

LIGO India meeting

Tuesday 26th June 2018, 9-10 UK (13:30-14:30 Pune, India)

Present:

Giles, Siong, Somak, Stuart, Mariela,
Sukanta, TCIS – Raji, Karthik

1. Update on spend profile:

Giles: GCRF– all money spent , Ed will take the interferometer parts and will set up the system in Sheffield. Other spend on consumables for laser stabilization, outreach books on GR, table top interferometers.

Underspent on the Newton-Bhabha grant. Any thoughts/ideas on other things to spend the consumables on are welcomed?

Giles: on the VR set up, how is it going in India? **Action: Somak/Sanjit to put together a proposal for purchasing items.**

2. UK meeting, visa support:

Somak: we can have several meetings, re the Glasgow meeting. Earlier last week I had a visit from the deputy high commissioner in India who had come to visit as a follow up with the British commission. He was aware of the collaboration and the Newton Bhabha and said he would try to help with the exchanges. UK visas are taking long time.

Karthik has applied to visa as well and should hear back by next week.

3. Update from India colleagues of VR activities/book launch:

IUCAA workshop on astrophysics and experimental aspects. Large demand in various universities in India, and we need to think what to introduce in the physics labs link to astrophysics and GW. We have been thinking of various set ups for gravitational waves for the labs other than interferometers, things like the suspensions, etc. maybe worth investing in this and discuss further. **Action: continue discussion at Glasgow meeting**

Giles: if we can develop university Masters level lab equipment courses which are training the next generation, this will help enhance activities in India, and I think this is one of the main goals of the Newton Bhabha fund. Perhaps schools as well?

Somak: India has 30 universities have astrophysics courses in their physics programs. We would like this to increase, also looking into adding it to mathematic/statistics departments as well as engineering. Physics and engineering require labs associated with them and there's a demand of non-telescope associated labs and an opportunity is to have astronomy labs where we could work together and develop ideas from GWs, specifically now with the discoveries. For a project to be successful needs to be cheap or using elements that already exist in the physics labs so that there is less expenses for the university, making it more attractive.

Giles: What would the time scale be? Would it be for this semester coming?

Somak: In order for it to be in the courses it needs to go through a process and get approved so would realistically start next year. We could perhaps sneak in pilot project in some labs in January in the statistics course and engineering. If we can come up with ideas we could try

and incorporate as pilot projects and start testing them. Maybe a topic of discussion at Glasgow meeting.

Giles: agree we need to discuss this further but also need to come up with what needs purchase.

3 AOB: Glasgow meeting

Reminder Glasgow meeting : 18-20 July

Possible points to discuss during meeting:

- Where we are with the detectors, how to benefit R&D from this grant.
- Outreach, activities into the universities and schools – most active at the moment but should see how to build further.
- How to bring in the industrial side, and there are some activities between Stuart and re coating and getting some visitors across.

Talks with industries are on-going. Siddartha from the industrial side (Machine Learning) might join the Glasgow meeting.

Somak coming, Raji not able to come, Karthik and a student applying for visa. **Action: Somak will be providing a list of people from the various groups in India who will be coming to Glasgow.**

Siong: Student currently working on machine learning with Glasgow under the Newton Bhabha fund. He won't be here at the time of the meeting but we will have others that are involved to present (Chris Messenger/Siong Heng).

(Giles needs to find **who is coming to the Glasgow meeting from the UK.**) **Action; Giles to contact UK participants. Sheffield only respondant so far.**

Giles: Somak, regarding the VR. We spoke a little about having a high end set up in IUCAA have you given any thoughts on what you want because we can get that going.

Somak: Delegated and they've had direct contact with Ozgrav but haven't heard back on updates, I will speak to Sanjit today to ask for updates and re the Glasgow meeting.

Giles: grant proposal stated that there would be an advisory board. Contacted Fred Rab, who was happy to be involved as a representative from LIGO. Good to have representation from commercial/industrial and outreach sides. Can everyone think about names? Good to have some members on the Indian community – Somak will think of names to propose. British embassy person? Giles suggests that we follow up at UK meeting and finalise a proposed list.

Remember to let us know if any more visa letters are required.

The Newton-Bhabha states that 30% of the funding will come from the UK and 70% is from India. *Somak*: the 70% should be from India from the LIGO india side but the money hasn't been given. For this workshop, we will have to commit the money from IUCAA resources which is OK for now, but it will eventually come from the LIGO money. The Visa letter needs to state who is funding what, with details. Award letter will be added to the dropbox folder.

Next meeting will be the UK-Glasgow meeting. Awaiting list of participants from the India and UK side.