Trabalho final (prova#2 aga0414)

1. Classificação de espectros (3 pontos)
2. Calibração He-Ar (1,5 pontos)
3. Linearidade do CCD (1,5 pontos)
4. Reduçao de imagens (2 pontos)

Redação: 2 pontos

Jorge Meléndez

1. Classificação de espectros

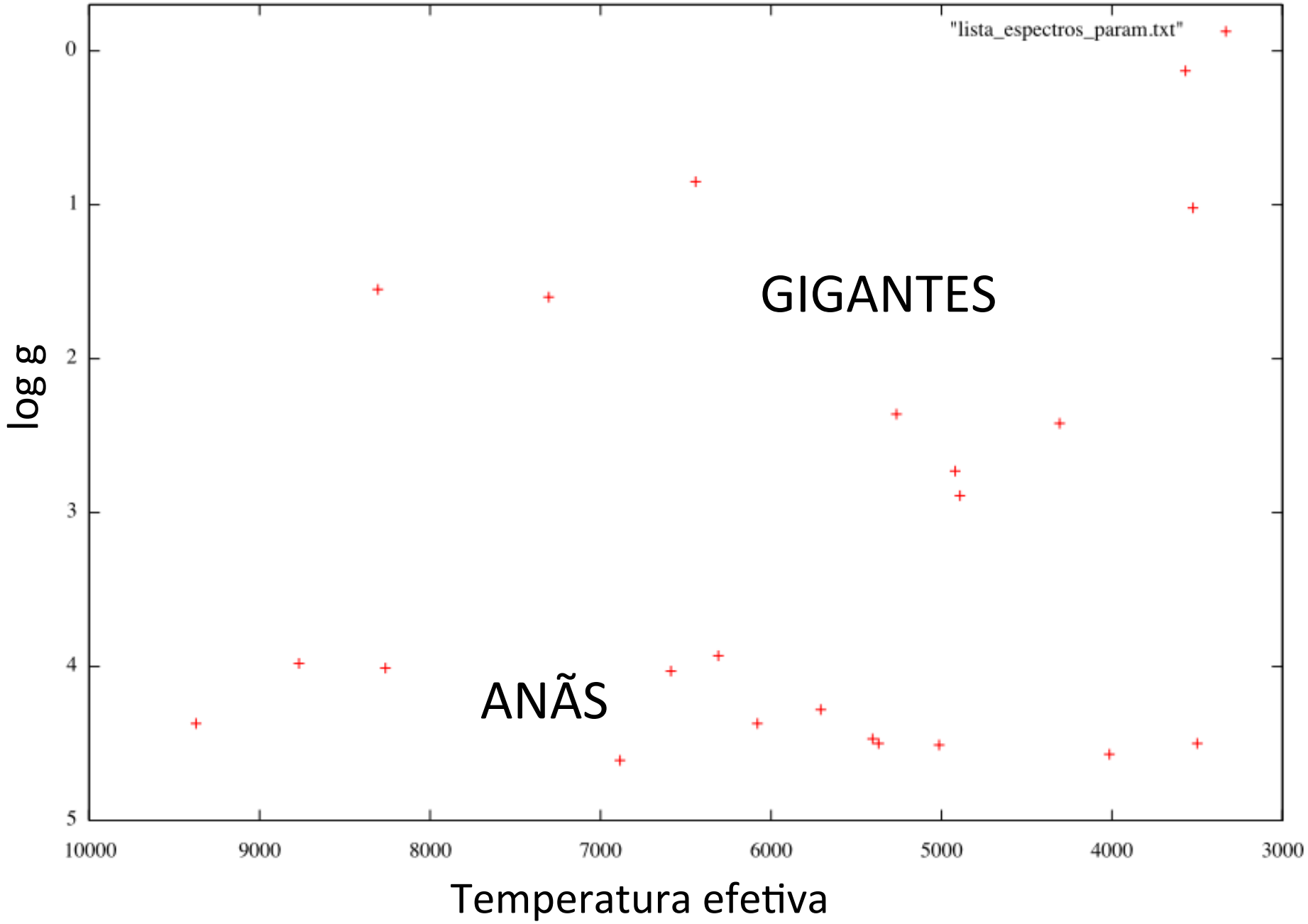
Determinação da temperatura efetiva (se possível, também se a estrela é anã ou gigante) de 3 estrelas desconhecidas. Indicar também qual o tipo espectral.

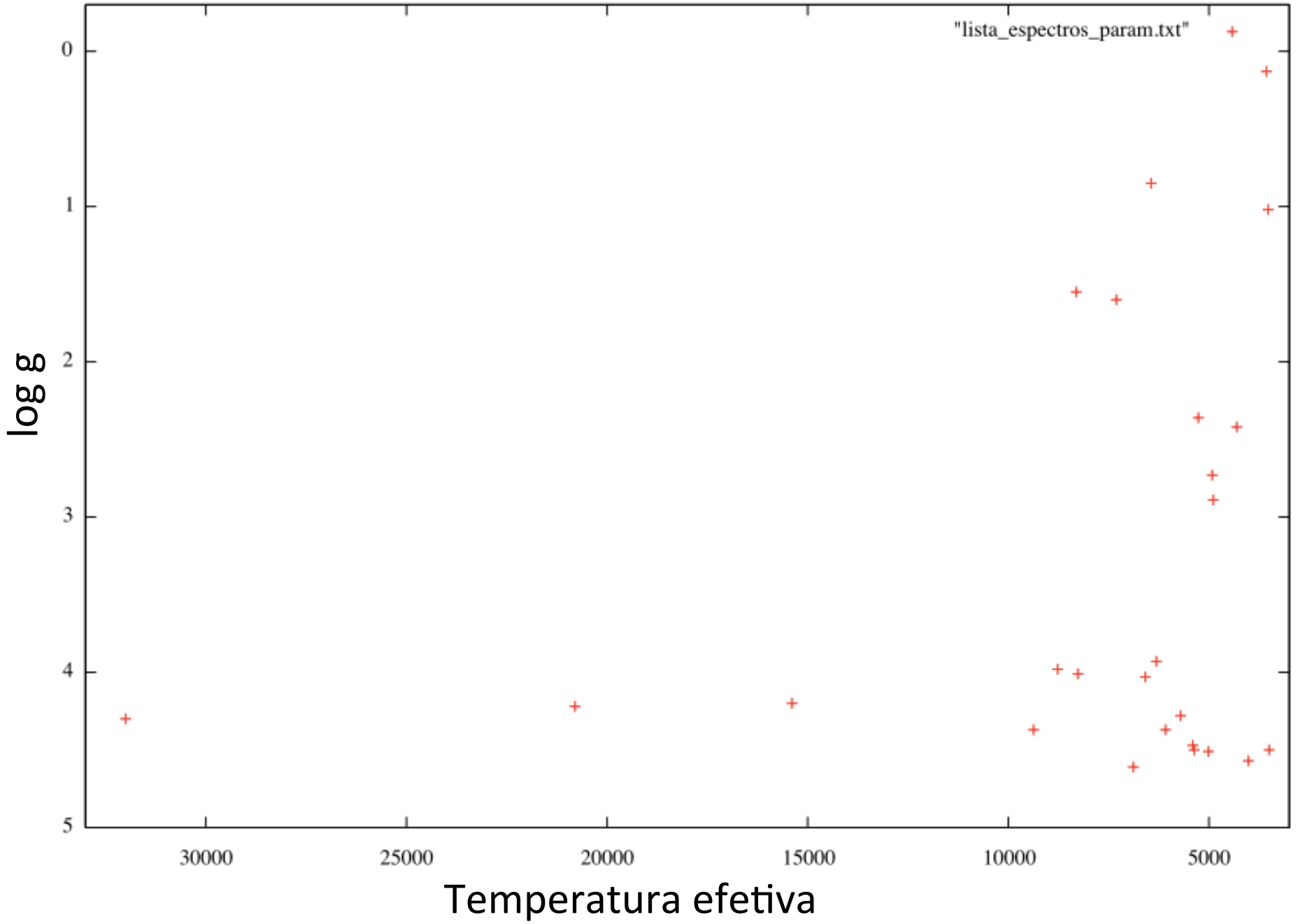
Usaremos 25 estrelas com temperaturas conhecidas na faixa de 3500 – 32 000 K. Também, existe certa variação em log *g* (considerar log g > 3,9: anã, log g < 3: gigante)

1. Classificação de espectros

25 estrelas de comparação observadas no OPD

Estrela	Teff	logg	[Fe/H]
HD038678	8262	4.01	-0.16
HD039801	3569	0.13	0.05
HD052877	3525	1.02	-0.06
HD054605	6442	0.85	0.14
HD059612	8306	1.55	0.01
HD061421	6587	4.03	0.00
HD062509	4892	2.89	0.06
HD075691	4307	2.42	-0.01
HD088955	8769	3.98	-0.01
HD036079	5264	2.36	-0.14
HD036673	7304	1.6	0.09
HD045289	5708	4.28	-0.02
HD033948	15390	4.20	0.00
BD-13 3442	6309	3.93	-2.76
CD-3110649B	4015	4.57	-0.09
HD097343	5404	4.47	-0.05
HD120559	5369	4.50	-1.00
HD122980	20800	4.22	-0.06
HD149438	32000	4.30	0.04
HIP51317	3500	4.5	0.00
HD109573	9373	4.37	0.00
HD115404	5014	4.51	-0.15
HD120237	6080	4.37	0.01
HD123139	4920	2.73	-0.02
HD126141	6886	4.61	0.03


"lista_espectros_param.txt"
GIGANTES
ANÃS
log g
Temperatura efetiva
0
1
2
3
4
5
10000
9000
8000
7000
6000
5000
4000
3000


"lista_espectros_param.txt"
log g
0
1
2
3
4
5
30000
25000
20000
15000
10000
5000
Temperatura efetiva

25 estrelas de comparação e 35 estrelas desconhecidas (MP*)

(aa_mm_dd)

Estrela	A.R.(2000)	Dec(2000)	V	PM_RA	PM_Dec	Teff	logg	[Fe/H]	exptime	date
HD038678	05 46 57.3	-14 49 19.0	3.54	0.014	-0.001	8262	4.01	-0.16	30	14mar03
HD039801	05 55 10.3	+07 24 25.4	0.58	0.028	0.011	3569	0.13	0.05	1	14mar03
HD052877	07 01 43.1	-27 56 05.0	3.49	-0.006	0.005	3525	1.02	-0.06	15	14mar03
HD054605	07 08 23.5	-26 23 35.0	1.84	-0.003	0.003	6442	0.85	0.14	3	14mar03
HD059612	07 29 51.4	-23 01 27.0	4.84	-0.003	0.005	8306	1.55	0.01	240	14mar03
HD061421	07 39 18.1	+05 13 30.0	0.34	-0.714	-1.036	6587	4.03	0.00	5	14mar03
HD062509	07 45 18.9	+28 01 34.3	1.15	-0.627	-0.046	4892	2.89	0.06	10	14mar03
HD075691	08 50 31.9	-27 42 35.4	4.03	-0.134	0.088	4307	2.42	-0.01	45	14mar03
HD088955	10 14 44.15	-42 07 18.9	3.84	-0.150	0.0494	8769	3.98	-0.01	45	14mar03
HD036079	05 28 14.7	-20 45 34.0	2.84	-0.005	-0.086	5264	2.36	-0.14	8	14mar04
HD036673	05 32 43.81	-17 49 20.2	2.60	0.00356	0.0011	7304	1.60	0.09	3	14mar04
HD045289	06 24 24.3	-42 50 51.0	6.67	-0.077	0.778	5708	4.28	-0.02	200	14mar04
MP0190	04 53 24.	+02 34 28.0	10.0	0.0000	0.000	????	????	?????	1000	14mar04
HD033948	05 13 33.27	-08 08 51.9	6.36	0.0000	0.000	15390	4.20	0.0	20	14mar09
BD -13 3442	11 46 50.6	-14 06 43.4	10.4	0.0000	0.0000	6309	3.93	-2.76	400	14mar09
CD-3110649B	13 47 42.84	-32 25 51.0	9.12	0.0882	-0.063	4015	4.57	-0.09	350	14mar09
HD097343	11 12 01.2	-26 08 12.0	7.05	0.272	-0.065	5404	4.47	-0.05	15	14mar09
HD120559	13 51 40.4	-57 26 08.3	7.97	0.000	0.000	5369	4.50	-1.00	60	14mar09
HD122980	14 06 02.76	-41 10 46.6	4.16	-0.023	-0.021	20800	4.22	-0.06	5	14mar09
HD149438	16 35 52.95	-28 12 57.6	2.81	-0.009	-0.022	32000	4.30	0.04	3	14mar09
HIP51317	10 28 55.5	+00 50 27.6	9.67	-0.603	-0.728	3500	4.50	0.0	400	14mar09
MP0171	04 25 11.7	-73 07 07.7	10.2	0.0000	0.0000	????	????	?????	450	14mar09
MP0185	04 46 29.8	+02 42 11.2	10.1	0.0000	0.0000	????	????	?????	550	14mar09
MP0189	04 52 10.6	-16 32 17.5	9.8	0.0000	0.0000	????	????	?????	600	14mar09
MP0192	04 54 27.1	-30 17 16.1	10.0	0.0000	0.0000	????	????	?????	450	14mar09
MP0198	04 59 36.3	+15 01 21.0	9.9	0.0000	0.0000	????	????	?????	450	14mar09

(aa_mm_dd)

Estrela	A.R.(2000)	Dec(2000)	V	PM_RA	PM_Dec	Teff	logg	[Fe/H]	exptime	date
MP0205	05 02 30.2	-61 56 16.8	10.3	0.0000	0.0000	????	????	?????	500	14mar09
MP0210	05 09 03.8	-54 33 26.3	10.0	0.0000	0.0000	????	????	?????	500	14mar09
MP0213	05 10 44.4	+00 04 09.5	8.9	0.0000	0.0000	????	????	?????	200	14mar09
MP0227	05 22 09.2	-14 03 11.2	9.5	0.0000	0.0000	????	????	?????	400	14mar09
MP0233	05 27 50.0	-03 05 40.9	10.1	0.0000	0.0000	????	????	?????	500	14mar09
MP0243	05 35 57.3	-73 25 34.7	9.8	0.0000	0.0000	????	????	?????	400	14mar09
MP0274	06 06 32.7	-73 01 21.4	10.3	0.0000	0.0000	????	????	?????	500	14mar09
MP0364	07 19 12.3	-01 08 47.0	9.6	0.0000	0.0000	????	????	?????	500	14mar09
MP0376	07 25 16.4	+10 55 34.0	10.2	0.0000	0.0000	????	????	?????	450	14mar09
MP0381	07 27 19.7	+00 16 16.0	10.2	0.0000	0.0000	????	????	?????	450	14mar09
MP0682	10 55 12.4	-73 18 49.7	9.9	0.0000	0.0000	????	????	?????	350	14mar09
MP0684	10 57 09.2	-65 08 05.3	9.5	0.0000	0.0000	????	????	?????	300	14mar09
MP0686	10 59 51.2	-80 21 05.0	9.8	0.0000	0.0000	????	????	?????	300	14mar09
MP0699	11 10 21.6	-23 39 25.9	10.7	0.0000	0.0000	????	????	?????	600	14mar09
MP0726	11 33 07.6	-43 44 21.1	9.1	0.0000	0.0000	????	????	?????	250	14mar09
MP0731	11 35 38.0	-50 43 24.6	8.9	0.0000	0.0000	????	????	?????	200	14mar09
MP0734	11 36 39.9	-32 55 34.0	9.1	0.0000	0.0000	????	????	?????	150	14mar09
MP0767	12 22 04.6	-51 23 09.2	9.2	0.0000	0.0000	????	????	?????	280	14mar09
MP0776	12 33 38.1	-53 51 00.7	9.3	0.0000	0.0000	????	????	?????	200	14mar09
MP0780	12 37 13.8	-30 44 57.8	10.2	0.0000	0.0000	????	????	?????	500	14mar09
MP0876	14 04 00.8	-12 45 09.4	9.2	0.0000	0.0000	????	????	?????	350	14mar09
MP0910	14 33 35.6	-16 23 35.9	9.5	0.0000	0.0000	????	????	?????	400	14mar09
MP0963	15 19 01.8	-41 20 22.2	9.5	0.0000	0.0000	????	????	?????	600	14mar09
MP0965	15 20 41.5	-40 55 20.3	9.7	0.0000	0.0000	????	????	?????	400	14mar09
MP0967	15 23 08.2	-38 23 10.0	10.0	0.0000	0.0000	????	????	?????	450	14mar09
MP0970	15 25 02.2	-40 55 31.8	9.6	0.0000	0.0000	????	????	?????	500	14mar09
MP0988	15 36 44.9	-35 33 39.2	10.5	0.0000	0.0000	????	????	?????	600	14mar09
HD109573	12 36 01.0	-39 52 10.0	5.79	-0.057	-0.025	9373	4.37	0.00	120	14abr13
HD115404	13 16 51.1	+17 01 01.9	6.52	0.623	-0.259	5014	4.51	-0.15	360	14abr13
HD120237	13 48 55.1	-35 42 15.0	6.52	-0.526	-0.184	6080	4.37	0.01	150	14abr13
HD123139	14 06 40.9	-36 22 11.8	2.06	-0.521	-0.518	4920	2.73	-0.02	10	14abr13
HD126141	14 23 06.8	25 20 17.0	6.23	-0.158	0.065	6886	4.61	0.03	150	14abr13
MP0804	13 00 29.0	-31 55 42.6	8.9	0.0000	0.0000	????	????	?????	300	14abr13
MP0887	14 09 26.9	-38 25 57.7	9.0	0.0000	0.0000	????	????	?????	400	14abr13

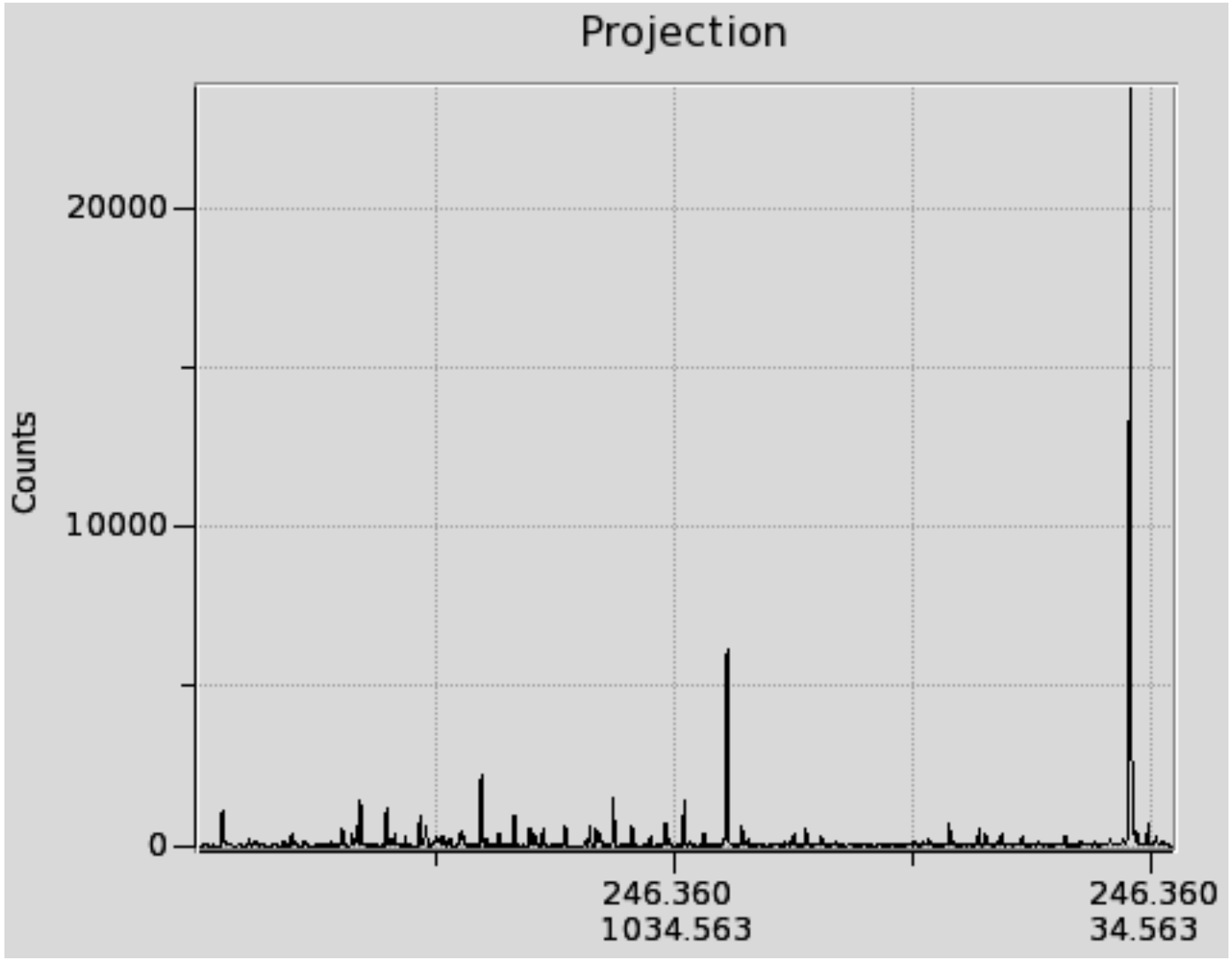
USAR: hear_2013jun13.fits (ja foi subtraido o bias).

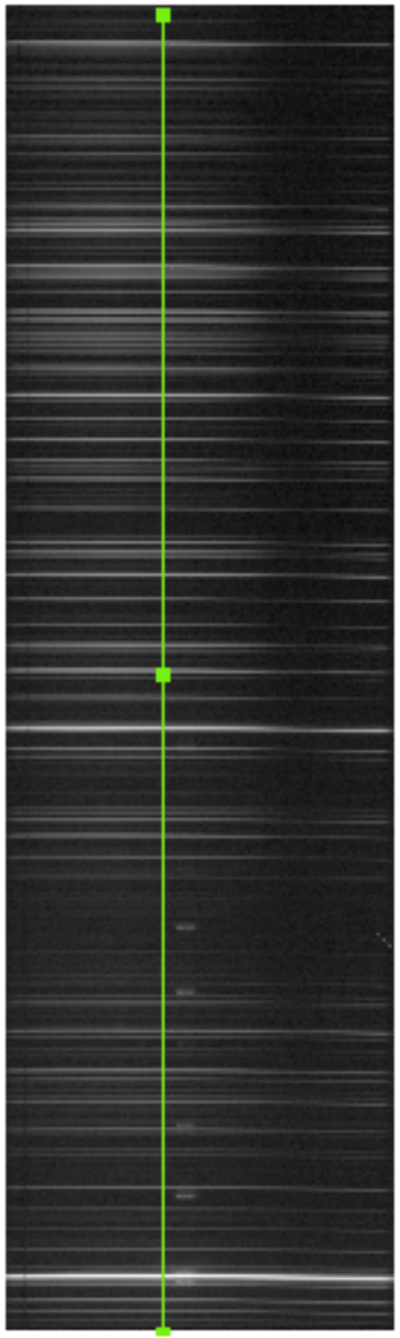
Distribuição de estrelas MP

- Andre: MP0190, MP0171, MP0185
- Antonia: MP0189, MP0192, MP0198
- Breno: MP0205, MP0210, MP0213
- Elielson: MP0227, MP0233, MP0243
- Elvis: MP0274, MP0364, MP0376
- Fabrício: MP0381, MP0682, MP0684
- Lucas: MP0686, MP0699, MP0726
- Paulo: MP0731, MP0734, MP0767
- Ricardo: MP0776, MP0780, MP0876
- Roberto: MP0910, MP0963, MP0965
- Rodrigo: MP0967, MP0970, MP0988

If there is a problem in any of your spectra, let me know and you can change one of them by either MP0804 or MP0887

2. Calibração He-Ar



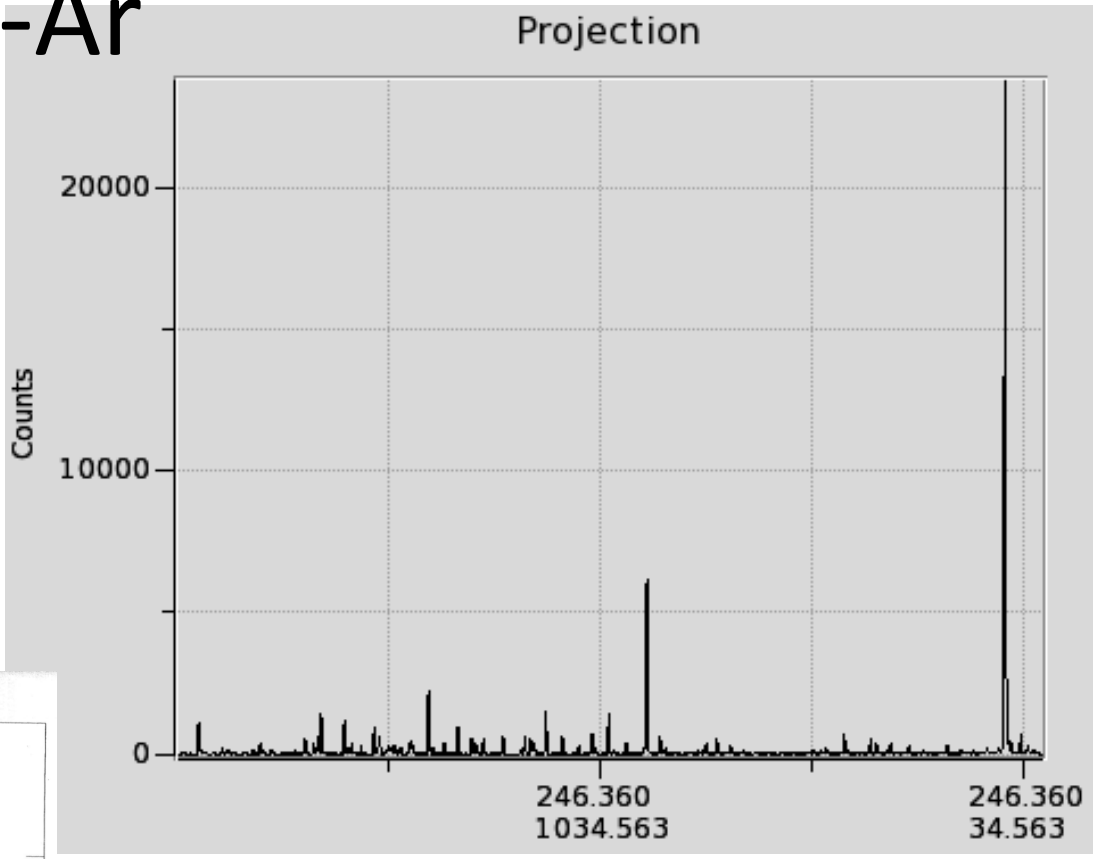


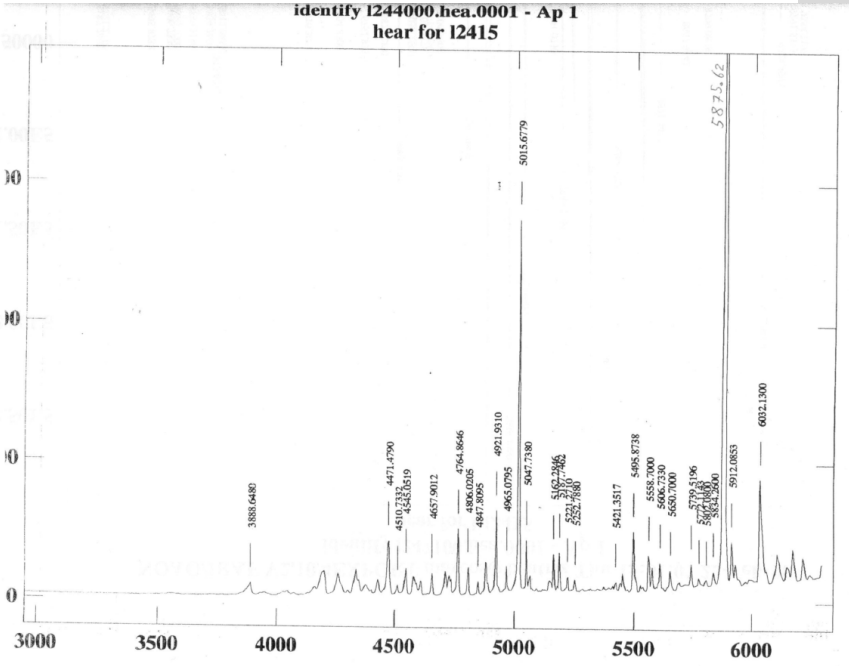
2. Calibração He-Ar

"Save as" (ou print screen) o resultado do projection no DS9

DICA: rspec transforma ascii a .fits

Mostrar pelo menos 4 linhas identificadas em diferentes posições





Qual o seu ângulo de rede?
Qual o comprimento de onda central que você estima do seu espectro para esse ângulo?

3. Linearidade do CCD

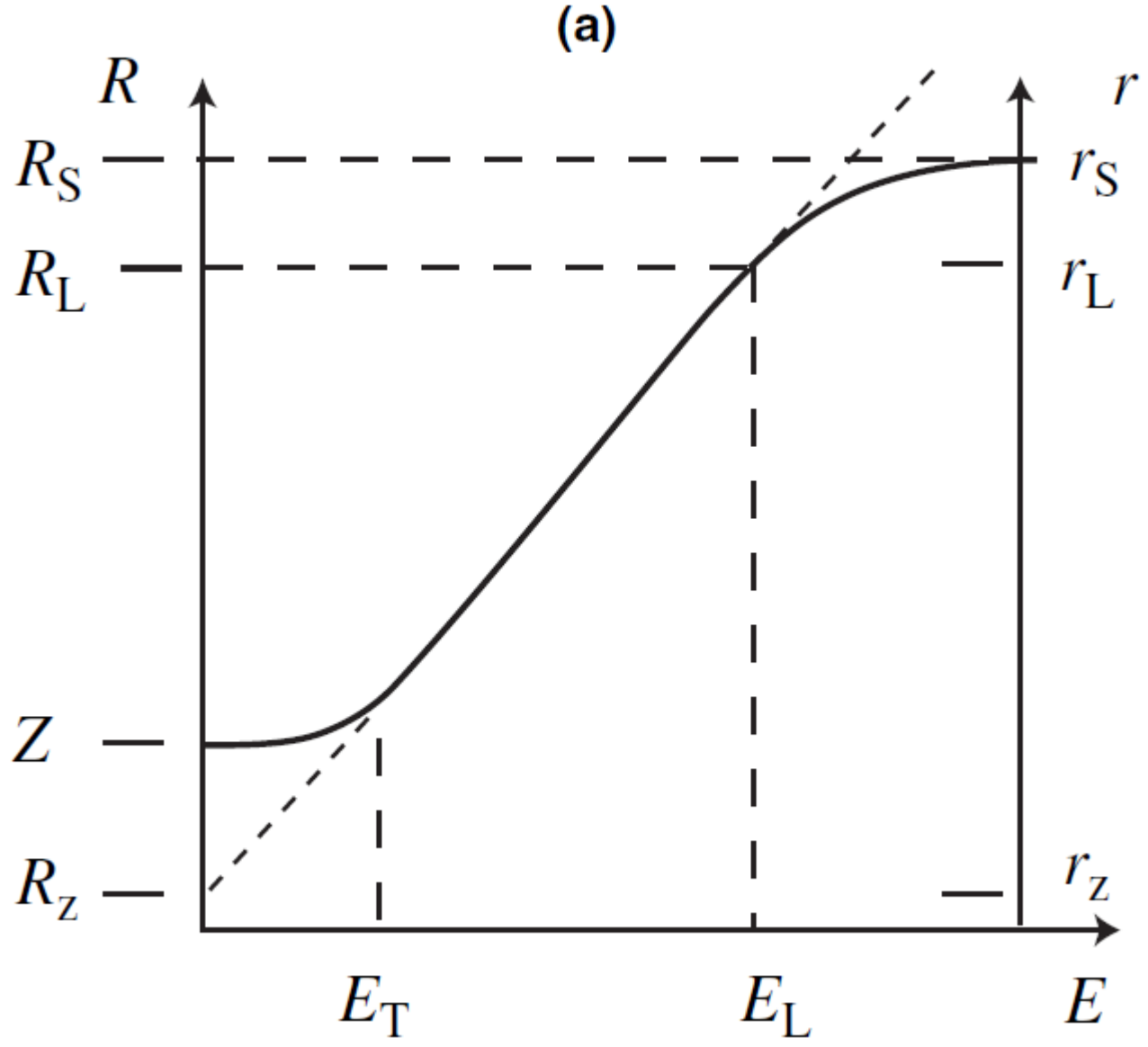
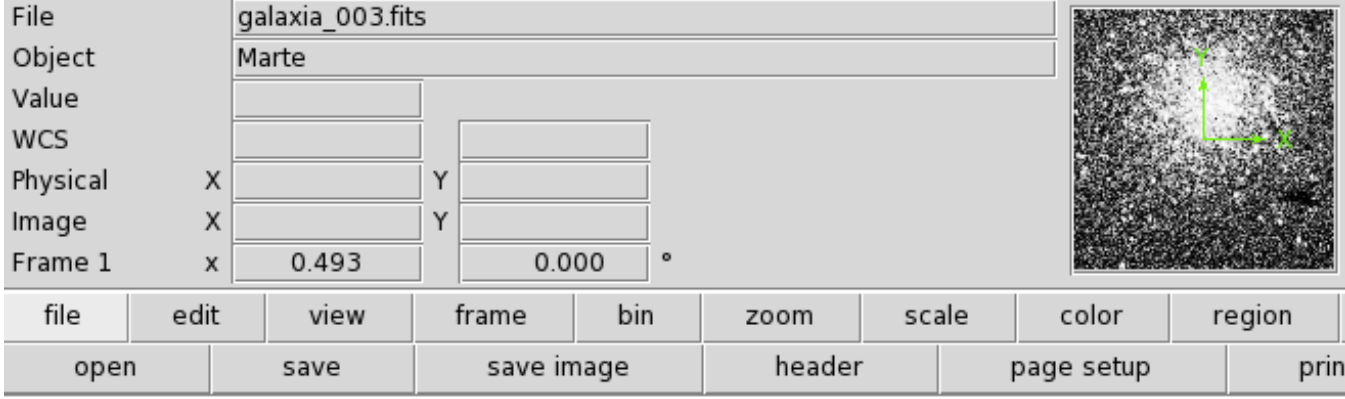
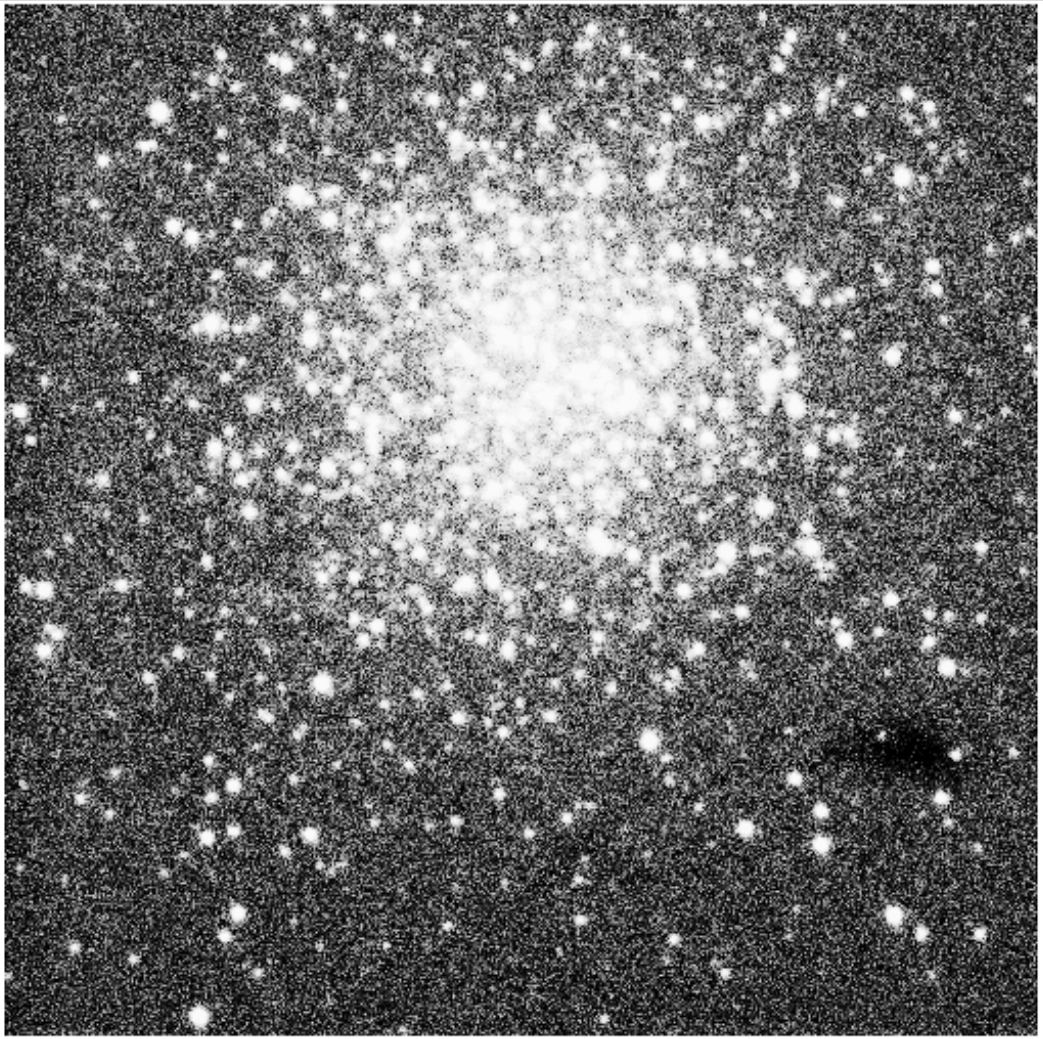


Fig. 9.10 Linearity: (a) A schematic of the output R, in ADU, and the response, r, in electrons, of a single pixel in a detector that is linear over a restricted input range. The sloped



4. Reduçao de imagens



File galaxiared_003.fits

Object Marte

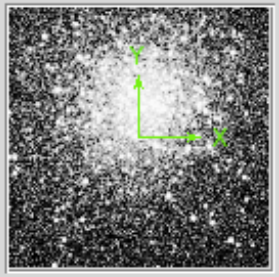
Value

WCS

Physical X Y

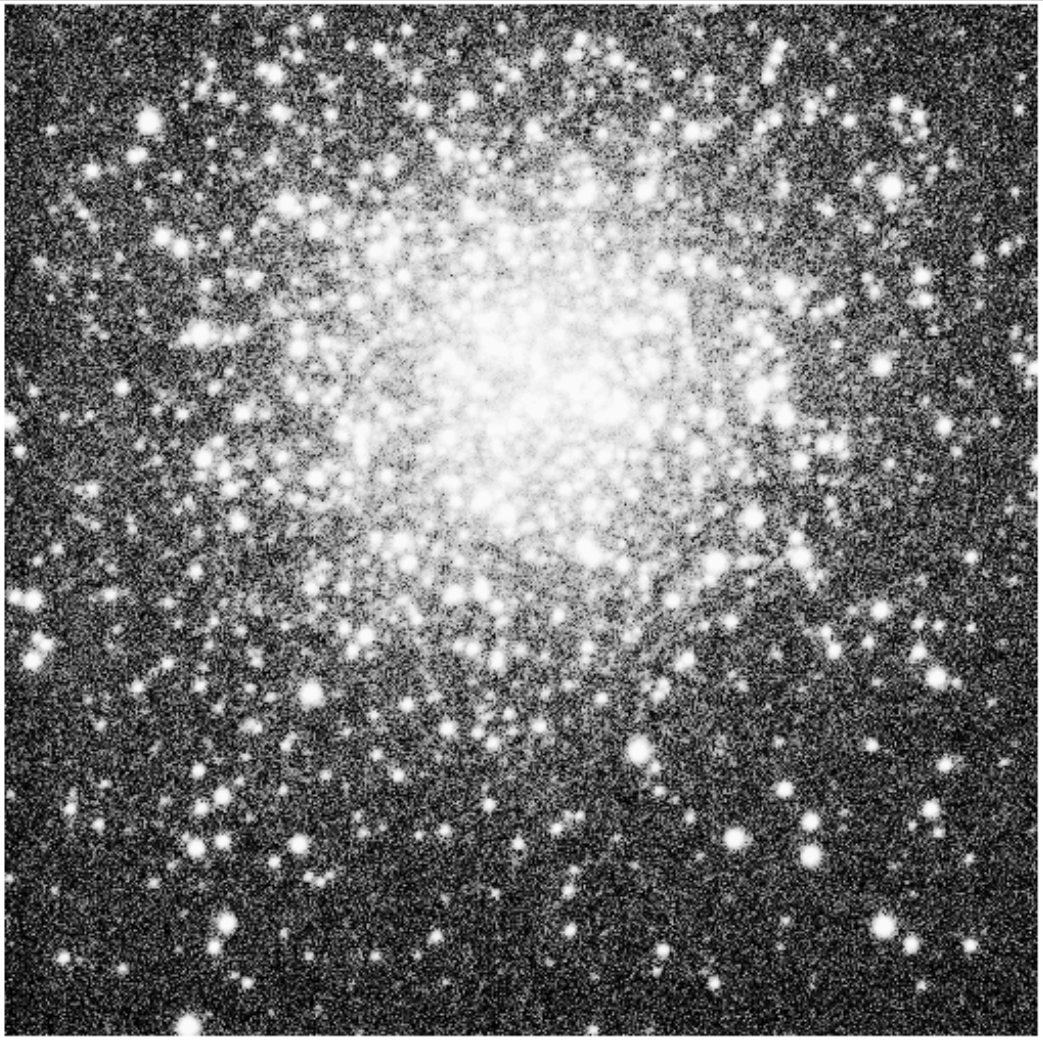
Image X Y

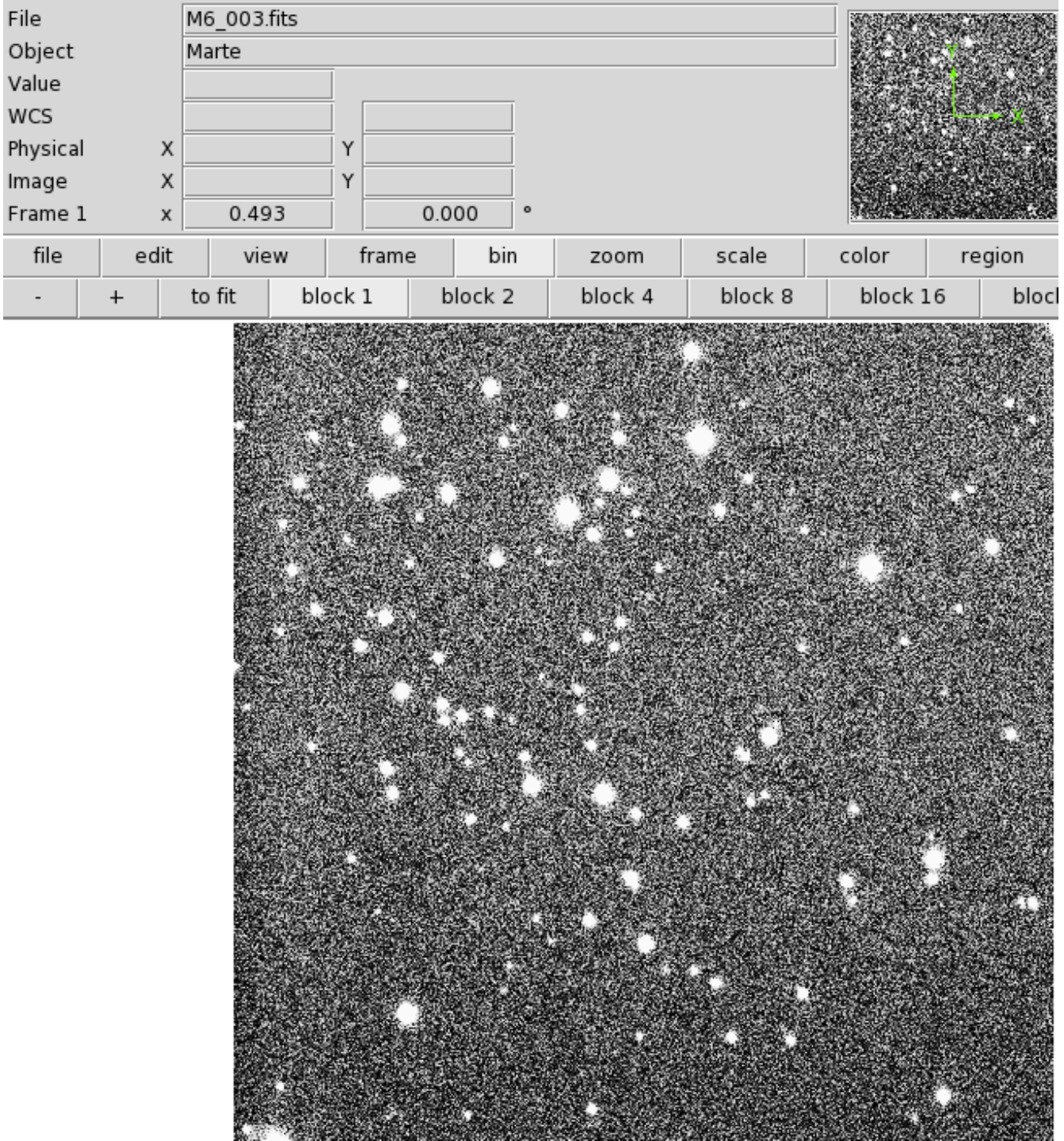
Frame 1 x 0.493 0.000 °

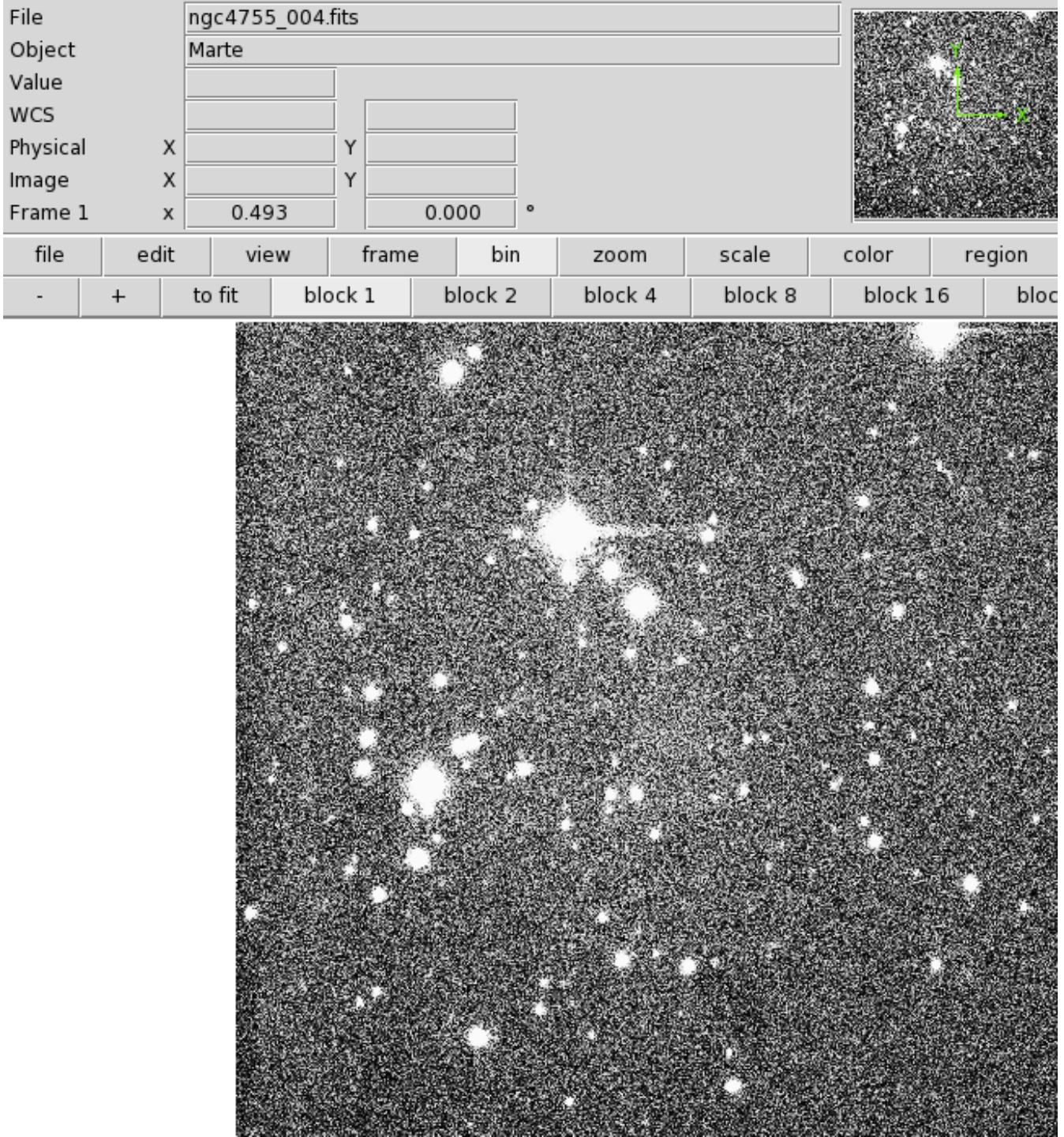


file | edit | view | frame | bin | zoom | scale | color | region

open | save | save image | header | page setup | prin




File
M6_003.fits
Object
Marte
Value
WCS
Physical X Y
Image X Y
Frame 1 x 0.493 0.000 °
file
edit
view
frame
bin
zoom
scale
color
region
-
+
to fit
block 1
block 2
block 4
block 8
block 16
Y
X


File
ngc4755_004.fits
Object
Marte
Value
WCS
Physical X Y
Image X Y
Frame 1 x 0.493 0.000 °
file
edit
view
frame
bin
zoom
scale
color
region
-
+
to fit
block 1
block 2
block 4
block 8
block 16

4. Reduçao de imagens

i. Apresentar uma (1) imagem crua por filtro
ii. Apresentar a imagem após a subtração do bias e normalização do flat
iii. Tricolor
iv. Mostrar imagem obtida em outros observatórios como comparação (rotar e “cropear” a imagem se for necessário, para melhor comparação)