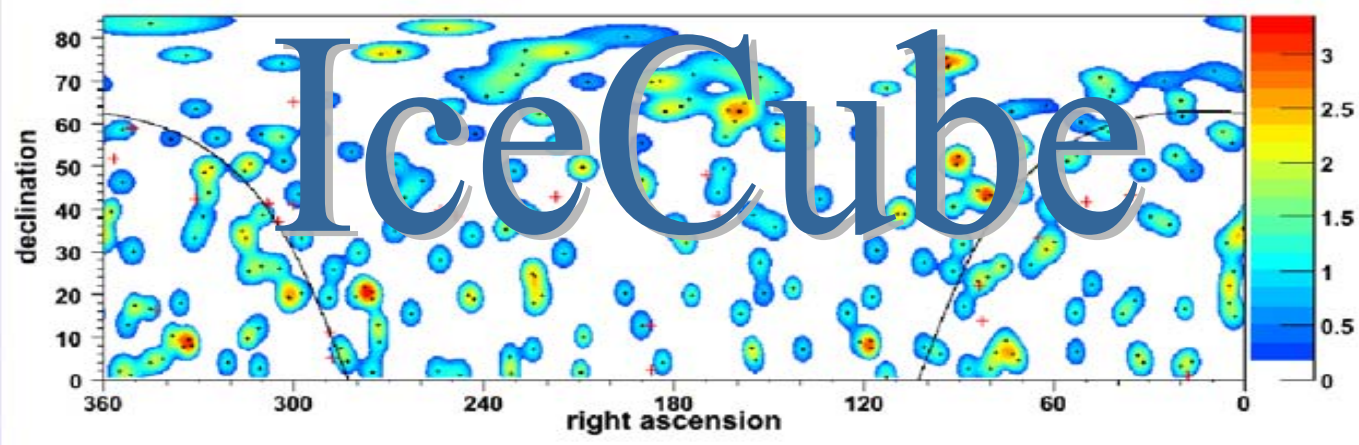


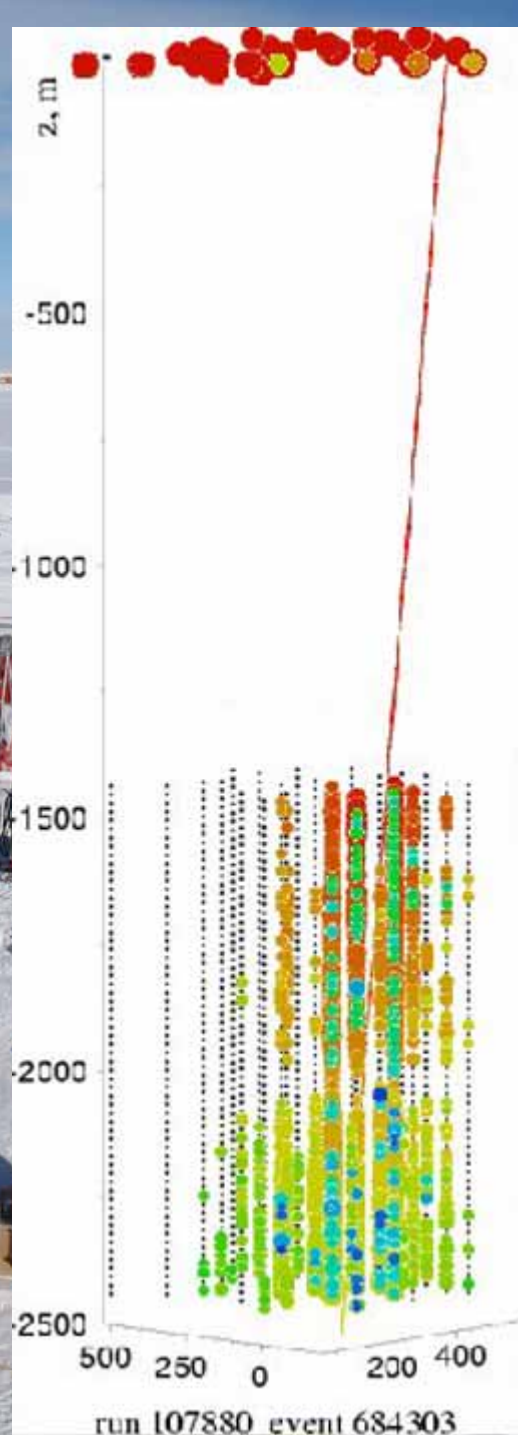
IceCube MREFC Project Status Report

Presented to: OPP Advisory Committee
(November 9, 2007)

Scott Borg
Division Director, OPP/ANT
On behalf of the OPP and MPS/PHY



Status report
NSF, 09/19/07

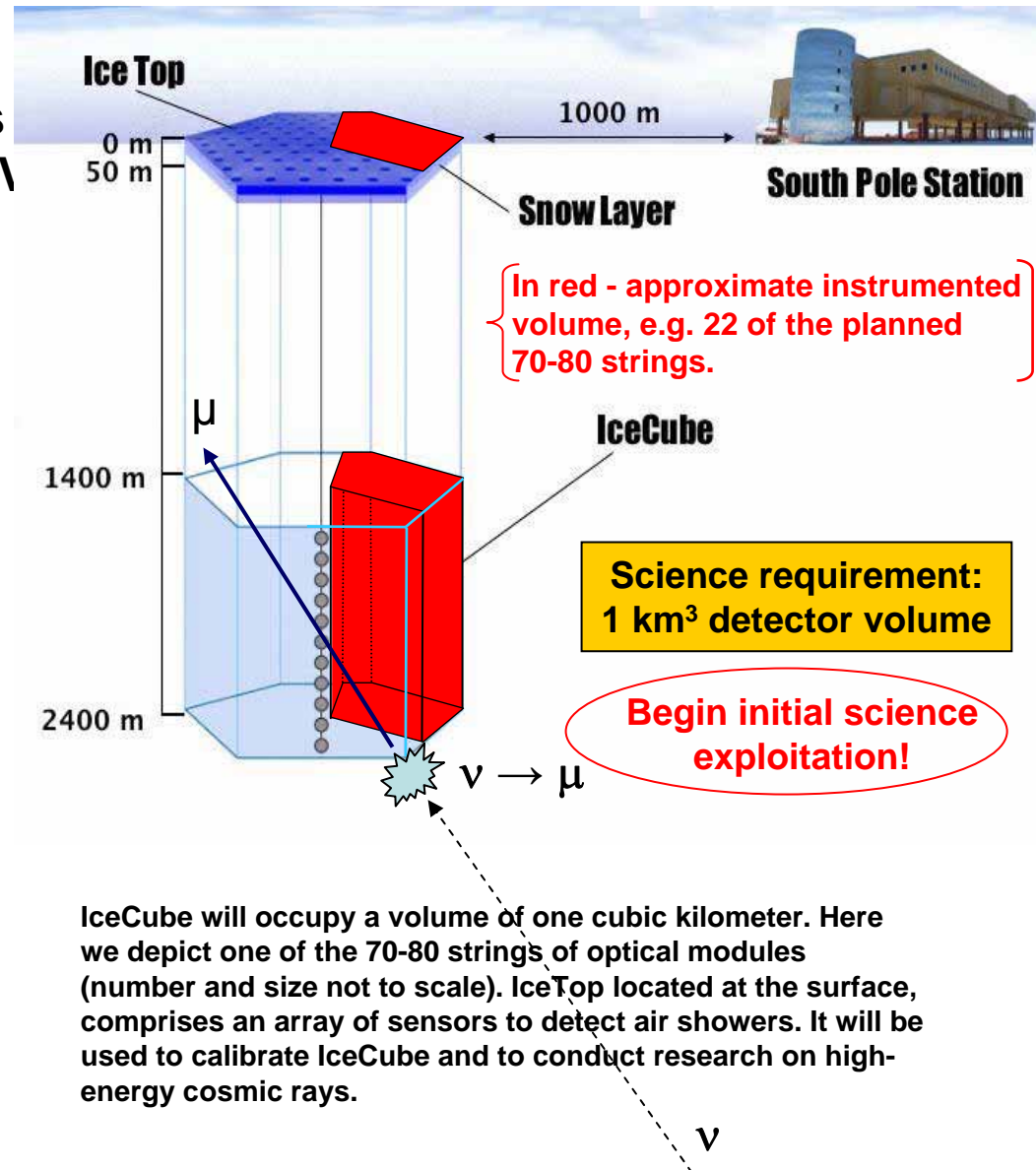
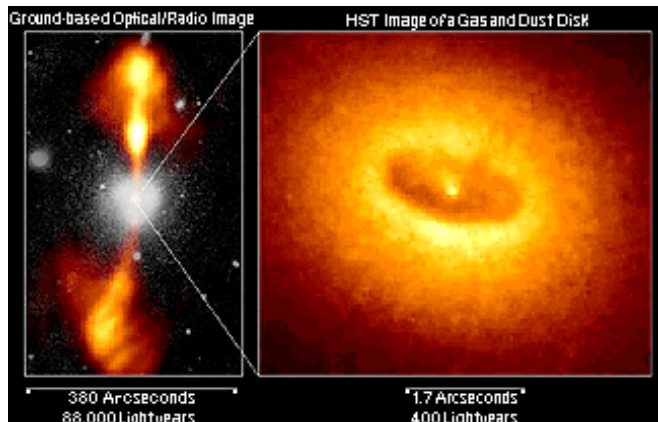


IceCube Neutrino Observatory

Science:

- New window on the universe
- Search for astrophysical sources of high energy neutrinos ($10^{11-18}eV$)
- Probe objects at cosmological distances and high energy astrophysical processes

- Supermassive black holes
- Gamma ray bursts
- Dark matter
- High energy cosmic ray sources
- Properties of neutrinos



Cost & Schedule Performance Update:

	<u>Baseline</u> (approv'd)	<u>Current</u> (Aug.2007)	
<u>Cost:</u> TPC	\$271.8 million	\$276.6 million	
NSF	\$242.1 “	\$242.1 “	<i>unchanged</i>
Foreign	\$ 29.7 “	\$ 34.5 “	<i>(see Note 1)</i>
<u>Earned Value:</u>	-	\$200.7 “	<i>(76.7%)</i>
<u>Contingency:</u>	\$ 40.1 “ <i>(22.4%)</i>	\$ 15.2 “ <i>(25.0%)</i>	
	<i>most technical risk retired, variances small, calls manageable</i>		
<u>Schedule:</u>	4 th Quarter (Q4), 2010	Q2, 2011	<i>(see Note 2)</i>

Note 1. Changes reflect increased contribution and valuation of foreign deliverables

Note 2. Add'l season at Pole in FY 2011 well within contingency, including all foreseen calls, e.g., the addition of up to another 10 strings consistent with the NSB approval

Plans for 07/08 Drill Season



- **Plan for up to 18 Holes**
 - Independent Firm Drill saves 12 hrs/hole, **+2 Holes**
 - Equipment Storage in Dark Sector, **+2 Holes**
 - Improved Reliability & Less hole lifetime, **+1 Hole**
- **Reduce risk from hose issues**
 - Make it “easy” for people to decide to replace a hose
 - Try to understand and solve failure mechanism – heat hose over winter
 - Order significant spare hose
- **Improve drill reliability**
 - Complete HPP motor replacement
 - Move pumps and improve filtration
 - Software improvements including port to Linux
- **Maintain excellent drill crews**
 - 31 drillers consistently on the ice



Summary - IceCube MREFC Construction Project

- **Construction project is 76.7% complete (Earned Value)**
- **Operations formally underway**
- **Outlook good for restoring strings as originally planned**
- **End-Game Planning**
- **Science**

Questions?