```
Python 3.7.8 (default, Jul 28 2020, 07:26:03)
[GCC 7.3.0 (Ubuntu/Linux)] :: Anaconda, Inc. on linux
Type "help", "copyright", "credits" or "license" for more information.

IPython 7.1.0 -- An enhanced Interactive Python.

In [1]: runfile('/home/jonathanrosie/Apogee By Programme 3.py', wdir='/home/jonathanrosie')
/home/jonathanrosie/anaconda3/lib/python3.7/site-packages/numpy/core/fromnumeric.py:3335: RuntimeWarning: Mean of empty slice.
  out=out, **kwargs)
/home/jonathanrosie/anaconda3/lib/python3.7/site-packages/numpy/core/_methods.py:161: RuntimeWarning: invalid value encountered in ddof1
  keepdims=keepdims)

Class 0: 12
Class 1: 2
Class 2: 2187
Class 3: 5248
Class 4: 1248
Class 5: 2148
Class 6: 1248
Class 7: 1028
Class 8: 1

Fe: 42212
Mg: 32148
Si: 32148
Ca: 32148
Ni: 30212

Kfit Stars 47387

Mh: Stars 5730

Mg_m: Stars 5230
Mg_p: Stars 5230
Mg_n: Stars 5000
Mg_z: Stars 5000

SNR_m: Stars 20000
SNR_p: Stars 20000
SNR_n: Stars 20000
SNR_z: Stars 12953

Dby_m: Stars 5000
Dby_p: Stars 5000
Dby_n: Stars 5045
Dby_z: Stars 5000

Mg_m: Stars 5230
Mg_p: Stars 7000
Mg_n: Stars 7000
Mg_z: Stars 5230

Mg_m: Stars 15200
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Bulge: 2219
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red_giants: 1452

cui_bin: 8361
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red_giants: 5129

Mets_1Kin: 1276
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subgiants: 1052
red_giants: 5230

Mets_bin: 3961
main_sequence: 1962
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Mets_dwarf: 1700
main_sequence: 1700
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Mets_giv: 1500
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Mets_giv_bin: 1500
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metals: 10870
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red_giants: 5230

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red_giants: 1158

mgi_clump: 203
main_sequence: 75
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red_giants: 113

cluster_gc: 5470
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subgiants: 40
red_giants: 5230

cluster_gc: 3101
main_sequence: 1014
subgiants: 1500
red_giants: 5230

cluster_gc: 967
main_sequence: 1500
subgiants: 0
red_giants: 5230

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subgiants: 0
red_giants: 5230

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main_sequence: 1500
subgiants: 0
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main_sequence: 1500
subgiants: 0
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cluster_gc: 849
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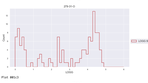
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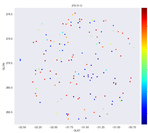
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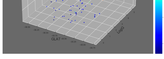

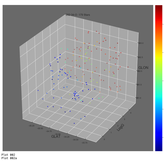
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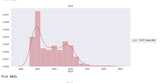
Plot 3D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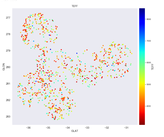
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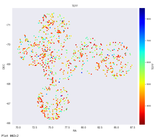

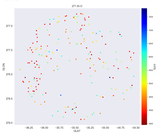
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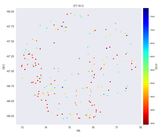
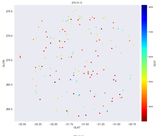
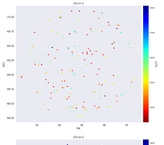
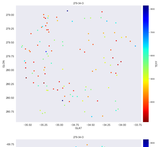
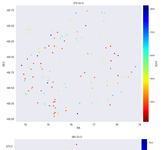
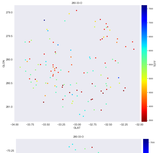


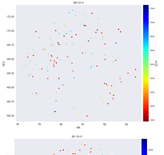


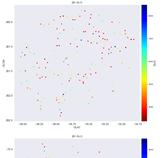


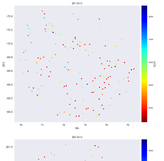


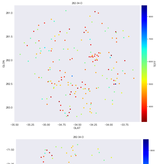


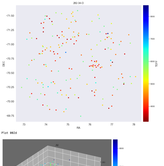


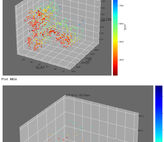


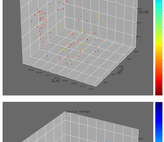






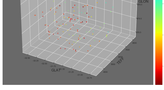


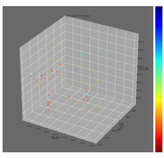


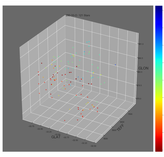


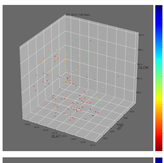

Plot 3D

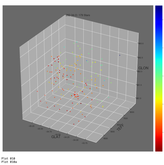

Plot 3D

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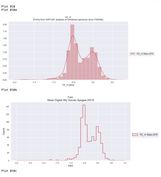


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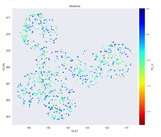
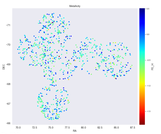
Plot #16c

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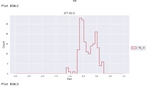


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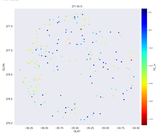


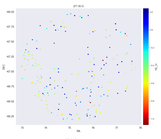


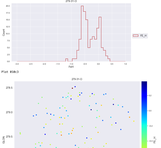


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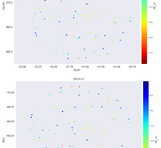


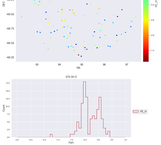


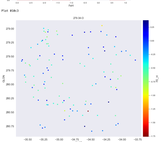


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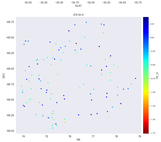


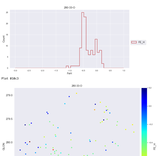


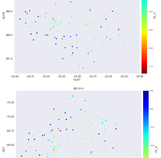


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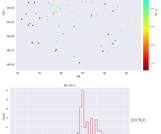

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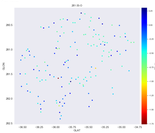
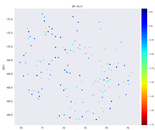
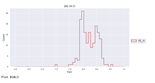
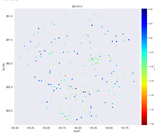
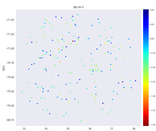


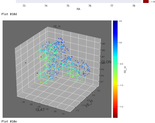




Plot 83&3




Plot 83&

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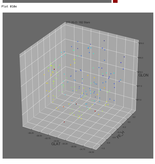

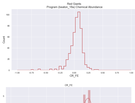


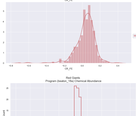


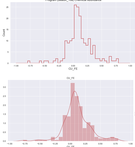


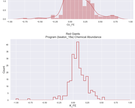


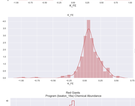


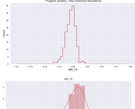


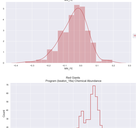


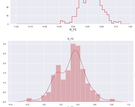


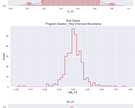


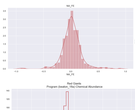


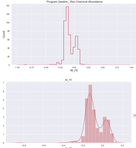


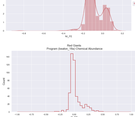


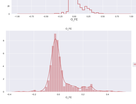


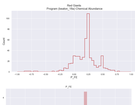


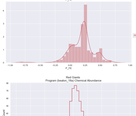


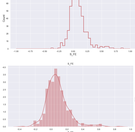


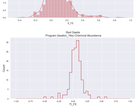


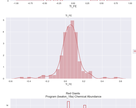


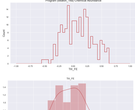


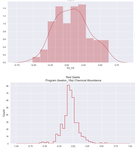


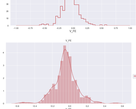


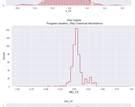

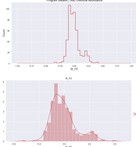


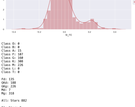


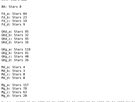
































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Class 02: 0
Class 03: 0
Class 04: 18
Class 05: 18
Class 06: 180
Class 07: 28
Class 08: 0
Class 09: 0

Fe: 180
Mg: 180
Mn: 180
Na: 180
Ni: 180

Al: Stars 012

Ba: Stars 0

Ca_ac Stars 85
Co_ac Stars 11
Cr_ac Stars 15
Cu_ac Stars 0

Eu_ac Stars 81
K_ac Stars 32
Mn_ac Stars 0
Na_ac Stars 0

Ne_ac Stars 219
Ni_ac Stars 0
O_ac Stars 85
P_ac Stars 0

Sc_ac Stars 0
Si_ac Stars 0
S_ac Stars 0
Ti_ac Stars 0

Ti_II_ac Stars 157
V_ac Stars 44
Y_ac Stars 0
Zn_ac Stars 0

Zr_ac Stars 12

Position: C:23:26.6° (276:34.6° (276:34.6° (88:33.6° (81:35.6° (82:34.6°)

Program Gaudin_Tilly

Ca
Co
Cr
Cu
Eu
K
Mn
Na
Ne
Ni
O
P
Sc
Si
S
Ti
Ti_II
V
Y
Zn
Zr
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