Atatürk University Astrophysics Research and Application Center (ATASAM)

Atatürk University Astrophysics Research and Application Center *(ATASAM)* was established in 2012 in Erzurum in Atatürk University campus within its own building *(3 floors, formed of administrative and technical units, ~1000 m^2)* as a research center directly affiliated to Rectorate. ATASAM aims to be a leader research center, at national and international levels, doing scientific researches, projects, observations, trainings, cooperation and other activities in the areas like astronomy, atmosphere, space sciences and technologies. ATASAM has completed the majority of its administrative *(building, budget, executive council, administrative staff: 6, security: 9, etc.)*, technical *(4x4 and tracked vehicles and motors, energy, fiber and RL internet, etc.)* and team organization *(academic and technical staff: 25, project consultants: 15, etc.)* infrastructure; and is continuously updating and improving its structuring in accordance with prospective projects and changing needs. ATASAM is not a center in which studies solely on space sciences at international level will be implemented; but is sustaining its development as an R&D center that technological information to be gathered as a result of these studies and the constructed infrastructure *(optic laboratory, mirror coating system, team and equipment, etc.)* will serve to optics and space sciences and similar inter-disciplinary topics *(optics, mechanics, software, data mining, image processing, atmosphere, coating, control system, etc.)*. Within this concept, ATASAM is open to every type of cooperation and partnership in its fields of study.

Vision

To be a leader research and application center in its area that is prestigious, innovative, competitive and participative at national and international levels.

Mission

To manage and offer infrastructural opportunities to innovative technologies for competitive research studies in the areas of astrophysics, space sciences and optic technologies at international levels and to carry out training activities and to make cooperation for producing and sharing updated and high quality scientific-technologic information.

Values

Scientific, Prestigious, Competitive, Innovative, High Quality, Productive, Preferred, Ethic, R&D Oriented, Participative, Leader.

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ATASAM

ATATÜRK UNIVERSITY
ASTROPHYSICS RESEARCH
AND APPLICATION CENTER

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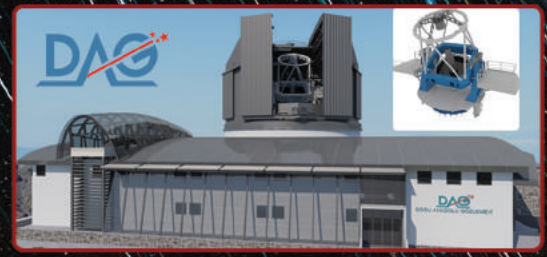
Some of the extensive projects that ATASAM have carried out since 2012 and will carry out in short and medium term *(2018- 2021)* are as follows:

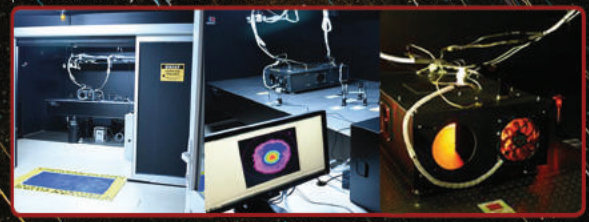
ATA50 Telescope ***(Atatürk University Research Telescope, 2010 - 2011):*** 50 cm diameter telescope *(ALLUNA RC20, ASA DDM160, Apogee U230 CCD)* and its surrounding units *(building, roof, infrastructure, etc.)* was established in the university campus within the scope and with the support of Atatürk University Controlled Scientific Research Project *(GBAP)* for research and training purposes and is being used actively.

ATM - AST - SEI System ***(Atmospheric - Astronomic - Seismic Monitoring - Analysis Systems, 2011 – 2018):***
With the support of the Ministry of Development, Atatürk University BAP and TÜBİTAK *(The Scientific and Technological Research Council of Turkey)* 1001 Project, atmospheric *(AWOS, Davis, Vaisala, METEOSAT, Boltwood, GNSS-PWV)*, astronomic *(SM, DIMM, MASS-DIMM, SLODAR, SQM, ASC)* and seismic *(CMG-6TD)* monitoring - follow-up systems were established by placing on and around the tower-platform built in DAG Site and the data is continuously being gathered and analyzed. Among these systems, MASS-DIMM and SLODAR will be activated in 2018.

DAG Project ***(Eastern Anatolia Observatory, 2012 - 2020):***
DAG is a project supported by the Ministry of Development and Atatürk University, aiming to establish an international observatory that will have the biggest and the first infra-red *(IR)* telescope in Turkey, with its original optical design in its class, 4 m mirror diameter and ability to make observations in both visual *(VIS)* and near infra-red *(NIR, <3 µm)* regions. DAG is being established as an observatory site on a large land allocated at 3170 m altitude *(Erzurum/Konaklı - Karakaya Hills)* with its observatory building *(special design and integrated structure, ~2500 m² indoor area including enclosure, coating unit, service and observation rooms etc.)* and powerful infrastructure *(electric, fiber internet, water, transportation, communication etc.)*. DAG will fill a large observational gap over the World and will develop national - international projects and cooperations.



ATASAM AO Laboratory ***(ATASAM Adaptive Optics Laboratory, 2016 - 2017):***
A Laboratory, aiming at doing basic and adaptive optics tests and carrying out research and training activities, was built in ATASAM building within the scope and with the support of Atatürk University Controlled Scientific Research Project and the purchasing, development and production of the related equipment *(large active optical table, basic optic and AO experiment set, cameras, turbulence generator, etc.)* were completed. Within the project, Optical Turbulence Generator *(OTJ)* was designed and produced by ATASAM technical team.



ODA Project ***(Focal Plane Instruments, 2016 - 2020):***
ODA Project is an infrastructure project supported by the Ministry of Development and planned for designing, purchasing, producing and developing astronomy purpose focal plane instruments and systems *(imagers, adaptive optic system, derotator, etc.)* that will be placed on two focal planes *(VIS, NIR)* of DAG Telescope. In addition, within this project, a laboratory *(OPAL: Optomechatronics Research Laboratory, will be operational in 2019, class 1000 clean rooms, etc.)* that will operate as a maintenance-repair-test-calibration with research and development *(R&D)* unit has been started to be constructed as a closed area of about 3500 m² consisting of administrative-technical facilities on a land of about 150 decares allocated in Atatürk University campus. With OPAL, it is not intended to build a laboratory providing test services solely for telescopes but is planned to establish a laboratory that will provide test services also for satellite equipment when needed with additional devices.

DAG GES Project ***(The Design, Production of Solar Energy System to be Integrated on DAG Building and Site and Building of R&D-Test Infrastructure, 2019 - 2020):***
DAG GES is a joint R&D project developed with the cooperation of Middle East Technical University Solar Energy Research and Application Center *(GÜNAM)* and ATASAM with the support of the Ministry of Development. Within the project, Building Integrated Photovoltaic *(BIPV)* cells and site integrated Solar Energy System *(GES)* will be designed and produced and a national photovoltaic open land R&D infrastructure will be constructed. DAG GES Project was presented to the Ministry of Development in 2018 and is currently under evaluation phase. Within the concept of the project, the design of an unframed BIPV, resistant to geographic and atmospheric conditions of the altitude on where DAG is being constructed and having special dimensions that allows to be integrated to DAG Building, will be developed. At the same time, it has been planned as a project to design, develop, produce and realize short-long term R&D and tests of GES that will be installed in DAG site and be produced with again BIPV concept resistant to environmental conditions.

AKS Project ***(Mirror Coating System, 2019 - 2021):***
AKS is an infrastructure project supported by the Ministry of Development and is planned for meeting the coating *(will be the biggest coating system in Europe)* needs of primarily the 4 m mirror of DAG Telescope and all the mirrors, optics and satellite systems nearby and will be established in DAG Site.