

KIC 010857698

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010857698-01 | OBS | No | 1.175916 | 132.290399 | 16.9 | 4.072 | 8.3 | 6.9 | 2.13 | 7302 | 0.93 | 18175.00 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 010857698-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |

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

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

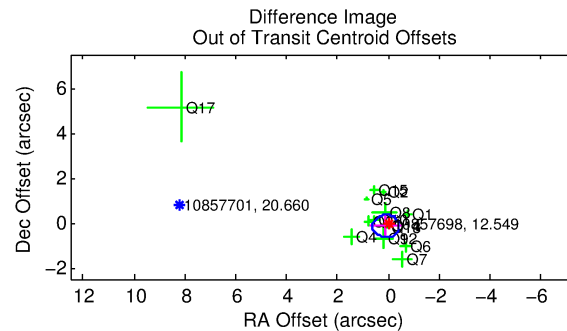
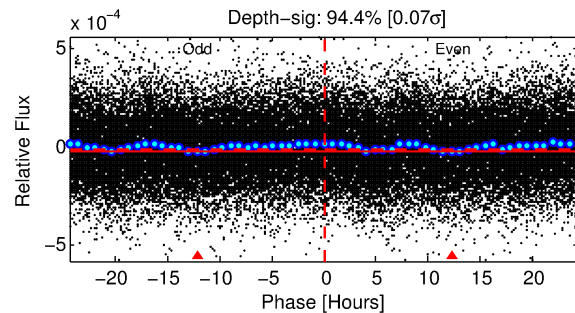
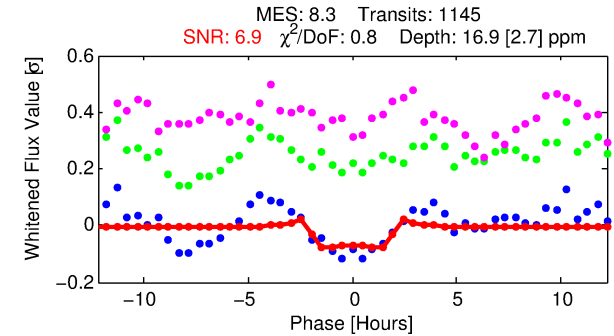
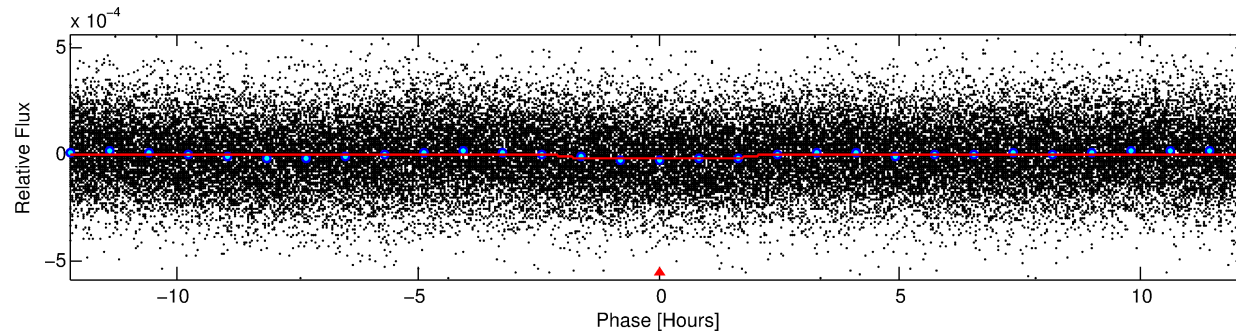
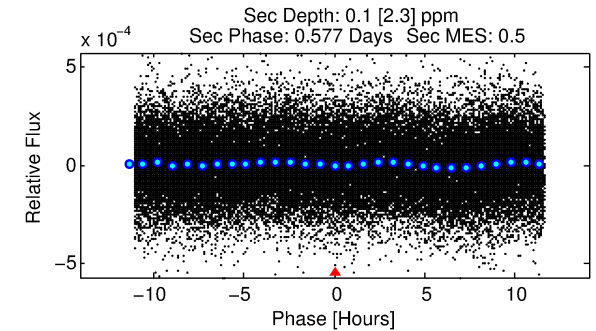
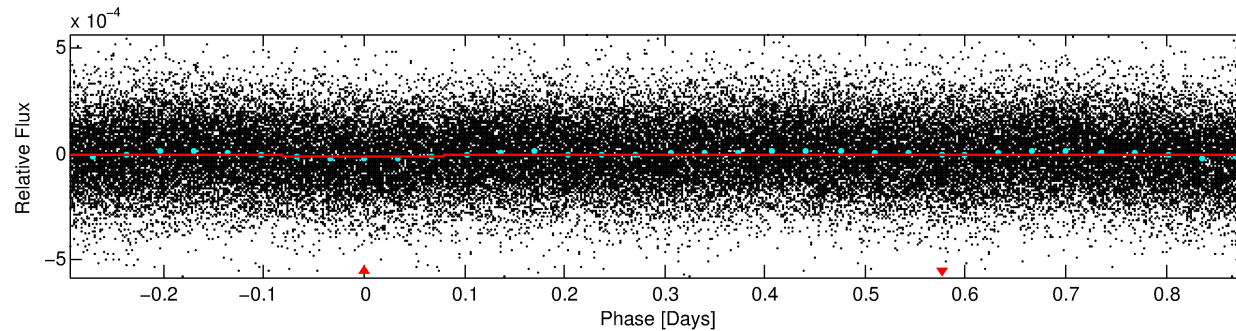
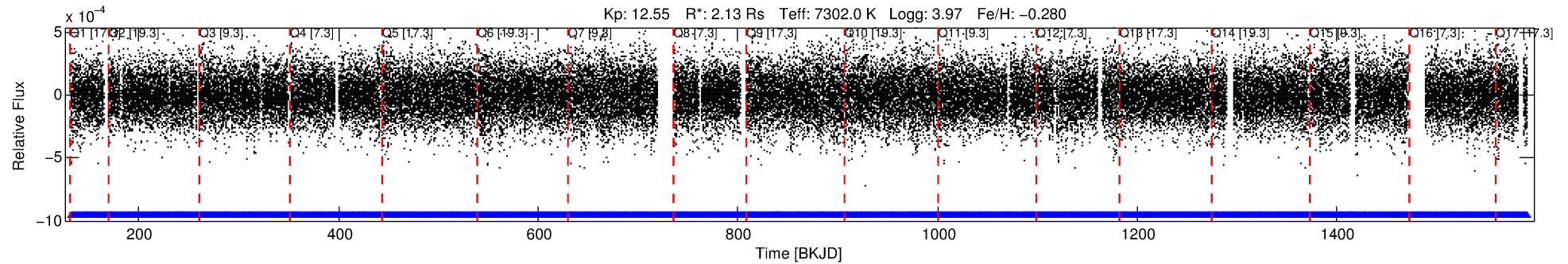
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010857698-01

No Significant Match Found

DV One-Page Summary

KIC: 10857698 Candidate: 1 of 1 Period: 1.176 d



DV Fit Results:

Period = 1.17592 [0.00002] d
Epoch = 132.2904 [0.0045] BKJD
Rp/R* = 0.0040 [0.0008]
a/R* = 1.89 [1.39]
b = 0.63 [0.98]
Seff = 18175.00 [9268.21]
Teq = 2961 [377] K
Rp = 0.93 [0.37] Re
a = 0.0252 [0.0080] AU
Ag = 0.03 [0.92] [-1.05σ]
Teffp = 1922 [14258] K [-0.07σ]

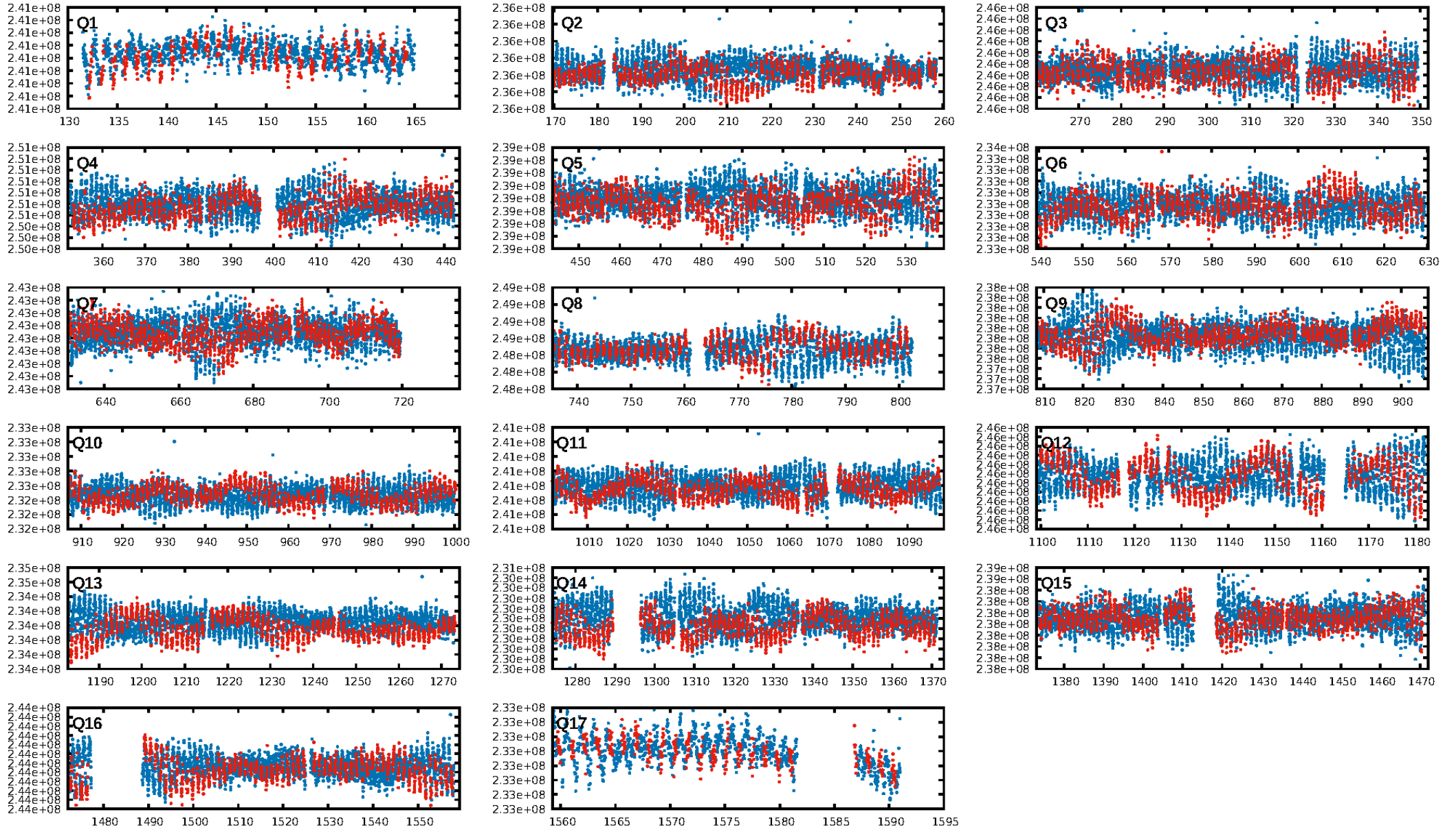
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.05e-12
RollingBand-fgt: 1.00 [1094/1094]
GhostDiagnostic-chr: 1.07
Centroid-sig: N/A
Centroid-so: 1.054 arcsec [1.51σ]
OotOffset-rm: 0.177 arcsec [1.04σ]
KicOffset-rm: 0.278 arcsec [1.63σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

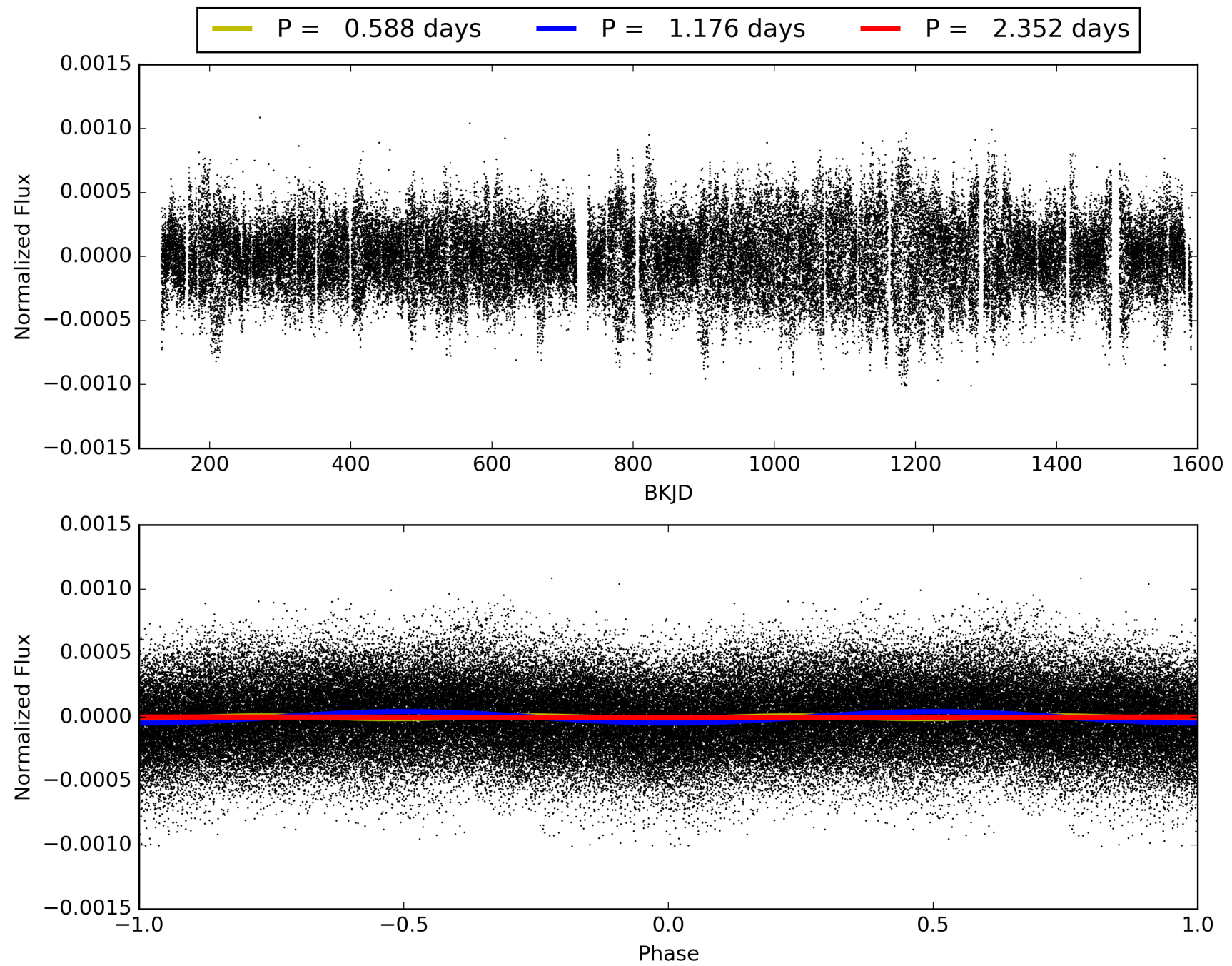
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:54:16 Z

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

TCE 010857698-01, PDC Light Curves

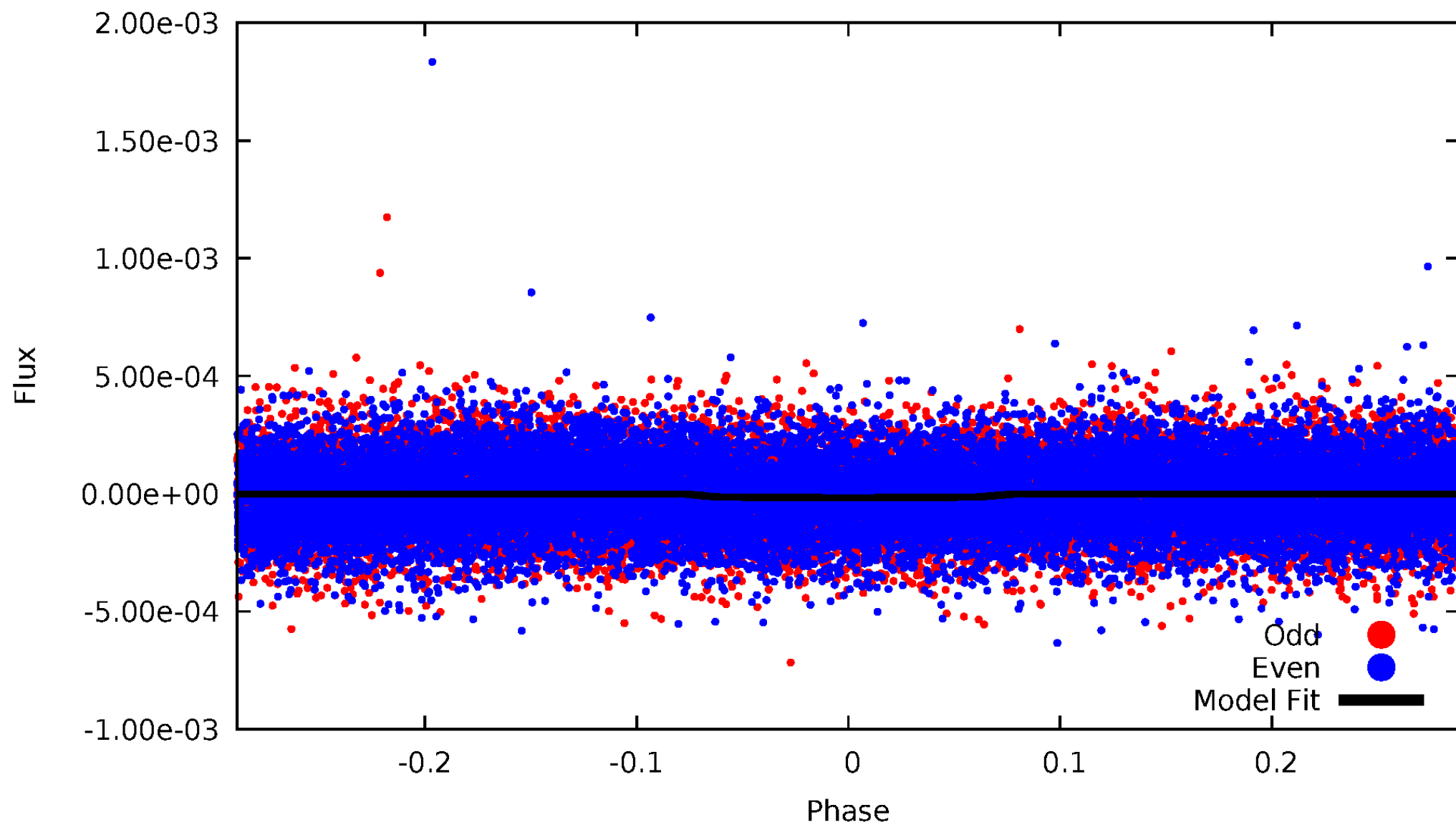


TCE 010857698-01



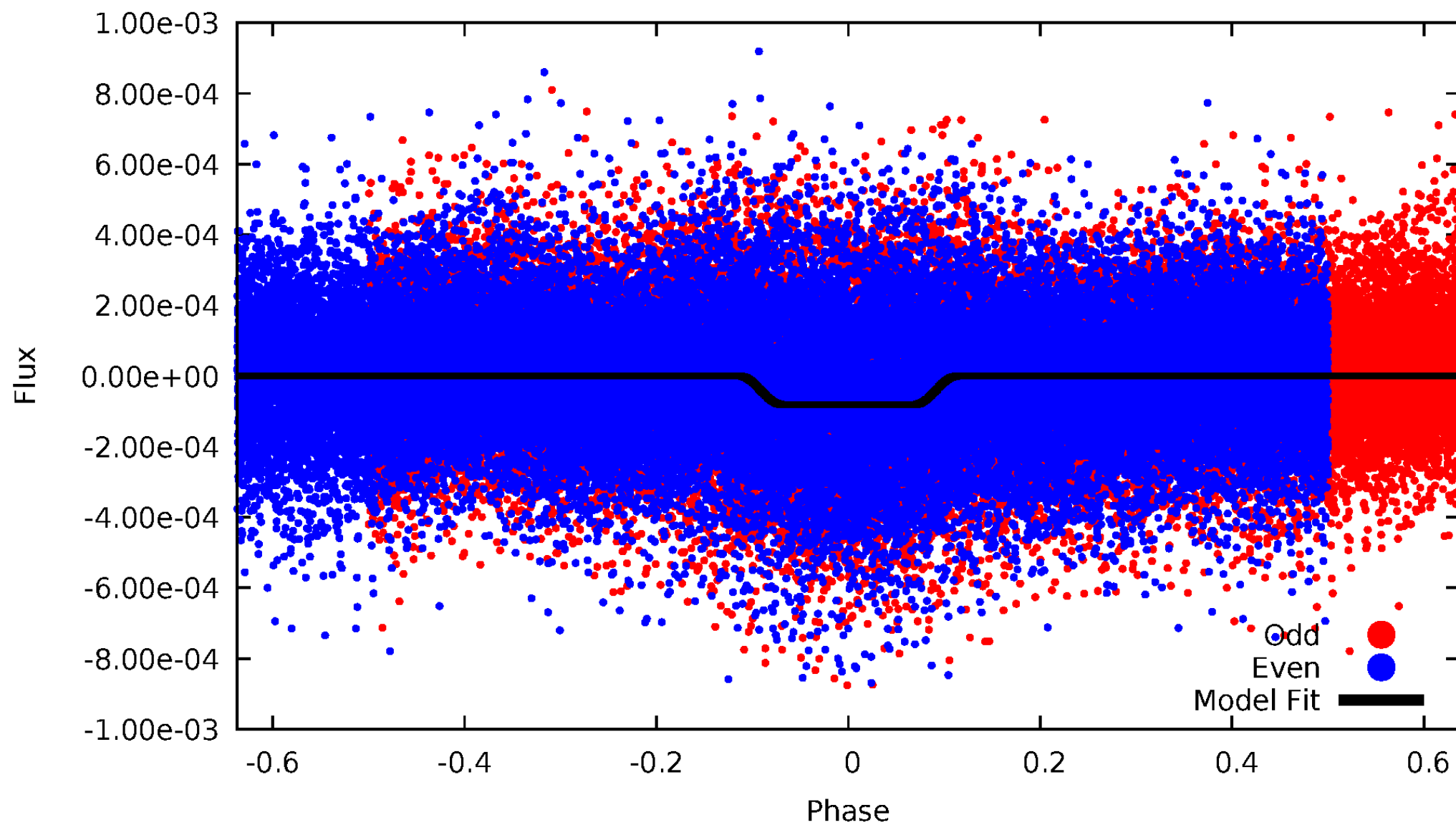
DV Odd/Even

TCE 010857698-01



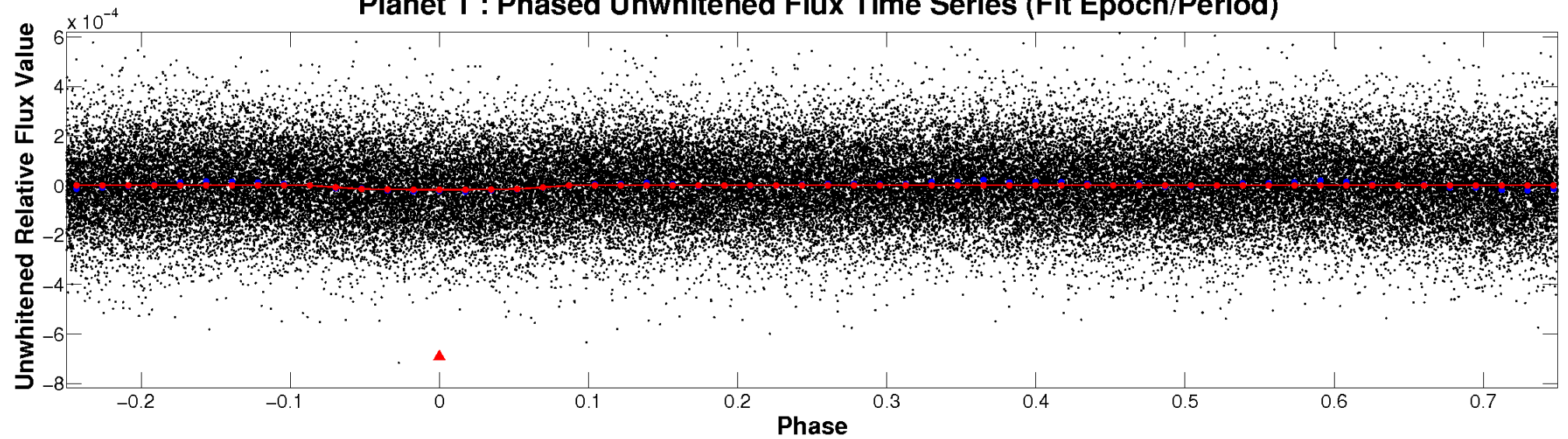
ALT Odd/Even

TCE 010857698-01

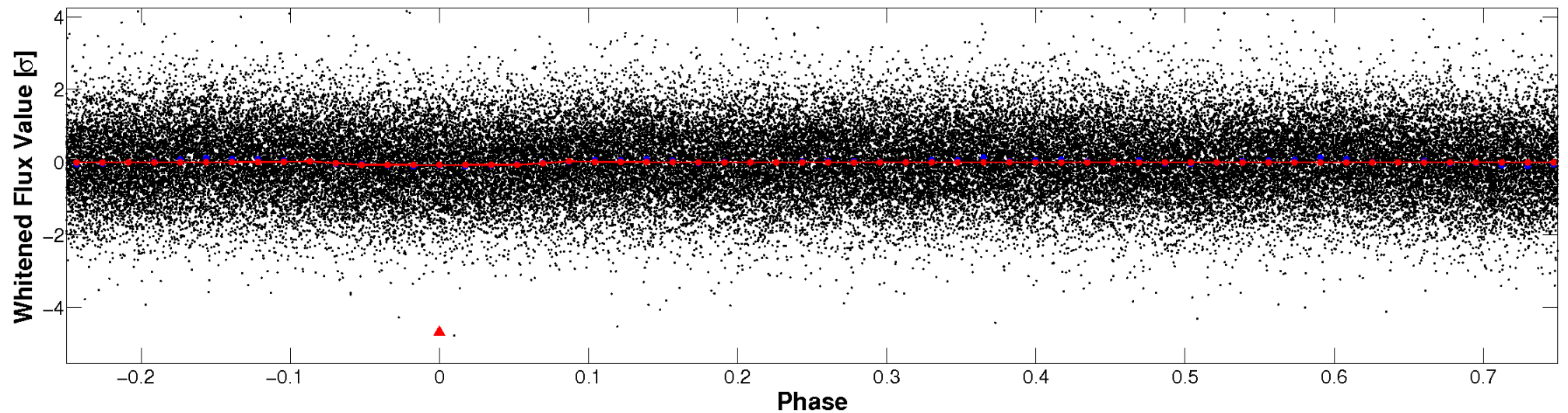


Non-Whitened Vs. Whitened Light Curve

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

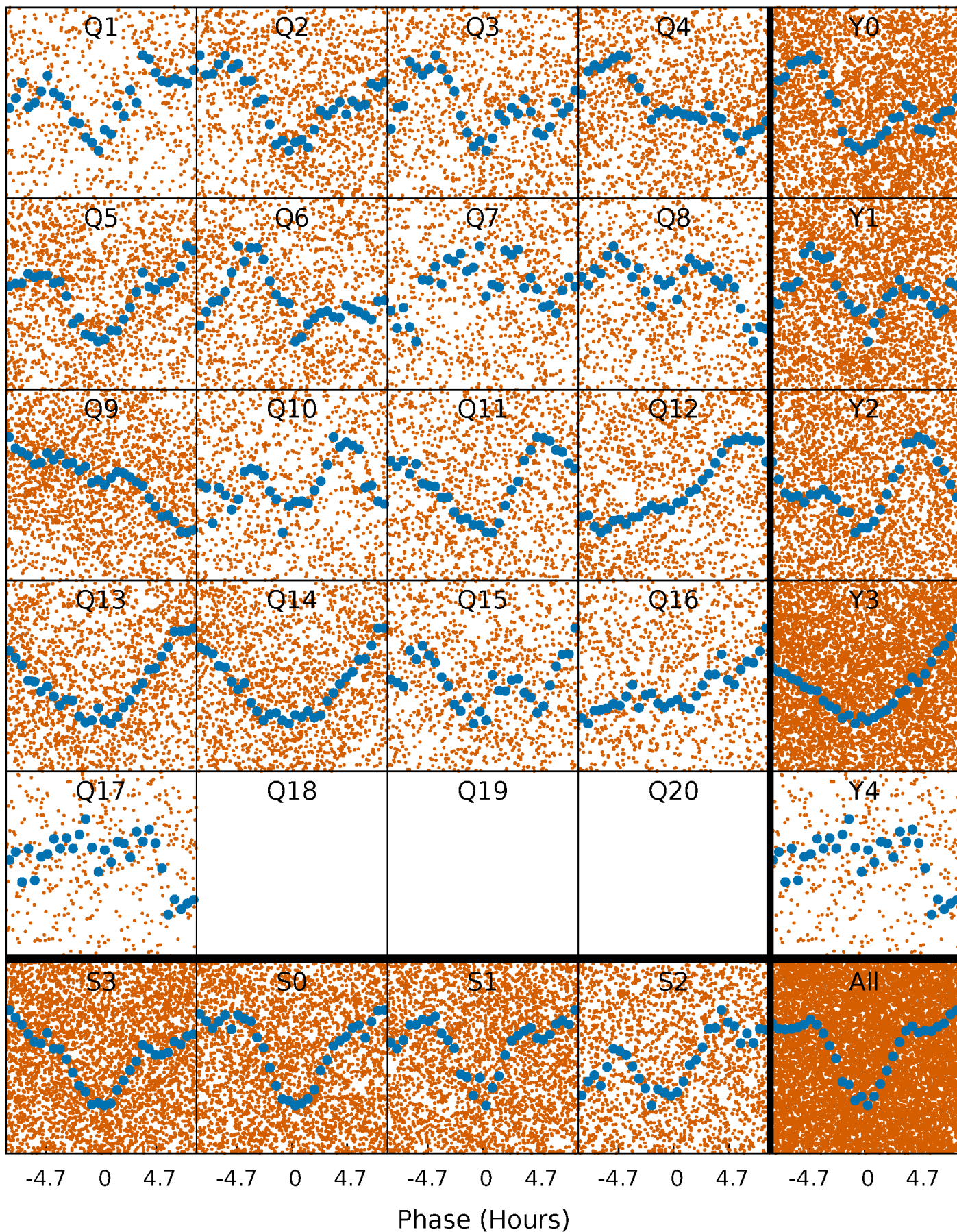


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



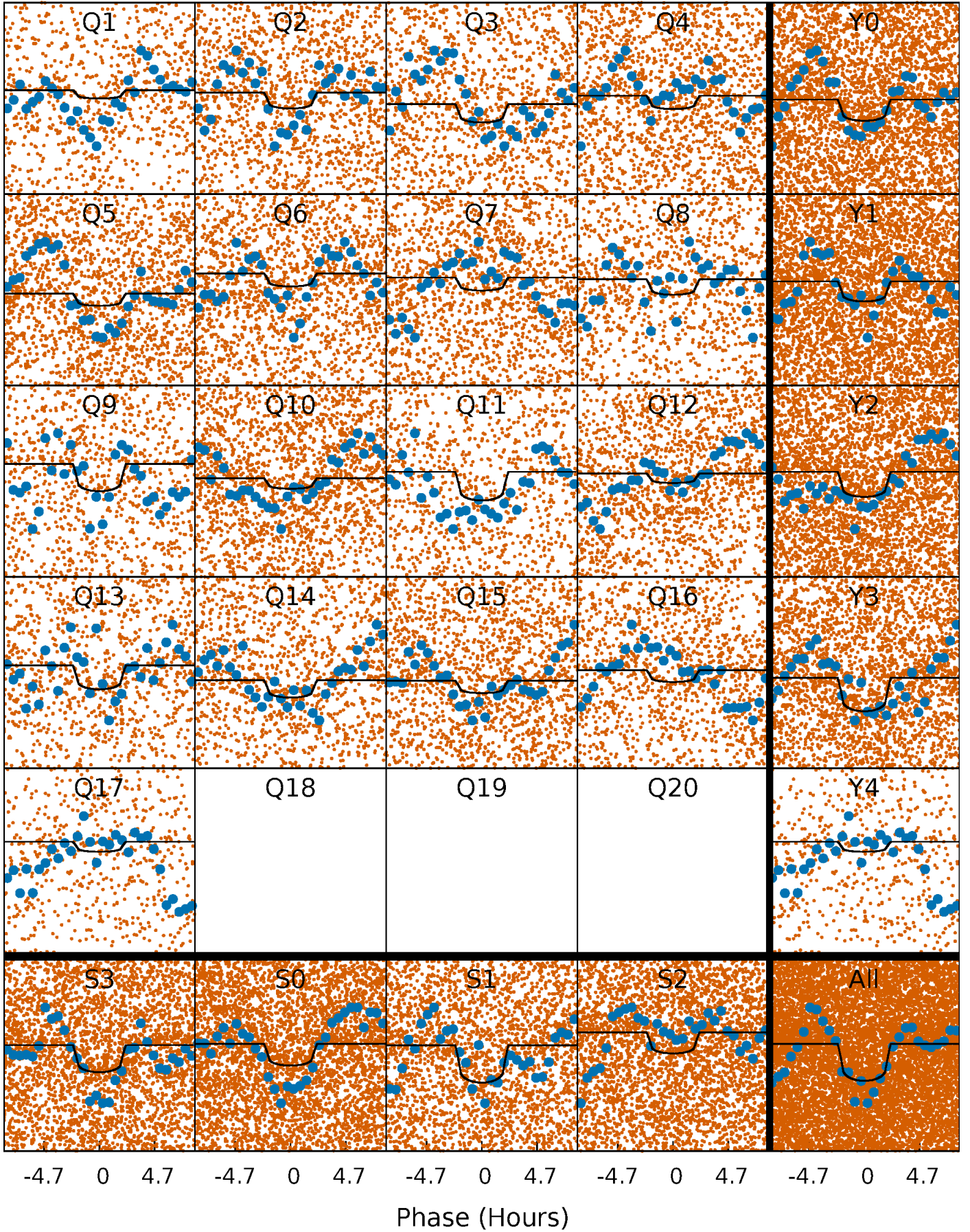
PDC Quarter-Phased Transit Curves

TCE 010857698-01 P= 1.175916 Days $T_0=132.290399$ (BKJD)



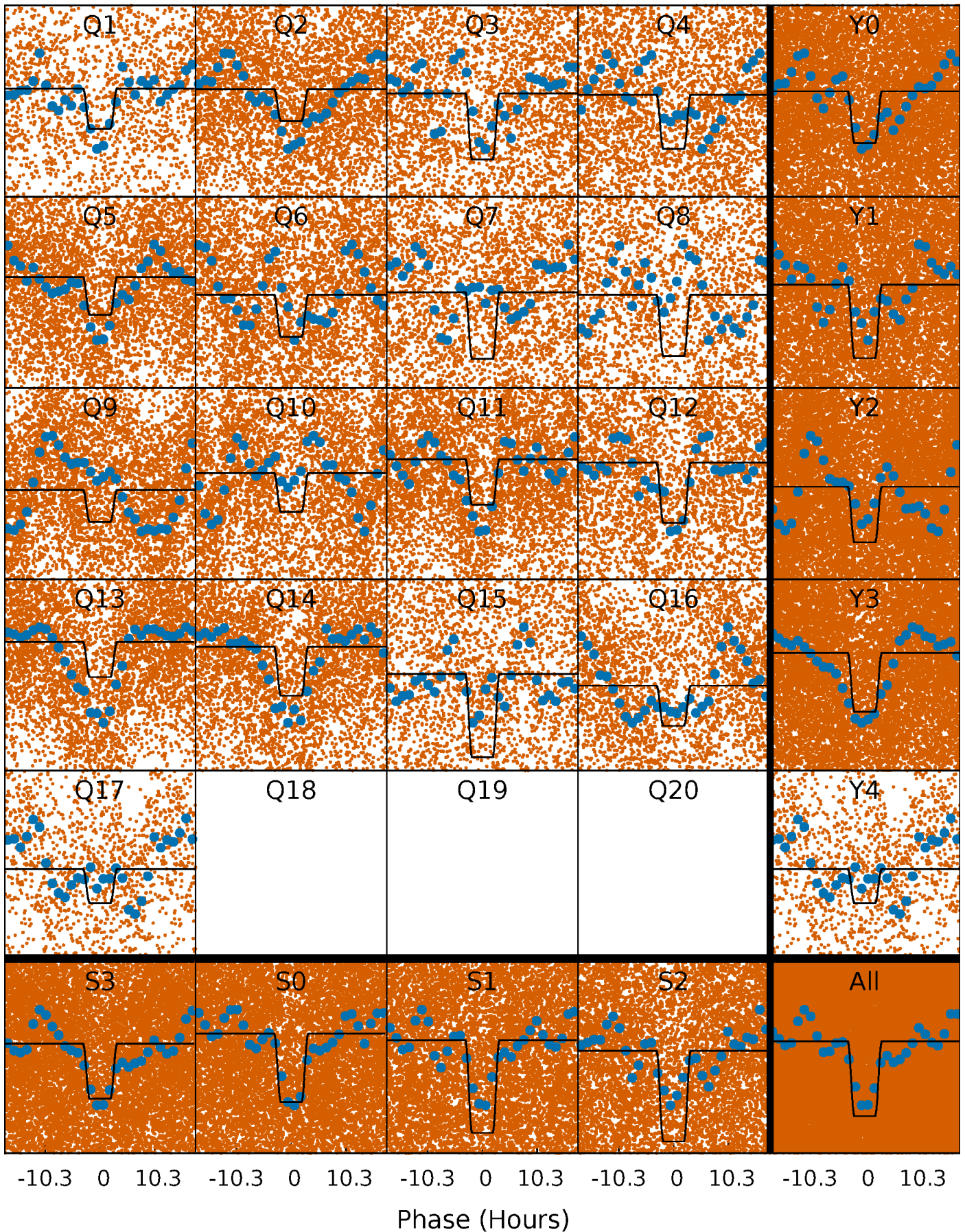
DV Quarter-Phased Transit Curves

TCE 010857698-01 P= 1.175916 Days $T_0=132.290399$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

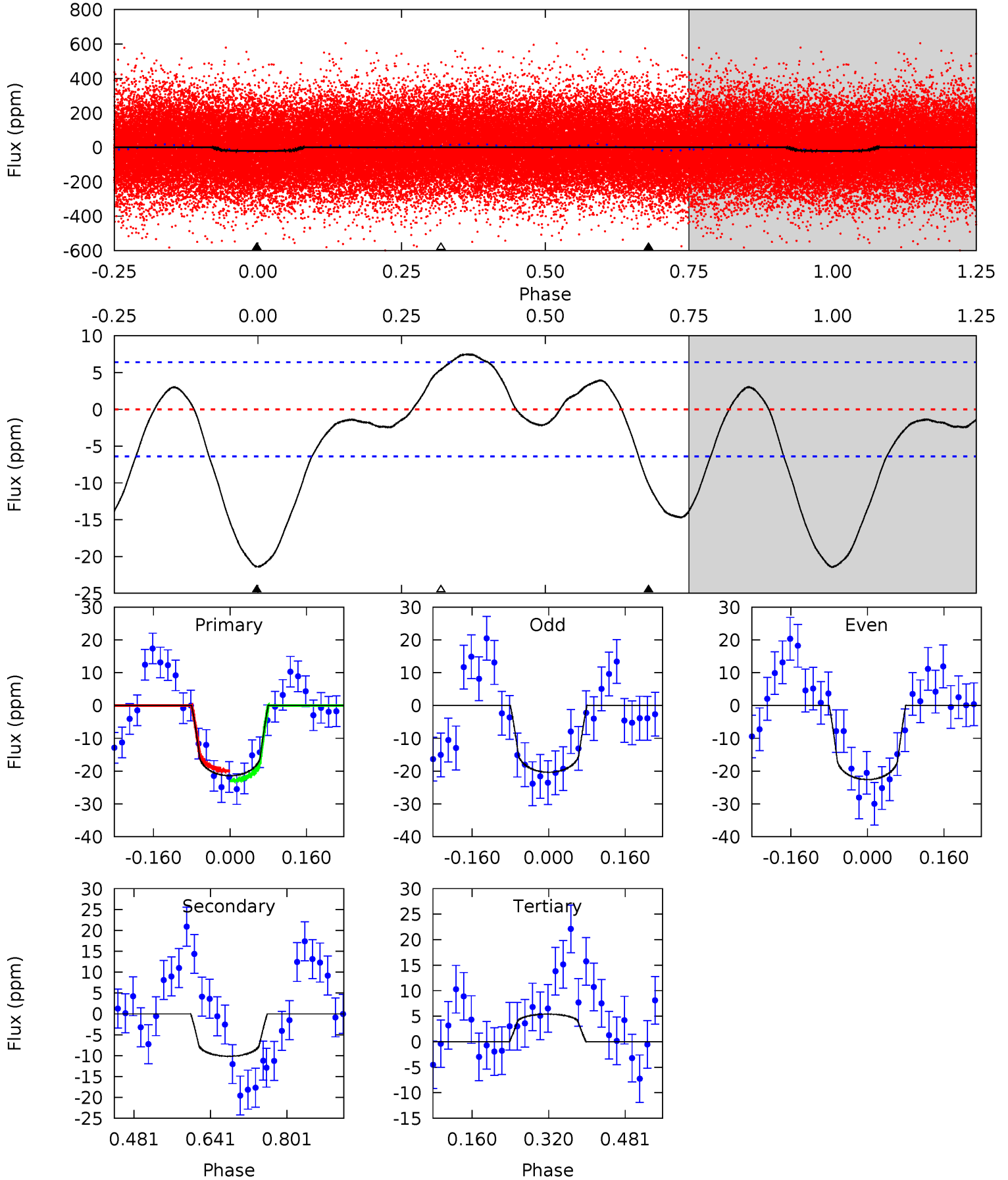
TCE 010857698-01 P= 1.175945 Days $T_0=132.279411$ (BKJD)



DV Model-Shift Uniqueness Test

010857698-01, P = 1.175916 Days, E = 131.114483 Days

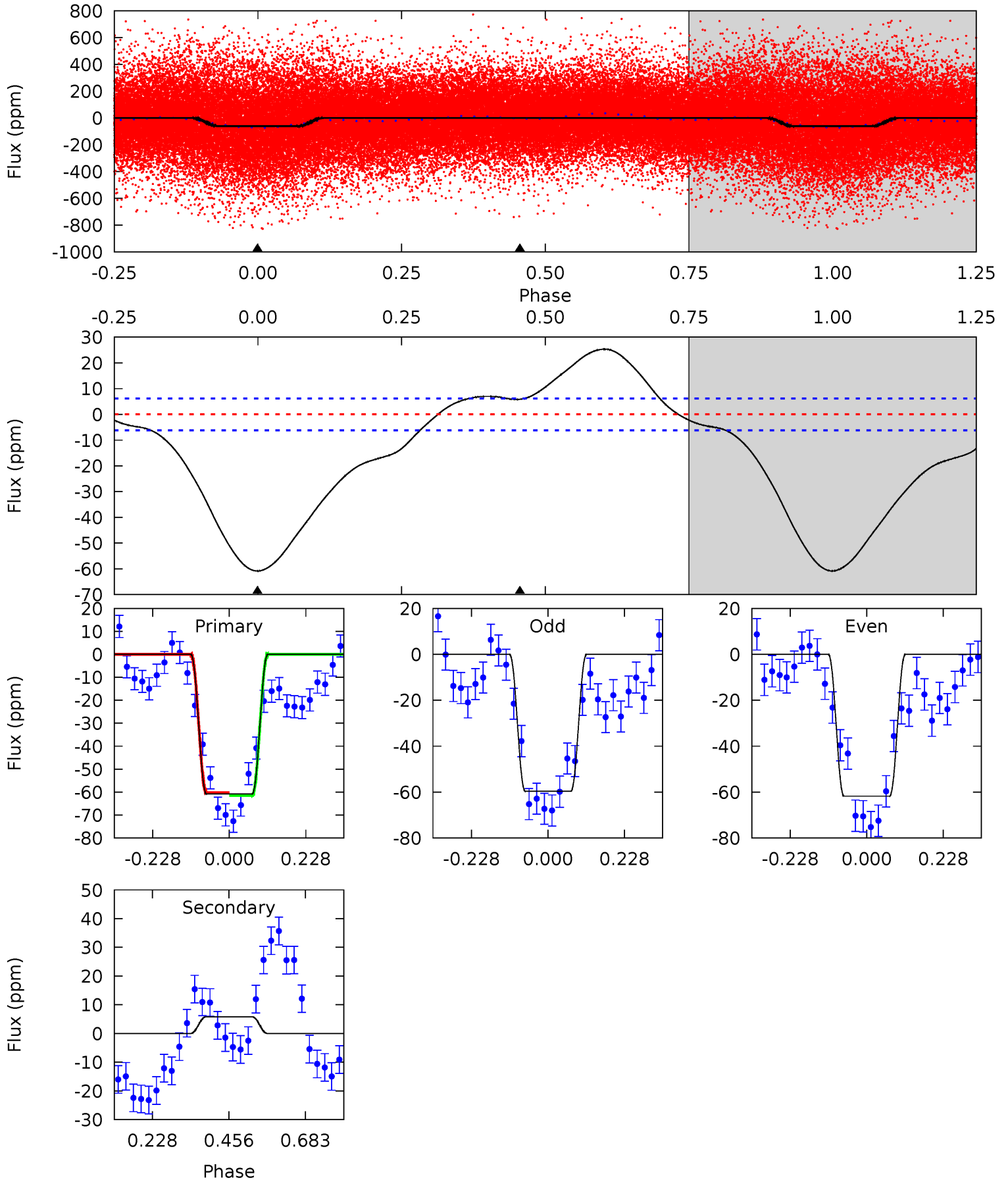
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.9 | 7.08 | -3.78 | 0 | 4.46 | 1.40 | 2.57 | 18.7 | 14.9 | 10.9 | 7.08 | 0.78 | 0.96 | 0.26 | 1.05 |



Alt Model-Shift Uniqueness Test

010857698-01, P = 1.175945 Days, E = 131.103466 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 43.2 | -4.14 | 0 | 0 | 4.39 | 1.21 | 4.51 | 43.2 | 43.2 | -4.14 | -4.14 | 0.76 | 0.87 | 0.29 | 0.44 |



Stellar Parameters For KIC 010857698

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7302^{+203}_{-304} | $3.970^{+0.273}_{-0.147}$ | $-0.280^{+0.250}_{-0.350}$ | $2.128^{+0.507}_{-0.760}$ | $1.540^{+0.188}_{-0.323}$ | $0.225^{+0.464}_{-0.094}$ |
| | +3%/-4% | +7%/-4% | +89%/-125% | +24%/-36% | +12%/-21% | +206%/-42% |
| Source | PHO1 | 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 010857698-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -10 ± 1 | $0.87^{+0.25}_{-0.20}$ | 4079^{+325}_{-371} | 6336^{+870}_{-619} | $4.594^{+2.779}_{-1.796}$ |
| Alt. | 6 ± 1 | $2.07^{+0.34}_{-0.42}$ | 4087^{+321}_{-375} | -4416^{+205}_{-209} | $-0.479^{+0.160}_{-0.270}$ |

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

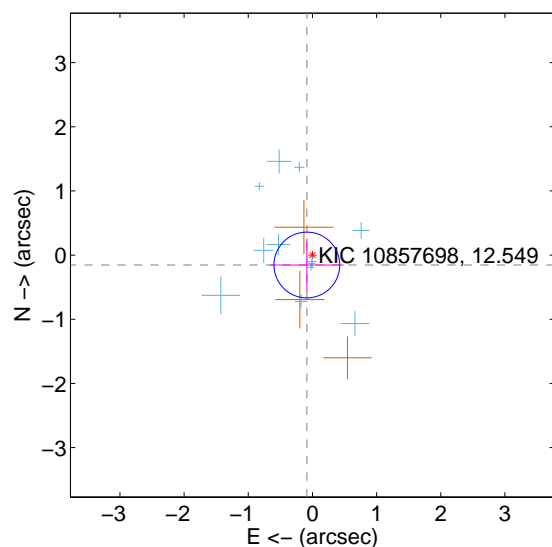
Supplemental centroid analysis for 010857698-01. Kepler magnitude: 12.55. Transit SNR 6.89

There are 12 quarters with good PRF difference image offsets

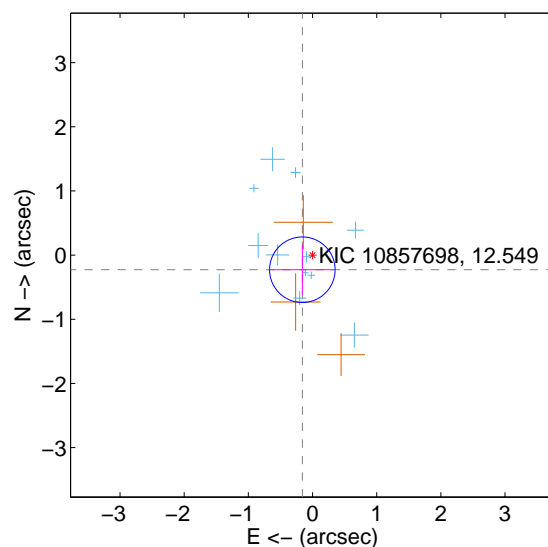
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.177 ± 0.171 | 1.04 | 0.087 ± 0.576 | -0.154 ± 0.412 |
| PRF-fit source offset from KIC position | 0.278 ± 0.170 | 1.63 | 0.159 ± 0.493 | -0.228 ± 0.390 |
| photometric centroid source offset | 1.05 ± 0.70 | 1.51 | 1.04 ± 0.70 | -0.16 ± 0.67 |

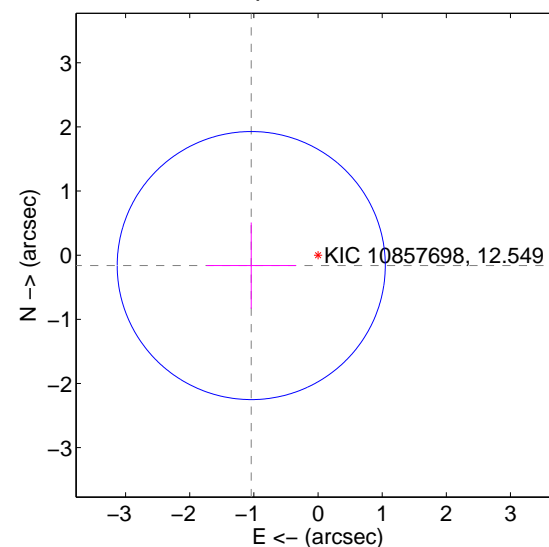
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

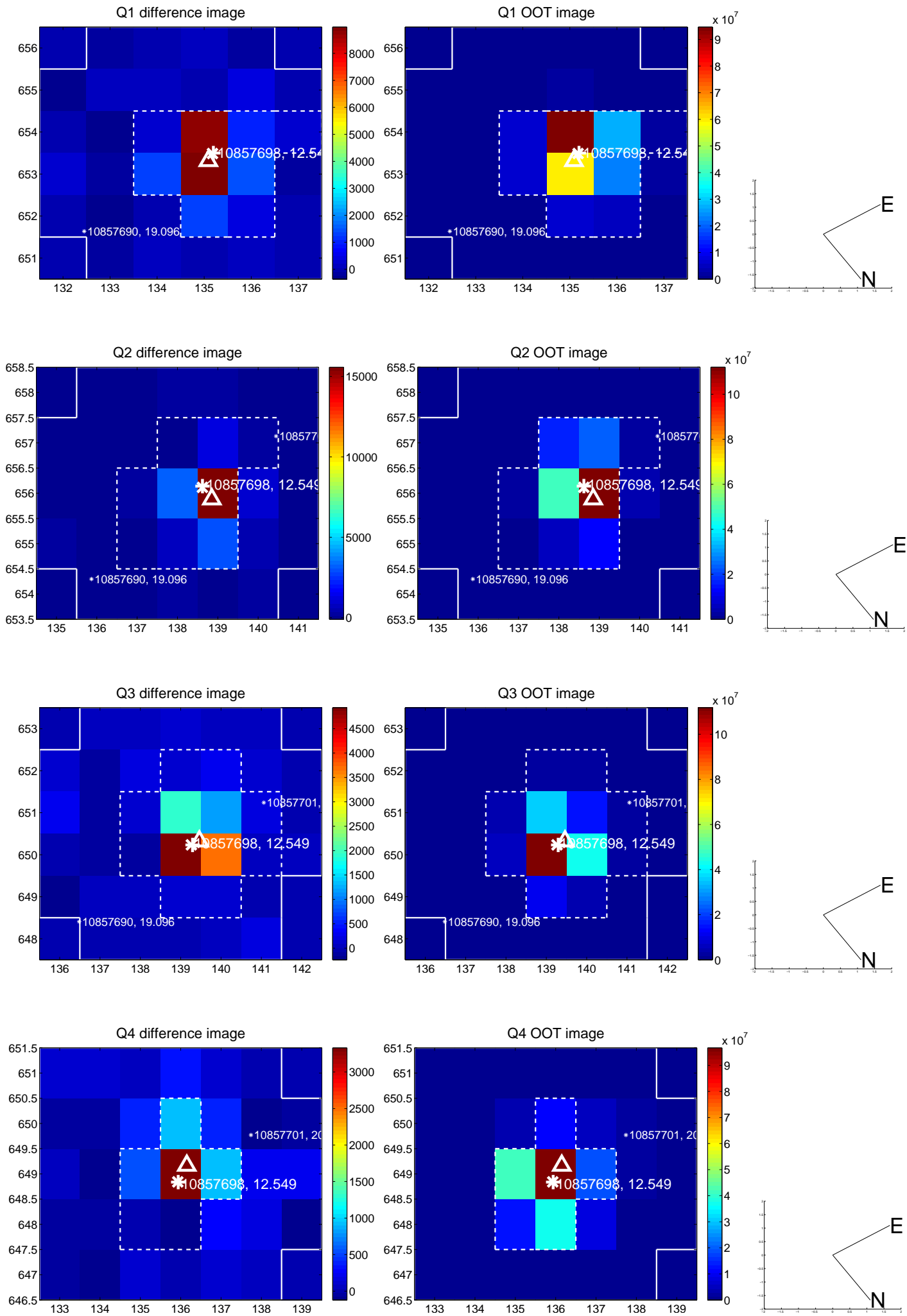


offset from photometric centroids

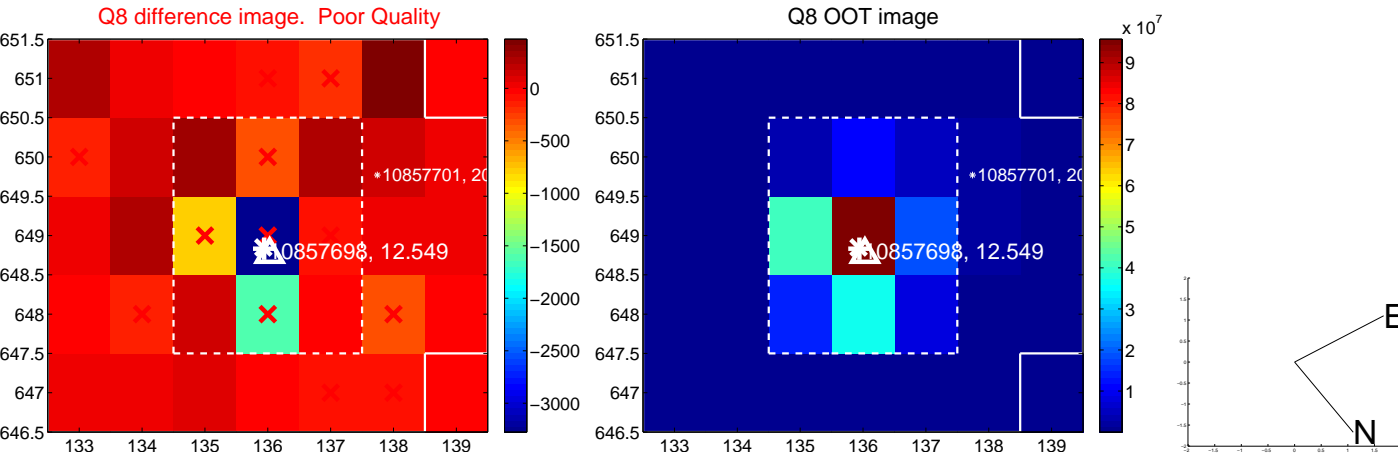
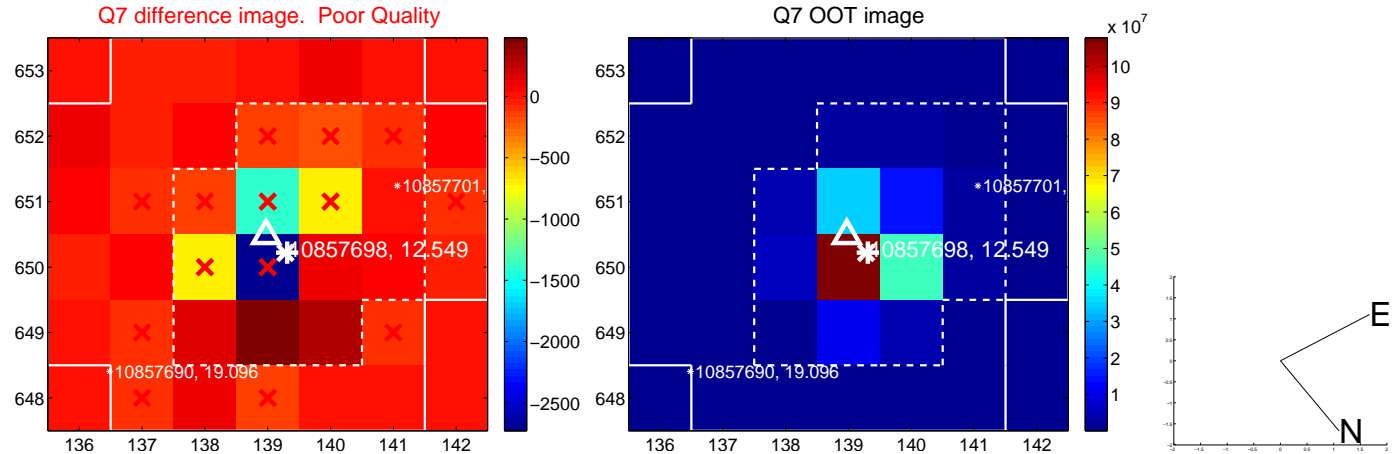
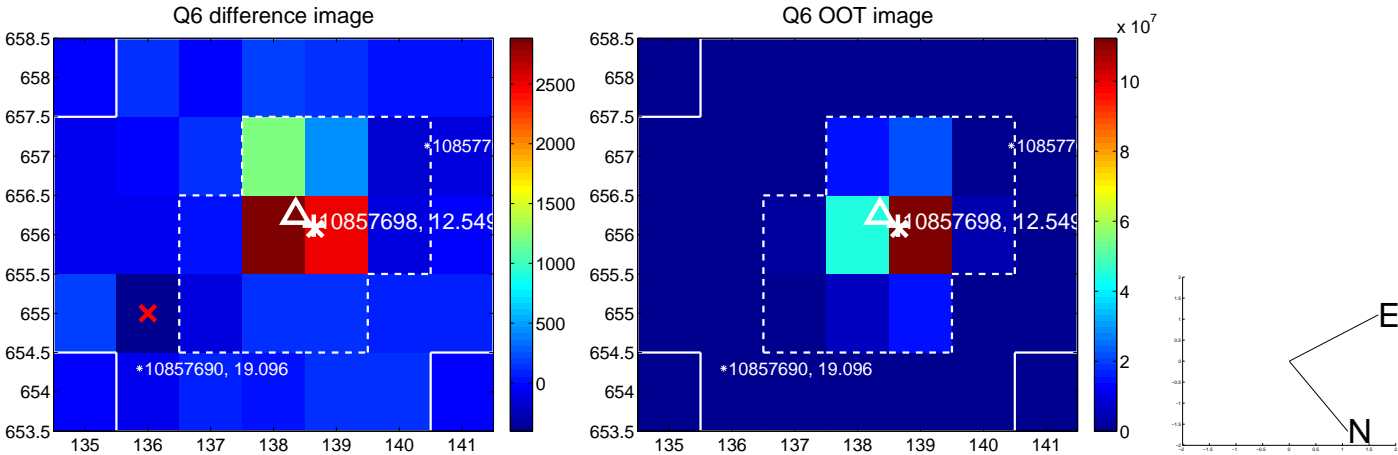
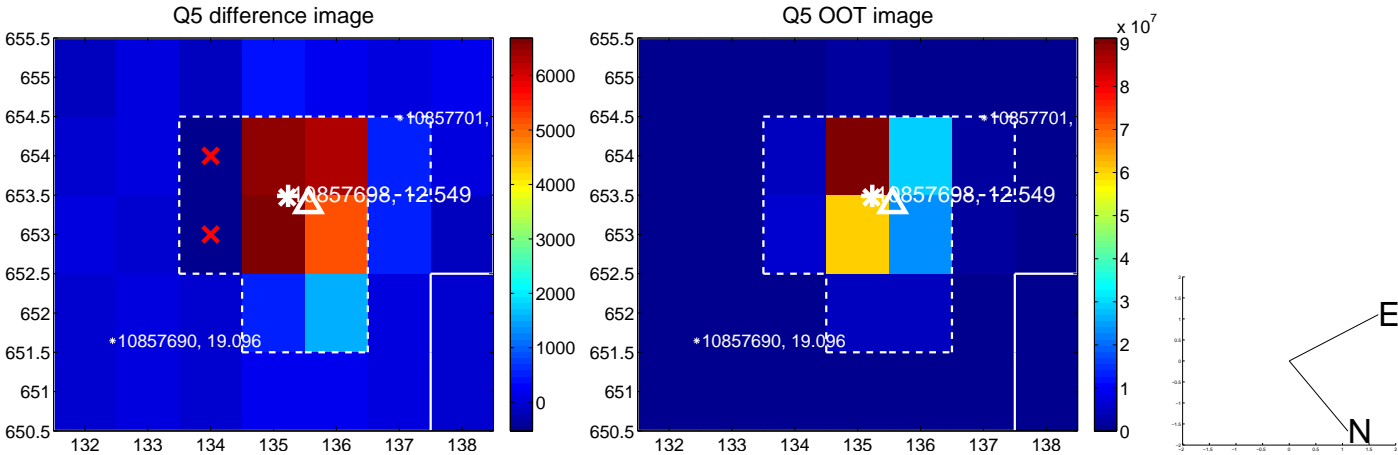


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

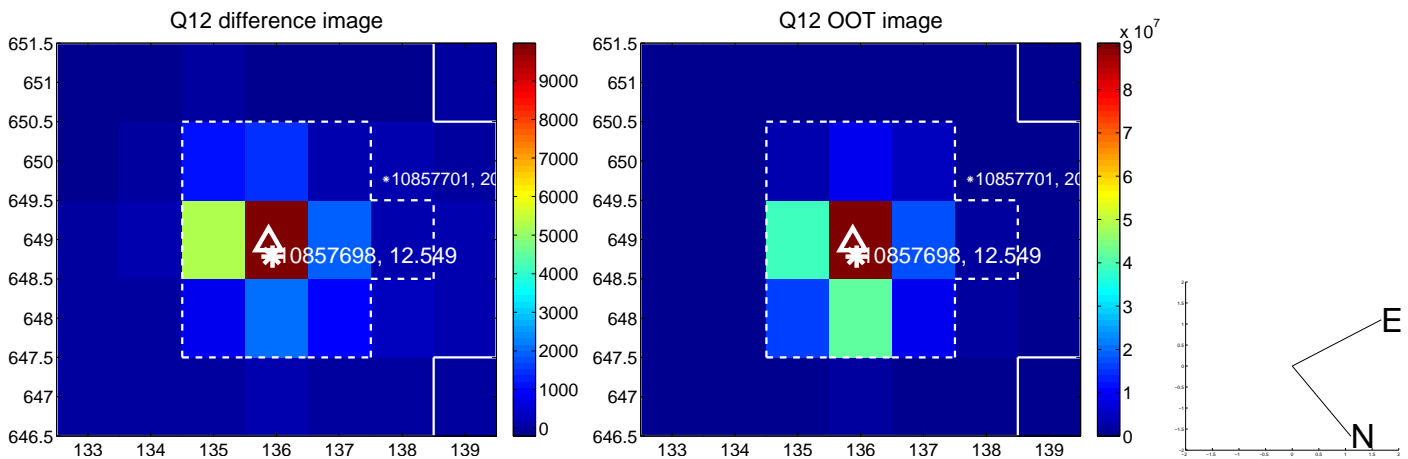
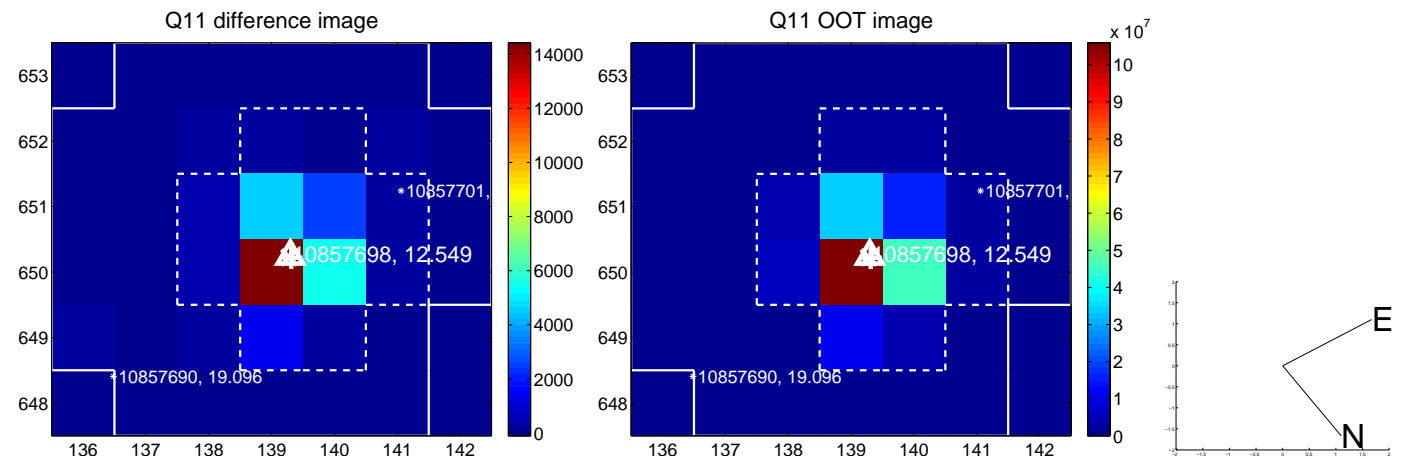
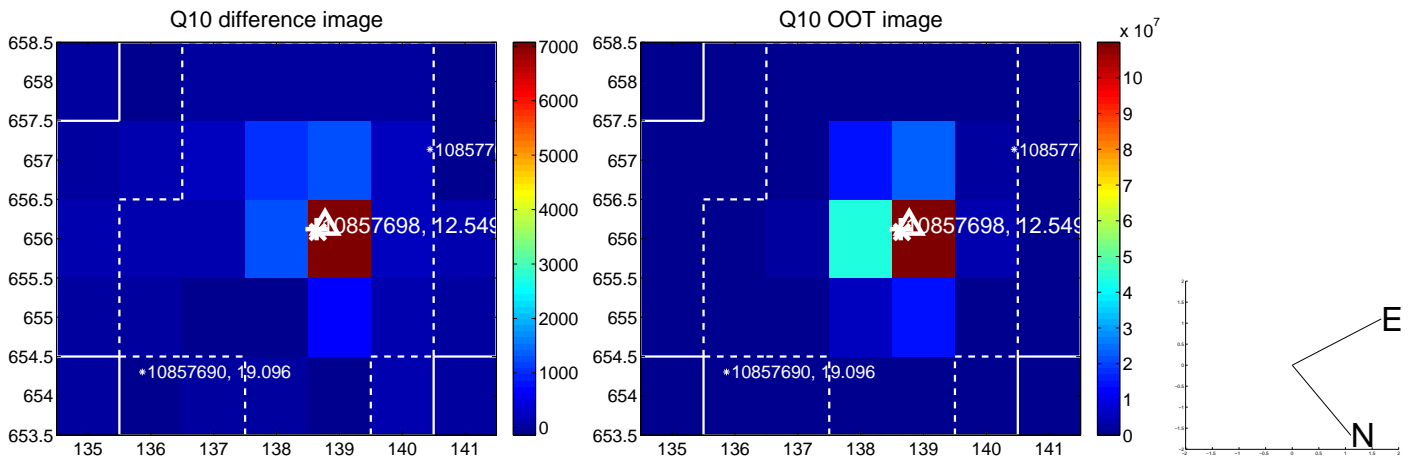
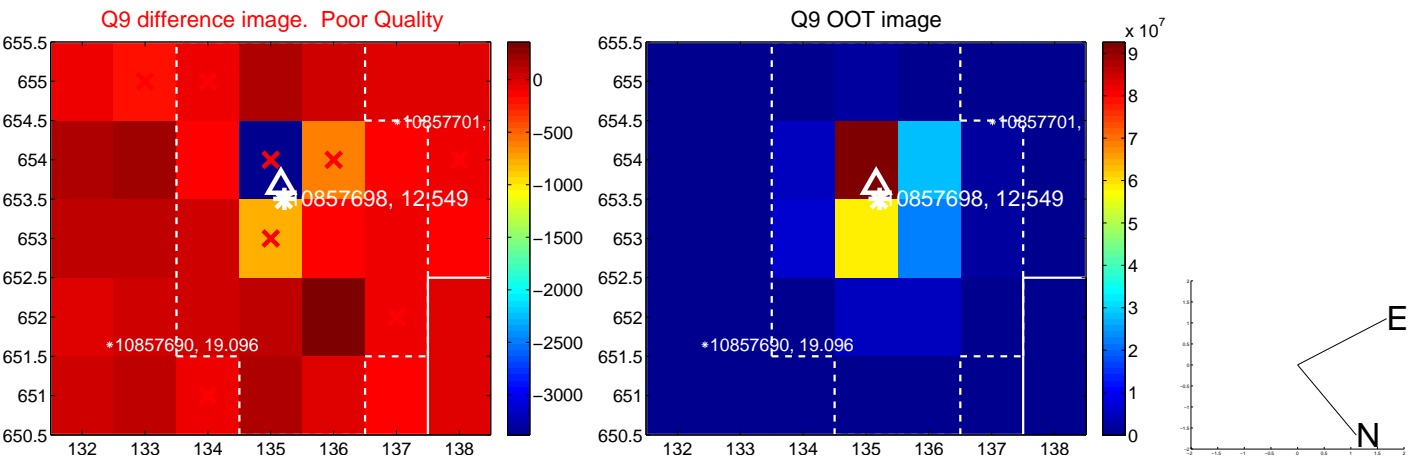
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



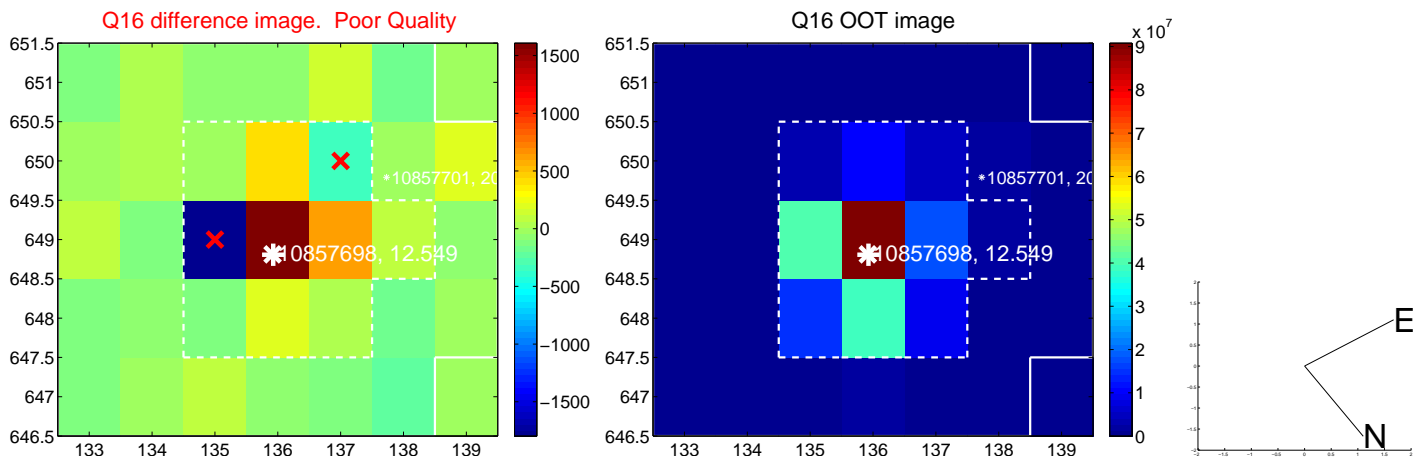
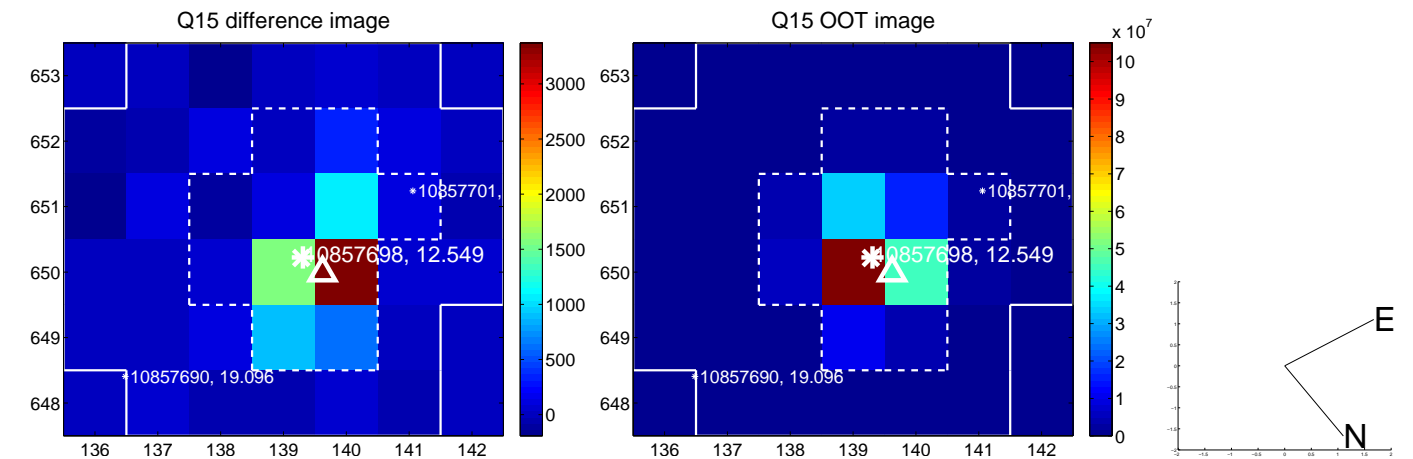
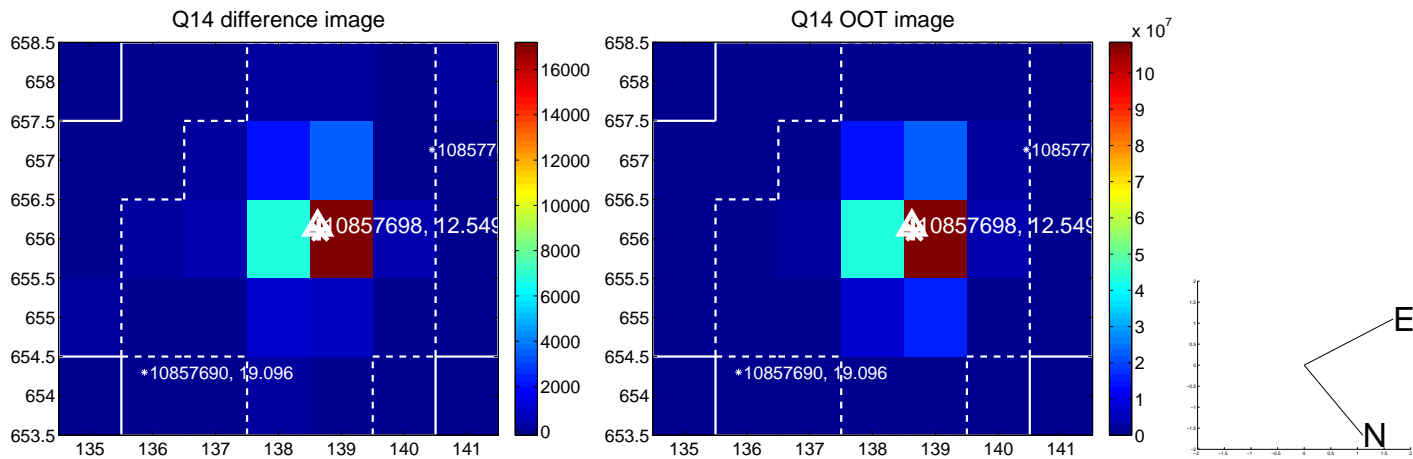
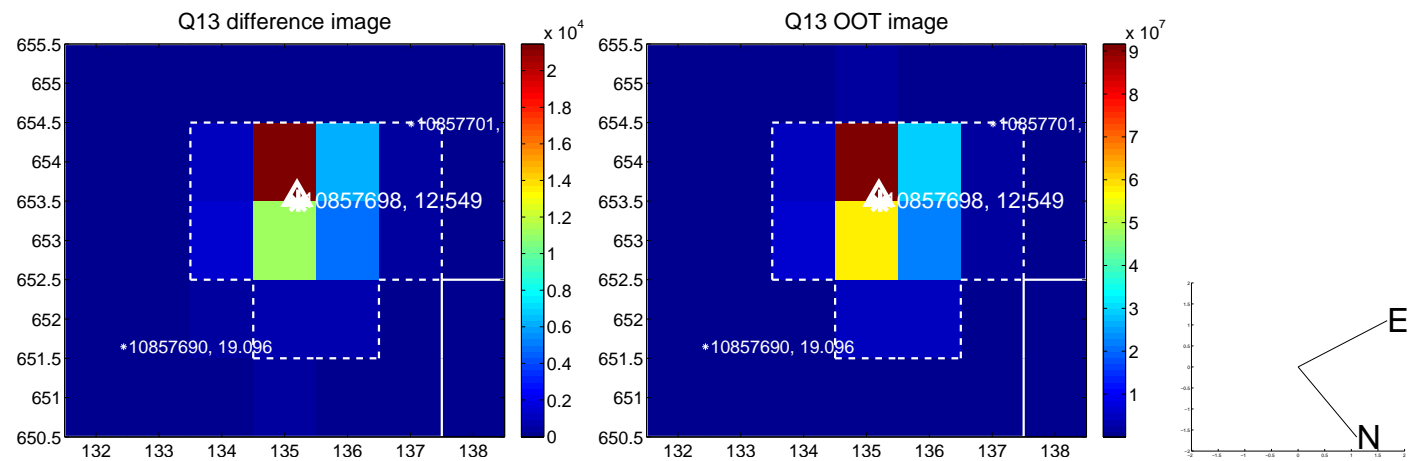
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



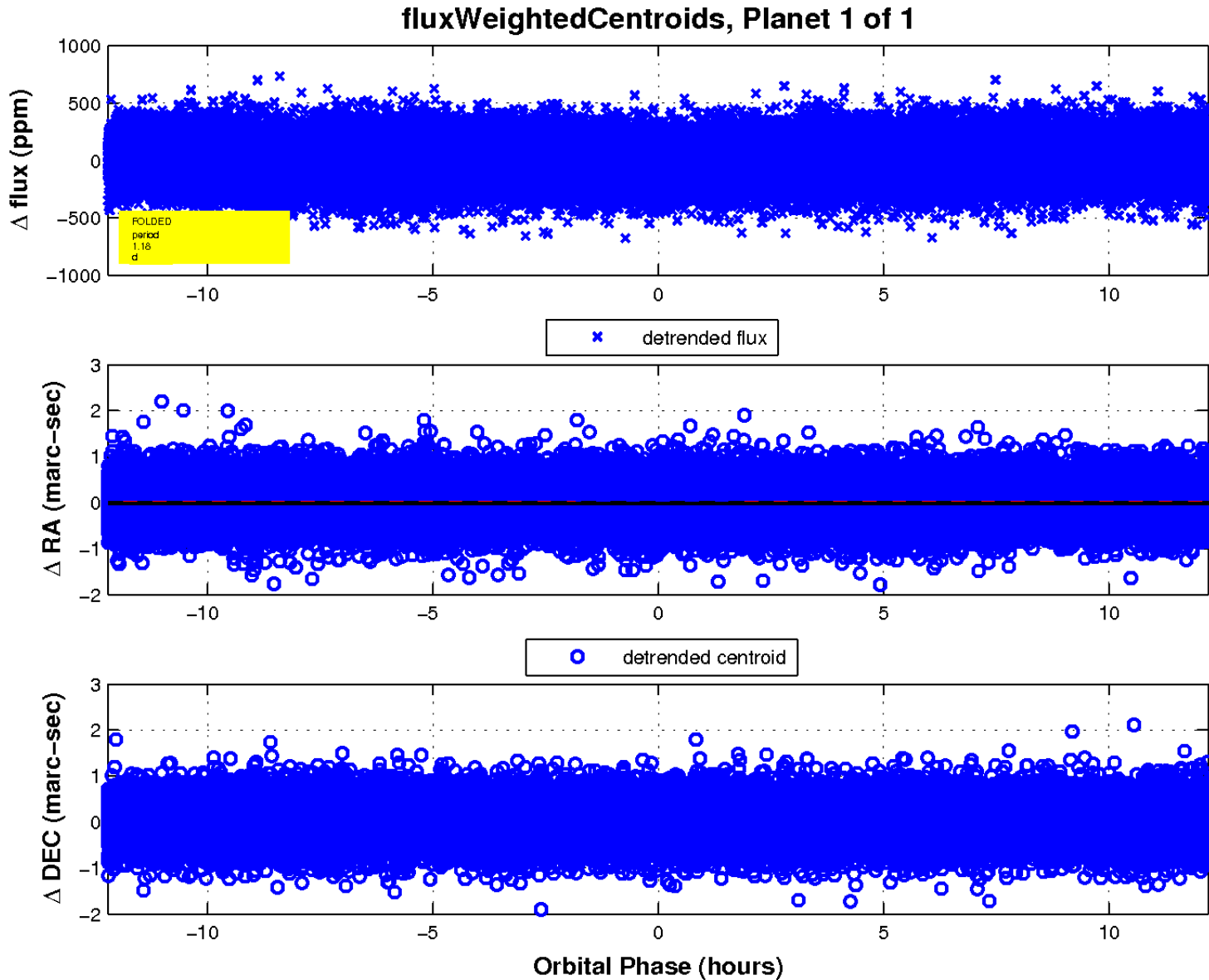
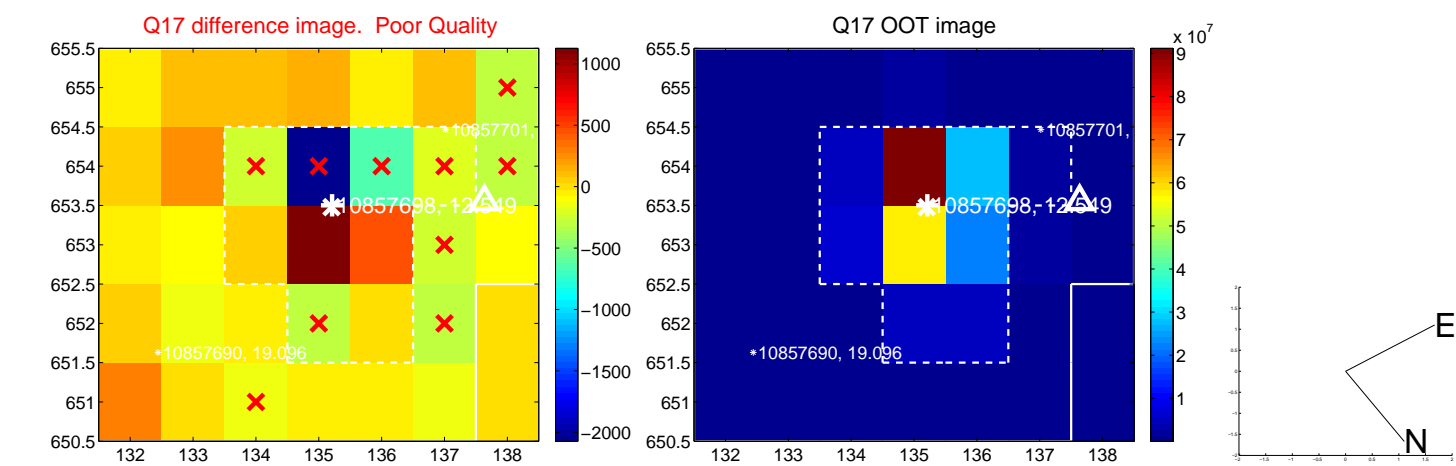
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

