



Submillimeter Wavelength Observations of Sgr A*

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Submillimeter Array on Mauna Kea



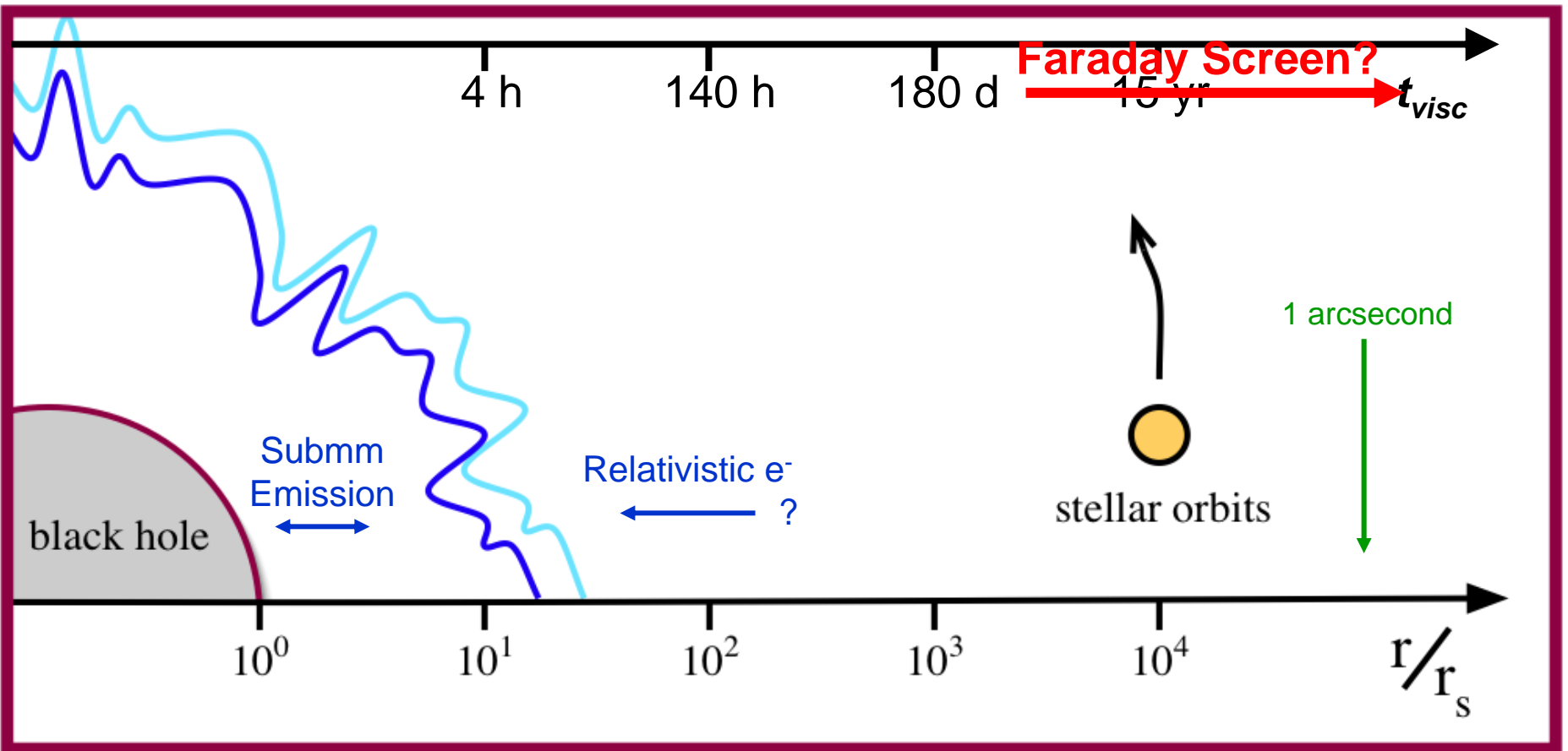
**SMA is a project of Smithsonian Astrophysical Observatory and
The Academia Sinica Institute of Astronomy and Astrophysics (Taiwan)**

**SAO is an independent agency of US Government
Budget = \$100M/yr, 700 people**





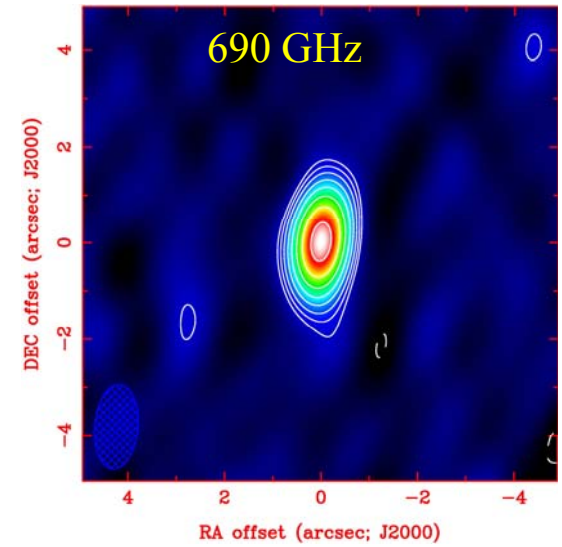
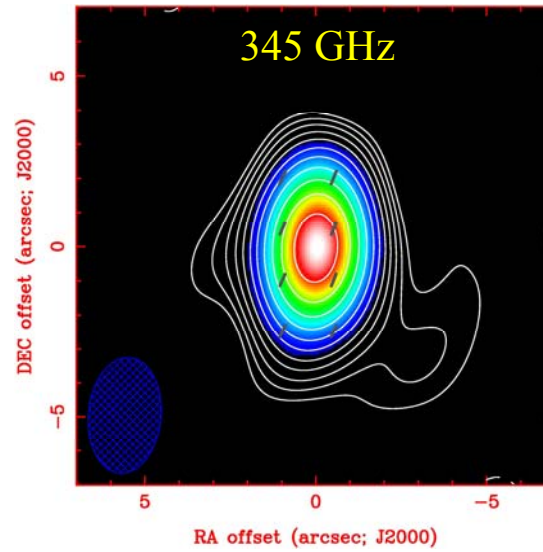
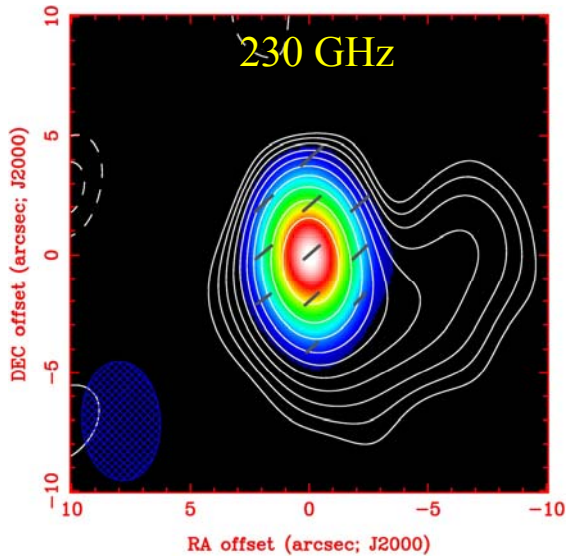




Schwarzschild Radius = 10 uas, 10^{12} cm



Polarization at Various Wavelengths









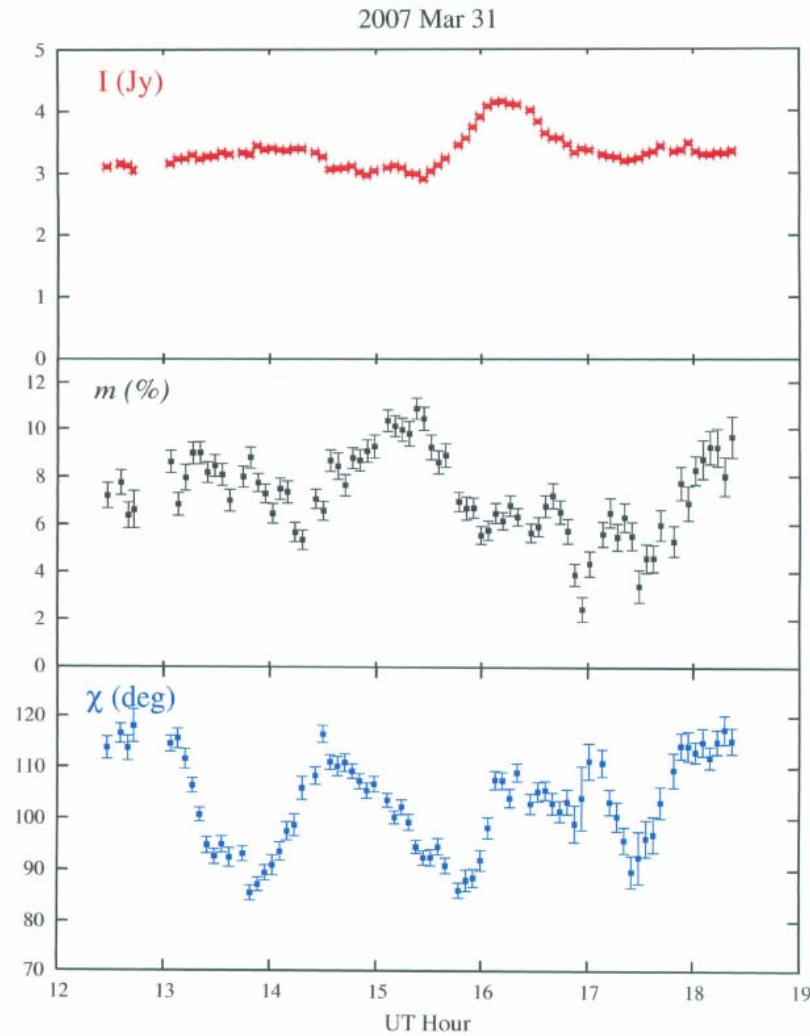




QuickTime?and a
H.264 decompressor
are needed to see this picture.

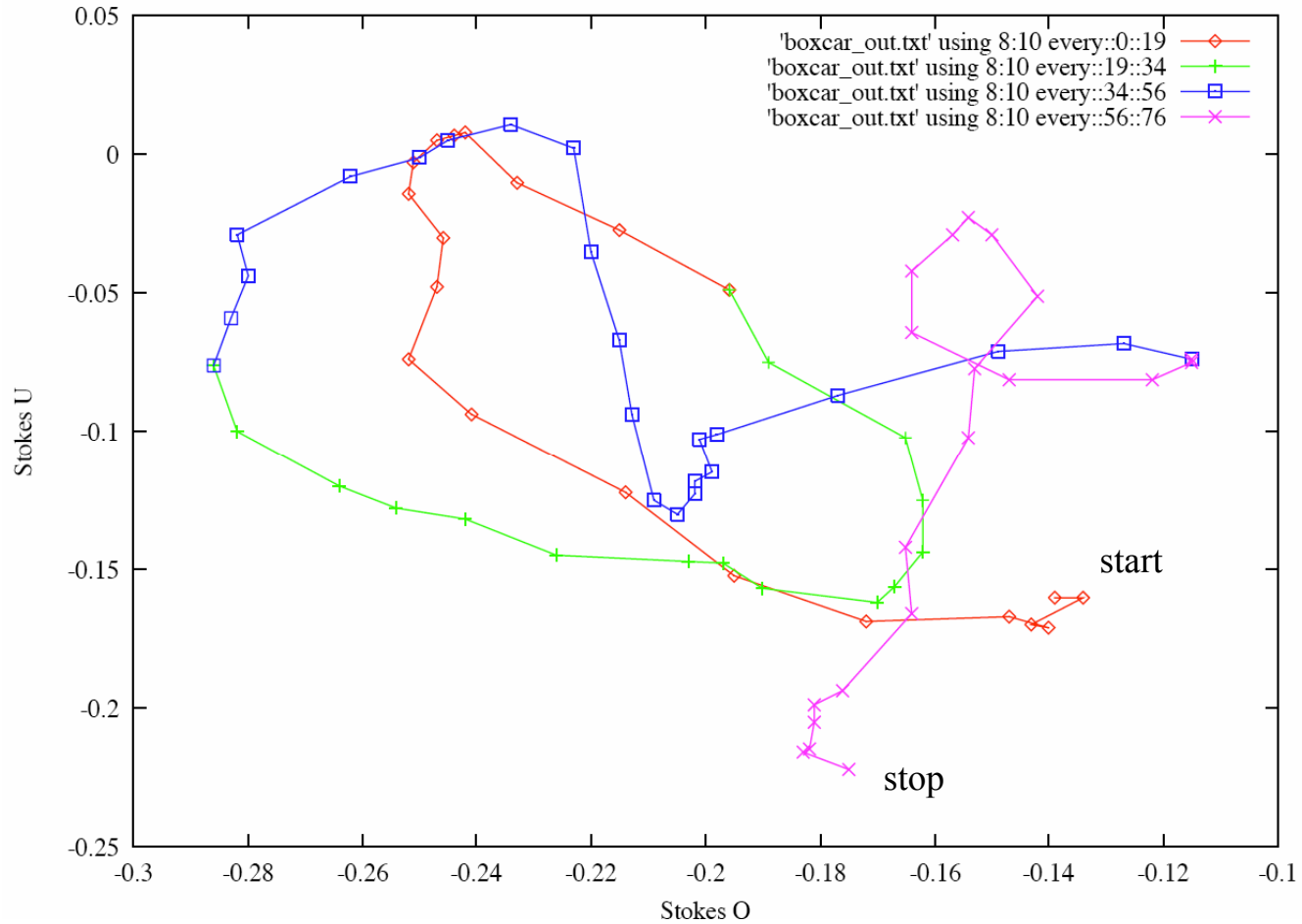


Polarization of Sgr A* at 230 GHz (1.3 mm) (SMA)



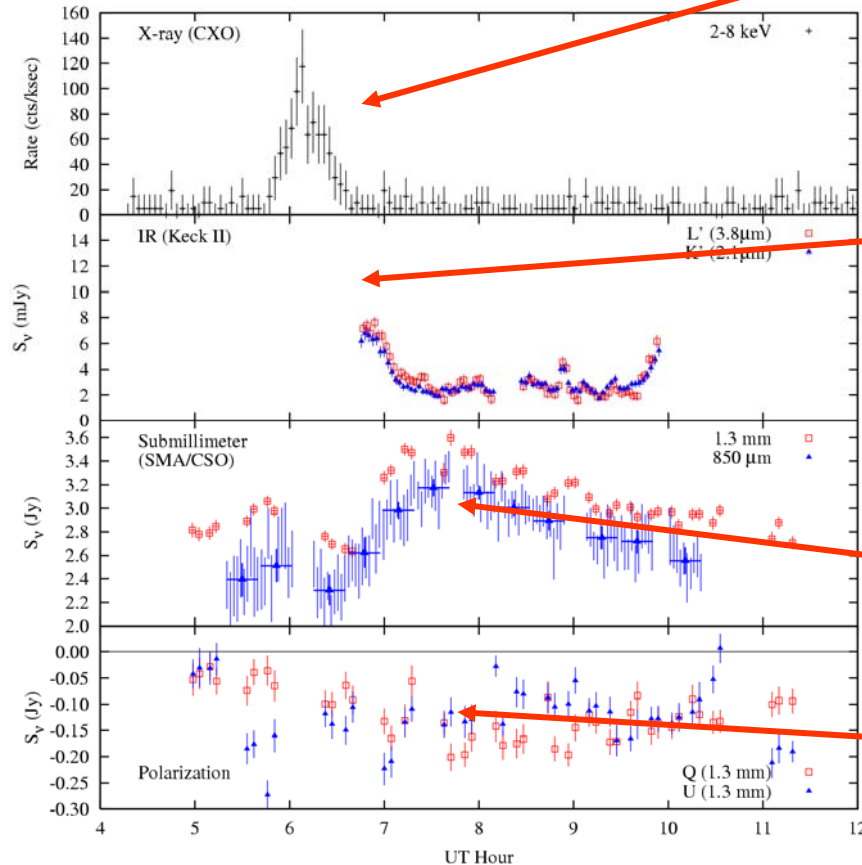


Polarization Track for 3/31/07 Observation of SgrA*





2006 Flare



- $20\times$ flare in X-ray
- $\alpha_X = 0 \pm 1.3$
- IR peak missed
- Very likely coincident with X-ray
- $\alpha_{IR} = -0.5 \pm 0.1$
- $\alpha_{IR-X} \neq \alpha_{IR}$
- Submm peak well after X-ray/IR
- No delay between 230/350 GHz



230 GHz VLBI Observations in April 2007

JCMT (w SMA support) - SMT - CARMA

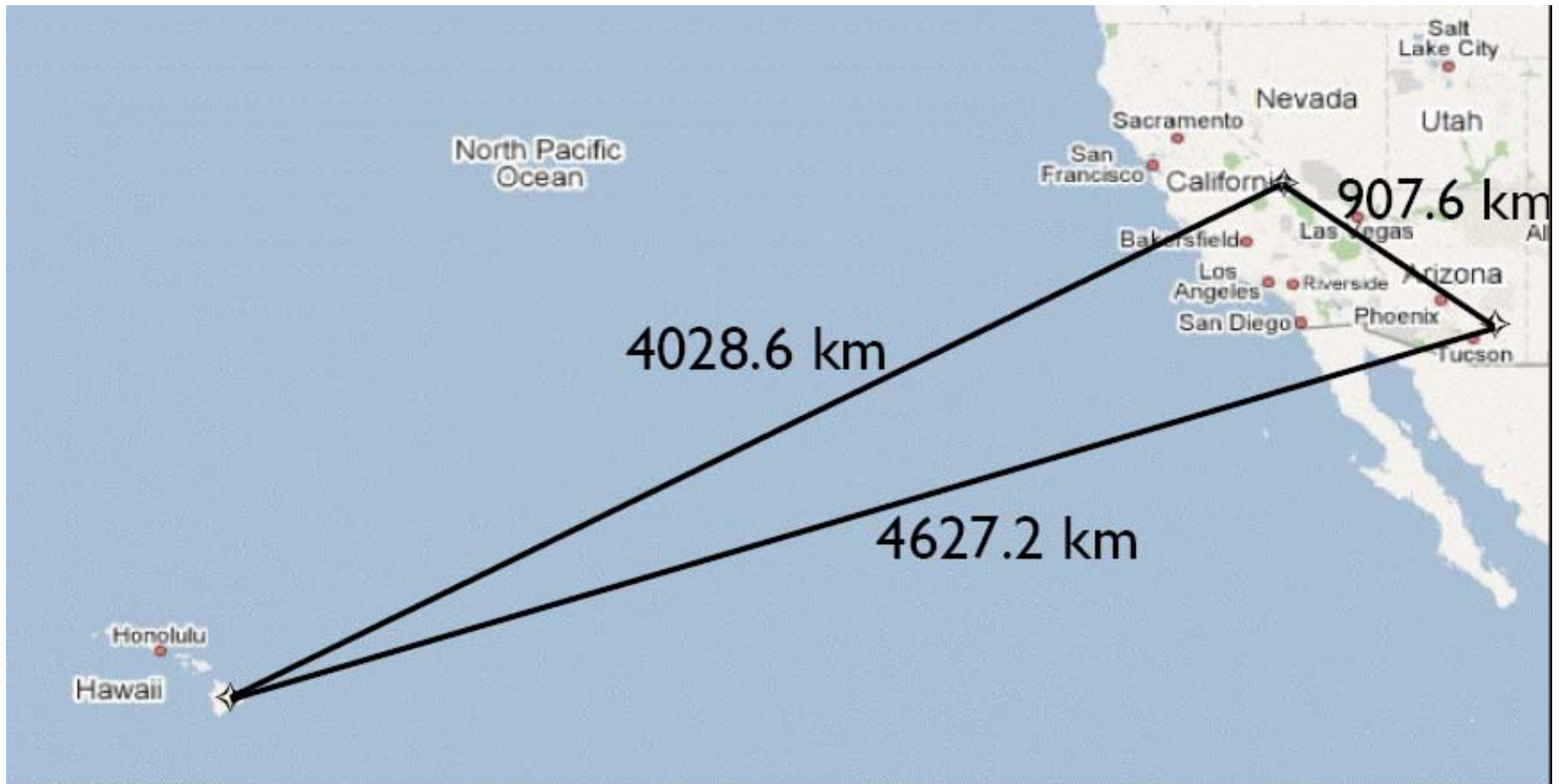
Haystack: Shep Doeleman, Alan Rogers, Alan Whitney

SMA: Jonathan Weintraub, Jim Moran, Ken Young, Dan Marrone

SMT: Lucy Ziurys, Robert Freund

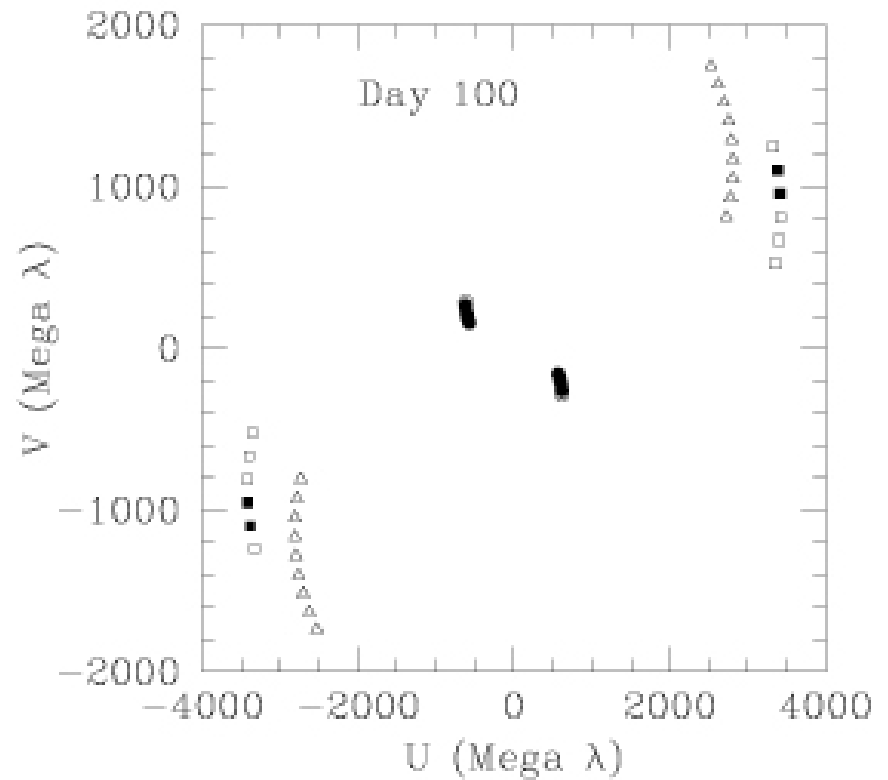
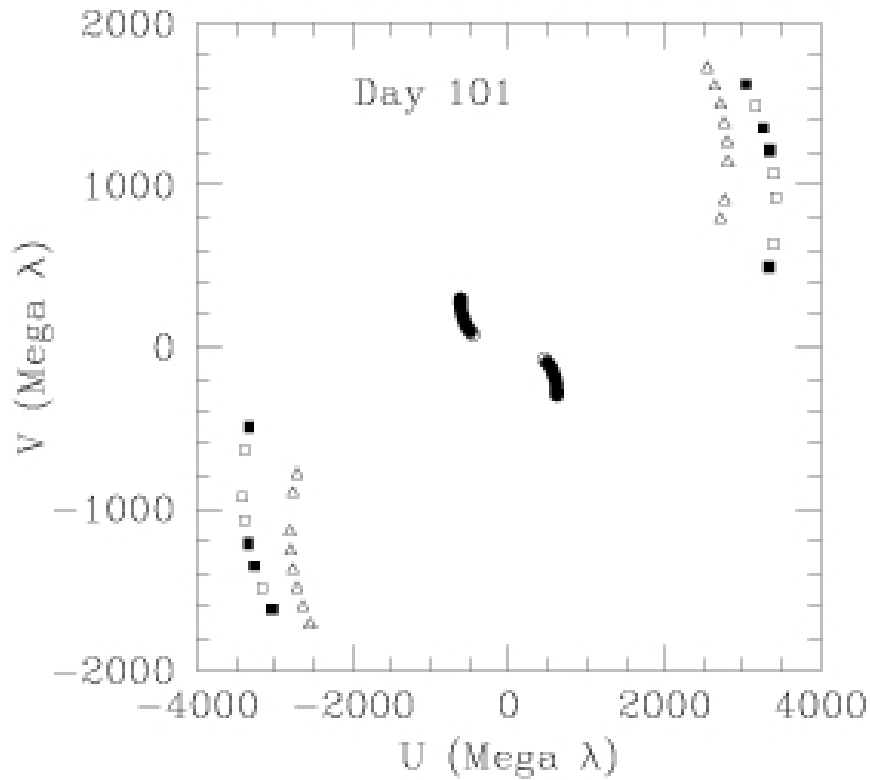
JCMT: Remo Tilanus, Per Friberg

CARMA: Dick Plambeck, Mel Wright





Projected Baselines for Sgr A* in 2007 Experiment

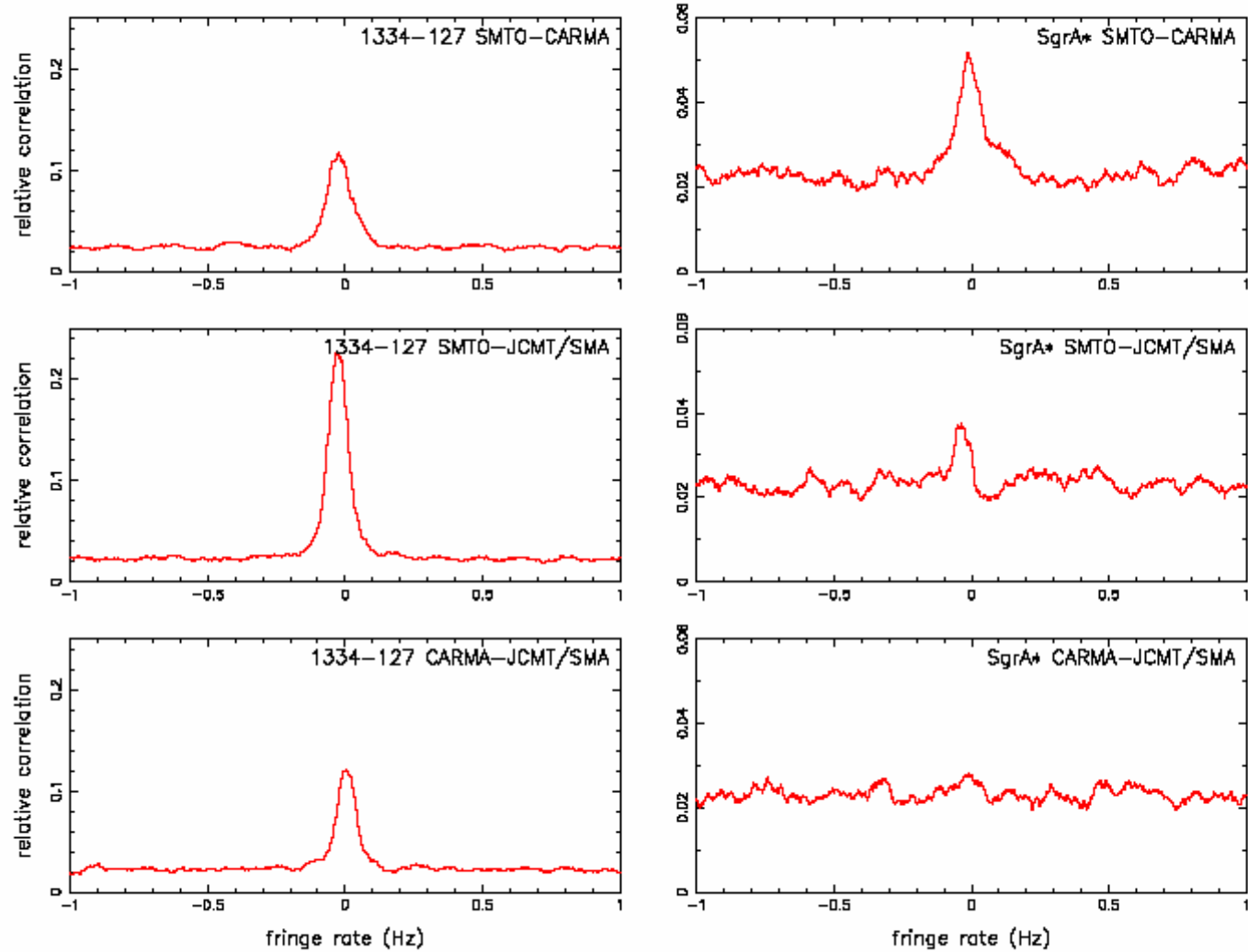




Fringe Rate Spectrum 230 GHz VLBI

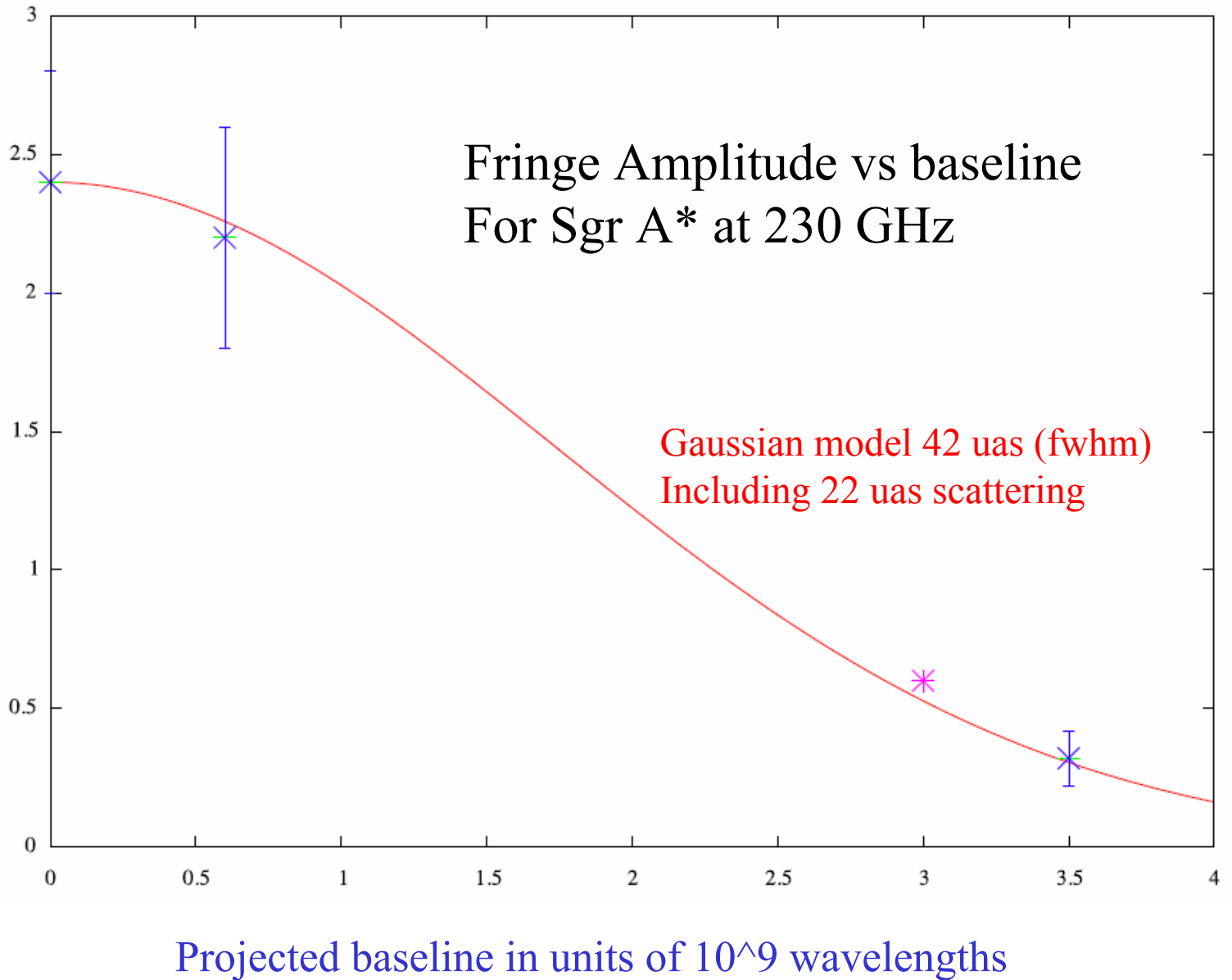
Quasar Calibrators

Sgr A*



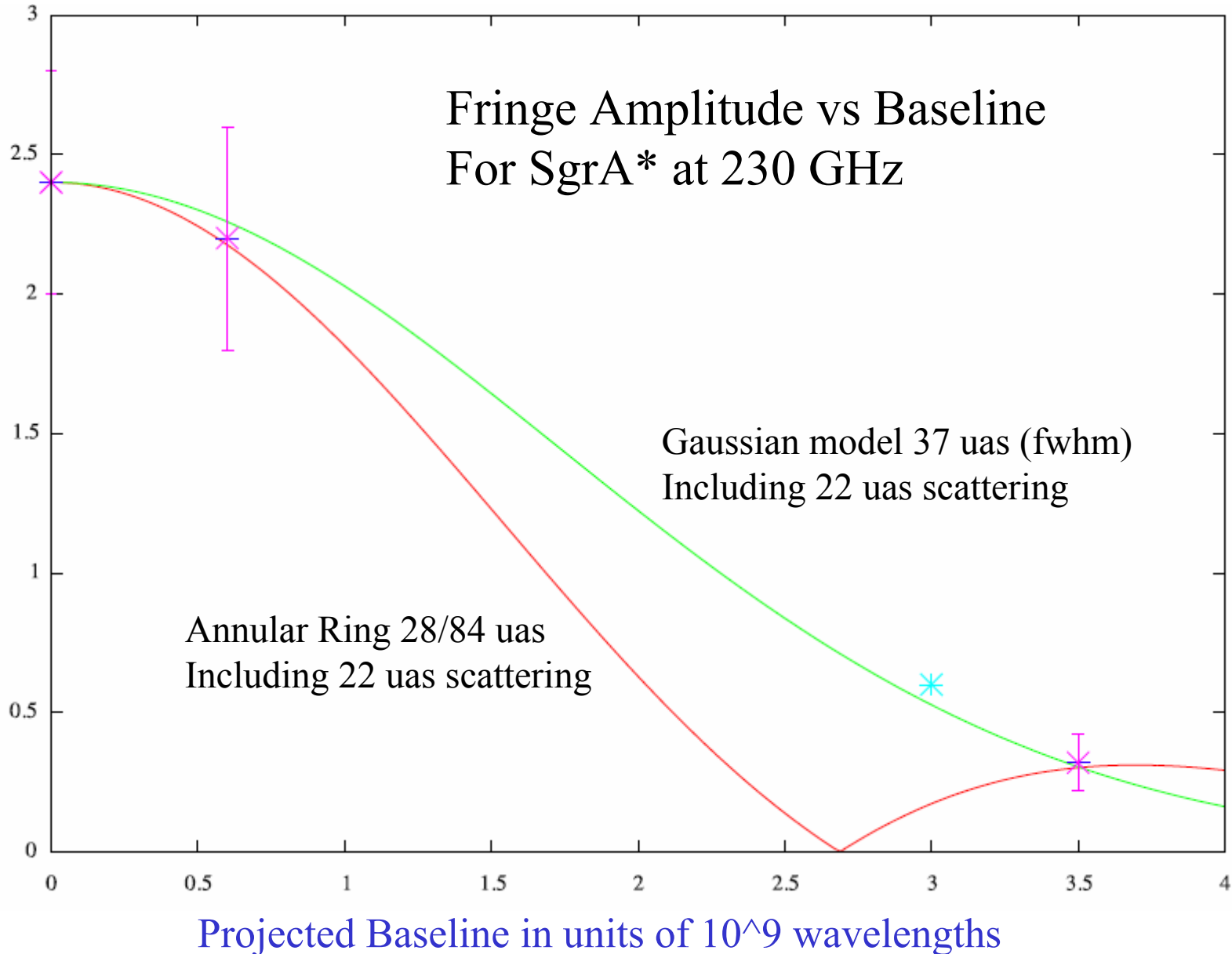


Fringe Amplitude in Jy





Fringe Amplitude in Jy

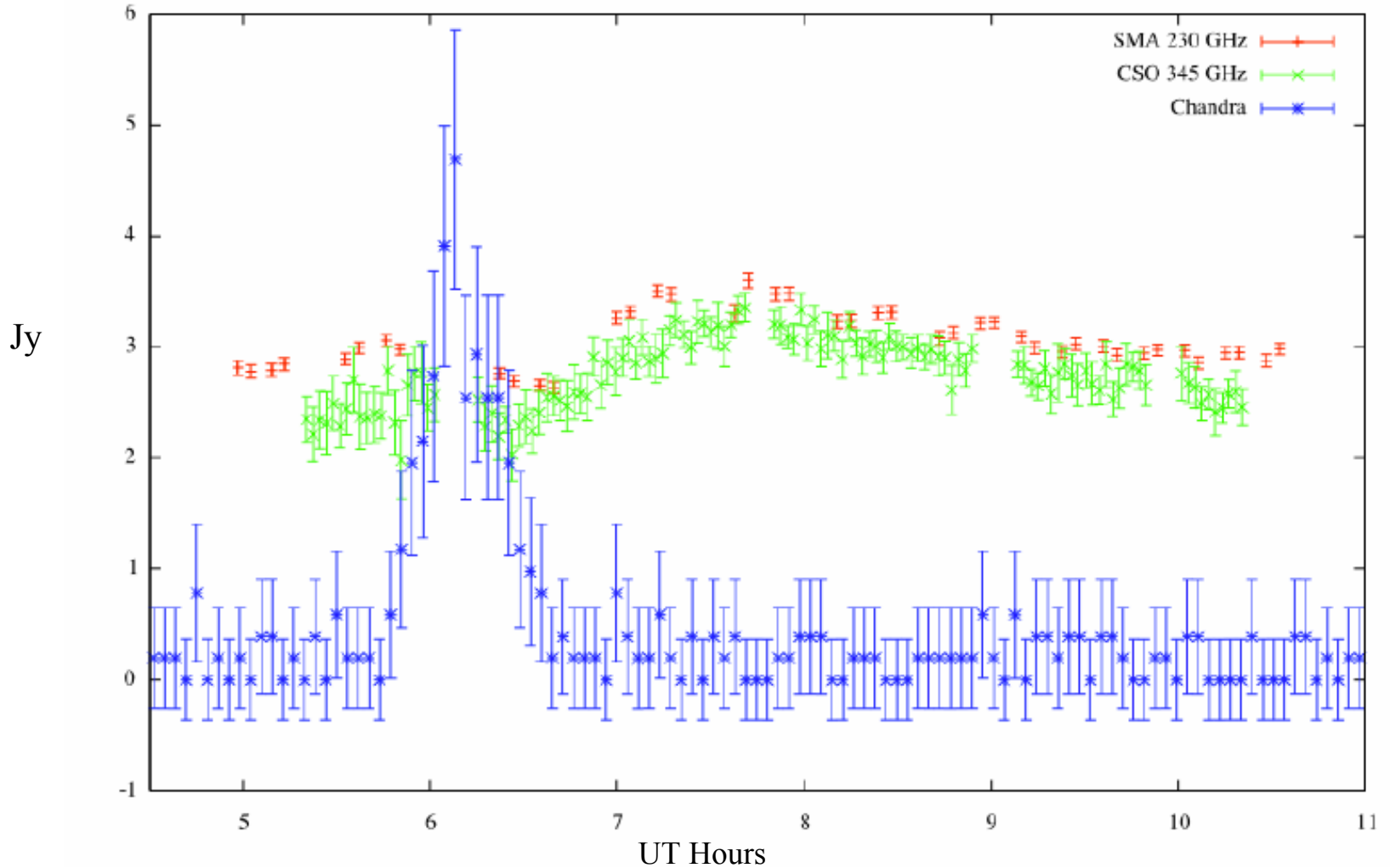






Sgr A* Light Curves for July 17, 2006

Sgr A* July 17th 2006

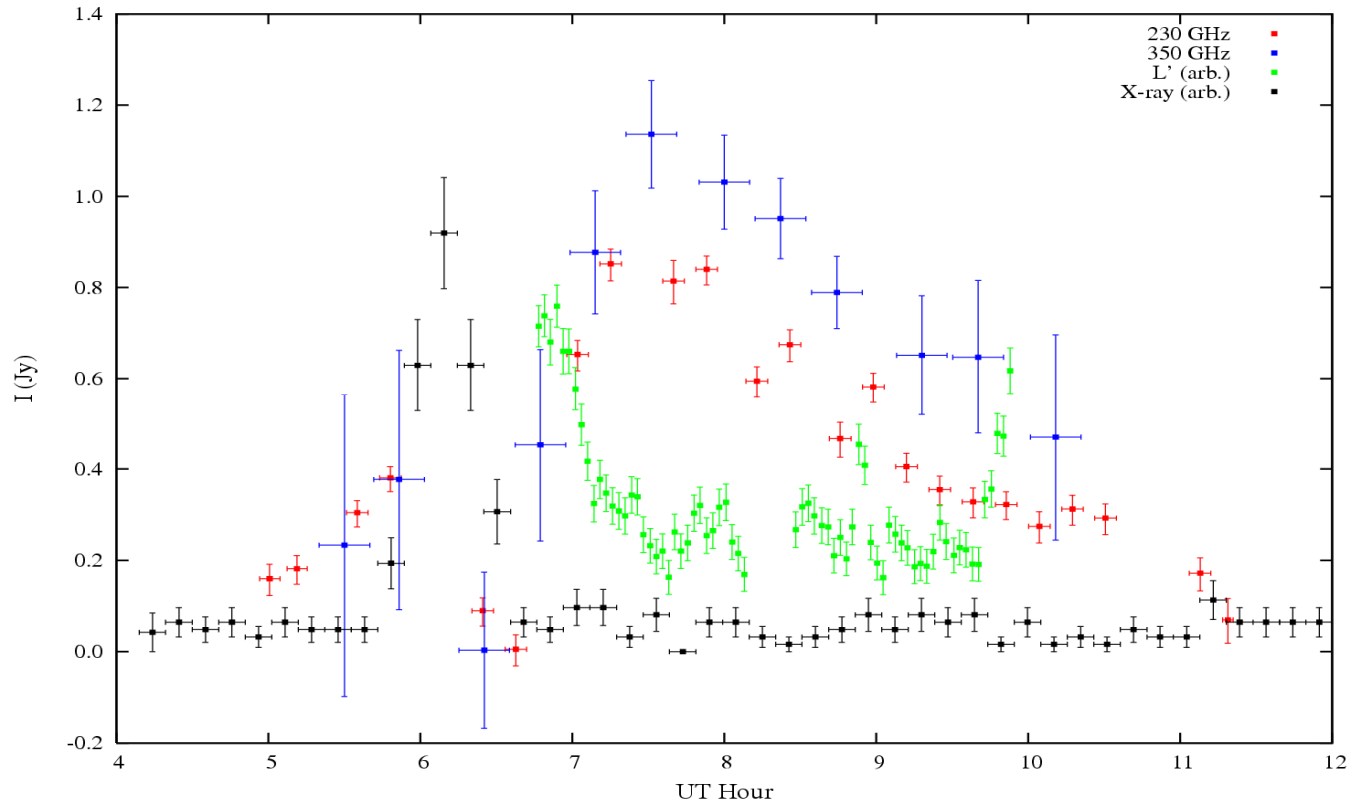






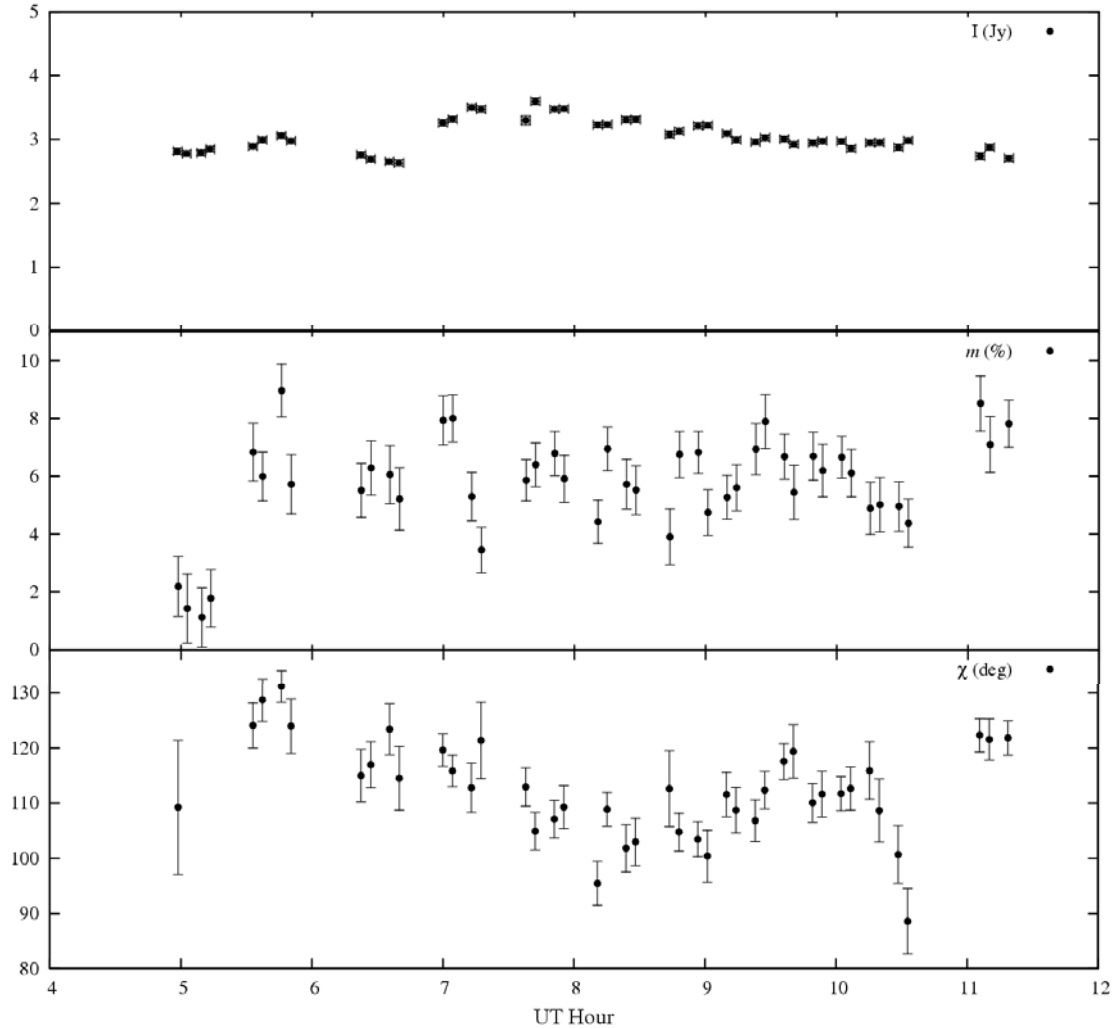


July 17, 2006 Flare





July 17, 2006 Flare







A HUNGRY BLACK HOLE

QuickTime and a
TIFF (Uncompressed) decompressor
are needed to see this picture.



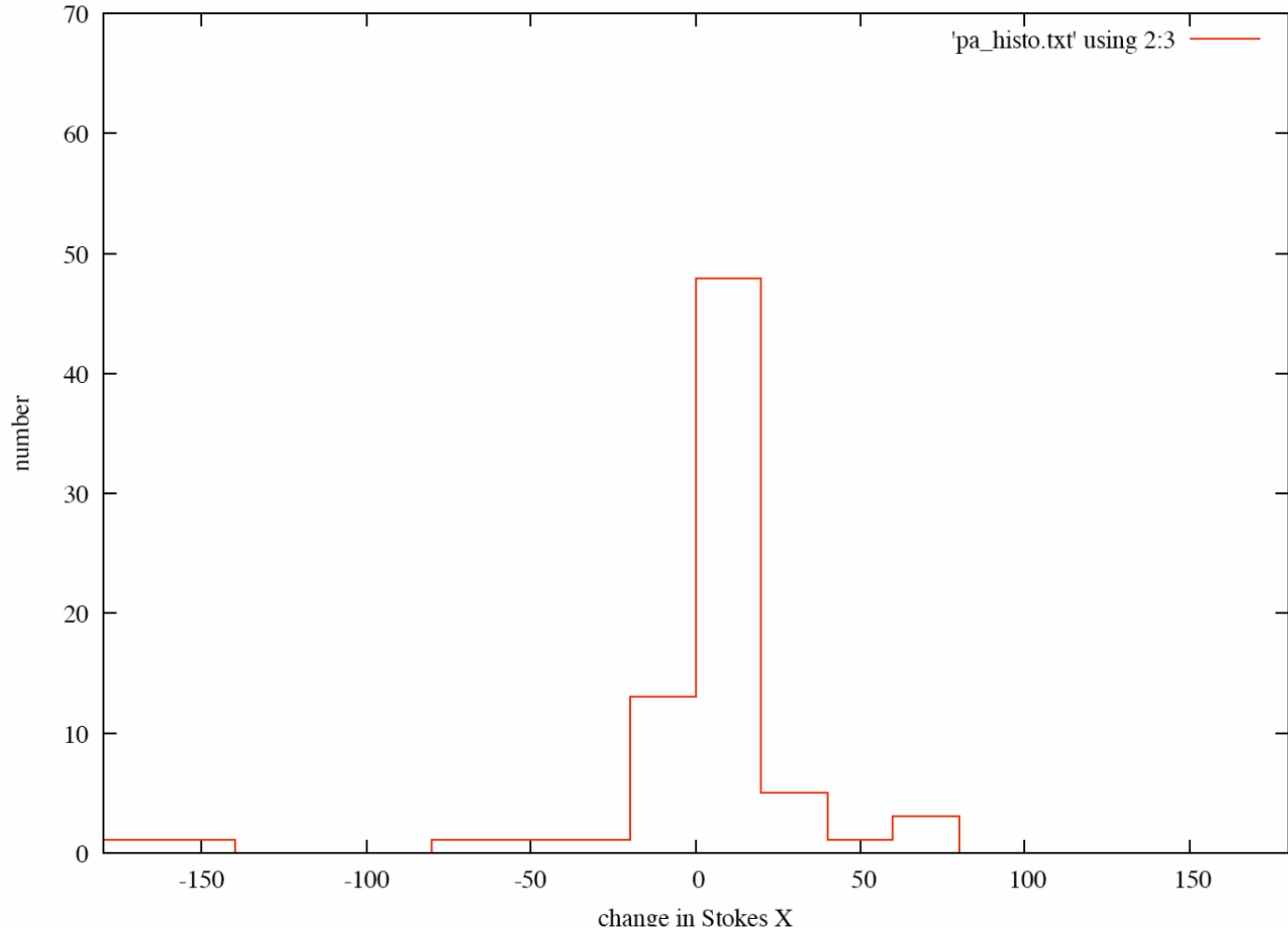
QuickTime?and a
decompressor
are needed to see this picture.

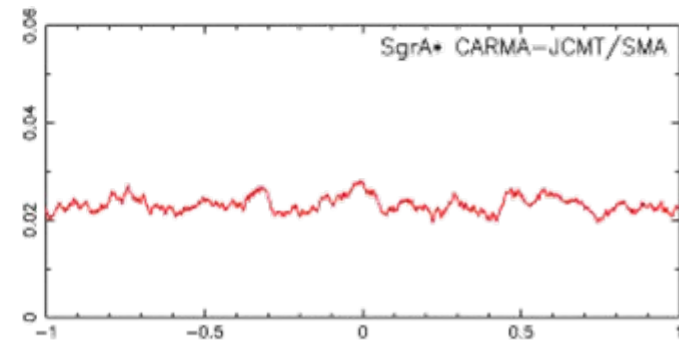
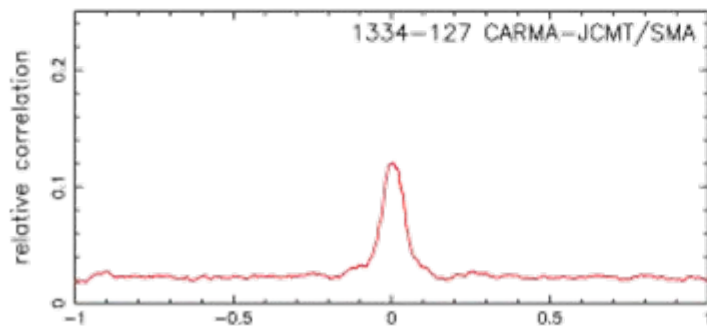
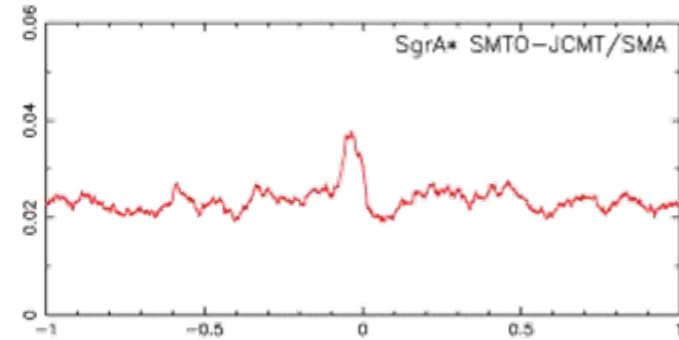
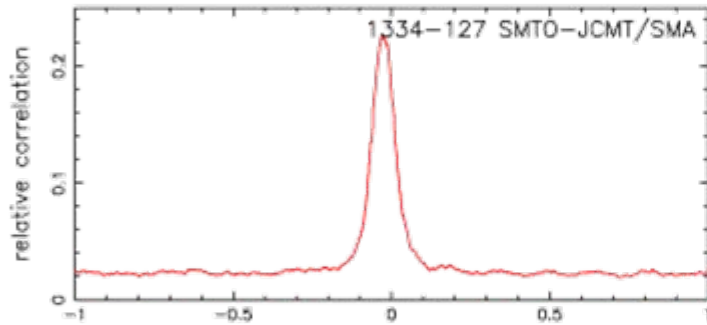
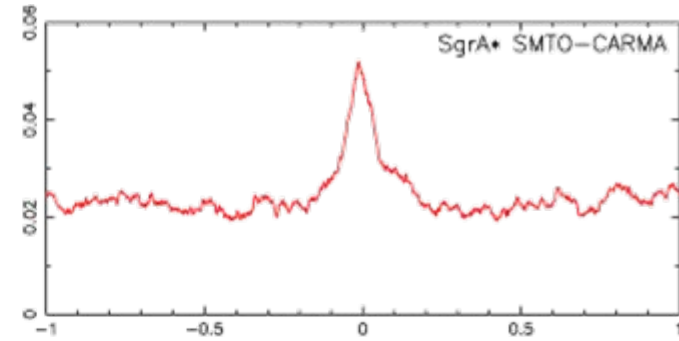
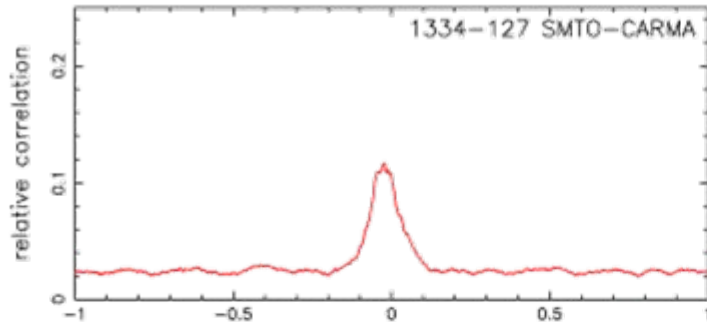






Histogram of occurrences of Stokes X changes - 3/31/07





fringe rate (Hz)

fringe rate (Hz)

