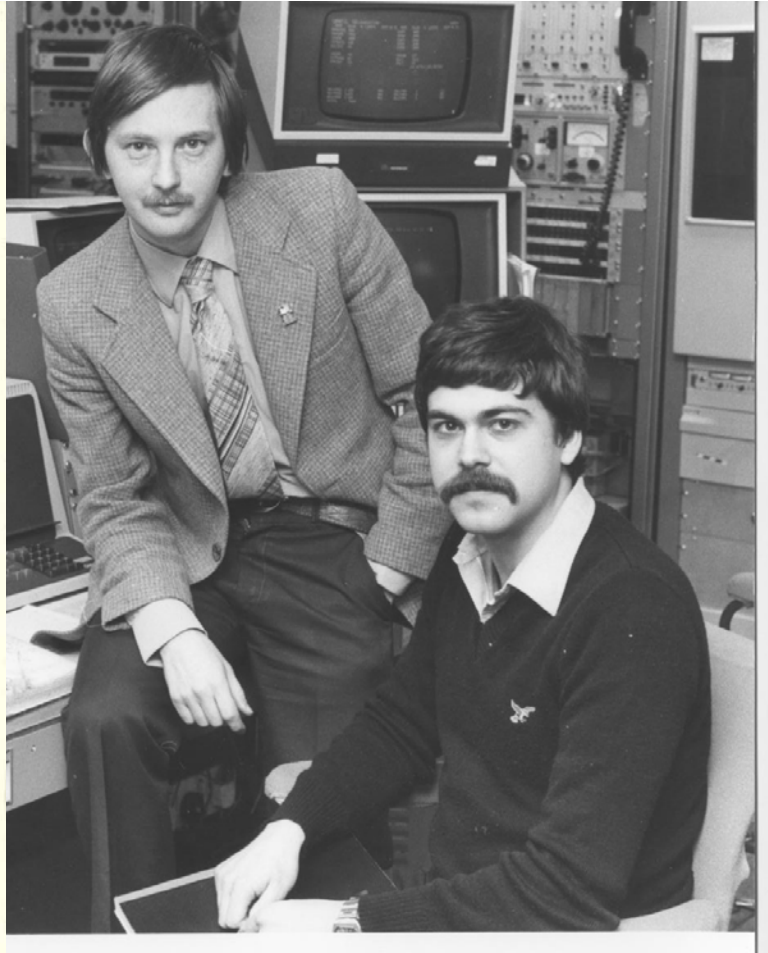
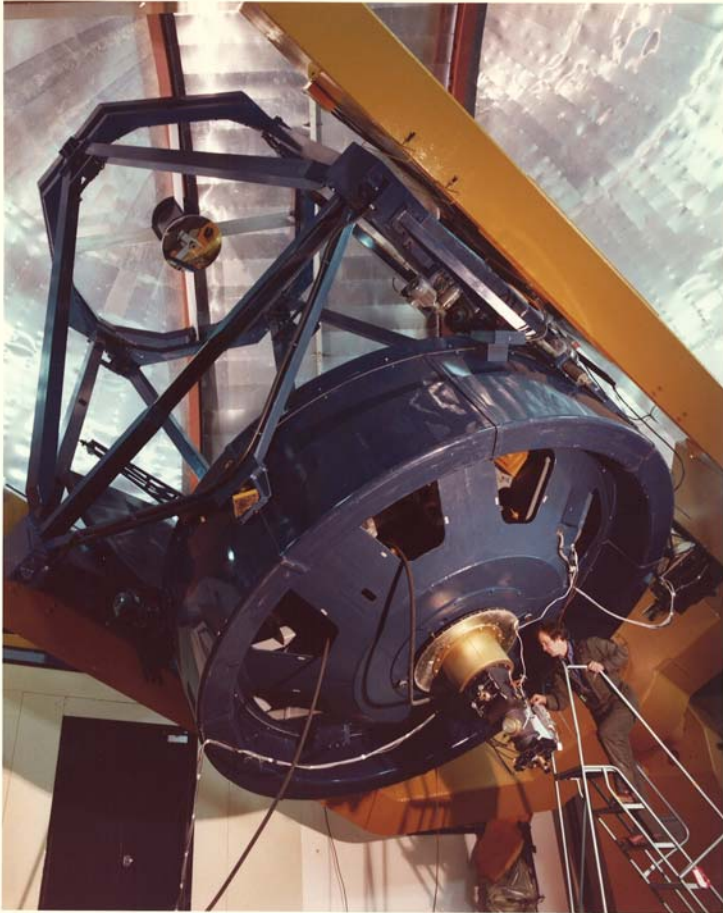


# Comets and Asteroids from UKIRT

(A personal journey)

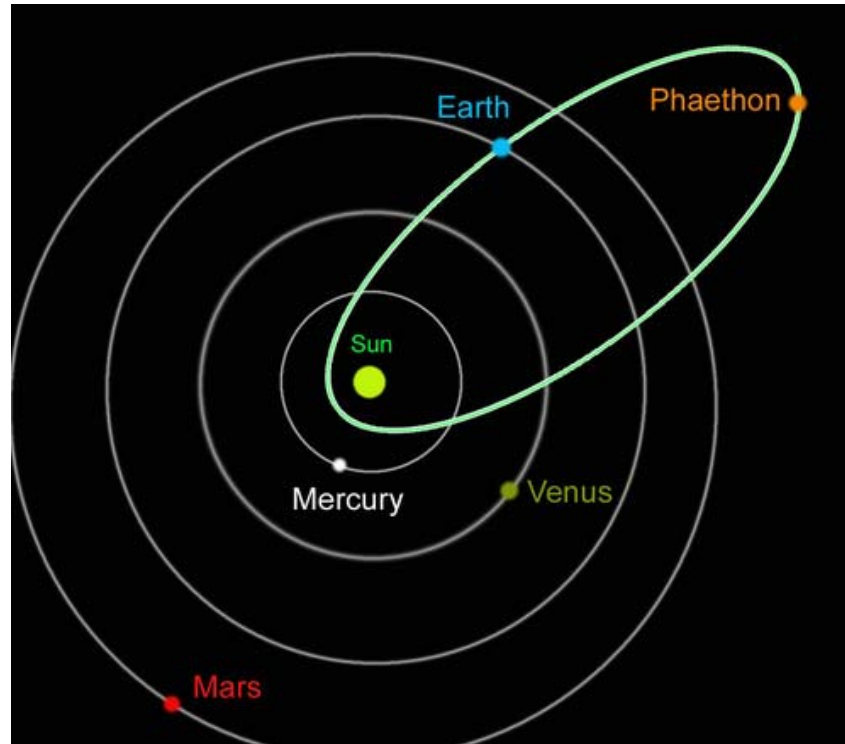
John Davies, UK Astronomy Technology Centre

Once upon a time.....

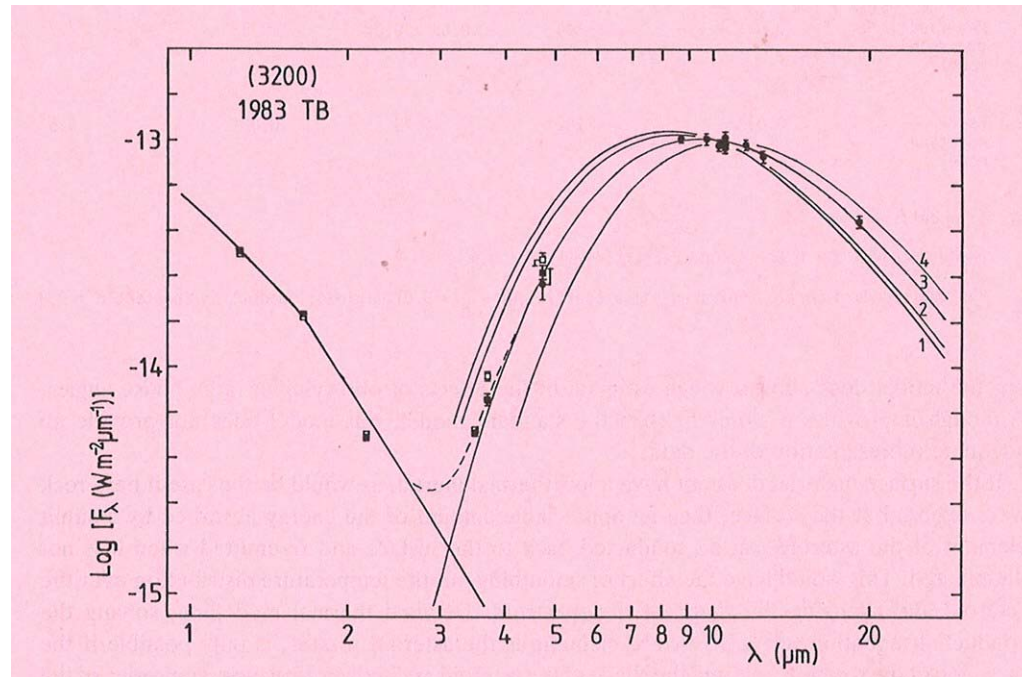


....there was a young telescope and a young astronomer.

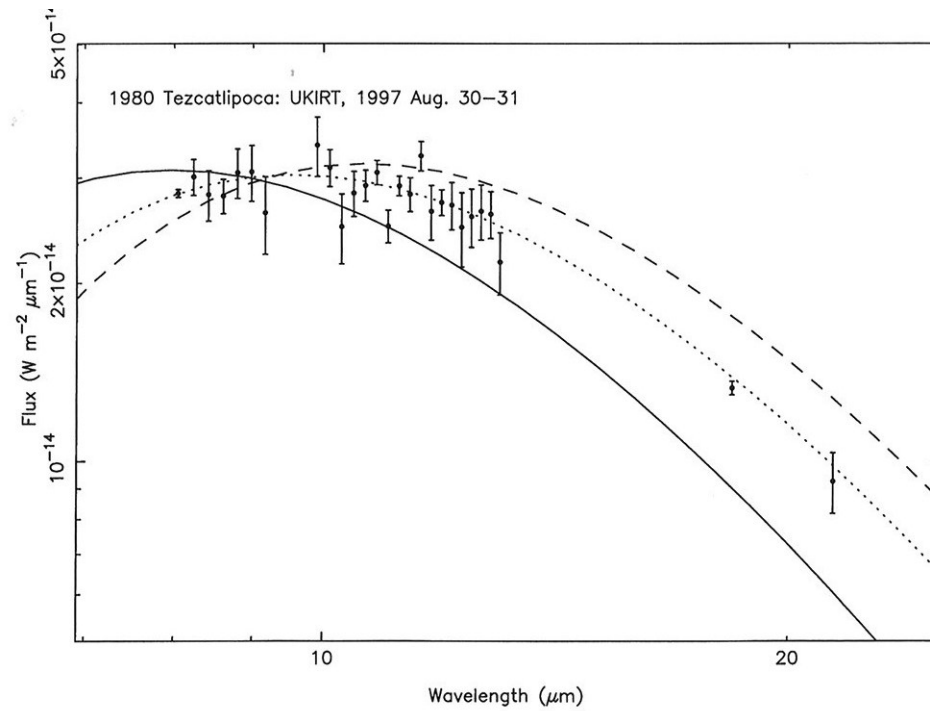
# 1983TB (3200 Phaethon)



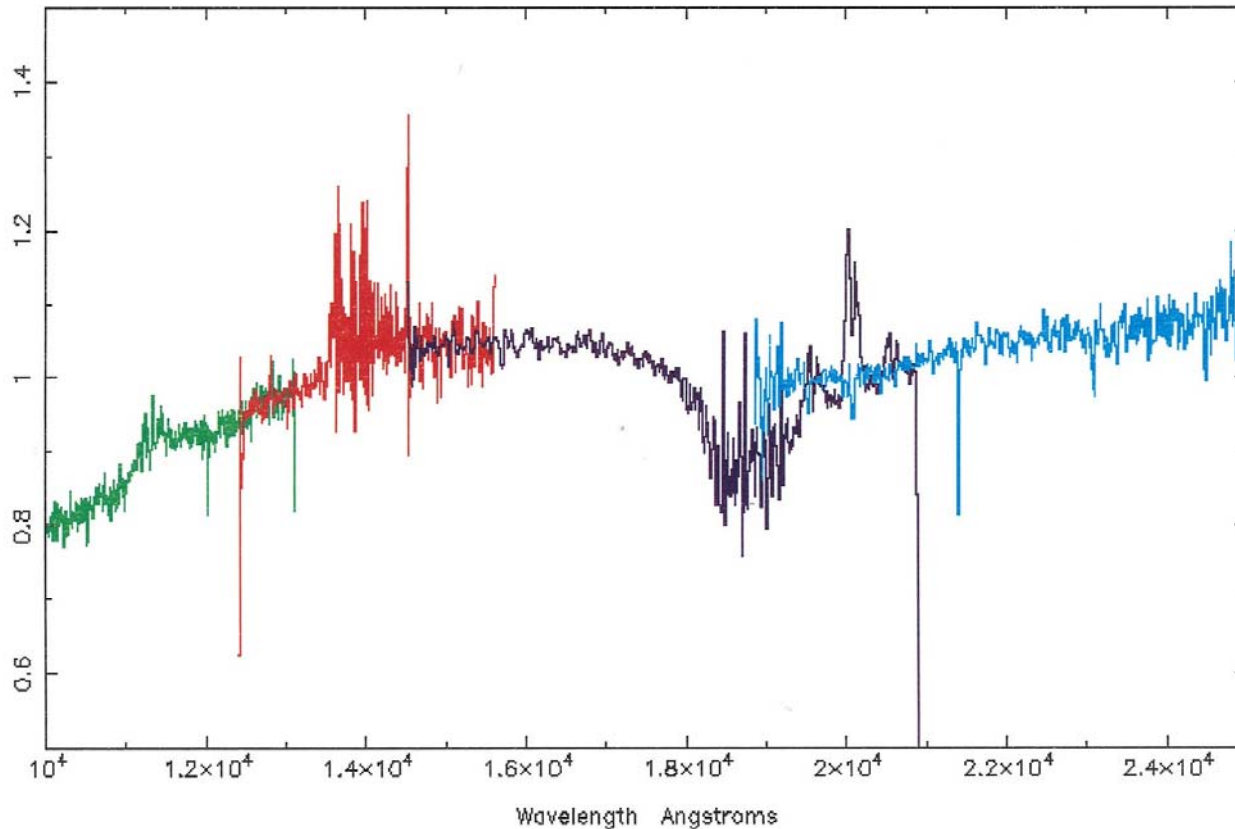
# 1993TB (3200 Phaethon) Stone or Snowball?



# NEATM



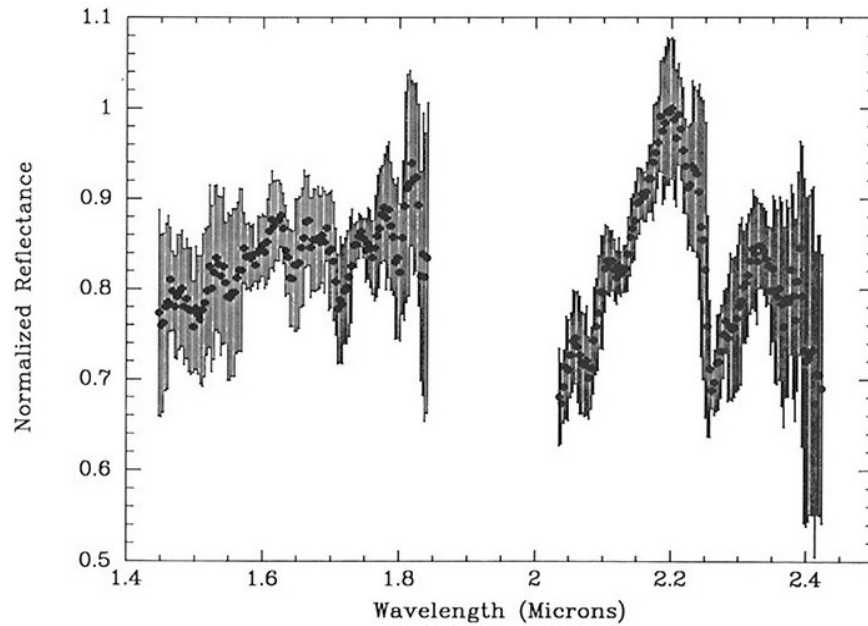
# Asteroid mineralogy with CGS4



# 5145 Pholus (and friends)

- Discovered in 1992 (5145) Pholus joined 2060 Chiron as the 2<sup>nd</sup> known Centaur (outer planet crossing) object.
- UKIRT service observations at JHK confirmed optical observations that it was very red with  $V-J= 2.58$

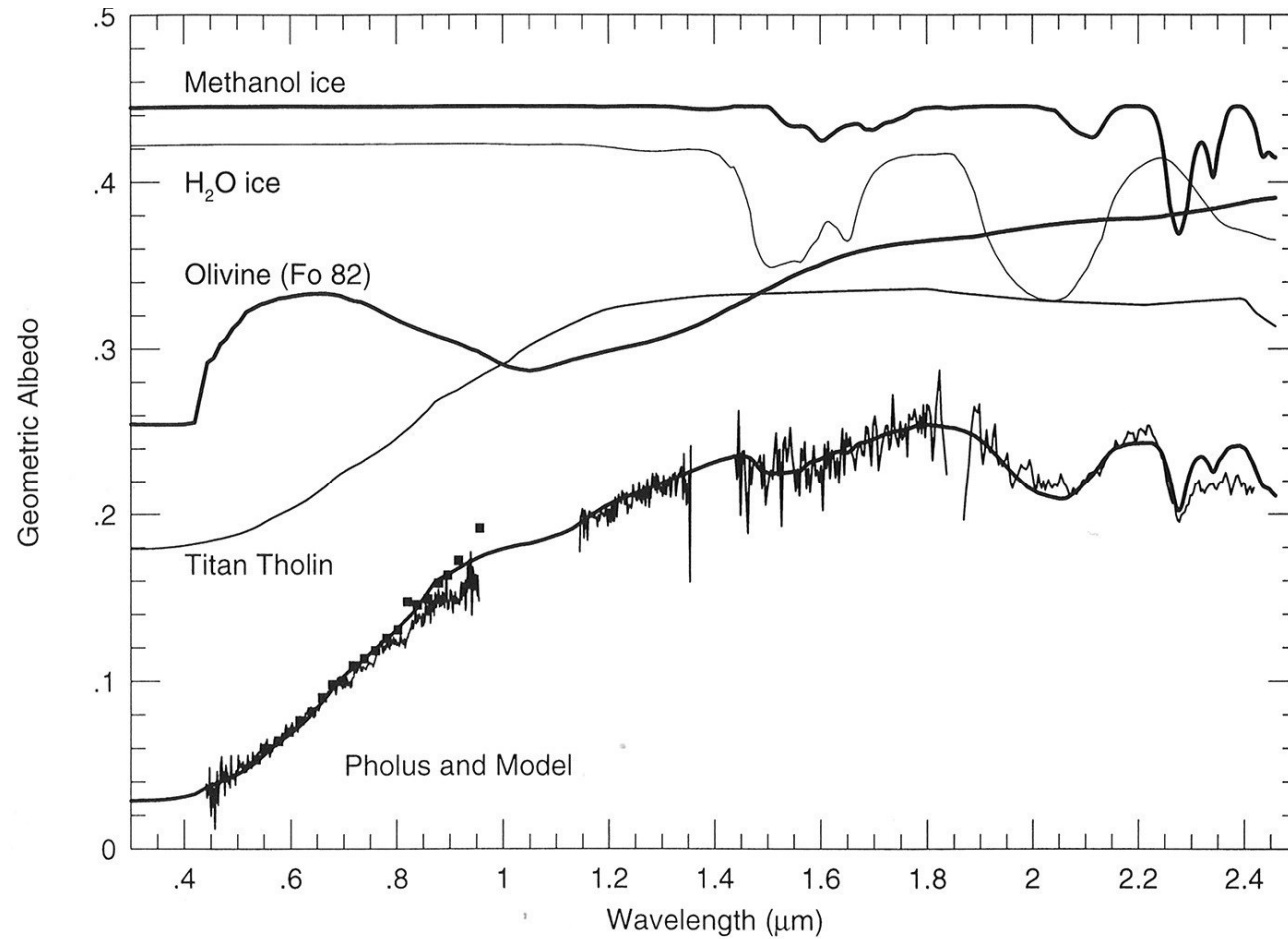
# 5145 Pholus: First IR Spectrum



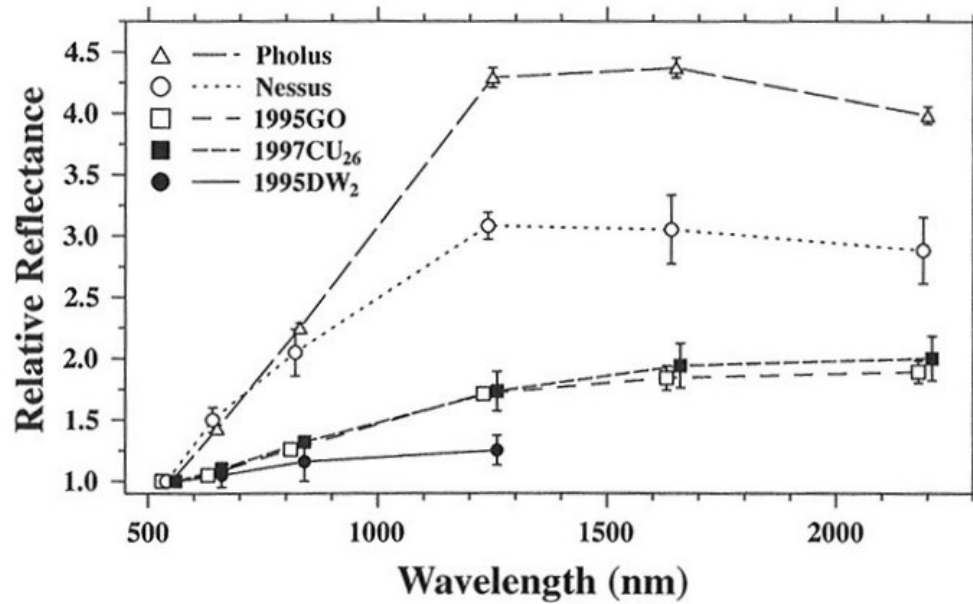
(Thanks Gillian)



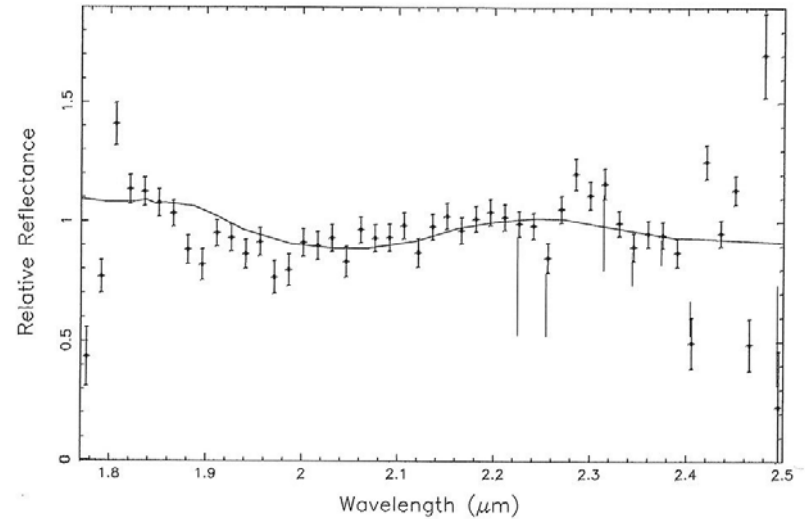
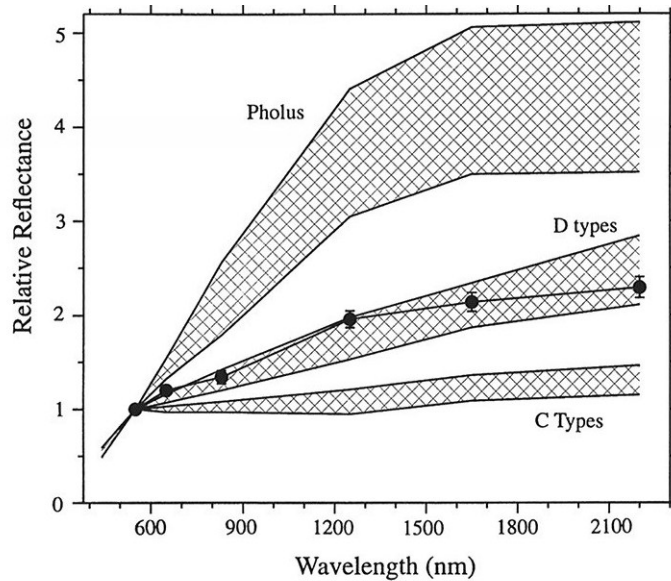
# 5145 Composition



# Other Centaurs



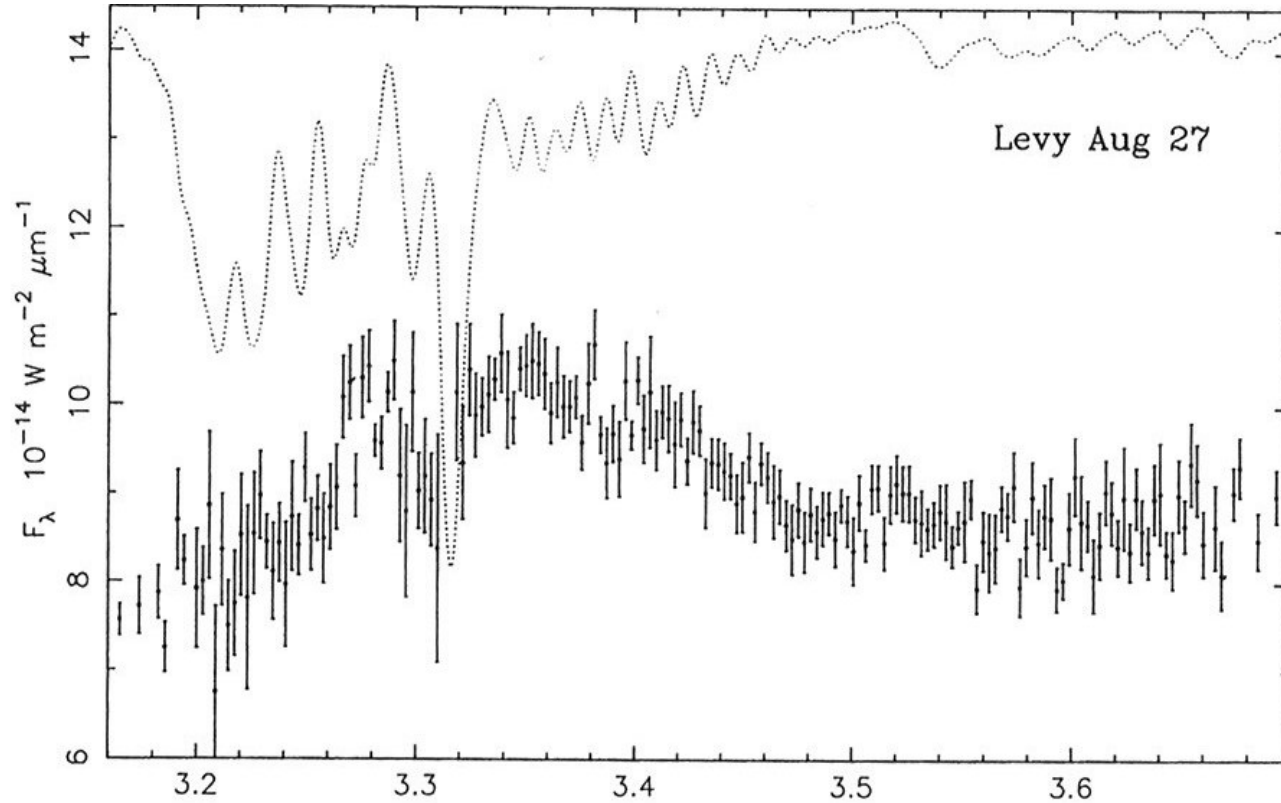
# Other Strange Asteroids



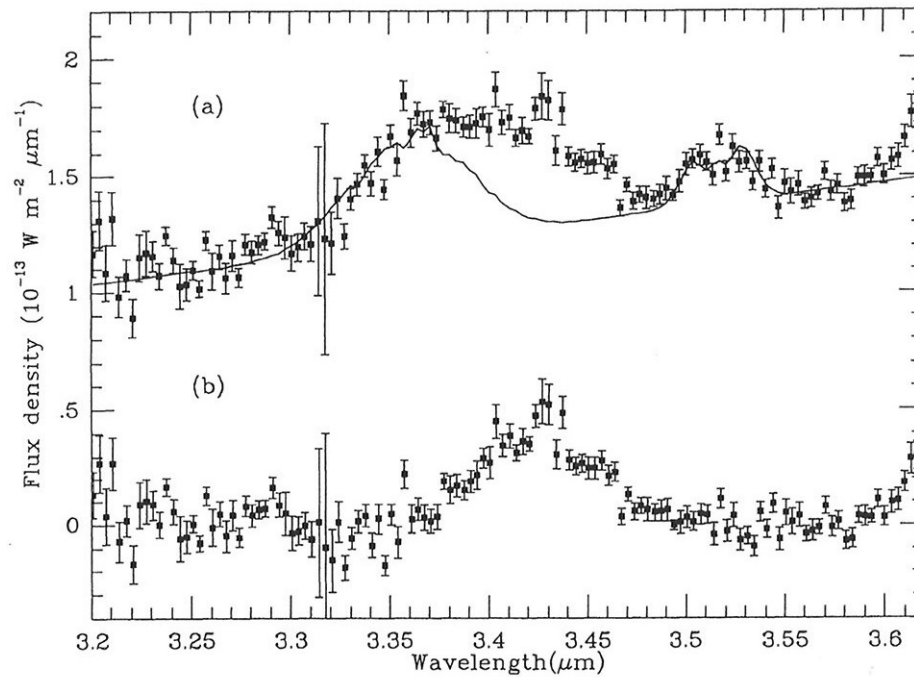
1993 PW Oort Cloud asteroid?

1998 WU24 Dormant Comet?

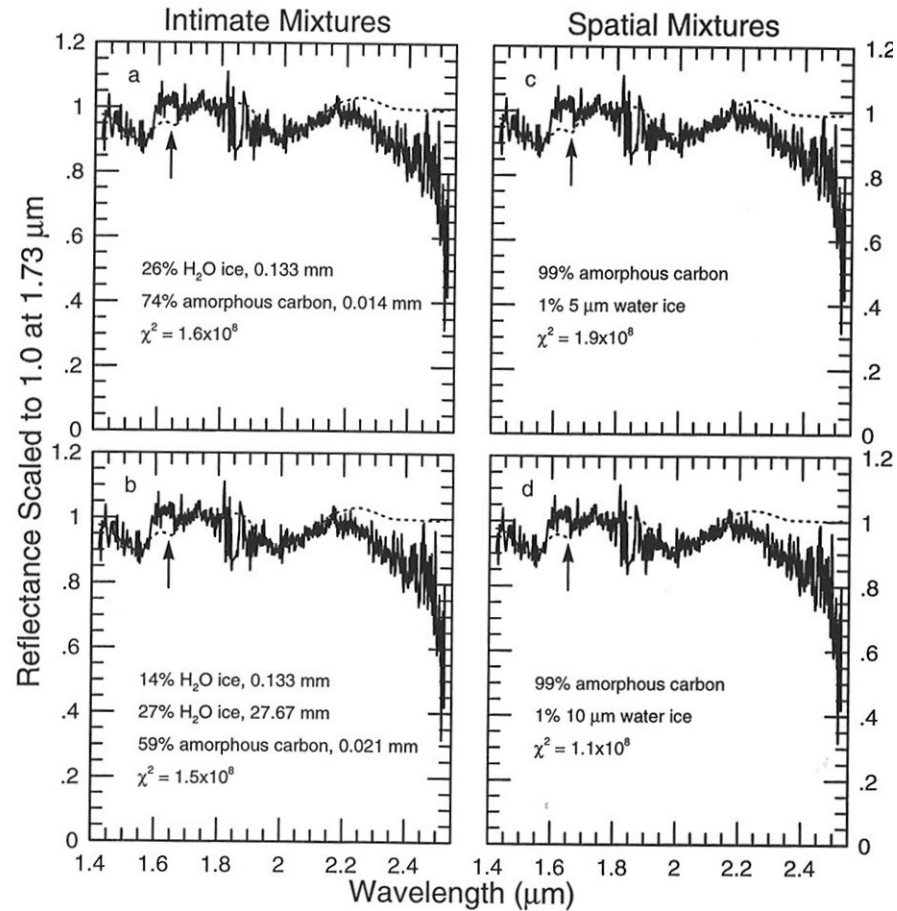
# Comet Spectroscopy



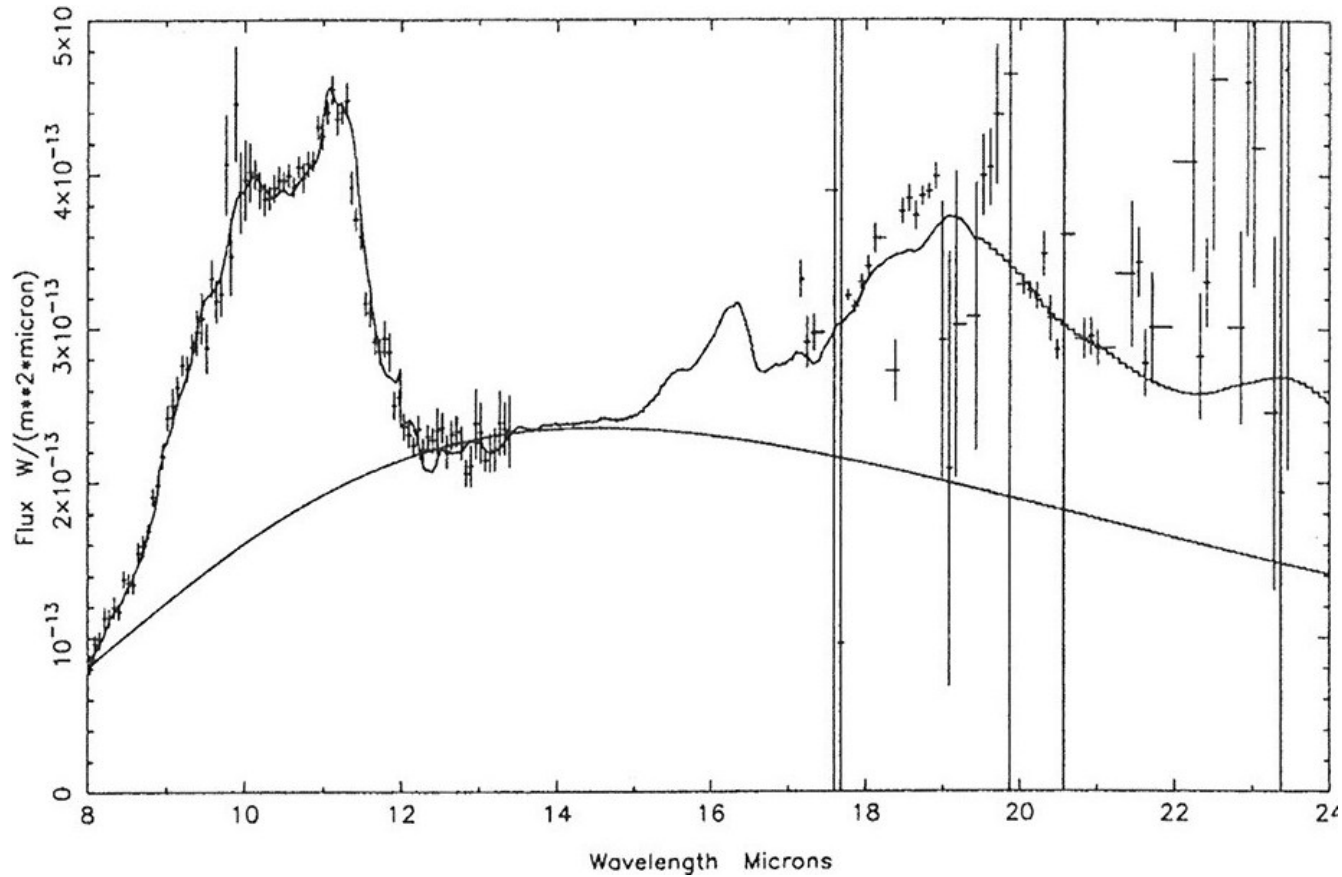
# Organics in Comet Swift-Tuttle



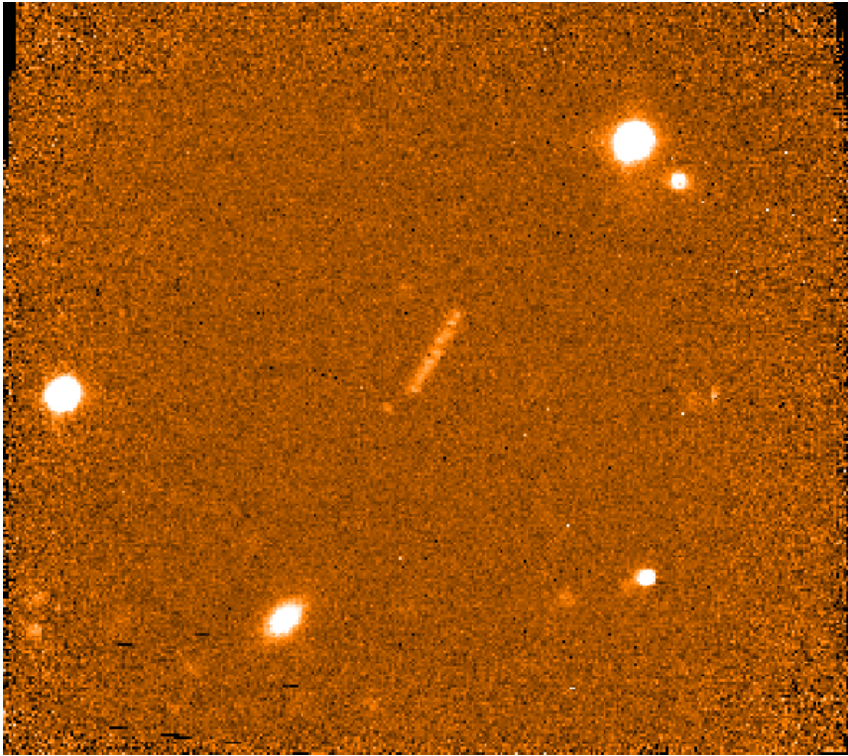
# Water in Comet Hale-Bopp



# Hale Bopp: CGS3 vs ISO

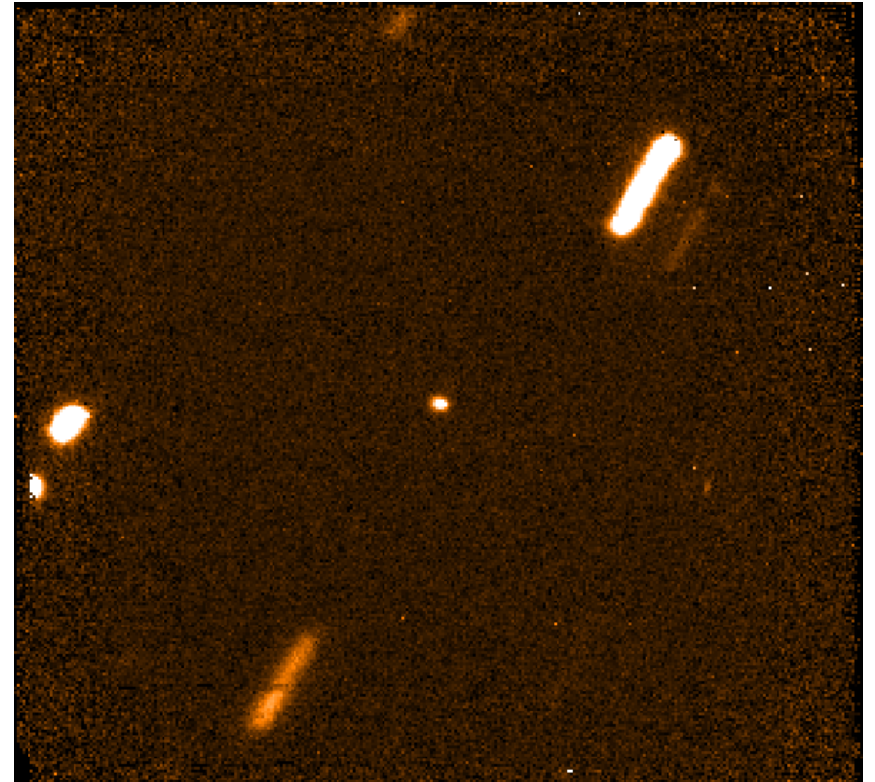
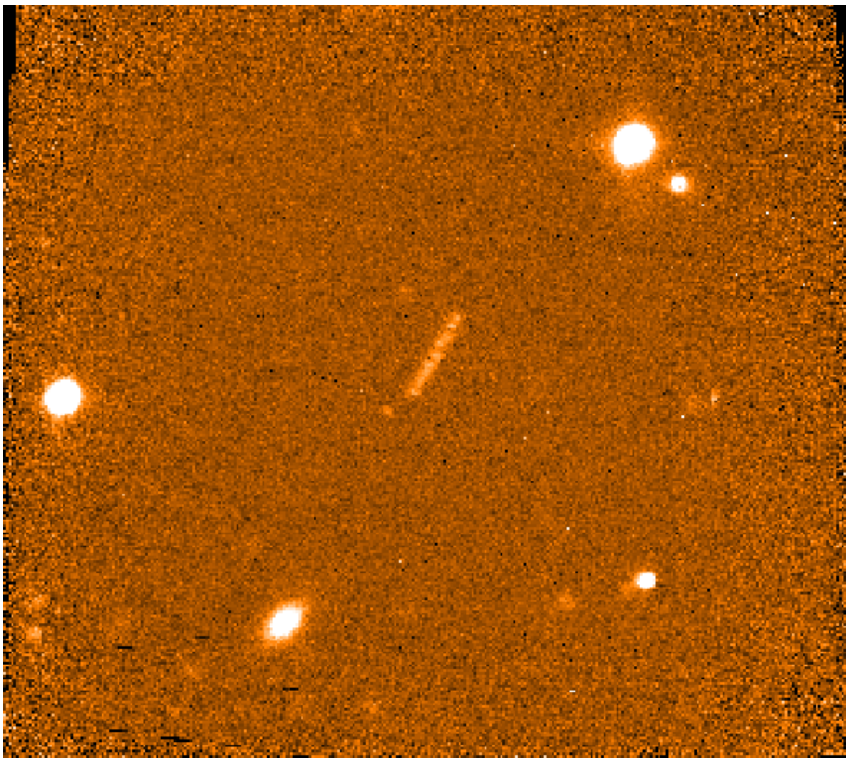


# Trans-Neptunian Objects: Faint and moving



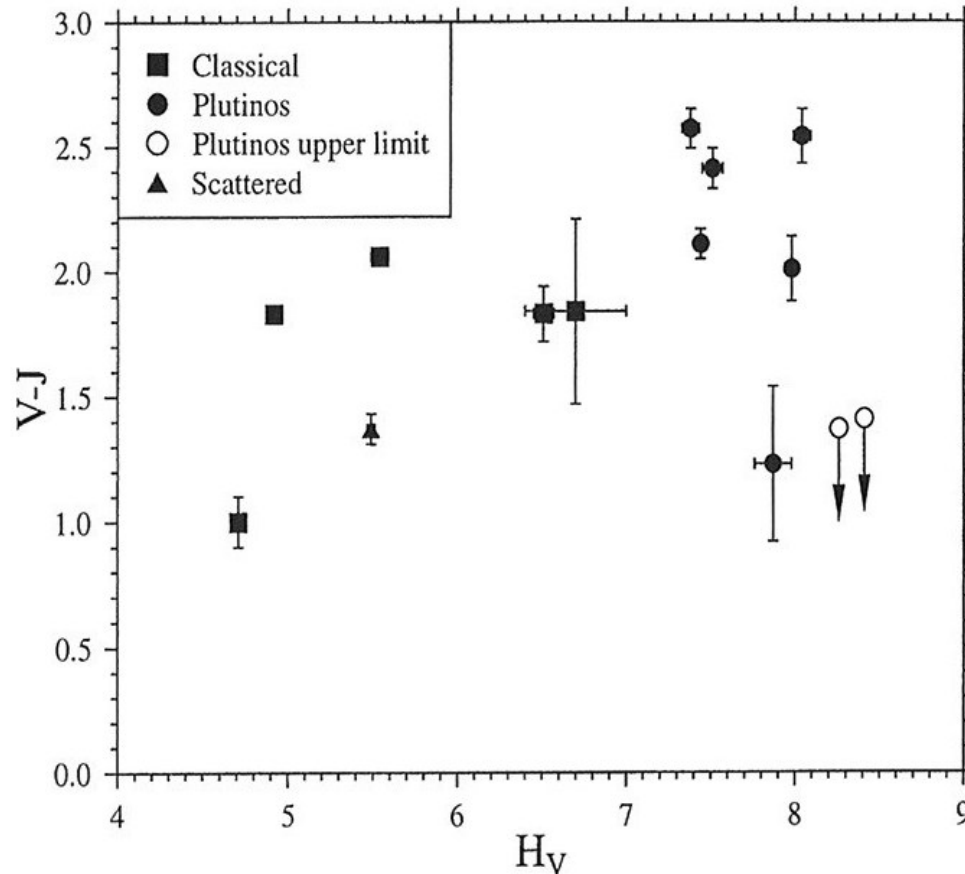


# Trans-Neptunian Objects: Faint and moving



Big thanks to ORAC, ORACDR and Malcolm Currie

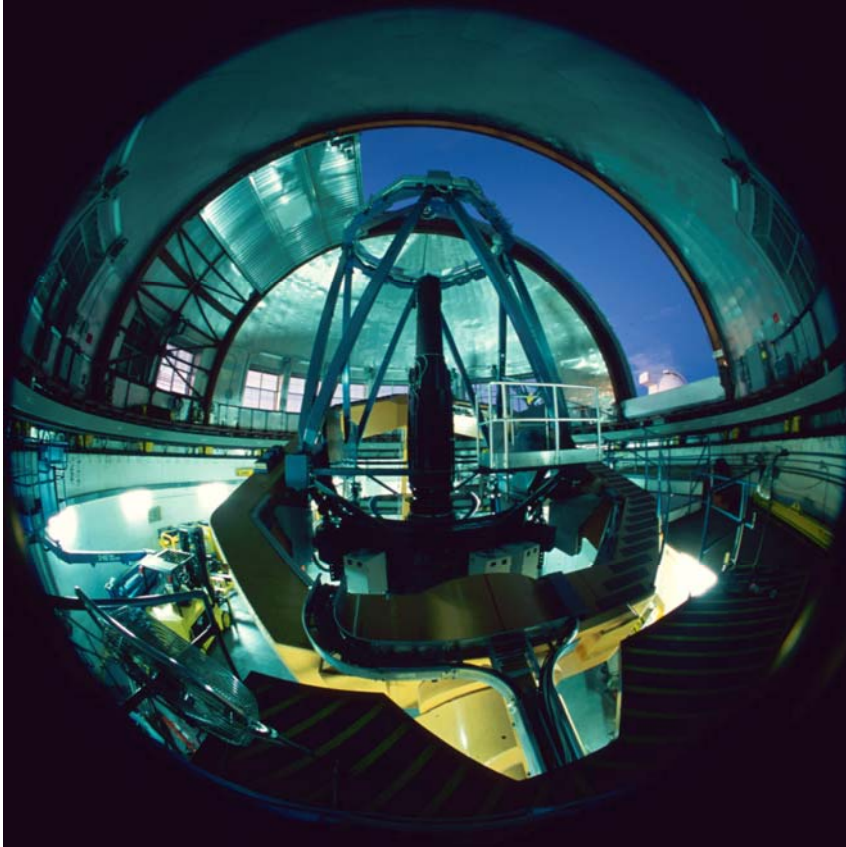
# Trans-Neptunian Objects: Searching for Trends

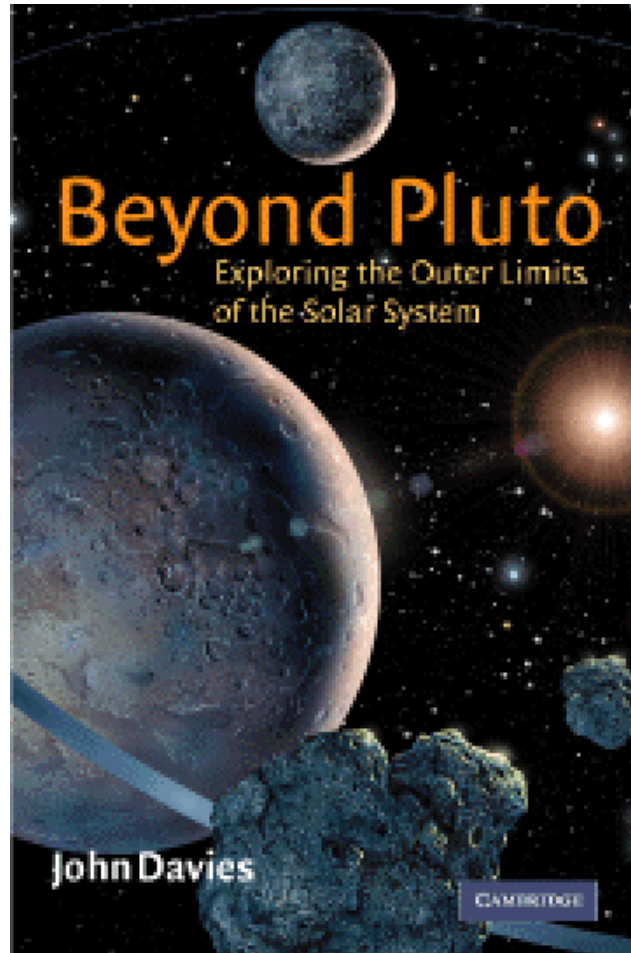


# Other Highlights

- Comet IRAS-Araki-Alcock
- H<sub>3</sub><sup>+</sup> in Jupiter and Saturn
- Spectroscopy of Giant planet moons, eg ices on Triton and Pluto
- The great comet crash (spectroscopy)
- Water in main belt Asteroids

# Where next?





*Dedication: To all my friends in Hawaii, especially those who made UKIRT the greatest infrared telescope in the world*