



# TEK ÇANAK RADYO TELESKOP KALİBRASYON TEKNİKLERİ

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**RECEP BALBAY<sup>1,2</sup>**

<sup>1</sup>Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Astronomi ve Uzay Bilimleri Bölümü

<sup>2</sup>Atatürk Üniversitesi, Astrofizik Araştırma ve Uygulama Merkezi

21. ULUSAL ASTRONOMİ KONGRESİ (UAK), 3-7 EYLÜL 2018, ERCİYES ÜNİVERSİTESİ, KAYSERİ

# RADYO KAYNAĞIN SICAKLIĞININ BELİRLENMESİ

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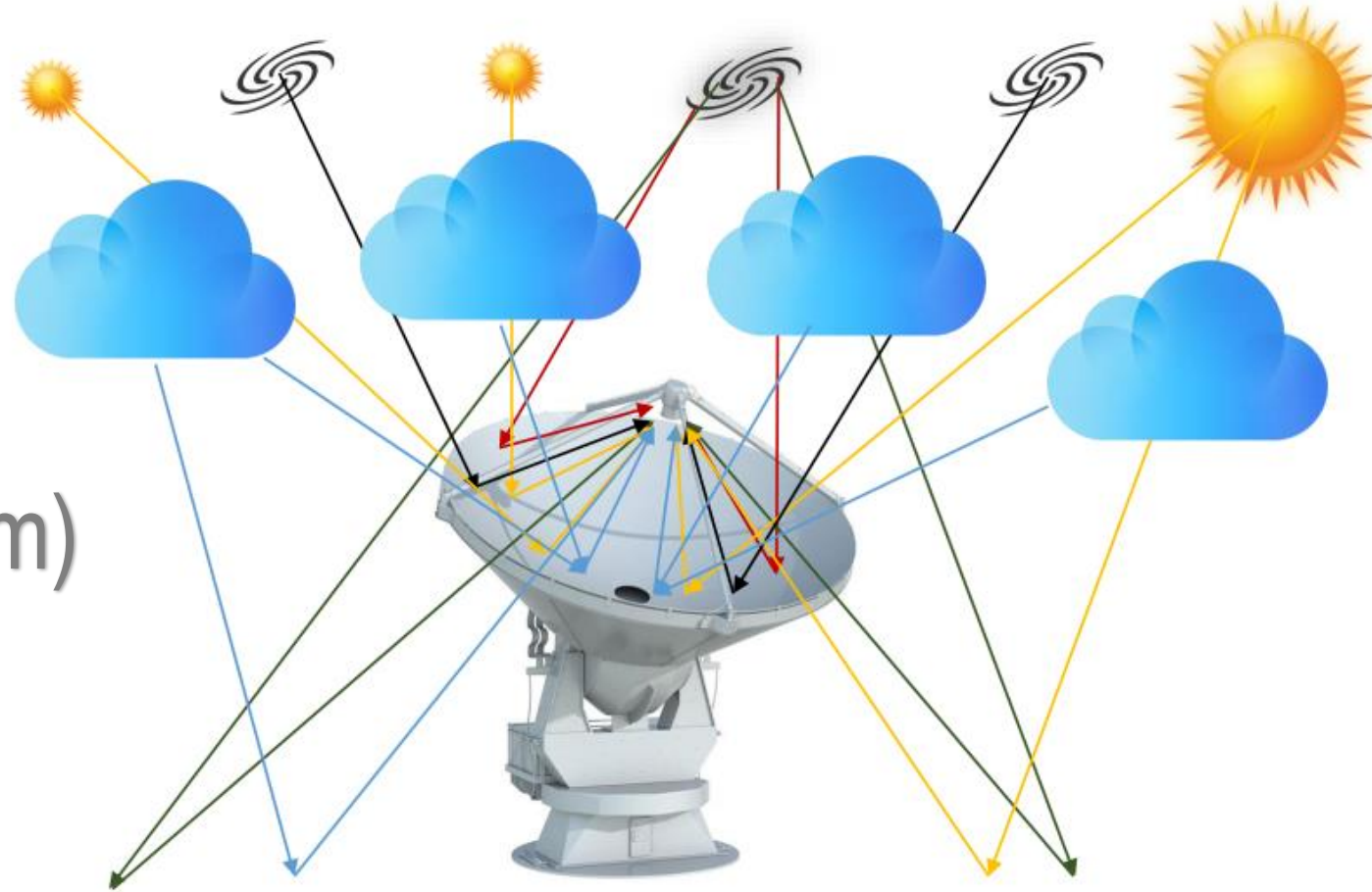
(ideal durum)



$$T_{ölçüm} = T_{kaynak} + T_{sistem}$$

# RADYO KAYNAĞIN SICAKLIĞININ BELİRLENMESİ

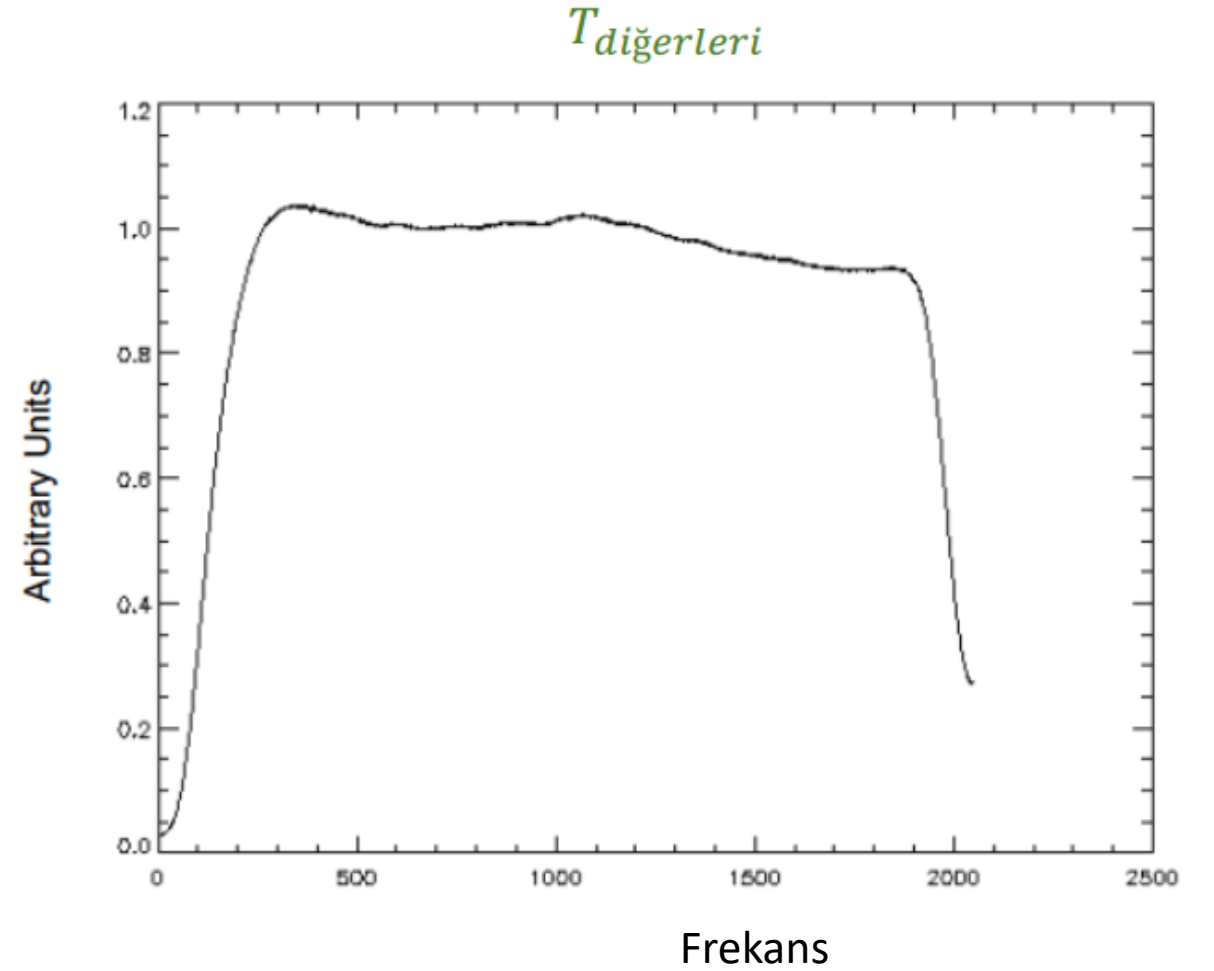
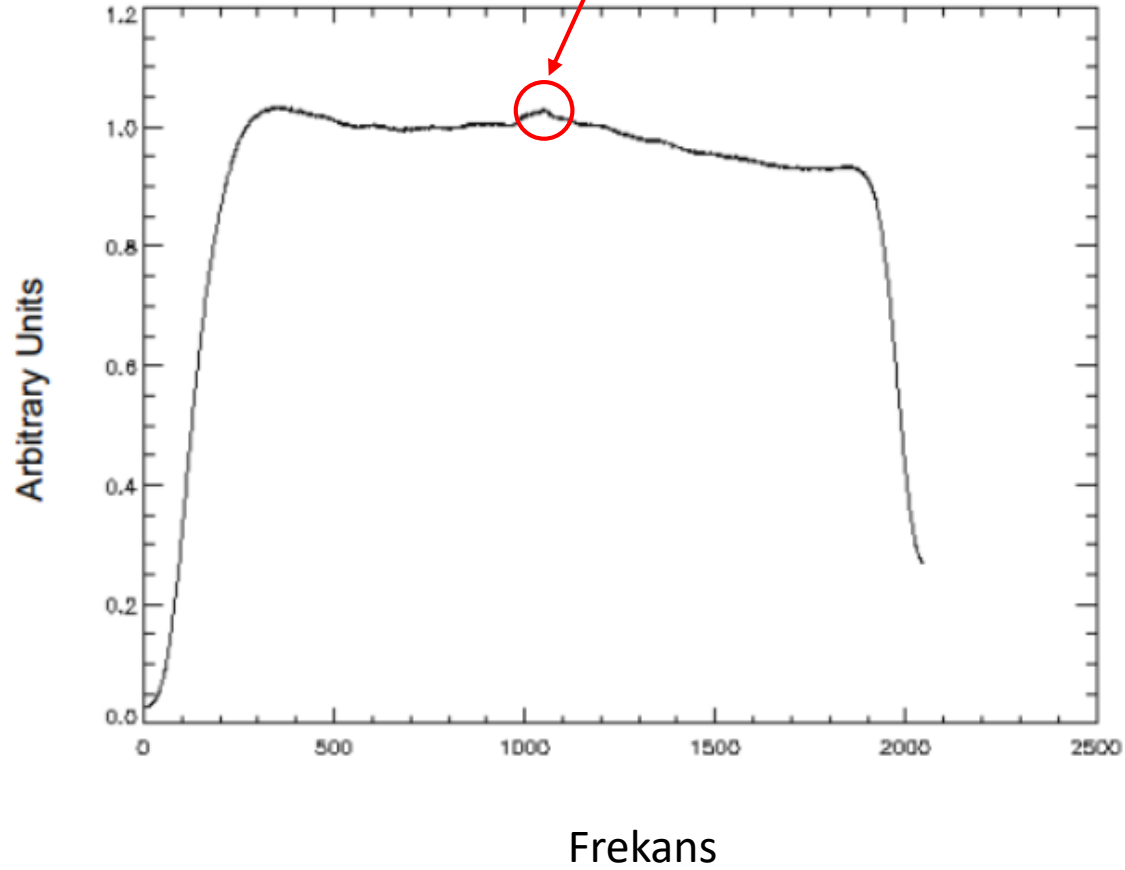
(gerçek durum)



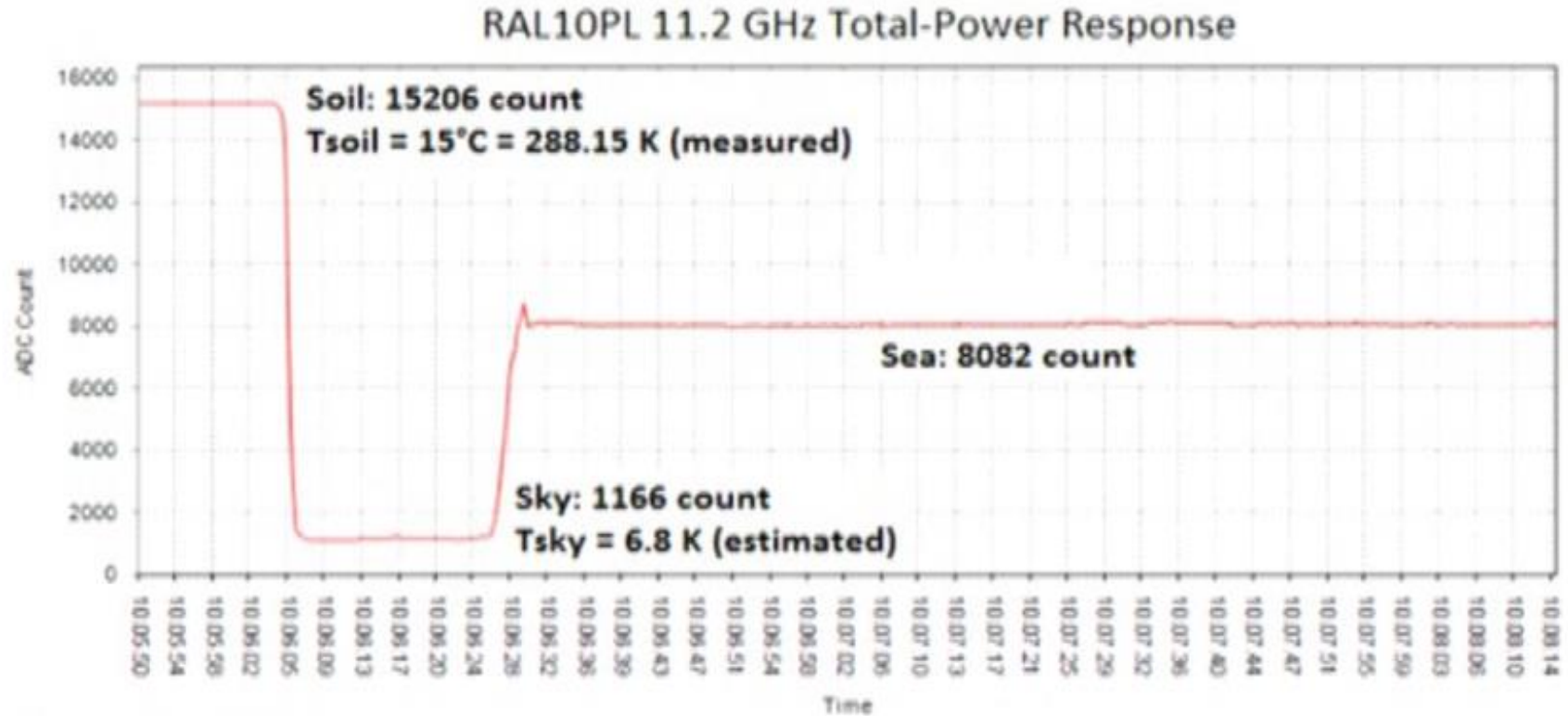
$$T_{\text{ölçüm}} = T_{\text{kaynak}} + T_{\text{sistem}} + T_{\text{yer}} + T_{\text{atmosfer}} + T_{\text{CMB}}$$

# RADYO KAYNAĞIN SICAKLIĞININ BELİRLENMESİ

$$T_{ölçüm} = T_{kaynak} + T_{diğerleri}$$

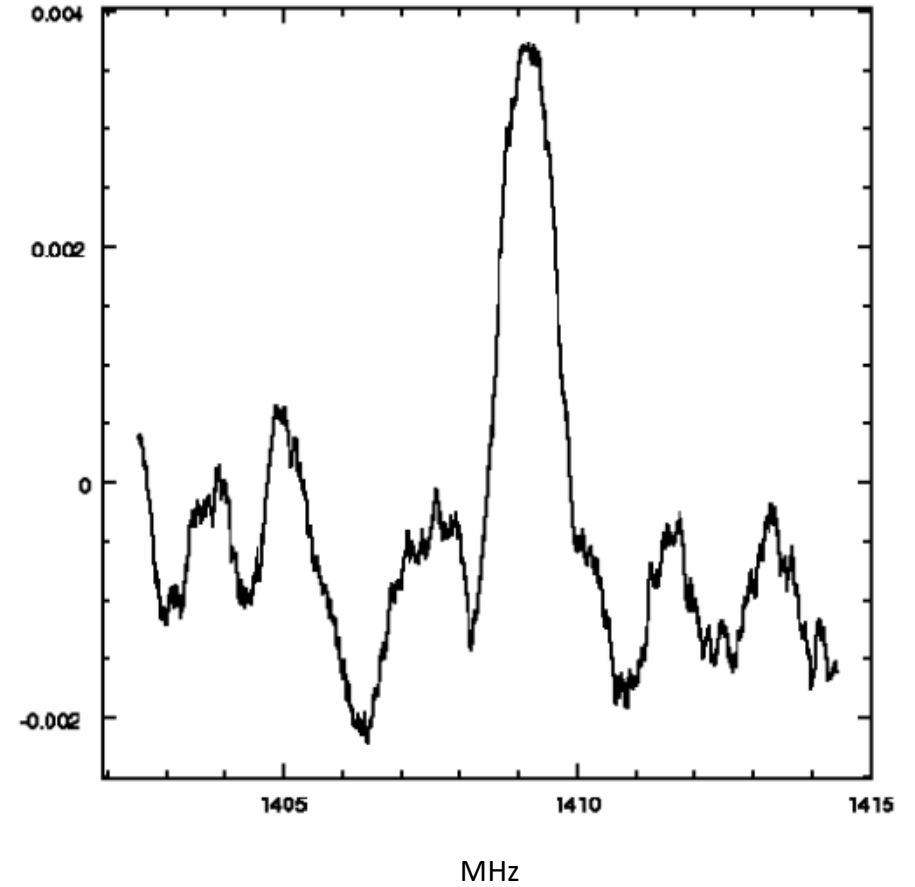
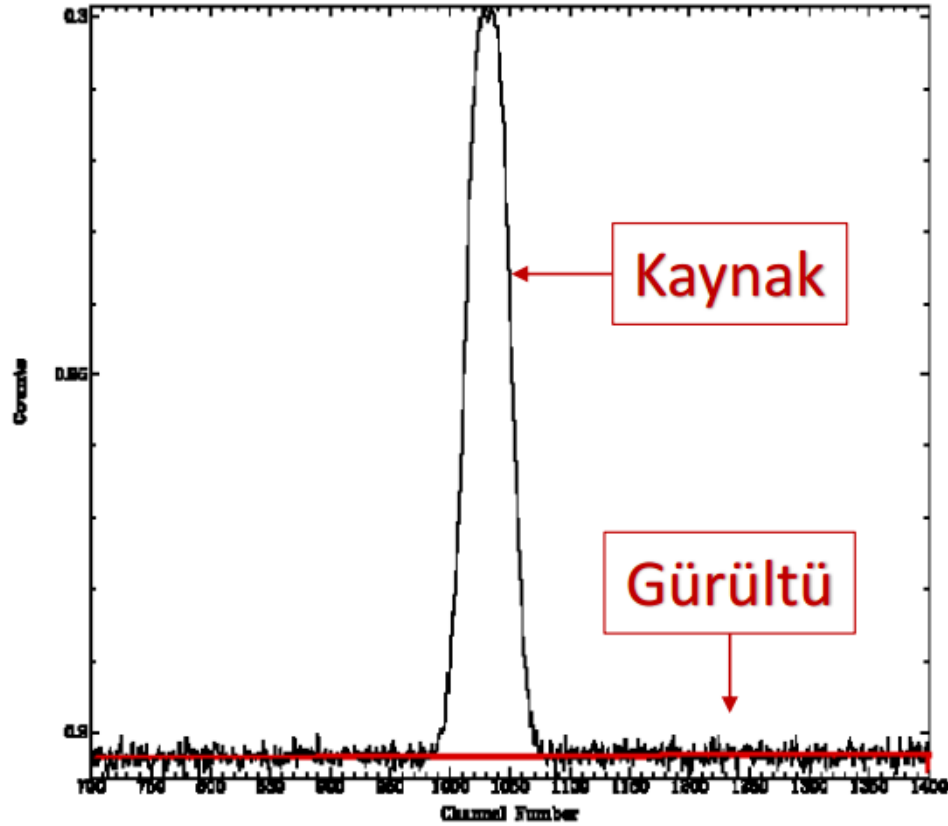


# RADYO KAYNAĞIN SICAKLIĞININ BELİRLENMESİ

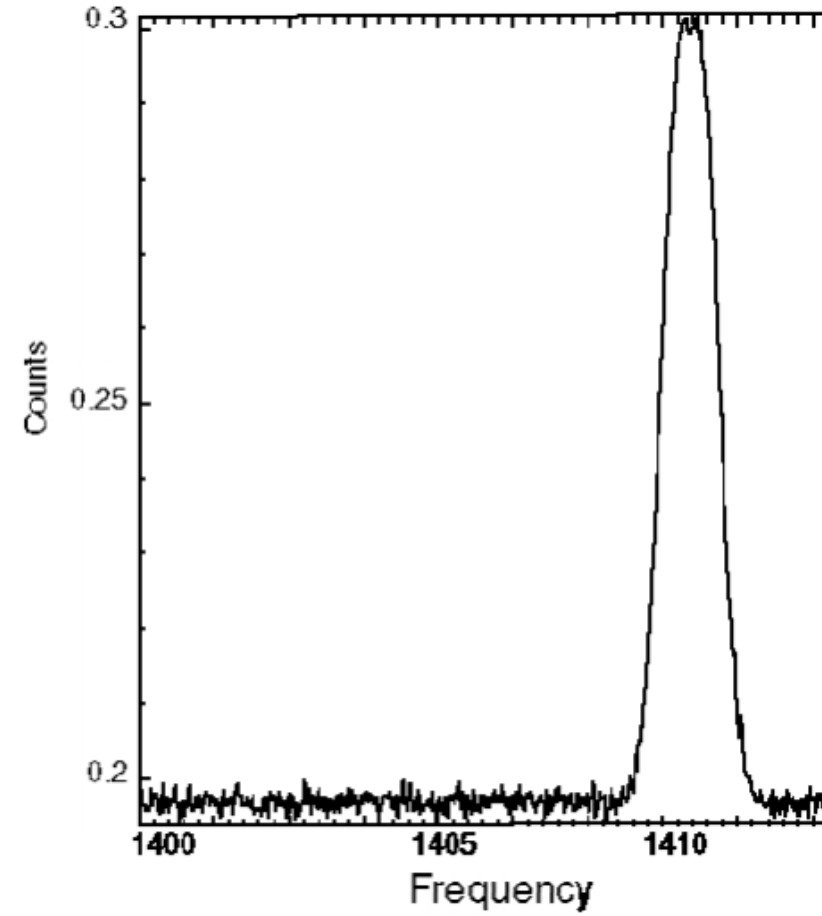
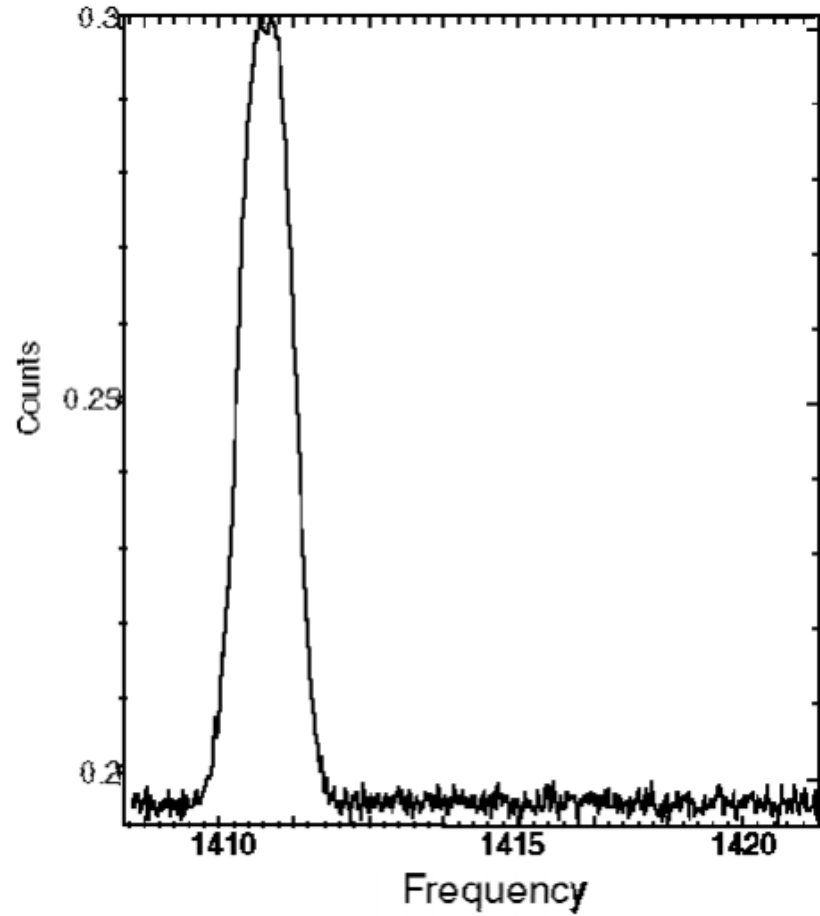


$$T(count) := T_{b\_soil} + \frac{count - count\_soil}{count\_soil - count\_sky} \cdot (T_{b\_soil} - T_{sky})$$

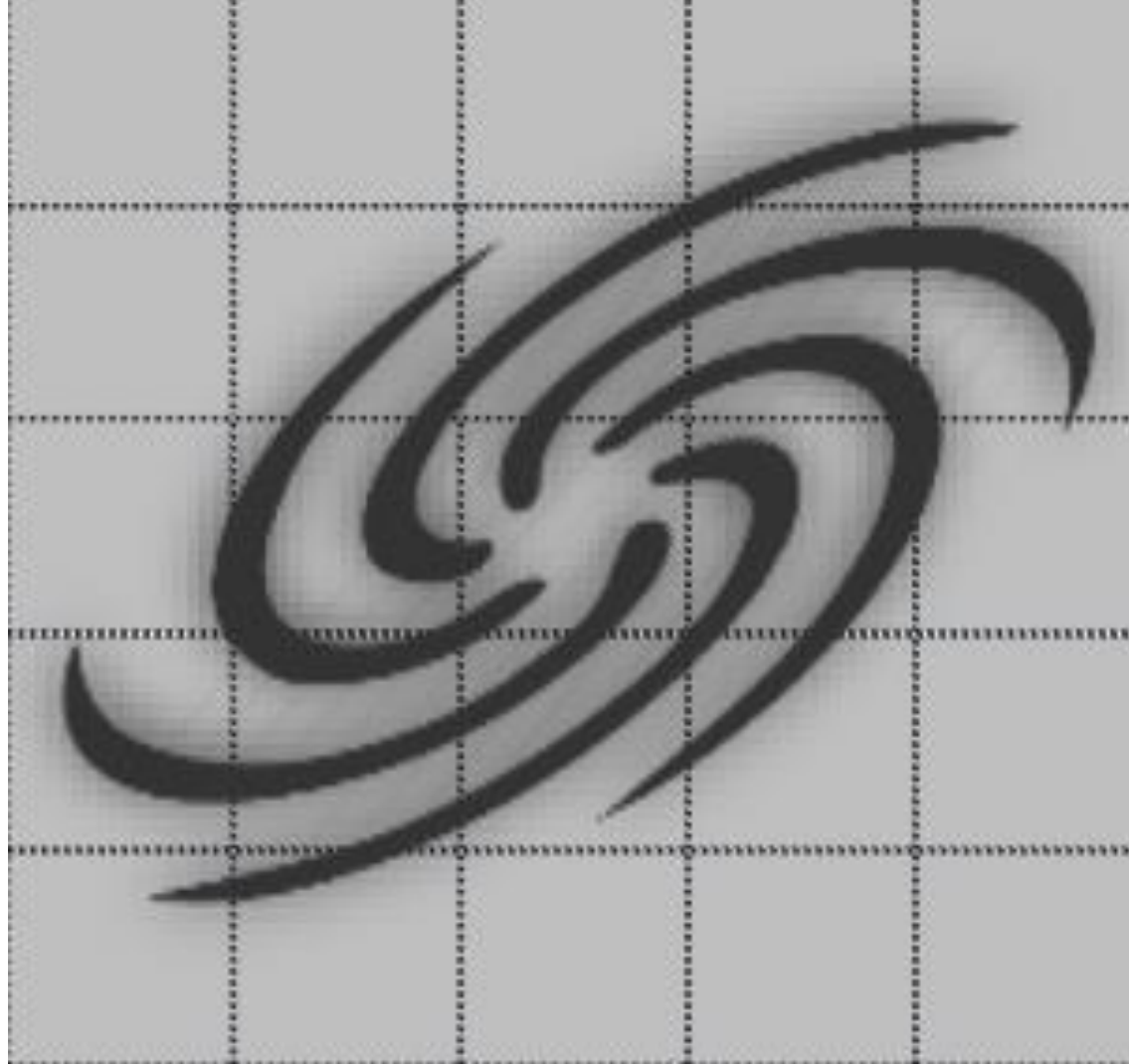
## TEMEL SEVİYE EŞLEŞTİRMESİ (BASELINE FIT)



## FREKANS DEĞİŞTİRME



## POZİSYON DEĞİŞTİRME





# RADYO GÖRÜNTÜLERİN OLUŞTURULMASI

EL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	
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AZ

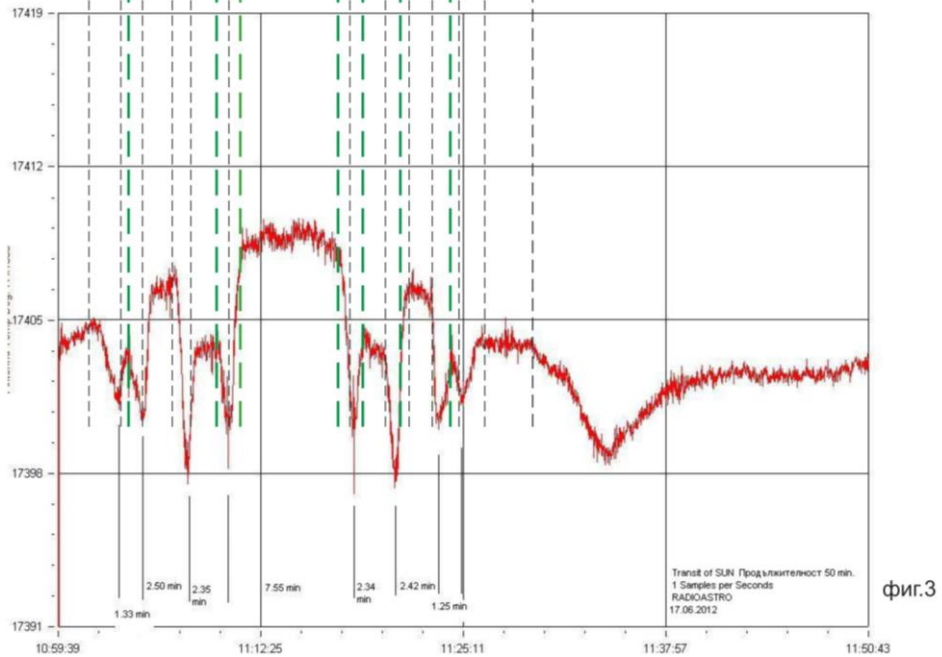
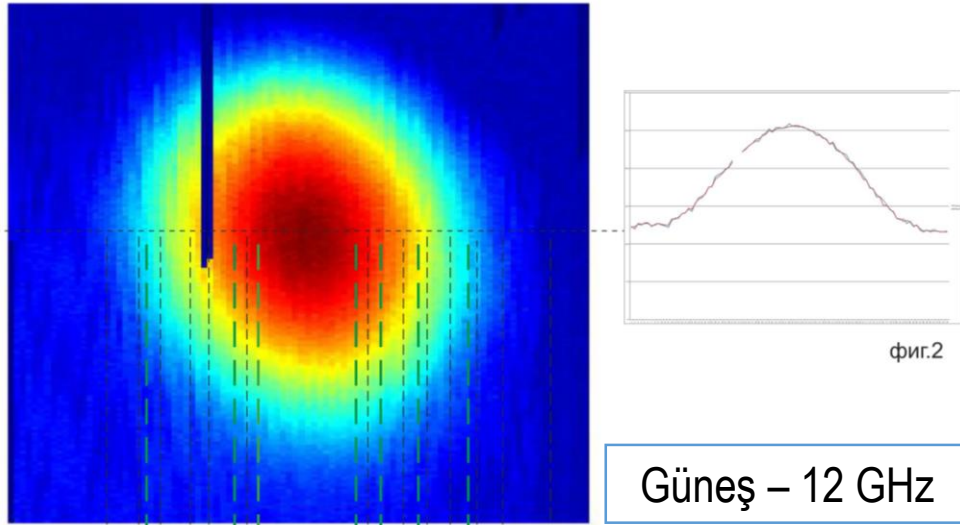
# RADYO GÖRÜNTÜLERİN OLUŞTURULMASI

EL

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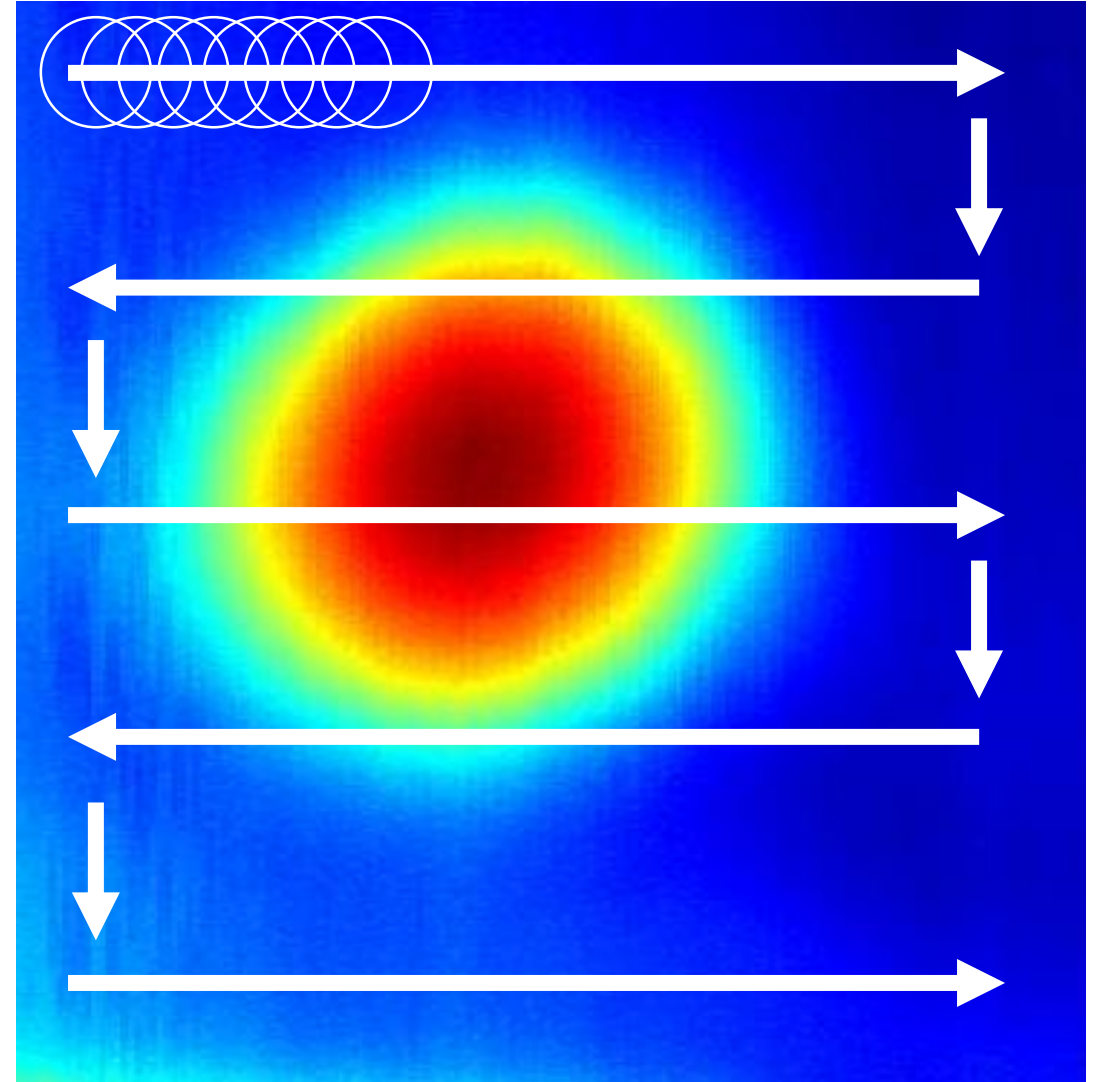
AZ

# RADYO GÖRSELLERİN OLUŞTURULMASI

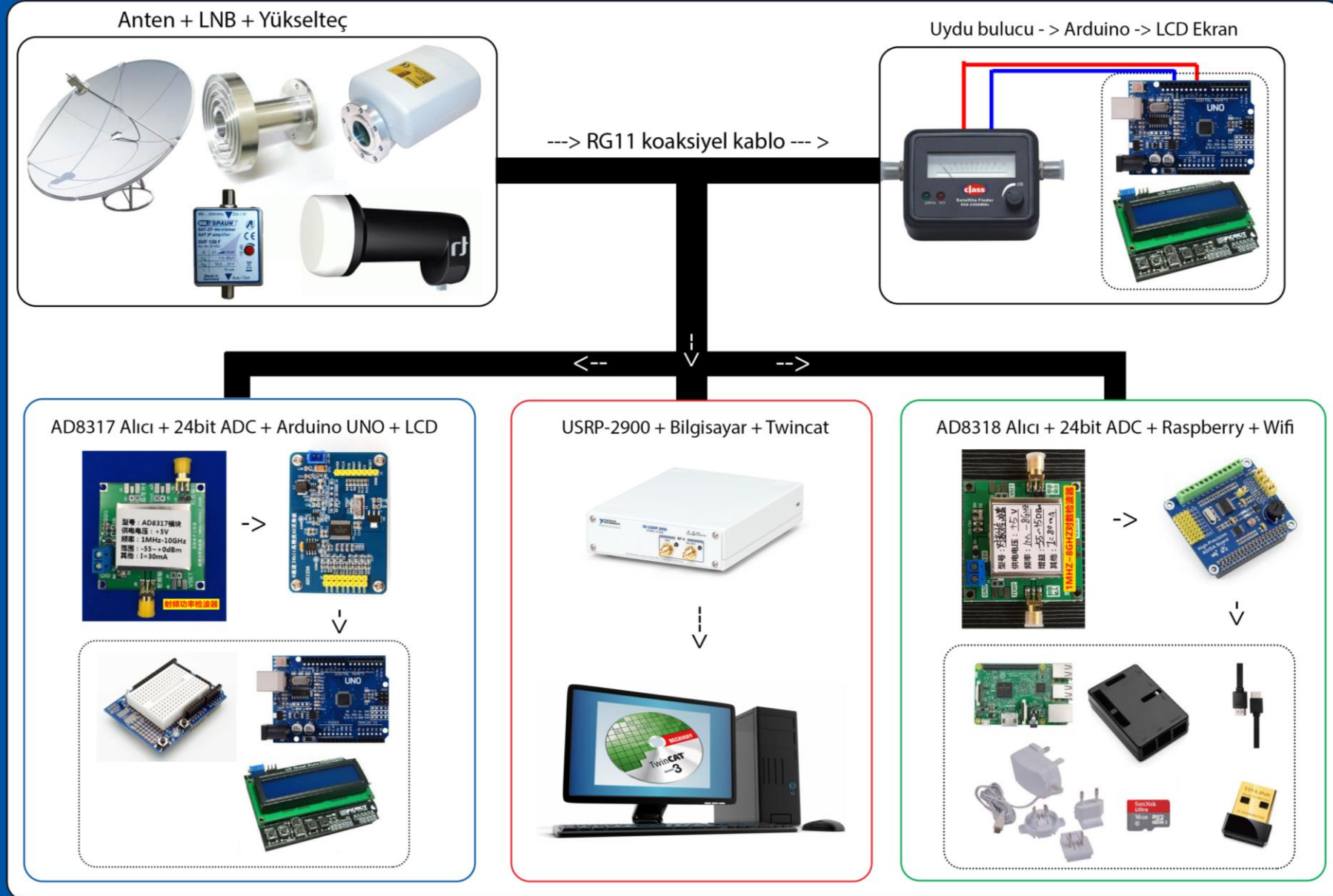


OFF

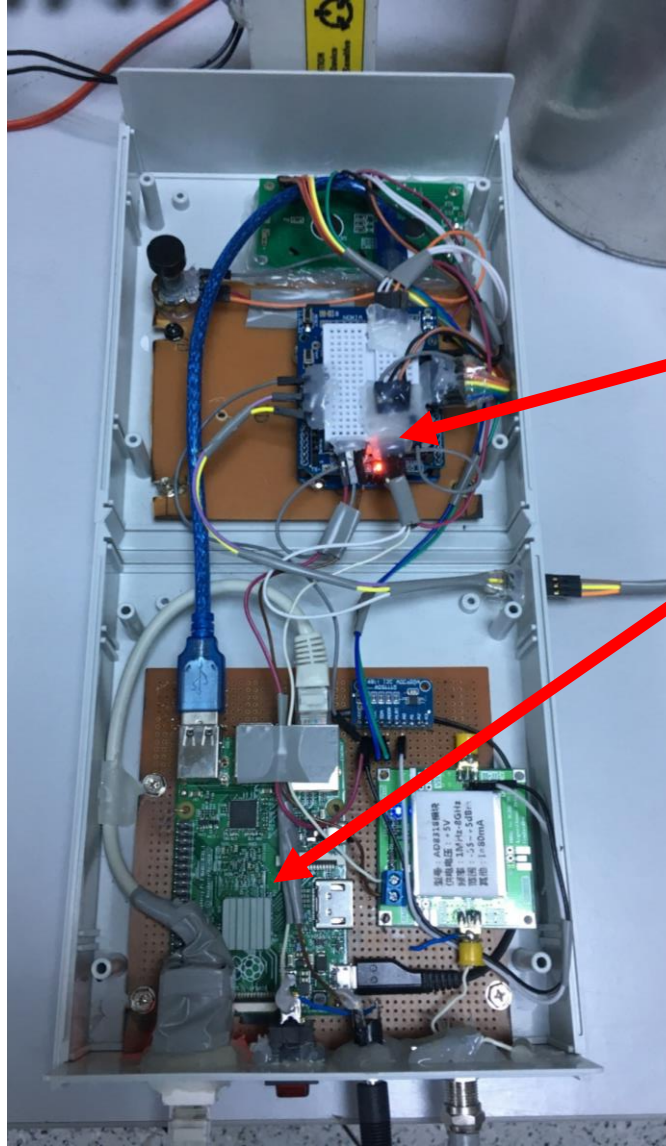
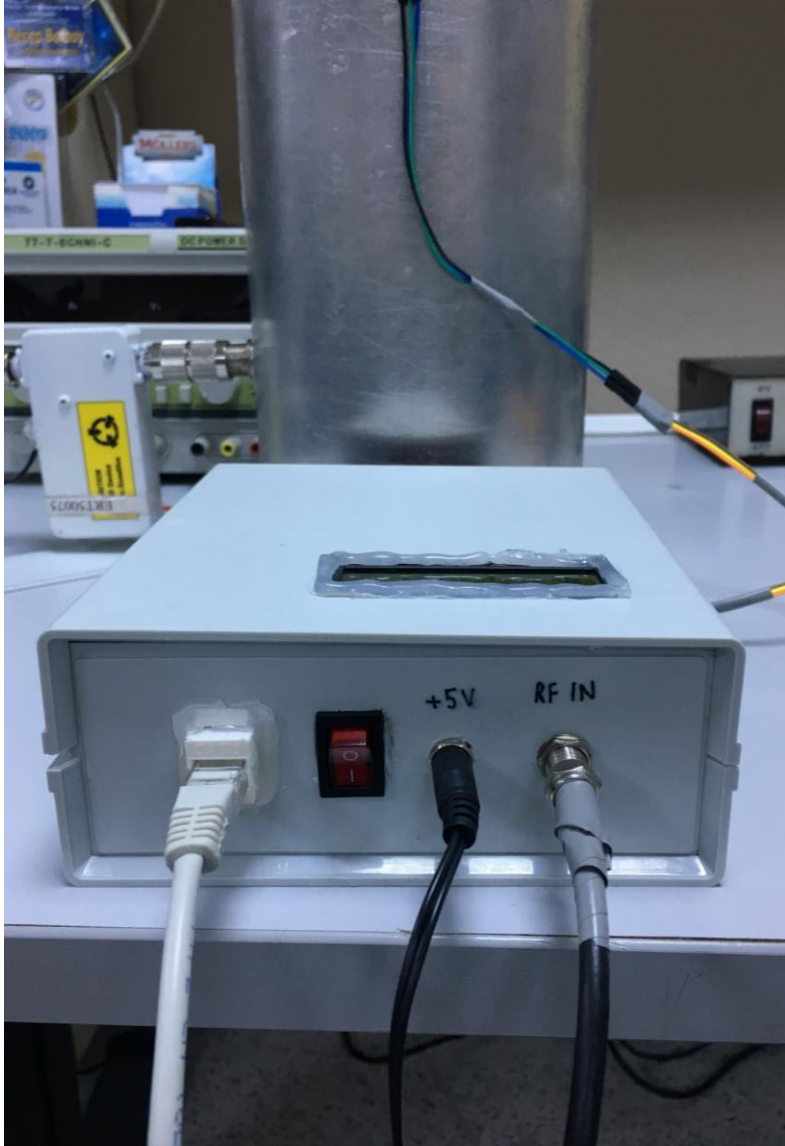
<http://radioastrobg.com/public/analiz/analiz.html>



# TEORİDEN PRATİĞE – PROJE ŞEMASI



# TEORİDEN PRATIĞE – RF GÜÇ METRE

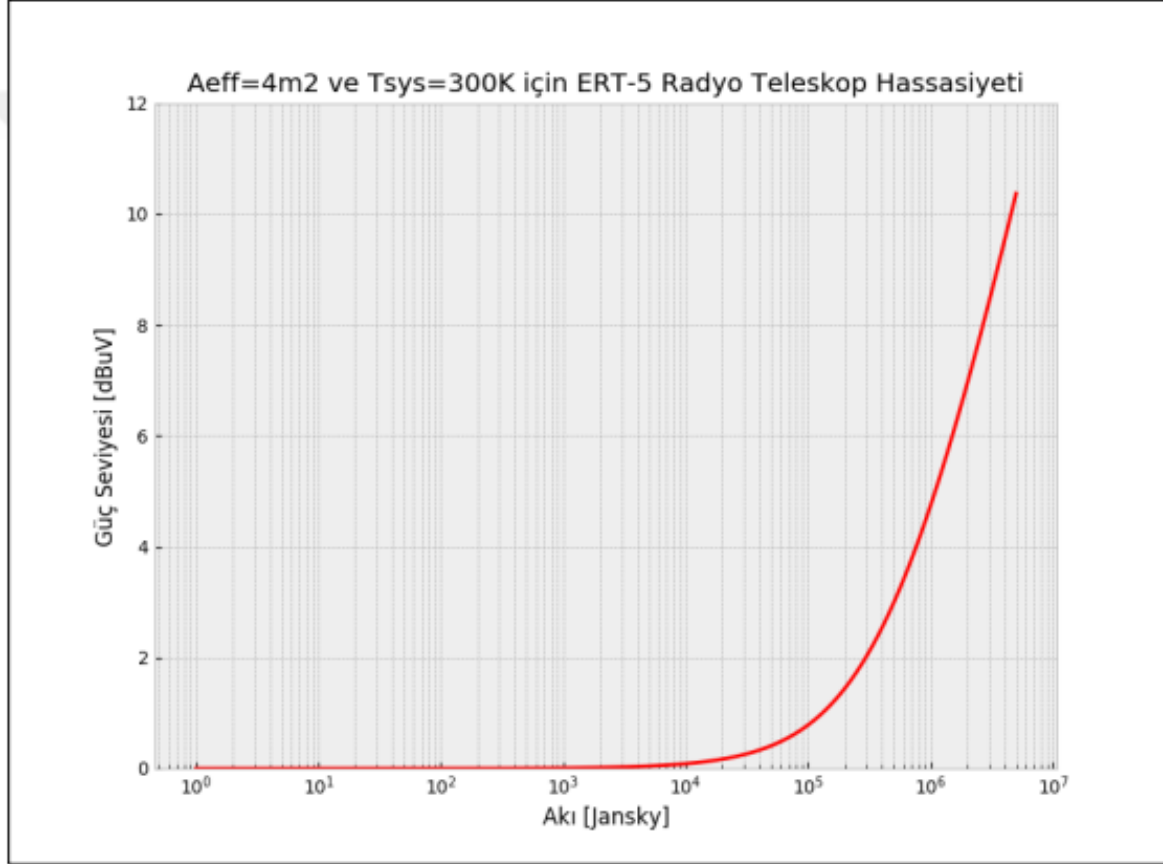


# TEORİDEN PRATIĞE – RT5 RADYO TELESKOPU

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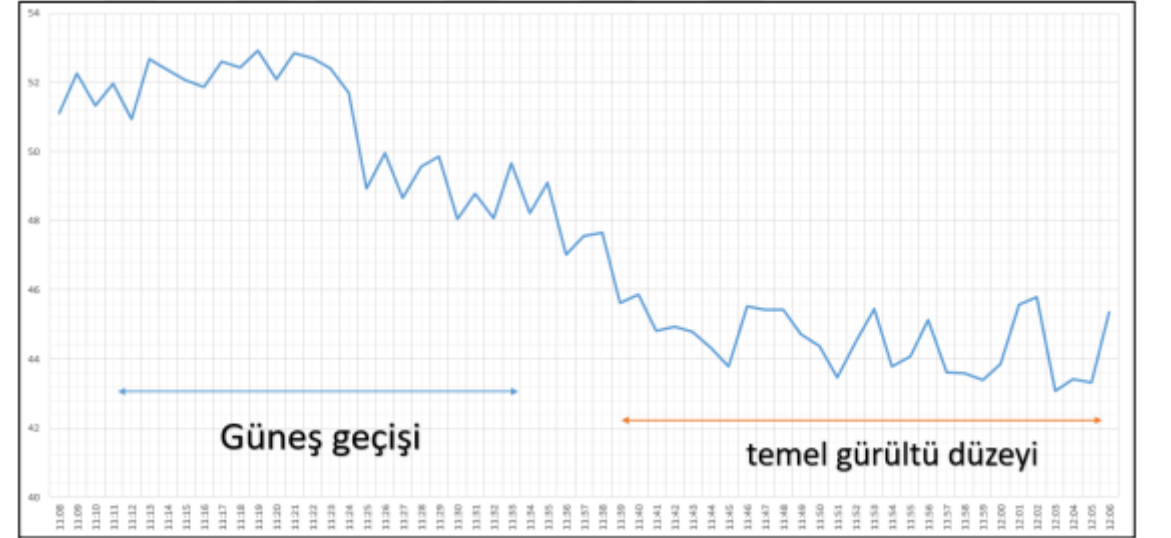
# SONUÇLAR



Gözlenen akı değerlerine karşılık gelen sinyal seviyeleri.

Tarih	Saat	Frekans (GHz)	Ölçüm (db $\mu$ V)	Boş gök yüzü (db $\mu$ V)	Güneş Akısı (SFU)	$T_{sis}$ (K)
04.07.2017	11:09	10.6 – 12.7	53.04	42.97	409.3	295

Radyo Gözlem Verisi (Güneş)



Radyo teleskop ile alınan Güneş gözlem verileri.

*Teşekkürler*