

CHAPTER I

INAUGURAL CEREMONY 1991 JULY 23

The Inaugural Ceremony was held in the San Martin Cultural Centre, Buenos Aires, in the presence of the President of the Republic of Argentina, Dr. Carlos S. Menem, the National Secretary for Science and Technology, Dr. Raúl F. Matera, the Secretary for Education and Culture of the City of Buenos Aires, Lic. Osvaldo E. Devries, the President of the Argentinian Astronomical Association, Dr. Esteban Bajaja and the Chairman of the National Organising Committee, Dr. Fernando R. Colomb.

The Chair was taken by Dr. Roberto H. Mendez, Chairman of the Local Organising Committee from the Institute of Astronomy and Physics of Space (IAFE), Buenos Aires.

A stylish musical interlude of works by Mozart, Piazzola, Belloso and Ocampo was provided by the La Plata University Brass Quintet.

Address by Dr. Roberto H. Mendez, Chairman, Local Organizing Committee

"On behalf of the Local Organizing Committee it is a pleasure to welcome you all to Buenos Aires. Given the local economic situation, and the consequent restrictions in our budget, we have made a great effort to ensure the efficiency of scientific activities during this General Assembly. Your presence here is stimulating and will surely become a landmark for the younger generation of Argentine Astronomers. We thank you for coming and we wish all participants an invigorating astronomical experience. Thank you again, and good luck."

Address by Dr. Fernando R. Colomb, Chairman, National Organizing Committee

"It is a great honour for me to welcome you to our country on behalf of the Argentine Astronomical Community.

If meetings of this kind, which bring together men and women who search fervently to provide answers to the enigmas of the Universe, are always important, this one conference held in the year 1991 offers us the privilege to meet on the threshold of the commemoration of the fifth centennial of the discovery of America, the crucial step forward in the integration of humanity, in whose celebration the year 1992 has been declared the International Space Year.

I believe that this particular circumstance, filled with special significance, constitutes a special motivation for the achievement of a more fruitful exchange of information, expectations and queries in our quest of the place man has been reserved in the cosmos.

We are glad that the conference Argentina is hosting today is being attended by so many outstanding scientists from all over the world. Argentina has had an active tradition in astronomical research since 1871, when President Sarmiento inaugurated the Observatory in Cordoba, which allowed Benjamin Gould to level up the knowledge of

the southern hemisphere skies, information which was added to the data already existing for the northern hemisphere. At present there are six institutions devoted to astronomical research, over two hundred internationally renowned specialists working in various related branches, and the recently set up astronomical reserve of El Leoncito, in the province of San Juan, a space of over sixty thousand hectares, protected from interferences by a provincial law, offering the possibility of a pole for the development of observations in different wavelengths.

We are convinced that astronomical investigation and the answers it provides can contribute solutions for the welfare of humanity, at a time of explosive scientific and technological advance.

On behalf of the astronomers of Argentina, who feel very proud for having been chosen as the first Latin American country to organize the General Assembly of the International Astronomical Union, let me welcome you once more and hope that your stay in the city of Buenos Aires will be a truly memorable event for each one of you."

Address by Dr. Esteban Bajaja, President Argentina Astronomical Association

"Distinguished Guest, Ladies and Gentlemen,

It is a great honour and a great pleasure for me to be here now welcoming you to our country. A great honour and also a responsibility, because of the number and level of the scientists present here; because, I am speaking on behalf of the members of the Argentine Astronomical Association, a majority of them decided several years ago, when nobody imagined the critical times to come, to propose Argentina as host country for this General Assembly; and finally, because 120 years of professional astronomy in this country demand from us a corresponding competence in the organization of this meeting.

It is also a great pleasure because I am able this time to welcome to my country many of you whom I met in other parts of the world. I regret, however, that I miss the chance to welcome many other astronomers who are not coming just because this is a General Assembly, which, in their opinion, means too many people, too many subjects, too much time. In spite of this attitude, which will have to be considered when planning future General Assemblies, and other facts like the war in the Persian Gulf and the outbreak of cholera in some countries of South America, we are glad to see that the attendance exceeds our expectations.

To organize a General Assembly of the IAU is by itself a difficult job and implies a large responsibility, but when the host country has the economical situation that our country had, particularly during the last few years, such job is much more difficult to be carried out. The members of the LOC might write a book describing the all sort of problems they met in their long and painful way to reach this moment. Because of these difficulties we expect from you some indulgence when judging some details in the organization that might have gone or may go wrong.

The important thing is that you are here now and we shall try to make your stay as comfortable and fruitful as possible. For the latter you know what you expect from this General Assembly. Let me tell you what we expect from it, why we consider that it was worth the effort. As result of the 120 years of tradition in astronomy, during most of which Argentina had the leadership in South America, we have at present six observatories, two schools on astronomy and 180 members in our Association, more than two thirds of which are young astronomers and students, covering most of the fields in Astronomy. We have also a very good place for astronomical observations in El Leoncito, Prov. of San Juan, where, among others, we have a 2.15m optical telescope operating since 1986. There is even a project for a scientific satellite. On the basis of this picture we may conclude that we are in a rather good situation.

Being, however, in the southern end of South America and not being able to travel easily, means for us essentially to be isolated from the rest of the world. Scientific publications and different forms of communications make this isolation not absolute but they are not enough for the interaction needed for the scientific research. This isolation, together with a poor economical situation along many years, with low salaries and insufficient funds for equipment and maintenance, produced a slow but constant decrease in the intensity and, necessarily, in the level of the activity in astronomy. We are aware of this but it becomes painfully clear when we compare our activity with the activities in other countries.

In which way do we expect that this General Assembly will help us to correct this situation? The first result will be, certainly, that we shall be able to know each other, which will make, we hope, easier the communications and smaller the isolation. Our main problem, however has been the low financial support for our activity. The situation has improved recently but we need an increased and stable support and this will be only possible when the economical situation of the country improves. We hope that this will happen soon but then we still have to convince the government, and even ourselves, that our activity has to be fully supported.

The fact that the General Assembly is taking place in this country might help us to show to our people that there are many astronomers like we in the world, trying to discover the mysteries of the Universe. That there are large national efforts supporting this activity in many countries, in some of which the economical situation is even worse than in ours. That this science is for the mankind, the most important, not only for the knowledge of the Universe but also as a way to know itself. That this science contains all the other sciences.

Furthermore, in this General Assembly you are going to tell us about your magnificent observational and computational facilities, and the astronomical results obtained with them. We shall be very

much impressed, I am sure, but I hope that we can overcome the depressing feeling that can invade us when comparing them with our facilities. Instead of that I hope that they will awake our enthusiasm, specially of the young people whose impulse has not been yet weakened by years of frustration and depression. I expect that they will see this display as a challenge to their own capacities to work with the modern technology and that they will try, and will get the help, to use those facilities.

I expect they will not want to be just witnesses of your progress, that they will want to participate, like the many Argentine astronomers around the world, some of them present here, who have chosen to live abroad to work and to live better, proving at the same time that our schools were good enough to enter in the world of science at international level. We expect, especially from them, that they will not forget their colleagues in this country working under inferior conditions.

In conclusion, I consider that this, more than a meeting to honour the 120 years of past Argentine astronomy, is a meeting for the young people, for those who are supposed to build the astronomy in this country for the next 50 years. With this in mind, I wish you and ourselves much success during this General Assembly and a happy stay."

Address by Lic. Osvaldo E. Devries, Secretario de Education y Cultura, Municipalidad de la Ciudad de Buenos Aires (Municipality)

"Ladies and Gentlemen, Members of the XXist General Assembly of the International Astronomical Union:

In representation of the Mayor of Buenos Aires, Mr. Carlos Grosso, it is a pleasure to welcome you to this city.

It is a honour for us to receive these important representatives of the scientific field of Astronomy and Astrophysics of such different countries.

As a man of sciences and as Secretary of Education and Culture of the Town Hall of Buenos Aires (Municipality) I want to say we hope this city-site can be a good seat for the development and interchanges of knowledge in this congress and I am sure this meeting shall be a centre of up-to-date and advances in the sciences.

This gratitude is wider as we know that all serious and conscious development of the nature knowledges is always offering chances for the men in the difficult art of government. These knowledges -we know- are the channels and instruments of applying all the scientific performances in order to get a final destiny to benefit the peace, the growth and happiness of all the towns of the world.

To all of you I just have to say: I wish you the best success for this Congress and in the name of the citizens of Buenos Aires: Welcome! this city is yours."

Address by Dr. Raul F. Matera, Secretario de Ciencia y Tecnologia de la Presidencia de la Nacion

"As the Secretary of Science and Technology, I have the pleasure and honour to welcome to Argentina the International Astronomical Union members, their spouses, invited participants, representatives of other international organizations, young astronomers, all of whom have come to participate to this important event which will gather a significant part of the international astronomical community.

I also have the pleasure and honour to express the gratitude of our scientific community for having chosen the city of Buenos Aires as the site of the General Assembly, the first realized by the International Astronomical Union, along its seventy one year life, in an Ibero-American country. We feel obliged, very gratified and at the same time, very compromised for this significant attitude.

I know very well goals and reasons that give support to the existence of the International Astronomical Union, therefore I would like to remark, although it may not be necessary, that astronomical research and international co-operation in Astronomy have a long tradition among us. This tradition starts with the creation of the National Astronomical Observatory, today Astronomical Observatory of the Cordoba National University, inaugurated on the 24 th of October, 1871, and whose Director was the well-known and eminent astronomer from the USA, Dr. Benjamin Gould. And as a symbol of the spirit with which Argentine Astronomy is born, let me emphasize this: the official inauguration of our first observatory took place about a year after observational work was initiated.

After one hundred and twenty years, the development of Argentine astronomy has resulted in half a dozen of institutes, two Astronomy University Schools, the first one of them established in 1935, and an Astronomical Association which was born in 1958.

The Argentine government realizes the importance of science and technology, particularly in the present world, and of the unconditioned support that should be given to basic science, since if it is not carried on thoroughly, applied science cannot be developed, neither could be technology. The fact that the Secretariat under my charge depends directly on the Nation Presidency is a proof of that. This support which I mention is granted by means of the National Council of Scientific and Technical Research (CONICET), which depends on the Secretariat of Science and Technology, by means of subsidies, aids to pluri-annual research programmes, scholarships, the Research Career and other mechanisms, subject to the evaluations made by different Scientific Commissions.

In the particular case of Astronomy, let me mention the Astronomical Complex "El Leoncito", which was inaugurated in 1986, which is entirely financed by CONICET and the Secretariat under my charge together with CONICET and the National Universities

of La Plata, which started the project, Cordoba and San Juan. All of these take part, by means of their representatives, in the Directive and Scientific Committee of this Astronomical Complex.

The economical difficulties that the Argentine Republic has been suffering and still undergoes have affected all national activities. In spite of this, I think that funds destined to science are important, the goal of my Secretariat being to obtain from the national budget a 1% of the National Gross Product for the Science and Technology Sector, that is to say, two and a half times more than what has been the norm up to now.

Together with this purpose of supporting scientific development I would like to mention the economical support that the Science and Technology Secretary and CONICET have compromised, with the intervention of the Economy Ministry, to materialize the construction of the first Argentine satellite of scientific applications, denominated SAC-B, which will bring on board one Argentine experiment and three American experiments and which will be launched by NASA in 1994. I would like to emphasize that all experiments in its payload refer to important Astronomy projects.

Finally, I want to thank you again for your decision of making Buenos Aires, for ten days, the worldwide center of astronomical activity, and wish you a pleasant and fruitful stay."

Address by Professor Kozai

"President Menem, Ladies, Gentlemen and Distinguished Guests.

It is very fortunate for the IAU to come to Argentina to hold the XXIst General Assembly upon the invitation of the Association Argentina de Astronomia, Argentine Astronomical Society, with the support of the Government. We are particularly honored that the Opening Ceremony can be held with the presence of President Menem and Dr. Matera, Secretary for Science and Technology, as well as the Secretary for Education and Culture of the City of Buenos Aires, who kindly and warmly welcome us. The arrangements of the General Assembly were made by the National and Local Organising Committees with the advices by the IAU Executive Committee, particularly his General Secretary who had visited here several times for the past three years. We have appreciated very much their efforts towards the success of the General Assembly under difficult financial conditions.

Indeed it is the first time that the IAU has held the General Assembly in Latin America and the second time in the southern hemisphere.

We, astronomers, must observe stars and galaxies both in north and south to understand the universe and, therefore, we must have observatories in both hemispheres. Argentina is the oldest member of the IAU in the southern hemisphere, as Argentina adhered to the IAU already in 1927. And all of us know my predecessor Prof. Jorge Sahade who has played an important role in developing astronomical research in this country.

History of astronomical research in Argentina can be traced further back. Systematic astronomical research started in 1871 with the foundation of the Astronomical Observatory of Cordoba. In fact in 1870, Argentinian President Sarmiento, after whom a nearby street is named, invited a US astronomer, Benjamin A. Gould, who founded the Astronomical Journal and intended to extend his researches to the southern hemisphere, to come to Argentina. It is indeed exciting to know that astronomical researches were initiated according to the desire of the President of Argentina. In fact we always ask Governments to support astronomical researches, and in many cases, without great success. Then, with the support of the President and the Province of Cordoba, he supervised the construction of the Observatory of Cordoba. His work, Uranometria Argentina, deserved the immediate appreciation of astronomers throughout the world. John M. Thome, the second Director, completed Gould's work and examined the positions and brightnesses of 600,000 stars.

Astrophysical researches were introduced by the foundation of Bosque Alegre Station, at an altitude of 1,250 meters with a 60 inch telescope. Several instruments were designed and constructed by Argentinian astronomers including a worldwide famous stellar spectrograph. The Astronomical Observatory of La Plata was founded in 1882. Six to seven observatories and institutes were created in this century. They were connected to the university system and for Cordoba and La Plata they turned into faculties or colleges of the universities.

There are over 50 members of the IAU working in several fields of astronomy. Among the instruments available, there are optical telescopes of 2.15 and 1.5 meter diameter as well as others of smaller size and a radio telescope of 30 meter diameter at the Argentine Radioastronomy Institute established in 1962. The Institute of Astronomy and Space Physics was established in 1969 in the campus of the University of Buenos Aires. During our stay in Argentina I hope that many colleagues will have the chance to visit some of these observatories and institutes.

Everybody knows that the IAU General Assembly is held every three years. In the old days it was the only opportunity for many astronomers in all the fields to meet each other. In fact, besides the General Assembly, there were then very few international astronomical meetings. As the IAU membership has substantially increased and, therefore, the number of the participants, it was found that there was not enough time to discuss science during the General Assembly because too many papers were presented and too many meetings were held. Then a new idea to hold symposia on specified topics came out. The IAU organised many symposia and colloquia, which the Executive Committee selects among many proposals. Now many astronomers found that even at symposia and colloquia there is not sufficient time for stimulating discussions and workshop-style meetings on more specialised topics with limited number of qualified participants have been organised without IAU sponsorship. And some of them have attracted many participants.

Therefore, it seems to me that the relative weight of the General Assembly has decreased. However, we still believe that the IAU General Assembly should be the unique chance for many astronomers in all fields and of many nationalities, from both developed and developing countries, to get together to discuss and exchange

directly information on a wide range of astronomical problems. The Executive Committee has tried to improve the format of the General Assembly to attract more members, although we could not change the system substantially. Still I hope that such problems will be discussed here, again, and in the future.

Of course, to discuss scientific problems is more important and we can expect that new results obtained by scientific satellites, particularly those launched since the previous General Assembly, and major ground-based facilities with high technology as well as those derived from theoretical works will be presented. And we expect that new agreements on international co-operations will be made through discussions among many astronomers. In fact one of the main objectives of the IAU is to develop astronomy through international co-operation. Indeed, international co-operation is very important, particularly, in astronomy. Also we expect to hear about the present situations of several exciting projects, particularly, for large telescopes of the 8-10 meter class and development of sophisticated astronomical techniques. Therefore, there are many reasons to expect that the XXist General Assembly will be very successful.

Now I would like to ask President Menem to declare the XXist General Assembly of the International Astronomical Union open."

Address by Dr. Carlos S. Menem, Presidente de la Republica Argentina
(Palabras del Presidente Menem en el acto de inauguración de la XXI Asamblea General de la Unión Astronómica Internacional)

"Señor Presidente de la Asamblea; señores miembros de la Unión Astronómica Internacional; Señor secretario de Ciencia y Tecnología; cuerpo diplomático; señoras, señores, hermanas y hermanos del mundo: cuando comenzó su disertación el Presidente de la Asamblea, le preguntaba a la señora traductora, Ana Brown, por que no hacía la traducción del inglés al español, y me comento que este Congreso se iba a realizar en inglés.

Siempre que vienen algunos visitantes a la República Argentina que no saben el español, me preguntan si yo se inglés; les contesto permanentemente, que en mi país hablo el español. Cuando salgo de Argentina y me preguntan si se el inglés, digo lo mismo: fuera de mi país sigo hablando el español.

La verdad es que no se hablar en inglés y lamento no poder comunicarme con ustedes en el idioma que se va convirtiendo en universal.

Les quiero expresar, como Presidente de todos los Argentinos la enorme satisfacción de que este Congreso se llieve a cabo en nuestra Patria, en nuestro territorio y en la Capital de la República, que algunos ya conocen y otros están conociendo.

Por supuesto que deseamos el mayor de los éxitos a esta Asamblea Internacional en el campo de esta fascinante ciencia como es la Astronomía.

Albert Einstein, uno de los grandes sabios que dió la humanidad al mundo, decía con una claridad mediana, total, absoluta, que Dios no jugaba a los dados.

La Astronomía es una ciencia que puede tener dos tipos de consideración: uno que deriva del aspecto teológico y otro del aspecto totalmente científico.

Los que creemos en Dios, decimos que nada nace de la casualidad, sino que todo es producto de la causalidad; que esta armonía, que este universo de los astros, que el girar permanente de los mismos, es producto de la presencia de Dios. Por otra parte, esta es una de las explicaciones que da Santo Tomas en cuanto a la existencia de Dios.

Además, está la explicación producto del conocimiento de los hombres, de la técnica y, fundamentalmente, de una ciencia como la Astronomía en su más pura esencia, que es lo que hacen permanentemente los hombres que se han dedicado a esta cuestión, a esta area tan importante de la vida de la humanidad. Es lo que ustedes -reitero- están haciendo en este momento y que nosotros avalamos en forma total y absoluta.

Esta ciencia pretende demostrar, a partir de esta armonía y de esta causalidad, el origen -diría- de los astros, de la humanidad y de la existencia misma en la Tierra desde el punto de vista científico.

Es por eso que Argentina como un país joven, nunca descuidó este aspecto que hace, evidentemente, a la vida de los pueblos y de las comunidades desde el punto de vista de lo que ocurre en el universo y como se proyecta éste hacia el planeta Tierra. También, está la búsqueda permanente desde la Tierra hacia las otras latitudes que hacen al universo, a esto que nos apasiona a nosotros como habitantes del planeta Tierra y a ustedes como científicos.

Cuando veo a científicos de todas partes del mundo reunidos en la República Argentina, cuando constato la presencia de científicos de Iberoamérica, tengo que remontarme inmediatamente a lo que en forma conexas hemos vivido hace pocas horas en Guadalajara, en la República de México, en un encuentro cumbre de todos los jefes de Estado y Presidentes de los países que integran este contexto iberoamericano.

Por supuesto que esta cuestión que hace a la Astronomía no estuvo ausente en las deliberaciones, al menos hubo una introducción por parte de algunos mandatarios respecto de este tema. Este Presidente lo ha hecho, fundamentalmente en lo que se refiere a este programa de satelización de las comunicaciones a nivel planetario, producto, por supuesto, de lo que aportan los científicos en el campo de la astronomía, sin ninguna duda.

Yo diría, como lo puede hacer el común de la gente que ha leído todo lo que hace a la armonía del Universo, que la Astronomía no tan sólo es la ciencia mas antigua del mundo, sino que también es la ciencia mas joven, porque se renueva en forma constante y permanente, como dije anteriormente. Esto nos ayuda a los hombres que nos hemos dedicado a esta verdadera pasión como es la política, a proyectar algunas respuestas y conclusiones de la Astronomía al campo de las relaciones entre las comunidades nacionales e internacionales.

Todo esto es lo que hace al derecho internacional, cosa que ha sido motivo también de un tratamiento especial en esta cumbre iberoamericana que ha finalizado hace pocas horas en Guadalajara, México.

El señor secretario de Ciencia y Tecnología, así como el Presidente, se han encargado de hacer referencia a los aspectos técnicos y a como evolucionó la Astronomía en la República Argentina, conceptos que, por supuesto, ratifico en estos momentos. Además, ratifico que estamos empeñados para que en el menor plazo posible estemos poniendo en orbita un satelite, el SAT 1, desde la República Argentina, para poder avanzar en este ámbito tan especial y tan deslumbrante -como dije antes- que es la Astronomía.

Queremos seguir iluminando desde la República Argentina algunas aspectos que hacen a esta ciencia; marcar rumbos en Iberoamérica y creo que con el empeño que ponen hombres como el doctor Matera y sus colaboradores, lo estamos consiguiendo, al mismo tiempo que vamos a conseguir otros logros en forma rápida y decisiva en los años que se avecinan en nuestro país.

Los Argentinos aspiramos -si se me permite la expresión- a seguir brillando con luz propia en este terreno y a recibir y a receptor la cooperación de quienes mas han avanzado teniendo en cuenta la antigüedad de sus países. Reitero que el tratamiento de este tema es fundamental y trascendental para el futuro de las relaciones entre los hombres y de las relaciones interesaciales que evidentemente se van a dar en un futuro no muy lejano, a partir de lo que ya esta ocurriendo cuando el hombre ha llegado a la Luna y cuando se propone llegar a otros planetas de esta gran obra de Dios que es el Universo.

Finalmente, les quiero agradecer desde lo mas profundo de mi corazón el haberme invitado a participar de este acto y darme la posibilidad de dejar inaugurado este Congreso de Astronomía.

Se que en la Capital Federal, en Argentina, hay mil doscientos astrónomos, que vale tanto como decir que hay mil doscientos astros de la ciencia paseando por las tierras de la República Argentina. Hagan de cuenta que están en sus propias casas, hagan de cuenta que están en su propio firmamento, en su propio cielo y ven en cada uno de los Argentinos a un hermano de causa y de lucha por la justicia y la paz en la humanidad.

Muchísimas gracias, que Dios los bendiga y los abrazo sobre mi corazón."

Buenos Aires, 23 de julio de 1991.