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COVER ILLUSTRATION:

Nuzzled in the chest of the constellation Virgo (the Virgin) lies a beautiful cosmic gem—the galaxy Messier 61. This glittering spiral galaxy is aligned face-on towards Earth, thus presenting us with a breathtaking view of its structure. The gas and dust of the intricate spiral arms are studded with billions of stars. This galaxy is a bustling hub of activity with a rapid rate of star formation, and both a massive nuclear star cluster and a supermassive black hole buried at its heart.

Messier 61 is one of the largest members of the Virgo Cluster, which is made up of more than a thousand galaxies, and is itself at the centre of the Virgo Supercluster—to which our Milky Way also belongs. This dazzling beauty was first discovered in 1779, and it has been capturing astronomers' interest ever since. Set against a dark sky littered with galaxies, this image shows the awe-inspiring M61 in its full glory—even at its distance of over 50 million light-years.

This image was taken as part of ESO's Cosmic Gems Programme, an outreach initiative to produce images of interesting, intriguing or visually attractive objects using ESO telescopes, for the purposes of education and public outreach. The programme makes use of telescope time that cannot be used for science observations. In case the data collected could be useful for future scientific purposes, these observations are saved and made available to astronomers through ESO's Science Archive.

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MARIA TERESA LAGO

General Secretary



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Astronomy in Focus

Preface

The scientific programme of the XXXth IAU General Assembly held in Vienna, Austria, from August 20th to 31st, 2018, included the usual six Scientific Symposia, plus one extra Symposium, the “Centennial Symposium” focused on the 100 years of IAU, and fifteen Focus Meetings.

The Focus Meetings were introduced for the first time in the programme of the XXIXth IAU General Assembly in 2015 aimed at discussing specific themes of great relevance in the current astronomical research scenario. Learning from that experience, the IAU Executive Committee took in 2016 the decision that the scientific programme of the XXXth IAU General Assembly should include only twelve scientific Focus Meetings plus three other of different character and duration: one addressing the activities of the Executive Committee Working Group on Global Coordination of Ground and Space Astrophysics (FM13), and the other two focused on the mission and activities carried out by two IAU Offices: the Office of Astronomy Outreach (FM14) and the Office of Astronomy for Development (FM15).

The Focus Meetings were selected from a set of thirty two Focus Meetings Proposals submitted by the deadline, December 15th 2016. The high quality and diversity of the proposals made the task of the Evaluation Panel particularly difficult.

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 XXXth General Assembly was not only a very participated astronomical gathering - the largest so far in terms of participants - but also a very stimulating one.

Besides the traditional two “Transaction” Volumes produced as outcome of the IAU General Assembly: Transaction-A, containing the reports by the Divisions, Commissions, Working Groups and a summary of the SpS and JD meetings, and Transaction-B presenting the more IAU “business” oriented reports, official speeches and documents, as well as the updated list of IAU Members, the “Astronomy in Focus” Volume introduces the most relevant contributions presented in the various Focus Meeting. Regrettably two of the Focus Meetings (FM2 and FM13) did not in the end produce the expected Proceedings which are essential to keep a full record of the meeting.

“Astronomy in Focus” is published in paper and electronic versions, allowing for each Focus Meeting up to 40 pages plus an introduction by the respective Chair and Editor. Furthermore, it was also offered the possibility to include extra supplementary material, in electronic version only.

Teresa Lago
IAU General Secretary

Table 1. Astronomy in Focus

FM #	Chair	Title
FM 1	Joseph Masiero	A century of Asteroid Families
FM 2	Wei Cui	Warm and Hot Baryonic Matter in the Cosmos
FM 3	Volker Beckmann	Radio Galaxies: Resolving the AGN phenomenon
FM 4	Analle Maury	Magnetic Fields along the Star-Formation Sequence
FM 5	Ralph Neuhaeuser	Understanding historical observations to study transient phenomena
FM 6	Danail Obreschkow	Galactic Angular Momentum
FM 7	Letizia Stanghellini	Radial metallicity gradients in star forming galaxies
FM 8	Luigina Feretti	New Insights in Extragalactic Magnetic Fields
FM 9	Greg Kopp	Solar Irradiance: Physics-Based Advances
FM 10	Ingrid Mann	Nano Dust in Space and Astrophysics
FM 11	Nikole Lewis	JWST: Launch, Commissioning, and Cycle 1 Science
FM 12	J. Allyn Smith	Calibration and Standardization Issues in UV-VIS-IR Astronomy
FM 13	David Spergel	Global Coord. of Intern. Astrophysics and Heliophysics Activities from Space and Ground
FM 14	Sze-leung Cheung	IAU's role on global astronomy outreach, the latest challenges and bridging different communities
FM 15	Kevindran Govender	Astronomy for Development