

Concluding Remarks

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Overview

In the local universe, a small percentage of galaxies may host extraordinarily luminous and energetic activity due to the rapid and efficient formation of stars, starbursts (SB) and/or active galactic nuclei (AGN) where the energy release is due to accretion on to a central, supermassive black hole. For both phenomena the enhanced activity can be 100 to 1000 times that in 'non-active' galaxies. Although there is general consensus that these diverse activities are related at least circumstantially (e.g. by dynamic triggering of galaxy interactions or stellar bars and by a high abundance of interstellar gas which may fuel both) – major uncertainty persists with respect to temporal sequence (their order and relative duration), their interaction (fueling and feedback) and their role in the early universe (formation and buildup of galaxies and relative contributions to the reionization of the universe).

The rapid development of multi-wavelength observations during the last decade has provided considerable constraints while many theoretical studies probed more deeply the physics inside these two phenomena. The goal of this conference was to review recent progress, to present new results, to plan future work, and to establish collaborations between people both observationally and theoretically. For the meeting, scientists from over 20 different countries travelled, many from half way around the globe – we appreciate their attendance immensely.

This meeting provided the first in-depth presentation of the extensive observational results from the Spitzer Space Telescope of mid-IR spectroscopy and imaging/photometry as well as new detailed theoretical modelling of the relationship and interaction of the SB and AGN phenomena. Major new studies have also been completed for the local universe from SDSS and other ground-based

radio, IR/optical, and space based x-ray observatories. The importance of the intense SB and AGN activity in the early universe only 1 billion years after the Big Bang is also becoming evident given the very early formation of extremely massive galaxies and black holes. The coming-together and cross-fertilization of these studies at the meeting was most productive. The level of interaction was particularly high due to the very large number of talks, especially by younger scientists from China and abroad who are ultimately the future leaders, and promises to further our understanding of these exciting phenomena. Extensive time was left open for coffee break discussions and interactions. And the beautiful banquet dinner cruise on the Huangpu river enabled many enduring scientific friendships.

Acknowledgements

It is a pleasure to acknowledge the scientists of Shanghai Normal University, and especially President Li, for their hospitality and generous and enthusiastic support for this forefront international meeting. We thank Harvard-Smithsonian Center for Astrophysics, the National Science Foundation of China represented by Dr. Peiwen Ji during the meeting, and Shanghai Municipal Government represented by Dr. Xiaochun Lu for their financial supports for this meeting. We especially thank Dr. Giovanni Fazio for his kindly organizing telecom for the SOC during preparation of this meeting.

The local organizing committee with Guoxun Dong, Jinxin Hao, Hua Hua, Hexing Li, Jin Li, Jianfei Lu (Chair), Jingying Lu, Zhijian Luo, Zhaoqing Yang, Zhongnan Yang, Lianhua Wang and Weimin Wang handled the detailed planning and logistics beautifully – making the meeting most productive.

The editors with Weimin Wang, Zhaoqing Yang, Zhijian Luo and Zhu Chen put a lot of efforts to combine all the contributions together – making the proceeding most beautiful.

The scientific organizing committee with Jiansheng Chen (BAO, China), Martin Elvis (CfA, USA), Giovanni Fazio (CfA, USA), Yu Gao (PMO, China), Reinhard Genzel (MPE, Germany), Gunther Hasinger (MPE, Germany), Jiansheng Huang (CfA, USA), Colin Norman (STScI, USA), Alain Omont (IAP, France), George Rieke (Arizona, USA), David Sanders (IfA, USA), Nick Scoville (Co-Chair, Caltech, USA), Chenggang Shu (Co-Chair, ShNU, China), Simon White (MPA, Germany), Toru Yamada (NAOJ, Japan) and Lin Yan (SSC, USA) was responsible for the selection and organization of science discussions.