

Dear colleagues,

This announcement is in the context of the development of the scientific instrumentation for the new 4 m Turkish telescope, DAG (Ataturk University, Erzurum, Turkey).

In order to develop our expertise in the field of high angular resolution technology and science, we are developing an adaptive optics system for DAG, based on a pyramid WFS, with high Strehl option. This system will feed at first light a (possibly spectro-)imager in the NIR bands. On a longer term, we would also like to embark in stellar coronagraphy for everything related to circum-stellar observations (faint companions, disks, possibly hot Jupiters etc).

But if AO imagery at moderate Strehl is relatively well understood and not too complicated to implement (for beginners), stellar coronagraphy is another level of difficulty, and we have no technical expertise at all in this field. Beside, we do not have yet a real AO science case: our objective is somewhere between starting AO development in Turkey by building a first system, and building AO science cases, even if the sky coverage capabilities of our system (NGS) will be limited.

In other words, we are starting AO from scratch, on a brand new 4 m telescope. For the system development itself, we have the resources, and a plan. But not much for the science cases and the AO-fed instruments.

So, we are making this call to the high angular resolution community to look for people/groups who would be interested in discussing/helping/working with us on developing our science case, and also talk about coronagraphic option. This international DAG AO group would then get a first hand access to the telescope AO instruments.

Our objective is manyfold:

- connecting with the world high angular resolution community
- give opportunities to young researchers in Turkey and abroad to be at the forefront of astronomical instrumentation development
- with the high angular science group, defining science cases that could benefit from such an instrument on a 4 m aperture, which might be moderate in size, but strong in telescope time accessibility
- once a competitive science case is found, prepare a pre-phase A for an instrument, and run for Turkish/international fundings (note that Turkey and Switzerland are, fortunately, countries eligible for EU funds). If successful, the telescope time will be shared between the high angular science group members. This is the opportunity we are offering.

It is also perfectly OK to use DAG+AO as a high angular resolution instrument or concepts test bench.

We will share with interested people the current telescope optical performance and characteristics, and the expected AO performance estimation (we are still working on this). A meeting (videocon) will be organised for people who have shown an interest at a later date, to be defined.

We hope that we have been able to catch your interest ! If so, just get in touch with me, and we will start discussing.

With my best wishes,

Laurent Jolissaint
DAG Focal Plane Instrumentation PM

Prof. Dr. Laurent Jolissaint, Optical Instrumentation
(w) +41 24 557 6421 (m) +41 78 811 9063 (skype) laurentjolissaint
Haute Ecole d'Ingénierie et de Gestion du Canton du Vaud (HEIG-VD)
University of Applied Sciences Western Switzerland
Route de Cheseaux 1, Case postale 521
CH-1401 Yverdon-les-Bains, Switzerland
