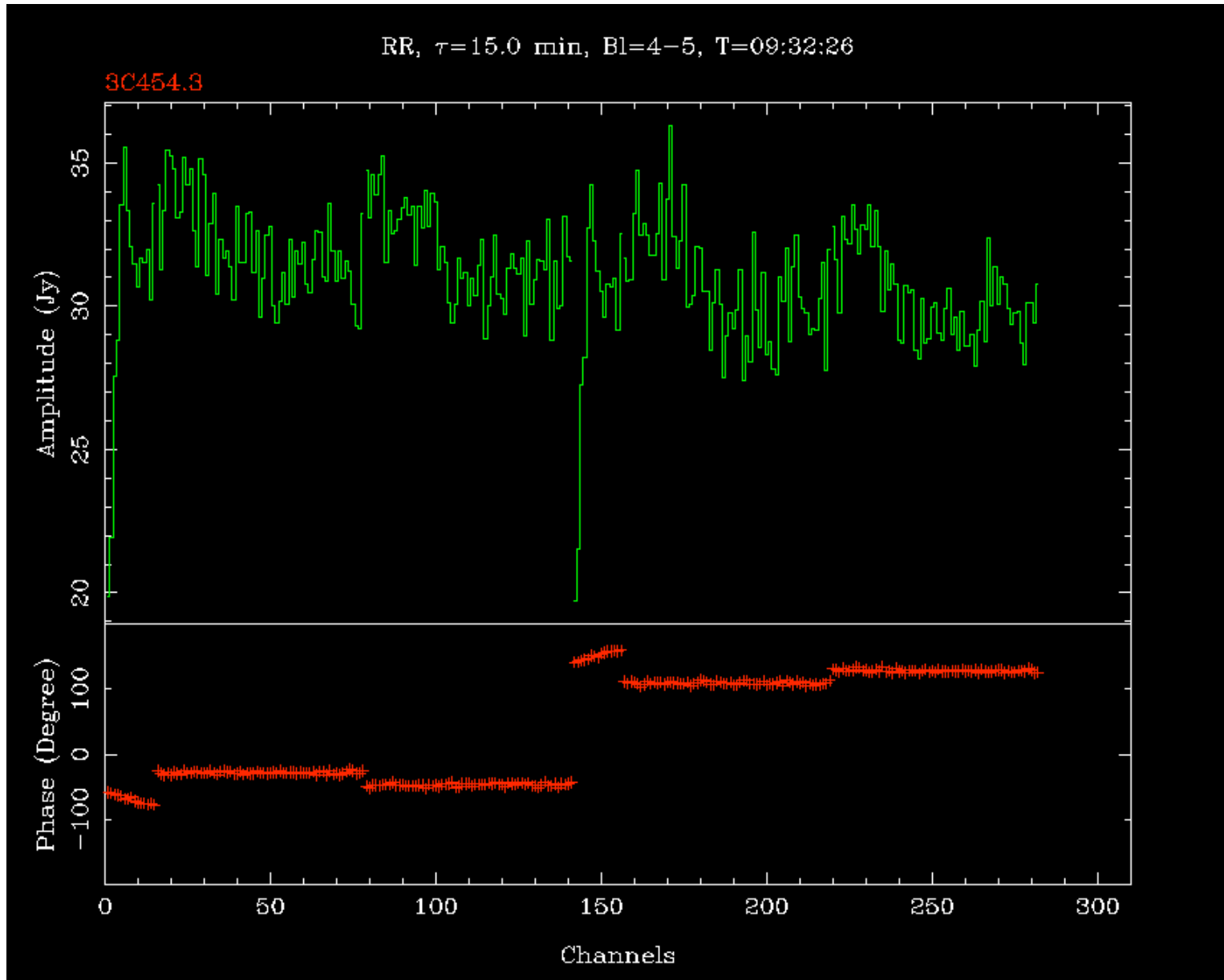


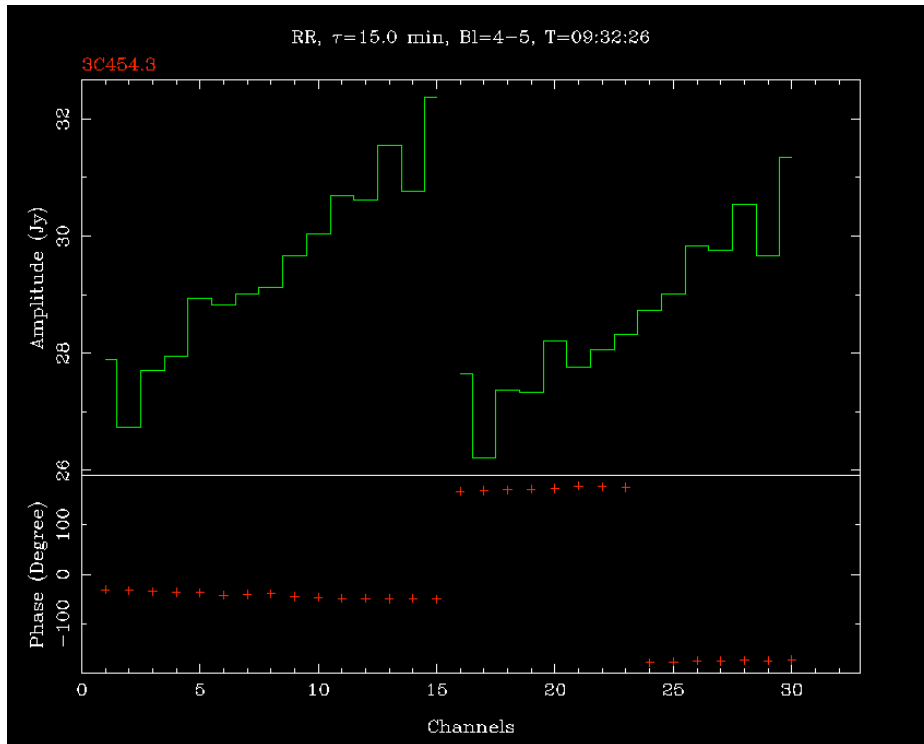
CARMA Passband



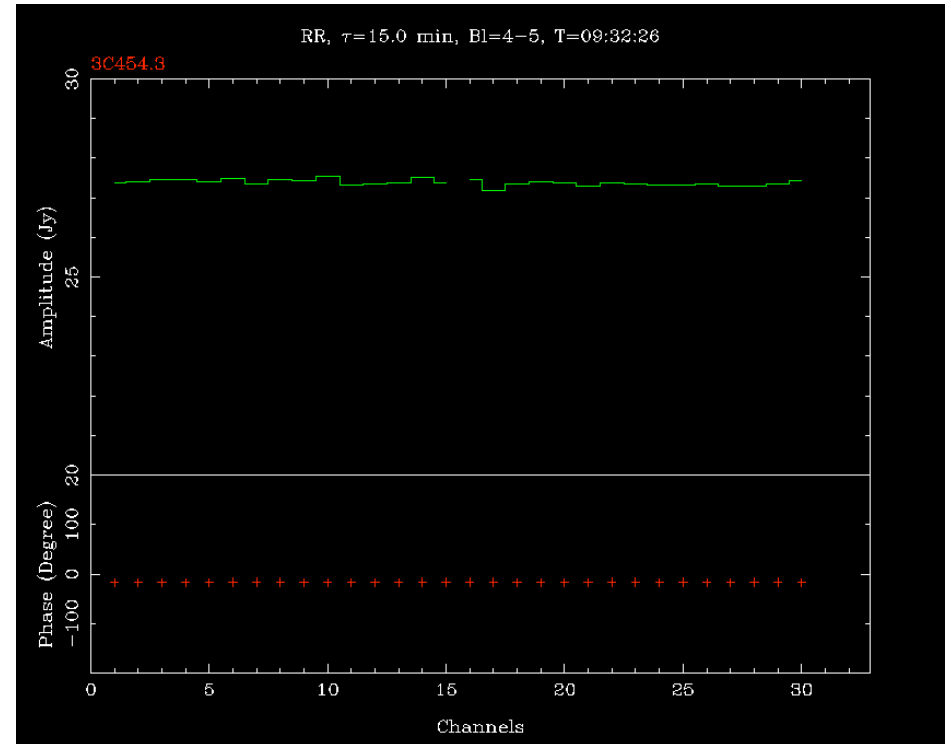
3x500 MHz or 3 x 62 MHz

mfcad vis=vis.mir select="source(3c454.3)" \
interval=1 refant=11

Before



After

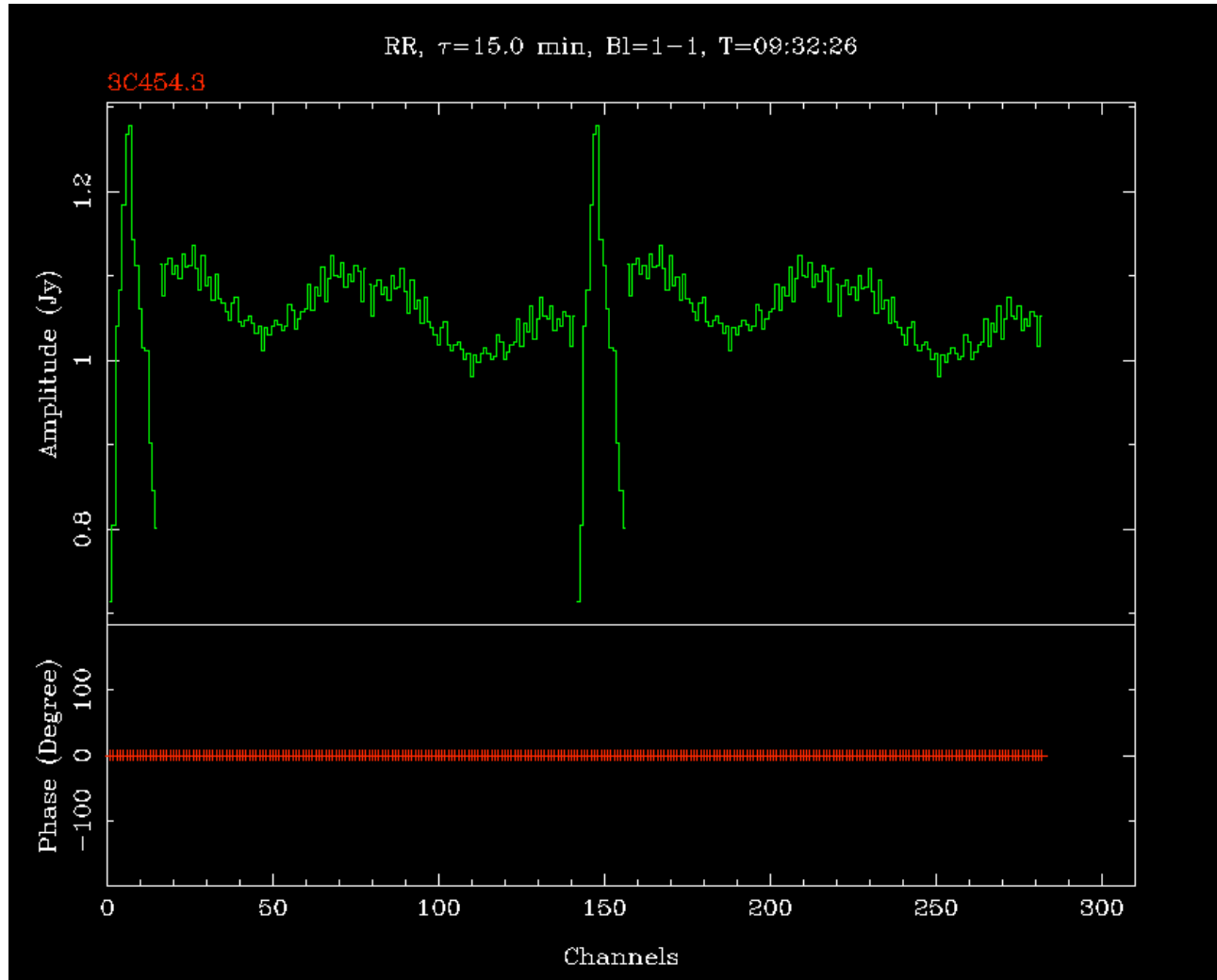


Steps to reduce narrow band data

1. Apply autocorrelations OR noise source
2. Separate 500 MHz and narrow band
3. Bandpass calibrate 500 MHz per channel
4. Bandpass calibrate AVERAGE narrow band
5. Copy gains from 500 MHz to narrow band
6. Derive average gain for narrow bands

Step 1a: Autocorrelations

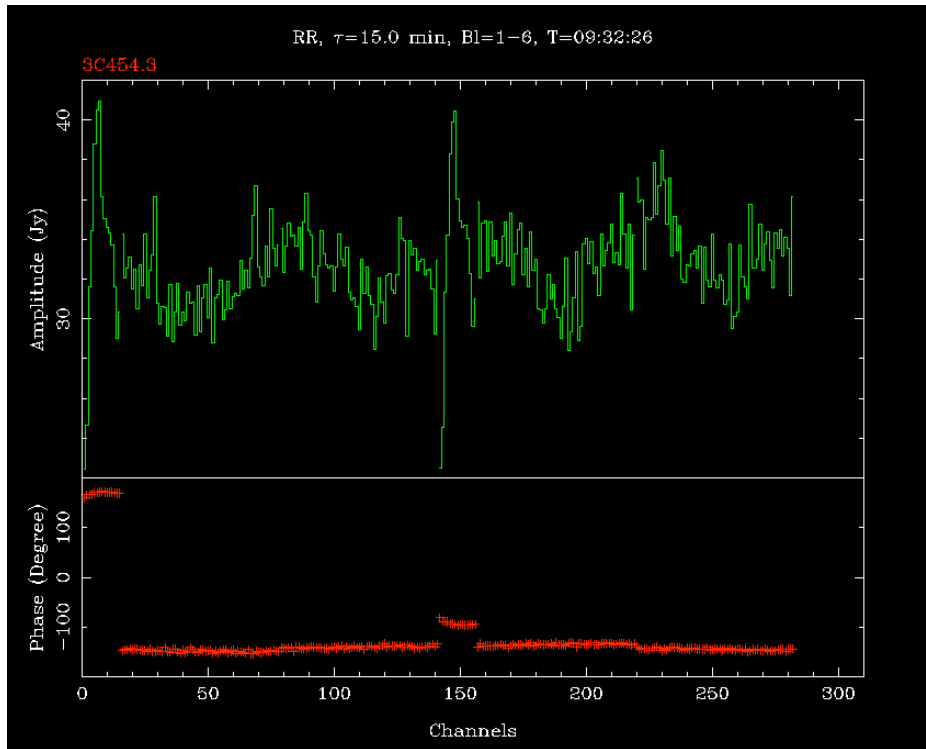
smauvspec vis=vis.mir select="ant(1)(1)" device=/xs



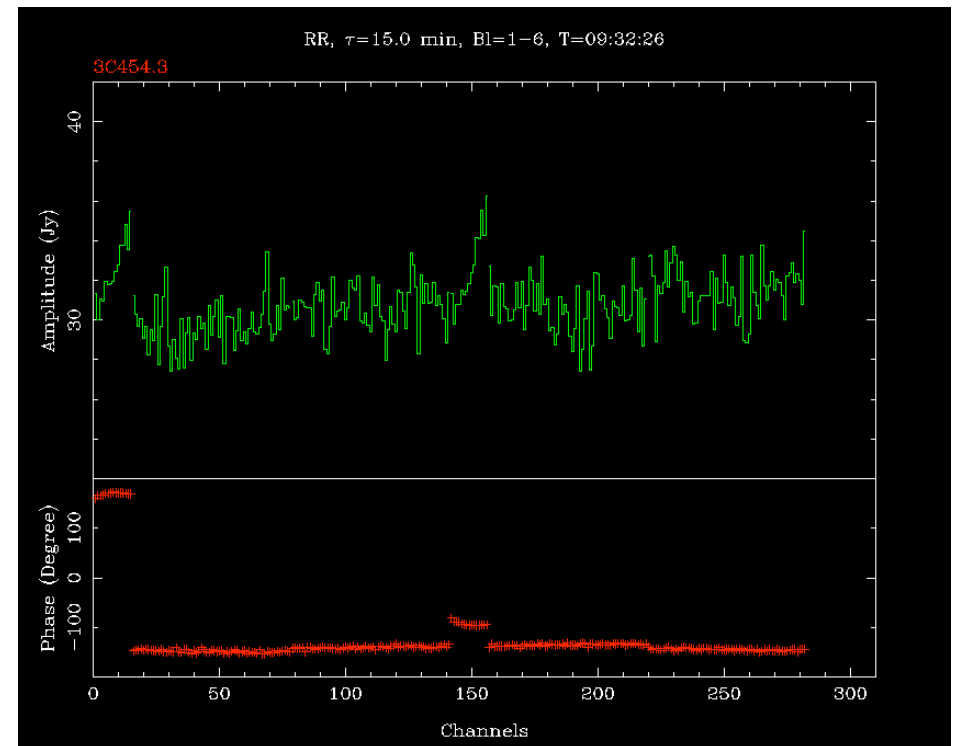
Step 1a: Autocorrelations

uvcal vis=vis.mir out=auto.mir options=fxcal

Before



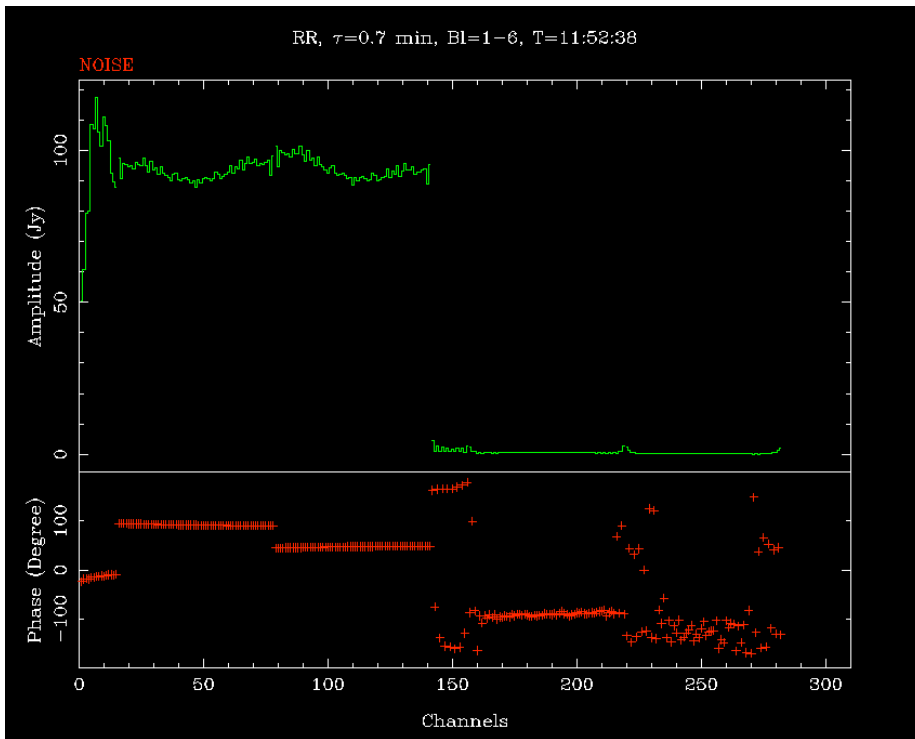
After



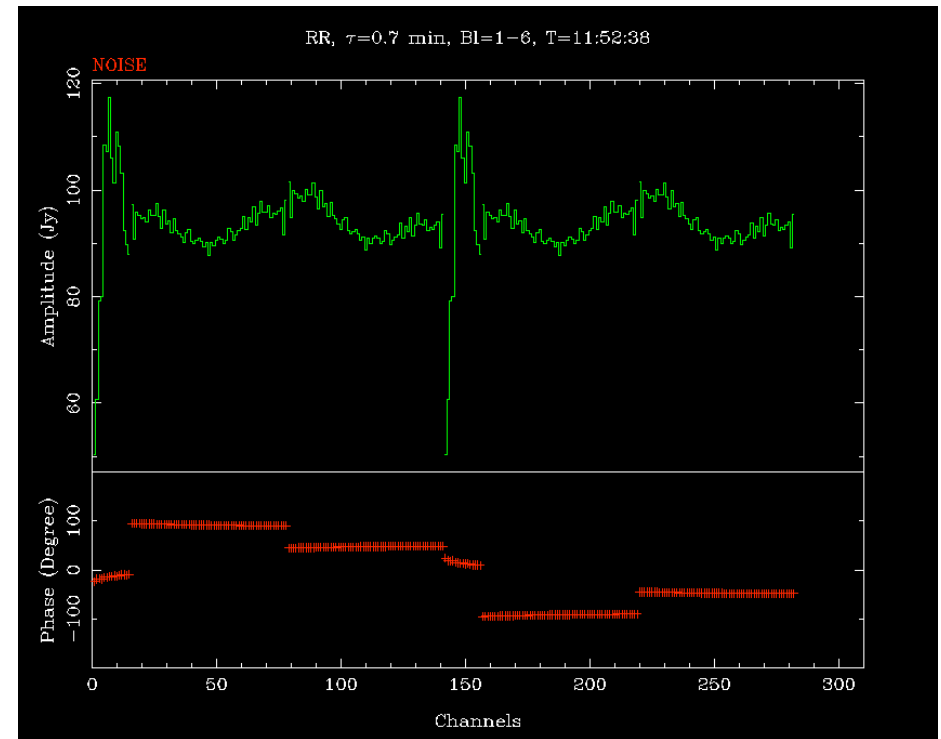
Step 1b: Conjugate noise source

uvcal vis=vis.mir out=noise.mir options=noisecal

Before



After

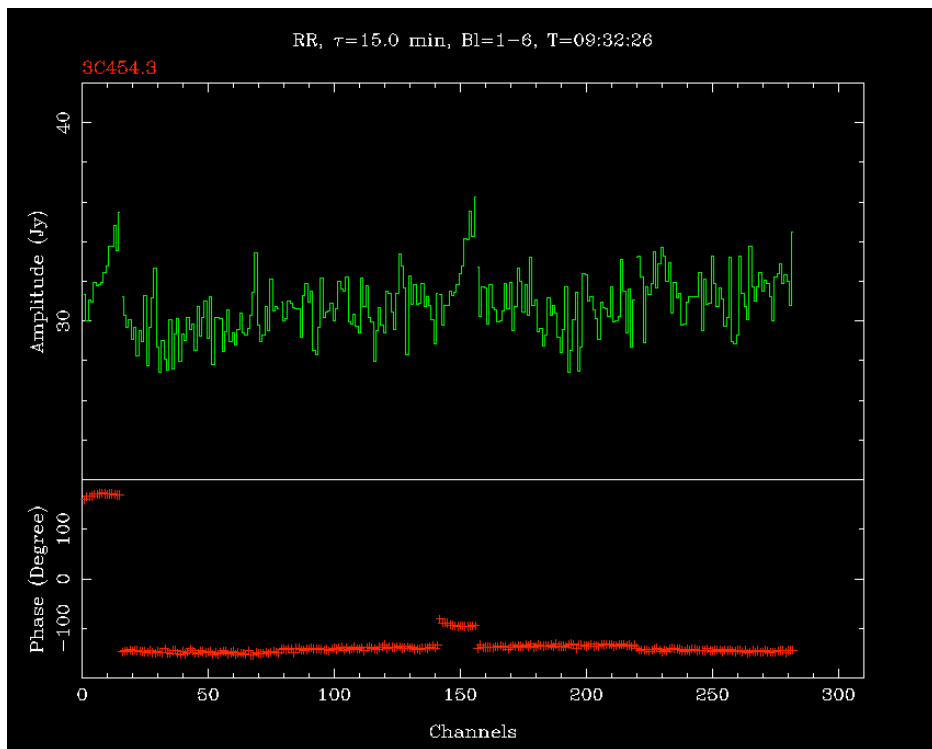


Step 1b: Apply noise source

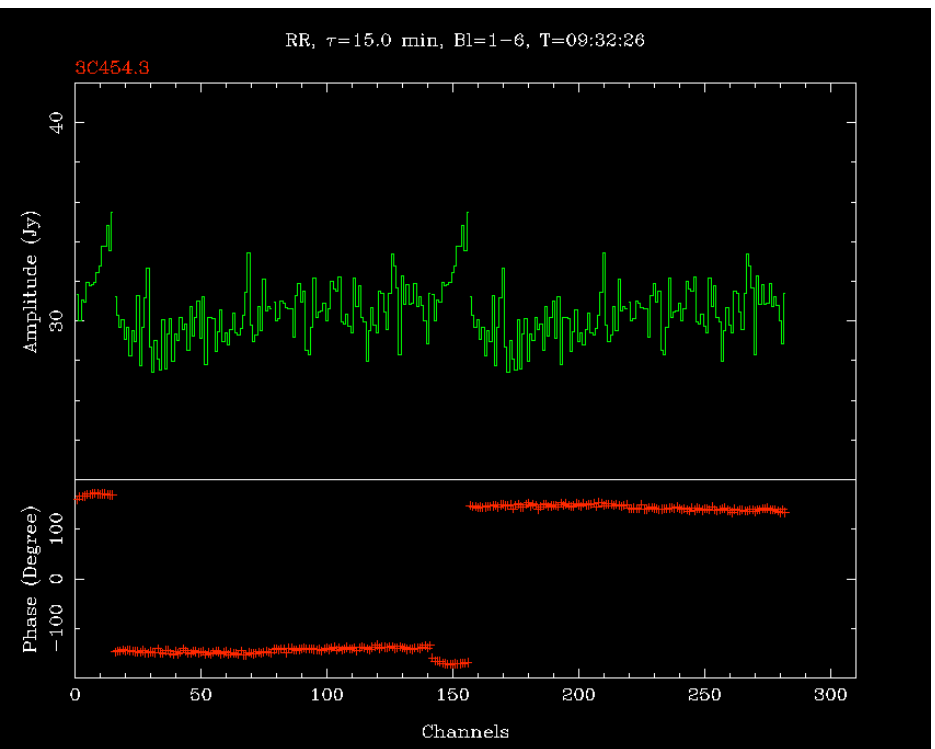
```
mfcfcal vis=noise.mir select="source(noise)" \  
interval=5 refant=11
```

Autocorrelations vs. Noise source

Autocorrelations



Noise Source



Step 2: Separate 500 MHz,narrow bands

```
uvcat vis=auto.mir out=bw500.mir \  
      select="win(1,4)"
```

```
uvcat vis=auto.mir out=bwn.mir \  
      select="win(2,3,5,6)"
```

Step 3: Bandpass 500 MHz

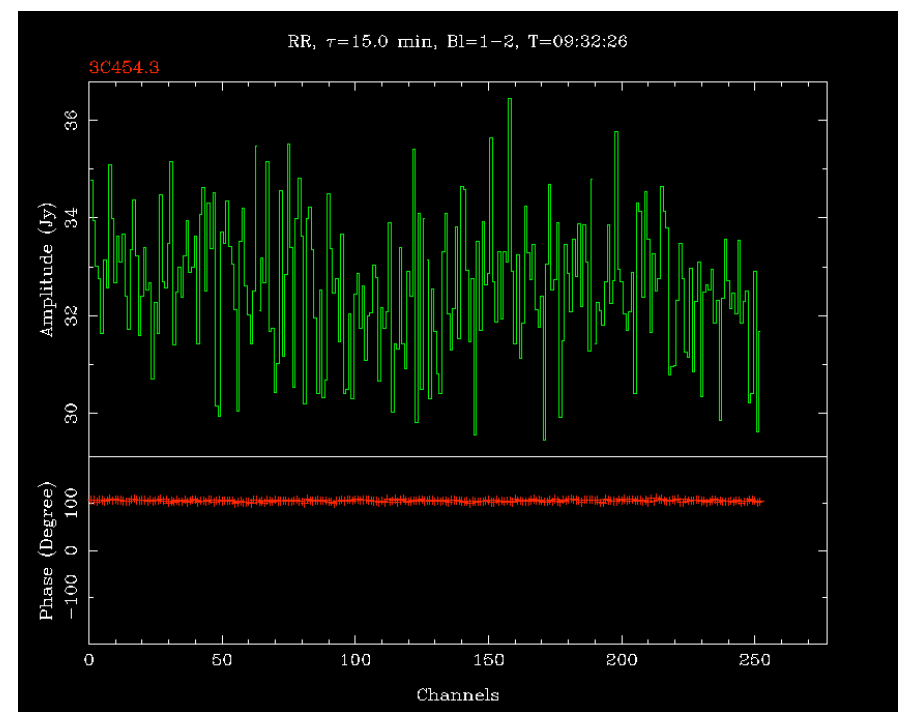
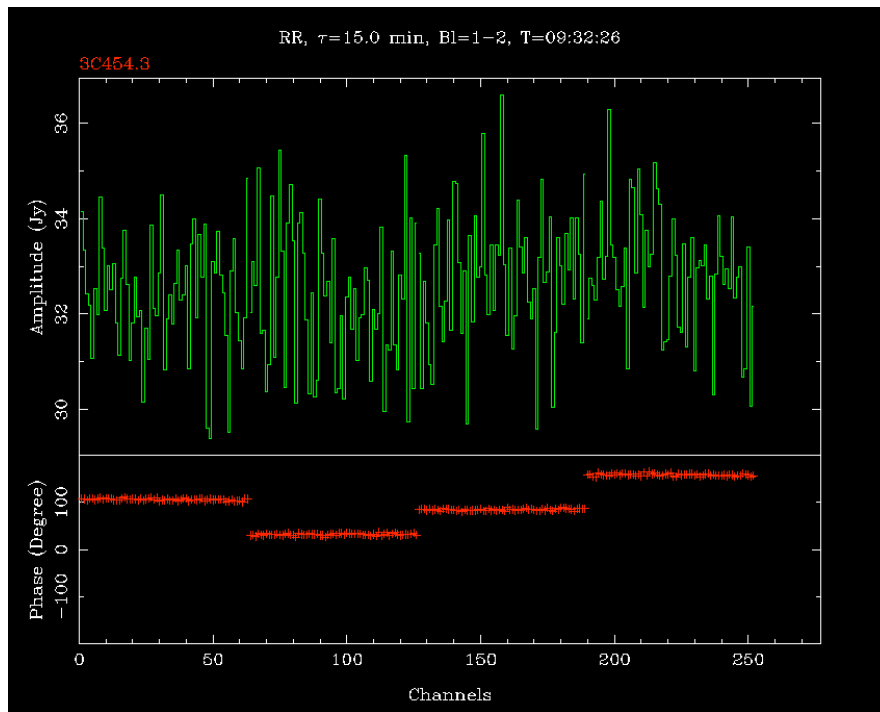
```
mfcal vis=bw500.mir select="source(3c454.3)" \  
interval=3 refant=11
```

Step 4: Bandpass narrow bands

```
mfcad vis=bwn.mir select="source(3c454.3)" \  
interval=1 refant=11 line=chan,4,1,63,63  
uvcat vis=bwn.mir out=bwn_auto.mir
```

Before

After



Step 5: Copy gains from 500 MHz to narrow

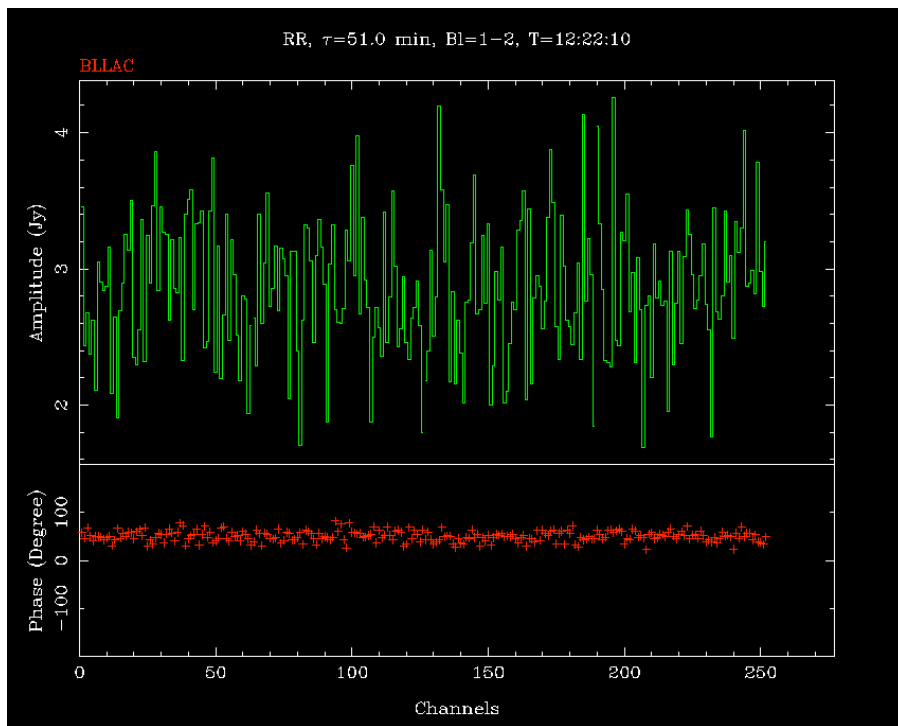
```
mfcal vis=bw500.mir select="source(bllac)" \  
interval=20 refant=11 options=nopass
```

```
gpcopy vis=bw500.mir out=bwn_auto.mir
```

Step 6: Derive gain in narrow bands

```
mfcad vis=bwn_auto.mir select="source(bllac)" \  
interval=500 refant=11 options=nopass
```

Before



After

