Workshop: Planetary Nebula Research with Subaru Telescope in the Era of International Partnership

2017 Dec 11-13, Hong Kong Univ

Participants and Organizers

Participants

~18 persons from Japan (3), Taiwan (2), USA (3), Hong Kong (6), UK (1), Australia (2), Canada (1)

~14 observers and ~4 theorists, cover most of the PN topics!

SOC

K. Asano (Univ of Denver), Y.-H. Chu (ASIAA), M. A. Dopita (The Australian National Univ), X. Fang (Hong Kong Univ), S. Hyung (Chungbuk National Univ), A. Karakas (Monash Univ), S. Kwok (Hong Kong Univ), X.-W. Liu (Peking Univ KIAA), R. Ohsawa (Univ of Tokyo), M. Otsuka (ASIAA, co-chair), A. Tajitsu (NAOJ Subaru, co-chair), T. Ueta (Univ of Denver, co-chair)

This WS is supported by Subaru Telescope and Hong Kong Univ

Main objectives

- Identify problems concerning PN research areas that can be addressed with the Subaru Telescope

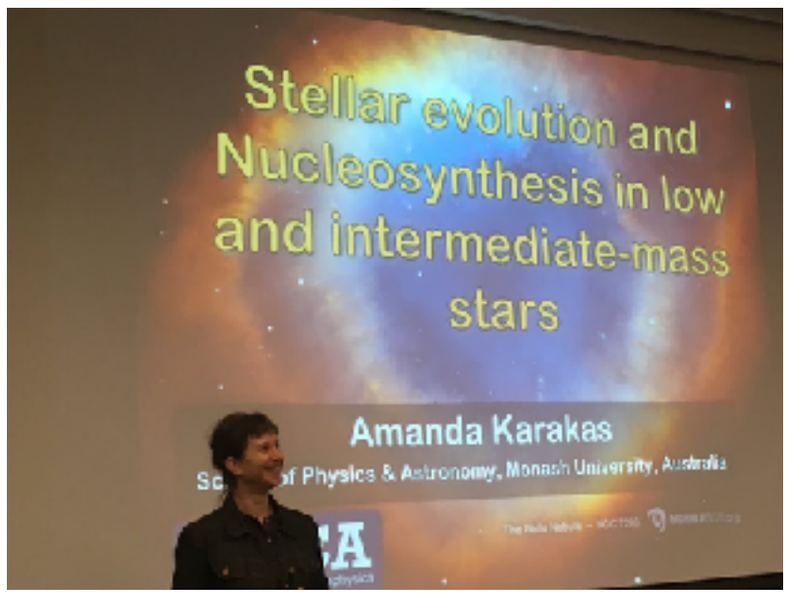
- Establish an international collaborative PN research group in potential Subaru partnership countries

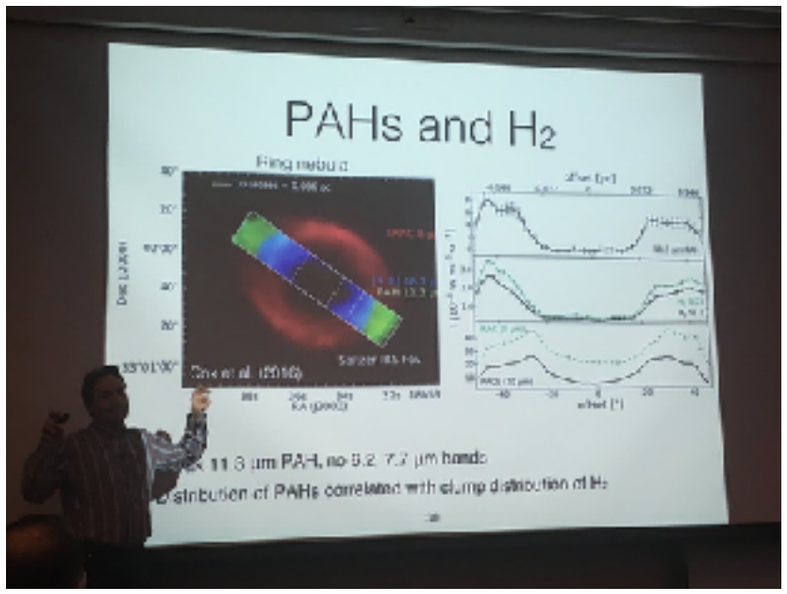
- Select a few projects can be performed in a very short term: identify the PI and co-Is and work on proposals for the S18B cycle and beyond

- Identify/discuss “needs” and “wants” of PN researchers to promote for future plan of Subaru Telescope in terms of telescope operations and instrumentation

Discussed Science Topics

- Overview of Planetary Nebula Research (S. Kwok)
- Planetary Nebula Data Base (Q. Parker)
- Stellar evolution and Nucleosynthesis in PN progenitors (A. Karakas)
- Li production in Novae (A. Tajitsu)
- Dust and Molecule production/formation in PNe (J. Cami, R. Ohsawa, K. Asano, S. Sadjadi)
- Milky Way Galaxy/M31 Galaxy Chemical evolution (X. Fang, T.-H. Lee, K. Bekki, T. Tsujimoto)
- Possible presence of Planets around PN central stars (Y.-H. Chu)
- Spatially resolved study of PNe with HDS Slit-Scan (T. Ueta, M. Otsuka)





Requests and Suggestions for Subaru

Instrumentation

- **For COMICS**
  - K-band filter to compare with other near-IR imaging data
  - Specific filters: e.g., for H2/PAH/Fullerene C60

- **For HDS**
  - Extra emission line filters: e.g., [O II]3726/29 Å , [O III]4363 Å

- **For PFS (to be confirmed)**
  - Addition of the fiber-bundle capability and the blue UV access

- **For future instruments**
  - IFU capabilities in the optical, near-IR, and even in the mid-IR
  - Coverage of the blue UV end in spectroscopy to cover [O II] 3726/29 Å and the Balmer jump (~3650 Å)

Requests and Suggestions for Subaru

Observation

- PIs participate via Zoom/Skype

Archival data

- Expand and strengthen documentations and help on data reduction. This would help to boost the use of the archival data, and hence, more general use of the telescope in the long run!

Requests and Suggestions for Subaru

For international operation

Overall, participants are keen to use Subaru. But, at the same time Subaru needs to keep proactively engaging them to keep their interests. Keep unique instrumentation and high scientific activity.

Subaru science workshop plays an important role for future internal operation!