

Star Formation News Letter

#281 No. 11-15

11. Detailed investigation of the emission structures in the vicinity of LkH α 198, Gevorgyan et al. [Astrophysics]
12. L1599B: Cloud Envelope and C+ Emission in a Region of Moderately Enhanced Radiation Field, Goldsmith et al. [ApJ]
13. The CDF Archive: Herschel PACS and SPIRE Spectroscopic Data Pipeline and Products for Protostars and Young Stellar Objects, Green et al. [AJ]
14. Photoevaporation and close encounters: how the environment around Cygnus OB2 affects the evolution of protoplanetary disks, Guarcello et al. [ApJS]
15. An extremely high velocity molecular jet surrounded by an ionized cavity in the proto-stellar source Serpens SMM1, Hull et al. [ApJL]

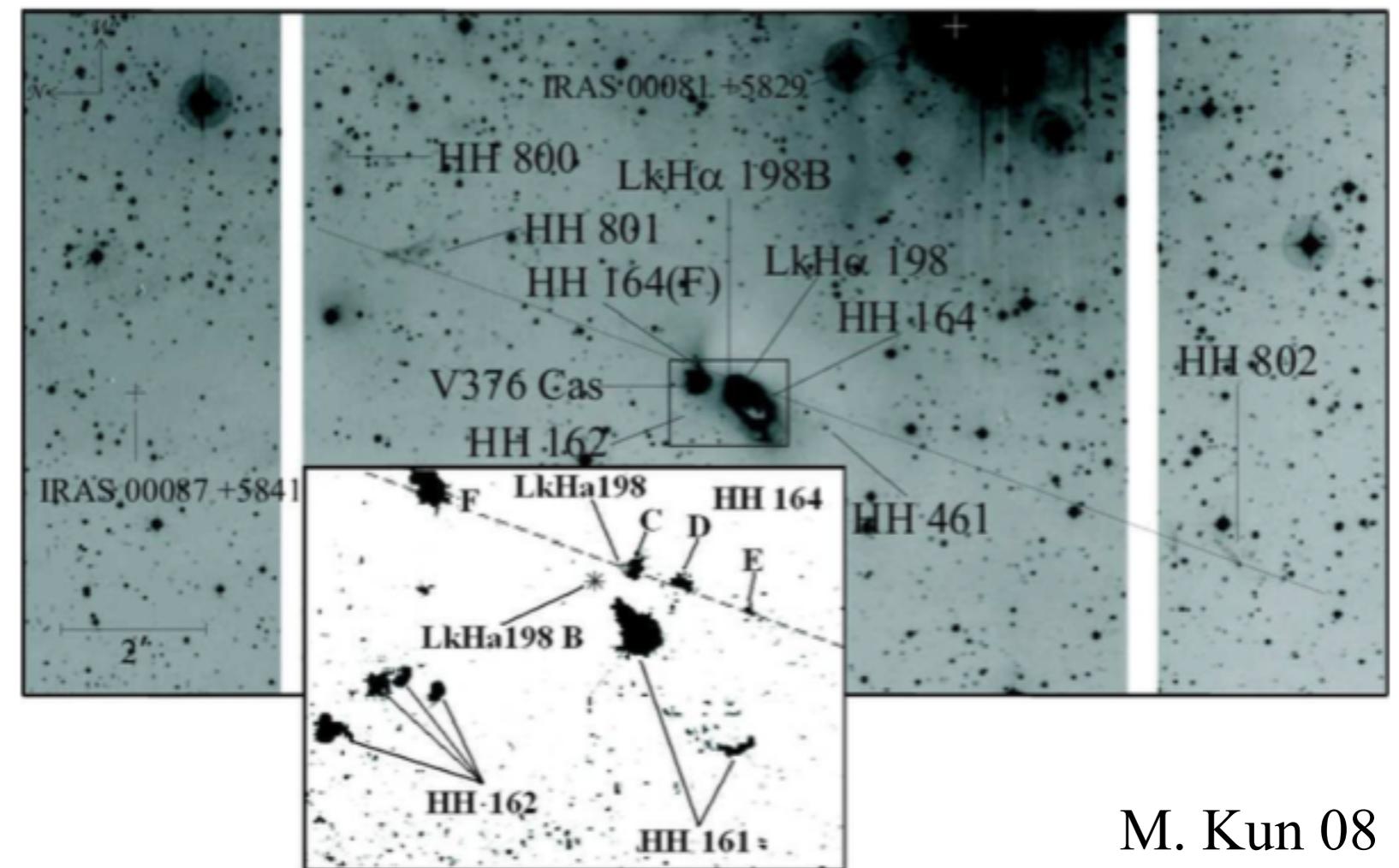
Detailed investigation of the emission structures in the vicinity of LkH α 198, M.H. Georgian

プレプリントなし、e-mail 届かず

LkH α 周囲の多天体分光 Byurakan 天文台 2.6 m
電子密度分布の導出

HH161は連星

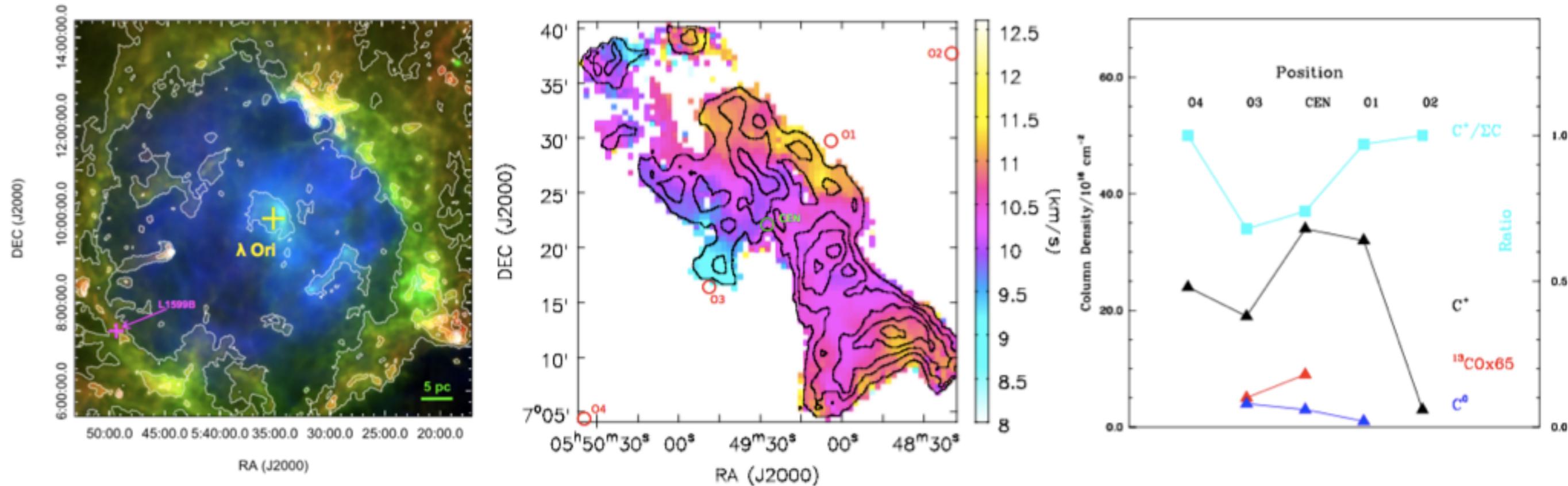
LkH α 198が
drive?



L1599B: Cloud Envelope and C+ Emission in a Region of Moderately Enhanced Radiation Field,

P.F. Goldsmith et al., to appear in ApJ

λ Ori: O8 III+B0.5 V 星からの距離が異なる5点を比較



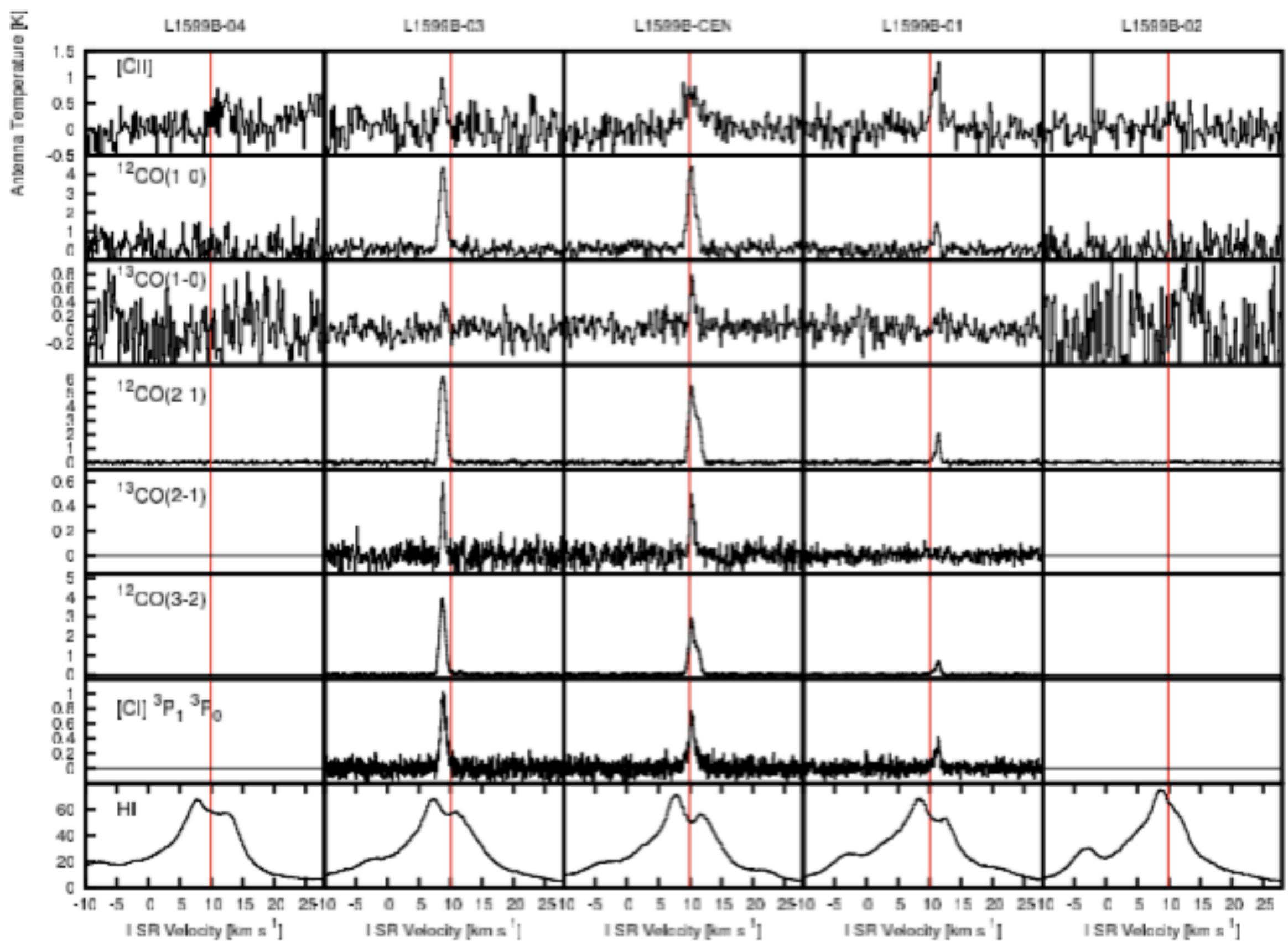
[CI], 12CO (J=1-0, 2-1, 3-2), 13CO (J=1-0, 2-1), HI (Arecibo)
PDR (photo dissociation region) [一様密度モデルとは若干不一致]

輻射により押されている(differential radial motion)

生データは次頁

λ Oriから遠い

λ Oriに近い



The CDF Archive: Herschel PACS and SPIRE Spectroscopic Data Pipeline and Products for Protostars and Young Stellar Objects,

J.D. Green et al. AJ

Herschel PACS and SPIRE

70天体 (原始星, YSO, FU Ori) 再解析

改善点: correction

1. position
2. jitter offsets
3. semi-extended sources

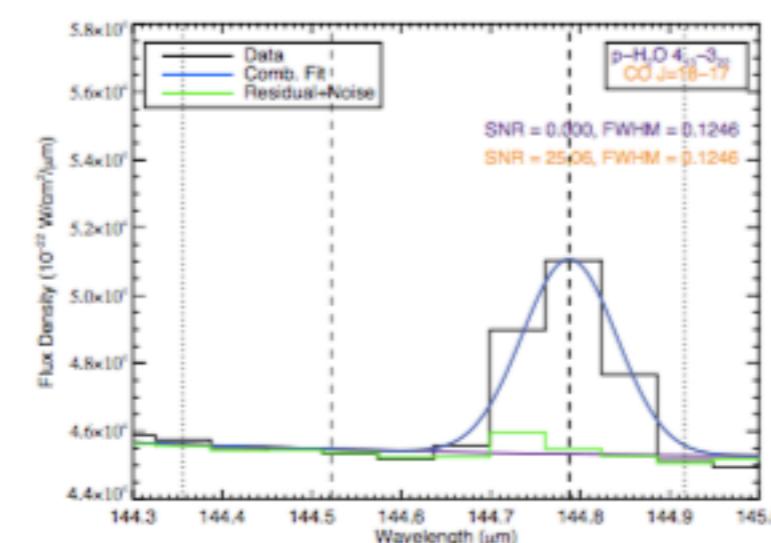
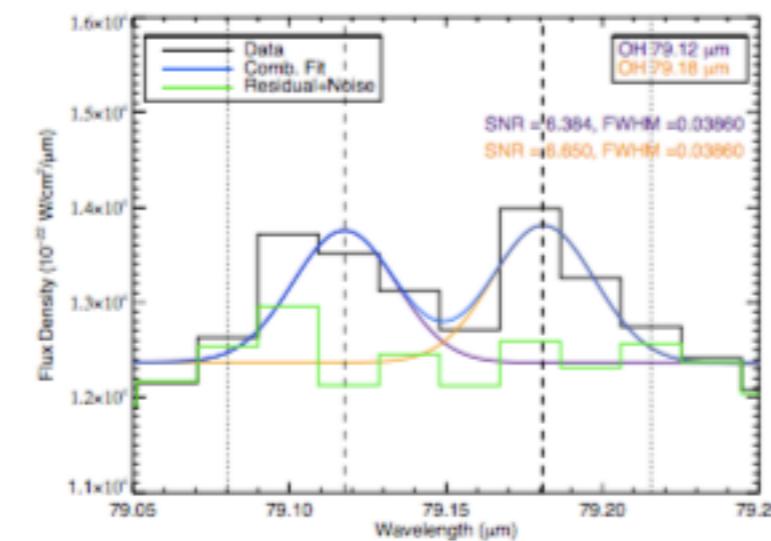
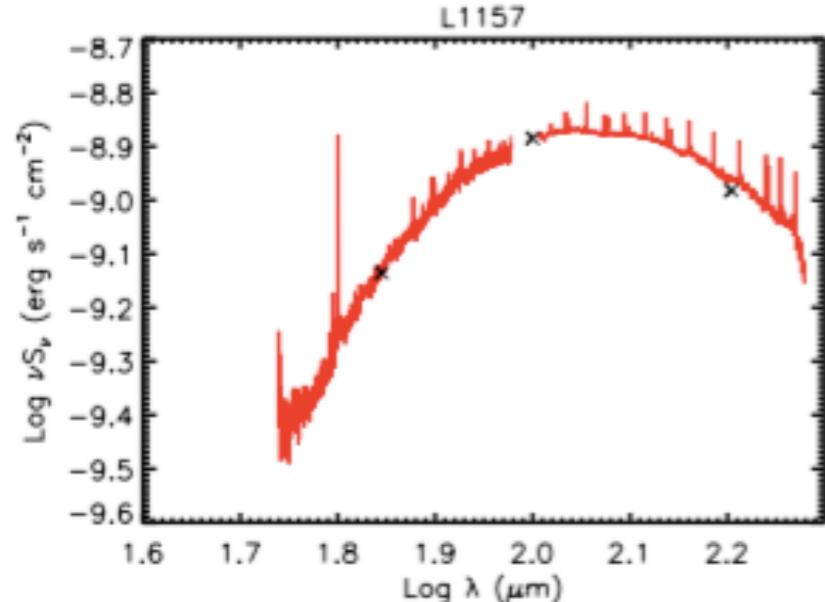
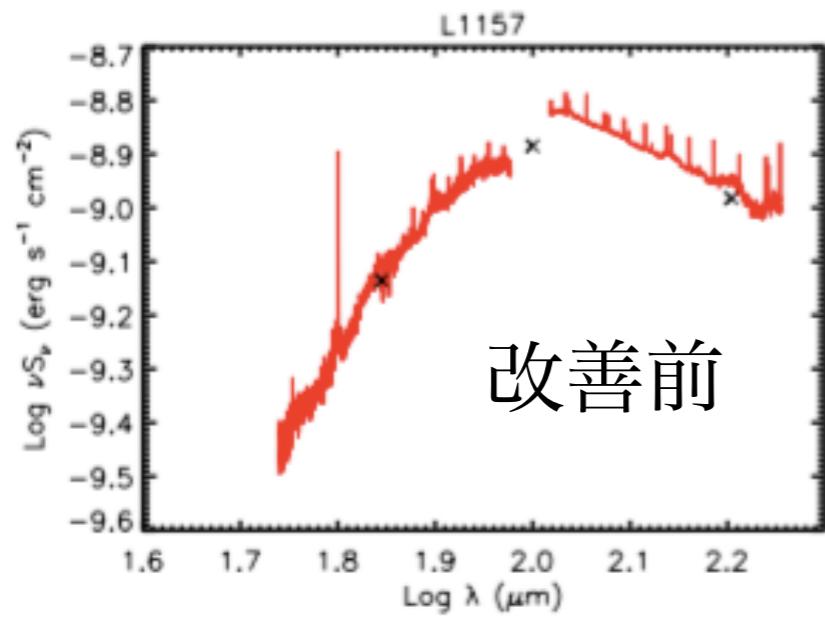
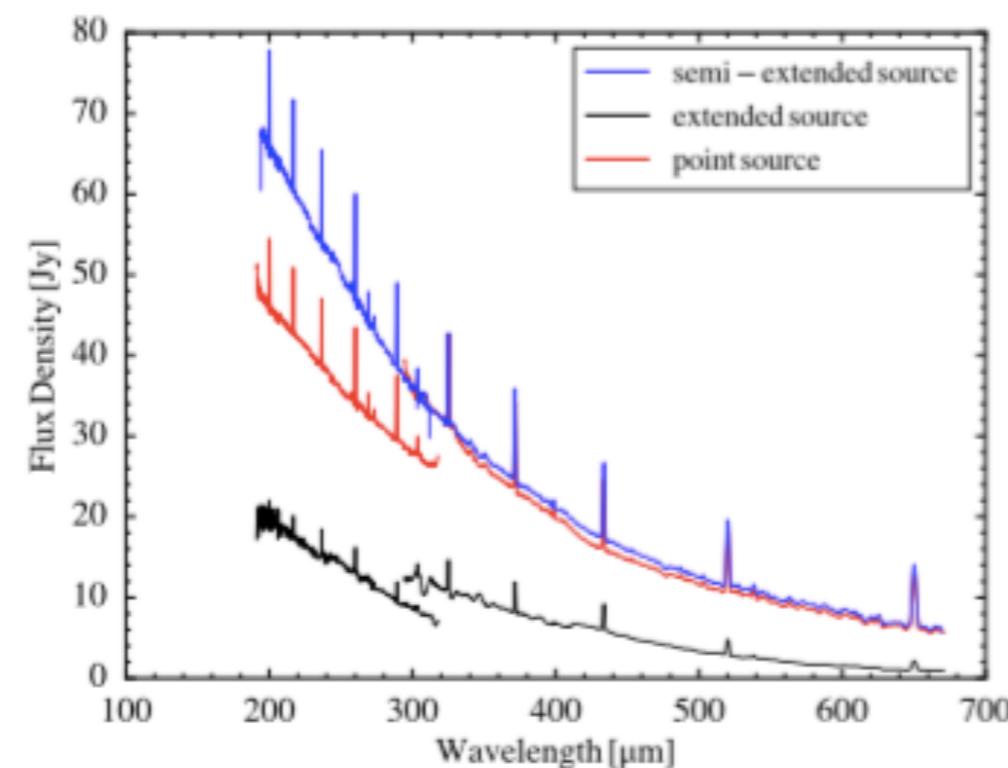
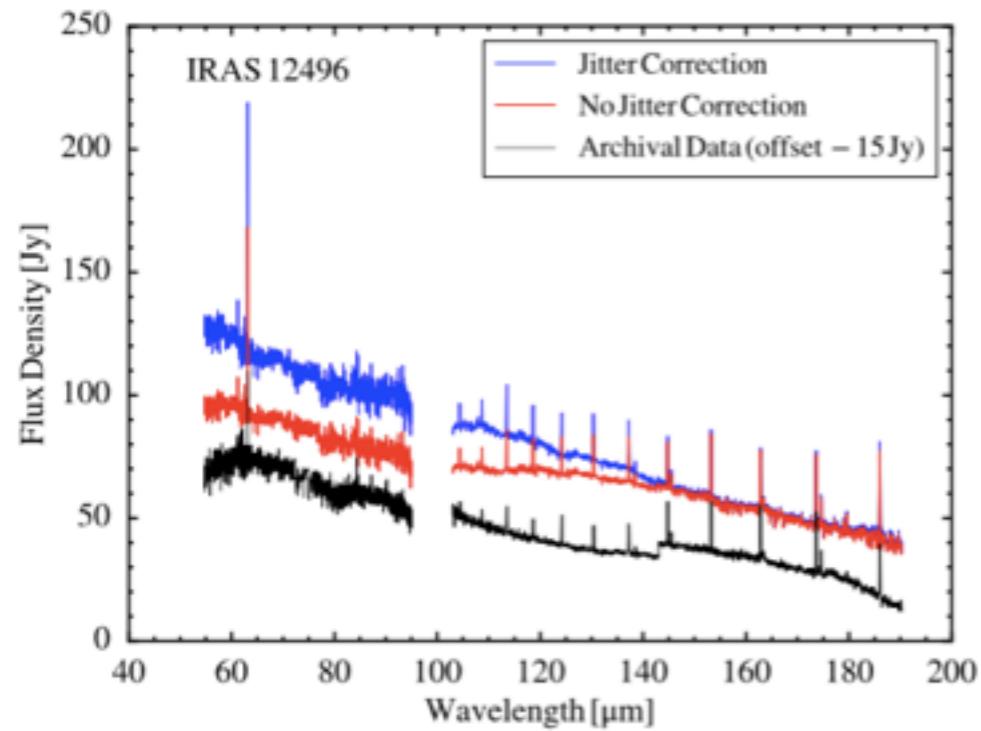
成果 = データベース (Web)

1. Datacubes [$F_\lambda(\alpha, \delta)$]
 2. Best-Calibration 1D spectra
 3. Line identification with fit parameters
 4. Contours for extended sources
- 2-4 については eps ファイル

いくつかの天体ではCOの回転温度と個数密度が相当変化

ただし、多くの天体では回転温度はほとんど変化なし (<2%)

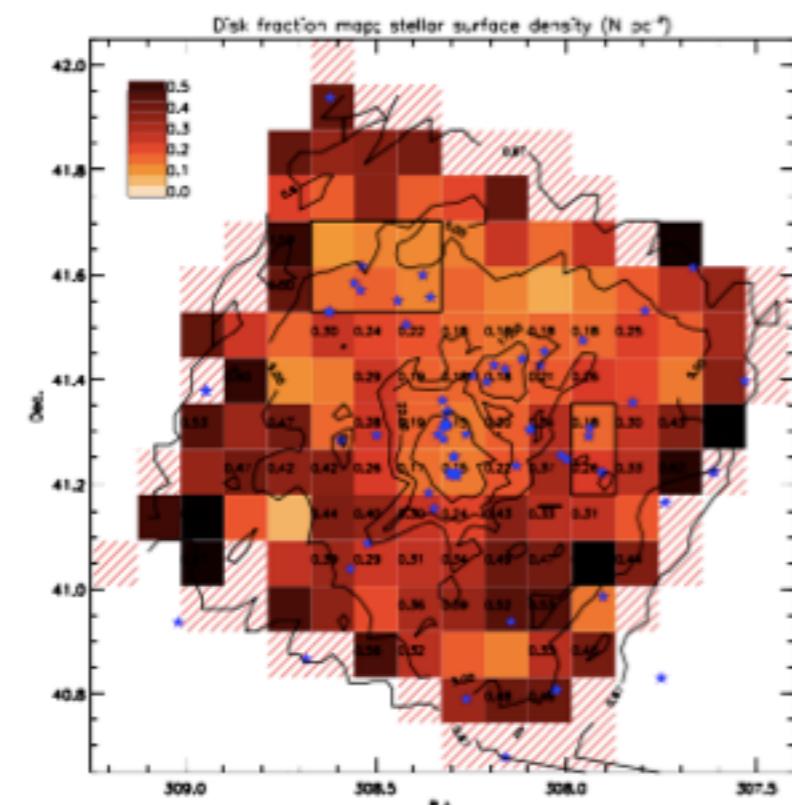
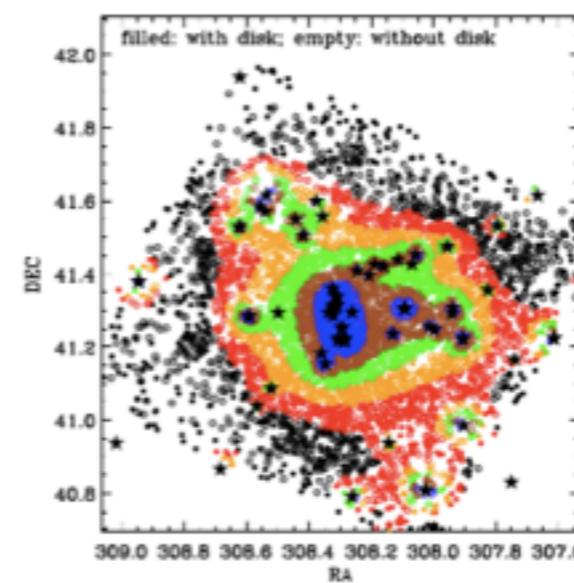
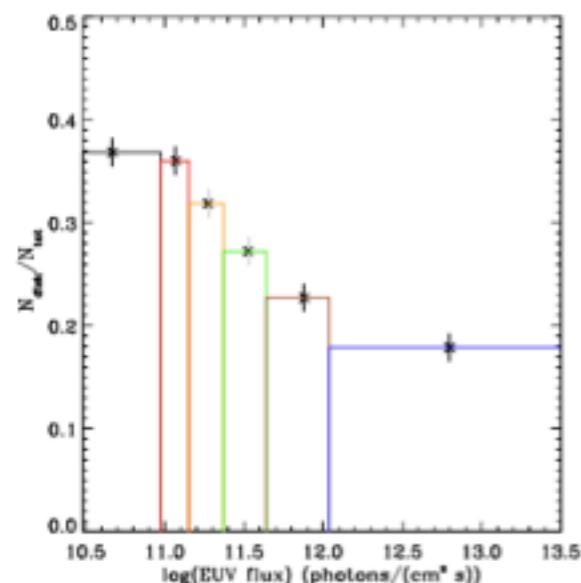
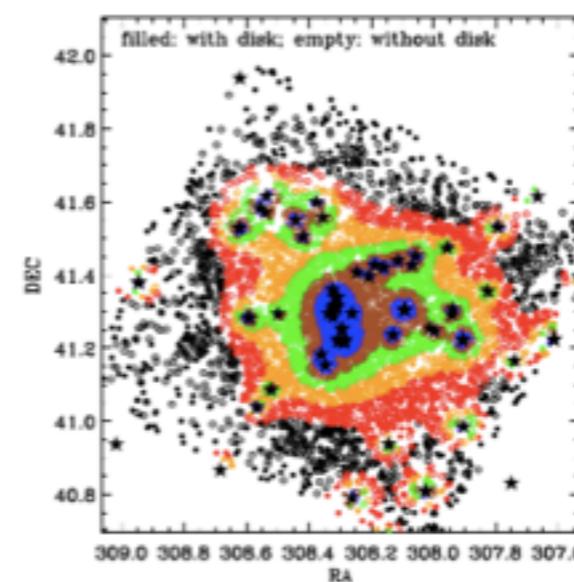
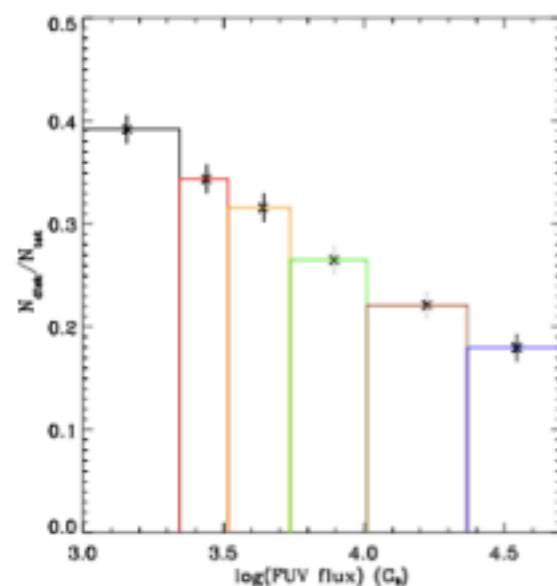
暖かい(～300 K) COの個数密度は 18% ぐらい増加



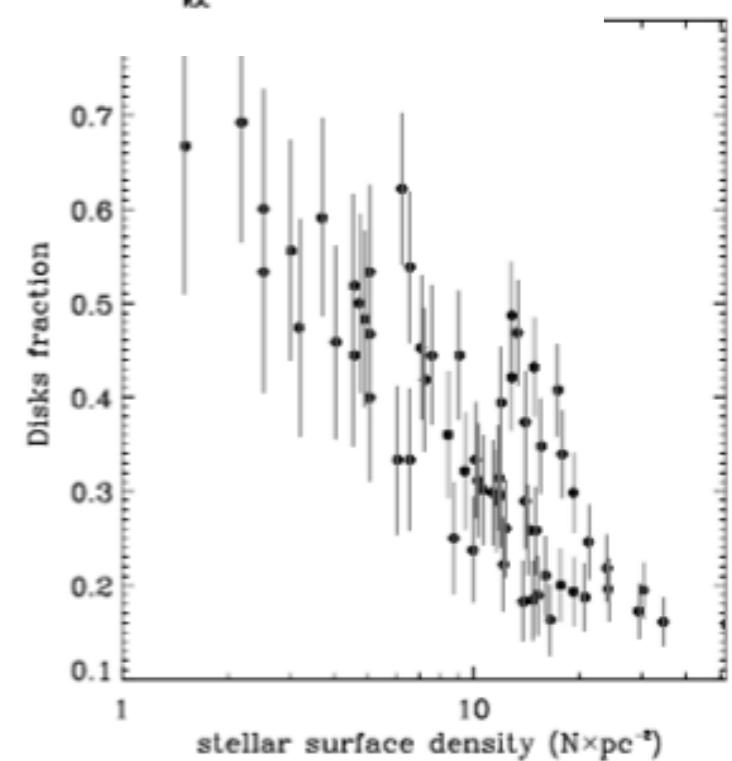
Photoevaporation and close encounters: how the environment around Cygnus OB2 affects the evolution of protoplanetary disks,

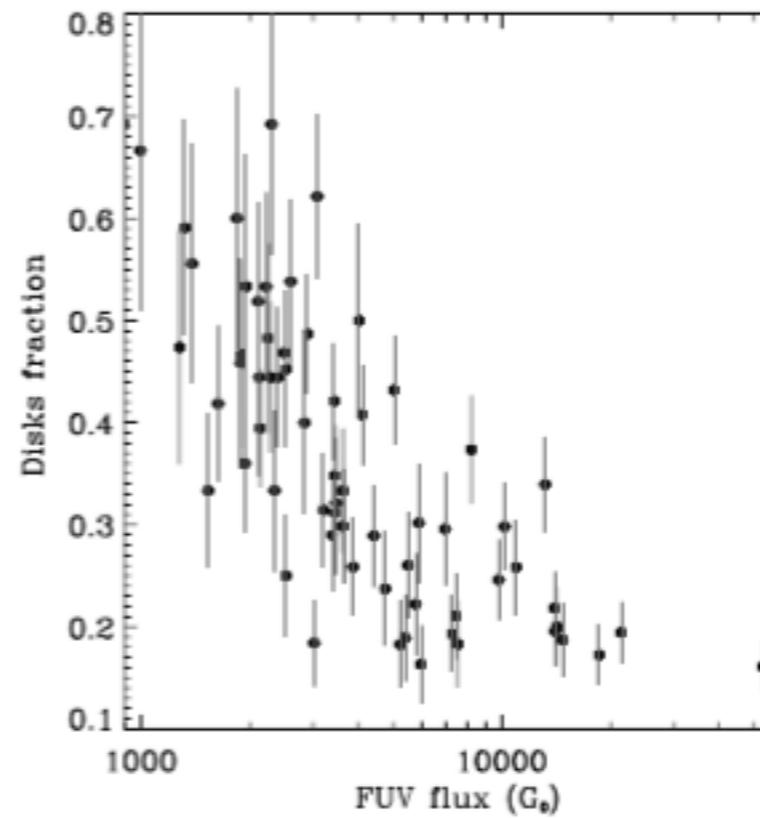
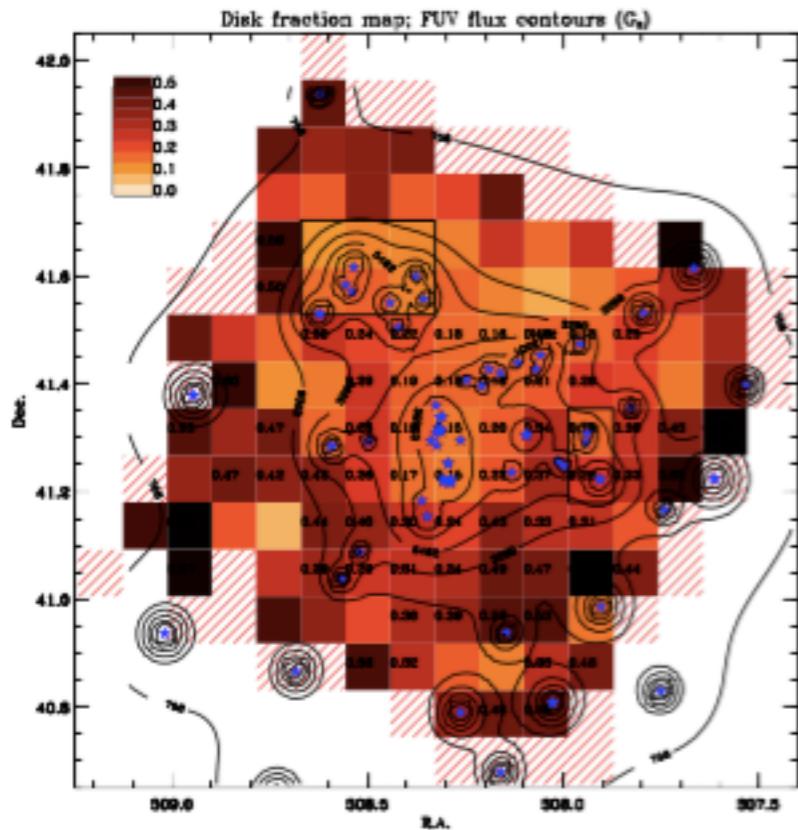
M.G. Guarcello, ApJS

紫外線の強いところ(OB星の
近く)は円盤が少ない



星の面密度
が高いとこ
ろでは円盤
が少ない





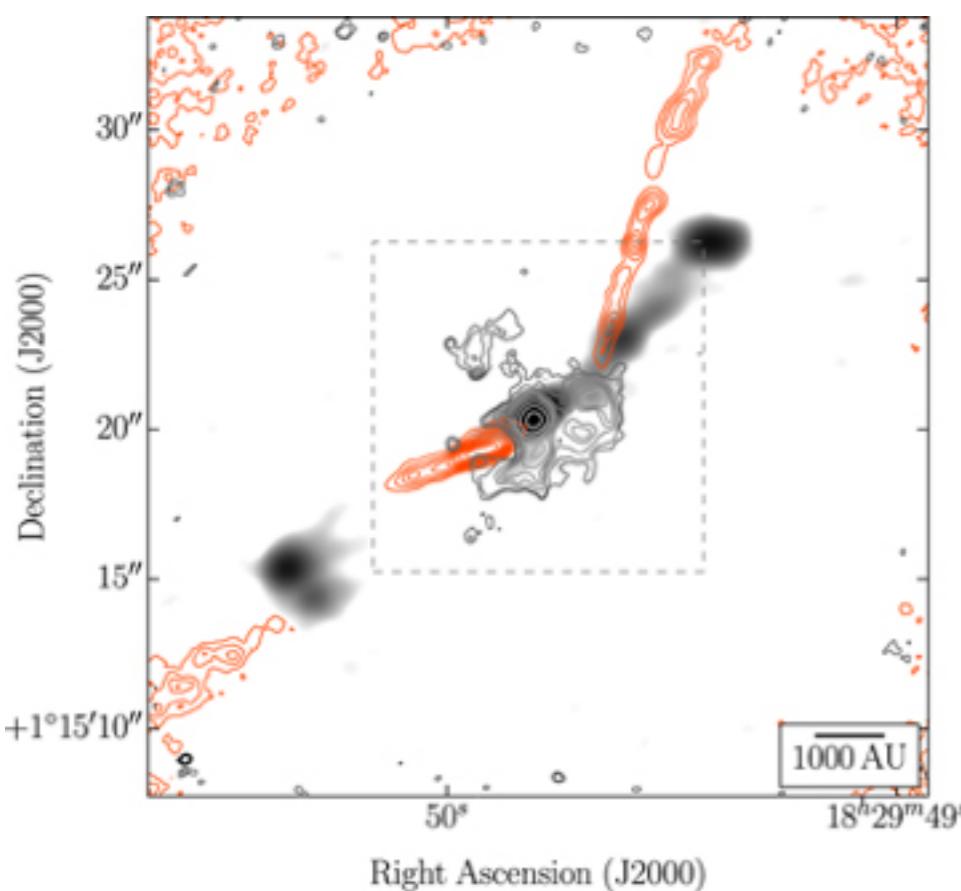
Abstract:

紫外線(FUV) の強いところでは円盤の存在比率が低い
 円盤は紫外線により散逸する
 星同士の衝突により円盤が剥がされる効果は低い
 (ただし根拠となるデータが見つからない)

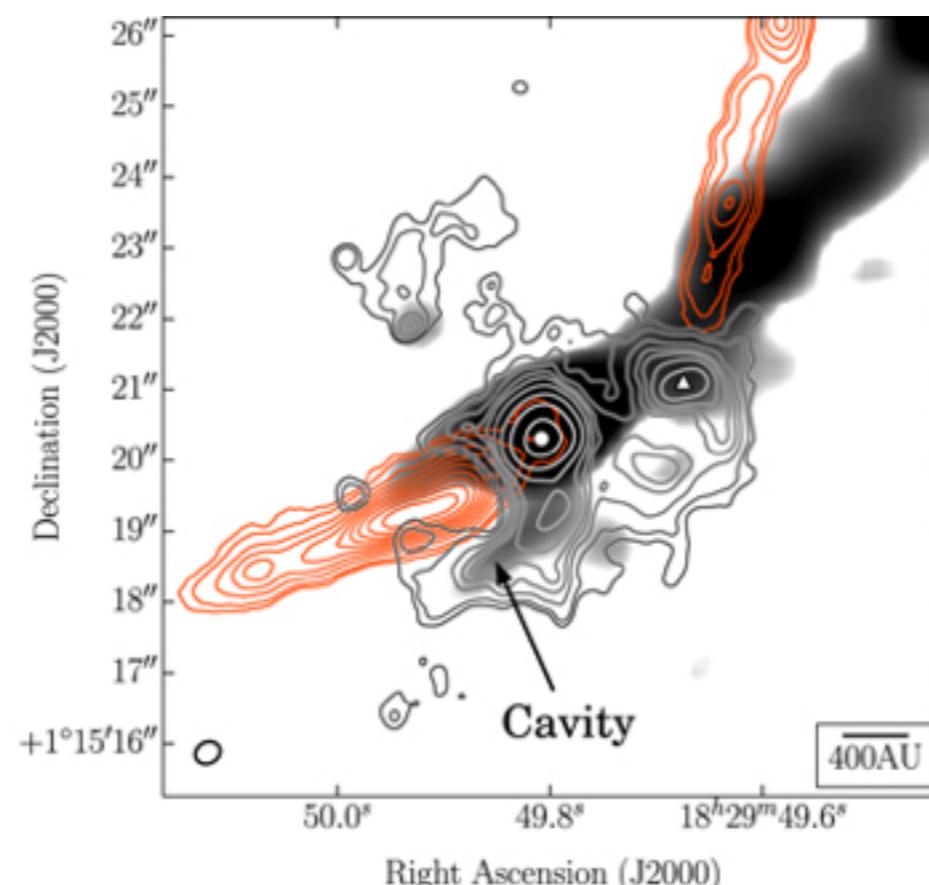
An extremely high velocity molecular jet surrounded by an ionized cavity in the proto- stellar source Serpens SMM1,

C.L.H. Hull, ApJL

Serpens SMM1= 中質量 class 0 + 1 Mo disk



ジェットの根元に cavity



CO 解像度 $0.^{\prime\prime}55 \times 0.^{\prime\prime}45$

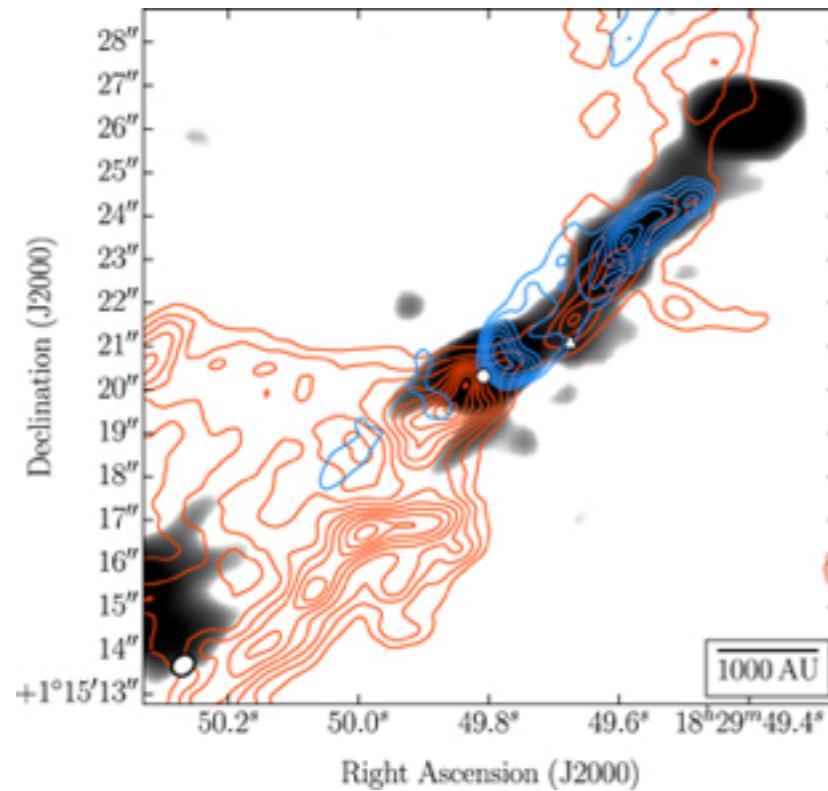
grey contours
ALMA 1.3mm
greyness
VLA 4 cm
free-free emission
CO 2-1
高速度 ~ 80 km/s
EHV (extremely high V)

右中央=SMM1a

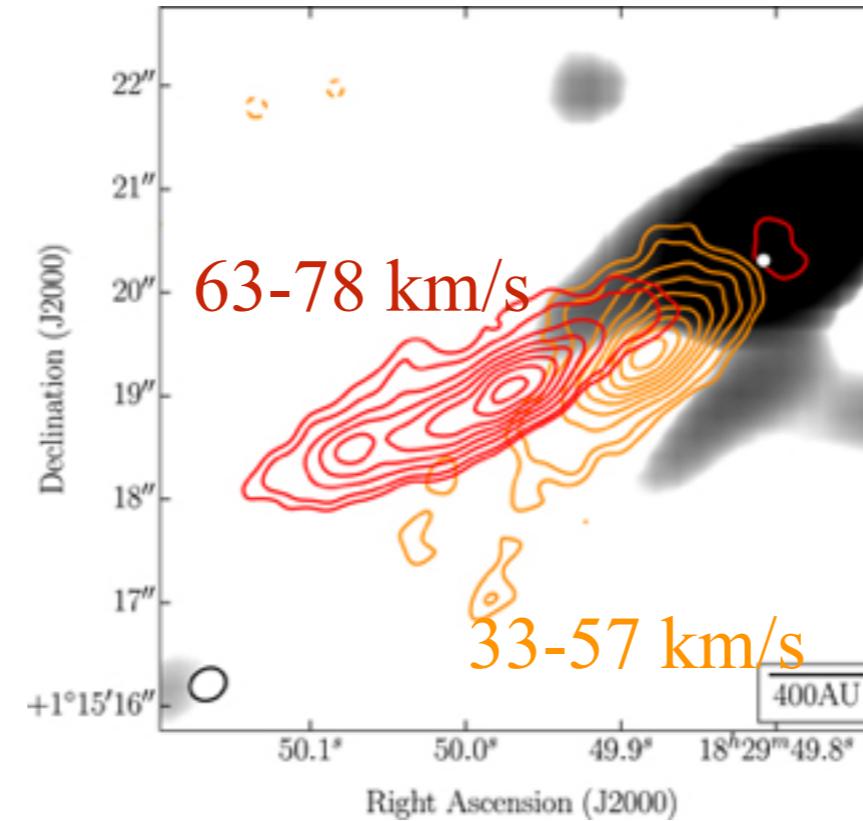
その左 SMM1b

高速blue 成分は見つからない

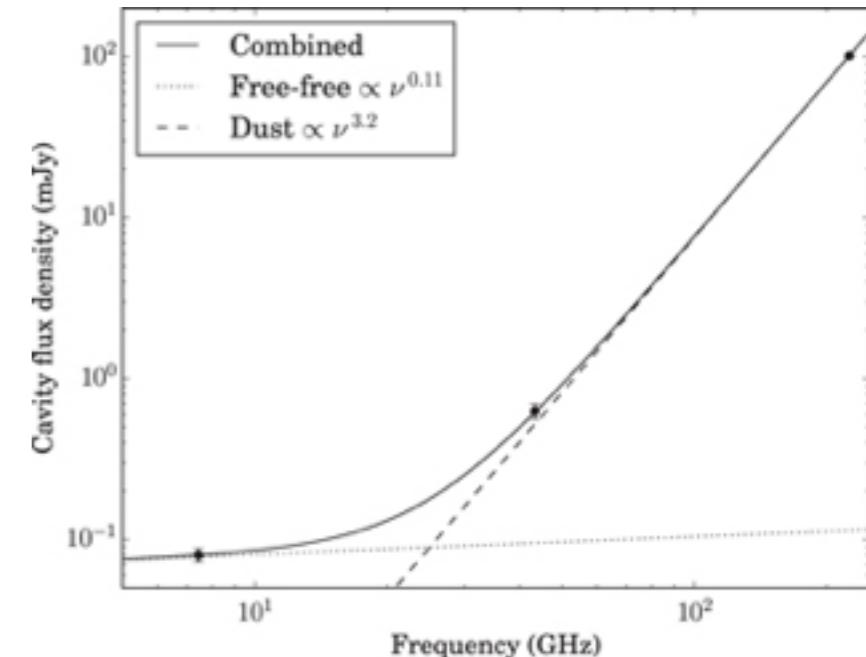
低速ジェット



歳差?



VLA 4cmは free-free



低速成分は別? Entrainment?
blue shift 成分も見える

電離源の候補

1. 中心星からの紫外線
2. 歲差運動するジェットからの放出物
3. 広がった(見えない)Windによる衝撃波

電離ガスもダストもcavity

free-freeでもcavityが見える
のは予想外