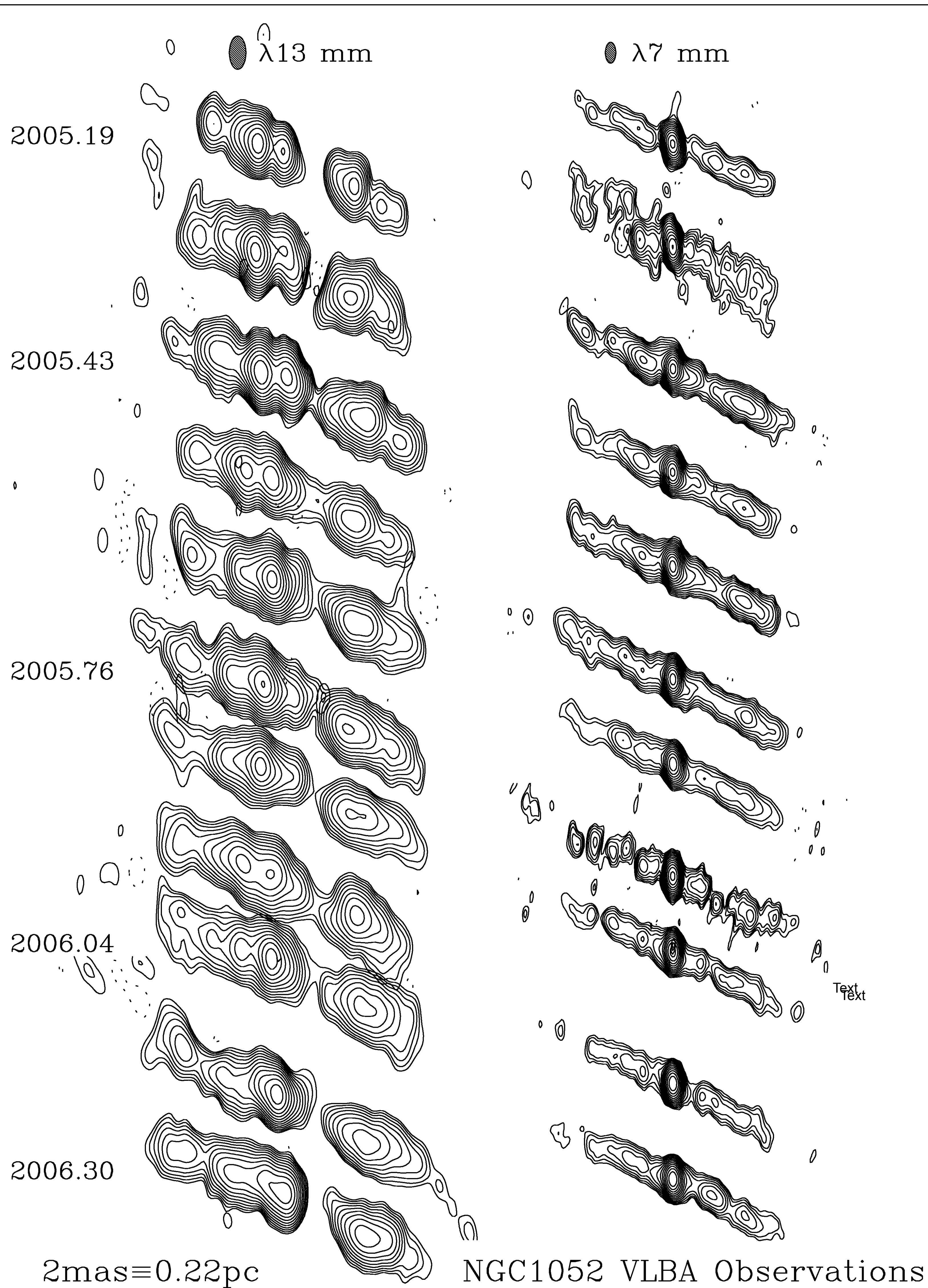
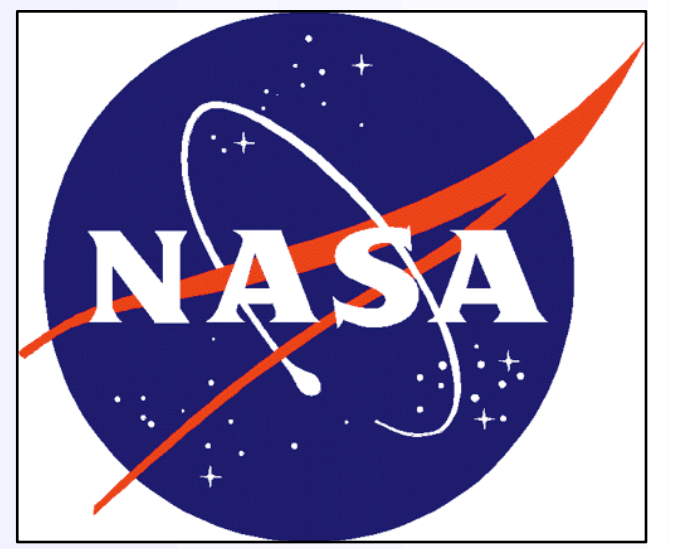


Max-Planck-Institut für Radioastronomie

The Radio/X-Ray Monitoring Campaign of NGC 1052

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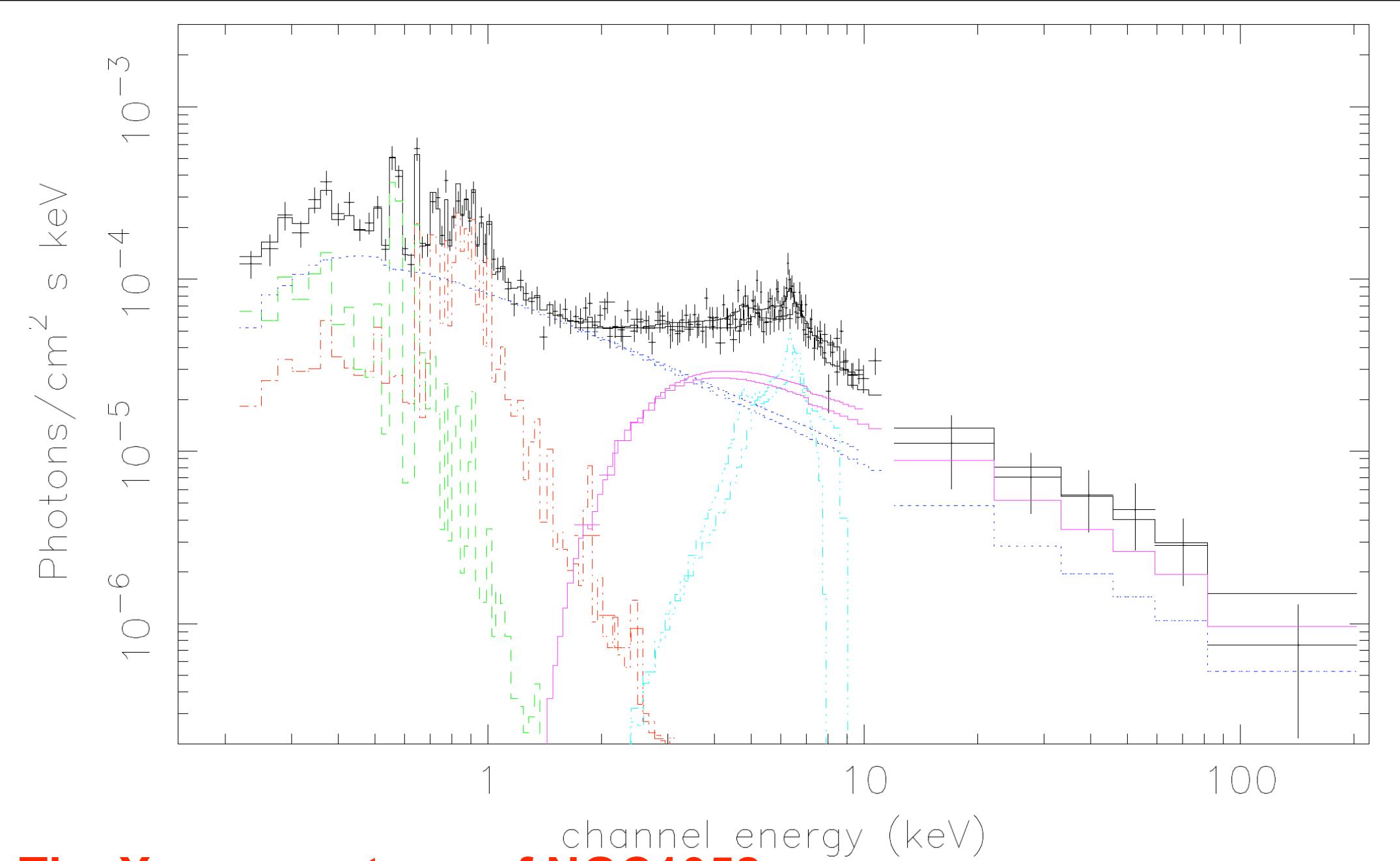
in collaboration with: K.A. Weaver (GSFC), A.P. Marscher (BU), J. Kerp, S. Kaufmann (AlfA), Y.Y. Kovalev (ASC Lebedev; NRAO), E. Angelakis, J.A. Zensus, (MPIfR), M.F. Aller, H.D. Aller, J.A. Irwin (Univ. Mich.)



VLBA Monitoring results

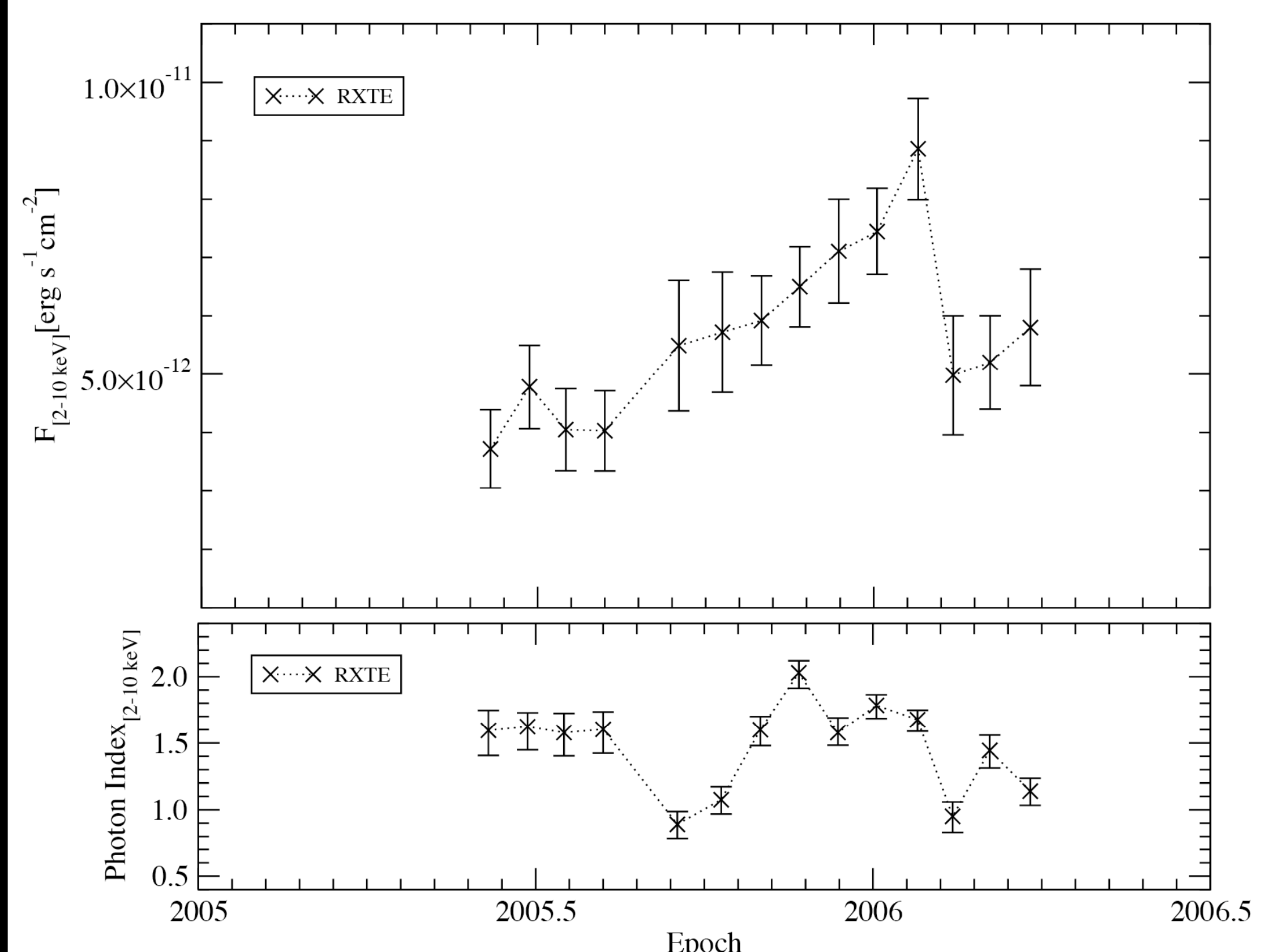
The varying radio structure of NGC 1052 at sub-parsec scales during our monitoring program. The images are shown spaced by their relative time intervals. The common restoring beams are 0.8×0.4 mas (P.A. 0°) and 0.5×0.25 mas (P.A. 0°) at $\lambda 13$ mm and $\lambda 7$ mm, respectively. The images have been aligned arbitrarily to the gap between jet and counter-jet (left column) and at the brightness peak (right column). A detailed phase-referencing analysis is pending.

Overview: We have started an observing campaign of the radio loud active galaxy NGC 1052. This campaign has been motivated by the detection of a variable disk-reflection X-ray spectrum with a broad relativistic iron line, that allows the accretion disk to be probed, and the possibility to monitor simultaneously the jet-production in these systems via Very-Long-Baseline Interferometry (VLBI) observations. The goal of this campaign is to study the accretion processes that lead to the formation of AGN jets and the distinction between radio-loud and radio-quiet AGN.



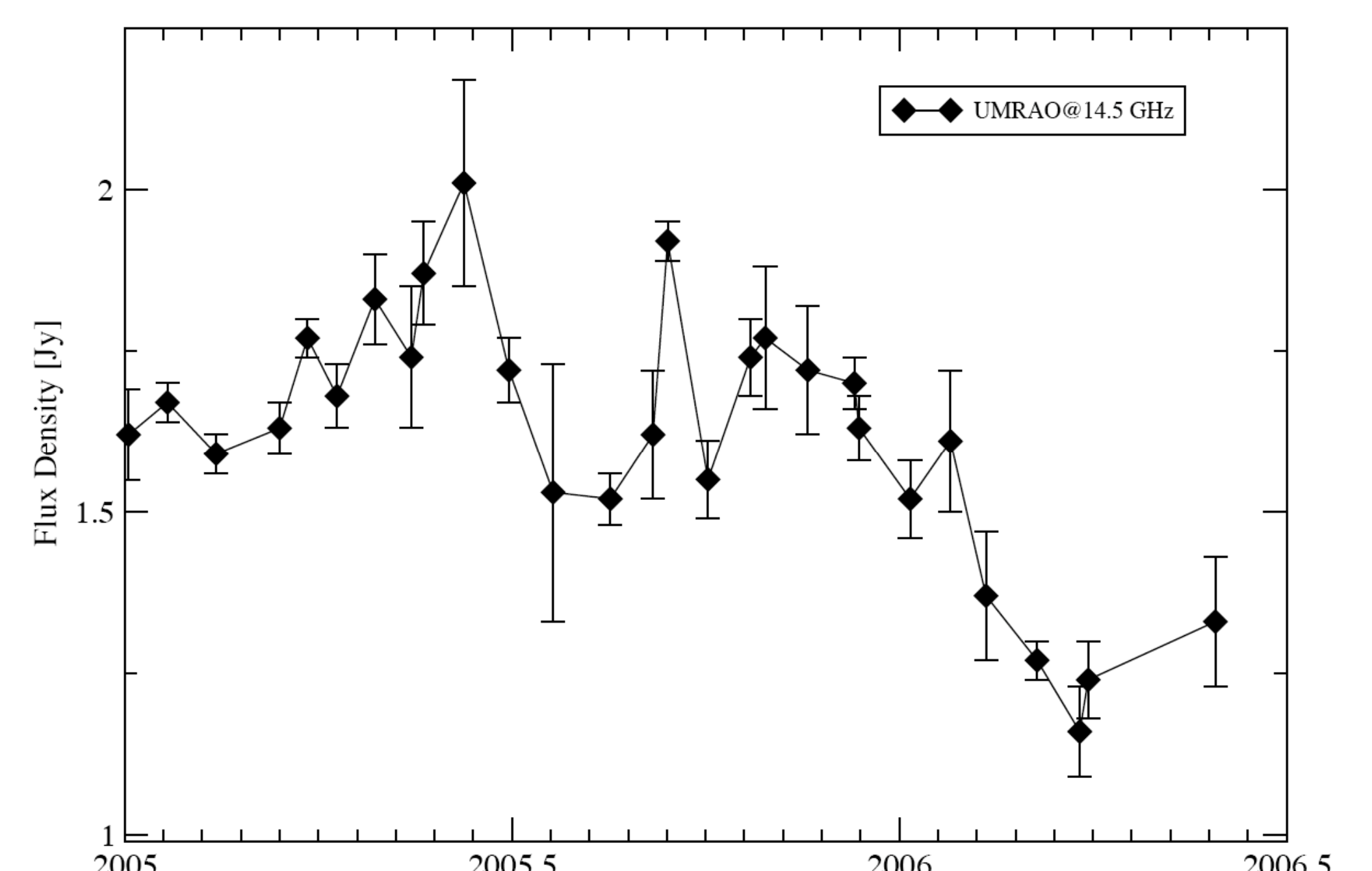
The X-ray spectrum of NGC1052

Unfolded X-ray spectra and models for a BeppoSax (Jan 11, 2000) and a XMM-Newton (Sep 28, 2001) observation of NGC 1052. Hard X-ray variability is most likely associated with a heavily absorbed power law and/or emission reflected from the accretion disk, in particular a strong, relativistically broad iron line.



RXTE X-Ray Monitoring

Varying X-ray spectrum of NGC 1052 as observed with the *Rossi X-Ray Timing Explorer (RXTE)* as part of our monitoring program. The historically well known "unusually flat X-ray spectrum" is only seen in individual epochs. At other times, the spectrum is steeper and Seyfert like. We used the maximal measured X-ray flux (Jan-24-2006) to trigger a deep *XMM-Newton* observation.



Radio Flux Density Monitoring

The radio flux density light curve of NGC 1052 at 14.5 GHz frequency has been measured as part of the University of Michigan Radio Observatory (UMRAO) blazar monitoring program. Through 2005, the source was in a relatively bright state and exhibited several local maxima, which most likely correspond to ejections of new components into the jet and counter-jet system.

Facility	Granted Observing Time	Data
VLBA	20 epochs (6 hours each) of 22GHz and 43GHz monitoring observations. Scheduled every six weeks.	First year completed. Data (self-calibrated and imaged). Phase referencing and model fitting pending.
Effelsberg	~70 hours of observing time at 13, 6, 3.6, 2.8, 2, 1.3, 0.9 cm. Scheduled every three weeks.	First year completed. Data analysis pending.
RXTE	30 epochs (2ksec each) of monitoring observations. Light curve evaluated at 2-10 keV. Scheduled every three weeks.	First year completed. Data analysis performed.
XMM-Newton	One triggered observation of 50ksec in February 2006	Data analysis pending.
Chandra	One deep Chandra observation in September 2005	Data analysis pending.
UMRAO RATAN-600	Observations inserted into ongoing long-term programs.	Data analysed as of spring 2006.