

We propose to use a total of 2 nights of the italian GTO in Period 80 to study disks and circumstellar gas in young stars of intermediate mass.

Disk-Jet interaction in the young star HD 104237

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We propose to use 1 night of the italian GTO in Period P80 to complete a detailed high resolution study of the young stellar system HD104237. We have obtained a limited amount of data on this system with AMBER during commissioning. Our initial result suggest that the wind is launched in a region very close to the inner rim of the disk (Tatulli et al. 2007, A&A, AMBER special issue, in press). The available data suffer from two major problems: the lack of proper calibration, which implies that all our analysis is based on differential visibilities, and only one baseline was observed, implying that we have very limited information on the source geometry.

We propose to observe the source with AMBER/VLTI with the ATs in two separate configurations D0-G1-H0 and A0-G1-K0 which offer baselines in the range 40 to 120 m, and two separate hour angles. With these data we will be able to compare the observations with detailed disk and wind models and constrain the wind launching region in these systems.

Source:

HD104237 12 00 05.0846 -78 11 34.564 J2000 K=4.6 V=6.5

Instrument setup: AMBER MR-K, 2.1 um

VLTI Configurations:

D0-G1-H0 - 2 hour angles: total 0.5nights

A0-G1-K0 - 2 hour angles: total 0.5nights

Fringe Tracker: FINITO requested

Total time requested: 1night

The circumstellar region of the Herbig Be star HD37490

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We propose to use 1 night of the italian GTO in Period P80 to study the gas and dust emission regions around the HBe star HD37490. In particular, K band observations will be used to clarify whether the circumstellar material around this early-type stars is structured in a

spherical or in a flattened geometry. In addition, variations in visibility across the HI Br γ line will constraint the size and geometry of the ionized wind. We therefore require to observe the source at several baselines and PA to sample different points in the (u,v) space.

Given the expected Amber performances on the AT for period P80, this object should be at the limit of sensitivity in MR but will be easily observed at high S/N in the low resolution mode. Given the strength of the Br γ line detected in this source (Nisini et al. 1995, A&A, 302, 169), we expect to detect a variation in visibility with respect to the source continuum even adopting the LR mode.

Source: HD37490 05 39 11.1 +04 07 17.3 (J2000) K=4.3 V=4.5

Instrument setup: Amber LR-HK

VLTI Configurations:

D0-G1-H0 - 2 hour angles: total 0.5nights

A0-G1-K0 - 2 hour angles: total 0.5nights

Fringe Tracker: FINITO requested

Total time requested: 1night