

# Solar Missions Forum

Summary of UK missions/facilities

# UK solar mission forum

- Has had various guises over the years (decades!).
- Have converged on holding it on a day before one of the solar RAS meetings. We will aim to do this on 7<sup>th</sup> Jan 2016. We will confirm it via the newsletter.
- All are welcome – especially students/PDRAs.

# STFC/UKSA funded

- **Hinode** – *‘the generation, transport, and dissipation of magnetic energy from the photosphere to the corona and will record how energy stored in the sun's magnetic field is released’*. 2006- .. UKSA funded
- **STEREO** – *‘to provide the first-ever stereoscopic measurements to study the Sun and the nature of its CMEs’*. 2007-.. UKSA funded
- **Solar Orbiter** – *‘to understand how the inner heliosphere works, and the impact of solar activity on it’* – launch 2018. UKSA funded
- **BiSON** – *‘monitoring of the globally coherent, core-penetrating modes of oscillation of the Sun’* – STFC funded
- **ROSA-DST** – *‘high cadence, high efficiency solar imager’* - STFC funded
- **DKIST** – *‘What is the nature of solar magnetism’* - STFC funding for visible cameras. Support available for development of science algorithms and observing proposals
- **LOFAR** – *measuring radio waves to investigate the physical processes related with flares and CMEs. STFC funded.*

# STFC/UKSA funded

- SKA
- ALMA

# Non UK funded

- **RHESSI** - *explore the basic physics of particle acceleration and explosive energy release in solar flares*
- **SDO** – *to understand the causes of solar variability and its impacts on Earth*
- **IRIS** – *to understand the dynamic chromosphere*
- **MAGIX** – *rocket flight.*

# Future with potential funding

- **Solar-C** – *‘energy transfer & dissipation from photosphere to corona’* – proposed for ESA M4 submission – not successful – will be proposed to JAXA in 2018.
- **EST** - *‘the magnetic coupling between the deep photosphere and upper chromosphere’*. SolarNET funding. H2020 proposal submitted. UK will put SOI to STFC.
- **HiRISE** – *‘formation flying - very high resolution imaging’*. Proposed for ESA M4 – not successful.
- **INSTANT** – *‘Coronal magnetic field measurement and tracking’*. Proposed for ESA S2 – not successful.
- **Carrington** - L5 space weather mission - funding sought from ESA by Airbus/Met Office/RAL/MSSL/IC (several associated economic impact/payload studies underway).
- **SPARK** – *‘probing the extremes of solar particle acceleration’*. Possible for ESA M5.
- **SolmeX** – *‘exploring the magnetic field in the upper atmosphere of our closest star’*. Possible for ESA M5.
- **ESA Space Weather Coronagraph** – *response to ESA ITT (no specific mission yet identified)*.
- **N.B. Also ESA Heliospheric Expert Centre (H-ESC) to be based at RAL**