

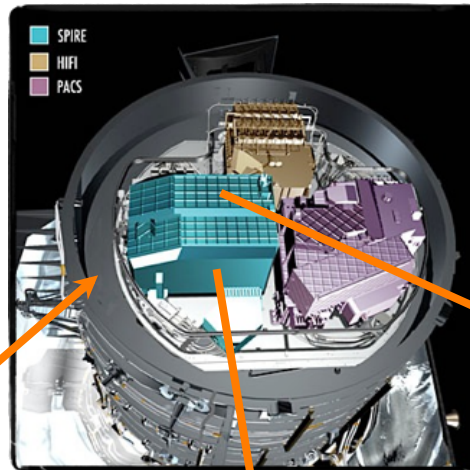
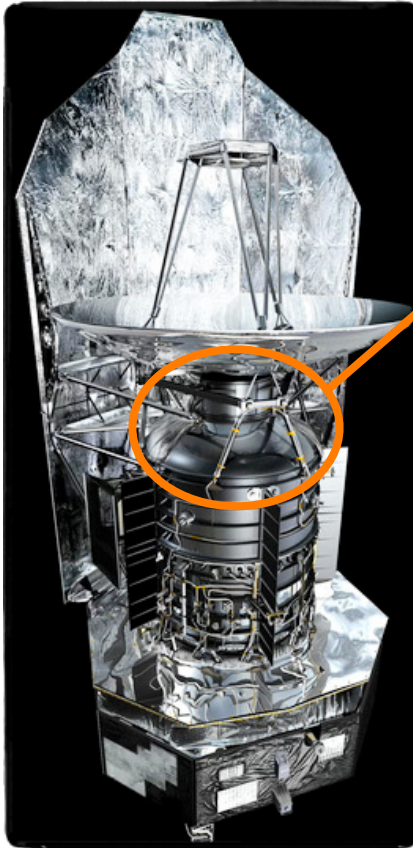
SPIRE Instrument: Photometer Overview

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on behalf of the
SPIRE ICC, the HSC and the NHSC

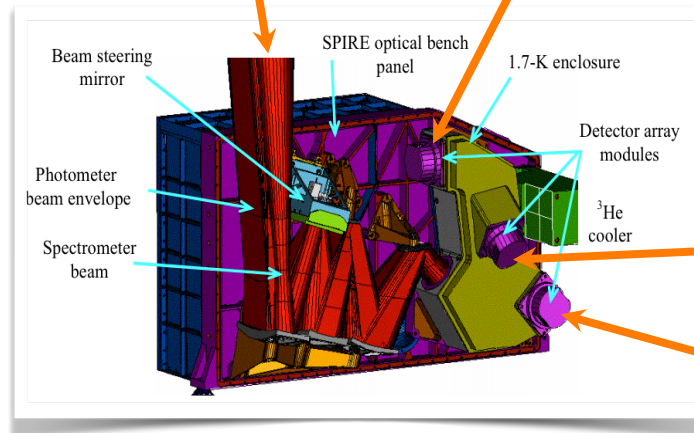
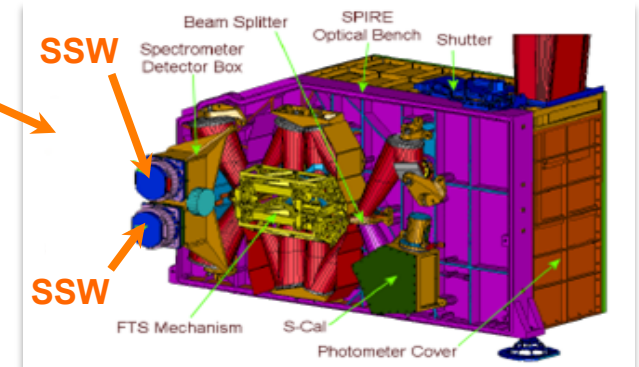


The Instrument



Imaging Fourier Transform Spectrometer

Simultaneous imaging observation of the whole spectral band
 37 and 19 pixels
 Wavelength Range: 194-313, 303-671 μm
 (447 – 989 GHz, 959 – 1545 GHz)
 Resolution: 24.98, 7.207, 1.193 GHz
 Circular FOV 2.0' diameter, beams: 17-21", 29-42"

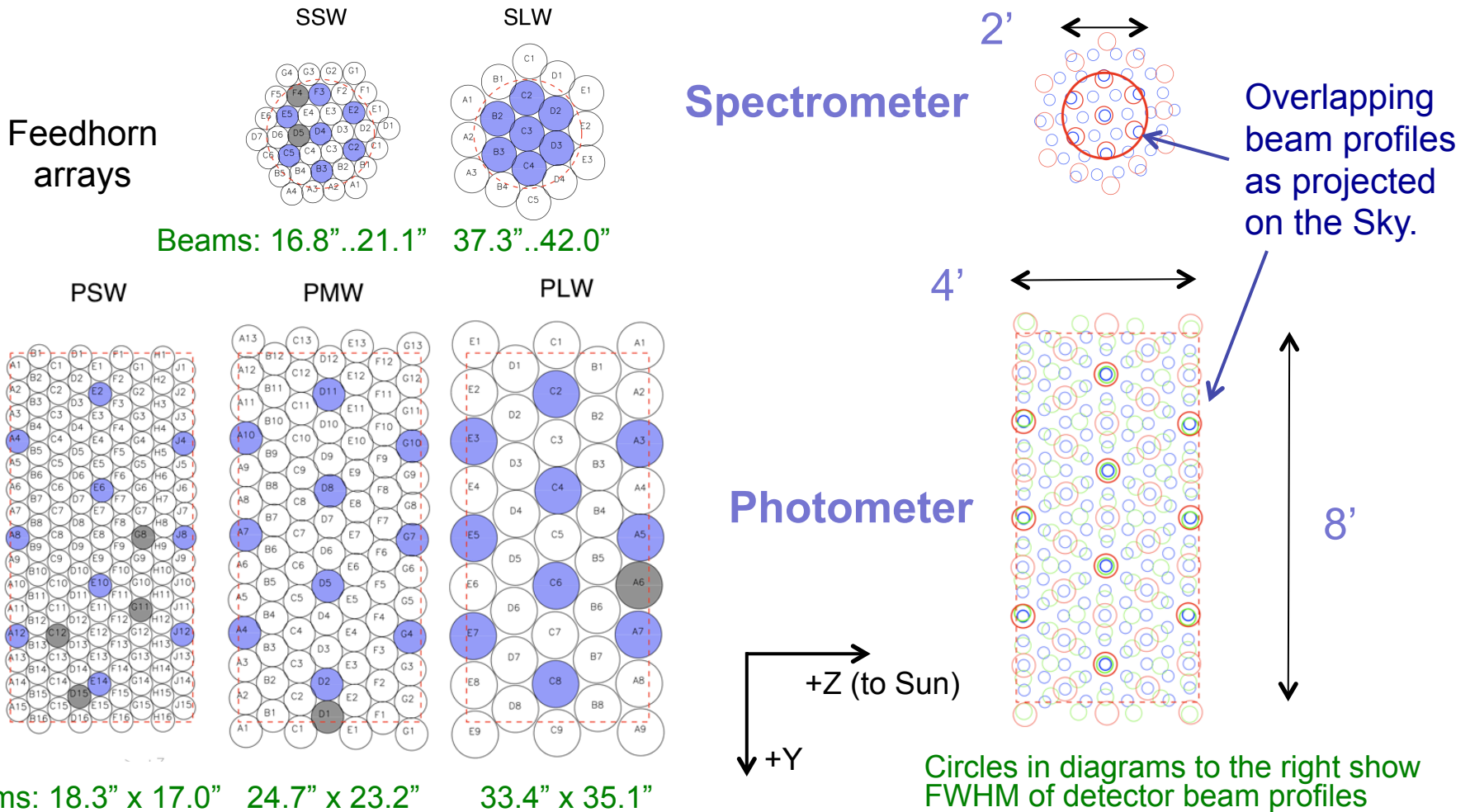


Imaging Photometer

Simultaneous observation in 3 bands
 139, 88, and 43 pixels
 Wavelengths: 250, 350, 500 μm
 $\lambda/\Delta\lambda \sim 3$
 FOV 4' x 8', beams 17.6", 23.9", 35.1"

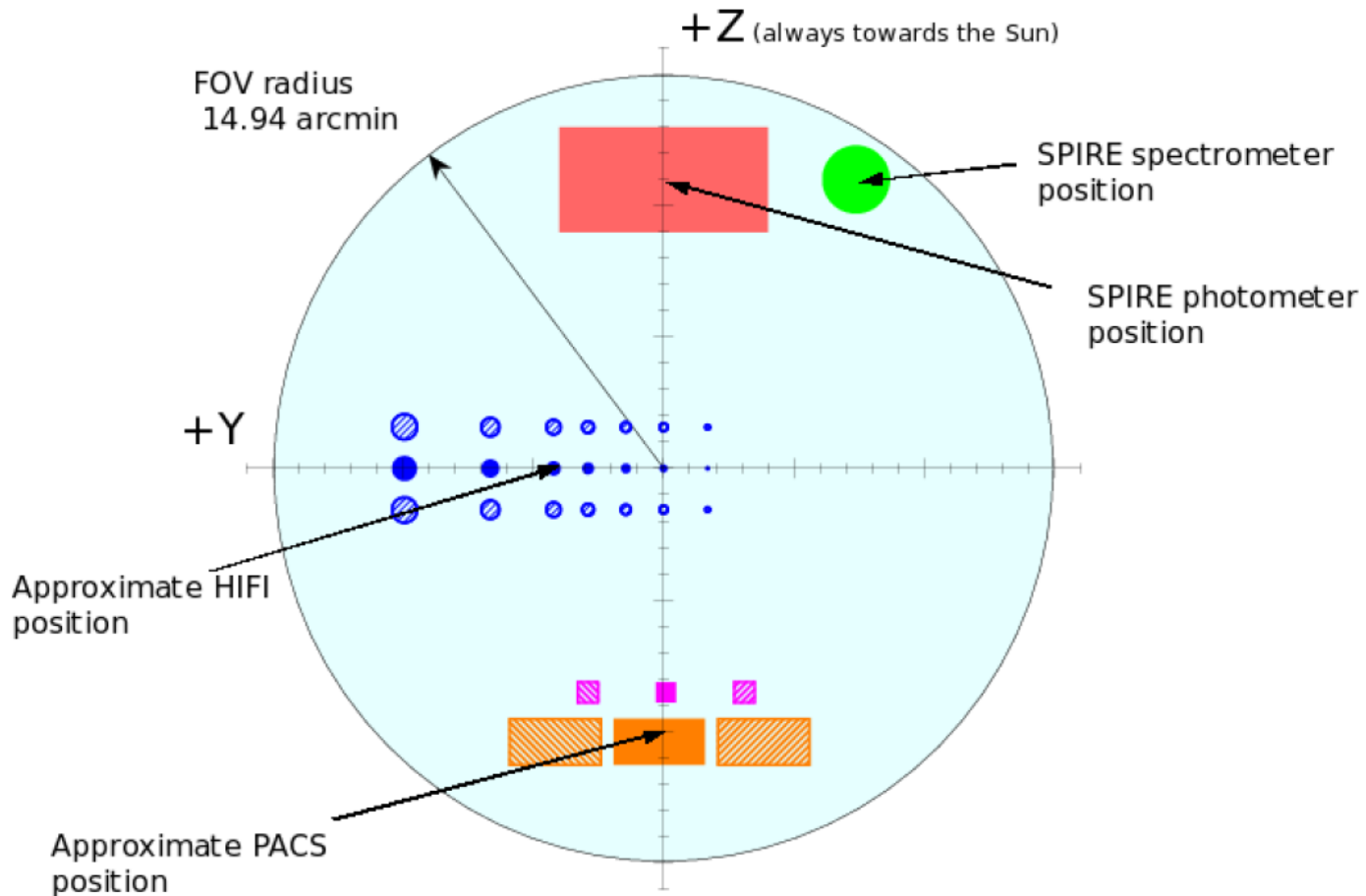


Bolometer Arrays Projected on the Sky



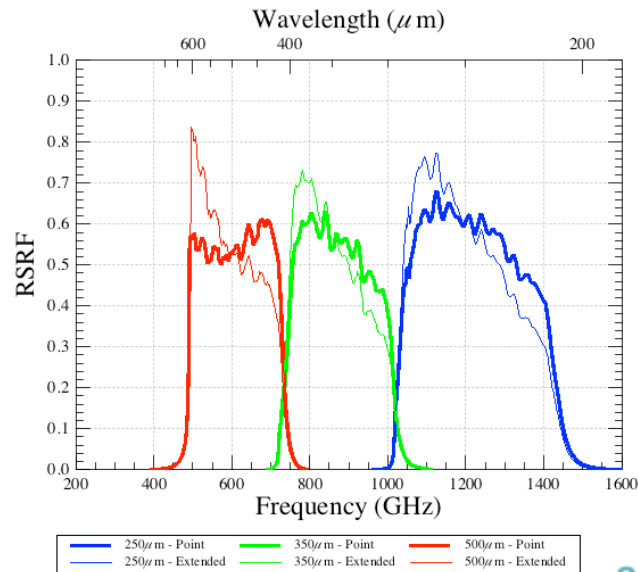


SPIRE in the Herschel Focal Plane



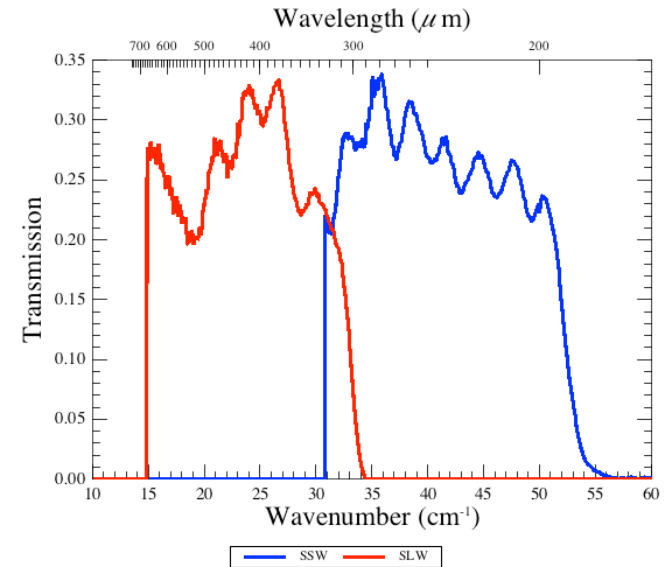


SPIRE Wavelength Coverage

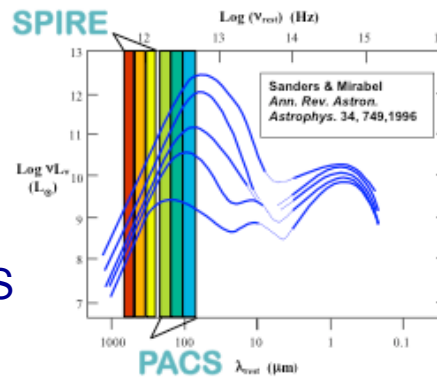


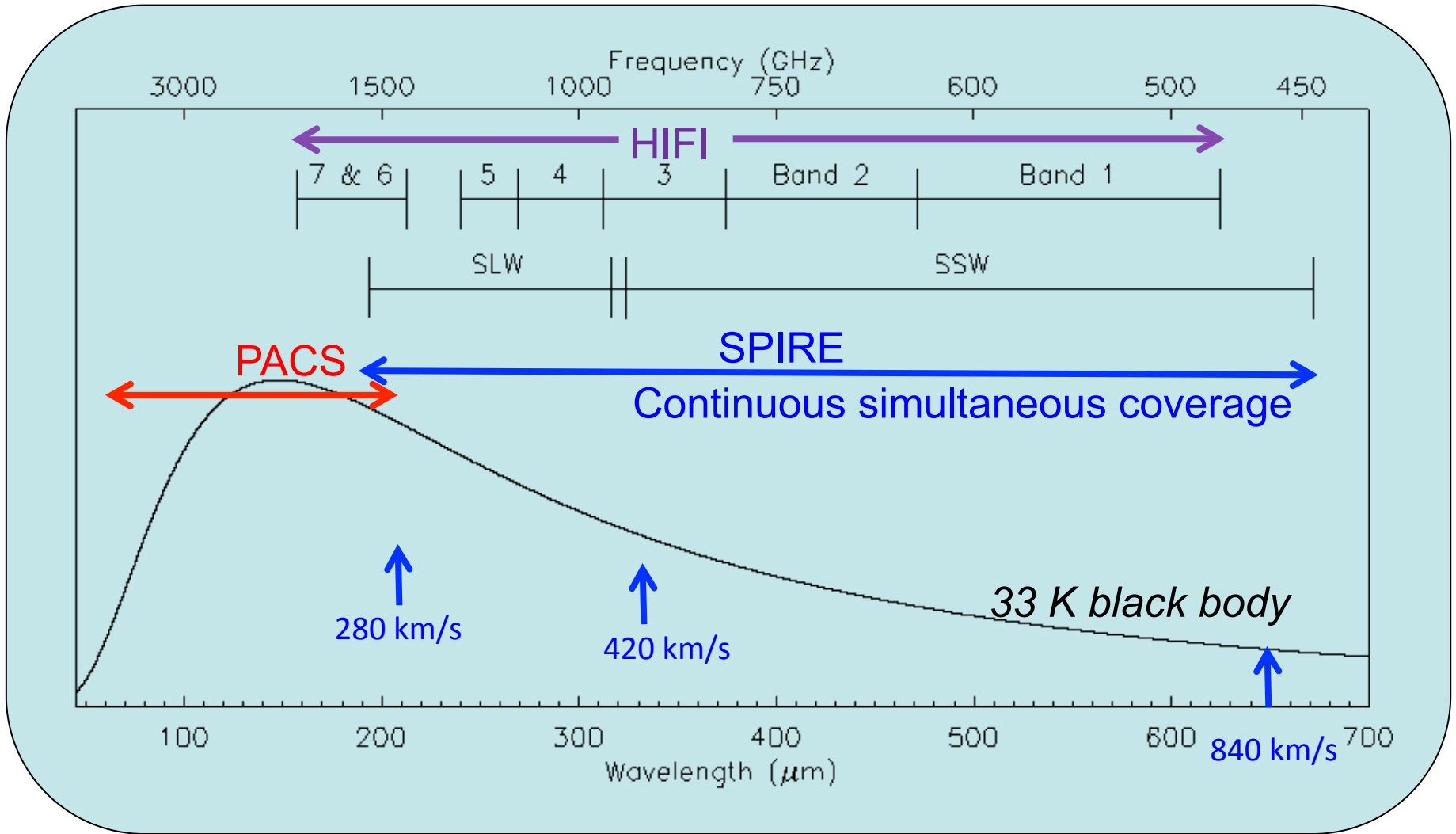
Photometer

Complementary to PACS



Spectrometer





Photometer Observing Modes



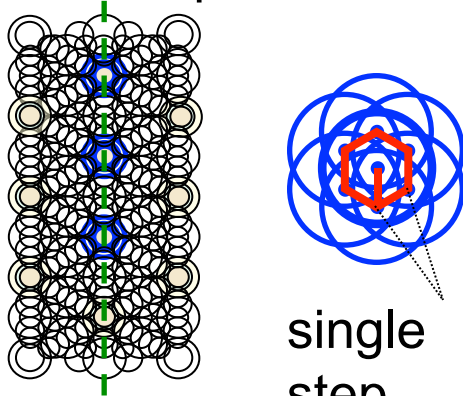
Photometer Observations

7 point jiggle (point source)

small map

scan (large) map

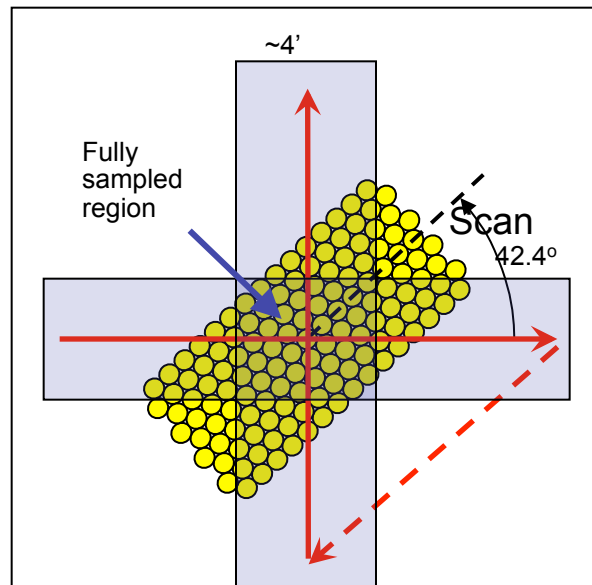
126" chop + nod



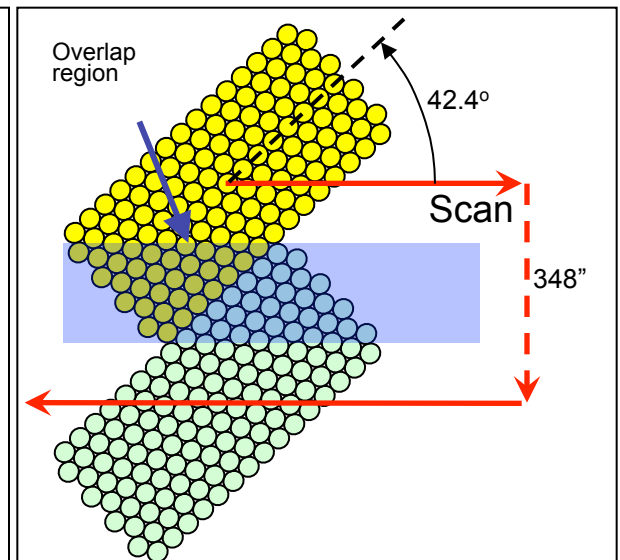
single
step
~ 6"

7-point jiggle for point source photometry, to compensate pointing error and under-sampling. Chopping and nodding at each jiggle position.

Some observations exist in the archive but were never used for standard observation programs.



Single cross scan at 84.8° replaces Jiggle map. Scan map at speeds of 30 and 60 "/sec. Full spatial sampling in center of scans.

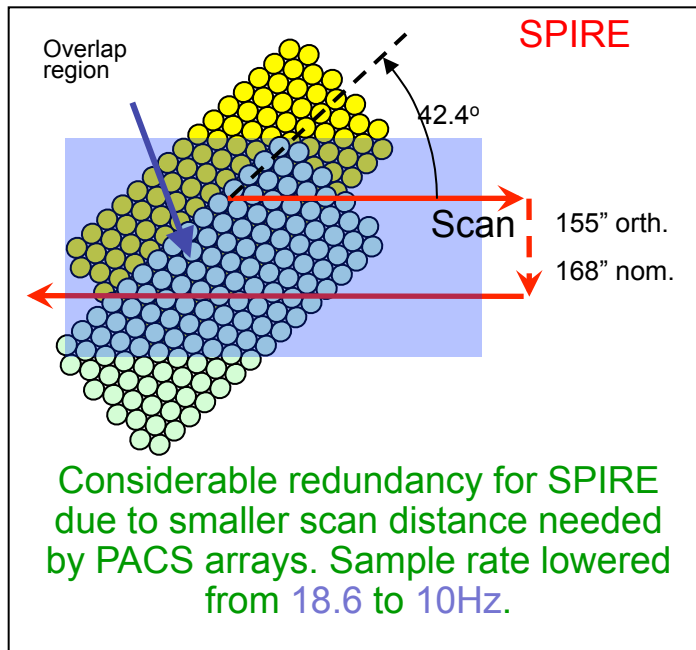


Scan map at speeds of 30 and 60 "/sec is most efficient mode for **large-area surveys**. Parameters are optimized for full spatial sampling and uniform distribution of integration time. Cross scan capability (84.8°)

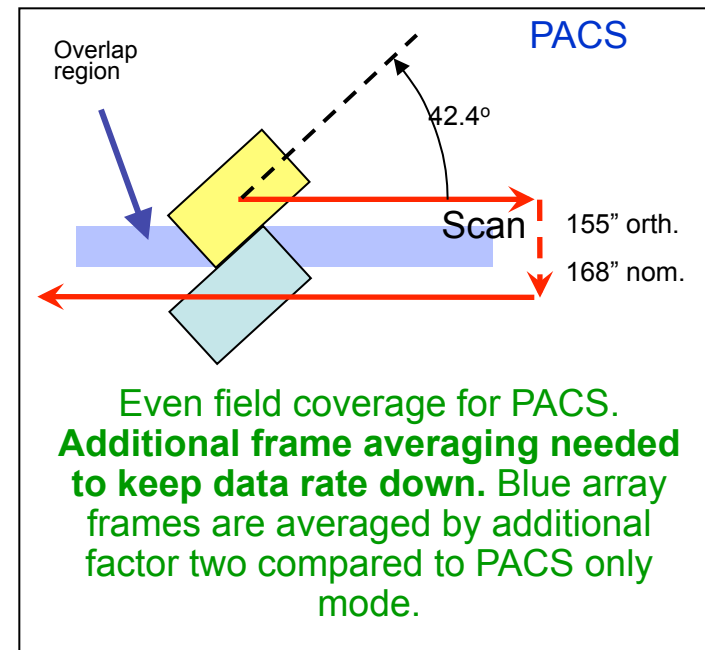
Parallel Mode SPIRE and PACS

1. Scan maps at speeds of 20 and 60"/sec with PACS and SPIRE active in parallel are useful for large-area surveys.
2. The distance between PACS and SPIRE apertures is 21 arcmin.
3. Two almost orthogonal (84.8°) directions for cross scanning are available.

SPIRE Geometry



PACS Geometry





Examples for Photometer End Products

