

Synthesis=Physics

Synthesis

"NVO"-like opportunities; new NASA/NSF \$?
e.g. Oph; Dust

Time and Motion

Space/time (astrometry, 3D), and Doppler
SURVEYS

Theory

T, n, v, B, X

Role of instabilities and/or turbulence (time-
dependence)

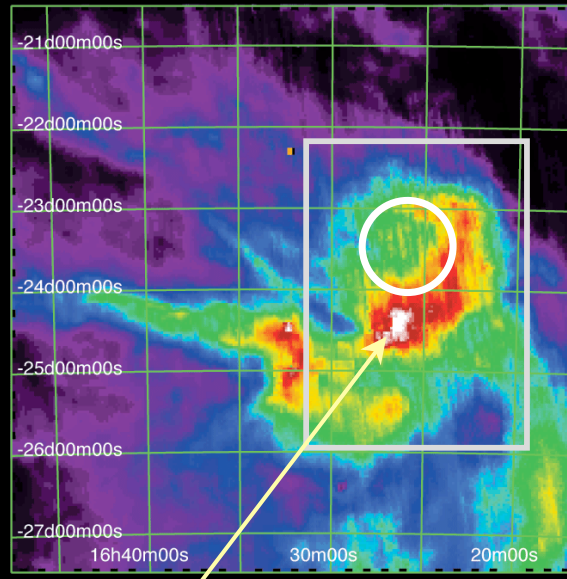
Smoke Signals from Ophiuchus

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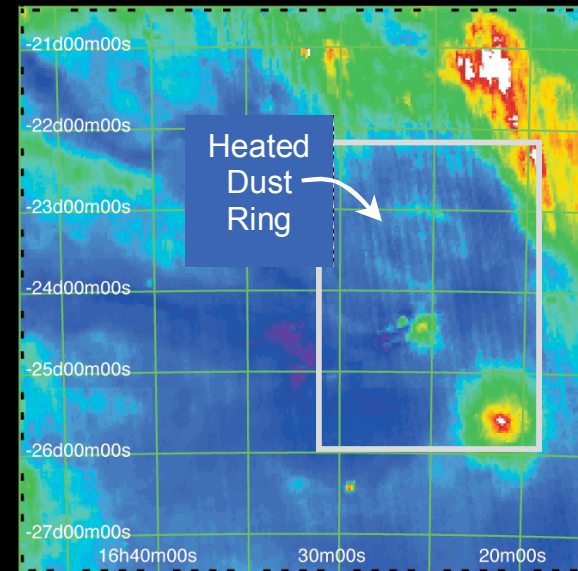
0.5×10^{51} erg SN
into 10^5 cm^{-3}
2 pc in 200,000 yr
 $T=38\text{K}$
 $v_{\text{exp}}=1.7 \text{ km s}^{-1}$

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Re-calibrated IRAS Dust Column Density

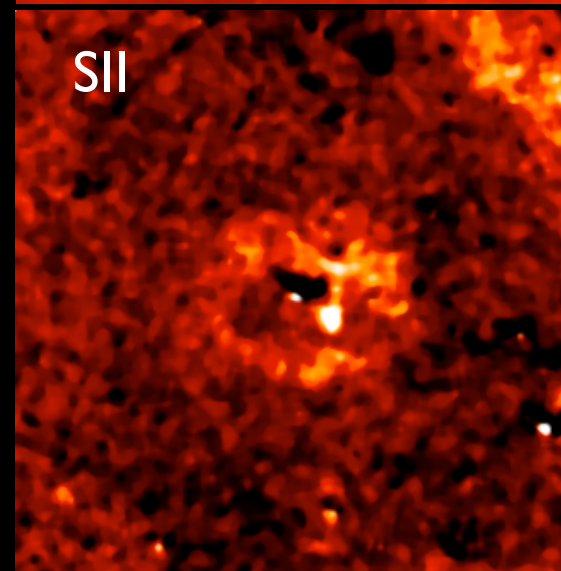
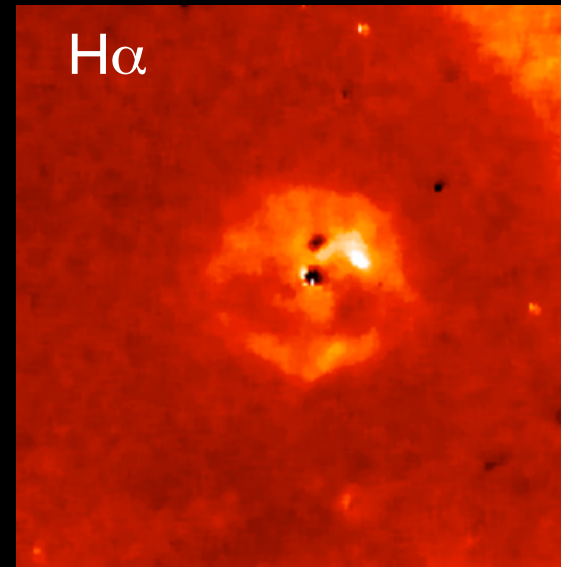
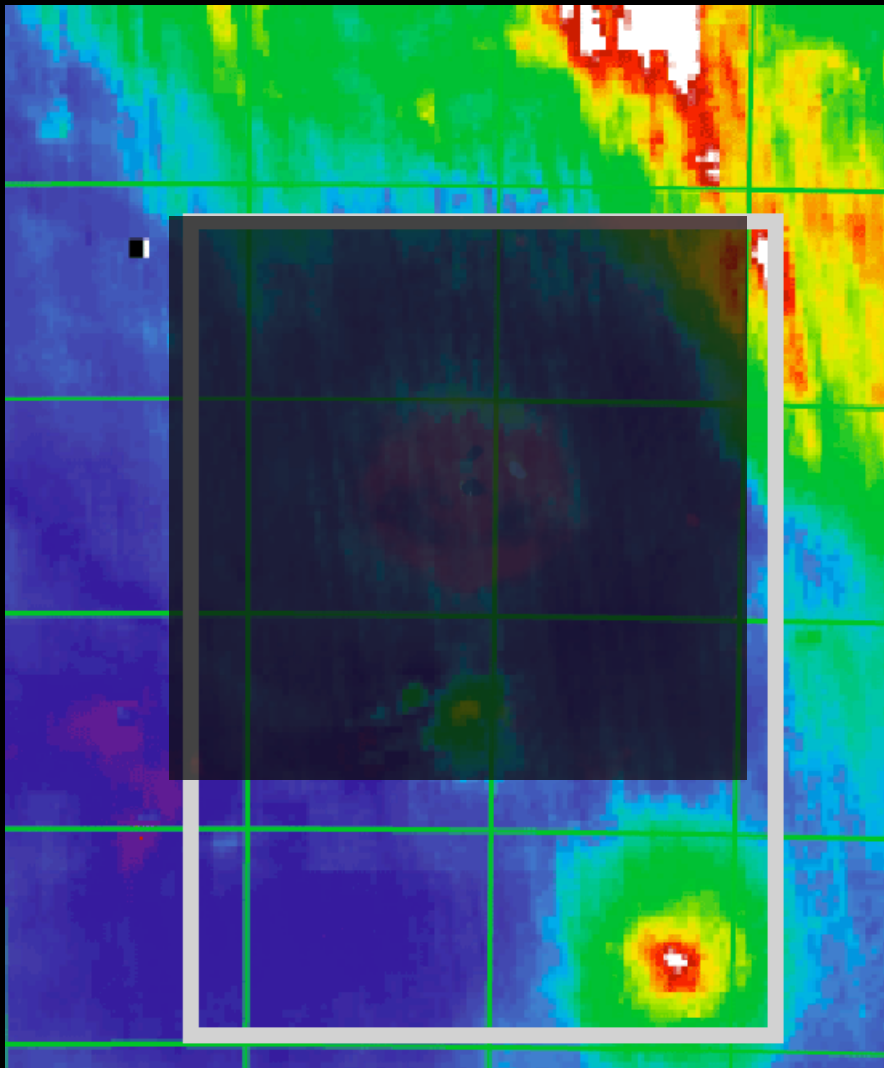


Re-Calibrated IRAS Dust Temperature

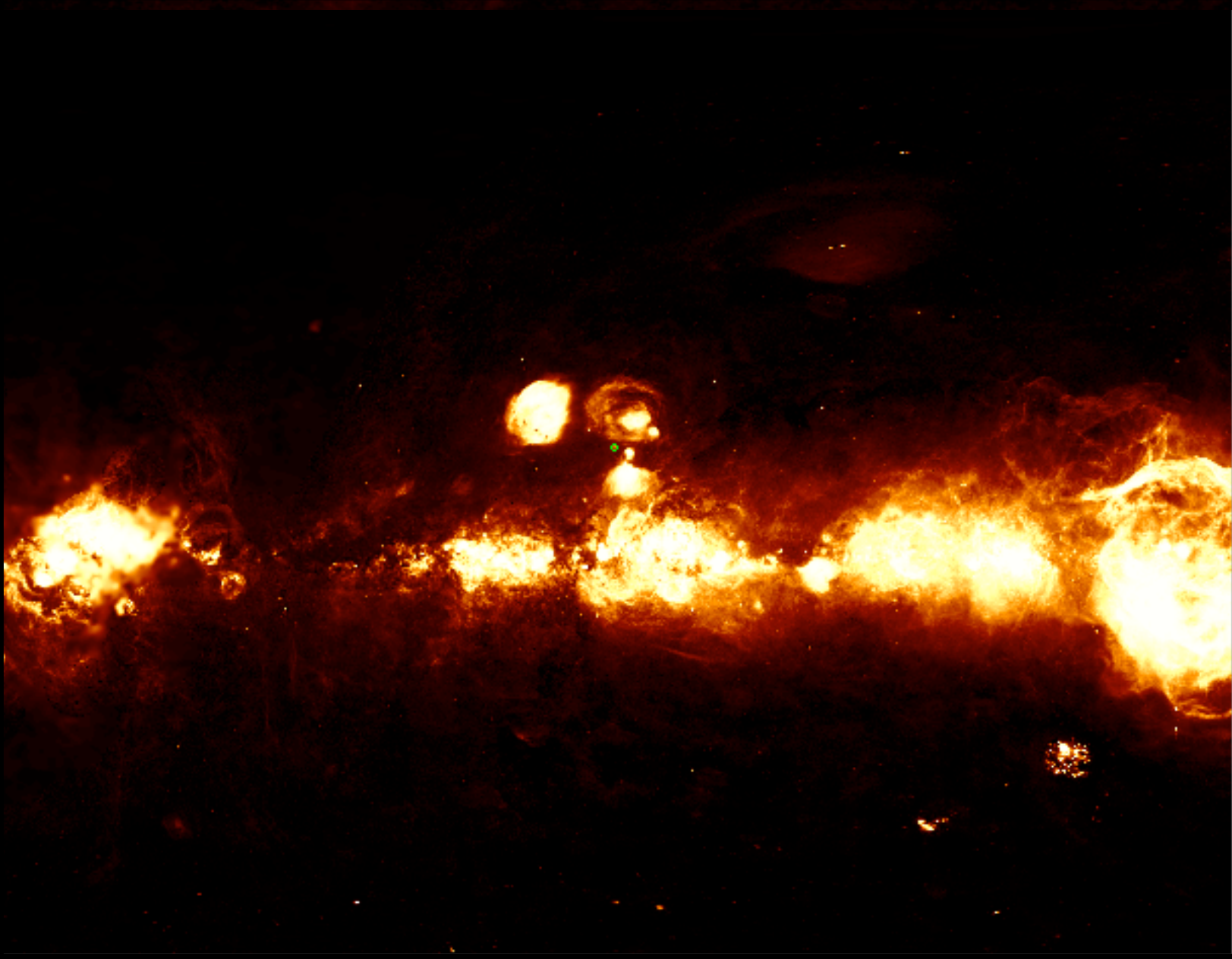


from Goodman, Gaensler,
Lada, Wolk & Schnee 2003/4
Chandra/XMM Proposals

Ionized Gas in the Ophiuchus Smoke Shell

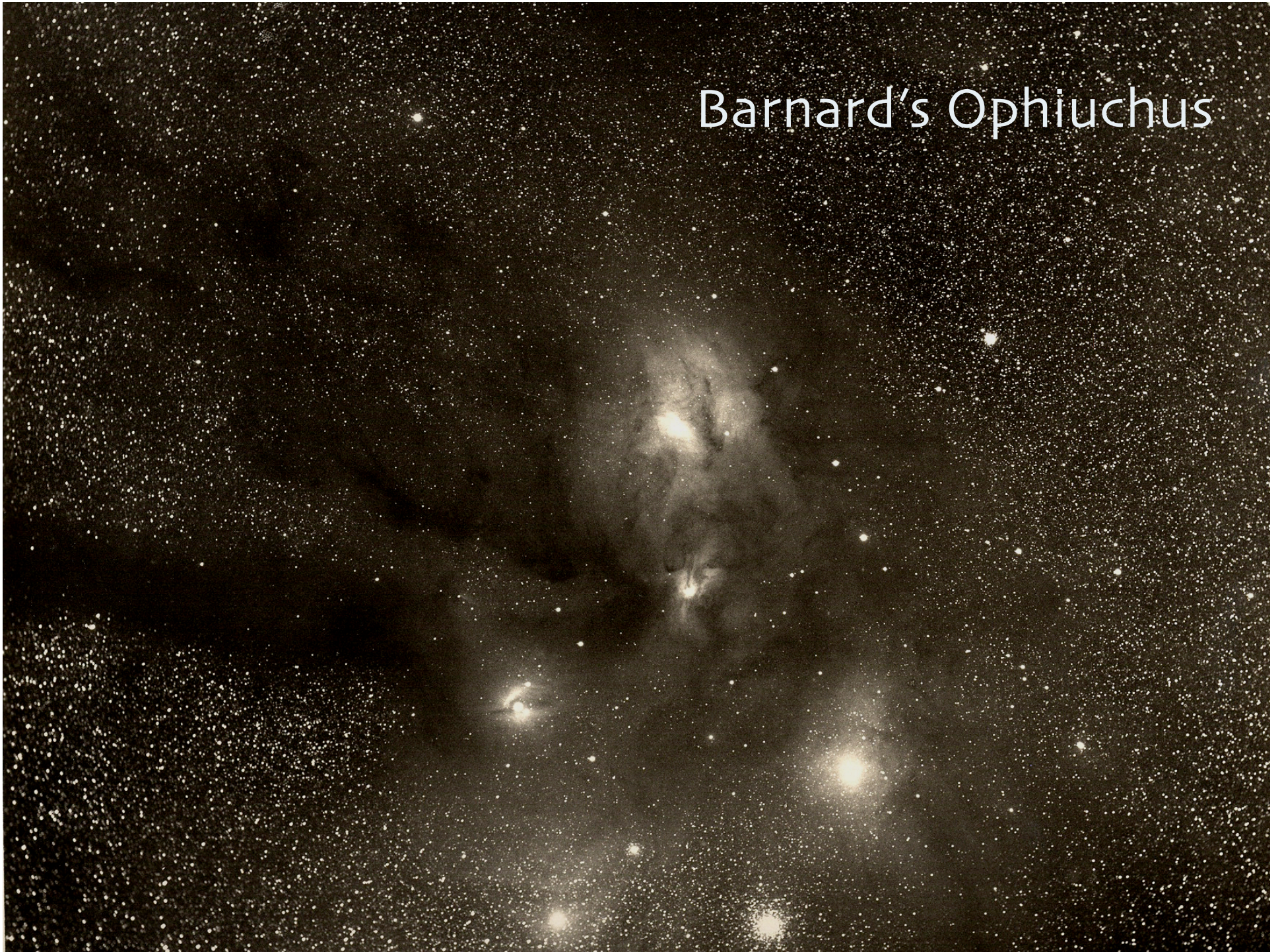


SHASSA Data courtesy of John Gaustad



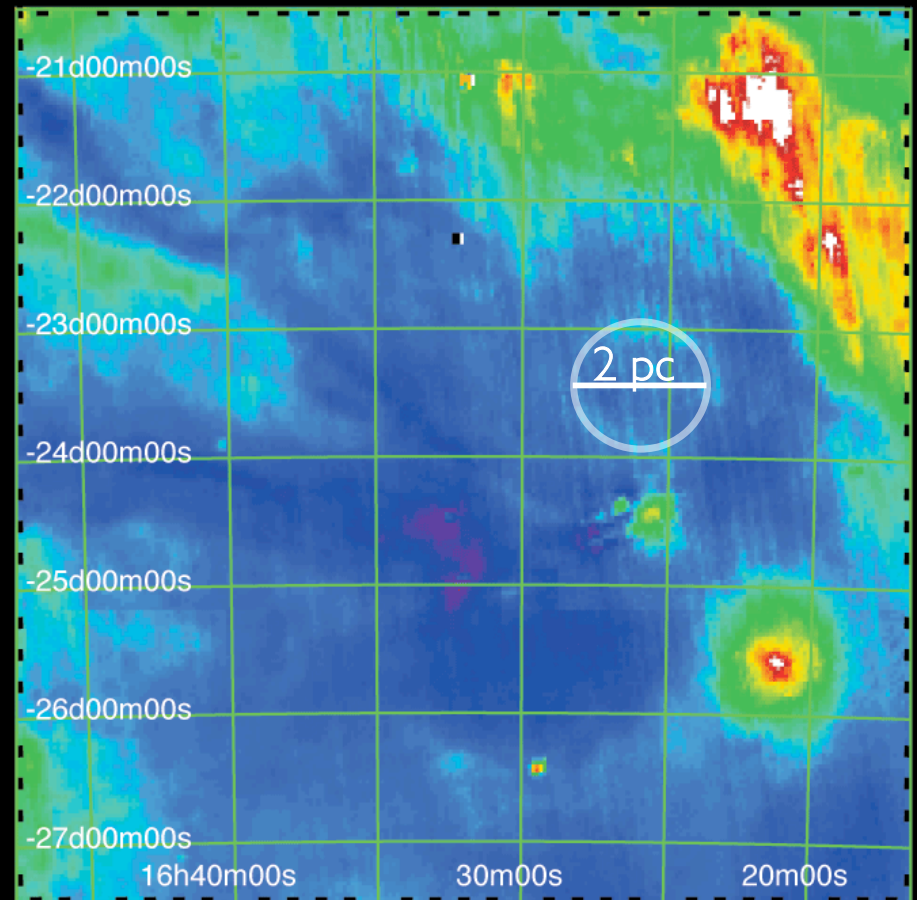
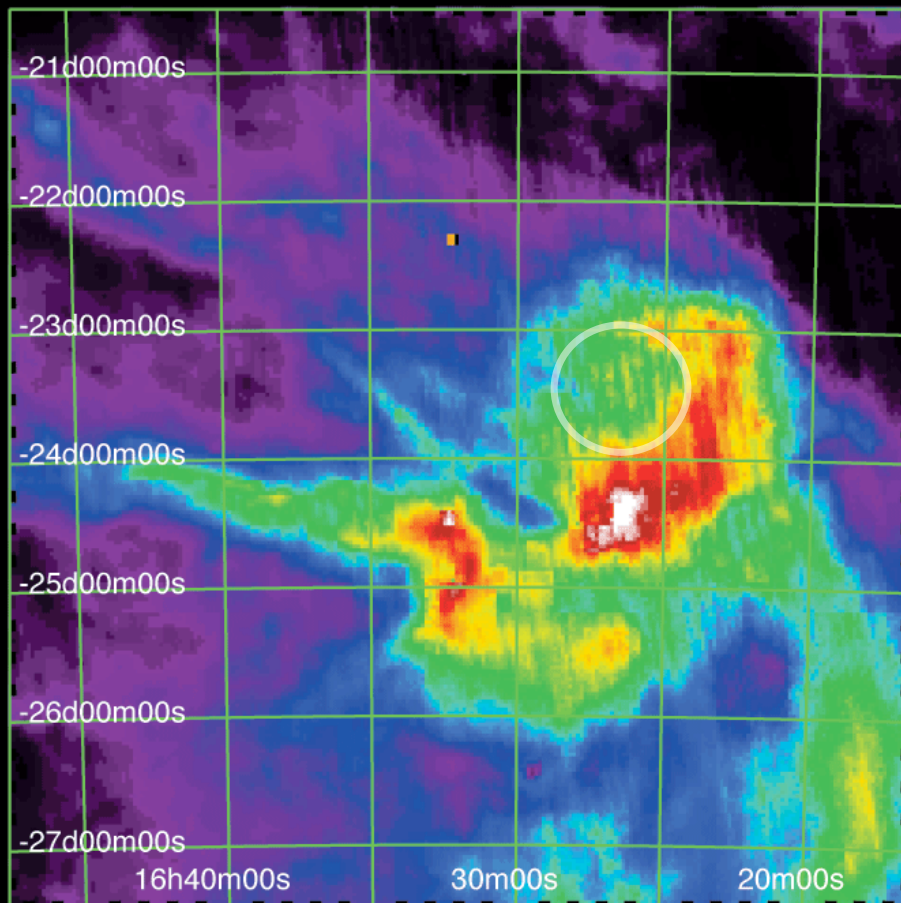
H- α emission, WHAM/SHASSA Surveys (see Finkbeiner 2003)

Barnard's Ophiuchus



COMPLETE

(Re)Discovery of a Heated Smoke Ring in Ophiuchus



D. Li, A. Goodman, J. Li & S. Schnee 2004

Spitzer's Forté



Spitzer Infrared Image: A. Noriega-Crespo (SSO/Caltech)