

Status of the Focal Plane Instrumentation (FPI) Project of the 4m DAG Telescope



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9908-207

INTRODUCTION

INSTRUMENT SPECIFICATIONS

PROJECT OVERVIEW

DAG Project (<http://dag-tr.org>) consists of a 4m state-of-the-art telescope which will be able to perform observations in both visible (VIS) and near-infrared (IR) wavelengths. DAG active optics telescope contract has been awarded to AMOS, the enclosure to EIE, and the building to GUNARDA. In the current status: the final design review (FDR) of the telescope is completed, the preliminary design review (PDR) of the enclosure is completed with an expected FDR in mid-July, M1 blank acceptance is expected the second week of August, the FDR of the observatory building is completed and the construction is undergoing.

FPI Instruments

Focus	Instrument No	Wavelength	Type	Local Contribution (%)	Int. Contribution (%)
N1/N2		-	DR	50	50
N1		-	AO	90	10
N1	a	VIS	G	95	5
N1	b	NIR	G	95	5
N1	c	V/N	YTA	-	100
N2	a	VIS	T	80	20
N2	b	NIR	T	80	20
N2	c	NIR	MOS	-	100

Nasmyth 1 FPIs

N1-a: An optical imager such as CCD with high quantum efficiency will be used for general photometry purposes and monitoring transient objects.

N1-b: An infrared imager will be used to study X-ray binaries and AGNs as well as galaxy evolution.

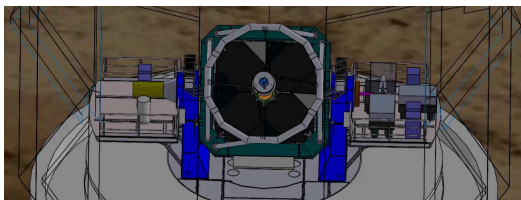
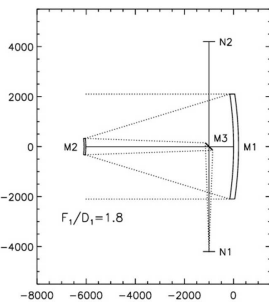
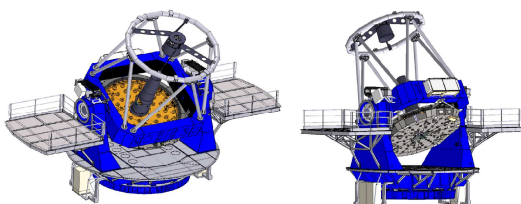
N1-c: New technology detectors operating around 100 mK and allow observations from optical to near-infrared wavelengths.

Nasmyth 2 FPIs

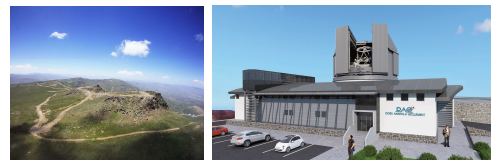
N2-a: DAG Project team has decided to obtain a spectrograph which will operate between 350-1000 nm with resolutions between 100-3000. This instrument is expected to be a workhorse for the Turkish astronomical community.

N2-b: As DAG will be the first and largest telescope to operate in the near-IR in Turkey, spectroscopy will be very crucial. This instrument will enable Turkish astronomers to work in the wavelength range of 0.9 – 2.5 microns.

N2-c: Although it is desired to have a multi-object spectrograph, this instrument slot can be reserved for future collaborations.



The Project will be coordinated by the Ataturk University Astrophysics Research and Application Centre (ATASAM). Alongside the main project of the Ataturk University, Istanbul University and Orta Dogu Teknik Universitesi has been awarded as well to support the Ataturk University. Recently funded FPI project mainly focuses on to obtain multi-purpose instruments working for optical and near-infrared wavelengths. These instruments are expected to be the workhorses of the DAG telescope as the variety of scientific topics interested by the Turkish astronomical community is quite broad. Besides classical imagers and spectrographs, DAG team has intention to experiment new technology instruments such as microwave kinetic inductance detectors (see Guver et al., this meeting). In the framework of the FPI project different laboratories for test, calibration and maintenance will be established in each institution.



CONCLUSIONS

As the largest telescope project moves forward, the additional FPI project has just been funded by the Ministry of Development of Turkey. DAG team, within this short time scale and in collaboration of four national universities, has started the FPI project. This ambitious project will not only serve to national but also to the international astronomical communities. At this stage, collaboration for science and instrumentation is possible and expected.

The purpose of the FPI project is to obtain:

- A multi-purpose instrument with imaging and spectroscopy capabilities working in the optical wavelengths.
- An imager and spectrograph for the near-infrared
- Adaptive Optics (AO) System for real-time atmospheric compensation.
- A new technology detector (preferentially imager)
- State-of-the-art in house built de-rotators (DR)

Acknowledgement: Authors would like to thank Republic of Turkey, Ministry of Development; FMV Isik University, Istanbul /Turkey; Atatürk University, Erzurum/Turkey; Astrophysics Research and Application Centre (ATASAM), Erzurum/Turkey; Orta Doğu Teknik Üniversitesi, Ankara/Turkey; Istanbul University, Istanbul/Turkey for their support throughout the project

