

# SRG-TR Grubu

## AGN ÇALIŞMALARI

Filiz Ak, N.

Seyit Hökelek, Irek Hamitođlu, Tolga Güver, Ebru Aktekin Çalıřkan,

Tuđba Boztepe, Ece Kilerci Eser, Esmayaz Gökçe, řivan Duran

### **SRG-TR AGN Ekibi**

Altan Baykal, Aykut Özdönmez, Aysun Akyüz, Aytap Sezer, Burçin Dönmez, Cahit Yeřilyaprak, Emrah Kalemci, Ergün Ege, Fahri Aliçavuş, Hasan Ak, Hasan Avdan, Hüsne Dereli Bégué, Mehtap Özbey Arabacı, Merve Colak, Muhammed Diyaddin İlhan, Mustafa Kürşad Yıldız, Nazım Aksaker, Nihal Ercan, Seda Kaptan, řenay Kayacı, řölen Balman, Tuba İkiz, Tülün Ergin, Cenk Kayhan

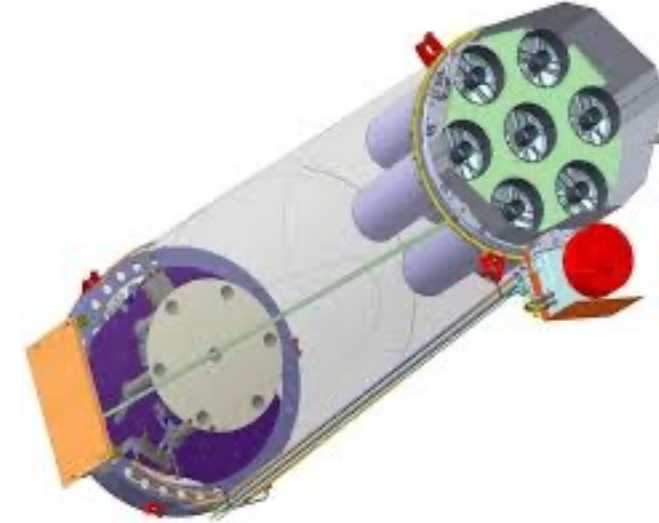
# SRG-TR

## TUG RTT 150 ve SRG-ART-XC İkili İşbirliği Protokolü



### SRG-TR Çalışma Grupları:

- AGN
- Galaksi Kümeleri
- Kataklizmik Değişenler
- X-ışın çiftleri
- Yıldız



SRG tarafından sert x-ışın  
kaynağı tespit edilen koordinatlar

**Kırmızı Daire:** SRG görüş alanı

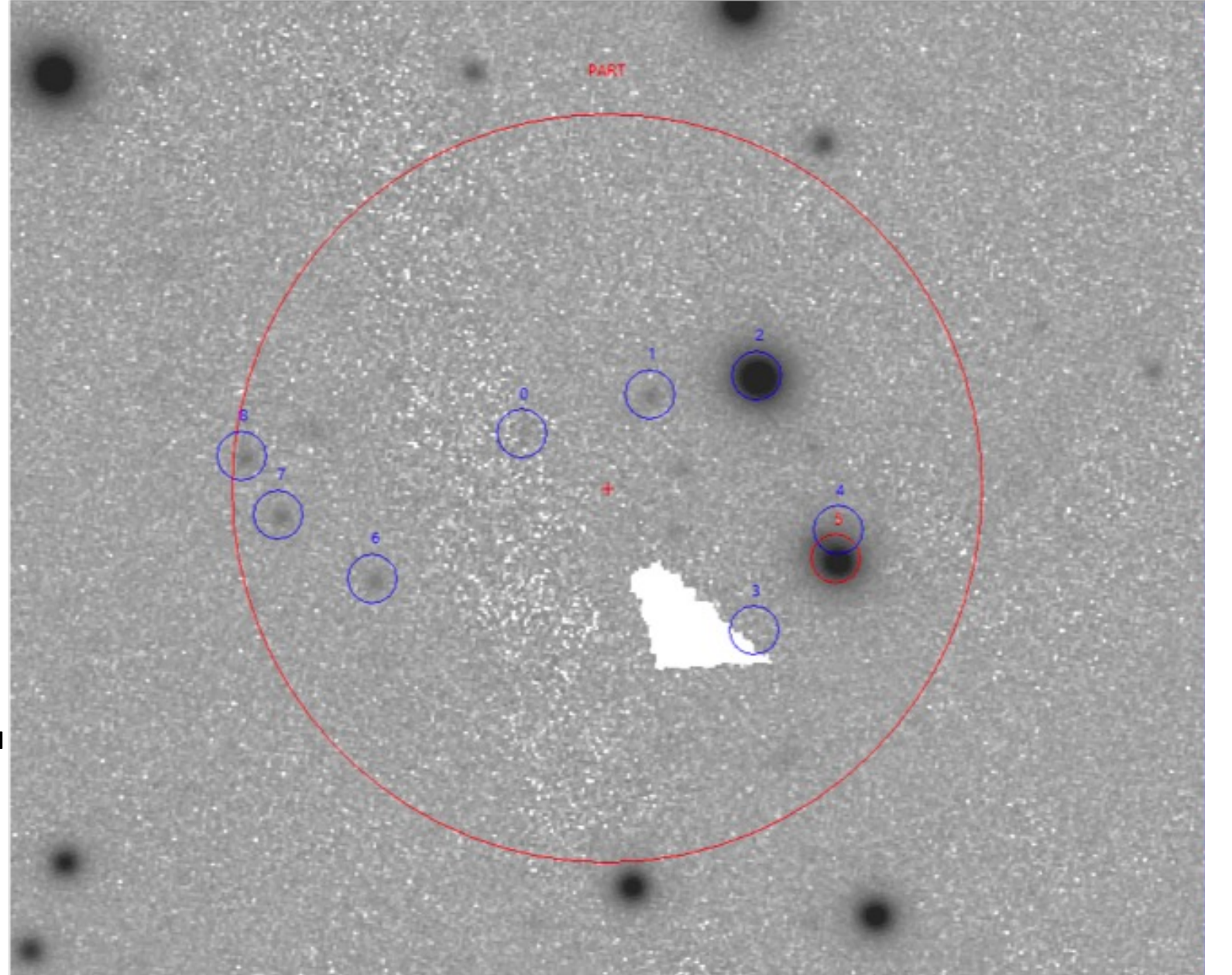
**Mavi Daireler:** Görüş alanı içinde kalan  
kaynaklar

### Sonraki Adımlar:

**Renk tabanlı AGN aday araması**

ugriz ve wise gibi  
çok bantlı gözlem verilerinin alınması

MOS gözlemleri





# Renk Tabanlı Sınıflama

Fotometrik ren renk diyagramları  
Neural Network  
AGN adaylarını belirleme  
Fotometrik z tahmini

2 milyon feed kaynak

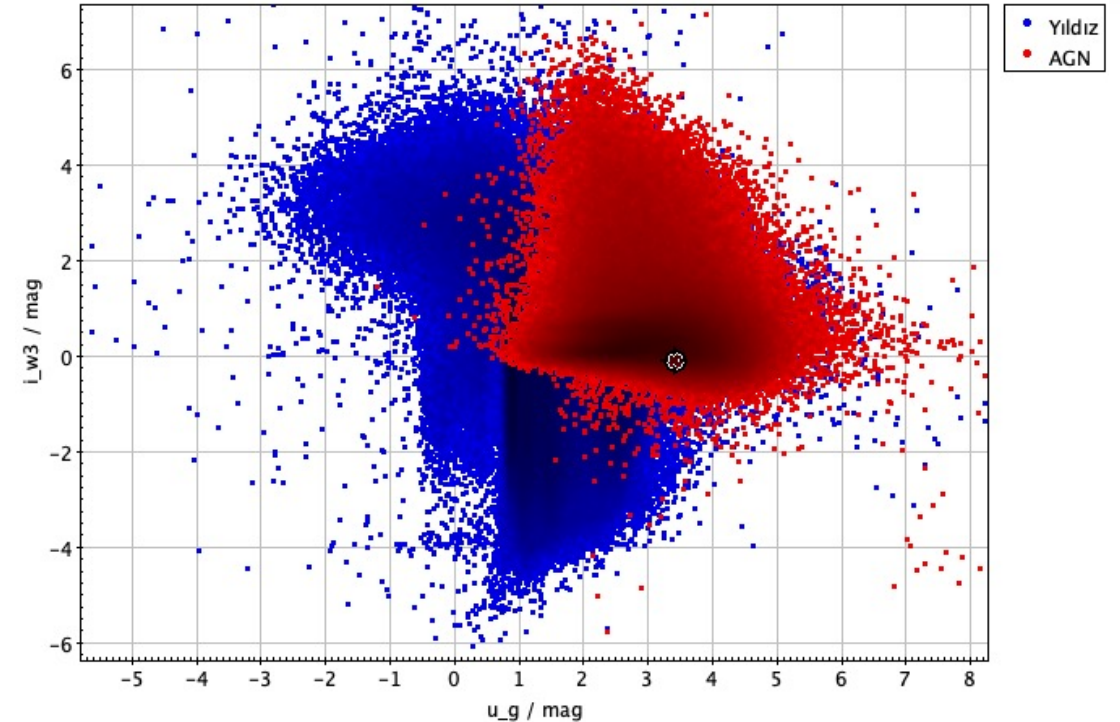
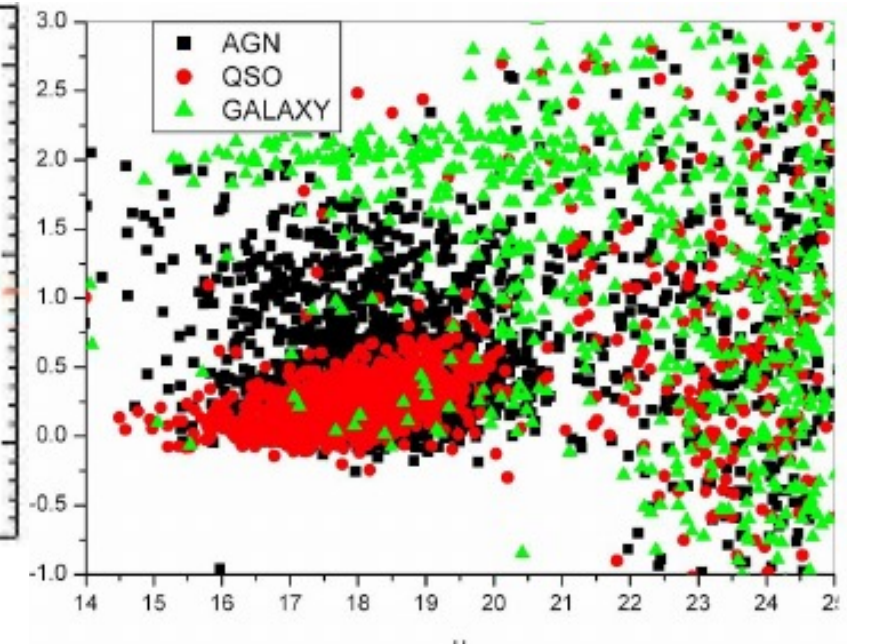
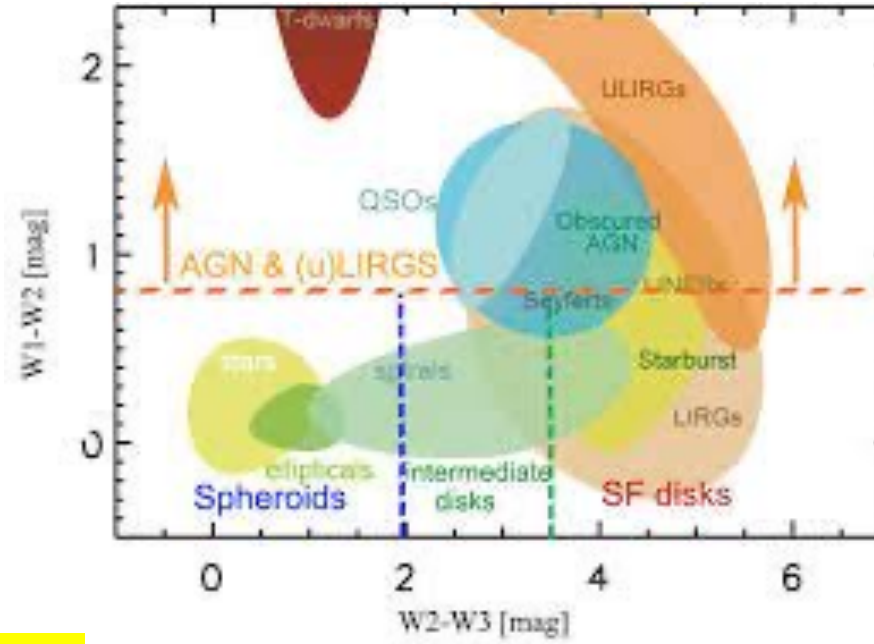
Wise

SDSS

PannStars

Başarı oranı ~%98

SDSS PSF Mag DR16 (Galactic Extinction Corrected)				
u	g	r	i	z
16.158	16.234	16.203	15.867	16.105
WISE (AB Mag)				
w1	w2	w3	w4	
14.308	13.848	12.78	11.826	
SDSS Colors				
u-g	g-r	r-i	i-z	
-0.10177	-0.02046	0.33952	-0.27849	
Wise Colors				
w1-w2	w2_w3	W3-w4	i-w3	
0.46	1.068	0.954	3.21562	



Area	Name	RA	Dec	PRB	Alandaki #
13	J011754.69-074824.9	19.4778813	-7.8069294	0.88170941	1
14	J101504.13+492600.7	153.76723	49.4335307	0.96498415	0
14	J101510.09+492633.2	153.792075	49.4425633	0.50946992	?
14	J101500.58+492609.6	153.752423	49.4360107	0.66801495	?
15	J030536.51+762256.2	46.4021542	76.3822936	0.9968222	5
16	J105452.40+771310.0	163.718356	77.2194699	0.57678209	0
16	J105445.31+771314.5	163.688799	77.220713	0.98995186	4

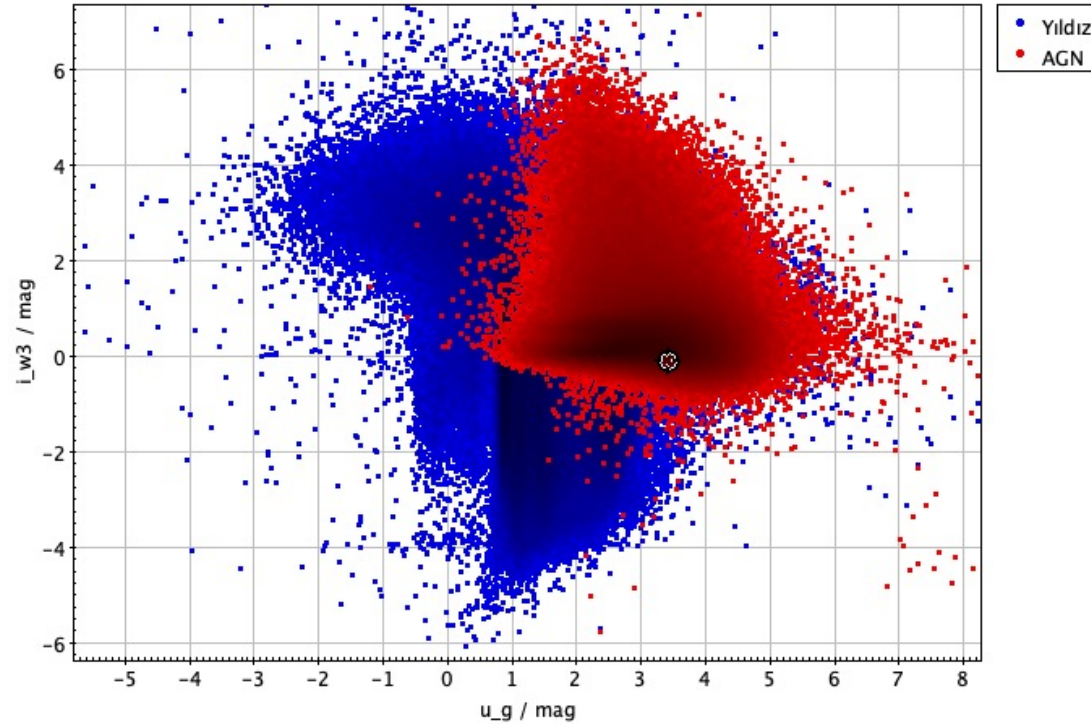
Gözlem bekleniyor

Blazar

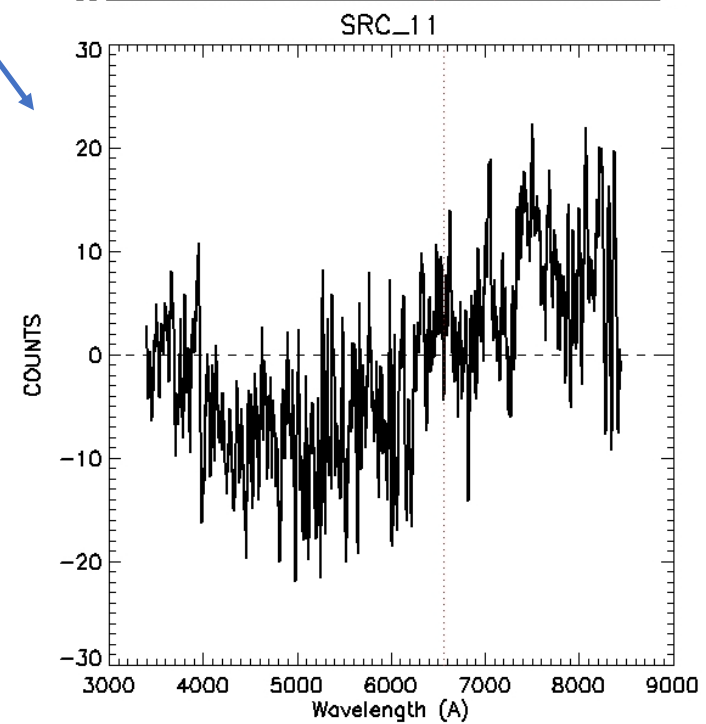
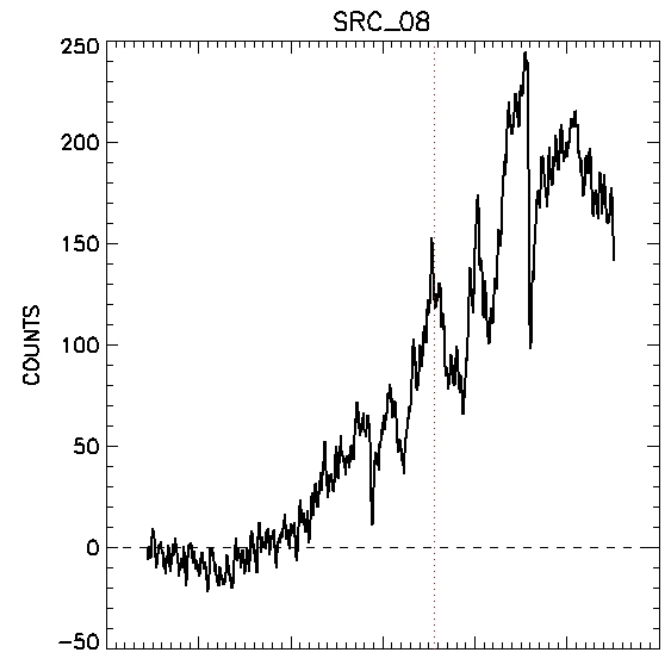
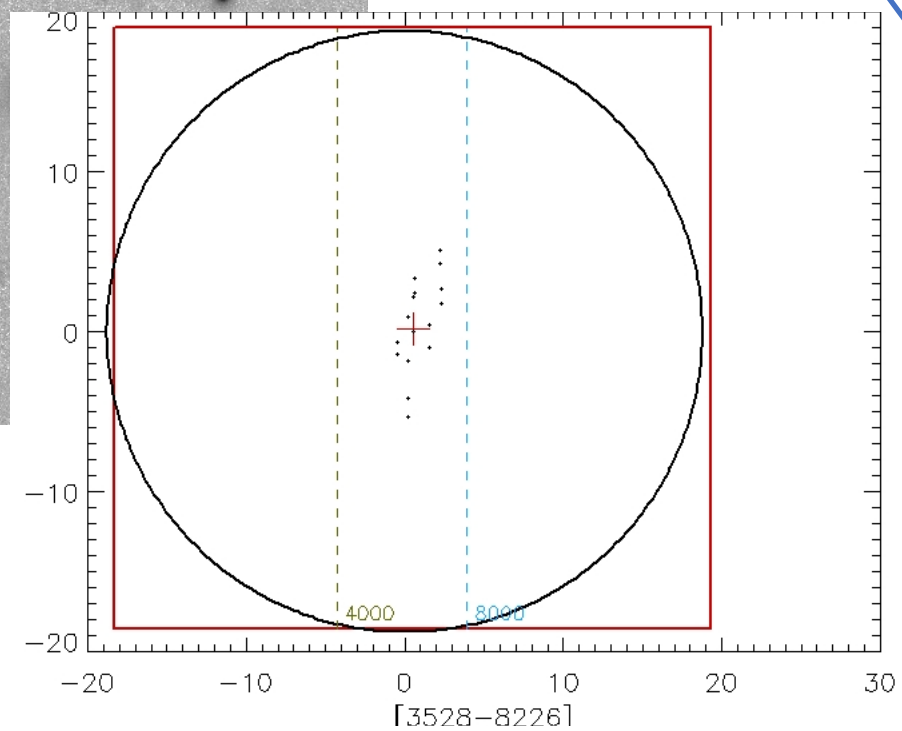
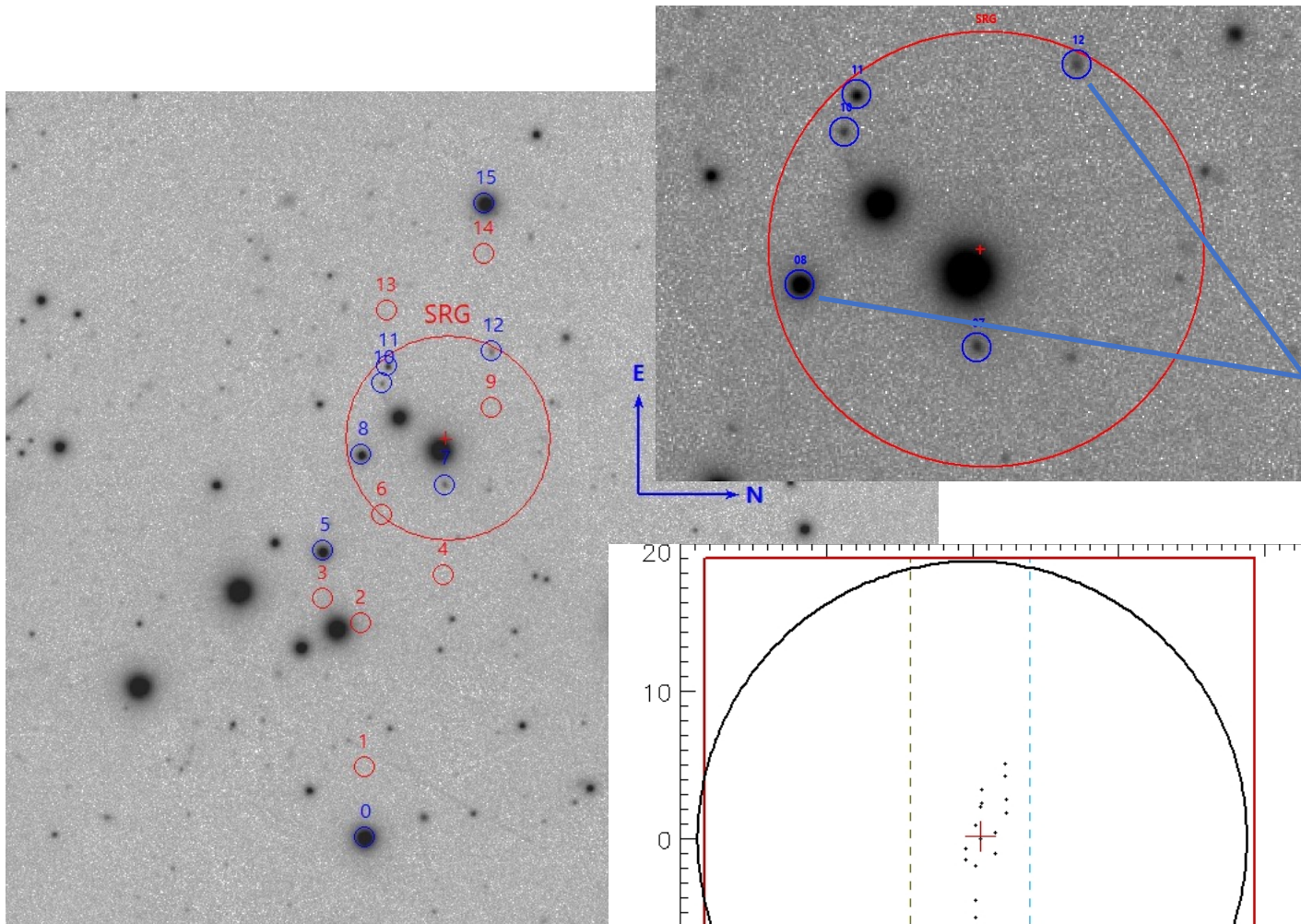
**Z\_phot = 0.21 +/- 0.02**

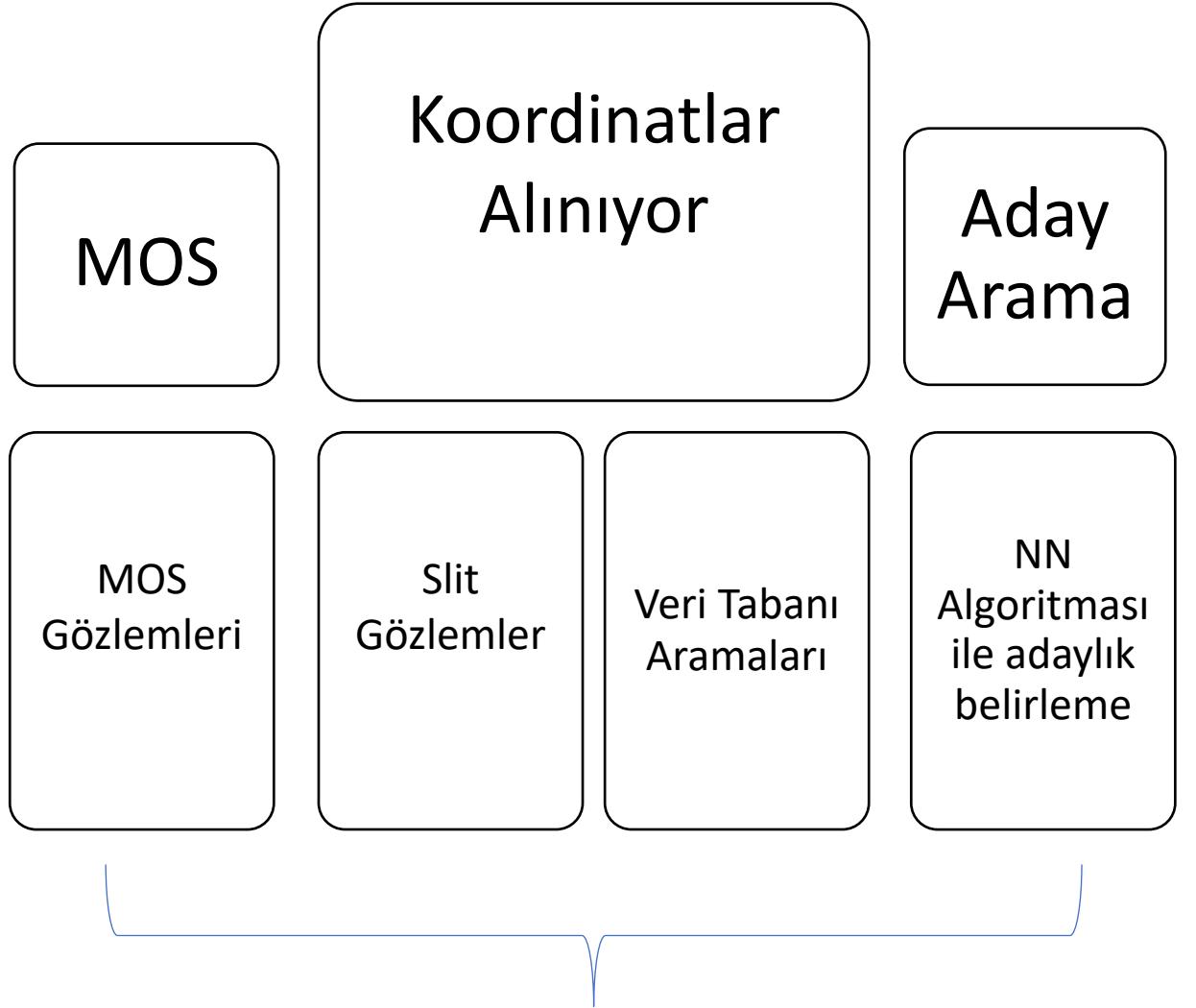
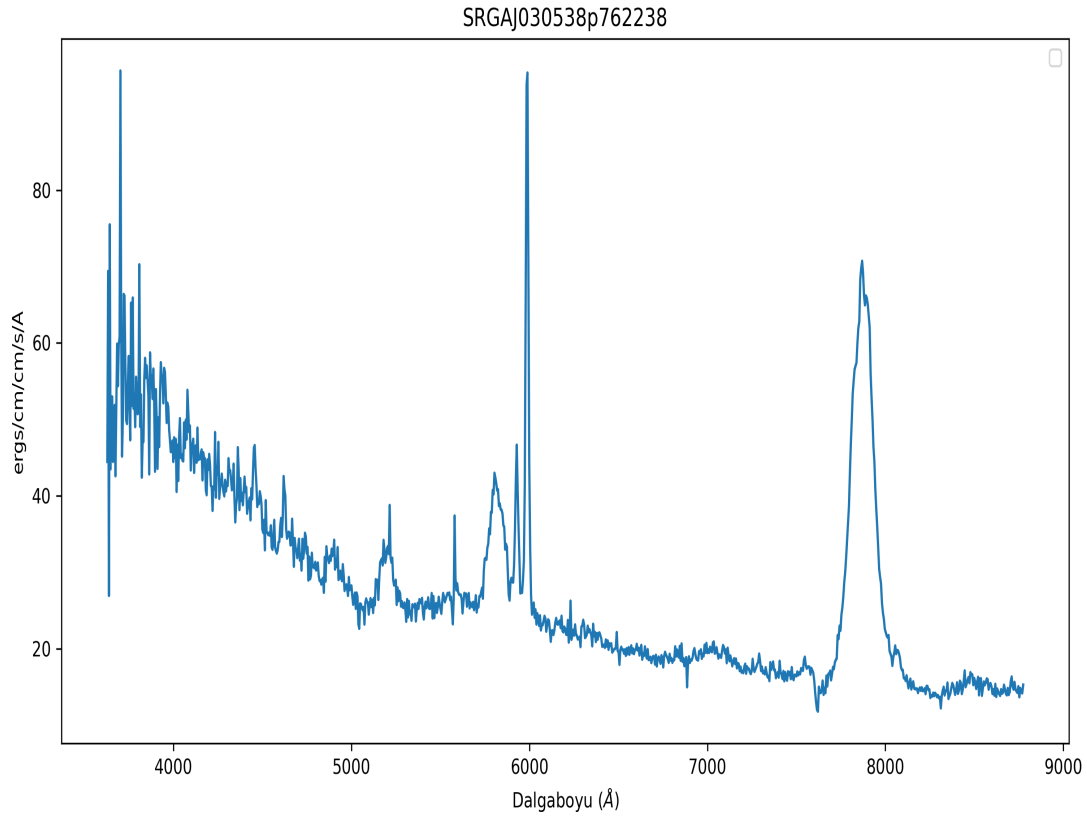
~21 kadir

Renk tabanlı AGN aday arama  
ve  
Kırmızıya Kayma (z) tahmini sonuçları









AGN Grubu

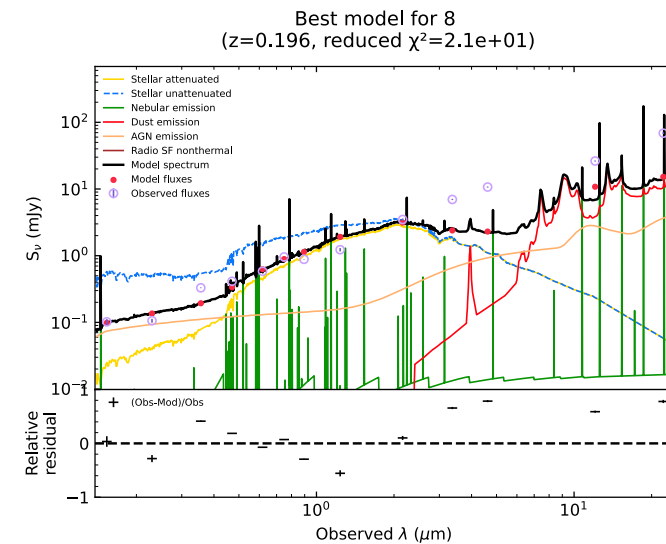
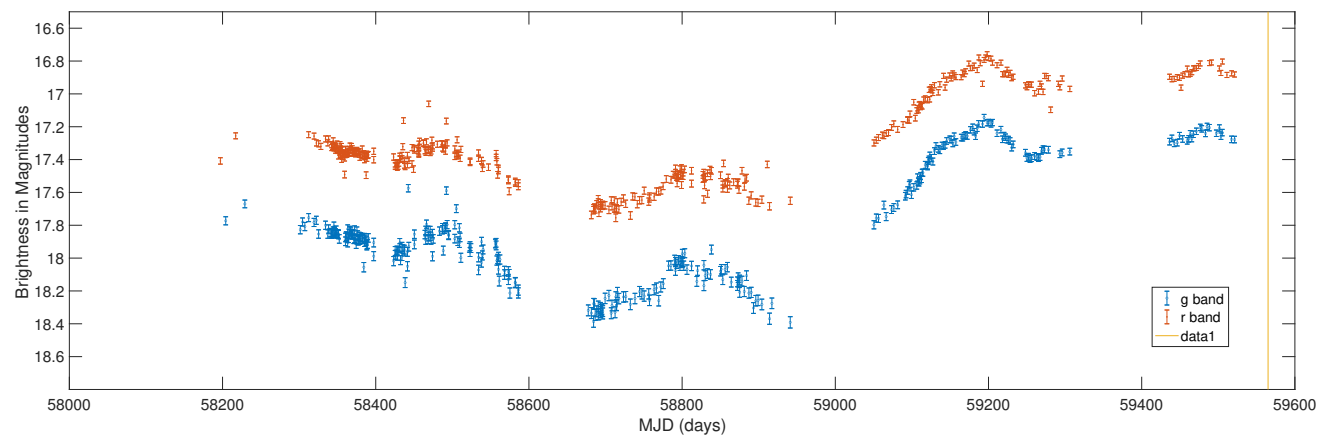
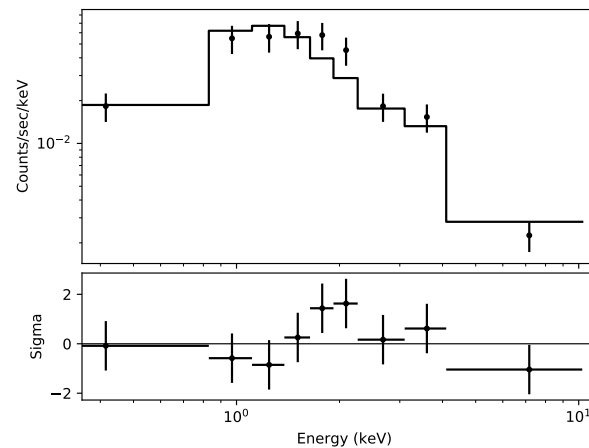
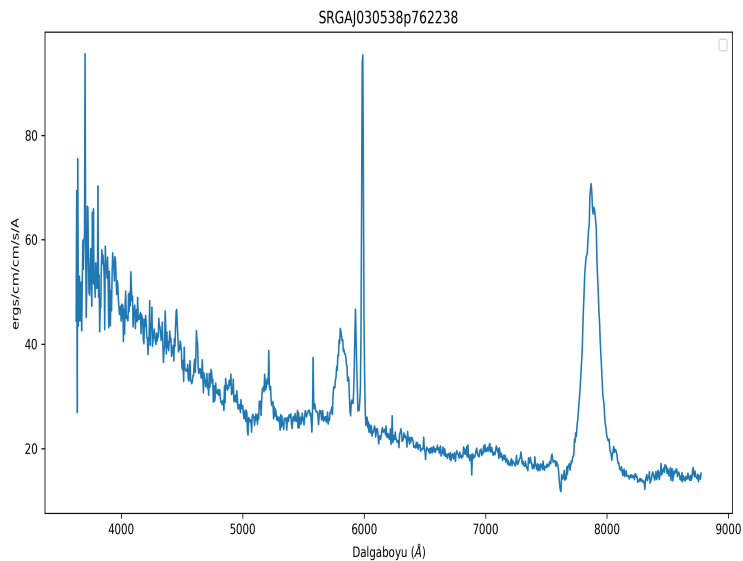
AGN ADAYI

# TAYF

# Fotometri

# X-Işın

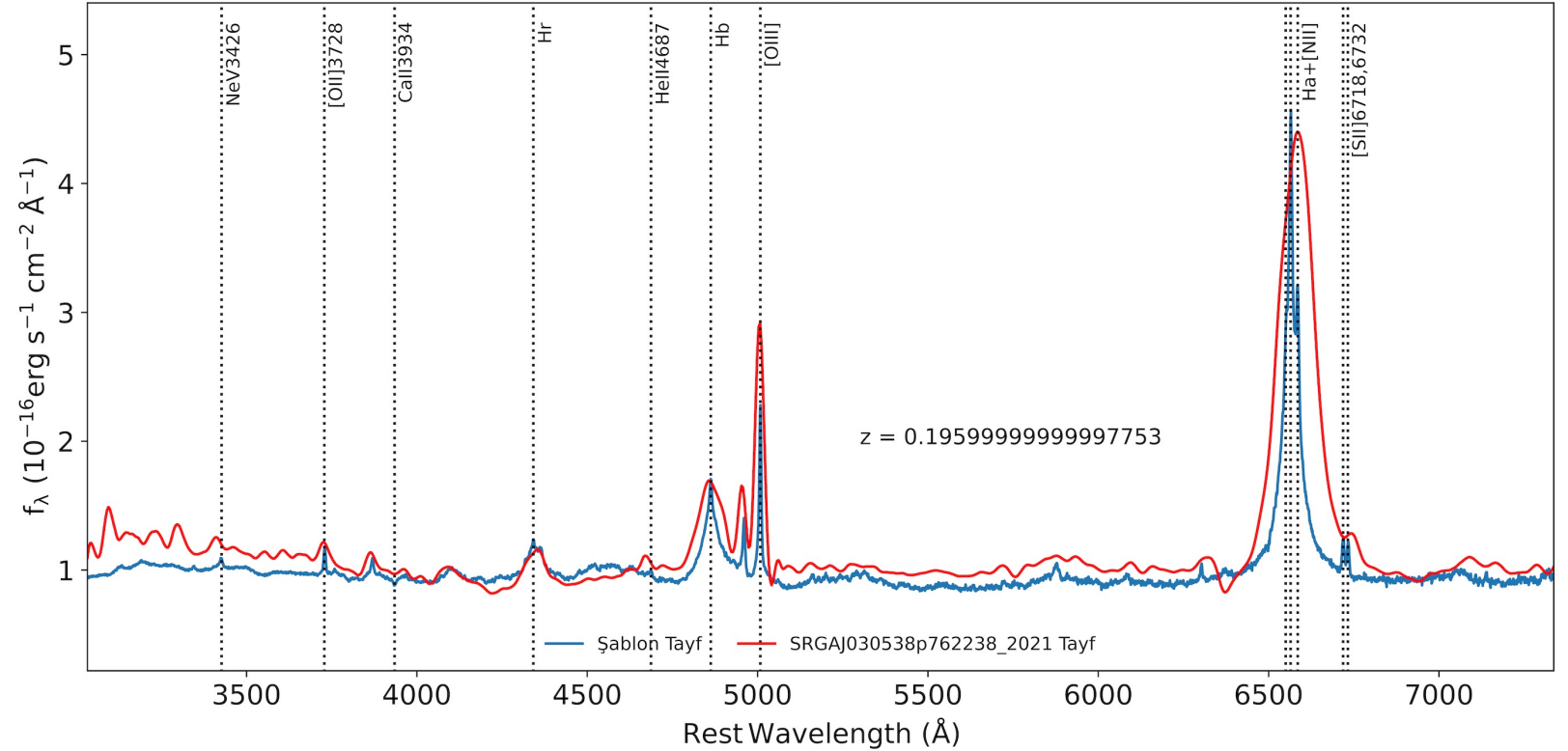
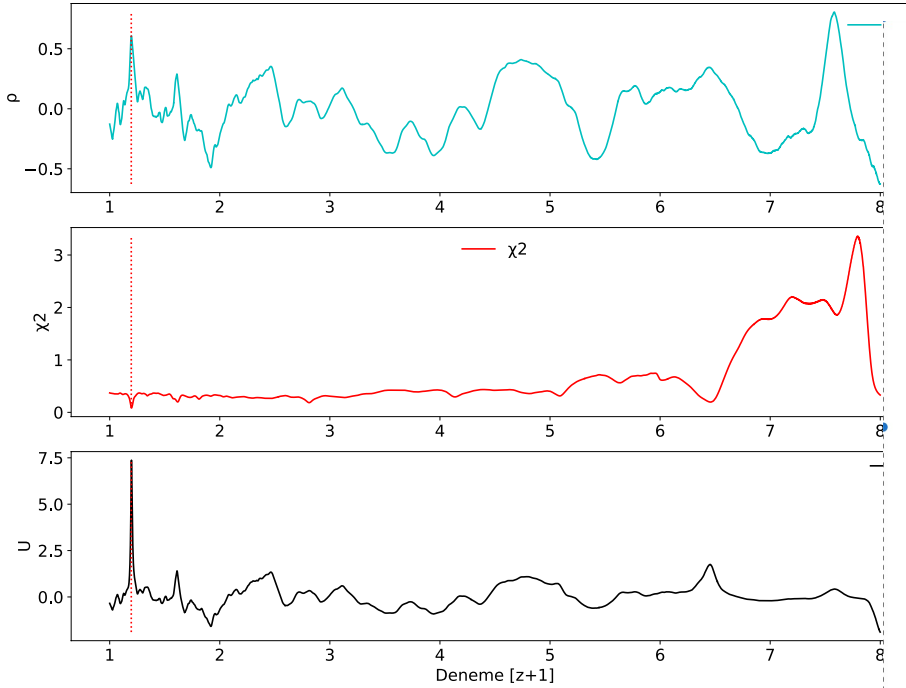
# SED





# Tayf Analizleri

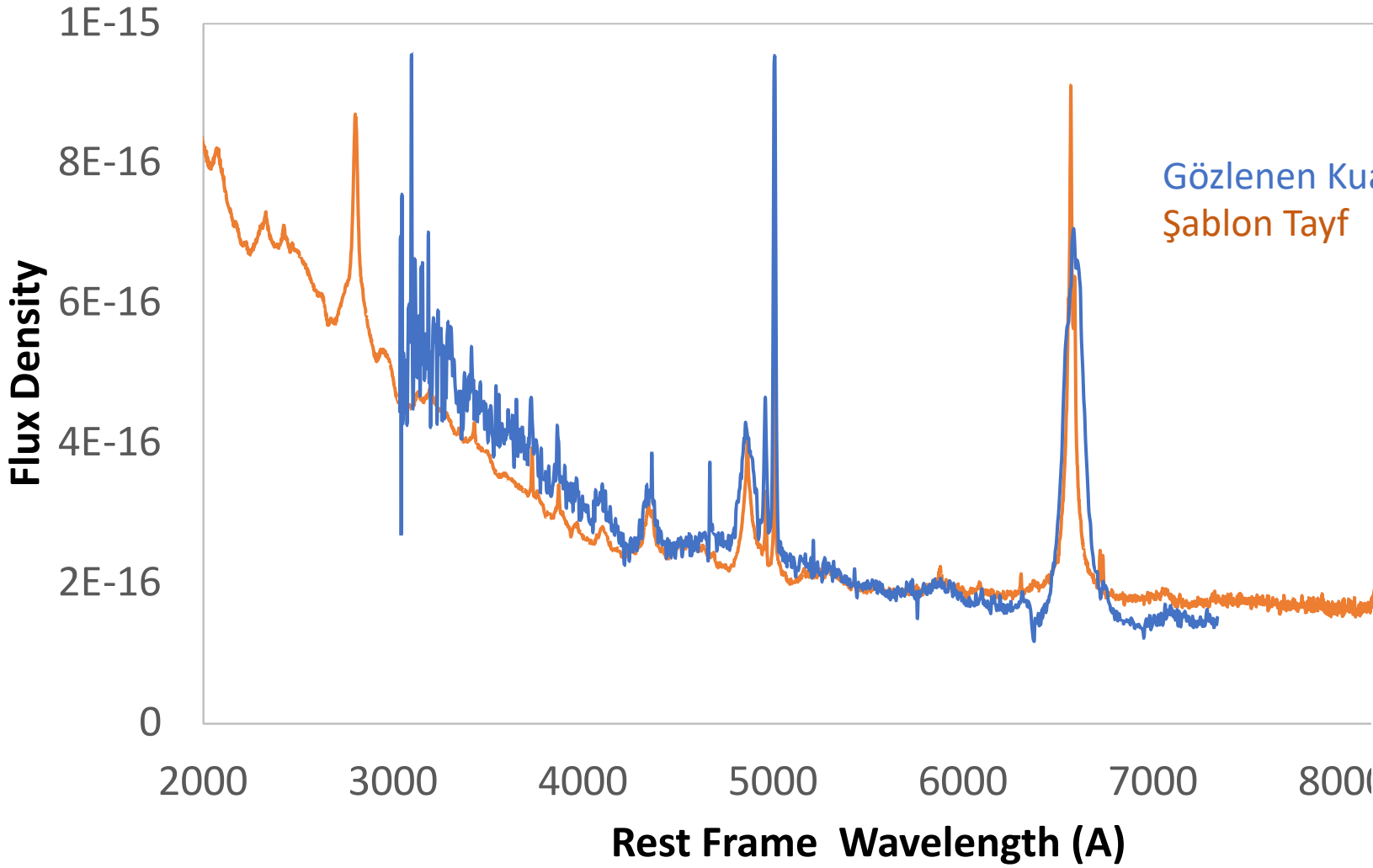
## 1- zFinder ile Kırmızıya Kayma Belirlenmesi



Kuazar Şablon Tayfı ile Gözlenen tayf arasında Rank korelasyonu tabanında uyumluluk hesaplayarak z belirleniyor.

$$z = 0.196 \pm 0.012$$

**zFinder: Kaçan, Hökelek, Filiz Ak 2022**



PL slope = -3.9568

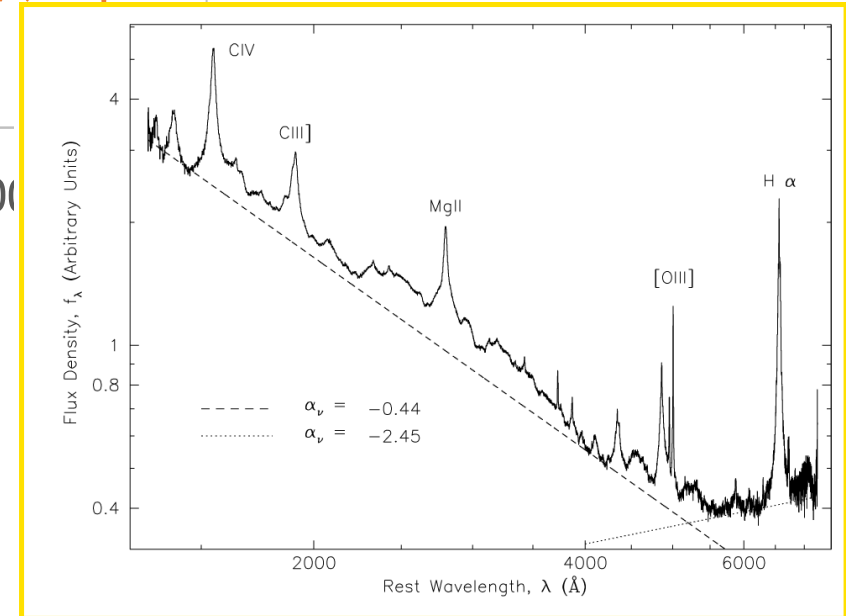
$$\alpha_{\lambda} = -1.95$$

Kuazarlar için ortalama  $\alpha_{\lambda}$  değeri -1.54

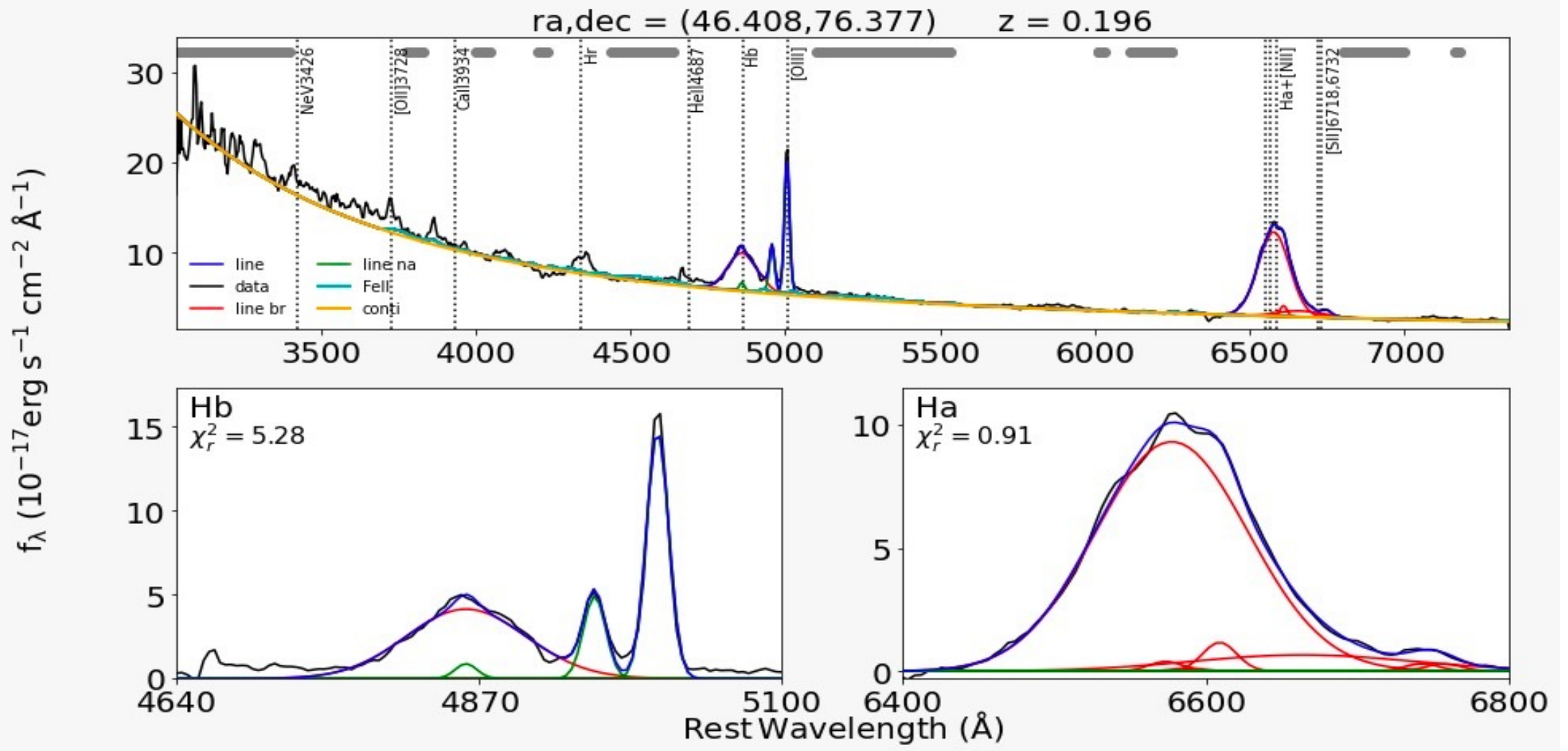
Galaktilik katkı ihmal edilebilir düzeyde

4000 Å kırılması belirgin

Vanden Berk vd. 2001.



# Galaktik Sönümlenme Düzeltmesi + Süreklilik Power Law Fiti + Salma Çizgileri Modellemesi

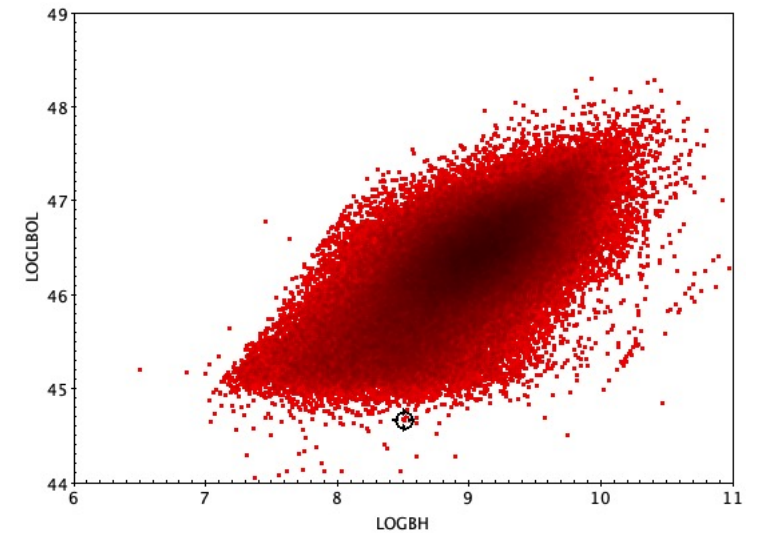
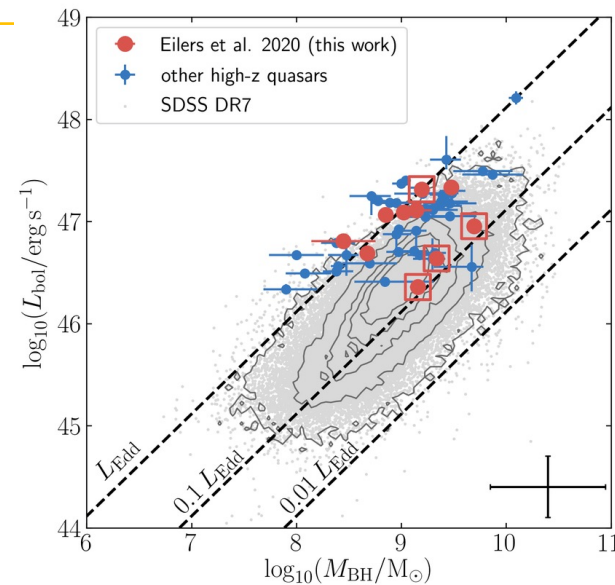
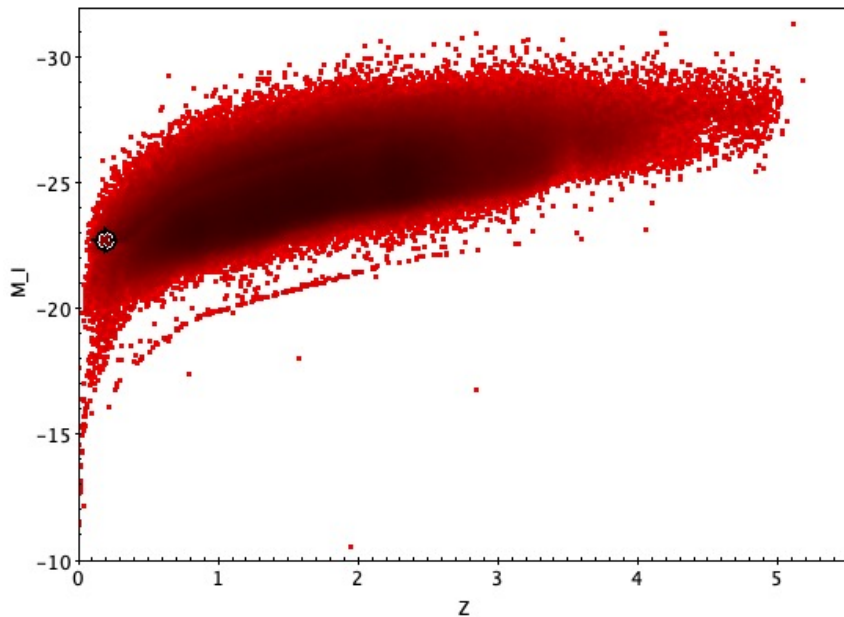


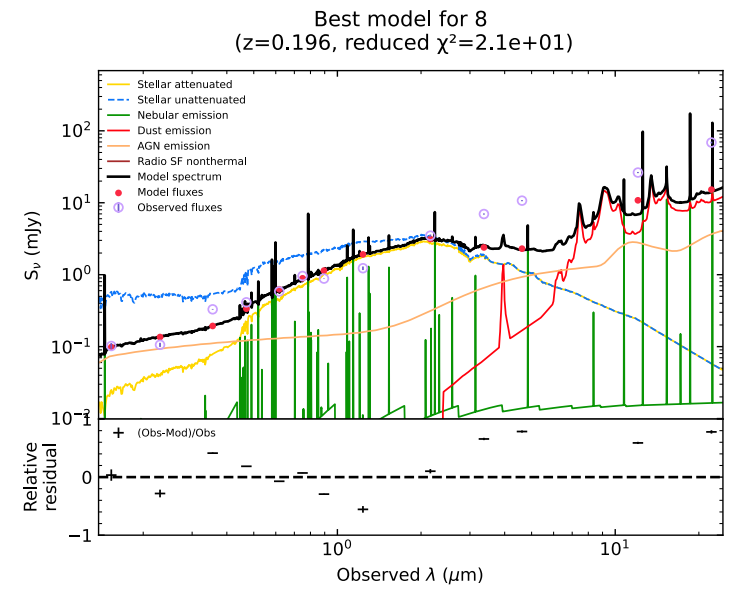
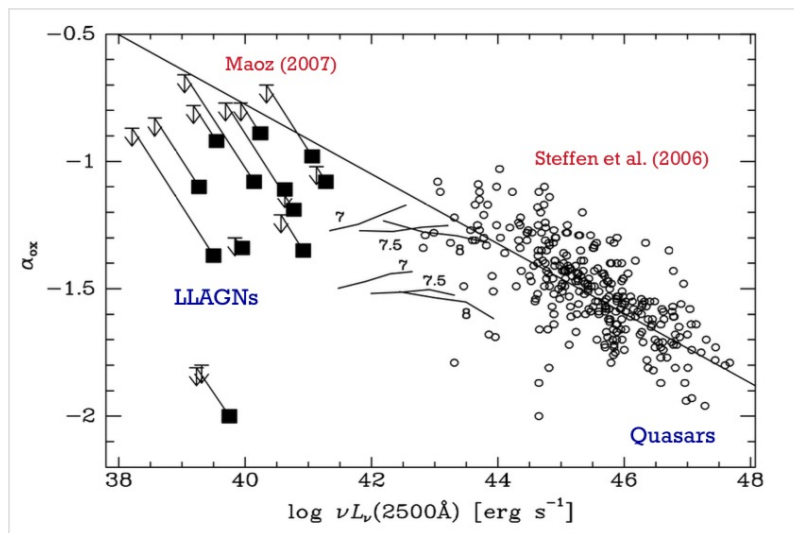
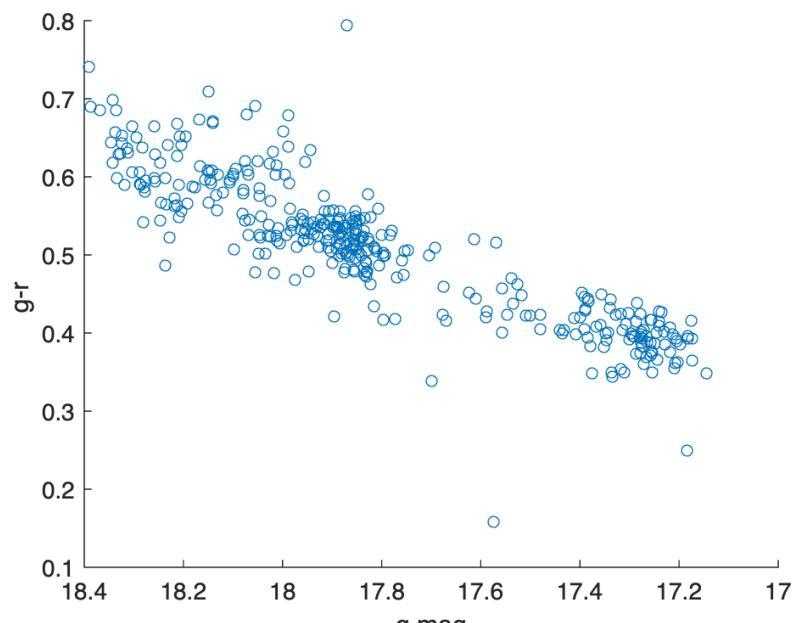
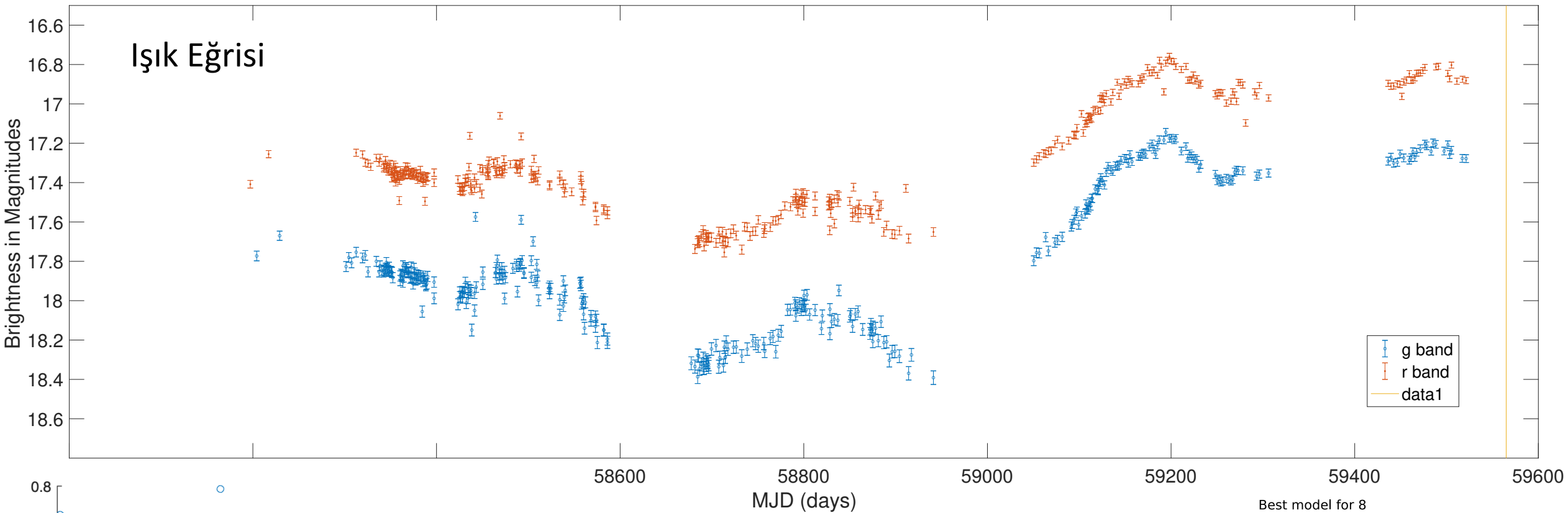


Çizgi	FWHM Km/s	EW Å
H $\alpha$ broad	5585	393.4
H $\alpha$ narrow		5.2
H $\beta$ broad	6610	82.0
H $\beta$ narrow		3.1
[OIII] 5007	1191.0	58.3
[NII] 6585	1206.6	11.1
[SiII]	1209.2	3.1

Parametre	Değer
z	<b>0.196 +- 0.012</b>
M <sub>i</sub> (z=2)	-22.66
M <sub>KD</sub>	8.26
L <sub>5100</sub>	43.45
L <sub>BOL</sub>	44.31
L <sub>Edd</sub>	0.1 ila 0.01

$N_H < 0.2 \times 10^{22} \text{ cm}^{-2}$





# SRG-TR Çalışmaları ile Gözlenen AGN'ler

4 Keşfedilen Kuazar

1 Starburst/Seyfert  
(Galaksi grubu ile işbirliği)

2 Blazar

1 LINER  
(Galaksi grubu ile işbirliği)

Henüz Tanımlanmamış Kaynaklar



# SRG-TR Çalışmalarının Kazanımları

Genç araştırmacıların yetiştirilmesi  
Tecrübeli gözlemcilerin yetiştirilmesi

MOS

Koordinasyon ve işbirliği

Tayf indirgeme IRAF  
Tayf indirgeme Python

Yeni Yazılım Geliştirme

SRG-TR Ekibine katkılarından dolayı teşekkür ederim.