

Meeting of ISSI H₀ team, Bern July 4-8, 2022

Team Members attending in presence:

1. Gisella Clementini
2. Benoit Mosser
3. Leo Girardi
4. Lucas Macri
5. Marcella Marconi
6. Mariateresa Crosta
7. Martin Groenewegen
8. Richard Anderson
9. Stefano Casertano
10. Louise Breuval
11. Saniya Khan
12. Marco Bruni

Team Members participating on-line:

- Andrea Miglio (perhaps on-line participation at times)
- Adam Riess (on-line participation in the working group on Cepheids/Gaia and the H₀ discussion on July 7)
- Michele Trabucchi (perhaps on-line participation at times)

Excused Team Members:

- Jeremy Mould
- Giulia De Somma

DPAC Colleagues invited to present talks on-line and/or to participate in the working groups' activities:

- Beatrice Bucciarelli (confirmed)
- Elena Pancino (confirmed)
- Michele Bellazzini (confirmed)
- Mario Lattanzi (confirmed)
- Vincenzo Ripepi (confirmed)

List of topics:

- 1) Parallax Offset (gravitational aberration, quality of focal plane calibration, bam variations)
- 2) Angular covariance (asteroseismology)
- 3) Synthetic photometry - standard photometry for bright sources
- 4) Gaia processing for a subset of stars (standard candles) ← recommendations to DPAC
- 5) Refine theoretical models for distances in order to bridge them with definition in cosmology
- 6) Empirical estimations of parallax offset
- 7) Variable sources:
 - Variation in the extinction law and effects on adopted PW relations
- 8) Cross-calibrating consistency between different distance indicators within the Local Group, using Gaia photometry
- 9) Cross-calibration Cepheids in LMC, SMC, M31, M33 using Gaia and HST data

Make a spreadsheet with a list of local hosts and see what is feasible/reached with Gaia.

Talks and topics to address during the meeting:

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|----------------------|---|
| Marcella | – Metal-dependent predictions for Classical Cepheid and RR Lyrae distance scale |
| Gisella | – Gaia (RR Lyrae stars and Cepheids in Gaia DR3) |
| Saniya | – Gaia offset as seen by asteroseismology |
| Benoit | – Asteroseismology of LMC & SMC twins of MW red giants (2 nd half of the week) |
| Mariateresa | – Relativistic approach in Gaia |
| Marco | – |
| Leo | – |
| Louise | – Observational calibration of the metallicity effect on the (Cepheid?) PL relation |
| Lucas | – M33 Miras |
| Martin | – The parallax zeropoint offset at the brightest magnitudes
– The SED fitting of classical Cepheids in the Magellanic Clouds |
| Richard | – RVS radial velocity curves of Cepheids (?) |
| Stefano | – Field stars TRGB |
| Adam | – H_0 status (talk on line) |
| Beatrice Bucciarelli | – Gaia parallaxes, the AGIS solution, the zero point offset, ... (talk on line) |
| Elena Pancino | – Gaia DR3 synthetic photometry (talk on line) |
| Vincenzo | – The C-MetaLL project (talk on line) |
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Program

Monday, July 4

- 9:30 – 10:00 Arrival
10:00 – 10:15 Welcome and introduction by Mark Sargent (ISSI Science Program Manager)
- 10:15 – 11:15 5 min talks by each participant, brief description of expertise and interests
11:15 – 11:30 break
11:30 – 12:30 discussion and identification of topics/results on which to focus the work,
formation of working groups
12:30 – 12:35 team photo 1
- 12:35 – 14:00 lunch break
14:00 – 17:00 work within working groups – with possibility of remote participation of colleagues
(via zoom)
17:00 – Welcome drink
- End of the day

Tuesday, July 5

- 9:30 – 11:00 talks (15m+5) - Beatrice, Mariateresa, Richard
11:00 – 11:30 break
11:30 – 12:30 talks - Martin
- 12:30 – 14:00 lunch break
14:00 – 16:30 work within working groups – with possibility of remote participation of colleagues
(via zoom?)
1), 6) Parallax offset (theoretical and empirical)
- 16:30 – 16:45 break
16:45 – 18:00 presentation of the working groups' results – discussion: identify possible works/
collaborations on ideas emerged in the
working groups
- 20:00 – **Social dinner:** Restaurant Rosengarten

Wednesday, July 6

- 9:30 – 11:00 talks Gisella, Marcella, Louise,
11:00 – 11:30 break
11:30 – 12:30 talks Vincenzo, Lucas

12:30 – 14:00 lunch break

14:00 – 16:30 work within working groups – with possibility of remote participation of colleagues
(via zoom?)

Item 4), 7), 8), 9)

16:30 – 16:45 break

16:45 – 18:00 presentation of the working groups' results

Thursday, July 7

9:30 – 11:00 talks (Elena Pancino, Stefano, Leo)

11:00 – 11:30 break

11:30 – 12:30 talks (Saniya, Benoit)

12:30 – 12:35 team photo 2

12:40 – 14:00 lunch break

14:00 – 16:30 work within working groups – with possibility of remote participation of colleagues
(via zoom?)

2), 3), 5)

16:30 – 16:45 break

16:45 – 17:05 talk (Adam)

17:05 – 18:00 discussion: definition of a roadmap to “solve” the Ho tension

End of the day

Friday, July 8

9:30 – 11:00 work within working groups

11:00 – 11:30 break

11:30 – 12:30 discussion and planning

End of the meeting

Doodle poll to choose the date of the next meeting in Bern between June 2023 and end of
September – October 2023