

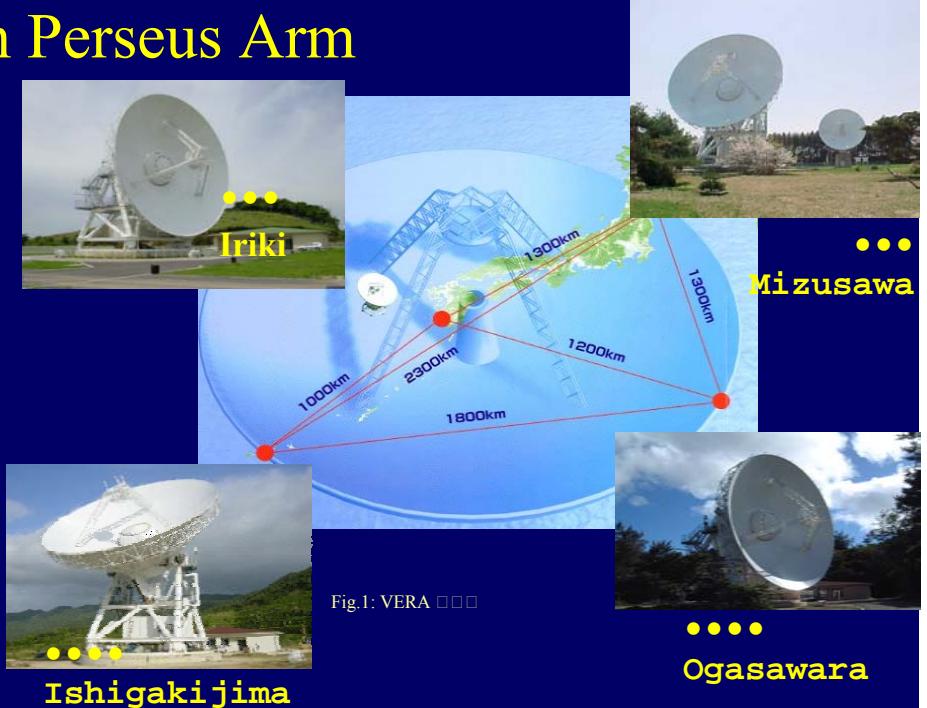


□ □ *H₂O maser observations of W3OH using VERA*

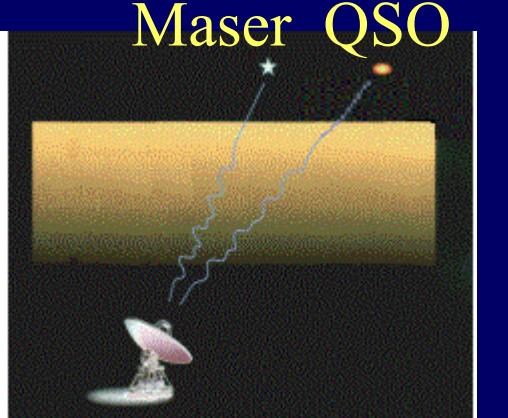
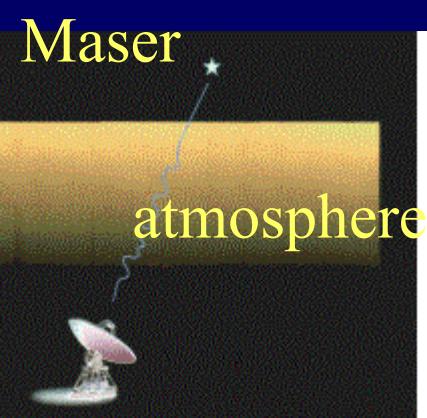
Osamu Kameya, T. Kurayama, H.Suda (NAO) , VERA member

Purpose
□ Evaluation of mapping capability using VERA
□ W3OH H₂O maser is very strong source

□ Reference source is strong
□ A typical massive-star forming region in Perseus Arm
□ UV distribution is ideal (dec~60deg)

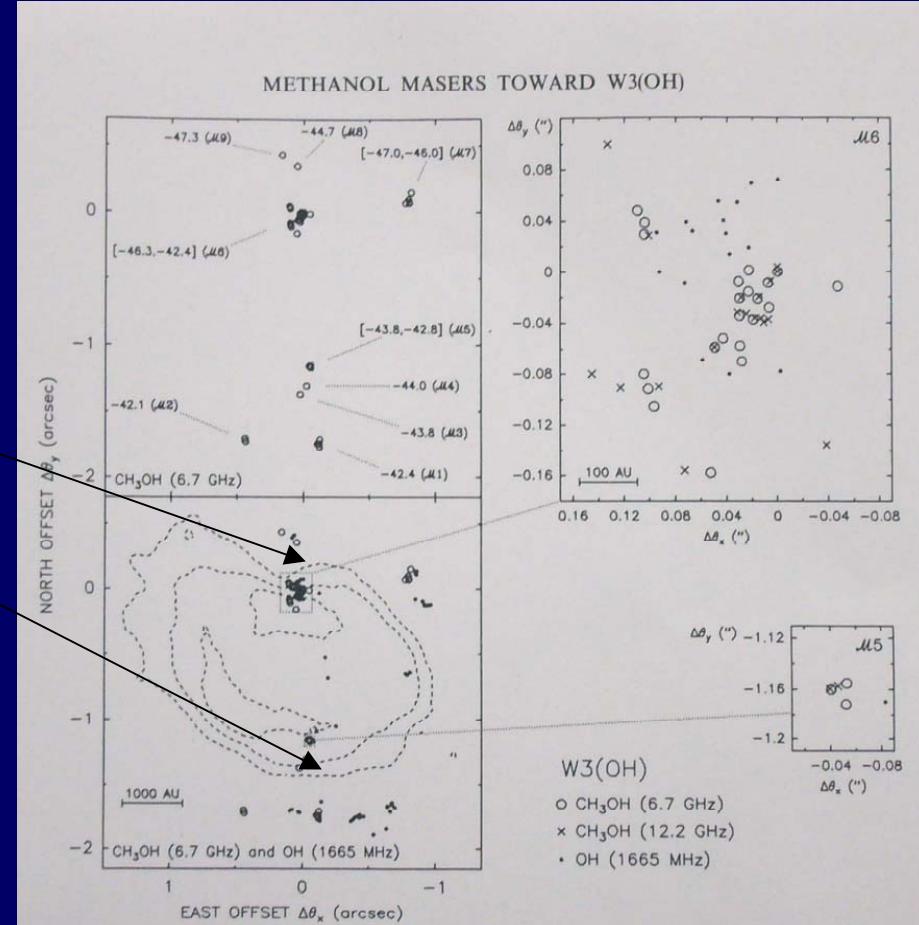
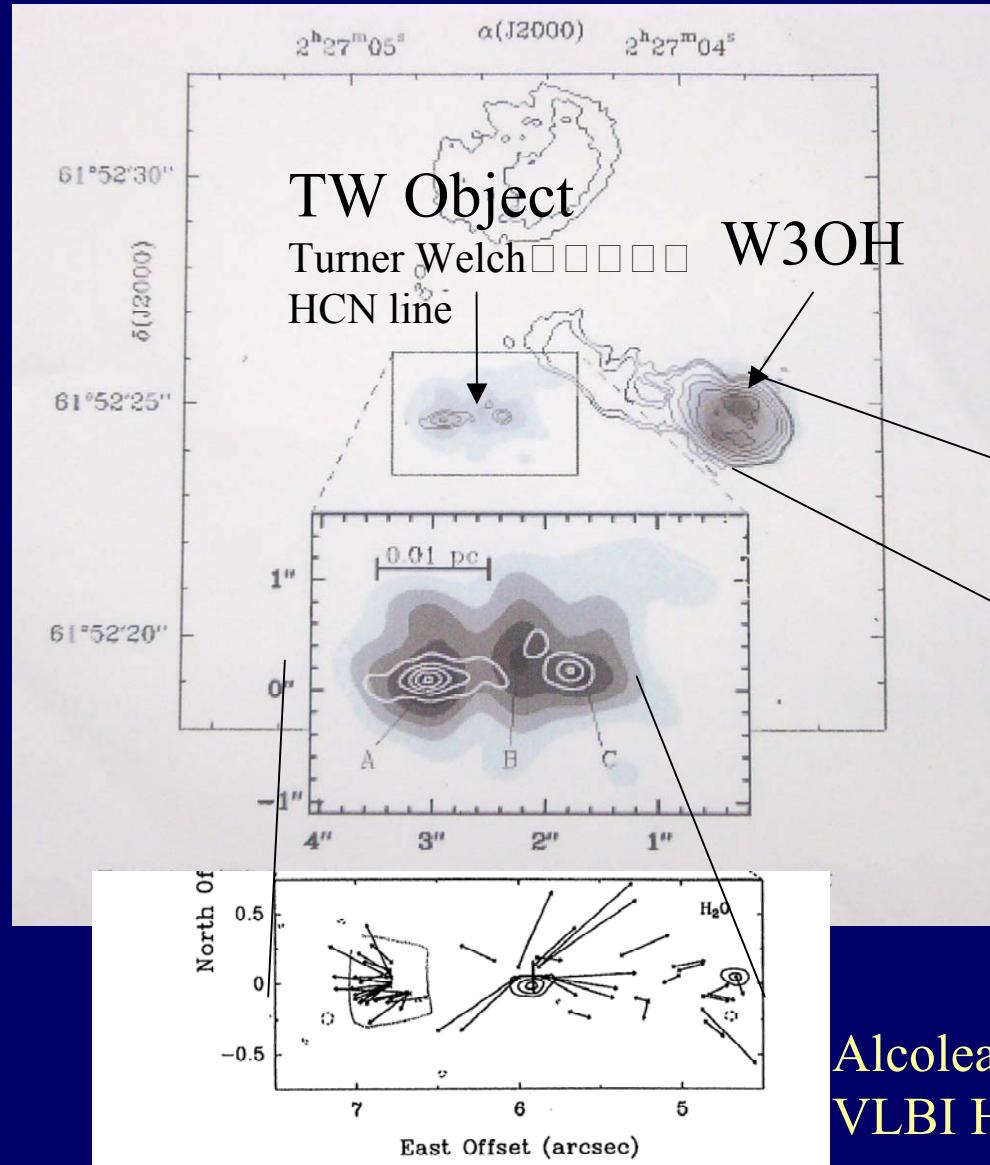


The VERA 2 Beam system



W3OH

Distance □ 2.2kpc □ □ Humphreys 1978 □ □ 1.83±0.14kpc □ IRS5 □ Imai et al. 2000
 1mas □ 2AU □ 1":2000AU



Alcolea et al 1992
 VLBI H_2O maser

Menten et al 1992 □ VLBI
 6.7GHz □ Methanol maser

Observations

R03079A Miz, Iri
R03126B Miz, Iri, Oga
R03140B Miz, Iri,Oga, Ish
R03233B Miz, Iri,Oga, Ish
R03254B Miz, Iri,Oga, Ish
R03295B Miz, Iri,Oga, Ish
R03326B Miz, Iri,Oga, Ish
R03353B Miz, Iri,Oga, Ish
R04028A Miz, Iri,Oga, Ish
R04057A Miz, Iri,Oga, Ish
R04086A Miz, Iri,Oga, Ish
R04113B Miz, Iri,Oga, Ish
R04146B Miz, Iri,Oga, Ish

Date:May 20, 2003

Stations Mizsawa, Iriki, Ogasawara, Ishigakijima

Freq: 22.235GHz LHCP

Objects:W3OH H₂O maser (main) and J0244+6228(ref.)

Angular distance: 2.2deg (max value of VERA)

Calibrator:J0234+285

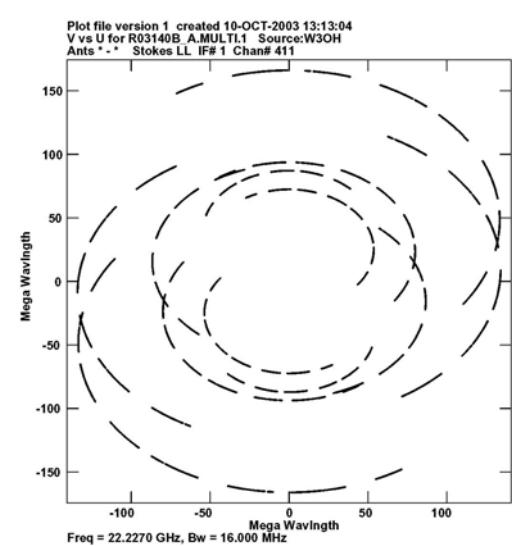
Tsys:200-300K@zenith (Mizusawa, Iriki, Ishigakijima)

420-1450K@ zenith (Ogasawara)

Recorder:2bit sampling 128MHzBW DIR1000

Correration: Mitaka FX Correlator

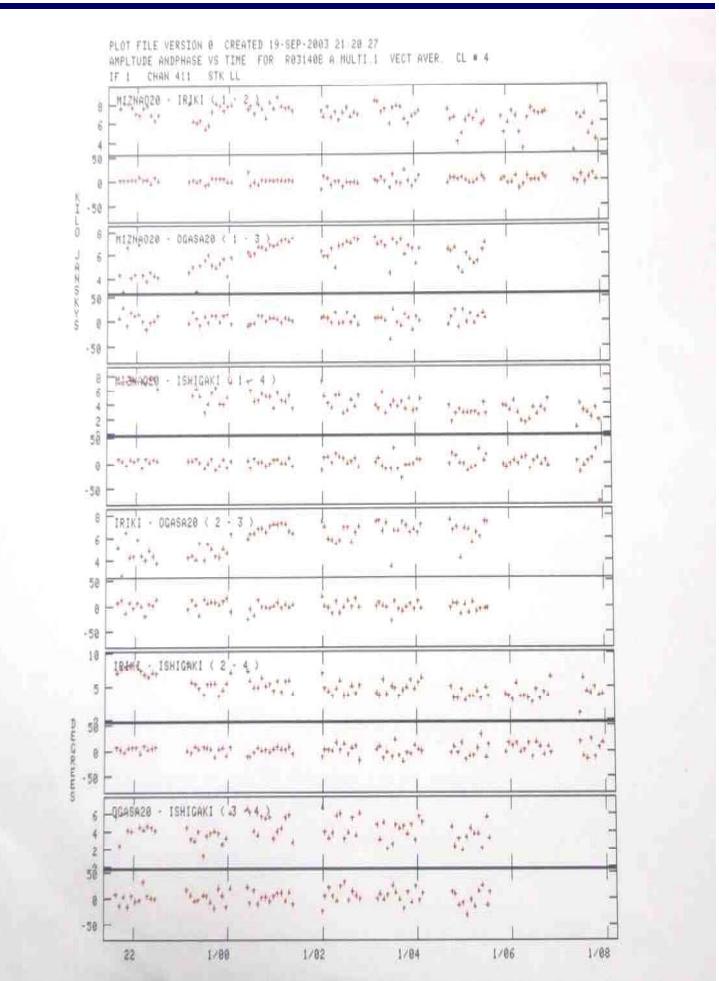
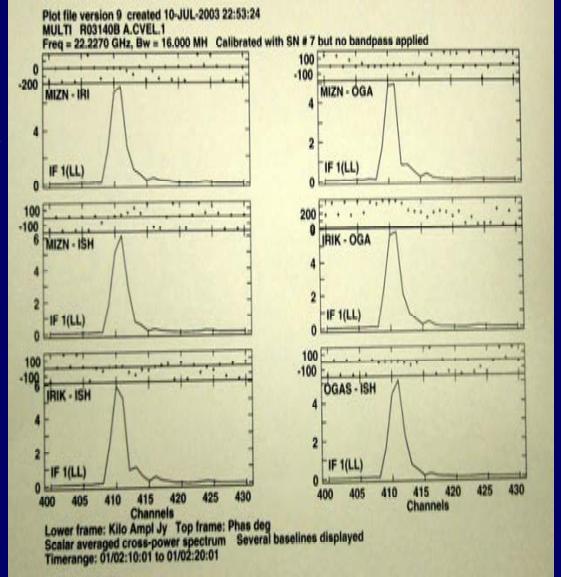
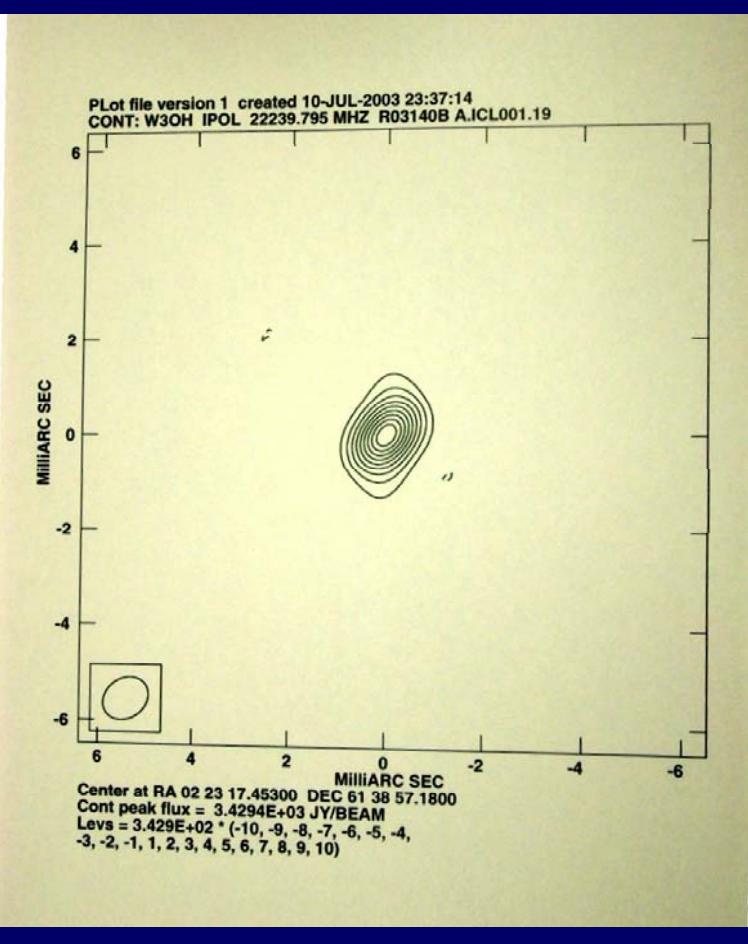
UV coverage ideal!



Results

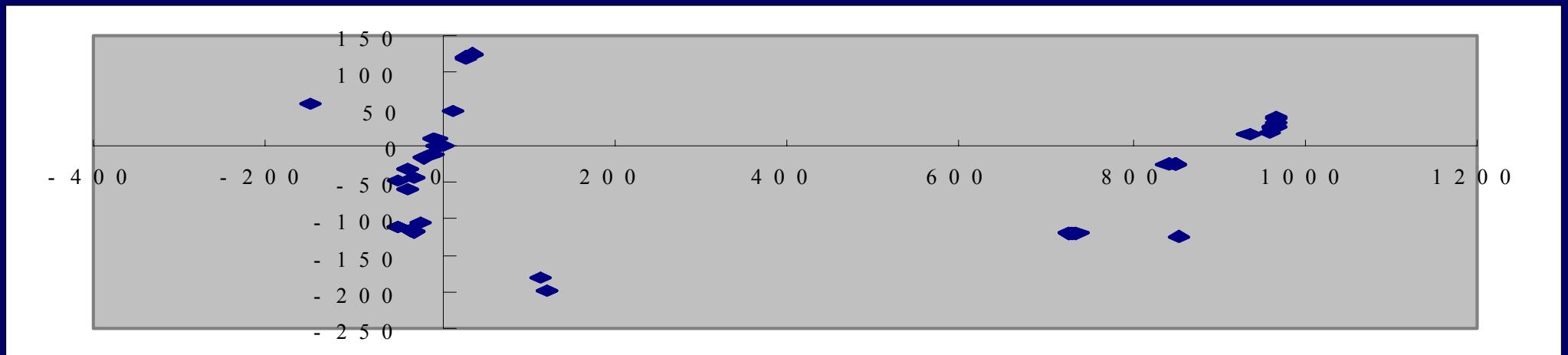
□ □ □ W3OH H₂O maser

Peak channel imaging:
Point-source like



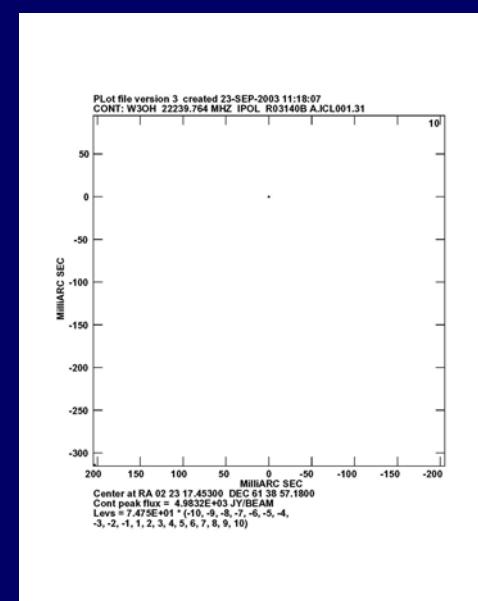
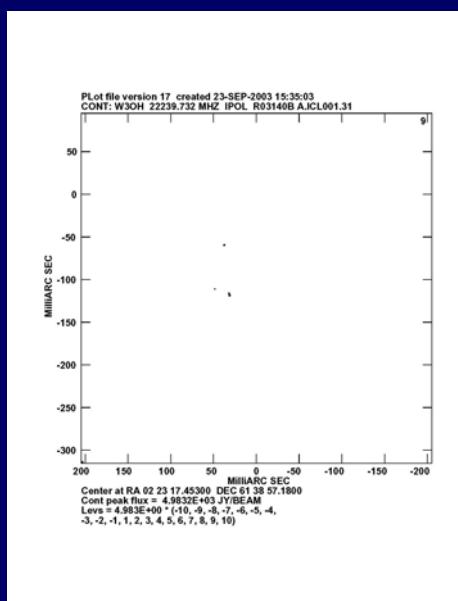
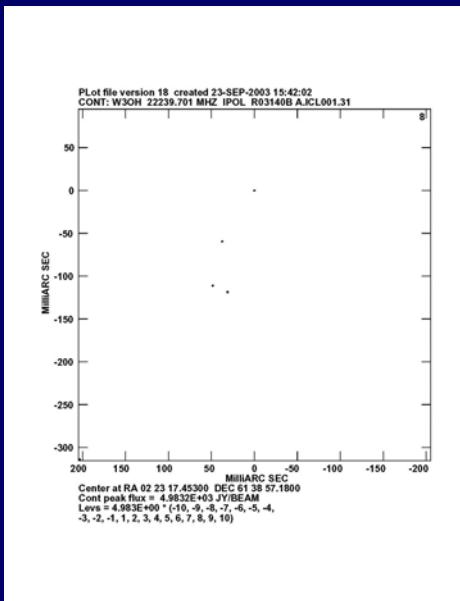
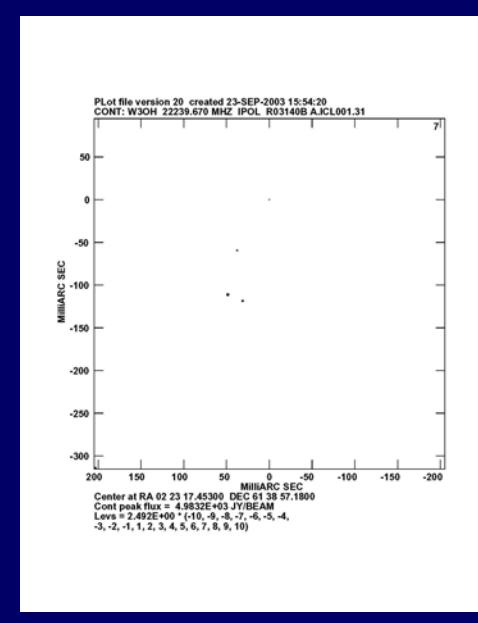
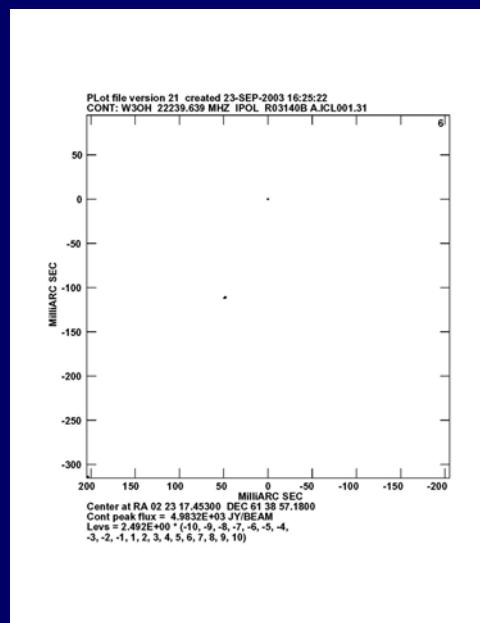
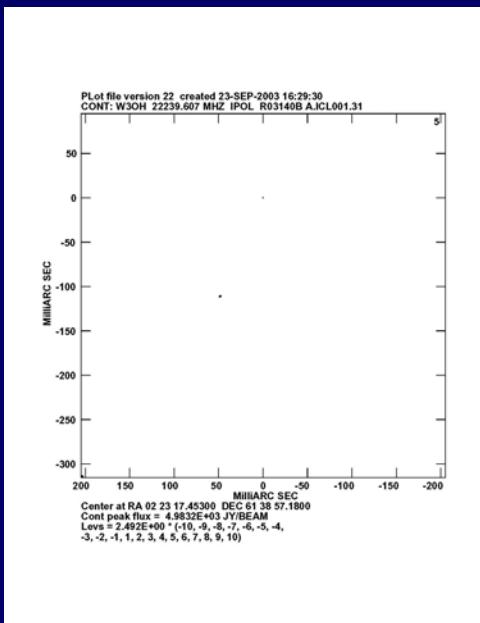
Results

□ □ □ W3OH H₂O maser

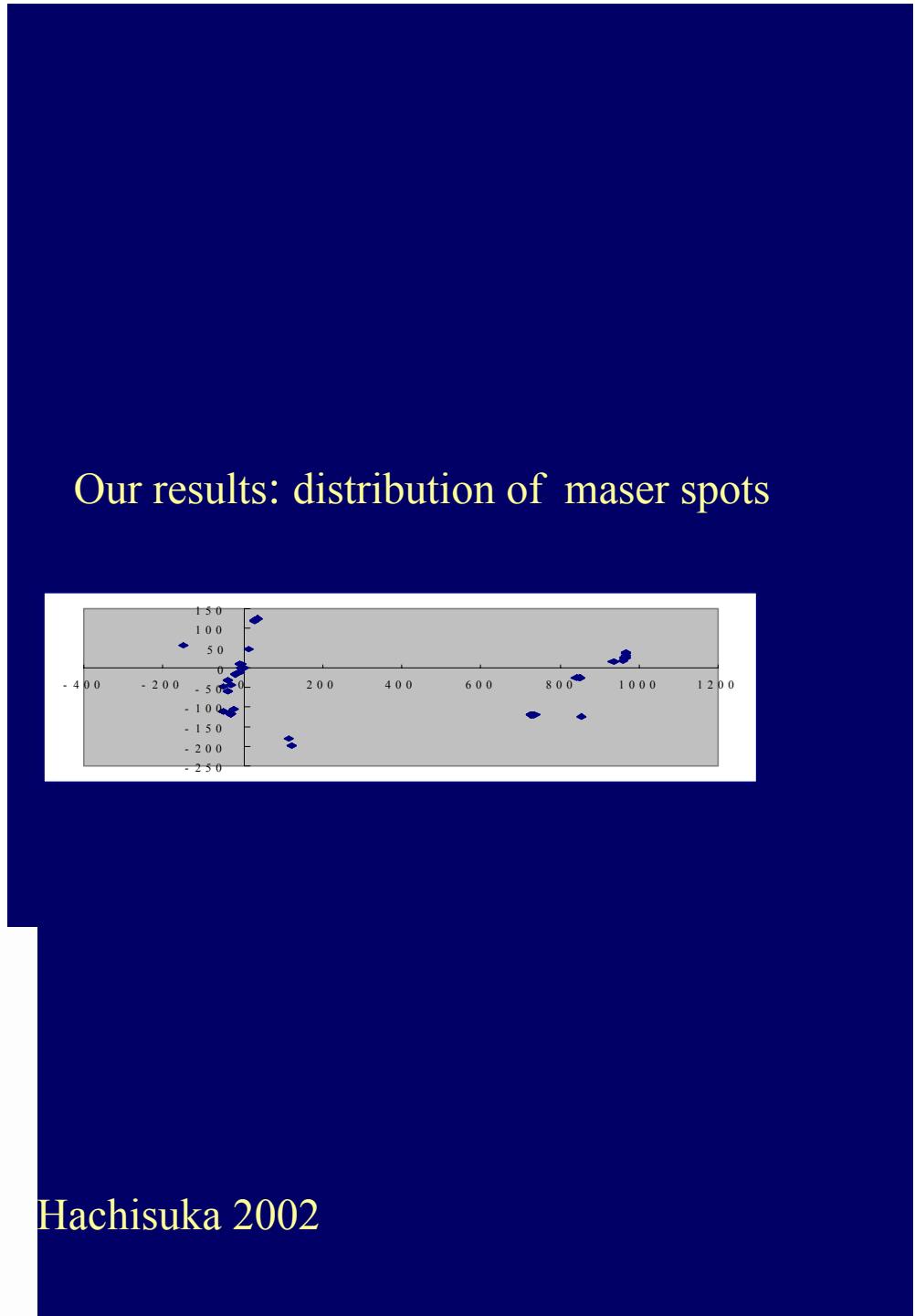
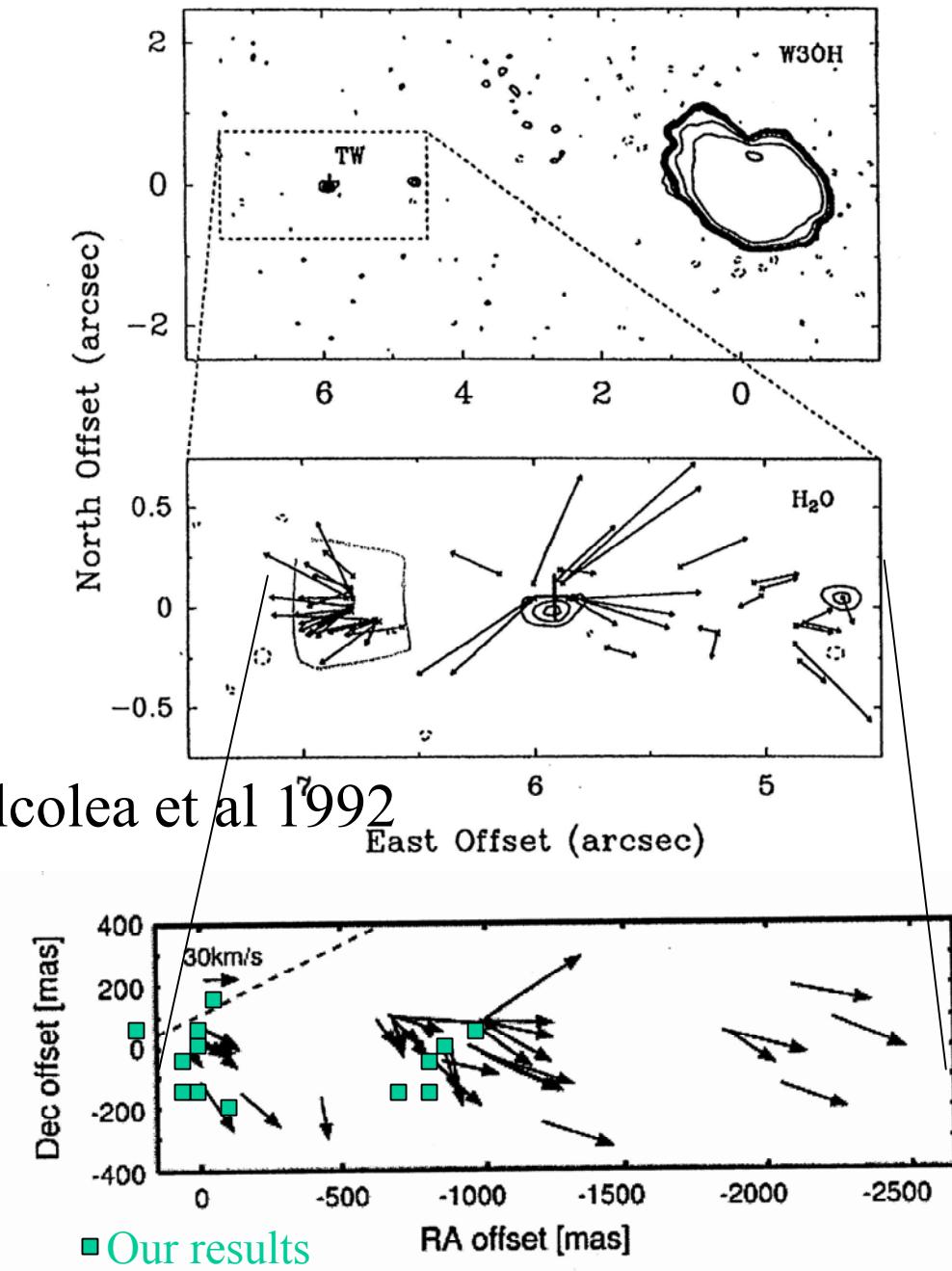


Our Results □ unit □ mas □

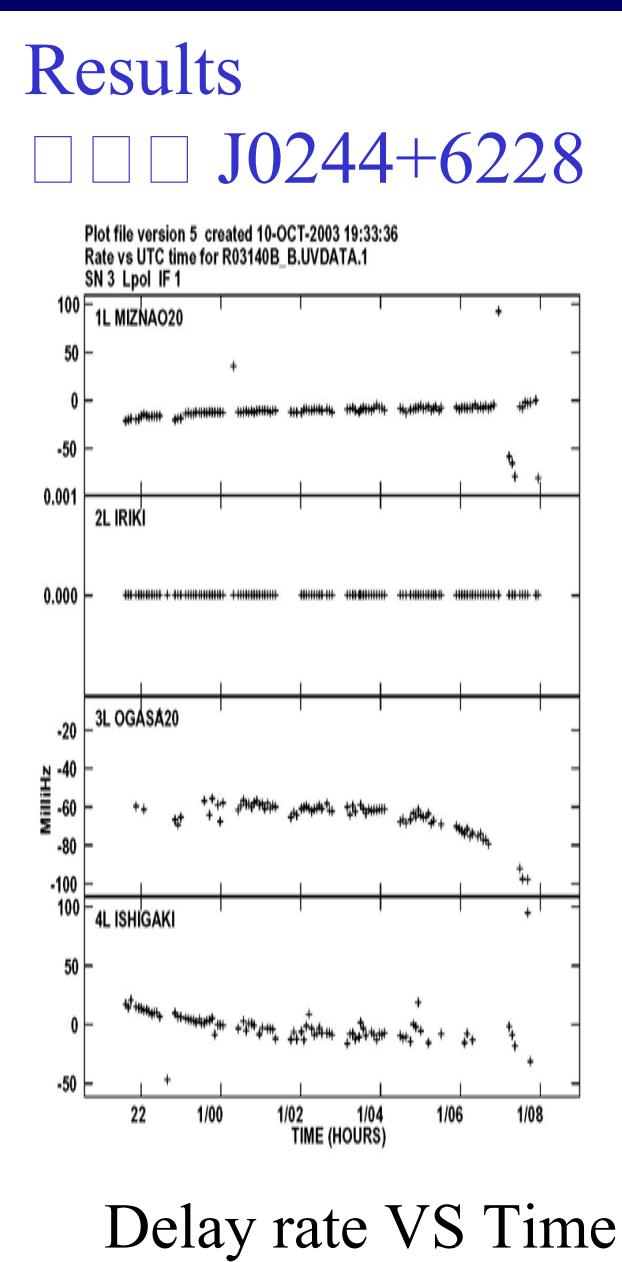
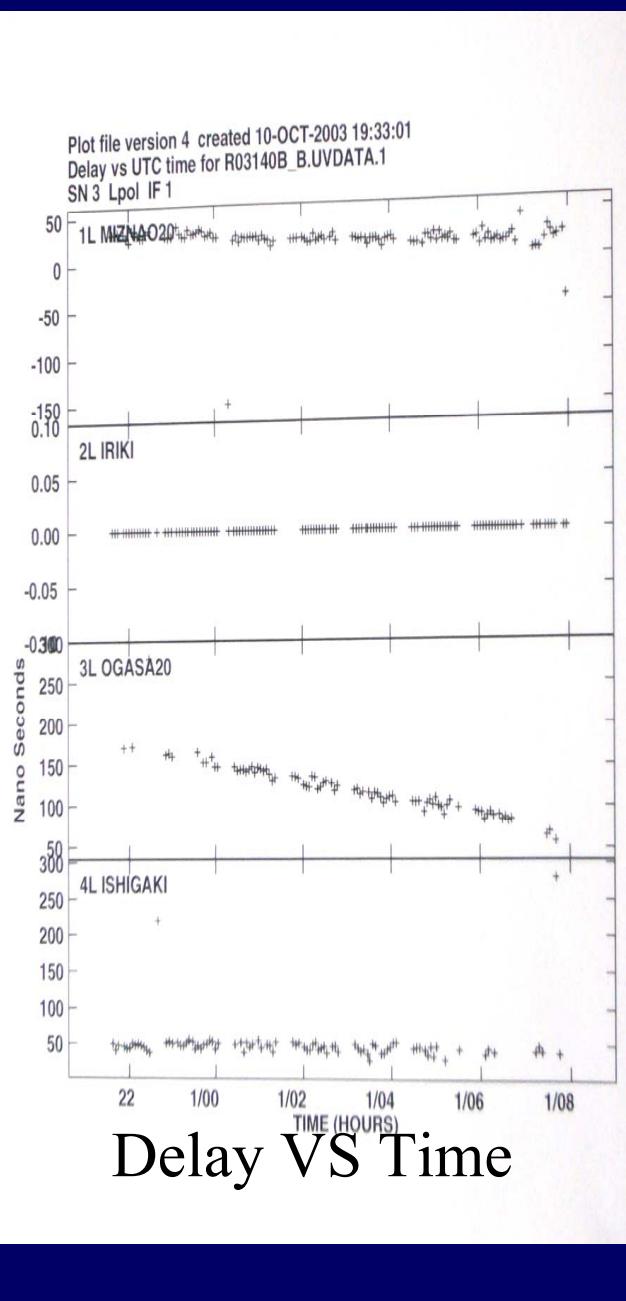
15GHz continuum Reid et al.1995



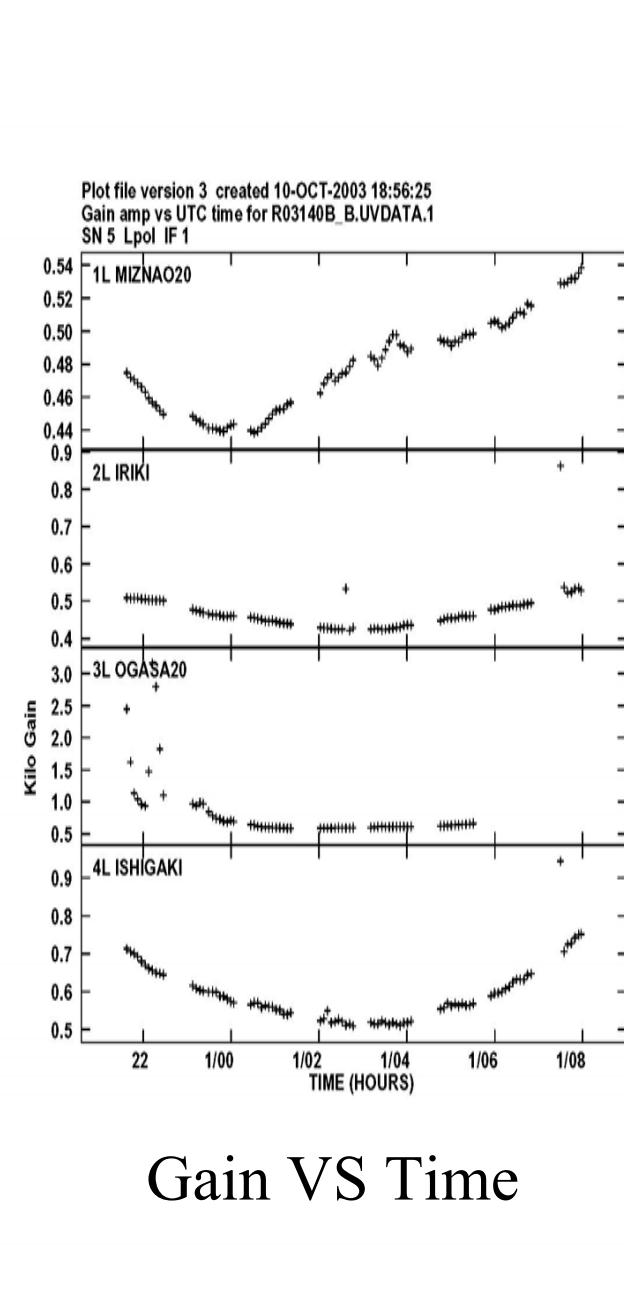
15GHz continuum Reid et al.1995



15GHz continuum Reid et al.1995

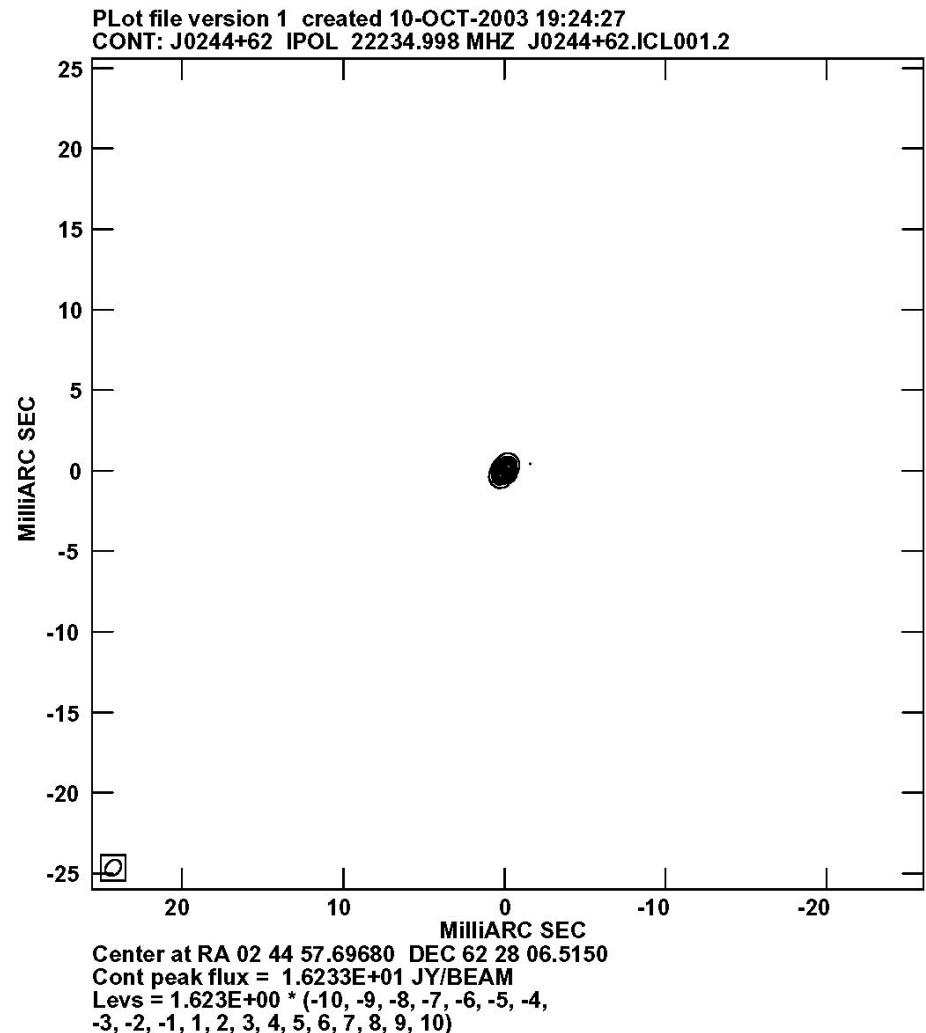


Delay rate VS Time

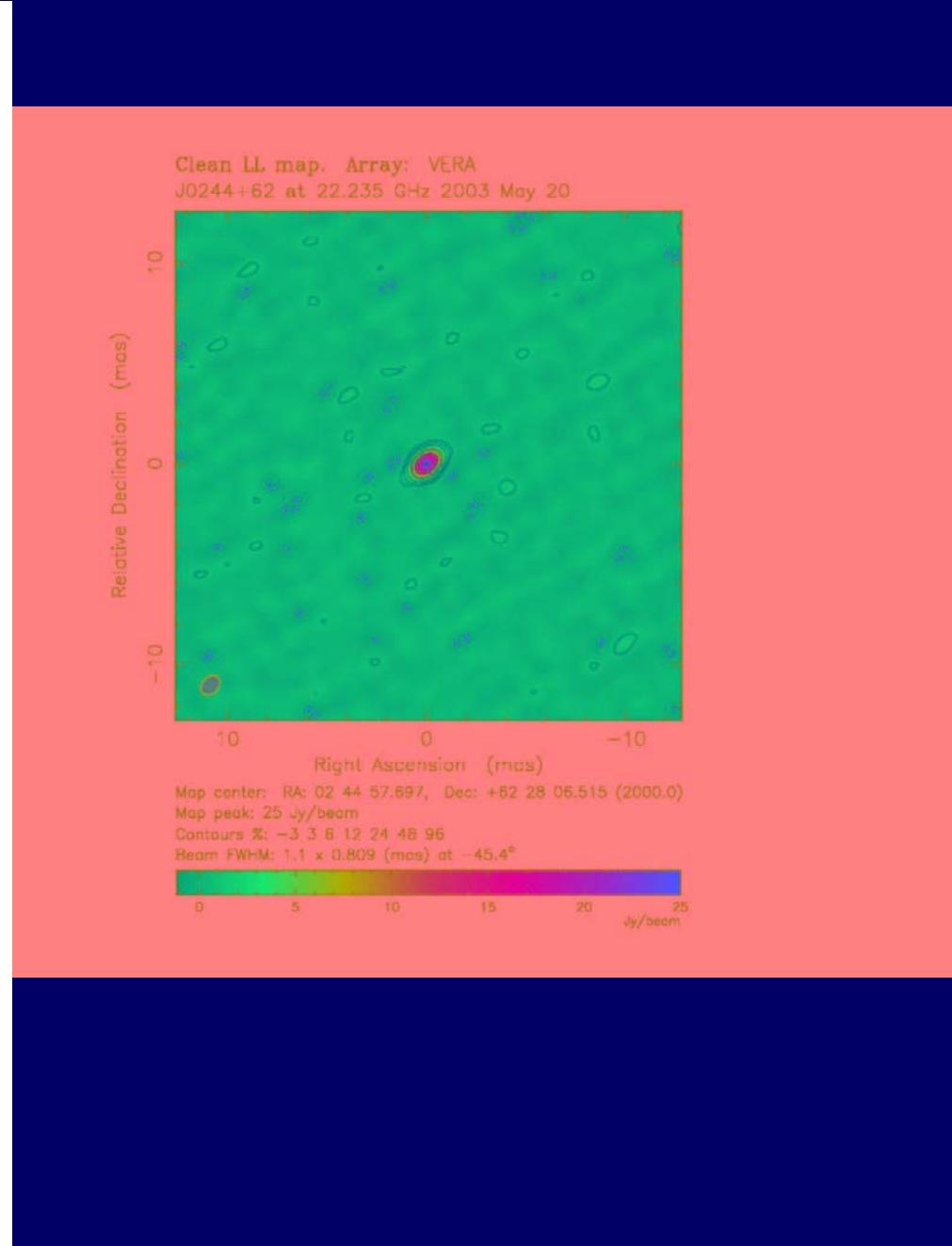


Results

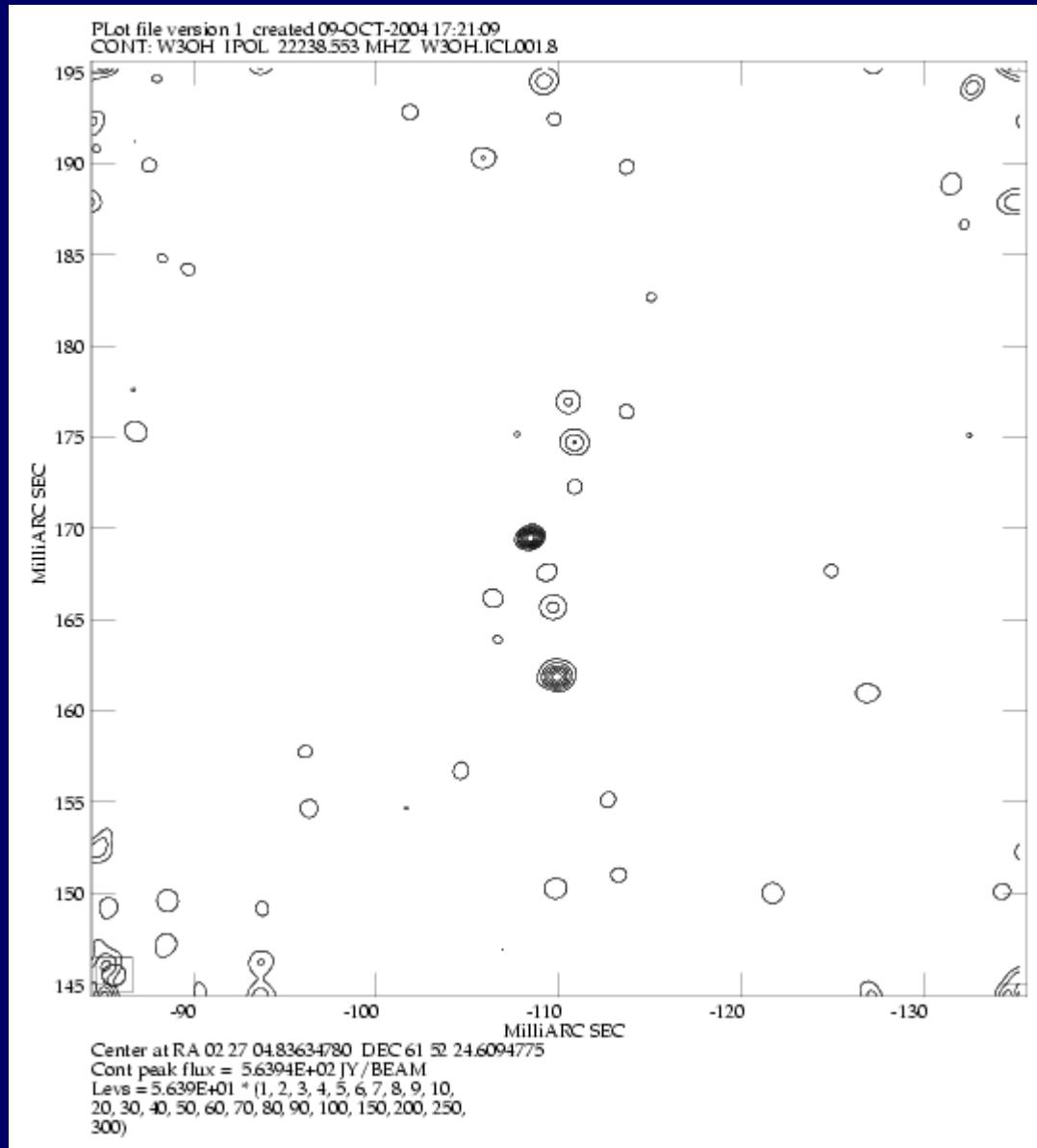
□ □ □ J0244+6228



Point-source like



An example of phase reference imaging (04086)



J0244+6228

Conclusions

- □ We have done simultaneous observations of W3OH H₂O maser and Reference source J0244+6228 using VERA(VLBI Exploration of Radio Astrometry).
 - □ Detected good fringes for both W3OH H₂O maser and the reference source J0244+6228.
 - □ Our results are not contradict to the previous results.
Our VERA system is probably good for VLBI imaging.
 1. Phase referencing imaging has started for some epochs.
 - Estimation of relative positions W3OH H₂O masers referring to J0244+6228
 - Positioning for the other epochs