

Building up a European astronomical community

The 11th Hellenic Astronomical Conference
Athens September 2013



The Antikythera mechanism

Astronomy is, rightly,
seen as a very old
science.

It is also seen, wrongly,
as a pure intellectual endeavour

Astronomy has been practiced for thousands of years primarily for practical purposes:

- following the seasons for agriculture
- measuring time for the organisation of societies
- geographical and navigation needs
- Sea faring nations had (and still have) large time and ephemeris services.

“Research” in astronomy or astrophysics was a small part of astronomical activity.

Emergence of a “weltbild” is a by-product of the astronomy service activity

It is only recently that astronomy lost its practical importance

Among astronomical activities in the service of society, we should include all forms of support to rituals in all? civilisations



Storm in
Stonehenge

Astronomy kept a mainly practical relevance until very recently.

Example: the Geneva region:

Geneva observatory (1772) like most observatories was primarily a time keeping service for the city.

Included meteorological services.

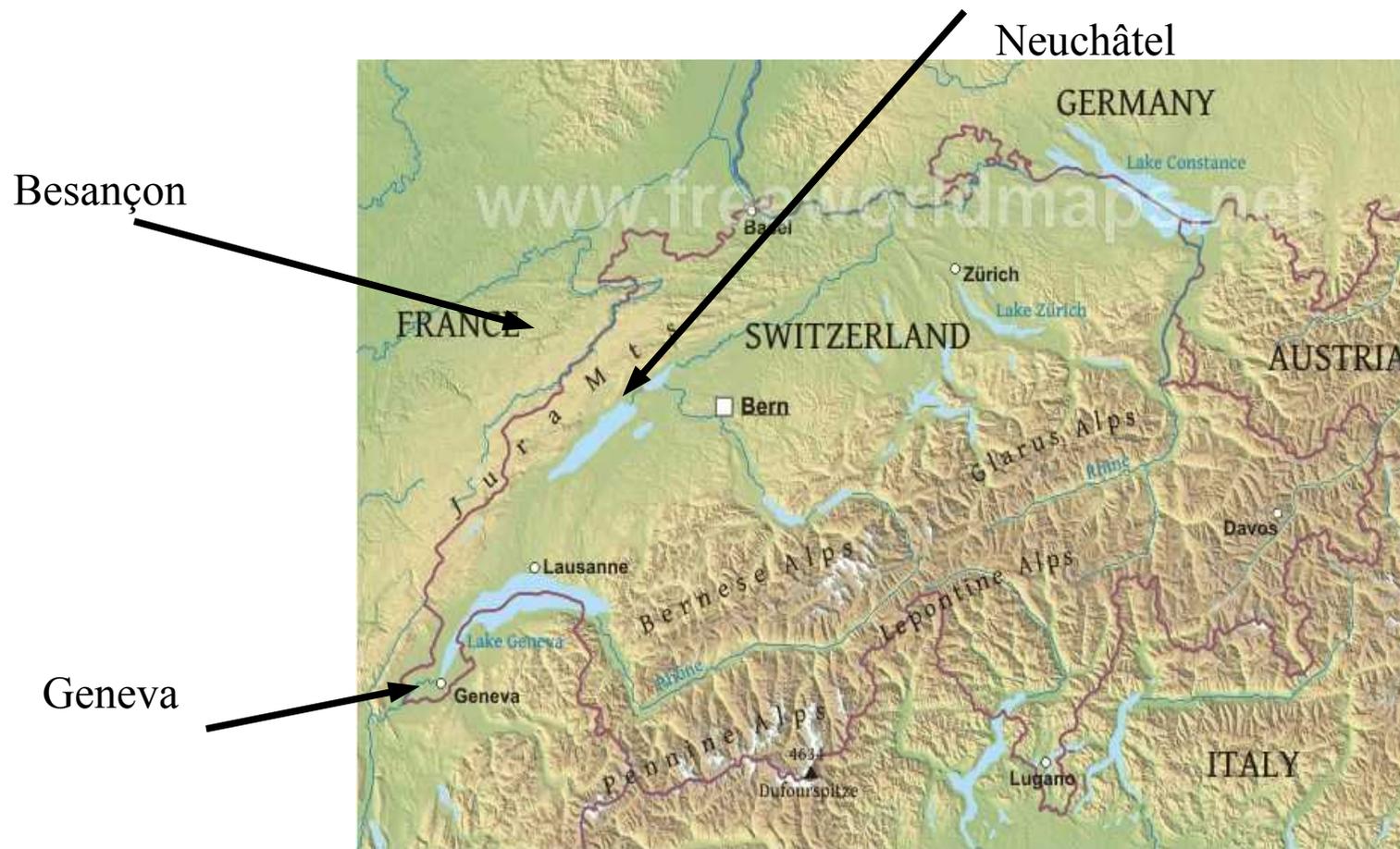
It remained active in measuring the stability of precision watches until late 1960's.

Teaching belonged to the responsibilities of the director, “research” (bibliography) was a side activity.

Little knowledge creation.

In the Jura area There are 3 observatories
in cities with a number of similarities:

Watchmaking among them



in the 19th century Geneva and Neuchâtel had observatories with time keeping functions



1878: founding of the
Besançon observatory to
support local watch making industry
against Geneva and Neuchâtel



In the 1960's:

Neuchâtel stayed with time measurements and turned to atomic time measurements, still very active.

Besançon went to time transport and some Astrophysics.

Geneva turned completely to astrophysics and dropped all time related activities.

Share between Geneva and Neuchatel was explicit.

This story is representative of many other ones.

Royal Greenwich Observatory was painstakingly transformed into a research organisation, moved around the UK and finally closed in the 1990's

In the recent PAST, science was a essential motivation for space based efforts.

Early space missions were often (mainly?) devoted to science and particularly astronomy.

It was not the only motivation:

Those who came before us made certain that this country rode the first waves of the industrial revolutions, the first waves of modern invention, and the first wave of nuclear power, and this generation does not intend to founder in the backwash of the coming age of space. We mean to be a part of it--we mean to lead it. For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace. **We have vowed that we shall not see space filled with weapons of mass destruction, but with instruments of knowledge and understanding.**

Yet the vows of this Nation can only be fulfilled if we in this Nation are first, and, therefore, we intend to be first. In short, our leadership in science and in industry, our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world's leading space-faring nation.

Kennedy, Moon speech Houston 1962

Astronomy and Space Science benefited from being a strong motivation for activities which had often other aims.

Foundation of ESRO (1962) shows that in Europe Science was a prime mover towards space activity. Possibly more so than elsewhere, because of the absence of “national” feelings and military ambitions.

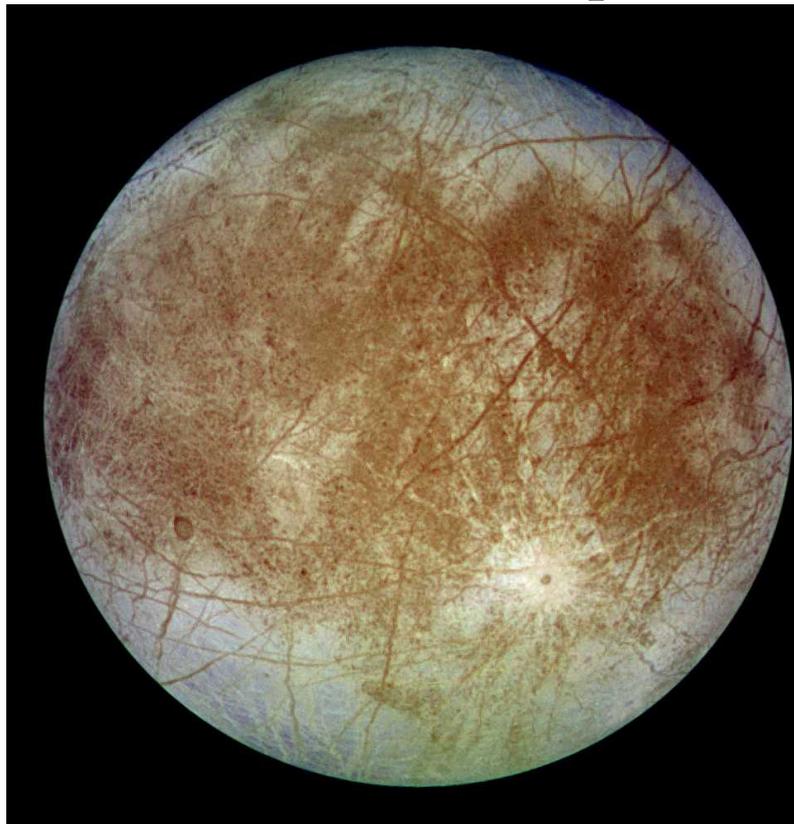
Relationship between power drive -military- and science in space matters is illustrated by the absence of “peace dividend” in the early 1990's (everywhere).

Space science budgets decreased rather than increased from mid 1990's to mid 2000's (20% in Europe).

Results from space astronomy
have been stunning:

Variety of the solar system
bodies

Europa



Ganymède

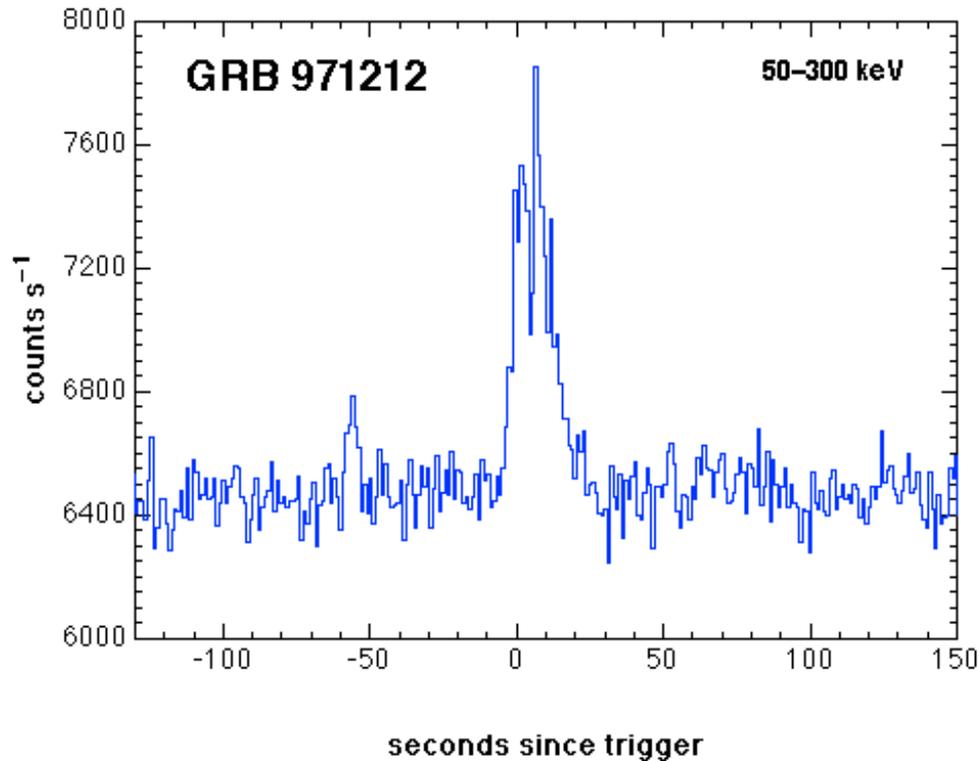


Io



Callisto

Variability in the sky



Our Universe is shaped
on all timescales, down to
millisecond

The realm of physics at work
in the sky is much broader
than had been anticipated.

sources of energy are

- gravitation (binaries, compact objects, clusters...)
- magnetic fields (magnetars, AXPs)
- radio-activity (nuclear lines)
- matter anti-matter annihilation (511keV line in our Galaxy)

Now space developments live on their own, science is not required, except as a motivation for some endeavours like the space station.

Nowadays space science helps us to understand the evolution of the Universe and the solar system including Earth. [Space science in Europe has initially been the main driver for the development of space technologies, which were later the basis for many applications serv-](#)

[ing a wide range of societal needs.](#) It provides tools and insights, which are of direct interest to mankind.

SPRT report to ESA 2007.

Space industry moved away from “pioneer times” and require immediate profit, like all other industries.

Policy makers also require that space applications make money.

Practical – economical- benefits of Astronomy are immense and possibly outplays those of any other science over time.

Development of a “weltbild” was a by-product of this activity.
A side benefit also of tremendous influence on society.

Today:

-We are very predominantly in the cultural, knowledge creation, side of astronomy.

-We insist, rightly, on the cultural value of our activity for education and society in general.

-Practical importance is indirect and largely limited to technology developments.

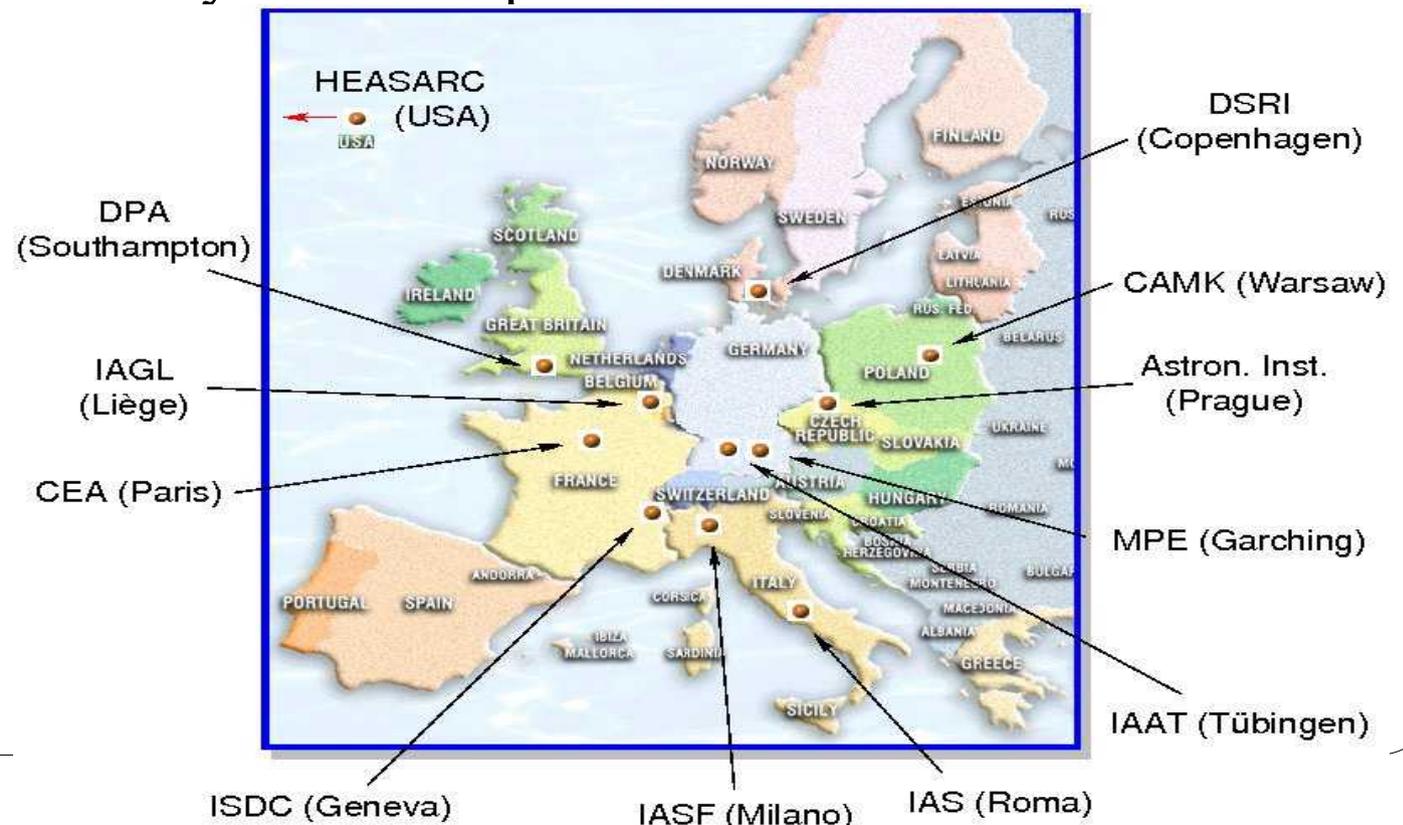


Together with this change, astronomy became a “big science”

Instruments are developed by large often international consortia.

Data processing and analysis also requires collective efforts.

ISDC consortium



It follows from this evolution that we need to work within larger communities.

In parts of the world these larger communities are national.
Not so in Europe.



Hence the need for European size entities

ESO, ESA on the side of the providers of instrumentation

ASTRONET and other organisations on the side of Agencies

EAS on the side of the community

EAS founded in 1990 (in Davos, Switzerland)
Initiative of L. Woltjer

~1990: end of Soviet Union

- Opening of Europe towards the East.
- Great European expectations, particularly East
- Huge difficulties for scientists, hence astronomers
in ex Soviet bloc regions.

These facts have been very influential on the early history of
the EAS

Some in the West felt “left out” or insufficiently served.

From there we must continue building the Society to

-become the expression of the European astronomers, in particular (but not only) in Bruxelles

-lack of a voice is perceived as a weakness by the EC

-to foster EU funding into astronomy in a way that satisfies us

-to speak up in the coordination of national funding

-to elaborate priorities for our community

-make pan-European collaborations stronger

This should be done, also now with great conviction.



Europe, particularly as defined in the EAS, is the largest World economy.

European astronomy should therefore be world leading



Creating a European astronomy community is not without difficulties:

We need an identity as European astronomer

but even the notion of identity has different meanings
across the continent Francis Fukuyama

In “I am French” or “I am Greek” or “I am Swiss” “I am” means
different things. In addition, French, Greek or Swiss are
also different.

To top it, European does also not cover the same meaning across
the continent

➔ The concept of a European astronomer identity
covers a vast area of meanings.

Thankfully Astronomy is better defined, although there also...

THE EUROPEAN Astronomical Society

- forsters European astronomy
- is independent of institutions, agencies, governments
- acts at the European level for the European astronomical community
- works together with affiliated societies
- collaborates with European institutions and agencies

Was founded in 1990 as a society of individual members

EAS is a society of individual members,

-Not the sum of, weighted average or most vocal, national positions, but a truly European voice.

-Avoids becoming yet another tension field between national interests

-Can and should also function as a place where national position can be harmonised.

Where the discussion between EAS and affiliated societies (“Rolle meetings”) can be most fruitful

For its members the EAS

- (Co-)organises the EWASS meetings (ex JENAM)
EAS-symposia, special sessions, plenary sessions...
- Distribute stipends to facilitate EWASS attendance
- Awards the prix Tycho Brahe Prize (2013, M. Tarenghi)
- Awards the “Lodewijk Woltjer lectures” (2001, S. Collin)
- Awards the MERC prizes, 3/ year, for young astronomers
- maintains the EAS-publications (J.-P. Zahn, plus de 50 titres)
- is working towards establishing links with the EU
- has established links with European Physical Society
- must further increase its international presence

continued:

- Developed a procedure to produce position papers
- Organised working groups
 - Future of Space astronomy (2012)
 - practices and funding of astronomical publication
 - Ethics and good uses
- produces a “Newsletter” (V. Chamandaris)
- diffuses electronic news
- organised and maintains a job service
- is setting up a link with astronomers who left the academic environment
- maintains a data base and the necessary administration
- maintains a web site (eas.unige.ch)

All of this for 40.- Euros per year

Work is done by

- Council of 10 members, including M. Kontizas
- Newsletter editor, V. Chamandaris
- ISDC staff with a financial contribution of EAS

-Resources: membership fees

~1000 individual members

12 individual Members work in Greece

(HEL.a.s. counts about 250 members;)

organisational members (organisations and institutions,
public or private that support EAS financially
and get a series of benefits)

Organisational members allowed us to double the budget
to some 70'000 Euros

Work in progress:

- Professionalise the EWASS meetings
 - make them pan-European
 - 1000-1500 participants
 - science and discussion of matters relevant to the community
- firm up the services and work done for the EAS in Geneva
- develop working groups and position papers

- improve communication
 - (presence in the press, e.g. at EWASS)
- organise a more prominent presence in Brussels

- requires further progress in the funding of the society
 - need for more individual and organisational members

Very significant institutional work

Essential to the development of European astronomy.

Still need to find a proper regional balance

Everybody is needed (http://eas.unige.ch/member_request_1.jsp).
Only so do we represent all.....

<http://eas.unige.ch/>

