

HST Near-IR Imaging of the Oph Cluster

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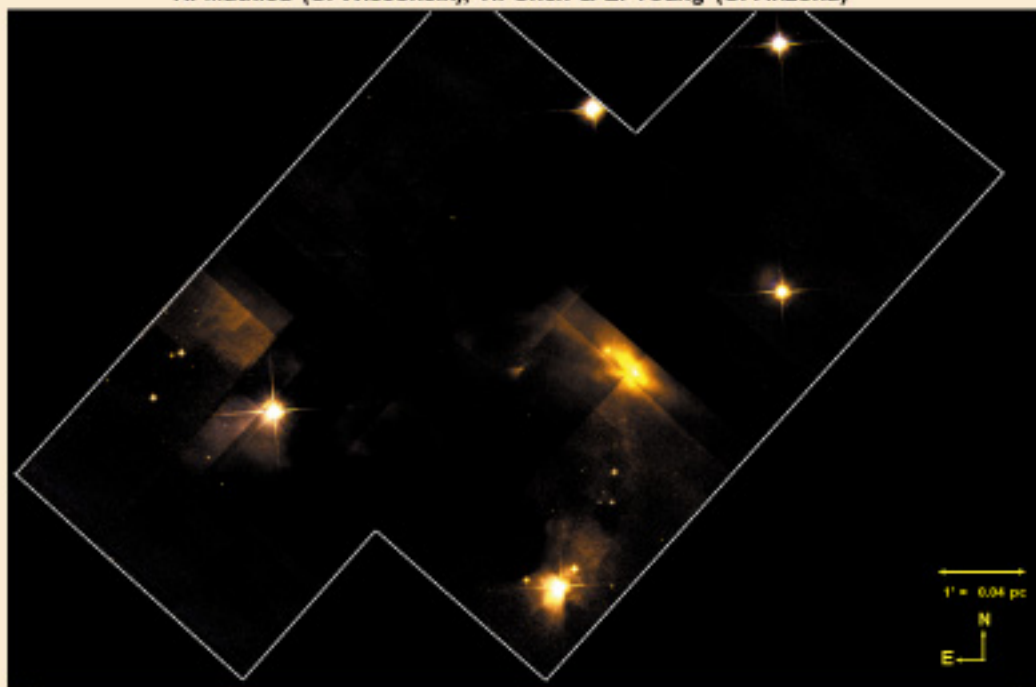


Figure 1. A color (F110W+F160W) mosaic of 4 of the 13 fields imaged. This region, which covers the molecular cloud core A, contains ~65 stars.

Observations

- Images were obtained in the F110W and F160W filters on NICMOS Camera 3 during the June 1996 NIC3 campaign. Thirteen fields, each composed of a 3x3 mosaic, were imaged using a spiral dither chop pattern resulting in a total integration time of 80 sec for each 61'' image (0.20''/pix).

- Observed positions are shown plotted on a Digital Sky Survey image in Figure 2. The total surveyed area is 0.022 square degrees.

Results

- We detect ~160 sources brighter than our limiting "H" magnitude of 21.5, approximately one-third of which are detected at "J", and approximately one-half of which were previously uncataloged (Barnes et al 1997 ApJ 5 112, 109; Strom et al 1996 ApJ 438, 813).
- We find evidence for at least one densely clustered group of cloud members comparable to the density found in the Orion Nebula Cluster ($N > 10^{-4} \text{ pc}^{-2}$; Hillenbrand & Hartmann 1998 ApJ 492, 540).

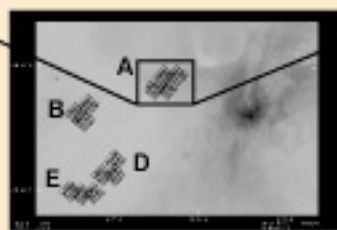


Figure 2. HST NIC3 fields plotted on an optical image from the DSS.



Figure 3. In core A, a dense cluster (18 stars in 0.03 pc radius) lies adjacent to a region of high opacity containing VLA 1623 (*) and a ridge of dense gas populated by mm continuum clumps (Motte et al 1998 A&A 336, 115).

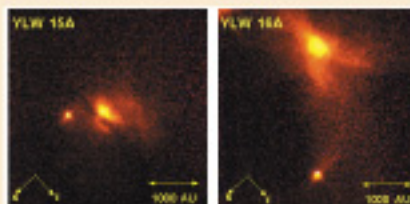


Figure 4. Several interesting structures are seen in scattered-light nebulae associated with embedded objects. These sources are in cores B (top) and E (bottom).

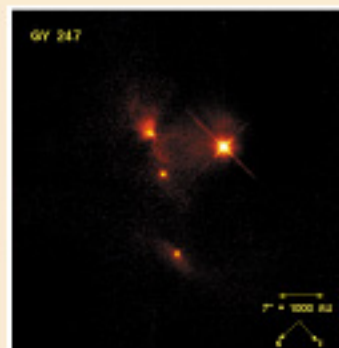


Figure 5. The bipolar morphology of the western-most source is similar to those in Taurus imaged with HST (Padgett et al 1999 AJ 117, 149; Hartmann et al 1999 AJ in press). This source is in core B.