Recent MAGDAS Activities in Australia

Richard Marshall[1] and the MAGDAS group[2]

[1] Space Weather Section (formerly IPS Radio and Space Services)**, Bureau of Meteorology, Sydney, Australia**

**[2] ICSWSE, Kyushu University, Fukuoka, Japan**

BOM's Space Weather Services

- **The Ionospheric Prediction Service (IPS) providing HF Radio services and support since late 1940's**

- **IPS Radio and Space Services since late 1990's when commenced providing additional Space Weather services and support**

- **Joined Australian Bureau of Meteorology (BOM) in 2007 – not yet fully integrated**

- **BOM Realignment 1 July 2014 – IPS divided entity first time since inception**

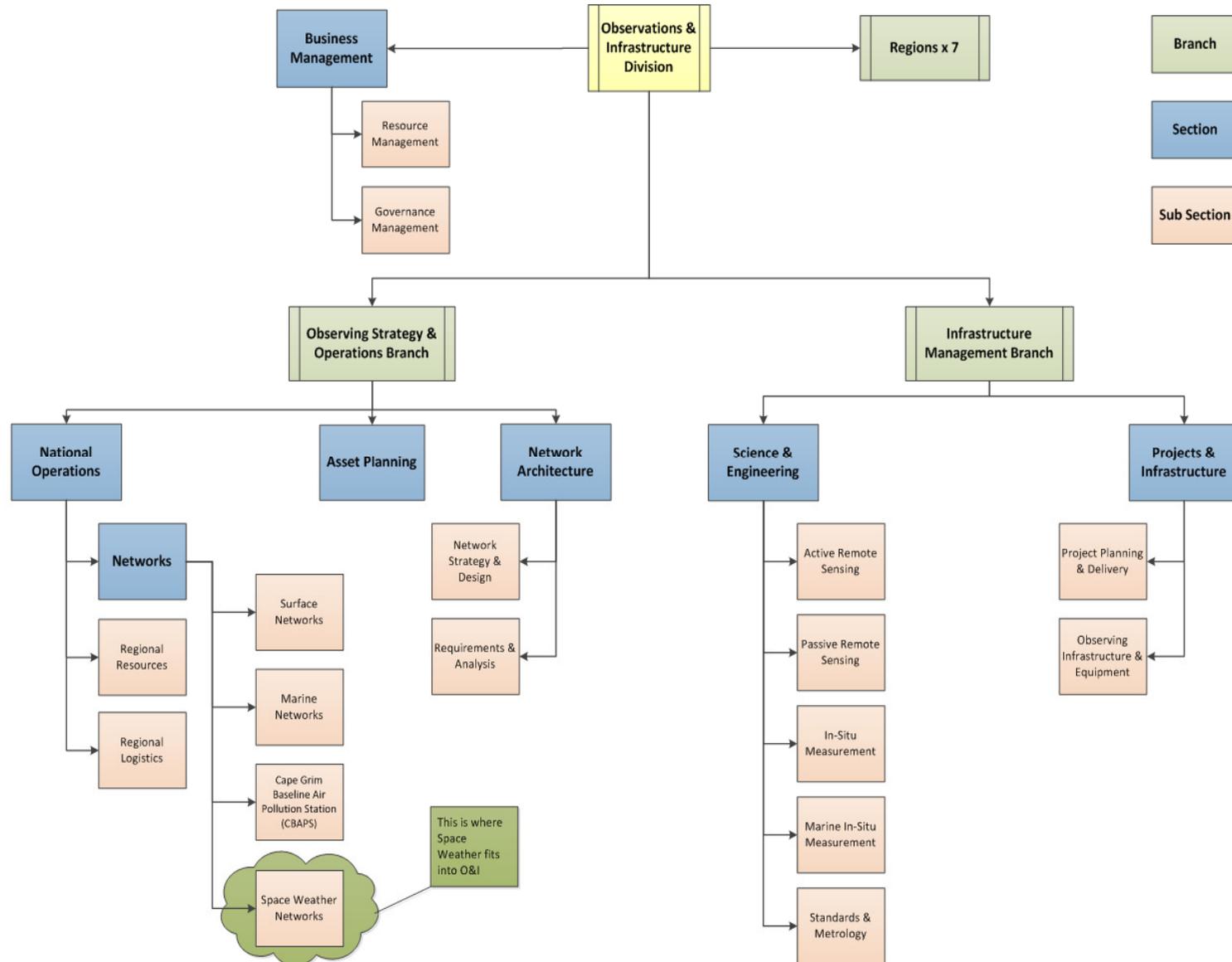- **Munro Review of terrestrial severe weather services – Option 20**
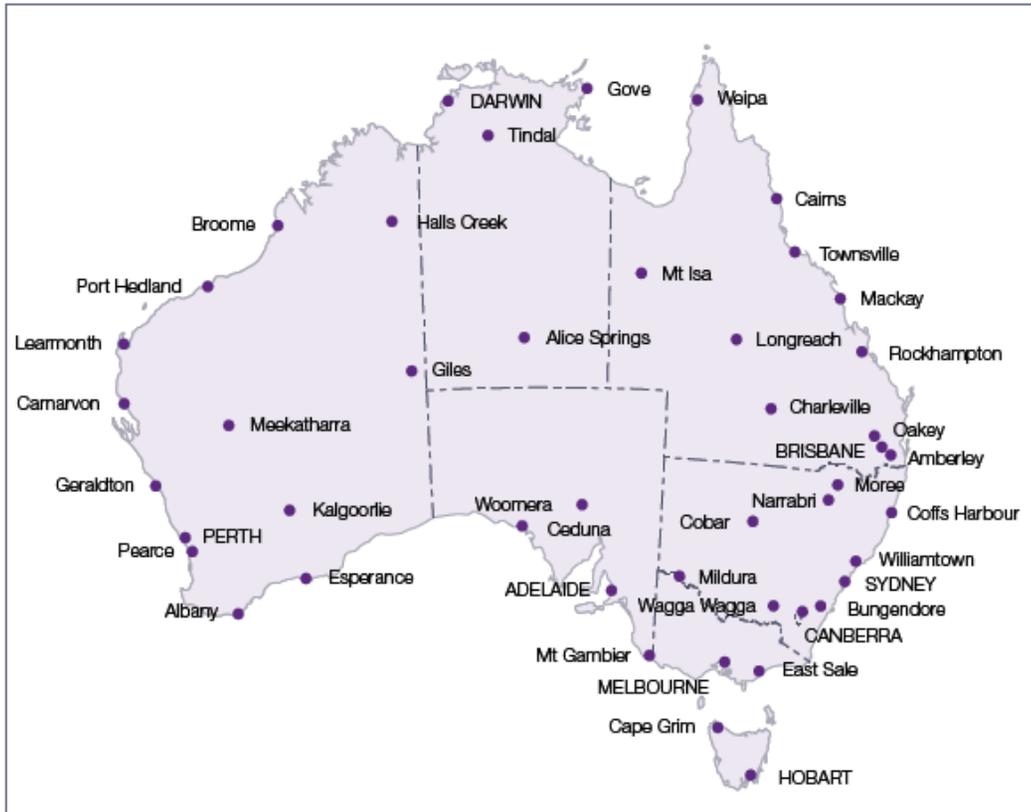
BOM's Realignment Project
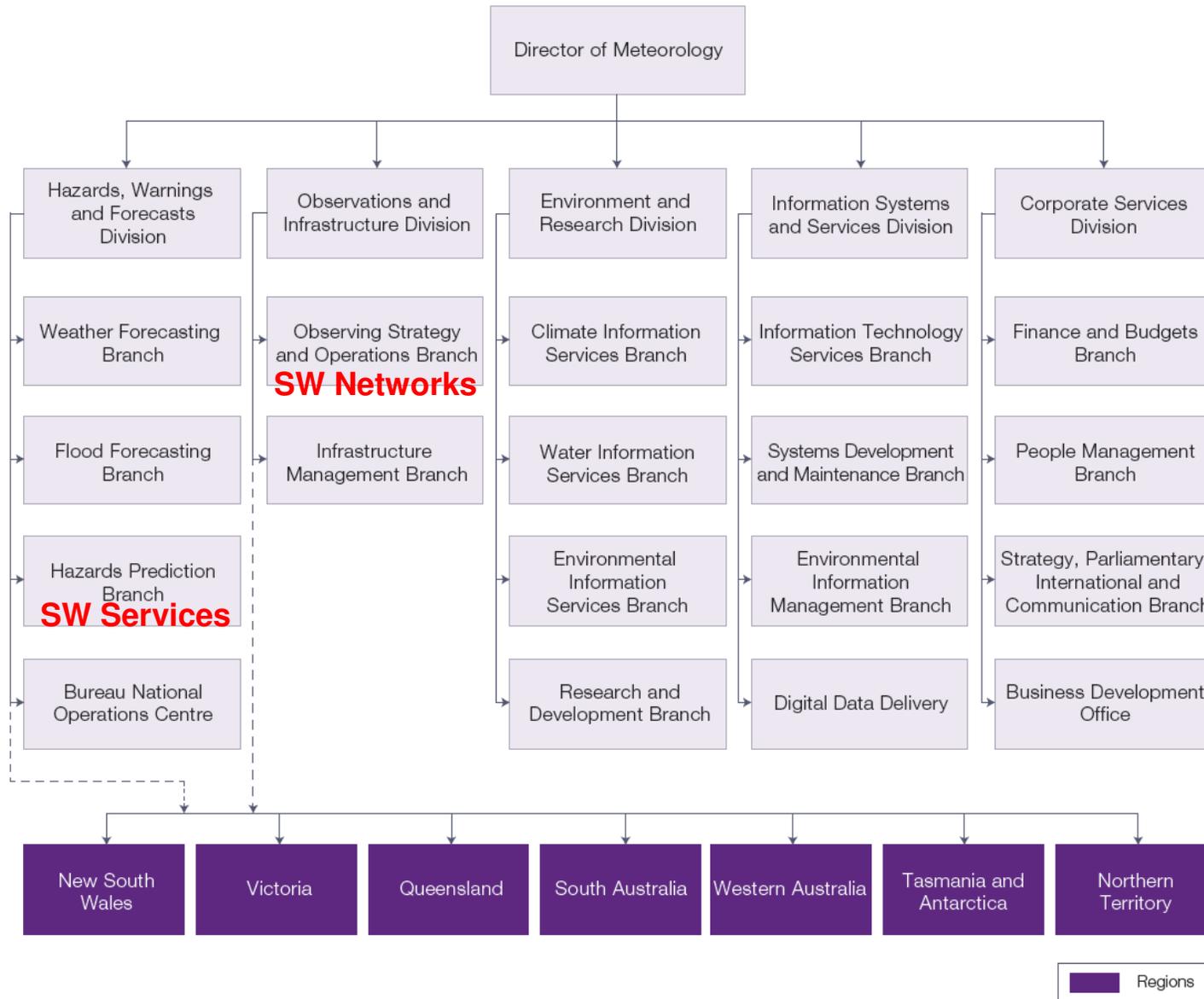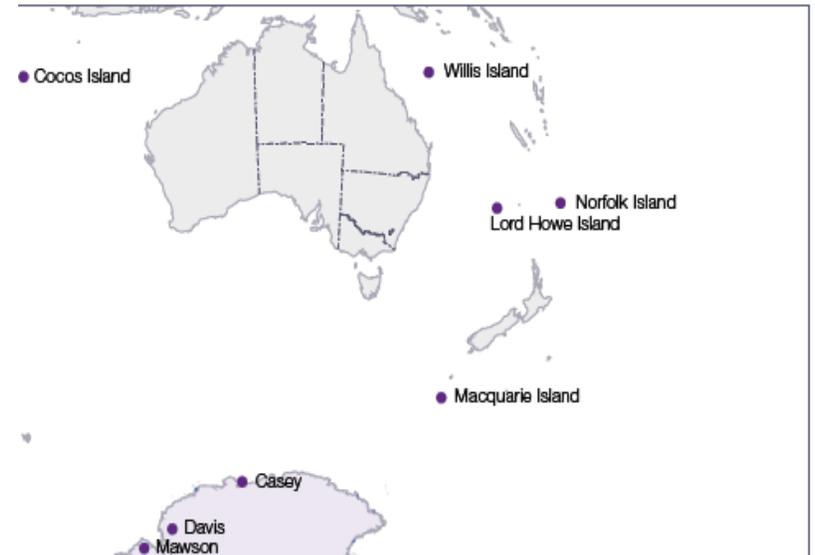
BOM's Space Weather Networks

BOM's Observations Network

BOM's Space Weather Review

Space Weather Services Review

* A Review of the Bureau of Meteorology's extreme weather and seasonal forecasting capacity proposed a number of options for obtaining funding for additional terrestrial weather forecasters
* Option 20: 'Cease or reduce the Ionospheric Prediction Service (IPS), or offer it as a commercial service.'
* Government response was to review the Bureau of Meteorology Space Weather Services (IPS)

The Review Terms of Reference were:

* Review the policy basis for the Bureau's Space Weather services;
* Provide an analysis and international benchmarking comparison of the Bureau's Space Weather services, and use of observations and infrastructure, including:
  - their current status;
  - performance and impact;
  - scope;
  - manner of delivery; and
  - adequacy of capabilities and resourcing to deliver the service;
* Evaluate the extent to which the Bureau's Space Weather services meet user needs, especially those of significant user groups and high-impact users;
* Assess the strategic outlook (over 5-10 years) for Space Weather services in Australian, regional and global settings and, in light of 1 to 3 above, provide advice on the capabilities required to meet the future challenges;
* Comment on the potential for cost-recovery of Space Weather services;
* Provide recommendations based on the above analyses, assessments and evaluations.

Reviewers: Professor Paul Cannon, University of Birmingham, UK (lead); Dr Terry Onsager, SWPC, NOAA, USA.

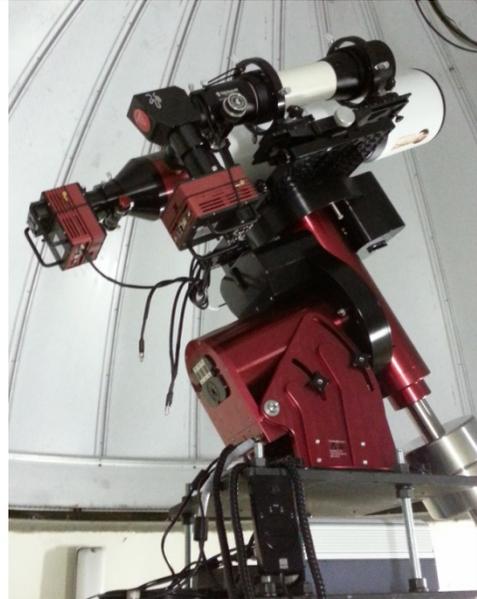**Outcome:** Space Weather review findings are presently with Minister before being released to public.

MAGDAS Global

MAGDAS/CPMN

(MAGnetic Data Acqusition System/Circum-pan Pacific Magnetometer Network)

SWN - space weather sensor network
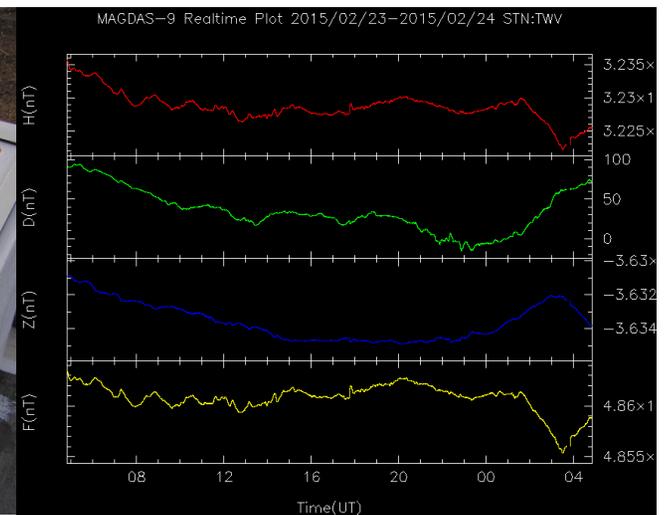## (formerly IPSNET)
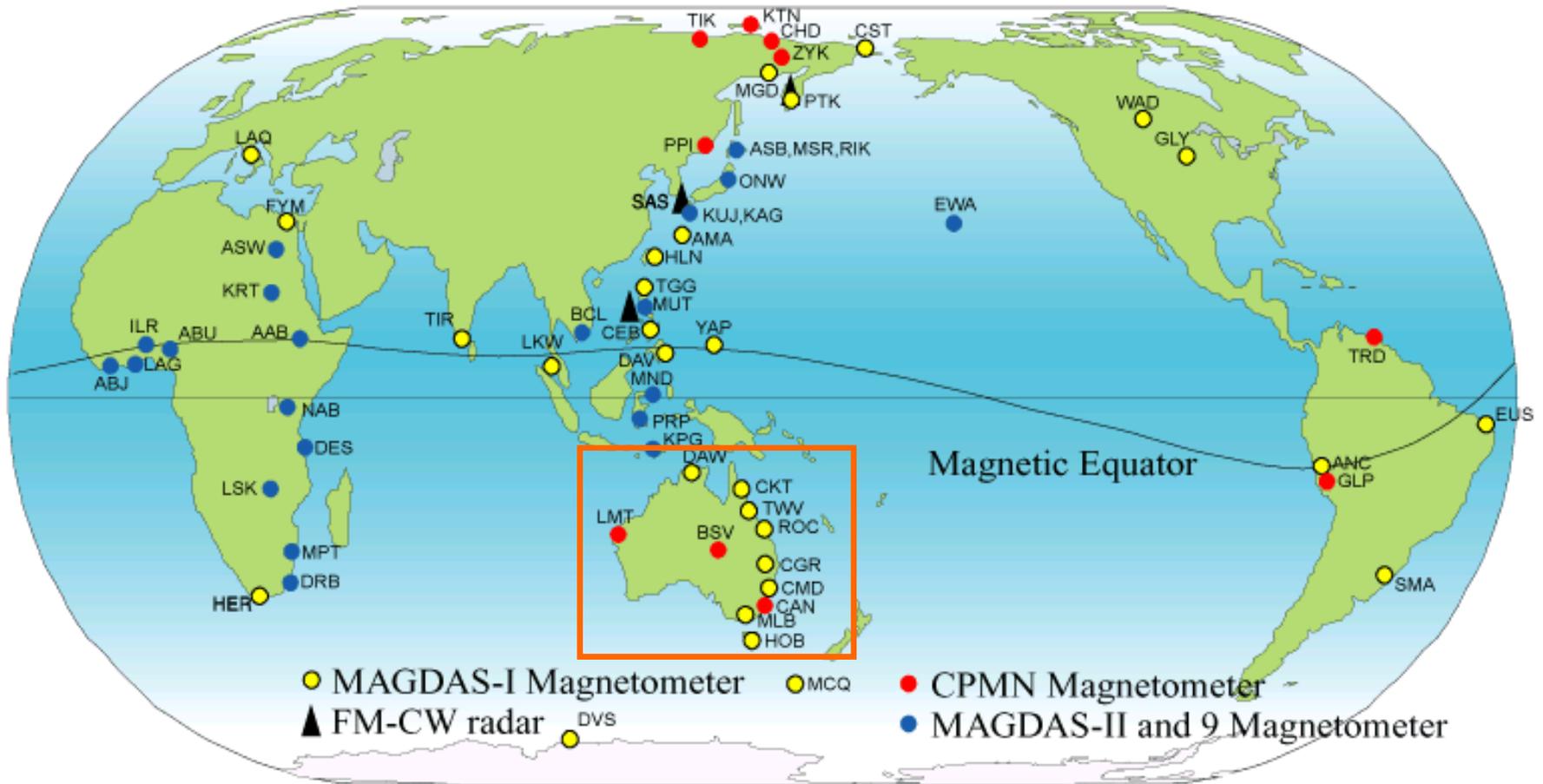
SWN Observatories
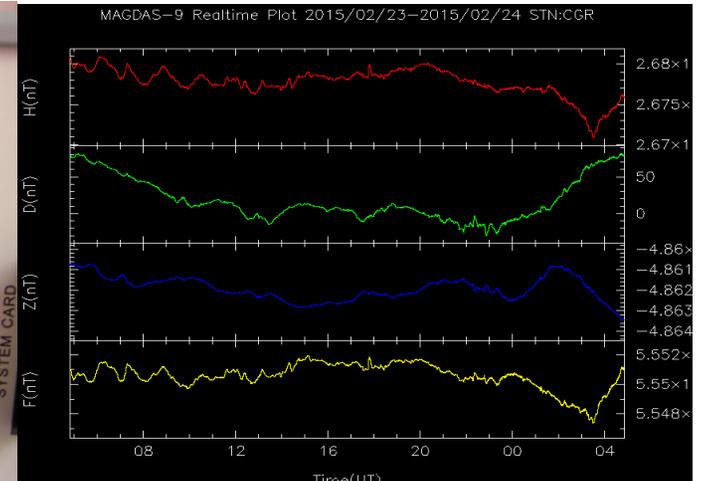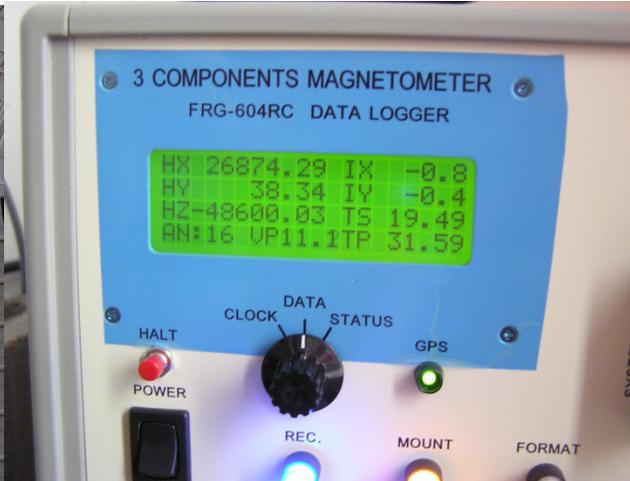
MAGDAS Future in Australia (2012)

Over the coming 12 months of 2012:

• Continue routine support of MAGDAS operations within Australia

• Develop, test and implement collection of digital data from MAGDAS-9 units

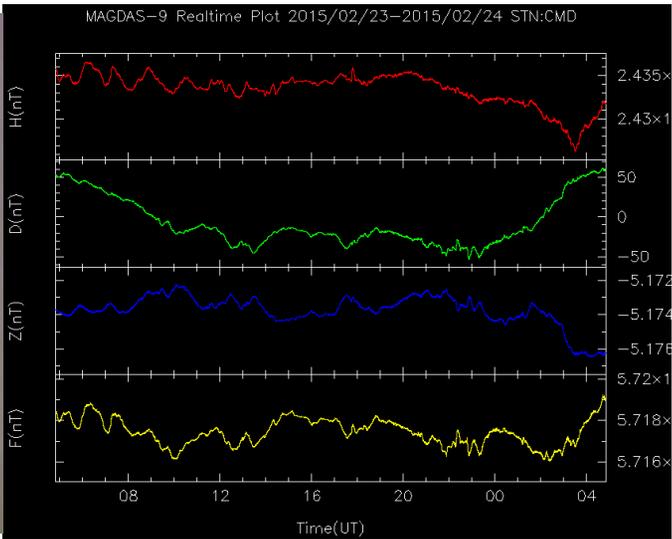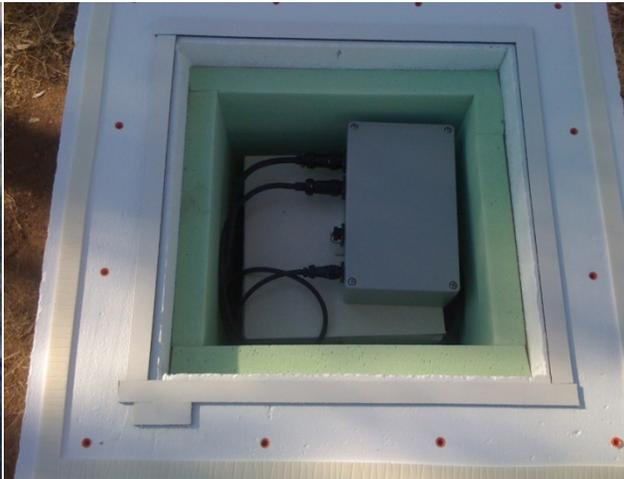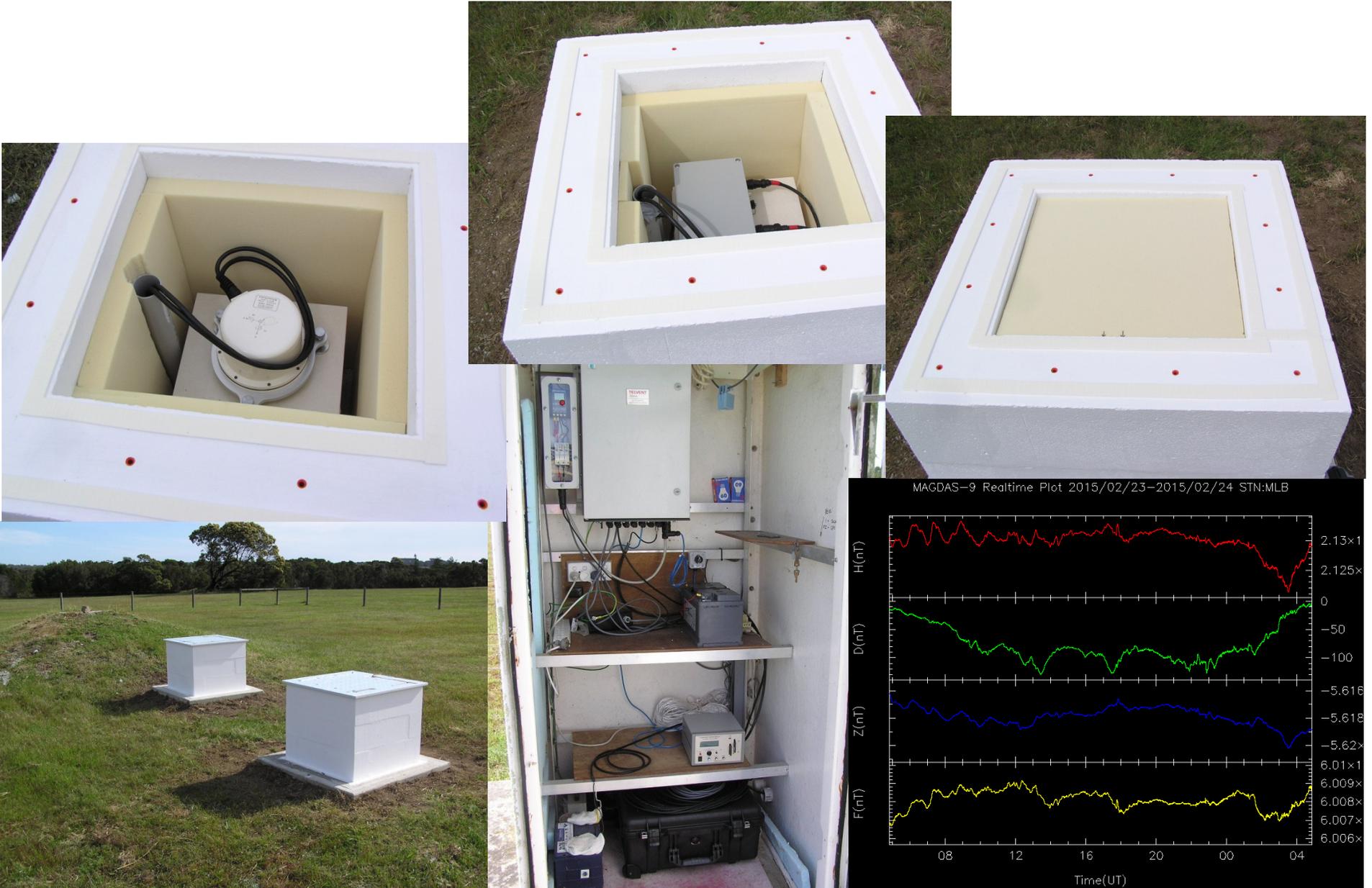• Upgrade at least one Australian MAGDAS-I system to MAGDAS-9

MAGDAS-9 Upgrade: Townsville 2013

MAGDAS-9 Upgrade: Culgoora 2013

MAGDAS-9 Upgrade: Camden 2014

MAGDAS-9 Upgrade: Melbourne 2014

MAGDAS I: Hobart
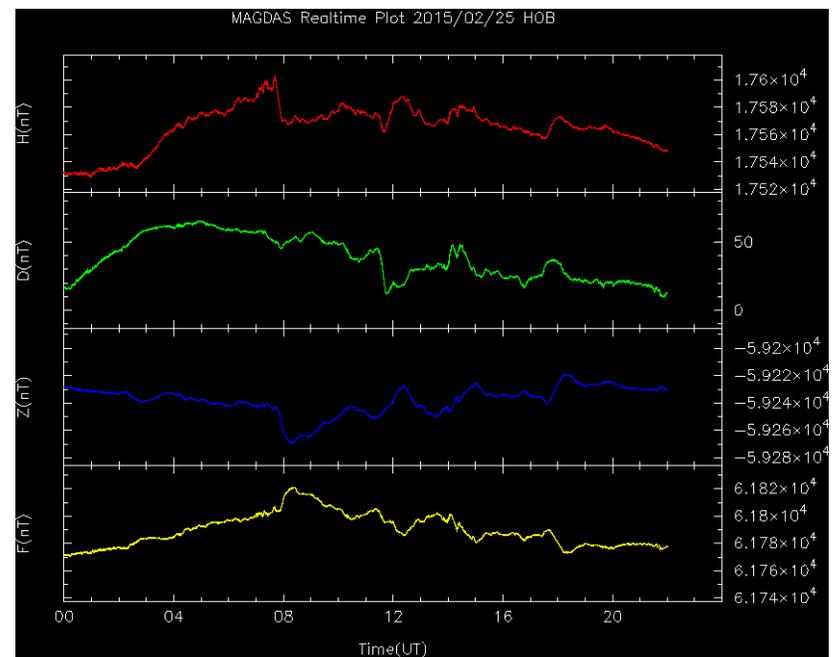
MAGDAS II: Canberra
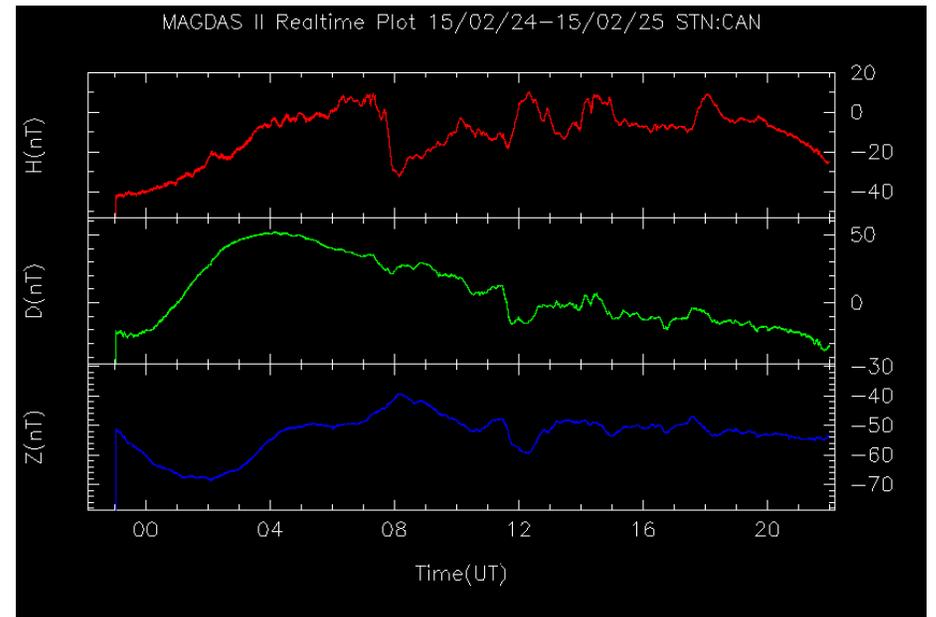
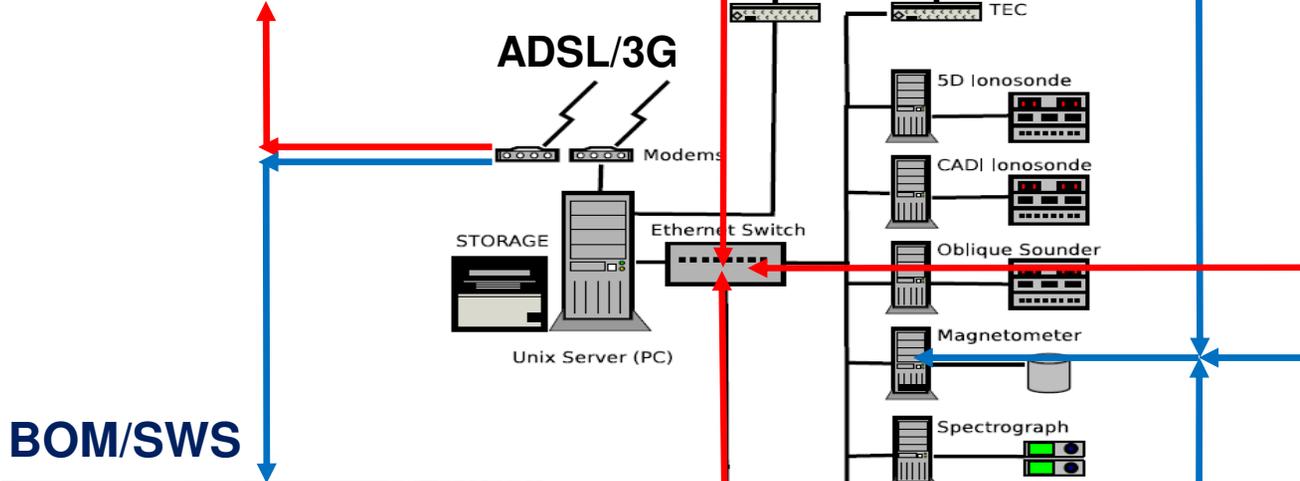# MAGDAS DATA → ICSWSE→ BOM/SWS

MAGDAS

Real-time Data

ICSWSE

FTP

BOM/SWS

BOM/SWS Software
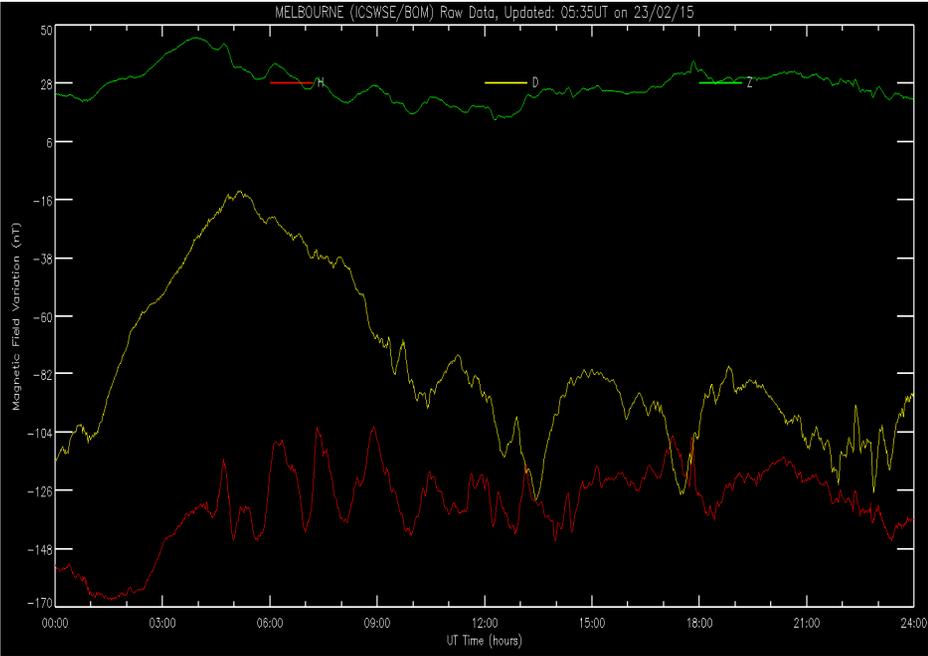
MAGDAS DATA → BOM SWS/ICSWSE

MAGDAS-9 Serial Data logger

MAGDAS-9 Serial Data logger

BOM SW SERVICES - MAGDAS

IPS Daily Report – Geophysical Section

Geomagnetic field for Australian Region
24 Feb: Quiet to Active

Estimated Indices 24 Feb : A   K
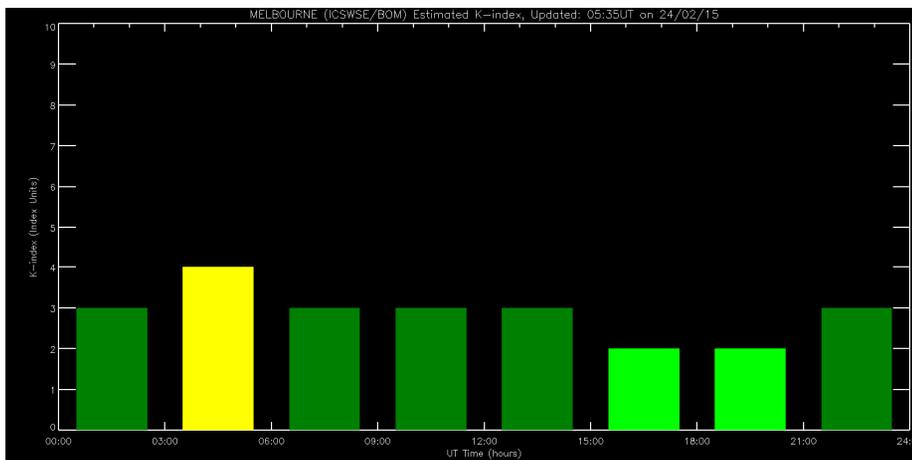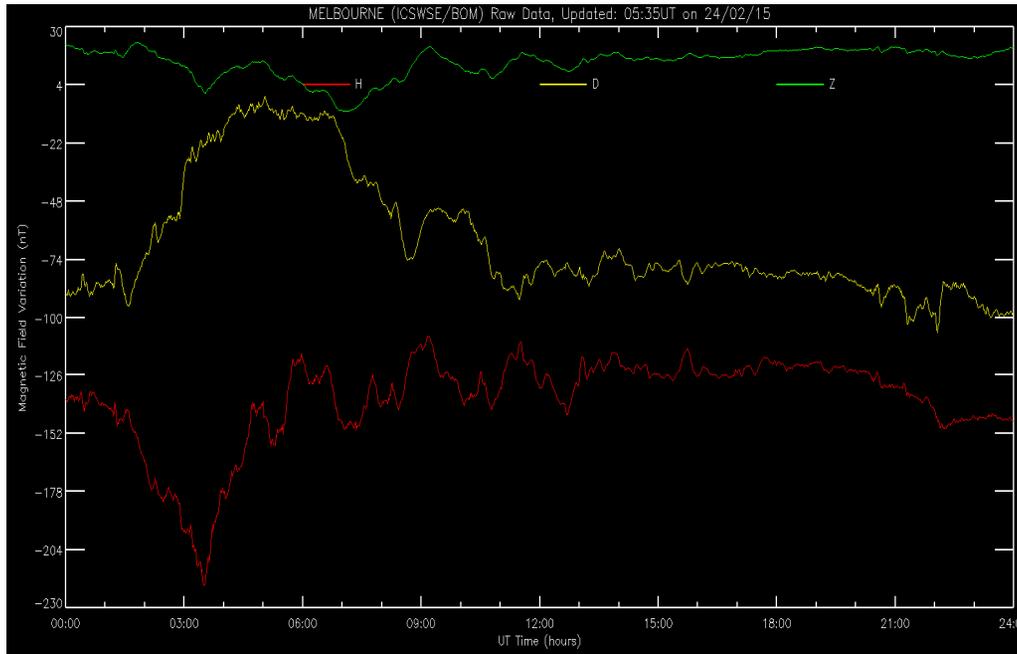|	A	K
Australian Region	14	34333223
Cocos Island	9	33232212
Darwin	14	34333223
Townsville	14	34333223
Learmonth	13	44332212
Alice Springs	14	34333213
Norfolk Island	11	33333212
Culgoora	13	24333223
Gingin	14	44332213
Camden	13	24333223
Canberra	11	23333222
Melbourne	14	34333223
Launceston	14	34333223
Hobart	13	34333222

NOTE: Indices may have been generated from data obtained in cooperation with the following organisations: Geoscience Australia, University of Newcastle Space Physics Group, Australian Governmen Antarctic Division and International Center for Space Weather Science and Education, Japan.

MAGDAS Future in Australia

• Continue routine support of MAGDAS operations within Australia

• Maintain and upgrade MAGDAS SerDAQ software for serial data from MAGDAS-9 units

• Upgrade Hobart MAGDAS-I system to MAGDAS-9 (2015/26)

• Provide co-authorship to any scientific research papers utilizing IPS/SERC MAGDAS data