

REPORT ON THE RADIONET3 NETWORKING ACTIVITY

TITLE: ASSEMBLY AND STAR FORMATION OF EARLY-TYPE GALAXIES IN 3D

DATE: 3-7 DEC 2013

TIME:
(WHOLE DAY)

LOCATION: LEIDEN, THE NETHERLANDS

MEETING WEBPAGE:

<http://www.lorentzcenter.nl/lc/web/2012/536/info.php3?wsid=536&venue=Snellius>

HOST INSTITUTE: LORENTZ CENTER

PARTICIPANTS NO: 20

REPORT:

1. Agenda and/or programme of the meeting

Monday 03 December 2012

10:00 – 12:00 Arrival, coffee and tea

12:30 – 13:30 Lunch

13:30 – 13:45 Welcome by the Lorentz Center, by Henriette Jensenius

13:45 – 14:00 Overview of workshop objectives (Cappellari)

14:00 – 15:30 Afternoon session I: Star-formation in ETGs (observations)

- Integrated Schmidt-Kennicutt relation (Bureau)
- Spatially-resolved S-K and gas-to-dust ratios (Crocker)
- EVLA Observations (Nyland)

15:30 – 16:00 Coffee and tea

16:00 – 17:30 Afternoon session II: Star-formation in ETGs

- Testing SF indicators
 - Outstanding issues for paper to progress
- 17:30 - Wine & Cheese Welcome Party

Tuesday 04 December 2012

09:00 – 10:30 Morning session I: HI

- HI kinematics and dark matter (Oosterloo)
- Other HI related projects (Serra)

10:30 – 11:00 Coffee and tea break

11:00 – 12:30 Morning session II: Cosmological simulations (Naab)

- Simulations of galaxy properties (Naab)
- HI comparison with simulations (Serra)

12:30 – 13:30 Lunch

13:30 – 15:30 Afternoon Session I: AGN and nuclear regions (Nyland)

- Triggering of AGN and impact on gas (Sarzi)
- Discussion on identification, classification, characterisation, analysis of AGN (Nyland)

15:30 – 16:00 Coffee and tea break

16:00 – 17:30 Afternoon Session II: Discussion groups

- AGN (Nyland, Sarzi, Morganti, Oosterloo)
- Plans for stellar kinematics on large radii (Weijmans, Krajnovic, Emsellem, Cappellari)
- Work in groups

17:30 - 18:00 Debriefing of various discussion groups to the team

Wednesday 05 December 2012

09:00 – 10:30 Morning session I: Stellar populations (McDermid)

- Stellar populations on different wavelengths
- Stellar populations on different scales

10:30 – 11:00 Coffee and tea break

11:00 – 12:30 Morning session II: Star-formation in simulations (Bois)

- Stellar populations in simulations
- What should be compared between simulations and observations?

12:30 – 13:30 Lunch

13:30 – 15:30 Afternoon Session I: Various papers

- Nuclear light profiles and kinematics (Krajnovic)
- Update on PXX referee report (Cappellari)
- Molecular gas velocity dispersion (Davis)

15:30 – 16:00 Coffee and tea break

16:00 - 17:30 Afternoon session I: Discussion groups
- Work in groups (Simulations, stellar populations, other)
17:30 - 18:00 Debriefing of various discussion groups to the team
19:00 TEAM DINNER (Restaurant Het Prentenkabinet)

Thursday 06 December 2012.

09:00 - 10:30 Morning session I: Formation of ETGs, an ATLAS3D perspective (Thorsten)
- general discussion
10:30 – 11:00 Coffee and tea break
11:00 – 12:30 Morning session II: MegaCam PI observations (Duc)
- overview of PI MegaCam observations
- overview of current results
- paper plans
12:30 - 14:00 Lunch & informal discussion
14:00 - 15:30 Afternoon Session I: MegaCam Large Program (Duc)
- overview and aims
- major science goals and possible followups
15:30 – 16:00 Coffee and tea break
16:00 – 18:00 Afternoon Session II: General discussion on MegaCam LP (Duc)
- plans to transition from PI to LP observations
- links with NGVS, status of collaboration

Friday 07 December 2012.

09:00 – 10:30 Morning session I: Atlas3D team round-table (McDermid)
- Review of actions, schedule and meetings
- Discussion on future collaborations
10:30 – 11:00 Coffee and tea break
11:00 – 12:30 Morning session II: MegaCam Large Program (Duc)
- Immediate plans
12:30 - END OF MEETING

2. Scientific Summary

The goal of this workshop was to bring together a diverse group of observers and simulators to interact on outstanding questions of star formation and mass assembly in early-type galaxies. The workshop was effectively a team meeting of the Atlas3D Project, enabling the members of the Atlas3D team and a number of people associated with the project to meet and interact. The Atlas3D team is an international group of researchers at various levels of seniority, from PhD students, post-docs, junior group leaders and senior scientists. The project began collecting data 5 years ago, and has since published more than 20 papers in the past 2 years. Participants at this meeting included researchers from both Europe and North America, 4 female researchers and 7 between PhD students and young postdocs (out of 20 participants).

This was a 5-day workshop, with a similar format for each day, which was a series of flexibly scheduled presentations about ongoing work in the morning, with topical discussion of ideas for new lines of investigation in the afternoon. The first two days were used to discuss observational and theoretical progress on the star formation process in early-type galaxies. There is ongoing debate as to whether the apparently regular ‘law’ of star formation found in spiral galaxies still holds in the more evolved, early-type galaxies. This question is complicated by the large variety of star formation tracers available, and the varying systematic uncertainties involved. These were discussed at length, resulting in plans for progress and publications.


The third day was used to hear about the latest results from simulations of galaxy formation using cosmological models re-simulated at high resolution. This was followed by open round-table discussion on galaxy formation scenarios, in an effort to bring the various pieces of information coming from different observables and model predictions into a coherent picture.

The last two days were focused on a new large observing initiative using the Canada-France-Hawaii Telescope. This is a multi-year project, combining the data and efforts of two large teams. This was the first general discussion of how to structure the new collaboration and conduct the project. Scientific goals were reviewed by the group, and the collaborative strategy was established.

The workshop met its broad scientific goals, which were namely to assess and describe the past and present star formation properties of the Atlas3D sample, and to make detailed comparisons of data with simulations in order to understand the galaxy formation paths. Significant progress was made in coordinating the team's efforts to make further progress in the coming months. In summary, the meeting was an enjoyable success.

3. Attendance list (incl. participant names, affiliation and country) signed by the participants and confirmed by the organizer

| | |
|---------------------|--------------------------------------|
| Maxime Bois | (Paris, France) |
| Frederic Bournaud | (GIF, France) |
| Martin Bureau | (Oxford, United Kingdom) |
| Michele Cappellari | (Oxford, United Kingdom) |
| Alison Crocker | (Toledo, United States) |
| Timothy Davis | (Garching, Germany) |
| Pierre-Alain Duc | (Gif sur Yvette cedex, France) |
| Eric Emsellem | (Garching, Germany) |
| Sadegh Khochfar | (Munich, Germany) |
| Davor Krajinovic | (Potsdam, Germany) |
| Harald Kuntschner | (Garching, Germany) |
| Richard McDermid | (Hilo, United States) |
| Raffaella Morganti | (Dwingeloo, Netherlands) |
| Thorsten Naab | (Garching, Germany) |
| Kristina Nyland | (Socorro, New Mexico, United States) |
| Tom Oosterloo | (Dwingeloo, Netherlands) |
| Sanjaya Paudel | (Bures Sur Yvette, Paris, France) |
| Marc Sarzi | (Hatfield, United Kingdom) |
| Paolo Serra | (Dwingeloo, Netherlands) |
| Anne-Marie Weijmans | (Toronto, Canada) |



4. Financial Report / RadioNet3 contribution

RadioNet contributed 2,000 € to the cost of the event, which was use to support the expenses of the following participants:

Eric Emsellem (Garching, Germany)
Harald Kuntschner (Garching, Germany)
Harald Kuntschner (Garching, Germany)
Richard McDermid (Hilo, United States)

5. Conference Proceedings and Web page

N.A.