

# Amaterska radioastronomija

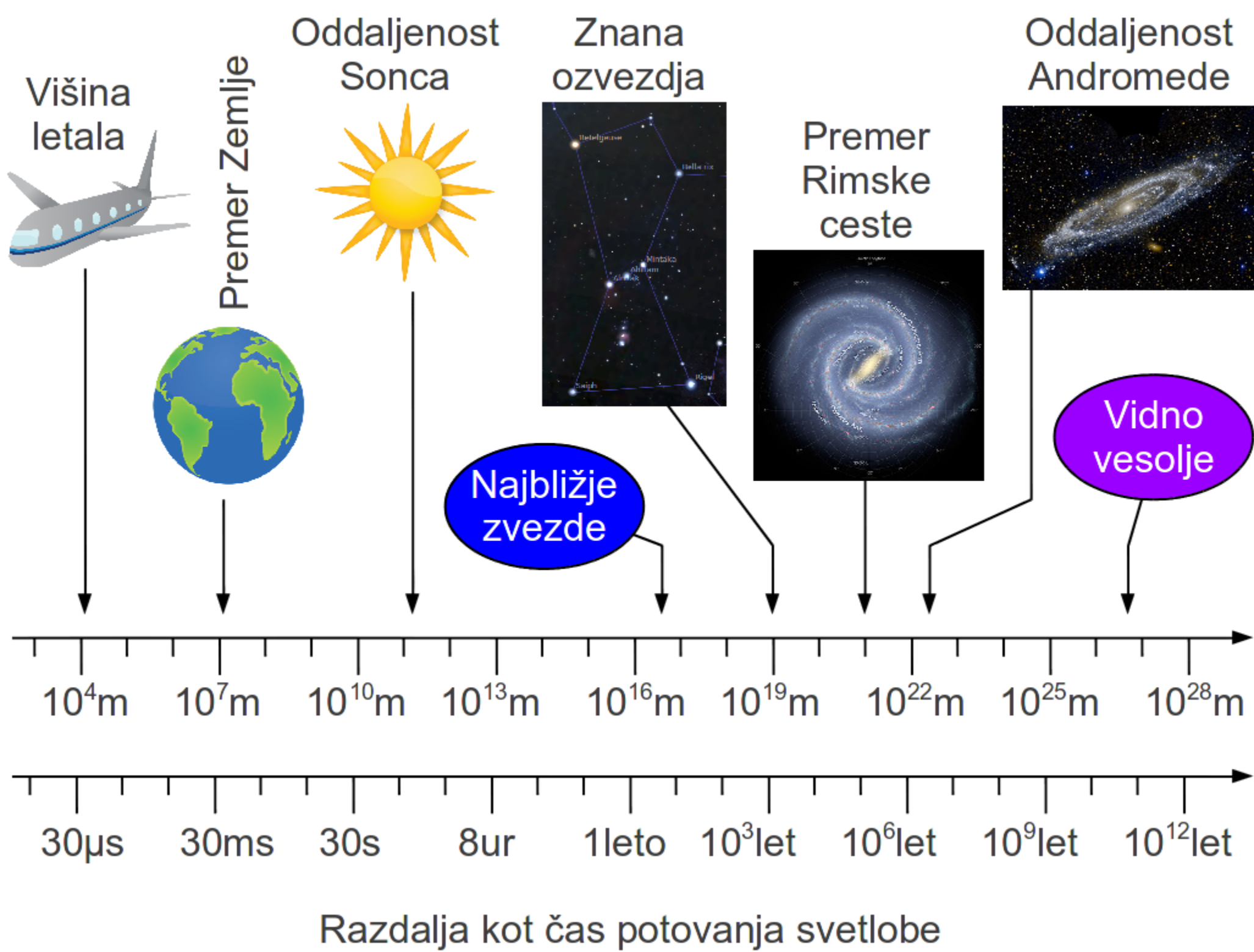
## 1 – Uvod

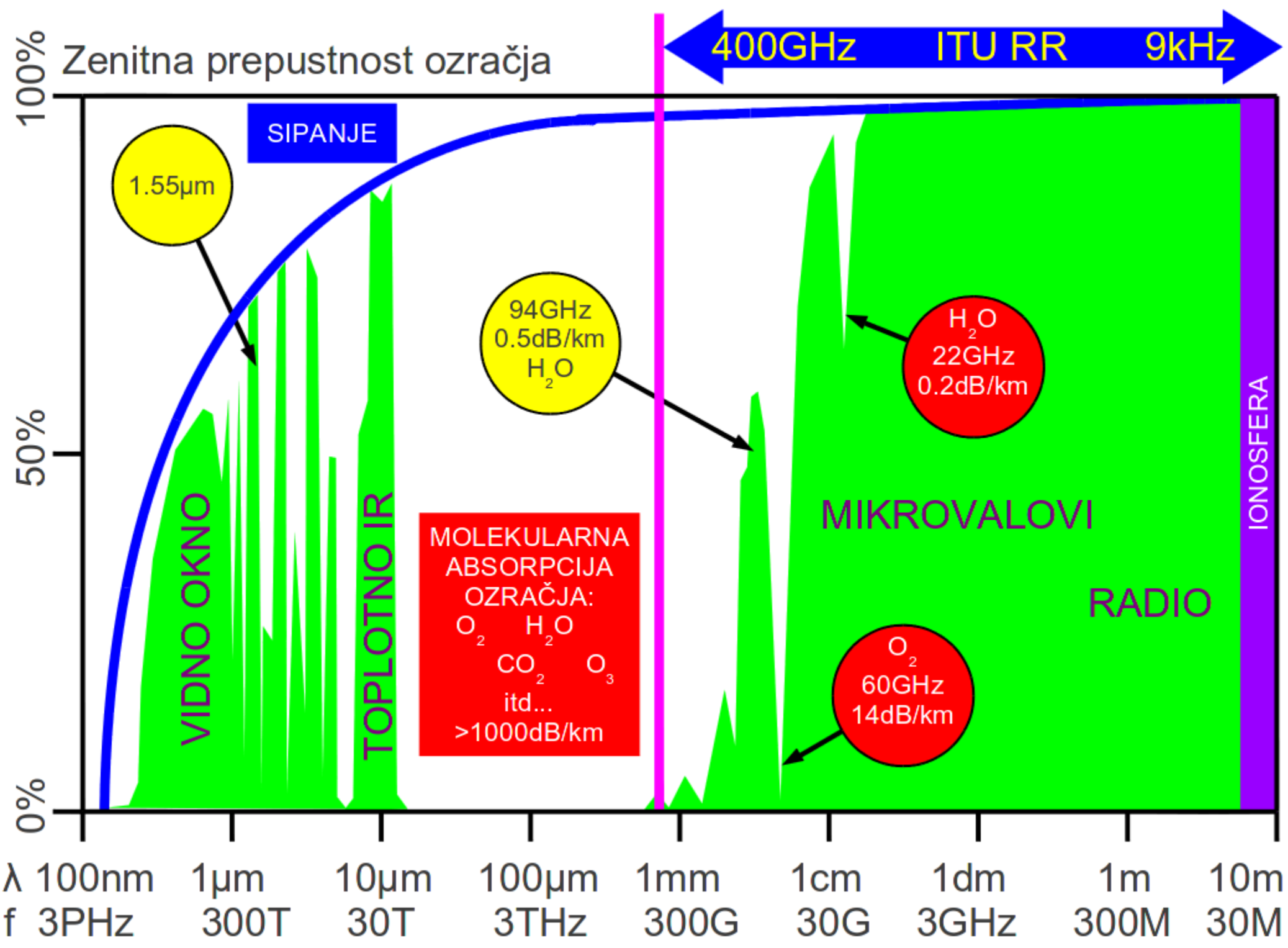


Laboratorij za sevanje in optiko

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&

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1.55 $\mu$ m

SIPANJE

94GHz  
0.5dB/km  
 $H_2O$

$H_2O$   
22GHz  
0.2dB/km

MOLEKULARNA  
ABSORPCIJA  
OZRAČJA:  
 $O_2$   $H_2O$   
 $CO_2$   $O_3$   
itd...  
>1000dB/km

$O_2$   
60GHz  
14dB/km

MIKROVALOVI

RADIO

IONOSFERA





Vega

Deneb

Capella

Altair

Aldebaran

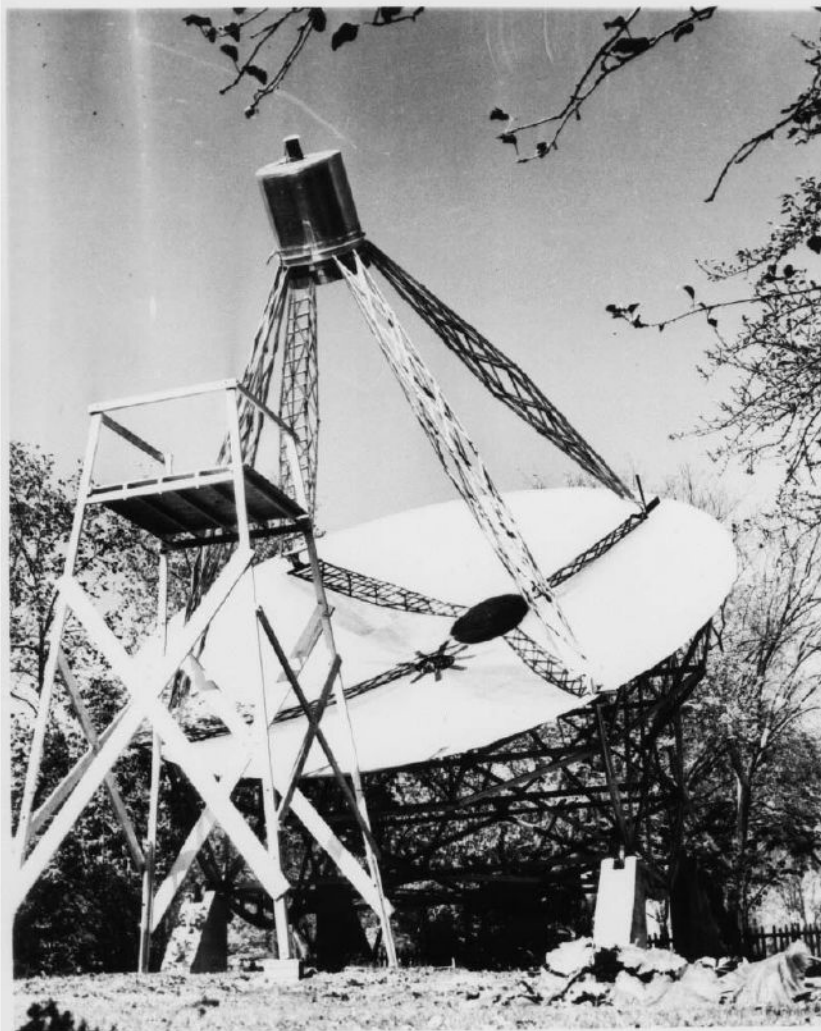
Fomalhaut

Betelgeuse

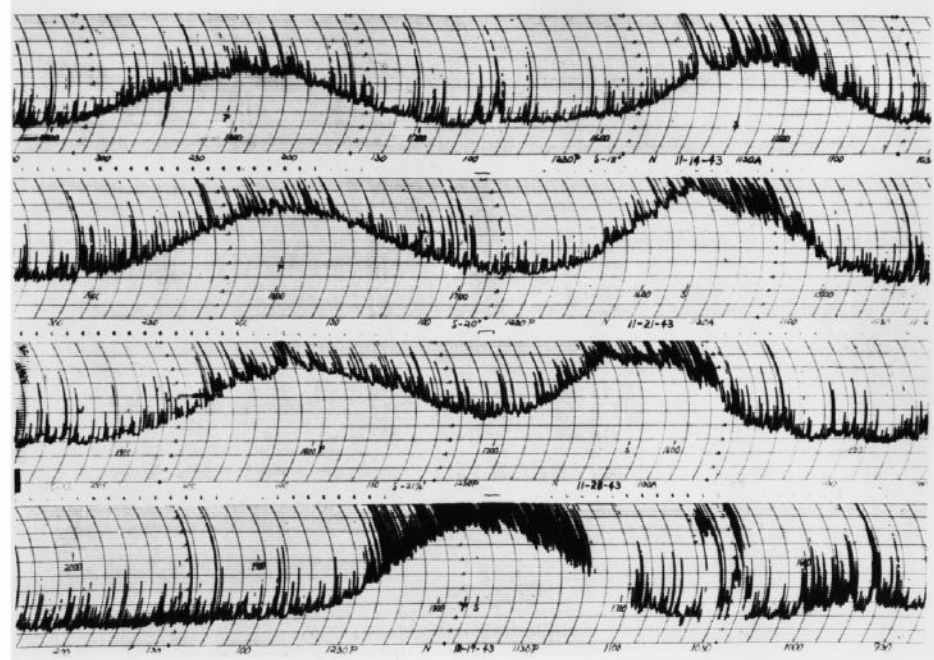
Rigel



# Grote Reber (1911-2002)



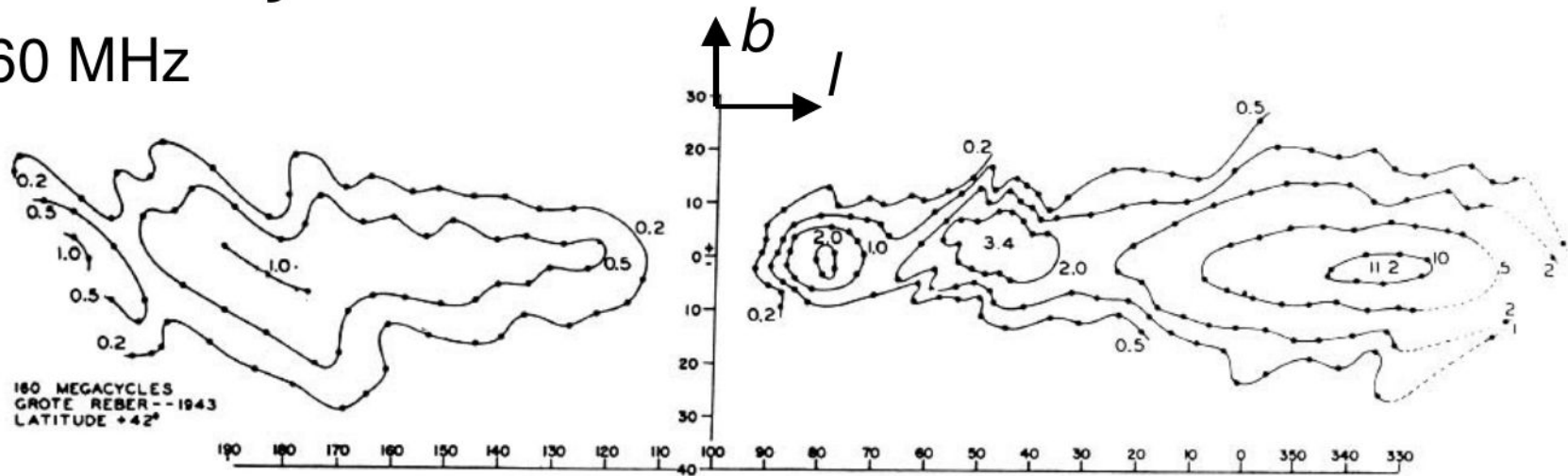
Reber's back yard 9-m telescope.  
Wheaton, IL, ~1938



Strip charts from Reber's telescope made in 1943. The broad peaks are due to the Milky Way and the Sun. The spikes are interference from automobile ignition.

# Early Radio Continuum Observations

160 MHz



480 MHz

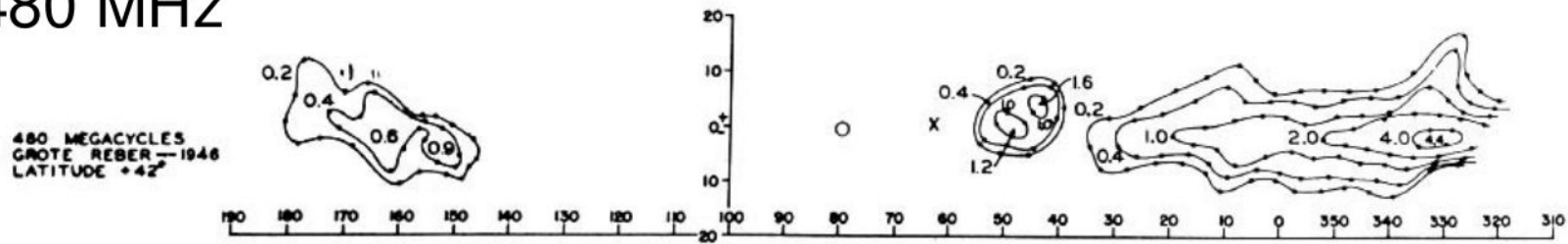


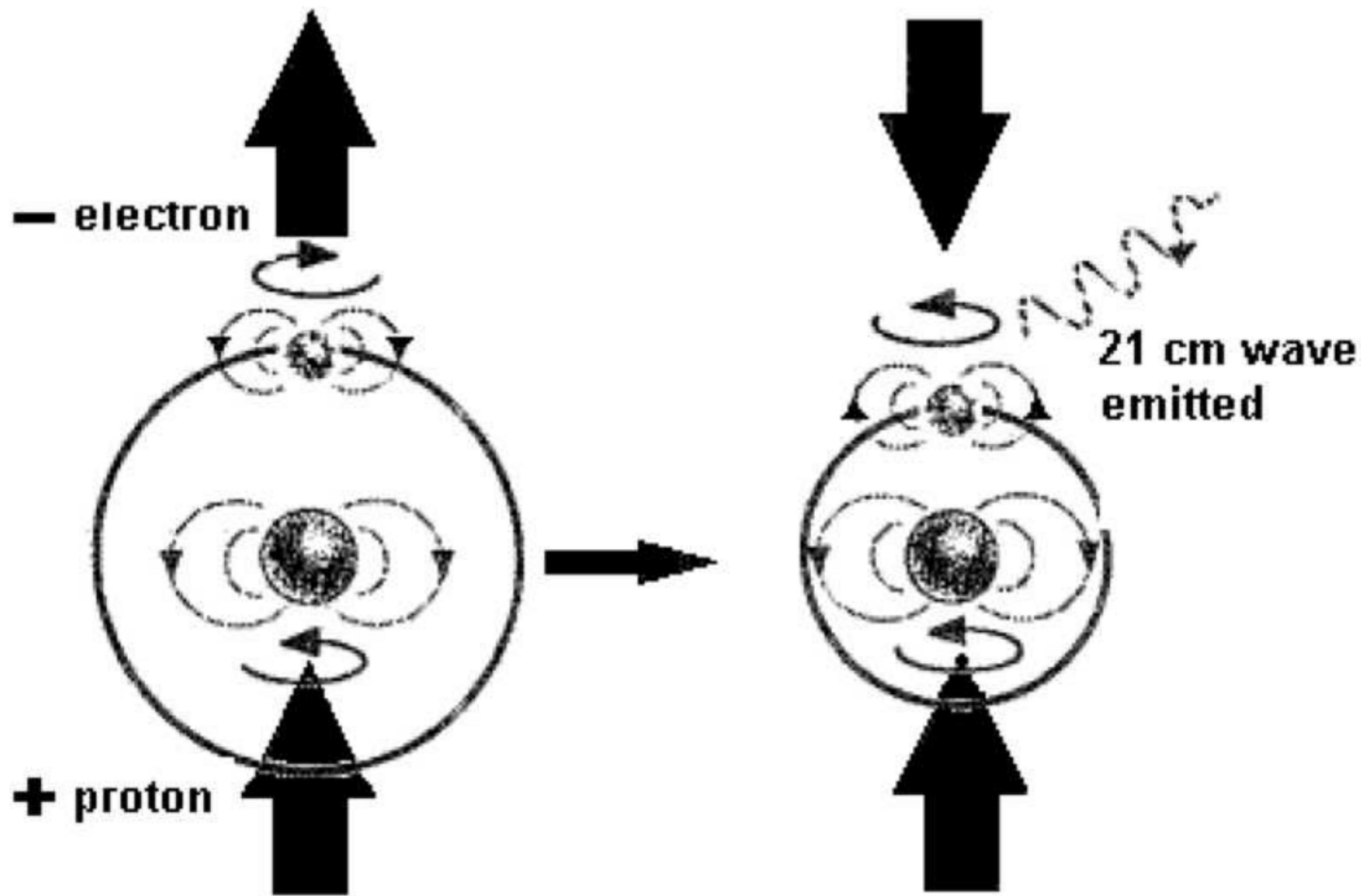
FIG. 7—Contours of constant intensity at 160 MHz and 480 MHz, taken at Wheaton, Illinois.

Between 1938 and 1943, Reber made the first radio surveys of the Milky Way and detected discrete sources in Cygnus & Cassiopeia. Non-thermal emission.



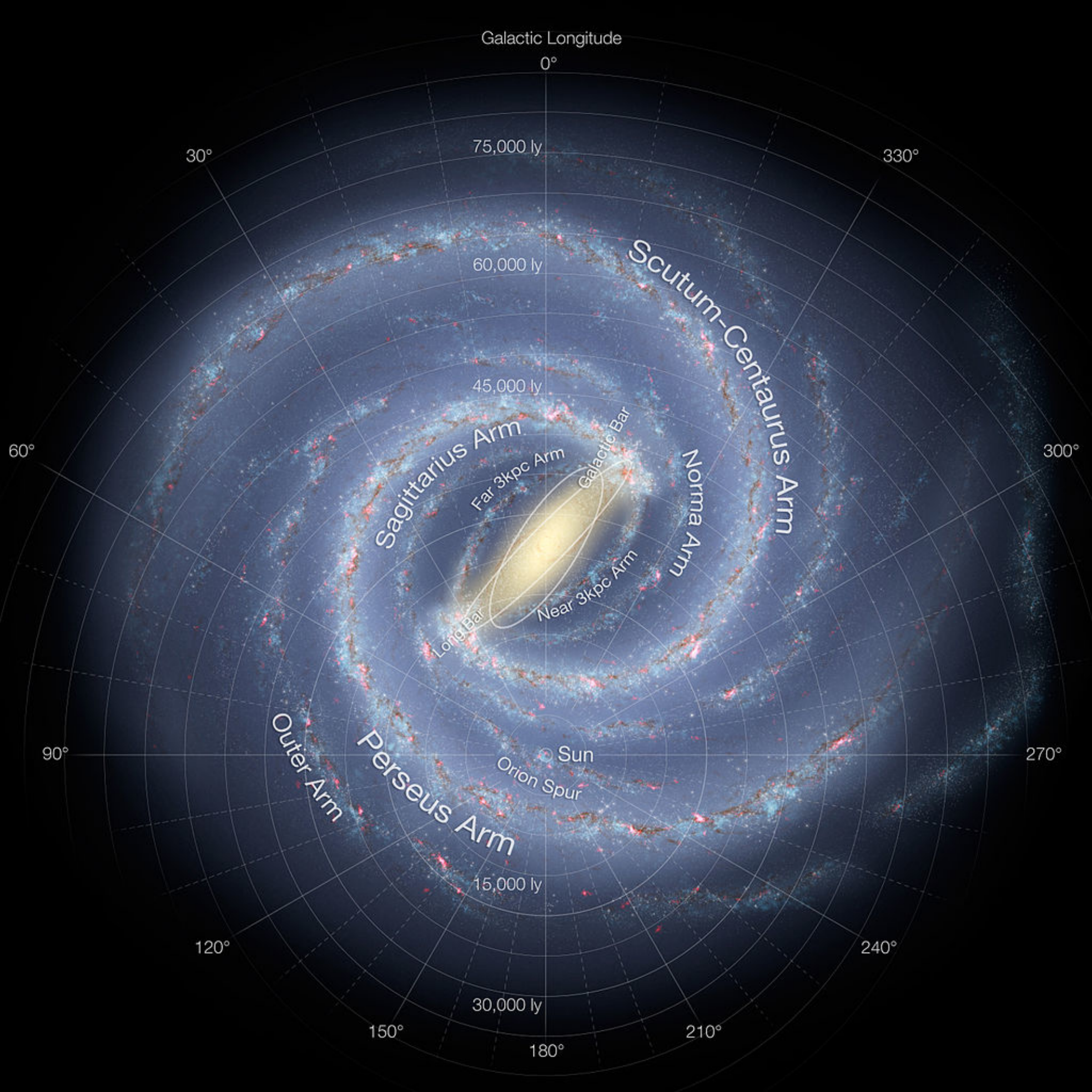


# Sevanje atomarnega vodika



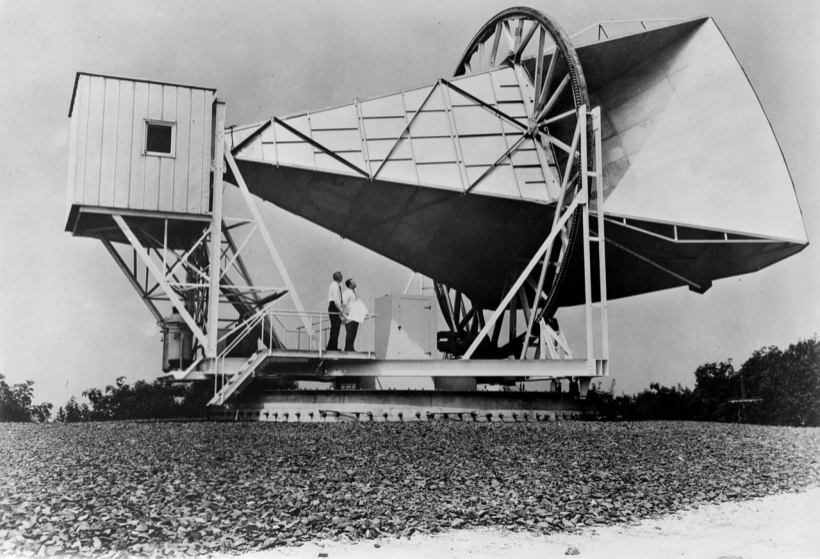
$f=1420405751.7667\text{Hz}$

1951 >>> odkritje spiralne oblike Rimske ceste



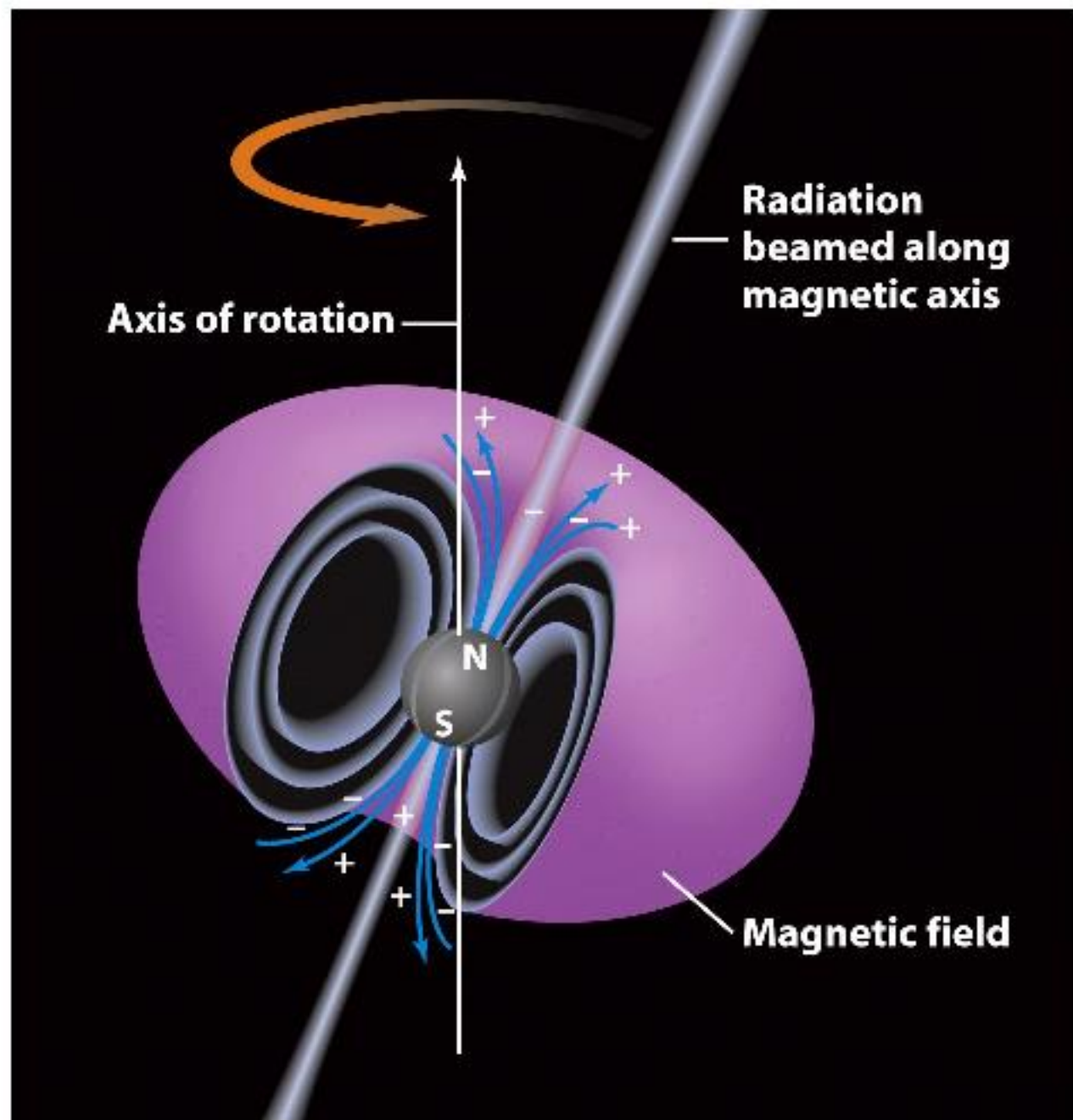


1964 mikrovalovno sevanje ozadja (~2.7K)  
Arno Penzias & Robert W. Wilson





Jocelyn  
Bell  
1967  
odkritje  
prvega  
pulzarja





A large radio telescope dish, known as the Astropfeiler Stockert, is mounted on a tall, conical tower. The tower has several levels with blue-framed windows and doors. The dish is made of a complex metal lattice structure and is tilted upwards. The background shows a blue sky with scattered white clouds and a line of trees at the base of the tower.

Astropfeiler  
Stockert  
25m  
(Wolfgang Herrmann)





Skupina  
DL0SHF  
9m



Joe Martin, K5SO  
8.6m





Jean-  
Jacques  
Maintoux,  
F1EHN  
3.3m



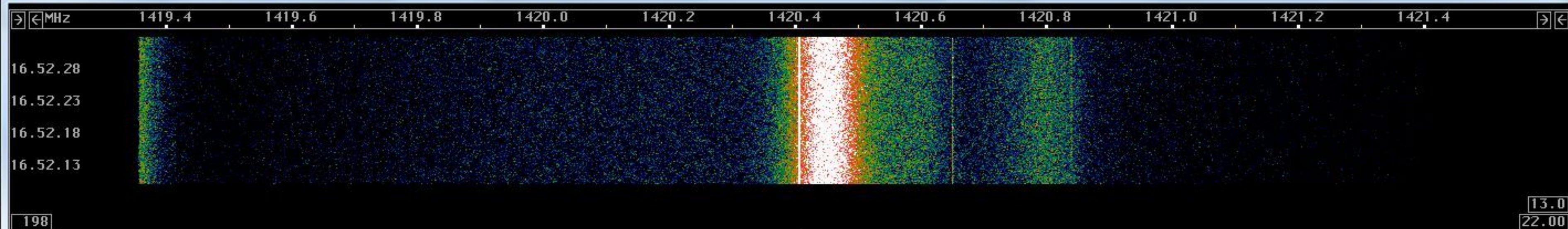
Interferometer

An aerial photograph showing a rural settlement. A paved road with white lane markings curves across the top of the image. Below the road, there are several buildings with red roofs. The surrounding area is a mix of bare trees and some green vegetation, suggesting a late autumn or winter setting. The overall scene is a typical rural landscape.

Pavle Rebrc, S57RA  
&  
Marko Cebokli, S57UUU

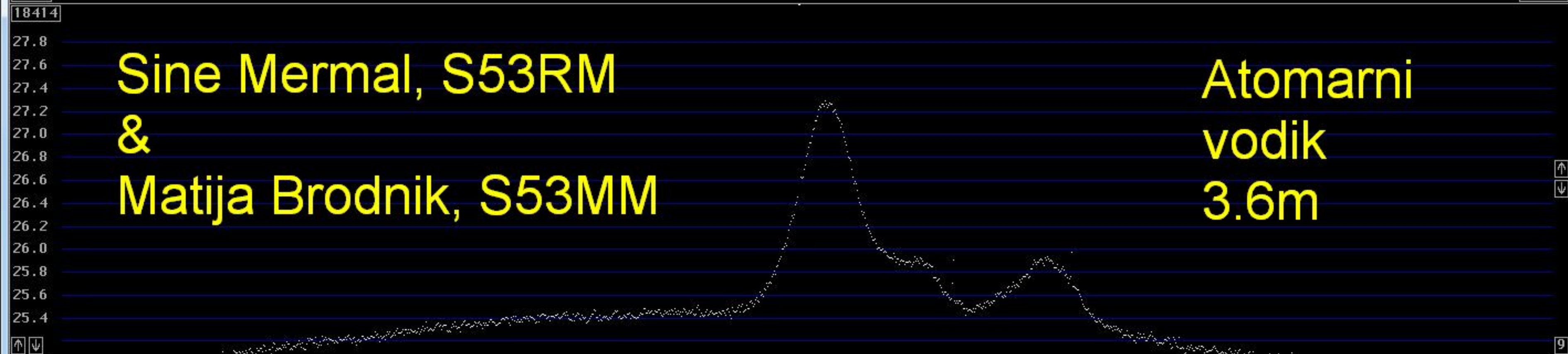
2x 3m





Sine Mermal, S53RM  
&  
Matija Brodnik, S53MM

Atomarni  
vodik  
3.6m



400

50 FM0 S Bw10

80

60

40

20

ON FERS REDUCED

1 16 001 Rat 8

Reserved for blanker

0 1 1.00 30.00 001 11

S

0.0000  
-65.10  
-65.15  
-65.20  
-65.25  
-65.30  
-65.35  
-65.40  
-65.45  
-65.50

1420.406  
48 dB

dBm 524288



Andrej Lajovic &  
Klemen Blokar  
Atomarni vodik  
1.9m

