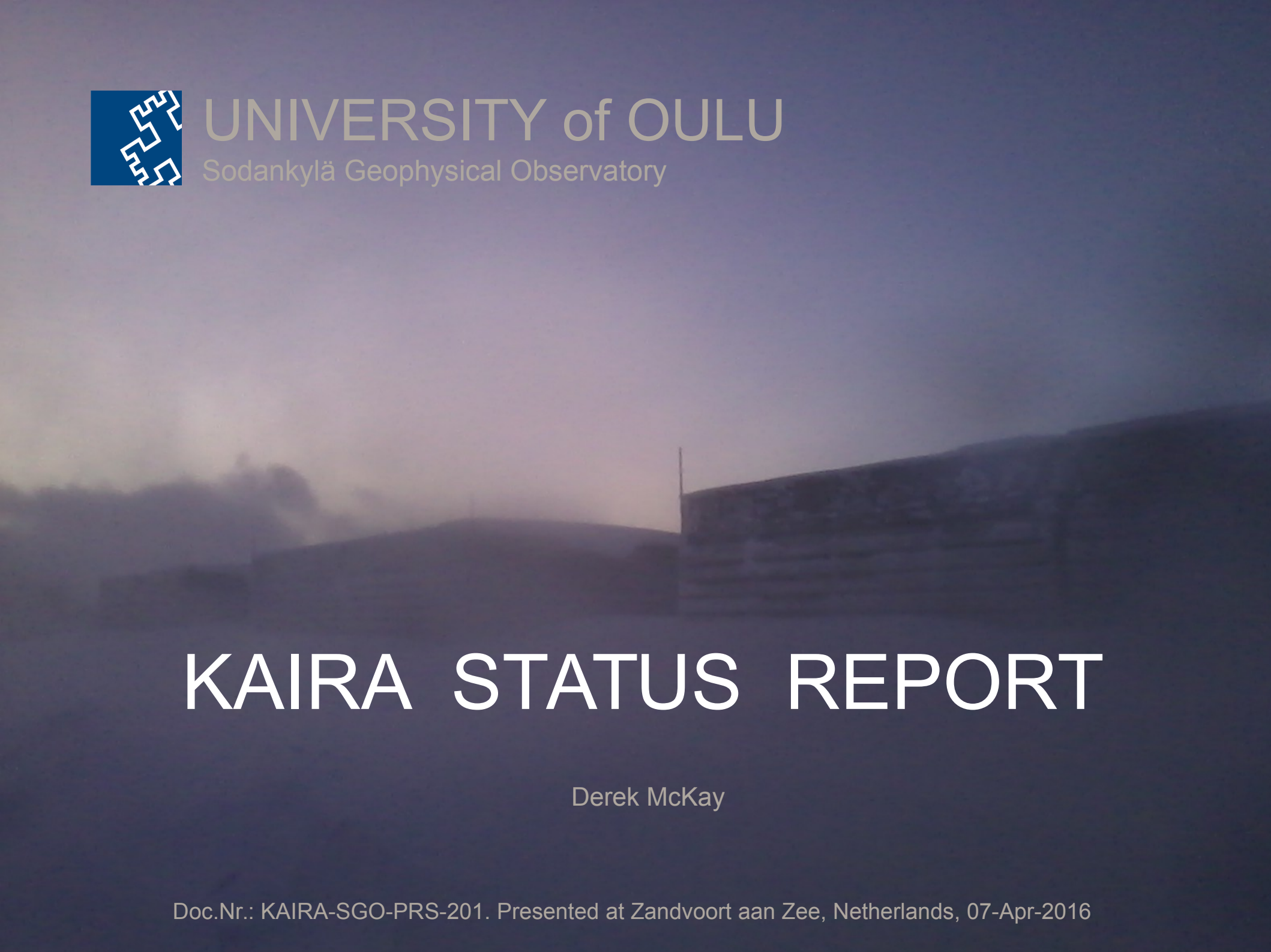

UNIVERSITY of OULU
Sodankylä Geophysical Observatory

KAIRA STATUS REPORT

Derek McKay

Doc.Nr.: KAIRA-SGO-PRS-201. Presented at Zandvoort aan Zee, Netherlands, 07-Apr-2016

SITE

Location

Kilpisjärvi, Finland, +69,1° N +20.8° E

Array maintenance

HBA in good condition – no plans to replace the lost tile
LBA #L26 damaged by jänis in March 2016 (repaired)
No failures of electronics

Utilities

Power-outage caused RF-container to drop below zero
Air-conditioning and heating otherwise working fine.

Maintenance

Fences okay
Site office in poor condition (water damage, flies)

McKay / ILT-TO Zandvoort, Netherlands, 2013

Image: C.Heinselman, EISCAT


Image: D. McKay, RAL / SGO


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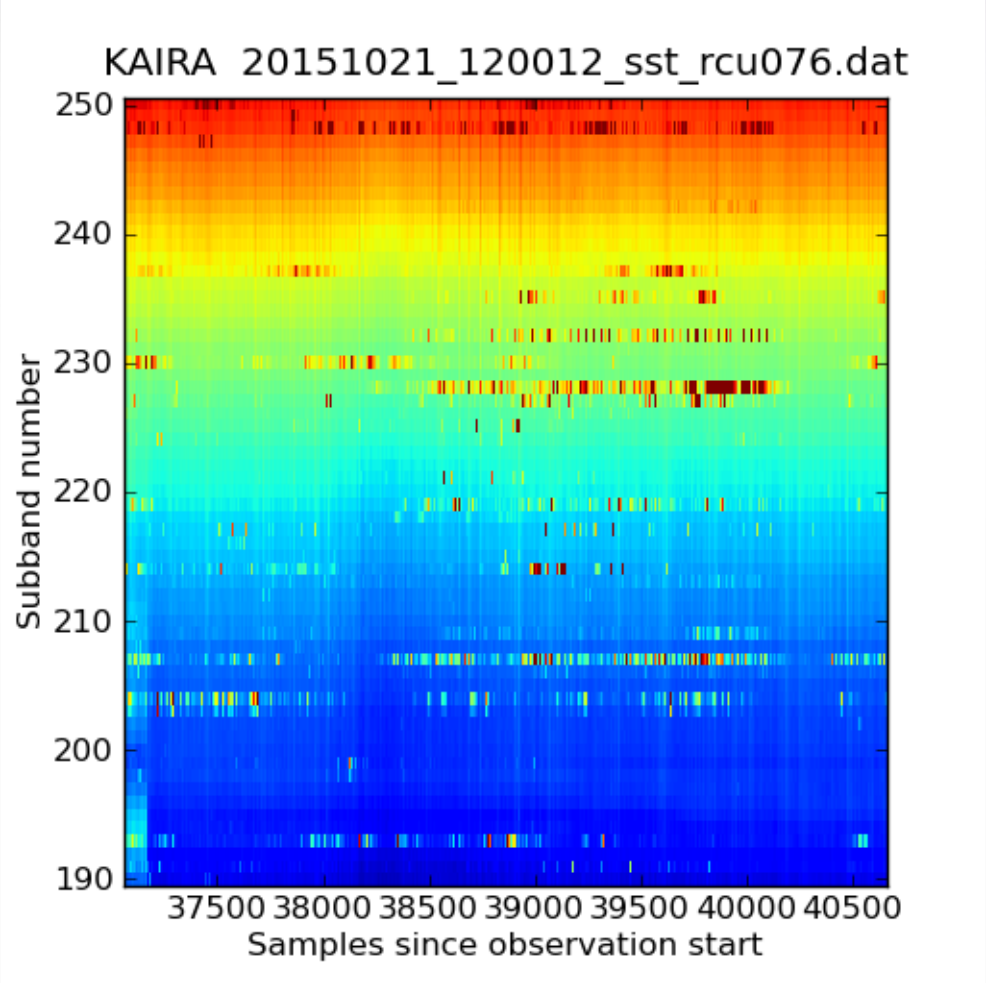
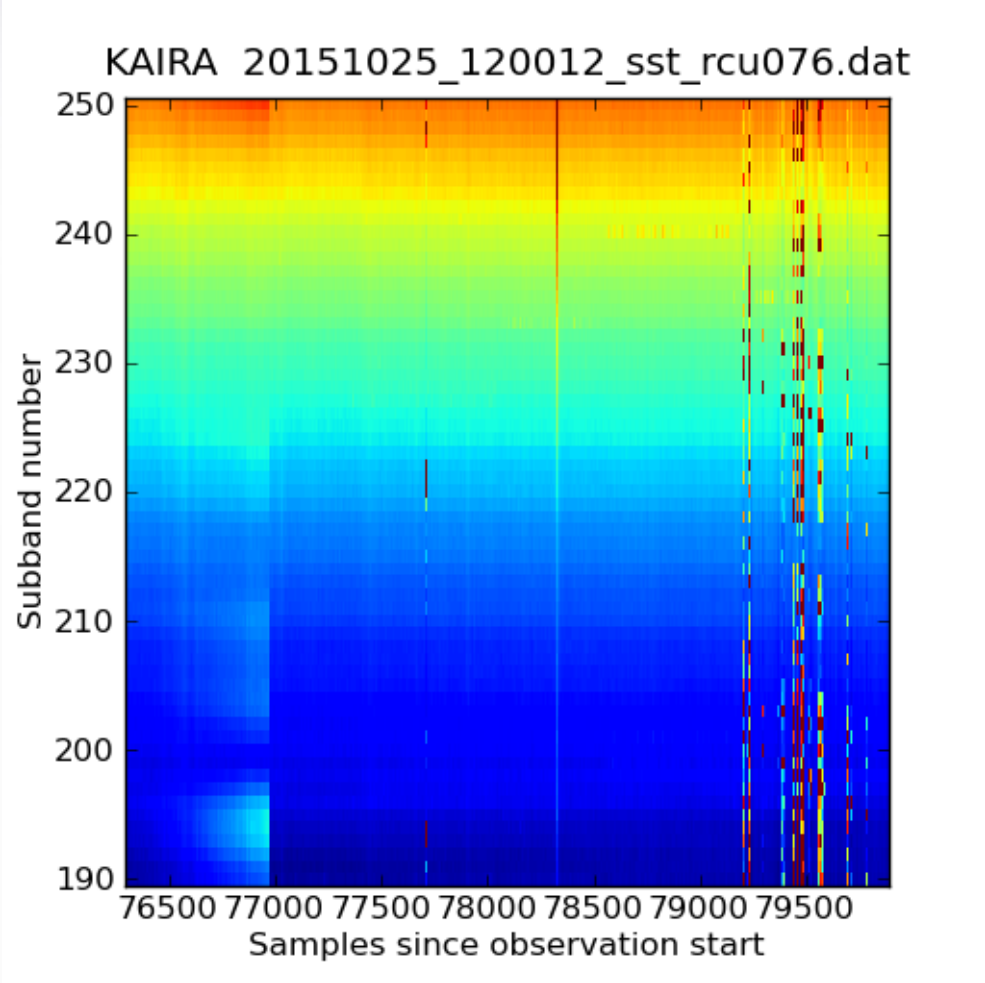
INTERFERENCE

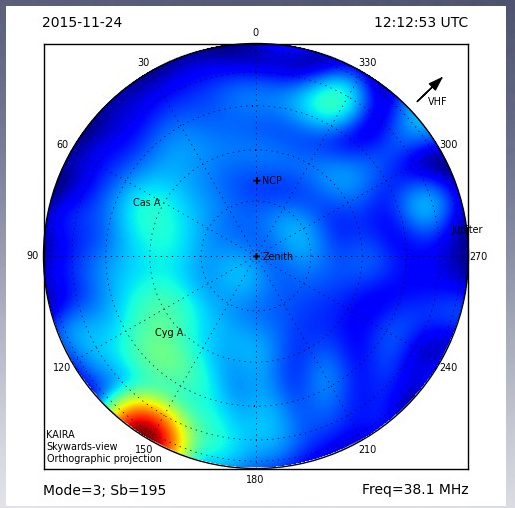
Interference

RFI situation is worse this year





INTERFERENCE



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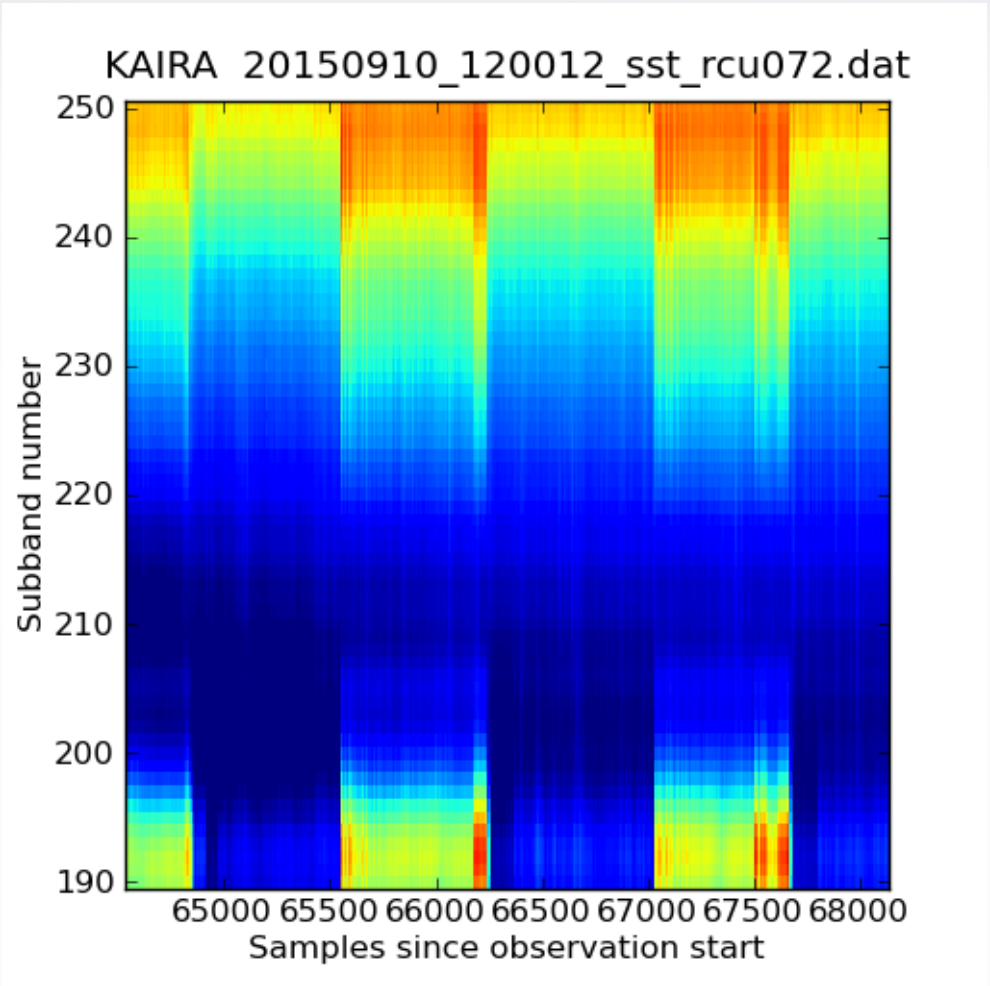
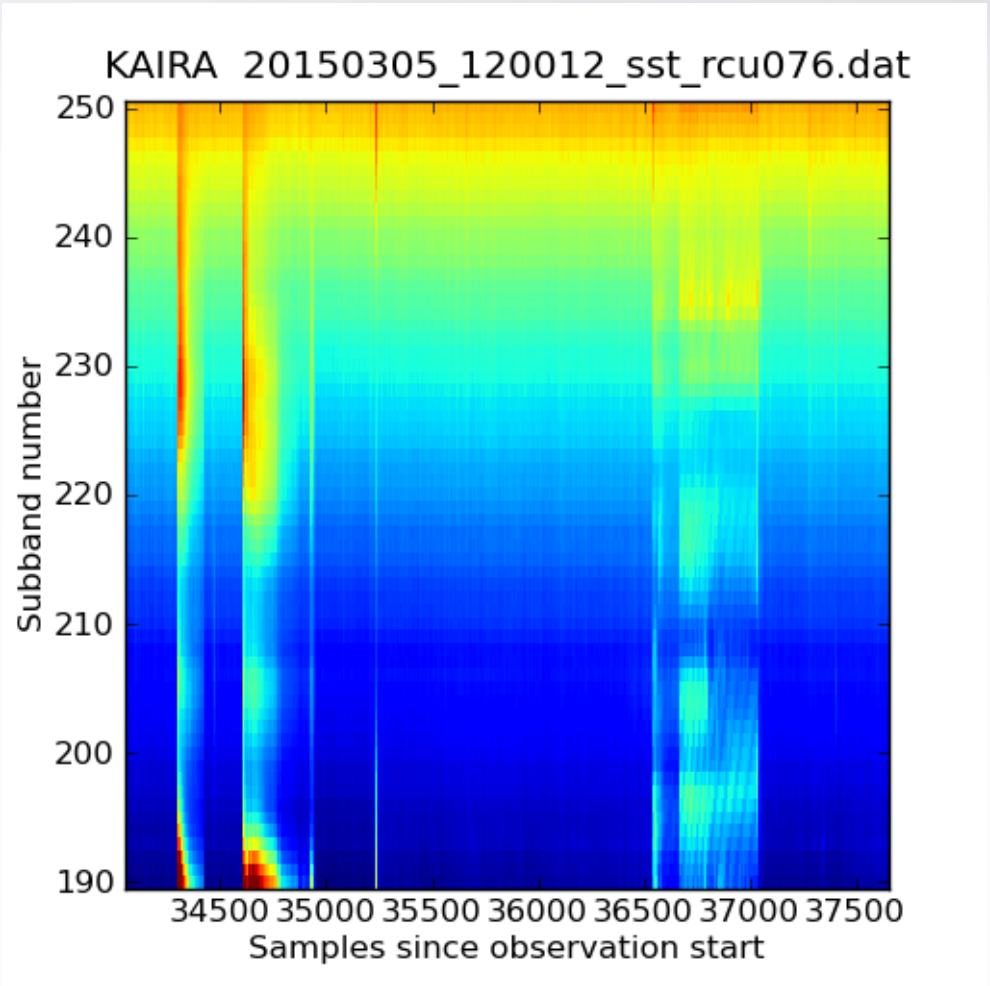
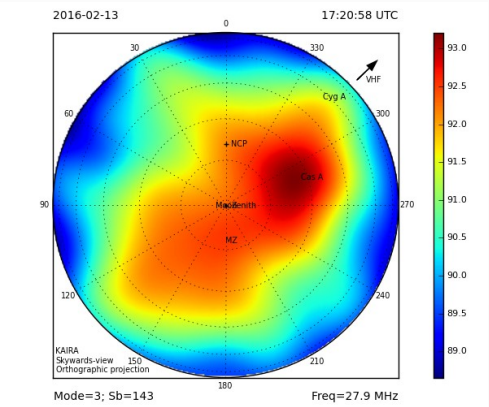


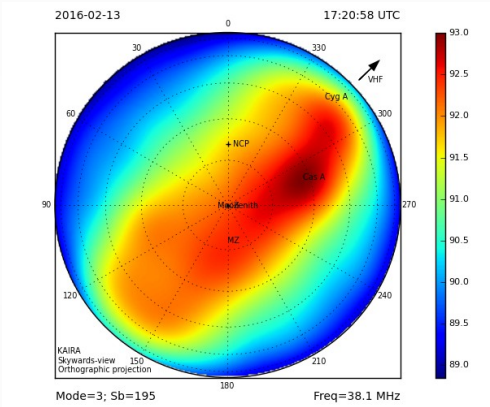


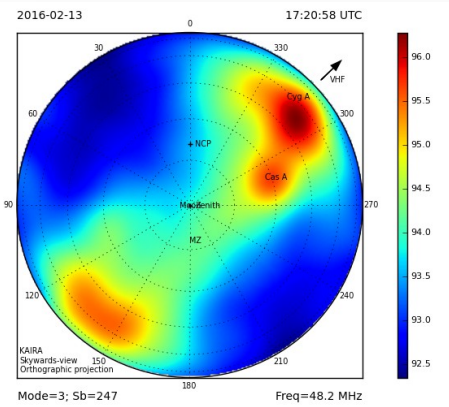
DEVELOPMENT

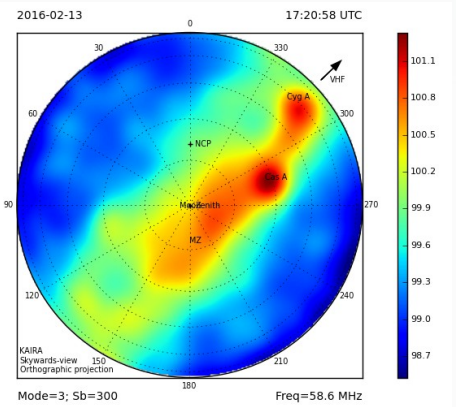
Software

- Multi-frequency correlator working
- Still looking to improve the number of frequencies





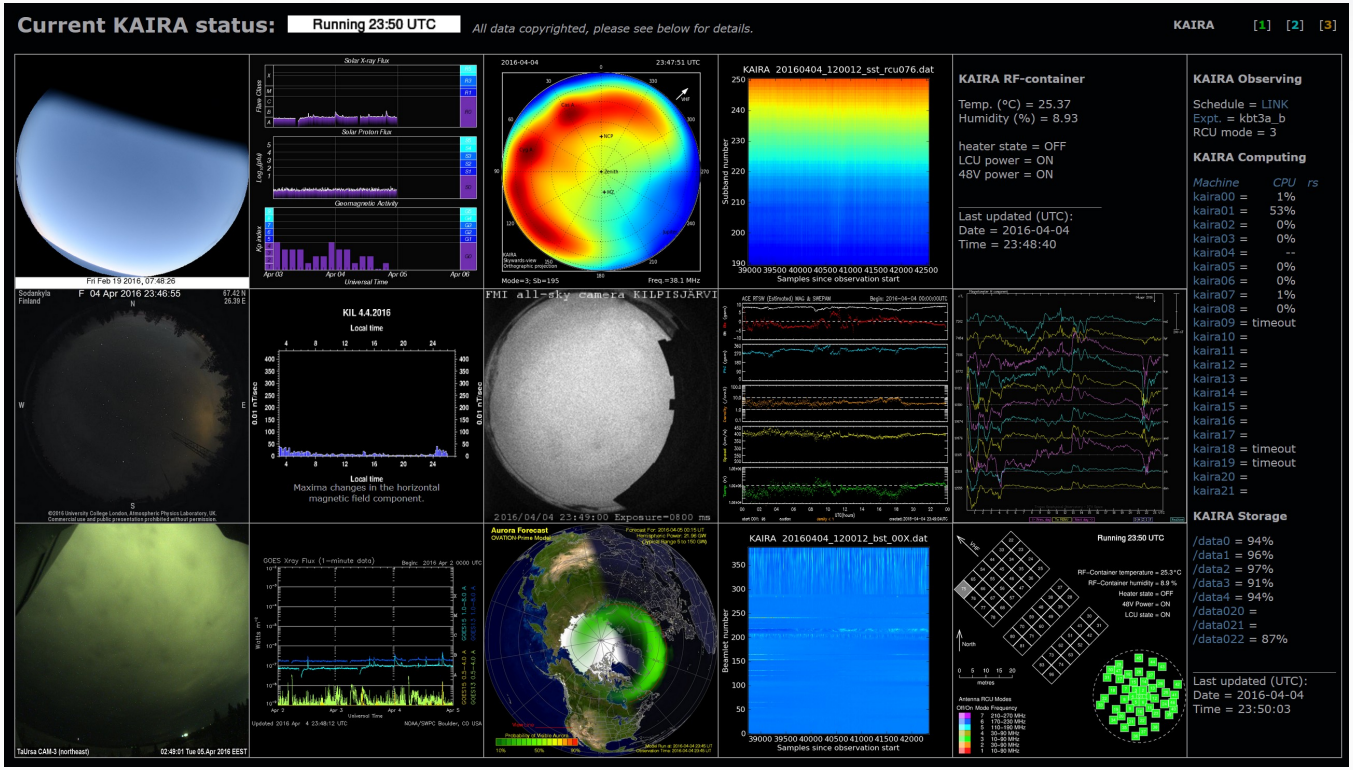




DEVELOPMENT

Software

- Multi-frequency correlator working
- Still looking to improve the number of frequencies
- Ongoing development and upgrading of the KAIRA software system
- Online monitoring system working well – e.g. http://www.sgo.fi/~djm45/kaira



DEVELOPMENT

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Computing

- Considering the installation of an LCU v2.0.
- New local storage (41 TB RAID array /kdata023)
- Old storage recovered to Sodankylä (/kdata020 & /kdata021)
- Transferring data to the Finnish national long-term archive

OBSERVATIONS

Uptime (Apr 2015 – Apr 2016) = 86%

Causes of outages: power-cuts, NFS failures, jänis attacks, maintenance

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Experiments

McKay, *et al*. “All-sky Interferometric riometry of aurorae”
McKay, *et al*. “Multi-frequency Interferometric riometry”
Kallunki, *et al*. “Solar observations”
Virtanen *et al*. “Lag-profile inversion for multibeam ISR”
Kero, *et al*. “Multi-frequency, multi-beam riometry”
Fallows *et al*. “Ionospheric scintillation”
Turunen *et al*. “Auroral upwelling”
Scaife *et al*. “Pulsar / Faraday rotation”
Martin *et al*. “EISCAT iononest riometry comparisons”
Sponarski *et al*. “Long-term scintillation trends”

SUPPORT

Staff

- Thomas Ulich, Head of Observations, SGO
- Derek McKay, PhD student, SGO/U.Oulu

Future plans

- LBA order with ASTRON
- EISCAT_3D funding and development
- AARTFAAC
- Network connection to ILT and increased data transport
- Membership of ILT, test-platform, and other options

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KIITOS!! / THANKS!!

http://www.sgo.fi/KAIRA kaira@sgo.fi