

```
In [1]: from sklearn.cluster import KMeans
import numpy as np
import matplotlib.pyplot as plt
from skimage.segmentation import felzenszwalb, mark_boundaries
from skimage import data, segmentation, filters, color
from skimage.future import graph
from plot_rag_merge import _weight_mean_color, merge_mean_color
```

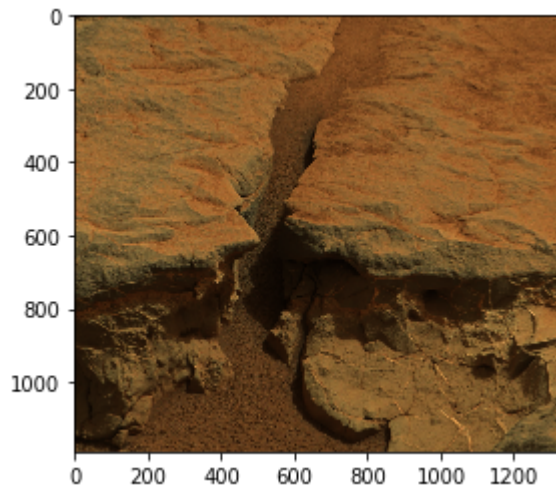
```
In [2]: p1 = np.load('0153MR0008490000201265E01_DRLX.npy',allow_pickle=True)
```

```
In [3]: p1 = np.delete(p1, 0, 0)
```

```
In [4]: p1.shape
```

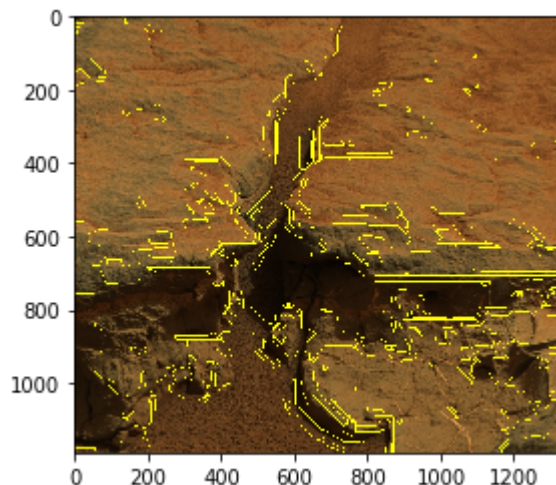
```
Out[4]: (1191, 1335, 3)
```

```
In [5]: imgplot = plt.imshow(p1)
```



```
In [6]: segments = felzenszwalb(p1, scale=32, sigma=12.5, min_size=15)
```

```
In [7]: imgplot = plt.imshow(mark_boundaries(p1, segments))
```

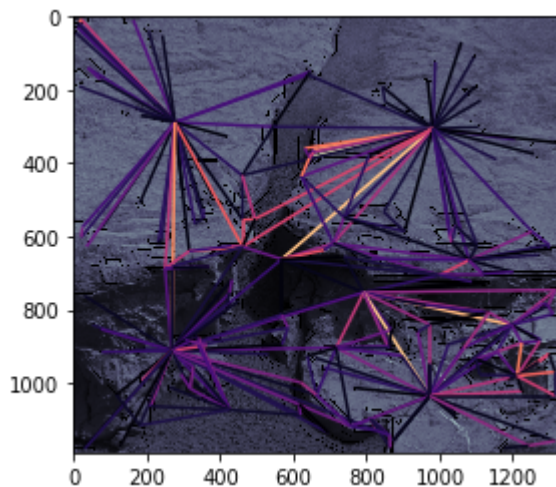


```
In [8]: g = graph.rag_mean_color(p1, segments)
```

```
In [9]: labels2 = graph.merge_hierarchical(segments, g, thresh=0.05, rag_copy=True,
                                         in_place_merge=True,
                                         merge_func=merge_mean_color,
                                         weight_func=_weight_mean_color)
```

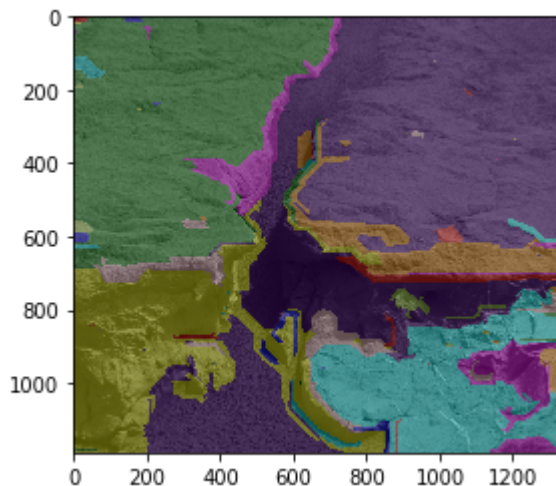
```
In [10]: graph.show_rag(segments, g, p1)
```

```
Out[10]: <matplotlib.collections.LineCollection at 0x21bbc660940>
```



```
In [11]: plt.figure()
out = color.label2rgb(labels2, p1)
plt.imshow(out)
```

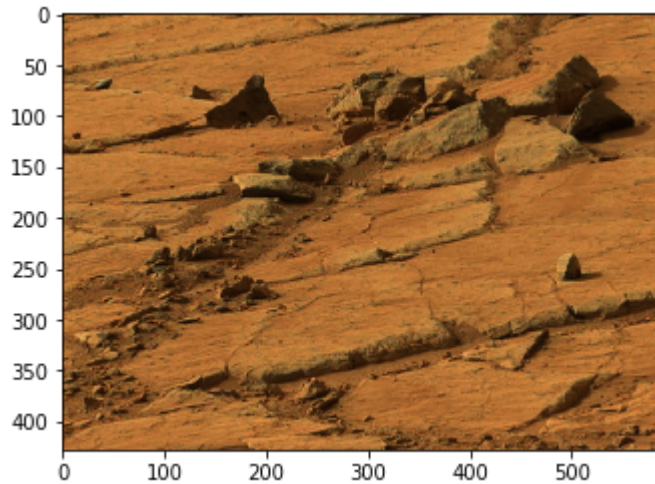
```
Out[11]: <matplotlib.image.AxesImage at 0x21bbd347320>
```



```
In [12]: p2 = np.load('0172ML0009240000104879E01_DRLX.npy', allow_pickle=True)
p2 = np.delete(p2, 0, 0)
p2.shape
```

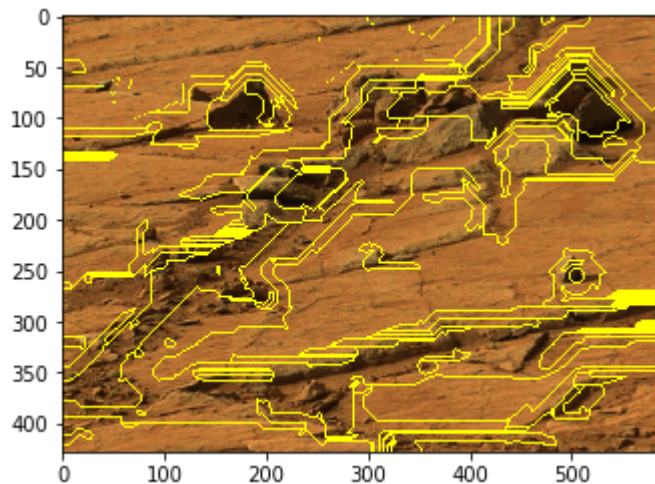
```
Out[12]: (428, 589, 3)
```

```
In [13]: imgplot = plt.imshow(p2)
```



```
In [14]: segments = felzenszwalb(p2, scale=20.0, sigma=10.95, min_size=2)
```

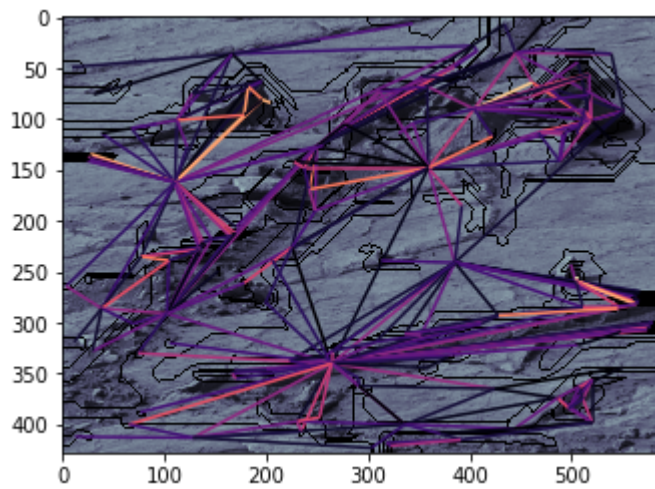
```
In [15]: imgplot = plt.imshow(mark_boundaries(p2, segments))
```



```
In [16]: g = graph.rag_mean_color(p2, segments)
labels2 = graph.merge_hierarchical(segments, g, thresh=0.095, rag_copy=True,
                                  in_place_merge=True,
                                  merge_func=merge_mean_color,
                                  weight_func=_weight_mean_color)
```

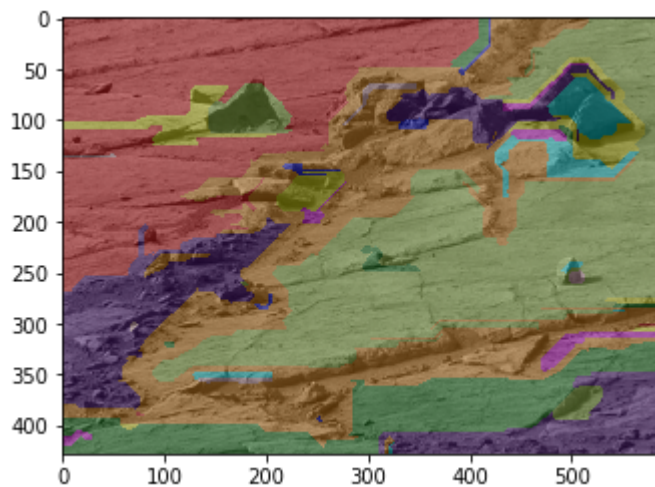
```
In [17]: graph.show_rag(segments, g, p2)
```

```
Out[17]: <matplotlib.collections.LineCollection at 0x21bbe99bdd8>
```



```
In [18]: plt.figure()  
out = color.label2rgb(labels2, p2)  
plt.imshow(out)
```

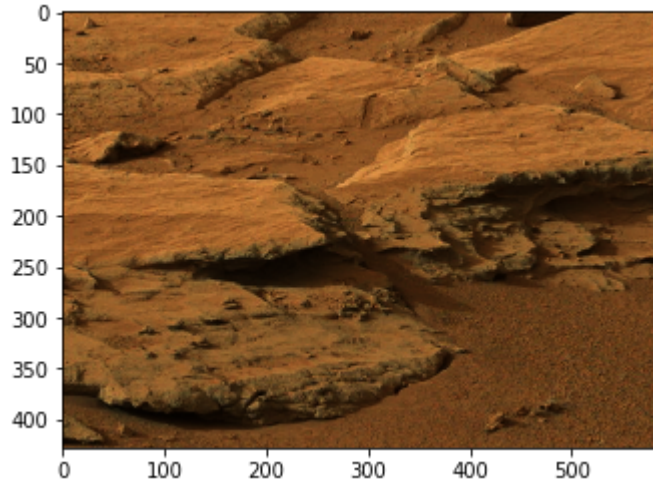
```
Out[18]: <matplotlib.image.AxesImage at 0x21bbc6c60f0>
```




```
In [19]: p3 = np.load('0172ML0009240340104913E01_DRLX.npy', allow_pickle=True)
p3 = np.delete(p3, 0, 0)
p3.shape
```

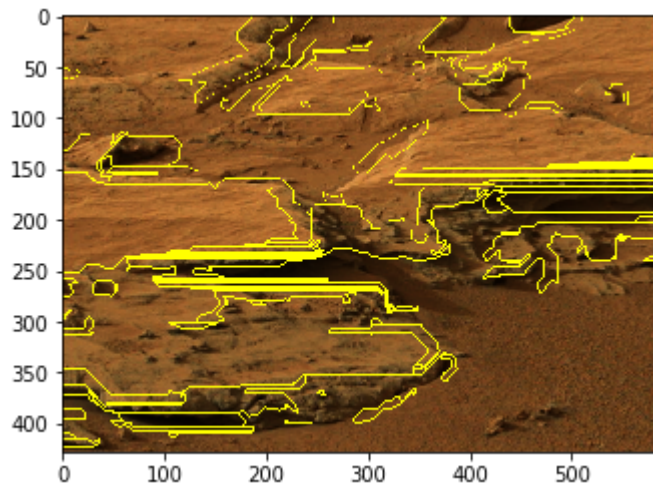
Out[19]: (428, 589, 3)

```
In [20]: imgplot = plt.imshow(p3)
```



```
In [21]: segments = felzenszwalb(p3, scale=50.0, sigma=8, min_size=20)
```

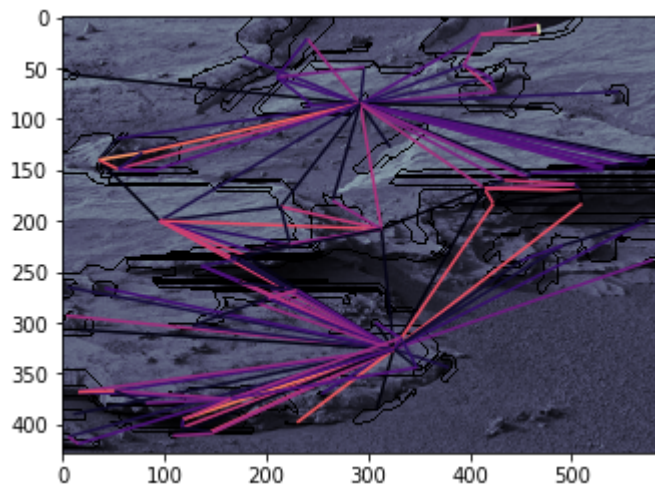
```
In [22]: imgplot = plt.imshow(mark_boundaries(p3, segments))
```



```
In [23]: g = graph.rag_mean_color(p3, segments)
labels2 = graph.merge_hierarchical(segments, g, thresh=0.055, rag_copy=True,
                                  in_place_merge=True,
                                  merge_func=merge_mean_color,
                                  weight_func=_weight_mean_color)
```

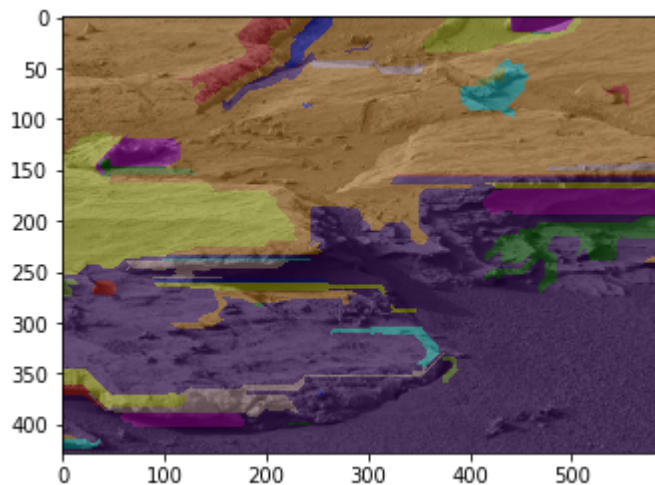
```
In [24]: graph.show_rag(segments, g, p3)
```

```
Out[24]: <matplotlib.collections.LineCollection at 0x21bbe94fa90>
```



```
In [25]: plt.figure()
out = color.label2rgb(labels2, p3)
plt.imshow(out)
```

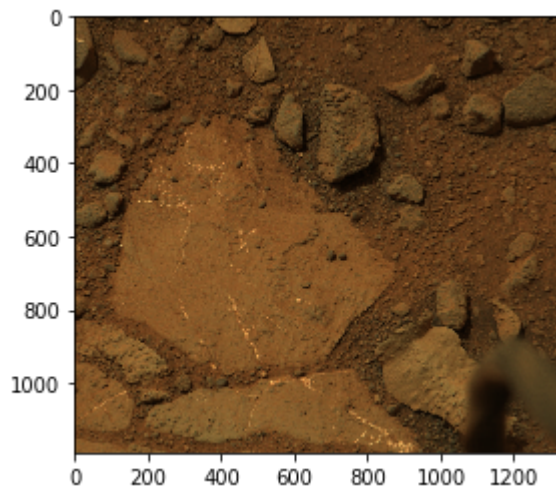
```
Out[25]: <matplotlib.image.AxesImage at 0x21bbc843fd0>
```



```
In [26]: p4 = np.load('0270MR0011860360203259E01_DRLX.npy', allow_pickle=True)
p4 = np.delete(p4, 0, 0)
p4.shape
```

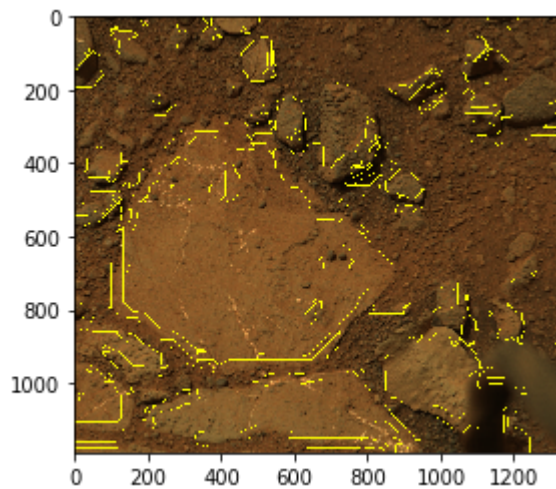
```
Out[26]: (1191, 1335, 3)
```

```
In [27]: imgplot = plt.imshow(p4)
```



```
In [28]: segments = felzenszwalb(p4, scale=20.75, sigma=18.95, min_size=3)
```

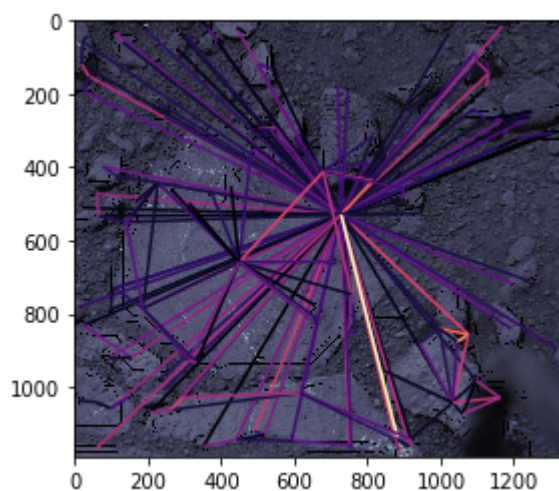
```
In [29]: imgplot = plt.imshow(mark_boundaries(p4, segments))
```



```
In [30]: g = graph.rag_mean_color(p4, segments)
labels2 = graph.merge_hierarchical(segments, g, thresh=0.095, rag_copy=True,
                                   in_place_merge=True,
                                   merge_func=merge_mean_color,
                                   weight_func=_weight_mean_color)
```

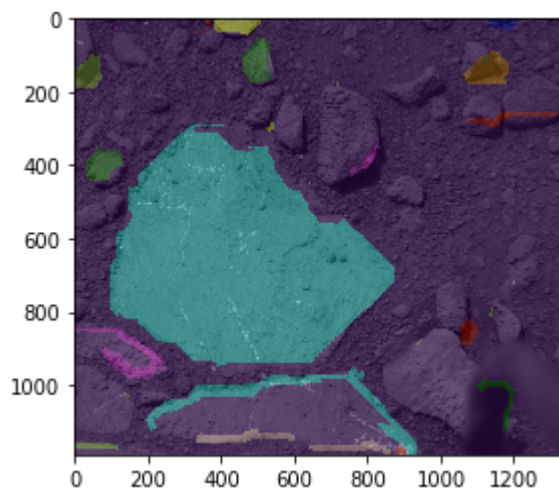
```
In [31]: graph.show_rag(segments, g, p4)
```

```
Out[31]: <matplotlib.collections.LineCollection at 0x21bbe9b4ba8>
```



```
In [32]: plt.figure()  
out = color.label2rgb(labels2, p4)  
plt.imshow(out)
```

```
Out[32]: <matplotlib.image.AxesImage at 0x21bbea19780>
```



```
In [ ]:
```