

Spitzer Warm Mission Opportunities



Galactic Science

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Steering Committee Reports

- Skrutskie et al.: Galactic Structure/ISM
- Strom et al.: Star Formation
- Knapp et al.: Stars & Brown Dwarfs

Contributed White Papers

- Gould et al.: Microlensing opportunities
- Wright et al.: WISE followup (Porcupine)
- Jura et al.: White dwarfs

Key Science Projects

- Expanded view of the Plane: Glimpse++
- Wide area surveys of OB associations, distant GMCs & outer spiral arms
- Variability studies: YSOs, L/T dwarfs, X-ray sources - piggyback on other projects?
- A deep “wide” survey for brown dwarfs & high-redshift quasars
- WISE (and other IR survey) follow-up

Things we'd kick ourselves for not doing

- Finding the first Y dwarf
- Microlensing & near-field triangulation - taking advantage of the wide separation between Spitzer & ground-based facilities
- IR emission from X-ray sources - limited timeframe for X-ray satellites/GLAST/Spitzer availability
- “Wide” surveys of young clusters/star forming regions

1000 hr “Transition” Program(s)

- SDSS Southern strip
 - 225 deg² of deep SDSS data ($r' \approx 25$)
 - Brown dwarfs & high redshift science
- Surveys of widely distributed sources
 - IR excess around White dwarfs
 - X-ray binaries
 - Brown dwarf companions
 - OB associations
- Variability studies

Things we agreed on

- “Suitable” time must be allowed for short (< 100 hr) PI programs - 1/7th is not enough
- Deep “wide” surveys should be conducted with time domain in mind
- Some kind of global data product is essential for enabling community access to large programs - SSC, proposing team, archival PI program
- ToO programs - few ok, not a big priority

Things we did not agree on

- Priority of large programs - no single science program was overwhelmingly supported by Galactic community
- \$\$\$ - who gets it?
 - Spitzer mission should retain funds to maintain quality data product and support
 - Ramp up in archive funding seems logical
 - Concerns about supporting large legacy-like programs on < 1/4 of legacy budgets
 - No qualms on dropping funding for (very) small proposals

Why do Galactic Astronomers need a warm Spitzer?

- Studies of Galactic (disk/bulge) structure need to peer through extinction in plane, at high sensitivity, with good imaging resolution and a wide field of view
- The frontier of brown dwarf research is at low temperatures => MIR imaging
- IR emission from non-IR sources - unexpected, still poorly explained
- WISE, Vista, UKIDSS will NOT be sufficient to address all Galactic science questions - wavelength & resolution are key science enablers