

Targets for Italian GTO on VISA, period 82

0) Overall list of targets

- 1) HD 50138 06 51 33.41 -06 57 59.2 H=5.1 K=4.2
- 2) DL Cha 13:06:08.5 -77:06:28 (J2000), K-mag= 1.8 mag
- 3) HD330036 15 51 15.9311 -48 44 58.532 V=10.6 K=7.57 N =0.7

1) Disk-jet interactions in the young star HD 50138

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(INAF-Osservatorio di Arcetri)

We propose to use 2 nights of the italian VISA GTO time in Period 82 to study the circumstellar environment of the young, intermediate mass star HD 50138. In particular, we plan to observe this source in the continuum and in the Br_γ line at 2.17 micron using Amber/VLTI on the ATs in two different configurations (D0-G1-H0 and A0-D0-G1) and two different hour angles, both in LR and MR.

Source:

HD 50138 06 51 33.41 -06 57 59.2 H=5.1 K=4.2

Instrument setup:

Amber MR-K, 2.1 micron

Amber LR-H and K

Configurations:

D0-G1-H0 1n (0.5n in MR and 0.5n in LR)

A0-D0-G1 1n (0.5n in MR and 0.5n in LR)

Fringe Tracker: FINITO

Total time requested: 2 nights

2) Unveiling the gas and dust emission region of the pre-main sequence star DL Cha

Proponents: Antonucci S., Nisini B., Li Causi G., Lorenzetti D.

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Source:

DL Cha 13:06:08.5 -77:06:28 (J2000), K-mag= 1.8 mag

Instrument setup: AMBER-LR and AMBER-MRK with FINITO Total time requested: 9hrs

Observing Proposal for the use of part of the Italian GTO time on VLTI
facility VISA for ESO Period P82

3) ''Studying the dusty environment of HD330036''

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We propose interferometric observations of the symbiotic system (SS) HD330036 with MIDI, with different baselines and orientations, in order to explore and study the structure and composition of its peculiar dust envelope. We are especially interested in the extension and shape of the observed MIR emission, originated in

an unusual circumbinary dust nebula in which both Polycyclic Aromatic Hydrocarbons and crystalline silicates

are found. UT observations already showed hints of an elongation in the dust emission. We want to add more visibility points with short baselines in order to better constrain the characteristics and morphology of the nebula. The results of these observations will be a test for the numerical code we are developing, that tries to reproduce simultaneously the observed SED and the geometry of the nebula.

-Requested time: 6 visibility points; 6 h ATs 16 m configuration (e.g. E0-G0)
- Observable in March

-Instrument + configuration: MIDI

-Target:

Name	RA	Dec	V mag	K mag	N mag
HD330036	15 51 15.9311	-48 44 58.532	10.6	7.57	0.7