Wolf Rayet Stars Observations Physics Evolution International Astronomical Union Symposia

#Wolf-Rayet stars #stellar evolution #astrophysics observations #massive star physics #IAU symposia

Explore the latest insights into Wolf-Rayet stars, covering their detailed observations, complex physics, and rapid evolutionary paths. This compilation summarizes key findings from International Astronomical Union symposia, offering a comprehensive view of these enigmatic massive stars.

Wolf-Rayet Stars: Observations, Physics, Evolution

Proceedings of IAU Symposium No. 99, held at Cozumel, Mexico, September 18-22, 1981

Wolf-Rayet Stars

In this IAU Symposium on Wolf--Rayet stars, binary aspects received ample attention, notably because of the recognition that many observations of spectral and photometric variability at all accessible wavelengths are related to colliding winds or other forms of wind interaction. The basic structure of the conference and its proceedings is basic parameters and general properties of WR stars; state of the art model atmospheres for WR stars, anisotropic mass loss and disk formation of WR stars, properties of WR binaries; influence of stellar winds on mass transfer in hot massive binary evolution; dust formation near WR stars and other circumstellar phenomena; and hydrodynamics and high-energy physics of colliding winds in WR+O binaries and of WR winds interacting with compact objects. Within this framework 20 invited reviews, 38 invited oral contributions, and 76 poster papers were presented at the Symposium, entertaining 111 astronomers from 24 countries. These proceedings provide up-to-date information on all aspects of Wolf--Rayet atmospheres, binaries, and colliding winds.

Wolf-Rayet Stars

Proceedings of the 116th Symposium of the International Astronomical Union, held at Porto Heli, Greece, May 26-31, 1985

Wolf-Rayet Stars

The organization of this Symposium had its beginnings at the International Astronomical Union General Assembly in Grenoble in 1976. The initial "rounding up" of the Scienti fic Organizing Committee was begun by Drs. Snow and Swings; most of us who became the eventual organizing committee met a few times during the Assembly and formulated the essential outlines of the meeting. Extensive correspondence with all the committee subsequently established the program. The idea was to bring

together both observers and theoreticians to discuss the stellar winds and mass loss rates and their effects on evolutions of O-type stars. On the observational side, there are now spectroscopic data from the far UV to the near IR regions concerning the stellar winds. There is also information about the free-free emission in the wind from the IR and radio portions of the spectrum. Fortunately, these different detection methods give more or less the same mass loss rate for the one star, s Pup" which has been observed at all wavelengths. One of the intents of the first three sessions of this Symposium is to outline the eXisting data on mass loss rates as it per tains to the O-type stars.

Wolf-rayet Stars

The first ideas for the symposium were generated in Brussels in the summer of 1986, dur ing exquisite lunches in between HST proposal consortium meetings. At the time it was expected that soon after the previous IAU symposium (No. 116) devoted to luminous hot massive stars, a bonanza of new exciting observational material would become available, together with significant advances on the theoretical front. Also it was felt that Wolf Rayet stars should feature predominantly, because that had not been the case since IAU Symposium No. 99 in 1981. Tradition requires that IAU symposia on hot massive stars take place in high lumi nosity beach resorts, and after Buenos Aires, Qualicum Beach, Cozumel and Porto Heli, Bali sounded like a reasonable place. Therefore we were only too pleased with the invitation of the Indonesian astronomical community to host the symposium in Sanur (Denpasar). The aim of the symposium was to bring together both observers and theoreticians active in the field of Wolf-Rayet stars and related objects, to present and discuss their recent results, in order to expose to what extent consensus exists as to the physical and chemical properties of Wolf-Rayet stars, their evolutionary status and their interrelations with other massive stars in galaxies.

Luminous Stars and Associations in Galaxies

Reviews our current understanding of the life, evolution and death of massive stars; for researchers and graduate students.

Mass Loss and Evolution of O-Type Stars

We have in this volume, compiled a connected account of the proceedings of the Symposium on Wolf-Rayet and High-Temperature Stars held at Buenos Aires. The Organizing Committee had assigned broad areas of topical interest to be reviewed by invited speakers. Each of these presentations was followed by lengthy discussions that were tape recorded and transcribed later. These discussions have been edited only to a limited extent. We have shortened them and rearranged them to bring about a greater coherence. We have, however, attempted to retain the tenor of the discussions, the flavour of impromptu remarks and the continuity of an argument. Much of the success of such a venture depends on the contributors to the discussions. To be able to make these thoughts available to a larger audience has been the task of those re sponsible for the elaborate tape recording of the proceedings. We thank those at the Instituto de Astronomia y Fisica del Espacio for the efficient way in which this re sponsibility has been discharged. Many at Buenos Aires and Kodaikanal have contrib uted efficient assistance to the preparation of this volume and we are deeply indebted for their help. In particular, two amongst these, Nora Martinez and A. M. Batcha have contributed overwhelmingly both to the organization of the symposium and the final preparation of the symposium volume. Financial support for this symposium came from the International Astronomical Union and the Argentine National Research Council.

Wolf-Rayet Stars and Interrelations with other Massive Stars in Galaxies

The IAU Colloquium No. 59, "The effects of mass loss on Stellar Evolution" was held on September 15-19, 1980 at the International Centre for Theoretical Physics, Miramare, Trieste (Italy), under the auspices of the IAU Executive Co~ mittee and the Italian National Council of Research. The planning of this conference began two years ago du ring the IAU Symposium No. 83 "Mass loss and evolution of 0 type stars" (Qualicum Beach, Victoria, Canada) when we felt that mass loss and its effects on the evolution of stars was too broad a subject for being confined to 0 type stars only. Therefore we thought that a conference dealing with the general problem of mass loss across the whole HR diagram would have been of interest to all people working in the field. The main idea was that bringing together Astronomers and Astrophysicists of the widest range of interests and e~ pertize - all in some way related to the problem of mass loss from stars - would have spurred thorough discussions on the many aspects and implications of this topic. We hope this goal has been achieved. Furthermore, the most recent observational and theoreti cal developments on the problem of mass loss from early ty pe stars

avoided this meeting to be a simple updating of the Qualicum Beach Symposium as far as this issue is concerned.

Massive Stars as Cosmic Engines (IAU S250)

Dense stellar systems lie at the interface between dynamics, stellar evolution, and galaxy formation, and they provide us with an ideal laboratory to understand many different aspects of these important fields as well as to explore the interplay between them. The complete study of dense stellar systems is a very challenging task which requires the collaboration and the exchange of ideas of astronomers and physicists with observational and theoretical expertise in galactic and extra-galactic astronomy, stellar dynamics, hydrodynamics, stellar evolution, as well as knowledge of many aspects of computational physics. IAU Symposium 246 brought together experts in all these areas to cover the broad field of dense stellar systems with particular emphasis on the interplay between them and on the comparison between observations and simulations. This volume provides a complete review of the most recent studies in this topical research.

Wolf-Rayet and High-Temperature Stars

The first ideas for the symposium were generated in Brussels in the summer of 1986, dur ing exquisite lunches in between HST proposal consortium meetings. At the time it was expected that soon after the previous IAU symposium (No. 116) devoted to luminous hot massive stars, a bonanza of new exciting observational material would become available, together with significant advances on the theoretical front. Also it was felt that Wolf Rayet stars should feature predominantly, because that had not been the case since IAU Symposium No. 99 in 1981. Tradition requires that IAU symposia on hot massive stars take place in high lumi nosity beach resorts, and after Buenos Aires, Qualicum Beach, Cozumel and Porto Heli, Bali sounded like a reasonable place. Therefore we were only too pleased with the invitation of the Indonesian astronomical community to host the symposium in Sanur (Denpasar). The aim of the symposium was to bring together both observers and theoreticians active in the field of Wolf-Rayet stars and related objects, to present and discuss their recent results, in order to expose to what extent consensus exists as to the physical and chemical properties of Wolf-Rayet stars, their evolutionary status and their interrelations with other massive stars in galaxies.

Effects of Mass Loss on Stellar Evolution

"If simple perfect laws uniquely rule the universe, should not pure thought be capable of uncovering this perfect set of laws without having to lean on the crutches of tediously assembled observations? True, the laws to be discovered may be perfect, but the human brain is not. Left on its own, it is prone to stray, as many past examples sadly prove. In fact, we have missed few chances to err until new data freshly gleaned from nature set us right again for the next steps. Thus pillars rather than crutches are the observations on which we base our theories; and for the theory of stellar evolution these pillars must be there before we can get far on the right track. " These words written by Martin Schwarzschi1d in his famous book en titled "Structure and Evolution of the Stars"(1958) remind us how necessary and fruitful is the interplay of stellar evolution theory and observations. Clearly, observations are the great censor by their possibility of confirming or contradicting theoretical constructions. In addition, they have a driving role: new and sometimes unexpected facts may give rise to progressive ideas and stimulate further theoretical developments. In turn, theory, in its major role of sifting out and placing the facts in a logical sequence based on physical laws, must also be predictive and indicate new and pertinent observations to be undertaken.

Dynamical Evolution of Dense Stellar Systems (IAU S246)

This volume presents the Proceedings of International Astronomical Union Symposium No.93 on Fundamental Problems in the Theory of Stellar Evolution. It contains the texts of all the invited papers, the abstracts of the contributed papers that were read by one of the attending author(s), and edited discussions. Only one abstract is included in this volume from each author who attended, and the abstracts of papers which were read on behalf of absent author(s) are not included. Those papers, which were read but are not included in the volume, are indicated by asterisks in the table of contents. The meeting took place at the University Hall, Kyoto University, Kyoto, Japan from July 22 to 25, 1980, and was sponsored by IAU Commission 35 on Stellar Constitution and co-sponsored by the IAU Commission 42 on Close Binary Stars. Locally, the Symposium was hosted by the Research Institute for Fundamental Physics, Kyoto University with encouragement from the Astronomical Society of Japan.

Financial support for the meeting was provided by the IAU, the Japan Society for the Promotion of Sciences, the Japan World Exposition Commemorative Fund, and the Yamada Science Foundation. Preparation for the Symposium and editing of the Proceedings were supported in part by Scientific Research Fund of Japanese Ministry of Education, Science and Culture (530603).

Wolf-Rayet Stars and Interrelations with other Massive Stars in Galaxies

How massive are the largest and smallest nuclear black holes in galaxies? Why are the masses of nuclear black holes proportional to those of their host galaxy bulges? How is nuclear activity triggered? What are the observational signatures of such processes? What are the connections between the active nucleus, stars and interstellar medium in galaxies? Answers to these questions are addressed in this book, which presents a compilation of 191 works covering recent observations from X-rays to radio wavelengths, as well as theoretical modeling of accretion disks, stellar populations and galaxy and black hole evolution. This volume presents the nuclear activity as a phase in the life of a galaxy, which is intimately connected to the evolution of its stars and interstellar medium. It brings together recent developments in topics covering most aspects of galaxy evolution, and is a valuable resource for astronomers and graduate students working in extragalactic astronomy.

Observational Tests of the Stellar Evolution Theory

This written account of the Symposium on Planetary Nebulae was prepared from manuscripts submitted by the participants. Nearly every paper that was presented at the meeting is reproduced here, in either complete or abbreviated form. The dis cussions have been somewhat shortened and rearranged, but we have tried to preserve the essential points and the general tenor of the exchanges. Participants who spoke in the discussion were asked immediately for written remarks, which were then edited, reproduced, and circulated at the meeting by the highly effective local Secretariat organized by Dr Perek. In addition, notes of the discussion taken by Mrs Edith F. Swan and by the undersigned were used. We wish to thank all the authors for their unusually good cooperation. We are especially grateful to Dr Minkowski, who kindly provided many excellent repro ductions of Mount Wilson and Palomar photographs, mostly taken by himself, of various planetary nebulae. We are particularly indebted to Mrs Swan, who attended the Symposium, made notes on the papers and discussions as they occurred, and did much of the checking and editing of the manuscripts. In addition, we are very grateful to Mrs Evelyn Seaver, who also did much of the checking, editing, and retyping of manuscripts, and to Dr B.L. Webster, Miss Rebecca Todd, Mr Joseph Tapscott, and Mr Dennis Schatz, who provided excellent assistance in the preparation of this volume.

Fundamental Problems in the Theory of Stellar Evolution

Planetary nebulae present a fascinating range of shapes and morphologies. They are ideal laboratories for the study of different astrophysical processes: atomic physics, radiative transfer, stellar winds, shocks, wind-wind interaction, and the interaction between stellar winds and the interstellar medium. In addition, planetary nebulae provide information about the late stages of stellar evolution. In the last five years studies of planetary nebulae have progressed very rapidly and new phenomena and insights have been gained. This is partly due to new observations (e.g. from the Hubble Space Telescope, the ISO satellite and new infrared and millimeter spectrographs) and partly to the advancement of hydrodynamic simulations of the structures of planetary nebulae (PN). Many of these new results were reported at IAU Symposium 180 in Groningen, the Netherlands, on August 26 to 30, 1996. This symposium was dedicated to one of the pioneers of PN research: Stuart Pottasch. These proceedings contain chapters on: Introduction to PN with the basic parameters Distances of PN The central stars of PN The envelopes of PN The evolution from AGB to PN The evolution from PN to white dwarfs PN in the galactic context PN in extragalactic systems The future of PN research . The book contains 29 reviews and more than 200 shorter contributions.

Wolf-rayet Stars

In this Symposium, researchers specializing in pulsation, rotation, magnetic fields and stellar winds are brought together for the first time in order to broaden our understanding of O and B stars. Thanks to advances in digital spectroscopy, new types of pulsating B stars have been discovered. The pulsations can be understood in terms of the recent revision of metal opacities, but the effects of rapid rotation and magnetic fields need further study. Observations in the UV and X-ray regions demonstrate that many B and Be stars show other activity, besides pulsation which is not yet understood. The reason

for the enhanced mass loss in Be stars is a question which dominates the Symposium and which remains unanswered, although it is surely to be found in activity at or near the photosphere coupled with rotation. It is shown that the geometry of the circumstellar envelopes around Be stars is indeed a flattened disk as they can now be optically resolved. The variability of radiatively-driven winds from O and B stars are likely related to the rotation of the star. This underlines the central theme of the book: that the various phenomena seen in these stars cannot be studied in isolation.

The Interplay Among Black Holes, Stars and ISM in Galactic Nuclei (IAU S222)

This volume reviews recent progress in the study of dynamics of star clusters. The meeting focused on the enormous progress of both the observation and the theoretical modeling of star clusters. New results from the refurbished Hubble Space Telescope (HST) include the mass function down to the hydrogen burning limits, white dwarf sequence, and central density profiles of `post-collapse' clusters by star counts. On the theoretical side, this symposium saw the first direct evidence of gravothermal oscillation through N-body simulation, which was made possible by GRAPE-4, the dedicated special-purpose computer for N-body simulation. Numerical techniques to combine stellar evolution and dynamical evolution of the cluster were presented. The book will be of primary interest to astrophysicists.

Planetary Nebulae

Proceedings of IAU Symposium No. 67 held in Moscow, U.S.S.R., July 29-August 4, 1974

Planetary Nebulae

Symposium 148 "The Magellanic Clouds and their Dynamical Interaction with the Milky Way" was the first IAU Symposium held in Australia since 1973. In all, 23 countries were represented by 149 participants. The Symposium was held from July 9 to 13, 1990 at Womens College, the University of Sydney. The last symposium on the Magellanic Clouds' was held in 1983 in Ttibingen, Germany. Since then new ground-and satellite-based instruments have become available. A range of results from these instruments were presented at IAU Symposium 148 and are published in these proceedings. IAU Symposium 148 was timed to coincide with the commissioning of the Australia Telescope, and indeed, a few of the first results from that instrument were presented at this Symposium Over the next decade the Australia Telescope is destined to make a major impact on Magellanic Cloud research. Papers are arranged in five main sections reflecting the Symposium timetable: • Large-Scale Structure and Kinematics • Star Formation and Clustering • Stellar Evolution • The Interstellar Medium • The LMC-SMC-Galaxy System These are preceeded by both the introduction to and the summary of the Symposium. Questions and answers from the oral sessions are reproduced at the end of each section.

Pulsation, Rotation and Mass Loss in Early-Type Stars

Proceedings of the 111th Symposium of the International Astronomical Union held at Villa Olmo, Como, Italy, May 24-29, 1984

Dynamical Evolution of Star Clusters - Confrontation of Theory and Observations

Astronomy and Astrophysics Abstracts, which has appeared in semi-annual volumes since 1969, is devoted to the recording, summarizing and indexing of astronomical publications throughout the world. It is prepared under the auspices of the International Astronomical Union (according to a resolution adopted at the 14th General Assembly in 1970). Astronomy and Astrophysics Abstracts aims to present a comprehensive documenta tion of literature in all fields of astronomy and astrophysics. Every effort will be made to ensure that the average time interval between the date of receipt of the original literature and publication of the abstracts will not exceed eight months. This time interval is near to that achieved by monthly abstracting journals, compared to which our system of accumu lating abstracts for about six months offers the advantage of greater convenience for the user. Volume 32 contains literature published in 1982 and received before February 11, 1983; some older literature which was received late and which is not recorded in earlier volumes is also included. We acknowledge with thanks contributions to this volume by Dr. J. Bou~a, Prague, who surveyed journals and publications in Czech and supplied us with abstracts in English.

Variable Stars and Stellar Evolution

The proposal to organize a Symposium on circumstellar matter and extended atmo spheres in binary systems was first made by the Dominion Astrophysical Observatory to the Executive Committee of the International Astronomical Union in the summer of 1969. It received the support of the presidents of Commissions 29 (Stellar Spectra), 30 (Radial Velocities), 36 (Stellar Atmospheres), and 42 (Photo-metric Double Stars). Approval in principle was given by the Executive Committee almost immediately, and the Committee further suggested that the Symposium be officially designated the Struve Memorial Symposium. Final approval was given at the time of the 1970 General Assembly of the Union. when the dates of the Symposium were set for August or September, 1972. The Organizing Committee set up consisted of K. O. Wright (Chairman), A. H. Batten, K. -H. B6hm, A. A. Boyarchuk, G. Larsson-Leander, and M. Plavec. In addition, J. Sahade and F. B. Wood acted as advisory members. Local organization was entrusted to a committee consisting of A. H. Batten, E. K. Lee, and C. D. Scarfe. The final dates selected were September 6-12, 1972, and the Sym posium was held at the Island Hall Hotel, Parksville, B. C. , on Vancouver Island some 90 miles from Victoria. The Organizing Committee attempted to arrange a Symposium of the type in which no contributed papers would be presented and discussion would range as widely as possible over the field covered by the six invited review papers.

The Magellanic Clouds

The XIXth General Assembly of the International Astronomical Union was held in New Delhi, India, from November 19 to 28, 1985. It was dedicated to the memory of a former IAU President, Professor M. K. V. Bappu, who tragically passed away on August 19, 1982. On the occasion of the Delhi General Assembly, the IAU Minor Planet Center announced that Minor Planet (asteroid) No. 2596 henceforth will carry the name Vainu Sappu. The full text of the announcement reads: "(2596) VAINU BAPPU = 1979 KN (diameter about 8 kilometers, period 5 years 4 months, mean distance from the Sun around 450 million kilometers) Discovered 1979, May 19, by R. M. West at the European Southern Observatory. Named in memory of Manali f

Planetary Nebulae

The Bosscha Observatory in Lembang, Java, Indonesia, celebrated in 1983 its 60th anniversary. Since its foundation, the physical properties of binary systems have formed a major research topic of this observatory. Until 1970, the study of visual binaries and the determination of orbits received most emphasis. Since then, also the evolution of close binary systems, such as X-ray binaries, Wolf-Rayet binaries and binary pulsars, has been researched with priority in Lembang. It seemed thus appropriate that a Colloquium devoted to the study of binary systems be held in Lembang at the time of the Observatory's anniversary. In the Colloquium, the role of wide double (and multiple) systems received special emphasis - not only because of the long tradition of visual binary research at Lembang; but also because their role in documenting stellar evolution has been largely overlooked in recent decades, and needs to be brought into focus with the information forthcoming from close binaries. The Colloquium covered the physical properties of visual as well as close binary systems, and their generic relations, in the broadest possible sense. It was sponsored by the International Astronomical Union as IAU Colloquium No. 80 ('Double Stars, Physical Properties and Generic Relations'). After the official opening ceremony, the meeting started with a discussion on the future of astronomy in Asia. The scientific sessions began with the 'V. Bappu Memorial Lecture on the Evolution of Binary Systems', presented by Z. Kopal.

Calibration of Fundamental Stellar Quantities

Stars form surrounded by a circumstellar disk which is thought to be the cradle of planets. IAU Symposium 243 highlights the latest developments in understanding the structure and evolution of the star-disk interaction region in young stars, a critical component of our knowledge of star and planetary system formation processes. Discussions review the physical processes thought to be at work at the star-disk interface, confront the predictions of the latest numerical and analytical magnetohydrodynamic models of star-disk-jet systems with observations, and explore the consequences of these processes for stellar angular momentum evolution and inner disk structure. The most recent observational results, computer simulations and theoretical developments in this active field of research are included to provide a unique vision into this central aspect of the star and planet formation problem.

Literature 1982, Part 2

Proceedings of the 106th Symposium of the International Astronomical Union held in Groningen, The Netherlands, May 30-June 3, 1983

Energy Research Abstracts

Proceedings of IAU Symposium No. 73 held in Cambridge, England, July 28-August 1, 1975

INIS Atomindex

Every 5 years since 1967 a meeting has been held to discuss the subject of planetary nebulae and their central stars. Previous meetings have been held in Tatranska Lomnica (Czechoslovakia); Liege (Belgium); Ithaca, New York (U. S. A); and London (Great Britain). IAU Symposium 131 was sponsored by IAU Commision 34, on Interstellar Matter and co-sponsored by IAU Commisions 35 and 36 on Stellar Constitution and Theory of Stellar Atmospheres. The symposium was held at the Universidad Nacional Autonoma de Mexico in Mexico City, October 5-9, 1987. It took place in one of the old buildings of the University of Mexico in the downtown area. The inner patio of the building provided very pleasant surroundings for the poster sessions and for extensive discussions among the participants. The meeting was attended by 160 scientists from 22 countries. The Scientific Organizing Committee,under the chairmanship of J.B. Kaler, prepared a comprehensive scientific program based on a set of invited presentations. All contributed papers were presented in poster form. The Scientific Organizing Committee would like to thank the staff of the University of Illinois Department of Astronomy: Dr. Ron Allen for granting financial support; Carol Stickrod, Louise Browning, Deana Griffin and Sandie Osterbur for their help with the organization. IAU provided economic assistance to a group of young astronomers.

Extended Atmospheres and Circumstellar Matter in Spectroscopic Binary Systems

IAU Transactions are published as a volume corresponding to each General Assembly. Volume A is produced prior to the Assembly and contains Reports on Astronomy, prepared by each Commission President. The intention is to summarize the astronomical results that have affected the work of the Commission since the production of the previous Reports up to a time which is about one year prior to the General Assembly. Volume B is produced after the Assembly and contains accounts of Commission Meetings which were held, together with other material. The reports included in the present volume range from outline summaries to lengthy compilations and references. Most reports are in English.

Transactions of the International Astronomical Union

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50 The International Astronomical Union has identified 88 what? - 50 The International Astronomical Union has identified 88 what? by How Convert 83 views 2 years ago 2 minutes, 28 seconds - ANSWER ³ The**International Astronomical Union**, has identified 88 what? #NEW VIDEO# ...
IAU-OAO Seminar on Public Engagement Training - IAU-OAO Seminar on Public Engagement Training by International Astronomical Union IAU 2,635 views Streamed 2 years ago 2 hours, 39 minutes - Join us for talks on the importance of astronomy outreach, public engagement training, and the future of **IAU**, public engagement ...
Globalscape
Brook Smith
Opening Remarks
The Mission of the Cavali Foundation
Scip Science Public Engagement Partnership
Challenges and Opportunities
Science Communication Is Diverse and Inclusive
Education Outreach and Engagement Awards
Avina Vondis Vandersoup
Thoughts on Public Engagement
Public Engagement
Public Engagement in Astronomy
Launch of the James Webb Space Telescope
Importance of Graphic Artists
Amateur Astronomers
Astrotourism
Lessons Learned
Educational Days
How Can We Get Hold of the Iconic Images
Fatimata Kibi
Maria Drostovska
Engage with Early Career Astronomers
How To Train Early Career Astronomers
Possible Solution to these Problems
Comments
Why People Perceptions Matter
Why Do People Perceptions Matter

The Importance of Two-Way Dialogue
Similarity
Willingness To Listen
The Challenge of Strategies
Model a Conversation
What Indicators Would You Recommend for Evaluation Strategies To Indicate Levels of Audience Trust in a Message from an Activity
Know Your Audience
How Do You Feel about Inviting People To Critique Science Rather than Just Accept Science
Formal Introduction
History of Outreach
The Office for Astronomy Outreach
International Year of Light
International Astronomical Union|#shorts #shortvideo #youtubeshorts #facts #funny #viralvideo - International Astronomical Union|#shorts #shortvideo #youtubeshorts #facts #funny #viralvideo by The Factscope Tv 8 views 2 months ago 6 seconds – play Short - Forget stargazing apps and backyard telescopes, dive into the cosmic kingdom ruled by the **International Astronomical Union**, ...
IAU 100 Years video (short version) - IAU 100 Years video (short version) by International Astronomical Union IAU 596 views 4 years ago 4 minutes, 10 seconds - Credit: **IAU**,.
The International School for Young Astronomers program was created by the IAU in 1967
It is aimed at students with a master's degree in astrophysics or at the beginning of their PHD.
For example, just looking at the earth and the sun
and how many times earth can fit into the sun and think of how small we are in comparison.
100 YEARS: UNDER ONE SKY
Winter Constellations - Winter Constellations by International Astronomical Union IAU 498 views 1 year ago 1 minute, 18 seconds - Video title: Winter Constellations Author: Amirreza Kamkar Country: Germany Sirius, the brightest star in the night sky, is shown ...
IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference - IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference by International Astronomical Union IAU 638 views Streamed 2 years ago 59 minutes - On 3 February 2022 leaders of the **International Astronomical Union**, (**IAU**,), NSF's NOIRLab, and the SKA Observatory (SKAO) will ...
Centre Organization
from satellite constellations
Training curriculum for observers worldwide
Need and Purpose
Challenges
Functions
Implementation
Progress
With the IAU and inside the IAU since 1946 - With the IAU and inside the IAU since 1946 by International Astronomical Union IAU 459 views 4 years ago 24 minutes - In this video, Jean-Claude Pecker (**IAU**, past General Secretary, 1964–1967) talks about some history of astronomy and the **IAU**,, ...
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Star Clusters Proceedings Of The 85th Symposium On The International Astronomical Union Held In Vict

How Do We Determine The Age of Star Clusters? - How Do We Determine The Age of Star Clusters? by Cosmoknowledge 3,573 views 3 years ago 2 minutes, 48 seconds - People in the channel have asked for this video! Here, we're gonna talk about the ways **astronomers**, use to determine the age of ...
Symposium Plenary Lecture: IAUS 373 - Symposium Plenary Lecture: IAUS 373 by International Astronomical Union IAU 137 views 1 year ago 1 hour, 32 minutes - Symposium, Plenary Lecture:

IAUS 373 August 10 (Wed) 09:15 - 10:45 KST.
Professor Adam Leroy
Resolved Studies of Galaxy Evolution
Star Gas Feedback Cycle
Region Evolution
Critical Time Scales
The Gravitational Free Fall Time
Annalisa Pillapitch
A Cosmological Magnetohydrodynamical Simulation of Galaxies
Large Volume Cosmological Simulations
Cosmological Scales Simulations
Ssfr Radial Profiles
Pressure Stripping
Isotropic Satellite Quenching
Angular Modulation
The Stellar Mass Function Evolution
What Drives the Ssr Evolution
Massive Central Disk Galaxies
Agent Frequency
Define the Disk Galaxies
Symposium Plenary Lecture: IAUS 371 - Symposium Plenary Lecture: IAUS 371 by International Astronomical Union IAU 118 views 1 year ago 1 hour, 19 minutes - Symposium, Plenary Lecture: IAUS 371 August 9 (Tue) 09:15 - 10:45 KST.
David Dvorkin
1920s Solar and Stellar Spectroscopy
Alexander Krameda
Henry Russell
Transition Probabilities
Online Atomic Spectra Database
Cosmic Origin of Heavy Elements
Urgent Problems Considering the Atomic Data
Conclusion
Cno Compilation
CITA 805: Simulating the formation of massive star clusters - CITA 805: Simulating the formation of massive star clusters by CITA Presentations 178 views 6 years ago 52 minutes - Title: Simulating the formation of massive **star clusters**, Speaker: Mike Grudi (Caltech) Date: 2017-12-18.
Young Massive Clusters (YMCs)
Big Questions
Meshless Conservation Laws in GIZMO
Methods: Lagrangian MHD
Methods: Star formation (without the stars)
Methods: Radiation
Methods: Feedback
SFE Summary
Simulated Star Clusters
Star Cluster Assembly
Hierarchical Star Formation
Cluster Shallowing via Mergers
Pairwise Merger Simulations
Star Cluster Structure: Summary
SFE vs. Cloud Surface Density
SFE and :Simulations
Bound Cluster Formation: Summary
Symposium Plenary Lecture: IAUS 370 - Symposium Plenary Lecture: IAUS 370 by International Astronomical Union IAU 78 views 1 year ago 1 hour, 32 minutes - Symposium, Plenary Lecture: IAUS 370 August 8 (Mon) 09:15 - 10:45 KST.
Magnetospheres
Radiation Driven Winds from Hot Stars
Mass Loss Rate

Speed of the Outflow of the Solar Wind
Basic Physics of Radiation Driven Installer Winds
Kanti Mechanism
Thermally Driven Coronal Winds
High Temperature Corona
Thermal Runaway
The Energy Balance
Energy Budget
Gyrochronology
Dust Tail
Escape Temperature
Planetary versus Stellar Magnetospheres
The Magnetism of Massive Stars
The Magnetic Confinement Parameter
Dynamical Magnetosphere
Centrifugal Breakout Events
Centrifugal Breakout
Relationship to Planets
The Solar Wind
Mars versus Earth versus Venus
Hot Jupiters versus Super Earth
The Fundamentals of Astrophysics
The Loss of Water in Venus
Accretion Disks
Ablation of Discs by Radiation
Alpha Factor
Line Deshadowing Instability
Star Cluster Research - Star Cluster Research by SUNY Geneseo 610 views 7 years ago 2 minutes, 13 seconds - Aaron Steinhauer and his two research students, Alex Belles '18 and Alexis Irwin '18, research a **star cluster**, to understand more ...
Symposium Plenary Lecture: IAUS 368 - Symposium Plenary Lecture: IAUS 368 by International Astronomical Union IAU 64 views 1 year ago 1 hour, 33 minutes - Symposium, Plenary Lecture: IAUS 368.
George Jorgovsky
George Zagowski
Star Galaxy Separation
Unsupervised Clustering
Dimensionality Reduction
Principal Component Analysis
Time Domain Survey
Periodograms
Visualizing High Dimensionality Data Spaces
Extended Reality
Uncertainty Quantification
The Biases
Symbolic Regression
Alpha Fold
Sociological Comments
Recap
What Is Ai
Interplay between Ai Physics and Humans
Deep Learning
Using Decision Trees
Wisdom of the Deep Learning
Example of Anomaly Detection
Latent Variables
Cosmology
Minimum Spanning Tree
Cosmological Parameters

Forward Modeling
Symposium Plenary Lecture: IAUS 374 - Symposium Plenary Lecture: IAUS 374 by International Astronomical Union IAU 34 views 1 year ago 1 hour, 12 minutes - Symposium, Plenary Lecture: IAUS 374 August 11 (Thu) 09:15 - 10:45 KST.
Rare Earth Why Complex Life Is Uncommon in the Universe by Peter Ward
Substance of the Rare Earth Hypothesis
Role of Astronomical Hazards
Reasons To Oppose Hypotheses
Virtual History
Modality and Necessity
Essential and Accidental Properties
Argument of Rare Earth Theorists
Trans World Identity
Copernican Mirror
Questions and Comments
Bayesian Inference
Astronomy - Ch. 28: The Milky Way (8 of 27) Where Does the Spiral Structurer Come From? - Astronomy - Ch. 28: The Milky Way (8 of 27) Where Does the Spiral Structurer Come From? by Michel van Biezen 1,349 views 3 years ago 7 minutes, 10 seconds - We will learn the spiral structure appears to come from the natural result of 3 main causes: 1) the density wave pattern of **stars**, 2) ...
Introduction
Density Wave Pattern
Gravitational Pull
Differentiation
Differential Speed
Time
Galaxy Collision
The math study tip they are NOT telling you - Ivy League math major - The math study tip they are NOT telling you - Ivy League math major by Han Zhango 1,075,398 views 6 months ago 8 minutes, 15 seconds - Hi, my name is Han! I studied Math and Operations Research at Columbia University. This is my first video on this channel.
Intro and my story with Math
How I practice Math problems
Reasons for my system
Why math makes no sense to you sometimes
Scale up and get good at math.
What If We Lived in a Globular Cluster? - What If We Lived in a Globular Cluster? by What If 543,544 views 4 years ago 4 minutes, 21 seconds - Take some cosmic dust and gas, then add billions and billions of planets and a whole lot of **stars**, to the mix. Spice it all up with a ...
Intro
Globular Cluster
Star Formation
Planet Formation
Outro
Our Solar Neighbourhood - Our Solar Neighbourhood by Royal Astronomical Society 17,959 views 3 years ago 3 minutes, 39 seconds - Since 2013 the European Space Agency Gaia satellite has been measuring the positions and characteristics of nearly two billion ...
We start our tour of the Solar neighbourhood at our Sun.
Now we move away from our Sun, seeing the planets and then stars within 100 parsecs (320 light years) of the Sun
The precise 3D positions in space for these 331312 stars were taken from Gala's newest star catalogue 'Gaia EDR3'.
Moving into this volume we see stars of different colours determined by Gaia. The colours are indicators of temperature.
Besides the position of the stars in space Gaia also measures the motions of the stars with high precision
The velocities of the stars are indicated by these vectors.
Many stars have companion stars. They orbit around their common center of gravity
We highlight these wide binary stars in yellow

This is the Hyades' cluster containing stars born about 600 million years ago.
We highlight the stars of the Hyades' in yellow.
9., large molecular cloud where they were born
Now we move out so that all the 331312 stars within 100 parsecs become visible.
Moving out of the Milky Way we recognize the region with a radius of 100 parsec around our Sun.
UPDATED: Improving Eye Health Through a Quantum Lens, Using Circadian Principles. - UPDATED: Improving Eye Health Through a Quantum Lens, Using Circadian Principles. by Quantum Eye Doc 838 views 18 hours ago 1 hour, 22 minutes - Learn the principles of Quantum Biology and why it's so important. Learn why our modern world is harmful from a circadian ...
How does your body know what time it is? - Marco A. Sotomayor - How does your body know what time it is? - Marco A. Sotomayor by TED-Ed 945,286 views 7 years ago 5 minutes, 9 seconds - Being able to sense time helps us do everything from waking and sleeping to knowing precisely when to catch a ball that's hurtling ...
CIRCADIAN BHYTHM
CHRONOBIOLOGY
ZEITGEBERS
What creates a spiral structure of galaxies? - What creates a spiral structure of galaxies? by Cosmos:elementary 18,956 views 3 years ago 12 minutes, 46 seconds - Why do spiral galaxies have this beautiful spiral structure? We are going to talk about both grand design and flocculent spiral ...
Introduction
Types of galaxies
Spiral structure
Density wave theory
Outro
What Are Active Galaxies? - What Are Active Galaxies? by Cosmoknowledge 12,174 views 3 years ago 3 minutes, 24 seconds - Most of the galaxies we observe are considered normal. We inhabit a normal galaxy called the Milky Way. When you observe a ...
What are the three main types of active galaxies?
Everything You've Ever Wanted To Know About Coffee - Everything You've Ever Wanted To Know About Coffee by Tastemade 771,143 views 5 years ago 4 minutes, 54 seconds - Everything you need to know to make the perfect cup of joe. For more amazing shows & recipes download the Tastemade App: ...
METHOD DETERMINES GRIND SIZE
AFTER 1 MINUTE BREAK THE CRUST
REMOVE BREWER AND ENJOY
1 LARGE CHEESE CLOTH
Undiscovered Universe With Dr. Annapurni Subramaniam: Life On Mars & More | The Ranveer Show 345 - Undiscovered Universe With Dr. Annapurni Subramaniam: Life On Mars & More | The Ranveer Show 345 by BeerBiceps 376,749 views 5 months ago 59 minutes - Follow Dr. Annapurni Subramaniam's Social Media Handles:- Instagram: https://instagram.com/subramaniamannapurni ...
Neutron Star Merger Gravitational Waves and Gamma Rays - Neutron Star Merger Gravitational Waves and Gamma Rays by Veritasium 1,132,436 views 6 years ago 5 minutes, 26 seconds - The merging of two neutron **stars**, was detected by gravitational waves and then by telescopes in all parts of the electromagnetic ...
Symposium Plenary Lecture: IAUS 372 - Symposium Plenary Lecture: IAUS 372 by International Astronomical Union IAU 76 views 1 year ago 1 hour, 23 minutes - Symposium, Plenary Lecture: IAUS 372.
Lay Hand Prayer,Bishop Amardeep Ministry #bishopamardeepministry - Lay Hand Prayer,Bishop Amardeep Ministry #bishopamardeepministry by Chamatkar Church Tv 77,988,388 views 6 months ago 27 seconds – play Short
UC Connect: The Return of Stargazing to the City - UC Connect: The Return of Stargazing to the City by University of Canterbury 263 views 9 months ago 1 hour, 1 minute - Reviving a 114-year tradition, University of Canterbury **astronomers**, are bringing stargazing back to the centre of Ltautahi ...
EGU2014: Face of the Earth Union Symposium (US3) - EGU2014: Face of the Earth Union Symposium (US3) by European Geosciences Union 57 views 8 years ago 1 hour, 23 minutes - Union Symposium, at the 2014 General Assembly of the European Geosciences **Union**,, which took place in Vienna from 27 April ...
Major points of the talk
Eduard Suess - key ideas on the face of the Earth

Charles Lyell
Charles Darwin
The Face of the Earth as palimpsest
The Face of the Earth as ruin
The Face of the Earth as Earth System
Key questions about the face of the Earth in 2014
Viewing the face of the Earth from above
Getting under the skin of the face of the Earth
Dating changes to the Face of the Earth
Namib Sand Sea, Namibia
Identifying the make up of the face of the Earth
Golden Gate Highlands, South Africa
Sequencing the face of the Earth
Geogenomics
Landscape dynamics and the face of the Earth 2014
Virtual Astronomy Club - 14th July 2020 - Ian Ridpath - Pictures in the Sky - Virtual Astronomy Club - 14th July 2020 - Ian Ridpath - Pictures in the Sky by Dave Eagle 361 views 3 years ago 1 hour, 26 minutes - In this session of the Virtual **Astronomy**, Club, Ian Ridpath tells us all about the history of the constellations. A fascinating tale of ...
Dave Eagle
Chinese constellations were very different
Stars in a constellation are unrelated
Almagest - first printed edition (1515)
Arabic star names on astrolabes
Albrecht Dürer celestial chart 1515
Latitude at which the constellations were invented: -36°N
Transmission of the constellations from their origin up to the 16th century
12 southern constellations
Dorado and Volans
Bayer labels stars with Greek letters
Hevelius presents his constellations
Argo from Bayer's Uranometria
Some Lacaille constellations
An aerial telescope of the day
Delporte's constellation boundaries
Serpens - a constellation divided
The pictures are gone
Linking lines between stars
Proper motions
the real reason why you're bad (or good) at math - the real reason why you're bad (or good) at math by GabeSweats 1,844,988 views 1 year ago 59 seconds – play Short - hey it's me gabe (@gabesweats) from tiktok! in this video, i go over the real reason why you're bad (or good) at math make sure to ...
UV, Optical and Infrared Photometry - GROWTH Astronomy School 2018 - UV, Optical and Infrared Photometry - GROWTH Astronomy School 2018 by GROWTH Project 1,318 views 4 years ago 1 hour, 9 minutes - This lecture explains the basics of measuring photometric fluxes from **astronomical**, ultraviolet, optical, infrared image data.
Aperture Photometry
Disadvantages
Virtual Collection
General Procedure in Photometry
Astro Query
Querying the Vizier Catalog
Run Source Extractor
Configuration File
Aperture Correction
The Curve of Growth
Psf Photometry
Biological Clocks - Science Nation - Biological Clocks - Science Nation by National Science Foundation News 5,252 views 14 years ago 2 minutes, 34 seconds - Everything from the mysterious

phenomenon of "early morning" heart attacks in humans -- to how tiny nocturnal mammals evade ...
Joseph Takahashi (UT Southwestern/HHMI) Part 1A: Circadian Clocks: Clock Genes, Cells and Circuits - Joseph Takahashi (UT Southwestern/HHMI) Part 1A: Circadian Clocks: Clock Genes, Cells and Circuits by Science Communication Lab 33,059 views 10 years ago 33 minutes - Lecture Overview: Circadian rhythms are an adaptation to the 24 hr day that we experience. Takahashi begins his talk with an ...
Intro
Human sleep-wake is clock-controlled
The human circadian clock in the brain
Ron Konopka and Seymour Benzer in 2000
Phenotype of the Clock mutant mouse
Genetic and Physical Map of the Clock region
Transgenic rescue of the Clock mutant using BACs
Molecular mechanism of the circadian clock
Circadian clock mechanism in mammals
Clocks exist in all major organs, tissues and cells
Circadian behavior of Clock::WT chimeras
NHC Scholar-to-Scholar Talk: Lorraine Daston, “Science Goes Global” - NHC Scholar-to-Scholar Talk: Lorraine Daston, “Science Goes Global” by National Humanities Center 592 views Streamed 2 years ago 1 hour, 17 minutes - When we refer to "the **international**, scientific community," what do we mean? In this Scholar-to-Scholar talk, NHC Fellow Lorraine ...
Robert Newman
Effective Global Governance in Science
The Paragon of Successful International Governance
The Universal Postal Union
Aspects of the International Postal Union That Provide a Template for the International Scientific Collaborations
Paris Observatory
Reflecting Telescope
International Meteorological Committee
Alfred Russell Wallace
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Spherical videos

Infrared Solar Physics

Infrared Solar Physics contains the proceedings of the 154th Symposium of the International Astronomical Union held in Tucson, Arizona, March 2--5, 1992. Aimed at active workers and graduate students in solar physics, this volume provides the first comprehensive view of a rapidly expanding discipline that gives us a new perspective on the sun. Measurements across the wide infrared spectral range -- here, from 1 mum to 1 mm -- can probe the solar atmosphere from below the visible surface through the outer reaches of the corona. Taking full advantage of revolutionary advances in detector technology, infrared observations from the ground, aircraft and space have led to a better understanding of solar magnetic fields, atmospheric structure and activity, and elemental abundances. The infrared has also provided new interpretive challenges, such as the appearance of the 12-mum emission lines of magnesium. These and other developments are discussed here by the leading contributors to the field, who also give their perspectives on the future of this rich field of study.

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Waves and Oscillations in the Solar Atmosphere (IAU S247)

Provides the latest summary on the solar coronal heating enigma and magneto-seismology of the solar atmosphere, for solar physics researchers.

Solar Gamma-, X-, and EUV Radiation

Proceedings of IAU Symposium No. 68 held in Buenos Aires, Argentina, 11-14 June 1974, organized by the IAU in co-operation with COSPAR

Solar Flare Loops: Observations and Interpretations

This book provides results of analysis of typical solar events, statistical analysis, the diagnostics of energetic electrons and magnetic field, as well as the global behavior of solar flaring loops such as their contraction and expansion. It pays particular attention to analyzing solar flare loops with microwave, hard X-ray, optical and EUV emissions, as well as the theories of their radiation, and electron acceleration/transport. The results concerning influence of the pitch-angle anisotropy of non-thermal electrons on their microwave and hard X-ray emissions, new spectral behaviors in X-ray and microwave bands, and results related to the contraction of flaring loops, are widely discussed in the literature of solar physics. The book is useful for graduate students and researchers in solar and space physics.

Non-Solar X- and Gamma-Ray Astronomy

Proceedings of IAU Symposium No. 87 held in Rome, Italy, May 8-10, 1969

New Developments in Array Technology and Applications

A sharing of information by researchers who use CCDs and arrays, designers and manufacturers of CCDs and Array Mosaics, and those who write the software to control such devices and to reduce the large amounts of data contained in each frame. In some 60 papers they discuss plans for applying the technology to the large telescopes that have been built recently or are planned for the near future, new developments in infrared arrays, advances and concerns with the use of CCDs in photometry and spectroscopy, and creating large mosaics of chips to allow larger areas of the sky to be covered in a single frame. Annotation copyright by Book News, Inc., Portland, OR

The Solar Corona

The Solar Corona covers the proceedings of the International Astronomical Union Symposium No. 16 held at Cloudcroft, New Mexico, U.S.A. on August 28-30, 1961. The book focuses on the characteristics, reactions, and analysis of the solar corona. The selection first offers information on the local physics of the corona and comments on coronal heating. Discussions focus on density, temperature, energy balance, excitation and ionization, and electrostatic ejection of light ions. The text then takes a look at the temperature of the solar corona and relative populations of Fe in the corona. The pu ...

The Extragalactic Infrared Background and Its Cosmological Implications

Proceedings of IAU Symposium No. 71, held in Prague, Czechoslovakia, August 25-29, 1975

Multi-wavelength Investigations of Solar Activity

The IAU Colloquium No. 143 "The Sun as a Variable Star: Solar and Stellar Irradiance Variations" was held on June 20 - 25, 1993 at the Clarion Harvest House, Boulder, Colorado, USA. The main objective of this Colloquium was to review the most recent results on the observations, theoretical interpreta tions, and empirical and physical models of the variations observed in solar and stellar irradiances. A special emphasis of the Colloquium was to discuss the results gained on the climatic impact of solar irradiance variability. The study of changes in solar and stellar irradiances has been of high interest for

a long time. Determining the absolute value of the luminosity of stars with different ages is a crucial question for the theory of stellar evolu tion and energy production of stellar interiors. Observations of the temporal changes of solar and stellar irradiances - in the entire spectral band and at different wavelengths - provide an additional tool for studying the physical processes below the photosphere and in the solar- stellar atmospheres. Since the Sun's radiative output is the main driver of the physical processes with in the Earth's atmosphere, the study of irradiance changes is an extremely important issue for climatic studies as well. Climatic models show that small, but persistent changes in solar irradiance may influence the Earth's climate.

Transactions of the International Astronomical Union

Annotation. The nonprofit Astronomical Society of the Pacific (ASP) publishes the Conference Series Proceedings as part of its century-old mission to provide resources for astronomers and advance the science of astronomy. Since 1988, the ASP has published the proceedings of astronomical workshops, meetings, colloquia, and symposia to meet the community's demand for affordable, high-quality volumes on current topics in the rapidly expanding fields of astronomy and astrophysics. Since 1998, the Society has also served as publisher for the International Astronomical Union (IAU), adding their Symposia, Highlights, and Transactions to our growing list of publications. For most rapid delivery of each volume, we encourage libraries and astronomy departments to place a Standing Order for the ASP Conference Series and/or the IAU Publications. Standing Orders are shipped directly from the printer and customers receive volumes at the same discounted rates as ASP members (approximately 25-35 ASP volumes each year and/or 5 IAU Symposia). Please refer to the order form to take advantage of this time-saving offer. We encourage all professionals who are sponsoring conferences, workshops, or colloquia to inquire about publishing these proceedings with the ASP. We provide quality volumes at less than half the price of comparable titles from other major publishers, ensuring that the publication will be available to a wider audience of budget-conscious scientists. From a meeting held at College Park, MD, 18-20 October 1999.

Basic Mechanisms of Solar Activity

Proceedings of the 139th Symposium of the International Astronomical Union on `The Galactic and Extragalactic Background Radiation, held in Heidelberg, FRG, June 12-16, 1989

Recent Insights Into the Physics of the Sun and Heliosphere

Cited in BCL3, Sheehy, and Walford . Compiled from the 12 monthly issues of the ABPR, this edition of the annual cumulation lists by Dewey sequence some 41,700 titles for books published or distributed in the US. Entry information is derived from MARC II tapes and books submitted to R.R. Bowker, an

Eruptive Solar Flares

This is an exhaustive survey of present-day solar research including both theory and observations. It deals with eruptive flares, filament eruption in x-rays and radio waves, energy release and transport, and terrestrial response to solar flares. Details of the most recent SOLAR-A project (launched shortly after the conference) are also presented.

The Sun as a Variable Star: Solar and Stellar Irradiance Variations

THE MEETING The IAU Symposium 160 ASTEROIDS COMETS METEORS 1999 has been held at Villa Carlotta in Belgirate, on the shore of Lago Maggiore (Italy), from June 14 to June 18, 1993. It has been organized by the Astronomical Observatory of Torino and by the Lunar and Planetary Institute of Houston. It has been a very large meeting, with 323 registered participants from 38 countries. The scientific program included 29 invited reviews, 106 oral communications, and 215 posters. The subjects covered included all the aspects of the studies of the minor bodies of the solar system, including asteroids, comets, meteors, meteorites, interplanetary dust, with special focus on the interrelationships between these. The meeting was structured as follows. 5 morning plenary sessions have been devoted to invited reviews on: (1) search programs (2) populations of small bodies (3) dynamics (4) physical observations and modelling (5) origin and evolution. Two afternoon plenary sessions have been devoted to space missions to small bodies and to interrelationships between the different populations. The afternoon parallel sessions have been devoted to: dynamics of comets; Toutatis, Ida, Gaspra; physical processes in cometary comae and tails; meteorites; the cosmogonic message from cometary nuclei;

physics of asteroids; the interplanetary dust complex; comet nuclei; meteors; composition and material properties of comets; dynamics of asteroids.

The Solar Corona

These proceedings sample new results derived from extended-objected IR observations and explore the capabilities of large-aperture, low-scattered-light instrumentation. The latest results from IR solar observations are described and a broad range of night-time problems from gravitational lens detection to planetary detection are explored in the context of what capabilities a large reflecting coronagraphic telescope could offer.

Subject Guide to Books in Print

One approach to learning about stellar populations is to study them at three different levels of resolution. First in our own Galaxy; secondly from nearby galaxies where stars can still be resolved; and thirdly in remote galaxies in which the stellar population can only be studied in integrated light. This IAU Symposium covered the entire range of galaxies in its study of their stellar populations. Interspersed with theoretical papers, the wealth of observational results provides an important state-of-the-art presentation of the progress that has been made in this field.

High Energy Solar Physics-anticipating HESSI

The Galactic and Extragalactic Background Radiation