Plan Estratégico Observatorios de Canarias

2013 - 2016

Comité de Dirección. RIA

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INSTITUTO DE ASTROFÍSICA DE CANARIAS

Observatorios de Canarias - OOCC

It is the **mission** of the ***Observatorios de Canarias*** to contribute towards a worldwide scientific and technological development in astrophysics, by promoting the installation and operation of world-class research infrastructures in an exceptional location, with high-quality and long-term characterized skies, and to foster a fruitful and stable environment of international collaboration.

It is the Observatories' **vision** to:

- Perform cutting-edge science to understand the Universe through different wavelengths windows.
- Provide an "astronomical reserve" for current and future infrastructures, thereby ensuring the best natural, technological and logistical conditions.
- Foster an environment of stable international collaborations, favouring scientific leadership and the emergence of synergies among national scientific communities.
- Support education and training of early-stage researchers and technicians, and the transfer of knowledge among scientific communities.
- Contribute towards social awareness on research and the importance of a knowledge-based economy.

Observatorios de Canarias - OOCC

The **values** of the Observatorios de Canarias are:

- A sustainable exploitation of the Canarian` skies, protected by law and characterized over a period of several decades.
- A functioning sustainable model based on international collaborations.
- To respect the society hosting the observatories in a such a way that it would benefit from our activities in terms of socio-economic growth.
- The pursuit of excellence in research as the ultimate goal, providing the infrastructures, conditions and genuine communication among User Institutions to achieve this objective.

SWOT analysis

Strengths

- The extraordinary astronomical quality of the summits of the Canary Islands, protected by law.
- International recognition as one of the best observatories in the world.
- The most productive ground-based observatory for Spanish astrophysicists.
- Strong and established institutional commitment towards the continued characterization and protection of the skies.
- Sustainable financing model.
- Ownership and operation by a top-level international scientific and technological centre.
- Strong implementation in the Canaries; a reference for regional society.
- Recognition and significant presence in EU funding programmes.
- At present, excellent telecommunications infrastructure.
- Possibility of simultaneous multi-band (UV–optical-IR) and multi-instrument observations.

SWOT analysis

Weaknesses

- Decreasing funding for maintenance and update in terms of both user-institution investment and basic common infrastructure.
- Limited flexibility in financial management.
- Difficulties in multi-year planning and management.
- Poor condition of the main access road.
- Unsuitable infrastructures for tourist exploitation.
- Excessive rigidity on environmental standards as a result of being installed in national park areas.
- Environmental management of discharges very problematic.
- Very complex and dilated-time installation permits procedures.
- Difficulties in following up the scientific publications resulting from access awarded by ALL time allocation committees.
- Loss of human resources (scientists and engineers) as a result of present crisis situation.

SWOT analysis

Opportunities

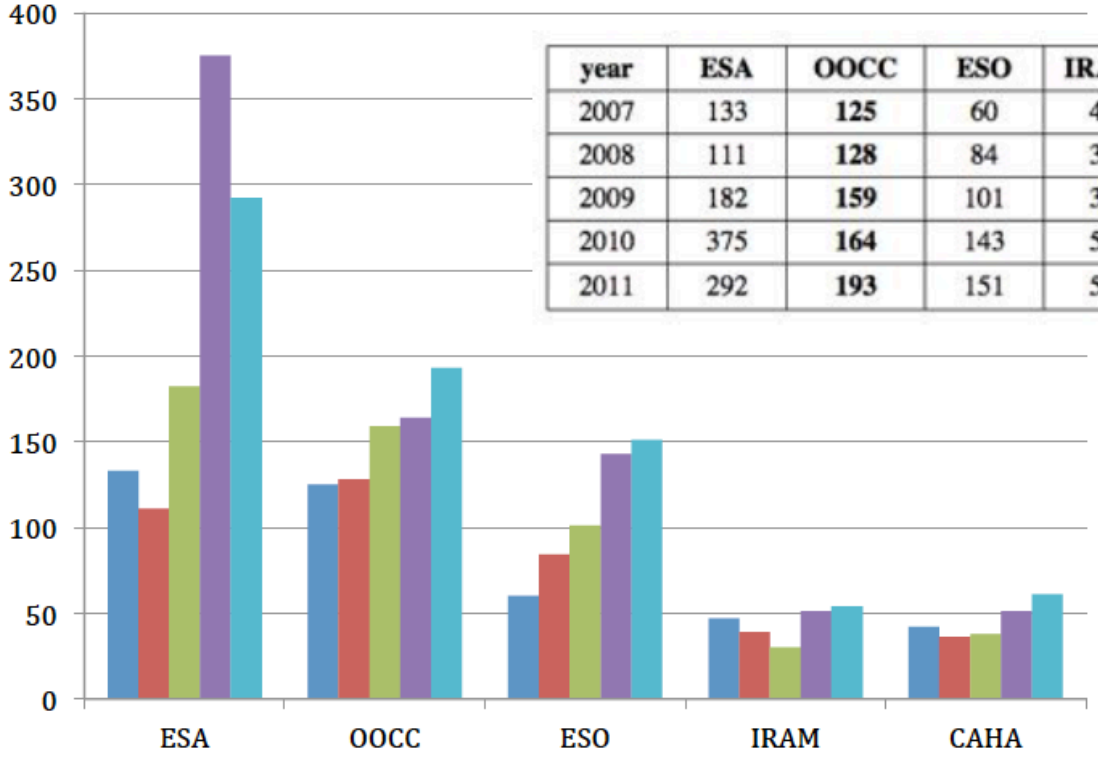
- An ‘astronomical reserve’, capable of attracting newest and most advanced international projects currently under way (EST, CTA, LT2, etc.).
- Added value within the ERA as the European Observatory of the Northern Hemisphere.
- Specialization in robotic telescopes.
- Proper exploitation of the GTC, the largest and most advanced optical–IR telescope in the world until the forthcoming era of ELTs (2020).
- The development of advanced instrumentation.
- Touristic exploitation of the observatories as an economic activity and funding source.
- The Canary Islands as a very suitable place for meetings and workshops.
- Boost awareness and conscience concerning nature preservation as a resource to increase general knowledge.
- Synergies of ground-based and satellite observations.

SWOT analysis

Threats

- The current economic situation affecting the maintenance of RTD activities worldwide in the very near future.
- Closure or diminished performance of facilities currently in operation.
- Use of telescope time for research of low interest and poor quality.
- Loss of prominence as a first-class centre attracting advanced instrumentation for astrophysical research.
- Disappearance in 2014 of *Commercial Operations* in our cost management model.
- Inability to manage the funding obtained in relation to corresponding commitments.
- Not being able to attract and retain the best international facilities.
- Application of generic procedures of the AGE unsuitable for management in an international context.

Comparative analysis



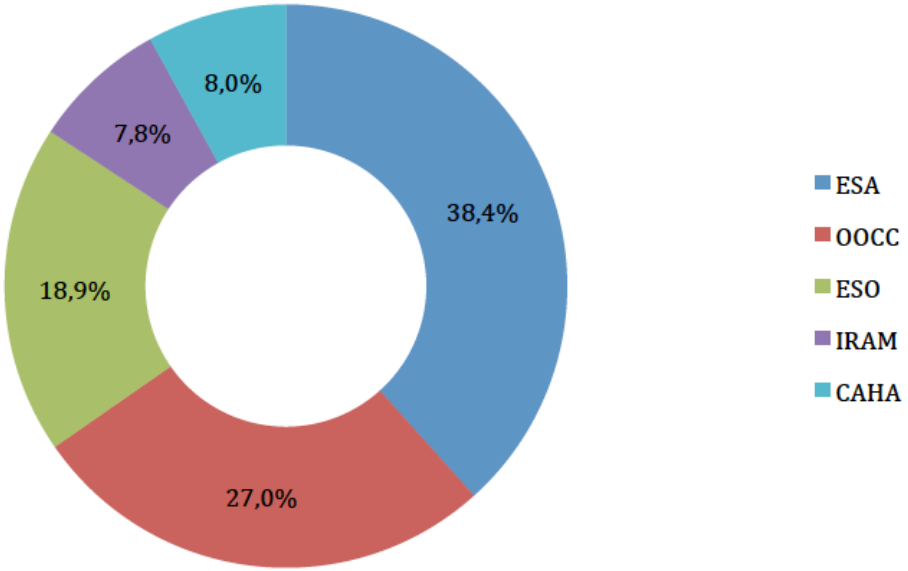
year	ESA	OOCC	ESO	IRAM	CAHA
2007	133	**125**	60	47	42
2008	111	**128**	84	39	36
2009	182	**159**	101	30	38
2010	375	**164**	143	51	51
2011	292	**193**	151	54	61

Number of refereed publications with Spanish authors based on research activities carried out at ICTS for astronomy (2007-2011).

- OOCC is the most productive collection of ground-based astrophysical facilities to which Spain has access, according to a study published by the RIA (2013).

Comparative analysis

Aggregate number of refereed publications with Spanish authors based on research activities carried out at ICTS for astronomy (2007 – 2011)



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Competitive advantages (I / II)

- Sky quality is among the best worldwide
- Legal protection assuring the present and future quality of the sites
- Most of the sky can be observed throughout the year
- Important synergies with existing and planned ground-based telescopes elsewhere and space missions
- Stable political and financial situation
- Governed by a set of international agreements
- Taxes exemptions
- Geological stability

Competitive advantages (II / II)

- Well-developed infrastructure and communications, including a top-class Internet link
- Wide range of science and wavelengths covered
- Critical mass: one of the largest observatories in the world
- Presence of a unique world-class telescope: the GTC
- Clear plans for continued leadership in infrastructures
- Close proximity to a world-class Research and Technology Centre
- The Canary Islands are well known in the scientific community
- Excellent support from the local population
- Located in an outermost region of the EU

Strategic Objectives. 2013-2016

Major strategies. 2013-2016

Strategy A:	To attract to these Observatories the new generation of telescopes.
Strategy B:	To maintain and enhance the current scientific and technological support provided to the community present at the Observatories, including the joint development of state-of-the-art instrumentation.
Strategy C:	To foster increased synergies with other ground-based facilities and/or space missions.
Strategy D:	To ensure a more active involvement from the society of the region, increasing awareness on astrophysics and improving social perception.
Strategy E:	To promote the definition and implementation of new forms of international collaboration, consistent with the Agreements in force, for the joint-operation of multi-national facilities.
Strategy F:	Continue to improve the quality and quantity of the access to and of the services and supporting infrastructures at the Observatories.
Strategy G:	To increase the interest and access from the Spanish scientific community on the medium-sized telescopes at the Observatories.

Actions

MAIN ONGOING ACTIVITIES (basically supported by own resources):

Nr.	Description	Estimated costs
Action 1	Maintenance and improvement of Common Services at OOCC.	550 k€/year + 8 FTE
Action 2	International Agreements and Trans-national cooperation. International Affairs.	3 FTE/year
Action 3	Time Allocation Committees (night-time and solar).	10 k€/year + 2 FTE
Action 4	To maintain a permanent characterization and protection of the sky quality at the OOCC for astronomical research.	50 k€/year + 7 FTE/year
Action 5	Service Programme and support to astronomers.	15 FTE/year
Action 6	Training of students.	100 K€/year + 1 FTE
Action 7	Funding search and management of successful proposals.	3 FTE/year
Action 8	New legal structures for joint operation of multi-national facilities.	0,5 FTE/year
Action 9	Synergies between ground-based telescopes and space missions.	2 FTE/year
Action 10	Communication and outreach at the OOCC.	100 k€ /year + 4 FTE
Action 11	Environmental protection actions.	20 k€/year
Action 12	Promotion of the OOCC to attract the world best telescopes, experiments and instruments.	2 FTE/year

Actions

SUBJECT TO EXTERNAL FUNDING AVAILABILITY (to be supported, partially or in total, by external funding availability):

Nr.	Description	Expected cost
Action 13	WEAVE.	2,500,000
Action 14	To promote the start-up of the EST Project Office under stable international collaborations.	1,000,000 1,000,000
Action 15	Improving GREGOR/TIP capabilities.	500,000
Action 16	Remote Observing.	100,000
Action 17	Pursuit of the atmospheric requirements at the OT for the optimal using of adaptive optics systems.	-
Action 18	Data reduction software group.	830,000
Action 19	Specific meteorological services for robotic telescopes.	100,000
Action 20	Software development for the activities of the Time Allocation Committee	40,000
Action 21	Migration the service telephony to Text over IP (ToIP)	-
Action 22	Connected to RedIRIS-NOVA, a dark fiber network	REDIRIS agreem.

Actions

SUBJECT TO EXTERNAL FUNDING & 3rd PARTIES INVOLVED:

Action 23	Improving supporting infrastructures at OOCC.
Action 24	Touristic exploitation of the OOCC

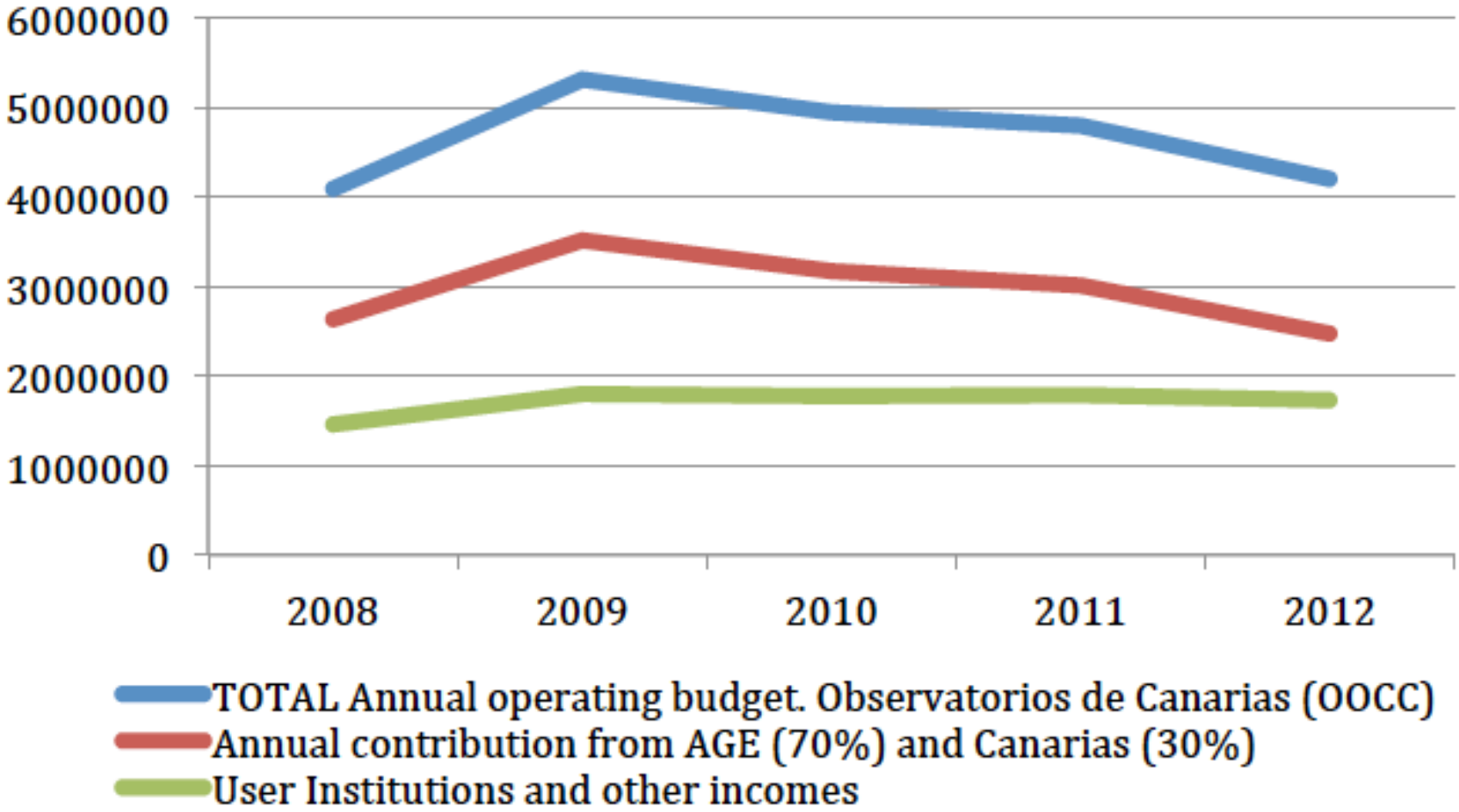
Resources strategy

- Resources that are available to implement the OOCC Strategic Plan for the period 2013–2016 come primarily from three different sources:

  - The budget from the AGE and from the Canary Islands, as part of the contribution to the IAC's budget
  - Annual contributions from user institutions (UIs) at the Observatories and service contracts with some Uis
  - External funding obtained under competitive calls and other incomes

Annual operating budget

This diagram represents these contributions in recent years



Human resources

- A total of 50 people are currently working full-time or part-time at the IAC in the running of the Observatories. In total, they account for 39 full-time equivalent (FTE) staff, with the following distribution according to specialization area.

	Researchers	Engineers & technicians	Management	Full-Time Equivalent
23 full-time staff	5	7	11	23
27 part-time staff	3	11	13	16
Total: 50 staff	**8**	**18**	**24**	**39**

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