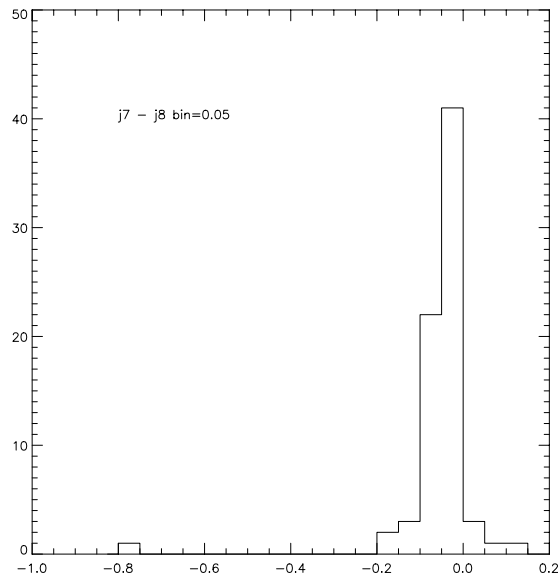


Carina IRSF/SIRIUS Data 2003/04

by WP Chen 2004/4/13

Kaushar sent me a file **j7j8both.txt** which contains the positional and photometric data of stars in the overlapping region of the J-band images between pointing #7 and #8. It contains 74 stars. I wrote a small idl procedure **j7j8both.pro** to read in the data, and plot the histogram of (j7-j8) [mag] as shown below. It is plotted with the U Tubingen routine

```
i> plothist, mj1-mj2, bin=0.05
```



The single outlier to the left, $J1-J2 = -0.769$ belongs to the last data entry, #74 (#73 in IDL!).

Kaushar sent me (April 13, 2004) a revised file, **j7j8new.txt**, now with 73 stars, which corrects the error in negative declination values and contains double-precision ra and dec in degrees. I also modified my program, now called **compboth.pro** to take care of some double-precision variables. The original second entry in **j7j8both.txt** has been left out from the revision **j7j8new.txt**,

```
10 45 26.170 -59 50 4.430 161.35904 -58.16544 16.913 0.013
```

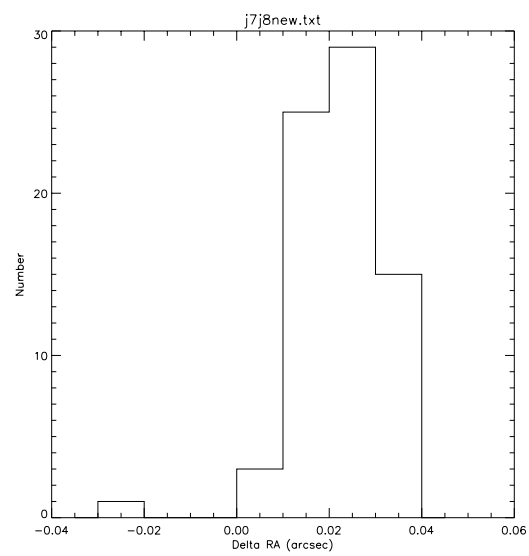
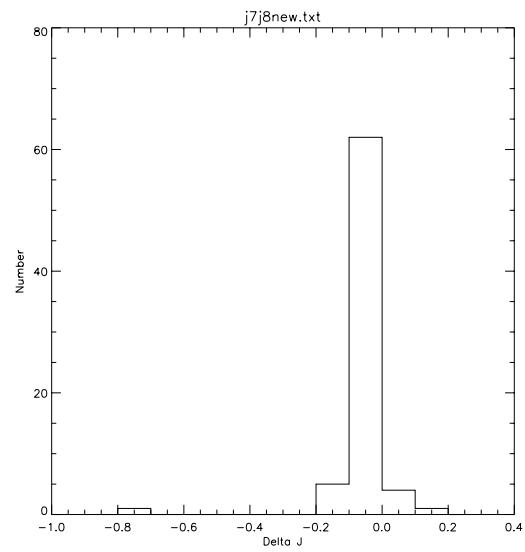
```
10 45 23.493 -59 50 2.240 161.34789 -58.16604 17.592 0.032
```

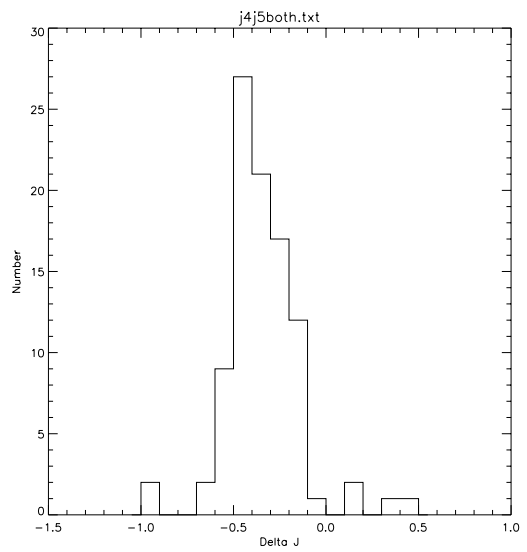
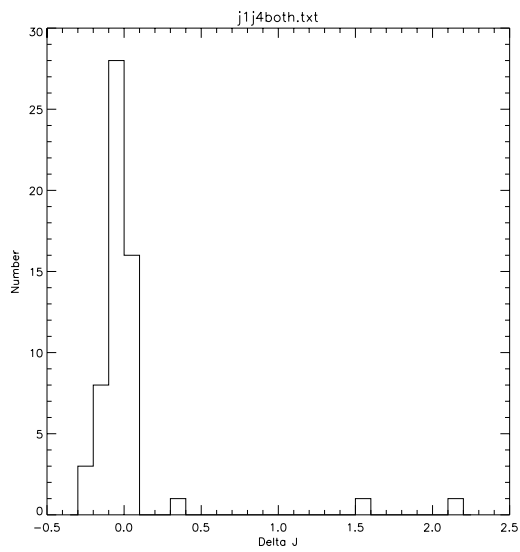
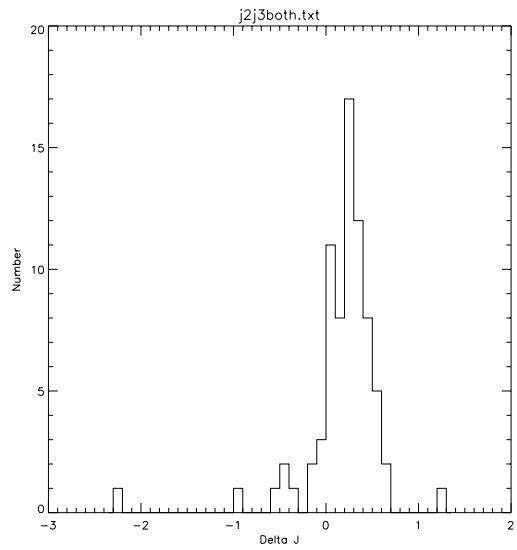
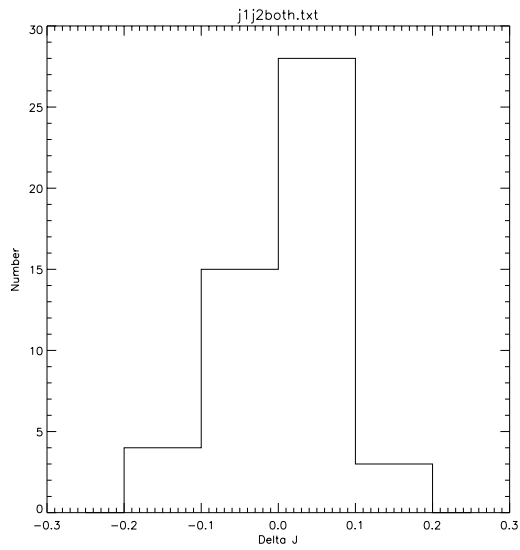
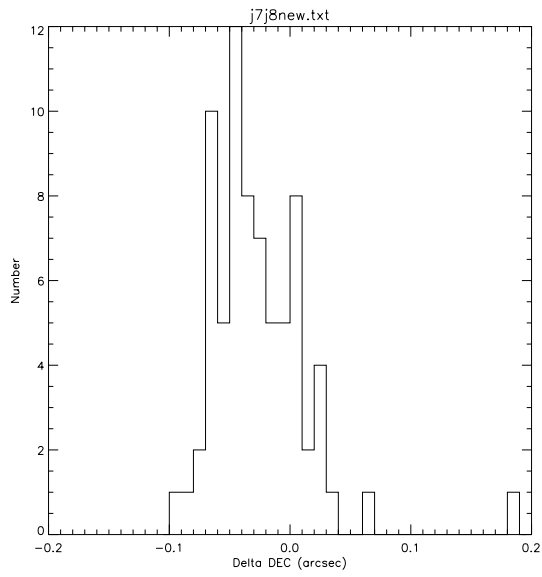
The last entry is still the strangest of all. The RA difference (RAS1-RAS2) is all positive and averages to $\sim +0.02''$, but entry #73 has $-0.02''$. The DEC difference is of the same order, with a naveraged offset of $-0.02''$. The J-magnitude difference averages to -0.04 mag, except the last entry (#73) which has $J1-J2 = -0.769$. #73 reads below. It could be a mismatch.

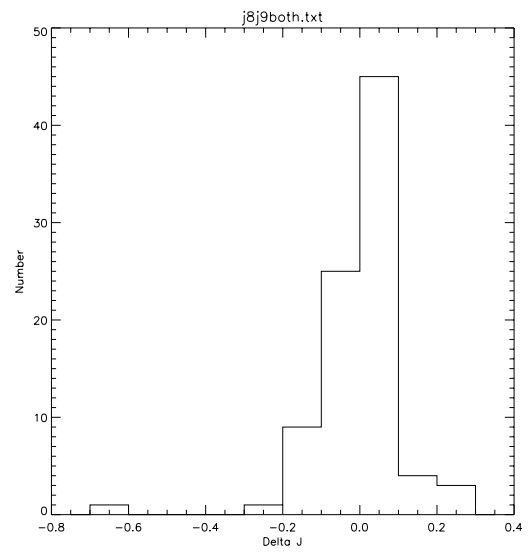
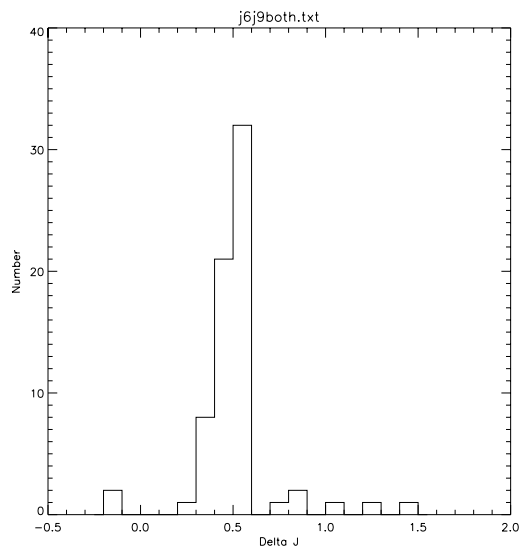
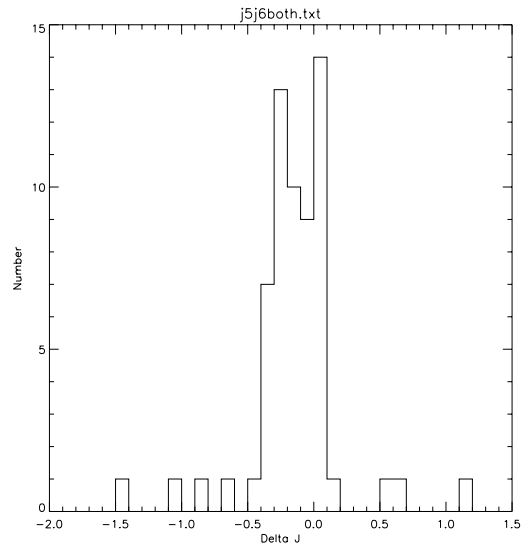
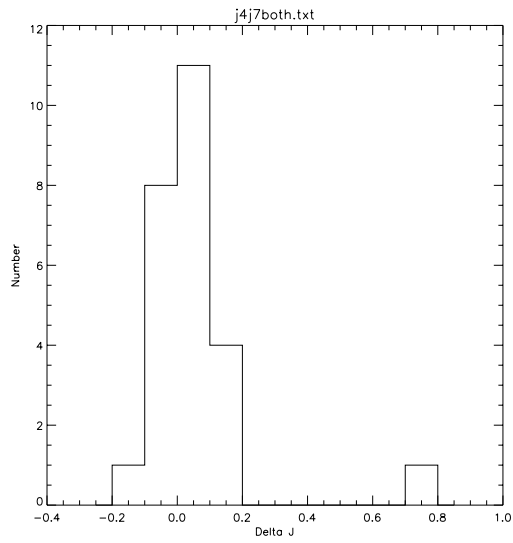
```
10 45 23.990 -59 43 44.150 161.3499583 -59.7289306 14.768 0.243
```

```
10 45 24.012 -59 43 44.080 161.3500500 -59.7289111 15.537 0.009
```

For j7j8 data: the J-mag, RA and DEC differences



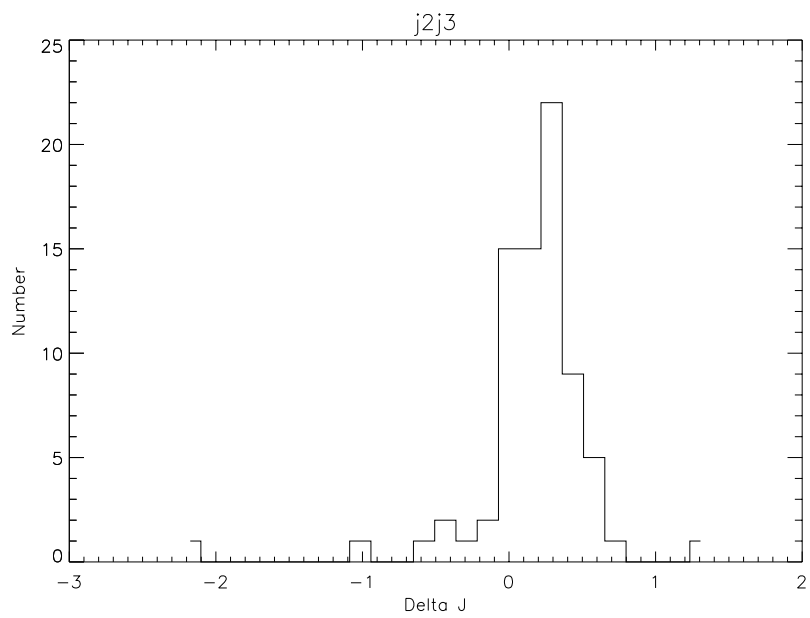
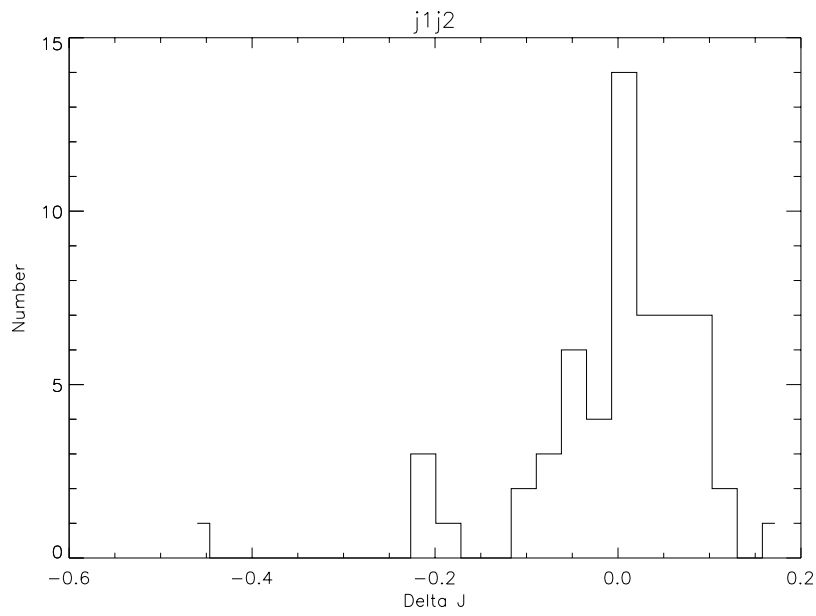


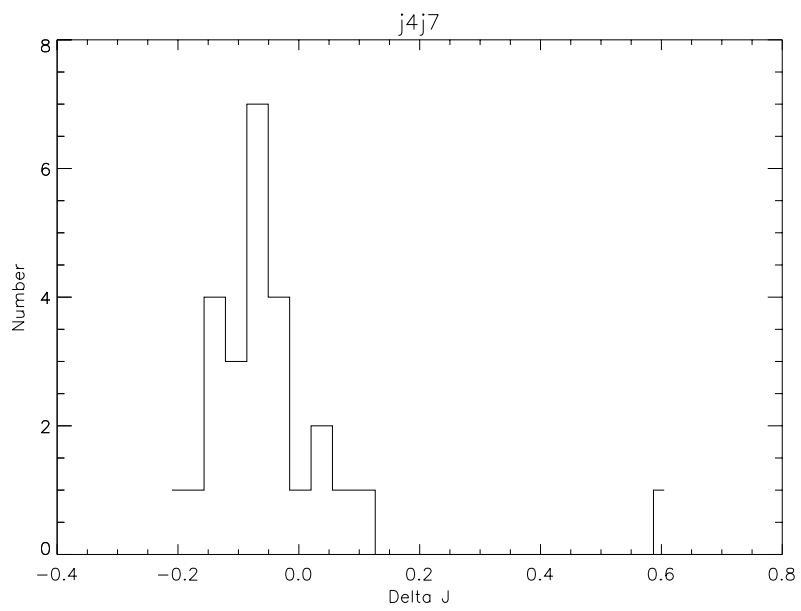
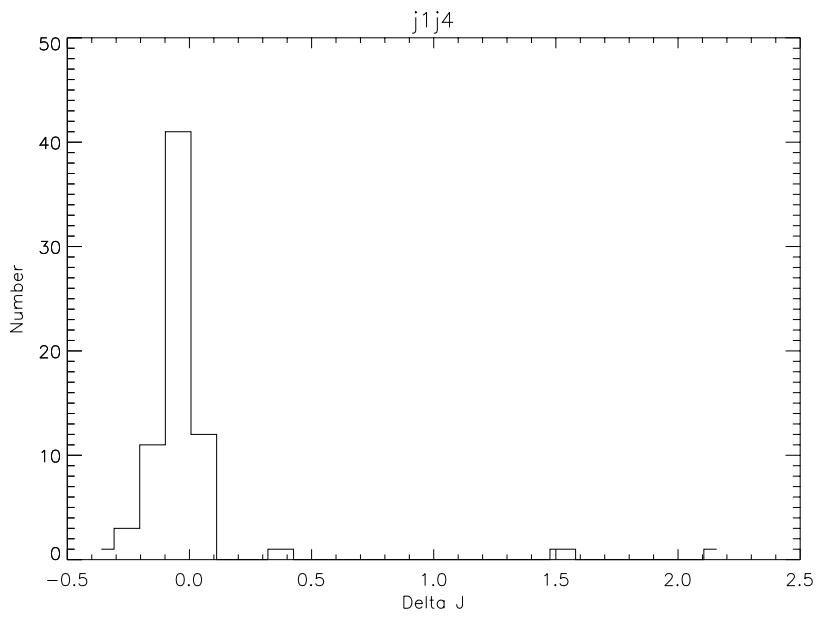


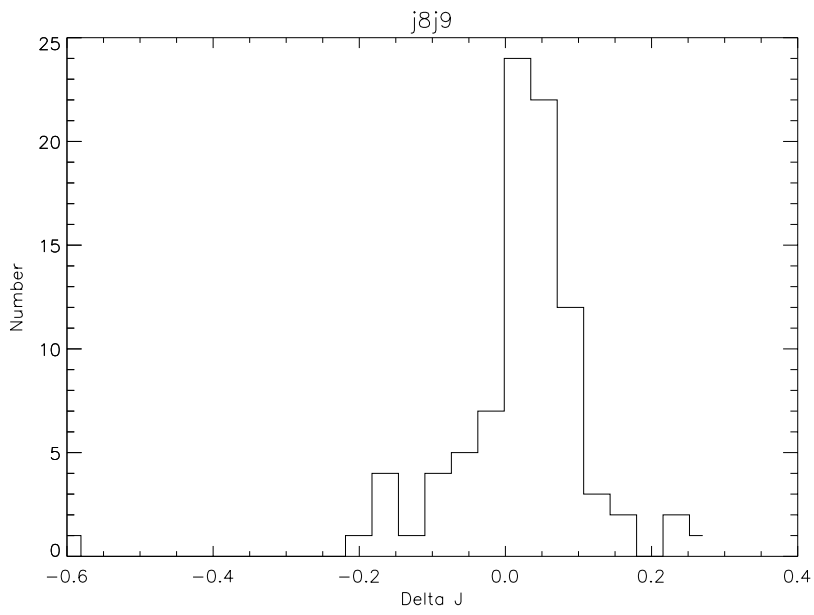
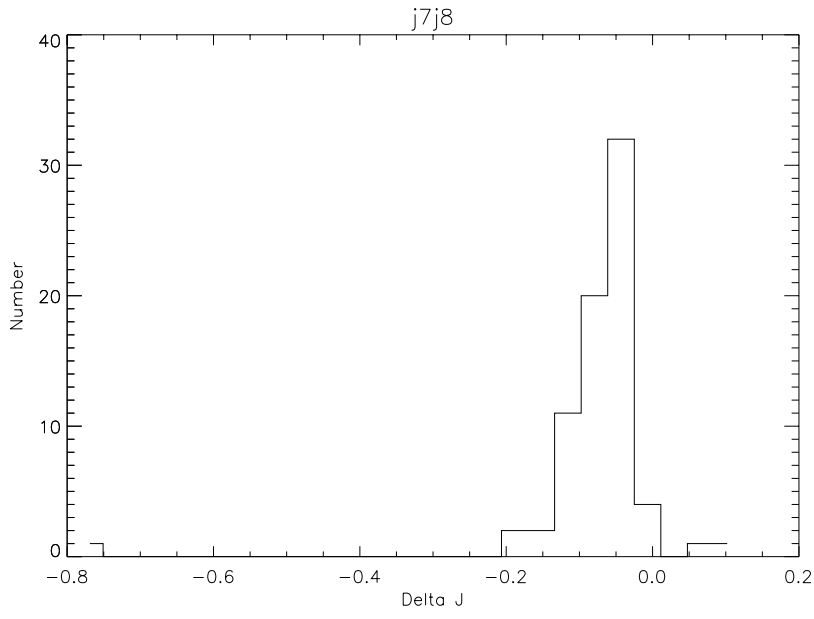
1004.06.14

Final Scaling Kaushar worked out the proper scaling for each pointing, for each filter, shown below.

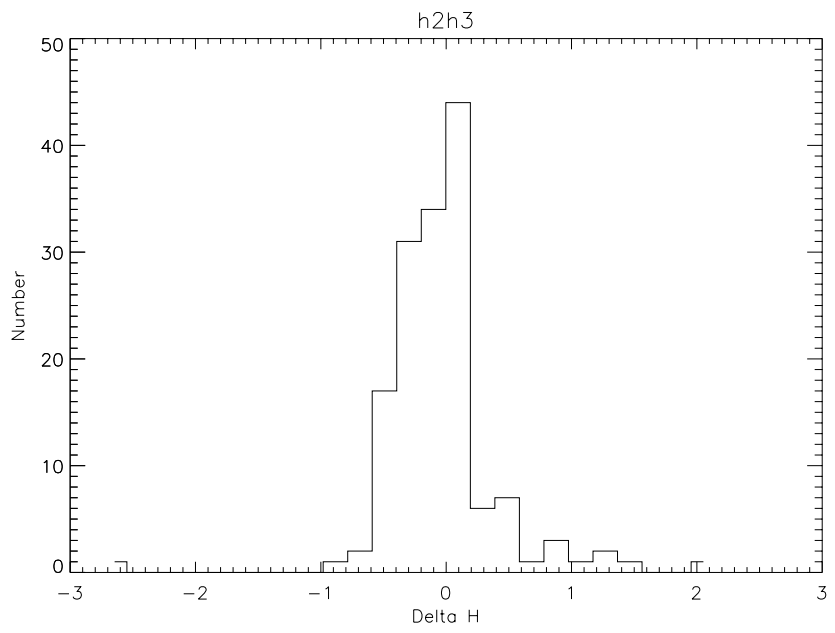
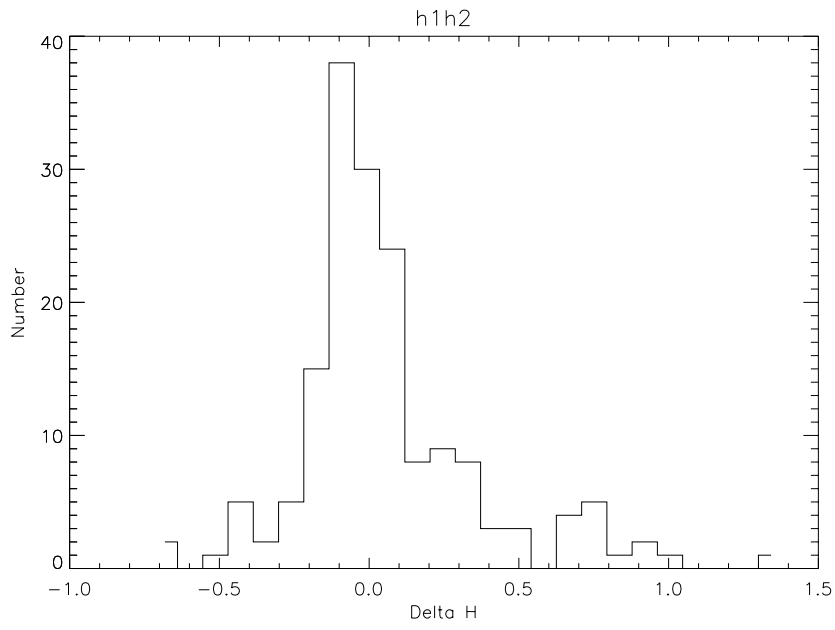
J band

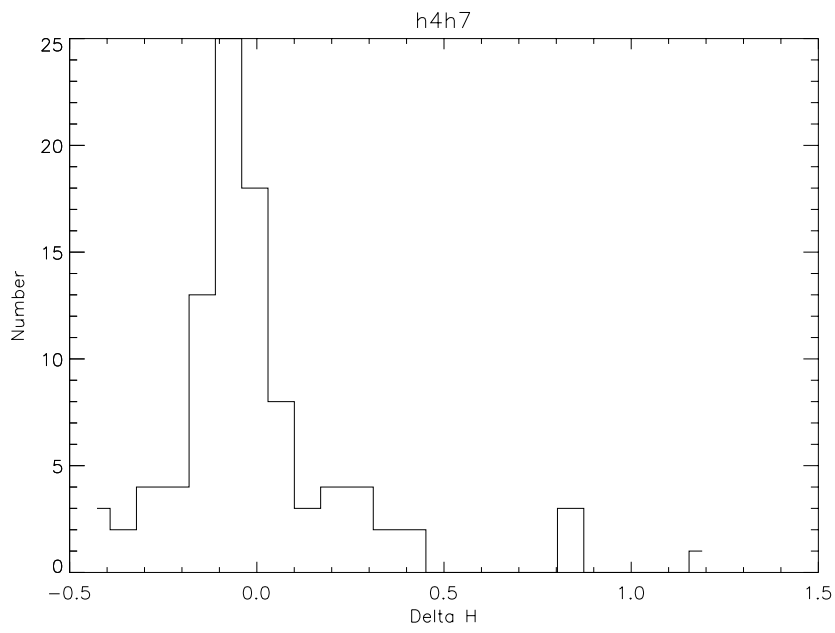
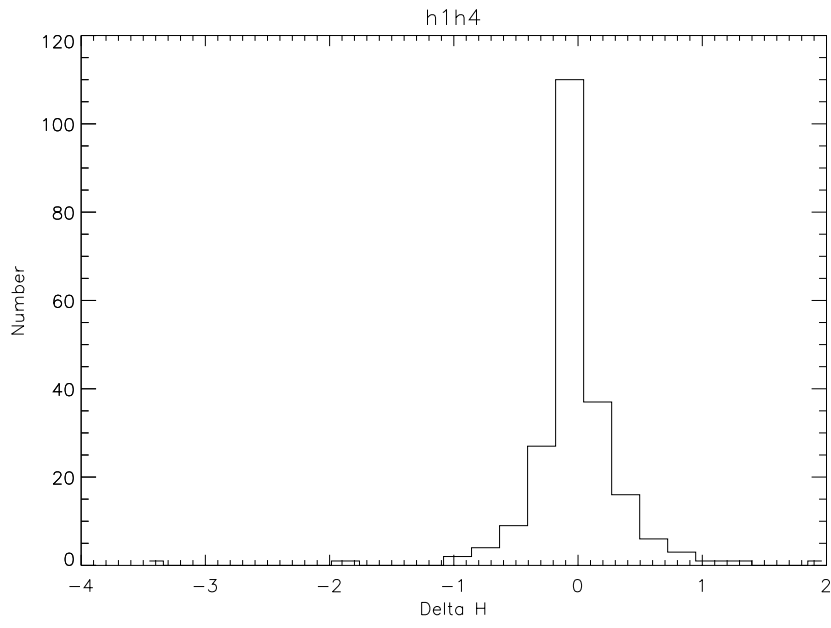


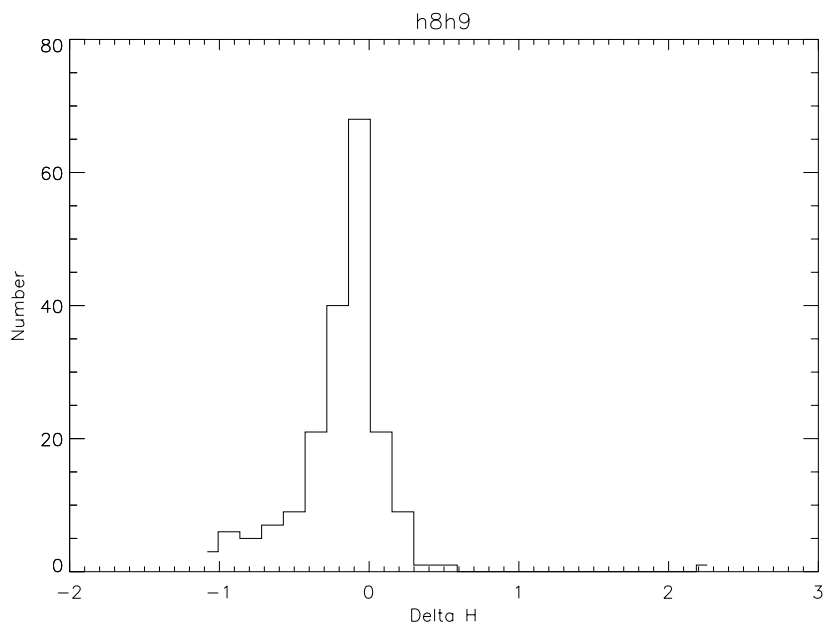
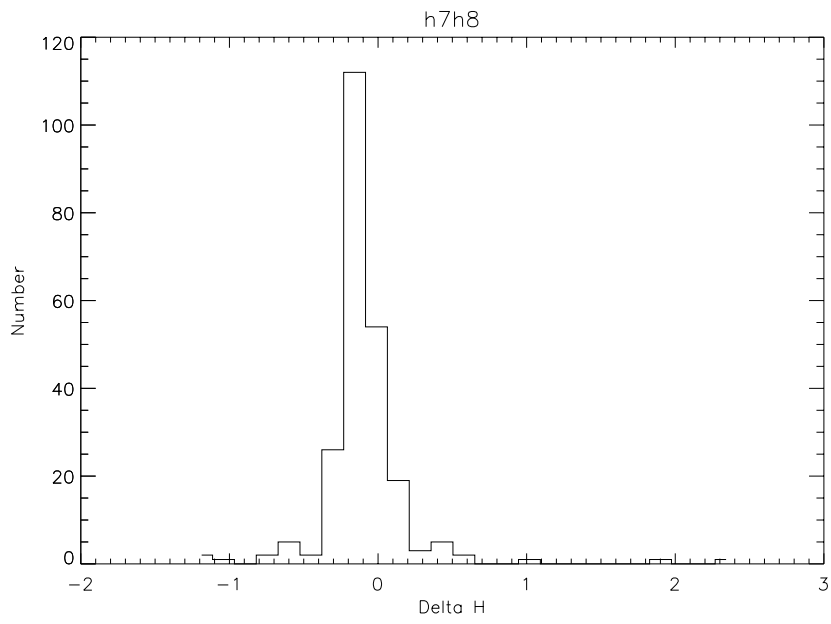




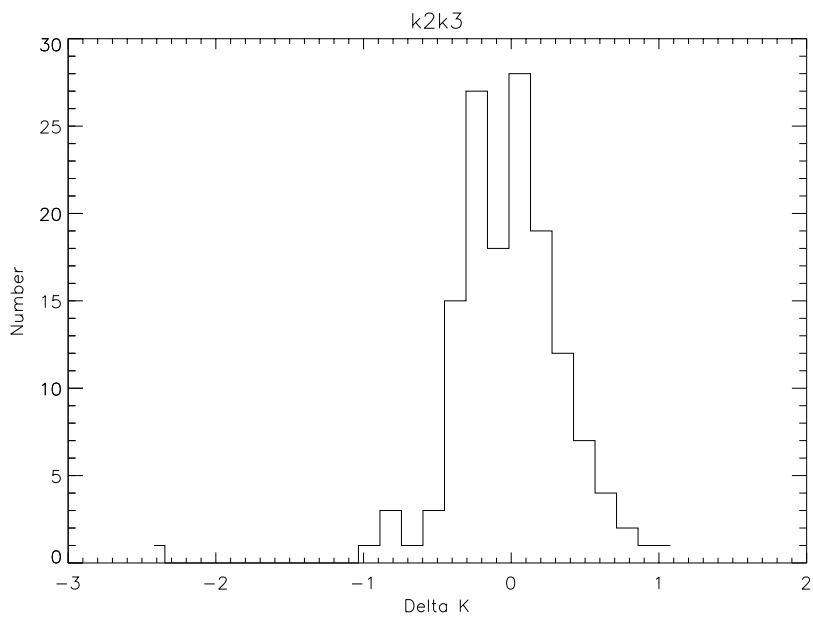
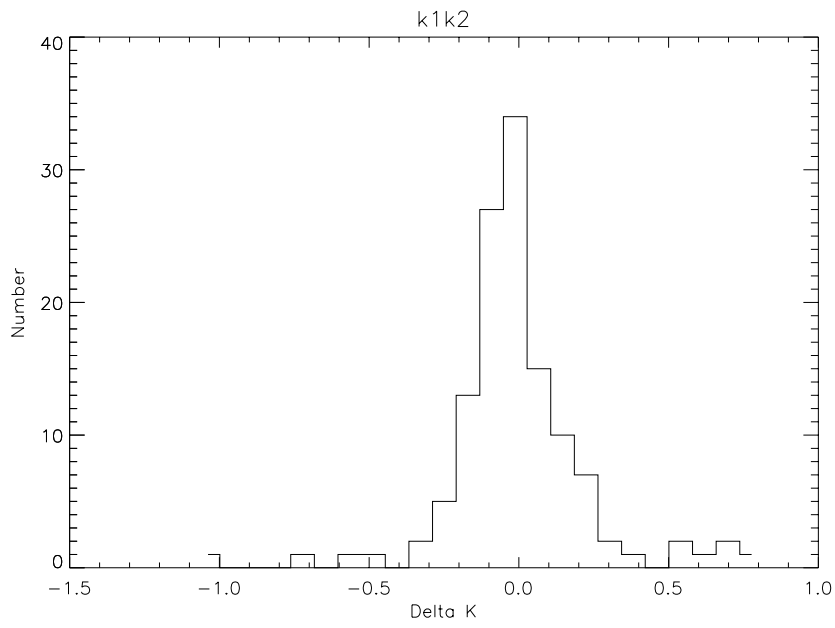
H band

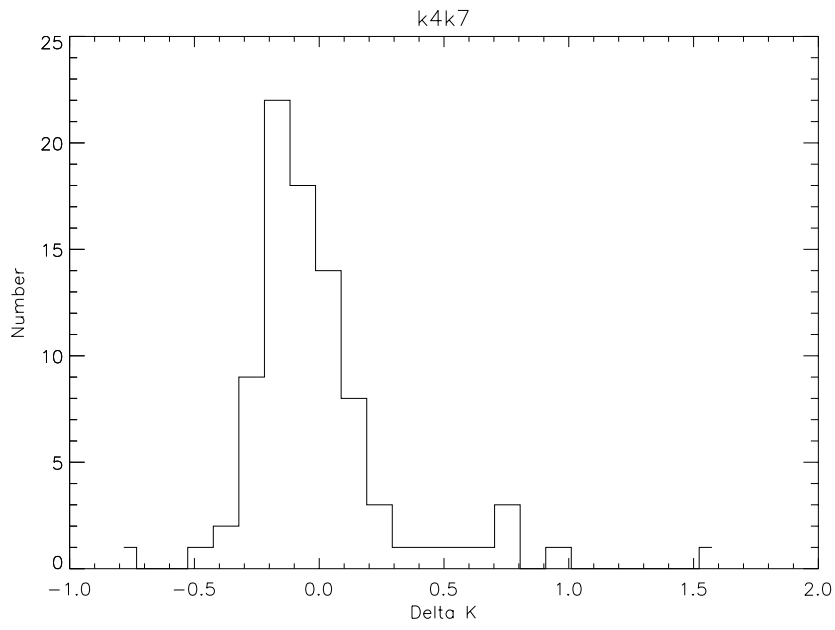
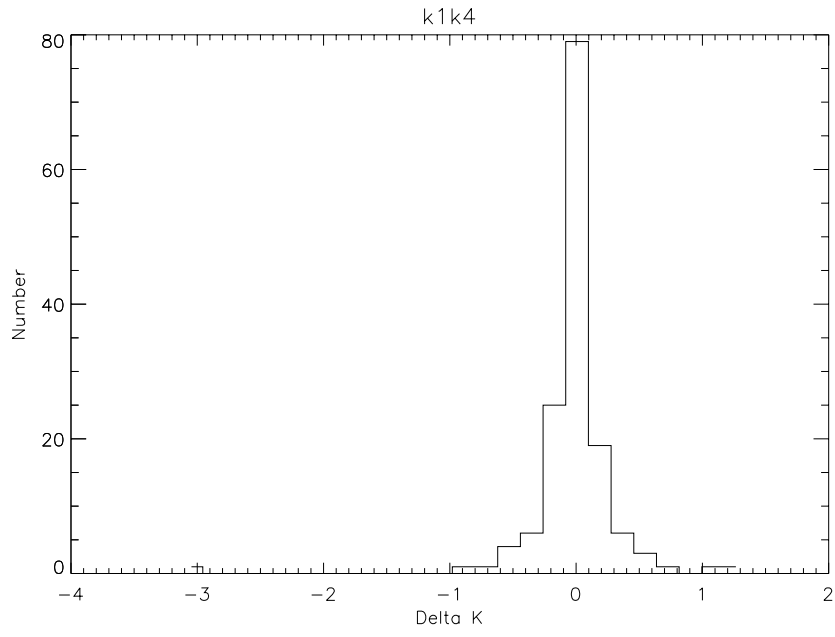


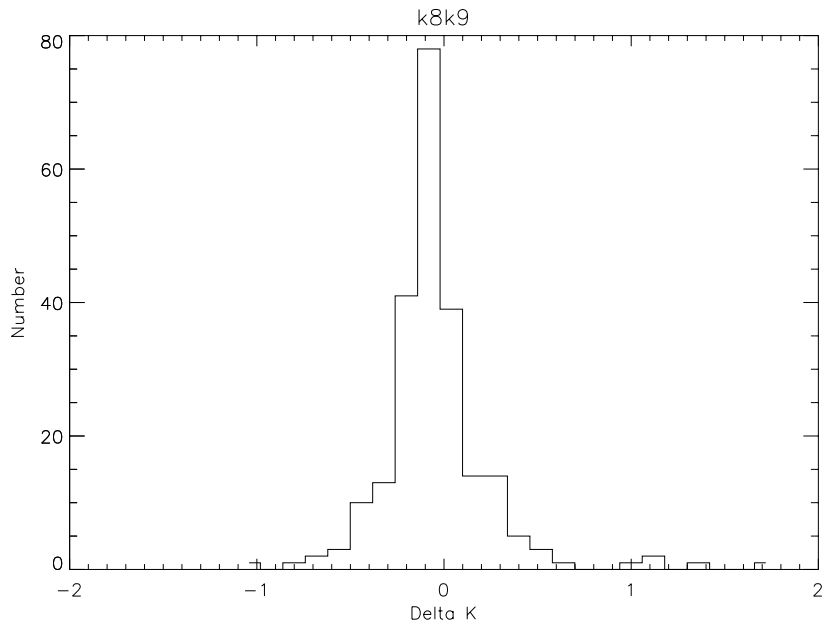
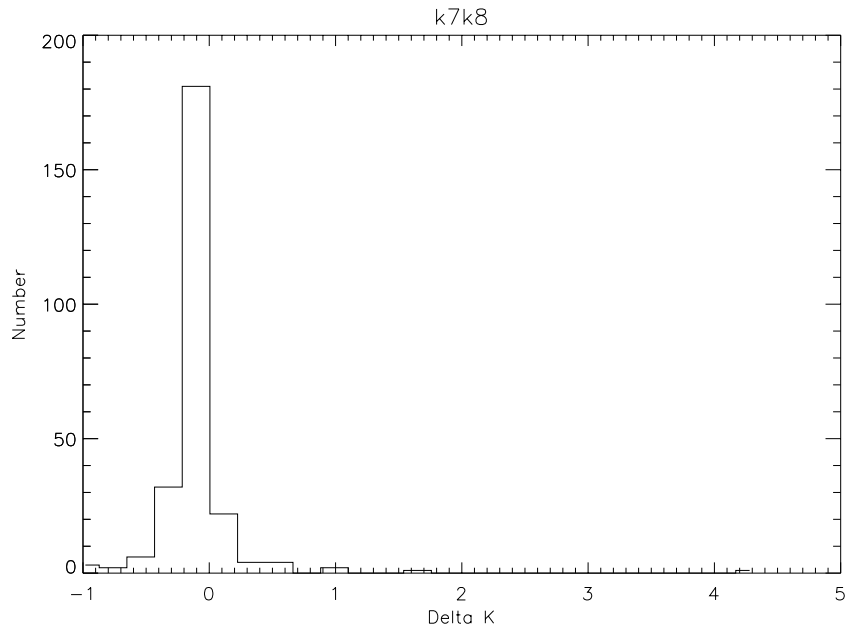




K band







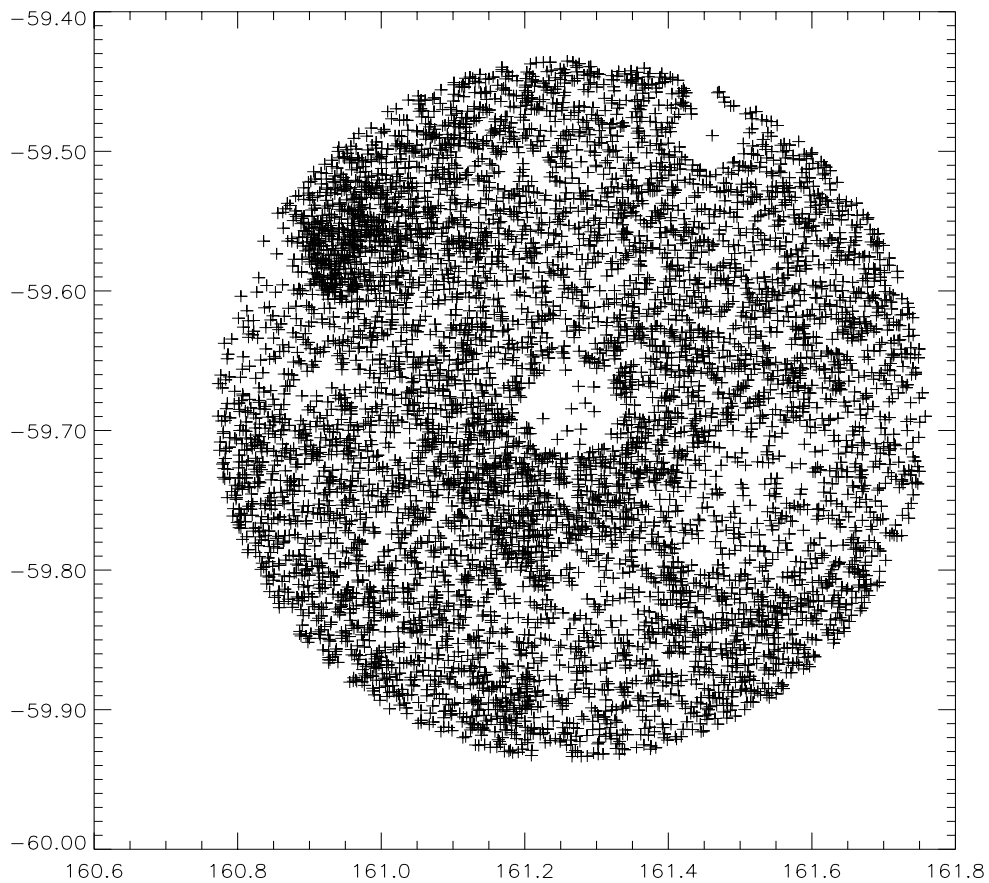
2MASS data

I used the (new) RADAR interface at IRSA <http://irsa.ipac.caltech.edu/> to get the 2MASS point sources. Within a radius of 15' centered around Eta Carina, there are 14,356 entries. I selected only those with S/N > 10 in all J, H, and Ks bands, ending up with 6727 entries, and saved as the file **2mass20040415.txt**.

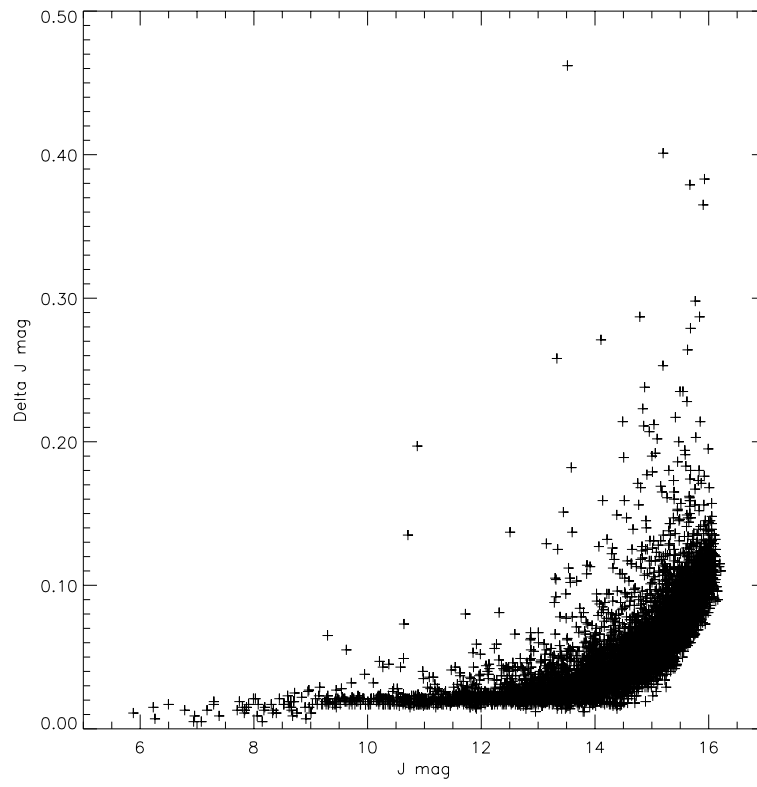
The format of the file for the first columns is

ra	dec	J	sig1_sig2	S/N	H	sig1	sig2	S/N	K	sig1	sig2	S/N
161.714680	-59.709854	14.696	0.051 0.053	37.5	14.121	0.063	0.064	33.5	13.937	0.076	0.076	19.6

The spatial distribution is as follows,



The J mag sensitivity follows,



The (J-H) versus (H-K) diagram follows,

