

# ASTRONET: strategic planning for European astronomy

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**Abstract.** ASTRONET is an ERA-NET led by a group of European funding agencies, including ESO and ESA. Its aim is to establish a comprehensive, long-term planning process for all of European astronomy – at all wavelengths, from the ground and from space, and for all of Europe. By addressing both long-term scientific goals, infrastructure needs, and resource management procedures, ASTRONET seeks to consolidate the continued development of European astronomy as a front-line player in the field.

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## 1. Introduction

As its most visible effort, ASTRONET will develop a strategic plan for European astronomy for the next ~25 years - much longer than the 7-year span of Framework Programme 7 (FP7). The ‘Decadal Surveys’ conducted regularly in the USA are a model for the process, but ASTRONET’s broader goals will be pursued in three steps:

## 2. The Science Vision

First, a *Science Vision* will identify the key research priorities for European astronomy over the period, making maximum use of existing national and regional plans. This effort is led by a Working Group, assisted by expert panels addressing the following four overarching questions:

- Do we understand the extremes of the Universe?
- How do galaxies form and evolve?
- How do stars and planets form?
- How do we fit in?

The group and panel members have been selected for their scientific eminence, not as lobbyists for any discipline or project. A draft of their report will be published in November 2006, and comments from the community are invited via the web and in an open discussion at a large Symposium in January 2007, after which the report will be finalised and published.

## 3. The Infrastructure Roadmap

Taking over from the *Science Vision*, an *Infrastructure Roadmap* will be developed to chart out the tools needed to reach these scientific goals. It will comprise not only the next generation of observational facilities (ALMA, ELT, SKA, space missions, etc.), but also computing facilities and networks, virtual observatories, and human resources. An optimum implementation plan will be drafted later.

Close coordination will be maintained with the discipline oriented initiatives (e.g., OPTICON, RadioNet, ASPERA, ELT and SKA Design Studies, etc.) as well with the European Strategy Forum for Research Infrastructures (ESFRI), the European Science Foundation, the European Research Council, and the European Astronomical Society. A similarly open procedure as adopted for the *Science Vision* will be followed in the preparation of the final report on the *Infrastructure Roadmap*.

#### 4. Involving all of Europe

Engaging all intellectual resources in Europe is crucial for the success of these initiatives which, we hope, will help to shape a strong and competitive future for European astronomy. ASTRONET is therefore contacting the astronomical communities and funding agencies in all EU Member and Associated States to involve them in developing the *Science Vision* and *Infrastructure Roadmap* and but enlist their participation in making them reality. Only then will we truly succeed.

#### 5. Resource management

At present, no reliable statistics exist on the overall human and financial resources deployed in European astronomy. Similarly, national strategic plans - if they exist at all - are different in scope, form, and schedule, making rational long-term planning at the European level difficult at best.

ASTRONET is therefore conducting a survey of the organisation, funding, and national and regional strategic plans for astronomy in Europe. On this basis, proposals will be made for better-coordinated and more effective resource management procedures for European astronomy. A call for a jointly funded research project will then be issued as a pilot project.

#### 6. The big picture

To be sure, ESA and ESO have developed long-term plans for their future investments; ESFRI is collecting plans for large European infrastructures for all the sciences; and the OECD Global Science Forum does the same on the global scene. So what will ASTRONET do that is not already being done?

It is crucial to note here that the budget for FP7 can fund only a tiny fraction of the new research infrastructures that Europe wants; the rest must come from the national funding agencies including the budgets of ESO and ESA, etc., whose plans cover just their own fields. But the funding agencies know they will in the end pay for it all and want to see how it all fits together, and ESFRI is not set up to recommend priorities or schedules.

On this background, ASTRONET is the chance offered by the funding agencies to European astronomy to prove that we can define our own priorities and present a common long-term plan that will convince them that their money will be well spent by us. If we succeed, a few more of our hopes may be realised. If we fail, we will all be worse off.

But there is an even wider perspective: Astronomy's greatest ambitions will no doubt only be achieved by truly global planning and cooperation. For Europe to play a role that befits its scientific, technical, and financial potential, we must sort out our own plans and priorities first. Only then can we aspire to more than playing second or third fiddle in the world of tomorrow.

For updated detailed information, see <<http://www.astronet-eu.org>>.