

Structure of Massive protostellar cores

<Team 4>

Changdae Choi

Hojae Ahn

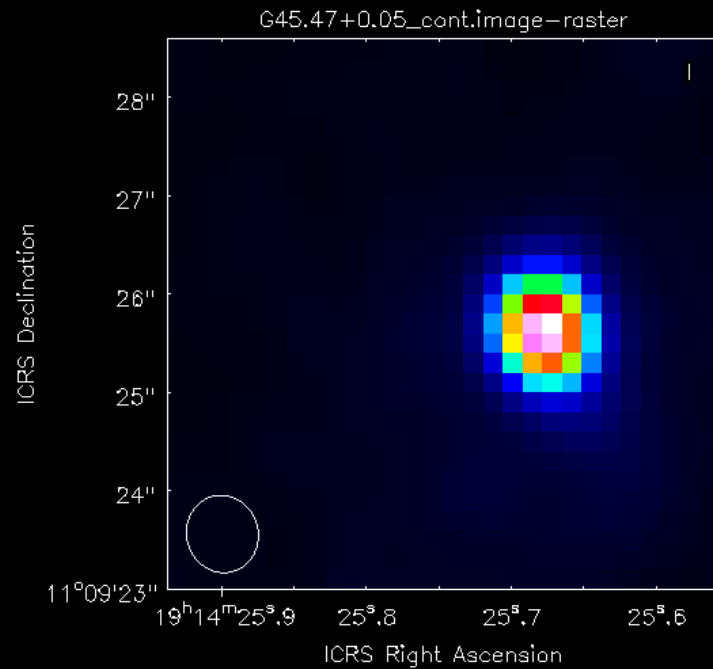
In Kang

Introduction

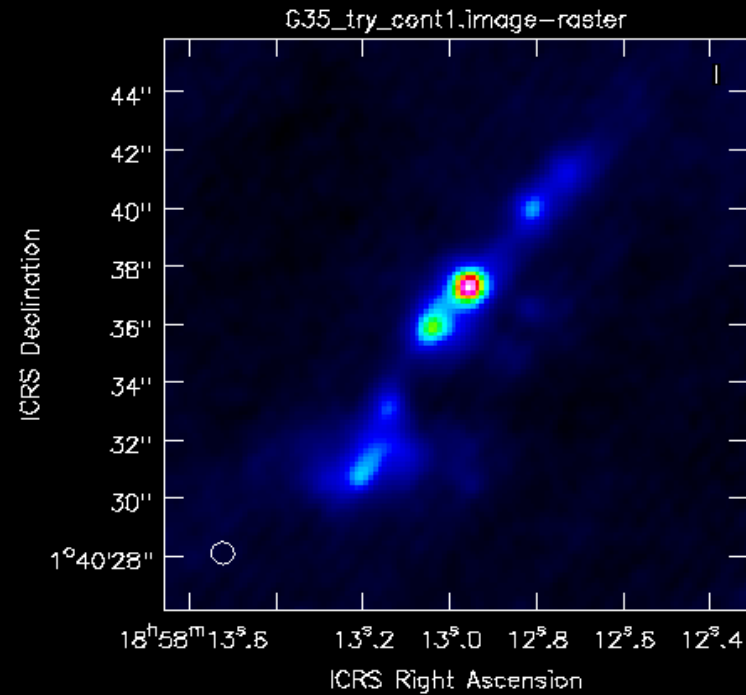
- ALMA Cycle 3 (band 6)
- 12m antennas : 41
- The structure of 8 Massive protostellar core
- G45.45+0.05, G35.20-0.74 N, IRAS_16562-3959
- Continuum(233 GHz) , H₂CO, H₂S, SO₂, SiO
- Imaging, Moment maps (for emission lines)

Name	G45.47+0.05	G35.20-0.74 N	IRAS_16562-3959
Distance (kpc)	6.3 (Remijan+04)	2.19 (Zhang+09)	1.7 (Guzmán+18)
Mass (M_⊙)	250 (Remijan+04)	1~10 (Sánchez-Monge+14)	700 (Guzmán+18)

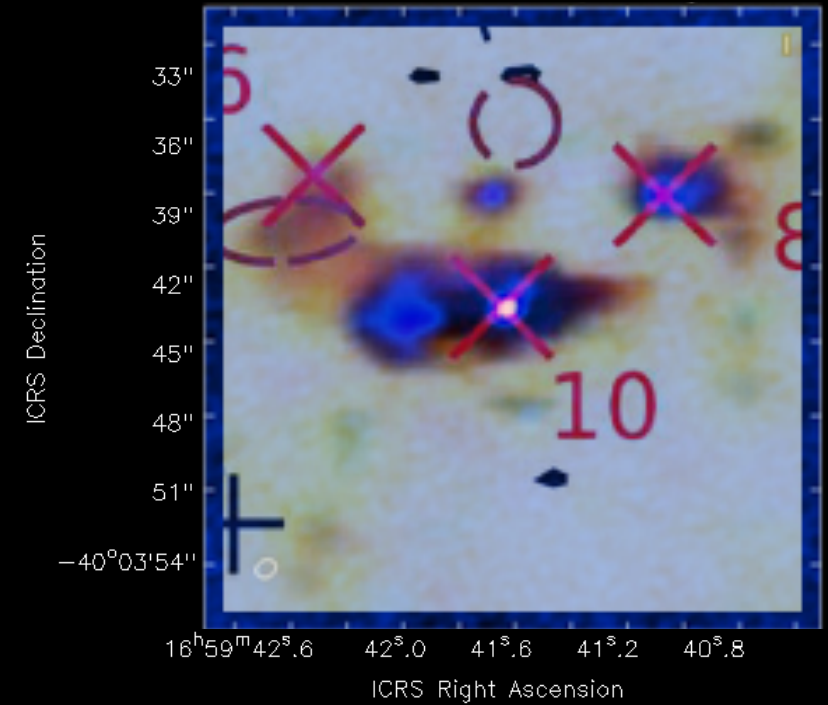
Continuum (223 GHz)



G45.47+0.05



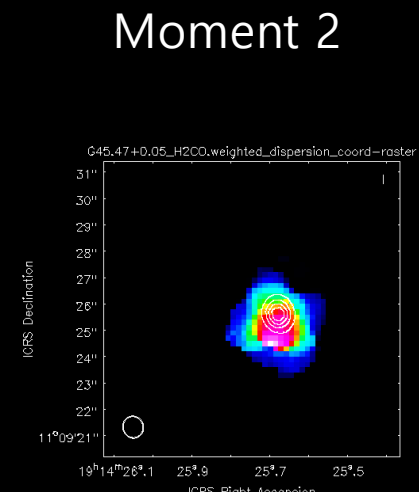
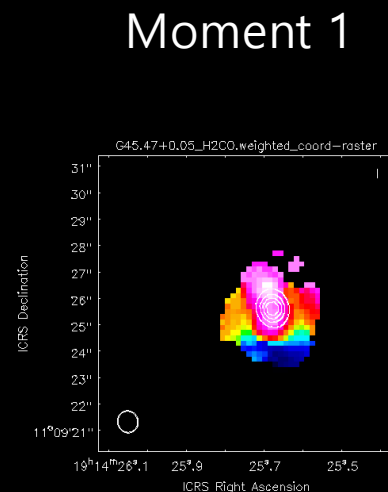
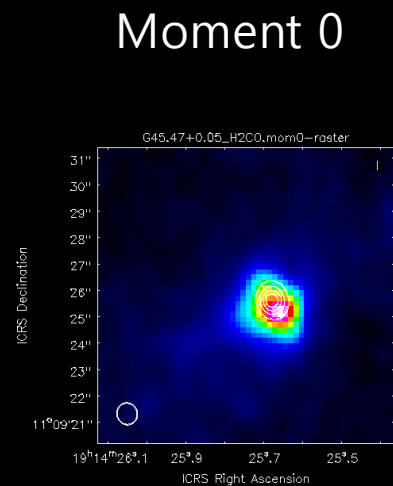
G35.20-0.74 N



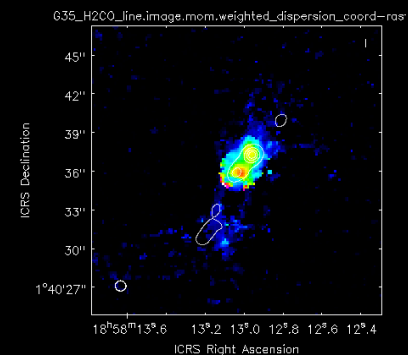
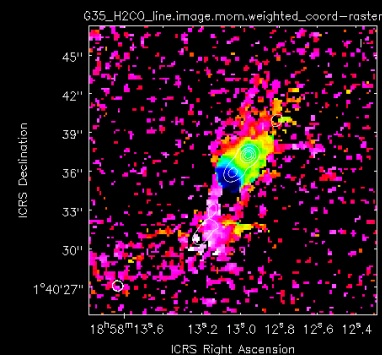
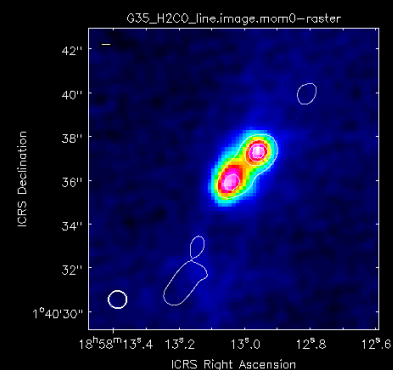
IRAS_16562-3959
(Guzmán+18)



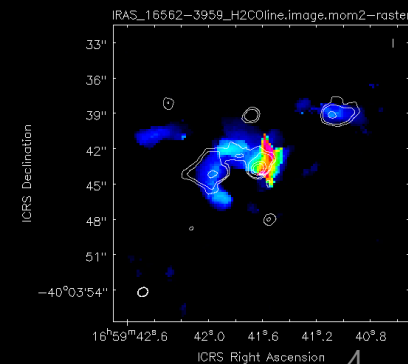
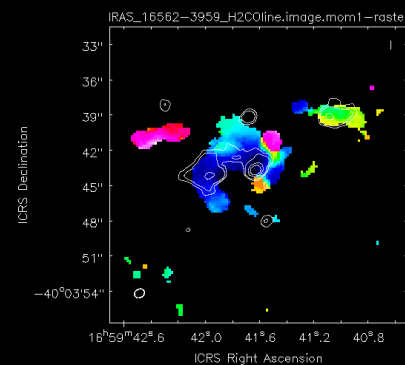
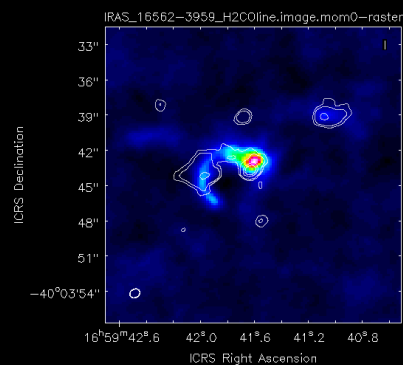
G45.47+0.05



G35.20-0.74 N



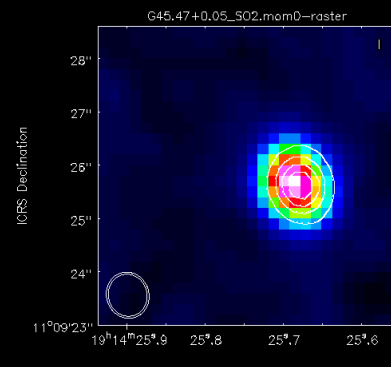
IRAS_16562-3959



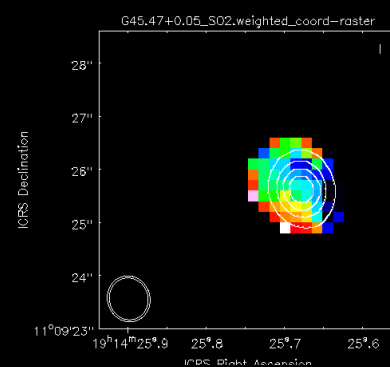
SO₂ $v=0$
22(2,20)→22(1,21)

G45.47+0.05

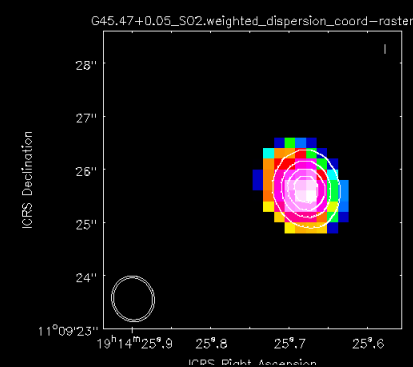
Moment 0



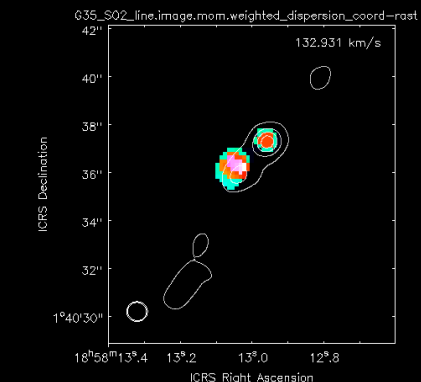
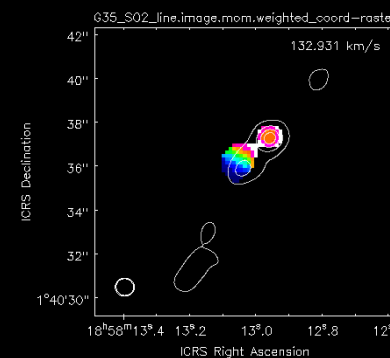
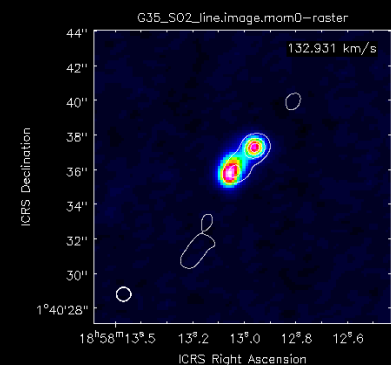
Moment 1



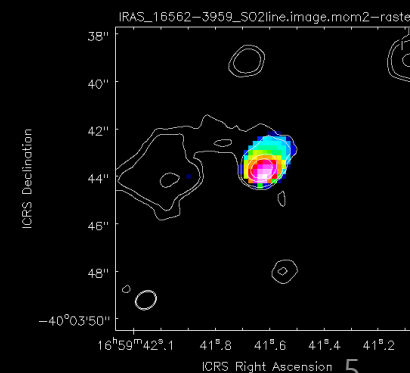
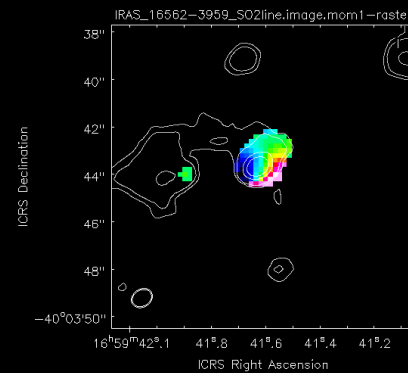
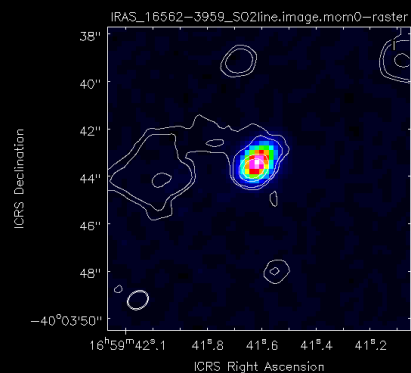
Moment 2



G35.20-0.74 N



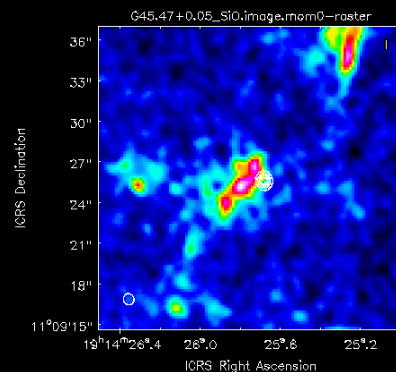
IRAS_16562-3959



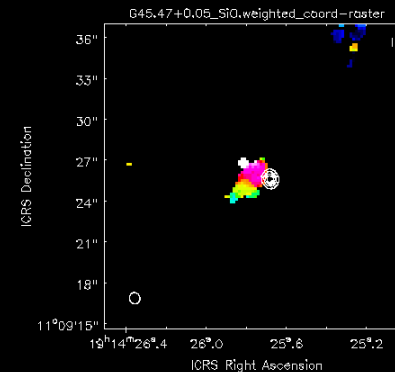
SiO $5 \rightarrow 4$

G45.47+0.05

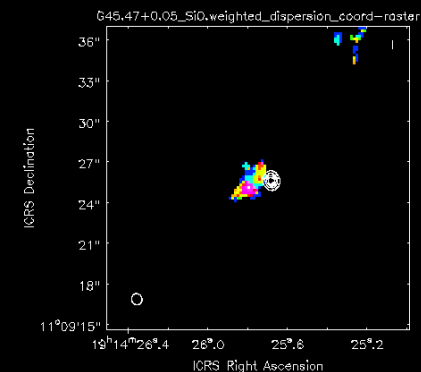
Moment 0



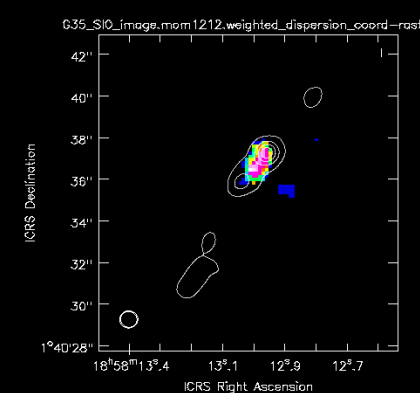
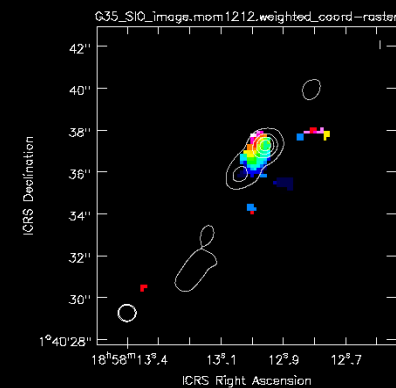
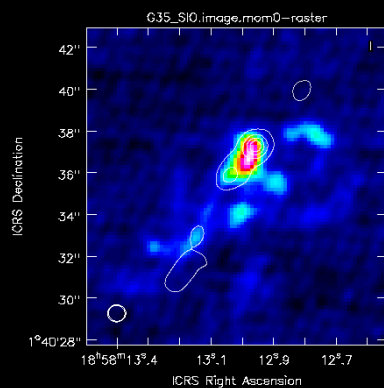
Moment 1



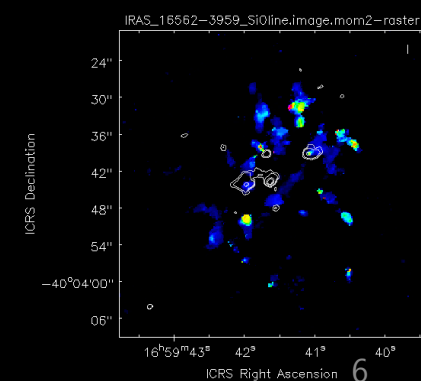
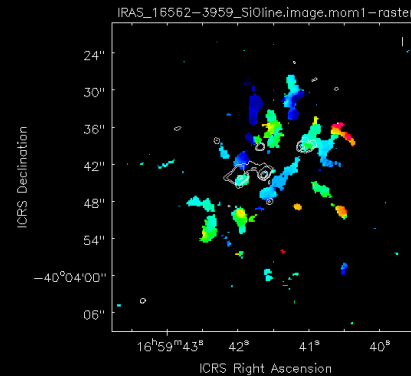
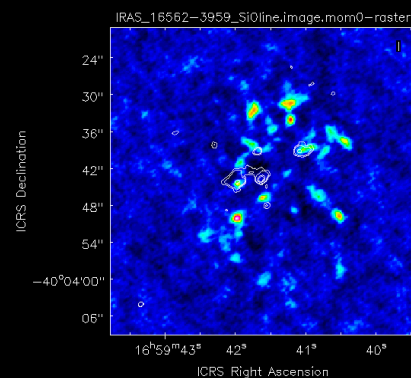
Moment 2



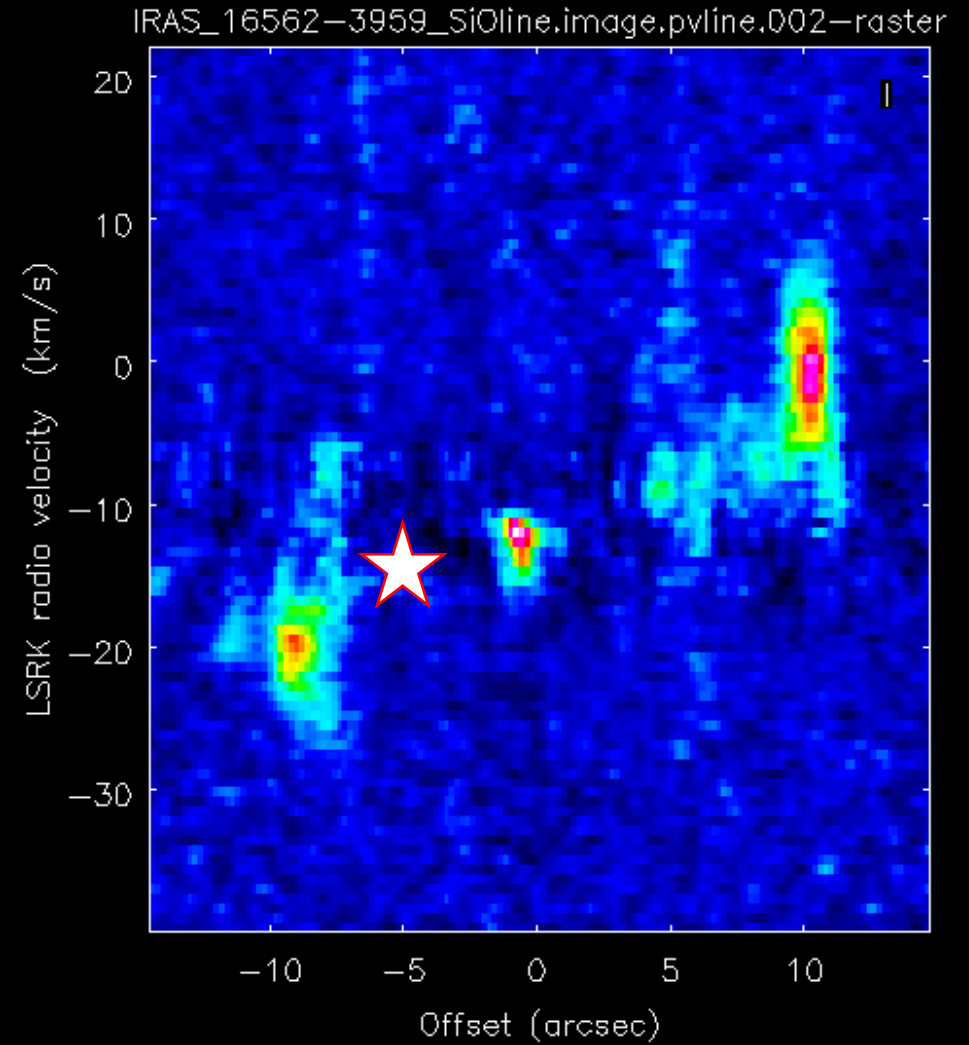
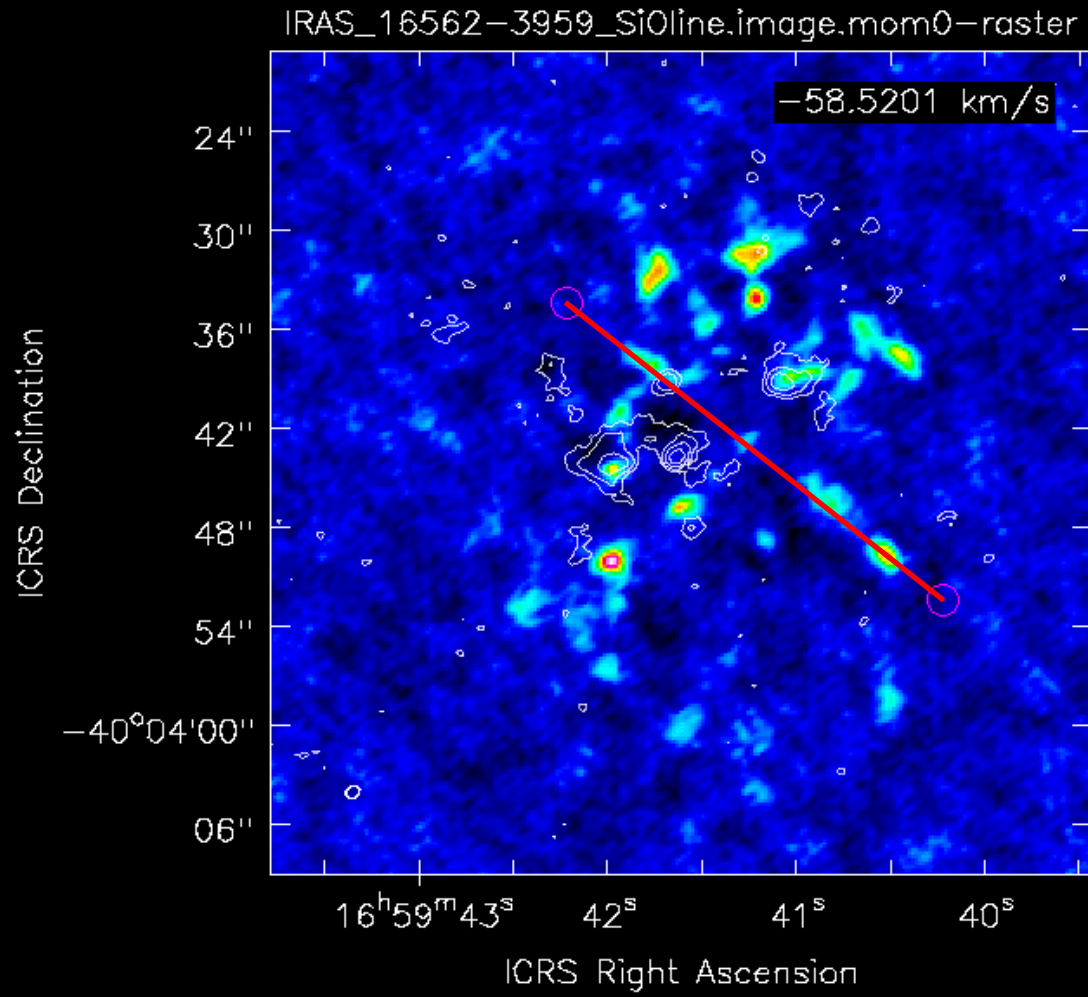
G35.20-0.74 N



IRAS_16562-3959

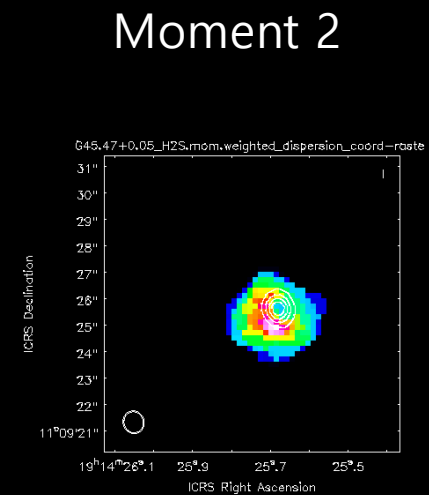
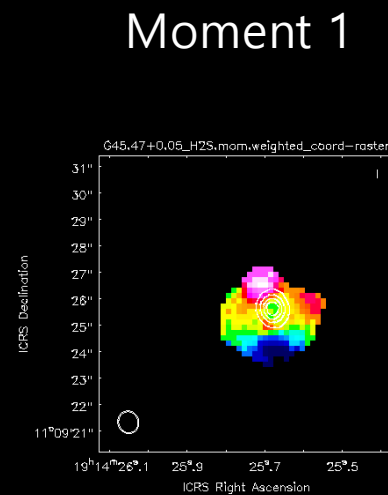
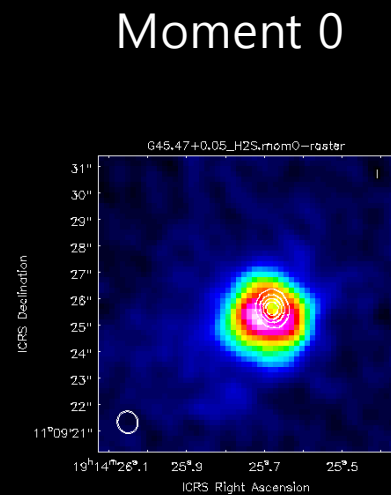


Outflow ?

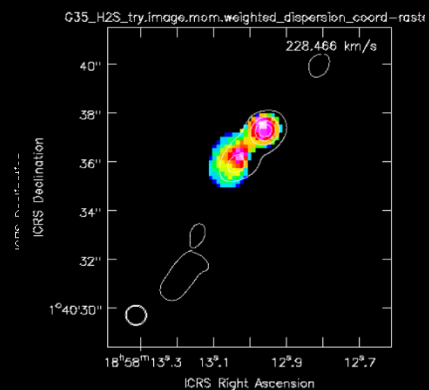
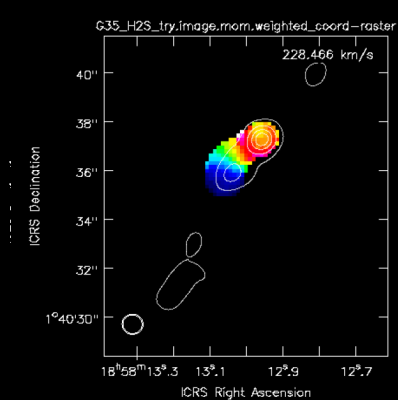
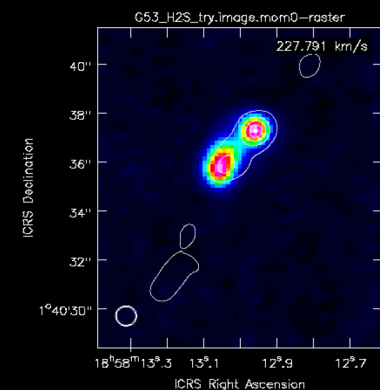


$\text{H}_2\text{S } 2(2,0) \rightarrow 2(1,1)$

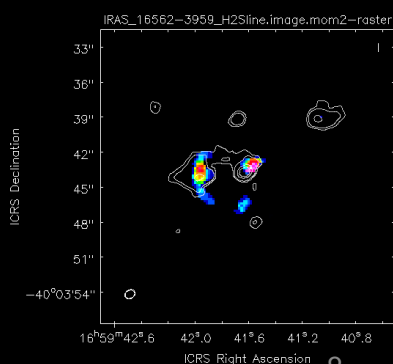
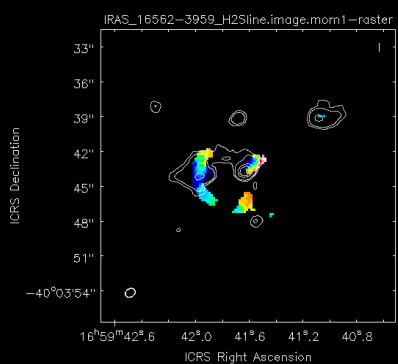
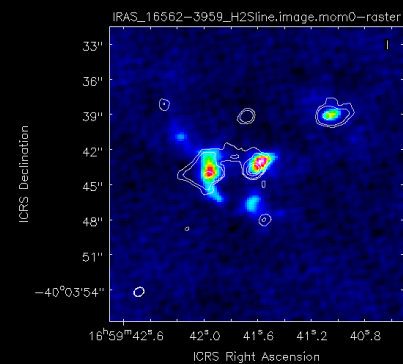
G45.47+0.05



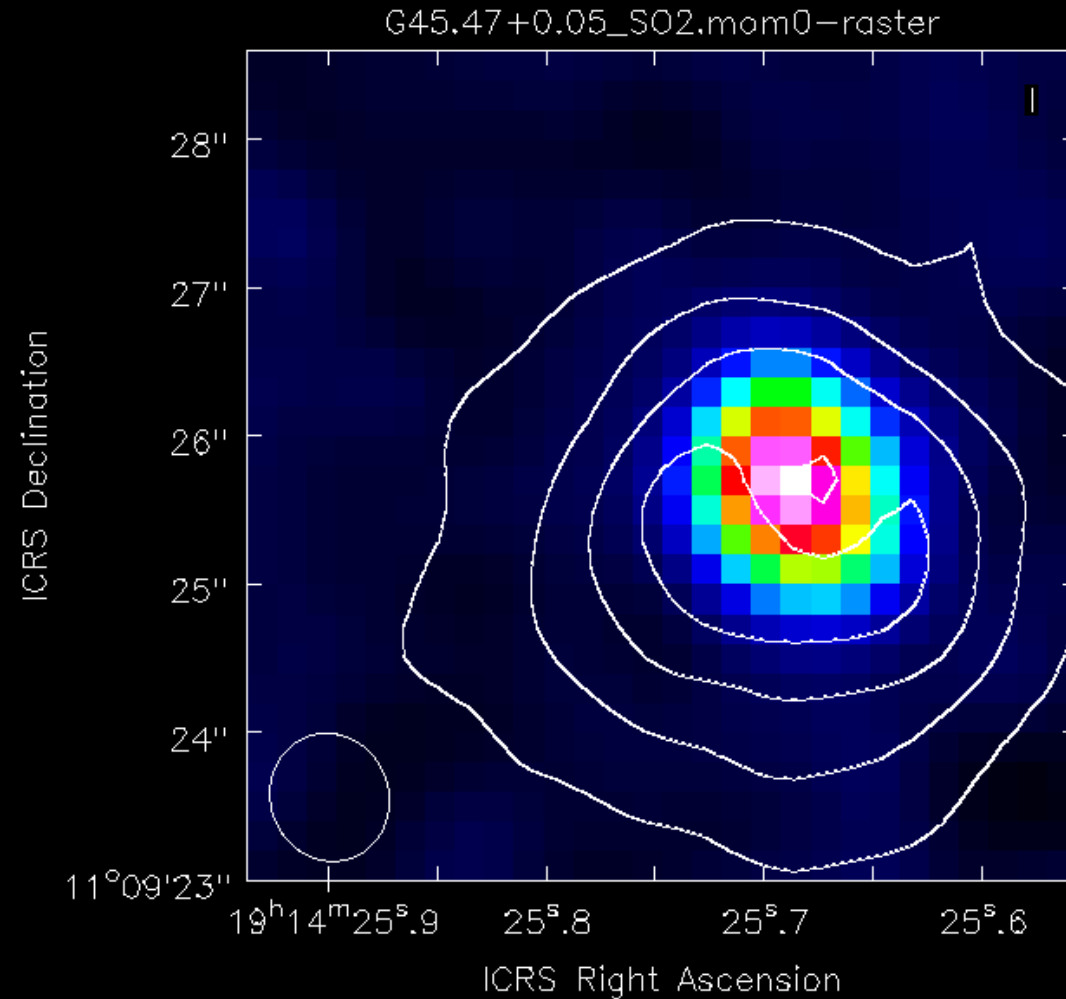
G35.20-0.74 N

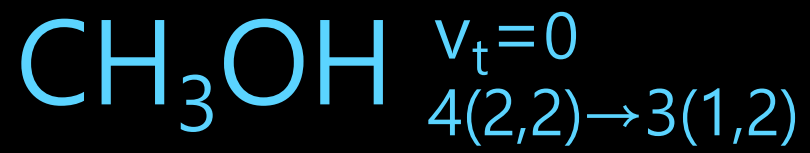


IRAS_16562-3959



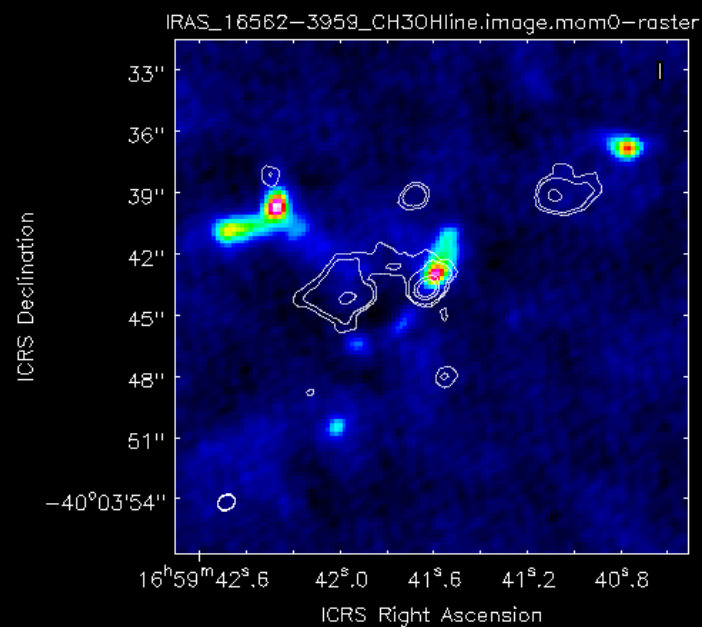
Anti-correlation between SO_2 and H_2S ?



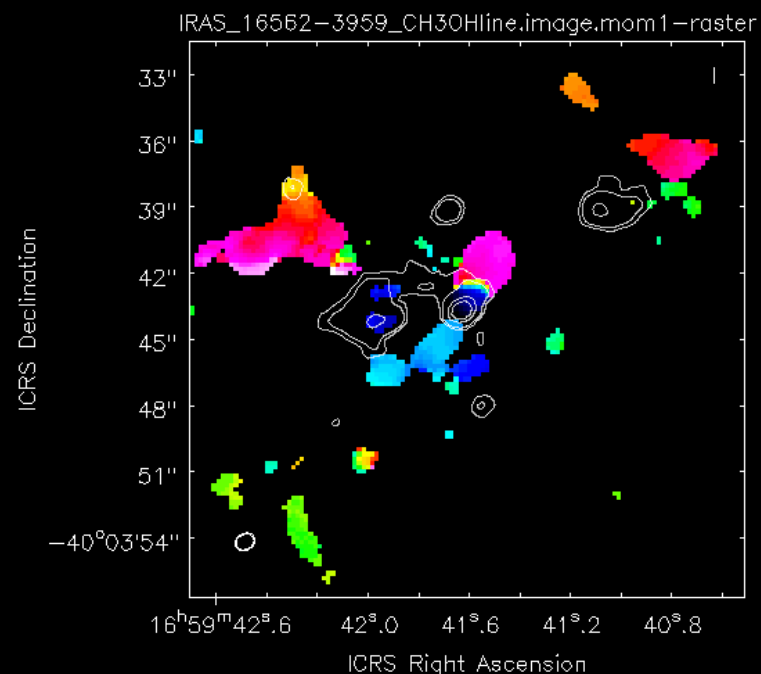


IRAS_16562-3959

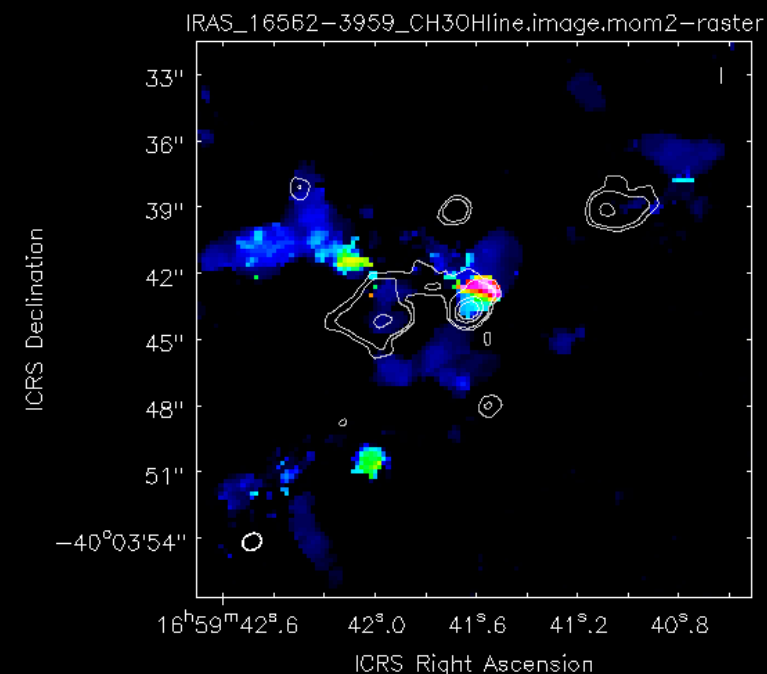
Moment 0



Moment 1



Moment 2



Thank you