

## wk12

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poster stuff -- ACO vs PTO but also PTO w/ vs w/o fringing  
weather station might have auroral emissions  
header info has seeing, atmospheric conditions linked to weather

manually sorting flats

20240115

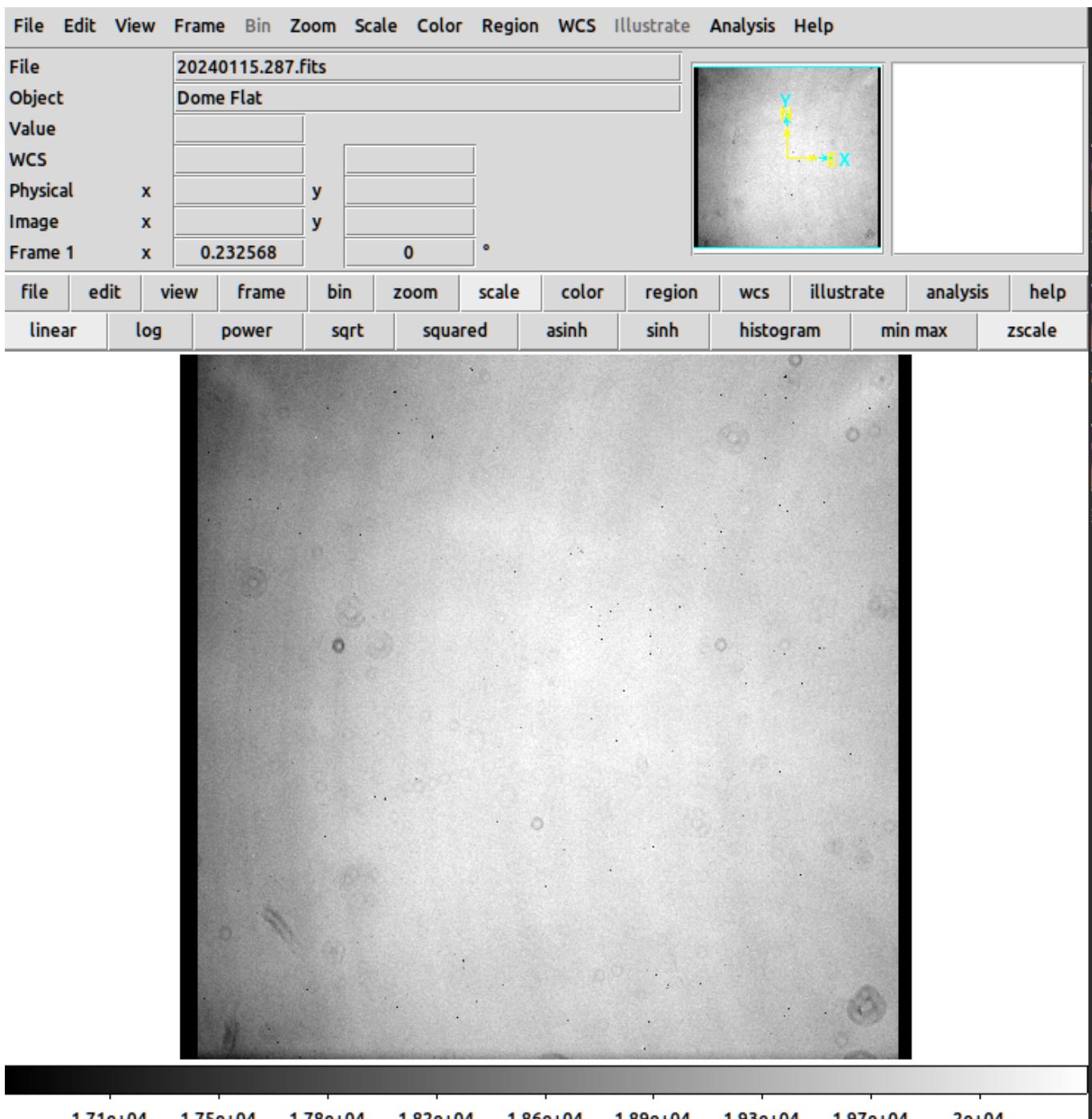
- 001-020
- 274-293

observing log DOES NOT SPECIFY dome or sky for 001-020 but DOES for the rest

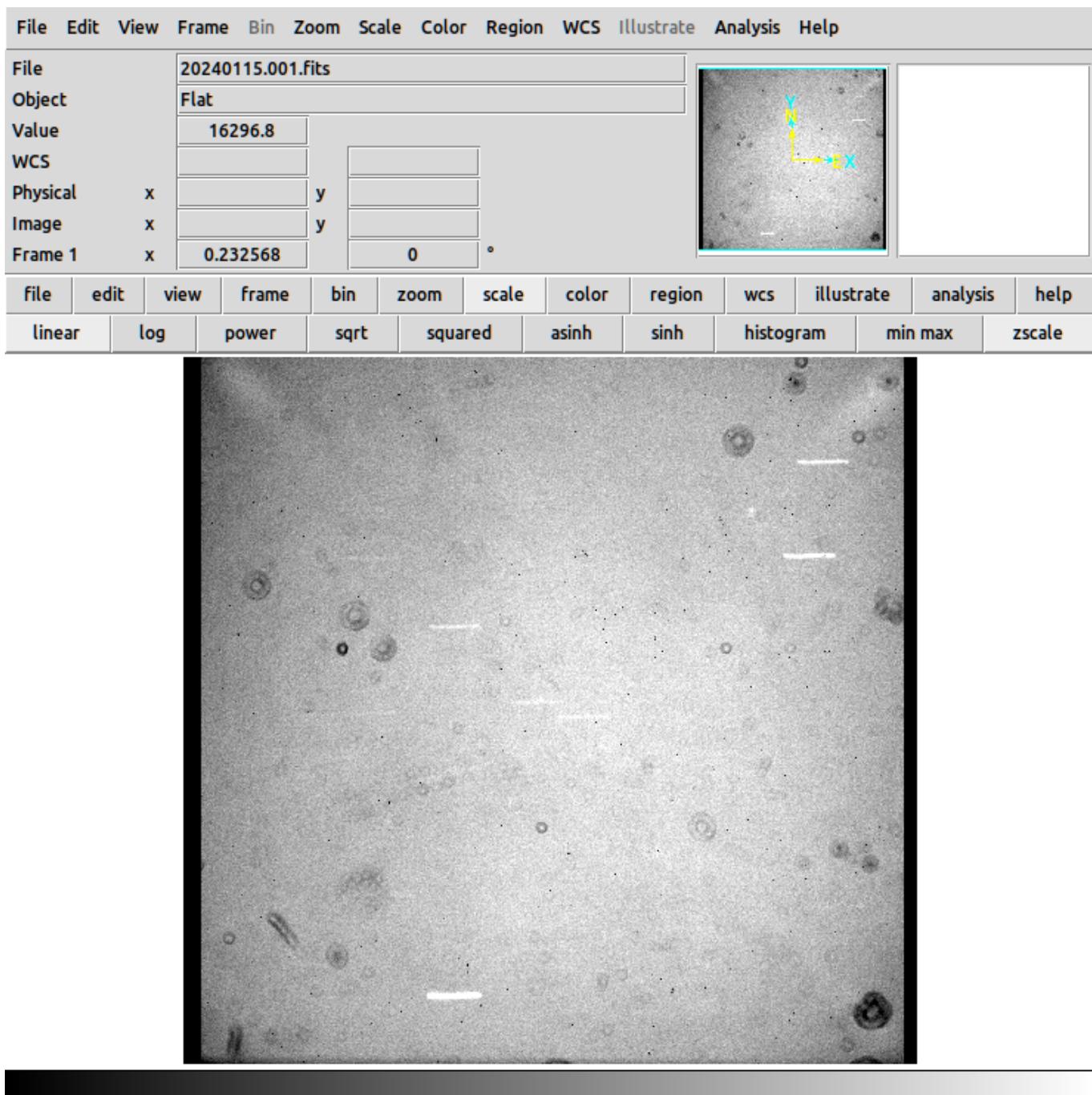
UT	2024 Jan 15										
001	005	01:04	Flat frames	—	—	1.06	V	7	3772		
006	010	01:05				1.06	V	7			
011	015	01:07				1.06	I	15			
016	020	01:11				1.06	I	30			

274	278	13:25	Dome Flat (V band)	N/A	N/A	N/A	V	15			
279	283	13:29	Dome Flat (I band)	N/A	N/A	N/A	I	2			
284	288	13:32	Dome Flat (I band)	N/A	N/A	N/A	I	2			
289	293	13:34	Dome Flat (V band)	N/A	N/A	N/A	V	15			

guess ill figure it out by inferring from what time it was (the logs are in UTC, MDT is 6 hours behind it so it wouldve been 6pm, astronomical twilight was at ??? on night 2/20240115)



here's a known V band dome flat, can visually compare the unknown flats to tell if sky or dome (probably won't need to look at I band dome flat/the differences between sky and dome flats should be roughly visible to the naked eye independent of filter)



001....definitely the sky. these are probably our desperate attempt at getting twilight sky flats, iirc.

actually this one might be a fucked up test image  
 thats definitely the sky but the flatness is debatable  
 nope not a test image

i do really love looking at these fucked up images  
 because ive put a lot of hours and a lot of struggling into understanding them and i can look at  
 those pixels and interpret them  
 pixelmancer...

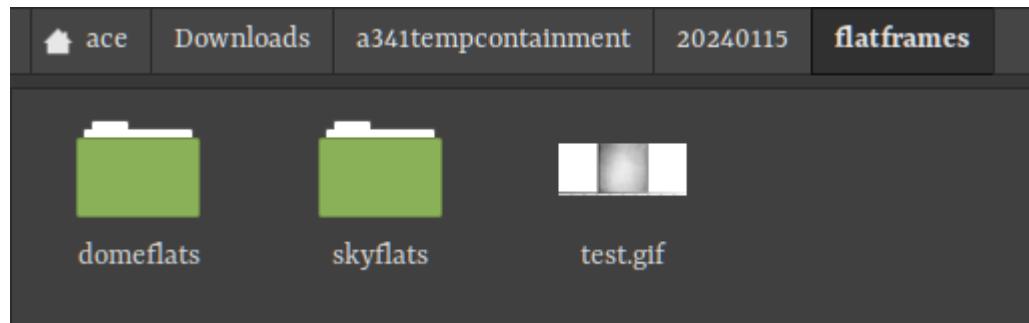
check images 001, 006, 011, 016 (beginning of each sequence)

001 - sky  
006 - sky  
011 - dome ??  
016 - dome ??

manually sorted

001-010 sky  
011-016 and 274-293 dome

additional file 'test.fits' was a dome flat (i looked at it in ds9) so i threw it in the dome flats folder as well



looking good! (test.gif is from me playing around with ds9)

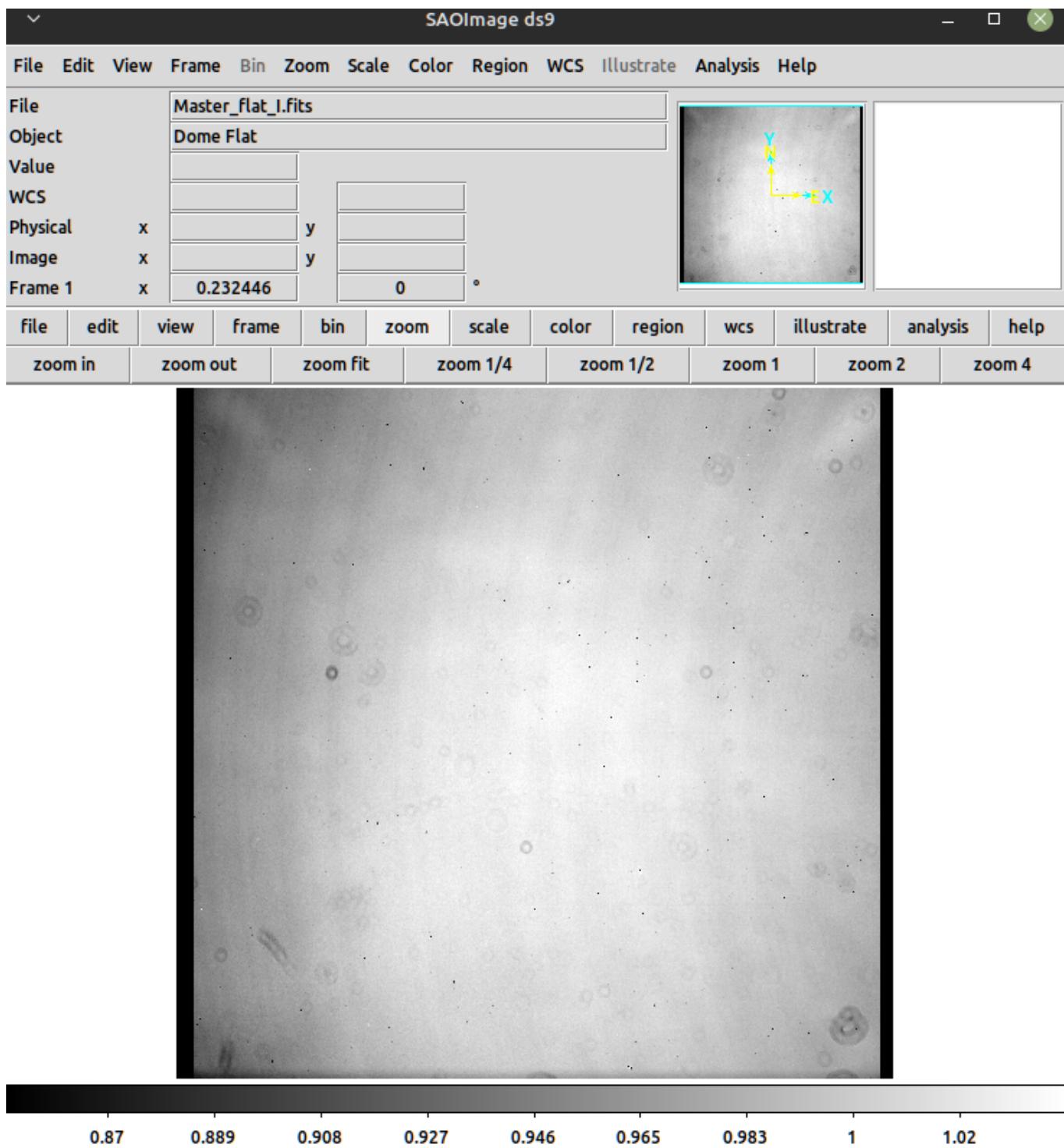
```
1 'flatframes/domeflats/I' + '/*.fits')
2 I, pathdata + 'flatframes/domeflats/I/Master_flat_I.fits', pathdata + 'biasframes/Master_bias.fits')

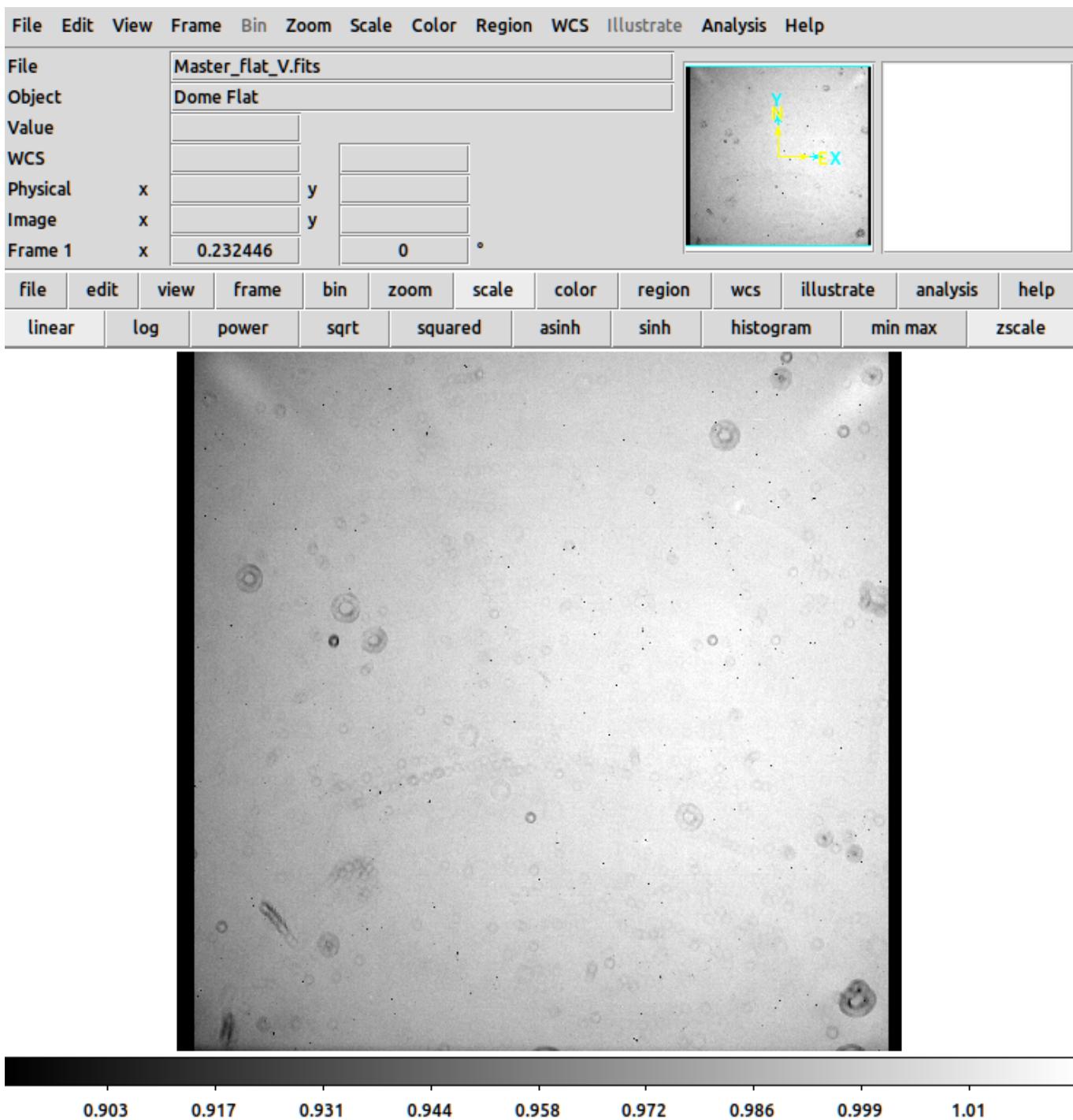
[12] ✓ 7.4s Python
```

```
▷ 
1 'flatframes/domeflats/V' + '/*.fits')
2 _V, pathdata + 'flatframes/domeflats/V/Master_flat_V.fits', pathdata + 'biasframes/Master_bias.fits')

[13] ✓ 3.9s Python
```





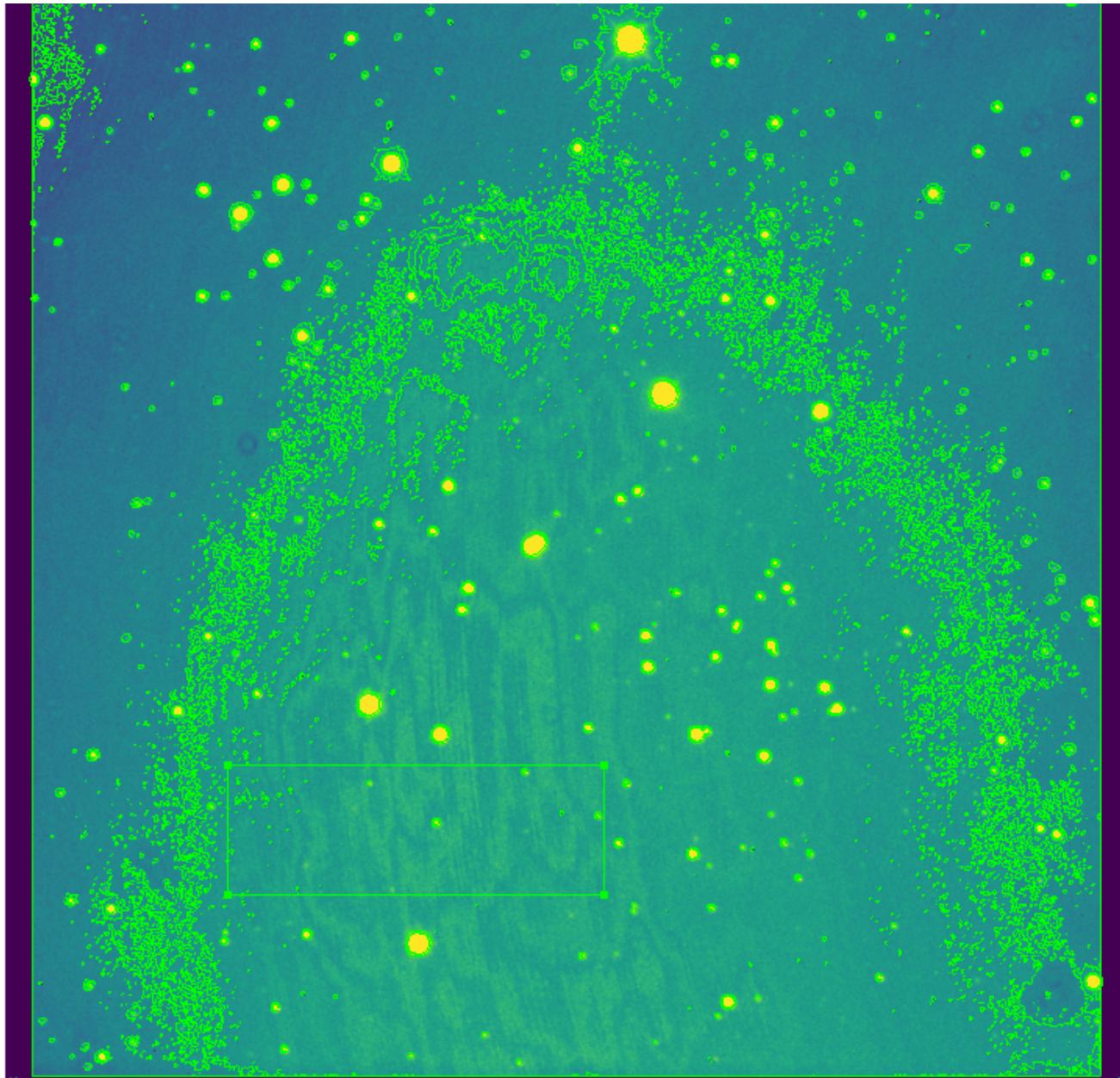
got another band-specific effect here, are(/how are) the rings on the I band one related to fringing?

okay infodump time. the little white marks in the top corners are noise from the amplifiers that read out the data. the concentric circles are probably dust on the telescope lens. the really big concentric circles in the top image are a band-specific effect and im not 100% whats up with that but it's probably fringing related. I WONDER if i could see the difference if i tried this on the 1/19 science images vs the 1/15 ones bc we had worse fringing one night than gthe other

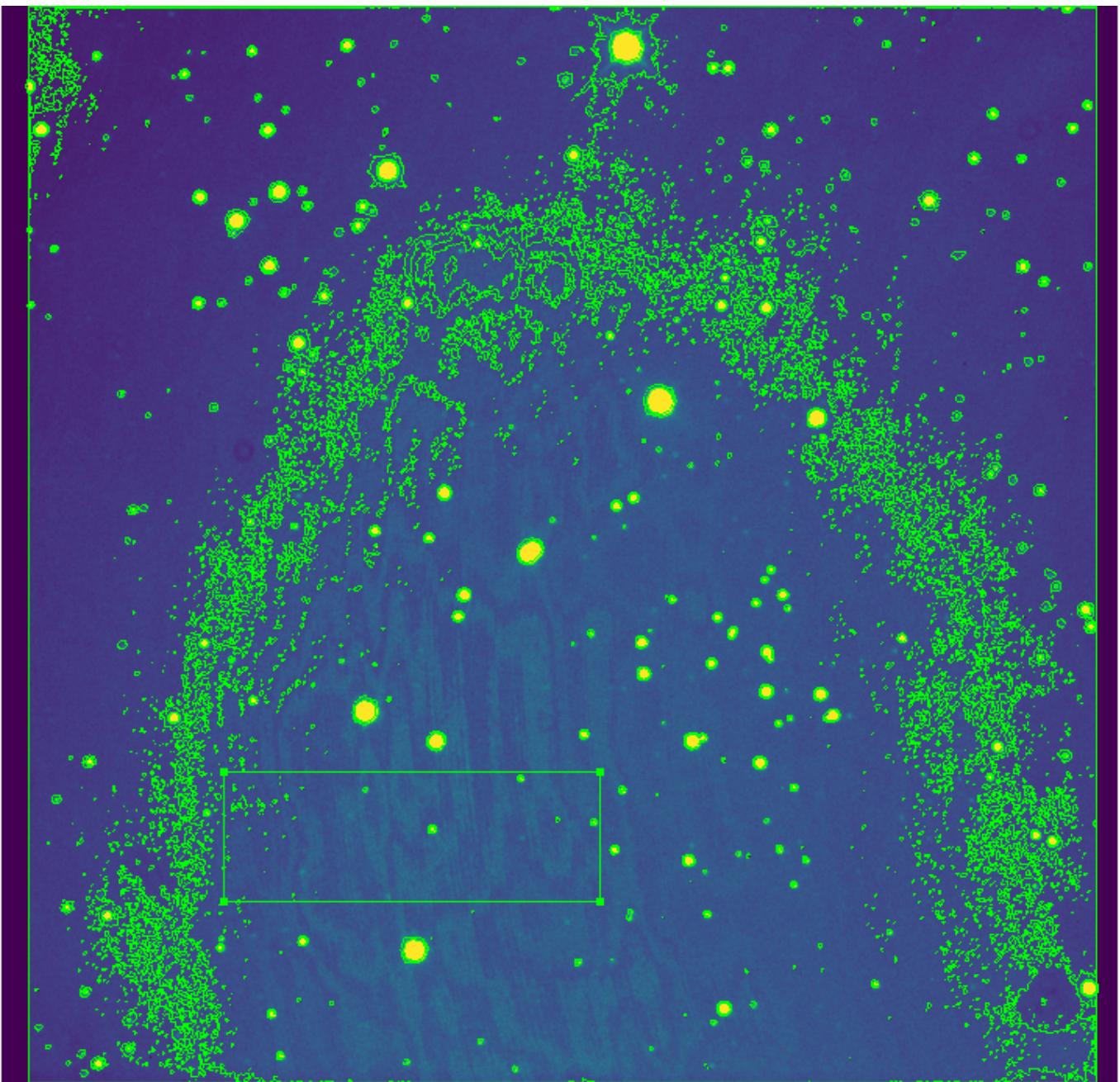
2024-04-28 19:04

ds9 trying to mess around w images

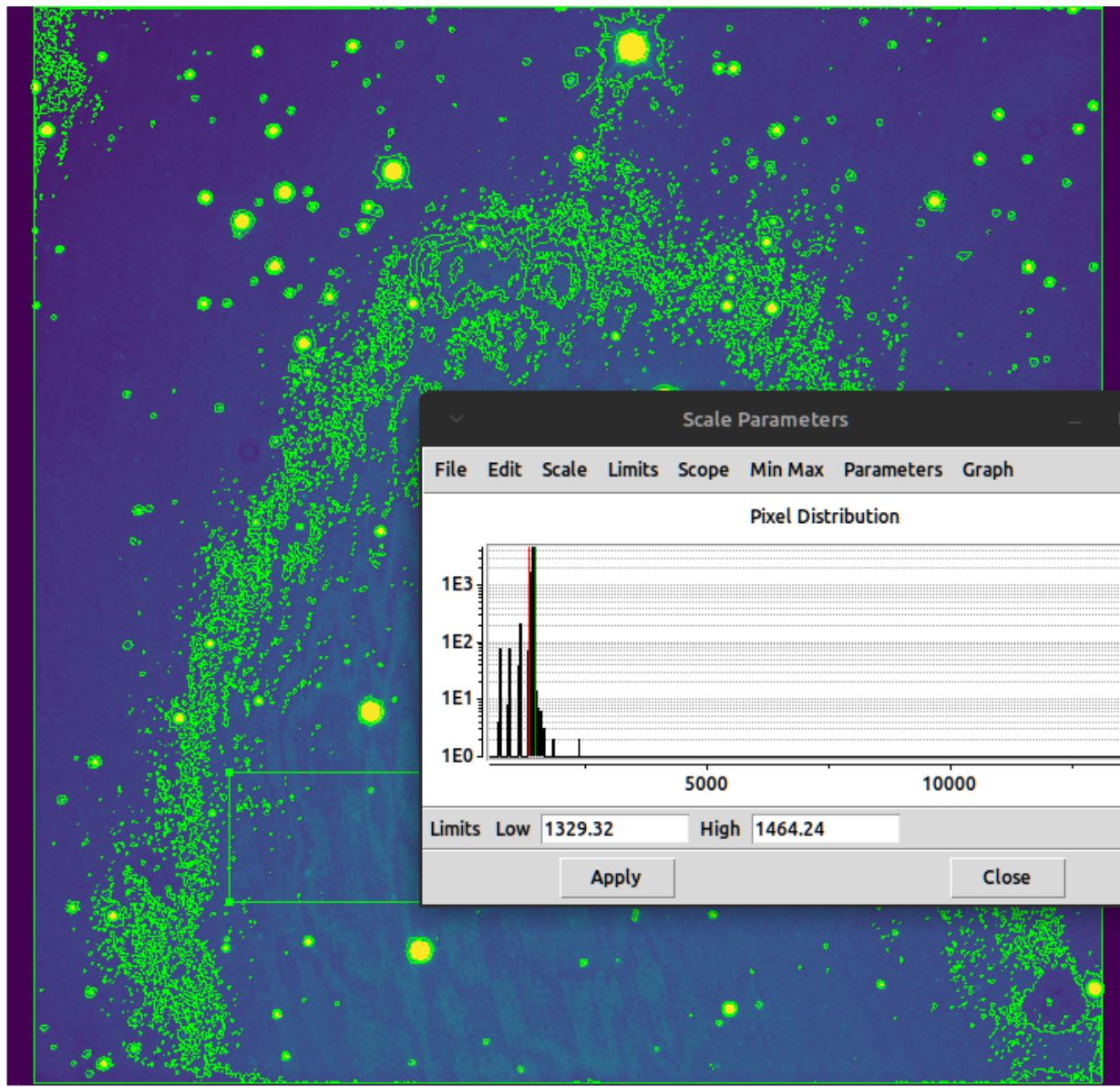
the fringing gets highlighted with histogram equalization scale, but it (mostly) blends in against the bg w/ sinh scale

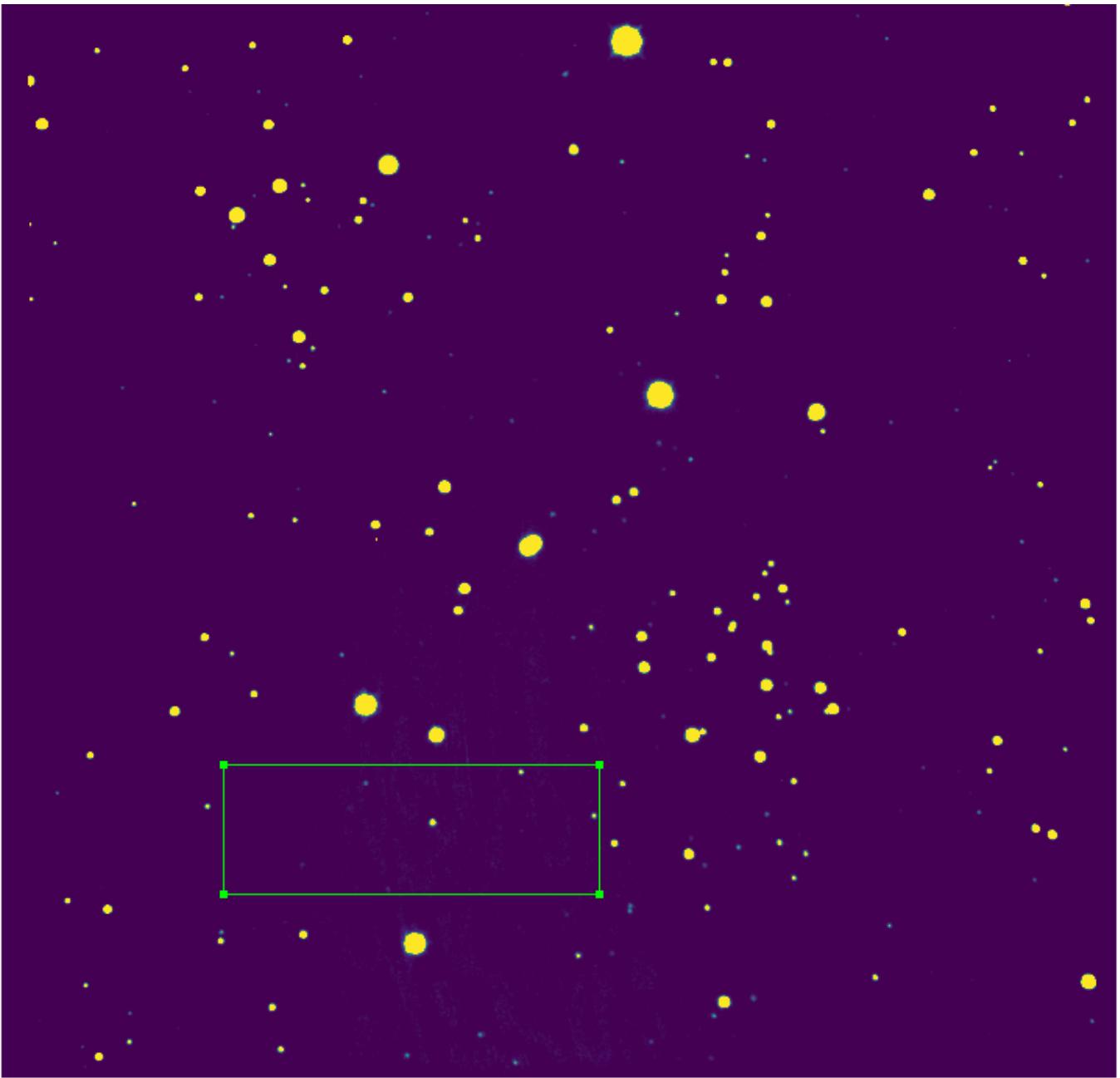


zscale



sinh scale



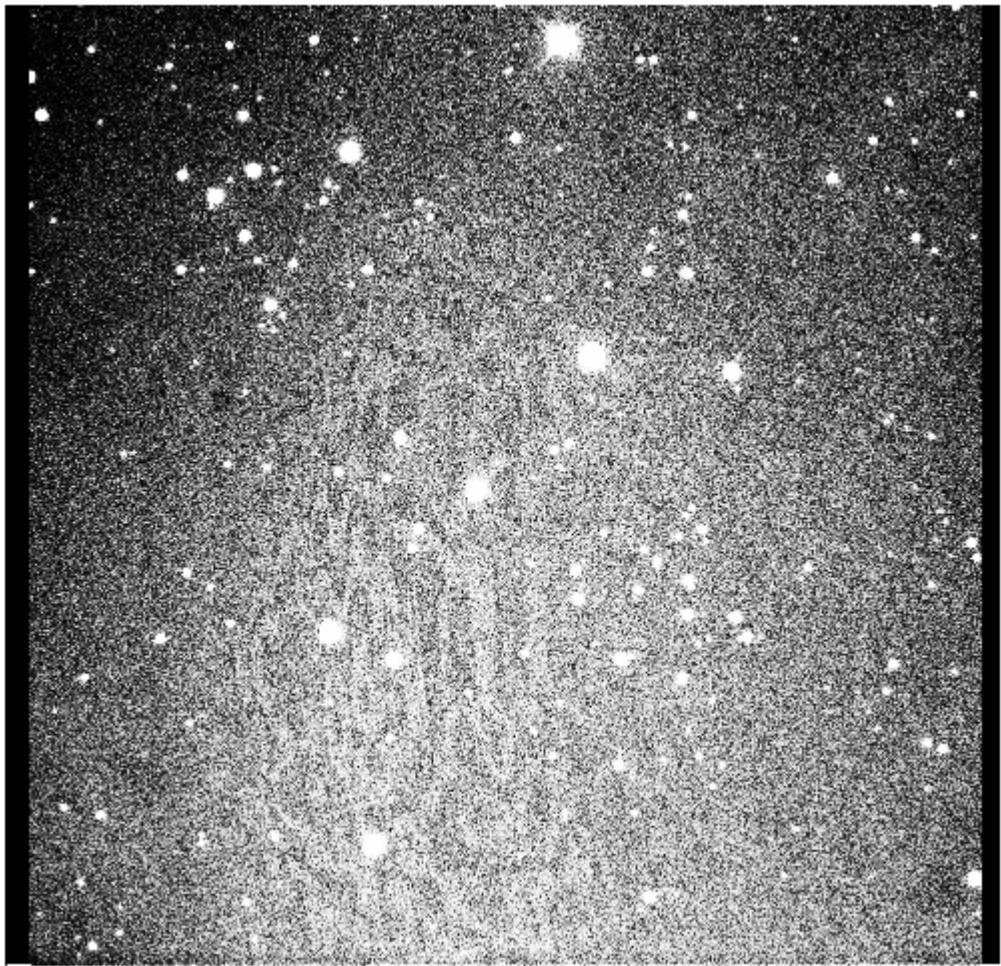


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## post-poster content

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still on same image (021)



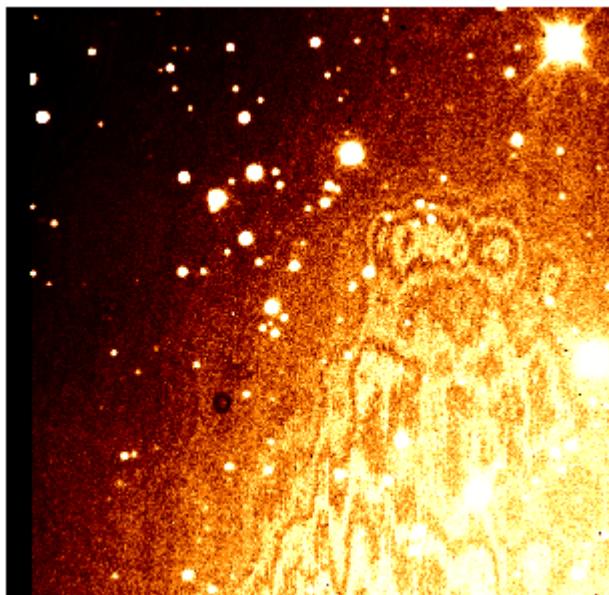
zscale linear- > zscale histogram

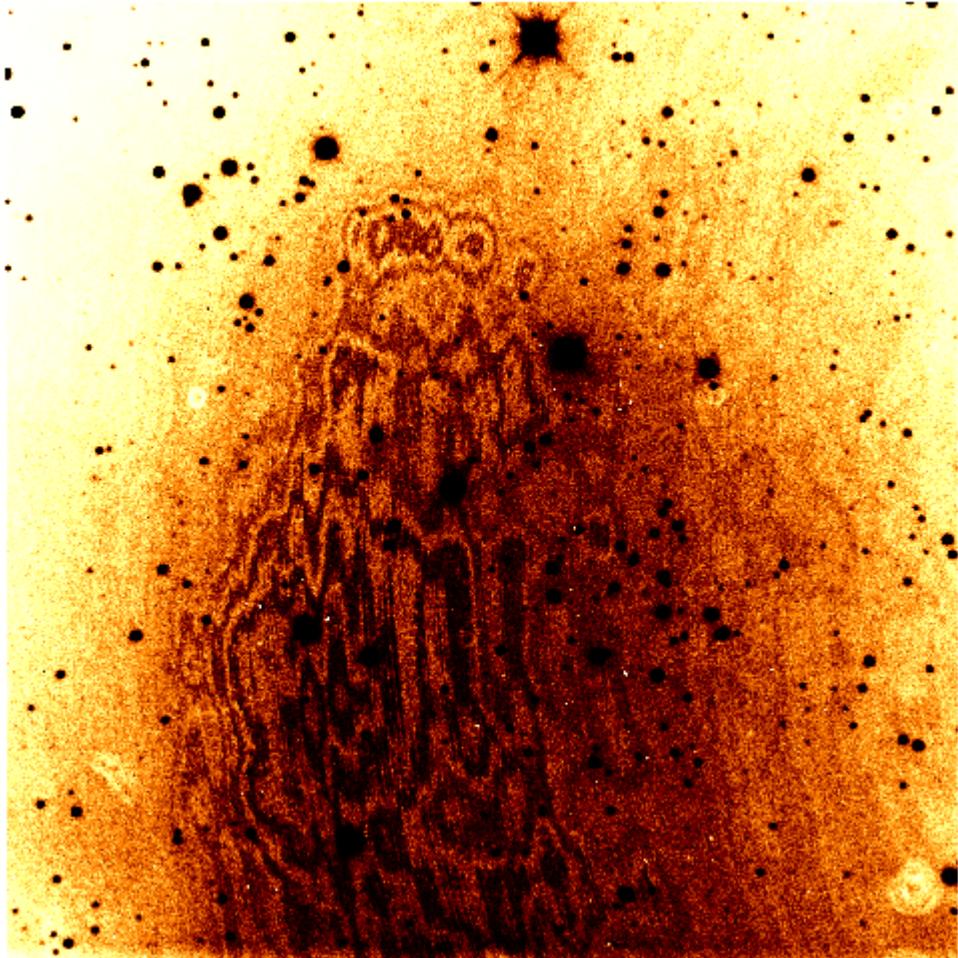
noise minimal by amplifiers, interesting

smoothing out beforehand helps -- i assume this is a Gaussian blur function

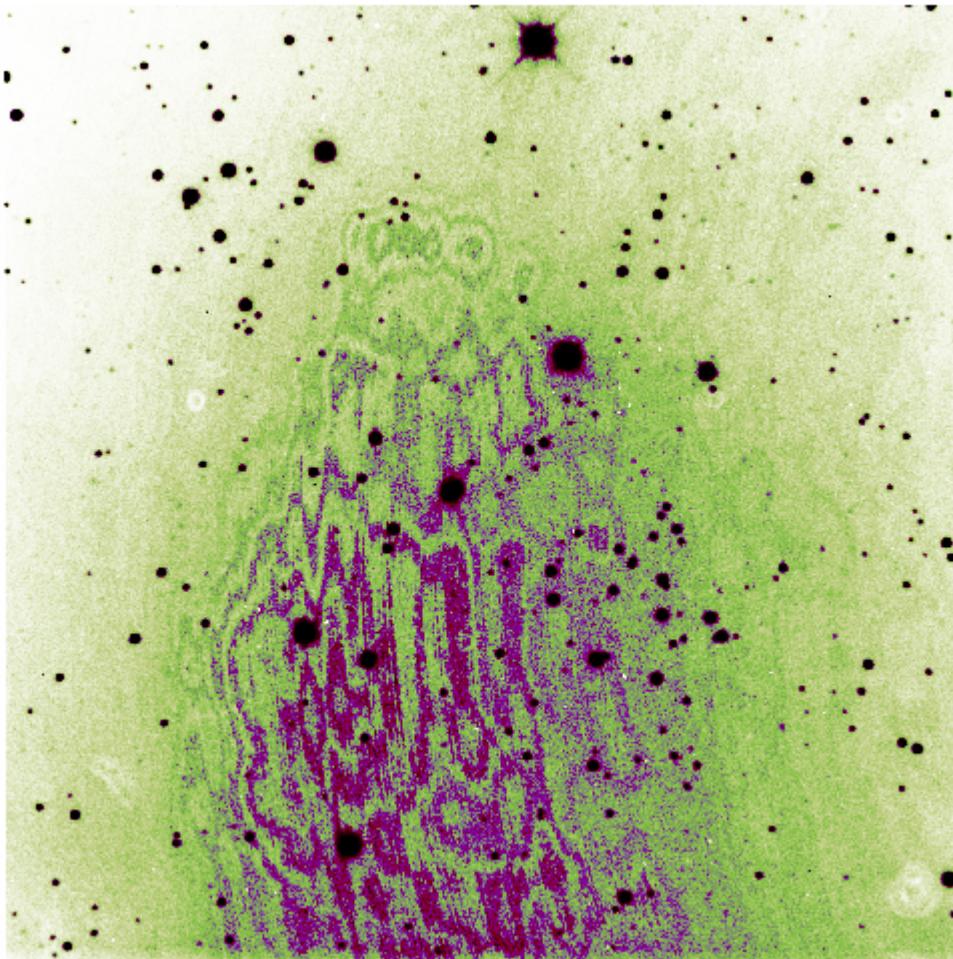


smth in that UVT lecture notes on radio astronomy about *white* noise being a specific kind

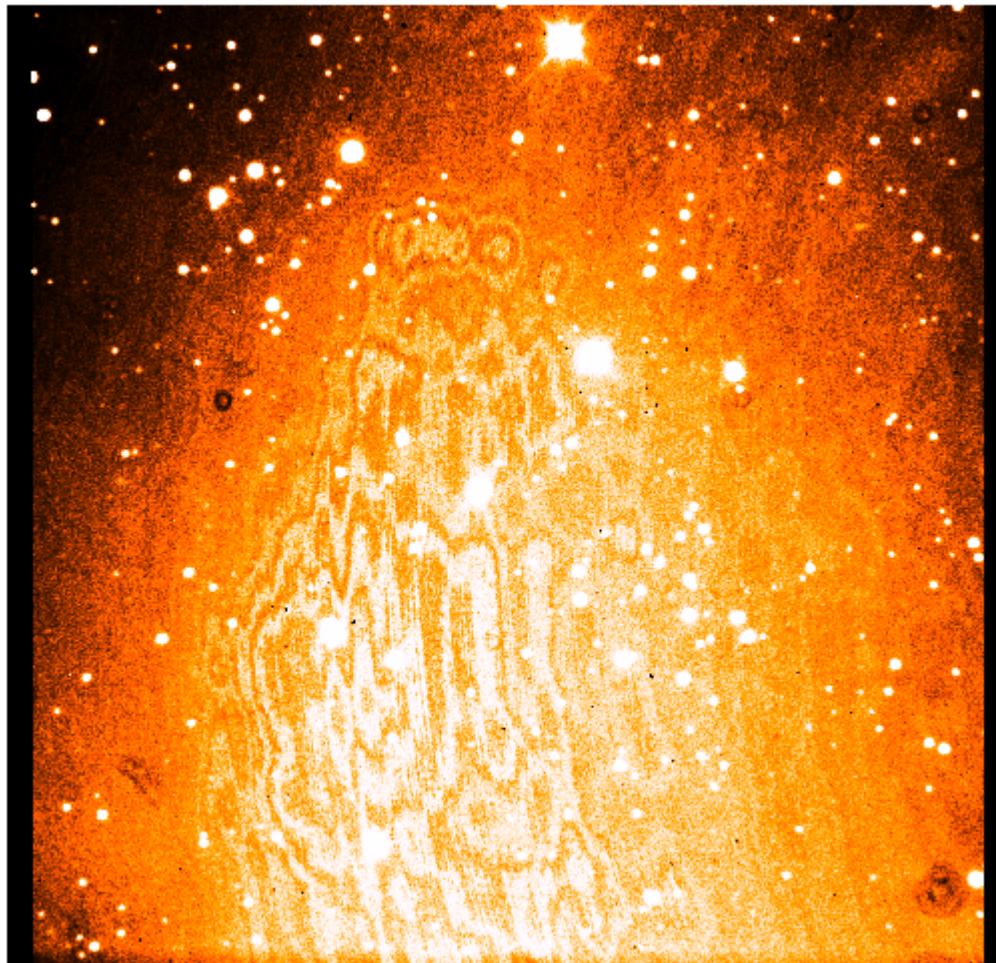


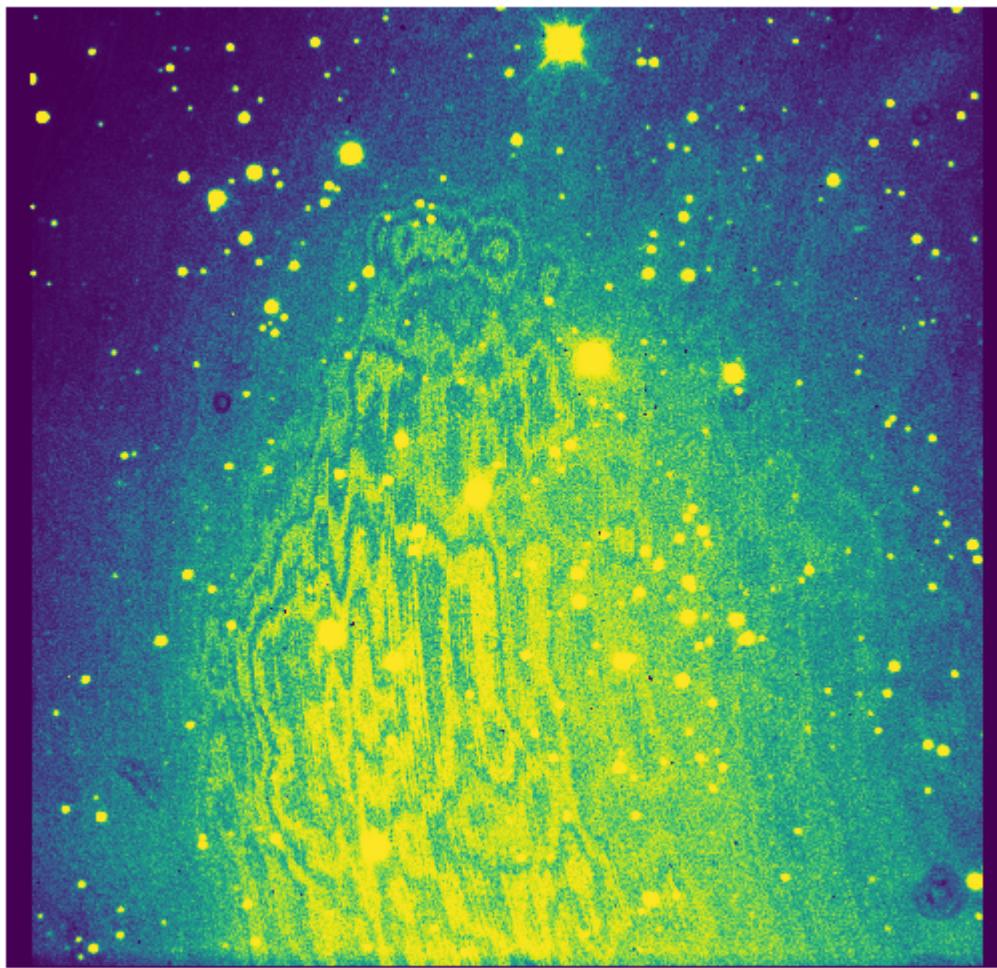


this brings out the overall effect of the noise really well actually, it's interesting that it's spreading from the bottom and avoids the amplifiers altogether

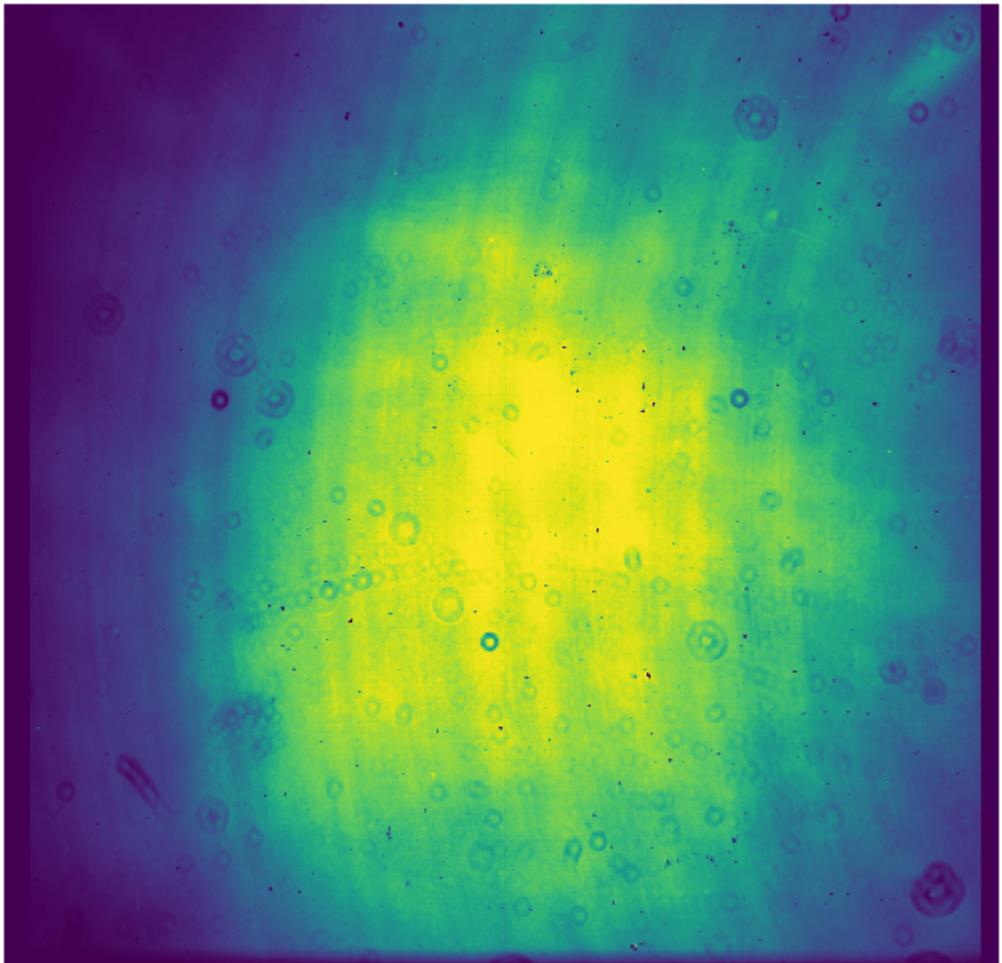


astro colorpalettes i love you

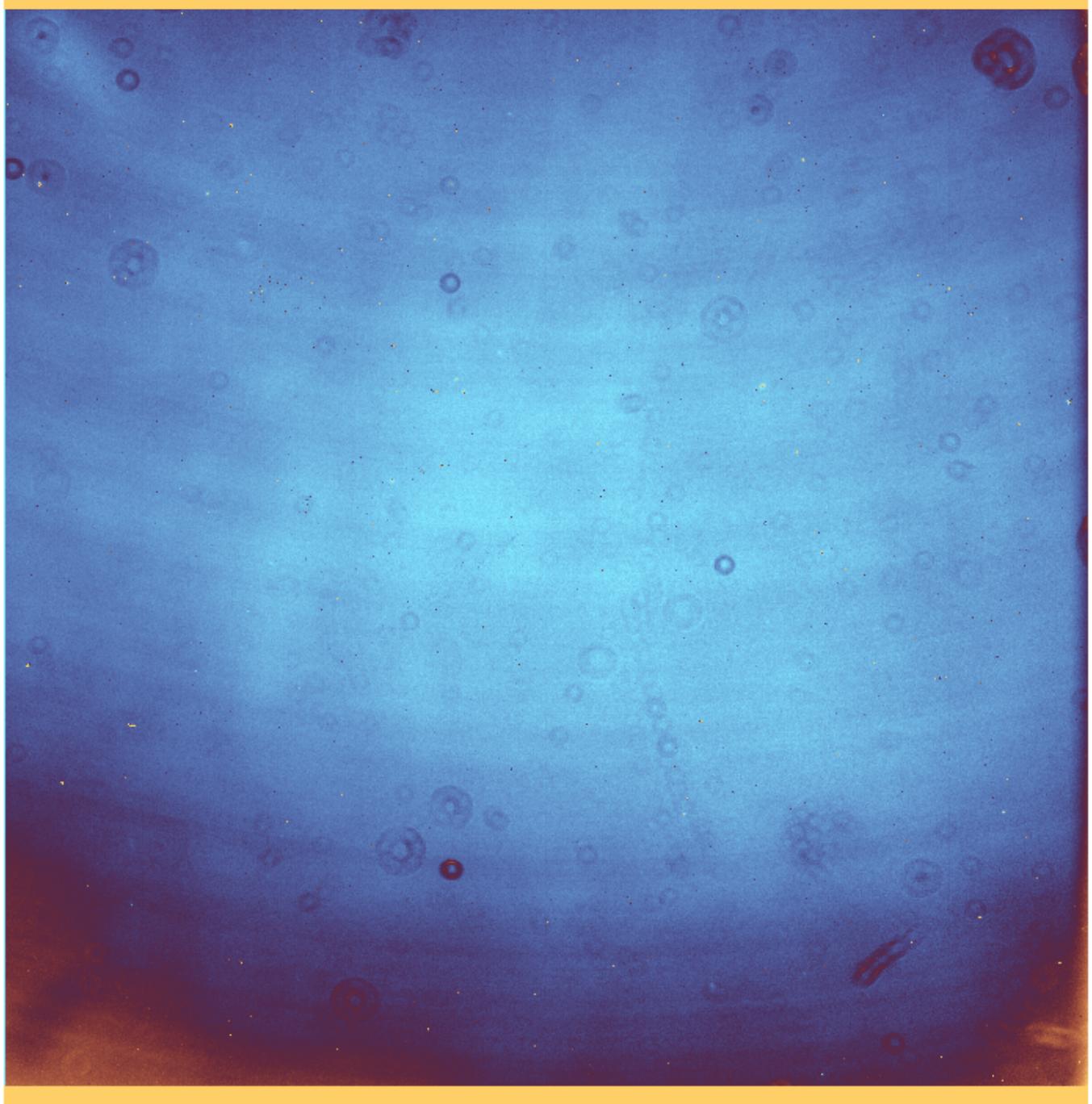




can see concentric rings visible in I-band flat



I flat in viridis



scm\_managua colormap  
+90deg rot