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**XXIXA**

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# Astronomy in Focus

## As presented at the IAU XXIX General Assembly, 2015

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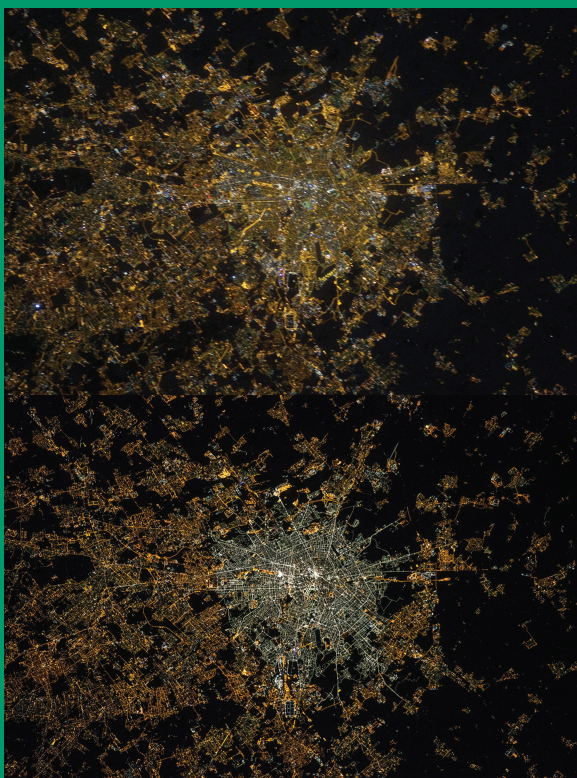
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*COVER ILLUSTRATION:*

The two images of the city of Milan, Italy, taken from the International Space Station at just two years interval from each other, show the dramatic change in the streets' illumination due to the massive replacement of traditional sources to new technology devices (LED sources). The impact of this technological revolution on the night-sky light pollution as well as other relevant concerns for the protection of dark skies were discussed in the Focus Meeting 21 - "Mitigating Threats of Light Pollution & Radio Frequency Interference".

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*Chief Editor*

THIERRY MONTMERLE, IAU General Secretary

*Institut d'Astrophysique de Paris,  
98bis, Bd Arago, 75014 Paris, France  
montmerle@iap.fr*

*Editor*

PIERO BENVENUTI, IAU Assistant General Secretary

*University of Padua, Dept of Physics and Astronomy,  
Vicolo dell'Osservatorio, 3, 35122 Padova, Italy  
piero.benvenuti@unipd.it*

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**ASTRONOMY IN FOCUS  
XXIXA**

**AS PRESENTED AT THE IAU XXIX GENERAL  
ASSEMBLY, HONOLULU, HAWAII,  
UNITED STATES, 2015**

Edited by

**PIERO BENVENUTI**

*University of Padua, Dept of Physics and Astronomy*



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## Preface

A significant change has characterised the scientific programme of the XXIXth IAU General Assembly held in Honolulu, Hawai'i, from August 3rd to 14th, 2015. While the format of the usual 6 Scientific Symposia remained the same as in previous GAs, the meetings known as "Special Sessions (SpS)" and "Joint Discussions (JD)" were replaced by the new "Focus Meetings". Indeed the difference between SpS and JD had become rather vague, therefore creating uncertainties both for the proposers that had to choose the type of meeting, as well as for the members of the Evaluation Panel.

It was therefore decided to merge the two types of meeting in a single format: the Focus Meeting, aimed at discussing specific themes of great relevance in the current astronomical research scenario. The initial idea was to limit the duration of the Focus Meeting to no more than two days, in order to accept a larger number of proposals, covering a wide range of hot topics and giving the opportunity to a large number of prospective GA participants to contribute with their recent scientific results.

The new format was received with enthusiasm by the astronomical community and 43 Focus Meeting Proposals were submitted by the deadline of December 15th, 2013. The high quality of the proposals made the task of the Evaluation Panel particularly difficult and, because of that reason, 22 Focus Meetings were accepted: a larger number with respect to the initially proposed limit of 18.

The quality of the invited and contributed talks as well as the attendance at all the Focus Meetings testify the success of the overall GA Scientific Programme. The combination of the 6 large Symposia, that offered exhaustive reviews in their respective scientific areas, with the more specialised Focus Meetings, made the participation in the XXIXth General Assembly a refreshing and stimulating astronomical happening.

The novelty in the format of the GA scientific programme had consequences also in the publication of the Proceedings. Traditionally, two "Transaction" Volumes were produced as outcome of the IAU General Assembly: Transaction-A, that contained reports by the Divisions, Commissions, Working Groups and a summary of the SpS and JD meetings, and Transaction-B that contained more IAU "business" oriented reports, official speeches and documents as well as the updated list of IAU Members.

For the "transition" XXIXth GA, it was decided to maintain the publication of the Transaction-B Volume, being it a valuable formal document for the history of the Union, and to transform the Transaction-A Volume into the current "Astronomy in Focus" Volumes, that contains the most relevant contributions presented in the various Focus Meeting together with a summary of all the accepted papers and posters.

However, since the XXIXth GA marked also the completion of the revision of the IAU internal scientific structure, with the transformation of the previous 40 Commissions into the new 35 ones, it was decided to publish as well a "legacy" Transaction-A Volume that describes the overall restructuring of the scientific bodies of the Union and offers the opportunity to the Commissions to report about their achievements and future plans.

The large numbers of Focus Meetings and the desire to assign a reasonable number of pages to each of them, made it impractical to publish the Proceedings in a single Volume. In agreement with the Publisher, it was therefore decided to split them in two Volumes: Astronomy in Focus XXIXA and Astronomy in Focus XXIXB. The partition of the Focus Meetings between the two volumes is reported in Table 1 and 2.

In conclusion we can say that the change to the new format of the GA Scientific Programme has been successful. Naturally, as in all new experiments, there are lessons to be learned for the future. In particular it may be better to slightly decrease the

**Table 1.** Astronomy in Focus XXIXA

FM #	Chair	Title
FM 1	A. Morbidelli	Dynamical problems in Extrasolar planets science
FM 2	C. Ruggles	Astronomical Heritage: Progressing the UNESCO-IAU Initiative
FM 3	M. Bishop	Scholarly Publication in Astronomy: Evolution or Revolution?
FM 8	S. Aigrain	Statistics and Exoplanets
FM 9	D. Bockelee-Morvan	Highlights in the exploration of Small Worlds
FM 11	D. Spergel	Global Coordination of Ground and Space Astrophysics and Heliophysics
FM 12	F. Salama	Bridging Laboratory Astrophysics and Astronomy
FM 13	N. Krivova	Brightness variations of the Sun and Sun-like stars
FM 20	K. Govender	Astronomy for Development
FM 21	C. Walker	Mitigating Threats of Light Pollution & Radio Frequency Interference

**Table 2.** Astronomy in Focus XXIXB

FM #	Chair	Title
FM 4*	L. Stanghellini	Planetary nebulae as probes of galactic structure and evolution
FM 5	J. Tauber	The Legacy of Planck
FM 6	A. Comastri	X-ray Surveys of the Hot and Energetic Cosmos
FM 7	C. Leitherer	Stellar Physics in Galaxies throughout the Universe
FM 10	Ch. Thoene	Stellar explosions in an ever-changing environment
FM 14	J. Lazio	The Gravitational Wave Symphony of Structure Formation
FM 15	S. Kwok	Search for water and life's building blocks in the universe
FM 16	B. Davies	Stellar Behemoths - Red Supergiants across the local Universe
FM 17	S. Jeffery	Advances in Stellar Physics from Asteroseismology
FM 18	E. Falgarone	Scale-free processes in the universe
FM 22	H. Ebeling	The Frontier Fields: Transforming our understanding of cluster and galaxy evolution

number of scheduled Focus Meetings and to impose a strict limit to their duration in order make the distinction between Symposia and FM more clear. In addition, after the selection of the FM, more attention should be paid in the planning and scheduling of the detailed scientific programme of each FM, avoiding possible overlapping and duplication of subjects.

All these indications, as well as those arising from the reading of the Astronomy in Focus Proceedings, will be taken into due account in the preparation of the Scientific Programme of the XXXth General Assembly.

Auf-wiederssehen in Vienna!

*Piero Benvenuti*  
IAU General Secretary

\*Details of FM4 were originally omitted and have been corrected in the online version, with an additional correction notice.