

2006-2007

SCIENCE PLANNING SUMMARY UNITED STATES ANTARCTIC PROGRAM



Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

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■ USAP Program Indexes

- [Aeronomy and Astrophysics](#)
Dr. Bernard Lettau, Program Director (acting)
- [Biology and Medicine](#)
Dr. Roberta Marinelli, Program Director
- [Geology and Geophysics](#)
Dr. Thomas Wagner, Program Director
- [Glaciology](#)
Dr. Julie Palais, Program Director
- [Ocean and Climate Systems](#)
Dr. Bernhard Lettau, Program Director
- [Artists and Writers](#)
Ms. Kim Silverman, Program Director

■ USAP Station and Vessel Indexes

- [Amundsen-Scott South Pole Station](#)
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Project Indexes

Project Web Sites

Principal Investigator/Link	Event No.	Project Title
Aghion, Anne	W-218-M	Works and days: An antarctic chronicle
Ainley, David	B-031-M	Adélie penguin response to climate change at the individual, colony, and metapopulation levels
Albuquerque, Lita	W-221-M	Stellar axis: Antarctica
Besson, Dave	A-123-S	Neutrino Array Radio Calibration
Bieber, John	A-120-M	Solar and heliospheric studies with antarctic cosmic ray observations
Blanchette, Bob	B-038-E/L	Studies of antarctic fungi: Adaptive strategies for survival and protecting Antarctica's historic structures
Booth, Charles R	R-513-M/P/S	National Science Foundation Polar Programs Ultraviolet Spectroradiometer Network
Bowser, Samuel	B-043-M	Evolution of morphology and trophic strategies in antarctic agglutinated foraminifera
Cande, Steven C	G-413-N	Collaborative Research: The connection between mid-Cenozoic seafloor spreading and the western Ross Sea Embayment
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Carlstrom, John	A-370-S	Science Coordination Office for Astrophysical Research in Antarctica (SCOARA)
Catania, Ginny	I-159-M	Grounding line forensics: The history of grounding line retreat in the Kamb Ice Stream outlet region
Church, Sarah	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Cortada, Xavier I	W-217-M	Antarctic art message mural
Dempsey, John	O-316-M	Physics and mechanics of the

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		breakup of warm antarctic sea ice: In-situ experiments and modeling
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
DiTullio, Giacomo	B-272-N	Interaction of iron, light and CO2 on phytoplankton community dynamics in the Ross Sea
Doran, Peter	B-426-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Evenson, Paul	A-333-S	ICECUBE
Fountain, Andrew	B-425-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Fricker, Helen A	I-277-E	Collaborative Research into Antarctic Calving (CRAC)
Garrott, Robert	B-009-M	Patterns and processes: Dynamics of the Erebus Bay Weddell seal population
Gogineni, Prasad	I-189-M	Center for Remote Sensing of Ice Sheets (CRISIS) - Basler airborne radar survey
Gorham, Peter	A-142-M	Antarctic Impulsive Transient Antenna (ANITA)
Hargreaves, Geoffrey	I-477-M	Investigation of climate, ice dynamics, and biology using a deep ice core from the West Antarctic Ice Sheet
Harwood, David	G-049-M	ANDRILL: Investigating Antarctica's role in Cenozoic global environmental change
Harwood, David	G-091-M	ANDRILL
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Herzog, Werner	W-219-M	The inner landscape (feature film)
Hofmann, David	O-257-S	South Pole monitoring for climatic change
Hofmann, David	O-264-P	Collection of atmospheric air for the NOAA/GMD worldwide flask-

		sampling network
Hofmann, Gretchen	B-134-M	Towards an understanding of protein homeostasis in cold-adapted antarctic fish
Horning, Markus	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.
Inan, Umran	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
Inan, Umran	A-327-N	ELF/VLF observation in the southern Pacific Ocean
Johns, Bjorn	T-295-M	UNAVCO GPS survey support
Kanatous, Shane B	B-018-M	The molecular signals that regulate the ontogeny of aerobic capacity, lipid metabolism and elevated myoglobin concentrations in the skeletal muscles of Weddell seals
Keeling, Ralph	O-204-P	Changes in atmospheric oxygen (O ₂), carbon dioxide (CO ₂), and argon (Ar) concentrations in relation to the carbon cycle and climate
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Kurbatov, Andrei	I-153-M	A Science Management Office for the United States Component of the International Trans Antarctic Expedition (US ITASE SMO): A collaborative program of research from Taylor Dome to South Pole
Kyle, Phillip	G-081-M	Mount Erebus Volcano Observatory II (MEVO II): Surveillance, models, impacts and outreach
LaBelle, James	A-128-S	Direction-finding measurements of LF/MF/HF auroral radio emissions at South Pole
Lange, Andrew	A-033-S	Background Imaging of Cosmic Extragalactic Polarization (BICEP)
Lazzara, Matthew	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Lazzara, Matthew	O-202-M/P	Antarctic Meteorological Research

		Center (AMRC)
Lee, Richard	B-256-P	Physiological and molecular mechanisms of stress tolerance in a polar insect
Lyons, W. Berry	B-420-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
MacAyeal, Douglas R	I-190-M	Earth's largest icebergs
Marsh, Bruce	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment
Mayewski, Paul	I-153-M	A Science Management Office for the United States Component of the International Trans Antarctic Expedition (US ITASE SMO): A collaborative program of research from Taylor Dome to South Pole
Mellish, Jo-Ann	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.
Moran, Amy	B-004-M	Collaborative Research: Effects of oxygen and temperature on egg mass function of Southern Ocean marine invertebrates
Morin, Paul	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Oftedal, Olav	B-024-M	Capital expenditure, lactation energetics, and the importance of foraging to Weddell seals and their pups
Palo, Scott	A-284-S	Dynamics of the antarctic MLT region using ground-based radar and TIMED Instrumentation
Prentice, Michael	I-133-M	Fluctuations of the West Antarctic Ice-Sheet in relation to lake history in Taylor Valley since the Last Glacial Maximum
Priscu, John	B-422-M	The Role of Resource Legacy on

		Contemporary Linkages Between Biodiversity and Ecosystem Processes in a Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program
Pryke, Clement	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Raymond, Charles F	I-163-M	Detection of crystal orientation fabrics near the Ross/Amundsen sea ice-flow divide and at the Siple Dome ice core site using polarimetric radar methods
Ross, Robin	B-028-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Prey component)
Rust, David M	A-146-M	Solar Bolometric Imager (SBI 2)
Ruth, David G	W-220-P	Antarctic ice: Sculpture in cast glass
Siddoway, Christine	G-088-M	Gneiss dome architecture: Form and process in the Fosdick Mountains
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sivjee, Gulamabas	A-129-S	The antarctic investigations of upper atmospheric disturbances over the South Pole Station
Smith, Raymond	B-032-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Bio-optical component)
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT program
Stearns, Charles	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Stearns, Charles	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program
Stock, Joann	G-071-N	Collection of marine geophysical data on transits of the Nathaniel B.

		Palmer
Swanger, Kate	G-054-M	Age, origin, and climatic significance of buried ice in the western Dry Valleys
Tang, Kam	B-230-M	Environmental and ecological regulation of differences and interactions between solitary and colonial forms of <i>Phaeocystis antarctica</i>
Vernet, Maria	B-016-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Phytoplankton component)
Virginia, Ross	B-423-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wall, Diana	B-424-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Zesta, Eftyhia	A-357-M/P	Extending SAMBA to auroral latitudes in Antarctica (South American Meridional B-field Array)

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Station and Vessel Schedules

The United States Antarctic Program operates three permanent research stations on the continent and two research vessels.

Opening Dates

	Austral Summer Openings		Austral Winter Openings
	Operational	Science	
McMurdo (Winfly*)	20 Aug 2006	23 Aug 2006	24 Feb 2007
McMurdo (Mainbody)	3 Oct 2006	4 Oct 2006	
South Pole	23 Oct 2006	30 Oct 2006	15 Feb 2007
Palmer	20 Sep 2006	11 Oct 2006	1 Apr 2007
Research Vessels	Vessels Operate Year-Round (Find Vessel Schedules)		

*A limited number of science projects deploy at Winfly

Estimated Population

	Summer	Winter
McMurdo	890 (weekly average) 2,900 (total)	187 (winter total)
South Pole	245 (weekly average) 725 (total)	45 (winter total)
Palmer	36-44 (weekly average) 76 (total)	30 (winter total)
RV/IB* NBP	39 science and staff / 25 crew	
ARSV** LMG	38 science and staff / 25 crew	

*RV/IB, Research Vessel/Icebreaker

**ARSV, Antarctic Research Support Vessel

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2006-2007 USAP Field Season

Air Operations

McMurdo Station

McMurdo-based aircraft (Helicopters, Twin Otter and LC-130 fixed-wing aircraft) will continue to support USAP researchers and program logistical functions.

Helicopters

PHI

[PHI, Inc.](#) (PHI) will provide helicopter support with four helicopters (two AS-350-B2 "A-Stars" and two Bell 212s) based out of McMurdo Station. They will support researches in the McMurdo Dry Valleys, Royal Society Range and on Ross Island.

The helicopters will support research in the McMurdo Sound area, the McMurdo Dry Valleys, Royal Society Range, on Ross Island, and in the Transantarctic Mountains near Shackleton Glacier.

Fixed Wing Aircraft: LC-130 Hercules, DC3 Basler, and DHC6 Twin Otters

New York Air National Guard (ANG)

The [New York Air National Guard](#) will provide re-supply and research support to South Pole Station. They will support research activities at Siple Dome, Byrd Surface Camp, Thwaites Glacier Camp, Pine Island Camp, and Beardmore Glacier.

Kenn Borek Air

[Kenn Borek Air](#) Twin Otter aircraft, operated by Kenn Borek Air will be used by a number of projects throughout the USAP area of operations.



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Staffed Field Camps

A total of six field camps will have resident staff to provide logistical and operational assistance to McMurdo and vessel-based researchers.

Dry Valleys

50 Nautical Miles From McMurdo Station

77.6°S, 162.9°E (Lake Hoare Camp)

Each year numerous groups conduct research throughout the Dry Valleys. Two resident staff will operate the main base camp at Lake Hoare and other groups will operate from small tent camps throughout the region.



Taylor Dome

100 Nautical Miles From McMurdo Station

77.78S, 158.79E

Taylor Dome will serve as the initial base for Paul Mayewski's ITASE Traverse (I-153-M). Three staff will support the traverse, scheduled to end the near Beardmore Glacier Basin. Every 100 kilometers, they will perform radar and GPS surveys, as well as drill ice cores. Next season, the traverse will resume and finish at South Pole Station.

Siple Dome

507 Nautical Miles From McMurdo Station

81.4°S, 149°W

Siple Dome with three resident staff will support two science projects: Ginny Catania (I-159-M) and Christine Siddoway (G-088-M) will use Siple Dome as a staging area and travel to an independent, tent camps. Dr. Catania's group will conduct radar and GPS experiments and Dr. Siddoway's team will perform geologic investigations.

WAIS Divide Field Camp

891 Nautical Miles From McMurdo Station

79.5°S, 112°W

The West Antarctic Ice Sheet (WAIS) Divide Field Camp with nine resident staff will support eight projects: Kendrick Taylor (I-477-M) will focus on ice-core sampling. The AWS (automatic weather station) project team, O-283-M (Charles Stearns), will service stations from the camp. Eftyhia Zesta's team (A-357-M) will inspect their magnetometer. Charlie Raymond (I-163-M) will conduct radar surveys. Jihong Cole-Dai (I-355-M) will perform detailed chemical analyses of shallow and deep cores. Prasad Gogineni's group (I-189-M) will ground-test and flight-test a remote-controlled air vehicle. Gordon Hamilton's (I-178-M) two team members will use the camp as a base for visiting several remote measurement sties along the ITASE 2002-03 traverse route between Byrd Camp and the South Pole. Ed Waddington's (I-171-M) project will drill shallow firn cores and take ice-penetrating radar measurements in the WAIS Divide region.



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2006-2007 USAP Field Season Event Numbering System

Every USAP project is assigned a unique event number consisting of three parts: A prefix indicating the USAP program funding the effort, a project number, and a suffix denoting the location where field work will take place. If field work takes place at more than one location the event number will indicate this with multiple suffixes separated by a slash.

Sample Event Number

A – **100** – **M**

In the example above, the project would be funded by the Astrophysics and Geospace Sciences program, have a project number of *100*, and would consist of field work to be performed at or near McMurdo Station.

Program Prefixes

Prefix	USAP Program
A	Aeronomy and Astrophysics Dr. Bernard Lettau, Program Director (acting)
B	Biology and Medicine Dr. Roberta Marinelli, Program Director
G	Geology and Geophysics Dr. Thomas Wagner, Program Director
I	Glaciology Dr. Julie Palais, Program Director
O	Ocean and Climate Systems Dr. Bernhard Lettau, Program Director
W	Artists and Writers Ms. Kim Silverman, Program Director
T	Technical Event
X	Other Science Events

Location Suffixes

Suffix	Supporting Location
M	McMurdo Station
P	Palmer Station
S	South Pole Station
—	

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N

RV/IB* Nathaniel B. Palmer

L

ARSV** Laurence M. Gould

E

Special Projects Supported by the USAP

(e.g., Investigators working with other national Antarctic programs)

**RV/IB, Research Vessel/Icebreaker*

***ARSV, Antarctic Research Support Vessel*



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Principal Investigator Index

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Aghion, Anne	W-218-M	Works and days: An antarctic chronicle
Ainley, David	B-031-M	Adélie penguin response to climate change at the individual, colony, and metapopulation levels
Albuquerque, Lita	W-221-M	Stellar axis: Antarctica
Anandakrishnan, Sridhar	I-205-M	Characterizing Lake Amundsen-Scott, South Pole: A ground geophysical program
Anderson, John B.	G-435-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Besson, Dave	A-123-S	Neutrino Array Radio Calibration
Bieber, John	A-120-M	Solar and heliospheric studies with antarctic cosmic ray observations
Blanchette, Bob	B-038-E/L	Studies of antarctic fungi: Adaptive strategies for survival and protecting Antarctica's historic structures
Booth, Charles R	R-513-M/P/S	National Science Foundation Polar Programs Ultraviolet Spectroradiometer Network
Bowser, Samuel	B-043-M	Evolution of morphology and trophic strategies in antarctic agglutinated foraminifera
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Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Carlstrom, John	A-370-S	Science Coordination Office for Astrophysical Research in Antarctica (SCOARA)
Castillo, Paterno R	G-430-N	Constraining the petrogenesis and mantle source of Adare Basin seamount lavas
Catania, Ginny	I-159-M	Grounding line forensics: The history of grounding line retreat in the Kamb

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		Ice Stream outlet region
Church, Sarah	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Cole-Dai, Jihong	I-355-M	Major chemical composition of the WAIS Divide ice core
Conway, Howard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Cortada, Xavier I	W-217-M	Antarctic art message mural
Costa, Daniel	B-232-E/L/P	Habitat utilization of Southern Ocean seals: Foraging behavior of Crabeater and Elephant seals using novel methods of oceanographic data collection
Dempsey, John	O-316-M	Physics and mechanics of the breakup of warm antarctic sea ice: In-situ experiments and modeling
Deshler, Terry	A-131-M	Measurements addressing the initial stages of ozone recovery, the nucleation of, index of refraction of, and existence of large PSC particles
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
DiTullio, Giacomo	B-272-N	Interaction of iron, light and CO ₂ on phytoplankton community dynamics in the Ross Sea
Doran, Peter	B-426-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Evenson, Paul	A-333-S	ICECUBE
Fabry, Victoria	B-069-M	Impacts of elevated pCO ₂ on a dominant aragonitic pteropod (Thecosomata) and its specialist predator (Gymnosomata) in the Ross Sea
Fountain, Andrew	B-425-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Fraser-Smith, Antony	A-100-M	Operation of an ELF/VLF radiometer at Arrival Heights
Fricker, Helen A	I-277-E	Collaborative Research into Antarctic Calving (CRAC)

Garrott, Robert	B-009-M	Patterns and processes: Dynamics of the Erebus Bay Weddell seal population
Gee, Jeffrey S	G-192-M	An integrated geomagnetic and petrologic study of the Dufek Complex
Gogineni, Prasad	I-189-M	Center for Remote Sensing of Ice Sheets (CReSIS) - Basler airborne radar survey
Gorham, Peter	A-142-M	Antarctic Impulsive Transient Antenna (ANITA)
Griffin, Ken	T-927-M	NASA / McMurdo Ground Station (MG1)
Hall, Brenda	B-068-M	Former elephant seal colonies in the Antarctic: Implications for holocene climate change and genetic diversity in the Southern Ocean
Hallet, Bernard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Hargreaves, Geoffrey	I-477-M	Investigation of climate, ice dynamics, and biology using a deep ice core from the West Antarctic Ice Sheet
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Hollibaugh, James	B-114-P	Distribution and ecology of ammonia oxidizing bacteria in the Palmer LTER study area
Horning, Markus	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.

Huber, Bruce	O-399-N	Cape Adare Long-term Mooring (CALM)
Inan, Umran	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
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Jacobs, Stanley S	O-274-N	The Amundsen Continental Shelf and the Antarctic Ice Sheet
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Lee, Richard	B-256-P	Physiological and molecular mechanisms of stress tolerance in a polar insect
Lewis, Adam	G-063-M	Deducing Late Neogene Antarctica

		climate from fossil-rich lacustrine sediments in the Dry Valleys
Licht, Kathy	G-084-M	Integrated Study of East Antarctic Ice Sheet Till (ISET): Tracers of ice flow and proxies of the ice-covered continental shield
Lyons, W. Berry	B-420-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
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Priscu, John	B-422-M	The Role of Resource Legacy on Contemporary Linkages Between Biodiversity and Ecosystem Processes

		in a Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program
Pryke, Clement	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Raymond, Charles F	I-163-M	Detection of crystal orientation fabrics near the Ross/Amundsen sea ice-flow divide and at the Siple Dome ice core site using polarimetric radar methods
Ross, Robin	B-028-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Prey component)
Rust, David M	A-146-M	Solar Bolometric Imager (SBI 2)
Ruth, David G	W-220-P	Antarctic ice: Sculpture in cast glass
Siddoway, Christine	G-088-M	Gneiss dome architecture: Form and process in the Fosdick Mountains
Sidell, Bruce	B-036-L/P	Differential expression of oxygen- binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sidell, Bruce	B-036-L/P	Differential expression of oxygen- binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sivjee, Gulamabas	A-129-S	The antarctic investigations of upper atmospheric disturbances over the South Pole Station
Smith, Raymond	B-032-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Bio-optical component)
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT program
Staudigel, Hubert	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Stearns, Charles	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Stearns, Charles	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program

Stock, Joann	G-071-N	Collection of marine geophysical data on transits of the Nathaniel B. Palmer
Swanger, Kate	G-054-M	Age, origin, and climatic significance of buried ice in the western Dry Valleys
Szuberla, Curt	T-396-M	Operation and maintenance of a CTBT class infrasound array at Windless Bight
Tang, Kam	B-230-M	Environmental and ecological regulation of differences and interactions between solitary and colonial forms of <i>Phaeocystis antarctica</i>
Tauxe, Lisa	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Travouillon, Tony	A-442-E	Measurements of the surface layer turbulence at Dome C
Trivelpiece, Wayne	B-040-E	Penguins as monitors of the krill-centric Southern Ocean marine ecosystem
Vernet, Maria	B-016-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Phytoplankton component)
Virginia, Ross	B-423-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wall, Diana	B-424-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wilch, Thomas	G-062-M	Late Cenozoic volcanism and glaciation at Minna Bluff: Implications for antarctic cryosphere history
Zesta, Eftyhia	A-357-M/P	Extending SAMBA to auroral latitudes in Antarctica (South American Meridional B-field Array)



2006-2007 USAP Field Season Project Indexes

Deploying Team Members Index

Team Member	Event No.	Principal Investigator
,	B-086-E	
Adams, Abigail	B-423-M	Ross Virginia
Adams, Byron	B-424-M	Diana Wall
Aghion, Anne	W-218-M	Anne Aghion
Albuquerque, Lita	W-221-M	Lita Albuquerque
Alvarez, Irma	G-071-N	Joann Stock
Ambuel, Jack	A-333-S	Paul Evenson
Anandakrishnan, Sridhar	I-205-M	Sridhar Anandakrishnan
Anderson, Britt	B-230-M	Kam Tang
Anderson, John	G-435-N	John B. Anderson
Angulo, Angel	G-071-N	Joann Stock
Applebaum, Sally	B-518-M	Mahlon Kennicutt
Arcone, Steven	I-153-M	Paul Mayewski
Arenz, Brett	B-038-E/L	Bob Blanchette
Arnett, Kenneth	A-112-M/S	
Arnould, John	B-232-E/L/P	Daniel Costa
Aumack, Craig	B-022-L/P	
Avery, James	A-284-S	Scott Palo
Ayres, Edward	B-424-M	Diana Wall
Azeem, S.	A-129-S	Gulamabas Sivjee
Bailey, Eva	B-230-M	Kam Tang
Baird, Thomas D	B-272-N	Giacomo DiTullio
Balm, Simon	W-221-M	Lita Albuquerque
Bamberg, Audrey	B-068-M	Brenda Hall
Banks, Forest	A-333-S	Paul Evenson

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

More Information

Additional information pertaining to the 2006-2007 Field Season.

- [Home Page](#)
- [Station Schedules](#)
- [Air Operations](#)
- [Staffed Field Camps](#)
- [Event Numbering System](#)

Barber, Shannon	B-197-M	
Bargmann, Naomi	B-040-E	Wayne Trivelpiece
Barkats, Denis	A-033-S	Andrew Lange
Barker, Joel	B-420-M	W. Berry Lyons
Barlow, Stephen	A-110-M/S	Gonzalo Hernandez
Barrett, Peter	G-091-M	David Harwood
Barwell-Clarke, Janet	B-114-P	James Hollibaugh
Basagic, Hassan	B-425-M	Andrew Fountain
Bean, John	O-316-M	John Dempsey
Beasley, Jon	W-221-M	Lita Albuquerque
Beattie, Keith	A-333-S	Paul Evenson
Beatty, James	A-142-M	Peter Gorham
Beck, Kenneth Charles	B-179-M	Bruce Johnson
Behrens, James	I-277-E	Helen A Fricker
Bender, Michael	G-054-M	Kate Swanger
Benoit, Josh	B-256-P	Richard Lee
Benson, Terry	A-333-S	Paul Evenson
Bent, Jonathan	O-214-L/N	
Bergeron, Beth	T-350-M	
Bernasconi, Pietro	A-146-M	David M Rust
Besson, Dave	A-123-S	Dave Besson
Bierman, Evan	A-033-S	Andrew Lange
Blair, Jeff	B-043-M	Samuel Bowser
Bliss, Andrew	G-078-M	
Blum, Jennifer	B-013-L/P	
Bogen, David	A-333-S	Paul Evenson
Boness, Daryl	B-024-M	Olav Oftedal
Boritt, Daniel	B-024-M	Olav Oftedal
Borley, Kimberly	B-036-L/P	Bruce Sidell
Bowles, Julie	G-182-M	Hubert Staudigel
Braddock, Peter	G-084-M	Kathy Licht

Bradford, Charles	T-927-M	Ken Griffin
Breton, Daniel	I-153-M	Paul Mayewski
Brunt, Kelly	I-190-M	Douglas R MacAyeal
Buchinger, Nicholas	A-333-S	Paul Evenson
Bucholtz, Jesse	G-078-M	
Bucolo, Anthony	B-022-L/P	
Bunt, Don	A-145-M	Bill Stepp
Burner, Ryan	B-016-L/P	Maria Vernet
Burt, Christopher	G-071-N	Joann Stock
Burton, Timothy	G-062-M	Thomas Wilch
Bush, Meredith	G-071-N	Joann Stock
Butler, Rhett G	G-090-P/S	
Byrd, Don	T-396-M	Curt Szuberla
Cande, Steven	G-071-N	Joann Stock
Cande, Steven	G-413-N	Steven C Cande
Cantley, Steve	A-333-S	Paul Evenson
Carbaugh, Gloria	O-257-S	David Hofmann
Carkhuff, Bliss	A-146-M	David M Rust
Carroll, Kelly	B-420-M	W. Berry Lyons
Carter, Lionel	G-091-M	David Harwood
Casassa, Gino	G-411-N	Bernard Hallet
Castillo, Pat	G-430-N	Paterno R Castillo
Catania, Ginny	I-159-M	Ginny Catania
Ceridon, Maile L.	B-179-M	Bruce Johnson
Chang, Jeff	A-327-N	Umran Inan
Chang, Jeff	A-112-M/S	
Chapin, Ed	A-147-M	Mark Devlin
Charpentier, Paul	A-333-S	Paul Evenson
Cheadle, Michael	G-192-M	Jeffrey S Gee
Cherwinka, Jeff	A-333-S	Paul Evenson

Chiang, Cynthia	A-033-S	Andrew Lange
Chiuchiolo, Amy	B-422-M	John Priscu
Chizmadia, Lysa	G-057-M	
Clayton, Robert	G-071-N	Joann Stock
Clayton, Robert	G-413-N	Steven C Cande
Clews, Ethan	T-396-M	Curt Szuberla
Close, Bryan	B-422-M	John Priscu
Cohen, Barbara	G-057-M	
Colao, Francesco	A-131-M	Terry Deshler
Cole-Dai, Jihong	I-355-M	Jihong Cole-Dai
Colville, Elizabeth	G-430-N	Paterno R Castillo
Conway, Maurice	I-163-M	Charles F Raymond
Cortada, Xavier	W-217-M	Xavier I Cortada
Cowan, Ellen	G-091-M	David Harwood
Cox, Amy	O-257-S	David Hofmann
Crabill, Marty	A-145-M	Bill Stepp
Crocker, Daniel	B-232-E/L/P	Daniel Costa
Crombie, Timothy	B-134-M	Gretchen Hofmann
Croon, Marcel	G-413-N	Steven C Cande
Crosby, Travis	G-091-M	David Harwood
Cullis, Patrick	O-257-S	David Hofmann
Curren, Matt	G-091-M	David Harwood
Dahlman, LuAnn	G-091-M	David Harwood
Darnell, Dennis	I-277-E	Helen A Fricker
Davey, Fred	G-413-N	Steven C Cande
Davis, Joseph	B-018-M	Shane B Kanatous
Davy, Bryan	G-071-N	Joann Stock
Day, Allan	A-370-S	John Carlstrom
Day, James	G-058-M	
Delaney, Allan	I-133-M	Michael Prentice

Demiroers, Levent	A-333-S	Paul Evenson
Dempsey, John	O-316-M	John Dempsey
Denlinger, David	B-256-P	Richard Lee
Dickson, Jay	G-054-M	Kate Swanger
DiTullio, Giacomo R	B-272-N	Giacomo DiTullio
Dixon, Daniel	I-153-M	Paul Mayewski
Donovan, William	I-189-M	Prasad Gogineni
Dowell, Charles	A-033-S	Andrew Lange
Drees, Jessica	I-171-M	
Dugger, Katie	B-031-M	David Ainley
Duling, Dennis	A-333-S	Paul Evenson
Dunbar, Gavin	G-091-M	David Harwood
Dunbar, Nelia	G-062-M	Thomas Wilch
Dunbar, Nelia	G-081-M	Phillip Kyle
Dutton, Geoff	O-257-S	David Hofmann
Edwards, Jeanne	A-333-S	Paul Evenson
Ehramjian, Jim	R-513-M/P/S	Charles R Booth
Eisert, Regina	B-024-M	Olav Oftedal
Elcheikh, Alan	A-333-S	Paul Evenson
Elliott, Christopher	A-333-S	Paul Evenson
Elliott, David	B-230-M	Kam Tang
Elnitsky, Michael	B-256-P	Richard Lee
Engels, Mary	B-032-L/P	Raymond Smith
Escher, Sharon	O-317-L	
Espinosa, Juan Carlos	W-217-M	Xavier I Cortada
Faber, David	B-069-M	Victoria Fabry
Fabry, Victoria	B-069-M	Victoria Fabry
Fales, Lloyd	B-031-M	David Ainley
Farris, Annie	B-009-M	Robert Garrott
Fernandez, Rodrigo	G-435-N	John B. Anderson

Firing, Eric	O-315-N	
Firing, Eric	O-315-N	
Flaherty, Larry	I-153-M	Paul Mayewski
Fleming, Richard	W-218-M	Anne Aghion
Florindo, Fabio	G-091-M	David Harwood
Folmer, Brent	T-350-M	
Forrest, Steve	B-086-E	
Foukal, Peter	A-146-M	David M Rust
Fowler, John	A-333-S	Paul Evenson
Frazier, Curtis	A-145-M	Bill Stepp
Freeburg, Ruth	T-396-M	Curt Szuberla
Gaffney, Ian	B-031-M	David Ainley
Gaines, Steven	B-134-M	Gretchen Hofmann
Gaiser, Thomas	A-333-S	Paul Evenson
Gaydos, Jennifer	B-230-M	Kam Tang
Gee, Jeffrey	G-192-M	Jeffrey S Gee
Genge, Matthew	G-058-M	
Gibson, Dar	A-333-S	Paul Evenson
Goebel, Michael	B-232-E/L/P	Daniel Costa
Goldstein, David	A-142-M	Peter Gorham
Gorham, Peter	A-142-M	Peter Gorham
Gorman, Kristin	B-013-L/P	
Gorz, Kelly	G-063-M	Adam Lewis
Granot , Roi	G-413-N	Steven C Cande
Graves , Andrew	B-038-E/L	Bob Blanchette
Gray, Millie	B-041-M	Markus Horning
Green, Brendan	B-069-M	Victoria Fabry
Green, James	G-054-M	Kate Swanger
Greenler, Leland	A-333-S	Paul Evenson
Grimes, Craig	G-192-M	Jeffrey S Gee

Guerrero, Raul	O-274-N	Stanley S Jacobs
Guidi, Sylvestre	W-218-M	Anne Aghion
Gunther, Kerry	B-009-M	Robert Garrott
Habura, Andrea	B-043-M	Samuel Bowser
Hagan, Jeanette	G-071-N	Joann Stock
Hale, Richard	I-189-M	Prasad Gogineni
Hallet, Bernard	G-411-N	Bernard Hallet
Halpern, Mark	A-147-M	Mark Devlin
Ham, Tom	A-333-S	Paul Evenson
Haman, Katherine	B-032-L/P	Raymond Smith
Haman, Katherine	B-016-L/P	Maria Vernet
Hamilton, Darrell	A-333-S	Paul Evenson
Hamilton, Gordon	I-178-M	
Hamilton, Gordon	I-153-M	Paul Mayewski
Hammetter, Ryan	A-333-S	Paul Evenson
Hammon, Sam	B-028-L/P	Robin Ross
Hannaford, Terry	A-333-S	Paul Evenson
Hannah, Michael	G-091-M	David Harwood
Hansaraj, Dhires	G-091-M	David Harwood
Hanson, Kael	A-333-S	Paul Evenson
Hargrave, Peter Charles	A-147-M	Mark Devlin
Harriman, Sarah	A-112-M/S	
Harris, Mark	T-927-M	Ken Griffin
Harwood, David	G-049-M	David Harwood
Haugen, James	A-333-S	Paul Evenson
Head, James	G-054-M	Kate Swanger
Held, Benjamin	B-038-E/L	Bob Blanchette
Hendrickson, James	T-927-M	Ken Griffin
Henig, Ashlee	G-071-N	Joann Stock
Henrys, Stuart	G-091-M	David Harwood
Hernandez, Gonzalo	A-110-M/S	Gonzalo Hernandez

Herzog, Werner	W-219-M	Werner Herzog
Heyob, Susan	A-333-S	Paul Evenson
Hiatt, Eric	G-084-M	Kathy Licht
Hill, Gary	A-333-S	Paul Evenson
Hill, Roger	B-041-M	Markus Horning
Hindle, Allyson	B-041-M	Markus Horning
Hoffman, Matthew	B-425-M	Andrew Fountain
Hoover, Stephen	A-142-M	Peter Gorham
Horgan, Huw	I-205-M	Sridhar Anandakrishnan
Horne, Peter	B-013-L/P	
Horning, Markus	B-041-M	Markus Horning
Huang, David	B-043-M	Samuel Bowser
Hughes, Terence	I-153-M	Paul Mayewski
Hulbe, Christina	I-159-M	Ginny Catania
Humphrey, Jim	A-145-M	Bill Stepp
Huntley, Peter	A-379-S	John Carlstrom
Hutchings, Thomas	A-333-S	Paul Evenson
Hynes, James	A-333-S	Paul Evenson
Imura, Satoshi	B-422-M	John Priscu
Ishihara, Takemi	G-413-N	Steven C Cande
Jacobs, Stan	O-274-N	Stanley S Jacobs
Jacobsen, John	A-333-S	Paul Evenson
Jacobson, Samuel	G-078-M	
Jayred, Michael	A-333-S	Paul Evenson
Jayred, Michael	T-350-M	
Jemison, Kelly	G-091-M	David Harwood
Jenkins, Adrian	O-274-N	Stanley S Jacobs
Johnson, Bruce	B-179-M	Bruce Johnson
Johnson, Kyle	A-284-S	Scott Palo
Johnston, Mark	B-009-M	Robert Garrott

Jones, Arthur	A-333-S	Paul Evenson
Jones, Kyle	G-081-M	Phillip Kyle
Juneau, Jill	A-145-M	Bill Stepp
Kaiser, Henry	B-043-M	Samuel Bowser
Kalin, Jonas	A-333-S	Paul Evenson
Kambarn, William	T-927-M	Ken Griffin
Kanatous, Shane	B-018-M	Shane B Kanatous
Karle, Albrecht	A-333-S	Paul Evenson
Keisler, Ryan	A-379-S	John Carlstrom
Keys, Harry	G-081-M	Phillip Kyle
Kimball, Christine	G-081-M	Phillip Kyle
King, Charlene	G-091-M	David Harwood
King, Louis	A-131-M	Terry Deshler
Kirchman, David	B-045-L/P	
Kisin, Sonja	G-413-N	Steven C Cande
Klein, Andrew	B-518-M	Mahlon Kennicutt
Klein, Jeffery	A-147-M	Mark Devlin
Kleist, Michael	A-333-S	Paul Evenson
Koch, Paul	B-068-M	Brenda Hall
Koenig, Lora	I-153-M	Paul Mayewski
Kohnen, Georges	A-333-S	Paul Evenson
Kooyman, Gerald	B-197-M	
Koppes, Michelle	G-411-N	Bernard Hallet
Kopsch, Conrad	G-091-M	David Harwood
Korhonen, Fawna	G-088-M	Christine Siddoway
Kositsky, Andrew	G-071-N	Joann Stock
Kovac, John	A-033-S	Andrew Lange
Kowalewski, Doug	G-054-M	Kate Swanger
Kowalski, Jeff	A-142-M	Peter Gorham
Kozlowski, Wendy	B-016-L/P	Maria Vernet

Krafft, Bjørn	B-024-M	Olav Oftedal
Kramer, Katie	G-084-M	Kathy Licht
Kramer, Shawn	B-018-M	Shane B Kanatous
Krasberg, Mark	A-333-S	Paul Evenson
Kravchenko, Ilya	A-123-S	Dave Besson
Krissek, Lawrence	G-091-M	David Harwood
Kropidowski, Stefan	B-040-E	Wayne Trivelpiece
Kuhn, Gerhard	G-091-M	David Harwood
Kuo, Chao-lin	A-033-S	Andrew Lange
la Pena, Santiago de	A-284-S	Scott Palo
Lacy, Laura	G-091-M	David Harwood
Lamb, Amie K	I-159-M	Ginny Catania
Lang, Patricia	O-214-L/N	
Lanoil, Brian	B-195-M	
Lara, Michael	B-024-M	Olav Oftedal
Latshaw, James	A-333-S	Paul Evenson
Lau, Elias	A-284-S	Scott Palo
Laufer, Andreas	G-091-M	David Harwood
Le Cocq, Cecile Eliane	A-100-M	Antony Fraser-Smith
Lee, Peter	B-272-N	Giacomo DiTullio
Leight, Cliff	G-058-M	
Leitch, Erik	A-379-S	John Carlstrom
Leonard, Katherine	O-274-N	Stanley S Jacobs
Leonard, Katherine	I-190-M	Douglas R MacAyeal
Lescroel, Amelie	B-031-M	David Ainley
Leventer, Amy	O-274-N	Stanley S Jacobs
Levy, Joseph	G-054-M	Kate Swanger
Levy, Richard	G-091-M	David Harwood
Li, Yingyu	B-272-N	Giacomo DiTullio
Lidstrom, Sven	A-333-S	Paul Evenson
Liewer, Kurt	A-142-M	Peter Gorham

Lindholm, Melissa	G-081-M	Phillip Kyle
Lindsley, Amy	B-040-E	Wayne Trivelpiece
Little, Chris	O-274-N	Stanley S Jacobs
Loomis, David	B-040-E	Wayne Trivelpiece
Loose, Brice	O-274-N	Stanley S Jacobs
Lorenzetti, Silvio	G-057-M	
Lowe, Alex	B-028-L/P	Robin Ross
Lubchenco, Peggy	B-134-M	Gretchen Hofmann
Lucas, Kathryn	G-071-N	Joann Stock
Lueker, Martin	A-379-S	John Carlstrom
Luyendyk, Bruce	G-071-N	Joann Stock
Lynch, Heather	B-086-E	
Lynch, Maureen	B-230-M	Kam Tang
Lyons, Timothy	A-333-S	Paul Evenson
Ma, Julian	B-045-L/P	
MacAyeal, Douglas	I-190-M	Douglas R MacAyeal
Mackenzie, Cynthia	A-333-S	Paul Evenson
Madigan, Michael	B-195-M	
Madsen, James	A-333-S	Paul Evenson
Maffioli, Paola	G-091-M	David Harwood
Malolepszy, Ziggy	G-056-M	Bruce Marsh
Mandernack, Kevin	G-091-M	David Harwood
Mannas, Jen	B-009-M	Robert Garrott
Marchant, Gary	A-145-M	Bill Stepp
Marriott, Duncan	T-396-M	Curt Szuberla
Marsaudon, Valere	B-031-M	David Ainley
Marsden, Gaelen	A-147-M	Mark Devlin
Marsh, Bruce	G-056-M	Bruce Marsh
Maschek, John	B-022-L/P	
Masters, Otto	A-145-M	Bill Stepp

Mathiason, Matthew	A-333-S	Paul Evenson
Matsuoka, Kenichi	I-163-M	Charles F Raymond
Matt, Terry	A-333-S	Paul Evenson
Mattison, Harold	A-333-S	Paul Evenson
Mayewski, Paul	I-153-M	Paul Mayewski
McCabe, Nathan	A-145-M	Bill Stepp
McCarthy, Forrest	G-088-M	Christine Siddoway
McCarthy, Michael	A-110-M/S	Gonzalo Hernandez
McDonald, Birgitte	B-232-E/L/P	Daniel Costa
McEwen, Donald	A-129-S	Gulamabas Sivjee
McFadden, Rory	G-088-M	Christine Siddoway
McGrath, Daniel	G-411-N	Bernard Hallet
McIntosh, Bill	G-062-M	Thomas Wilch
McIntosh, Bill	G-081-M	Phillip Kyle
Mclain, Ryan	G-078-M	
McMahon, Jeffrey	A-379-S	John Carlstrom
Medved, Miroljub	B-426-M	Peter Doran
Meidinger, Rick	A-333-S	Paul Evenson
Meurer, William	G-192-M	Jeffrey S Gee
Meyhandan, Rishi	A-333-S	Paul Evenson
Michalchuk, Brad	G-435-N	John B. Anderson
Middaugh, Nicole	B-114-P	James Hollibaugh
Middaugh, Nicole	B-045-L/P	
Miknaitis, Kathryn	A-379-S	John Carlstrom
Mikucki, Jill	B-195-M	
Millan-Martinez, Cristina	G-091-M	David Harwood
Miller, Andrew	B-179-M	Bruce Johnson
Miller, Bruce	B-004-M	Amy Moran
Miller, Elizabeth	G-056-M	Bruce Marsh
Miller, Julianna R	B-272-N	Giacomo DiTullio

Miller, Vanessa	G-091-M	David Harwood
Mironov, Anatoliy V	I-159-M	Ginny Catania
Moldwin, Mark	A-357-M/P	Eftyhia Zesta
Montes Hugo, Martin	B-016-L/P	Maria Vernet
Mooiweer, Wiesje	A-131-M	Terry Deshler
Moore, Kelly	B-028-L/P	Robin Ross
Moran, Amy	B-004-M	Amy Moran
Morey, Andres	A-333-S	Paul Evenson
Morgan, Gareth	G-054-M	Kate Swanger
Morgensen, Steen	B-009-M	Robert Garrott
Morin, Roger	G-091-M	David Harwood
Morley, Geoffrey	O-316-M	John Dempsey
Müller, R. Dietmar	G-413-N	Steven C Cande
Murray, Timothy	A-333-S	Paul Evenson
Mutiso, Charles	A-129-S	Gulamabas Sivjee
Muto, Atsuhiko	I-190-M	Douglas R MacAyeal
Myers, Kristen	B-045-L/P	
Naish, Timothy	G-091-M	David Harwood
Nakase, Dana	B-028-L/P	Robin Ross
Nam, Jiwoo	A-142-M	Peter Gorham
Neeley, Aimee R	B-272-N	Giacomo DiTullio
Neff, William	O-214-L/N	
Netterfield, Calvin	A-147-M	Mark Devlin
Newberger, Tim	O-214-L/N	
Newcomb, Matthew	A-333-S	Paul Evenson
Nguyen, Hien	A-033-S	Andrew Lange
Nichol, Ryan	A-142-M	Peter Gorham
Niessen, Frank	G-091-M	David Harwood
Nitsche, Frank	O-274-N	Stanley S Jacobs
Noble, Matthew	A-146-M	David M Rust
Norman, Shaun	G-058-M	

Nylen, Thomas	T-295-M	Bjorn Johns
O'Brien , Lachlan	G-413-N	Steven C Cande
O'Brien, Kristin	B-036-L/P	Bruce Sidell
O'Malley, Kathy	B-179-M	Bruce Johnson
Obryk, Maciej	B-426-M	Peter Doran
Oftedal, Olav	B-024-M	Olav Oftedal
Ohneiser, Christian	G-091-M	David Harwood
Olney, Matthew	G-091-M	David Harwood
Oppenheimer, Clive	G-081-M	Phillip Kyle
Orlando, Angiola	A-366-S	Sarah Church
Osborne, Dan	T-396-M	Curt Szuberla
Padin, Stephen	A-379-S	John Carlstrom
Palladino, Kimberly	A-142-M	Peter Gorham
Palmer, Terence	B-518-M	Mahlon Kennicutt
Palmer, Vanessa	I-163-M	Charles F Raymond
Panter, Kurt	G-062-M	Thomas Wilch
Panter, Kurt	G-430-N	Paterno R Castillo
Parfrey, Laura Ellen	B-043-M	Samuel Bowser
Pascale, Enzo	A-147-M	Mark Devlin
Patterson, Michael	A-333-S	Paul Evenson
Patwardhan, Kaustubh	G-056-M	Bruce Marsh
Paulos, Robert	A-333-S	Paul Evenson
Paulsen, Timothy	G-091-M	David Harwood
Payne, Christopher D	B-272-N	Giacomo DiTullio
Pearson, Linnea	B-018-M	Shane B Kanatous
Pegrum, Sophie	W-221-M	Lita Albuquerque
Pennycook, Jean	B-031-M	David Ainley
Perez Lara, Juan	A-145-M	Bill Stepp
Pernic, Robert J	A-370-S	John Carlstrom
Persico, Davide	G-091-M	David Harwood

Peters, Leo	I-205-M	Sridhar Anandakrishnan
Peterson, Dean	G-056-M	Bruce Marsh
Petrushak, Steven	G-091-M	David Harwood
Pettersen, Claire	A-333-S	Paul Evenson
Pettit, Donald	G-058-M	
Pezzoli, Glenn	O-260-L	Janet Sprintall
Piwowarski, Thomas	A-333-S	Paul Evenson
Plagge, Tom	A-379-S	John Carlstrom
Podoll, Andrew	G-063-M	Adam Lewis
Poenisch, Kevin	I-355-M	Jihong Cole-Dai
Pompilio, Massimo	G-091-M	David Harwood
Ponganis, Katherine	B-197-M	
Pooley, Brent	G-091-M	David Harwood
Poskaitis, Andrew	G-071-N	Joann Stock
Powell, Ross	G-091-M	David Harwood
Power, Donovan	I-163-M	Charles F Raymond
Prentice, Michael	I-133-M	Michael Prentice
Proffitt, Kelly	B-009-M	Robert Garrott
Przybylski, Gerald	A-333-S	Paul Evenson
Quetin, Langdon	B-028-L/P	Robin Ross
Quinn, Art	W-220-P	David G Ruth
Rachelson, William	A-112-M/S	
Rampey, Michael	G-058-M	
Ratzlaff, Ken	A-123-S	Dave Besson
Redinger, Bob	A-145-M	Bill Stepp
Reed, Josh	G-091-M	David Harwood
Rentmeesters, Charles	A-333-S	Paul Evenson
Rex, Marie	A-147-M	Mark Devlin
Rich, Shannon	B-028-L/P	Robin Ross
Richards, Erik	T-927-M	Ken Griffin

Richards, John	A-333-S	Paul Evenson
Richter, Danny	G-430-N	Paterno R Castillo
Richter, Steffen	A-033-S	Andrew Lange
Riser, Morten	B-024-M	Olav Oftedal
Roberts, Don	A-145-M	Bill Stepp
Roberts, Miles	B-024-M	Olav Oftedal
Roberts, Paul	G-062-M	Thomas Wilch
Robertson, Mark	G-090-P/S	
Robinson, Laura	G-054-M	Kate Swanger
Robl, Phillip	A-333-S	Paul Evenson
Rolander, Nathan	A-146-M	David M Rust
Romero-Wolf, Andrew	A-142-M	Peter Gorham
Rosen, Marc	A-142-M	Peter Gorham
Ross, Jake	G-081-M	Phillip Kyle
Ross, Robin	B-028-L/P	Robin Ross
Ross, Ronald	I-190-M	Douglas R MacAyeal
Rotella, Jay	B-009-M	Robert Garrott
Roth, A Philip	A-333-S	Paul Evenson
Rott, Carsten	A-333-S	Paul Evenson
Rotzien, Jonathan	G-071-N	Joann Stock
Routti, Heli	B-024-M	Olav Oftedal
Ruth, David	W-220-P	David G Ruth
Rutledge, Douglas	A-333-S	Paul Evenson
Sabacka, Marie	B-422-M	John Priscu
Saltzberg, David	A-127-M	
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Samarkin, Vladimir	B-195-M	
Sandstrom, Perry	A-333-S	Paul Evenson
Sawyer, Georgina	G-081-M	Phillip Kyle
Sbarbori, Elise	G-182-M	Hubert Staudigel
Scanlan, Mary	G-062-M	Thomas Wilch

Scherer, Reed	G-091-M	David Harwood
Schneider, Darryn	A-333-S	Paul Evenson
Scholz, Erich	G-091-M	David Harwood
Schram, Julie	B-032-L/P	Raymond Smith
Schreiber, Erika	B-004-M	Amy Moran
Schroeder, Michael	O-274-N	Stanley S Jacobs
Schulte, Glen	B-256-P	Richard Lee
Schutt, John	G-057-M	
Schwarz, Robert	A-366-S	Sarah Church
Seaman, Andrew	O-257-S	David Hofmann
Sears, James	A-379-S	John Carlstrom
Seibel, Brad	B-069-M	Victoria Fabry
Semisch, Chris	A-147-M	Mark Devlin
Sener , Joseph	B-009-M	Robert Garrott
Sergienko, Olga	I-190-M	Douglas R MacAyeal
Sessions, Thomas S.	B-320-E	
Shean, David	G-054-M	Kate Swanger
Shields, Amy	B-230-M	Kam Tang
Shulman, Leonard	A-333-S	Paul Evenson
Siddoway, Christine	G-088-M	Christine Siddoway
Sidell, Bruce	B-036-L/P	Bruce Sidell
Simburger, Garry	A-142-M	Peter Gorham
Simmons, Breana	B-424-M	Diana Wall
Sinkola, Nickolas	T-927-M	Ken Griffin
Sjunneskog, Charlotte	G-091-M	David Harwood
Sladen, William	B-031-M	David Ainley
Smellie, John L	G-062-M	Thomas Wilch
Smith, Benjamin E	I-171-M	
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Soundarapandian, Karthik	A-333-S	Paul Evenson

Souter, Barbara	G-056-M	Bruce Marsh
Sprague, Jonathan	B-004-M	Amy Moran
Stanish, Lee	B-421-M	
Staniszewski, Zachary	A-379-S	John Carlstrom
Steen-Larsen, Hans Christian	I-163-M	Charles F Raymond
Stempel, Michelle	G-413-N	Steven C Cande
Stempel, Michelle	G-071-N	Joann Stock
Stepp, Bill	A-145-M	Bill Stepp
Stezelberger, Thorsten	A-333-S	Paul Evenson
Stilwell, Bryan	A-145-M	Bill Stepp
Stock, Joann	G-071-N	Joann Stock
Stock, Joann	G-413-N	Steven C Cande
Stracener, Bill	A-145-M	Bill Stepp
Strong, Percy	G-091-M	David Harwood
Sturm, Eric	G-091-M	David Harwood
Sulanke, Karl-Heinz	A-333-S	Paul Evenson
Sullivan, Greg	A-333-S	Paul Evenson
Sun, Daoyuan	G-071-N	Joann Stock
Sweeney, Colm	O-214-L/N	
Szuberla, Curt	T-396-M	Curt Szuberla
Takahashi, Taro	O-214-L/N	
Takahashi, Yuki	A-033-S	Andrew Lange
Talarico, Franco	G-091-M	David Harwood
Tang, Chao	B-195-M	
Tang, Kam	B-230-M	Kam Tang
Taviani, Marco	G-091-M	David Harwood
Teyssier, Christian	G-088-M	Christine Siddoway
Thigpen, Tyler	B-032-L/P	Raymond Smith
Thom, Jonathan	I-190-M	Douglas R MacAyeal
Thom, Jonathan	O-283-M/S	Charles Stearns

Thoma, Mark	A-333-S	Paul Evenson
Thomas, Austen	B-032-L/P	Raymond Smith
Thomas, Nick	A-147-M	Mark Devlin
Thomson, Julian	G-091-M	David Harwood
Thomton, Jamie	B-041-M	Markus Horning
Tilav, Serap	A-333-S	Paul Evenson
Todgham, Anne	B-134-M	Gretchen Hofmann
Toniolo, Viola	B-031-M	David Ainley
Tortell, Philippe	B-272-N	Giacomo DiTullio
Travouillon, Tony	A-442-E	Tony Travouillon
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Trivelpiece, Wayne	B-040-E	Wayne Trivelpiece
Truch, Matt	A-147-M	Mark Devlin
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Uzorka, Ogugua	O-316-M	John Dempsey
Vandenbroucke, Justin	A-333-S	Paul Evenson
Varner, Gary	A-142-M	Peter Gorham
Venema, Bryan	A-110-M/S	Gonzalo Hernandez
Vernet, Maria	B-016-L/P	Maria Vernet
Vieira, Joaquin	A-379-S	John Carlstrom
Viero, Marco	A-147-M	Mark Devlin
Voigt, Don	I-205-M	Sridhar Anandakrishnan
Vriend, Nathalie	G-071-N	Joann Stock
Wade, Terry	B-518-M	Mahlon Kennicutt
Webb, Peter	G-049-M	David Harwood
Wefel, Mark	A-145-M	Bill Stepp
Weidert, Ryan	G-071-N	Joann Stock

Weidner, George	O-283-M/S	Charles Stearns
Welch, Brian	I-153-M	Paul Mayewski
Welch, Kathy	B-420-M	W. Berry Lyons
Wellner, Julia	G-435-N	John B. Anderson
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White, Seth	T-295-M	Bjorn Johns
Whiteside, Robin	A-145-M	Bill Stepp
Whitmer, Allison	B-134-M	Gretchen Hofmann
Whitney, Michael	A-333-S	Paul Evenson
Wiebe, Donald	A-147-M	Mark Devlin
Wilch, Thomas	G-062-M	Thomas Wilch
Wilch, Thomas	G-091-M	David Harwood
Williams, Bifford	A-284-S	Scott Palo
Williams, Karen	G-081-M	Phillip Kyle
Williams, Trevor	G-091-M	David Harwood
Winslow, Nathan	G-056-M	Bruce Marsh
Winter, Diane	G-091-M	David Harwood
Wirth, Caesar	A-370-S	John Carlstrom
Wise, Nathan	A-145-M	Bill Stepp
Wisniewski, Paul	A-333-S	Paul Evenson
Witherow, Rebecca	B-420-M	W. Berry Lyons
Wohlford, Tristan	B-016-L/P	Maria Vernet
Woods, Arthur	B-004-M	Amy Moran
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Woschnagg, Kurt	A-333-S	Paul Evenson
Wu, Edward	A-366-S	Sarah Church
Wujcik, Jody	B-036-L/P	Bruce Sidell
Wumkes, Mark	I-153-M	Paul Mayewski
Xu, Ji-Feng	G-430-N	Paterno R Castillo
Yeck, James	A-333-S	Paul Evenson

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Yoon, Kiwon	A-033-S	Andrew Lange
Young, Patrick	G-435-N	John B. Anderson
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Zellner, Nicole	G-058-M	
Zemcov, Michael	A-366-S	Sarah Church
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Zieg, Michael	G-056-M	Bruce Marsh
Zimmerman, Melany	A-333-S	Paul Evenson
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California Institute of Technology	G-071-N	Stock, Joann
California Institute of Technology	A-442-E	Travouillon, Tony
California Institute of Technology	A-033-S	Lange, Andrew
California Los Angeles, University of	A-357-M/P	Zesta, Eftyhia
California San Diego, University of	I-277-E	Fricker, Helen
California Santa Barbara, University of	B-028-L/P	Ross, Robin
California Santa Barbara, University of	B-032-L/P	Smith, Raymond
California Santa Barbara, University of	B-134-M	Hofmann, Gretchen
California Santa Cruz, University of	B-232-E/L/P	Costa, Daniel
California State University San Marcos	B-069-M	Fabry, Victoria
Chicago, University of	A-379-S	Carlstrom, John
Chicago, University of	A-366-S	Pryke, Clement
Chicago, University of	I-190-M	MacAyeal, Douglas
Chicago, University of	A-370-S	Carlstrom, John
Clarkson University	O-316-M	Dempsey, John
College of Charleston	B-272-N	DiTullio, Giacomo
Colorado Boulder, University of	A-284-S	Palo, Scott
Colorado College	G-088-M	Siddoway, Christine
Colorado State University	B-424-M	Wall, Diana
Colorado State University	B-018-M	Kanatous, Shane
Columbia Scientific Balloon Facility	A-145-M	Stepp, Bill
Columbia University	B-021-L	Martinson, Doug

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Columbia University	O-399-N	Huber, Bruce
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Delaware, University of	A-120-M	Bieber, John
Delaware, University of	A-333-S	Evenson, Paul
Embry Riddle Aeronautical University	A-129-S	Sivjee, Gulamabas
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H.T. Harvey & Associates	B-031-M	Ainley, David
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Hawaii Manoa, University of	B-004-M	Moran, Amy
Johns Hopkins University	G-056-M	Marsh, Bruce
Johns Hopkins University	A-146-M	Rust, David
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Louisiana State University Baton Rouge	B-426-M	Doran, Peter
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Minnesota, University of	B-038-E/L	Blanchette, Bob
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Montana State University Bozeman	B-422-M	Priscu, John
National Aeronautics and Space Administration	T-927-M	Griffin, Ken
National Oceanic and Atmospheric Administration	O-257-S	Hofmann, David
National Oceanic and Atmospheric Administration	O-264-P	Hofmann, David
National Oceanic and Atmospheric Administration	B-040-E	Trivelpiece, Wayne

National Science Foundation	G-062-M	Wilch, Thomas
Nebraska Lincoln, University of	G-049-M	Harwood, David
Nebraska Lincoln, University of	G-091-M	Harwood, David
New Mexico Institute of Mining and Technology	G-081-M	Kyle, Phillip
New York State Department of Health	B-043-M	Bowser, Samuel
North Dakota State University	G-063-M	Lewis, Adam
Ohio State University	B-420-M	Lyons, W. Berry
Oregon State University	B-041-M	Horning, Markus
Pennsylvania State University	I-205-M	Anandakrishnan, Sridhar
Pennsylvania, University of	A-147-M	Devlin, Mark
Portland State University	B-425-M	Fountain, Andrew
Rice University	G-435-N	Anderson, John
Scripps Institution of Oceanography	O-260-L	Sprintall, Janet
Scripps Institution of Oceanography	B-016-L/P	Vernet, Maria
Scripps Institution of Oceanography	O-204-P	Keeling, Ralph
Scripps Institution of Oceanography	G-182-M	Staudigel, Hubert
Scripps Institution of Oceanography	G-182-M	Tauxe, Lisa
Scripps Institution of Oceanography	G-192-M	Gee, Jeffrey
Scripps Institution of Oceanography	G-413-N	Cande, Steven
Scripps Institution of Oceanography	G-430-N	Castillo, Paterno
Smithsonian Institution	B-024-M	Oftedal, Olav
South Dakota State University	I-355-M	Cole-Dai, Jihong
Stanford University	A-100-M	Fraser-Smith, Antony
Stanford University	A-366-S	Church, Sarah
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Texas A & M University	B-518-M	Kennicutt, Mahlon
Texas Austin, University of	I-159-M	Catania, Ginny
The University of Maine	B-068-M	Hall, Brenda
The University of Maine	B-036-L/P	Sidell, Bruce

The University of Maine	B-036-L/P	Sidell, Bruce
The University of Maine	I-153-M	Kurbatov, Andrei
UNAVCO	T-295-M	Johns, Bjorn
United States Geological Survey	I-477-M	Hargreaves, Geoffrey
Virginia Institute of Marine Sciences	B-230-M	Tang, Kam
Washington, University of	A-110-M/S	Hernandez, Gonzalo
Washington, University of	I-163-M	Raymond, Charles
Washington, University of	G-411-N	Conway, Howard
Washington, University of	G-411-N	Hallet, Bernard
Wisconsin Madison, University of	O-283-M/S	Lazzara, Matthew
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018	B-018-M	Kanatous, Shane
021	B-021-L	Martinson, Doug
024	B-024-M	Oftedal, Olav
028	B-028-L/P	Ross, Robin
031	B-031-M	Ainley, David
032	B-032-L/P	Smith, Raymond
033	A-033-S	Lange, Andrew
036	B-036-L/P	Sidell, Bruce
036	B-036-L/P	Sidell, Bruce
038	B-038-E/L	Blanchette, Bob
040	B-040-E	Trivelpiece, Wayne
041	B-041-M	Horning, Markus
041	B-041-M	Mellish, Jo-Ann
043	B-043-M	Bowser, Samuel
049	G-049-M	Harwood, David
054	G-054-M	Swanger, Kate
056	G-056-M	Marsh, Bruce
056	G-056-M	Morin, Paul
062	G-062-M	Wilch, Thomas
063	G-063-M	Lewis, Adam
068	B-068-M	Hall, Brenda
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084	G-084-M	Licht, Kathy
088	G-088-M	Siddoway, Christine
091	G-091-M	Harwood, David
100	A-100-M	Fraser-Smith, Antony
110	A-110-M/S	Hernandez, Gonzalo
114	B-114-P	Hollibaugh, James
120	A-120-M	Bieber, John
123	A-123-S	Besson, Dave
128	A-128-S	LaBelle, James
129	A-129-S	Sivjee, Gulamabas
131	A-131-M	Deshler, Terry
133	I-133-M	Prentice, Michael
134	B-134-M	Hofmann, Gretchen
142	A-142-M	Gorham, Peter
145	A-145-M	Stepp, Bill
146	A-146-M	Rust, David
147	A-147-M	Devlin, Mark
153	I-153-M	Kurbatov, Andrei
153	I-153-M	Mayewski, Paul
159	I-159-M	Catania, Ginny
163	I-163-M	Raymond, Charles
179	B-179-M	Johnson, Bruce
182	G-182-M	Staudigel, Hubert
182	G-182-M	Tauxe, Lisa
189	I-189-M	Gogineni, Prasad
190	I-190-M	MacAyeal, Douglas
192	G-192-M	Gee, Jeffrey
202	O-202-M/P	Lazzara, Matthew
202	O-202-M/P	Stearns, Charles

204	O-204-P	Keeling, Ralph
205	I-205-M	Anandakrishnan, Sridhar
217	W-217-M	Cortada, Xavier
218	W-218-M	Aghion, Anne
219	W-219-M	Herzog, Werner
220	W-220-P	Ruth, David
221	W-221-M	Albuquerque, Lita
230	B-230-M	Tang, Kam
232	B-232-E/L/P	Costa, Daniel
256	B-256-P	Lee, Richard
257	O-257-S	Hofmann, David
260	O-260-L	Sprintall, Janet
264	O-264-P	Hofmann, David
272	B-272-N	DiTullio, Giacomo
274	O-274-N	Jacobs, Stanley
277	I-277-E	Fricker, Helen
283	O-283-M/S	Lazzara, Matthew
283	O-283-M/S	Stearns, Charles
284	A-284-S	Palo, Scott
295	T-295-M	Johns, Bjorn
316	O-316-M	Dempsey, John
327	A-327-N	Inan, Umrans
333	A-333-S	Evenson, Paul
336	A-336-P	Inan, Umrans
355	I-355-M	Cole-Dai, Jihong
357	A-357-M/P	Zesta, Eftyhia
366	A-366-S	Church, Sarah
366	A-366-S	Pryke, Clement
370	A-370-S	Carlstrom, John
379	A-379-S	Carlstrom, John

396	T-396-M	Szuberla, Curt
399	O-399-N	Huber, Bruce
411	G-411-N	Conway, Howard
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413	G-413-N	Cande, Steven
420	B-420-M	Lyons, W. Berry
422	B-422-M	Priscu, John
423	B-423-M	Virginia, Ross
424	B-424-M	Wall, Diana
425	B-425-M	Fountain, Andrew
426	B-426-M	Doran, Peter
430	G-430-N	Castillo, Paterno
435	G-435-N	Anderson, John
442	A-442-E	Travouillon, Tony
477	I-477-M	Hargreaves, Geoffrey
513	R-513-M/P/S	Booth, Charles
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Johns, Bjorn	T-295-M	UNAVCO GPS survey support
Szuberla, Curt	T-396-M	Operation and maintenance of a CTBT class infrasound array at Windless Bight

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Bieber, John	A-120-M	Solar and heliospheric studies with antarctic cosmic ray observations
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Carlstrom, John	A-370-S	Science Coordination Office for Astrophysical Research in Antarctica (SCOARA)
Church, Sarah	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Deshler, Terry	A-131-M	Measurements addressing the initial stages of ozone recovery, the nucleation of, index of refraction of, and existence of large PSC particles
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Submillimeter Telescope (BLAST-POL)
Evenson, Paul	A-333-S	ICECUBE
Fraser-Smith, Antony	A-100-M	Operation of an ELF/VLF radiometer at Arrival Heights
Gorham, Peter	A-142-M	Antarctic Impulsive Transient Antenna (ANITA)
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Inan, Umran	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
Inan, Umran	A-327-N	ELF/VLF observation in the southern Pacific Ocean
LaBelle, James	A-128-S	Direction-finding measurements of LF/MF/HF auroral radio emissions at South Pole
Lange, Andrew	A-033-S	Background Imaging of Cosmic Extragalactic Polarization (BICEP)

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Palo, Scott	A-284-S	Dynamics of the antarctic MLT region using ground-based radar and TIMED Instrumentation
Pryke, Clement	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Rust, David	A-146-M	Solar Bolometric Imager (SBI 2)
Sivjee, Gulamabas	A-129-S	The antarctic investigations of upper atmospheric disturbances over the South Pole Station
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program
Travouillon, Tony	A-442-E	Measurements of the surface layer turbulence at Dome C
Zesta, Eftyhia	A-357-M/P	Extending SAMBA to auroral latitudes in Antarctica (South American Meridional B-field Array)

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USAP Program Index Biology and Medicine

Principal Investigator	Event No.	Project Title
Ainley, David	B-031-M	Adélie penguin response to climate change at the individual, colony, and metapopulation levels
Blanchette, Bob	B-038-E/L	Studies of antarctic fungi: Adaptive strategies for survival and protecting Antarctica's historic structures
Bowser, Samuel	B-043-M	Evolution of morphology and trophic strategies in antarctic agglutinated foraminifera
Costa, Daniel	B-232-E/L/P	Habitat utilization of Southern Ocean seals: Foraging behavior of Crabeater and Elephant seals using novel methods of oceanographic data collection
DiTullio, Giacomo	B-272-N	Interaction of iron, light and CO ₂ on phytoplankton community dynamics in the Ross Sea
Doran, Peter	B-426-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Fabry, Victoria	B-069-M	Impacts of elevated pCO ₂ on a dominant aragonitic pteropod (Thecosomata) and its specialist predator (Gymnosomata) in the Ross Sea
Fountain, Andrew	B-425-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Garrott, Robert	B-009-M	Patterns and processes: Dynamics of the Erebus Bay Weddell seal population
Hall, Brenda	B-068-M	Former elephant seal colonies in the Antarctic: Implications for holocene climate change and genetic diversity in the Southern Ocean
Hofmann, Gretchen	B-134-M	Towards an understanding of protein homeostasis in cold-adapted antarctic

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		fish
Hollibaugh, James	B-114-P	Distribution and ecology of ammonia oxidizing bacteria in the Palmer LTER study area
Horning, Markus	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.
Johnson, Bruce	B-179-M	Altitude symptoms at the South Pole
Kanatous, Shane	B-018-M	The molecular signals that regulate the ontogeny of aerobic capacity, lipid metabolism and elevated myoglobin concentrations in the skeletal muscles of Weddell seals
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Lee, Richard	B-256-P	Physiological and molecular mechanisms of stress tolerance in a polar insect
Lyons, W. Berry	B-420-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment
Mellish, Jo-Ann	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.
Moran, Amy	B-004-M	Collaborative Research: Effects of oxygen and temperature on egg mass function of Southern Ocean marine invertebrates
Oftedal, Olav	B-024-M	Capital expenditure, lactation energetics, and the importance of foraging to Weddell seals and their pups
Priscu, John	B-422-M	The Role of Resource Legacy on Contemporary Linkages Between Biodiversity and Ecosystem Processes in a Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program
Ross, Robin	B-028-L/P	Palmer Long Term Ecological

		Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Prey component)
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Smith, Raymond	B-032-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Bio-optical component)
Tang, Kam	B-230-M	Environmental and ecological regulation of differences and interactions between solitary and colonial forms of <i>Phaeocystis antarctica</i>
Trivelpiece, Wayne	B-040-E	Penguins as monitors of the krill-centric Southern Ocean marine ecosystem
Vernet, Maria	B-016-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Phytoplankton component)
Virginia, Ross	B-423-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wall, Diana	B-424-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program

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USAP Program Index Geology and Geophysics

Principal Investigator	Event No.	Project Title
Anderson, John	G-435-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Cande, Steven	G-413-N	Collaborative Research: The connection between mid-Cenozoic seafloor spreading and the western Ross Sea Embayment
Castillo, Paterno	G-430-N	Constraining the petrogenesis and mantle source of Adare Basin seamount lavas
Conway, Howard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Gee, Jeffrey	G-192-M	An integrated geomagnetic and petrologic study of the Dufek Complex
Hallet, Bernard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Harwood, David	G-049-M	ANDRILL: Investigating Antarctica's role in Cenozoic global environmental change
Harwood, David	G-091-M	ANDRILL
Kyle, Phillip	G-081-M	Mount Erebus Volcano Observatory II (MEVO II): Surveillance, models, impacts and outreach
Lewis, Adam	G-063-M	Deducing Late Neogene Antarctica climate from fossil-rich lacustrine sediments in the Dry Valleys
Licht, Kathy	G-084-M	Integrated Study of East Antarctic Ice Sheet Till (ISET): Tracers of ice flow and proxies of the ice-covered continental shield
Marsh, Bruce	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Morin, Paul	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Siddoway, Christine	G-088-M	Gneiss dome architecture: Form and

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		process in the Fosdick Mountains
Staudigel, Hubert	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Stock, Joann	G-071-N	Collection of marine geophysical data on transits of the Nathaniel B. Palmer
Swanger, Kate	G-054-M	Age, origin, and climatic significance of buried ice in the western Dry Valleys
Tauxe, Lisa	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Wilch, Thomas	G-062-M	Late Cenozoic volcanism and glaciation at Minna Bluff: Implications for antarctic cryosphere history

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USAP Program Index Glaciology

Principal Investigator	Event No.	Project Title
Anandakrishnan, Sridhar	I-205-M	Characterizing Lake Amundsen-Scott, South Pole: A ground geophysical program
Catania, Ginny	I-159-M	Grounding line forensics: The history of grounding line retreat in the Kamb Ice Stream outlet region
Cole-Dai, Jihong	I-355-M	Major chemical composition of the WAIS Divide ice core
Fricke, Helen	I-277-E	Collaborative Research into Antarctic Calving (CRAC)
Gogineni, Prasad	I-189-M	Center for Remote Sensing of Ice Sheets (CRISIS) - Basler airborne radar survey
Hargreaves, Geoffrey	I-477-M	Investigation of climate, ice dynamics, and biology using a deep ice core from the West Antarctic Ice Sheet
Kurbatov, Andrei	I-153-M	A Science Management Office for the United States Component of the International Trans Antarctic Expedition (US ITASE SMO): A collaborative program of research from Taylor Dome to South Pole
MacAyeal, Douglas	I-190-M	Earth's largest icebergs
Mayewski, Paul	I-153-M	A Science Management Office for the United States Component of the International Trans Antarctic Expedition (US ITASE SMO): A collaborative program of research from Taylor Dome to South Pole
Prentice, Michael	I-133-M	Fluctuations of the West Antarctic Ice-Sheet in relation to lake history in Taylor Valley since the Last Glacial Maximum
Raymond, Charles	I-163-M	Detection of crystal orientation fabrics near the Ross/Amundsen sea ice-flow divide and at the Siple Dome ice core site using polarimetric radar methods

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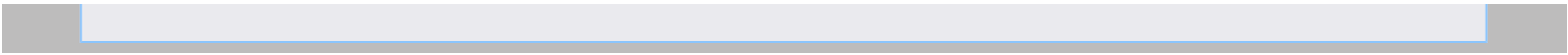
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USAP Program Index Ocean and Climate Systems

Principal Investigator	Event No.	Project Title
Dempsey, John	O-316-M	Physics and mechanics of the breakup of warm antarctic sea ice: In-situ experiments and modeling
Hofmann, David	O-257-S	South Pole monitoring for climatic change
Hofmann, David	O-264-P	Collection of atmospheric air for the NOAA/GMD worldwide flask-sampling network
Huber, Bruce	O-399-N	Cape Adare Long-term Mooring (CALM)
Jacobs, Stanley	O-274-N	The Amundsen Continental Shelf and the Antarctic Ice Sheet
Keeling, Ralph	O-204-P	Changes in atmospheric oxygen (O ₂), carbon dioxide (CO ₂), and argon (Ar) concentrations in relation to the carbon cycle and climate
Lazzara, Matthew	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Lazzara, Matthew	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT program
Stearns, Charles	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Stearns, Charles	O-202-M/P	Antarctic Meteorological Research Center (AMRC)

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Artists and Writers

Principal Investigator	Event No.	Project Title
Aghion, Anne	W-218-M	Works and days: An antarctic chronicle
Albuquerque, Lita	W-221-M	Stellar axis: Antarctica
Cortada, Xavier	W-217-M	Antarctic art message mural
Herzog, Werner	W-219-M	The inner landscape (feature film)
Ruth, David	W-220-P	Antarctic ice: Sculpture in cast glass

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USAP Station Index Amundsen-Scott South Pole Station

Principal Investigator	Event No.	Project Title
Besson, Dave	A-123-S	Neutrino Array Radio Calibration
Booth, Charles	R-513-M/P/S	National Science Foundation Polar Programs Ultraviolet Spectroradiometer Network
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Carlstrom, John	A-370-S	Science Coordination Office for Astrophysical Research in Antarctica (SCOARA)
Church, Sarah	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Evenson, Paul	A-333-S	ICECUBE
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Hofmann, David	O-257-S	South Pole monitoring for climatic change
LaBelle, James	A-128-S	Direction-finding measurements of LF/MF/HF auroral radio emissions at South Pole
Lange, Andrew	A-033-S	Background Imaging of Cosmic Extragalactic Polarization (BICEP)
Lazzara, Matthew	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Palo, Scott	A-284-S	Dynamics of the antarctic MLT region using ground-based radar and TIMED Instrumentation
Pryke, Clement	A-366-S	Next generation CMB polarization measurements with the QUEST experiment on DASI
Sivjee, Gulamabas	A-129-S	The antarctic investigations of upper atmospheric disturbances over the South Pole Station
Stearns, Charles	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)

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USAP Station Index McMurdo Station

Principal Investigator	Event No.	Project Title
Aghion, Anne	W-218-M	Works and days: An antarctic chronicle
Ainley, David	B-031-M	Adélie penguin response to climate change at the individual, colony, and metapopulation levels
Albuquerque, Lita	W-221-M	Stellar axis: Antarctica
Anandakrishnan, Sridhar	I-205-M	Characterizing Lake Amundsen-Scott, South Pole: A ground geophysical program
Bieber, John	A-120-M	Solar and heliospheric studies with antarctic cosmic ray observations
Booth, Charles	R-513-M/P/S	National Science Foundation Polar Programs Ultraviolet Spectroradiometer Network
Bowser, Samuel	B-043-M	Evolution of morphology and trophic strategies in antarctic agglutinated foraminifera
Catania, Ginny	I-159-M	Grounding line forensics: The history of grounding line retreat in the Kamb Ice Stream outlet region
Cole-Dai, Jihong	I-355-M	Major chemical composition of the WAIS Divide ice core
Cortada, Xavier	W-217-M	Antarctic art message mural
Dempsey, John	O-316-M	Physics and mechanics of the breakup of warm antarctic sea ice: In-situ experiments and modeling
Deshler, Terry	A-131-M	Measurements addressing the initial stages of ozone recovery, the nucleation of, index of refraction of, and existence of large PSC particles
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
Doran, Peter	B-426-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program

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Fabry, Victoria	B-069-M	Impacts of elevated pCO ₂ on a dominant aragonitic pteropod (Thecosomata) and its specialist predator (Gymnosomata) in the Ross Sea
Fountain, Andrew	B-425-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Fraser-Smith, Antony	A-100-M	Operation of an ELF/VLF radiometer at Arrival Heights
Garrott, Robert	B-009-M	Patterns and processes: Dynamics of the Erebus Bay Weddell seal population
Gee, Jeffrey	G-192-M	An integrated geomagnetic and petrologic study of the Dufek Complex
Gogineni, Prasad	I-189-M	Center for Remote Sensing of Ice Sheets (CReSIS) - Basler airborne radar survey
Gorham, Peter	A-142-M	Antarctic Impulsive Transient Antenna (ANITA)
Griffin, Ken	T-927-M	NASA / McMurdo Ground Station (MG1)
Hall, Brenda	B-068-M	Former elephant seal colonies in the Antarctic: Implications for holocene climate change and genetic diversity in the Southern Ocean
Hargreaves, Geoffrey	I-477-M	Investigation of climate, ice dynamics, and biology using a deep ice core from the West Antarctic Ice Sheet
Harwood, David	G-049-M	ANDRILL: Investigating Antarctica's role in Cenozoic global environmental change
Harwood, David	G-091-M	ANDRILL
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Herzog, Werner	W-219-M	The inner landscape (feature film)
Hofmann, Gretchen	B-134-M	Towards an understanding of protein homeostasis in cold-adapted antarctic fish
Horning, Markus	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.

Johns, Bjorn	T-295-M	UNAVCO GPS survey support
Johnson, Bruce	B-179-M	Altitude symptoms at the South Pole
Kanatous, Shane	B-018-M	The molecular signals that regulate the ontogeny of aerobic capacity, lipid metabolism and elevated myoglobin concentrations in the skeletal muscles of Weddell seals
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Kurbatov, Andrei	I-153-M	A Science Management Office for the United States Component of the International Trans Antarctic Expedition (US ITASE SMO): A collaborative program of research from Taylor Dome to South Pole
Kyle, Phillip	G-081-M	Mount Erebus Volcano Observatory II (MEVO II): Surveillance, models, impacts and outreach
Lazzara, Matthew	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Lazzara, Matthew	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Lewis, Adam	G-063-M	Deducing Late Neogene Antarctica climate from fossil-rich lacustrine sediments in the Dry Valleys
Licht, Kathy	G-084-M	Integrated Study of East Antarctic Ice Sheet Tills (ISET): Tracers of ice flow and proxies of the ice-covered continental shield
Lyons, W. Berry	B-420-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
MacAyeal, Douglas	I-190-M	Earth's largest icebergs
Marsh, Bruce	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Mayewski, Paul	I-153-M	A Science Management Office for the United States Component of the International Trans Antarctic Expedition (US ITASE SMO): A collaborative program of research from Taylor Dome to South Pole
Mellish, Jo-Ann	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.

Moran, Amy	B-004-M	Collaborative Research: Effects of oxygen and temperature on egg mass function of Southern Ocean marine invertebrates
Morin, Paul	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Oftedal, Olav	B-024-M	Capital expenditure, lactation energetics, and the importance of foraging to Weddell seals and their pups
Prentice, Michael	I-133-M	Fluctuations of the West Antarctic Ice-Sheet in relation to lake history in Taylor Valley since the Last Glacial Maximum
Priscu, John	B-422-M	The Role of Resource Legacy on Contemporary Linkages Between Biodiversity and Ecosystem Processes in a Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program
Raymond, Charles	I-163-M	Detection of crystal orientation fabrics near the Ross/Amundsen sea ice-flow divide and at the Siple Dome ice core site using polarimetric radar methods
Rust, David	A-146-M	Solar Bolometric Imager (SBI 2)
Siddoway, Christine	G-088-M	Gneiss dome architecture: Form and process in the Fosdick Mountains
Staudigel, Hubert	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Stearns, Charles	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Stearns, Charles	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program
Swanger, Kate	G-054-M	Age, origin, and climatic significance of buried ice in the western Dry Valleys
Szuberla, Curt	T-396-M	Operation and maintenance of a CTBT class infrasound array at Windless Bight
Tang, Kam	B-230-M	Environmental and ecological regulation of differences and interactions between solitary and colonial forms of Phaeocystis antarctica

Tauxe, Lisa	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Virginia, Ross	B-423-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wall, Diana	B-424-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wilch, Thomas	G-062-M	Late Cenozoic volcanism and glaciation at Minna Bluff: Implications for antarctic cryosphere history
Zesta, Eftyhia	A-357-M/P	Extending SAMBA to auroral latitudes in Antarctica (South American Meridional B-field Array)

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USAP Station Index Palmer Station

Principal Investigator	Event No.	Project Title
Booth, Charles	R-513-M/P/S	National Science Foundation Polar Programs Ultraviolet Spectroradiometer Network
Costa, Daniel	B-232-E/L/P	Habitat utilization of Southern Ocean seals: Foraging behavior of Crabeater and Elephant seals using novel methods of oceanographic data collection
Hofmann, David	O-264-P	Collection of atmospheric air for the NOAA/GMD worldwide flask-sampling network
Hollibaugh, James	B-114-P	Distribution and ecology of ammonia oxidizing bacteria in the Palmer LTER study area
Inan, Umran	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
Keeling, Ralph	O-204-P	Changes in atmospheric oxygen (O ₂), carbon dioxide (CO ₂), and argon (Ar) concentrations in relation to the carbon cycle and climate
Lazzara, Matthew	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Lee, Richard	B-256-P	Physiological and molecular mechanisms of stress tolerance in a polar insect
Ross, Robin	B-028-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Prey component)
Ruth, David	W-220-P	Antarctic ice: Sculpture in cast glass
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes

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		affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Smith, Raymond	B-032-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Bio-optical component)
Stearns, Charles	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Vernet, Maria	B-016-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Phytoplankton component)
Zesta, Eftyhia	A-357-M/P	Extending SAMBA to auroral latitudes in Antarctica (South American Meridional B-field Array)

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RVIB Nathaniel B. Palmer

Principal Investigator	Event No.	Project Title
Anderson, John	G-435-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Cande, Steven	G-413-N	Collaborative Research: The connection between mid-Cenozoic seafloor spreading and the western Ross Sea Embayment
Castillo, Paterno	G-430-N	Constraining the petrogenesis and mantle source of Adare Basin seamount lavas
Conway, Howard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
DiTullio, Giacomo	B-272-N	Interaction of iron, light and CO2 on phytoplankton community dynamics in the Ross Sea
Hallet, Bernard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Huber, Bruce	O-399-N	Cape Adare Long-term Mooring (CALM)
Inan, Umran	A-327-N	ELF/VLF observation in the southern Pacific Ocean
Jacobs, Stanley	O-274-N	The Amundsen Continental Shelf and the Antarctic Ice Sheet
Stock, Joann	G-071-N	Collection of marine geophysical data on transits of the Nathaniel B. Palmer

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Principal Investigator	Event No.	Project Title
Blanchette, Bob	B-038-E/L	Studies of antarctic fungi: Adaptive strategies for survival and protecting Antarctica's historic structures
Costa, Daniel	B-232-E/L/P	Habitat utilization of Southern Ocean seals: Foraging behavior of Crabeater and Elephant seals using novel methods of oceanographic data collection
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment
Ross, Robin	B-028-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Prey component)
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Smith, Raymond	B-032-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Bio-optical component)
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT program
Vernet, Maria	B-016-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Phytoplankton component)

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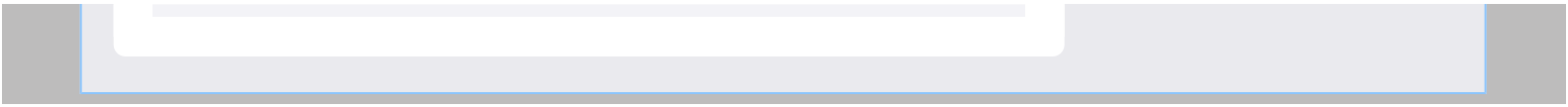
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USAP Station Index Special Projects

Principal Investigator	Event No.	Project Title
Blanchette, Bob	B-038-E/L	Studies of antarctic fungi: Adaptive strategies for survival and protecting Antarctica's historic structures
Costa, Daniel	B-232-E/L/P	Habitat utilization of Southern Ocean seals: Foraging behavior of Crabeater and Elephant seals using novel methods of oceanographic data collection
Fricker, Helen	I-277-E	Collaborative Research into Antarctic Calving (CRAC)
Travouillon, Tony	A-442-E	Measurements of the surface layer turbulence at Dome C
Trivelpiece, Wayne	B-040-E	Penguins as monitors of the krill-centric Southern Ocean marine ecosystem

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2006-2007 USAP Field Season

Project Detail

Project Title

Works And Days: An Antarctic Chronicle

Summary

Event Number:
W-218-M

Program Manager:
Ms. Kim Silverman

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Ms. Anne Aghion
anne@anneaghionfilms.com

New York, New York

Project Web Site:
<http://www.anneaghionfilms.com>

Location

Supporting Stations: McMurdo Station
Research Locations: On station, Taylor Valley, Olympus Range

Description

No one gets to Antarctica by accident. Conjured out of dreams as a place of the imagination, Antarctica is only arrived at by will - and with what a friend calls "a bit of ice in the head." So how does the reality measure up to the dream? "An Antarctic Spring" is a feature-length documentary film that will be ready for broadcast during the International Polar Year. The film follows groups of scientists through endless spring and summer days on the frozen continent as they research climate change. It explores what dreams drove these scientists to the bottom of the world in the first place, and what "bit of ice in the head" keeps them working there. It focuses on how their dreams have been transformed by life on the ice, and on what has been gained or lost along the way. A handful of characters drive the narrative structure, which will revolve around how scientific knowledge and antarctic lore are passed down from old hands to first-time Antarcticans.

Field Season Overview

The film crew plans to begin filming immediately upon arrival at McMurdo Station. The crew's field season will be divided into two components. The first component will entail filming field team members of Terry Deshler's research group, A-131 as they launch ozone balloons from McMurdo and recover instrument packages from the McMurdo and Ross Ice Shelves. The crew will also take opportunities to film the people and environment of McMurdo during this time, including field safety training. In the second component, the film crew will travel by helicopter to the Taylor Valley region with the field team of David Marchant's research group, G-063. The crew will follow these researchers as they move from Mt. Boreas to Friis Hills to Table Mountain in pursuit of their research objectives.

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Deploying Team Members

- Richard Fleming
- Sylvestre Guidi



2006-2007 USAP Field Season

Project Detail

Project Title

Adélie Penguin Response To Climate Change At The Individual, Colony, And Metapopulation Levels

Summary

Event Number:
B-031-M

Program Manager:
Dr. Chris Fritsen

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. David Ainley
dainley@penguinscience.com

H.T. Harvey & Associates
Los Gatos, California

Project Web Site:
<http://www.penguinscience.com>

Location

Supporting Stations: McMurdo Station
Research Locations: Beaufort Island, Cape Bird, Cape Crozier, Cape Royds, Inexpressible Island

Description

Since 1996, this study has involved novel technology and experimentation including natural experiments and long hours finding banded birds at three colonies of widely disparate sizes occurring in a metapopulation. While changes in populations typically are tracked to gauge response to climate or habitat change, the process actually involves the response of individuals as each copes with an altered environment. During this study spanning 15 breeding seasons, researchers have found that 20 percent of individuals within a colony successfully raise offspring, and that they do so because of exemplary foraging proficiency. Moreover, foraging requires more effort at the largest colony, where intra-specific competition is higher than at small colonies and requires more proficiency during periods of environmental stress, e.g., anomalous sea-ice conditions. Not only is breeding success and eventual recruitment involved in this species' response to environmental change, but, when conditions are particularly daunting, so is emigration, countering the long-standing assumption that Adélie penguins are highly philopatric. This project is a collaboration of six co-PIs from the United States, New Zealand, and France and will continue the outreach and education program, including webisodes and PenguinScience.com.

Field Season Overview

Team members will establish field camps near penguin breeding colonies at Capes Crozier, Bird, and Royds, and if ice conditions and logistics permit, they will make day trips by helicopter to visit the penguin colony on Beaufort Island. At each camp, the scientists

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will search for previously banded penguins and log their breeding status. They will investigate foraging effort by attaching time-depth recorders, satellite tags, and GLS tags to the birds. The researchers will also continue their operation of computerized weighbridges to track the arrival and departure from the nesting area of tagged birds and log their weight.

The researchers also plan to continue work on an educational web site and DVD based on their field work. One early-arriving field team member will compile video footage of the birds and of the research effort. Late arriving members will concentrate on development of the educational materials. At the close of the Adélie penguin nesting season, the researchers will pull out their camps and return to McMurdo by helicopter.

Deploying Team Members

- Katie Dugger (Co-PI)
- Lloyd Fales
- Ian Gaffney
- Amelie Lescroel
- Valere Marsaudon
- Jean Pennycook
- William Sladen
- Viola Toniolo



Project Title

Stellar Axis: Antarctica

Summary

Event Number:
W-221-M

Program Manager:
Ms. Kim Silverman

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Ms. Lita Albuquerque
studio@LitaAlbuquerque.com

Santa Monica, California

Project Web Site:
<http://www.stellaraxis.com/>

Location

Supporting Stations: McMurdo Station
Research Locations: Spur off the road to Pegasus Ice Runway

Description

Antarctica is phase one of a two-part project – Stellar Axis - that will entail a tracing of the stars above the North and South Pole onto the ice at both poles. This was inspired by a mental image that came to the artist about fifteen years ago, in which she saw a planet that had nothing on it but gold tipped pyramids aligned to the stars. Having studied Ancient sites and archaeoastronomy, Ms. Albuquerque intuited that there had been such a map on Earth a long time ago. She felt that this mirroring of the stars on the earth was an image that needed to be remembered, and decided that her work would follow the ancient axiom (As Above, So Below) of a star system reflection traced on Earth and pointing to our relationship with the earth, our bodies, and the cosmos.

Field Season Overview

The field team plans to create an artistic work by placing ninety-nine blue “star sculptures” on the ice shelf near the Pegasus ice runway. The team will travel by tracked vehicle on the Pegasus road to their field site. There they will assemble the sculptures and stake them securely in place. After the team has recorded the installation from the ground and by helicopter, the installation will be removed.

Deploying Team Members

- Simon Balm
- Sophie Pegrum
- Jon Beasley

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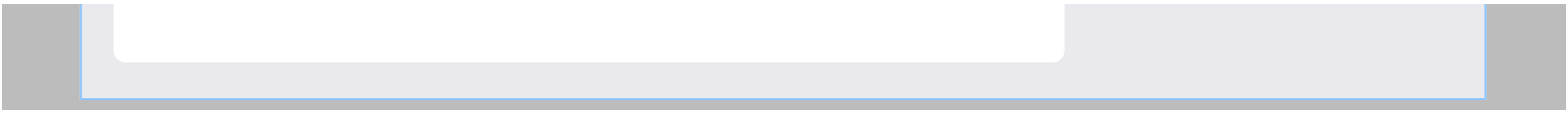
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Project Title

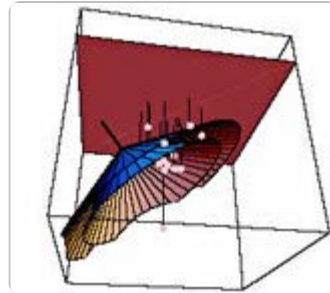
Neutrino Array Radio Calibration

Summary

Event Number:
A-123-S

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Mr. Dave Besson
dzbesson@gmail.com

University of Kansas Lawrence
Physics (RICE)
Lawrence, Kansas

Project Web Site:
<http://heplx3.phsx.ku.edu/~riceuser>

Location

Supporting Stations: South Pole Station
Research Locations: MAPO (Martin A. Pomerantz Observatory)

Description

This project is studying the propagation of electromagnetic waves along the surface of a dielectric medium (ice), as predicted in some models. During previous field seasons, researchers have deployed prototypes of RICE-II modules, either in dedicated dry boreholes or in hot-water-drilled holes. The team also has deployed optical fiber in a drill hole to observe the effects of freeze-in on optical fiber performance. Optical fiber attached to a radio-frequency transmitter was also used to test and compare received signals relative to other RICE channels. Researchers have also lowered a passive aluminum reflector into an ice hole to measure transmission through firm ice and as preparation for the possible deployment of surface antennas in conjunction with the buried RICE array.

Field Season Overview

The researchers plan to expand their RICE-II co-deployment of Radiowave Neutrino Detectors in IceCube holes in the ice cap near South Pole Station. Field team members will deploy up to ten detector clusters, each consisting of four antennas. Most of the detector clusters will be attached to unused IceCube string breakouts and will only require swapping a Digital Radio Module for a Digital Optical Module during deployment. One or two detector clusters will be deployed separately and to shallower depths. Once the detectors are installed, researchers will test their signal digitization and transmission technology. The researchers also plan to retrofit the current RICE-I experiment, housed in MAPO, with 450-MHz notch filters in an attempt to mitigate the intrusive and unforeseen radiowave background caused by the station LMR system.

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Deploying Team Members

- Ilya Kravchenko
- Ken Ratzlaff



2006-2007 USAP Field Season

Project Detail

Project Title

Solar And Heliospheric Studies With Antarctic Cosmic Ray Observations

Summary

Event Number:
A-120-M

Program Manager:
Dr. Bernhard Lettau (acting)

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. John Bieber
jwbieber@bartol.udel.edu

University of Delaware
Bartol Research Institute
Newark, Delaware

Project Web Site:
<http://www.bartol.udel.edu/~neutron/>

Location

Supporting Stations: McMurdo Station
Research Locations: Cosray Building

Description

Neutron monitors in Antarctica provide a vital three-dimensional perspective on the anisotropic flux of cosmic rays that continuously bombard Earth. Neutron monitor records play a crucial role in efforts to understand the nature and causes of cosmic-ray and solar-terrestrial variations occurring over the 11-year sunspot cycle, the 22-year Hale cycle, and even longer time scales. This project will continue collecting cosmic-ray neutron data at McMurdo. In addition, a neutron monitor van will be placed on the USAP icebreaker for observations during the annual voyage to Antarctica. Data from these instruments will be analyzed in concert with data from the "Spaceship Earth" neutron monitor network to understand variations associated with solar energetic particles that occur on time scales of minutes to hours.

Field Season Overview

The researchers plan to deploy their Neutron Monitor Van (the "Tasvan") aboard the USCG Polar Star for its annual antarctic deployment. Two team members will visit the ship in Seattle to install, configure, and calibrate the instruments. Another team member will meet the ship during both southbound and northbound port calls in Australia to check and calibrate the scientific equipment. At McMurdo Station, the RPSC Research Associate will maintain the Neutron Monitor Observatory in building 84 ("Cosray"), replace UPS system batteries, and transmit data to the home institution for analysis.

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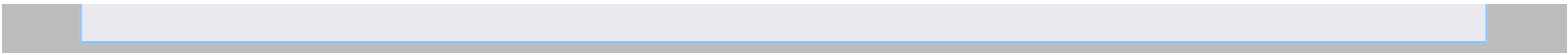
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2006-2007 USAP Field Season

Project Detail

Project Title

Studies Of Antarctic Fungi: Adaptive Strategies For Survival And Protecting Antarctica's Historic Structures

Summary

Event Number:
B-038-E/L

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Melissa Rider



Principal Investigator

Dr. Bob Blanchette
robertb@umn.edu

University of Minnesota
St. Paul, Minnesota

Project Web Site:
<http://forestopathology.coafes.umn.edu/antarctica.htm>

Location

Supporting Stations: Special Project, ARSV Laurence M. Gould
Research Locations: Marguerite Bay via HMS Endurance; Deception Island and Palmer Station via LMG

Description

This project will continue investigating the microbes associated with historic huts in the Ross Sea and along the Antarctic Peninsula. Researchers will evaluate the unique fungi that attack the wood of these historic sites and study the distribution and species diversity of microbes that have proliferated within and around the huts. Samples will be taken and cultures generated to better understand the biology and physiology of these organisms.

Field Season Overview

In early January, one researcher will travel from Port Stanley, Falkland Islands onboard the British Antarctic Survey (BAS) vessel HMS Endurance to East Base on Stonington Island. The researcher will assess the deterioration taking place in the wooden structures there and will initiate investigations on the microorganisms present. During the north and south transits to and from East Base, the researcher will visit and collect samples from as many historic sites along the peninsula as is logistically feasible.

In mid-March, two researchers will board the R/V Laurence M Gould (LMG07-04) for transport to and from Palmer Station. En route they will stop at Deception Island to study microbial diversity and decomposition processes in wood remain from whaling stations and abandoned bases. Samples of soil and organic material will be collected to provide information about microorganisms and possible ecosystem changes related to the effect of volcanic disturbances on the deterioration processes affecting the historic artifacts.

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At Palmer Station, field team members will use Zodiac inflatable boats to travel to and study sites on Humble Island and near the old Palmer Station. Samples will be retrieved from different sterile substrates previously placed into the ground to act as baits for microflora, and cultures will be taken for laboratory analyses. Researchers will also identify and establish new field research sites. Samples will be returned to the home institution for further study.

Deploying Team Members

- Brett Arenz
- Benjamin Held
- Andrew Graves



2006-2007 USAP Field Season

Project Detail

Project Title

National Science Foundation Polar Programs Ultraviolet Spectroradiometer Network

Summary

Event Number:

R-513-M/P/S

Program Manager:

Mr. George Blaisdell

ASC POC/Implementer:

Dr. Stephen Alexander / Jesse Alcorta / Rob Edwards



Principal Investigator

Mr. Charles R Booth

booth@biospherical.com

Biospherical Instruments, Inc.

San Diego, California

Project Web Site:

<http://www.biospherical.com/nsf>

Location

Supporting Stations: McMurdo Station, Palmer Station, South Pole Station

Research Locations: Arrival Heights, Terra Lab, ARO (Atmospheric Research Observatory)

Description

The National Science Foundation Ultraviolet (UV) Monitoring Network was established in 1987 by the NSF Office of Polar Programs in response to serious ozone depletion reported in Antarctica. Biospherical Instruments installed the first instruments in 1988 and has operated the network since then. The network is providing data to researchers studying the effects of ozone depletion on terrestrial and marine biological systems. Network data is also used for the validation of satellite observations and for the verification of models describing the transfer of radiation through the atmosphere.

Field Season Overview

The technicians plan to perform testing, maintenance, engineering upgrades, and characterization of the high resolution UV spectroradiometers at McMurdo, South Pole, and Palmer Stations. Two field team members will travel to McMurdo in mid-January. One technician will begin work on the Arrival Heights instrument, while the other travels by LC-130 aircraft to South Pole to service the instrument there. This technician will return to McMurdo in late January to assist with the work at Arrival Heights.

In mid-February, two technicians will travel to Palmer Station, where they will: 1) Perform testing, maintenance, and engineering upgrades on the instrument; 2) Relocate the existing spectroradiometer system from T-5 into the new Terra Lab, or remove the existing spectroradiometer system from T-5 and place a new SUV-150B spectroradiometer system

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into the new facility; and 3) Perform a standard site characterization of the new site and obtain precise longitude, latitude, and elevation coordinates for the new spectroradiometer's position.

During the winter and for the remainder of the year, RPSC Research Associates at all three stations will maintain and service the instruments. Data from all three instruments is transmitted to the U.S. for processing, analysis, and dissemination.

Deploying Team Members

- Jim Ehamjian (Team Leader)



2006-2007 USAP Field Season

Project Detail

Project Title

Evolution Of Morphology And Trophic Strategies In Antarctic Agglutinated Foraminifera

Summary

Event Number:
B-043-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Samuel Bowser
Samuel.Bowser@health.ny.gov

New York State Department of Health
Wadsworth Center
Schroon Lake, New York

Project Web Site:
<http://www.bowserlab.org>

Location

Supporting Stations: McMurdo Station
Research Locations: Explorers Cove, McMurdo Sound, Cape Chocolate, Granite Harbor

Description

Researchers will conduct a comprehensive analysis of the molecular phylogeny of early-evolving foraminiferan protists (allogromiids) in McMurdo Sound. They will also study a taxonomically definitive group of allogromiids at both multi-gene molecular and structural levels of analysis in order to generate a more robust and detailed phylogeny for the group. Researchers will use this new evolutionary framework as a springboard to test hypotheses regarding the biogeography of morphospecies that appear to be distributed in both arctic and antarctic waters. The ultimate goals of the study are to further develop rapid molecular screening methods for future ecological research, and to understand the driving forces that led to the early diversification of foraminifera, whose origin stems from the Neoproterozoic and spans the dawn of skeletonization in multicellular organisms.

Field Season Overview

Researchers will conduct early season sampling using SCUBA diving at Arrival Heights, at Cape Evans, and at other sites in McMurdo Sound. The field team will also re-occupy the field camp at Explorers Cove, where they will open dive holes and begin collecting specimens. Collection activities will consist largely of SCUBA divers operating an airlift sampler or taking sediment cores. From deeper locations, sediment cores will be taken by box corer, using the sea ice as a platform. Field team members will also make day trips to Cape Chocolate and Granite Harbor to dive and collect specimens. Specimens will be sorted and analyzed in the Cray Laboratory and at the Explorers Cove field camp. Some samples will be shipped to the home institution for further analysis.

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Deploying Team Members

- Jeff Blair
- Andrea Habura
- David Huang
- Henry Kaiser
- Laura Parfrey



2006-2007 USAP Field Season

Project Detail

Project Title

Collaborative Research: The Connection Between Mid-Cenozoic Seafloor Spreading And The Western Ross Sea Embayment

Summary

Event Number:
G-413-N

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jesse Doren



Principal Investigator

Dr. Steven C Cande
scande@ucsd.edu

Scripps Institution of Oceanography
Geoscience Research Division
La Jolla, California

Project Web Site:
<http://www.gps.caltech.edu/~jstock/Palmerres.html>

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Adare Basin, Ross Sea

Description

Previous research has shown that there was 170 kilometers of seafloor spreading between east and west Antarctica from 40 to 26 million years ago, in the mid-Cenozoic. This produced new seafloor in the Adare Basin, but the relationship to the continental basins of the Ross Embayment to the south has not been established. Researchers with this project will conduct a marine geophysical survey to study the structural relationship between these basins. The project will acquire magnetic, gravity, swath bathymetry, and seismic data from the southern end of the Adare Basin south into the Northern Basin and Central Basin of the Ross Embayment. The results have important implications for the overall geological history of Antarctica during the mid-Cenozoic, as well as for processes that control the transition from continental to oceanic rifting.

Field Season Overview

The field team will board the RV/IB Nathaniel B Palmer in New Zealand for cruise NBP07-01. During the one-week transit to the primary study site near Cape Adare, field team members will collect magnetic, gravity and swath bathymetry data. Within the study site the team members will conduct dredging operations, and they will collect Multi-channel seismic (MCS) data. During the MCS program, they will continue to collect magnetic, gravity, and bathymetry data, and they will deploy approximately 20 sonobouys. Magnetic, gravity and swath bathymetry data will also be collected during the three-day transit to McMurdo Station, where the field team will disembark.

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Deploying Team Members

- Robert Clayton (Co-PI)
- Marcel Croon
- Fred Davey
- Roi Granot
- Takemi Ishihara
- Sonja Kisin
- R. Dietmar Müller
- Lachlan O'Brien
- Michelle Stempel
- Joann Stock (Co-PI)



2006-2007 USAP Field Season

Project Detail

Project Title

Cosmological Research With The 10-Meter South Pole Telescope

Summary

Event Number:
A-379-S

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. John Carlstrom
jc@kicp.uchicago.edu

University of Chicago
Astronomy and Astrophysics
Chicago, Illinois

Project Web Site:
<http://pole.uchicago.edu>

Location

Supporting Stations: South Pole Station
Research Locations: Dark Sector

Description

The South Pole Telescope (SPT) project conducts cosmological research by measuring the intensity and polarization anisotropy of the Cosmic Microwave Background (CMB). By surveying 4,000 square degrees of the sky with high sensitivity in three wavelength bands, the telescope can detect galaxy clusters through the spectral distortion they impart on the CMB. Researchers will use the resulting catalog of galaxy clusters to set constraints on the mysterious dark energy that dominates the mass-energy density of the universe and is causing the expansion of the universe to accelerate.

Field Season Overview

Project researchers plan to install a 10-meter telescope at South Pole Station in time for winter 2007 observations. Field team members at South Pole and in New Zealand will supervise and assist with the transport of telescope components. Once telescope components and materials have arrived safely at South Pole, additional team members will deploy to assist with the construction and activation of the instrument. Six of the researchers will remain to operate the telescope and make scientific observations during the winter.

Deploying Team Members

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Peter Huntley

- Ryan Keisler
- Erik Leitch
- Martin Lueker
- Jeffrey McMahon
- Kathryn Miknaitis

Stephen Padin (Co-PI)

- Tom Plagge
- James Sears
- Zachary Staniszewski
- Joaquin Vieira



2006-2007 USAP Field Season

Project Detail

Project Title

Science Coordination Office For Astrophysical Research In Antarctica (SCOARA)

Summary

Event Number:

A-370-S

Program Manager:

Dr. Vladimir Papitashvili

ASC POC/Implementer:

Charles Kaminski



Principal Investigator

Dr. John Carlstrom

jc@kicp.uchicago.edu

University of Chicago

Astronomy and Astrophysics

Chicago, Illinois

Project Web Site:

<http://astro.uchicago.edu/scoara/>

Location

Supporting Stations: South Pole Station

Research Locations: Dark Sector

Description

Antarctica's tremendous potential for cosmology and astrophysics can be realized best if the scientists involved understand and participate in the management, planning, and oversight of the shared resources and logistical support necessary to conduct research. The Science Coordination Office for Astrophysical Research in Antarctica (SCOARA) is an intellectual partnership composed of and directed by these scientists to ensure that the highest quality astrophysical research is conducted at the South Pole.

Field Season Overview

Two field team members will travel to South Pole to replace winter-over personnel and begin summer tasking. Throughout the season, additional team members will cycle in and out of the station. All will redeploy by mid-February, except for one team member who will remain for the winter. Specifically, the researchers will a) decommission and retrograde the Viper telescope; b) assist with the liquid nitrogen (LN2) plant relocation; c) assist with the installation and commission of the South Pole Telescope; d) assist with the maintenance and support of BICEP, QUAD, and ICE³; e) inventory and restock MAPO workshop parts; f) schedule shared equipment facility maintenance; g) clean out the CARA mill van and retrograde obsolete components; h) modify the MAPO HVAC after LN2 plant relocation; and i) survey radio frequency interference at MAPO and DSL before SuperDARN becomes active.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

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Deploying Team Members

- Allan Day
- Robert Pernic
- Caesar Wirth



2006-2007 USAP Field Season

Project Detail

Project Title

Grounding Line Forensics: The History Of Grounding Line Retreat In The Kamb Ice Stream Outlet Region

Summary

Event Number:
I-159-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Ginny Catania
gcatania@utig.ig.utexas.edu

University of Texas Austin
Institute for Geophysics
Austin, Texas

Project Web Site:
<http://www.ig.utexas.edu/research/projects/glf/>

Location

Supporting Stations: McMurdo Station
Research Locations: Siple Coast, Siple Dome

Description

This project will address key questions concerning the mechanisms governing changes in ice streams by studying the dynamics of ice stream interaction and shutdown, in particular ice stream outlet dynamics (i.e. grounding line migration). Researchers will investigate several key features in the Kamb/Whillans ice stream area that will provide additional details to the evolving description of ice flow history in the region. The research effort is targeted at sites that can be used to test scenarios implied by satellite image analysis, modeling studies, and prior field work. The information obtained will contribute to a fundamental understanding of ice sheet dynamics and the effects of global warming and sea level rise on ice sheets.

Field Season Overview

The field team will travel by LC-130 aircraft to the Siple Dome camp. Team members will conduct their initial research in the Siple Dome vicinity, traveling by snowmobiles and using ice-penetrating radar and GPS. The researchers will then twice move camp by Basler aircraft to study sites near the grounding line regions of the Kamb, Whillans, and Mercer ice streams. At these sites, they will travel by snowmobile, moving 50 to 100 kilometers per day, to conduct further ice-penetrating radar and GPS experiments. At the end of December, the field team and all equipment will return to McMurdo by LC-130 aircraft.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

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Deploying Team Members

- Christina Hulbe (Co-PI)
- Amie Lamb
- Anatoliy Mironov



2006-2007 USAP Field Season

Project Detail

Project Title

Next Generation CMB Polarization Measurements With The QUEST Experiment On DASI

Summary

Event Number:
A-366-S

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Sarah Church
schurch@stanford.edu

Stanford University
Stanford, California

Project Web Site:
http://www.stanford.edu/~schurch/quad_instrument.html

Location

Supporting Stations: South Pole Station
Research Locations: MAPO (Martin A. Pomerantz Observatory)

Description

The cosmic microwave background (CMB) is the faint, relic heat from the Big Bang, and its properties encode information on the formation, structure, and development of the universe. QUaD, an upgrade to the DASI telescope at South Pole Station, is designed to map the polarization structure of the CMB. The advantages of Antarctica to QUaD are: (1) high atmospheric transparency at the frequencies of interest; (2) atmospheric stability, allowing long observations; (3) the ability to perform identical observations of the same areas of sky throughout the year by being on axis of rotation; and (4) the absence or low elevation of the interfering sun and moon.

Field Season Overview

Six field team members will cycle in and out of South Pole Station to perform standard maintenance and performance verification on their instrument. There will never be more than four project personnel in Antarctica at any given time. One team member will remain at South Pole to support the instrument during winter observations.

Deploying Team Members

- Angiola Orlando
- Edward Wu
- Robert Schwarz
- Michael Zemcov

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

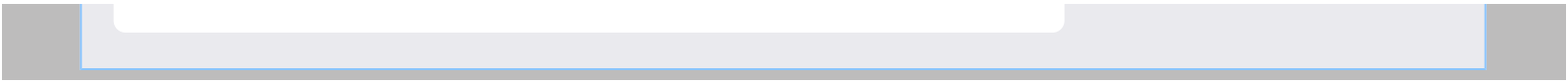
Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

More Information

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2006-2007 USAP Field Season

Project Detail

Project Title

Antarctic Art Message Mural

Summary

Event Number:
W-217-M

Program Manager:
Ms. Kim Silverman

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Mr. Xavier I Cortada
xavier@cortada.com

Miami, Florida

Project Web Site:
<http://www.cortada.com/antarctica>

Location

Supporting Stations: McMurdo Station
Research Locations: On station, day trip to South Pole

Description

Miami artist Xavier Cortada will create a series of site-specific projects and installations in Antarctica, at both McMurdo and South Pole stations. He will also paint murals for donation to the U.S. Antarctic Program. Cortada's art aims to demonstrate how interconnected humans are to each other and to their planet. Through this project the artist explores how time passes through us, and he addresses environmental concerns such as global warming and its threat to Earth's biodiversity. .

Field Season Overview

The project team plans to paint a mural and donate it to McMurdo Station upon completion. Researchers and station personnel will be encouraged to write messages that can be affixed to the mural. The artist and his assistant will also be filming, recording sounds, painting, and sketching during this time. The team will make a day trip to South Pole Station, where they will arrange small flag-like art pieces in a circle around the geographic South Pole. The installation will be recorded then the art pieces removed. The artist will accomplish other tasking and art projects as time allows.

Deploying Team Members

- Juan Espinosa

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

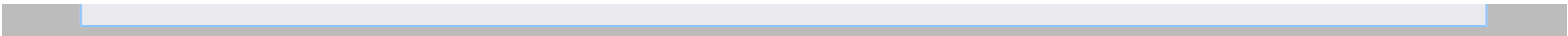
Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

More Information

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2006-2007 USAP Field Season

Project Detail

Project Title

Physics And Mechanics Of The Breakup Of Warm Antarctic Sea Ice: In-Situ Experiments And Modeling

Summary

Event Number:
O-316-M

Program Manager:
Dr. Kelly Falker (acting)

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. John Dempsey
jdempsey@clarkson.edu

Clarkson University
Department of Civil and Environmental Engineering
Potsdam, New York

Project Web Site:
http://people.clarkson.edu/~john/JPD_Docs/Award_Number_0338226.htm

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Sound

Description

In an effort to better understand the mechanics of antarctic sea ice breakup, this project investigates how the sea ice responds to stresses applied by wind and ocean waves. Using in-situ experiments, the researchers measure the tensile strength, fracture energy, and other physical properties of the ice. Additional experiments are performed in a laboratory with ice harvested from the field site.

Field Season Overview

Field team members will set up an operations and testing center in the Crary Lab where they will calibrate their equipment and otherwise prepare for field work. Afterward, the team will make day trips by helicopter to a test site on first-year sea ice north of McMurdo. A temporary, day-use, tent camp will be established, with one tent used to house computers and other electronic equipment and the other used for shelter.

Team members will cut holes and squares in the sea ice with augers, chain saws, and special ice saws. They will then fracture the squares in-situ to measure load stresses, fracture energy, and tensile strength. They will also conduct cyclic tests to examine the influence of amplitude and frequency on fracturing, and they will measure brine diffusion in the vicinity of crack tips. Sea ice cores and beams will be returned to the Crary Laboratory for additional testing and crack surface profiling. Some ice samples will be returned to the home institution for further tests.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Deploying Team Members

- John Bean
- Geoffrey Morley
- Ogugua Uzorka



2006-2007 USAP Field Season

Project Detail

Project Title

Balloon-Borne Large Aperture Sub-Millimeter Telescope (BLAST-POL)

Summary

Event Number:
A-147-M

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. Mark Devlin
devlin@physics.upenn.edu

University of Pennsylvania
Department of Physics and Astronomy
Philadelphia, Pennsylvania

Project Web Site:
<http://blastexperiment.info/>

Location

Supporting Stations: McMurdo Station
Research Locations: Williams Field Long Duration Balloon Facility

Description

BLAST (Balloon-borne Large-Aperture Submillimeter Telescope) is a comprehensive program to study the link between Galactic magnetic fields and star formation. BLASTPol is the first instrument to combine the sensitivity and mapping speed necessary to trace magnetic fields across entire clouds with the resolution to trace fields down into dense substructures, including cores and filaments. BLASTPol therefore provides the critical link between the PLANCK all-sky polarization maps with 5' resolution and ALMA's ultra-high resolution, but with only a 20" field of view. BLASTPol will use the PLANCK data to refine its target selection, then ALMA will utilize BLASTPol maps to "zero in" on areas of particular interest. Together, these three instruments will probe the inner workings of star formation with previously unreachable resolution, sensitivity and scope.

Field Season Overview

The researchers plan to work at the Long Duration Balloon Facility at Williams Field to prepare their Balloon-borne Large Aperture Telescope for launch between early December and early January. Most researchers will leave Antarctica after the launch, but five will stay to assist in payload recovery.

Deploying Team Members

Project Indexes

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Project Web Sites

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Ed Chapin

- Mark Halpern (Co-PI)
- Peter Hargrave (Co-PI)
- Jeffery Klein (Co-PI)
- Gaelen Marsden
- Calvin Netterfield (Co-PI)
- Enzo Pascale

Marie Rex

- Chris Semisch
- Nick Thomas
- Matt Truch
- Marco Viero
- Donald Wiebe



2006-2007 USAP Field Season

Project Detail

Project Title

Interaction Of Iron, Light And CO2 On Phytoplankton Community Dynamics In The Ross Sea

Summary

Event Number:
B-272-N

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephanie Suhr Sliester



Principal Investigator

Dr. Giacomo DiTullio
ditullioj@cofc.edu

College of Charleston
Grice Marine Biological Lab
Charleston, South Carolina

Project Web Site:
<http://www.who.edu/sites/corsacs>

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Ross Sea

Description

The Ross Sea is a region of intense biological productivity, where phytoplankton biomass is dominated by two main taxonomic groups: diatoms and Phaeocystis. It is well known that these two phytoplankton groups have different impacts on biogeochemical cycles in the Ross Sea, but the factors that control their relative abundance are not well understood. CORSACS (Controls on Ross Sea Algal Community Structure) will investigate the interactive effects of iron, carbon dioxide, and light levels in the Ross Sea on phytoplankton community structure and on the biogeochemical cycling of carbon, sulfur, iron, cobalt, and Vitamin B12. The expedition will involve both transect work and onboard experimental work. The project is a collaborative effort between Dr. Giacomo DiTullio (B-272, University of South Carolina), Dr. Walker Smith (B-386, Virginia Institute of Marine Science), Dr. Robert Dunbar (B-258, Stanford University), Dr. Peter Sedwick (B-267, Bermuda Biological Station for Research), Dr. David Hutchins (B-279, University of Delaware), Dr. Philippe Tortell (B-282, University of British Columbia), and Dr. Mak Saito (O-398, Woods Hole Oceanographic Institution).

Field Season Overview

NBP06-08 will sail from New Zealand in early November. Field team members will collect plankton, water, and ice samples using a variety of methodologies, and they will conduct a variety of onboard laboratory experiments, including incubations. Data to be collected will include air and water CO2 concentrations; seawater pH levels; water, ice, and plankton

Project Indexes

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trace metal concentrations; plankton community structure in response to varying levels of light, CO₂, and trace metals; and differences between diatom and Phaeocystis communities and between pelagic and sea ice microbial communities. All researchers will disembark the vessel at the termination of the cruise.

Deploying Team Members

- Thomas Baird
- Peter Lee
- Yingyu Li
- Julianna Miller
- Aimee Neeley
- Christopher Payne
- Philippe Tortell
- Scarlett Trimborn



2006-2007 USAP Field Season

Project Detail

Project Title

Role Of Resource Legacy On Contemporary Linkages Between Biodiversity And Ecosystem Processes In A Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program

Summary

Event Number:
B-426-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Peter Doran
pdoran@lsu.edu

Louisiana State University Baton Rouge
Department of Geology and Geophysics
Baton Rouge, Louisiana

Project Web Site:
<http://tigger.uic.edu/~pdoran/home.htm>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys

Description

This project addresses the central hypothesis that biodiversity and ecosystem structure and function in the McMurdo Dry Valleys are dictated by the interactions of climatic legacies with contemporary biotic and physical processes. Researchers will upgrade and maintain long-term, automated, lake-monitoring equipment in the Dry Valleys; carry out manual hydrologic balance measurements; collect data from a number of long-term environmental sensors in and on the lakes; measure lake-ice movements; collect sediment samples; and survey the bed contact between Lake Hoare and the Canada Glacier to determine the role of glacier movement in Lake Hoare lake-level history.

Field Season Overview

The field team members will travel by helicopter from McMurdo Station to the Dry Valleys. The team will be based at three established field camps in Taylor Valley: Lake Fryxell, Lake Hoare, and Lake Bonney. At each camp, team members will survey ablation stakes with the assistance of UNAVCO and use SCUBA diving to carry out benthic studies and collect samples. The researchers will also make day trips by helicopter to Wright Valley and Victoria Valley, where they will carry out further hydrologic balance measurements, and to Garwood Valley and Cape Bernacchi, where they will service the meteorological stations and download data. Samples will be processed and analyzed at field camps and at the Cray Laboratory. Some samples will be shipped to the home institution for further

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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analysis.

Deploying Team Members

- Miroslub Medved (Team Leader)
- Maciej Obryk



Project Title

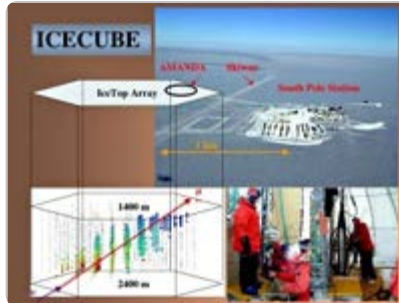
ICECUBE

Summary

Event Number:
A-333-S

Program Manager:
Dr. Bernhard Lettau (acting)

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Paul Evenson
evenson@udel.edu

University of Delaware
Physics and Astronomy
Newark, Delaware

Project Web Site:
<http://icecube.wisc.edu>

Location

Supporting Stations: South Pole Station
Research Locations: Counting House, MAPO (Martin A. Pomerantz Observatory)

Description

IceCube is a cubic-kilometer, high-energy neutrino observatory under construction in the clear deep ice below the South Pole Station. The IceCube telescope is an international collaboration designed to open unexplored wavelength bands for astronomy by using neutrinos as cosmic messengers.

Field Season Overview

One hundred team members will cycle in and out during the season, with the last ones departing South Pole in mid-February. Field team members will install 12 to 14 detector strings in the IceCube array, and they will trench and install ten IceTop stations. In addition, project personnel will prepare for and implement the move from the temporary lab to the permanent IceCube Laboratory.

Deploying Team Members

- Jack Ambuel
- Forest Banks
- Keith Beattie
- Terry Benson
- Timothy Lyons
- Cynthia Mackenzie
- James Madsen
- Matthew Mathiason

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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- David Bogen
- Nicholas Buchinger
- Steve Cantley
- Paul Charpentier
- Jeff Cherwinka
- Levent Demiroers
- Dennis Duling
- Jeanne Edwards
- Alan Elcheikh
- Christopher Elliott
- John Fowler
- Thomas Gaisser (Co-PI)
- Dar Gibson
- Leland Greenler
- Tom Ham
- Darrell Hamilton
- Ryan Hammetter
- Terry Hannaford
- Kael Hanson
- James Haugen
- Susan Heyob
- Gary Hill
- Thomas Hutchings
- James Hynes
- John Jacobsen
- Michael Jayred
- Arthur Jones
- Jonas Kalin
- Albrecht Karle (Co-PI)
- Michael Kleist
- Georges Kohnen
- Mark Krasberg
- James Latshaw
- Sven Lidstrom

- Terry Matt
- Harold Mattison
- Rick Meidinger
- Rishi Meyhandan
- Andres Morey
- Timothy Murray
- Matthew Newcomb
- Michael Patterson
- Robert Paulos
- Claire Pettersen
- Thomas Piwowarski
- Gerald Przybylski
- Charles Rentmeesters
- John Richards
- Phillip Robl
- A Philip Roth
- Carsten Rott
- Douglas Rutledge
- Perry Sandstrom
- Darryn Schneider
- Leonard Shulman
- Karthik Soundarapandian
- Thorsten Stezelberger
- Karl-Heinz Sulanke
- Greg Sullivan
- Mark Thoma
- Serap Tilav
- Justin Vandenbroucke
- Michael Whitney
- Paul Wisniewski
- Kurt Woschnagg
- James Yeck
- Michael Zernick
- Melany Zimmerman



Project Title

Role Of Resource Legacy On Contemporary Linkages Between Biodiversity And Ecosystem Processes In A Cold Desert Ecosystem: The McMurdo Dry Valleys LTER Program

Summary

Event Number:
B-425-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Andrew Fountain
andrew@pdx.edu

Portland State University
Geology
Portland, Oregon

Project Web Site:
<http://www.mcmlter.org/>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys

Description

The McMurdo Long Term Ecological Research (LTER) projects will continue to investigate the McMurdo Dry Valleys as an end-member ecosystem and focus on the relative roles of legacy and extant processes on current biodiversity and ecosystem structure and function. This project measures Dry Valley meteorological parameters and the physical properties of Dry Valley glaciers, with special emphasis on LTER core research areas.

Field Season Overview

The field team will travel by helicopter from McMurdo Station to the established field camp at Lake Hoare, which team members will use as their base of operations for the season. The researchers will make day trips by helicopter to the Commonwealth, Howard, Taylor, and Hughes glaciers to make mass balance measurements and study ice structure. Day trips will also be made to various meteorological stations in the Taylor, Beacon, Wright, and Victoria Valleys, where sensors and dataloggers on the stations will be replaced. In addition, field team members plan to remove the Lake Bonnie snow fence and their equipment at Blood Falls.

Deploying Team Members

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

More Information

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■ Hassan Basagic (Team Leader)

■ Matthew Hoffman



2006-2007 USAP Field Season

Project Detail

Project Title

Collaborative Research Into Antarctic Calving (CRAC)

Summary

Event Number:
I-277-E

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
John Evans



Principal Investigator

Dr. Helen A Fricker
hafricker@ucsd.edu

University of California San Diego
Scripps Institution of Oceanography
La Jolla, California

Project Web Site:
http://eqinfo.ucsd.edu/~helen/amery_rift/

Location

Supporting Stations: Special Project
Research Locations: Amery Ice Shelf

Description

Using a combination of satellite and in situ measurements, this project will measure simultaneously the propagation and widening of two transverse-to-flow ice shelf rifts that make up the active part of a rift system at the front of the Amery Ice Shelf. Project scientists will use these measurements to investigate the apparent behavioral relationship between these two rifts. In addition, researchers will study the stresses that control the initiation of rifts at the front of the ice shelf and the propagation of the rift system, and they will investigate the effect a calving event will have on the stress field in the ice shelf and on currently inactive rifts, e.g. they will try to determine whether calving will precipitate propagation of another rift.

Field Season Overview

The two-member field team will travel from Australia to Davis Station onboard the Australian Antarctic Division (AAD) vessel Aurora Australis. From Davis, they will make day trips by helicopter to the Amery Ice Shelf, returning to a field camp on Sansom Island afterward. To track rift propagation on the ice shelf, the researchers will establish GPS and seismic stations at previously measured study sites near two transverse-to-flow rifts. Once the stations are installed and collecting data, the researchers will return to Davis Station. After several weeks, the field team will return to the ice shelf and remove the stations, then depart Antarctica onboard AAD vessel.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Deploying Team Members

- James Behrens
- Dennis Darnell



Project Title

Patterns And Processes: Dynamics Of The Erebus Bay Weddell Seal Population

Summary

Event Number:
B-009-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. Robert Garrott
rgarrott@montana.edu

Montana State University Bozeman
Ecology
Bozeman, Montana

Project Web Site:
<http://www.homepage.montana.edu/~rgarrott/antarctica/index.htm>

Location

Supporting Stations: McMurdo Station
Research Locations: Big Razorback

Description

This project continues a long-term population study of the Erebus Bay Weddell seal population. All pups born in the eight colonies that make up the population will be tagged during October and November. Untagged adults will be tagged when they are encountered. After the pupping season seven to eight censuses of the entire population will be conducted. A large number of seals will be photographed to document the body mass dynamics of pups and adult females and a small sample of these will be physically weighed. These data will be correlated with a variety of variables including sea ice condition, colony, age, time of year, survival, and reproduction, to understand the role of climate, local colony, and individual characteristics on both body mass and population dynamics.

Field Season Overview

Field team members will travel by tracked vehicle and snowmobile to establish a field camp at Big Razorback Island. Teams of researchers will make day trips by snowmobile to tag new pups and census the seals of Erebus Bay. Team members will also photograph and weigh a number of seals to document body mass dynamics. Once the pupping season is over, the researchers will travel by helicopter to survey the study area and search for tagged seals farther afield.

Deploying Team Members

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

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- Annie Farris
- Kerry Gunther
- Mark Johnston
- Jen Mannas

- Steen Morgensen
- Kelly Proffitt (Team Leader)
- Jay Rotella (Co-PI)
- Joseph Sener



2006-2007 USAP Field Season

Project Detail

Project Title

Center For Remote Sensing Of Ice Sheets (CReSIS) - Basler Airborne Radar Survey

Summary

Event Number:
I-189-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Prasad Gogineni
gogineni@crsis.ku.edu

University of Kansas Lawrence
Lawrence, Kansas

Project Web Site:
<http://https://www.crsis.ku.edu/>

Location

Supporting Stations: McMurdo Station
Research Locations: WAIS Divide

Description

The Center for Remote Sensing of Ice Sheets (CReSIS) will focus the 2013-14 airborne-radar survey mission on Whillans (B) and Bindschadler (D) ice streams on the Siple Coast of West Antarctica. By flying new lines that cross historical survey lines, the reliability of the historical data can be improved and the effective survey area can therefore be expanded by combining both datasets. Researchers also plan to collect survey data over ice-core drilling sites and sites sounded by their surface-based accumulation radar being used this season by the I-188-M (Gogineni) team, so that internal layers mapped by the different radars can be cross-correlated and validated.

Field Season Overview

The field team will begin gathering data on environmental conditions and conducting tests of their prototype, electrically-powered aircraft at McMurdo Station. The team will then travel by LC-130 aircraft to the WAIS Divide field camp, where team members will assess local conditions that would affect operation of a remotely-operated aircraft. Upon returning to McMurdo, the team members will conduct additional flight tests. An on-board video camera will enable post-flight evaluations of air to ground visual referencing, which will enable development of a line-of-sight, flight control station.

Deploying Team Members

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

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William Donovan

Richard Hale (Team Leader)



2006-2007 USAP Field Season

Project Detail

Project Title

Antarctic Impulsive Transient Antenna (ANITA)

Summary

Event Number:
A-142-M

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. Peter Gorham
gorham@phys.hawaii.edu

University of Hawaii Manoa
Hawaii Institute of Geophysics & Planetology
Honolulu, Hawaii

Project Web Site:
<http://www.phys.hawaii.edu/~anita>

Location

Supporting Stations: McMurdo Station
Research Locations: Williams Field Long Duration Balloon Facility

Description

Neutrinos are of great interest to astrophysicists because they are the only particle that can reach earth unattenuated at all energies. Ultra-high-energy neutrinos are particularly interesting since interactions with the photons of the cosmic microwave background prevent other cosmic particles from propagating over long astrophysical distances. The ANITA instrument is a radio telescope designed to detect these ultra-high-energy cosmic ray neutrinos from a scientific balloon floating over Antarctica. ANITA will look for radio impulses that are expected to originate from high-energy neutrino interactions in the ice. The ANITA instrument detects these ultra-high-energy neutrinos by use of the Askaryan effect, which predicts the production of a coherent radio emission from the cascade of particles produced in a high-energy particle interaction. In other words, ANITA will detect a 'snap' in the radio frequencies caused by the interaction of an ultra-high energy neutrino. In order to detect these rare and faint Askaryan pulses, a large, radio-transparent medium (such as ice) in a radio-quiet area (such as Antarctica) is required.

Field Season Overview

Members of the field team plan to work at the Williams Field balloon facility to set up, integrate, and test the ANITA instrument to prepare it for flight operations. With assistance from ICDS (Ice Core Drilling System), two team members will install a ground calibration system at Williams Field and Taylor Dome to validate the balloon-borne instrument.

Once the instrument package is ready, it will be exercised continuously, gathering

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engineering and calibration data until launched. At that point, the payload instrumentation will be exercised intensively for 24-36 hours while the balloon is within line-of-sight telemetry, and all flight systems will be tuned for the flight duration. At the end of the line-of-sight period, most field team members will redeploy, leaving three or four members to await the landing and recovery.

Deploying Team Members

- James Beatty
- David Goldstein
- Stephen Hoover
- Jeff Kowalski
- Kurt Liewer
- Jiwoo Nam
- Ryan Nichol
- Kimberly Palladino
- Andrew Romero-Wolf
- Marc Rosen
- David Saltzberg
- Garry Simburger
- Gary Varner



2006-2007 USAP Field Season

Project Detail

Project Title

Investigation Of Climate, Ice Dynamics, And Biology Using A Deep Ice Core From The West Antarctic Ice Sheet

Summary

Event Number:
I-477-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Mr. Geoffrey Hargreaves
hargreavesmg@gmail.com

United States Geological Survey
National Ice Core Laboratory
Denver, Colorado

Project Web Site:
<http://www.waisdivide.unh.edu>

Location

Supporting Stations: McMurdo Station
Research Locations: WAIS Divide camp

Description

This project, part of a five-year collaborative effort of several research teams, will collect a 3,400-meter-deep ice core in West Antarctica. The main objectives are to: 1) develop the most detailed record of greenhouse gases possible for the last 100,000 years; 2) determine if the climate changes that occurred during the last 100,000 years were initiated by changes in the northern or southern hemisphere; 3) investigate the past and future stability of the West Antarctic Ice sheet; and 4) investigate the biology of deep ice.

Field Season Overview

This season, the project has two phases. In the first phase, one field team member will travel early in the season by LC-130 aircraft to the WAIS Divide field camp. This team member will work with contractor Ice Core Drilling Services team members to drill and extract a 130-meter ice core as close as possible to the main borehole location. Afterward, the crew will drill and extract a 100-meter core from the main borehole. Both cores will be processed, packaged, and stored in trenches until they are transported by LC-130 to McMurdo. The team member will also return to McMurdo by LC-130. The ice cores will be shipped to the home institution for analysis

For the second phase, a single field team member from the National Ice Core Laboratory (NICL) will travel later in the season by LC-130 to the WAIS Divide field camp. This team member will conduct a site review of the WAIS Divide facility, particularly the core storage

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and processing areas within the arch. The team member will return to McMurdo by LC-130.



2006-2007 USAP Field Season

Project Detail

Project Title

ANDRILL: Investigating Antarctica's Role In Cenozoic Global Environmental Change

Summary

Event Number:
G-049-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jessie Crain



Principal Investigator

Dr. David Harwood
धारwood1@unl.edu

University of Nebraska Lincoln
Department of Geosciences
Lincoln, Nebraska

Project Web Site:
http://qcpages.qc.cuny.edu/offshore_new_harbor/offshore.htm

Location

Supporting Stations: McMurdo Station
Research Locations: Southern McMurdo Sound ANDRILL site

Description

The Offshore New Harbor (ONH) Project aims to study sediments deposited in Antarctica during the transition from the Greenhouse World (34-100 Ma) to Icehouse World (<34 Ma). The goal of the Project is to address two widely recognized but unresolved issues regarding Antarctica's history: 1) the initiation of cryospheric (>34 million years ago) development in Antarctica; and 2) the abrupt climate shift at circa 34 million years ago.

Field Season Overview

The researchers plan to deploy a series of current meters through the sea ice at the proposed ANDRILL drill site in southern McMurdo Sound. The field team is composed of two groups. The first will travel by tracked vehicle to establish a field camp at the drill site. These team members will use a hole melter to create one or more holes in the sea ice. Through them they will deploy an acoustic doppler current profiler that is tethered to the sea-ice surface. They will also deploy a string of physical current meters positioned at various depths in the 530-meter water column. These meters will be attached to a cable that is anchored to the ocean floor and tethered to the sea-ice surface. Once the instruments are deployed, the team members will return by tracked vehicle to McMurdo Station and redeploy. The profiler and meters will remain in the water column to collect data for six to eight weeks.

The second field team will travel to McMurdo Station in late November then by tracked vehicle out to the field camp. These team members will recover the instruments. Once this

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is accomplished, the field team will break camp and return to McMurdo, where data from the profiler and physical meters will be downloaded.

Deploying Team Members

- Peter Webb



2006-2007 USAP Field Season

Project Detail

Project Title

ANDRILL

Summary

Event Number:
G-091-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jessie Crain



Principal Investigator

Dr. David Harwood
धारwood1@unl.edu

University of Nebraska Lincoln
Department of Geosciences
Lincoln, Nebraska

Project Web Site:
<http://www.andrill.org>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Ice Shelf ANDRILL site

Description

The ANDRILL project is a collaborative effort between the national Antarctic programs of Italy, New Zealand, and the United States that seeks to recover important geological records from beneath Antarctica's icy blanket. The project's primary objectives are to investigate Antarctica's role in global environmental change over the past 65 million years and to better understand Antarctica's future response to global changes. Using a state-of-the-art drilling system, ANDRILL will obtain long sections of core from beneath thick ice shelves and land-fast sea ice, in water up to one kilometer deep.

Field Season Overview

The researchers plan to recover a sediment core from beneath the northwest portion of the Ross Ice Shelf. The drilling will be a 24-hour operation, with field team members working 12-hour shifts. Team members will commute from McMurdo and Scott Base to the drill site via shuttle. A diverse range of scientific work will be conducted at the drill site, including initial core characterization and down-hole logging. Team members will also travel via helicopter to a variety of geologic locations near McMurdo to ground-truth core data. The core will be transported to the Cray Laboratory for additional analysis then shipped to the home institution for further study.

Deploying Team Members

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- Peter Barrett
- Lionel Carter
- Ellen Cowan
- Travis Crosby
- Matt Curren
- LuAnn Dahlman
- Gavin Dunbar
- Fabio Florindo
- Michael Hannah
- DhiresH Hansaraj
- Stuart Henrys
- Kelly Jemison
- Charlene King
- Conrad Kopsch
- Lawrence Krissek
- Gerhard Kuhn
- Laura Lacy
- Andreas Laufer
- Richard Levy
- Paola Maffioli
- Kevin Mandernack
- Cristina Millan-Martinez
- Vanessa Miller
- Roger Morin
- Timothy Naish (Co-PI)
- Frank Niessen
- Christian Ohneiser
- Matthew Olney
- Timothy Paulsen
- Davide Persico
- Steven Petrushak
- Massimo Pompilio
- Brent Pooley
- Ross Powell (Co-PI)
- Josh Reed
- Reed Scherer
- Erich Scholz
- Charlotte Sjunneskog
- Percy Strong
- Eric Sturm
- Franco Talarico
- Marco Taviani
- Julian Thomson
- Betty Trummel
- Slawek Tulaczyk
- Thomas Wilch
- Trevor Williams
- Diane Winter



2006-2007 USAP Field Season

Project Detail

Project Title

Austral High-Latitude Atmospheric Dynamics

Summary

Event Number:

A-110-M/S

Program Manager:

Dr. Vladimir Papitashvili

ASC POC/Implementer:

Charles Kaminski



Principal Investigator

Dr. Gonzalo Hernandez

hernandez@uw.edu

University of Washington

Earth and Space Sciences

Seattle, Washington

Project Web Site:

<http://cedarweb.hao.ucar.edu/>

Location

Supporting Stations: McMurdo Station, South Pole Station

Research Locations: Arrival heights, ARO (Atmospheric Research Observatory)

Description

This project continues long-term observation, characterization, and understanding of high-latitude atmospheric motions, in particular mesospheric motions and thermospheric persistent vertical winds near Arrival Heights and simultaneously with those at South Pole and Mount John, NZ. Wintertime mesospheric kinetic temperature observations have shown the presence of dynamical coupling between the stratosphere and the upper regions of the atmosphere in the Southern Hemisphere. Results indicate that the dynamical processes leading to the stratospheric warming or cooling are already in place during the austral winter and the early mesospheric signals lead to the potential capability to estimate the springtime ozone hole.

Field Season Overview

The researchers plan to perform maintenance, repairs, and calibration on project instruments. The team will first service the experimental apparatus at Arrival Heights near McMurdo Station, then deploy to South Pole Station to service instruments there. If necessary, they will complete their calibration of the Arrival Heights instruments when they return to McMurdo in late January. If no further work is necessary, the entire field team will redeploy shortly after returning to McMurdo from South Pole. The instruments are maintained during the rest of the year by the RPSC Research Associate. Data are transmitted to the home institution for analysis.

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Deploying Team Members

- Stephen Barlow
- Michael McCarthy (Team Leader)
- Bryan Venema



2006-2007 USAP Field Season

Project Detail

Project Title

The Inner Landscape (Feature Film)

Summary

Event Number:
W-219-M

Program Manager:
Ms. Kim Silverman

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Mr. Werner Herzog

Los Angeles, California

Project Web Site:
<http://wernerherzog.com/main/index.htm>

Location

Supporting Stations: McMurdo Station

Research Locations: On station, Mount Erebus, New Harbor

Description

Werner Herzog will produce a feature length documentary film for Discovery's Theatrical Documentary Unit. For a century, explorers, adventurers, and scientists have traveled and studied the antarctic continent. Now Herzog would like to be the first poet with a movie camera in this beautiful land. Antarctica seems to be the unknown continent that allows us deep insights into our past, the past of our entire planet, and a glimpse into our future. Beyond the cute penguins we see often representing Antarctica, this film will feature the landscapes, the lesser documented strange forms of life, and the scientists who study them. Herzog's films reach for a deeper stratum of truth, an "ecstatic" truth, that explores the inner landscapes of jungles and deserts not as a backdrop but as a quality of the human soul.

Field Season Overview

The film crew plans to film at McMurdo Station, travel by helicopter to Explorers Cove and Mount Erebus to record scientists going about their work, and travel by fixed-wing aircraft to film icebergs at sea. One member of the crew, who is also a member of the B-043 field team, will use SCUBA diving to film underwater sequences at Explorers Cove.

Deploying Team Members

- Peter Zeitlinger

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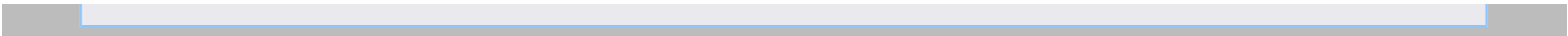
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2006-2007 USAP Field Season

Project Detail

Project Title

South Pole Monitoring For Climatic Change

Summary

Event Number:
O-257-S

Program Manager:
Dr. Peter Milne

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. David Hofmann
david.j.hofmann@noaa.gov

National Oceanic and Atmospheric Administration
Global Monitoring Division (GMD)
Boulder, Colorado

Project Web Site:
<http://www.esrl.noaa.gov/gmd/>

Location

Supporting Stations: South Pole Station
Research Locations: ARO (Atmospheric Research Observatory)

Description

At the South Pole, the National Oceanic and Atmospheric Administration's (NOAA) Global Monitoring Division (GMD) collects year-round, long-term measurements of trace atmospheric constituents that influence climate change. These measurements are part of NOAA's effort to determine and assess the long-term build up of global pollutants in the atmosphere. The measurements are used for time-series analysis of multi-year data records that focus on stratospheric ozone depletion; trans-Antarctic transport and deposition; interplay of the trace gases and aerosols with solar and terrestrial radiation fluxes on the polar plateau; the magnitude of seasonal and temporal variations in greenhouse gases; and the development of polar stratospheric clouds over Antarctica. Other objectives of the research are to determine the rate at which concentrations of these atmospheric constituents change and to examine the sources, sinks, distributions, budgets, and trends. These data help climate modelers and diagnosticians determine how the rate of change of these parameters affects climate, particularly when the data are included in climate-model studies that support this project.

Field Season Overview

Two field team members will staff the Atmospheric Research Observatory (ARO) throughout the austral summer and continuing through the winter, while other researchers will deploy for shorter periods. Team members will record meteorological variables and measure carbon dioxide, water vapor, surface and stratospheric ozone, solar and terrestrial radiation, and ozone-depleting compounds and other trace constituents in the atmosphere

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over South Pole. Field personnel will also perform routine maintenance and upgrades on the instruments. Data will be returned to the home institution for analysis.

Deploying Team Members

- Gloria Carbaugh
- Amy Cox
- Patrick Cullis
- Geoff Dutton
- Andrew Seaman



2006-2007 USAP Field Season

Project Detail

Project Title

Collection Of Atmospheric Air For The NOAA/GMD Worldwide Flask-Sampling Network

Summary

Event Number:
O-264-P

Program Manager:
Dr. Peter Milne

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. David Hofmann
david.j.hofmann@noaa.gov

National Oceanic and Atmospheric Administration
Global Monitoring Division (GMD)
Boulder, Colorado

Project Web Site:
<http://www.esrl.noaa.gov/gmd/>

Location

Supporting Stations: Palmer Station
Research Locations: Terra Lab

Description

The National Oceanic and Atmospheric Administration's (NOAA) Global Monitoring Division (GMD) team will continue long-term measurements of trace constituents that influence climate and the ozone layer. The work done at Palmer Station is in conjunction with the ongoing worldwide measurements of carbon dioxide, methane, carbon monoxide, aerosols, water vapor, surface and stratospheric ozone, chlorofluorocarbons, and the ozone layer. The work is part of NOAA's effort to determine and assess the long-term buildup of global pollutants in the atmosphere. Measurements will be used for time-series analysis of multi-year data records that focus on stratospheric ozone depletion; trans-Antarctic transport and deposition; interplay of the trace-gases aerosols with the solar and terrestrial radiation fluxes on the polar plateau; the magnitude of seasonal and temporal variations in greenhouse gases; and the development of polar stratospheric clouds over Antarctica. Other objectives of this research are to determine the rate at which concentrations of these atmospheric constituents change and to examine the sources, sinks, and budgets. Working with climate modelers and diagnosticians, researchers will use the data to determine how the rate of change of these parameters affects climate, particularly when the data are included in climate-model studies that support this project.

Field Season Overview

No project personnel will deploy. The Palmer Station physician will collect weekly air samples year-round from behind the Terra Lab using a portable flushing and pressurizing apparatus. One or two samples will be collected each week, and environmental conditions

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at the time of sampling will be logged. Sampling will occasionally be deferred until certain meteorological criteria are met. All samples will be returned to the National Oceanic and Atmospheric Administration's Global Monitoring Division for analysis of carbon dioxide and other trace constituents.



2006-2007 USAP Field Season

Project Detail

Project Title

Towards An Understanding Of Protein Homeostasis In Cold-Adapted Antarctic Fish

Summary

Event Number:
B-134-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Gretchen Hofmann
hofmann@lifesci.ucsb.edu

University of California Santa Barbara
Department of Ecology, Evolution, Marine Biology
Santa Barbara, California

Project Web Site:
<http://hofmannlab.msi.ucsb.edu/>

Location

Supporting Stations: McMurdo Station

Research Locations: Crary Lab, Cape Evans, Cape Royds, Inexpressible Island, McMurdo Sound

Description

This project studies the cold adaptation of protein synthesis in antarctic fishes. Researchers will collect three species using hook and line fishing in shallow water and fish traps placed on the ocean floor at 400-800 meter depths. In the laboratory, project scientists will measure various aspects of protein synthesis to determine the efficiency of this important physiological process. Since it may be that a high percentage of newly synthesized proteins fold abnormally in antarctic fish, researchers seek to understand the adaptations these fish have developed that allow them to produce normal, functional proteins. This effort will involve studying the patterns of expression of genes that are involved in maintaining a normal pool of proteins.

Field Season Overview

The field team will be divided into two groups. The first group will pursue the project's biological and molecular research objectives. Members of this group will use tracked vehicles and snowmobiles to make day trips onto the sea ice. The researchers will collect fish through ice holes by means of hook-and-line in shallow water (30-40 meters) and fish traps set in deep water (400-800 meters). Fish will be returned to the Crary aquarium and used for molecular biology measurements and other experiments in the laboratory. Field team members will also deploy a remotely operated vehicle (ROV) under the sea ice to record video images of the benthos.

Project Indexes

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The second group will pursue the project's educational objectives. These team members will use the ROV extensively. They will travel by helicopter to Explorers Cove to make video recordings of geology and marine biology research in action. The video recordings and other information collected will be used as part of the K-12 educational outreach (ED) component of this project.

Deploying Team Members

- Timothy Crombie
- Steven Gaines
- Peggy Lubchenco
- Anne Todgham
- Allison Whitmer
- Mackenzie Zippay



2006-2007 USAP Field Season

Project Detail

Project Title

Collaborative Research: Aging In Weddell Seals: Proximate Mechanisms Of Age-Related Changes In Adaptations To Breath-Hold Hunting In An Extreme Environment.

Summary

Event Number:
B-041-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Markus Horning
markus.horning@oregonstate.edu

Oregon State University
Marine Mammal Program
Newport, Oregon

Project Web Site:
<http://mmi.oregonstate.edu/pearl/antarctica>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Sound sea ice, Crary Lab

Description

This study seeks to determine if aging within the reproductive range of Weddell seals is associated with a reduced ability to produce external work (e.g., successful diving and foraging) and reduced functionality (i.e., decline in swimming muscle function). To address these objectives, researchers will outfit seals with transmitters, ECG monitors, time-depth recorders, dataloggers, flipper accelerometers, and stomach temperature transmitters. Project scientists will also collect muscle biopsy and blood samples. These samples will be used for a variety of assays designed to determine age related changes in enzyme activities, hemoglobin concentrations, and other factors. The combination of telemetry data and tissue assays will allow researchers to assess the manifestation of the dive response and the plasticity of foraging capacity with aging.

Field Season Overview

A six person field team will make day trips by snowmobile and tracked vehicle from McMurdo Station to the area around the Erebus Glacier Tongue and the Delbridge islands, where they will sedate seals, take tissue and blood samples, and attach telemetry instruments and transmitters. Samples will be transported to the Crary Laboratory for analysis. The instruments will be retrieved after a few days or weeks and their data downloaded. Some samples will be returned to the home institution for further analysis.

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Deploying Team Members

- Millie Gray
- Roger Hill
- Allyson Hindle
- Jamie Thomton



2006-2007 USAP Field Season

Project Detail

Project Title

ELF/VLF Observation Of Whistler-Mode Waves, Lightning Discharge, And Gamma-Ray Events From Palmer Station

Summary

Event Number:
A-336-P

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Umran Inan
inan@nova.stanford.edu

Stanford University
Department of Electrical Engineering
Stanford, California

Project Web Site:
<http://vlf.stanford.edu/research/whistler-mode-wave-studies-palmer-station-antarctica>

Location

Supporting Stations: Palmer Station
Research Locations: Terra Lab, Glacier antenna

Description

Whistler-mode waves play a major role in controlling the dynamic evolution of relativistic electron populations in the Earth's radiation belts. They regularly penetrate the ionosphere and can be detected at ground-based stations. Because of its remoteness from anthropogenic electromagnetic noise sources, Palmer Station remains one of the most electromagnetically quiet ELF/VLF receiving sites in the world, allowing researchers to take full advantage of this extremely sensitive receiver system. The system records broadband data (full waveform data sampled at 100 kHz) as well as narrowband data (the demodulated amplitude and phase of narrowband VLF transmitter signals) 24 hours a day, 365 days a year. The scientific investigations involving these data are focused on magnetospherically generated whistler-mode waves; global lightning and thunderstorm activity; the characteristics of lightning discharges associated with terrestrial gamma ray flashes; and the ionospheric effects of gamma ray

Field Season Overview

The data collection equipment is operated throughout the year by the contractor Research Associate. From early to late April, a project researcher will deploy to Palmer Station to perform annual maintenance and calibration and prepare the equipment for winter operation. During the 2006-2007 season, in coordination with the Ukrainian National Antarctic Program, the project will install a parallel antenna and data receiver at Vernadsky Station.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

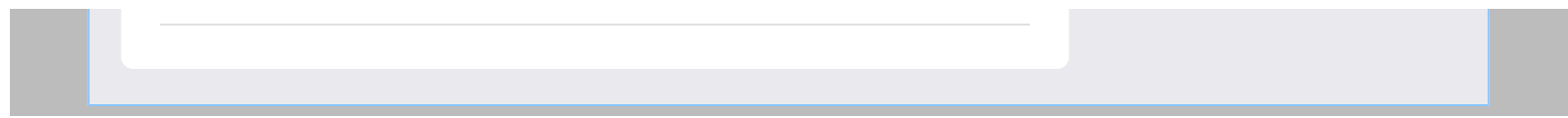
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2006-2007 USAP Field Season

Project Detail

Project Title

ELF/VLF Observation In The Southern Pacific Ocean

Summary

Event Number:
A-327-N

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Andy Nunn / Bruce Felix



Principal Investigator

Dr. Umran Inan
inan@nova.stanford.edu

Stanford University
Department of Electrical Engineering
Stanford, California

Project Web Site:
<http://www-star.stanford.edu/~vlf/pars/pars.htm>

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Onboard science of opportunity

Description

This research program addresses the need for very-low frequency (VLF) measurements at the geomagnetic conjugate point of the High-Frequency Active Auroral Research Program (HAARP) HF heating facility in Gakona, AK. Observations on the NBP contribute to current on-going studies of magnetospheric wave-injection, wave growth and amplification, and particle-loss mechanisms in the Earth's radiation belts. More specifically, the VLF receiver allows researchers to observe conjugate, ducted, whistler mode signals excited by HAARP and related triggered emissions and particle precipitation. In addition, the regularly scheduled cruises of the NBP provide access to the geomagnetic conjugate point for the central United States, a region of intense lightning activity and lightning-related phenomena.

Field Season Overview

The researchers plan to meet the RV/IB Nathaniel B Palmer at its port call prior to cruise NBP06-03A. Under their oversight, RPSC personnel will install the project's VLF and GPS antenna on the bridge and run cables from these antennas to VLF electronics inside the ship. Once the cruise is underway, an RPSC technician will schedule regular data acquisitions and archive the data onto external hard drives. The hard drive(s) will be shipped to the home institution at the end of the cruise.

Deploying Team Members

Project Indexes

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- Jeff Chang



2006-2007 USAP Field Season

Project Detail

Project Title

UNAVCO GPS Survey Support

Summary

Event Number:
T-295-M

Program Manager:
Dr. Michael Jackson

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Mr. Bjorn Johns
johns@unavco.org

UNAVCO
Wellington, Undefined

Project Web Site:
<http://www.unavco.org/projects/project-support/polar/polar.html>

Location

Supporting Stations: McMurdo Station
Research Locations: Field sites with science groups

Description

UNAVCO provides technical support and equipment for precision geodetic observations using GPS and terrestrial LiDAR technologies. Survey-grade GPS receivers, terrestrial laser scanners, and power and communications systems for both high-precision campaign surveying and continuous data collection are available to project researchers. Infrastructure for this support includes a Real-Time Kinematic (RTK) differential GPS broadcasting station covering McMurdo Sound, a repeater on Mount Erebus for GPS data retrieval from the Transantarctic Mountains, and an Iridium satellite communications hub in Colorado. Technical support is also provided for the Palmer Station GPS surveying system. Operation and maintenance is provided as needed for the NASA International Global Navigation Satellite System (GNSS) Service (IGS) stations MCM4 and PALM, the POLENET (ANET) remote GPS stations, and GPS reference stations on the West Antarctic Ice Sheet (WAIS) Divide and at South Pole Station.

Field Season Overview

The field team will work out of the Crary Laboratory to provide GPS support to various science projects. In addition, the team members have several specific tasks scheduled for this season. They will: a) continue testing two remote, prototype, permanent GPS systems installed at McMurdo Station; b) train WAIS Divide camp personnel on GPS data downloading from the WAIS reference station; c) install an automated download system at WAIS Divide; d) continue developing next-generation power and communication systems for remote, autonomous geophysical data collection and retrieval; and e) perform maintenance as needed to TAMDEF continuous GPS stations.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Team members will make day trips by helicopter to service the GPS stations and repeaters on Ross Island and in the Dry Valleys. Additional day and multi-day trips will be made in support of specific science projects, as requested.

Deploying Team Members

- Thomas Nylén
- Seth White



2006-2007 USAP Field Season

Project Detail

Project Title

The Molecular Signals That Regulate The Ontogeny Of Aerobic Capacity, Lipid Metabolism And Elevated Myoglobin Concentrations In The Skeletal Muscles Of Weddell Seals

Summary

Event Number:
B-018-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Shane B Kanatous
kanatous@colostate.edu

Colorado State University
Fort Collins, Colorado

Project Web Site:
<http://extremephysiology.biology.colostate.edu>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Sound sea ice, Crary Lab

Description

This project builds on the results of a pilot study that characterized the physiological changes in the skeletal muscles of Weddell seals as they matured. The first objective of the present study is to further characterize the ontogenetic changes in muscle aerobic capacity, lipid metabolism, and myoglobin concentration and distribution using enzymatic, immuno-histochemical, and myoglobin assays in newly weaned, sub-adult, and adult seals. The second objective is to determine the molecular controls that regulate these changes in skeletal muscle physiology during maturation and development of diving capacity.

Field Season Overview

The field team members will travel by snowmobile onto the sea ice to identify seal haul-out sites. Once the sites have been identified, the researchers will make day trips by snowmobile to collect samples. The scientists will also establish two, one-week-long field camps on the sea ice, one at the end of October and another near the end of November, which they will use as central staging points for sample collection forays. Team members will also travel by helicopter to areas farther afield to survey for juvenile seals and collect samples. Muscle biopsy samples will be analyzed and processed in the Crary Laboratory for immuno-histochemistry, primary cell culture, enzyme assays, RNA, and protein isolation. Some samples may be returned to the home institution for further analysis.

Deploying Team Members

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- Joseph Davis
- Shawn Kramer

- Linnea Pearson
- Steve Trumble



2006-2007 USAP Field Season

Project Detail

Project Title

Changes In Atmospheric Oxygen (O₂), Carbon Dioxide (CO₂), And Argon (Ar) Concentrations In Relation To The Carbon Cycle And Climate

Summary

Event Number:
O-204-P

Program Manager:
Dr. Peter Milne

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Ralph Keeling
rkeeling@ucsd.edu

Scripps Institution of Oceanography
Geoscience Research Division
La Jolla, California

Project Web Site:
<http://bluemoon.ucsd.edu>

Location

Supporting Stations: Palmer Station
Research Locations: Terra Lab, Clean Air Hut

Description

Records of changes in atmospheric oxygen along with carbon dioxide levels have been documented for nearly 15 years at a number of sites throughout the globe using flask sampling of air. The researchers plan to continue monitoring the levels of oxygen, carbon dioxide, and argon in the atmosphere. These data will be of great use in modeling studies to assess the understanding of various carbon related processes. In addition, there exists significant potential for unexpected global phenomena of societal relevance. Technology for making climate relevant observations will be advanced and made available to the scientific community through publications and the training of students.

Field Season Overview

No project personnel will deploy to Antarctica. The Palmer Station physician will collect air samples in special flasks and ship the samples to the home institution for analysis. Samples are collected year-round.

Project Indexes

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2006-2007 USAP Field Season

Project Detail

Project Title

Temporal Variability In Natural And Anthropogenic Disturbance Of McMurdo Station

Summary

Event Number:
B-518-M

Program Manager:
Dr. Polly Penhale

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Mahlon Kennicutt
m-kennicutt@tamu.edu

Texas A & M University
Oceanography
College Station, Texas

Project Web Site:
<http://antarctica.geog.tamu.edu>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Station, Bratina Island

Description

This project aims to establish a long-term environmental monitoring program at Palmer Station, similar to that at McMurdo Station, that will aid the United States Antarctic Program (USAP) in meeting reporting requirements of the Antarctic Treaty. The Antarctic Treaty's Protocol on Environmental Protection, supplemented by the policies and practices of the nations that work and do science there, have combined to focus scrutiny on foreseeable or detected anthropogenic impacts. This project collects a system of observations that should enable scientists to be more aware of anthropogenic impacts on both marine and terrestrial habitats. The observations are located precisely and tracked over time. Researchers will use geographic information systems (GIS) techniques and geostatistical methods to organize these diverse data sets into a coherent, coordinated framework.

Field Season Overview

Project team members plan to continue their environmental monitoring program. McMurdo Station will serve as their base of operations for the season. Team members will use SCUBA diving to collect marine sediment samples in the contaminated zone, and they will travel by pickup truck to collect terrestrial samples in the McMurdo Station vicinity. The field team will also make a day trip by helicopter to Bratina Island to SCUBA dive and collect sediment samples. Samples will be processed and analyzed in the Crary Laboratory, and some samples may be shipped to the home institution for further analysis.

Project Indexes

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Deploying Team Members

- Sally Applebaum
- Andrew Klein (Co-PI)
- Terence Palmer
- Terry Wade (Co-PI)



2006-2007 USAP Field Season

Project Detail

Project Title

A Science Management Office For The United States Component Of The International Trans Antarctic Expedition (US ITASE SMO): A Collaborative Program Of Research From Taylor Dome To South Pole

Summary

Event Number:
I-153-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Andrei Kurbatov
akurbatov@maine.edu

The University of Maine
Orono, Maine

Project Web Site:
<http://www2.umaine.edu/USITASE>

Location

Supporting Stations: McMurdo Station
Research Locations: Taylor Dome, Beardmore Glacier

Description

Researchers will continue studying the last 200 years of East Antarctica's environmental history by taking ice cores and collecting other data along a traverse route from Byrd Glacier to South Pole Station. The data will be used to make regional comparisons of the interannual variability of several factors associated with the Antarctic Circumpolar Wave. These regional comparisons can be extended from the last two decades of satellite and field observations to the last 200 years through the interpretation of ice core-derived climate and environmental proxies. These proxy climate histories will also help parse out anthropogenic influence on air temperature, atmospheric circulation, and atmospheric chemistry.

Field Season Overview

Management of the U.S. component of the International Trans-Antarctic Scientific Expedition (ITASE) includes coordinating logistics and sample collection, assisting in sample collection, and maintaining a science management office. Field team members will travel with other ITASE participants by LC-130 aircraft to the previous season's over-winter site at Taylor Dome. After de-wintering their vehicles, the ITASE participants will continue their overland traverse, using ice-penetrating radar to search for crevasses. During the traverse, team members will collect snow samples and take ice cores. The traverse will halt at a location near the Beardmore Glacier basin, where the vehicles will be wintered in preparation for the following season. Team members will return to McMurdo by LC-130.

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Samples and cores will be returned to the home institutions for processing and analysis.

Deploying Team Members

- Steven Arcone (Co-PI)
- Daniel Breton
- Daniel Dixon
- Flaherty
- Gordon Hamilton (Co-PI)
- Terence Hughes (Co-PI)
- Lora Koenig
- Brian Welch (Co-PI)
- Mark Wumkes



2006-2007 USAP Field Season

Project Detail

Project Title

Mount Erebus Volcano Observatory II (MEVO II): Surveillance, Models, Impacts And Outreach

Summary

Event Number:
G-081-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. Phillip Kyle
kyle@nmt.edu

New Mexico Institute of Mining and Technology
Department of Earth & Environmental Science
Socorro, New Mexico

Project Web Site:
<http://erebus.nmt.edu/>

Location

Supporting Stations: McMurdo Station
Research Locations: Mt. Erebus

Description

Mount Erebus on Ross Island is the most active volcano in Antarctica. Its persistent convecting lava lake of anorthoclase phonolite magma is unique among volcanos. The lake and underlying magmatic system emit volcanic gases into the pristine Antarctic atmosphere. Because of the access researchers have to the mountain and the nature of its small strombolian eruptions, Mount Erebus has become a model volcano for study. This project is a continuation of research conducted over the past seven field seasons, during which the team installed six integrated geophysical/geodetic surveillance observatories, monitored other seismometers, made measurements of gas emissions, and took GPS measurements to observe deformation of the volcano. The seismic networks allow an understanding of the eruptive behavior and dynamics of Mount Erebus, and inversion of the seismic data will allow topographic imaging of the magma chamber and plumbing inside the volcano.

Field Season Overview

After altitude acclimatization, team members will occupy the Lower Erebus Hut for four to six weeks, using it as a base of operations. During that time, they will pursue a number of research activities, including: a) Inspecting, repairing, and maintaining 11 permanent seismic stations and two independent permanent GPS stations around the flanks and summit (using helicopter close support); b) Maintaining the six integrated surveillance instrumentation (ISI) systems; c) Making GPS measurements on the flanks and summit; d)

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Collecting volcanic rock samples; e) Measuring emission rates of various gases and collecting gas samples; f) Re-visiting a GPS network to check for deformation; g) Continuing video surveillance of volcanic activity as part of the Mt. Erebus Volcano Observatory.

The researchers will use snowmobiles to travel to study sites in the summit region, and they will make day trips by helicopter to study sites and instrument stations elsewhere on the mountain. They will continue to use receivers at Arrival Heights for the ISI stations and the video signal from the camera on the crater rim. The field team will return by helicopter to McMurdo in late December. Rock and gas samples will be shipped to the home institution for analysis. The RPSC Research Associate will monitor and maintain the ISI station receivers at Arrival Heights throughout the winter.

Deploying Team Members

- Nelia Dunbar
- Kyle Jones
- Harry Keys
- Christine Kimball
- Melissa Lindholm
- Bill McIntosh (Co-PI)
- Clive Oppenheimer
- Jake Ross
- Georgina Sawyer
- Karen Williams



2006-2007 USAP Field Season

Project Detail

Project Title

Direction-Finding Measurements Of LF/MF/HF Auroral Radio Emissions At South Pole

Summary

Event Number:
A-128-S

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. James LaBelle
jlabelle@einstein.dartmouth.edu

Dartmouth College
Department of Physics & Astronomy
Hanover, New Hampshire

Project Web Site:
<http://www.dartmouth.edu/~spacephy/>

Location

Supporting Stations: South Pole Station
Research Locations: B2 (South Pole Science Lab)

Description

The LF/MF/HF receiver installed at South Pole measures radio emissions of auroral origin in the frequency range of 50 to 5000 kHz. This includes the upper part of the whistler mode range and several critical ionospheric frequencies, such as the plasma frequency, upper hybrid frequency, electron gyrofrequency, and harmonics. Several types of natural auroral radio emissions occur in this range. For many of these, the generation mechanism and the cause of the observed wave structure remain mysteries. The South Pole is an ideal location for observing these signals because of the low level of man-made background noise.

Field Season Overview

The researchers plan to perform standard maintenance of the experimental equipment at South Pole Station, which will involve raising one or more antennas. The field team member will also attempt to find the source of and mitigate the severe radio frequency interference that appeared after the experiment was reconfigured and moved to the B2 science lab. The instruments will continue to operate year-round, and data will be sent to the home institution for analysis.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Project Title

Background Imaging Of Cosmic Extragalactic Polarization (BICEP)

Summary

Event Number:
A-033-S

Program Manager:
Dr. Bernhard Lettau (acting)

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Andrew Lange
ael@astro.caltech.edu

California Institute of Technology
Physics
Pasadena, California

Project Web Site:
<http://bicep.caltech.edu/>

Location

Supporting Stations: South Pole Station
Research Locations: DSL (Dark Sector Lab)

Description

BICEP (Background Imaging of Cosmic Extragalactic Polarization) is an experiment designed to measure the polarization of the cosmic microwave background (CMB) to unprecedented precision and thus help answer crucial questions about the beginning of the Universe. It operates at 100 GHz and 150 GHz at angular resolutions of 1.0° and 0.7° with an array of 98 polarization-sensitive bolometers, mapping a large region of the sky near the South Celestial Pole. The experiment is optimized to provide exquisite sensitivity to CMB polarization on medium to large angular scales, allowing it to directly probe for the gravitational wave signature of inflation.

Field Season Overview

In early November, four members of the summer team plan to travel to South Pole Station to relieve the winter-over staff. If adequate LHe remains, they will continue season-end calibrations and observations for ten days and then begin warming the BICEP instrument. Additional members of the field team will deploy for each key phase of the season's work, while previously deployed members redeploy.

In mid-November, the researchers will lower the BICEP receiver from the telescope mount into the dedicated BICEP DSL lab space. Over the subsequent four weeks, the receiver will be opened and refurbished and the focal plane insert upgraded. The receiver will be cooled and tested in the BICEP lab area by mid-December and by late December will be reinstalled on the BICEP telescope mount.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Beginning in late December, the telescope will be tested for mechanical, cryogenic, and electronic noise performance in simulated observing conditions. From early January through early February, the instrument will be calibrated using sources mounted on the rooftop mast of DSL as well as astronomical sources. From early February through the end of the summer, researchers will optimize astronomical calibrations as the telescope is placed in winter operations mode. Data will be transmitted to the home institution for analysis.

Deploying Team Members

- Denis Barkats
- Evan Bierman
- Chiang
- Charles Dowell
- John Kovac
- Chao-lin Kuo
- Hien Nguyen
- Steffen Richter
- Yuki Takahashi
- Kiwon Yoon



2006-2007 USAP Field Season

Project Detail

Project Title

Antarctic Automatic Weather Station Program (AWS)

Summary

Event Number:

O-283-M/S

Program Manager:

Dr. Bernhard Lettau

ASC POC/Implementer:

Patricia Jackson



Principal Investigator

Dr. Matthew Lazzara

mattl@ssec.wisc.edu

University of Wisconsin Madison

Space Science and Engineering Center/AMRC

Madison, Wisconsin

Project Web Site:

<http://amrc.ssec.wisc.edu/aws>

Location

Supporting Stations: McMurdo Station, South Pole Station

Research Locations: AWS sites on Ross Ice Shelf, West Antarctica, Polar Plateau, and the Peninsula

Description

A network of automatic weather stations (AWS) has been established on the antarctic continent and several surrounding islands. These facilities measure surface wind, pressure, temperature, and humidity. Some of them also track other atmospheric variables, such as snow accumulation and incident solar radiation. The data are transmitted via satellite to a number of ground stations and put to several uses, including operational weather forecasting, accumulation of climatological records, general research purposes, and specific support of the U.S. Antarctic Program, especially the LTER (Long Term Ecological Research) program at McMurdo and Palmer stations. The AWS network has grown from a small-scale program in 1980 into a significant data retrieval system that is now extremely reliable, and has proven indispensable for both forecasting and research purposes.

Field Season Overview

Field team members will travel by helicopter and Twin Otter fixed-wing aircraft to install and service weather stations in the McMurdo area, on the Ross Ice Shelf, and at other sites in West Antarctica. In late January, one researcher will travel to South Pole Station for three days to service AWSs in that area. If resources are available, and depending on discussions with other researchers and with the NSF, team members will either service or retrieve AWSs on the East Antarctic Plateau.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Researchers with the French, Japanese, and British Antarctic Programs, in collaboration with this project, will install and service AWSs at various sites around the continent. The data collected by the AWSs are made broadly available to weather forecasters, antarctic researchers, and climatologists worldwide.

Deploying Team Members

- Jonathan Thom
- George Weidner (Co-PI)



2006-2007 USAP Field Season

Project Detail

Project Title

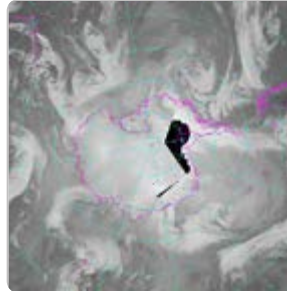
Antarctic Meteorological Research Center (AMRC)

Summary

Event Number:
O-202-M/P

Program Manager:
Dr. Peter Milne

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. Matthew Lazzara
mattl@ssec.wisc.edu

University of Wisconsin Madison
Space Science and Engineering Center/AMRC
Madison, Wisconsin

Project Web Site:
<http://amrc.ssec.wisc.edu>

Location

Supporting Stations: McMurdo Station, Palmer Station
Research Locations: On station

Description

The Antarctic Meteorological Research Center (AMRC) collects a variety of Antarctic and southern hemisphere meteorological data and provides it to the Antarctic community in support of research, education, and operations. At McMurdo Station, AMRC researchers meet with sources and users of this data in a continual effort to refine the process. AMRC receives meteorological and climatological data from Palmer and South Pole stations for distribution on its Internet site. Project team members have developed a system to better capture data from Antarctic automatic weather stations (O-283) and acquire key satellite imagery for inclusion in AMRC's Antarctic composite imagery. The goal is to improve the availability and flow of meteorological data for the benefit of researchers everywhere.

Field Season Overview

Two field team members will deploy to McMurdo Station at different times in the season. While on site, both team members will, with RPSC assistance, install new computer systems to collect, archive, and distribute meteorological data. The researchers will interface with RPSC and other agency personnel to further the acquisition of weather and climatological data from a variety of sources and locations, and they will train the RPSC Research Associate in the operation and maintenance of the AMRC equipment. At McMurdo and Palmer Stations, the RPSC Research Associate will continue to maintain the AMRC equipment and collect data. The data will be forwarded to the AMRC for processing and dissemination.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

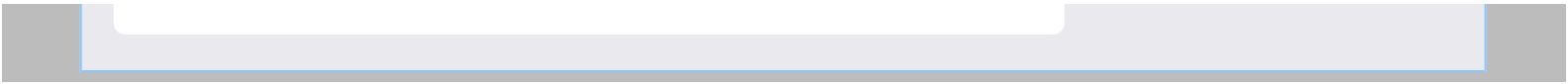
Project Web Sites

Find more information about 2006-2007 USAP projects by viewing project web sites.

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2006-2007 USAP Field Season

Project Detail

Project Title

Physiological And Molecular Mechanisms Of Stress Tolerance In A Polar Insect

Summary

Event Number:
B-256-P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Richard Lee
leere@miamioh.edu

Miami University
Oxford, Ohio

Project Web Site:
<http://www.units.muohio.edu/cryolab/education/antarctic.htm>

Location

Supporting Stations: Palmer Station
Research Locations: Palmer local boating area

Description

During the austral summers of 1979 and 1980, previous research documented the ability of the antarctic midge, *Belgica antarctica*, to tolerate a wide variety of stresses. This project will further characterize this ability, especially in an ecological context. During the three years of the project, team members will characterize fully the microclimatic conditions experienced by *B. antarctica*, both seasonally and among different microhabitats. They will then work to characterize the molecular mechanisms involved in surviving the documented fluctuations, and they will investigate how the midge may accumulate protective molecules from the macroalgae *Prasiola crispa*, a primary food plant of *Belgica* larvae.

Field Season Overview

Field team members will use Zodiac inflatable boats to collect midges at various sites within the Palmer boating area, including Bonaparte Point, Norsel Point, Torgerson Island, and Humble Island. Winter acclimatized larvae will be collected early in the field season. Midges will also be collected at other, specific times throughout the season to monitor changes in the stress proteins and other chemicals that provide protection against extreme temperature and water stresses. In the Palmer laboratory, researchers will study the insects' response to thermal stresses, collect RNA samples, conduct osmolality assessments, assess proline and sorbitol levels, and determine gene expression profiles. Samples will be shipped to the home institution for further analysis.

Deploying Team Members

Project Indexes

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- Josh Benoit
- David Denlinger (Co-PI)

- Michael Elnitsky
- Glen Schulte



2006-2007 USAP Field Season

Project Detail

Project Title

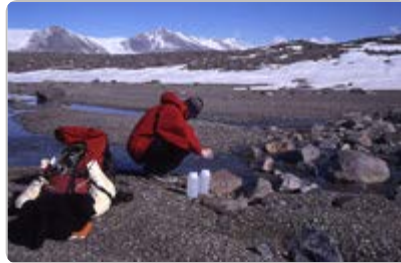
Role Of Resource Legacy On Contemporary Linkages Between Biodiversity And Ecosystem Processes In A Cold Desert Ecosystem: The McMurdo Dry Valleys LTER Program

Summary

Event Number:
B-420-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. W. Berry Lyons
lyons.142@osu.edu

Ohio State University
The School of Earth Sciences
Columbus, Ohio

Project Web Site:
<http://www.mcmlter.org>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys

Description

The McMurdo Long Term Ecological Research (LTER) project will continue to investigate the McMurdo Dry Valleys as an end-member ecosystem and focus on the relative roles of legacy and extant processes on current biodiversity and ecosystem structure and function. Researchers from this project will monitor the inorganic geochemistry of waters collected from the glaciers, streams, ponds, and lakes of the Dry Valleys; study upland seeps and ponds to gain a better understanding of their hydrologic and geochemical controls; and continue to work with co-PIs conducting lake, stream, and glacier sampling programs.

Field Season Overview

The researchers will travel by helicopter from McMurdo Station to established field camps in Taylor Valley. They will work out of these camps for several days at a time, and they will make day trips by helicopter from the camps to other sampling sites, including upland pond sites in the Dry Valleys. The team may also make day trips by helicopter from McMurdo to Dry Valley study sites. The field team will collect water, snow, and sediment samples from these sites and return the samples to the Crary Laboratory for chemical analyses. Team members will also remove the snow fence installation on the Bonney Reigel. Samples will be shipped to the home institution for further analysis.

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

Project Web Sites

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Deploying Team Members

- Joel Barker
- Kelly Carroll
- Kathy Welch (Team Leader)
- Rebecca Witherow



Project Title

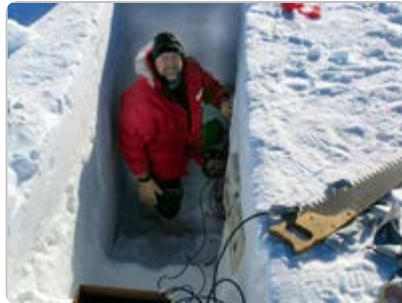
Earth's Largest Icebergs

Summary

Event Number:
I-190-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Douglas Miller



Principal Investigator

Dr. Douglas R MacAyeal
drm7@midway.uchicago.edu

University of Chicago
Department of Geophysical Sciences
Chicago, Illinois

Project Web Site:
<http://ice.ssec.wisc.edu/iceberg.html>

Location

Supporting Stations: McMurdo Station
Research Locations: Icebergs in the Ross Sea, Ross Ice Shelf

Description

Researchers will investigate the basic principles governing the calving, drift, melting, break-up and environmental impact (including generation of seismic and acoustic signals that impact the background noise of the world ocean) of large icebergs. The last major calving from the Ross Ice Shelf was in the 1980's, thus the present conditions present a once-in-a-generation opportunity. Because the northward drift of large tabular icebergs represents a natural "climate change" experiment on an accelerated time-scale, the melting of the icebergs being studied over the next decade will foretell events that may occur in parts of Antarctica (e.g., the ice shelves) as global warming kicks in over the coming century. Understanding the natural drift patterns, and regions where icebergs accumulate near inhabited parts of the globe, may someday prove useful for supplying fresh water to populations in need, as far-fetched as that may be with current technology.

Field Season Overview

Traveling by Twin Otter aircraft, field team members will make day trips and establish overnight field camps to recover previously deployed seismometers and GPS instruments, deploy GPS instruments and Automated Weather Stations, deploy a camera at a rift site on the Ross Ice Shelf, and test automated ice-shelf radar and blowing-snow monitoring instruments. The researchers will visit icebergs C16 and B15J, as well as the Nascent Iceberg site on the Ross Ice Shelf. Team members will also travel by helicopter to conduct instrument tests at Windless Bight.

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Deploying Team Members

- Kelly Brunt
- Katherine Leonard
- Atsuhiko Muto
- Ronald Ross
- Olga Sergienko
- Jonathan Thom



2006-2007 USAP Field Season

Project Detail

Project Title

3-D Dynamics Of The Ferrar Magmatic Mush Column, Dry Valleys

Summary

Event Number:
G-056-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jessie Crain



Principal Investigator

Dr. Bruce Marsh
bmarsh@jhu.edu

Johns Hopkins University
Morton K. Blaustein Dept of Earth & Planetary Sci
Baltimore, Maryland

Project Web Site:
<http://silvermagma.eps.jhu.edu>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys

Description

Planetary magmatism is a richly integrated process. The most challenging aspect of understanding it is that so little of the integrated nature of the full magmatic life cycle can be examined in any reliably realistic context. In active volcanic systems, all the evidence of the deeper workings can only be loosely inferred from the composition, sequence, and volumes of magmatic wreckage. In contrast, the Ferrar dolerites of the McMurdo Dry Valleys represent an excellent example, perhaps the best on Earth, of a fully integrated magmatic system that can be studied in great detail due to its excellent exposure and pristine condition of the rocks. By collecting samples and by mapping the spatial relations of the rocks of the Ferrar magmatic system, researchers with this project seek to establish the fundamental operational principles of the process of planetary magmatism.

Field Season Overview

The field team will travel by helicopter to the southern end of Bull Pass in the Olympus Range, where they will establish a field camp. From there they will make day trips by helicopter to other study sites. Team members will map the geologic relations among the various magmatic rocks at these sites and collect rock samples. Using helicopter close support, the researchers will also perform geologic mapping reconnaissance surveys. The field team will break camp and return to McMurdo by helicopter in late January. All rock samples will be shipped to the home institution for analysis.

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Deploying Team Members

- Ziggy Malolepszy
- Elizabeth Miller
- Kaustubh Patwardhan
- Dean Peterson
- Barbara Souter
- Nathan Winslow
- Michael Zieg



2006-2007 USAP Field Season

Project Detail

Project Title

Palmer Long Term Ecological Research (LTER): Climate Migration, Ecological Response And Teleconnections In An Ice-Dominated Environment

Summary

Event Number:
B-021-L

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephanie Suhr Sliester



Principal Investigator

Dr. Doug Martinson
dgm@ldeo.columbia.edu

Columbia University
Lamont-Doherty Earth Observatory
Palisades, New York

Project Web Site:
<http://www.lternet.edu/sites/pal/>

Location

Supporting Stations: ARSV Laurence M. Gould
Research Locations: Palmer LTER large scale grid

Description

The overall objectives of the Palmer-LTER projects are to document and understand the seasonal cycles of primary production, krill recruitment, Adelie penguin breeding, and microbial biogeochemical processes in the near-shore regime of the coastal antarctic ecosystem. This project continues a long-term sampling program of the water column at each standard station during the annual Palmer LTER cruise. Using samples collected by ARSV Laurence M. Gould staff, project researchers measure the physical, biogeochemical, ecological, and oceanographic properties of the seawater at these and other locations relevant to LTER Principal Investigator needs.

Field Season Overview

During the annual LTER cruise (LMG07-01) RPSC marine staff will perform tasking for this project: Collect water samples, deploy CTDs to sample deep water properties, recover and redeploy a long-term sediment trap array, deploy a suite of surface ARGOS floats to diagnose the current velocity field in the sampling gradient, conduct three, 24-hour, process study stations in the vicinities of penguin colonies near Anvers, Renaud, and Adelaide Islands. Samples will be returned to the home institution for further analysis.

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2006-2007 USAP Field Season

Project Detail

Project Title

Collaborative Research: Effects Of Oxygen And Temperature On Egg Mass Function Of Southern Ocean Marine Invertebrates

Summary

Event Number:
B-004-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Amy Moran
morana@hawaii.edu

University of Hawaii Manoa
Honolulu , Hawaii

Project Web Site:
<http://www.clemson.edu/~moran>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Sound, Cape Evans, New Harbor, Granite Harbor

Description

Antarctic marine organisms exist under constant, low-temperature conditions that fundamentally affect oxygen availability and metabolism. This project uses both natural and artificial egg masses of Antarctic invertebrates as a model system to explore the relationship between oxygen availability, metabolic rate, and the size and shape of organisms. Project researchers will construct artificial egg masses of known size, shape, and embryo density, then measure oxygen gradients and embryonic developmental rates. The morphology and oxygen gradients in natural egg masses of Antarctic nudibranchs will also be examined and compared to related temperate nudibranchs to determine whether egg mass design has evolved in Antarctica in response to a release from the oxygen-based constraints that exist in warmer environments.

Field Season Overview

Field team members will travel by tracked vehicle to the Delbridge Islands, Cape Evans and other locations in McMurdo Sound, and by helicopter to New Harbor, where they will use SCUBA diving to collect adult nudibranchs and nudibranch egg masses. The samples will be transported back to the Crary Laboratory, where adult animals will be spawned and the egg masses and embryos incubated and studied. Some samples will be returned to the home institution for further analysis.

Deploying Team Members

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- Bruce Miller
- Erika Schreiber

- Jonathan Sprague
- Arthur Woods (Co-PI)



2006-2007 USAP Field Season

Project Detail

Project Title

Capital Expenditure, Lactation Energetics, And The Importance Of Foraging To Weddell Seals And Their Pups

Summary

Event Number:
B-024-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Olav Oftedal
oftedalo@si.edu

Smithsonian Institution
National Zoological Park
Washington, District of Columbia

Project Web Site:
<http://nationalzoo.si.edu/ConservationAndScience/AquaticEcosystems/Antarctica/default.cfm>

Location

Supporting Stations: McMurdo Station
Research Locations: Crary Lab, Hutton Cliffs

Description

This project seeks to investigate the relationship between capital expenditure, food intake, and lactation energetics in Weddell seals. Body composition, milk output, and weaning will be estimated from body water content and water turnover, as determined by two isotopes (deuterium, tritium). Maternal energy expenditure will be determined in a subset of study animals using double-labeled water (tritium and Oxygen-18). The combination of deuterium, tritium, and Oxygen-18 will allow the measurement of total maternal energy expenditure, as well as the contribution of food energy to the energy budget of lactating Weddell seals. Feeding by mothers or pups will be detected from the appearance of seal-prey biomarkers in the seals' blood. Diving behavior and haul-out patterns of lactating Weddell seals and their pups will be monitored with radio transmitters and time-depth recorders attached to the animals.

Field Season Overview

The first field team member will travel to McMurdo Station in late August to begin preparations, with the remaining team members arriving in early October. The researchers will establish a sea-ice field camp at the Hutton Cliffs Weddell seal colony. Mother and pup seal pairs will be captured, weighed, and held in enclosures for isotope administration and blood and milk sample collection. Samples will be processed on-site for later analysis in the Crary Laboratory. After ice conditions force the closure of the sea-ice camp, the researchers will travel to and from their study sites by snowmobile. Samples will be

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returned to the home institution for further analysis.

Deploying Team Members

- Daryl Boness (Co-PI)
- Daniel Boritt
- Regina Eisert (Co-PI)
- Bjørn Krafft
- Michael Lara
- Morten Riser
- Miles Roberts
- Heli Routti



2006-2007 USAP Field Season

Project Detail

Project Title

Dynamics Of The Antarctic MLT Region Using Ground-Based Radar And TIMED Instrumentation

Summary

Event Number:
A-284-S

Program Manager:
Dr. Bernhard Lettau (acting)

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Scott Palo
scott.palo@colorado.edu

University of Colorado Boulder
Department of Aerospace Engineering Sciences
Boulder, Colorado

Project Web Site:
<http://grison.colorado.edu>

Location

Supporting Stations: South Pole Station
Research Locations: Meteor Radar Building

Description

A meteor radar is a VHF system capable of measuring the spatial structure and temporal evolution of the horizontal wind field. Using a meteor radar at Amundsen-Scott South Pole Station, this project will study the winds in the mesosphere and lower thermosphere (MLT) region. Project researchers will characterize meteor flux measurements and determine the impact of a non-isotropic flux distribution on the chemistry and dynamics of this region. They will also collaborate with other researchers in an effort to understand the processes that control the neutral dynamics and chemistry of the antarctic MLT. In particular, project researchers seek to understand: a) the space-time decomposition of wave motions, b) delineation of the spatial climatology over Antarctica with emphasis on the structure of the polar vortex, c) dynamical response to energetic events, and d) inter-annual variability.

Field Season Overview

Two field team members will deploy to South Pole Station to perform annual maintenance and calibration work on their equipment and recover data. They will also identify and order any new hardware or software requirements. These field team members will leave Antarctica in early November. For five days in mid-January, three field team members will return to South Pole Station to install any new hardware or software and prepare their instrument for winter operation.

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Deploying Team Members

- James Avery (Co-PI)
- Kyle Johnson
- Santiago la Pena
- Elias Lau
- Bifford Williams



2006-2007 USAP Field Season

Project Detail

Project Title

Fluctuations Of The West Antarctic Ice-Sheet In Relation To Lake History In Taylor Valley Since The Last Glacial Maximum

Summary

Event Number:
I-133-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Michael Prentice
mlprenti@indiana.edu

Department of Geology
Bloomington, Indiana

Project Web Site:
<http://mypage.iu.edu/~mlprenti>

Location

Supporting Stations: McMurdo Station
Research Locations: Taylor Valley

Description

This project seeks to reconstruct how the West Antarctic Ice Sheet (WAIS) withdrew from Taylor Valley since it last achieved its maximum extent. Researchers will also test hypotheses for the co-evolution of the WAIS margin and the former glacial lake that was dammed against it. One objective is to study high-elevation sediment bodies by means of surface geology and ground penetrating radar (GPR) to determine whether they are deltas or formed by other processes. Another objective is to constrain the former height of the glacial lake by measuring the salt content of sediments along elevation transects to determine whether they were submerged. A third objective is to use GPR and sediment coring to determine whether controversial sediments on the valley floor are direct glacial deposits or were deposited in a lake.

Field Season Overview

The field team will travel by helicopter from McMurdo Station to establish a field camp in Taylor Valley. The researchers will then travel on foot and by helicopter to study sites in the Fryxell basin and near the Rhone Glacier, where they will probe sediment bodies by means of surface geology and ground penetrating radar. Field team members will also take samples to measure the salt content of sediments along elevation transects, and they will take cores of sediments on the valley floor. Samples and cores will be processed at the Crary Laboratory and returned to the home institution for analysis.

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Deploying Team Members

- Allan Delaney



2006-2007 USAP Field Season

Project Detail

Project Title

The Role Of Resource Legacy On Contemporary Linkages Between Biodiversity And Ecosystem Processes In A Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program

Summary

Event Number:
B-422-M

Program Manager:
Dr. Peter Milne (acting)

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. John Priscu
jpriscu@montana.edu

Montana State University Bozeman
Land Resources and Environmental Sciences
Bozeman, Montana

Project Web Site:
<http://www.homepage.montana.edu/~lkbonney/>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys

Description

The McMurdo Long Term Ecological Research (LTER) projects will continue to investigate the McMurdo Dry Valleys as an end-member ecosystem and focus on the relative roles of legacy and extant processes on current biodiversity and ecosystem structure and function. This project will continue long-term measurements of the biological, chemical, and physical properties of McMurdo Dry Valley lakes and lake ice, with special emphasis on LTER core-research areas.

Field Season Overview

The field team members will begin operations in the Crary Laboratory. After an initial set-up period, the team will travel by helicopter to the Dry Valleys, where they will periodically occupy the field camps at Lakes Fryxell, Hoare, and Bonney. The team's field season will consist of two sampling rotations between these camps. The first rotation will begin at Lake Fryxell in early November, move by helicopter to Lake Hoare the third week of November, and again by helicopter to Lake Bonney the fourth week of November. The second round of sampling will follow the same lake rotation.

Members of the field team will travel on foot or take day trips by helicopter from their field camps to other sampling sites in the Dry Valleys, including Lake Vanda to collect water samples, the Canada Stream to collect water and particulate matter samples, and the

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Canada and Taylor Glaciers to collect ice samples. Samples will be processed and analyzed at the field camps and at the Crary Laboratory at the end of the field season. Some samples will be shipped to the home institution for further analysis.

Deploying Team Members

- Amy Chiuchiolo (Team Leader)
- Bryan Close
- Satoshi Imura
- Marie Sabacka



2006-2007 USAP Field Season

Project Detail

Project Title

Detection Of Crystal Orientation Fabrics Near The Ross/Amundsen Sea Ice-Flow Divide And At The Siple Dome Ice Core Site Using Polarimetric Radar Methods

Summary

Event Number:
I-163-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Charles F Raymond
cfr@ess.washington.edu

University of Washington
Geophysics Program
Seattle, Washington

Project Web Site:
<http://earthweb.ess.washington.edu/matsuoka/wais/wais.html>

Location

Supporting Stations: McMurdo Station
Research Locations: WAIS Divide Camp

Description

Researchers will use an ice-penetrating radar that detects spatial variations of ice crystal alignments over a wide area near the West Antarctica inland divide that separates ice flow towards Ross and Amundsen Seas. This area is of particular interest because the US Antarctic Program will drill an ice core there and past ice flow history in this region is poorly known. Researchers use the fact that ice crystal alignments are caused by strain and thereby provide information about history of ice flow. Crystal alignments are detected using polarimetric radar methods.

Field Season Overview

The field team will calibrate and field test their ice-penetrating radar system at McMurdo Station. When these tests are complete, the team will travel by LC-130 aircraft to the WAIS Divide field camp. From this camp, the researchers will travel by snowmobile to take detailed radar measurements of the ice at 21 sites within a 60 kilometer by 150 kilometer area. Team members will also measure the strain grids that were installed at these sites last season. A Twin Otter aircraft will lay a fuel cache for this effort. In early February, the field team will return to McMurdo by LC-130.

Deploying Team Members

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- Maurice Conway
- Kenichi Matsuoka (Co-PI)
- Vanessa Palmer

- Donovan Power
- Hans Christian Steen-Larsen



2006-2007 USAP Field Season

Project Detail

Project Title

Palmer Long Term Ecological Research (LTER): Climate Migration, Ecological Response And Teleconnections In An Ice-Dominated Environment (Prey Component)

Summary

Event Number:
B-028-L/P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephanie Suhr Sliester / Rob Edwards



Principal Investigator

Dr. Robin Ross
robin@icess.ucsb.edu

University of California Santa Barbara
Marine Science Institute
Santa Barbara, California

Project Web Site:
<http://pal.lternet.edu>

Location

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: Palmer local boating area, Palmer LTER large scale grid

Description

The overall objectives of the Palmer-LTER projects are to document and understand the seasonal cycles of primary production, krill recruitment, Adelie penguin breeding, and microbial biogeochemical processes in the near-shore regime of the coastal antarctic ecosystem. This project continues a long-term effort to characterize the distribution and abundance of zooplankton and micronekton in the LTER summer study region. Field team members will study the effects of physical processes, particularly interannual differences in the extent and dynamics of pack ice, on macrozooplankton. The emphasis is on recruitment and production in Antarctic krill and interactions between the krill, its food sources, and its predators.

Field Season Overview

The season will consist of a Palmer Station program and the annual LTER summer cruise aboard the R/V Laurence M. Gould (LMG07-01). During the research cruise, project team members will use SCUBA diving to collect krill and conduct underwater video surveys of krill schools and their food. Nets will also be used to collect zooplankton, krill, and fish larvae for on-board experiments. Team members will conduct bioacoustic surveys to locate and map krill schools.

At Palmer Station, the team members plan to use a specially equipped Zodiac inflatable boat to conduct acoustic surveys and locate krill schools. Researchers will conduct

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CTD/Fluorometer vertical profiles within the krill schools and collect water from within the schools for analysis of chlorophyll a and particulate carbon. Field team members will also use SCUBA diving and conduct net tows to collect krill, and the captured animals will be used in growth experiments in the Palmer Station aquarium. Cultures of antarctic phytoplankton species will also be grown in incubators in the laboratory and aquarium. Frozen krill specimens will be shipped to the home institution for future analyses.

Deploying Team Members

- Sam Hammon
- Alex Lowe
- Kelly Moore
- Dana Nakase
- Langdon Quetin (Co-PI)
- Shannon Rich



Project Title

Solar Bolometric Imager (SBI 2)

Summary

Event Number:
A-146-M

Program Manager:
Dr. Bernhard Lettau (acting)

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. David M Rust
david.rust@jhuapl.edu

Johns Hopkins University
Applied Physics Laboratory
Laurel, Maryland

Project Web Site:
<http://sd-www.jhuapl.edu/SBI/>

Location

Supporting Stations: McMurdo Station
Research Locations: Williams Field Long Duration Balloon Facility

Description

Solar irradiance variations affect Earth's climate, but the magnitude of the Sun's intrinsic variation is uncertain. It is possible that intrinsic variations played a major role in climate changes over the past few millennia. This project seeks to clarify the Sun's role in global climate change. During the 11-year sunspot cycle, the total solar irradiance (TSI) varies in proportion to local magnetic fields. By studying irradiance at the upcoming sunspot minimum when the local fields will be weakest, researchers can detect other possible sources of TSI variation with the least interference by the large amplitude signals from local magnetic fields. Project researchers will operate the Solar Bolometric Imager (SBI2) from a long-duration balloon above Antarctica, where near-space conditions can be attained for 10-30 days. SBI will provide bolometric (wavelength-integrated light) and color temperature images from which the irradiance signals and their underlying physical causes can be assessed.

Field Season Overview

Team members will work at the Long Duration Balloon Facility at Williams Field preparing and testing the instrument until it is launched in early December. Most team members will redeploy soon afterward, but one researcher will stay to assist in payload recovery.

Deploying Team Members

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- Pietro Bernasconi (Co-PI)

- Bliss Carkhuff

- Peter Foukal (Co-PI)

- Matthew Noble

- Nathan Rolander



2006-2007 USAP Field Season

Project Detail

Project Title

Antarctic Ice: Sculpture In Cast Glass

Summary

Event Number:
W-220-P

Program Manager:
Ms. Kim Silverman

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Mr. David G Ruth
druth@glass.com

Oakland, California

Project Web Site:
<http://www.davidruth.com>

Location

Supporting Stations: Palmer Station

Research Locations: Palmer local boating area

Description

As an artist working in cast glass, David Ruth has been inspired by water in its various forms. Water offers a natural analogy for the possible form and look of how glass can be conceived. Over the past three years, Mr. Ruth has been increasingly interested in a type of glass that when fused looks remarkably like ice. He has also been exploring the use of natural textures in his work and has experimented with taking molds from roots, rock faces, dirt piles, and sand. The correspondence of ice and geology represents a model and potential surfaces for Mr. Ruth's continued investigations. Antarctic ice comes in an astounding variety of colors, which the artist will use for inspiration as well. Upon returning to the studio from Antarctica, Mr. Ruth will use his experiences, observations, and collected textures to build up sculptural forms that will then be cast in glass.

Field Season Overview

The artist and his colleague plan to explore the Palmer Station region on foot and by Zodiac inflatable boat. The two team members will observe, photograph, and take molds of ice and rock surfaces. They will also interview scientists and staff members to better understand the research and functioning of the station.

Deploying Team Members

- Art Quinn

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

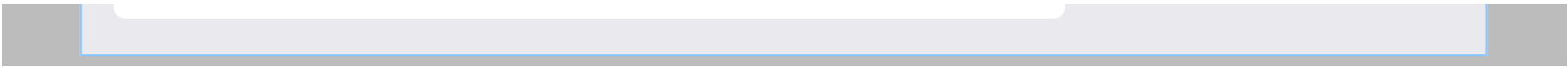
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2006-2007 USAP Field Season

Project Detail

Project Title

Gneiss Dome Architecture: Form And Process In The Fosdick Mountains

Summary

Event Number:
G-088-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Christine Siddoway
csiddoway@coloradocollege.edu

Colorado College
Department of Geology
Colorado Springs, Colorado

Project Web Site:
<http://www.coloradocollege.edu/dept/GY/AntarcticaR>

Location

Supporting Stations: McMurdo Station
Research Locations: Fosdick Mountains

Description

Researchers will conduct remote field work in the Fosdick Mountains for geological investigation of the three dimensional architecture of a magnificent gneiss dome using traditional geological field practices as well as GPS, digital and stereoscopic mapping tools. The Fosdick Mountains are located in the northern Ford Ranges on the east margin of the Ross Sea, just about due east of McMurdo Station. Careful documentation of spatial relationships and textural relationships will be accompanied by sampling for petrology, geochronology, and isotope analysis. These geological field studies focus on the behavior of partially molten rock, particularly the processes of and causes for flow in the Earth's middle crust.

Field Season Overview

The field team members will be transported by LC-130 and Basler aircraft from McMurdo Station to their previous season's camp site and winter-over cache. Once that base camp is re-established, team members will use snowmobiles and sleds to traverse glaciers and snow fields to their mapping and sampling sites. The researchers will also establish mobile tent camps from which they will conduct the majority of their field work. At times they will split in to two small parties, each situated within VHF range of the other, to allow a broader coverage of rock exposures. The team geologists will conduct detailed outcrop mappings that focus on rock textures and mineral associations, and they will collect representative samples.

Project Indexes

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A final member will join the team in mid-November by Twin Otter aircraft from McMurdo. At that time, the field team will use 3-5 days of Twin Otter close support to investigate distant outlying sites at the far eastern and western ends of the Fosdick Range and upon the summit plateau. The camp will be pulled out and all team members will return to McMurdo Station by LC-130 and Basler in mid-December.

Deploying Team Members

- Fawna Korhonen
- Forrest McCarthy
- Rory McFadden
- Christian Teyssier (Co-PI)



2006-2007 USAP Field Season

Project Detail

Project Title

Differential Expression Of Oxygen-Binding Proteins In Antarctic Fishes Affects Nitric Oxide-Mediated Pathways Of Angiogenesis And Mitochondrial Biogenesis.

Summary

Event Number:
B-036-L/P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephanie Suhr Sliester / Dr. Stephen Alexander



Principal Investigator

Dr. Bruce Sidell
BSidell@maine.edu

The University of Maine
School of Marine Sciences
Orono, Maine

Project Web Site:
http://www.marine.maine.edu/faculty/faculty_indiv.

Location

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: Palmer local boating area and Western Antarctic Peninsula

Description

This project seeks to understand the characteristics of physiology and protein structure of antarctic fishes that are compatible with and/or adaptive to life at body temperatures around zero degrees C. Researchers will capture specimens of antarctic hemoglobin-lacking channichthyid icefishes and red-blooded nototheniid species. The physiological, anatomical, and molecular characteristics of these closely related species will be compared to shed light on mechanisms that have led to dramatic differences in cardiovascular anatomy and physiology between species that produce Hb and those that do not.

Field Season Overview

This season, the project has two phases. In the first phase, one field team member will travel early in the season by LC-130 aircraft to the WAIS Divide field camp. This team member will work with contractor Ice Core Drilling Services team members to drill and extract a 130 meter ice core as close as possible to the main borehole location. Afterward, the crew will drill and extract a 100 meter core from the main borehole. Both cores will be packaged and stored in trenches until they are transported by LC-130 to McMurdo. The team member will also return to McMurdo by LC-130. The ice cores will be shipped to the National Ice Core Laboratory (NICL) and will be processed in summer 2007.

For the second phase, a single field team member from NICL will travel later in the season

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by LC-130 to the WAIS Divide field camp. This team member will conduct a site review of the WAIS Divide facility, particularly the core storage and processing areas within the arch. The team member will also return to McMurdo by LC-130.

Deploying Team Members

- Kimberly Borley
- Kristin O'Brien (Co-PI)
- Matthew Urschel
- Jody Wujcik



2006-2007 USAP Field Season

Project Detail

Project Title

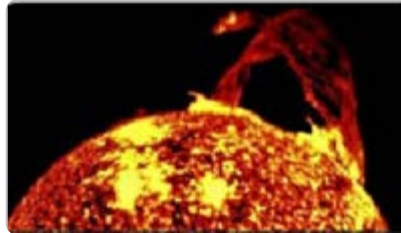
The Antarctic Investigations Of Upper Atmospheric Disturbances Over The South Pole Station

Summary

Event Number:
A-129-S

Program Manager:
Dr. Bernhard Lettau (acting)

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Gulamabas Sivjee
sivjee@erau.edu

Embry Riddle Aeronautical University
Space Physics Research Laboratory
Daytona Beach, Florida

Project Web Site:
<http://www.spri.db.erau.edu/>

Location

Supporting Stations: South Pole Station
Research Locations: ARO (Atmospheric Research Observatory)

Description

This project investigates solar-terrestrial interactions involving atomic, molecular, and plasma processes in the upper atmosphere over South Pole Station. The work involves measuring the effects of solar disturbances on the composition, dynamics, and thermodynamics of the antarctic thermosphere, mesosphere, and stratosphere. In particular, the researchers seek to understand these five processes: 1) The source(s) and propagation of antarctic F-region patches; 2) Variations in the antarctic E-region O/N₂ ratio; 3) antarctic middle atmosphere disturbances generated by Stratospheric Warming Events (SWE); 4) the antarctic thermospheric response to Solar Magnetic Cloud/Coronal Mass Ejection (SMC/CME) events; and 5) the effects of Joule heating on the thermodynamics of the antarctic F-region.

Field Season Overview

The researchers plan to modify and realign their scientific instruments during a brief stay at South Pole Station. During the year, the RPSC Research Associate will operate and maintain the equipment. The instruments will operate continuously through the austral winter, from April through September, and data will be transmitted to the home institution for analysis.

Deploying Team Members

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- S. Azeem
- Donald McEwen

- Charles Mutiso



2006-2007 USAP Field Season

Project Detail

Project Title

Palmer Long Term Ecological Research (LTER): Climate Migration, Ecological Response And Teleconnections In An Ice-Dominated Environment (Bio-Optical Component)

Summary

Event Number:
B-032-L/P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephanie Suhr Sliester / Rob Edwards



Principal Investigator

Dr. Raymond Smith
ray@icess.ucsb.edu

University of California Santa Barbara
ICESS (Institute for Computational Earth System Science)
Santa Barbara, California

Project Web Site:
<http://pal.lternet.edu>

Location

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: Palmer local boating area, Palmer LTER large scale grid

Description

The overall objectives of the Palmer-LTER projects are to document and understand the seasonal cycles of primary production, krill recruitment, Adelie penguin breeding, and microbial biogeochemical processes in the near-shore regime of the coastal antarctic ecosystem. This project continues a long-term study of marine optics within the LTER sampling grid, specifically investigating the processes controlling the space/time variability of phytoplankton productivity and biomass.

Field Season Overview

The season will consist of a Palmer Station program and the annual LTER summer cruise aboard the R/V Laurence M. Gould (LMG07-01). At Palmer Station, the field team members will use a specially outfitted Zodiac inflatable boat to conduct bio-optical profiling and to measure hydrographic properties. The researchers will also collect water samples and return them to the station's aquarium for filtration and analysis. Team members will collaborate with members of B-016 to process and analyze these samples.

During the cruise, project team members will make sea ice observations and collect ice cores and water samples. Team members will again collaborate with members of B-016 to process and analyze these samples in on-board laboratories. Team members will also measure the bio-optical properties of water and ice, and they will collect depth, weather, and satellite data for use in system modeling. The team will return to Palmer Station to

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continue scientific work there after the cruise.

Deploying Team Members

- Mary Engels
- Katherine Haman
- Julie Schram
- Tyler Thigpen
- Austen Thomas



2006-2007 USAP Field Season

Project Detail

Project Title

The Drake Passage High-Density XBT Program

Summary

Event Number:
O-260-L

Program Manager:
Dr. Peter Milne

ASC POC/Implementer:
Dr. Karl Newyear



Principal Investigator

Dr. Janet Sprintall
jsprintall@ucsd.edu

Scripps Institution of Oceanography
Physical Oceanography Research Division
La Jolla, California

Project Web Site:
<http://www-hrx.ucsd.edu>

Location

Supporting Stations: ARSV Laurence M. Gould
Research Locations: Drake Passage

Description

The objective of the expendable BathyThermograph (XBT) program is to measure the seasonal to interannual variability of upper-ocean temperature and geostrophic transport through the Drake Passage. Closely spaced XBT (temperature) measurements are collected underway on six to eight Drake Passage crossings of the ARSV Laurence M. Gould (LMG) per year. The project has been ongoing since 1996. With the multi-year time series, researchers have observed substantial variability in circulation, transport, and water properties on time scales from seasonal to interannual, and spatial scales from mesoscale eddies to the Antarctic Circumpolar Current cores.

Field Season Overview

RPSC marine support personnel will deploy approximately 70 XBTs (expendable bathythermographs) and 11 XCTDs (expendable conductivity/temperature/depth probes) on selected southbound cruise of the R/V Laurence M Gould. The XBTs are loaded and launched using an automatic launcher and associated software that automatically collects the profile data. The system drops an XBT probe at pre-specified locations, as prompted by the GPS location. RPSC personnel will also collect salinity samples for each XCTD deployment. At the end of each cruise, XBT and XCTD data, salinity samples, meteorological information, and data from the underway thermosalinograph will be sent to the principal investigator for processing and analysis.

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Deploying Team Members

- Glenn Pezzoli



2006-2007 USAP Field Season

Project Detail

Project Title

NASA Long Duration Balloon (LDB) Support Program

Summary

Event Number:
A-145-M

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Mr. Bill Stepp
Bill.Stepp@csbf.nasa.gov

Columbia Scientific Balloon Facility
Palestine, Texas

Project Web Site:
<http://www.csbf.nasa.gov>

Location

Supporting Stations: McMurdo Station
Research Locations: Williams Field Long Duration Balloon Facility

Description

This austral summer the Columbia Scientific Balloon Facility (CSBF) will launch one stratospheric balloon as part of NASA's Long Duration Balloon (LDB) program. The balloons measure 400 feet in diameter, expand to a volume of 40 million cubic feet, and ascend at a rate of about 900 feet per minute to a float altitude of 125,000 feet. Because of the Antarctic wind pattern that starts in early December, the balloons will circumnavigate Antarctica between 70° and 80° south latitude. The payloads are composed of scientific instruments, command and control systems, and solar- and/or battery-powered units. The bulk of the data collected is stored using onboard hard drives, with a small amount sent by radio telemetry to the United States.

Field Season Overview

CSBF plans to launch three stratospheric balloons from the Long-Duration Balloon Facility at Williams Field. The launch window is between December 10 and January 10. Once a balloon has completed its mission, project personnel will terminate the flight by traveling aboard an aircraft to within line-of-sight of the balloon over the Ross Ice Shelf or Polar Plateau and sending a radio command to release the payload. The payload will descend on a parachute to a predicted impact site, where team members and supported scientists will recover it, using air or ground support depending on the location. Payload instruments will be returned to the home institutions to be refurbished.

Deploying Team Members

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- Don Bunt
- Marty Crabill
- Curtis Frazier
- Jim Humphrey
- Jill Juneau
- Gary Marchant
- Otto Masters
- Nathan McCabe

- Juan Perez Lara
- Bob Redinger
- Don Roberts
- Bryan Stilwell
- Bill Stracener
- Mark Wefel
- Robin Whiteside
- Nathan Wise



2006-2007 USAP Field Season

Project Detail

Project Title

Collection Of Marine Geophysical Data On Transits Of The Nathaniel B. Palmer

Summary

Event Number:
G-071-N

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jesse Doren



Principal Investigator

Dr. Joann Stock
jstock@gps.caltech.edu

California Institute of Technology
Geological and Planetary Sciences
Pasadena, California

Project Web Site:
<http://www.gps.caltech.edu/~jstock/Palmerres.html>

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Southwestern Pacific Ocean

Description

Well-constrained plate reconstructions of the circum-antarctic region are critical for examining a number of problems of global geophysical importance. This project seeks to improve reconstructions of the Antarctic and surrounding plates by surveying gravity, magnetics, and swath bathymetry on RVIB Nathaniel B Palmer transit cruises in areas where data are lacking. Researchers will survey several major features of the Antarctic and Pacific plates, including Pacific-Antarctic fracture zones; the Cenozoic magnetic anomalies formed by the spreading of the Pacific plate away from Antarctica; and the southern end of an enigmatic bathymetric feature known as the Wishbone Scarp.

Field Season Overview

The science party for cruise NBP06-07C will consist of 19 people aboard the RVIB Nathaniel B. Palmer: three professors, fifteen students and one New Zealand research scientist/collaborator. The cruise will be a 14 day round trip out of Lyttelton, New Zealand. The cruise will begin with a transit of about 2 days to the east-northeast to get out of shipping lanes and into deeper waters. The approximate survey region will be in the area bounded by the latitudes 40 S to 43 S and the longitudes 177 E to 173 W, all within New Zealand territorial waters. After the transit, there will be about ten days of streamer testing and geophysical surveying along lines of scientific interest, followed by a two-day transit back to Lyttelton. During the cruise the researchers will tow a magnetometer and collect swath bathymetry, Bathy2000 or Knudsen 320BR sub-bottom data and gravity data. Also about once per day an XBT or XSV will be launched to collect a temperature profile of the

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water column for calibration of the multi-beam sound velocity profile. During the seismic streamer testing either Bolt and G/I airguns and single and multi-channel streamers with depth control birds will be deployed along with sonobuoys to detect marine mammals. RPSC technicians will deploy the seismic equipment and the science party will collect and analyze the data. For about one hour per day the ship's conference room will be used for a formal class in marine geophysics.

Deploying Team Members

- Irma Alvarez
- Angel Angulo
- Christopher Burt
- Meredith Bush
- Steven Cande (Co-PI)
- Robert Clayton
- Bryan Davy
- Jeanette Hagan
- Ashlee Henig
- Andrew Kositsky
- Kathryn Lucas
- Bruce Luyendyk
- Andrew Poskaitis
- Jonathan Rotzien
- Michelle Stempel
- Daoyuan Sun
- Nathalie Vriend
- Ryan Weidert
- Alana Zohar



2006-2007 USAP Field Season

Project Detail

Project Title

Age, Origin, And Climatic Significance Of Buried Ice In The Western Dry Valleys

Summary

Event Number:
G-054-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Kate Swanger
Kate_Swanger@uml.edu

University of Massachusetts
Lowell, Massachusetts

Project Web Site:
<http://people.bu.edu/marchant/>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys

Description

This project will investigate two aspects the Dry Valley environment as analogues for conditions on Mars: Buried ice deposits and microclimates. Buried ice deposits represent an exciting and potentially far-reaching archive of atmosphere and climate on Earth extending back for many millions of years. These deposits are terrestrial analogs to widespread and young buried ice on the Martian surface as identified by recent data from Mars Odyssey. This project will evaluate the age, origin, and climatic significance of buried ice in the western Dry Valleys region. Microclimates of the Dry Valleys hold implications for landscape evolution and climate change on Mars. The Antarctic Dry Valleys are commonly viewed as a relatively fixed cold polar desert with little internal variation. Recent analyses have shown that there are three fundamentally different microclimate zones within this general 'stereotypical' cold polar desert, and that these may hold the keys to climate change on Mars.

Field Season Overview

The field team plans to pursue a two-pronged study plan. One group of researchers will attempt to determine the age, origin, and climate significance of buried ice in the western Dry Valleys region. The other will study Dry Valley microclimates to better understand ancient and current climate processes on Mars. The first group will travel by helicopter to set up a field camp in Beacon Valley. This team will drill and collect no less than 15 cores from buried ice. The cores will be packaged in the field and returned to McMurdo for safe storage until they are shipped to the home institution for analysis. The second group will travel by helicopter to establish a field camp at Don Juan Pond. This team plans to

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document the range of surface geomorphic processes in at least three discrete microclimate zones in the Dry Valleys (a coastal-thaw zone, and inland-mixed zone, and a stable-upland zone).

Members of both field camps will make day trips by helicopter to install data loggers and measure micro-, meso-, and macro-scale landforms at other sites in the Dry Valleys. A number of smaller, temporary field camps may also be established for this purpose. All team members will return to McMurdo by helicopter by the end of January.

Deploying Team Members

- Michael Bender
- Jay Dickson
- James Green (Team Leader)
- James Head (Co-PI)
- Doug Kowalewski (Team Leader)
- Joseph Levy
- Gareth Morgan
- Laura Robinson
- David Shean (Team Leader)



Project Title

Environmental And Ecological Regulation Of Differences And Interactions Between Solitary And Colonial Forms Of Phaeocystis Antarctica

Summary

Event Number:
B-230-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Kam Tang
kamtang@vims.edu

Virginia Institute of Marine Sciences
Gloucester Point, Virginia

Project Web Site:
<http://www.vims.edu/phae/>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Sound, Crary Lab

Description

This project seeks to understand the relationship between assemblages of the marine diatom *Phaeocystis antarctica* (Prymnesiophyceae) and co-occurring grazers. Researchers will conduct experiments to study size-specific growth and photosynthetic rates of *P. antarctica*, size-specific grazing mortality due to microzooplankton and mesozooplankton, the effects of macronutrients and micronutrients on the relative dominance of solitary cells and colonies, and the effects of grazing-related chemical signals on *P. antarctica* colony development. This effort will improve our understanding of ecological and biogeochemical processes in waters dominated by this species.

Field Season Overview

Team members will travel on foot to collect water and plankton samples from an ice hole within 30 meters of McMurdo Station. Additional samples will be obtained late in the season from collaborating researchers aboard the RVIB Nathaniel B Palmer. All samples will be returned to the Crary Laboratory for incubation, experiments, and analysis. Some samples may be shipped to the home institution for further analysis.

Deploying Team Members

- Britt Anderson
- Jennifer Gaydos

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- Eva Bailey
- David Elliott

- Maureen Lynch
- Amy Shields



2006-2007 USAP Field Season

Project Detail

Project Title

Palmer Long Term Ecological Research (LTER): Climate Migration, Ecological Response And Teleconnections In An Ice-Dominated Environment (Phytoplankton Component)

Summary

Event Number:
B-016-L/P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephanie Suhr Sliester / Rob Edwards



Principal Investigator

Dr. Maria Vernet
mvernet@ucsd.edu

Scripps Institution of Oceanography
La Jolla, California

Project Web Site:
<http://pal.lternet.edu>

Location

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: Palmer local boating area, Palmer LTER large scale grid

Description

The overall objectives of the Palmer-LTER projects are to document and understand the seasonal cycles of primary production, krill recruitment, Adelie penguin breeding, and microbial biogeochemical processes in the near-shore regime of the coastal antarctic ecosystem. This project continues long-term studies of marine optics and phytoplankton within the LTER sampling grid. Researchers will focus on primary production rates and phytoplankton community structures and their relationship to physical forcing. At Palmer Station and aboard the ARSV Laurence M. Gould, water samples will be collected to determine the biochemical properties of phytoplankton and experiments will be carried out to estimate primary production rates.

Field Season Overview

The season will consist of a Palmer Station program and the annual LTER summer cruise aboard the R/V Laurence M. Gould (LMG07-01). While at Palmer Station, project team members will collect water and plankton samples using Zodiac inflatable boats, carry out incubations and other experiments to estimate rate processes in the laboratory, and conduct other biological and chemical analyses. Team members will also conduct underwater irradiance measurements. During the cruise, team members will collect similar samples from the vessel, using standard hydrographic, net, trawl, and acoustic sampling gear, and conduct similar analyses. Researchers will also sample the fall phytoplankton bloom at sea when they depart Palmer Station.

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Deploying Team Members

- Ryan Burner
- Katherine Haman
- Wendy Kozlowski
- Martin Montes Hugo
- Tristan Wohlford



2006-2007 USAP Field Season

Project Detail

Project Title

Role Of Resource Legacy On Contemporary Linkages Between Biodiversity And Ecosystem Processes In A Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program

Summary

Event Number:
B-423-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Ross Virginia
ross.a.virginia@dartmouth.edu

Dartmouth College
Environmental Studies Program
Hanover, New Hampshire

Project Web Site:
<http://mcmlter.org>

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo Dry Valleys, Crary Lab

Description

The McMurdo Long Term Ecological Research (LTER) projects will continue to investigate the McMurdo Dry Valleys as an end-member ecosystem and focus on the relative roles of legacy and extant processes on current biodiversity and ecosystem structure and function. This project samples and maintains core LTER soil experiments, in conjunction with the B-424-M group, that measure the response of soil biota to substrate additions and climate change. Researchers will study relationships between soil biodiversity and ecosystem function by measuring in-situ carbon dioxide, nitrogen, and phosphorus flux through a combination of gas-flux, buried-bag, and resin-exchange-membrane techniques.

Field Season Overview

In close collaboration with Diana Wall's B-424, the field team will make brief (one- to seven-day) trips via helicopter from McMurdo Station to study sites in the Taylor, Wright, Victoria, and Beacon Valleys to monitor long-term experiments and collect soil samples. Samples will be returned to the Crary Laboratory for processing, incubation, and analysis. Some samples will be shipped to the home institution for further analysis.

Deploying Team Members

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- Abigail Adams



2006-2007 USAP Field Season

Project Detail

Project Title

Role Of Resource Legacy On Contemporary Linkages Between Biodiversity And Ecosystem Processes In A Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program

Summary

Event Number:
B-424-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. Diana Wall
diana.wall@colostate.edu

Colorado State University
Natural Resource Ecology Laboratory
Fort Collins, Colorado

Project Web Site:
<http://www.nrel.colostate.edu/projects/soil/MCM/index.html>

Location

Supporting Stations: McMurdo Station
Research Locations: Crary Lab, McMurdo Dry Valleys

Description

The McMurdo Long Term Ecological Research (LTER) projects will continue to investigate the McMurdo Dry Valleys as an end-member ecosystem and focus on the relative roles of legacy and extant processes on current biodiversity and ecosystem structure and function. This project continues a long-term study of the impact of climate and other global changes on the abundance, distribution, and diversity of soil biota in the McMurdo Dry Valleys. Researchers maintain, monitor, and sample soils in various long-term experimental plots throughout Taylor Valley, in collaboration with the B-423-M research group. These experiments reveal relationships between biodiversity and Dry Valley carbon, nitrogen, and hydrologic cycles.

Field Season Overview

The field team will set up operations in the Crary Laboratory. Working in close collaboration with B-423, field team members will make day trips by helicopter to study sites in the Taylor, Wright and Victoria Valleys. Team members may also make multi-day trips to established field camps in Taylor Valley. The researchers will monitor long-term experimental plots and collect soil samples to look for relationships between biodiversity and carbon, nitrogen, and hydrological cycles, and they will study the phylogeny of soil fauna (nematodes, tardigrades, and rotifers). Samples will be returned to the Crary Laboratory for processing and analysis. Some samples will be shipped to the home

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institution for further analysis.

Deploying Team Members

- Byron Adams
- Edward Ayres
- Breana Simmons



2006-2007 USAP Field Season

Project Detail

Project Title

Extending SAMBA To Auroral Latitudes In Antarctica (South American Meridional B-Field Array)

Summary

Event Number:

A-357-M/P
NSF/OPP Award 0636939

Program Manager:

Dr. Bernhard Lettau (acting)

ASC POC/Implementer:

Rob Edwards



Principal Investigator

Dr. Eftyhia Zesta
Eftyhia.Zesta@hanscom.af.mil

University of California Los Angeles

Los Angeles, California

Project Web Site:

<http://samba.atmos.ucla.edu>

Location

Supporting Stations: McMurdo Station, Palmer Station

Research Locations: On station

Description

Through remote sensing, this project studies ultra-low frequency (ULF) waves and mass density in the inner magnetosphere during geomagnetically active periods. Installing a magnetometer at Palmer Station has extended the South American Meridional B-Field Array (SAMBA) chain to mid-latitudes, geomagnetically. A magnetometer system at the West Antarctic Ice Sheet Divide site (WAIS-D) extends the SAMBA chain to auroral latitudes for the further study of substorms. In addition, the WAIS-Divide site is near conjugate (geomagnetically) to the magnetometer station at Poste de la Balaine, in Canada, offering routine conjugate observations during substorms.

Field Season Overview

Project researchers plan to repair the automated magnetometer station at the WAIS-D site. If RPSC personnel can make the necessary repairs, this project will have no deployments. Otherwise, one field team member will travel by LC-130 aircraft to WAIS-D to make the repairs. At Palmer Station, the magnetometer operates autonomously. The RPSC research associate will perform weekly checks of the instrument to confirm that data are being collected.

Deploying Team Members

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- Mark Moldwin (Team Leader)



USAP Program Index Biology and Medicine

Principal Investigator	Event No.	Project Title
Ainley, David	B-031-M	Adélie penguin response to climate change at the individual, colony, and metapopulation levels
Blanchette, Bob	B-038-E/L	Studies of antarctic fungi: Adaptive strategies for survival and protecting Antarctica's historic structures
Bowser, Samuel	B-043-M	Evolution of morphology and trophic strategies in antarctic agglutinated foraminifera
Costa, Daniel	B-232-E/L/P	Habitat utilization of Southern Ocean seals: Foraging behavior of Crabeater and Elephant seals using novel methods of oceanographic data collection
DiTullio, Giacomo	B-272-N	Interaction of iron, light and CO ₂ on phytoplankton community dynamics in the Ross Sea
Doran, Peter	B-426-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Fabry, Victoria	B-069-M	Impacts of elevated pCO ₂ on a dominant aragonitic pteropod (Thecosomata) and its specialist predator (Gymnosomata) in the Ross Sea
Fountain, Andrew	B-425-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Garrott, Robert	B-009-M	Patterns and processes: Dynamics of the Erebus Bay Weddell seal population
Hall, Brenda	B-068-M	Former elephant seal colonies in the Antarctic: Implications for holocene climate change and genetic diversity in the Southern Ocean
Hofmann, Gretchen	B-134-M	Towards an understanding of protein homeostasis in cold-adapted antarctic

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		fish
Hollibaugh, James	B-114-P	Distribution and ecology of ammonia oxidizing bacteria in the Palmer LTER study area
Horning, Markus	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.
Johnson, Bruce	B-179-M	Altitude symptoms at the South Pole
Kanatous, Shane	B-018-M	The molecular signals that regulate the ontogeny of aerobic capacity, lipid metabolism and elevated myoglobin concentrations in the skeletal muscles of Weddell seals
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Lee, Richard	B-256-P	Physiological and molecular mechanisms of stress tolerance in a polar insect
Lyons, W. Berry	B-420-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valleys LTER program
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment
Mellish, Jo-Ann	B-041-M	Collaborative Research: Aging in Weddell Seals: Proximate mechanisms of age-related changes in adaptations to breath-hold hunting in an extreme environment.
Moran, Amy	B-004-M	Collaborative Research: Effects of oxygen and temperature on egg mass function of Southern Ocean marine invertebrates
Oftedal, Olav	B-024-M	Capital expenditure, lactation energetics, and the importance of foraging to Weddell seals and their pups
Priscu, John	B-422-M	The Role of Resource Legacy on Contemporary Linkages Between Biodiversity and Ecosystem Processes in a Cold Desert Ecosystem: The McMurdo Dry Valley LTER Program
Ross, Robin	B-028-L/P	Palmer Long Term Ecological

		Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Prey component)
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Sidell, Bruce	B-036-L/P	Differential expression of oxygen-binding proteins in antarctic fishes affects nitric oxide-mediated pathways of angiogenesis and mitochondrial biogenesis.
Smith, Raymond	B-032-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Bio-optical component)
Tang, Kam	B-230-M	Environmental and ecological regulation of differences and interactions between solitary and colonial forms of <i>Phaeocystis antarctica</i>
Trivelpiece, Wayne	B-040-E	Penguins as monitors of the krill-centric Southern Ocean marine ecosystem
Vernet, Maria	B-016-L/P	Palmer Long Term Ecological Research (LTER): Climate migration, ecological response and teleconnections in an ice-dominated environment (Phytoplankton component)
Virginia, Ross	B-423-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program
Wall, Diana	B-424-M	Role of resource legacy on contemporary linkages between biodiversity and ecosystem processes in a cold desert ecosystem: The McMurdo Dry Valley LTER program

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USAP Program Index Geology and Geophysics

Principal Investigator	Event No.	Project Title
Anderson, John	G-435-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Cande, Steven	G-413-N	Collaborative Research: The connection between mid-Cenozoic seafloor spreading and the western Ross Sea Embayment
Castillo, Paterno	G-430-N	Constraining the petrogenesis and mantle source of Adare Basin seamount lavas
Conway, Howard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Gee, Jeffrey	G-192-M	An integrated geomagnetic and petrologic study of the Dufek Complex
Hallet, Bernard	G-411-N	Controls on sediment yields from tidewater glaciers from Patagonia to Antarctica
Harwood, David	G-049-M	ANDRILL: Investigating Antarctica's role in Cenozoic global environmental change
Harwood, David	G-091-M	ANDRILL
Kyle, Phillip	G-081-M	Mount Erebus Volcano Observatory II (MEVO II): Surveillance, models, impacts and outreach
Lewis, Adam	G-063-M	Deducing Late Neogene Antarctica climate from fossil-rich lacustrine sediments in the Dry Valleys
Licht, Kathy	G-084-M	Integrated Study of East Antarctic Ice Sheet Till (ISET): Tracers of ice flow and proxies of the ice-covered continental shield
Marsh, Bruce	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Morin, Paul	G-056-M	3-D dynamics of the Ferrar Magmatic Mush Column, Dry Valleys
Siddoway, Christine	G-088-M	Gneiss dome architecture: Form and

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		process in the Fosdick Mountains
Staudigel, Hubert	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Stock, Joann	G-071-N	Collection of marine geophysical data on transits of the Nathaniel B. Palmer
Swanger, Kate	G-054-M	Age, origin, and climatic significance of buried ice in the western Dry Valleys
Tauxe, Lisa	G-182-M	Geomagnetic field as recorded in the Mt Erebus Volcanic Province: Key to field structure at high southern latitudes
Wilch, Thomas	G-062-M	Late Cenozoic volcanism and glaciation at Minna Bluff: Implications for antarctic cryosphere history

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USAP Program Index Ocean and Climate Systems

Principal Investigator	Event No.	Project Title
Dempsey, John	O-316-M	Physics and mechanics of the breakup of warm antarctic sea ice: In-situ experiments and modeling
Hofmann, David	O-257-S	South Pole monitoring for climatic change
Hofmann, David	O-264-P	Collection of atmospheric air for the NOAA/GMD worldwide flask-sampling network
Huber, Bruce	O-399-N	Cape Adare Long-term Mooring (CALM)
Jacobs, Stanley	O-274-N	The Amundsen Continental Shelf and the Antarctic Ice Sheet
Keeling, Ralph	O-204-P	Changes in atmospheric oxygen (O ₂), carbon dioxide (CO ₂), and argon (Ar) concentrations in relation to the carbon cycle and climate
Lazzara, Matthew	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Lazzara, Matthew	O-202-M/P	Antarctic Meteorological Research Center (AMRC)
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT program
Stearns, Charles	O-283-M/S	Antarctic Automatic Weather Station Program (AWS)
Stearns, Charles	O-202-M/P	Antarctic Meteorological Research Center (AMRC)

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Artists and Writers

Principal Investigator	Event No.	Project Title
Aghion, Anne	W-218-M	Works and days: An antarctic chronicle
Albuquerque, Lita	W-221-M	Stellar axis: Antarctica
Cortada, Xavier	W-217-M	Antarctic art message mural
Herzog, Werner	W-219-M	The inner landscape (feature film)
Ruth, David	W-220-P	Antarctic ice: Sculpture in cast glass

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Other Science Events

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2006-2007 USAP Field Season

Project Detail

Project Title

Characterizing Lake Amundsen-Scott, South Pole: A Ground Geophysical Program

Summary

Event Number:
I-205-M

Program Manager:
Dr. Julie Palais

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Sridhar Anandkrishnan
sak@essc.psu.edu

Pennsylvania State University
Department of Geosciences and Environment Instit
University Park, Pennsylvania

Location

Supporting Stations: McMurdo Station
Research Locations: Amundsen-Scott Lake, 10km from South Pole station

Description

During the 1970's, U.S. Antarctic Research Program scientists used radar profiling to identify over 70 subglacial lakes in Antarctica. These lakes are characterized by a flat, bright radar reflection, and one of them is only ten kilometers away from South Pole Station. Although radar profiling is sufficient to identify subglacial areas that are "probably lakes," to confirm their existence seismic experiments must be conducted. This project will conduct a seismic experiment over the South Pole lake to determine whether it is thawed or frozen and to look for the presence of any lacustrine sediment deposits.

Field Season Overview

The field team will travel by LC-130 aircraft to South Pole Station. After an initial acclimatization and equipment period shakedown period, the team will travel by snowmobile to establish a field camp ten kilometers from the station. At this study site, team members will drill shot holes using a hot water drill, detonate explosives in those holes, and record the reflected seismic energy. In early January, the field team will take down camp and return to South Pole Station, then return by LC-130 to McMurdo. The project is supported from McMurdo Station.

Deploying Team Members

- Huw Horgan
- Don Voigt
- Leo Peters

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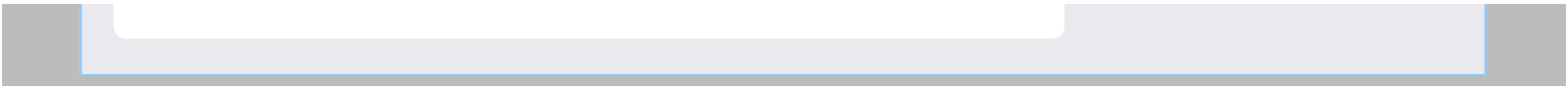
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2006-2007 USAP Field Season

Project Detail

Project Title

Controls On Sediment Yields From Tidewater Glaciers From Patagonia To Antarctica

Summary

Event Number:
G-435-N

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jesse Doren



Principal Investigator

Dr. John B. Anderson
johna@rice.edu

Rice University
Earth Science Department
Houston, Texas

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Antarctic Peninsula

Description

This project will examine the role of glacier dynamics in determining glacial sediment yields through a combination of techniques from glaciology and marine geology. This examination is based on the hypothesis that rates of glacial erosion are a function of sliding speed, and are therefore expected to diminish sharply as basal temperatures drop below the melting point. To test this hypothesis, the researchers will measure both sediment accumulation rates from seismic studies in fjord sediments and dynamic characteristics of the glaciers producing the sediments, for six tidewater glaciers ranging from fast-moving temperate glaciers in Patagonia to slow-moving polar glaciers on the Antarctic Peninsula.

Field Season Overview

During this project's second field season (2007) the researchers will examine three tidewater glacier systems in the Antarctic Peninsula to compare to those studied in 2005 in Chile. The researchers will visit Maxwell Bay and at at least two locations farther south on the peninsula itself. Science objectives will include the collection of a large number of cores for each area in addition to 3.5 kHz data, multi-beam, and high-resolution seismic surveys.

Deploying Team Members

- Rodrigo Fernandez
- Brad Michalchuk
- Russell Smith
- Julia Wellner (Team Leader)
- Patrick Young

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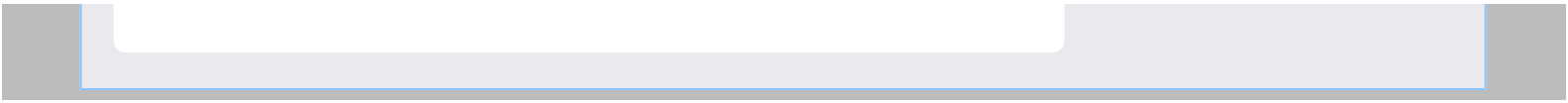
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2006-2007 USAP Field Season

Project Detail

Project Title

Constraining The Petrogenesis And Mantle Source Of Adare Basin Seamount Lavas

Summary

Event Number:
G-430-N

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jesse Doren



Principal Investigator

Dr. Paterno R Castillo
pcastillo@ucsd.edu

Scripps Institution of Oceanography
Geoscience Research Division
La Jolla, California

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Adare Basin, Ross Sea

Description

The fundamental cause of Cenozoic magmatism in west Antarctica has been explained by several models, each based primarily on geochemical evidence gleaned from igneous rocks collected in west Antarctica and on Ross Island. This project will dredge samples from the numerous, small volcanic seamounts in the Adare Basin, in the western Ross Sea, then analyze these samples for critical age, petrographic, petrochemical, and isotopic data. For the first time, this will provide geochronologic and geochemical data for submarine intraplate magmatism in the Adare Basin. If it can be established that the Adare Basin seamounts are of Cenozoic age and related to other Cenozoic igneous rocks in west Antarctica, scientists should be able to constrain better the "pristine" mantle source composition of west antarctic magmas.

Field Season Overview

The field team will board the RVIB Nathaniel B Palmer in New Zealand for cruise NBP07-01. Once the vessel arrives at the study site near Cape Adare, field team members will commence round-the-clock dredging for igneous rock samples on the numerous, small, isolated seamounts in the Adare Basin. The samples will be processed, inspected, and classified in the shipboard laboratory, then packaged for shipment to the home institution for a more detailed analysis. The field team will disembark the vessel at McMurdo Station.

Deploying Team Members

- Elizabeth Colville
- Danny Richter

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■ Kurt Panter (Co-PI)

■ Ji-Feng Xu



2006-2007 USAP Field Season

Project Detail

Project Title

Major Chemical Composition Of The WAIS Divide Ice Core

Summary

Event Number:

I-355-M

Program Manager:

Dr. Julie Palais

ASC POC/Implementer:

Michael McClanahan



Principal Investigator

Dr. Jihong Cole-Dai

jihong.cole-dai@sdstate.edu

South Dakota State University

Department of Chemistry and Biochemistry

Bookings, South Dakota

Location

Supporting Stations: McMurdo Station

Research Locations: WAIS Divide

Description

Snow and ice accumulation in ice sheets and glaciers preserves a history of the Earth's climate and atmospheric chemistry. Chemical analysis of deep ice cores can reveal the composition of the atmosphere over time scales of a few hundred to hundreds of thousands of years. Thus, the ice core chemical record can illuminate the relationship between global climatic changes, atmospheric chemical composition, and biogeochemical cycles. In addition, fresh snow and aerosol samples mirror current atmospheric conditions. Chemical analysis of these samples allows scientists to document and quantify the extent of global pollution against a natural background unperturbed by human activities. Researchers from this project will conduct major ion chemical analysis on shallow and deep cores from the West Antarctic Ice Sheet (WAIS) Divide region, where snow accumulates rapidly and where cores should reveal a detailed history of atmospheric chemistry.

Field Season Overview

Researchers with this project plan to perform detailed chemical analyses of shallow and deep cores from WAIS Divide. The two-person field team will travel by LC-130 aircraft to the WAIS Divide field camp. The team members will excavate snow pits in the vicinity of the camp, study the structure of the revealed snow and ice, and collect snow block samples. At the end of their field season, the researchers will return to McMurdo by LC-130. The samples will be transported to the home institution for major ion chemical analysis.

Deploying Team Members



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- Kevin Poenisch



Project Title

Controls On Sediment Yields From Tidewater Glaciers From Patagonia To Antarctica

Summary

Event Number:
G-411-N

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jesse Doren



Principal Investigator

Dr. Howard Conway
conway@ess.washington.edu

University of Washington
Earth and Space Sciences
Seattle, Washington

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Antarctic Peninsula

Description

This project will examine the role of glacier dynamics in determining glacial sediment yields through a combination of techniques and resources from glaciology and marine geology. Their examination is based on the hypothesis that rates of glacial erosion are a function of sliding speed, and are therefore expected to diminish sharply as basal temperatures drop below the melting point. The work is based in both Patagonia and the Antarctic Peninsula, an ideal natural laboratory for the research purposes because the large latitudinal range provides for a large range of precipitation and glacier thermal regimes over relatively homogeneous lithologies and tectonic settings. Prior studies of the region have noted a significant decrease in glaciomarine sediment accumulation in the fjords along a southward transect, and the fjords constitute nearly perfect natural sediment traps that are accessible by oceanographic vessels.

Field Season Overview

During the second field season the researchers will access and conduct surface velocity and ice imaging of three tidewater glaciers in the Antarctic Peninsula: Marion Cove Glacier and associated piedmont at Maxwell Bay in the South Shetland Islands, the Illiad Glacier and Marr Piedmont on Anvers Island, and a third glacier on the Peninsula east of Anvers Island. The researchers will access the shore in each of the bays using zodiacs and/or a landing craft from the RV/IB Nathaniel B. Palmer, and will access the equilibrium line of each of glacier by ski and with the aid of a snowmobile from the shore.

At each field site, a team of six (science party plus one RPSC mountaineer) expects to camp on the glacier for four to seven days at a time (dependent upon weather), and access study sites on skis and on foot. Scientific equipment to be used will include GPS survey

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equipment to support differential motion analysis, ice penetrating radar system transported from the University of Washington, gravity meters, and a hand auger to set up velocity stakes and accumulation grids. The researcher expect to be self sufficient during the time at each glacier. They will require comprehensive field supplies to support a party of seven in a remote field camp for one week at a time and mountaineering equipment for safe glacier travel for a party of six. The field party will remain in contact with the RVIB Nathaniel B. Palmer, which will be working in the adjacent fjords and will be picked up by landing craft at the end of each week.

Deploying Team Members

- Gino Casassa
- Daniel McGrath
- Michelle Koppes



2006-2007 USAP Field Season

Project Detail

Project Title

Habitat Utilization Of Southern Ocean Seals: Foraging Behavior Of Crabeater And Elephant Seals Using Novel Methods Of Oceanographic Data Collection

Summary

Event Number:
B-232-E/L/P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander / Dr. Stephanie Suhr
Sliester / Melissa Rider



Principal Investigator

Dr. Daniel Costa
costa@ucsc.edu

University of California Santa Cruz
Dept of Ecology & Evolutionary Bio
Santa Cruz, California

Location

Supporting Stations: Special Project, ARSV Laurence M. Gould, Palmer Station
Research Locations: Palmer local boating area, Livingston Island, Cape Shirreff, peninsula region near Anvers Island

Description

This project will examine the foraging behavior and habitat utilization of crabeater seals in the Western Antarctic Peninsula--a region of strong environmental gradients--using satellite data loggers that transmit data on location, diving activity, temperature, and salinity. The researchers will determine the relationship of specific foraging behaviors and animal movement patterns to oceanographic and bathymetric features, develop and test models of the importance of these features in defining habitat use and foraging success, and compare how individuals respond to annual variability in the marine environment. Instrumentation on seals will collect data on temperature and salinity in regions and at times that are difficult to access with any other data collection system.

Field Season Overview

The project has two phases. In the first phase, a single field team member will travel on board the R/V Laurence M Gould (cruise LMG06-12) in early November to Livingston Island on the Antarctic Peninsula. From the NOAA-AMLR (Antarctic Marine Living Resources) sponsored field camp at Cape Shirreff, the team member will work with NOAA researchers to attach satellite data loggers to southern elephant seals and collect biological samples. The data loggers will transmit behavioral and temporal information to the home institution. In early March, the Gould will return (cruise LMG07-02) to retrieve the field team member and transport her to Punta Arenas, where she will disembark. Some samples will be returned to the home institution for analysis.

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In the second phase of the project, field team members will travel to the Antarctic Peninsula region aboard the Gould (cruise LMG07-05) in early April. Working primarily from the vessel, the researchers will use Zodiac inflatable boats to access ice floes and capture up to 30 crabeater seals for study. Team members will sedate and restrain the seals, attach data loggers, and collect samples. While working on the Gould, the field team will make intermittent visits to Palmer Station and may also use Zodiac boats there to search for and capture seals on islands within the Palmer boating area. Researchers will use both the Gould and Palmer laboratories to process samples. Some field team members will disembark the Gould in Punta Arenas at the close of LMG07-05, while others will remain aboard the vessel for cruise LMG07-06 to continue the work. All field remaining team members will disembark at the close of LMG07-06. Frozen samples will be returned to the home institution for analysis.

Deploying Team Members

- John Arnould
- Daniel Crocker (Co-PI)
- Michael Goebel (Co-PI)
- Birgitte McDonald



2006-2007 USAP Field Season

Project Detail

Project Title

Measurements Addressing The Initial Stages Of Ozone Recovery, The Nucleation Of, Index Of Refraction Of, And Existence Of Large PSC Particles

Summary

Event Number:
A-131-M

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Terry Deshler
desbler@uwyo.edu

University of Wyoming
Department of Atmospheric Science
Laramie, Wyoming

Location

Supporting Stations: McMurdo Station
Research Locations: On station

Description

Polar stratospheric clouds (PSCs) play a pivotal role in polar ozone depletion. Heterogeneous chemistry occurs on the surface of the particles in the clouds, releasing active chlorine that destroys ozone. This project continues to focus on the development of the Antarctic ozone hole and the characteristics of PSCs by making balloon-borne, in-situ measurements of ozone and PSC profiles in the atmosphere above McMurdo Station, from the surface to about 35 kilometers. Project scientists will also make ground-based LIDAR measurements of atmospheric aerosols and compare them to the balloon-borne measurements.

Field Season Overview

Soon after arrival, the field team will prepare equipment and begin launching ozonesonde balloons to measure stratospheric ozone concentrations. The researchers plan to take up to 30 ozone profiles during the course of the season. Up to eight of these ozonesonde flights will carry dual instruments designed to provide further information about the internal chemistry of electrochemical concentration cells.

In addition to the normal ozonesonde package, five balloon launches will carry aerosol counters to generate profiles of atmospheric aerosol concentration and size. The resulting data will be used in an effort to understand the nature of the ozone-destroying heterogeneous chemistry that occurs on PSC particles. The researchers also plan to take LIDAR measurements during the dark periods of WINFLY 2006-early October 2006 and from February 2007 through WINFLY 2007. Balloon-borne aerosol measurements will be coordinated with the LIDAR measurements. After the annual ozone hole has closed, team

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members will travel by helicopter to retrieve instrument packages on the McMurdo and Ross Ice Shelves. Afterward, all team members will redeploy.

Late in the season, two field team members will deploy again to upgrade and test the LIDAR system. During this period, the RPSC Research Associate will be trained in the operation of the LIDAR and in balloon launch procedures. During the 2007 austral winter, the Research Associate will take LIDAR measurements and launch approximately 20 ozonesonde balloons. The balloon launches will take place between June and the beginning of the following WINFLY, to coincide with the European CAAC project. Data will be transmitted to the home institutions for analysis.

Deploying Team Members

- Francesco Colao
- Louis King
- Wiesje Mooiweer



2006-2007 USAP Field Season

Project Detail

Project Title

Impacts Of Elevated PCO2 On A Dominant Aragonitic Pteropod (Thecosomata) And Its Specialist Predator (Gymnosomata) In The Ross Sea

Summary

Event Number:
B-069-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Dr. Stephen Alexander



Principal Investigator

Dr. Victoria Fabry
fabry@csusm.edu

California State University San Marcos
Dept of Biological Sciences
San Marcos, California

Location

Supporting Stations: McMurdo Station
Research Locations: Crary Lab, Cape Bird, Cape Royds, Ross Ice Shelf

Description

As global carbon dioxide levels rise, more of the gas dissolves in the world's oceans, increasing their acidity. Among other metabolic effects, excessive acidity in the marine environment can negatively affect the ability of marine organisms to precipitate calcium to form shells. This project seeks to evaluate the impact of elevated carbon dioxide on calcification, metabolic physiology, and organismal performance in Antarctic pteropods, small gastropod molluscs that are abundant members of the Ross Sea zooplankton. Researchers will study both shelled (euthecosomatous) and carnivorous (gymnosomatous) pteropods collected from holes in the sea ice near Cape Bird, Cape Royds, McMurdo Station, and at the ice shelf transition zone.

Field Season Overview

The field team will base operations out of the Crary Laboratory. Team members will travel by snowmobile to collect pteropods through holes in the sea ice near McMurdo Station and near the McMurdo Ice Shelf transition zone. They will also travel by helicopter to collect animals from the ocean near Cape Evans and Cape Royds. Collected pteropods will be maintained at the Crary Laboratory, where they will be observed, filmed, incubated, and used for experiments. Some samples will be shipped to the home institution for further analysis.

Deploying Team Members

Project Indexes

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Project Web Sites

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- David Faber
- Brendan Green

- Brad Seibel (Co-PI)



2006-2007 USAP Field Season

Project Detail

Project Title

Operation Of An ELF/VLF Radiometer At Arrival Heights

Summary

Event Number:
A-100-M

Program Manager:
Dr. Vladimir Papitashvili

ASC POC/Implementer:
Charles Kaminski



Principal Investigator

Dr. Antony Fraser-Smith
acfs@alpha.stanford.edu

Stanford University
STAR Laboratory
Stanford, California

Location

Supporting Stations: McMurdo Station
Research Locations: Arrival Heights

Description

The radiometers at McMurdo Station operate in both the extremely-low-frequency and very-low-frequency (ELF/VLF) ranges, monitoring radio noise from natural sources. Because thunderstorms generate telltale radio signals, tracking variations in global radio noise reflects thunderstorm activity, which can provide information on global climate change. The ELF/VLF record collected by this project at Arrival Heights is unbroken for nearly 20 years. Such a long period of data collection allows researchers to look for weak effects, such as those that might be associated with global warming. The McMurdo Station site is part of a network of eight radiometers operated by Stanford University for the Office of Naval Research.

Field Season Overview

In mid-December, one field team member will inspect and service the radiometer maintained in the Arrival Heights facility. The RPSC Research Associate will maintain the instrument during the year, transfer data to DVD, and ship data discs back to the home institution for analysis and archiving.

Deploying Team Members

- Cecile Le Cocq

Project Indexes

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2006-2007 USAP Field Season

Project Detail

Project Title

An Integrated Geomagnetic And Petrologic Study Of The Dufek Complex

Summary

Event Number:
G-192-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Jessie Crain



Principal Investigator

Dr. Jeffrey S Gee
jsgee@ucsd.edu

Scripps Institution of Oceanography
Geoscience Research Division
La Jolla, California

Location

Supporting Stations: McMurdo Station
Research Locations: Dufek Massif

Description

The Dufek Complex of Antarctica (including the Dufek Massif and Forrestal Range) provides a unique setting to test hypotheses relating to 1) the intensity and directional stability of the Earth's magnetic field in the Jurassic, 2) the extent to which secular variations of the geomagnetic field are averaged in slowly cooled intrusive igneous rocks, and 3) the magmatic construction of a large layered intrusion. To address these issues, project researchers will take core samples from three sections of the Dufek Massif in the Pensacola Mountains.

Field Season Overview

The field team will travel by LC-130 aircraft from McMurdo Station to the Patriot Hills, and then by Twin Otter aircraft to the Dufek Massif, where team members will establish a field camp near the sampling site. They will remain in the area for five weeks, during which time they will travel by snowmobile to collect a number of oriented drill core samples from the outcrop. The team will return to McMurdo via Patriot Hills in late January. The core samples will be shipped to the home institution for laboratory analysis.

Deploying Team Members

- Michael Cheadle
- William Meurer (Co-PI)
- Craig Grimes

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

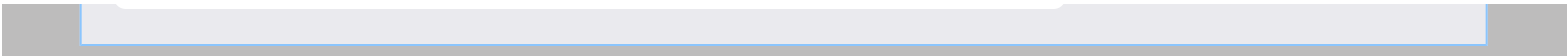
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2006-2007 USAP Field Season

Project Detail

Project Title

NASA / McMurdo Ground Station (MG1)

Summary

Event Number:
T-927-M

Program Manager:
Mr. Pat Smith

ASC POC/Implementer:
Douglas Miller



Principal Investigator

Mr. Ken Griffin
Kenneth.R.Griffin@nasa.gov

National Aeronautics and Space Administration
Wallops Flight Facility
Wallops Island, Virginia

Location

Supporting Stations: McMurdo Station
Research Locations: On station

Description

NASA's McMurdo Ground Station (MG1) is a 10-meter antenna housed in a white radome visible on the hill above McMurdo Station. It is used primarily for data recovery from polar-orbiting science satellites. MG1 also provides Launch and Early Operations Phase (LEOP) support for launches from Vandenberg Air Force Base involving satellite missions that require downrange telemetry support; telemetry and command for satellite housekeeping and recovery from satellite operational emergencies; and, in collaboration with the National Oceanic and Atmospheric Administration (NOAA) National Environmental Satellite and Data Information Service, data recovery for the EUMETSAT MetOp polar weather satellite constellation.

Field Season Overview

Members of the field team will begin deploying to McMurdo Station in late August, with additional members arriving in October, January, and February. The technicians will track a variety of satellites, monitor launches, and collect data. Two members of the team will work at McMurdo through the austral winter. Data will be recorded on site and shipped to NASA facilities for processing. Some data will be transmitted to NASA facilities over dedicated internet links.

Deploying Team Members

- Charles Bradford
- Mark Harris (Co-PI)
- William Kambarn
- Erik Richards (Co-PI)

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

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■ James Hendrickson

■ Nickolas Sinkola (Co-PI)



Project Title

Former Elephant Seal Colonies In The Antarctic: Implications For Holocene Climate Change And Genetic Diversity In The Southern Ocean

Summary

Event Number:
B-068-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Brenda Hall
brendah@maine.edu

The University of Maine
Inst for Quat./Climate Stud. and Dept of Geol Sci
Orono, Maine

Location

Supporting Stations: McMurdo Station
Research Locations: Adelie Cove, Edmonson Point, Inexpressible Island, Scott Coast, Terra Nova Bay

Description

This study seeks, by means of paleontological samples and data, to reconstruct the Holocene climate and elucidate climate variations over time in the Ross Sea region. In past seasons, researchers from this project discovered southern elephant seal skin and hair at many sites along the Scott Coast. This season, they will continue their search for ancient seal rookeries and paleontological samples. These data will allow project scientists to reconstruct the former spatial and temporal distribution of this species through time in the Ross Sea -- an area where it no longer hauls out. Ultimately, by using data from a combination of elephant seal and penguin rookeries, researchers will reconstruct sea ice and climate variations over time. They also will examine genetic diversity and foraging ecology for the seals over that same time period.

Field Season Overview

Field team members will travel by helicopter from McMurdo Station to temporary field camps in the study area. The field team will split into two groups, with one group beginning its work at Inexpressible Island and the other working from the southern Scott Coast. Each group will move from site to site by helicopter and establish new camps within its geographic area. Each site will be thoroughly scouted for samples. The northern group will be supported by the helicopters of Mario Zuchelli Station (Italy) at Terra Nova Bay. The groups will reunite at Dunlop Island, though they will continue to work as separate teams within the same geographic area. Samples will be returned to the home institution for further study.

Project Indexes

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Deploying Team Members

- Audrey Bamberg
- Paul Koch



2006-2007 USAP Field Season

Project Detail

Project Title

Distribution And Ecology Of Ammonia Oxidizing Bacteria In The Palmer LTER Study Area

Summary

Event Number:
B-114-P

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Rob Edwards



Principal Investigator

Dr. James Hollibaugh
aquadoc@uga.edu

University of Georgia
Marine Sciences
Athens, Georgia

Location

Supporting Stations: Palmer Station
Research Locations: Palmer local boating area

Description

This project investigates the distribution, phylogenetic affinities, and ecology of ammonium-oxidizing bacteria in the Palmer LTER study area. The goals of this project are to 1) obtain more conclusive information concerning the composition of antarctic ammonia oxidizers; 2) begin characterizing their physiology and ecology; and 3) obtain cultures of the organisms for more detailed studies.

Field Season Overview

The field team will travel to Palmer Station aboard the R/V Laurence M Gould (cruise LMG06-11). They will take water samples from the salt water system at the station and from Zodiac inflatable boats in the Palmer boating area. The samples will be processed in the Palmer laboratory and used for experiments to determine ammonium oxidation rates. DNA samples will be collected from water and sea ice for genomic analysis. Sampling will continue when the researchers depart Antarctica, during the northbound transit to Punta Arenas. Frozen samples will be shipped to the home institution for further analysis.

Deploying Team Members

- Janet Barwell-Clarke
- Nicole Middaugh

Project Indexes

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Project Title

Cape Adare Long-Term Mooring (CALM)

Summary

Event Number:
O-399-N

Program Manager:
Dr. Peter Milne

ASC POC/Implementer:
Dr. Karl Newyear



Principal Investigator

Mr. Bruce Huber
bhuber@ldeo.columbia.edu

Columbia University
Lamont-Doherty Earth Observatory
Palisades, New York

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Ross Sea

Description

Antarctic Bottom Water (AABW) is the densest of the major water masses filling the deepest parts of the world's oceans. Because it obtains many of its characteristics during its contact with other seawater, glacial ice, and atmosphere along the continental margins of Antarctica, researchers expect that changes in newly formed AABW may represent an effective indicator for abrupt climate change. The two most important source regions for AABW are within the Weddell and the Ross Seas, with the Ross Sea arguably the second largest source. However, no systematic effort has been undertaken to make long-term measurements of its outflow. To fill this data gap, this project deployed and maintained an array of moorings east of Cape Adare to observe the properties of AABW exiting the northwest corner of the Ross Sea.

Field Season Overview

The deploying field team member will board the RV/IB Nathaniel B Palmer in McMurdo for cruise NBP07-02. Working with onboard RPSC marine science support personnel and scientists from Stanley Jacob's research group, O-274, the researcher will recover an instrument mooring near Cape Adare. Elements from the recovered mooring will be combined with new instruments and hardware to construct two moorings, both of which will be deployed in the same area. In addition, the researcher will occupy several conductivity/temperature/depth (CTD) stations at and near the mooring sites to collect water samples and other data. Samples will be analyzed in the ship's laboratory, and some will be returned to the home institution for further study. The team member will disembark the vessel in Punta Arenas.

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Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

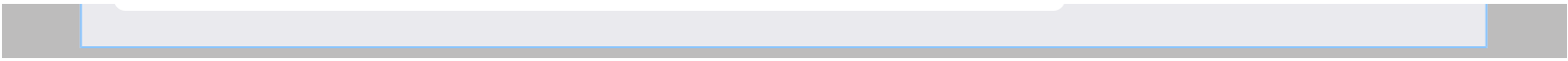
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2006-2007 USAP Field Season

Project Detail

Project Title

The Amundsen Continental Shelf And The Antarctic Ice Sheet

Summary

Event Number:
O-274-N

Program Manager:
Dr. Bernhard Lettau

ASC POC/Implementer:
Dr. Karl Newyear



Principal Investigator

Dr. Stanley S Jacobs
sjacobs@ldeo.columbia.edu

Columbia University
Lamont-Doherty Earth Observatory
Palisades, New York

Location

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Amundsen Sea

Description

This project seeks to achieve a better understanding of interactions between oceans and glacial ice in the Amundsen Sea, in relation to observed changes in the West Antarctic Ice Sheet and freshening of the coastal Southern Ocean. Aboard the RVIB Nathaniel B Palmer, researchers will attempt to gain access to the coastline and broad regions of the continental shelf, parts of which are flooded by relatively warm deep water with properties that may be changing over time. That water comes into contact with deep subsurface areas of the ice sheet, where it is associated with the highest basal melt rates and the fastest-moving glaciers in Antarctica. Elements of this work relate to climate change questions raised by remote sensing studies. The data collected will provide information for the development and validation of ocean circulation models, which will eventually be useful in assessing the role of the Antarctic Ice Sheet in sea level change.

Field Season Overview

The field team will meet the RVIB Nathaniel B Palmer at McMurdo Station for cruise NBP07-02. Team members will take the first conductivity/temperature/depth (CTD) samples near Ross Island. Afterward, the vessel will proceed north to Cape Adare, then eastward to the Amundsen Sea.

Researchers will reoccupy CTD/rosette stations near ice shelf fronts, deploy expendable bathythermographs (XBTs) where feasible, deploy an autonomous underwater vehicle (AUV) beneath ice shelves to investigate the dimensions and seawater properties of sub-ice shelf cavities, recover and set arrays of bottom-moored instruments, and deploy sea ice drifters. The geographic targets for this sampling regimen are the ice shelf fronts of Pine Island, the Thwaites Glacier Tongue, and the Crosson/Smith region in the southeast corner

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of the shelf, with secondary objectives near the western Getz and Dotson Ice Shelves and along the continental shelf break. The researchers will disembark in Punta Arenas.

Deploying Team Members

- Raul Guerrero
- Adrian Jenkins (Co-PI)
- Katherine Leonard
- Amy Leventer
- Chris Little
- Brice Loose
- Frank Nitsche
- Michael Schroeder



2006-2007 USAP Field Season

Project Detail

Project Title

Altitude Symptoms At The South Pole

Summary

Event Number:
B-179-M

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
Stephen Alexander



Principal Investigator

Dr. Bruce Johnson
johnson.bruce@mayo.edu

Mayo Clinic
Rochester, Minnesota

Location

Supporting Stations: McMurdo Station
Research Locations: McMurdo / South Pole, Elevated Station

Description

The goal of this project is to develop an algorithm for predicting mild to moderate altitude symptoms in the general population working at South Pole. This will include demographic, physiological, and genetic measures as well as biochemical markers. Breathing patterns during sleep and activity levels at altitude will also be examined.

Field Season Overview

This study will require two seasons in Antarctica, 2006-2007 and 2007-2008, and there will be 5 participants from the group's laboratory forming two study groups, one at McMurdo and one at South Pole. Researchers will arrive in McMurdo on the 13th of October in order to recruit volunteers from personnel deploying to South Pole on the opening flight. One or two members of the group will then head to South Pole as soon as possible to capture study volunteers. Volunteers initially recruited in McMurdo Station, will fill out a consent form, questionnaires, have a blood sample drawn, and perform minor physiological testing (e.g., rest HR, blood pressure, oxygen saturation). For those that are willing, subjects will either wear an activity monitor or a shirt. The shirt is worn at night while sleeping while the activity monitor will be worn for 3-5 days. The same subjects will then be followed with similar testing while at South Pole.

Deploying Team Members

- Kenneth Beck
- Andrew Miller
- Maile Ceridon
- Kathy O'Malley

Project Indexes

Find information about projects approved for the 2006-2007 USAP field season using the available indexes.

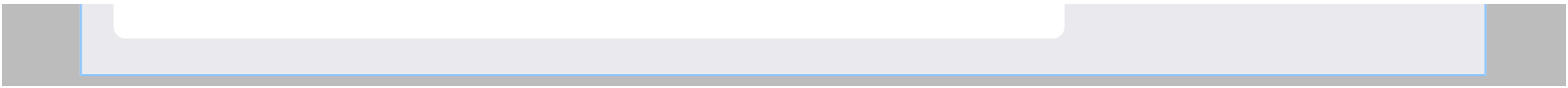
Project Web Sites

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2006-2007 USAP Field Season

Project Detail

Project Title

Deducing Late Neogene Antarctica Climate From Fossil-Rich Lacustrine Sediments In The Dry Valleys

Summary

Event Number:
G-063-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Adam Lewis
adam.r.lewis.1@ndsu.edu

North Dakota State University
Department of Geosciences
Fargo, North Dakota

Location

Supporting Stations: McMurdo Station
Research Locations: Taylor Valley, Olympus Range

Description

Researchers will assess the degree to which variations in the diversity and assemblage of fossil pollen, plants, diatoms, and insects in these late Neogene lake sediments can be used to reconstruct paleoclimate and ecological conditions. This study has several possible benefits for allied research in the Ross Sea region. First, anticipated results could help place modern lakes of the Dry Valleys region into a long-term evolutionary framework. Second, dated micro and macrofossils from the Dry Valleys could help facilitate correlation and dating among glacial and non-glacial deposits across the Transantarctic Mountains. Third, dated pollen assemblages from lacustrine sediments in the Dry Valleys could be used to help provide age control for pollen-rich layers in offshore cores.

Field Season Overview

The field team will travel by helicopter to establish a field camp near Mount Boreas in the Olympus Range. The researchers will move by helicopter twice during the season to establish camps at Friis Hills in the western Taylor Valley and at Table Mountain. At each camp, team members will collect lacustrine sediment samples. Team members will also make day trips by helicopter to other study sites in the Dry Valleys, primarily Taylor Valley, where they will collect additional samples. The researchers will break their final camp and return to McMurdo in mid-December. All samples will be shipped to the home institutions for analysis.

Deploying Team Members

Project Indexes

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■ Kelly Gorz

■ Andrew Podoll



2006-2007 USAP Field Season

Project Detail

Project Title

Integrated Study Of East Antarctic Ice Sheet Tills (ISET): Tracers Of Ice Flow And Proxies Of The Ice-Covered Continental Shield

Summary

Event Number:
G-084-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Kathy Licht
klicht@iupui.edu

Indiana Univ.-Purdue Univ. Indianapolis
Indianapolis, Indiana

Location

Supporting Stations: McMurdo Station
Research Locations: Southern Transantarctic Mountains

Description

This project is an integrated study that will help to constrain Antarctica's Late Quaternary (about 18,000 yrs ago) glacial history and improve our knowledge of the rocks that underlie the massive east antarctic ice sheet. The goals are to use till provenance to evaluate paleoice flow models for the Ross Embayment and characterize rocks eroded from the east antarctic craton while constraining physical changes to till during transport in a polar setting. Results from this study will provide direct inputs of ice fluxes to numeric ice sheet models, which will improve predictions of Antarctica's response to increasing atmospheric and ocean temperatures, as well as its contribution to global sea level rise. This study will also help to characterize the petrology, geochemistry and age of subglacial basement terrains underlying a large segment of the polar ice cap.

Field Season Overview

The researchers plan to sample exposed glacial sediment from the heads, length, and mouths of several outlet glaciers in the Southern Transantarctic Mountains. After preparing their field gear at McMurdo Station, the field team members will travel by LC-130 aircraft to a site near Otway Massif, where they will establish a deep-field camp. From there, they will conduct snowmobile traverses to nearby study sites. They will use a Twin Otter aircraft for ten days of close support to access sites further afield. Team members will collect till samples from the heads and mouths of the Reedy, Scott, Amundsen, Liv, Shackleton, Beardmore, Nimrod, and Byrd Glaciers. The team will break camp and return by LC-130 to McMurdo in late January. Samples will be shipped to the home institution for analysis.

Deploying Team Members

Project Indexes

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- Peter Braddock
- Eric Hiatt

- Katie Kramer



2006-2007 USAP Field Season

Project Detail

Project Title

Geomagnetic Field As Recorded In The Mt Erebus Volcanic Province: Key To Field Structure At High Southern Latitudes

Summary

Event Number:
G-182-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Patricia Jackson



Principal Investigator

Dr. Hubert Staudigel
hstaudigel@ucsd.edu

Scripps Institution of Oceanography
Institute for Geophysics and Planetary Physics
La Jolla, California

Location

Supporting Stations: McMurdo Station
Research Locations: Inaccessible Island, Mt Bird, Mt Erebus, Wright Valley, Aurora Cliffs

Description

This project will collect oriented paleomagnetic specimens from lava flows around the Mount Erebus Volcanic Province including sites in Wright Valley, Mount Bird, Cape Royds to Turks head, Aurora Cliffs and Mount Erebus.

Field Season Overview

The field team members will make day trips by helicopter to a number of sampling sites, including Mount Bird, Aurora Cliffs, Mount Erebus, and the Wright Valley, where they will collect lava specimens. The researchers will also travel by snowmobile to establish a sea-ice field camp near Cape Evans, where they will collect for two days. Some previously sampled sites in the Royal Society Range may be revisited by helicopter. Rock samples will be shipped to the home institution for laboratory analysis.

Deploying Team Members

- Julie Bowles
- Elise Sbarbori

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2006-2007 USAP Field Season

Project Detail

Project Title

Operation And Maintenance Of A CTBT Class Infrasound Array At Windless Bight

Summary

Event Number:
T-396-M

Program Manager:
Ms. Jessie Crain

ASC POC/Implementer:
Douglas Miller



Principal Investigator

Dr. Curt Szuberla
caszuberla@alaska.edu

University of Alaska Fairbanks
Geophysical Institute
Fairbanks, Alaska

Location

Supporting Stations: McMurdo Station
Research Locations: Windless Bight

Description

This project operates, maintains, upgrades, calibrates, and services the joint U.S. Comprehensive Nuclear Test Ban Treaty (CTBT) station at Windless Bight. Windless Bight's location on the Ross Ice Shelf is unique for its very-low wind levels, which makes infrasound detection possible. Infrasound can detect volcanic eruptions, winds over distant mountain ranges, large storms at sea, auroral and meteor events, earthquakes, avalanches, and human-caused events such as very large explosions.

Field Season Overview

The technicians plan to operate, maintain, upgrade, calibrate, and service the joint US Comprehensive Nuclear-Test-Ban Treaty (CTBT) station (I55US) in Windless Bight. The field team will travel by tracked vehicle or snowmobile to establish a tent field camp in Windless Bight. One or two team members may remain in McMurdo to coordinate data acquisition in the CTBT Hub room. When the field work is complete, the field team will return by tracked vehicle to McMurdo. For the remainder of the year, the RPSC Research Associate will oversee the CTBT station, ensure data collection, and transmit data to CTBT headquarters for processing.

Deploying Team Members

- Don Byrd
- Ethan Clews
- Duncan Marriott
- Dan Osborne

Project Indexes

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■ Ruth Freiburg



Project Title

Measurements Of The Surface Layer Turbulence At Dome C

Summary

Event Number:

A-442-E

Program Manager:

Dr. Bernhard Lettau (acting)

ASC POC/Implementer:

Michael McClanahan



Principal Investigator

Dr. Tony Travoignon

tonyt@caltech.edu

California Institute of Technology

Astronomy

Pasadena, California

Location

Supporting Stations: Special Project

Research Locations: Dome C

Description

The high antarctic plateau is an ideal location for astronomical observatories. At Dome C, optical turbulence is extremely good above 30 meters. Below that, surface inversion causes a large amount of turbulence that degrades ground observing conditions. In order to quantify and study the statistical properties of the surface layer turbulence at Dome C, project researchers will install an array of ultra-sonic anemometers on a 30-meter tower. During the next two austral winters, these instruments will measure the temperature and wind speed profile along this range. Their high sampling rate will also allow them to measure the turbulence parameter C_n^2 .

Field Season Overview

The researchers plan to measure ground layer turbulence at Dome C by installing a series of sonic-anemometers along a 30-meter tower already present on site. Two field team members will travel to Dome C onboard the Italian Program's (PRNA) twin otters. Once the instruments have been installed, the researchers will return by twin otter to McMurdo. The anemometers will collect temperature and wind speed data over the austral winter.

Project Indexes

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2006-2007 USAP Field Season

Project Detail

Project Title

Penguins As Monitors Of The Krill-Centric Southern Ocean Marine Ecosystem

Summary

Event Number:
B-040-E

Program Manager:
Dr. Roberta Marinelli

ASC POC/Implementer:
John Evans



Principal Investigator

Dr. Wayne Trivelpiece
wayne.trivelpiece@noaa.gov

National Oceanic and Atmospheric Administration
AMLR - Antarctic Ecosystem Research Division (SW Fisheries Sci Ctr)
La Jolla, California

Location

Supporting Stations: Special Project
Research Locations: Copacabana Field Camp on King George Island, transport on ARSV Laurence M. Gould

Description

This project continues a long-term study of the breeding biology and demography of Adelie, Chinstrap, and Gentoo penguins at Admiralty Bay, King George Island, in the South Shetland Islands. The primary objectives are to: 1) determine and compare the relationships of sex, age, and breeding experience to reproductive success and survival, clarifying how the demographic variables interact to affect changes in animal populations; and 2) investigate the relationships between population dynamics, prey availability, and environmental variability to clarify the mechanisms whereby environmental variation may influence predator dynamics via the prey field.

Field Season Overview

Five field team members and all supplies for the field season will be transported to the Copacabana Field Station on King George Island in early October aboard the R/V Laurence M Gould (LMG06-11). Once there, the researchers will make scientific observations of the birds, take measurements, and collect samples. Field team members will cycle in and out during the season, with all remaining members departing Antarctica in late February aboard the R/V Laurence M. Gould (cruise LMG07-02).

Deploying Team Members

- Naomi Bargmann
- David Loomis
- Stefan Kropidowski
- Susan Trivelpiece (Co-PI)

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■ Amy Lindsley

■ Susan Woods



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Project Detail

Project Title

Late Cenozoic Volcanism And Glaciation At Minna Bluff: Implications For Antarctic Cryosphere History

Summary

Event Number:
G-062-M

Program Manager:
Dr. Thomas Wagner

ASC POC/Implementer:
Michael McClanahan



Principal Investigator

Dr. Thomas Wilch
TWILCH@nsf.gov

National Science Foundation
Office of Polar Programs
Arlington, Virginia

Location

Supporting Stations: McMurdo Station
Research Locations: Minna Bluff

Description

This project investigates volcanic and glacial records at Minna Bluff in the western Ross Embayment to interpret West Antarctic Ice Sheet history. The primary objectives are to document the growth of the 50-kilometer long peninsula and reconstruct past glacial events as recorded in the volcanic sequences. Researchers will interpret ice sheet history in the intertwined volcanic and glacial records at Minna Bluff by 1) mapping the volcanic and glacial lithofacies of Minna Bluff; 2) establishing a chronology based on the $^{40}\text{Ar}/^{39}\text{Ar}$ method; 3) describing the major and trace element geochemistry; 4) measuring the stable isotopes of authigenic alteration phases in hyaloclastites; and 5) measuring chlorine-36 exposure ages in glacial erratics.

Field Season Overview

Field team members will first make several reconnaissance flights by helicopter to assess outcrops, identify camp sites, and collect digital imagery of steep-angle cliff faces. In early January, the field team will travel by helicopter to establish a field camp on the southeastern end of Minna Bluff. Team members will traverse the local area on foot to map the terrain and collect rock samples. The field team will also make day trips by helicopter to other study sites, and they will periodically move camp with helicopter support. The researchers will break their final camp and return by helicopter to McMurdo in early February. Rock samples will be returned to McMurdo and shipped to the home institutions for analysis.

Deploying Team Members

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- Timothy Burton
- Nelia Dunbar
- Bill McIntosh (Co-PI)
- Kurt Panter (Co-PI)

- Paul Roberts
- Mary Scanlan
- John Smellie



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Deploying Team Members

-
- Steve Forrest
- Heather Lynch



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Deploying Team Members

- Kenneth Arnett
- Sarah Harriman
- Jeff Chang
- William Rachelson (Team Leader)



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Deploying Team Members

- Craig Aumack
- John Maschek
- Anthony Bucolo



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Deploying Team Members

- Shannon Barber
- Katherine Ponganis
- Gerald Kooyman



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Deploying Team Members

- Jonathan Bent
- Patricia Lang
- William Neff
- Tim Newberger (Co-PI)
- Colm Sweeney (Co-PI)
- Taro Takahashi



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Deploying Team Members

- Beth Bergeron (Team Leader)
- Michael Jayred
- Brent Folmer



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Deploying Team Members

- Andrew Bliss
- Jesse Bucholtz (Team Leader)
- Samuel Jacobson
- Ryan Mclain

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Deploying Team Members

- Jennifer Blum
- Kristin Gorman
- Peter Horne



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Deploying Team Members

■ Rhett Butler

■ Mark Robertson



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Deploying Team Members

- Lysa Chizmadia
- Barbara Cohen
- Silvio Lorenzetti
- John Schutt (Team Leader)



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Deploying Team Members

- James Day
- Matthew Genge
- Cliff Leight
- Shaun Norman
- Donald Pettit
- Michael Rampey
- Linda Welzenbach
- Nicolle Zellner

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Deploying Team Members

- Jessica Drees
- Benjamin Smith (Team Leader)



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Deploying Team Members

- Sharon Escher



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Deploying Team Members

■ Eric Firing

■ Eric Firing



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Deploying Team Members

- Gordon Hamilton (Team Leader)



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Deploying Team Members

- David Kirchman
- Julian Ma
- Nicole Middaugh
- Kristen Myers
- Noelle Yochum



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Deploying Team Members

- Brian Lanoil (Co-PI)
- Michael Madigan (Co-PI)
- Jill Mikucki
- Vladimir Samarkin
- Chao Tang



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Deploying Team Members

- David Saltzberg



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Deploying Team Members

- Thomas Sessions



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Deploying Team Members

- Lee Stanish

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