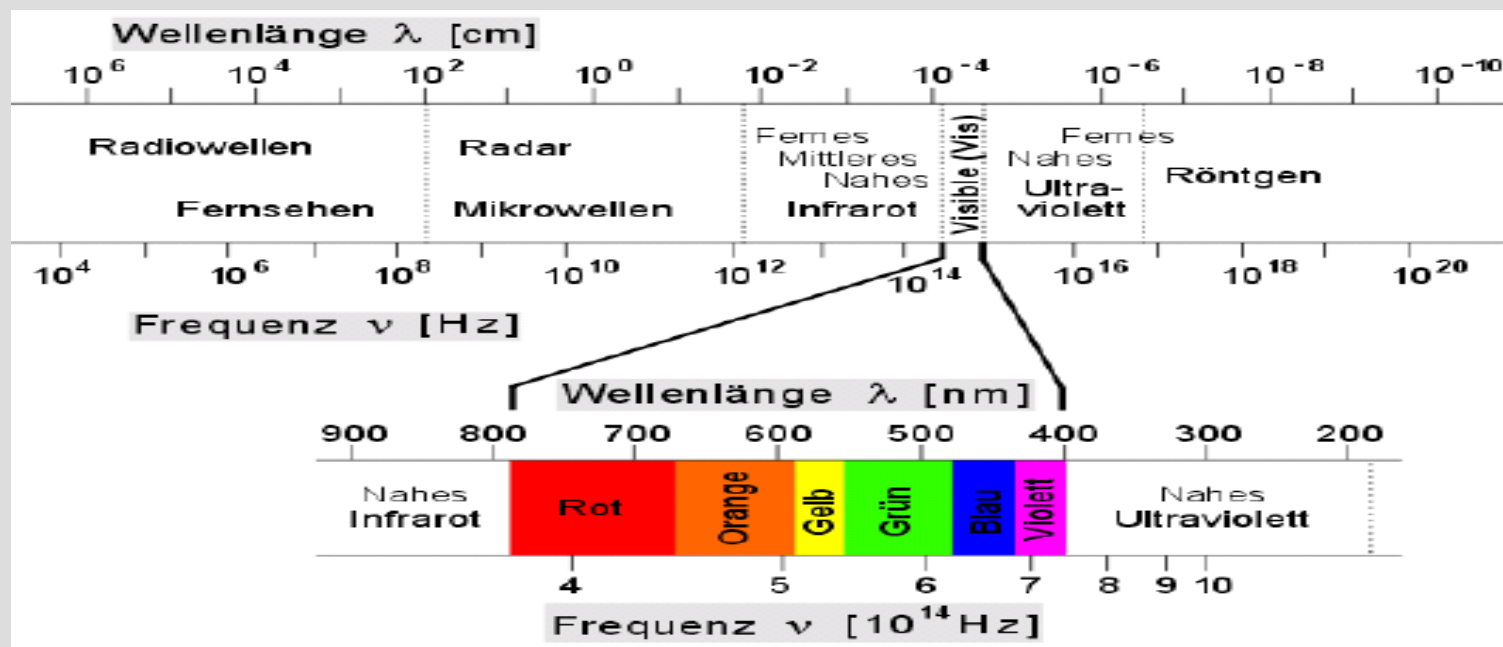
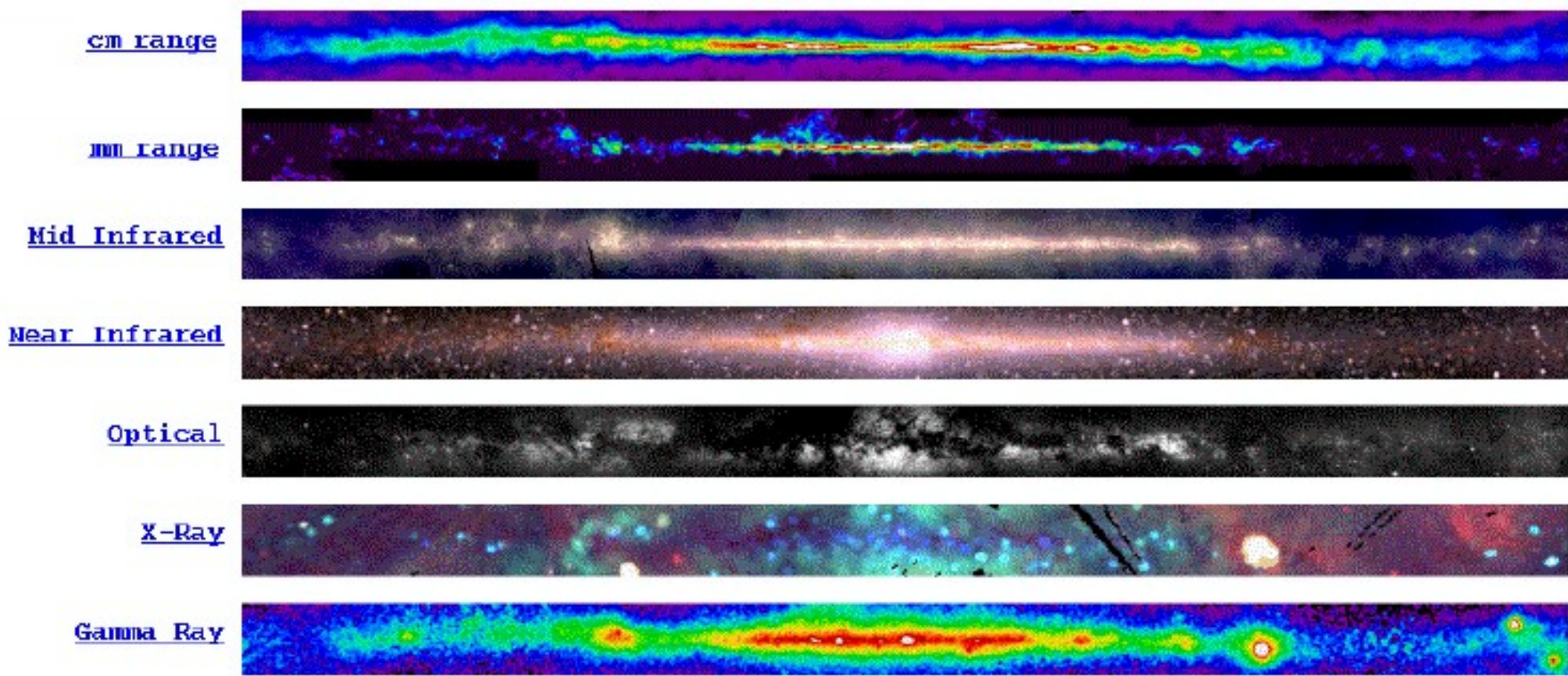
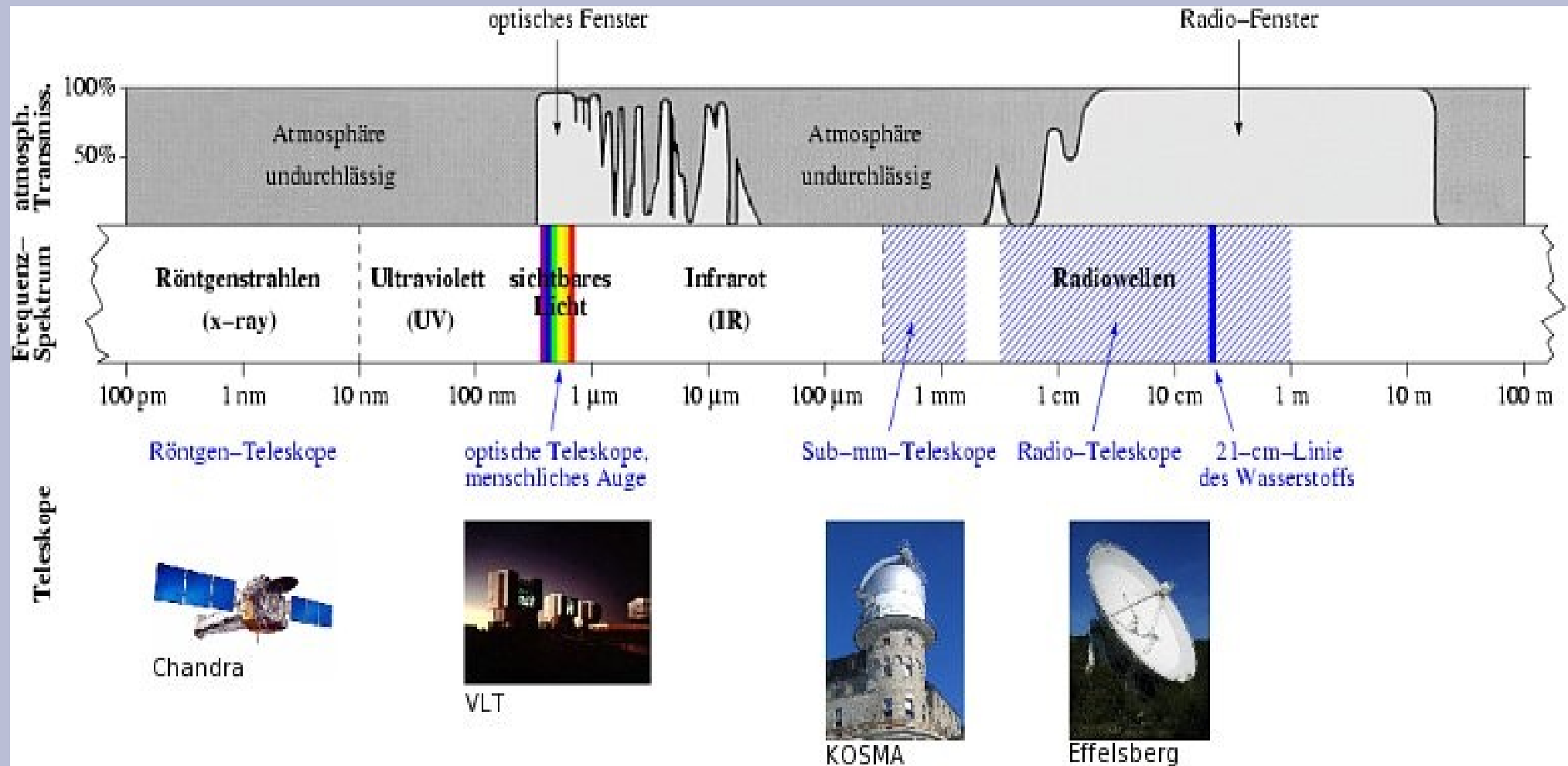


Radioastronomie an der Volkssternwarte Radebeul

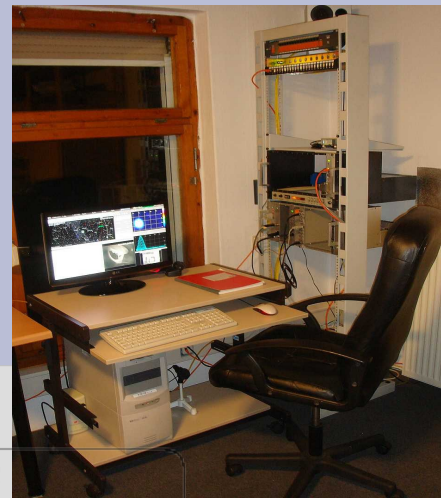


9. "Dresdner Lange Nacht der Wissenschaften", Juli 2011

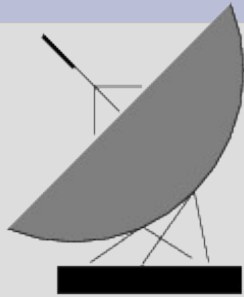




Steuerung



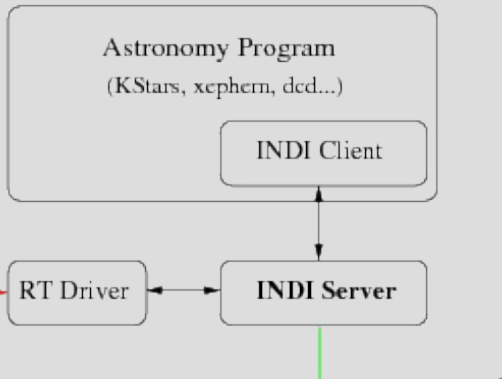
Control Room PC



RT Controller

Movements
Positions
Coordinate Transforms
Object Handling (Goto, Guide...)
LX200-Protocol Engine
Sensors

LX200-Protocol
over RS485



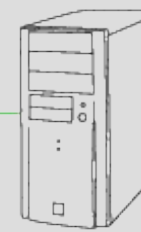
INDI Clients
communicate with INDI-Server
through XML messages



Observatory Network

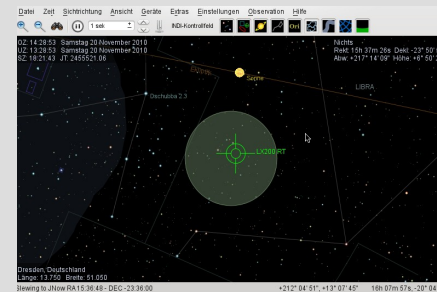


INDI Clients

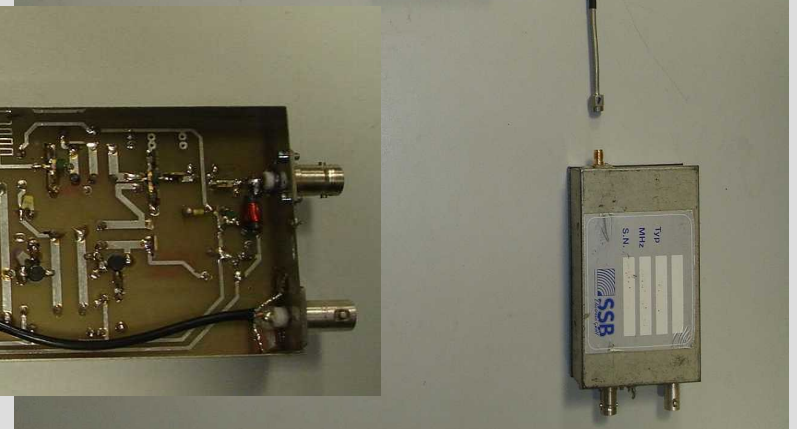
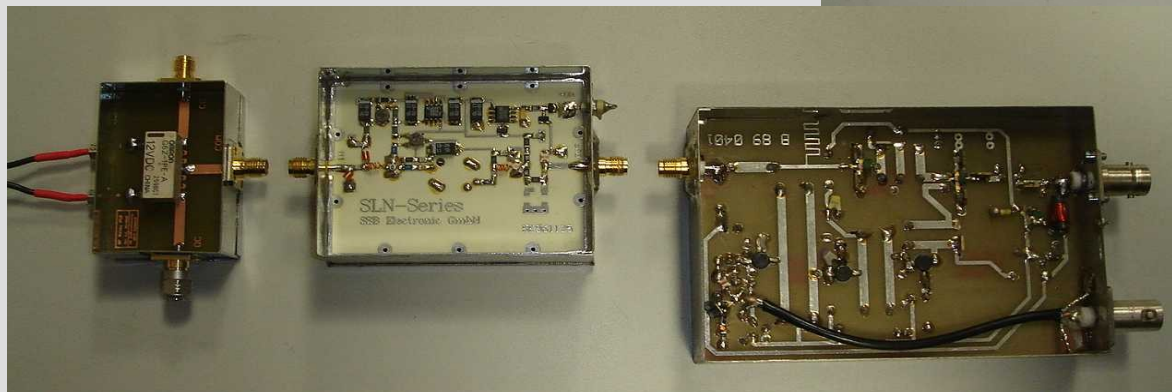


Gateway

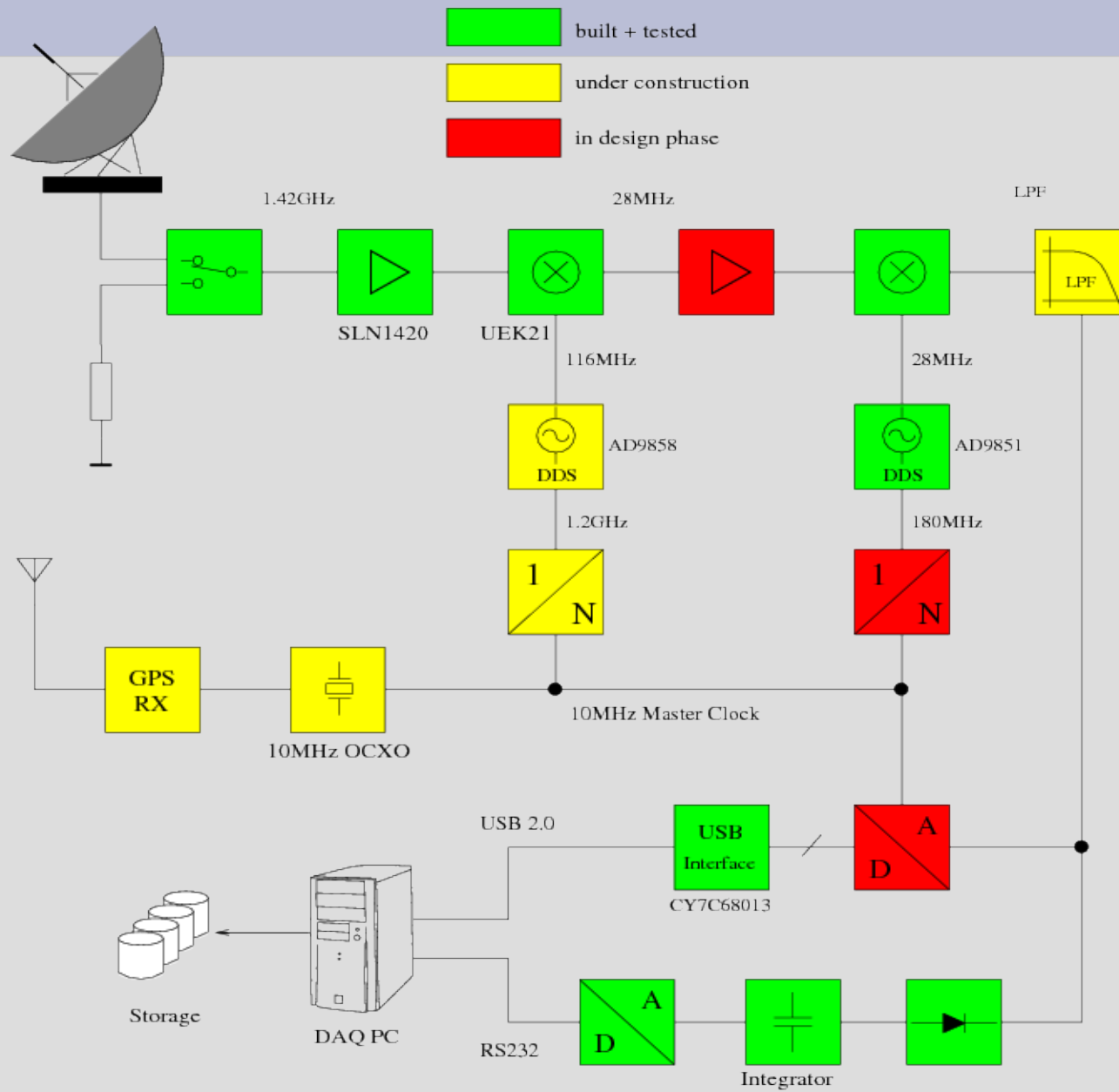
WWW



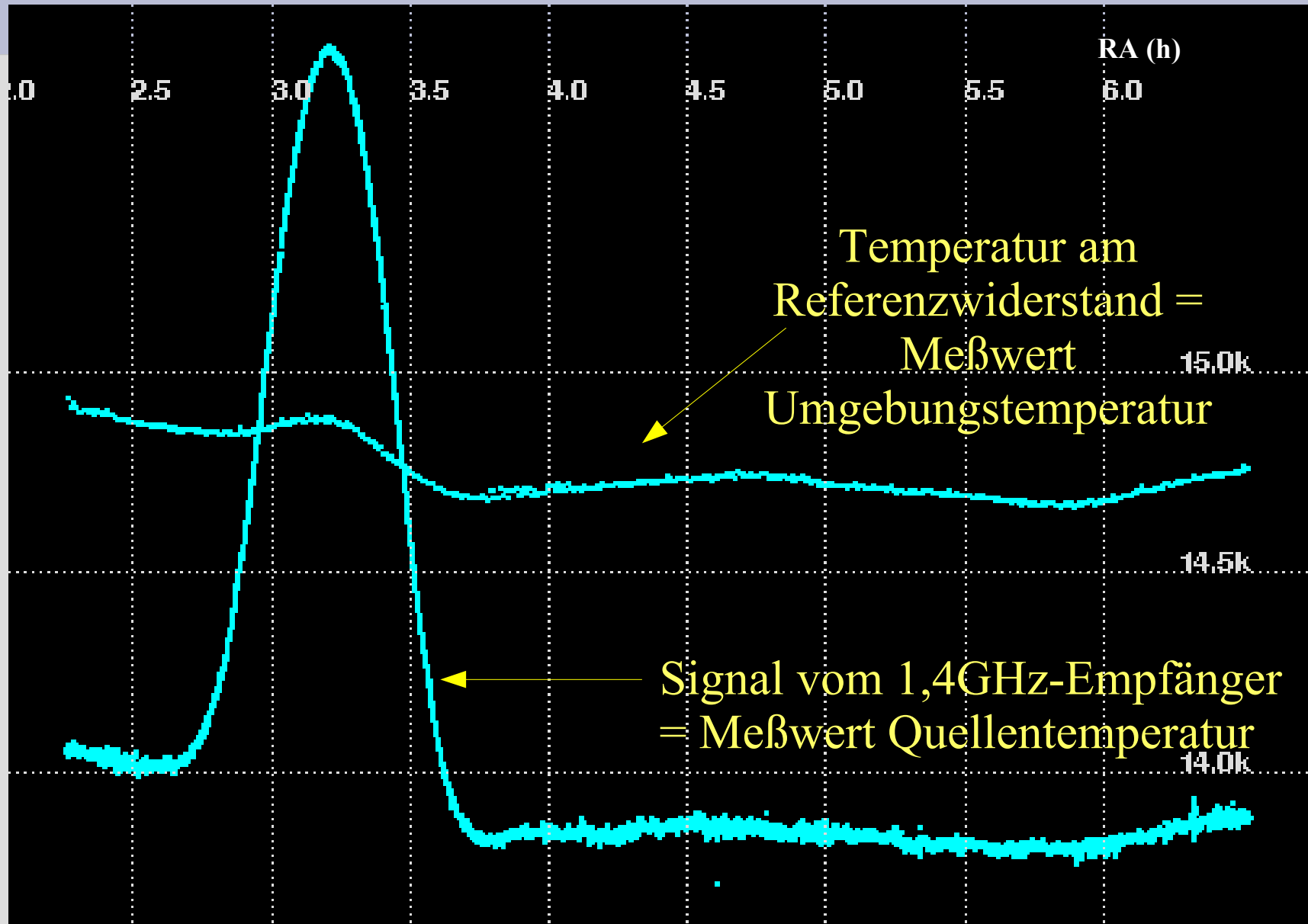
Beobachtungstechnik 1,4 GHz



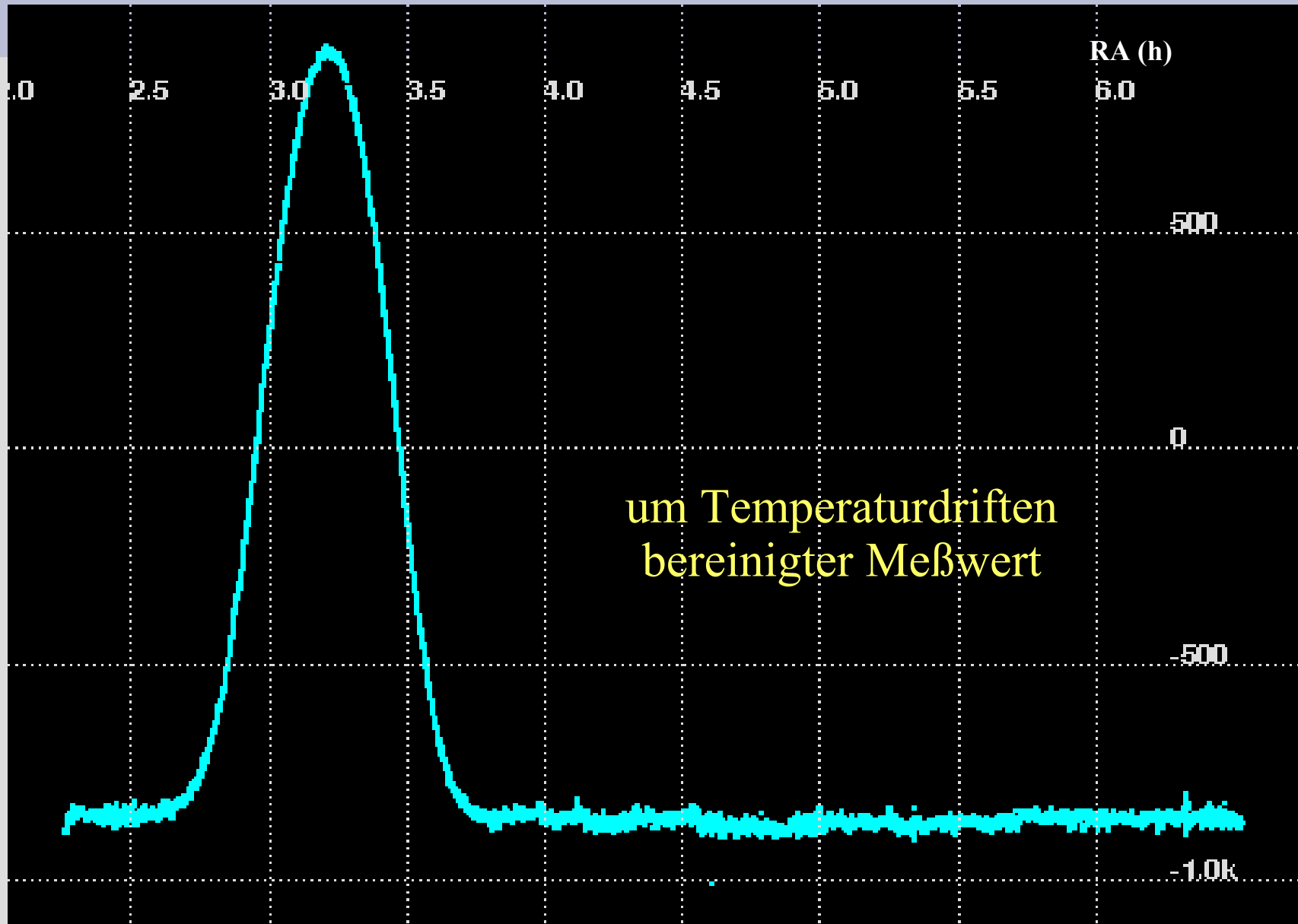
Signalweg



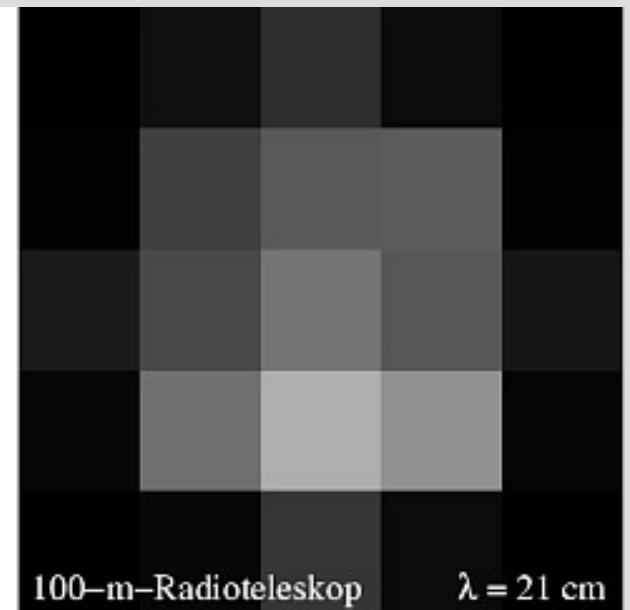
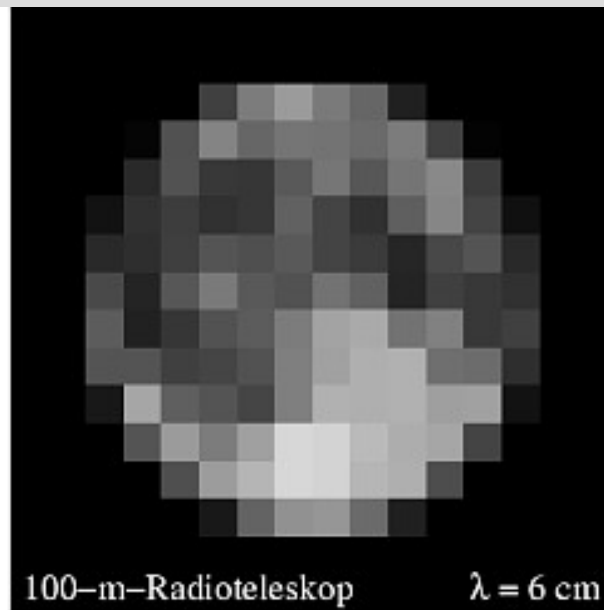
Beobachtungen bei 1,4 Ghz



Beobachtungen bei 1,4 Ghz

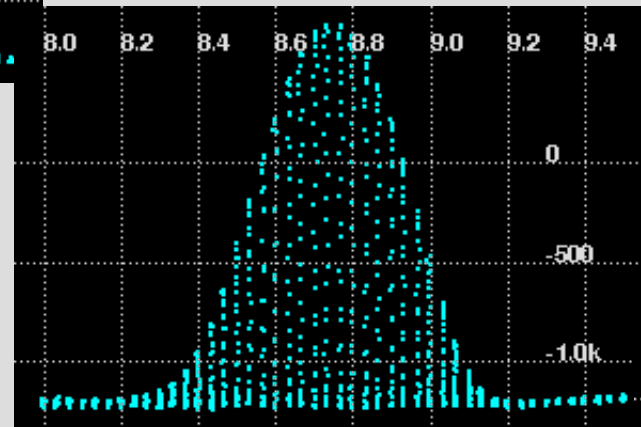
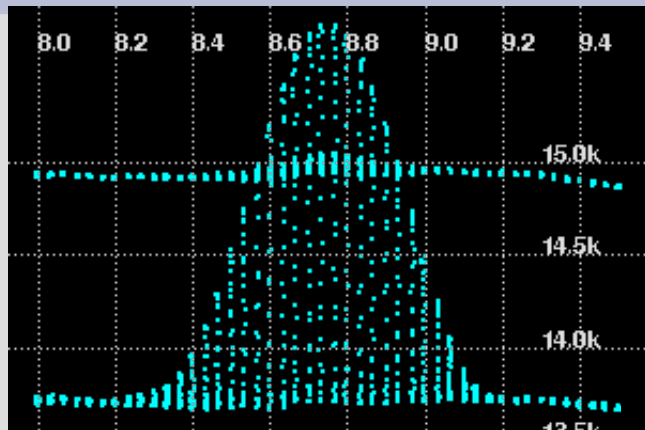


Beobachtungen bei 1,4 Ghz

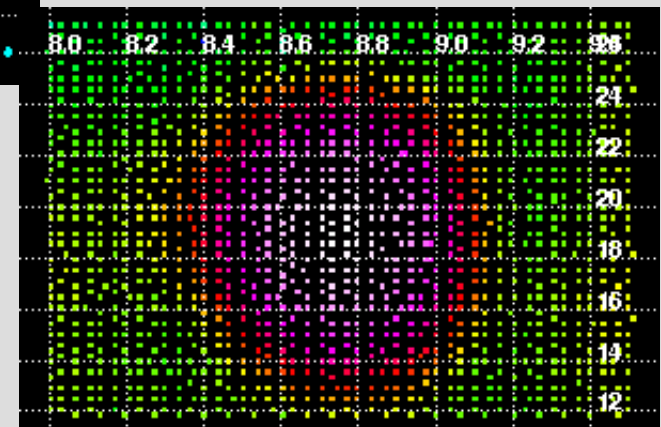


Beobachtungen bei 1,4 Ghz Sonne 2d-Scan

→ Scan in regelmäßigem Gitter
(Äquatorial/Horizontalsystem)



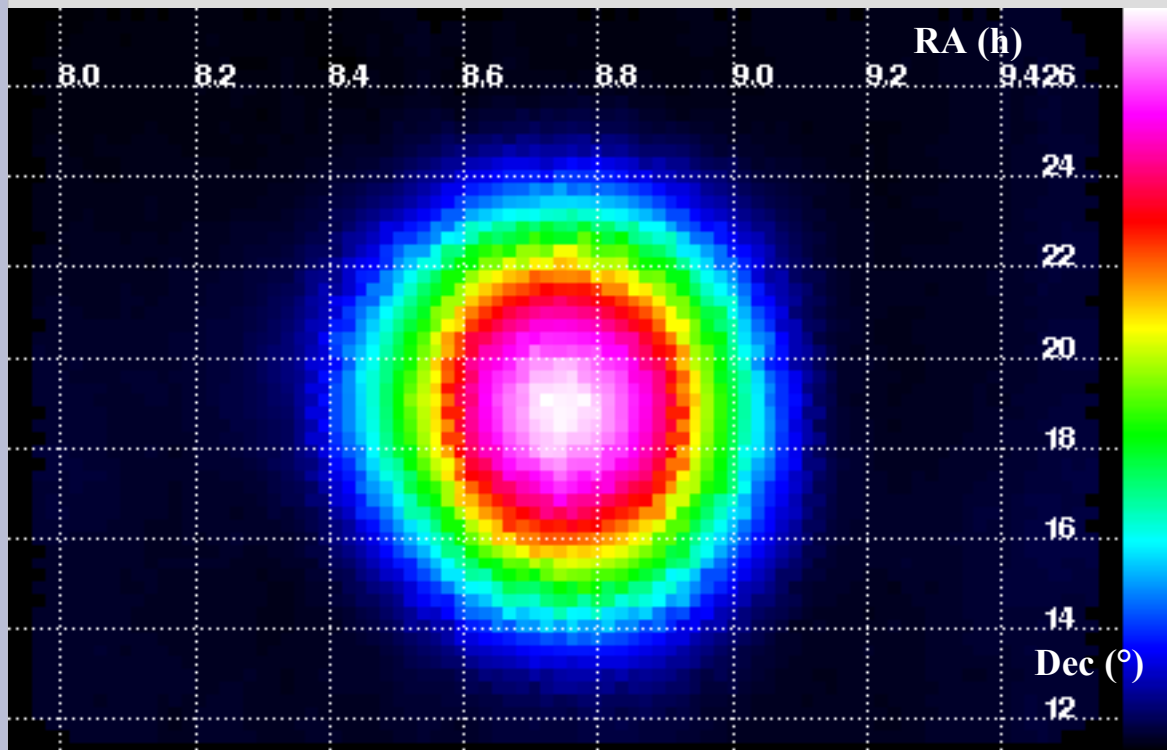
→ Referenz-
bereinigung



→ Füllen des Raumgitters
mit Meßwerten

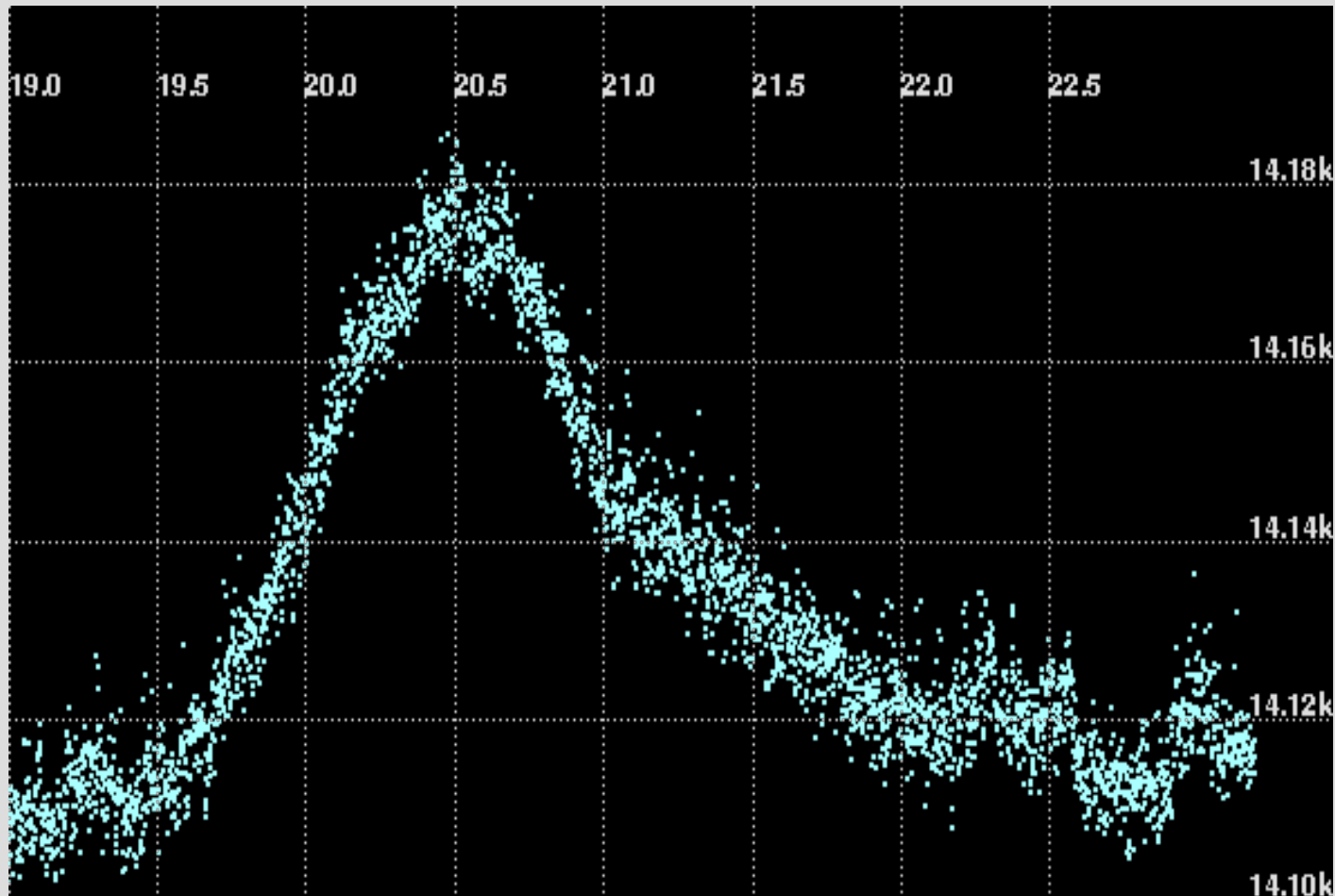
Beobachtungen bei 1,4 Ghz

Sonne 2d-Scan

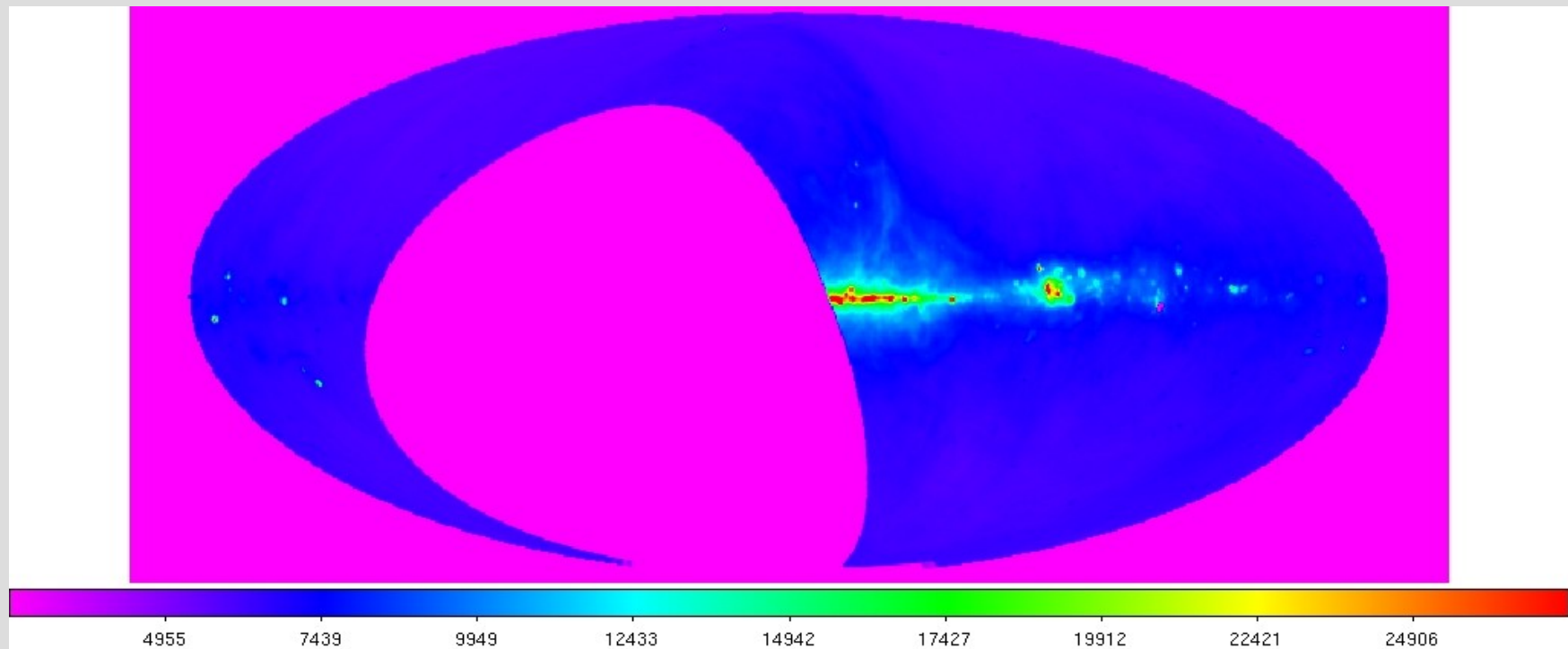


- Anpassen des Binnings
- Interpolation fehlender Gitterpunkte („Löcher“)

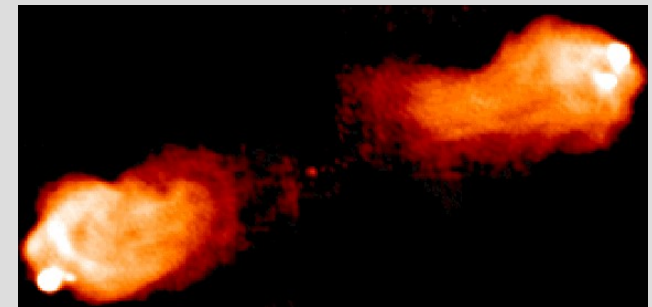
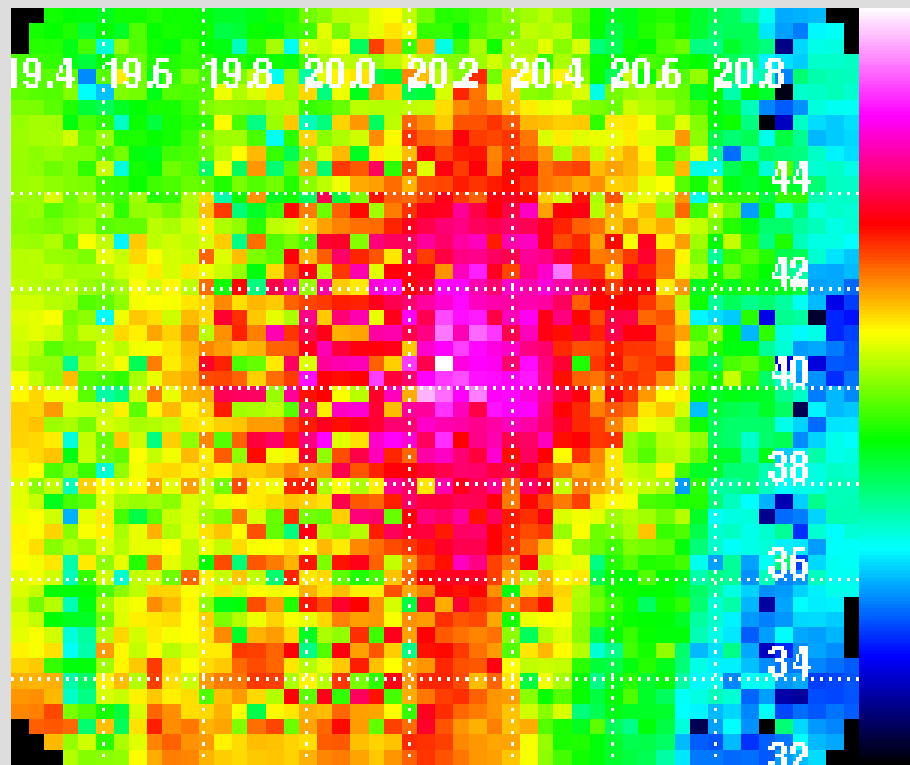
Beobachtungen bei 1,4 Ghz Durchgang Milchstrasse



Milchstrasse bei 1,4 GHz



Beobachtungen bei 1,4 Ghz Cyg A / Cyg X-Komplex



Radiobild von Cyg A (VLA)

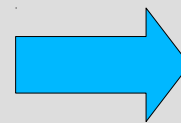
Beobachtungstechnik 11 GHz

kommerzielle Satelliten-Empfangstechnik



Beobachtungstechnik 11 GHz

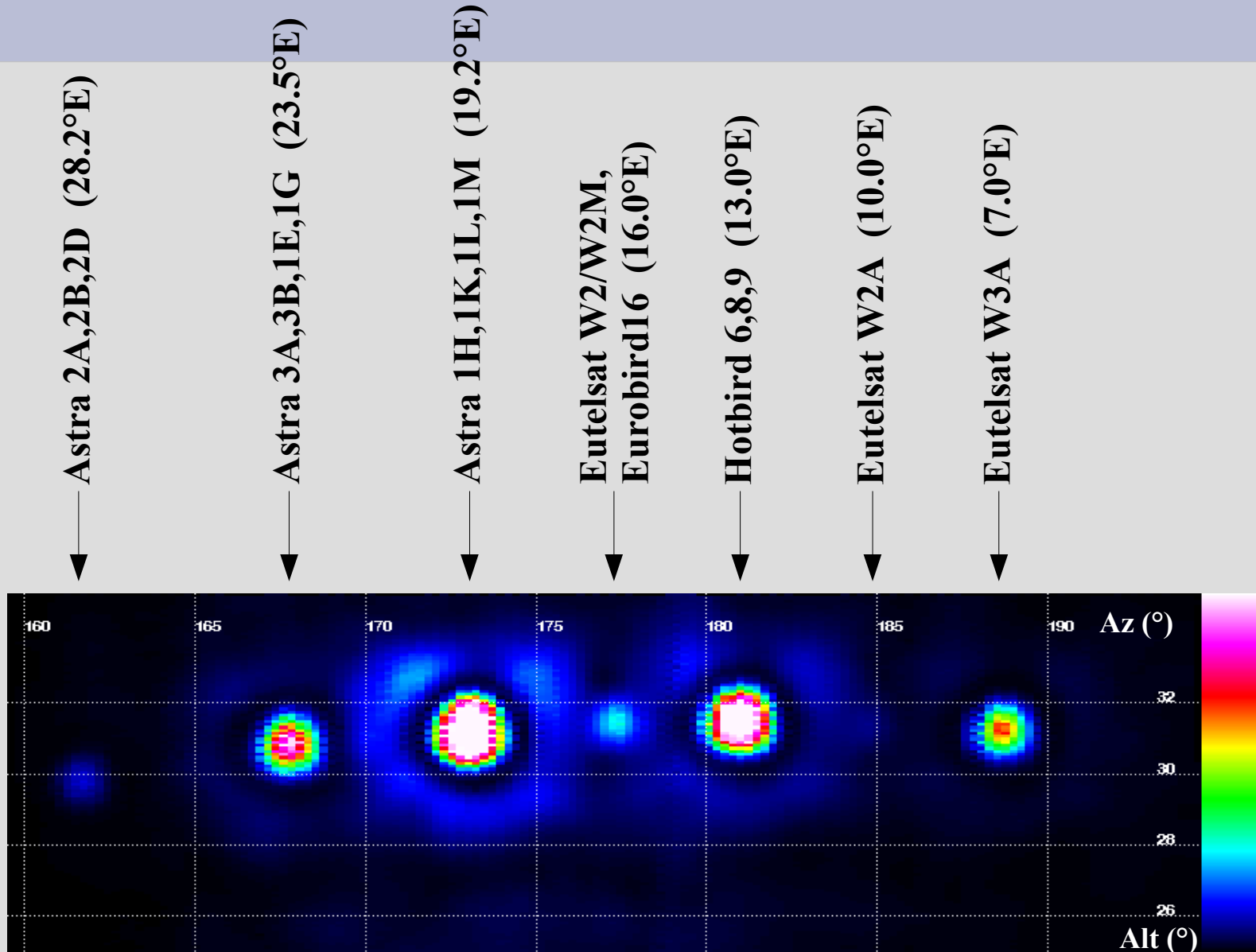
kommerzielle Satelliten-Empfangstechnik



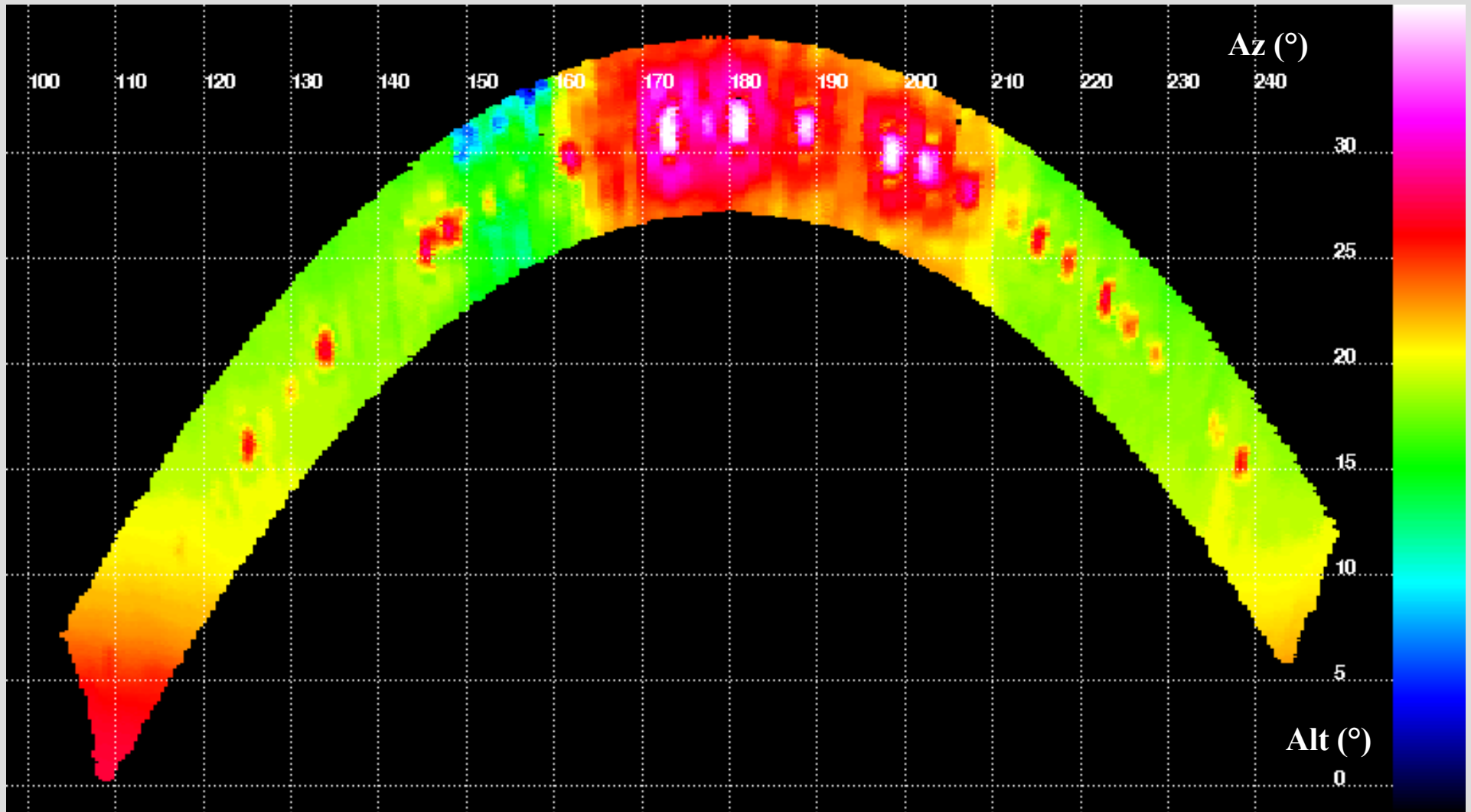
Exzellente Hardware für
Radioastronomie

Sat-LNB (Preis: 5€)
Rauschmaß: 0.1dB

Beobachtungen bei 11GHz

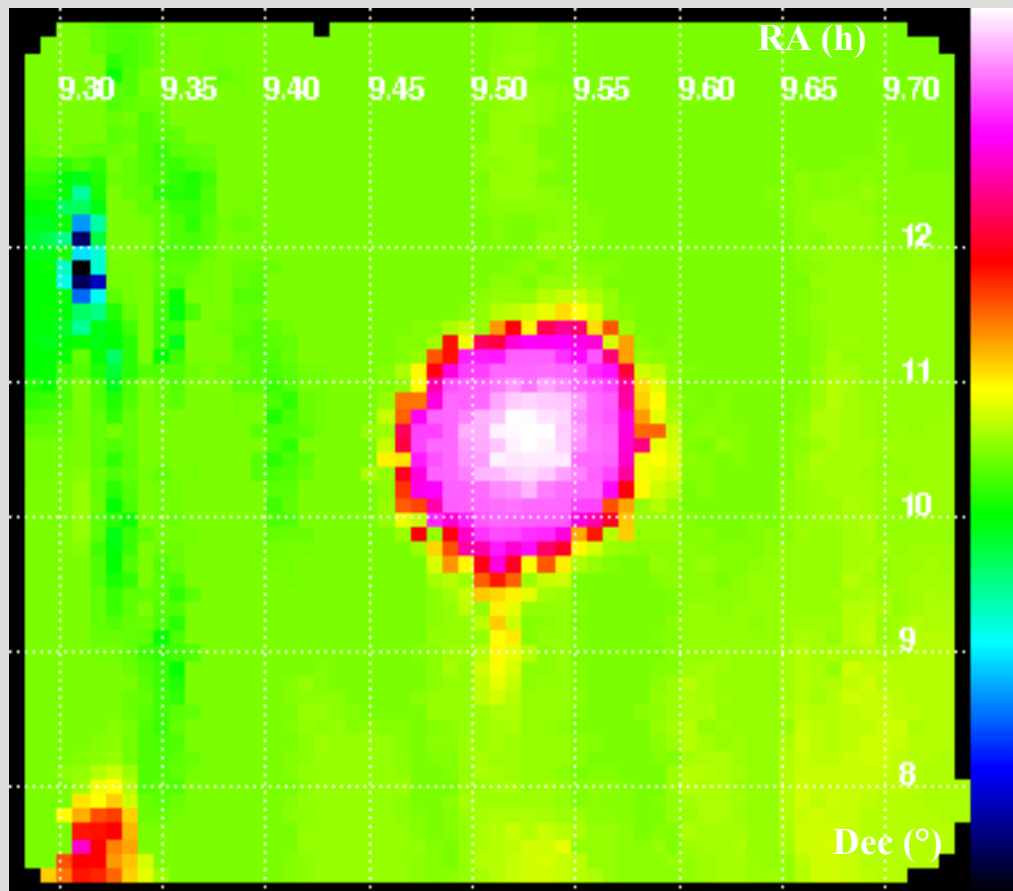


Beobachtungen bei 11GHz



Beobachtungen bei 11GHz

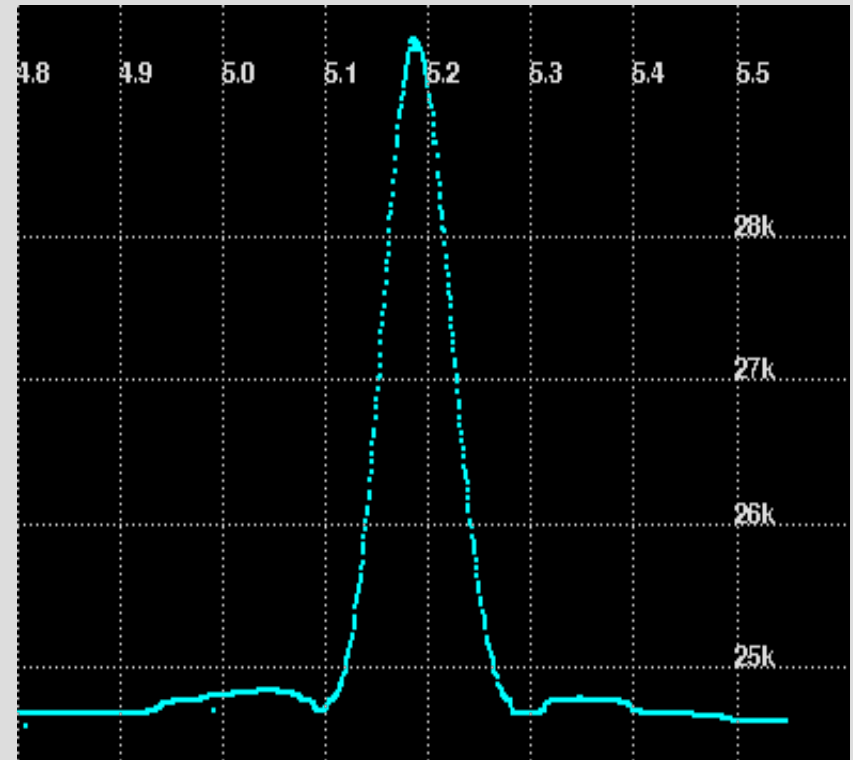
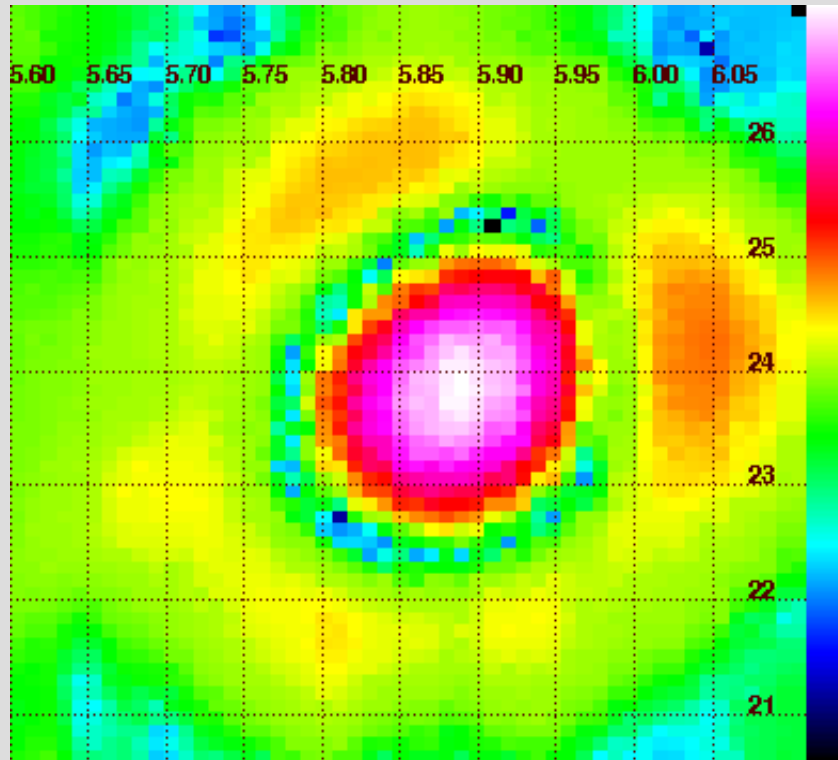
Mond



20%
Beleuchtung

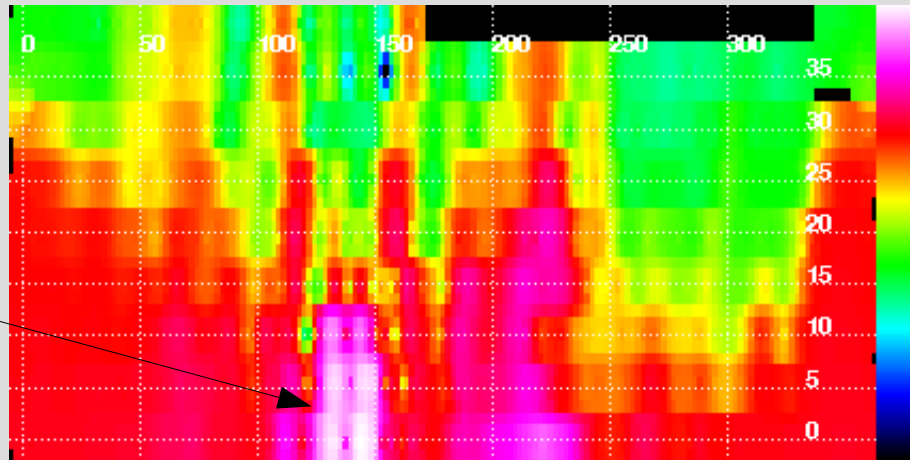
Beobachtungen bei 11GHz

Sonne

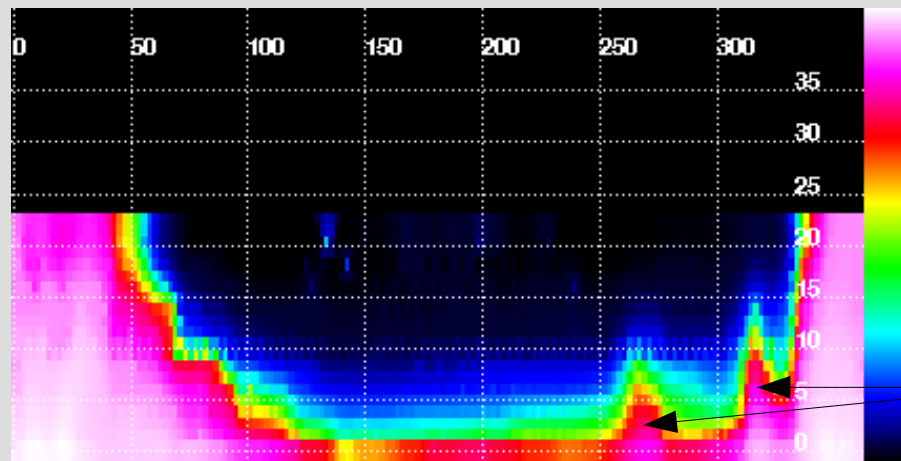


Horizontscan

Tschechischer
TV-Sender
(703,25 Mhz),
Einmischen als
Subharmonische
von 1,4GHz



1,4 GHz

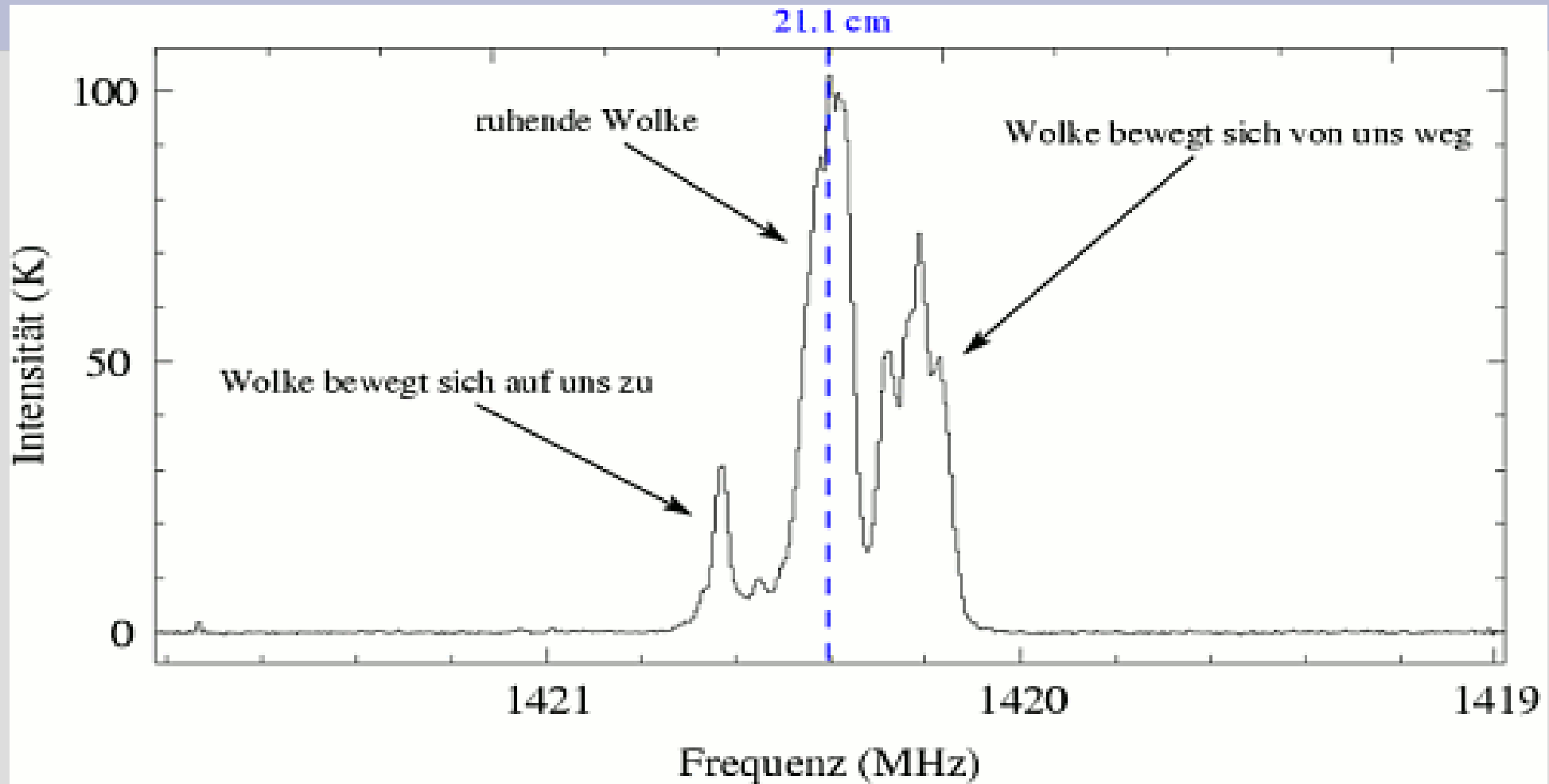


11 GHz

freistehende
Baumgruppen

Wald Stw-
Gebäude SPH Wald

Die 21cm-Linie des Wasserstoffs



Spektrum der 21-cm-Linienstrahlung von Gaswolken in der Milchstraße.

Vergleich verschiedener Feedsysteme

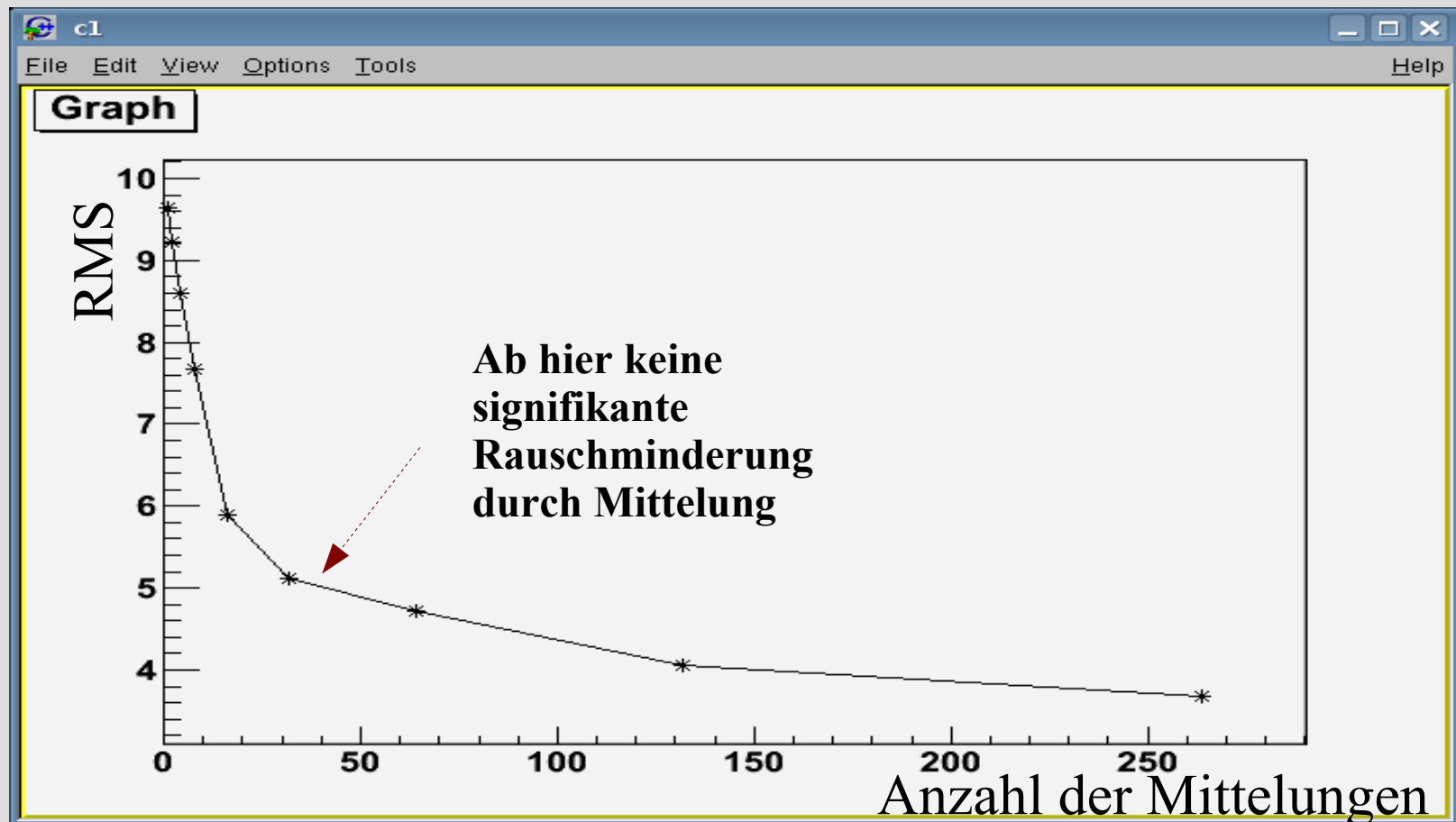
Beobachtungs-frequenz (GHz)	Feedsystem	Rauschzahl (dB)	Gain an Sonne (dB)	Theoret. Auflösung (°)	Gemessene Auflösung (°)
11	Sat-LNB	0,3	k.A.	0,64	1,0
1,4	Ringdipol	0,5	6	5	7,8
1,4	Rillenhorn	0,5	10,5	5	5,45

$$\sin\alpha = 1.22 \frac{\lambda}{D}$$

Fluktuation der Meßwerte

Allan-Plot

- Fluktuation des Signals (Rauschen) in Abhängigkeit von der Zeitkonstanten (Mittelungsintervall)



Die Radioamateurastronomen der Sternwarte Radebeul

