

# HIPPARCHOS

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IAU - 100 years







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## HIPPARCHOS

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Hipparchos is the official newsletter of the Hellenic Astronomical Society. It publishes review papers, news and comments on topics of interest to astronomers, including matters concerning members of the Hellenic Astronomical Society.

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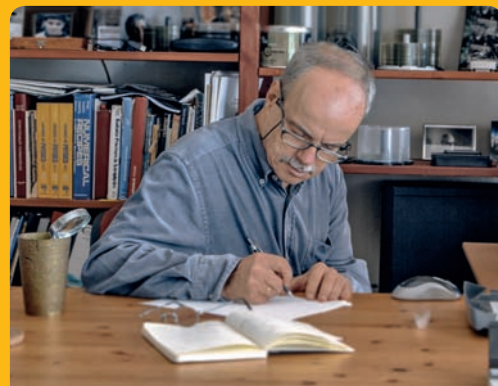
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### Cover Image:

The Orion nebula above the participants of the 1948 IAU GA in Zurich. A composition for the celebration of the 100 years of IAU.

Credit: IAU

# Message from the President



**T**he new issue of *Hipparchos* you are holding in your hands is, in many ways, a special issue as it celebrates the 100th anniversary of International Astronomical Union born on July 28, 1919. This important anniversary, known as “IAU 100 - Under One Sky” is celebrated around the globe, and in Greece, with a series of events – for more information see our Society’s site:

<http://www.helas.gr/IAU100.php>

Therefore it comes as no surprise that the editor of *Hipparchos* decided that it would be very timely to dedicate most of this year’s issue to this unique event.

It was thus very appropriate to ask Academician (and first President of our Society) Prof. Georgios Contopoulos to write a personal view of IAU as he served, amongst other positions of prominence, as its General Secretary from 1973-1976. Prof. Contopoulos’s recollections are an amazing mosaic of the mid to late 20th century history showing that science, like all human activities, is closely related to its era. The Cold War globally, and the Greek Junta on a local level, set the stony stage where astronomers had to move in order to meet and discuss science in an epoch that international communication was not as easy as it is today and national barriers were setting sometimes high obstacles. Still the language of the scien-

tists proves to be much more universal than this of the politicians.

On the second installment concerning the anniversary, Prof. Kanaris Tsinganos, also former President of Hel.A.S. and, at present, the National Outreach Coordinator for IAU 100, undertakes the difficult task to present us with the major discoveries that marked these last 100 years of Astronomy. The task is achieved as the author does not try to cover everything – which would have been exhausting for author, readers and editor alike – but focuses instead on some selected, hand-picked topics. This works very well and the combination of about fourty photographs/diagrams accompanied by an informative text on topics ranging from the Sun/Solar System to Cosmology conveys the width and spread of the last 100 years of astronomical discovery.

The current issue of *Hipparchos* contains also two review articles not directly connected to IAU 100 but having interest on their own. Dr Christophe Sauty (Observatoire de Paris) gives us a very clear, from a theoretical standpoint, review of MHD disks and jets. The story behind the science is also very interesting, since Dr. Sauty is one of the very few examples of people who came from abroad to work on their PhD in Greece and in the process

he developed strong ties to the country – as well as to Hel.A.S. The other review article is by our Secretary, Dr. Kostas Gontikakis (KEAEM, Academy of Athens) and deals, in a brief but concise way, with the upper solar atmosphere, a fascinating topic that is still far from understood.

I hope that all the above prove that the present issue of *Hipparchos* is indeed special. It gives us, from the authors’ personal perspectives, the tremendous growth of Astronomy during the last 100 years and makes us wonder what the future might bring. Furthermore, the “IAU 100 - Under One Sky” anniversary is a perfect opportunity for demonstrating to the public the richness and depth of the science we all practice and love. It is also an opportunity to bolster the scientific methods against the various branches of pseudo-science which, thanks to their sheer ultra-lightness and enigmatic support, have become undeservedly fashionable. And, last but not least, it gives us the opportunity to demonstrate, in these high tension times, that we indeed live under one sky and the study of this sky breaks down the barriers imposed not only on us, but also on all of humanity.

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*Apostolos Mastichiadis  
President of Hel.A.S.*

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# 100 years of the International Astronomical Union (IAU)

by George Contopoulos

*Former General Secretary of the IAU*

**T**his year is the hundredth anniversary of the International Astronomical Union (IAU).

The IAU forms the most important collaboration of the astronomers of the world. It has more than 13000 members, from more than 100 countries. Its members are at least doctors of astronomy or of related fields. It contains about 50 Commissions on various subjects and its governing body is the Executive Committee that consists of the President, the General Secretary, the Assistant General Secretary and 5 more members.

Every Commission has its Organizing Committee, that includes its President and Vice President. The Commissions deal with particular subjects, like the dynamical astronomy, the planets, the spectroscopy of the stars, the stellar evolution, the Galaxy and other galaxies, the cosmology, the high energy astrophysics, etc.

The term of the Executive Committee and of all the Commissions' officers is three years. Every 3 years there is a General Assembly of the Union, that brings together thousands of astronomers. During the General Assembly there are many scientific meetings and meetings on various organizational subjects, like the introduction of new members and countries, the election of the new Presidium, and the ratification of the decisions of the various Commissions. E.g. the General Assembly ratifies the names of the various structures of the moon and the planets, the basic parameters of stellar astronomy and of cosmology, the future Symposia etc.

I had the opportunity to participate in many General Assemblies of the IAU and to be elected President of the Commission 33 on the Structure and Dynamics of the Galaxy (1967), Assistant General Secretary (1970) and General Secretary of the IAU (1973).

Here I will mention some of my reminiscences from my participation in the IAU.

The first time that I participated in a General Assembly was in Dublin, Ireland (1955). There I had the opportunity to meet many leading astronomers, like Ryle (Nobel prize for his work in radio-astronomy, Fig. 1), Profs. Oort and Lindblad, leading specialists in galactic dy-

namics etc. The General Assemblies give us a unique opportunity of contact with astronomers from all around the world. The most important result of these contacts for me, was the invitation by Prof. Lindblad (Fig. 2), to go for one month in Stockholm, the following year. I met also



**Figure 1:** General Assembly of the IAU in Dublin (1958). Talking with Prof. Ryle (Nobel prize).



**Figure 2:** Professor and Mrs. Lindblad at the Dublin General Assembly.

the Dutch Professor Oort, who was at that time President of the Commission on the Structure and Dynamics of the Galaxy (Commission 33) and was then succeeded by Professor Blaauw and later by Professor Bok.

During my visit to Stockholm in 1956 I had the opportunity to calculate with the help of an electronic computer, for the first time in international astronomy, some 3-dimensional orbits of stars in a galaxy. The forms of these orbits were quite unexpected at that time. I presented these orbits at the next General Assembly of the IAU in Moscow (1958). I was the only Greek representative in this General Assembly (see the Greek flag in front of the University of Moscow (Fig. 3) because the travel from Greece to the Soviet Union at that time was not permitted, and I got a special permission with great difficulty.

At my lecture in Moscow there was present Professor Dirk Brouwer, who invited me to Yale University as a visiting professor. Thus, Moscow opened for me the road to the United States, where I have been many times as visiting professor in several universities.

The next General Assembly was in Berkeley, California (1961). There we had the first meeting of the specialists in Stellar and Galactic Dynamics. In this meeting there were the American Ivan King, the French Michel H  non, the British Donald Lynden-Bell, the German Sebastian von Hoerner, and a few more, and we decided to have in Greece the first International Symposium in Dynamical Astronomy. This took place in Thessaloniki in 1964. This Symposium brought together for the first time people that were working in Celestial Mechanics and those that were working on Stellar and Galactic Dynamics. After that meeting the field of Dynamical Astronomy had a spectacular development.

Then there was the General Assembly in Hamburg (1964). During this Assembly Professor Bok, President of the Commission on the Structure and Dynamics of the Galaxy (Commission 33) of the IAU, proposed me as his successor as President of the Commission. But the Presidium of the IAU had objections. As Prof. Bok told me, I had a basic drawback: the fact that I was not Dutch, as all the previous Presidents of this Com-

mission. But Dr. Bok convened the Organizing Committee of Commission 33 and all of them unanimously, declared that they did not want any other person as President, besides Contopoulos. After that the Presidium of the IAU gave in. Thus, I became Vice President of the Commission and after 3 years I became its President.

The main job of the President of the Commission was to write a Report on the activities in the field of the Structure and Dynamics of the Galaxy during the last three years. In this particular occasion I prepared, besides the usual abridged review required by the IAU, a big volume describing the recent scientific developments in Dynamical Astronomy. This volume had a considerable impact internationally.

The next big change for me came in 1970. The President of the IAU at that time, was the German Professor Otto Heckmann. Dr. Heckmann invited me to Hamburg to give a lecture and then he proposed to me to become the next General Secretary of the Union. I felt very honored, but I was skeptical if I should accept, because Greece was under a Junta, and I was not certain whether I would be free to travel frequently abroad as required. I was remembering the case of a colleague of mine who despite the fact that he had the required permission to travel abroad, he was taken out of a plane that he had boarded. I told that to Dr. Heckmann, but he assured me that the Junta would not dare to stop me if I had this prestigious international position. Thus, I accepted, and I was elected Assistant General Secretary in 1970, at the Brighton, England General Assembly of the IAU.

During this General Assembly I made a proposal to the representatives of the United Kingdom, France, Germany and the Soviet Union to form a European Astronomical Society. All were very favorable, but when the Soviet delegates returned to Moscow they were not allowed to participate in such a Society. Thus, my project failed at that time and it was realized only after a number of years when the international conditions were better.

Then I proposed a different project, namely to have every year a large local meeting in Europe, under the auspices of the International Astronomical Union. This idea was quite successful and the first European Meetings took



**Figure 3:**  
The flags  
of the participant  
countries  
at the Moscow  
General Assembly  
of the IAU (1958)  
in front  
of the Moscow  
University.



**Figure 4:**  
The first European Meeting under the auspices of the IAU in Athens (1972). We see Prof. Chandrasekhar (Nobel prize) [right] and Prof. Oort [center].



place in Athens (1972) and Tbilisi, Georgia (USSR) in 1975. Later on, there were many similar "Continental" Meetings not only in Europe but also in Asia, in Australia-New Zealand, and in Latin America.

The first European IAU Meeting in Athens was very successful. (Fig. 3 shows two leading astronomers, Prof. S. Chandrasekhar (Nobel prize) and J. Oort, that attended our Meeting). Among other participants there were many people from the Eastern countries, the Soviet Union, Poland, Czechoslovakia, Yugoslavia, Romania and Bulgaria. But most of them were provided with only one dollar per day for their expenses. Thus, we provided free lodging and most of the meals for them and they all were enthusiastic. This we could do because the Ministry of Education had provided some money for our expenses.

But the Minister of Education was angry because in the booklet that described the Program of the Meeting we were not stating that the Meeting was co-authored by the IAU and the Greek Ministry of Education. I replied that the IAU does not co-author Meetings with local organizations. Then the Minister threatened that he would cancel the Meeting. But how this could be done when many participants were already arriving? Thus, I proposed a compromise

solution. To write that the Meeting was organized by the IAU with financial support from the Greek Ministry of Education. This was accepted, but reluctantly.

The next General Assembly took place in Sydney, Australia, in 1973. There I took over as General Secretary. But before that Meeting there was a serious controversy in the IAU because the Polish representative wanted to have this General Assembly in Poland, because this year was the 500th anniversary of Copernicus. And the Soviets threatened that they would withdraw if we would not accept the Polish proposal. Thus, we decided to have an Extraordinary General Assembly in Poland, immediately after the General Assembly in Australia. Thus, many people travelled directly to Poland from Australia.

In Poland we were treated very nicely. Among other things the Polish provided us with a photocopy of the original manuscript of Copernicus under the title "De revolutionibus orbium coelestium". In this photocopy I noticed that there was a page in which Copernicus was referring to the Greek astronomer Aristarchus, who was the first to propose the heliocentric theory. However, this page was crossed out and it did not appear in the published book of Copernicus. I showed this page to the President of the IAU, Professor Leo Gold-

berg, and it made a strong impression on him. Then at the opening ceremony the next day, when the Polish organizers emphasized the original theory of Copernicus, when the time came for the President of the IAU to speak, Dr. Goldberg emphasized the fact that Copernicus, as a true scientist, he made the correct references to his predecessors, especially the Greek Aristarchus, who first proposed the heliocentric theory.

As Assistant General Secretary of the IAU I was supervising the Meetings of the IAU, in particular its Symposia and Colloquia, and the corresponding publications. During the 3-years period (1970-1973) I had to take care of 50 Symposia and Colloquia.

Later as General Secretary of the IAU, I had to take care of all the correspondence of the Union, thousands of letters with the National Committees (50 at the time), the 50 Commissions of the Union and a large number of other Organizations and Unions. One of my first efforts was the return to the Union of China, which had withdrawn after Taiwan was accepted as a member country. Finally China accepted to return under the condition that we should accept that there is only one China, but there are two groups of Chinese representatives, one from Beijing and the other from Taipei (capital of Taiwan). When later the Chinese representatives from Beijing came to our next General Assembly, they thanked me particularly for my efforts in their favor.

Besides my other duties, I was the representative of the IAU in ICSU (International Council of Scientific Unions), that had representatives from all the countries and International Unions, like the Unions of Physics, Mathematics, Chemistry, etc. The most important meeting of the ICSU at that time took place in Leningrad in 1974. There all the representatives of the Unions emphasized their wish to have more ample participation of scientists from the Soviet Union. But the President of the Soviet delegation, Professor Ambartsumian, disappointed us by stressing that the participation of scientists in International Meetings should be arranged internationally, which in his opinion means that only the National Academies should decide who should participate in such Meetings and it was not correct to send invitations to particular persons. After Ambartsumian's talk the atmosphere of