

Workshop for South Pole Cosmology and Astrophysics

May 3-4, 2004 Washington, DC
at NSF, Room 595 in Stafford II.

PURPOSE: We are organizing a workshop to discuss how best to put in place a mechanism to ensure the best planning, allocation, management and scientific support for the shared resources required for the Cosmology and Astrophysics experiments at the U.S. Amundsen-Scott South Pole Station, i.e., experiments within the Dark Sector.

Examples where scientifically-managed coordination may be desired among the many current and planned projects include:

1. Liquid helium supply and allocation
2. Power allocation and future needs
3. Dark Sector model machine shop supply, maintenance and operation
4. Dark Sector mechanical and electronics support
5. A voice for science IT and future data transmission
6. Science cargo needs
7. Science population constraints, synergy of winter-over talent, etc.

These issues used to be covered by CARA for the up-looking astrophysics projects. After CARA ended, they have been covered by ad hoc mechanisms that are difficult to fund and maintain.

Discussion and presentations at the workshop will focus on:

1. Conveying the shared resources requirements and logistical needs of the current and possible future Cosmology and Astrophysics projects at the South Pole
2. Possible operational models to coordinate the needed support.

WORKSHOP GOAL: The goal of the workshop is to determine which aspects of the South Pole Dark Sector shared resources, logistical support and coordination for the science projects at the South Pole are best managed by the scientists involved, and to develop and agree upon a model for the scientifically-motivated organization to carry out these duties.

PARTICIPANTS: Investigators interested in fielding Cosmology and Astrophysics experiments at the NSF Amundsen-Scott South Pole Station were invited to attend.

Here?	Name	Institution	Project/Science
N	Roger Angel	U. Arizona	Large O/IR Telescope
Y	Douglas Caldwell	NASA/Ames	Search for Extrasolar Planets
Y	John Carlstrom	U. Chicago	DASI, QUaD, SPT
Y	Richard Chamberlin	Caltech/CSO	AST/RO, Site Characterization
Y	Sarah Church	Stanford	CMB Polarization, QUaD
N	Tom Gaiser	Maryland	ICECUBE/ AMANDA
Y	Al Harper	U. Chicago	IR, Past CARA Director
Y	Bill Holzapfel	U.C.Berkeley	ACBAR, BICEP, SPT
Y	Jim Jackson	Boston U	IR – AIRO
N	Adair Lane	SAO	AST/RO
N	Andrew Lange	CMB Polarization	BICEP
N	Adrian Lee	U.C. Berkeley	SPT, CMB Polarization
Y	Bob Loewenstein	U. Chicago	IR, IT, Communications
Y	Philip Lubin	UCSB	CMB
Y	Chris Martin	SAO	AST/RO
N	Stephan Meyer	U.Chicago	CMB, past CARA Director
Y	Bob Morse	U.W. Madison	Neutrinos, AMANDA, ICECUBE
N	Giles Novak	NWU	ISM Polarimetry, SPARO
Y	Steve Padin	U. Chicago	CMB, SPT project manager
Y	Bob Pernic	U. Chicago	Past CARA logistics coordinator
Y	Jeff Peterson	Carnegie Mellon U	CMB,ACBAR, Viper
N	Clem Pryke	U. Chicago	CMB, QUaD, DASI
Y	John Ruhl	Case WRU	OPP-OAC, ACBAR, SPT
Y	Gordon Stacey	Cornell U	Far-IR/Submm, SPIFI
Y	Tony Stark	SAO	On SPUC, AST/RO, SPT
Y	Mark Swain	Caltech/JPL	IR interf. extrasolar planets
N	Wesley Traub	CfA	extrasolar planets, Earth-Moon shine
Y	Chris Walker	U. Arizona	Star formation, AST/RO
Y	Jim Yeck	U. W. Madison	ICECUBE project director

NSF Participants:

Y	Jerry Marty	NSF	South Pole Science Support
Y	George Blaisdell	NSF	South Pole Operations Support (snow)
Y	Brian Stone	NSF	Science support manager
Y	Kevin Culin	NSF	IT technical representative
Y	Vladimir Papitashvili	NSF	AA&A program manager
Y	Scott Borg	NSF	Antarctic Science Section Head

RPSC Participants:

Y	Charles Kaminski	RPSC	Science Support Planning Manager
Y	Paul Sullivan	RPSC	Science Support Manager

Agenda

Sunday May 2: Arrive, check in Hotel

Monday May 3 at NSF, Room 595 in Stafford II.

Monday Morning

(07:45-09:00 Laptop inspection available)

08:00-08:45 Coffee, Light breakfast

08:45-09:00 Introductions, Overview and Scope of Meeting (Carlstrom)

09:00-09:45 Lessons from the Past

(2 talks; 15+5)

John Carlstrom - Crate labs through CARA

Bob Morse - Cosmic Ray and Neutrino experiments through AMANDA

09:45-10:30 Overview of the site properties

Bob Morse - Unique advantages for astro-particle physics

(covered in last talk)

Rich Chamberlin - mm/submm [8+5]

Bill Holzapfel - atmospheric stability [6+4]

Jim Jackson - infrared to far-infrared [8+5]

Steve Padin for R. Angel - seeing; image quality; other sites [6+4]

10:30-10:45 <<Coffee Break>>

10:45:12:00 The View from NSF

(5 talks; each 10 min presentation + 5 min questions)

Jerry Marty - long term planning

George Blaisdell - snow management

Brian Stone - science support issues and cryogenics

Kevin Culin - IT and data transmission

Vladimir Papitashvili - AA&A program status and funding

12:00-13:00 <<Lunch & Discussion>>

Monday Afternoon

13:00-15:30 Current and possible future science projects
A round table discussion of the science goals and the logistical needs of the current and possible next generation South Pole Cosmology and Astrophysics projects.

Everyone is welcome to present a short (5 minute) presentation on their ongoing or future possible project(s) including:

- concise scientific motivation and goals
- technique and motivation for deploying at South Pole
- required logistical needs, especially shared resources

Please bring your *concise* presentation in ppt with a way to transfer to a common MSWindows OS computer (we will have memory sticks available and can read CDs).

15:30-16:00 <<Break>>

16:00-17:30 The need for, and scope of, scientifically-managed support.

Round table discussion - assembly of issues to be discussed and addressed by working groups on Tuesday
e.g.,

- things we need to coordinate
- how *NOT* to interfere with NSF peer review
- how to avoid entitlement, or self propagating institution
- how to involve all projects
- how to incorporate new projects/people
- ensure passing on lessons-learned
- ...

17:30-18:00 Examples of models for Science-managed support
(food for thought for Tuesday)

John Carlstrom 10 + 20 min discussion

19:00-???? <<Group Dinner at local Restuarant TBD>>

Tuesday Morning

08:30-09:00 Coffee, Light breakfast

09:00-10:30 Models for Coordinating the Scientific Logistical Support
A Strawman Model I - John Carlstrom 15 min
Others? - please email me!
General Discussion
Assign working groups

10:30-10:45 <<Break>>

10:45-12:00 Working groups to develop recommendations for coordinating specific areas (presumably the working group topics will be settled by yesterday's discussion. Some possibilities:

- (1) communication, telecons, CONus, SP, CONus-SP, inter-project NSF, Raytheon, Cargo, NZ...
- (2) shared resources within SIPs...
- (3) IT - leader: Bob Loewenstein?
- (4) Cryogenics - leader: John Ruhl?
- (5) machine shop -
- (6) electronics support -
- (7) population
- (8) winterovers..
- (9) providing help/advice to new projects?
- (10) adapting to the needs of new projects
- (11) others...

12:00-13:00 <<Lunch and Discussion>>

13:00-14:30 Working group reports

14:30-16:00 Overview of a scientifically-motivated organization to coordinate and support the shared resources for the Dark Sector at the South Pole.

16:00 End of Workshop