

KIC 005887393

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005887393-01 | OBS | 7748.01 | 1.550942 | 131.620195 | 11.6 | 1.605 | 8.9 | 7.3 | 2.97 | 7612 | 1.17 | 24532.29 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005887393-01 | OBS | FP | 0.05 | 0 | 0 | 1 | 0 | HALO_GHOST |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

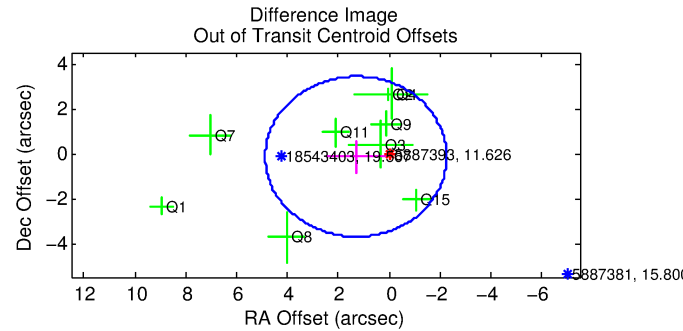
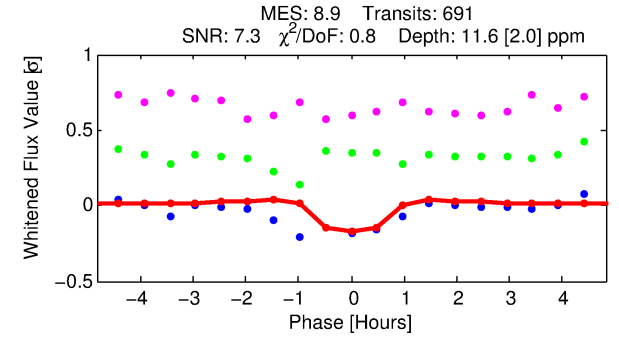
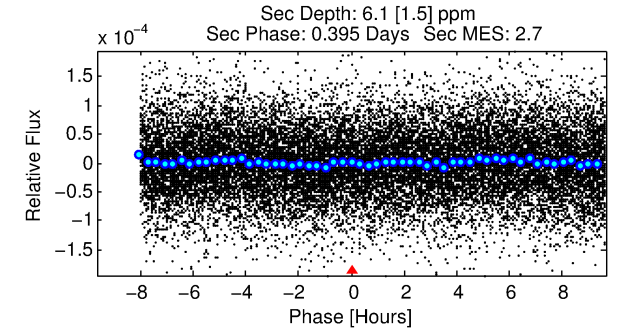
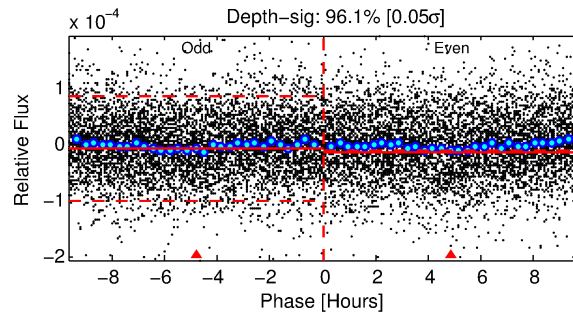
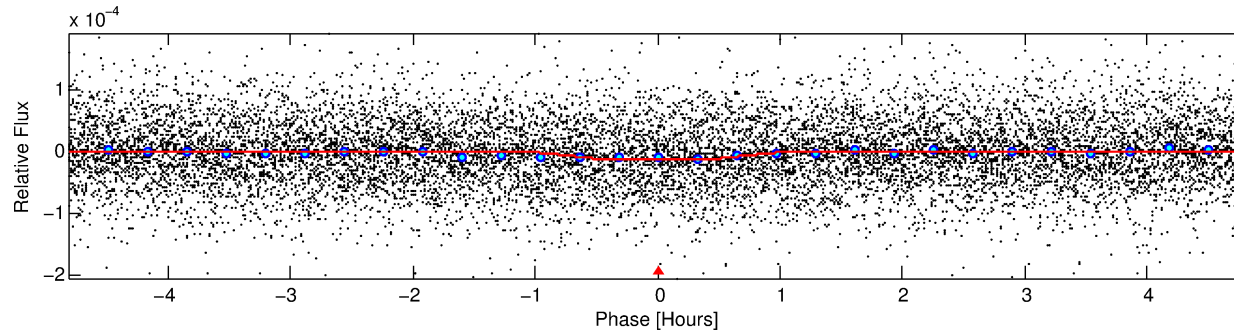
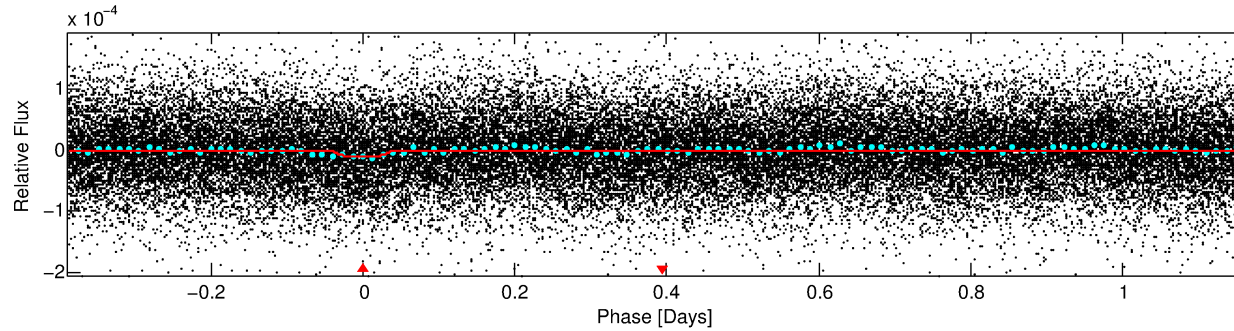
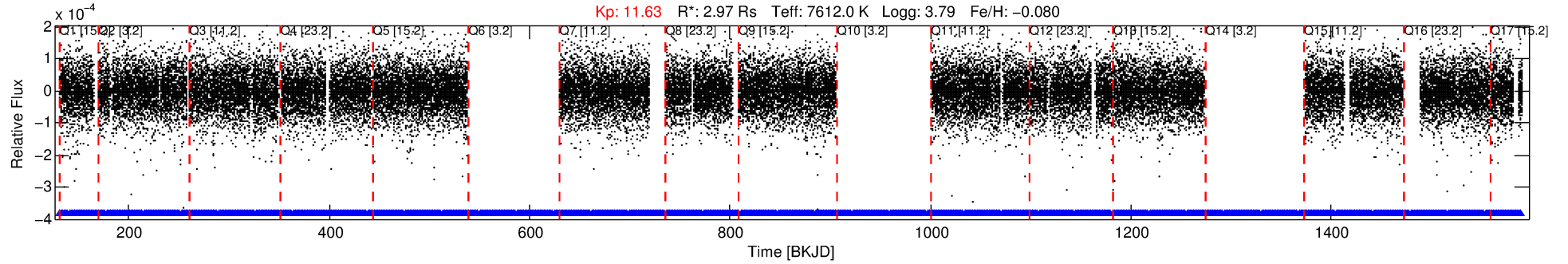
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005887393-01

No Significant Match Found

DV One-Page Summary

KIC: 5887393 Candidate: 1 of 1 Period: 1.551 d



DV Fit Results:

Period = 1.55094 [0.00001] d
Epoch = 131.6202 [0.0030] BKJD
 $R_p/R^* = 0.0036$ [0.0006]
 $a/R^* = 3.41$ [3.06]
 $b = 0.90$ [0.21]
 $S_{\text{eff}} = 24532.29$ [17052.93]
 $T_{\text{eq}} = 3191$ [555] K
 $R_p = 1.17$ [0.57] R_e
 $a = 0.0329$ [0.0140] AU
 $A_g = 2.62$ [2.09] [0.77 σ]
 $T_{\text{eff}} = 6275$ [732] K [3.36 σ]

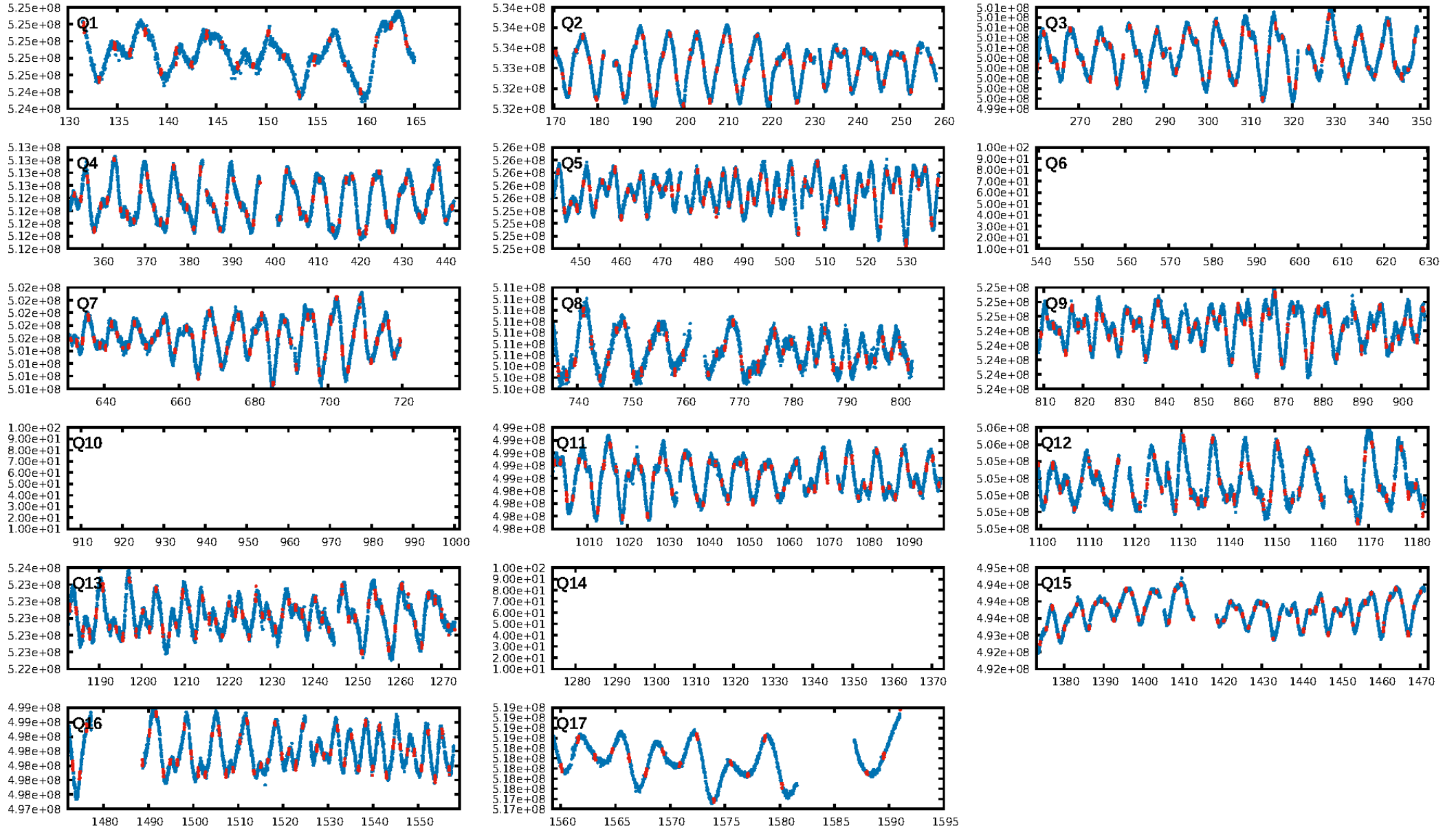
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.02e-18
RollingBand-fgt: 1.00 [653/653]
GhostDiagnostic-chr: -0.2321
Centroid-sig: 15.9%
Centroid-so: 3.544 arcsec [1.03 σ]
OotOffset-rm: 1.311 arcsec [1.10 σ]
KicOffset-rm: 2.198 arcsec [2.74 σ]
OotOffset-st: 1/4/2/2 [9]
KicOffset-st: 1/4/2/2 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 1.00 [14/14]

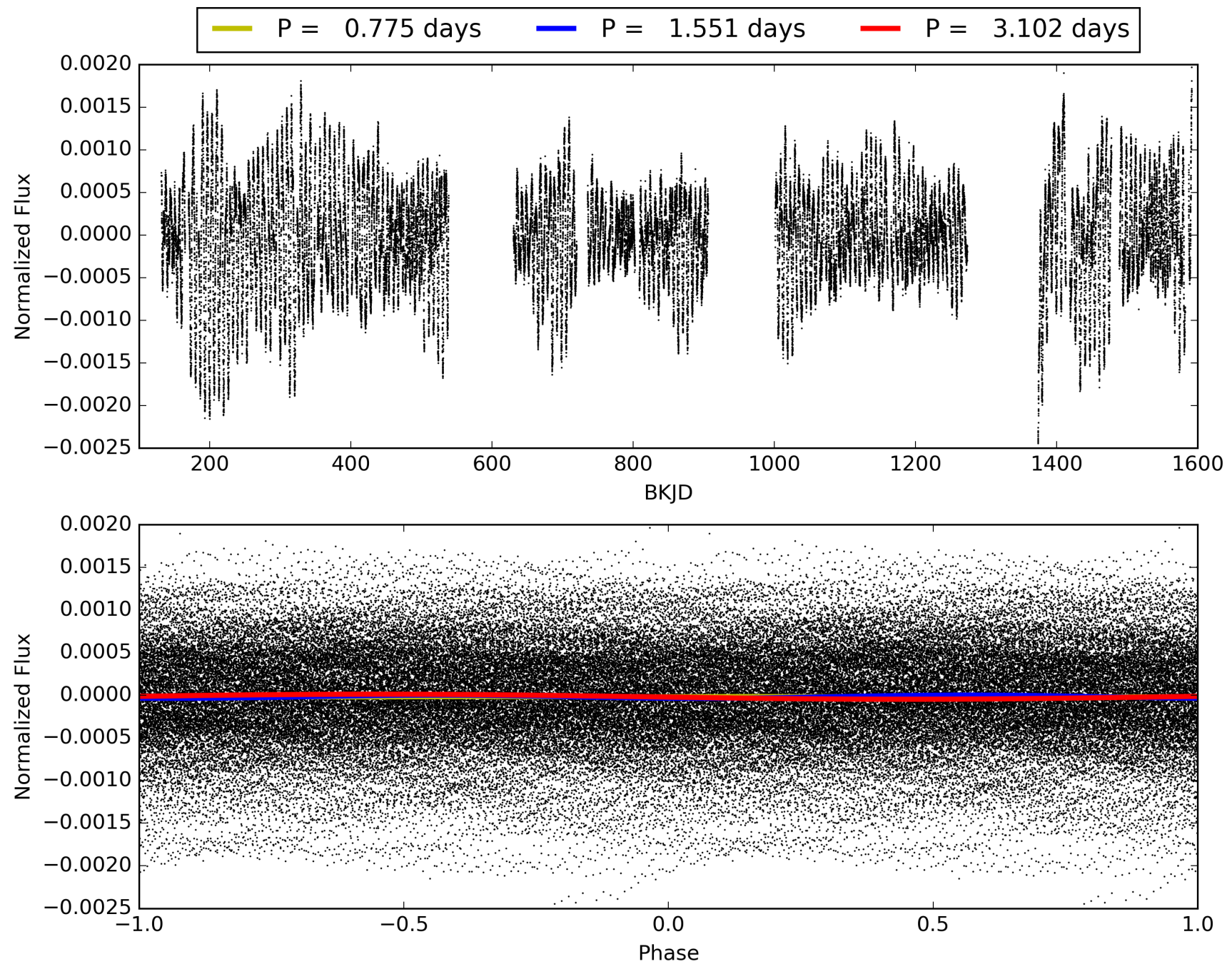
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:21:56 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005887393-01, PDC Light Curves

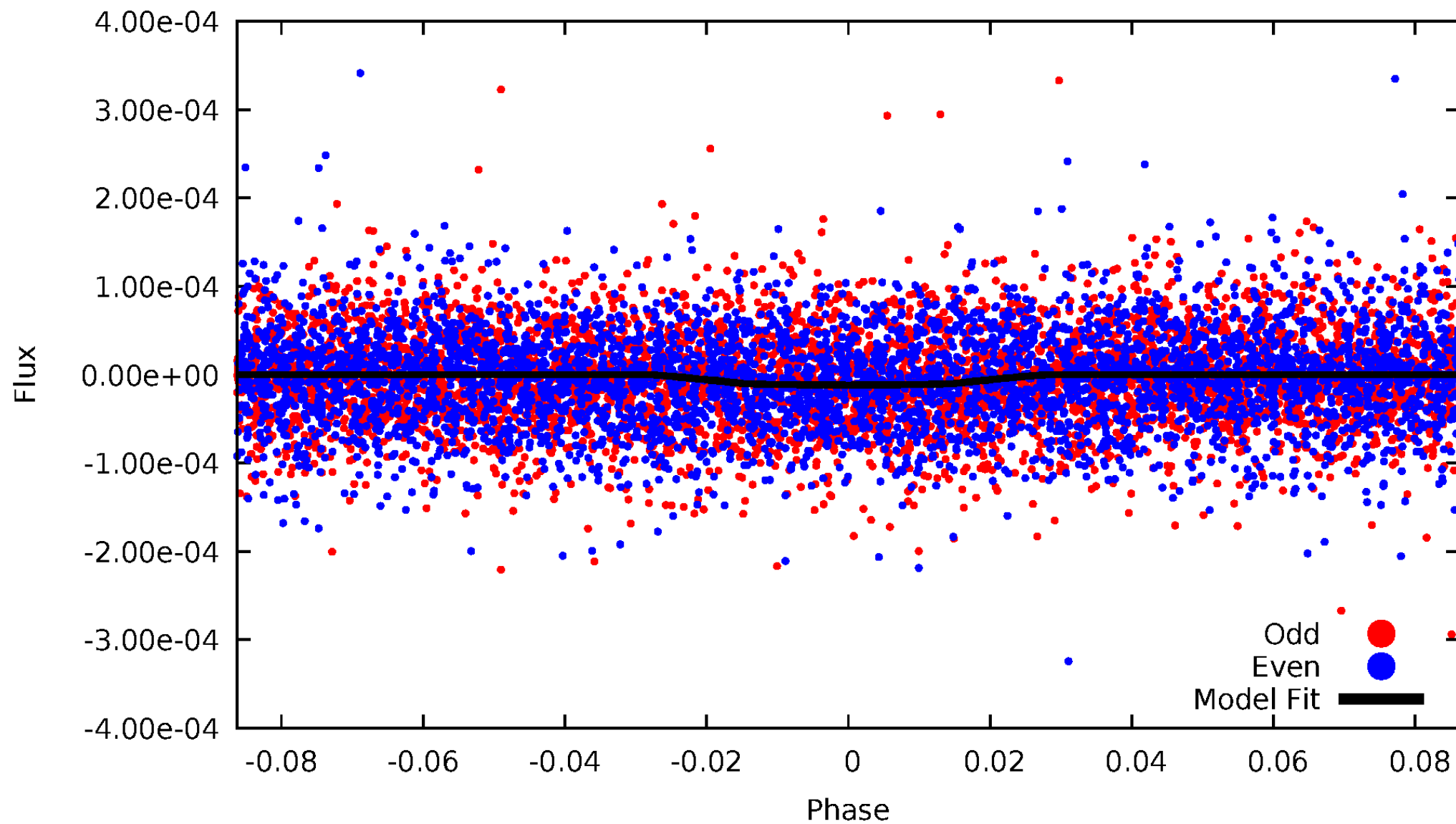


TCE 005887393-01



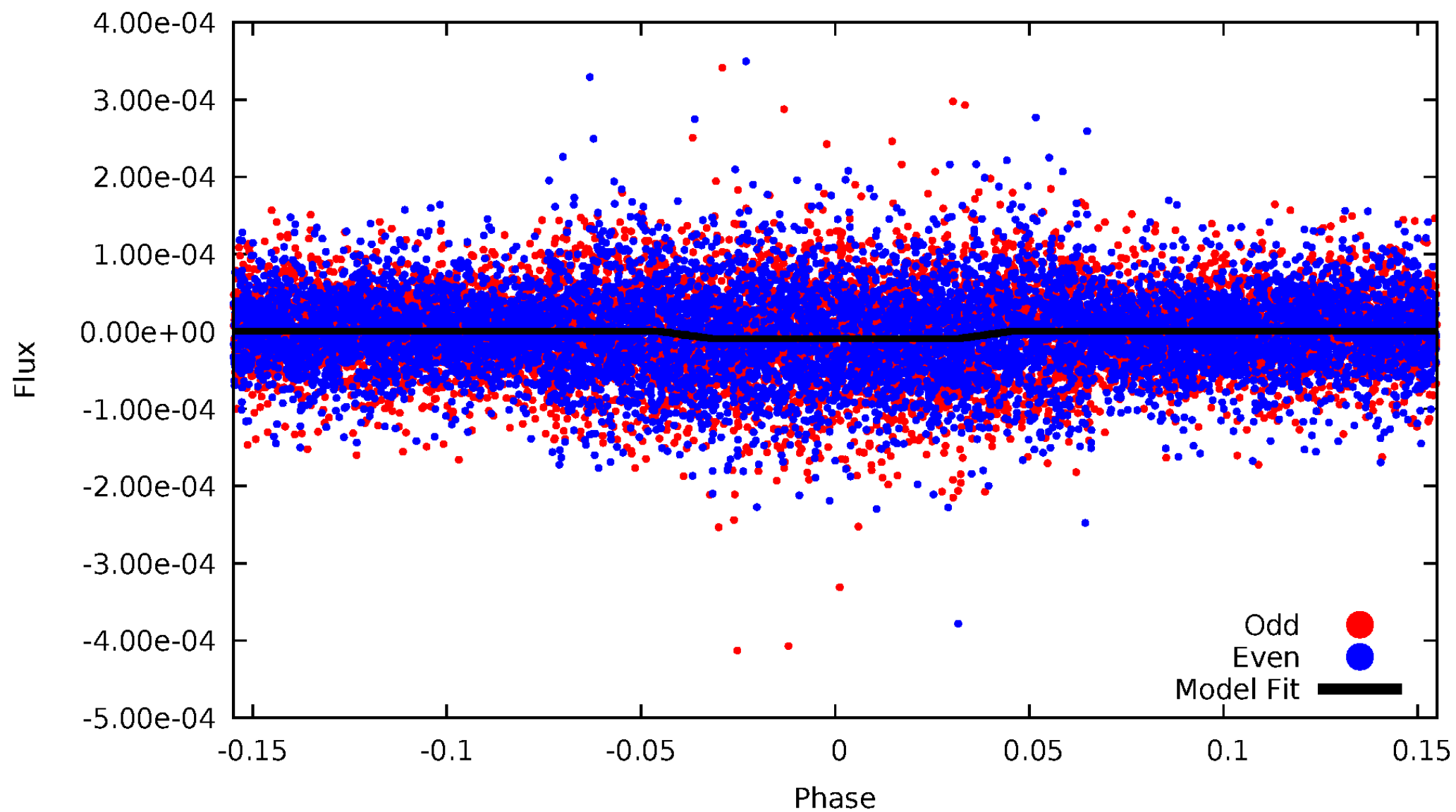
DV Odd/Even

TCE 005887393-01



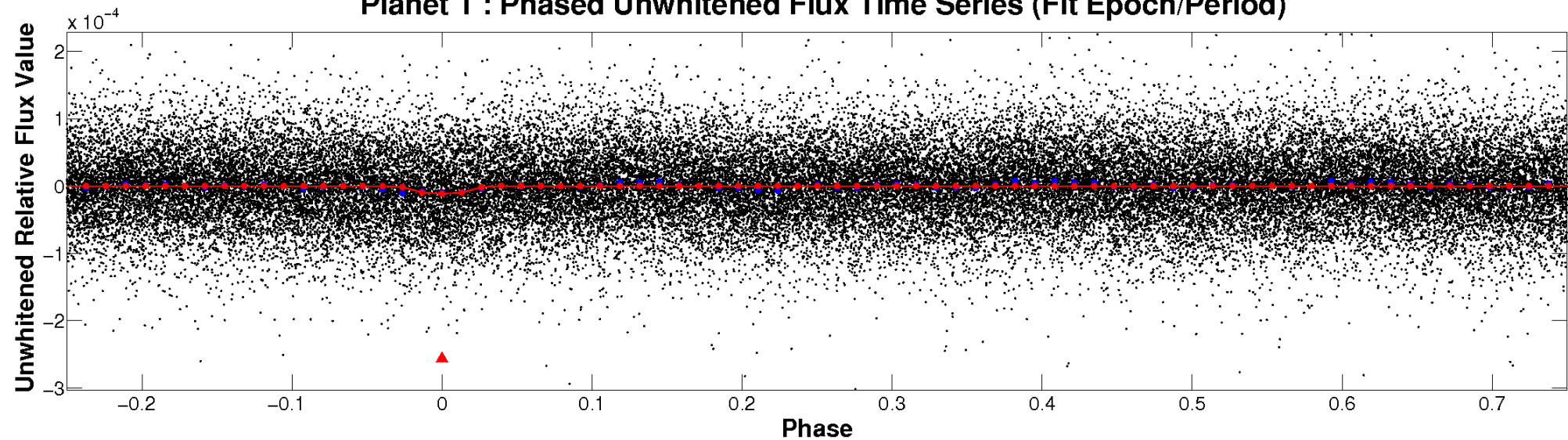
ALT Odd/Even

TCE 005887393-01

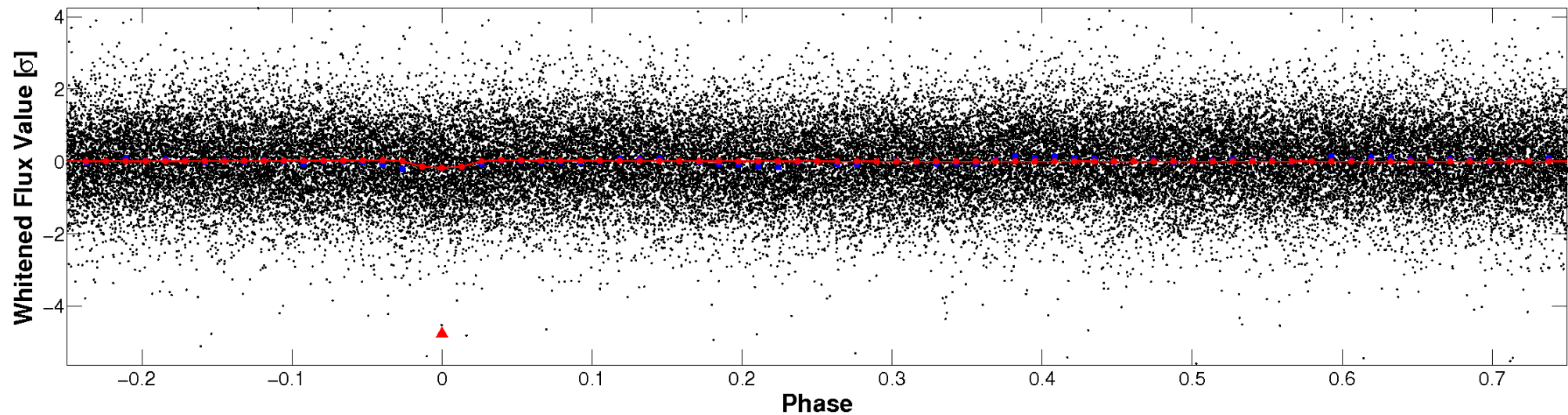


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

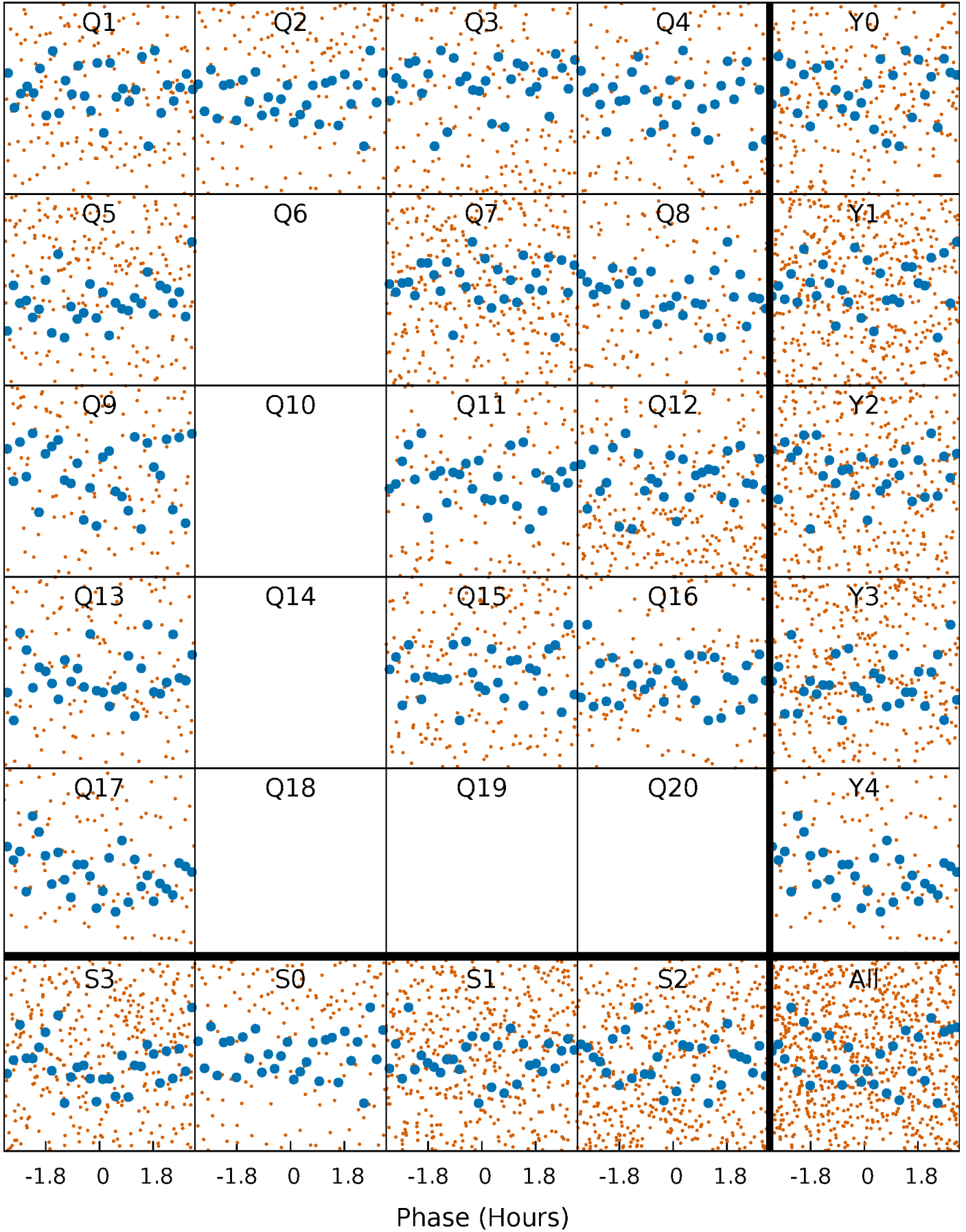


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



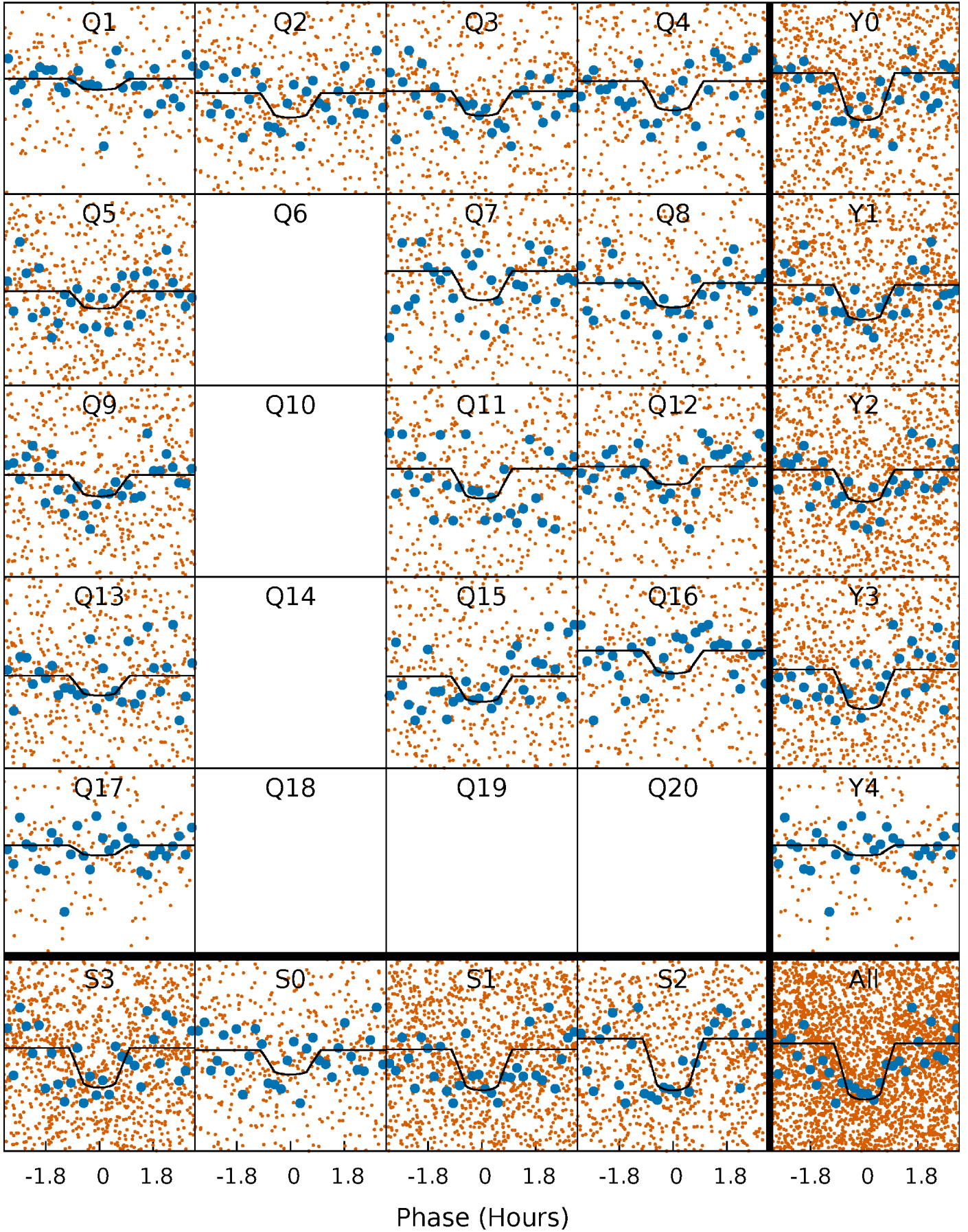
PDC Quarter-Phased Transit Curves

TCE 005887393-01 P= 1.550942 Days $T_0=131.620194$ (BKJD)



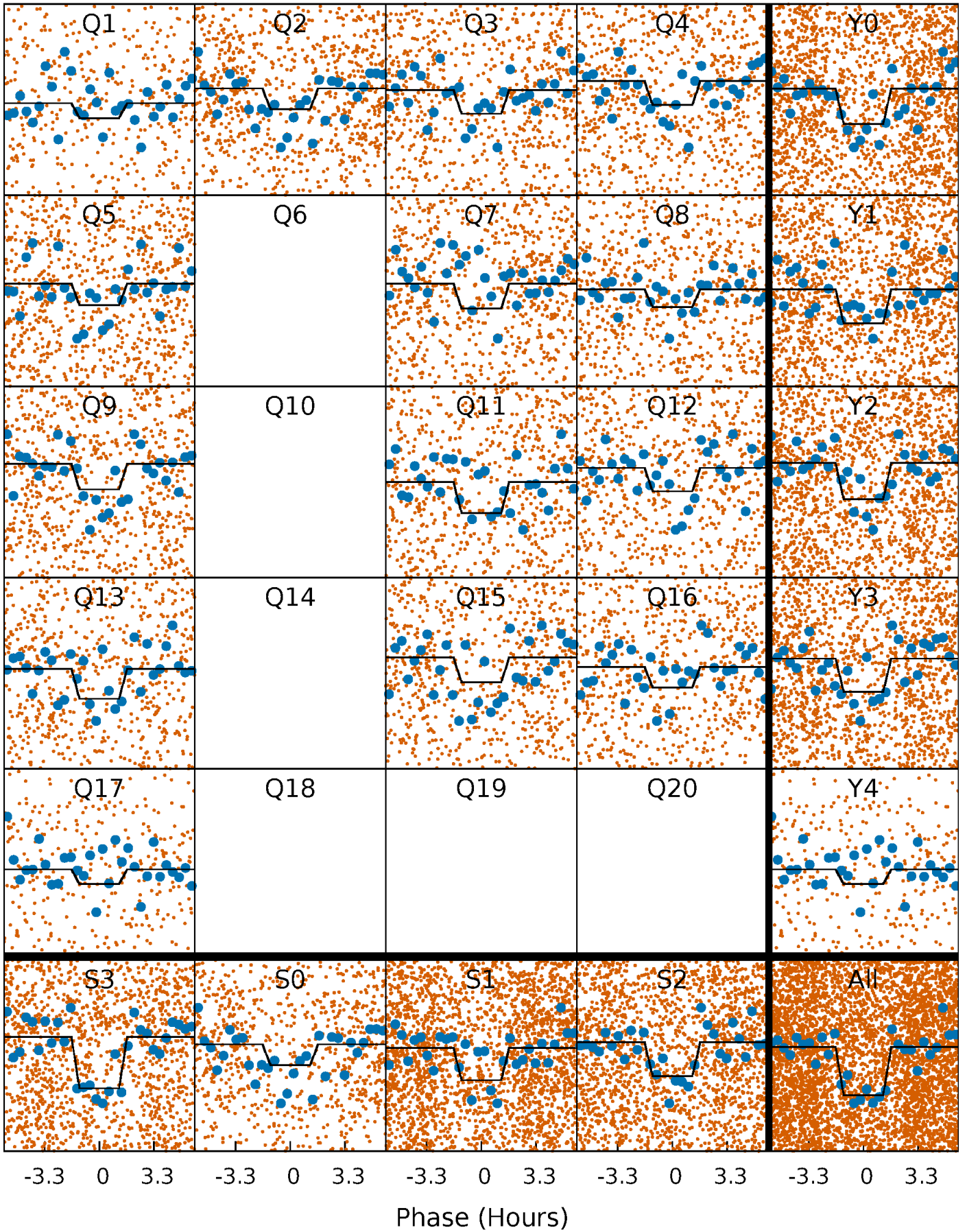
DV Quarter-Phased Transit Curves

TCE 005887393-01 P= 1.550942 Days $T_0=131.620194$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

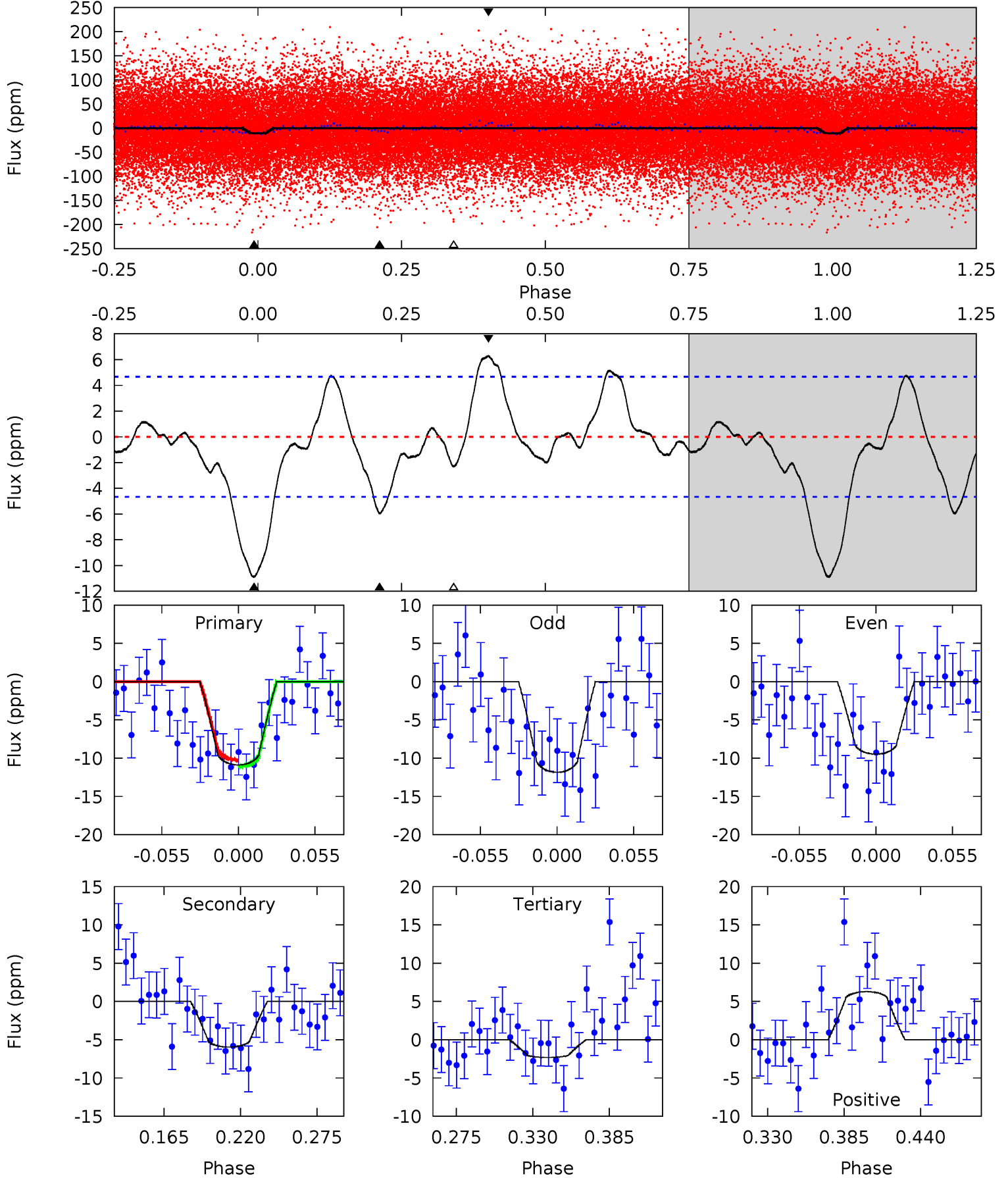
TCE 005887393-01 P= 1.550904 Days $T_0=131.620969$ (BKJD)



DV Model-Shift Uniqueness Test

005887393-01, P = 1.550942 Days, E = 130.069252 Days

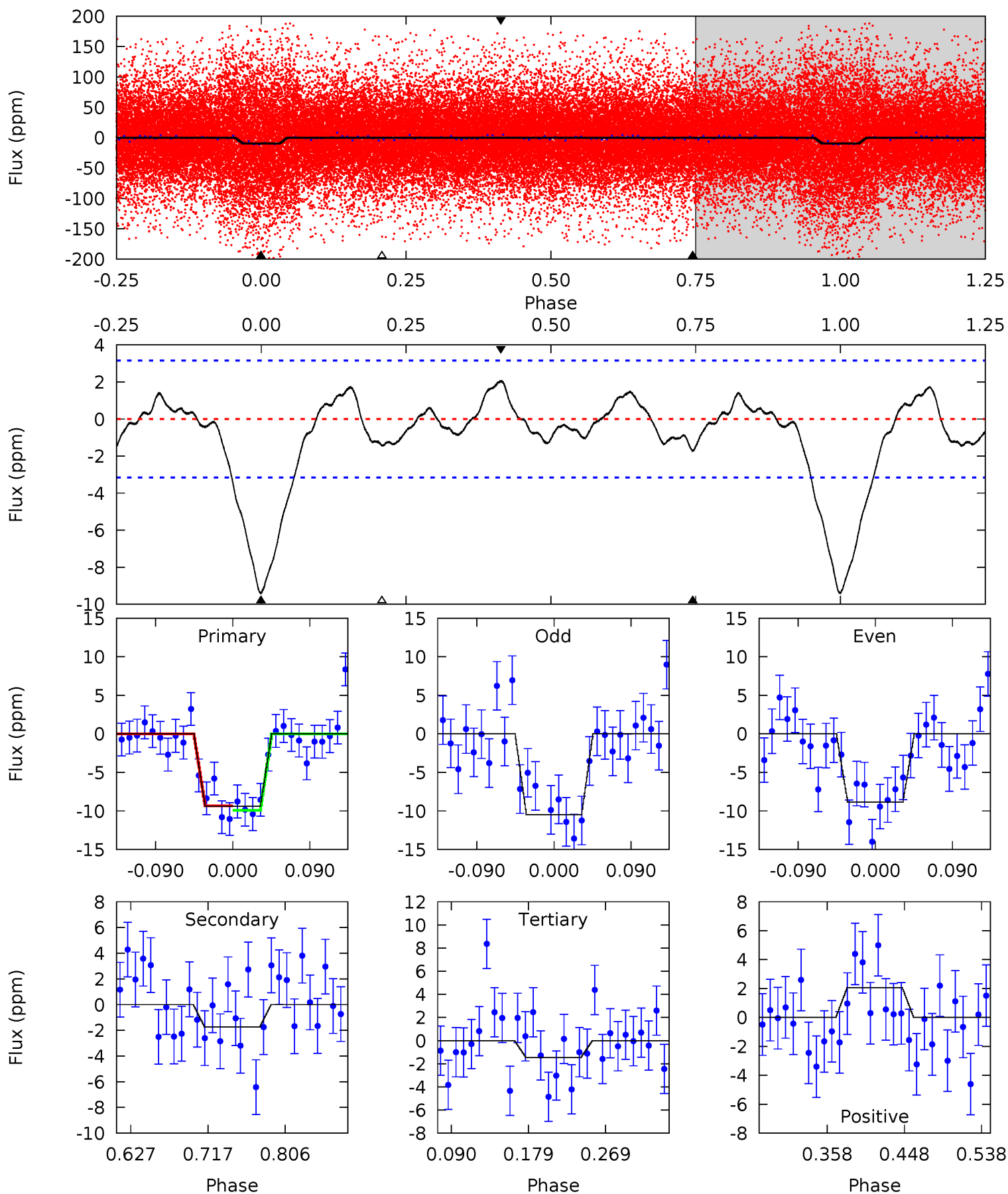
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.9 | 5.98 | 2.32 | 6.31 | 4.69 | 1.92 | 2.20 | 8.61 | 4.62 | 3.66 | -0.33 | 1.20 | 0.87 | 0.37 | 0.43 |



Alt Model-Shift Uniqueness Test

005887393-01, P = 1.550904 Days, E = 130.070065 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.7 | 2.52 | 2.12 | 3.00 | 4.59 | 1.70 | 1.29 | 11.6 | 10.7 | 0.41 | -0.47 | 1.18 | 0.86 | 0.18 | 0.42 |



Stellar Parameters For KIC 005887393

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7612^{+211}_{-343} | $3.787^{+0.391}_{-0.092}$ | $-0.080^{+0.200}_{-0.350}$ | $2.968^{+0.418}_{-1.339}$ | $1.969^{+0.092}_{-0.521}$ | $0.106^{+0.335}_{-0.032}$ |
| | +3%/-5% | +10%/-2% | +250%/-438% | +14%/-45% | +5%/-26% | +316%/-31% |
| Source | KIC0 | KIC0 | KIC0 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005887393-01 / KOI 7748.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -6 ± 1 | $1.06^{+0.27}_{-0.27}$ | 4292^{+314}_{-447} | 5958^{+729}_{-622} | $3.038^{+2.348}_{-1.135}$ |
| Alt. | -2 ± 1 | $0.88^{+0.29}_{-0.24}$ | 4337^{+293}_{-464} | 4717^{+794}_{-817} | $1.269^{+1.273}_{-0.678}$ |

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

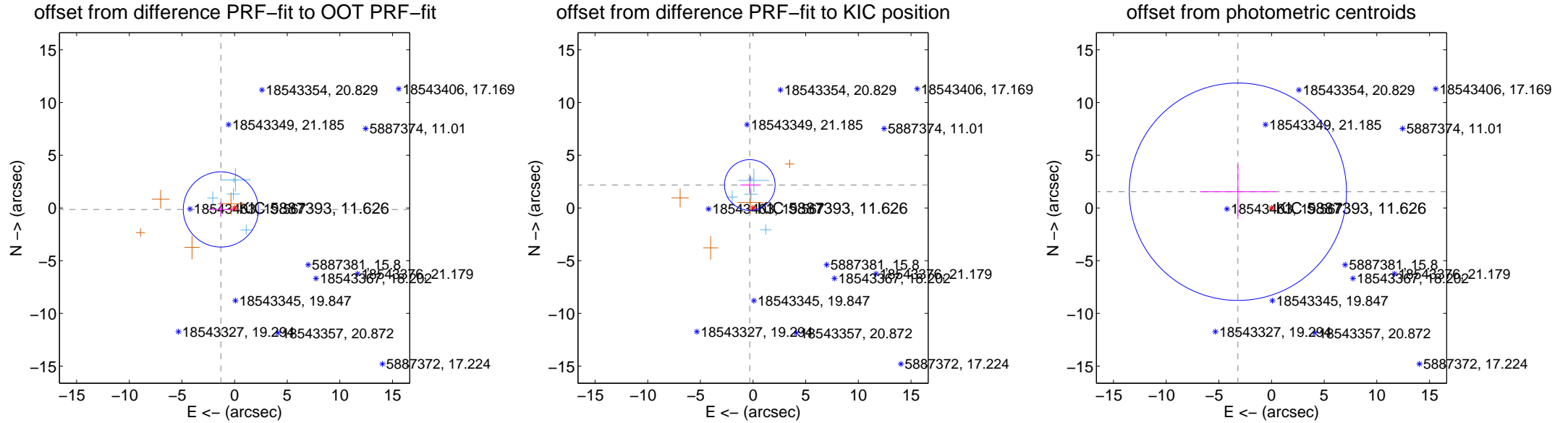
DV Centroid Data

Supplemental centroid analysis for 005887393-01. **Kepler magnitude: 11.63.** Transit SNR 7.31

There are 5 quarters with good PRF difference image offsets

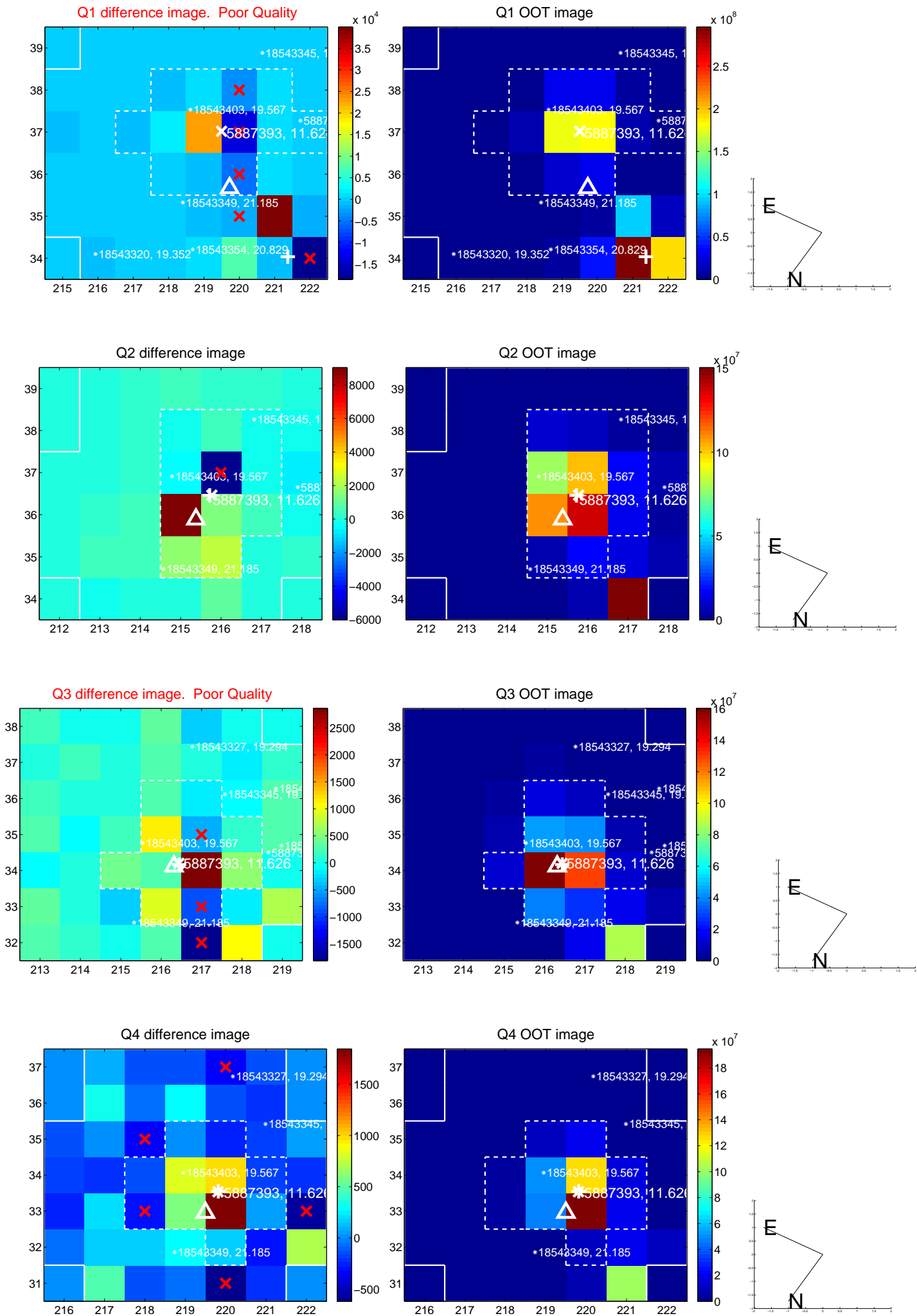
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.311 ± 1.189 | 1.10 | 1.304 ± 1.160 | -0.142 ± 0.700 |
| PRF-fit source offset from KIC position | 2.198 ± 0.801 | 2.74 | 0.310 ± 0.908 | 2.176 ± 0.799 |
| photometric centroid source offset | 3.54 ± 3.44 | 1.03 | 3.19 ± 3.60 | 1.54 ± 2.61 |

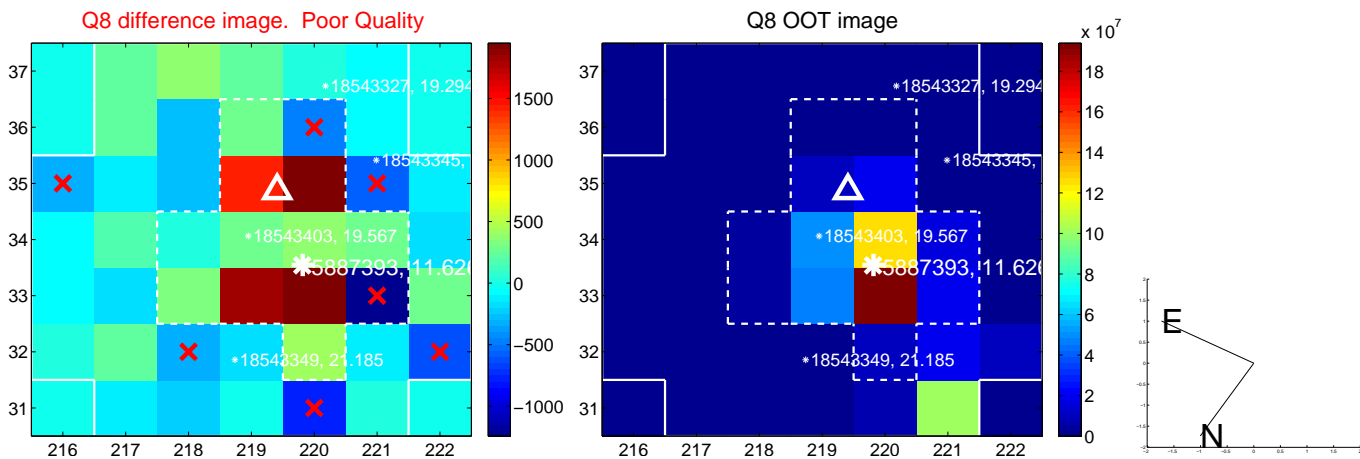
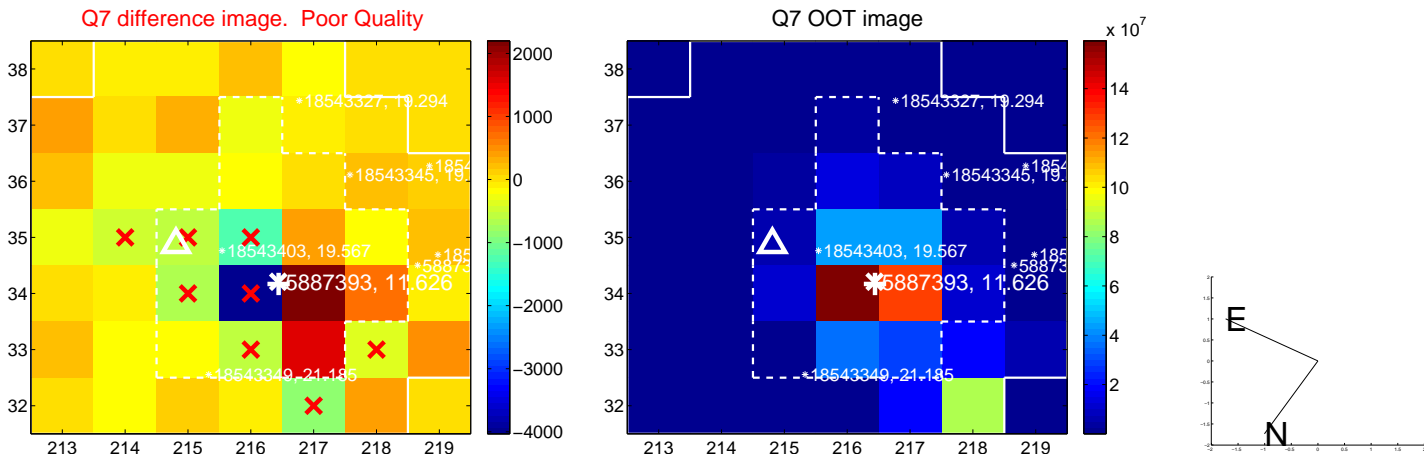
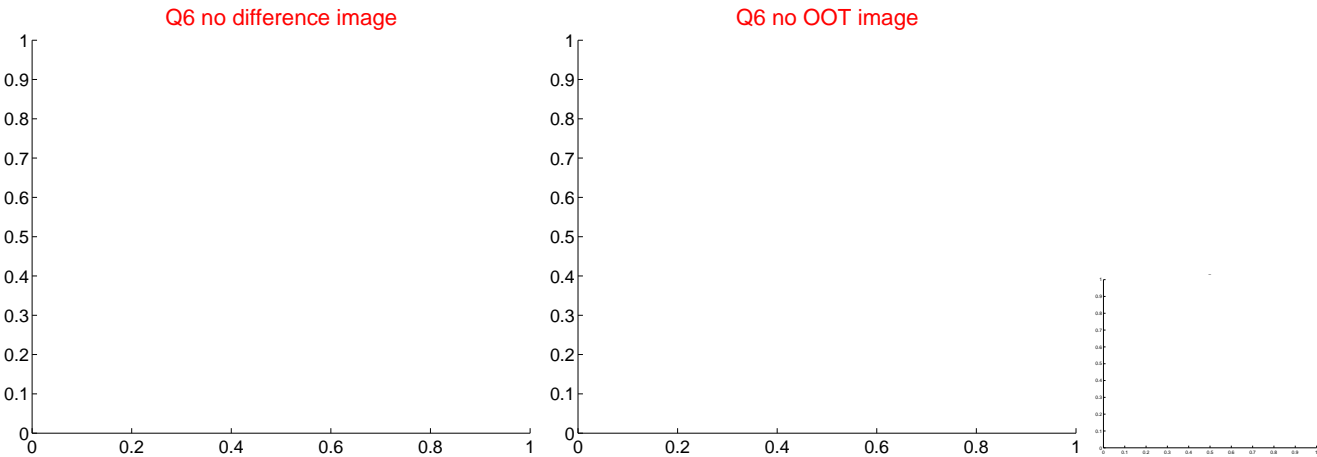
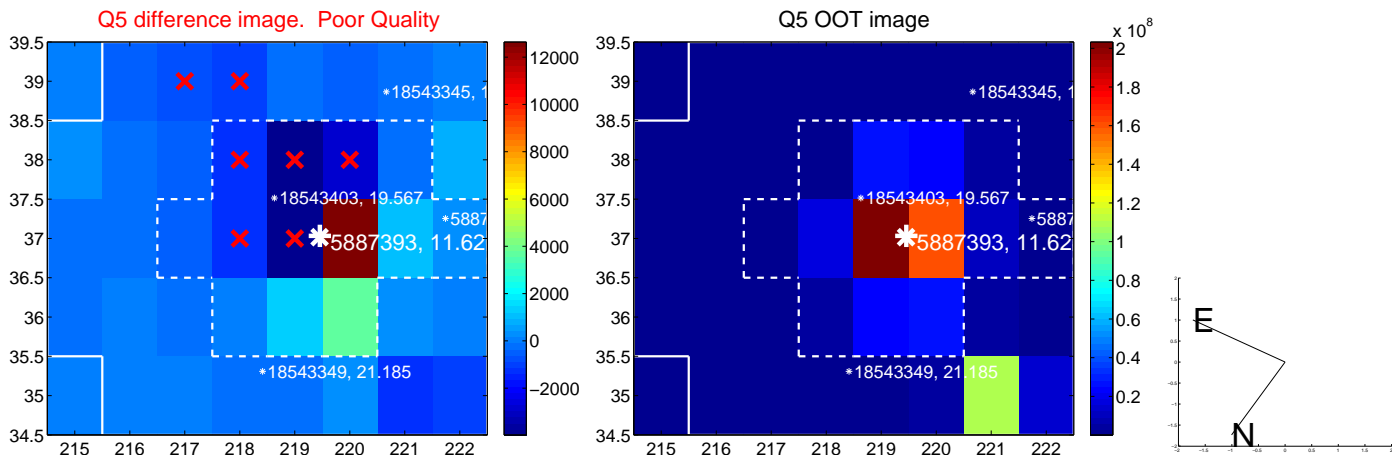


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

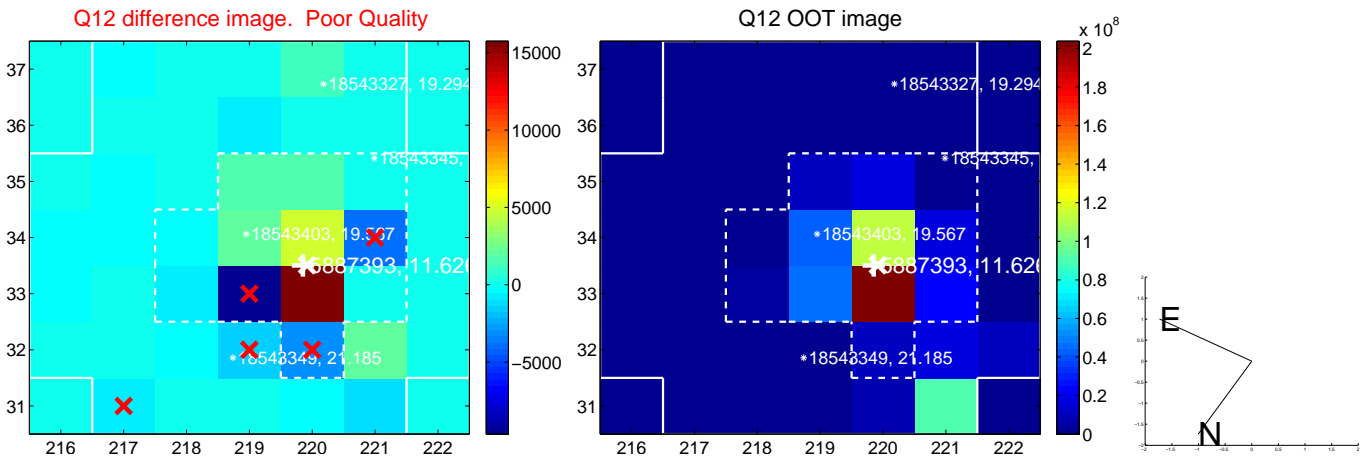
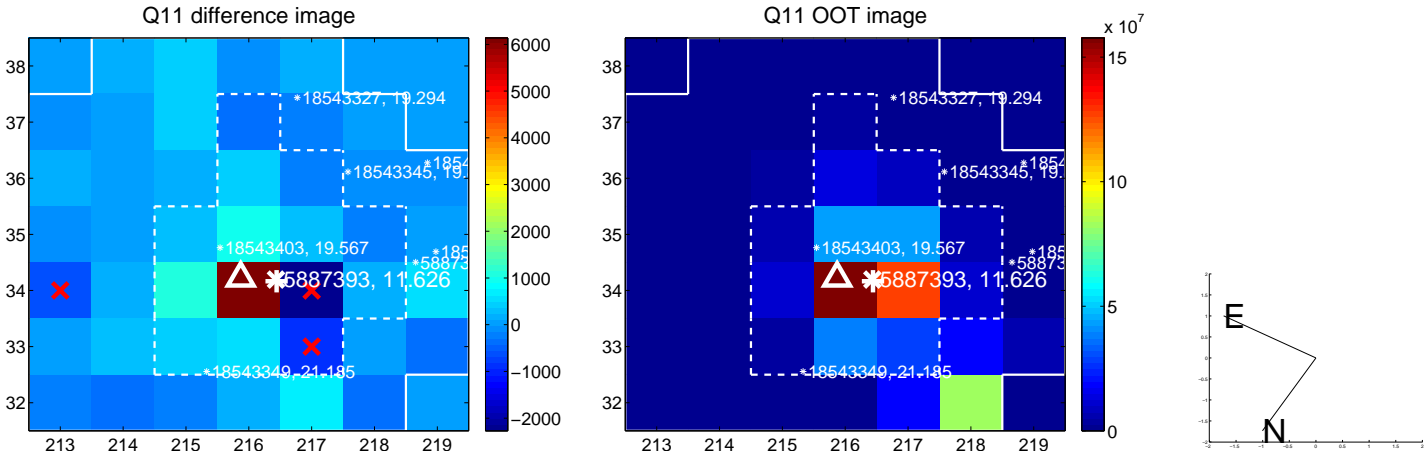
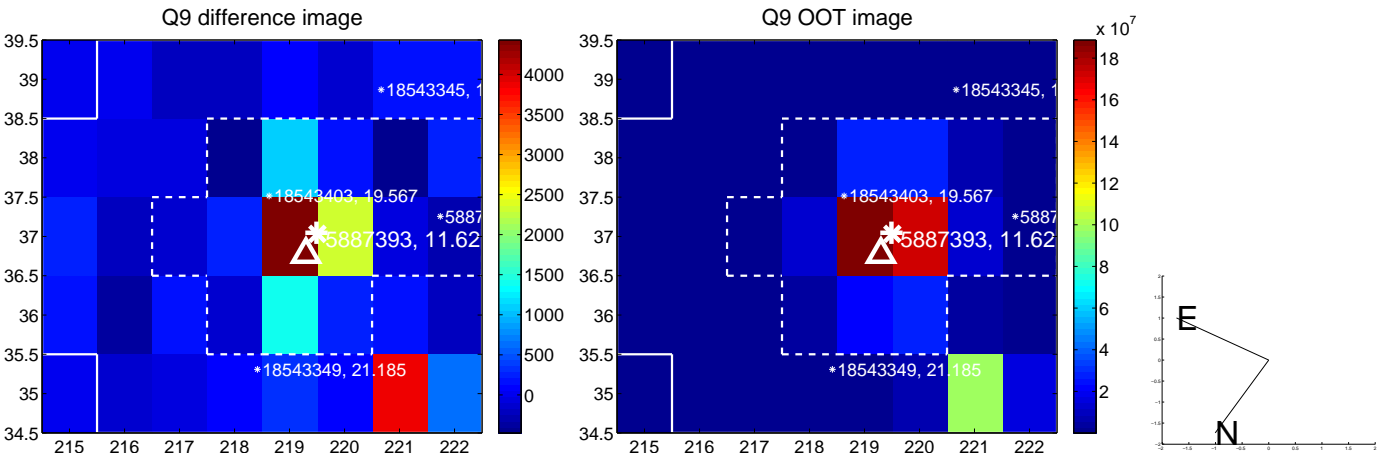
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



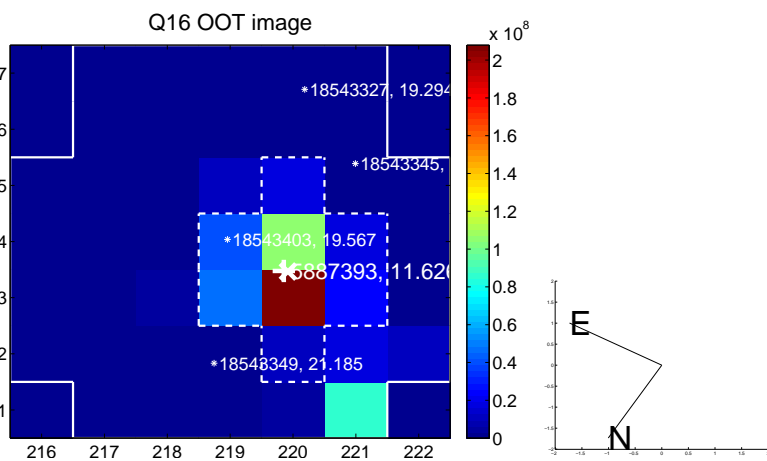
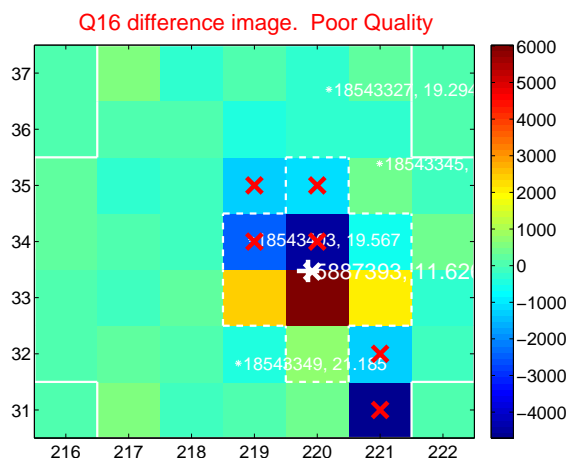
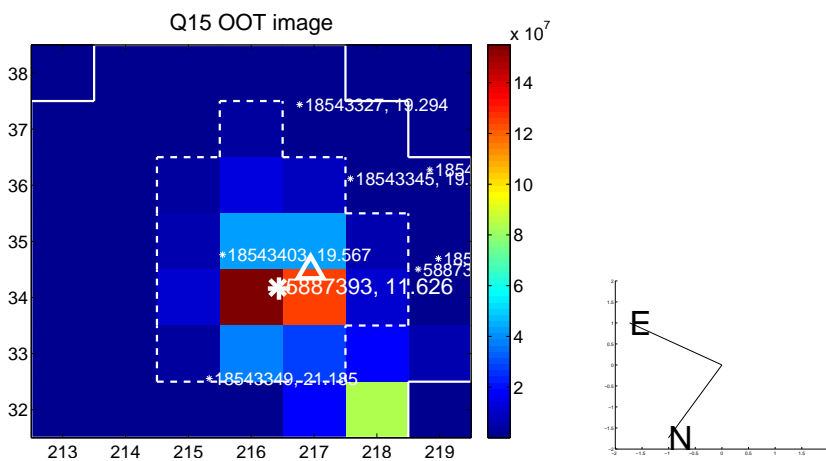
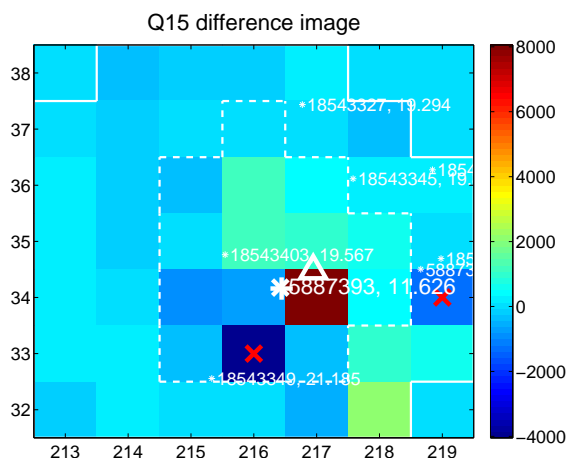
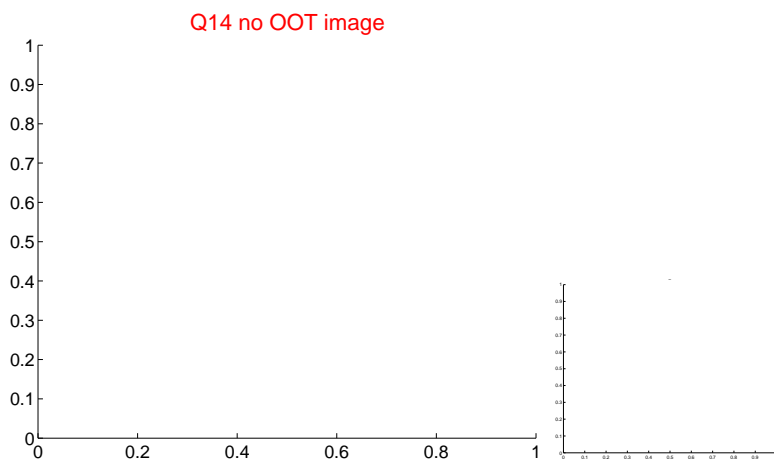
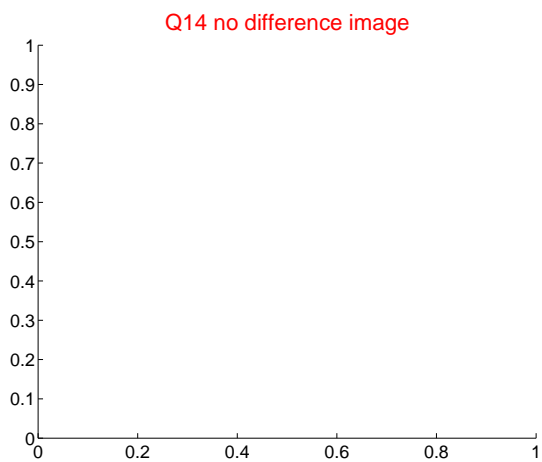
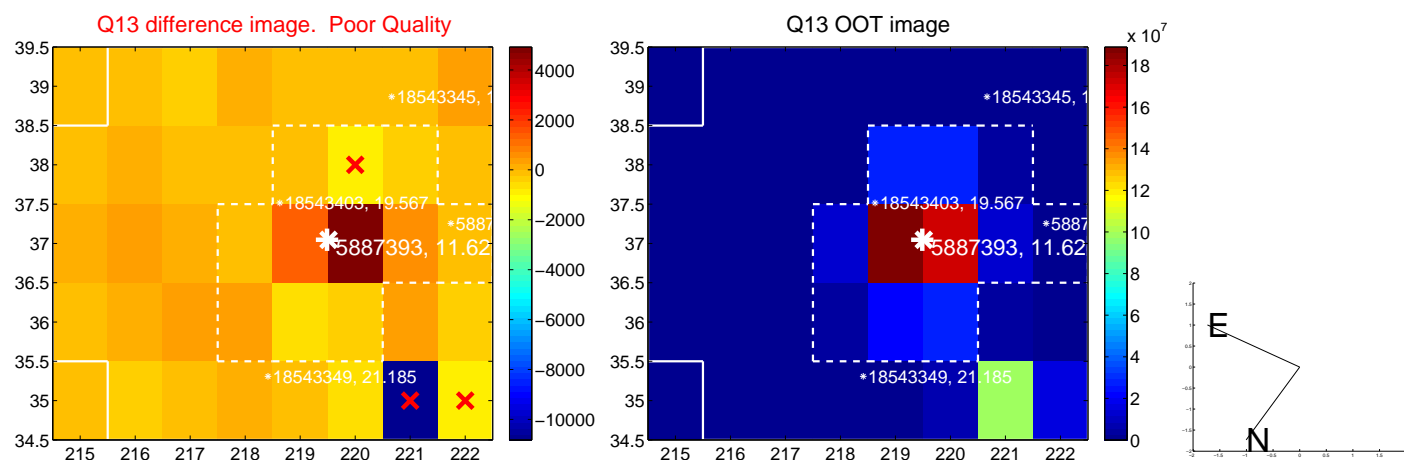
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



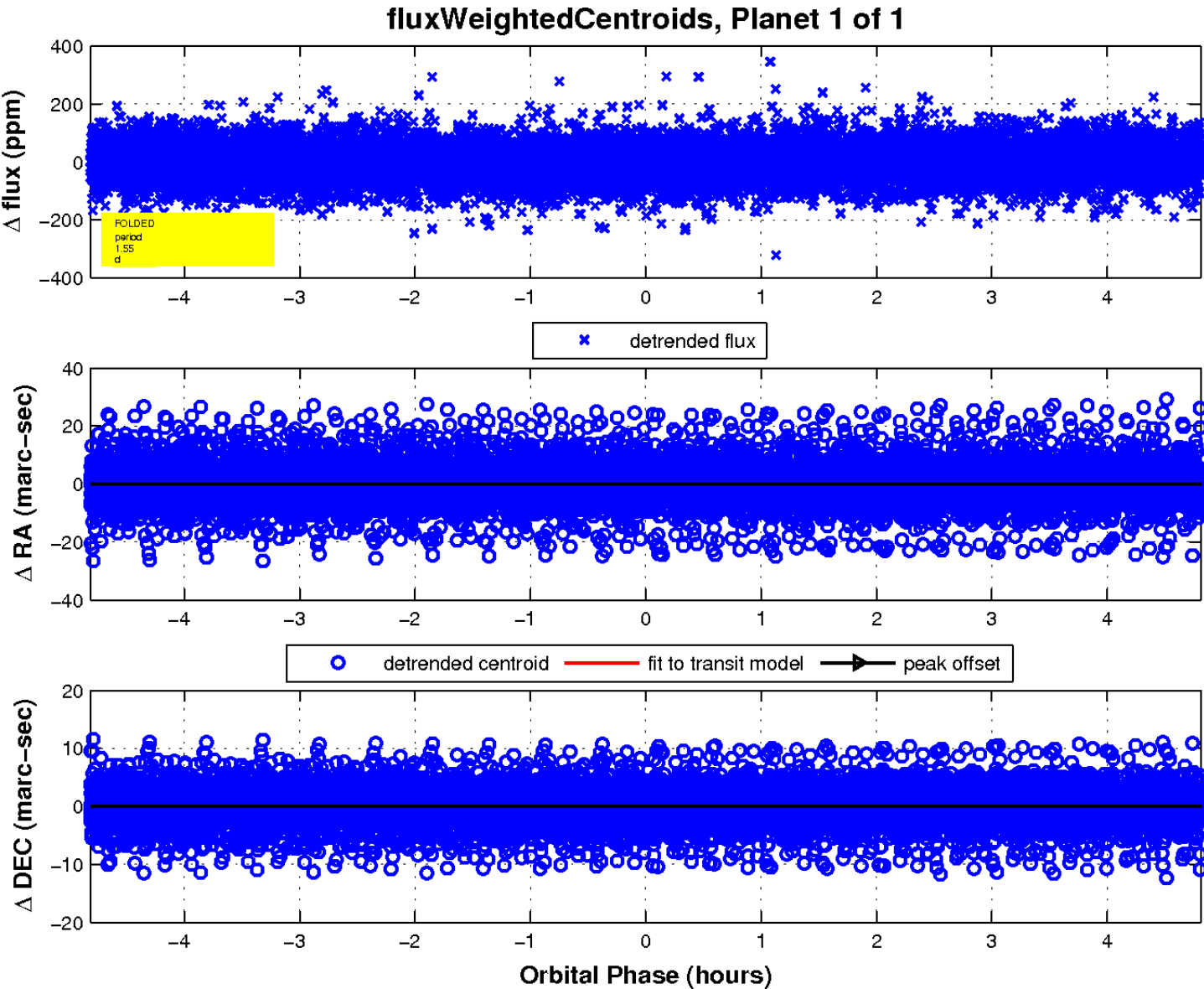
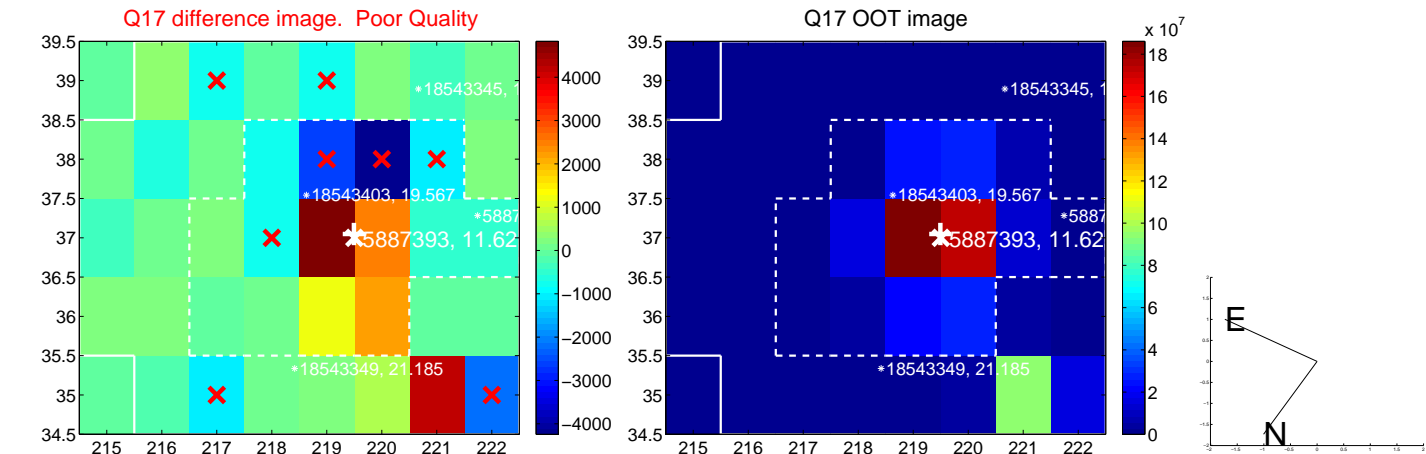
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UKIRT Image

Declination

