

The Life of an IceCube Winter-Over at the South Pole

Virtual Seminar on Multi-Messenger Astronomy
July 13, 2021
Dr. Martin Wolf



Traveling to South Pole

- Started in Munich on September 22nd
- Arrived at South Pole on November 24th 2020
- Usually two weeks, but due to COVID-19 two months this year!
- 2 weeks each of quarantine in San Francisco and Christchurch
- One month stay in McMurdo due to bad weather at South Pole



The Clothing Distribution Center (CDC) in Christchurch

- Issuing of ECW (Extremely Cold Weather) gear
- Most important items:
“Big Red” Canada Goose jacket, Carhartt overall, and white Bunny Boots

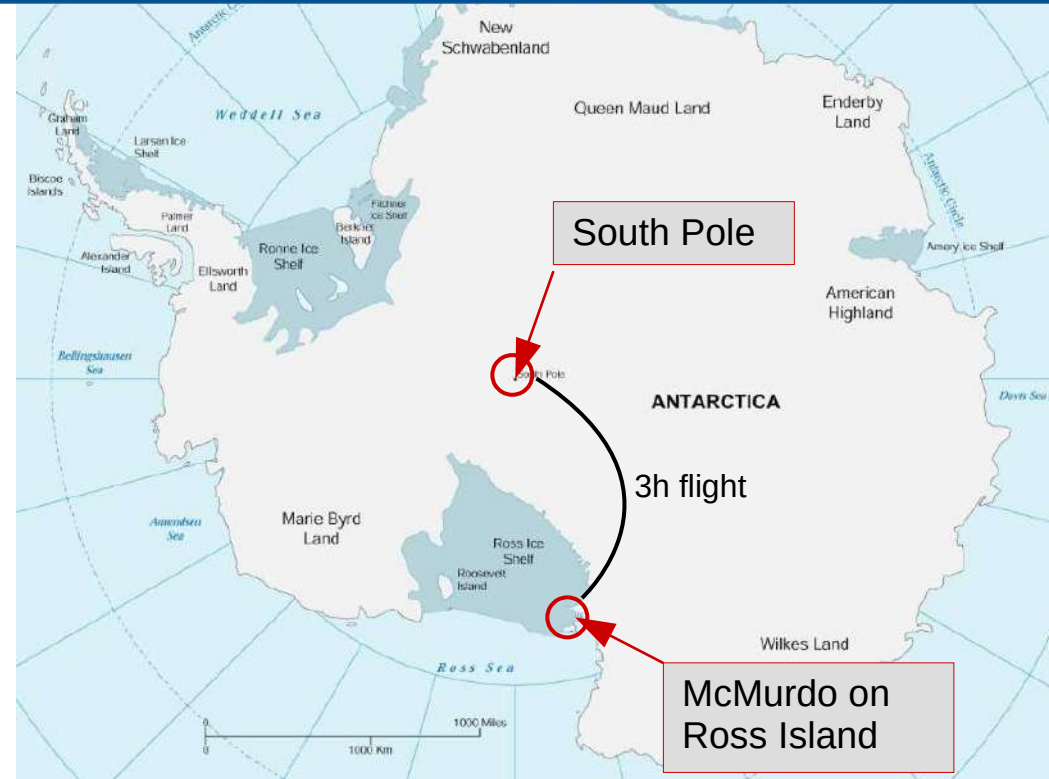


Last chance to see
trees and flowers
for the next year!



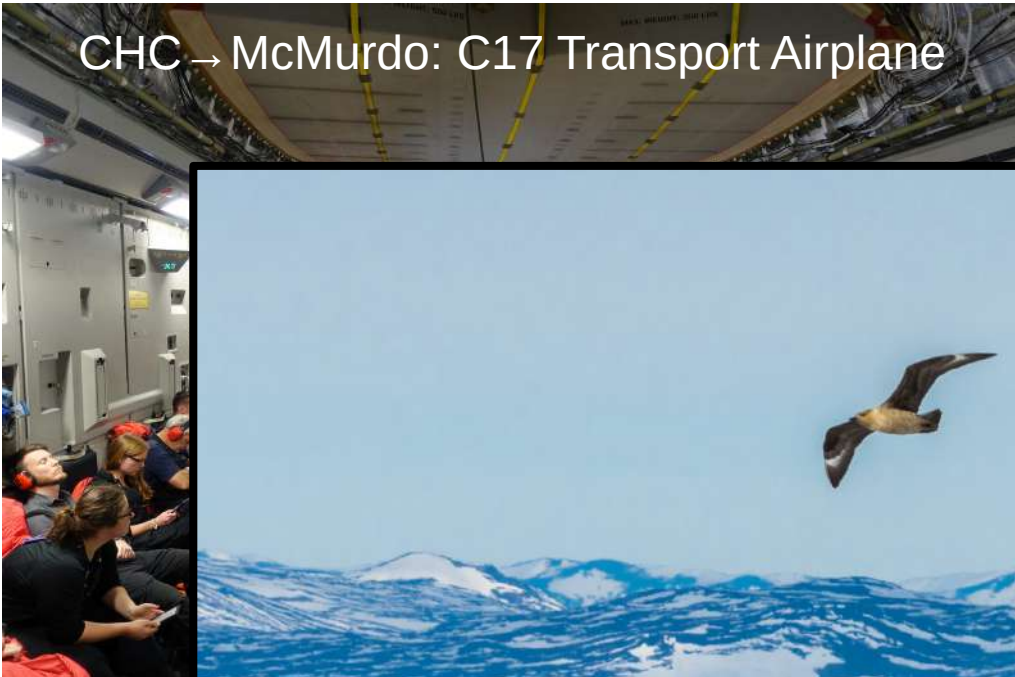
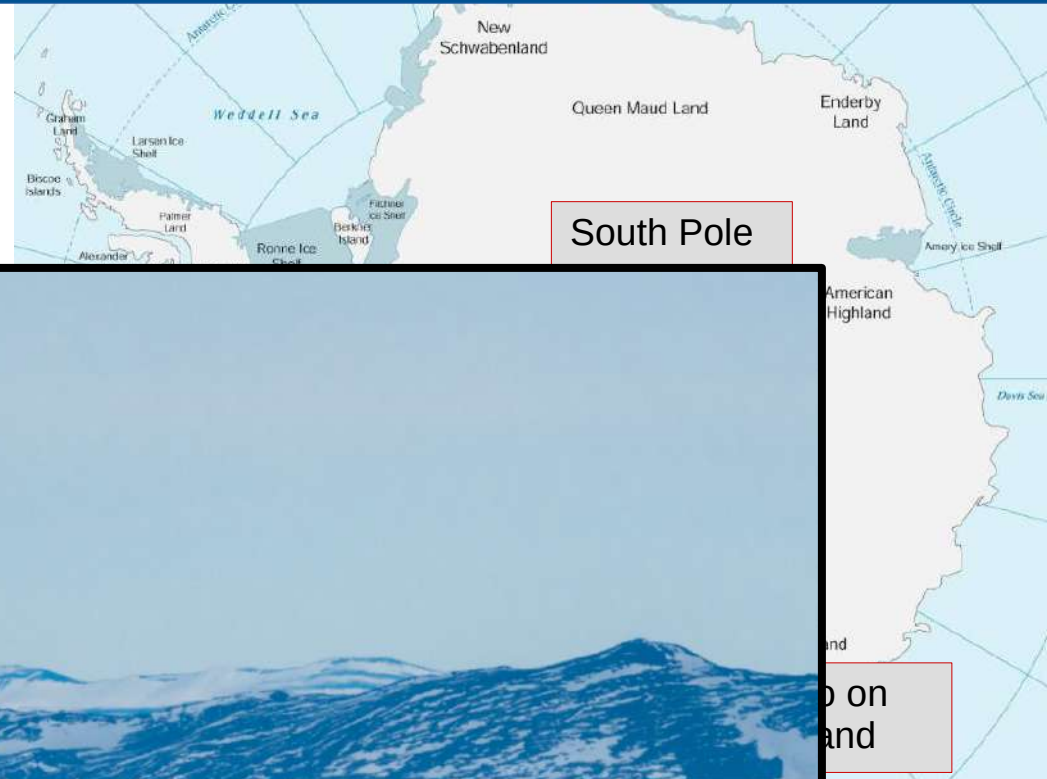
McMurdo Station

CHC → McMurdo: C17 Transport Airplane



McMurdo Station

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From McMurdo to South Pole

Transantarctic Mountains



Glacier in the Transantarctic Mountains



Basler Airplane from Ken Borek Air



South Pole Sectors

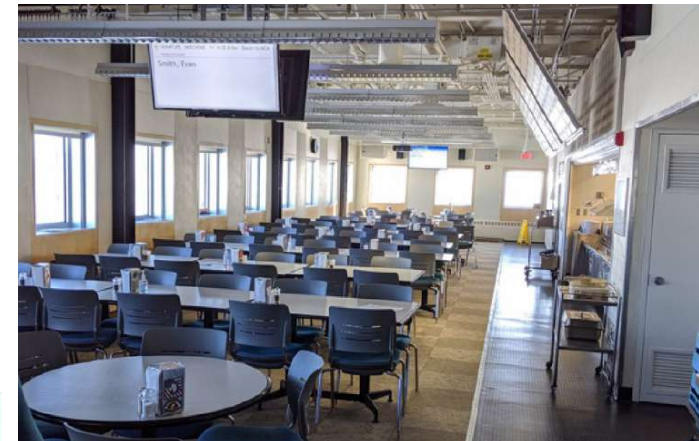
- Dark Sector
 - IceCube Laboratory (ICL)
 - South Pole Telescope (SPT)
 - Background Imaging of Cosmic Extragalactic Polarization (BICEP)
- Clean Air Sector
 - Atmospheric Research Observatory (ARO) run by NOAA
- Quiet Sector
 - Seismological detectors



The Station

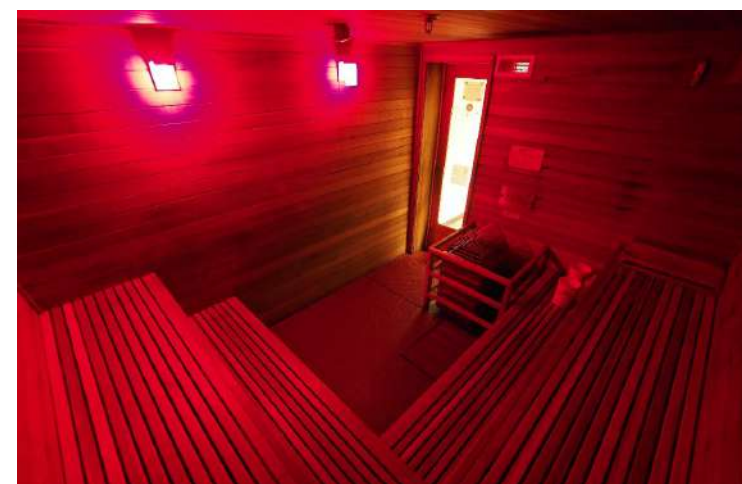


- 9300 ft (2830 m) elevation
- 65,000 ft² (6040 m²)
- 39 people this winter (2020/21)
- 450,000 gallons (1.7M l) of fuel



Inside the Station

- 2 levels, 2 pods (A & B), 4 wings
- Science Lab
- Offices
- Galley
- Gym
- Sauna
- Library
- Craft Room
- Store
- Greenhouse
- Berthing



More of the Station



The Greenhouse



Holidays



Weather



Fun Activities



End of Summer



Sunset



Twilight



Aurora Australis



The IceCube Laboratory (ICL)

- 1.5km from station
- Contains ~140 servers for data taking of 86 IceCube strings, 5409 DOMs
- Cargo & Lab area on 1st floor
- Control & server room on 2nd floor
- Controlling mainly from station via direct fiber cable connection



The IceCube B2 Station Laboratory

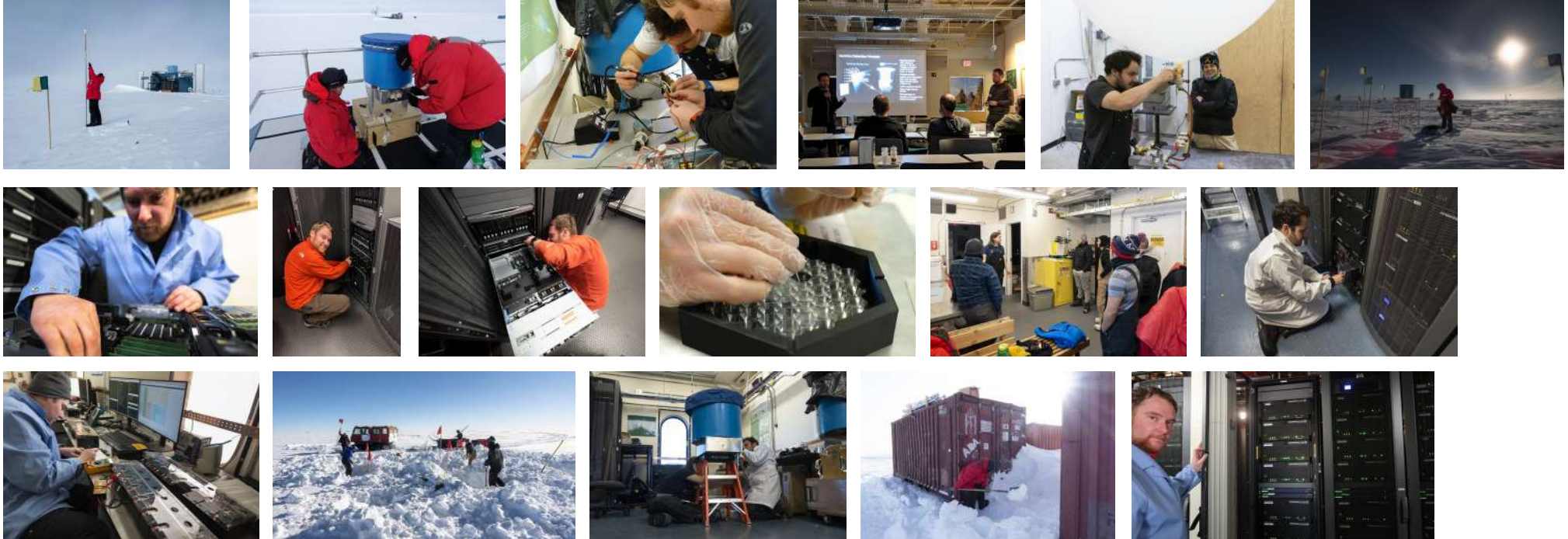


- Located in B-Pod 2nd floor
- Workstations for controlling the detector as at ICL



The work of an IceCube Winter-Over

- Keeping the detector alive and data taking 27/7, up-time about >99.9%
- Calibration runs, general maintenance like hardware replacement
- Documentation
- Lots of snow shoveling
- Outreach events
- Staying rested in case of an emergency



Thank You!
Questions?

