

# **ASTRONET project summary**

## **Strategic objectives**

Astronomy is entering a new golden age of discovery: from the rise of the Universe to the detection of planets around other stars and possible bodes of life in the Solar System, exciting scientific discoveries are ripe for harvest now. The overarching goal of ASTRONET is to ensure that Europe will maintain and develop its position of strength in this grand, but fiercely competitive enterprise.

Scientific breakthroughs will require new observations at all wavelengths of the electromagnetic spectrum, performed with state-of-the-art research infrastructures on the ground and in space as well as advanced computing and data mining tools. To build them, Europe's human and financial resources must be deployed as effectively and efficiently as possible. Two strategic objectives follow from this:

1. Co-ordination across traditional barriers between disciplines and communities is needed to define common goals and priorities for the future in the most cost-effective manner; and
2. The intellectual resources of all of Europe, including the new Member States and Associated States, must be deployed to optimise the scientific and societal benefits of the overall research effort.

To accomplish this, ASTRONET gathers all the key European actors in all astronomical disciplines, i.e. optical/infrared, high energy and radio astronomy, both ground and space based. The strategic objective is to exchange information and establish durable co-ordination of European strategic plans at the highest level, underpinning the successful, but discipline-oriented co-operation and synergy developed by the ongoing I3 and Design Study initiatives in astronomy funded by the EC under FP6. Under the ERA-NET, ASTRONET will develop a consensus-based, global scientific vision and infrastructure roadmap that will assist decision makers in keeping Europe at the forefront of astronomy in the world. Co-ordination and involvement of the entire European community will greatly increase the value of national and European investments in the field.

## **Project abstract**

Co-operation has made European astronomy a leader in the field. Defending this position will require a new generation of infrastructures that are feasible only at the European or global level. Through ASTRONET, the key European actors in this field, national research funding agencies and international organisations, will establish a comprehensive, consensus based, co-ordinated strategy for developing European astronomy at all wavelengths, in all countries, on the ground and in space.

To achieve this, ASTRONET will first develop a global, long-term Scientific Vision for European astronomy in a transparent, bottom-up approach. From this, an Infrastructure and Key Technology Roadmap and an implementation plan will be derived in a similar manner, as a guide for major policy decisions. This process will build on the EC-funded ongoing co-ordinating activities in each discipline (I3s, Design Studies, etc.), creating maximum added

value to the research activities funded at the national and European levels and establishing durable co-operation and co-ordination of strategic plans for European astronomy.

All of European astronomy must take part in this effort: unlike money, *intellectual capital* is evenly distributed all over Europe, including the new Member States and Associated States. This precious resource must be deployed optimally to ensure the rich scientific returns of European astronomy and its front-line facilities. ERA-NET funding will enable ASTRONET to invite all interested and qualified actors to join right from the start, sharing also the key societal returns of modern astronomy, technological spinoff and scientifically and technically trained manpower. Correcting regional and gender imbalances will be an important objective. In parallel, ASTRONET will establish an exchange of information and co-ordination of best practices between agencies and initiate ambitious joint research programme, transforming European astronomy into a true European Research Area.