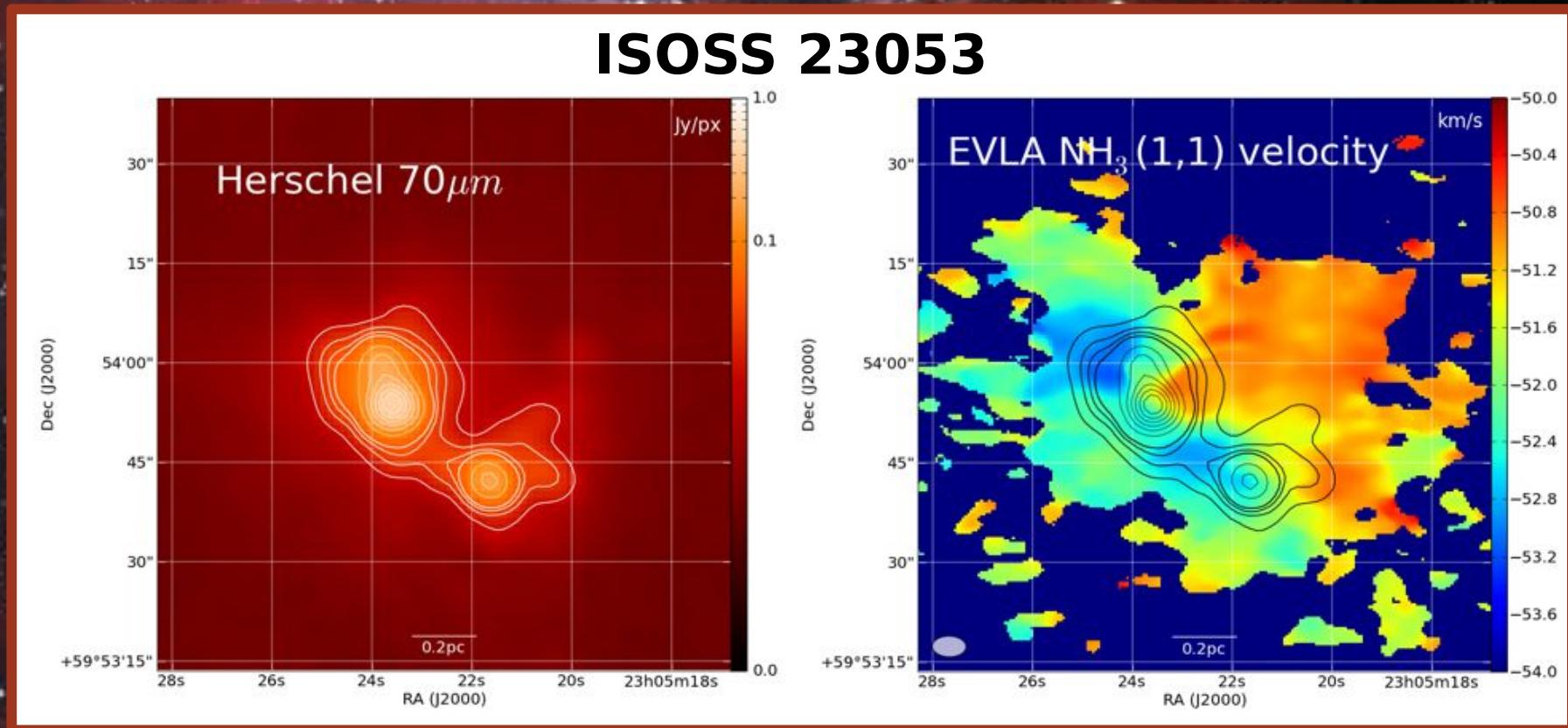


Poster Blitz #1

Temperature, Kinematics and Turbulences of IRDCs

Simon Bahr - MPIA



- smooth and steep velocity gradients
- temperature distributions 15-30K



The Aquila prestellar core population

Vera Könyves (SAp, CEA/Saclay)

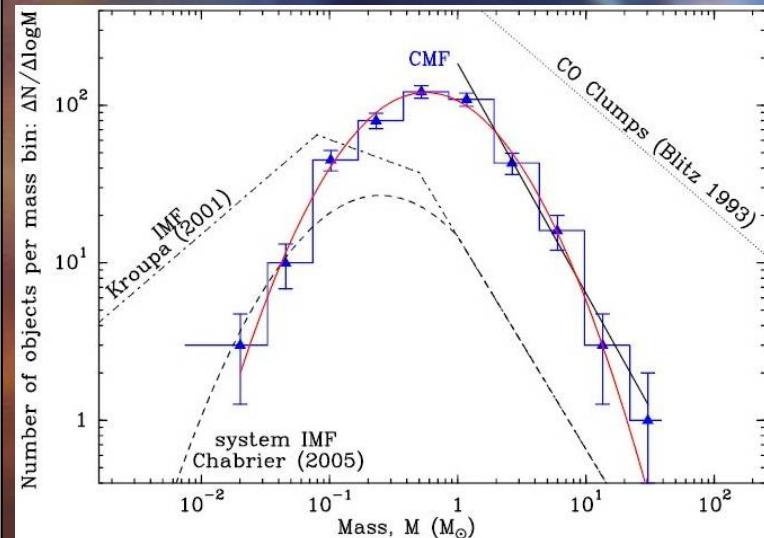
Ph.André, A.Men'shchikov, N.Schneider, S.Bontemps, D.Arzoumanian, A.Maury, N.Peretto, F.Motte, P.Didelon, P.Palmeirim, M.Attard, and the SPIRE SAG3 cons.



irfu
cea
saclay

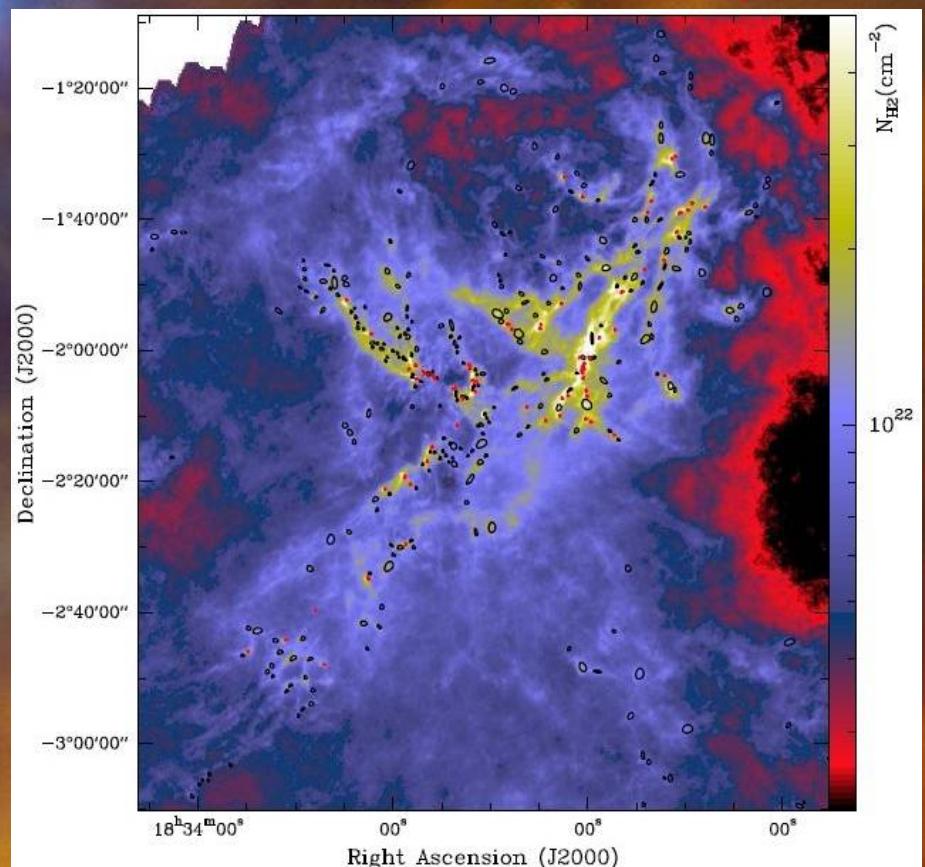
W40
HII region

CMF of starless cores in the entire Aquila field.
~70% of them is prestellar.

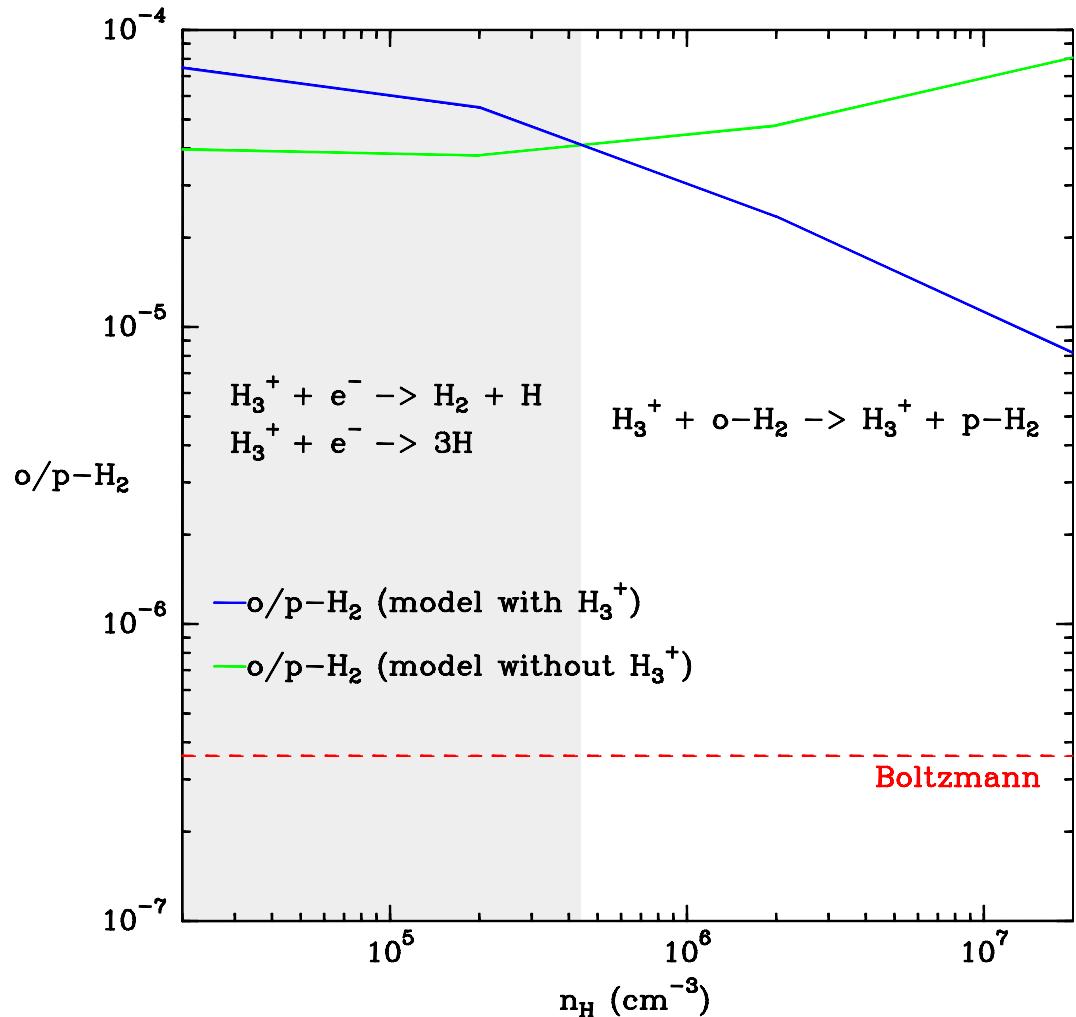


André+, 2010
Könyves+, 2010
Bontemps+, 2010
Men'shchikov+, 2010
Maury+, 2011
Könyves+, in prep.

In the entire field: >400 starless cores, ~100 protostars



The ambivalent role of H₃⁺ in the ortho/para thermalization of H₂



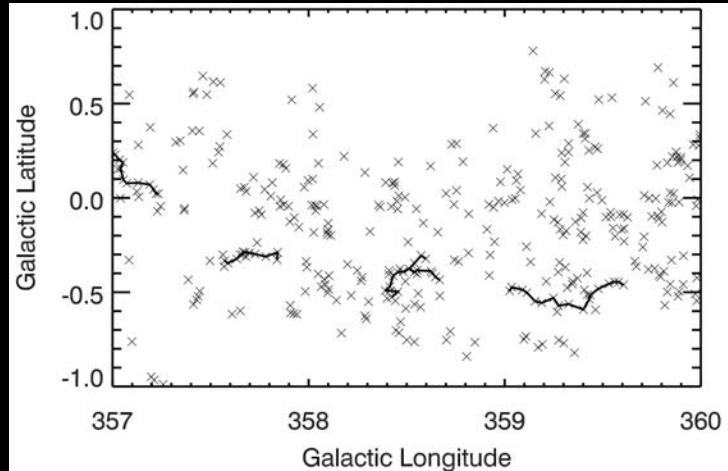
o/p ratio of H₂ in our standard model
(R_{gr} = 0.1 μm, T = 10 K, ζ = 3×10⁻¹⁷ s⁻¹)
as function of the gas density, n_H, for
two different models.

Le Gal, Hily-Blant, Faure, Rist, Pineau des Fôrets 2012, In prep.

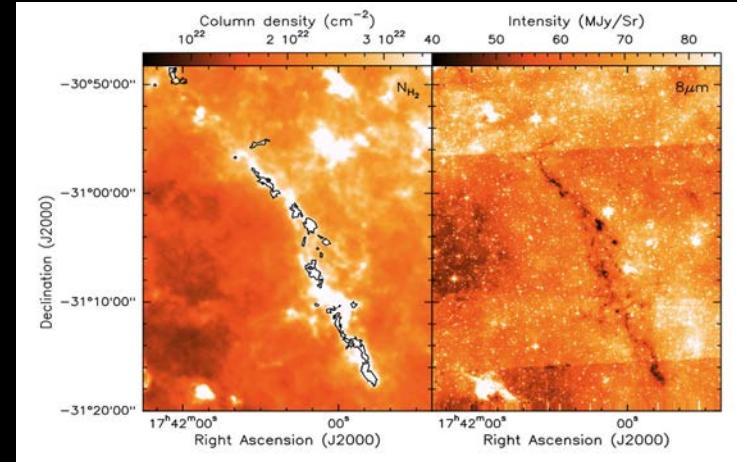
Large-Scale Infrared Dark Filaments

C. Lenfestey^{1,2}, N. Peretto² and G.A.Fuller¹

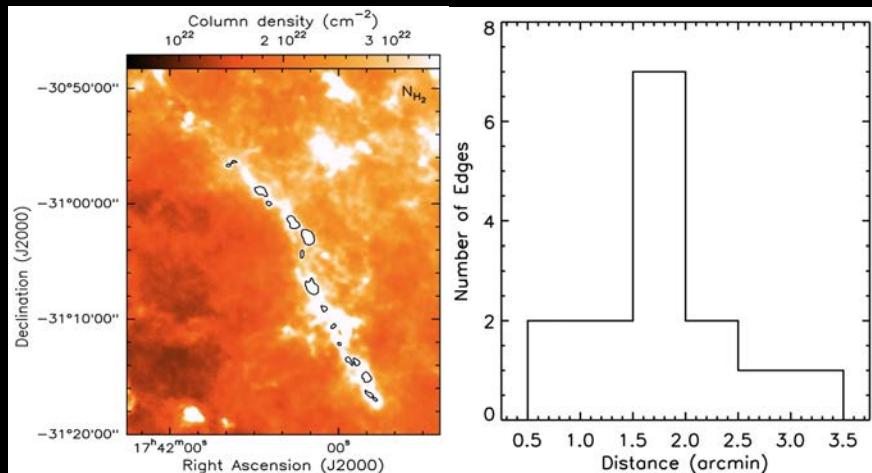
1. Jodrell Bank Centre for Astrophysics, University of Manchester, UK; 2. Service d'Astrophysique CEA Saclay, France



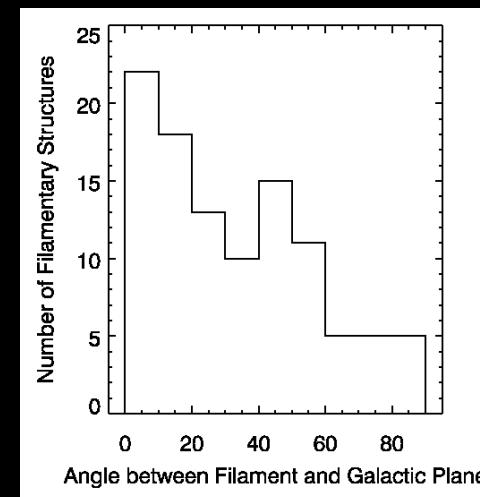
SDCs with the filamentary structures detected by the MST algorithm.



(left) *Herschel* column density map with contours outlining the SDCs overlaid, (right) *Spitzer* 8μm map



Herschel column density map with contours showing peak (left), plot of distances between consecutive peaks (right)

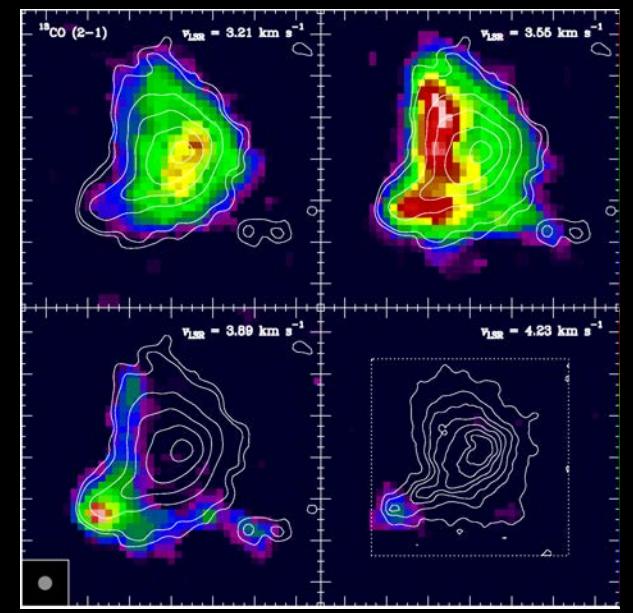
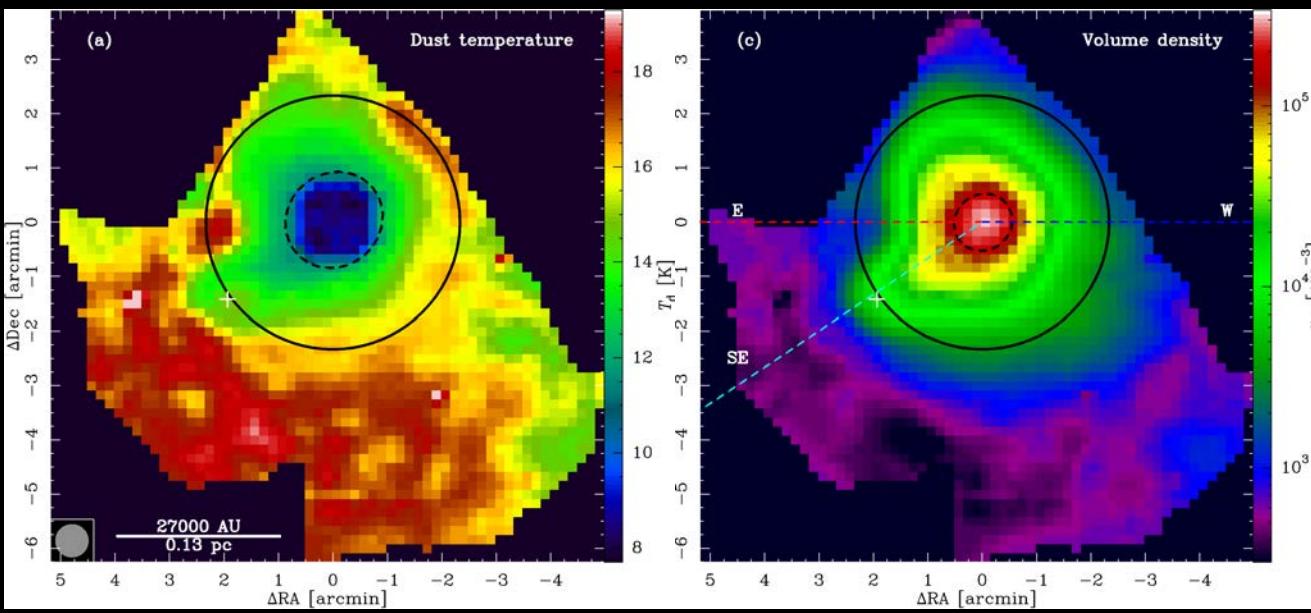
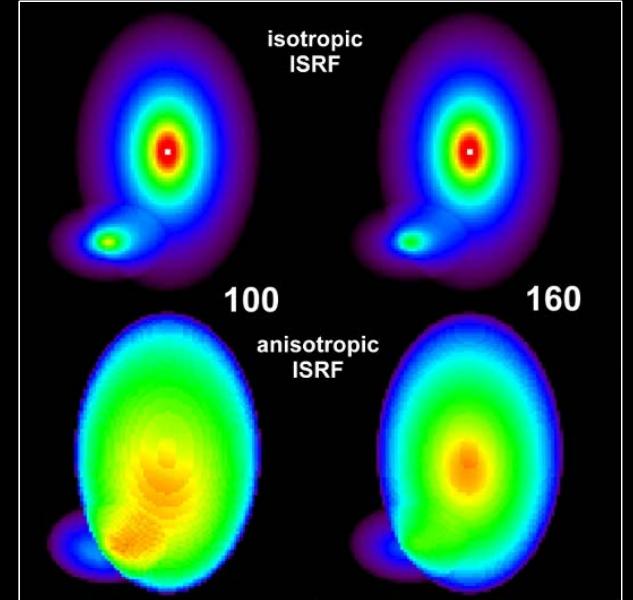
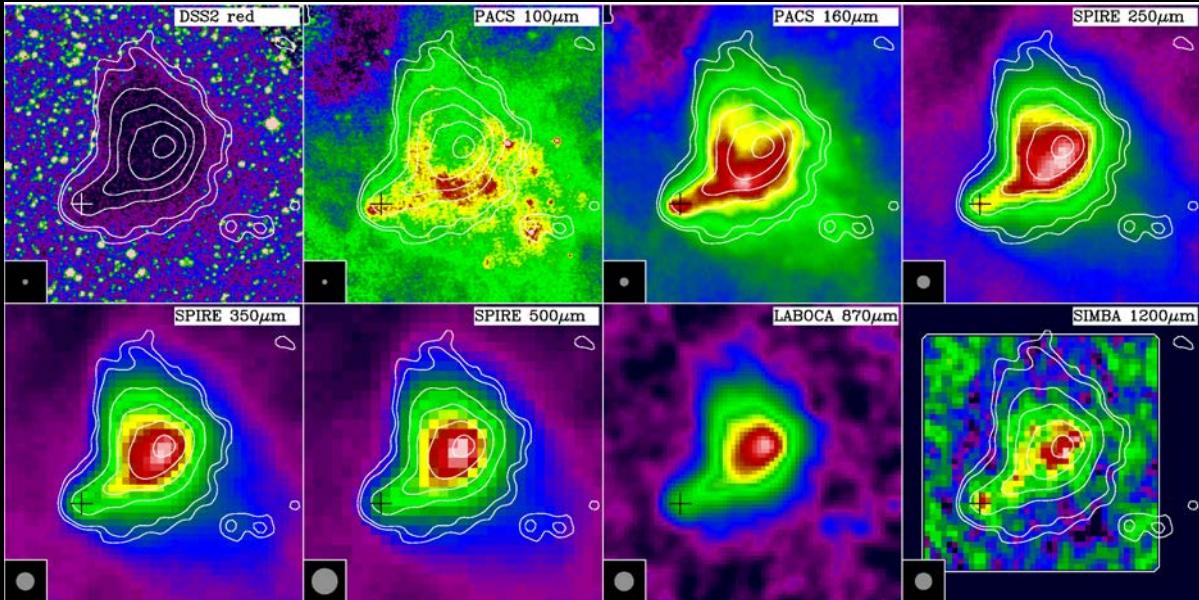


Position angle of all filaments w.r.t. Galactic plane



The dust temperature and density distributions of B68

M. Nielbock et al.



Evidence for the growth of the Taurus B211 filament based on Herschel Observations

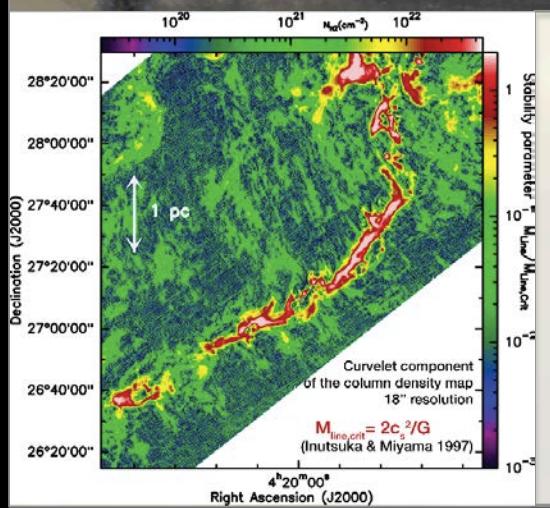
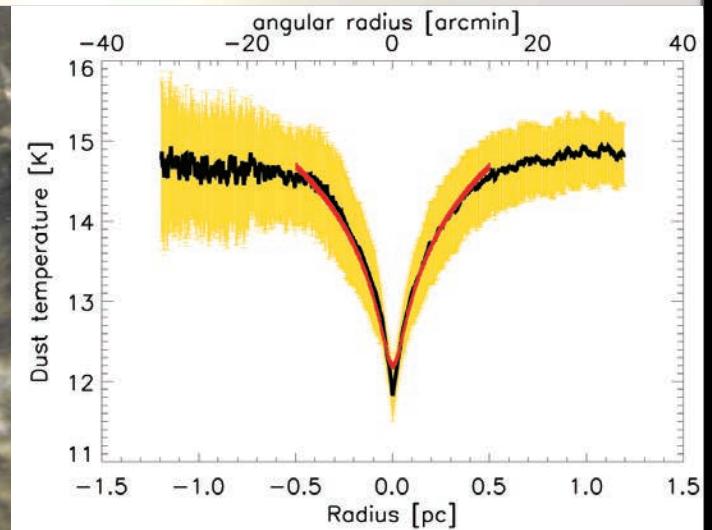
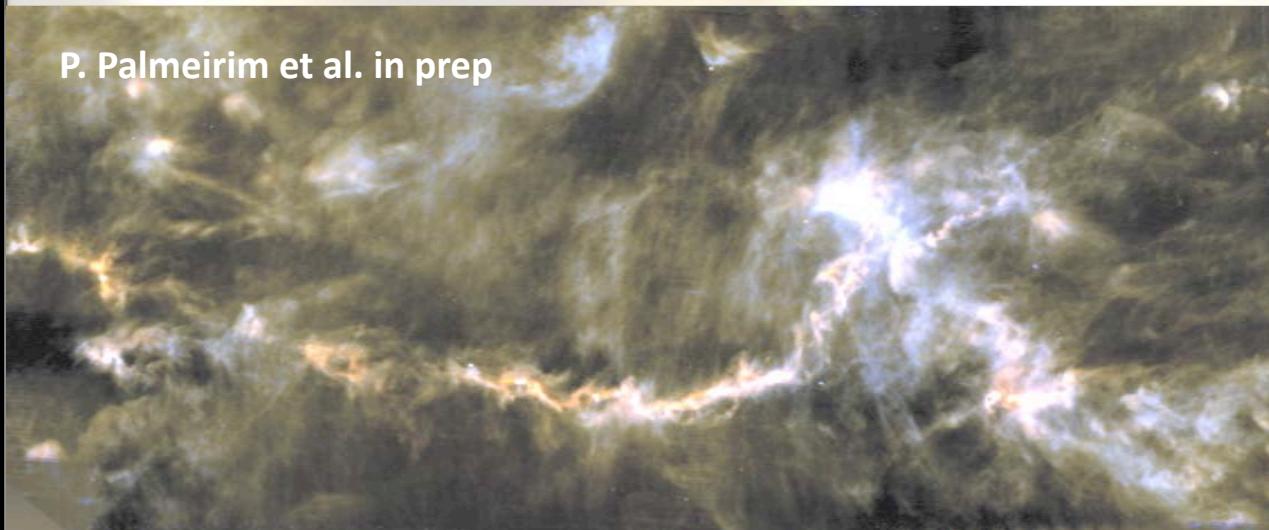
irfu
cea
saclay



P. Palmeirim¹, Ph. André¹, D. Arzoumanian¹, J. Kirk², D. Ward-Thompson², N. Peretto¹, N. Schneider¹, P. Didelon¹, V. Konyves¹, A. Men'shchikov¹
and the Herschel Gould Belt and SAG 3 consortia

¹Laboratoire AIM, DSM, IRFU/Service d'Astrophysique, C.E.A. Saclay ²School of Physics & Astronomy, Cardiff University, Cardiff, UK

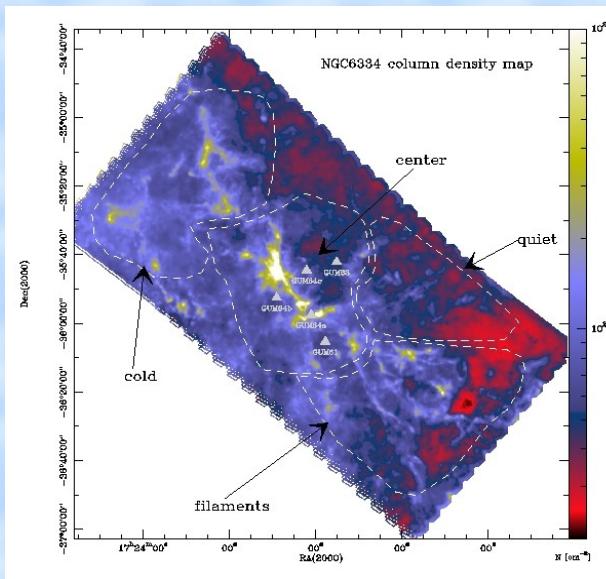
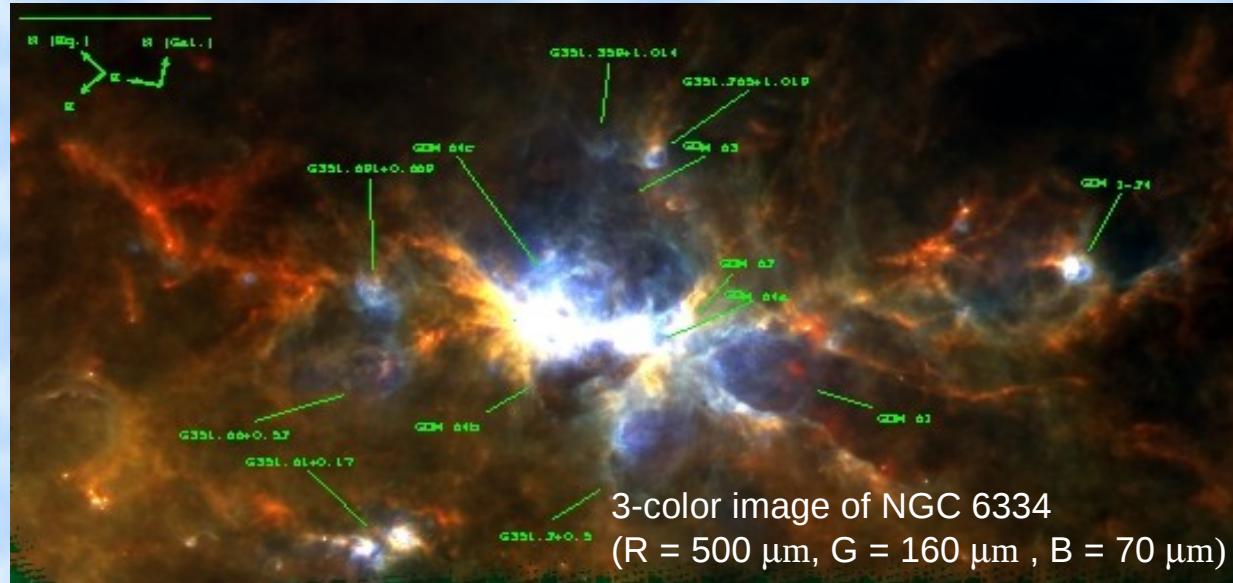
P. Palmeirim et al. in prep



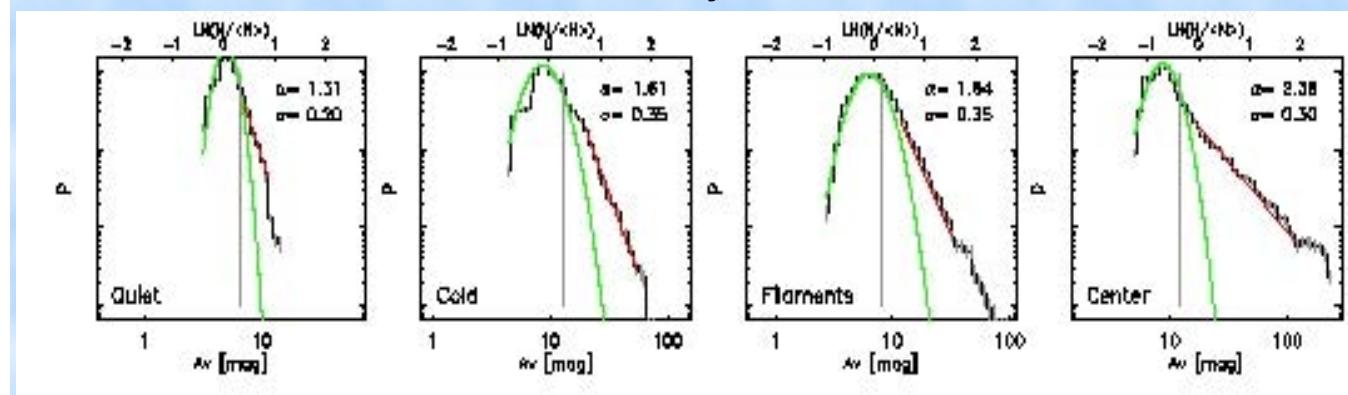
- Low-density striations along the direction of the magnetic field.
- The B211 filament isn't isothermal.
- The filament is contracting towards its major axis?
- Infall velocity (~ 1 km/s) from the striations onto the B211 filament are consistent with ^{12}CO observations (Goldsmith et al. 2008).
- The B211 filament is currently contracting quasi-statically towards its long axis while accreting material from the surrounding environment.

Herschel view of the star-forming complex NGC 6334

Russeil D., Schneider N., Anderson L., Zavagno A., Motte F., Bontemps S., Tigé J., Molinari S., Persi P. et al.



PDF analysis



$$\rho(r) = \rho(r_0)(r/r_0)^{-\alpha} \quad \alpha \text{ increasing, } 1.3 \dots 2.4$$

Possible External Triggers of Star Formation in the Orion-A GMC

Shimajiri Yoshito (Nobeyama Radio Observatory) et al.

