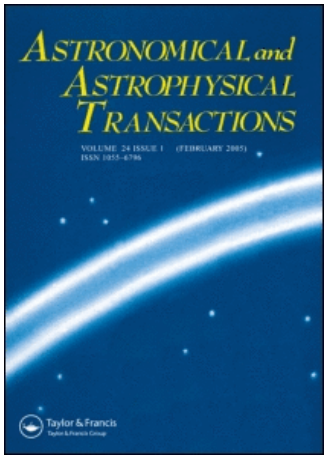


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# The astronomer alexander I. Postoiev (1900-1976)

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# THE ASTRONOMER ALEXANDER I. POSTOIEV (1900–1976)

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This is a biographical note on the life of Dr Alexander I. Postoiev, a victim of Stalin's purge of Soviet astronomers in 1936–1937 (McCutcheon, 1985). Along with his family, he left the Soviet Union in 1943, and lived in Germany as a refugee and "displaced person" until 1952, when he moved to Brazil. Then he started the second part of his professional career. Thanks to his efforts the Astronomical and Geophysical Institute (IAG) from the University of São Paulo (USP) was involved, for the first time, in programme of international cooperation, thus contributing to the institutional consolidation of IAG/USP as a leading centre of astronomical research and teaching today in Brazil.

KEY WORDS The history of astronomy, astronomers, personality, A. I. Postoiev

## 1 INTRODUCTION

This article was written by two people who had the privilege of being directly acquainted with Dr Alexander I. Postoiev at the Astronomical and Geophysical Institute of the University of São Paulo (IAG/USP). It was first suggested in 1991 by Professor Peter Shcheglov, from the Sternberg Astronomical Institute, Moscow, for publication in Russia. It is being published now, seven years later, thanks to the effort and interest of Dr Mikhail M. Molodensky from IZMIRAN. The publication of this article in Russian suggested by Prof. P. Shcheglov and delayed for several reasons is also being realized now. (Footnotes here and elsewhere by the reviewer and translator of this work, Dr Alina I. Eremeeva.)

The article is divided in to three parts. The first part covers the life of Dr Postoiev until his arrival in Brazil. For this period, the sources of information available are poor, consisting of some official documents found in the files of IAG/USP and a few verbal recollections by the authors. It is based to a large extent on the thesis and article by McCutcheon (1985, 1989). The second part gives an account of his activities at IAG/USP, based on the personal testimony of the authors. This part consists of information hitherto unpublished, and consequently constitutes an

unedited contribution. The third part gives the authors' impressions and opinions of Dr Postoiev's outlook, attitudes and personality.

## 2 FIRST PART (1900–1952)

Alexander I. Postoiev, son of Ivan and Catharina Postoiev, was born in St. Petersburg on February 20, 1900 and his father was a medical officer in the Imperial Russian Army.

Finishing pre-university studies in his birthplace, he entered the University of Kharkov in 1917. But the Civil War soon interrupted his academic career until 1920, when he moved to the Faculty of Physico-Mathematical Sciences at the Public University of Petrograd. Expelled briefly in 1924 for having the appearance of a "white guardist", he finished his undergraduate studies there in 1925, obtaining a specialization title in astronomy.

Dr Postoiev was always reserved about his past life when talking to Brazilian colleagues, but he was fond of recounting a crucial episode of his life which occurred when he was a 10-year-old boy. Awakened one night by his father to see a large comet, he was so impressed by the sight of if that he decided to study astronomy. He said that the comet was visible even in daylight so it was, perhaps, the unannounced Great Comet (1910) which appeared early in 1910, and was a much more impressive sight than Halley's Comet.

After he obtained his bachelor's diploma, for the next three years he attended graduate courses at the Astronomical Institute (Institute Theoretical Astronomy since 1943) of Leningrad. This Institute was also an astronomical training centre for students from the Public University of Leningrad, and from other similar Soviet institutions. Future astronomers like N. F. Boeva (celestial mechanician), P. P. Dobronravin and V. A. Ambartsumian (astrophysicists) were also students at the Institute of Theoretical Astronomy.

At the end of 1928 Dr Postoiev was admitted to the staff of Tashkent Observatory, obtaining in 1930 the position of Assistant to the Director. The Director then was I. A. Teplov. In 1935 he himself was appointed Director, taking the post of A. L. Bulinskii who for a while replaced the former Director, Teplov. As a representative of the younger generation with a complete academic background in astronomy, and as a specialist in astrometry and geodesy, Dr Postoiev made efforts to organize a modern Time Service at the Observatory. He succeeded so well that the Time Service there soon became one of the fifteen services cooperating with the Bureau International de l'Heure from the Observatoire de Paris. At the same time Dr Postoiev also taught at the University of Tashkent.

The Revolution had abolished honorary titles, but in 1935 they were reinstated, and Dr Postoiev received the title of Doctor. In the same year he was elected member of the International Astronomical Union (IAU).

Suddenly on March 1 1936, Dr Postoiev's long troubles began. He was dismissed from the directorship of Tashkent Observatory and replaced by a certain I. P. Start-

sev who was not even an astronomer. This measure was aimed by no means simply at a reorganization of the Observatory's administration. In fact Dr Postoiev was arrested by the secret police NKVD (People's Commissariat of Internal Affairs) and sent to a labour camp, as he himself recalled later (quoted by McCutcheon, 1985): "Early in 1936 my career came abruptly to an end: I was arrested, accused of membership of a counter-revolutionary group (imaginary) and of "counter-revolutionary intentions" and without any legal proceedings sent to a concentration camp."

Two-thirds of the staff of Tashkent Observatory disappeared without leaving any trace before the start of 1937. Vladimir P. Shcheglov was the only lucky one who returned and became Director in 1941.

Dr Postoiev spent three and a half years in a concentration camp in the polar regions to the north of the Ural Mountains, working as a topographer and meteorologist. According to McCutcheon (1985), the reason for his dismissal was related to an event known in Soviet Union astronomy as "the Voronov Affair". This affair started when a young amateur astronomer Nikolai Mihkailovich Voronov came to Tashkent Observatory in 1931, to work in the area of celestial mechanics. Very soon he claimed that he could develop some simplified methods for calculating the orbits of minor planets, reducing the time to months instead of years. In 1935 Voronov published two papers about minor planet orbits in the prestigious German journal Astronomisches Nachrichten, which gave him recognition among astronomers of his own country and he was invited to join the staff of the Pulkovo Observatory. However in 1936, Voronov was proved to have faked his results about the minor planet (13) "Egeria" (these results were published by him in Pulkovo Circular No. 16) and he was forced to announce that they were erroneous and should be disregarded. This announcement aroused the earlier Dr Idelson's (then head of Voronov's department) suspicions about the validity of two other papers published in the next issue of Astronomisches Nachrichten. As a result Voronov was dismissed from Pulkovo Observatory. Since Voronov published the two papers mentioned above when his immediate superior as Director of the Tashkent Observatory was A. Postoiev, it is possible that this was the reason for Postoiev's dismissal and later arrest without any justification. [It seems incredible: N. M. Voronov was invited to the Pulkovo Observatory at the end of 1934 and he was dismissed from Pulkovo on a March 1936, i.e. after Dr Postoiev's arrest. (See: Istorico-Astronomical Issledovaniya [Historic-Astronomical Researches], Vol. XXI, p. 292)]. The real reasons for his dismissal and arrest are still unknown. To the authors of this article, in occasional moments of confidence Dr Postoiev said that he could have been the victim of rivalry from somebody on his own staff.

At the end of 1939 (or in 1940) he was freed from the labour camp, but not allowed to return to Tashkent or to settle in any other major Soviet city. The best that he could manage was a part-time position as an instructor in astronomy and geophysics at the Poltava Pedagogical Institute in Ukraine.

At the IAU Meeting in Copenhagen in 1946, the Soviet delegates deleted Postoiev's name from the list of IAU members with the remark: "He went with the Germans." Indeed the German army occupied Poltava in 1941. Dr Postoiev spent two hungry years of German occupation as a school teacher, and in 1943 he decided

to escape from the Soviet Union, by volunteering to go to Germany as a common labourer along with his wife and his 17-year-old son, Vladimir (Vadin).

When the war came to the end, Dr Postoiev and his family were "displaced persons" in the American zone of Germany. The British and American governments had agreed to Soviet demands that all displaced Soviet citizens be repatriated, by force if necessary, and this led to many cases of individual and mass suicide by people who preferred to die rather than return to the Soviet Union. They knew that if they did return, it would be only for execution or a long prison term. In fear of imminent repatriation and a possible death sentence if he returned, Dr Postoiev wrote to Dr Harlow Shapley from the US Naval Observatory (USNO), and begged for help (quoted by McCutcheon, 1985): "The DPs – "displaced persons" – are not liked by anybody, hated by Germans, treated by some papers as "facists or common criminals", only because they don't want to return to their countries and they are a burden to the USA Army and UNNRA. Worst of all is the now growing danger of compulsory "repatriation", which would mean for us death or a new term of forced labour in some remote concentration camp! I shall never abandon the hope for a better future and return to my science, but now I am ready to take any job, be it the humblest in any part of the world in a free country."

Here follows another excerpt of a letter to Dr Shapley in 1945: "some German scientists, I believe, are now being invited to USA to develop their inventions for further destruction of humanity. Has pure science any chances?"

Between 1945 and 1950 Dr Postoiev worked in several administrative jobs for the International Organization for Refugees. The director of the camp where Dr Postoiev was detained wrote to the Tolstoy Foundation in New York, urging that a position should be found for him in the United States (quoted by McCutcheon, 1985): "We believe Dr Postoiev to be the most outstanding personality we have met in our experience with some then [*sic*] thousand Displaced Persons. His manner is mild, and his conduct is extremely gentile [*sic*]. He has the ability of affability, and is blessed with common sense and sound judgement..."

The threat of forced repatriation ceased in 1947. However, the joint efforts of Drs Harlow Shapley, Otto Struve, Nicholas Bobrovnikoff and A. N. Vyssotsky, and the Tolstoy Foundation, to bring Dr Postoiev to the US never succeeded. The professional profile of Dr Postoiev was better suited for a position at USNO, but this institution was not open to non-American citizens. Dr Shapley arranged a position as a cartographer at the Iranian Institute headed by his brother, John Shapley, but this plan failed as did another one in New Mexico. Finally, in 1948, Dr Harlow Shapley created for Dr Postoiev a computing position at the Harvard College Observatory. It seemed that all Dr Postoiev's troubles were over.

When he and his family applied in 1949 for American visas, the passports were returned without any explanation. He appealed this decision, but the rejection was upheld. He was told that "the information upon which this decision was predicated is classified and, under the law, may not be divulged to you." Very likely the application was denied because of the wave of McCarthyism and anti-communist paranoia sweeping across the United States. Dr Harlow Shapley had earned enemies in Washington for his opposition to this trend. Possibly a US Displaced Persons

Commission viewed Dr Postoiev as a potential Soviet agent. Ironically in 1936 he had been convicted without trial by the Soviet Union as a right-wing counter-revolutionary. And now in 1949 he was labelled a communist. The correspondence between Dr Postoiev and Dr Shapley ended in 1951.

In his thesis McCutcheon (1985) stated that Dr Postoiev "never succeeded in returning to astronomy. Perhaps, as Nicholas Bobrovnikoff recollects, Postoiev ended up in South America as a surveyor, or maybe he and his family moved to some other distant corner of the globe. Perhaps he died in Germany, a broken man with no possibilities left."

But in 1952, along with his family, Dr Postoiev moved to Brazil. The more indulgent health inspection of the Brazilian immigration service was an additional factor in this decision. Dr. Postoiev's wife was lame, and it was feared that her admittance into a new country could be jeopardized. Fortunately for Dr Postoiev this did not happen in Brazil.

A list follows (Matsuura, 1977) of the scientific papers published by D. Postoiev in the Soviet Union:

"Eléments et Ephéméride de la Planète Emma (283)", Byulleten Astronomicheskogo Instituta (Leningrad), **8**, 58, 1925.

"Application of the Method of Variation of Heliocentric Coordinates to the Determination of the Elements of the Planet Emma (283)", Astronomicheskii Zhurnal, **8**, 1926.

"Tables for the Approximative Determination of Latitude, Time and Azimuth with a Plumb-Line", Astronomical Institute (Leningrad), 1928.

"Note on the Next Opposition of 433 Eros", *Astronomische Nachrichten*, **238**, 5708, 327, 1930.

"The Time Service of the Tashkent Astronomical Observatory", *Trudy Tashkentskoi Observatorii*, **4**, 1, 3, 1931.

"The Free Pendulum Short Clock", *Trudy Tashkentskoi Astronomicheskoi Observatorii*, **4**, 1, 14, 1931.

"The New Subterranean Clock Room of the Tashkent Observatory", *Trudy Tashkentskoi Astronomicheskoi Observatorii*, **4**, 2, 50, 1933.

"A Scheme for Semi-Automatic Reception of Rythmic Time Signals", Geodezist (Moscow), **3**, 1935.

"60 Years of the Tashkent Astronomical Observatory (1874–1934)", *Trudy Tashkentskoi Astronomicheskoi Observatorii*, **5**, 5, 1935.

"Work of the Tashkent Astronomical Observatory in Meridian Astronomy", *Trudy Tashkentskoi Astronomicheskoi Observatorii*, **15**, 35, 1935.

"A Revision of Latitude Observations in Tashkent in 1895–1896 Basing on Boss and FK3 Catalogues without the Chain Method", unpublished, 1941.

## 3 SECOND PART (1952–1976)

Coming to Rio de Janeiro, Dr Postoiev attempted to get a job at the National Observatory. The Director there was Dr Lélio Gama who, constrained by institu-

tional limitations, could not offer a suitable salary. He then advised Dr Postoiev to make another attempt at IAG/USP in São Paulo, where the Director was Dr Alypio Leme de Oliveira. On February 1952 Dr Postoiev was hired as an astronomer at IAG/USP, so beginning the second part of his career.

As an institution, IAG/USP can be traced back to 1886 (Marques dos Santos, 1988), but the designation IAG/USP only became official in 1930. Soon after the foundation of the University of São Paulo in 1934, IAG/USP was incorporated into it with loose links, since it was simply annexed to the University. In 1946 IAG/USP acquired the status of a research institute. Finally in 1972 its three department (Astronomy, Geophysics and Meteorology) were organized, and IAG/USP was transformed into a teaching and research faculty.

Therefore, at the time of the arrival of Dr Postoiev, IAG/USP was still the correct institutional name. People, however, used to refer to it as the Observatory of São Paulo, although this name should be reserved only to the site of the astronomical and meteorological facilities and the headquarters of IAG/USP. It is located 20 km to the south, in front of the Zoo, near to the Botanic Garden (Figure 1), comprising a green area known as the Park of the State of São Paulo. (One clarification is in order: São Paulo town is the capital of a Brazilian Federative State which bears the same name: São Paulo State.) The construction of the Observatory of São Paulo in 1932–1941 was required by the rapid growth of the city, which came about because of the profitable coffee trade. The boundaries of the town reached the now fashionable Paulista Avenue where the former Observatory's building, now demolished, used to stand. In the 1950s the Observatory's new surroundings on the outskirts of the city were still bucolic. The *art déco* buildings amidst ample and geometric gardens were designed by the Director, Dr Oliveira.

Today the whole green area of the Park of State is engulfed by urban sprawl, since São Paulo city has joined up with neighbouring towns, giving rise to Greater São Paulo with about 19 million inhabitants.

Only in 1990 was a new building of IAG/USP inaugurated in the main campus of the University, located to the west of the town. There the Departments of Geophysics and Atmospheric Sciences (formerly Meteorology) offer undergraduate courses for the respective bachelor's degrees, as well as graduate courses.

The Department of Astronomy, however, does not offer a bachelor's degree in astronomy. A student beginning the graduate courses for an M.Sc. or Ph.D. in the Department of Astronomy usually has a bachelor's degree in physics, and has attended courses on basic astronomy at the undergraduate level. The Department of Astronomy is charged with teaching basic astronomy in the undergraduate courses of other faculties, for example, the Physics Institute. Having only a minor role at undergraduate level, and now facing a shortage of financial resources, the Department of Astronomy along with the administration of IAG/USP, the main shops and labs, remains in the old Observatory of São Paulo, in the Park of the State, 25 km from the main campus, but the construction of a new specially designed building for the Department of Astronomy has started on the main campus.

On his arrival in Brazil, Dr Postoiev was proficient in Russian, English, German and French. At IAG/USP he could only maintain superficial conversations in

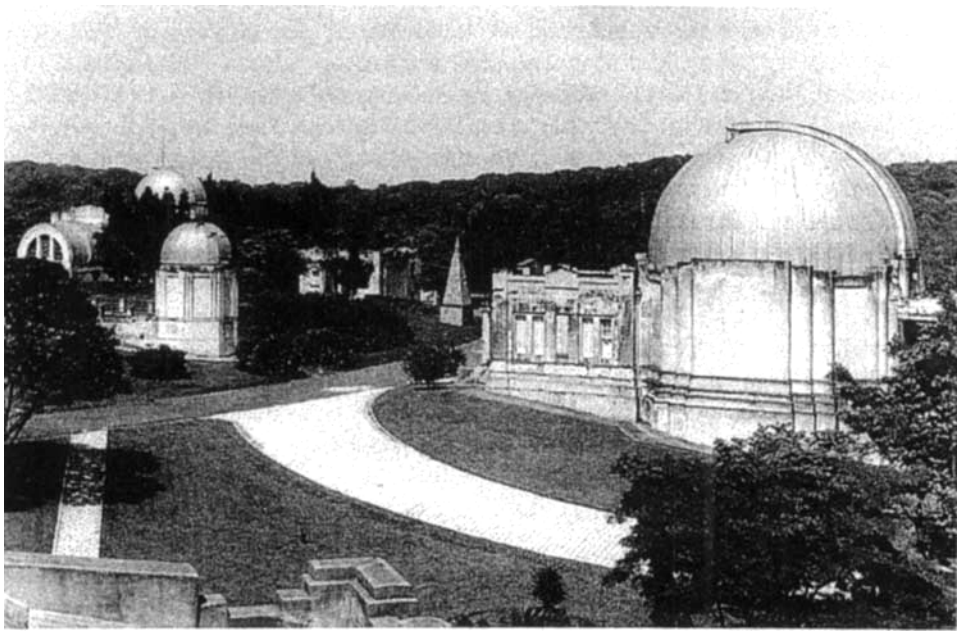

**Figure 1** A partial view of the Observatory of São Paulo (now Observatory Alexander Postoiev) around 1960. Dr Postoiev's office was at the leftmost building topped with a telescope dome.

English with some young meteorologists, who had formerly served in the Brazilian Air Force; or in German or childish Russian (as Dr Postoiev used to say) with the photographer Maximilian Koenig, who was an Austrian citizen born in Russia, but who left Russia when he was still a boy; or in French with the Director, Dr Oliveira. The author of this note, PMS, was one of these young meteorologists.

To expand his possibilities of communication, Dr Postoiev started to learn Portuguese, and learned to speak and to write correctly in only a few months. Replying to the Brazilians' admiration, he used to comment that after mastering four languages, learning a fifth one did not raise any problem.

Soon after his arrival he decided to stay in Brazil forever. Living in a modest rented house he used to say that there he enjoyed the happiest period of his entire life.

In 1953 the Director, Dr Oliveira, relying on the collaboration of Dr Postoiev, decided to restart the traditional publication of the Astronomical Year Book from the Observatory of São Paulo. The first edition dated back to 1930, but in 1938 publication had been discontinued. In 1955 the new Director, Dr Abrahão de Moraes, charged Dr Postoiev with editing the Astronomical Year Book and until his death he maintained the issues punctually year after year. In 1991, the head of the astrometric section decided to cease publication.

It is important to remark that the only well-established activity in those days at IAG/USP was the routine collection of data at the Meteorological Station. This

activity started with the installation of the Meteorological Station in 1932 (Marques dos Santos, 1964), and has continued until today without interruption. For astronomical observations the following instruments were available at IAG/USP: a Zeiss/Jena 18 cm refractor (still operational under its own dome for public lectures), a Grubb 20 cm refractor (lent now to another institute of the university in another town), a Heyde 6.8 cm transit instrument, and a three-mirror coelostat (which never worked properly). For geophysical studies there was a seismograph (horizontal and vertical) that was never fully assembled. Occasionally the Director, Dr Oliveira, climbed up to the Zeiss/Jena refractor to take photographs; he was the only user for many years, but he did not leave any palpable results.

According to their academic training, Dr Oliveira and his predecessor, Dr José Nunes Belfort de Mattos, were engineers. In Brazil it is usual to attribute a Doctor's title to engineers, lawyers and medical doctors. The former directors from IAG/USP lacked formal astronomical education and any acquaintance with other advanced astronomical centres around the world.

To give a complete account of the scientific ambience found here by Dr Postoiev, it must be added that IAG/USP maintained a short-lived Time Service which consisted of the radio transmission of the legal time for the population. Also in 1949 the periodic publication of the *Ionospheric Bulletin* started, providing radiopropagation forecasts eagerly sought at that time by civil aviation companies, military departments and radioamateurs. After several sporadic interruptions, the publication of the Bulletin was ended in 1983 due to lack of demand.

In 1954 a circular letter from the organizers of the International Geophysical Year (IGY/1957–1958) reached IAG/USP, inviting Brazilian institutions to participate in the scientific activities of that memorable event. This opened to Dr Postoiev the first prospect of planning a complete astronomical project at IAG/USP. In 1956 he took a trip to Rio de Janeiro with the new Director, Dr Moraes, for a conference on the activities for the IGY in the western hemisphere. There the participation of the Brazilian scientific institutions in the IGY was discussed in detail. Dr Moraes ascended to the directorship of IAG/USP when Dr Oliveira was obliged to retire, having attain his 70th birthday. Dr Moraes was a physicist with personal preferences for mathematics and celestial mechanics. He managed to send young Brazilian students to France and to the USA, who mostly specialized in celestial mechanics.

In the IGY Conference held in Rio de Janeiro, thanks to the insistence of Dr Postoiev against the hesitant Dr Moraes, it was agreed that IAG/USP would be a participant of the Moon Position Programme which coordinated internationally by Dr William Markowitz from USNO. A technical description of this participation was written in Portuguese by Postoiev (1962). The Program was conceived as part of the general programme of the IGY on latitude and longitude. A similar international programme had been carried out earlier in 1926 and 1933, but now new technical resources had been introduced, for example: photographic zenithal telescopes, Danjon astrolabes, quartz clocks, etc. The purpose of the programme was to upgrade the geographical coordinates of the participating observatories, to monitor their variations, to improve the methods for determining the time, to investigate the irregularities in the Earth's rotation, to improve the stellar catalogues and to

investigate their sources of error. In the Moon Position Programme the Moon was simply one corner of the triangulation for determining the geographical coordinates. To run the programme, a specially designed photographic camera (Markowitz Camera) was necessary for dimming the Moon's brightness, and to allow the reference stars in the same plate to be photographed. The camera would also compensate for the rapid proper motion of the Moon during the exposure time. It is easy to see that such a programme cannot discover the necessary information on the size and shape of the Earth, its rotation, the comparison between ephemeris time and atomic time, etc., if it is carried out by a single observatory. A worldwide net is required and, in that sense, thanks to the personal commitment of Dr Postoiev to this Programme, the IAG/USP enjoyed the first historic opportunity of cooperating internationally in an astronomical project.

From the National Observatory in Rio de Janeiro, Dr Postoiev borrowed a short pendulum clock, an indispensable standard of time for running the programme. The achievement of Dr Postoiev in this enterprise can only be properly appreciated if the several difficulties facing him after attaching the Markowitz Camera at the 18 cm Zeiss/Jena refractor (Postoiev, 1962) are taken into account. The synchronous motors were for the wrong frequency and the right ones were unavailable locally. He also had to solve several electrical and mechanical problems. The routine observations began in July 1958 and finished only in 1968. The author of this note, PMS, collaborated with Dr Postoiev as an observer in this programme. A total of 3000 developed plates (1500 pairs) was sent to USNO. Quantitatively IAG/USP beat the world record except for the three observatories located in the USA (Washington, San Diego and Hawaii). Qualitatively the plates were excellent according to the following passage of a letter from Dr Markowitz to Dr Postoiev: "Upon examining these results, we find that one of the best series of observations is from São Paulo Observatory" (Figure 2).

Dr Postoiev always stressed the importance of the very basic rules and methods for computational tasks and data analysis. He coordinated the reproduction of a compact Russian logarithm table for easy handling (Postoiev, 1958), using different colours for printing.

While the Moon Position Programme was being implemented at IAG/USP, he built in 1959 a new housing for the coelostat, this time operating in a horizontal position. Following the original design conceived by Hale (1929), he built an exact replica of a spectroheliograph which worked well until it was disassembled in 1978. It was possible to monitor sunspots in white light, prominences and filaments in the $H_\alpha$ line and plages in the Ca II K line. For several years the solar data were collected by the observatory assistants and fellowship-holder students. This activity was motivated by the IGY, but was not officially part of it. The authors remember Dr Postoiev sometimes coming from the coelostat in a rush, and breathing with difficulty (he had asthma), inviting us to come and see a solar flare erupting. The spectroheliograph was disassembled in reply to a request from the Centre of Radioastronomy of Mackenzie University, then subordinated to the National Observatory, for a temporary loan. At the Radio Observatory in Atibaia, São Paulo State, about 50 km North of São Paulo city, the instrument should have been used

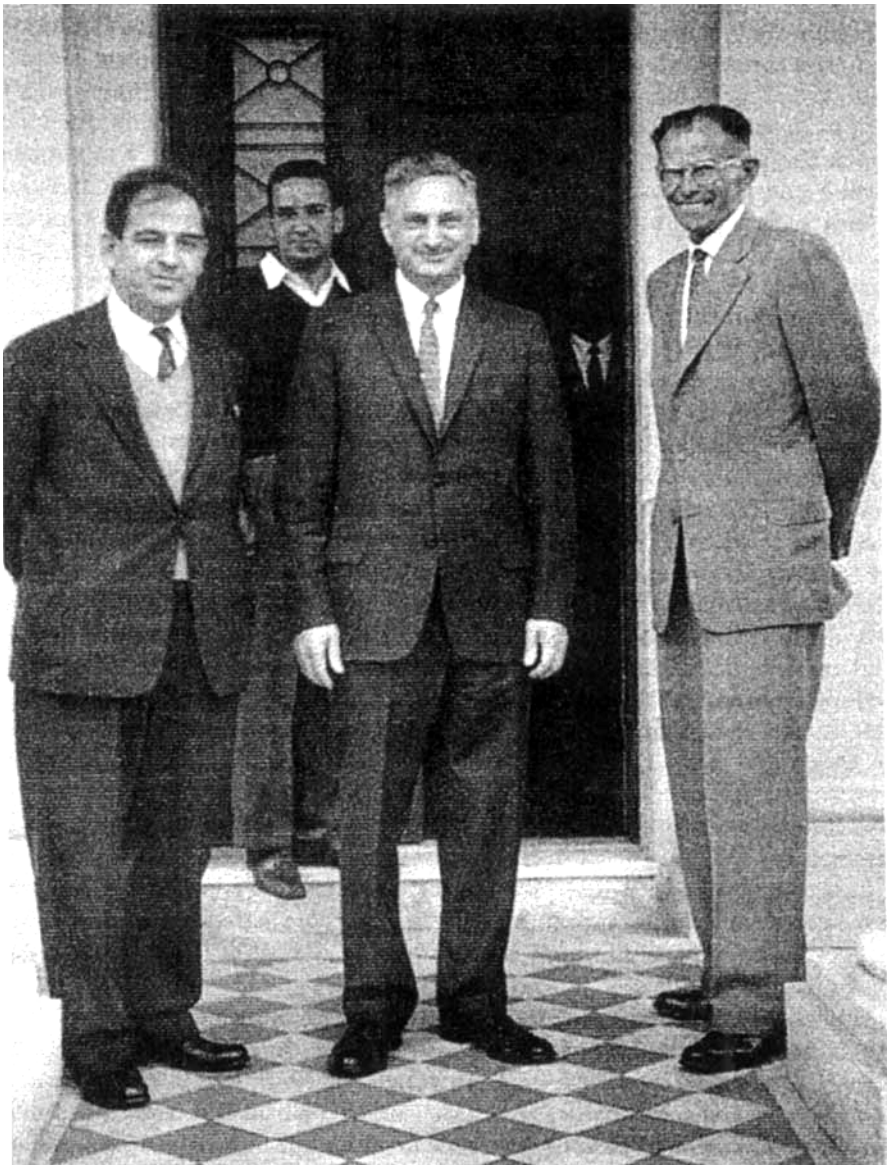

**Figure 2** Picture taken during the visit of Dr William Markowitz to IAG/USP on October 1962. In the front from right to left: Dr Alexander I. Postoiev, Dr W. Markowitz and Dr Abrahão de Moraes. Rear: one of the authors of this article (PMS).

for monitoring solar activity. But there the spectroheliograph was never set up. Finally on September 1981 it was brought back to IAG/USP, but regretably it could not be assembled again, since its housing had suffered modifications and had been used for geophysical research (Figure 3).

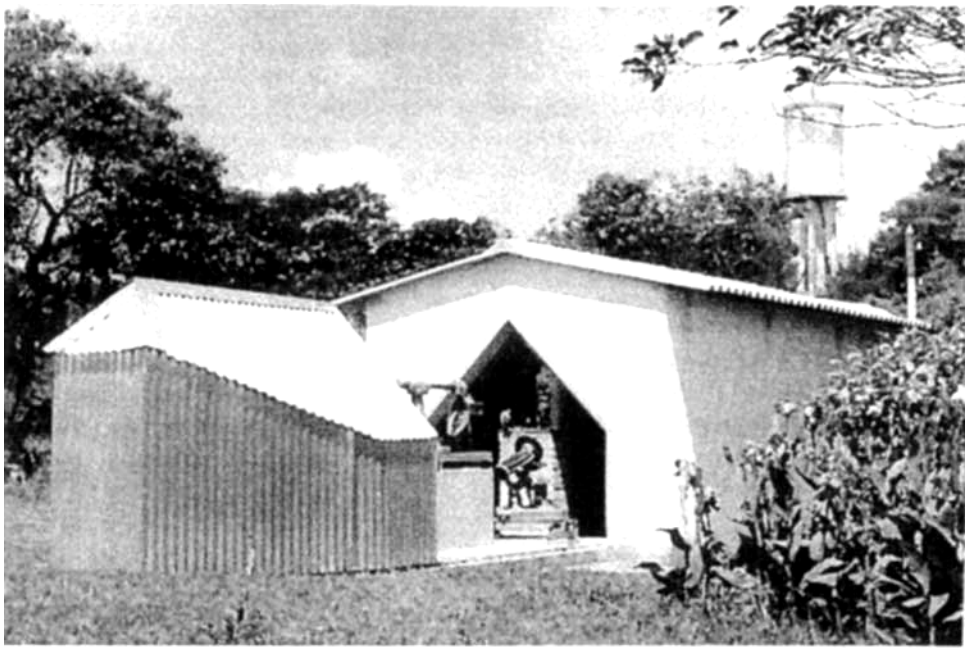

**Figure 3** The coelostat and the housing of the Hale spectroheliograph built by Dr Postoiev.

For completeness it must be added that during the IGY the IAG/USP took part in the reception of radio signals emitted by Soviet and American artificial satellites. Signals from Sputnik I were received at 20 MHz. Later the signals from Explorer I were received by means of a 108 MHz radio interferometer (Marques dos Santos, 1984; 1989). By the way, the Russians will certainly enjoy learning that the carrier rocket of Sputnik I was seen at IAG/USP, as a first magnitude star lasting for about one minute, by one of the authors (Marques dos Santos, 1990) on November 20, 1957, at 19h 09m (local time).

Also in 1959, Dr Postoiev coordinated the determination of the geographical coordinates of IAG/USP which, for the first time, appeared in the 1961 issue of the *Astronomical Year Book*. This work was performed with a Bamberg 10 cm transit instrument lent by the Geographical Service of the Brazilian Army.

On his 60th birthday in 1960 Dr Postoiev invited colleagues from IAG/USP for a party in his house, when he offered typical Russian treats.

During the 1961 IAU Meeting in Berkeley, Dr Postoiev was pointed out by the Brazilian delegates to the members of the Union, and he was readmitted as a Brazilian member. That year French astronomers visited IAG/USP, and showed interest in an astrometric time-latitude station in São Paulo for filling a gap in the international network of the Bureau International de l'Heure. Dr Postoiev was sensible too of the wishes expressed during the IAU General Assembly held in Moscow in 1958, and in Berkeley in 1961, that IAG/USP should implant an astrometrical station

for collecting data with the highest accuracy then attainable. With this in mind at some time vaguely around 1958–1960, the idea of purchasing a Danjon astrolabe (Figure 4) for IAG/USP was suggested. Preparing for the acquisition of this astrolabe, in 1962, Dr Postoiev spent one month visiting Dr André Danjon, at the Observatoire de Paris. The advantage of this instrument is to allow the simultaneous and precise determination of time and latitude. Back in Brazil, Dr Postoiev started to build a shed for the astrolabe, with corrugated aluminum sheets, in an open area at the Observatory's rear. But the Danjon astrolabe bought by IAG/USP was only shipped in 1964. In the meantime USNO lent another Danjon astrolabe which was available and it was installed in the shed. Along with a Belin electronic chronograph and a Hewlett-Packard quartz clock endowed with a Sulzer standard of frequency, it operated from 1962 until 1964, thus anticipating the rise of the Observatory of São Paulo to the rank of a modern and well-equipped astrometrical station. The fact that this station was located in the Southern hemisphere, then poorer in astronomical facilities, increased its importance. In 1964 the astrolabe lent by USNO was returned.

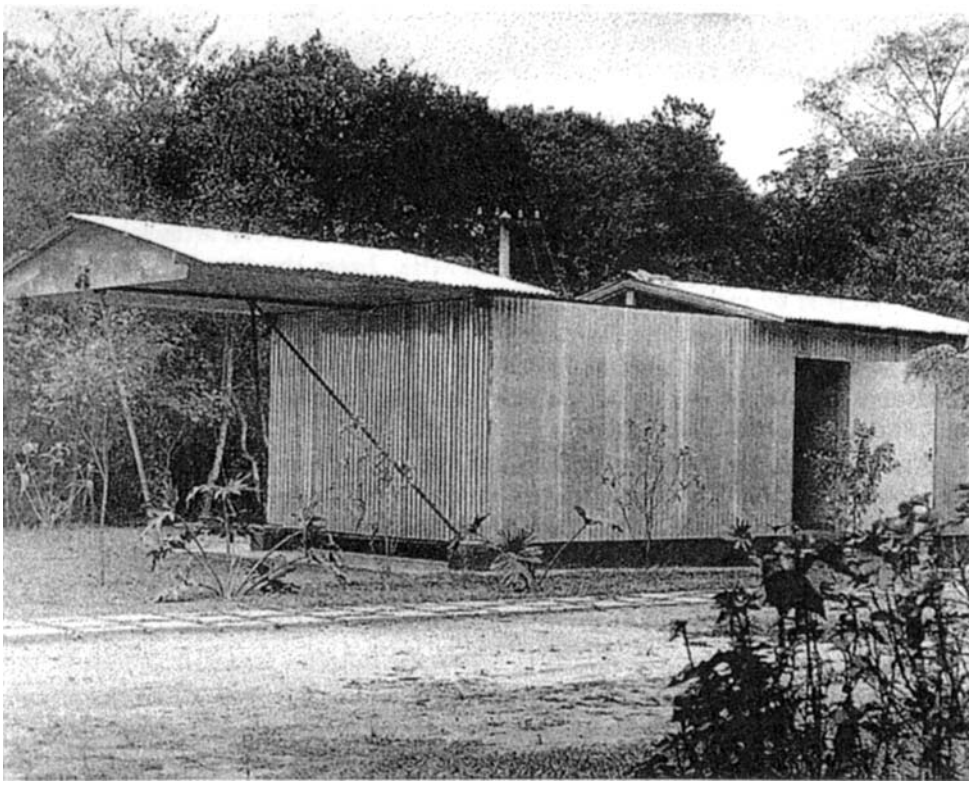

**Figure 4** Housing for the Danjon astrolabe erected by Dr Postoiev at the rear of the Observatory of São Paulo.

In 1961 IAG/USP started to recruit young students, involving them in astrometric observational tasks. With several collaborators Dr Postoiev published in 1962 tables for determining the meridian by the elongation method (Postoiev *et al.*, 1962). Although IAG/USP was not a teaching centre, several times he taught concurrent courses on positional astronomy.

In 1964 the astrolabe ordered by IAG/USP from France arrived, and it was installed in the shed which was left free after the return of the astrolabe to USNO. That year Dr Postoiev lost his wife, and later he attended the IAU Meeting in Hamburg, Germany. From 1964 until 1970 he participated in two important international programme, namely: the International Polar Motion Service, with the central office at the International Latitude Observatory in Mizusawa-shi, Iwate-ken. Japan, headed by Prof S. Yumi; and the Bureau International de I'Heure with office at the Observatoire de Paris, headed by Prof N. Stoyko.

On November 12, 1966, the shadow of a total solar eclipse swept the extreme south of Brazil around noon. This event attracted several Brazilian astronomical groups, as well as several teams from the USA, Holland and Italy. Well aware of its importance, Dr Postoiev prepared a special supplement (Postoiev, 1965) for the *Astronomical Year Book* containing astronomical maps and meteorological information. One of the authors, OTM, was then only starting out on his astronomical career. Through this supplement he became acquainted with Dr Postoiev. When he moved from Mackenzie University to IAG/USP in August 1972, he shared a room with Dr Postoiev for one year.

Since the early 1960s French/Brazilian Technical Cooperation had taken place involving the exchange of scientists. Analysing jointly the data from the astrolabe collected at the Observatory of São Paulo, it was decided that a better astronomical site should be sought. In the meantime the idea of purchasing a meridian circle, to be installed in this new site, was also mooted. The first idea was to order it from Askania Werke, Germany. However, this manufacturer had stopped production of meridian circles, so it was ordered from Zeiss/Oberkochen, Germany. In 1967, extending his trip to attend the IAU Meeting in Prague, (then Czechoslovakia), Dr Postoiev visited the Carl Zeiss factory in Oberkochen, where the meridian circle was still under construction with the drawings yielded by Askania.

The site chosen for the astrometrical station was a hilly region in Valinhos town, 50 km north–west of São Paulo city. There the new observatory was erected and inaugurated in 1972. After the inauguration the meridian circle was installed there (Figure 5). The Danjon astrolabe was removed from the Observatory of São Paulo and installed there also. But recently it was brought back to the Observatory of São Paulo. Dr Moraes died prematurely in 1971, and to honour him the new observatory was designated the Observatory Abrahão de Moraes. This Observatory began to operate after the retirement of Dr Postoiev in 1970. Today is a station dedicated only to astrometrical observations. It stands on rocky ground, a requirement which was intentionally looked for in order to secure the stability of the meridian circle. Personally Dr Postoiev did not agree with this, since for him normal soil would have been preferable. But after his retirement he could not fight so much for his own

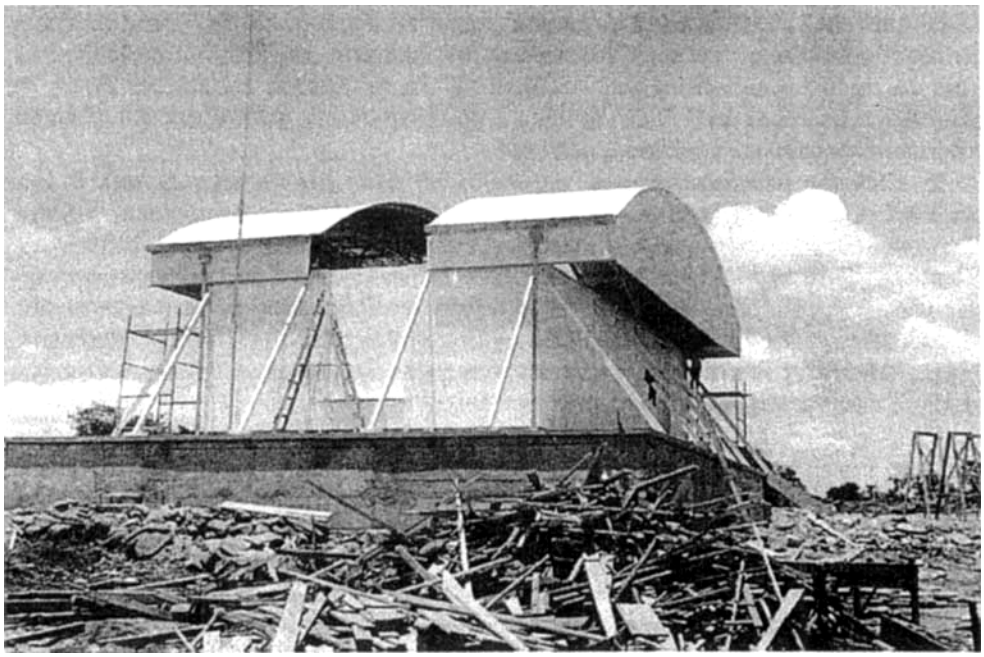

**Figure 5** Building for the meridian circle under construction at the Observatory Abrahão de Moraes.

ideas. A staff member, Dr Benevides Soares, had just obtained his doctor's degree in France and came back to Brazil in 1967. The continuation of the astrometrical research initiated by Dr Postoiev at IAG/USP naturally became his concern.

In order to have a right to a pension after retirement, any non-Brazilian person must obtain Brazilian citizenship. Near to the compulsory retiring age of 70, Dr Postoiev hesitated to request Brazilian citizenship, distressed by the sensation that he was cutting off his Russian roots. But, in fact, until Brazilian citizenship was granted him in 1969, he did not have any legal nationality.

Retiring on February 27, 1970, a fellowship from the National Research Council (CNPq) was granted him in order to continue working at IAG/USP preparing the yearly issues of the Astronomical Year Book. This he did until his death on July 21, 1976, when the proofs for the 1977 issue were ready. In Dr Postoiev's mind this fellowship was to maintain his professional obligations to IAG/USP. Dr Luiz Muniz Barreto, then Director of the National Observatory in Rio de Janeiro, managed to obtain the fellowship, as the central office of CNPq was still in Rio de Janeiro, and had not been moved to the new capital, Brasília.

In his spare time Dr Postoiev delighted in astronomical activities other than those connected with his work. In 1973, when Comet Kohoutek appeared, he wrote a booklet in Portuguese (Postoiev, 1973) about comets. It was widely distributed with great success among the public. After enquiring patiently of several colleagues,

he compiled in Portuguese "The Astronomical Data and Tables" (Postoiev, 1976). However, following criticism from a staff member, the publication was abandoned while it was still at the printers.

In 1975 Dr Postoiev submitted to surgery on cataracts in both eyes. Afterwards he never recovered his full physical strength, with diabetes making things still worse, and he had frequent falls. Also he lived alone in the house, relying on the daytime help of a housemaid. His son was married and lived elsewhere. One day Dr Postoiev felt down in the street, breaking his femur. After surgery he was released from hospital to recover at home and he was taken to his son's house. There he refused to take food, getting so weak that he was brought back to hospital. According to the normal expectations of friends and colleagues, physically he had every chance of surviving. Contrary to this expectation, however, he died two months later, refusing to be cured, and tortured by the prospect, which was intolerable to him, of henceforth living dependent on somebody else for moving, eating, drinking, etc. The nurses in the hospital found medicines artfully hidden under the bedsheets. In his very last days, Dr Postoiev lost the ability to speak Portuguese, talking to everybody only in Russian. He was buried in the same grave of his wife. He died poor but always maintained an admirable dignity. He lived in the same house he had rented since he arrived in São Paulo. His only personal goods were his books which he bequeathed to the two authors of this note.

If the Department of Astronomy from IAG/USP is today a leading astronomical institution in Brazil, this must be attributed to the contributions of several people in the history of IAG/USP. But the contribution from Dr Postoiev is outstanding because he implanted and carried out the first scientific programme of astronomy, and for the first time he involved IAG/USP in international collaboration, so obtaining for IAG/USP the first worldwide recognition as an astronomical research centre. For the saks of his career, perhaps it would have been if Dr Postoiev had moved to the USA instead of Brazil. But destiny brought him to IAG/USP, where he laid scientific foundations at a time when no Brazilian could have done it, since no Brazilian astronomer with the necessary formal education was available then.

In the session of September 16, 1976, the Congregation of IAG/USP unanimously approved a proposal changing the name of the Observatory of São Paulo to the Alexander Postoiev. On May 28, 1977, this proposal was formally ratified by the Rector of the University of São Paulo, in Resolution No. 1.174 Postoiev.

## 4 PERSONAL FEATURES

Physically Dr Postoiev was thin and tall. He had a "V" shaped head, and behind the glasses one could see his thick typically Slavic eyebrows.

He used to dress with elegant simplicity and discretion. He hated neckties. At work he replaced his jacket with a white apron. His outlook was of a traditional educator. What he never showed was any trace of negligence.

As a professional he was exemplary. He was, first of all, a methodical man. For a while his transport from home to the Observatory was a motorized bicycle which he rode stiff-necked. Later he took buses. Every morning, because of his asthma, he came breathlessly into his office after climbing the Observatory hill. He started the day by adjusting the sidereal clock. He was a skilful astrometric observer, and he transmitted his skills to young students and technicians. In night-time observations he worked only for the first two or three hours because the high humidity at the Observatory threatened to trigger an asthma attack. He was skilful at mechanical, optical and computational jobs. When the desktop calculators arrived, he was open-minded, giving up the old methods and using the updated machines. In relation to colleagues and to all personnel he was always kind and accessible, never discriminating against even the humblest personnel he was always kind and accessible, never discriminating against even the humblest by whom he was deeply loved. As a born educator he was always ready to transmit his knowledge to colleagues, technicians, students and visitors. Naturally and gladly he took on himself the task of the Observatory's public relations, replying to a stream of letters from the public and receiving visitors in his office.

He always maintained his typical Russian frankness. The author OTM remembers a visitor, who was seeking lunar phases until the year 2000. Impressed by such a massive amount of data, Dr Postoiev asked what this information was for. The visitor turned out to be the manufacturer of a hair-lotion for preventing baldness and the Moon phases were for determining the applications of the lotion. Abruptly Dr Postoiev changed his mood, and denegrated the information, accusing the visitor of quackery and the exploitation of good faith. He was always intransigent in relation to anything deceitful, so he never tolerated astrology. This capacity for showing his feelings with complete openness was a very nice trait, though sometimes shocking according to western standards.

There was a Russian bookstore downtown where Dr Postoiev often used to go on Saturdays. He became the friend of the bookstore's owner, a certain Mr Rozov. But in several attempts, he only rarely succeeded in approaching compatriots. One day his son recognized a member of the Moscow Circus in the street. Excitedly he spoke some words in Russian. This made the person run away and disappear in the crowd. At the IAU meeting in Hamburg, Dr Postoiev was clearly avoided by Soviet delegates. Yet at the IAU meeting in Prague, a Soviet astronomer, an ex-colleague of Dr Postoiev, came up to the IAG/USP director, Dr Moraes, recommending him as a very qualified and competent astrometrist. Possibly Dr Postoiev never heard about this episode. But he came back from the meeting with enthusiasm, since he had been able to talk with several Soviet astronomers, and meet many young Soviet students. The next and last opportunity he had to meet Soviet astronomers was the international COSPAR meeting held in São Paulo in 1974. That time Dr Postoiev admired the achievements of the Soviet space programme. In spite of all the unpleasant experiences he had lived in through the Soviet Union, Dr Postoiev always had deep affection for his compatriots.

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