

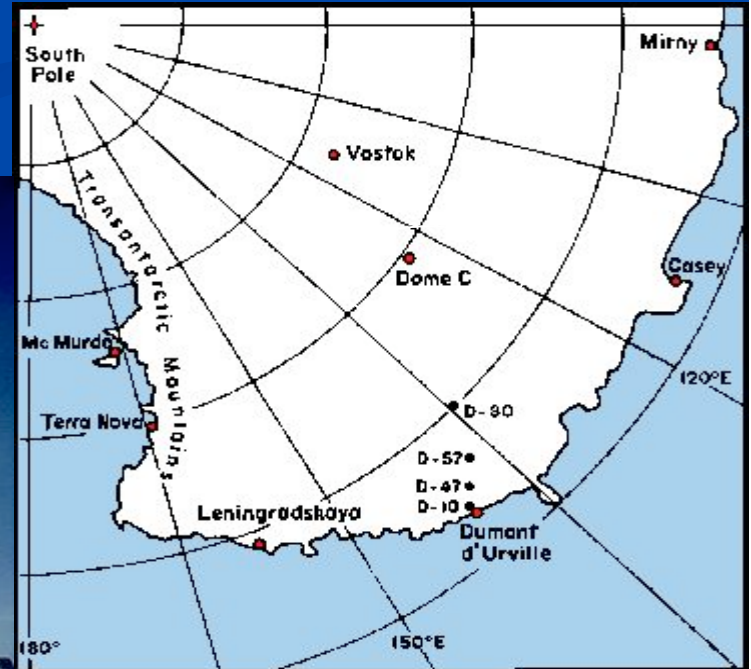
# Antarctic Interferometry breakout session

*Future Directions in Interferometry Meeting, Tucson*

Coudé du Foresto, Christou, Elvis, Lynds, Mighell, Rajagopal, Serjeant, Stencel, Storey, Swain, Tokovinin.

## Charges:

- [1] science targets/goals, a.k.a. niche
- [2] related technology,  
site studies & requirements
- [3] recommendations to NOAO  
for array concepts



# What are the niches for Antarctic interferometry ? What science?

- *Diffraction limited imaging in the visible / high Strehl*
- High dynamic range imaging
  - « A disk machine » : characterization of disks: stars (YSO's, exozodis), AGNs, accretion
- Gains in K-L-M
  - Disks, exoplanets, AGNs
- Sky coverage
  - AGN statistics, GRB followup, Magellanic Cloud science
- *Ultimate astrometry (longer term perspective)*
  - *Exoplanets*

# Technical issues

- No show stopper perceived at component level
- Site testing:
  - See John Storey's list of « to be done » items
  - Multisite, multiyear info needed
- Structures stability to get above ground layer + GLAO trade-off
- Comparative cost modelling and trade studies
  - Temperate vs. Antarctic (vs. space) solution for same capabilities
- Operational models and costing
  - Infrastructures, communications
- Political context

# Recommendations

- Undertake comparative extensive site testing
  - Dome C, A, F
  - $C_n^2$ ,  $r_0$ ,  $\theta_0$ ,  $\tau_0$ ,  $L_0$ , ground layer height
- Perform system / cost / operations study based on strawman concept (point design)
- Look into synergies:
  - With pathfinder efforts:
    - SPT 10m submm, PILOT, ALADDIN, ...
  - With International Polar Year