

SASSy summary document

Observations summary

In the 2 year pilot phase of SASSy we will map two 10-degree wide strips, one centred on the Galactic Plane (and known as GP-Wide) and one perpendicular to the plane and centred on the North Ecliptic Pole (known as Pole to Pole or P2P). Both strips are terminated by a declination limit of -30° to avoid regions of perpetually high airmass. The target 1-sigma depth of each strip is 30 mJy at $850 \mu\text{m}$. NB – SASSy will observe in weather grade 4 and so will not obtain any $450 \mu\text{m}$ data.

Following the 2 year pilot our intention is to map the remaining sky to the same target depth of 30 mJy, concentrating first on the ALMA accessible portion of the sky ($-30^\circ < \delta < +40^\circ$), then on the northern cap $> +40^\circ$. We will re-examine this proposed strategy in the light of the results from the pilot survey.

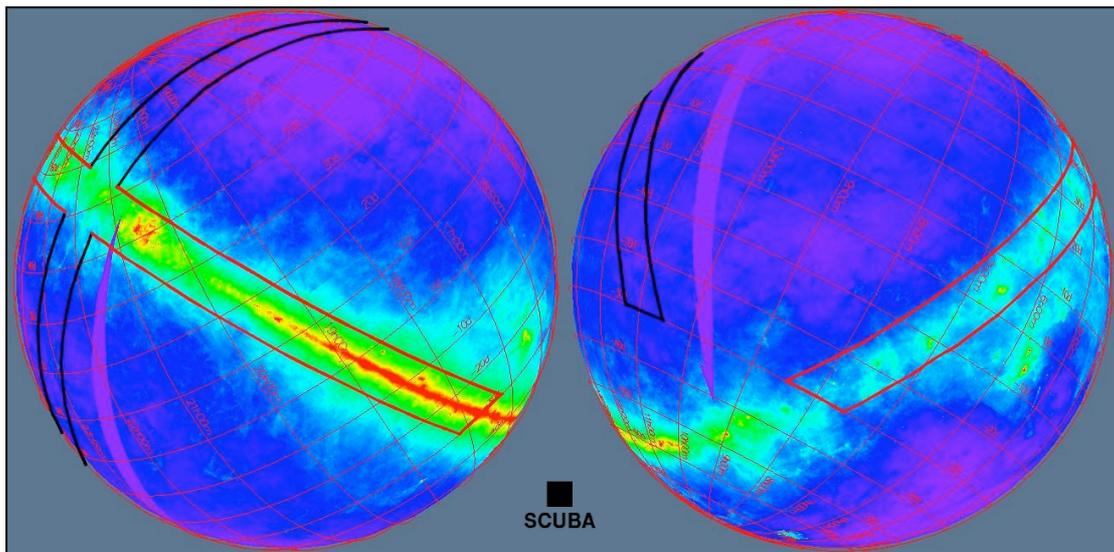


Fig 1: The two strips that will be mapped in the pilot phase, overlaid on an IRAS $100 \mu\text{m}$ survey image.
GP-Wide: $l=0-245^\circ$, $|b| < 5^\circ$
Pole to Pole: $l=91-101^\circ$, $-90^\circ < b < 90^\circ$; $l=271-281^\circ$, $20^\circ < b < 90^\circ$ & $-90^\circ < b < -85^\circ$

Survey Science Goals

- To determine the number and distribution of Infrared Dark Clouds (IRDCs) in the Galaxy
- To determine the relation between IRDCs and Galactic structure
- To search for and identify unknown populations of star formation in IRDCs, high-latitude clouds and isolated star-forming regions outside known clouds
- To determine the fraction of clustered versus isolated star formation
- To identify the origin of field T-Tauris by answering the distributed T-Tauri problem
- To search for new populations of extreme luminosity galaxies and determine their redshifts with ASTRO-F FIR data
- To determine the number counts of bright sub-mm galaxies
- To investigate the lensing fraction of sub-mm galaxies
- To provide high-resolution foreground maps at $850 \mu\text{m}$ for *Planck*
- To search for and identify cold local galaxies
- To provide compact pointing and flux calibrators for *ALMA*, *Planck*, *Herschel* & *JCMT*.