

Stars & Planets

Discussion points



General

Key science issues.....
.....from the discussion session:

- Archival research using Great Observatory data is becoming increasingly important: **Improve cross-linking between the individual archives**
- “Balanced” observing proposals (for 2-3 GObs) are not well served by the current proposal structure: **Consider modifications**
- 3 GObs have different timelines: **GObs TAC/panels should take this into account in assessing proposals**



Planetary systems

Key science issues.....

.....from the review

- Colours, compositions and masses of KBOs: *Spitzer & HST imaging*
- Physics of extrasolar planets through observations of transiting systems, particularly M dwarf planets: *Spitzer & HST time-resolved imaging & spectra*
- Observations of Solar System gas giants – transient phenomena: *Chandra, Spitzer & HST imaging & spectroscopy*

.....from the discussion session:

- Statistics & structure of protoplanetary disks – probing planet formation in the outer disk: *Chandra to find young stars to target; Spitzer to find disks; & HST to image disks – focus on complete samples and sub-solar mass stars*
- Concerted observations of comets – structure and composition: *Chandra gas emission, HST imaging, Spitzer IRS spectra*



Stars MS and beyond

Key science issues.....

.....from the review

- Beyond T dwarfs – probing extreme ultracool dwarfs: *Spitzer & HST imaging of targets identified through ground-based surveys (UKIDSS)*
- UV spectra of $[Fe/H] < -5$ stars – constraining the first epoch of Milky Way star formation: *HST STIS/COS spectra of stars identified through ground-based surveys*
- Systematic study of interacting binaries – particular emphasis on investigating potential SN II progenitors: *Chandra + HST UV spectra*
- Galactic Bulge globular clusters – age, composition & evolution from near-IR CMD analysis: *HST IR imaging (WFC3)*



Stars MS and beyond

.....from the discussion session:

- Astrophysics of jets and outflows – systematic coordinated study of well-defined, representative sample: **Chandra, HST & Spitzer** imaging of a statistically representative sample; multi-epoch observations for variability
- Excavating the stellar graveyard - characteristics of neutron star & black hole populations: **Chandra** detection in nearby galaxy, **Spitzer** and **HST** imaging to characterise environment
- Star cluster dynamics – mass segregation, stellar evolution & neutron star/BH progenitors: **Chandra, HST & Spitzer** imaging & spectra
- Coordinated observations of the Galactic Centre – transient phenomena & environment: **Chandra, Spitzer & HST** imaging & spectra
- Mass loss and winds in massive stars: **Chandra, HST, Spitzer** imaging & spectroscopy
- Probing the low-mass IMF – searching for planetary-mass brown dwarfs in young star clusters: **Deep Spitzer** imaging, **targeted HST** imaging