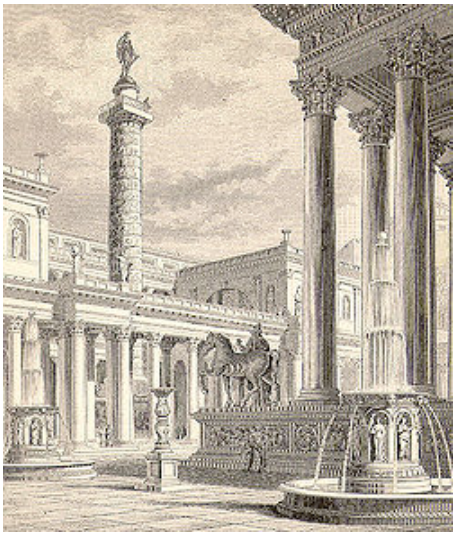
Flagstaff Interferometry Forum
Executive Summary
15-16 March 2013
Host: Lowell Observatory, Flagstaff, AZ



Forum Organizers:

Guy Perrin (Obs. Meudon)
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Theo ten Brummelaar (CHARA)
Gerard van Belle (Lowell Observatory)

The **Optical Interferometry Forum** was a special opportunity to get together and talk about a technique that is both important to our various areas of expertise, and scientifically productive. The interferometry[1] community has this opportunity only infrequently and incompletely, so having a more focused event with adequate time for discussion was, we felt, important. The attendance for the Forum was solicited from throughout the community and largely self-selecting; the organizers accepted every request for attendance.

We live in a time of **Great Disturbances**: Big things are happening in astronomy that unsettle the status quo and make it challenging to develop and use the technique of optical interferometry. In the United States, this in particular includes the Decadal Review, and even the detailed plans laid out therein aren't quite happening as expected because of funding issues. Development of JWST and the next generation of large ground-based telescopes require lots of resources, and operating costs of new facilities that are coming online (such as ALMA) have a large impact as well.

We also live in a time of **Great Opportunities**: There will be a time after JWST. The CHARA Array is soldiering along, the NPOI upgrades are poised to revitalize the instrument, VLTI has upgrades under development, there are new efforts in LBTI and MROI, and China is developing Dome A. The scientific productivity of the existing facilities is robust and unique.

The questions we aimed to address where:

- How do we envision this forum as related to other existing structure, such as the IAU, USIC, OLBIN, EII? We shouldn't duplicate those efforts.
- Do we want future meetings? Are they associated with the SPIE or other meetings? Are they combined with the interferometry schools in Europe?
- Do we want proceedings? The answer is probably yes. What are those written products?
- How do we best construct a plan for the future?

[1] Throughout this report, "interferometry" is intended to refer to long-baseline optical interferometry - eg. Interferometry which operates in the visible and near- to mid-infrared, and principally employs reflecting surfaces and homodyne combination.

Conclusions

- Interferometry has gone from an exotic technique with promise, to a demonstrated technique with a steadily growing technical capability, a large and active community, and significant impact on stellar physics.
- Opening access to a wider community has demonstrated benefits. Opening to a wider community is also due to the availability of data preparation, data calibration, data reduction and data interpretation packages, in a word, documented, reliable and well behaved user-friendly software.
- Funding
  - In Europe, VLTI funding, including some development, is currently stable. France, through its funding by INSU of, e.g., JMMC, plays a supportive role for OI interferometry well beyond its contribution to ESO funding. Positive feedback is needed for this effort to be considered worthwhile by the funding agencies.
  - Interferometry in the U.S. is not strongly supported by the Decadal report, and there are reduced opportunities at NSF but there is a possible future "mid-scale" funding opportunity.
  - In the next 10+ years, the interferometry community must make the most of existing facilities and their obvious extensions.
- Possible facility options for the future on the decade+ time-scale include:
  - Moderate development from existing facilities to much enhanced imaging capability
  - Moderate development to fainter target capability
- Possible options on the decade++ time-scale include:
  - Major development of a super-facility
  - Not in sight at present
  - Now is the time to build a consensus for the next major development.
- The meeting was a success.
- An International Interferometry Forum is needed and has numerous important roles.

Recommendations

- The Forum should have both on-going and annual activities.
- The Forum should develop a charter.
- The Forum should use the IAU banner as a Commission 54 activity.
- The Forum should engage IAU officers and members in Forum work.
- The Forum should hold annual meetings:
  - Adjacent to SPIE in SPIE years.
  - In alternate years adjacent to CHARA-NPOI meetings or schools.
- The Forum should publish Forum reports, including from this meeting.
- The Forum should foster long-term development of interferometry science directions.
- Roadmaps are needed – including U.S.-Europe coordination of roadmaps – which requires U.S. entity to develop roadmap.
- USIC should be revived, to develop a national consensus and to represent the U.S. to Europe.
- We encourage making catalogs of observed targets available.
- We encourage improved archive access.
- The U.S. community should consider "webinars" as a low-cost implementation of

interferometry schools.

- U.S. PI's should be encouraged to propose to VLTI.
- Joint facility access – CHARA-VLTI, CHARA-NPOI, NPOI-VLTI – should be studied.
- The scope of the CHARA-NPOI meetings should be expanded, at least in SPIE off-years.
- OLBIN should be rebuilt in a supportable form, perhaps as a wiki.
- The community should make use of social media, including starting and maintaining an interferometry Facebook page.

Forum Participants

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