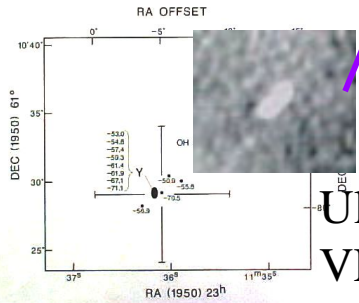
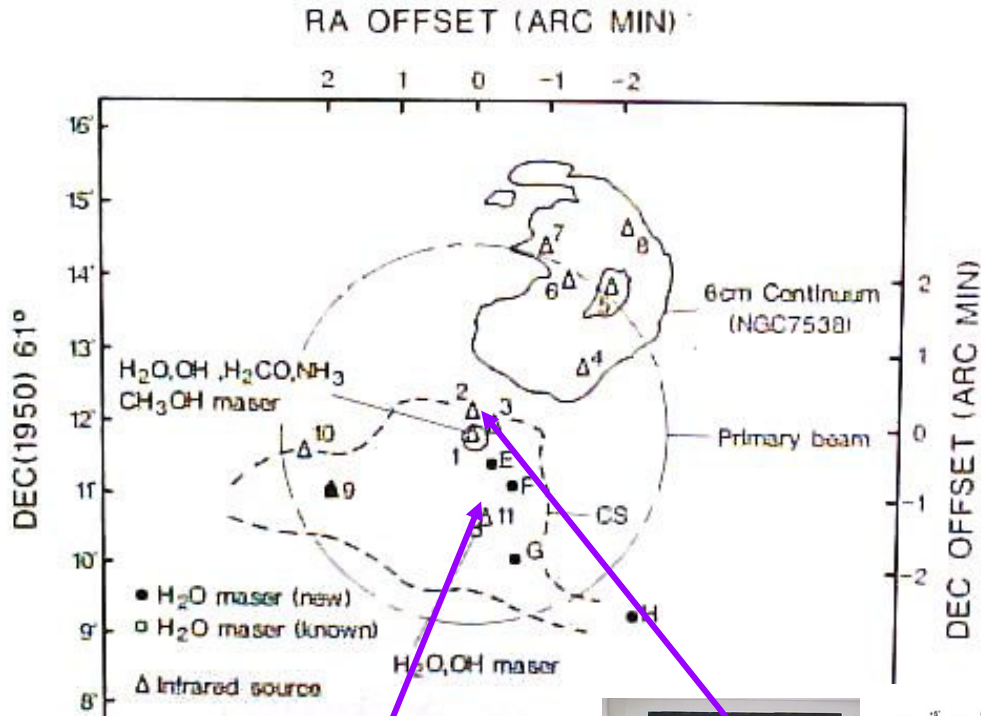


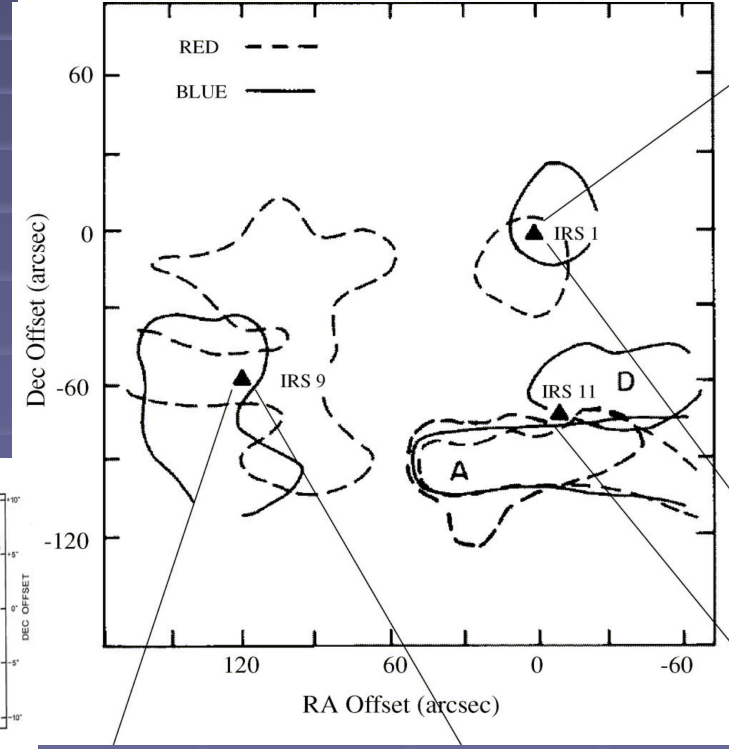
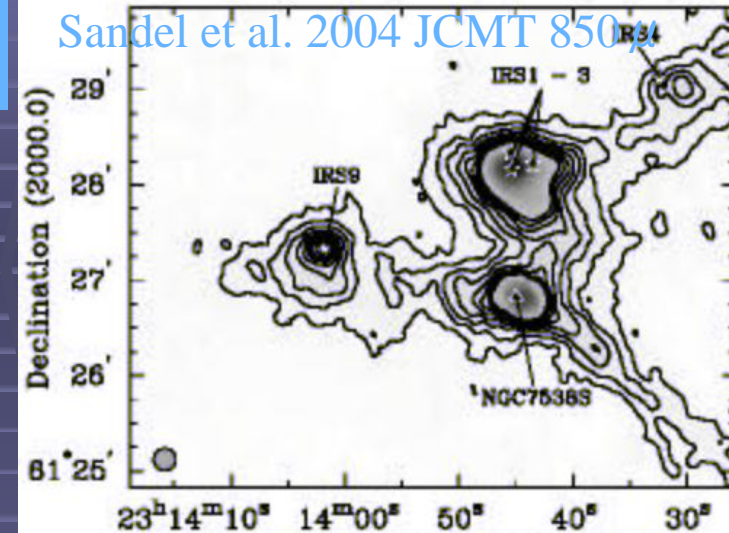
# WATER VAPOR MASERS IN THE NGC7538 REGION

Osamu KAMEYA (Mizusawa VLBI Observatory, NAOJ), VERA team



Ultra compact HII regions  
VLA 15cm Kameya et al. 1990

Sandel et al. 2004 JCMT 850  $\mu$ m



Kameya et al. 1986 CO outflow

# VLBI observation of H<sub>2</sub>O masers of NGC 7538

Observation date, time: 2005yr103d  
2006yr 206d

Stations: VERA 4 stations

Recording mode: GEO1D mode 16MHz-2bit-2ch

Recorder1000 (256Mbps) (5 volumes)

Freq.: 22.235GHz (H<sub>2</sub>O maser)

2 beam separation: ~2degree

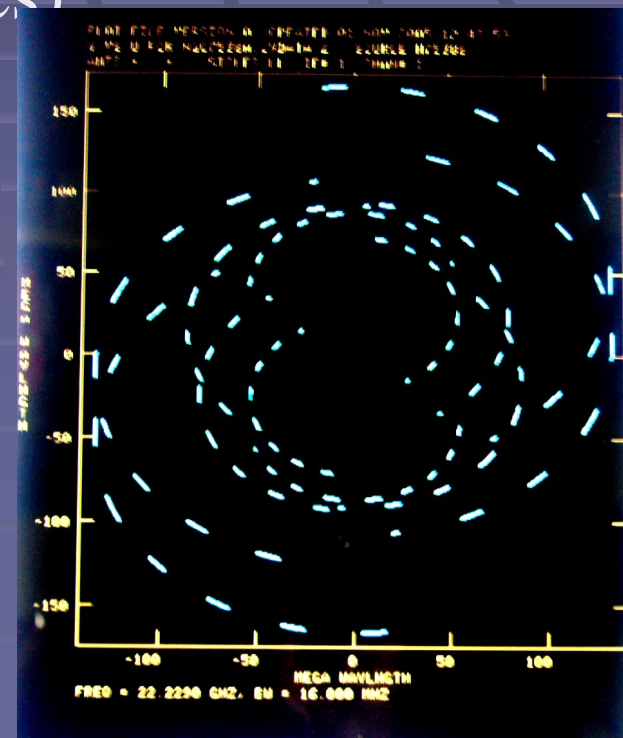
A beam: NGC7538S or N masers

B beam: Cepheus A masers

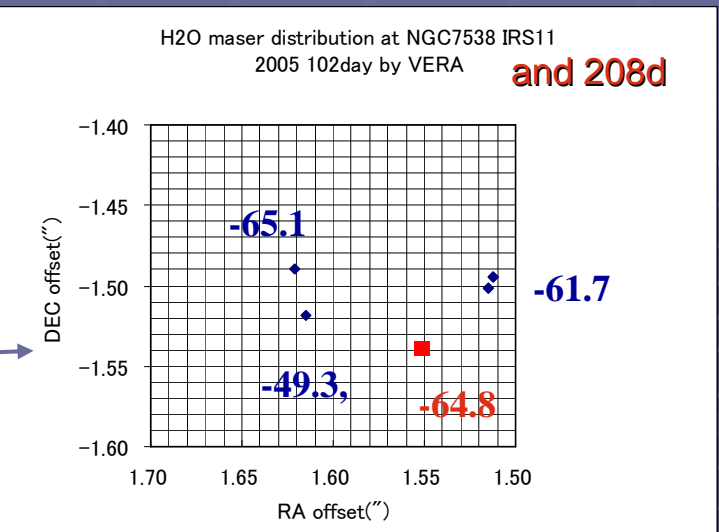
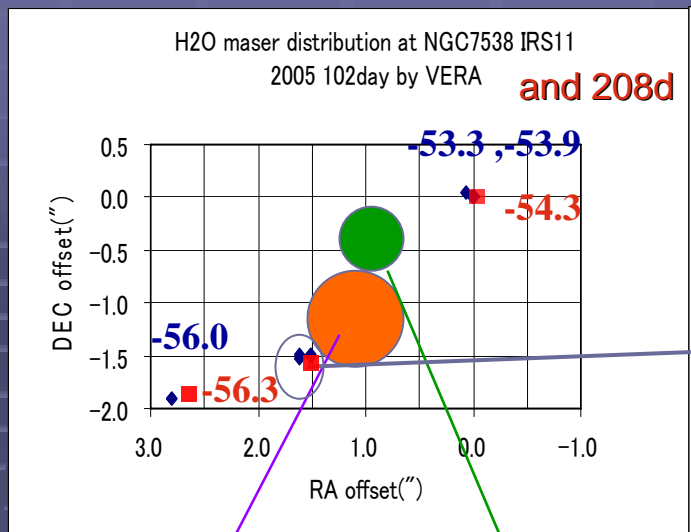
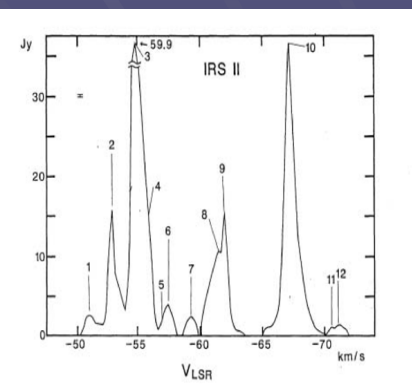
Calibrator: BL Lac, J2005+7752

Tsys: Miz:185-340K Irk:196-280K

Oga:350-700K Ishi:360-620K



# Results of VERA (S)



Kameya et al. 1990b  
VLA 1989 April  
Ultra compact HII region

Kameya et al. 1990  
NMA H<sub>2</sub>O 1987 May 9

