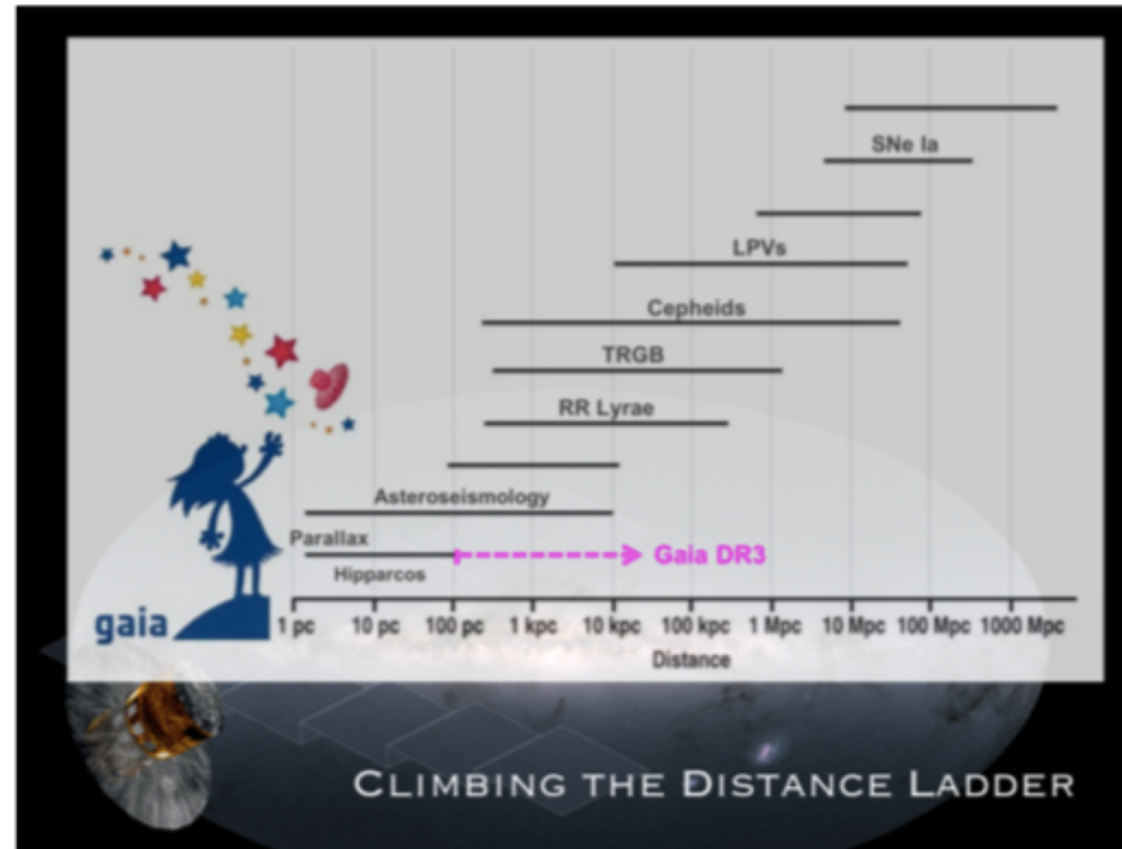




ISSI International Team in Space and Earth Sciences 2020

SHoT: the Stellar path to the H_0 Tension in the Gaia, TESS, LSST and JWST era



Kick-off telecon – September 16, 2020 – G. Clementini

Team Members

1. **R. Anderson** (Cepheids, distance scale, radial velocities – ESO, Garching, Germany)
2. **S. Casertano** (Distance scale, Cosmology, JWST – STSci, Baltimore, MD, US)
3. **G. Clementini (Team Leader)**, Pulsating variable stars, distance scale, Gaia, LSST/VRO – INAF – OASBO, Italy)
4. **M. Crosta** (Relativistic astrometry, Local Cosmology, Gaia – INAF- OATO, Italy)
5. **L. Girardi** (Stellar models, population models of variable stars, TRGB, LSST/VRO – INAF - OAPD, Italy)
6. **M. Groenewegen** (LPVs, Cepheids, TRGB – Koninklijke Sterrenwacht van België, Brussel, Belgium)
7. **L. Macri** (Cepheids, distance scale – Texas A&M University, College Station, TX, US)
8. **M. Marconi** (Pulsation models, distance scale, Gaia, LSST/VRO – INAF - OACN, Italy)
9. **A. Miglio** (Asteroseismology: modelling – School of Physics and Astronomy, University of Birmingham, UK)
10. **B. Mosser** (Asteroseismology: TESS / K2 data analysis – Observatoire de Paris, LESIA, Meudon, France)
11. **J. Mould** (TRGB, SNe Ia – Centre for Astrophysics & Supercomputing, Swinburne University, Hawthorn, Australia)
12. **A. Riess** (Distance scale, Cosmology, JWST – STSci, Baltimore, MD, US)

Agenda

1. Welcome and introduction
2. Technical infos (web page, dates of the first face-to- face meeting in Bern, reimbursements, invitation of young scientists and external members, etc.)
3. Turn of the table: each participant can say a few words about what he/she plans to do in/for the project (with 1-2 slides if you wish)
4. AOB

Agenda

1. welcome and introduction

We should be in 10 attending this telecon.

Excuses from Richard who is in his honey moon. He may not be able to join us but is happy to announce that he was just awarded an ERC starting grant on the H₀ tension with pulsating stars.

Excuses also from Lucas who may not be able to join us because busy in a NASA panel.

2. Technical infos

- **Project website on the ISSI server, in progress.**

Andrea is collecting infos for the website. Please send him (a.miglio@bham.ac.uk) any material, projects, publications and your picture to be posted on the project website.

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- **Dates of first face-to-face meeting in Bern**

Of the following 4 slots which we originally selected for the meeting only options A., C. seem to be still available:

A. February 15-19/2021

~~B. March 1-5/2021~~

C. March 8-12/2021

~~D. March 22-26/2021~~

there are Workshops now planned for B. and D. and during the Workshops all rooms of ISSI are reserved for the workshop participants.

C. received 4 preferences, A. only 1.

Shall we go for March 8-12/2021 (option C.) or move ahead to April (e.g. 26-30), or May (e.g. 3-7)?

2. Technical infos (continued)

- Travel costs and per diem

During the stay in Bern each member will get a per diem for meals of CHF 35.- for lunch and CHF 35.- for dinner. Breakfast is included in the hotel fees. The hotel is paid directly by ISSI. Travel costs will only be reimbursed to the Leader, unless she/he renounces it in favour of another member.

Participants will get the per diem by bank transfer, so would each participant please provide the IBAN code together with the exact address of one's own bank.

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- Young scientists invitation

Eligible young scientists should be not older than 2 years after the PhD degree at the time of his/her nomination by the leader. The Leader, in consultation with the other members of the Team, is expected to identify the young scientists and establish a programme. Young scientists may, attend all meetings of a Team but could also vary among them.

ISSI support for the young scientists will consist of the accommodation and of a per diem to cover the meals while in Bern, as for the core team members (no travel). The additional support allocated to a Team for young scientists, will be about 20% of the total core Team members.

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- Self-supporting invited experts

Self-supporting experts can be invited to attend the Team meetings. Notify ISSI of their presence or solicit exceptional financial support.

More info in : **ISSI_Team_Guideline.pdf**

My plans for this ISSI project

Gaia Early Data Release 3 (EDR3): **Thursday, December 3, 2020**

- Five-parameter astrometric solution (positions on the sky (α , δ), parallaxes, and proper motions) for around 1.5 billion sources, with a limiting magnitude of about $G \approx 21$ and a bright limit of about $G \approx 3$ mag, along with new quality indicators (RUWE, and source image descriptors).
- G magnitudes for around 1.8 billion sources and G_{BP} and G_{RP} magnitudes for around 1.5 billion sources.

EDR3 will provide improved parallaxes (reaching individual distances above 20-24 kpc with $\sigma\varpi/\varpi < 0.2$) for RR Lyrae stars (RRLs) and Cepheids in the previous Gaia Data Release 2 (DR2) .

Main goals:

- **New calibrations of the PL, PW relations of Cepheids and the LZ, PW and NIR PL relations of RRLs based on the Gaia EDR3 new parallaxes along with NIR photometry from the VMC survey**
- **Metallicity effects on the Cepheid PL and PW relations based on new abundances from high resolution spectroscopy**
- **Tests on the potential of the Andromeda galaxy as an anchor complementing the LMC in the definition of the cosmic distance ladder**

Main collaborators external to the our ISSI Team:

V. Ripepi, A. Garofalo, T. Muraveva, R. Molinaro, L. Sarro, H. Delgado