ANNUAL REPORTS
OF THE
ASTRONOMICAL INSTITUTES
OF GREECE
1965

PUBLISHED BY THE GREEK NATIONAL COMMITTEE FOR ASTRONOMY

ACADEMY OF ATHENS
RESEARCH AND COMPUTING CENTER
ATHENS
1966

CONTENTS

Annual Reports for the Year 1965 of the :

ASTRONOMICAL INSTITUTE

NATIONAL OBSERVATORY OF ATHENS

ANNUAL REPORT 1965

Professor Dr. D. Kotsakis has been elected Associate Professor in the chair of Astronomy of the University of Athens by the Faculty of Sciences, and has, therefore, assumed, ipso jure, as from August 4,1965, the direction of the Astronomical Institute of this Observatory. Untill then Dr. C. Macris was acting as director.

I. – ATHENS OBSERVATORY

Staff. Mr. Th. Prokakis who was untill now a grantee of the Royal Hellenic Research Foundation, was appointed assistant in this Institute on April 19, 1965.

Mr. E. Haimis has retired on December 31st 1965, after having served in this Observatory for 35 years. Techniciam Mr. Chr. Economidis likewise retired for the same reason. Mr. G. Banos, assistant, is continuing his training in Solar Physics at Meudon. Assistant Professor Dr. C. Macris was sent by the Board of this Obsertory to Freiburg to discuss with Prof. Kiepenheuer the observational program of the forthcoming annular eclipse of the Sun of May 20, 1966. Mr. C. Banos, assistant, went to Meudon in July and August; he staid there 45 days and worked with Dr. A. Dollfus on a special observational program for studying the major planets. He was supported financially by the International Astronomical Union.

Time Service. Routine work was carried out in this section by Mr. Haimis, Mr. C. Banos, and Mr. D. Elias. The two latter registered 102 and 124 time signals respectively and made the appropriate chronometer checkings. They likewise made 80 comparisons for observing earth satellites and comets and 20 checkings of the National Broadcasting Corporation's hour signals.

Planet and Comet Program. Mr. C. Banos used the Doridis and Newall (Penteli) refractors to observe the planets. He obtai-

ned 1,300 photographs of Jupiter on 65 plates; this work was carried out within the framework of the activities of IAU Comission 16 aiming to determine the jovian period of rotation. Dr. Dollfus has manifested interest in this work. He likewise obtained 16 plates of Mars with 320 pictures and 8 plates of Saturn with 160 pictures. Mr. Elias used the Doridis refractor to observe comet Ikeya-Seki and secured 25 visual and 12 photographic observations of this object. Relevant data were published in the IAU Circulars.

Solar Service. Dr. C. Macris has obtained several Hα heliograms of the chromosphere and furthermore pursued his work on the photometry of flocculi using material made available by the Observatory of Arcetri. Jointly with Mr. Prokakis he has studied photospheric granulation on photographs which he obtained with the 40 cm. refractor. Mr. C. Banos made 26 observations in Hα and took photographs. Mr. Prokakis made 115 observations in Hα and white light; he has furthermore processed and classified photographic material of the Sun (120 films in Hα and 95 plates) and has regularly sent filtergrams to Meudon and Freiburg.

Mr. Elias has obtained on 280 days 2,500 photographs of the chromosphere in Hα and has secured 40 pictures of the photosphere as well as 318 pictures of spots. He likewise made 52 observations of the solar diameter by the Schoenberg method totalling 8,500 measurements.

An observation group of the U.S. Air Force Solar Service, consisting of three officers one of whom is chief officer Major Don S. Packnett have begun as from September 1st monitoring the Sun and keeping watch on solar activity within the general activity program of the Apollo project.

A seminar on Solar Physics was held at Lagonissi from 12-26 September under the auspices of NATO. This Advanced Study Institute on Solar Physics was directed by Dr. Righini and the organiser was Dr. C. Macris who carried most of the weight of the work. Invited lectures were given by Drs. Giovanelli, Goldberg, Kiepenheuer, Michard, Rösch, Pagel and other younger group members and the seminar was generally a success. The exertions of Mr. Prokakis and Mr. Elias have been greatly appreciated and the entire staff of this Institute attended the lectures.

Annular Eclipse of May 20, 1966. Since this country is particularly favoured for observing this eclipse the Astronomical Institute of the Observatory assumed the responsibility of the necessary preparations and for making available detailed data for the use of interested Greek and foreign scientists. A special ephemeris was issued accordingly and a working program of activities for this Institute was laid down within the limits of the available equipment and financial means. Mr. C. Chasapis and Mr. D. Elias made the necessary calculations, derived the eclipse elements, and traced the line of centrality across this country; the meteorological Institute of the Observatory is responsible for meteorological data concerning the month of May in this area; Mr. Chasapis and Mr. Elias together with Mr. Bozis, Assistant in the Department of Astronomy of the University of Thessaloniki, had recourse to the IBM 1620 II electronic computer of this University to check their calculations and extend them. Thus the eclipse phases for 30 towns of Greece and Cyprus were derived as well as precise elements for Athens and Scaramanga at altitudes of 100, 200, and 500 kms. The Geographic Service of the Army cooperated in these eclipse preparations and precise geographical coordinates for various points on the line of centrality were determined on the spot by field groups. The Department of Geodetic Astronomy of the Technical University of Athens cooperated in this program. Members of this Institute inspected the various localities on the line of centrality and selected the most appropriate sites, made arrangements with the local authorities, etc.. Prof. Kiepenheuer visited the site at Karystos and Anavyssos; the latter had already been visited by Drs. Giovanelli and Michard during the Solar Physics seminar of Lagonissi which lies only a few kilometers from Anavyssos. As already mentioned the Meteorological Institute and the Ionospheric Institute of this Observatory cooperated with the Astronomical Institute.

Other Activities. Mr. Elias observed variable stars, occultations and earth satellites. Together with other members of the staff he reduced observations and considered subjects for research.

Usefull work was devoted to the reorganisation of the Library of this Observatory by Mrs Caroumbalos, Prokakis, and Elias.

Dr. C. Macris was sent by the Greek Governement to Madrid to attend the meetings of the IQSY Committee as representative of the Astronomical Institute (28 March–3 April). He likewise visited the Società Astronomica Italiana, in October.

II–PENTELI ASTRONOMICAL STATION

Daily routine meteorological observations at 8 a.m. were continued this year by Mr. Chasapis who was responsible for their reduction, thus completing full twenty year series of climatological data. Mr. Chasapis likewise made 107 observations of 61 long period and irregular variables, and 14 visual observations of comet Ikeya-Seki. Mr. Chasapis has submitted to the Faculty of Science of the University of Athens a Ph.D thesis on «Greek Astronomy in the 2nd millenium B.C. according to the orphic hymns».

III.–PUBLICATIONS

C. Chasapis and *D.P. Elias.*

Eclipse of May 20th, 1966. Memoirs of the Observ. of Athens. Seric I, no 12, Athens 1965.

D. P. Elias.

Preliminary Values of Photometric Parameters and Predicted Magnitudes of Comet Ikeya-Seki (1965 f.) Circular No 1943, IAU.

IV. – ACQUISITION OF EQUIPMENT

The followimg equipment has been acquired by this Institute:

1) An electronic Chronograph, Type B – 620, No 3.
2) One quartz clock, Type B – 800.
3) Two Electronically operated Quartz Chronometers, Type B – 850.
4) Three Transistorised Voltage Stabilisers, Type B – 565.
5) One electric Diehl - Transmatic Computing machine.
6) One 310 mm mirror, f-1875/M by Audry and Nogen of Rotrov.
7) One triple Instrument, 15/225, 16/240, 11/165 constructed in the workshop of the Observatory.
8) A Zeiss 30 cm quartz Coelostat.
9) A Zeiss astrostat.

V. – VISITS

The Observatory and the Penteli Station were visited by the participants to the Solar Physies seminar and by other scientists such as: N. Boneff (Sofia), G. Dimitroff (Hanover U.S.A.), Markowitz (U. S. Naval Observatory), A. Mikhailov, and D. Polojentsev (Pulkovo).

The Director
Prof. D. Kotsakis

RESEARCH AND COMPUTING CENTER

ACADEMY OF ATHENS

ANNUAL REPORT 1965

Staff. Professor L. N. Mavridis acted as Director of the Center jointly with his duties as Chairman of the Department of Geodetic Astronomy, University of Thessaloniki. Mr. C. P. Poulakos was appointed Research Assistant effective January 1, 1965. He is salaried from funds made available through the Scientific Affairs Division North Atlantic Treaty Organization.

Equipment. One tape recorder Grundig TK 40 was acquired.

Research Programs. The following research programs were carried out during 1965:

1) Statistical Study of Solar Activity (Professor J. Xanthakis). The analytical study of the variation of the different indices of solar activity within each sunspot cycle and from cycle to cycle, reported last year, was continued. Some of the results found were included in a paper on «The Different Indices of Solar Activity and the Time of Rise» presented by Professor J. Xanthakis in the Advanced Study Institute on «Solar Physics» held under the auspices of the Science Committee, North Atlantic Treaty Organization at Lagonissi, Greece, September 12-26, 1965.

2) Investigation of Problems of Star Formation (Professors J. Xanthakis and L. N. Mavridis in collaboration with Professor B. Strömgren). The survey of the stars with ultraviolet excess contained in an area of 2,000 square degrees in high galactic latitudes reported last year was continued.

3) Photoelectric Photometry of Galactic Cepheids (Professor L. N. Mavridis in collab ration with Dr. K. Bahner). The study of the light variation of the anomalous cepheid TU Cas with the help of the recently developed new method as well as the discussion of the photoelectric two-color (B, V) observations of the remaining 17

galactic cepheids reported last year were continued. Some supplementary photoelectric two-color (B, V) observations of TU Cas were made in the Observatoire de Haute Provence.

4) Distribution of the M−, S− and C− Type Stars in Selected Areas of the Milky Way (Professor L. N. Mavridis partly in collaboration with Professor V. Blanco). The photographic photometry of the M−, S− and C− type stars discovered in the areas studied, reported last year, was continued.

5) Rotational Velocities of the Members of Selected Open Clusters (Professor L. N. Mavridis in collaboration with Professor R. Kraft). The study of the rotational velocities of 50 stars in the area of the open cluster NGC 6633 reported last year was continued.

Publications. The following publications appeared in 1965:

1) Contributions from the Research and Computing Center, Academy of Athens, Series I (Astronomy):

No. 13: J. Xanthakis, A Study of the Sunspot Magnetic Field Strengths. Memorie della Società Astronomica Italiana, vol. XXXVI, pp. 25-40, 1965.

2) A. Blaauw and L. N. Mavridis (Editors), Observational Aspects of Galactic Structure. Proceedings of an International Summer Course held under the auspices of the Science Commitee, North Atlantic Treaty Organization, at Lagonissi, Greece, September 9-23, 1964 Athens, 1965.

Visitors. Professor Zdeněk Kopal, Director of the Department of Astronomy, University of Manchester visited the Center and held a colloquium.

Miscellaneous. Professor J. Xanthakis was the leader of the Greek delegation in the IIIrd International Quiet Sun Years Assembly held in Madrid March 29 - April 2, 1965. He also attended the «Second International Symposium on the Use of Artificial Satellites for Geodesy» held under the auspices of the National Technical University of Athens, in Athens, April 27 - May 1, 1965 and addressed the participants on behalf of the Greek National Committee on Space Research. The same symposium was attended by Professor L. N. Mavridis, who was also member of the Organizing Committee of the symposium. Professor J. Xanthakis attended also the Advanced Study Institute on «Solar Physics» held under the auspices of the Science Committee, North Atlantic Treaty Organization, at Lagonissi, Greece, September 12-26, 1965 and was appointed editor of the Proceedings of the Institute. The same meeting was also attended by Professor L. N. Mavridis and Mr. P. G. Alexiou. Professor L. N. Mavridis attended the «Kolloquium über Probleme der Sternphotometrie» held under the auspices of the Akademie der Wissenschaften zu Heidelberg and the Landessternwarte Heidelberg, in Heidelberg

October 25-26, 1965. He also visited the following scientific institutions: 1) The Observatoire de Marseille. 2) The Observatoire de Haute Provence, where he gave a colloquium lecture on «Infrared Surveys and Their Results» and carried out photoelectric two-color (B, V) observations of the anomalous cepheid TU Cas. His work in these two observatories was supported by a grant of the French C. N. R. S. 3) The Observatoire de Paris. 4) The Observatoire de Paris, Section d' Astrophysique à Meudon. 5) The Institut d' Astrophysique, Paris. 6) The Institut Géographique National, Paris. The visit of the last four institutions was supported by a grant made available in the framework of the Greek-French Cultural Exchanges Program.

The Director of the Center
Professor L. N. Mavridis

DEPARTMENT OF ASTRONOMY

UNIVERSITY OF ATHENS

ANNUAL REPORT 1965

Staff. Dr. D. Kotsakis has been elected Associate Professor of Astronomy in the chair held untill now by Dr. Plakidis who has retired. Dr. Kotsakis is also acting as Director of the Department of Astronomy.

A new assistant, Mr. P. Laskaridis, B. Sc, has been appointed in this Department.

Teachings. Prof. Carapiperis has given a course of Physical Astronomy and Dr. Kotsakis held a course in Mathematical and Physical Astronomy.

Exercises. The students received their routine training in Practical Astronomy, in this Department, at the National Observatory, and at Penteli. These were supervised by chief assistant Dr. Katsis and assistants Mr. G. Antonacopoulos and P. Laskarides. They were attended by 228 fourth—year students of the Mathematical Section and 172 fourth−year students of the Physical Section.

Instruments. The following equipment was purchased with the standing credit of this Department:

1) An electric Diehl-Transmatic computing machine.

2) A typewriter with Latin keyeboard.

3) A photolab print dryer.

Meetings. Prof. D. Kotsakis, Chief Assistant D. Katsis and assistants G. Antonacopoulos and P. Laskarides attender the Second International Symposium on The Use of Artificial Earth Satellites for Geodesy, held in Athens (April 27 - May ist), the Agard Nato Lecture Series on Guided Missile Engineering, held in Athens (August 23-27), and the NATO Advanced Studies Institute on Solar Physics, held at Lagonissi (September 12-26).

Publications. The following publications were made by members of the Staff.

D. Kotsakis.

a) Dispersion of Fragments in the Restricted Three Boby Problem, Zeitschrift für Astrophysik, 60, p. 273-285 (1965).

b) Die Astronomie in Griechenland, Sterne und Weltraum, Juni 1965.

D. Katsis.

The motion of an Artificial Earth Satellite in a resisting Atmosphere. Professoral Thesis, submittet to this University.

G. Antonacopoulos.

Study on the Restricted 3-body problem in a resisting medium and its importance in the morphological evolution of the Solar System, PhD thesis submitted to this University.

The Head of the Department
Prof. D. Kotsakis

ASTRONOMICAL DEPARTMENT

UNIVERSITY OF THESSALONIKI

ANNUAL REPORT 1965

Staff. Dr. G. Contopoulos worked as a Senior Research Associate at the Institute for Space Studies in New York from June to October 1965.

Dr. B. Barbanis worked as a Research Associate at the Columbia University in New York (on leave of absence since 1-1-65).

Dr. J. Hadjidemetriou returned from the University of Manchester after receiving there his Ph. D. and he was appointed Research Associate of the Royal, Hellenic Research Foundation in October 1965.

Dr. G. Bozis submitted his thesis «A new integral of the Restricted Three Body Problem» to the Faculty of Sciences of the University of Thessaloniki, which was accepted in December 1965.

Mr. M. Moutsoulas was appointed assistant in April 1965. Since July 1965 he is on leave of absence, after receiving a scholarship from the University of Manchester.

Miss F. Papamichael was appoinred assistant in May 1965.

Scientific work during 1965: a) Dr. Contopoulos and Mr. Moutsoulas finished their work «Resonance Cases and Small Divisors in a Third Integral of Motion». The second part of this work was published in the Astronomical Journal and the third part is to be sent for publication.

b) During his stay at the Institute for Space Studies, N. York, Dr. Contopoulos worked on the following subjects :

1) The relation between the adiabatic invariants and the third integral. A paper on this subject was accepted for publication in the Journal of Mathematical Physics.

2) Applications of the third integral to the Galaxy. The third integral can be used as an argument of the distribution function in constructing models of the Galaxy. It can be used also in explaining the forms of the orbits on the plane of symmetry of a spiral galaxy etc. A paper on this subject will be published in the Proceedings of the Summer Seminar on Relativity and Astrophysics, American Mathematical Society, 1965.

3) A program was developed for the IMB 7094 computer to calculate the high order terms of the third integral. Tables including these terms were prepared and were sent for publication in the Supplement Series of the Astrophysical Journal. Certain applications of these Tables were of special interest.

4) In cooperation with Dr. B. Strömgren the orbits of many B and early A stars were calculated from the present time backwards in order to find their places of origin. It was found that these stars come from parts of our own spiral arm and of the outer spiral arm.

5) Further work was done on the energy exchange between coupled oscillators, the third integral in 3-dimensional potentials, resonance orbits, etc.

c) Dr. Contopoulos and Dr. Hadjidemetriou began working on some spesial resonance phenomena which appear in two dimensional potentials.

d) Dr. Contopoulos has found a new formal integral in the restricted three body problem for orbits of small excentricity around the primaries. Further, he could find two time-dependent formal in-

tegrals in the elliptic restricted three–body problem. A paper on this subject was published in the Astrophysical Journal and a further paper has been prepared.

e) During his stay in Columbia University Dr. Barbanis worked on the following problems:

1) The isolating character of the third integral when the unperturbed frequencies are equal. He found only isolating orbits when the energy is less than a certain limit. For high energies, approaching the energy of escape, quasi-isolating orbits appear. It is reremarkable thate isolating and quasisolating orbits appear even for energies much larger than the energy of escape. A paper on this subject was sent for publication.

2) The stability of models of spiral galaxies. This work is continuing.

3) Orbits in the plane of symmetry of galaxies. Many unexpected forms of orbits were found which are studied.

f) Mr. Bozis continued his work on the new integral of the restricted three–body problem. He made many calculations of orbits and invariant curves in the regularized plane and by comparing his results with the corresponding results of the two–body problem he could explain all the peculiarities that were found. He also extended Contopoulos' work on the new integral of the restricted problem and made some numerical applications. The agreement between theoretical results and results derived from the numerically calculated orbits is very good. Further he calculated some orbits in the elliptical restricted three–body problem.

g) Dr. Hadjidemetriou worked on the two-body problem with decreasing mass. His thesis on the «Two-body Problem with Variable Mass» was accepted by the University of Manchester in July 1965. After he returned to Greece he continued to work on this problem, studying, in particular, the mass exchange in close binary systems.

h) Mr. Papageorgiou and Mr. Arsenis continued their daily observations of the sun, both of the photosphere and the chromosphere. The obervations cover 305 days. The total patrol time was 560 hours. Monthly reports were sent to the same center during the as slast year.

Publications. In the series «Contributions from the Astronomical Department of the University of Thessaloniki» have appeared:

No 15. B. Barbanis. Projections of Galactic Orbits, Astronomical Journal **70**, 285, 1965.

No 16. G. Contopoulos. Third Integral in the Restricted Three-body Problem, Astrophysical Journal **142,** 802, 1965.

No 17. G. Contopoulos. Periodic and Tube Orbits, Astronomical Journal **70,** 526, 1965.

Other publications. a) G. Contopoulos and B. Strömgren-Tables of Plane Galactic Orbits, a Publication of the Institute for Space Studies, 1965.

b) Introduction to Astrophysics (Part 3, Stellar Systems) under the supervision of Dr. Contopoulos, for the fourth grade students of Mathematics and Physics (in Greek) 1965.

Lectures-Seminars. The courses and seminars of the Astronomical Department continued as in previous years.

During his stay in the United States Dr. Contopoulos was invited to give three lectures at the Summer Institute in Dynamical Astronomy, held in Stanford University, Palo Alto, California, (August 1965), and one lecture at the Summer Seminar on Relativity Theory and Astrophysics, held in Cornell University, Ithaca, N. York.

He was also invited to give lectures or seminars at the Massashussets Institute of Technology, the University of Chicago, the University of California (Berkeley), the University of Washington (Seattle), the Boeing Research Laboratories (Seattle), Yale University, Harvard University, New York University and Columbia University.

Dr. Contopoulos organized with Dr. Strömgren a two day Seminar on «Galactic Models» at the Institute for Space Studies, N. York. The following papers were discussed.

1) «The general field of the Galaxy» (G. Contopoulos).
2) «Places of Formation of Young Stars» (B. Strömgren).
3) «Spiral Structure» (C. C. Lin).
4) «Plane Galactic Orbits in a Spiral Field» (B. Barbanis).

DEPARTMENT OF ASTRONOMY

TECHNICAL UNIVERSITY OF ATHENS

ANNUAL REPORT 1965

Staff. The Staff of this Department consisting of Mr. G. Catsiaris Mr. D. Vlachos, and graduate mathematicians and agronomists and survey engineers, have carried out field work in the course of the summer using new methods of astronomical surveying and geodetics.

Equipment. The available regular funds of this Department have been used to purchase:

1) One Angström pyrheliometer with accessories.

2) One Frieden electronic computer.

Exercises and Teaching. During the academic year 1964-65 Prof. J. Argyrakos, Head of this Department, assisted by Mr. Catsiaris and Mr. Vlachos gave a course on General, Practical, Spherical, and Geodetic Astronomy. A senior seminar was held during the same academic year and special subjects were discussed by senior students. All activities were supervised by the Head of the Department. Courses, exercises, and measurements were attended by 48 and 56 students respectively, of the third and fourth year of the School of Agronomy and Survey Engineering.

The Head of the Department

Prof. J. Argyrakos

DEPARTMENT OF GEODETIC ASTRONOMY

UNIVERSITY OF THESSALONIKI

ANNUAL REPORT 1965

Staff. Professor L. N. Mavridis continued acting as Director of the Research and Computing Center, Academy of Athens, jointly with his duties as Chairman of this Department. Mr. P. L. Ivrissimtsis graduate in Physics has been appointed Assistant effective May 28, 1965. Also Mr. A. C. Tsioumis graduate in Physics has been appointed Assistant effective November 13, 1965.

Equipment. The following equipment was acquired in 1965:

1) One astronomical theodolite Kern DKM3A, 2) one calculating machine Olivetti Tetractys, 3) two calculating machines Facit CM-2-16, 4) one stereomicroscope Zeiss III, 5) one reproduction apparatus Leitz—Reprovit IIa, 6) two tape recorders, one Grundig TK 40 and one Grundig TK 46, 7) one epidiascope Leitz—Wetzlar III L2 and 8) one projector Prado 500.

Research Programs. The following research programs wer carried out during 1965 in cooperation with the Research and Com puting Center, Academy of Athens, to the annual report of whic we refer for further details:

1) Investigation of Problems of Star Formation (Professo L. N. Mavridis in collaboration with Professors B. Strömgren an J. Xanthakis).

2) Photoelectric Photometry of Galactic Cepheids (Professo L. N. Mavridis in collaboration with Dr. K. Bahner).

3) Distribution of the M—, S— and C— Type Stars in Selecte Areas of the Milky Way (Professor L. N. Mavridis partly in colla boration with Professor V. Blanco).

4) Rotational Velocities of the Members of Selected Open Clus ters (Professor L. N. Mavridis in collaboration with Professor R. Kraft).

Publications. The following publication appeared in 1965 A. Blaauw and L. N. Mavridis (Editors), Observational Aspects o Galactic Structure. Proceedings of an International Summer Cours held under the auspices of the Science Committee, North Atlanti Treaty Organization at Lagonissi, Greece, September 9-23, 1964 Athens, 1965.

Teaching. Professor L. N. Mavridis gave during the academi year 1965-66 courses in General and Spherical Astronomy fo the 3rd year undergraduates and in Geodetic Astronomy and Highe Geodesy for the 4th year undergraduates of the Division of Rura and Surveying Engineering.

Miscellaneous. Professor L. N. Mavridis attended the following international scientific meetings: 1) The «Second International Symposium on the Use of Artificial Satelites for Geodesy» held under the auspices of the National Technical University of Athens, in Athens April 27 - May 1, 1965. He also acted as member of the Organizing Committee of this symposium. 2) The Advanced Study Institute on «Solar Physics» held under the auspices of the Science Committee, North Atlantic Treaty Organization at Lagonissi, Greece, September 12-26, 1965. The «Kolloquium über Probleme der Sternphotometrie» held, under the auspices of the Akademie der Wissenschaften zu Heidelberg and the Landessternwarte Heidelberg, in Heidelberg October 25-26, 1965. He also visited the following scientific institutions: 1) The Observatoire de Marseille. 2) The Observatoire de Haute Provence, where he gave a colloquium lecture on «Infrared Surveys and Their Results» and carried out photoelectric two-color (B, V) obser-

vations of the anomalous cepheid TU Cas. His work in these two observatories was supported by a grant of the French C.N.R.S. 3) The Observatoire de Paris. 4) The Observatoire de Paris, Section d' Astophysique à Meudon. 5) The Institut d' Astrophysique, Paris. 6) The Institut Géographique National, Paris. The visit of the last four institutions was supported by a grant made available in the framework of the Greek-French Cultural Exchanges Program.

The Chairman of the Department

Professor L. N. Mavridis