



STFC Science Board 81st meeting

16 and 17 December 2020, via videoconference

Meeting Summary

Professor Tara Shears chaired the meeting. The Chair thanked Professors Stewart Boogert and Bill Chaplin for their commitments to Science Board as this was their last meeting as Board members.

STFC Light Sources Strategy Report and STFC Detectors Strategy Report

Science Board received a presentation and overview of the reports from: Professor Neil Geddes, Professor Paul McKenna, Dr Adrian Cole (Light Sources); and Marcus French (Detectors). Science Board were invited to discuss and comment on the drafts of each report, which were provided prior to the meeting.

Environmental Sustainability

The Board received a presentation from Paul Vernon, Executive Director of Business & Innovation Directorate, on STFC's environmental sustainability action planning, following the publication of the [UK Research and Innovation Environmental Sustainability Strategy](#).

Advisory Panel Updates

Science Board were provided with an update from the Chairs of the Solar System Advisory Panel (SSAP, Professor Ineke De Moortel) and the Astronomy Advisory Panel (AAP, Professor Stephen Serjeant). Science Board heard from the panels on recent activities, scheduled work the panel will be undertaking over the coming year, an update on progress of the community roadmap and highlights of scientific discoveries or scientific areas of emerging interest. The panel also had the opportunity to discuss any concerns from the panel or community.

Links to the scientific highlights presented can be found in [Annex 1](#).

Funding Advice and Recommendations

Science Board considered the following Project Peer Review Panel (PPRP) reports:

- SoftWare InFrastructure and Technology for High Energy Physics (SWIFT-HEP)
- The Cassegrain U-Band Efficient Spectrograph (CUBES): Bringing a unique capability to ESO's Very Large Telescope (VLT).

Infrastructure Prioritisation Update

Science Board received a proposed overview of the planned Infrastructure Prioritisation process for 2021 from Dr Ailidh Woodcock and Philip Amison and invited the Board to comment on and discuss any aspects which could be improved, including any feedback from the 2020 process.

Standing items

The minutes and actions from the October 2020 meeting were reviewed and the Chair and Deputy Chair provided the Board with an update on any matters arising from Council meetings.

Science Board received an update and additional commentary on the STFC update report from Professor Mark Thomson, Executive Chair of STFC, which included the UK's departure from the EU, the outcome of the spending review, an update on the 2020 Infrastructure Prioritisation process and the recent ratification of the Square Kilometre Array (SKA) treaty.

Information papers included, a Bibliometric Report of STFC funded publications and the new STFC Honour's process, which were noted by Science Board.

Date of Next Meeting

The next Science Board meeting will be held on 23 and 24 February (82nd meeting) 2021 by videoconference.

Annexes

Annex 1: Links to scientific highlights presented by Advisory Panels

SSAP:

1. Solar Orbiter First Light: <https://sci.esa.int/web/solar-orbiter/-/solar-orbiter-s-first-images-reveal-campfires-on-the-sun> and <https://www.gov.uk/government/news/uk-built-spacecraft-captures-closest-ever-images-of-the-sun>
2. DKIST First Light: <https://nso.edu/inouye-solar-telescope-first-light/>
3. UK involvement in the Parker Solar Probe first results papers: Bale et al, Nature, Volume 576, Issue 7786, p.237-242, <https://doi.org/10.1038/s41586-019-1818-7> and Kasper et al, Nature, Volume 576, Issue 7786, p.228-231, <https://doi.org/10.1038/s41586-019-1813-z>
4. ESA selection of Comet Interceptor with UK Mission PI and substantial UK hardware: <https://www.cometinterceptor.space/>
5. UK scientists have been leading some of the characterisation of asteroid Bennu by NASA's OSIRIS-REx mission: Rozitis et al, Science Advances Volume 6, Issue. 41, eabc3699 (2020): <https://doi.org/10.1126/sciadv.abc3699>
6. Venus Phosphine Discovery with data from the ALMA and James Clerk Maxwell Telescope (JCMT): Greaves, J.S., Richards, A.M.S., Bains, W. et al. Phosphine gas in the cloud decks of Venus. Nat Astron (2020). <https://doi.org/10.1038/s41550-020-1174-4>

AAP:

1. Petersen, M.S., Peñarrubia, J. Detection of the Milky Way reflex motion due to the Large Magellanic Cloud infall. Nature Astronomy (2020). <https://doi.org/10.1038/s41550-020-01254-3>
2. Jones, Mark H.; Haswell, Carole A.; Barnes, John R.; Staab, Daniel; Heller, René, A Possible Transit of a Disintegrating Exoplanet in the Nearby Multiplanet System DMPP-1, The Astrophysical Journal Letters, Volume 895, Issue 1, id.L17, 10 pp. (2020) <http://doi.org/10.3847/2041-8213/ab8f2b>

3. Barnes, J.R., Haswell, C.A., Staab, D. et al. An ablating 2.6 M_⊕ planet in an eccentric binary from the Dispersed Matter Planet Project. *Nature Astronomy* 4, 419-426 (2020). <https://doi.org/10.1038/s41550-019-0972-z>
4. Staab, D., Haswell, C.A., Barnes, J.R. et al. A compact multi-planet system around a bright nearby star from the Dispersed Matter Planet Project. *Nature Astronomy* 4, 399-407 (2020). <https://doi.org/10.1038/s41550-019-0974-x>
5. Haswell, C.A., Staab, D., Barnes, J.R. et al. Dispersed Matter Planet Project discoveries of ablating planets orbiting nearby bright stars. *Nature Astronomy* 4, 408-418 (2020). <https://doi.org/10.1038/s41550-019-0973-y>
6. Heywood, I., Camilo, F., Cotton, W.D. et al. Inflation of 430-parsec bipolar radio bubbles in the Galactic Centre by an energetic event. *Nature* 573, 235-237 (2019). <https://doi.org/10.1038/s41586-019-1532-5>
7. Bright, J.S., Fender, R.P., Motta, S.E. et al. An extremely powerful long-lived superluminal ejection from the black hole MAXI J1820+070. *Nature Astronomy* 4, 697-703 (2020). <https://doi.org/10.1038/s41550-020-1023-5>