

KIC 005036491

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005036491-01 | OBS | No | 0.736976 | 131.707313 | 26.2 | 2.373 | 7.2 | 5.6 | 1.73 | 6170 | 1.04 | 13323.83 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005036491-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_KIC_POS—HALO_GHOST |

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

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

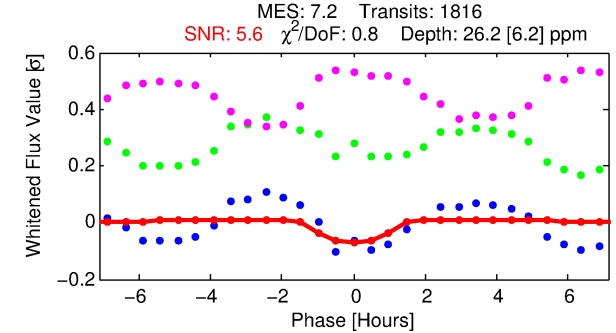
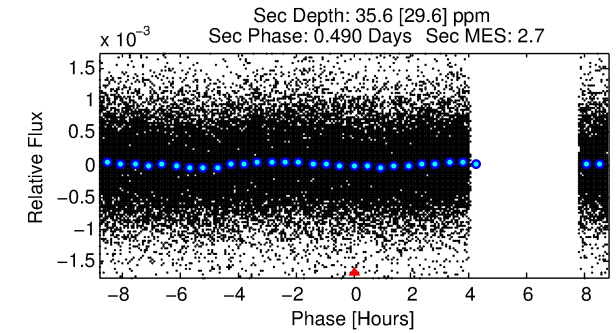
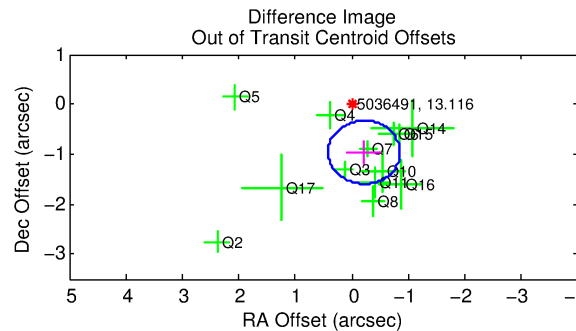
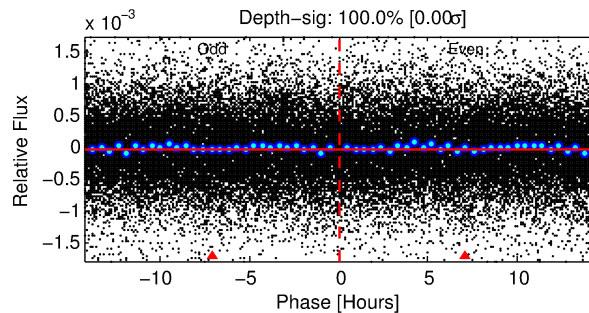
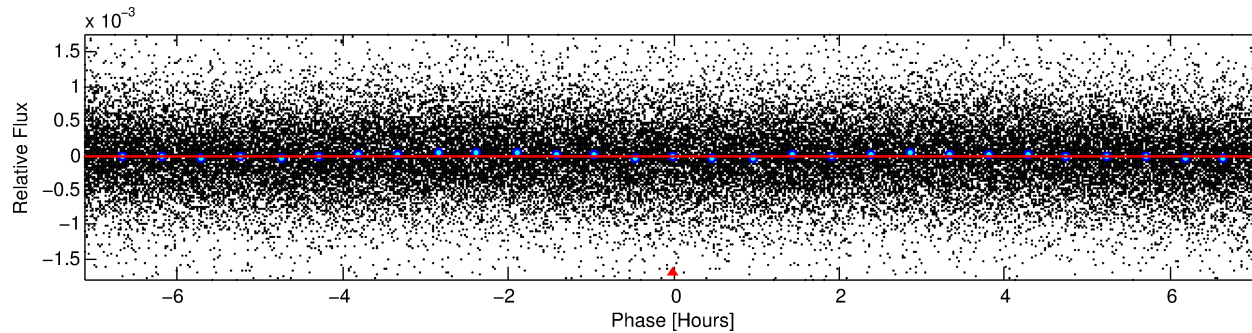
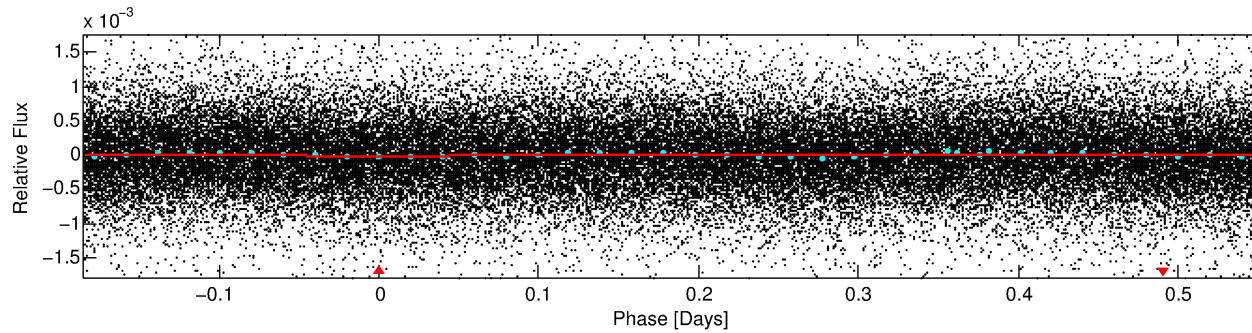
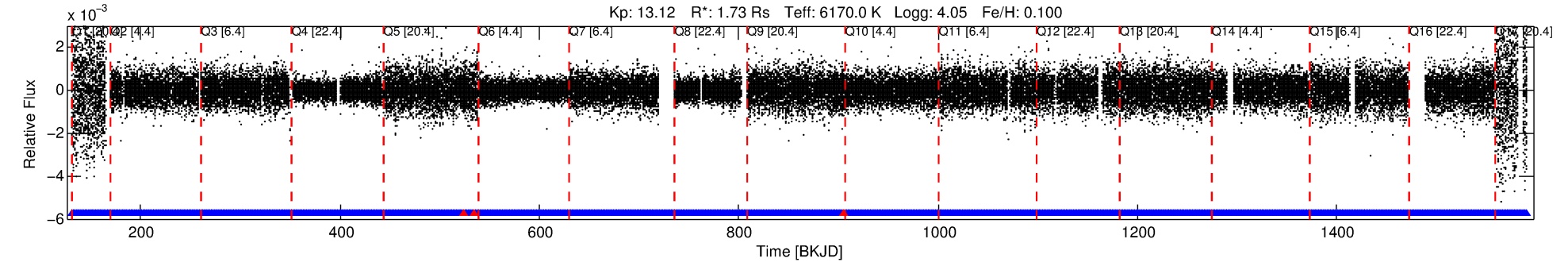
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005036491-01

No Significant Match Found

DV One-Page Summary

KIC: 5036491 Candidate: 1 of 1 Period: 0.737 d



DV Fit Results:

Period = 0.73698 [0.00002] d
Epoch = 131.7073 [0.0057] BKJD
Rp/R* = 0.0055 [0.0054]
a/R* = 1.42 [3.69]
b = 0.90 [1.11]
Seff = 13323.83 [6971.18]
Teff = 2740 [358] K
Rp = 1.05 [1.08] Re
a = 0.0171 [0.0055] AU
Ag = 5.24 [11.45] [0.37 σ]
Teffp = 6409 [3410] K [1.07 σ]

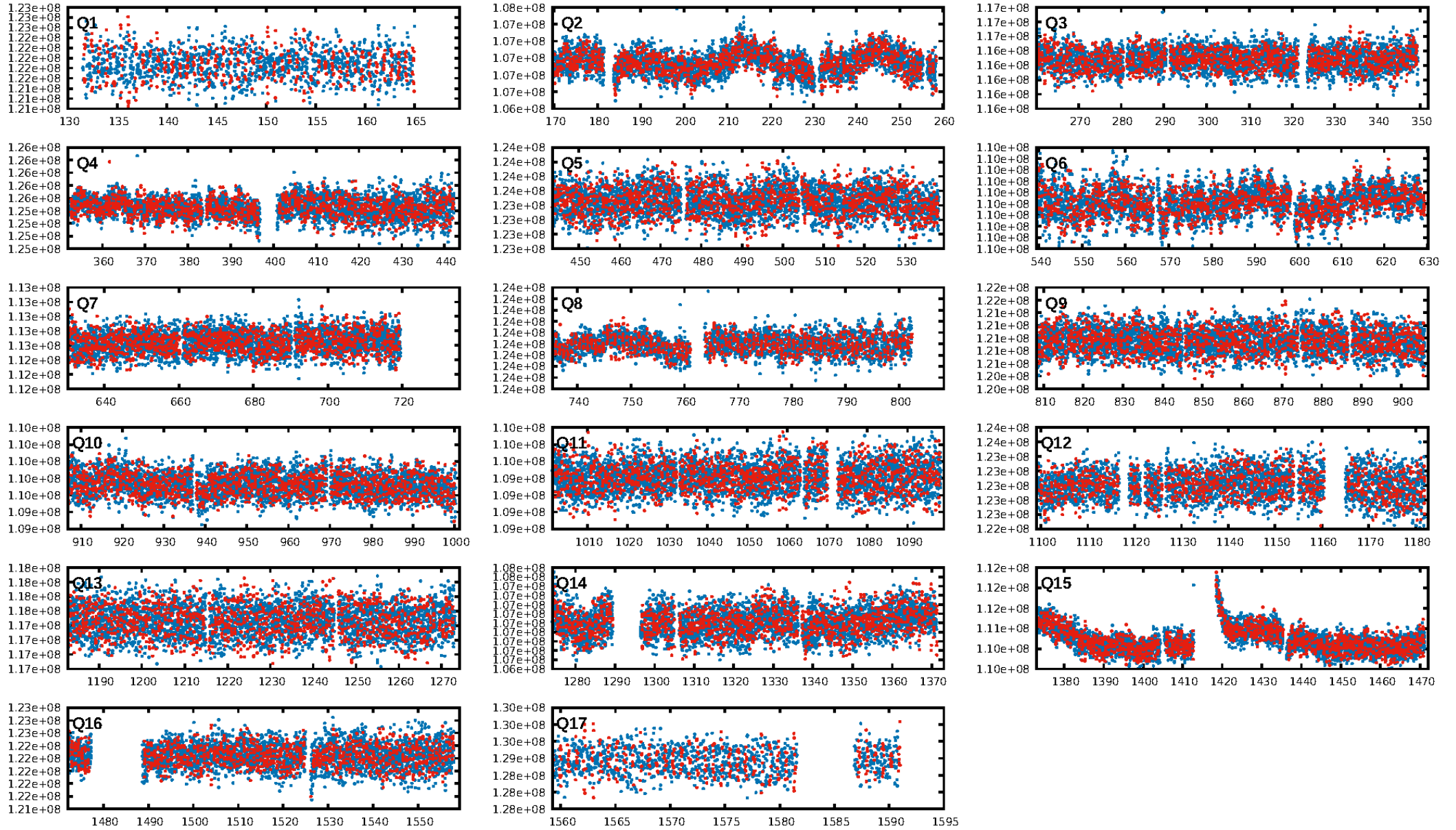
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.00e-15
RollingBand-fgt: 1.00 [1729/1733]
GhostDiagnostic-chr: 0.0283
Centroid-sig: 0.0%
Centroid-so: 3.924 arcsec [5.99 σ]
OotOffset-rm: 0.985 arcsec [4.64 σ]
KicOffset-rm: 3.325 arcsec [12.22 σ]
OotOffset-st: 4/4/3/2 [13]
KicOffset-st: 4/4/3/2 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [17/17]

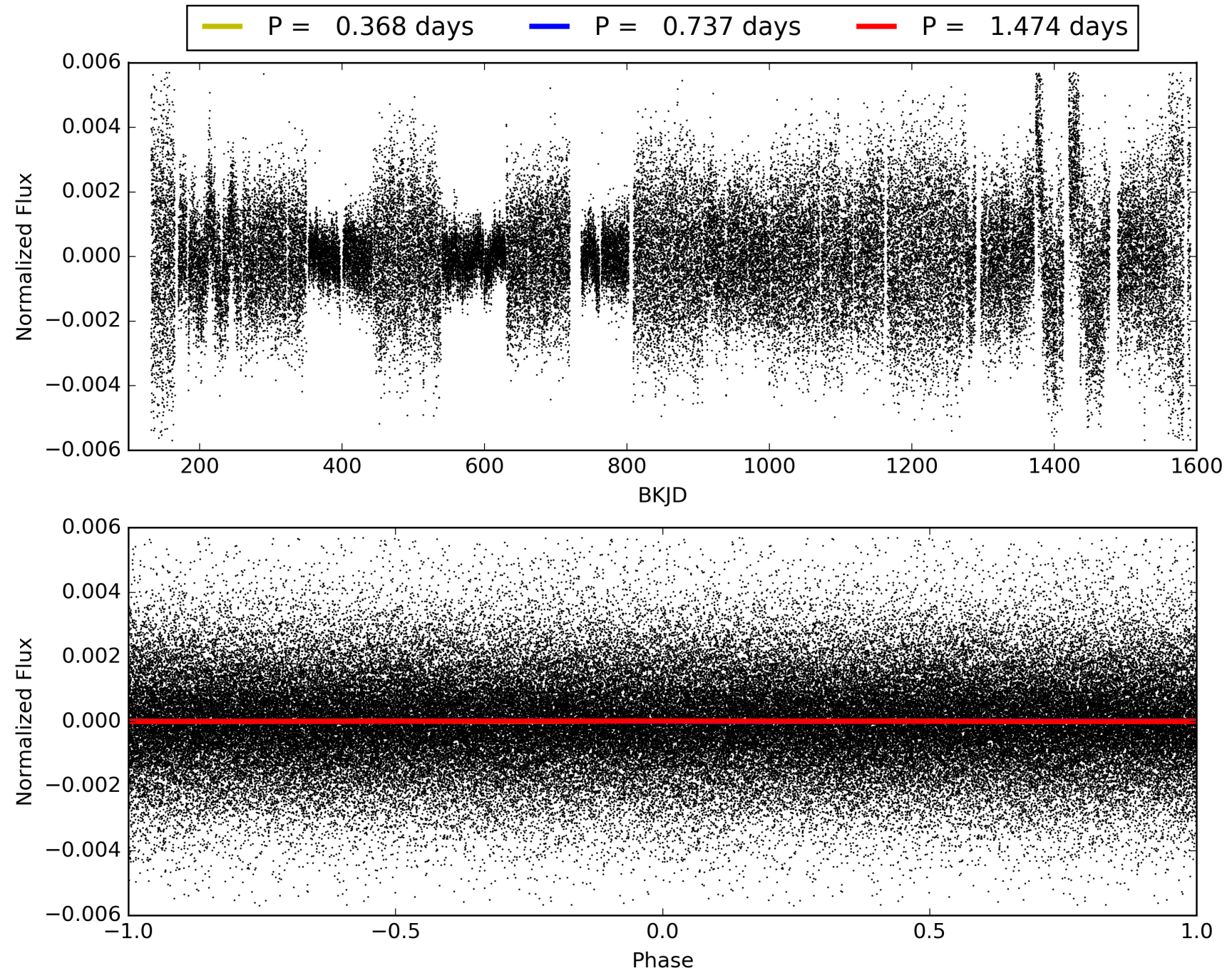
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:43:44 Z

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

TCE 005036491-01, PDC Light Curves

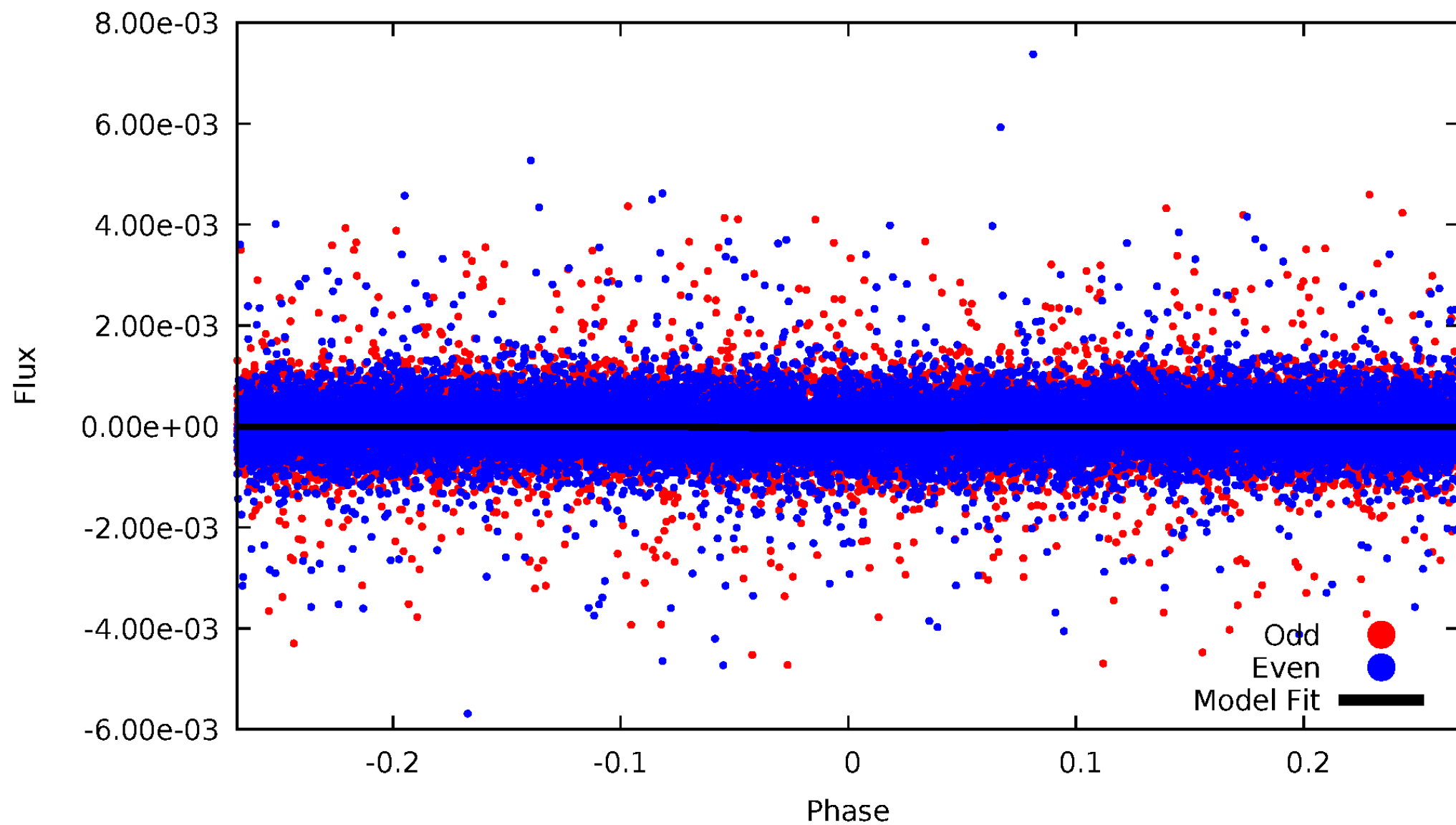


TCE 005036491-01



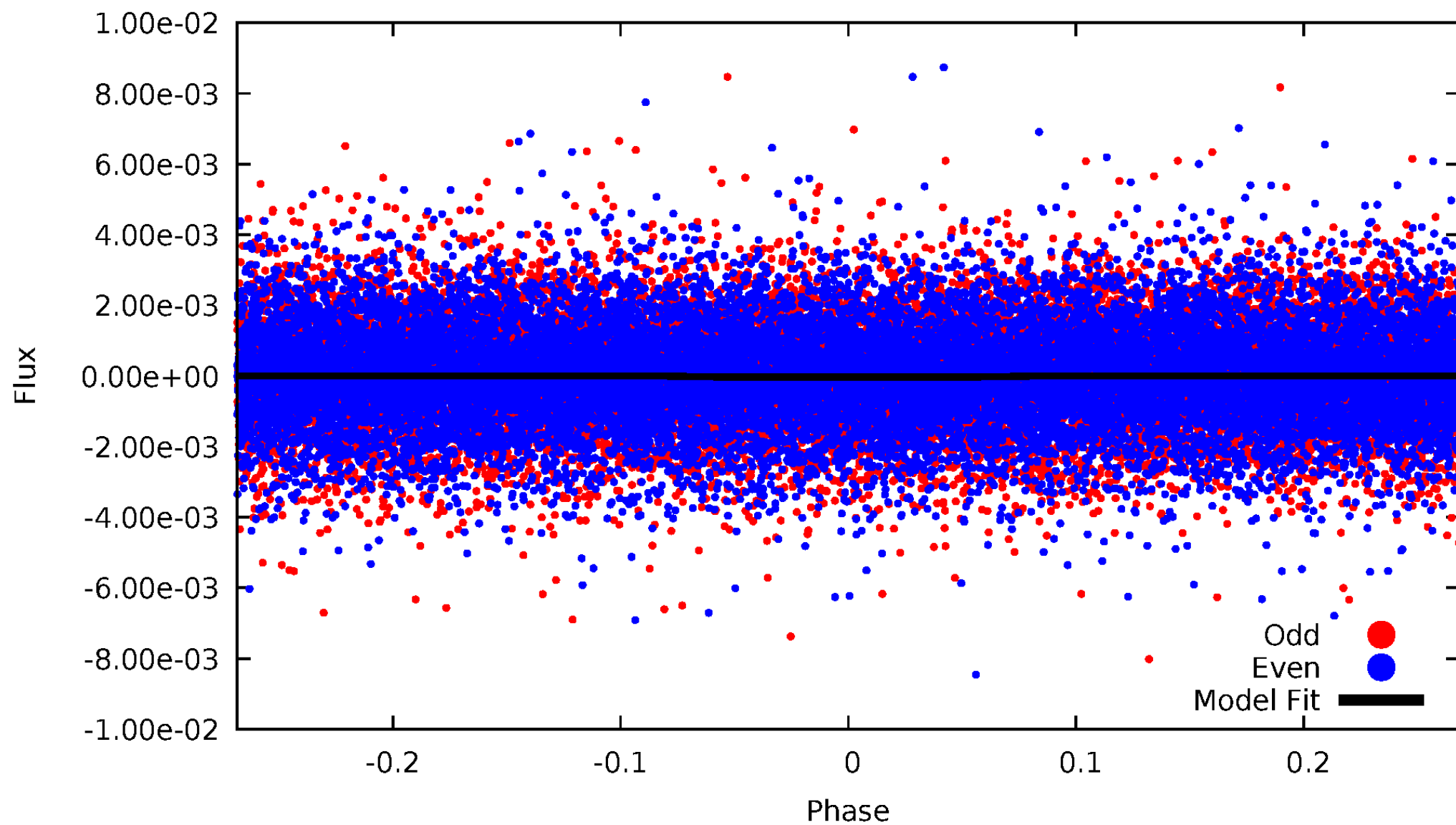
DV Odd/Even

TCE 005036491-01



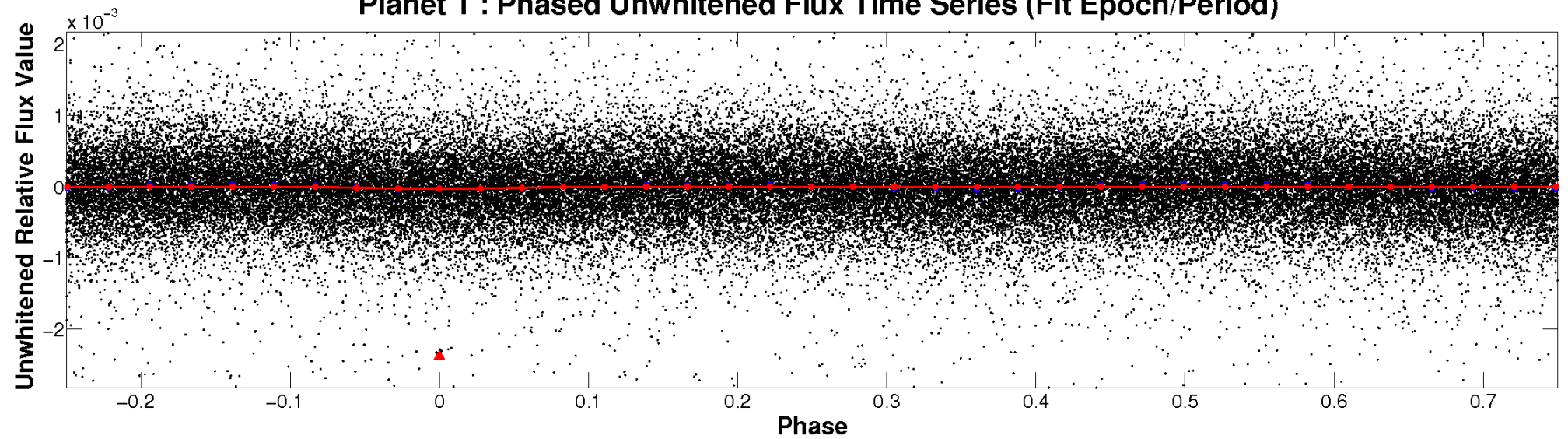
ALT Odd/Even

TCE 005036491-01

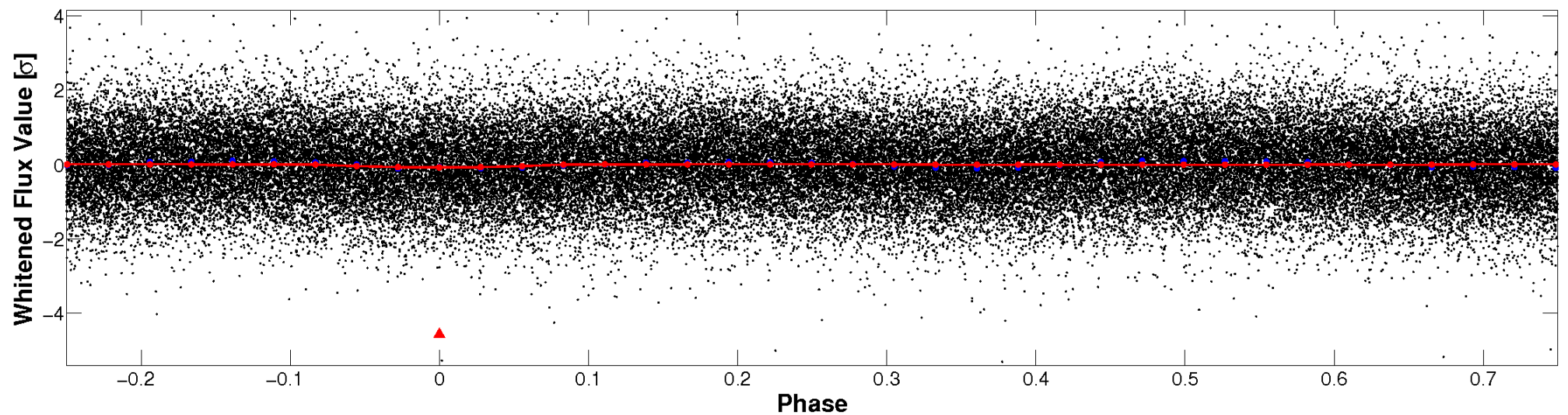


Non-Whitened Vs. Whitened Light Curve

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

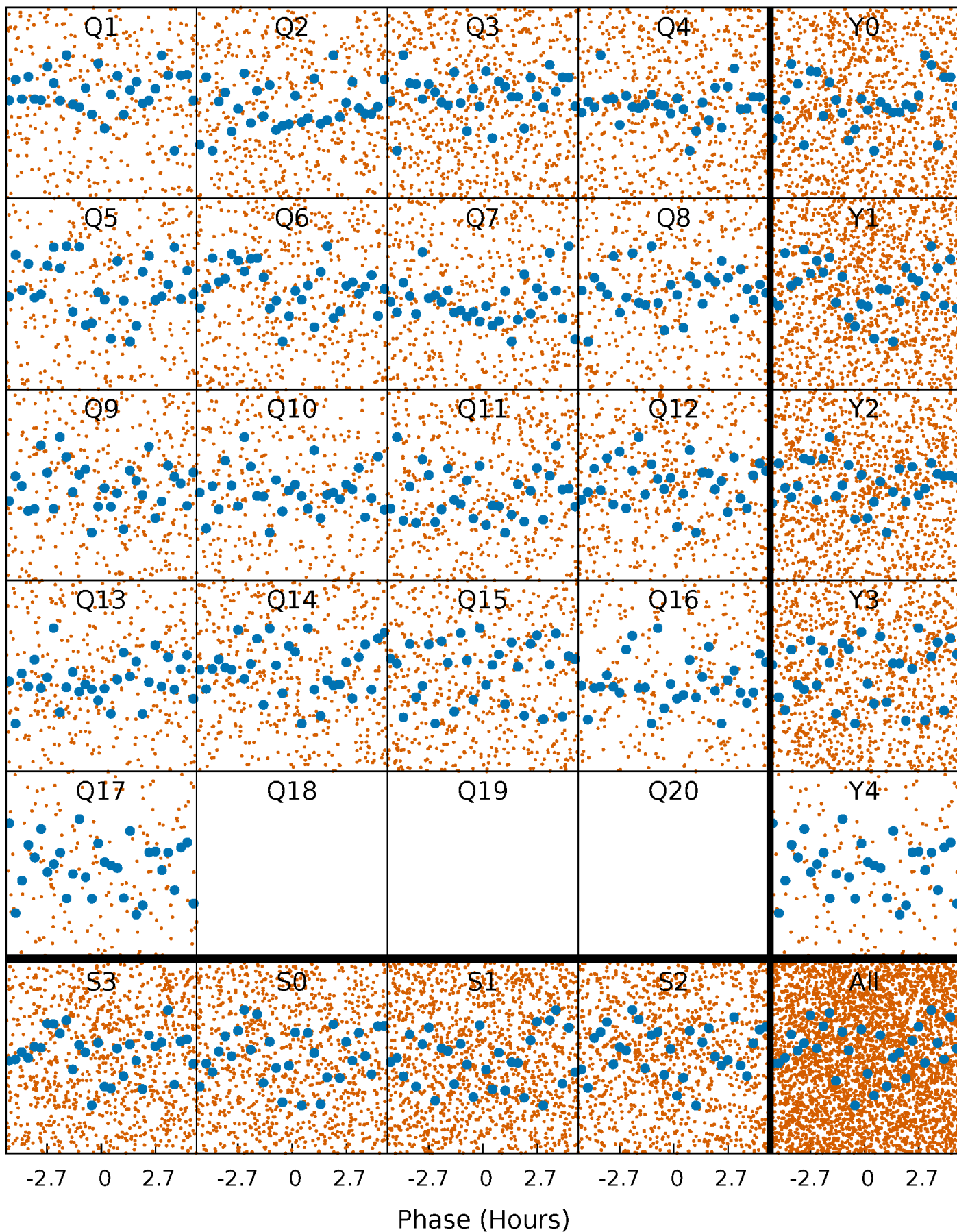


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



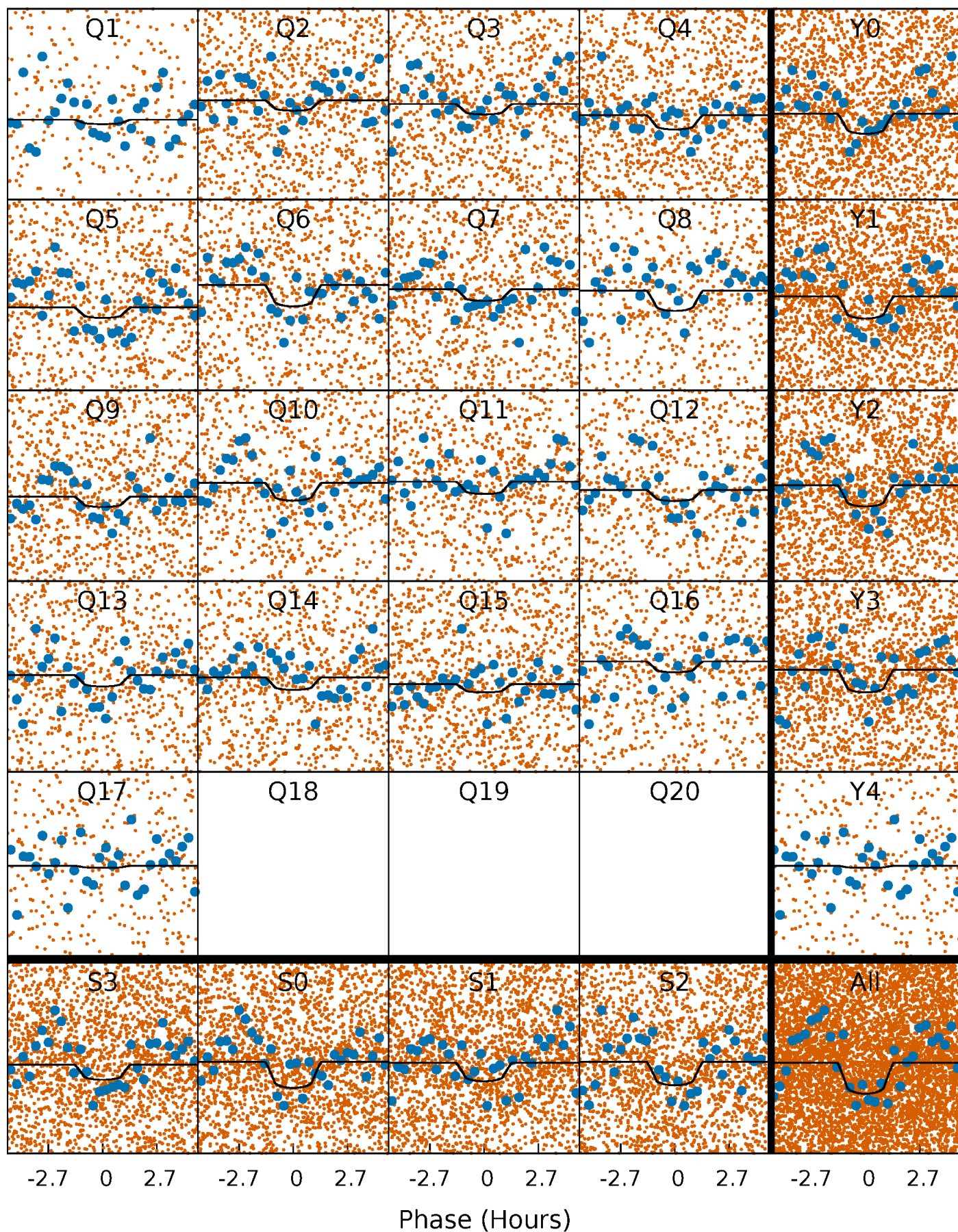
PDC Quarter-Phased Transit Curves

TCE 005036491-01 P= 0.736976 Days $T_0=131.707313$ (BKJD)



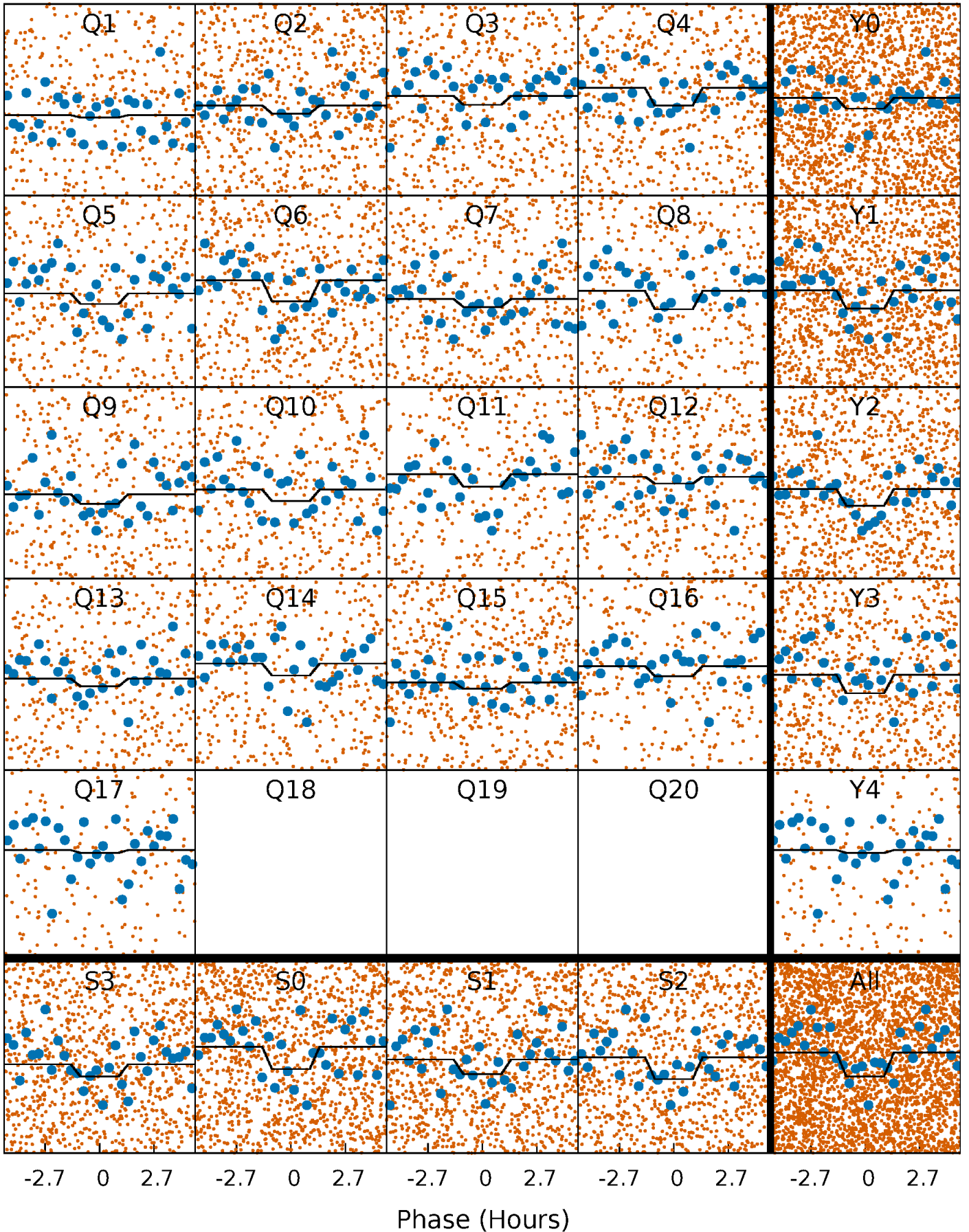
DV Quarter-Phased Transit Curves

TCE 005036491-01 P= 0.736976 Days $T_0=131.707313$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

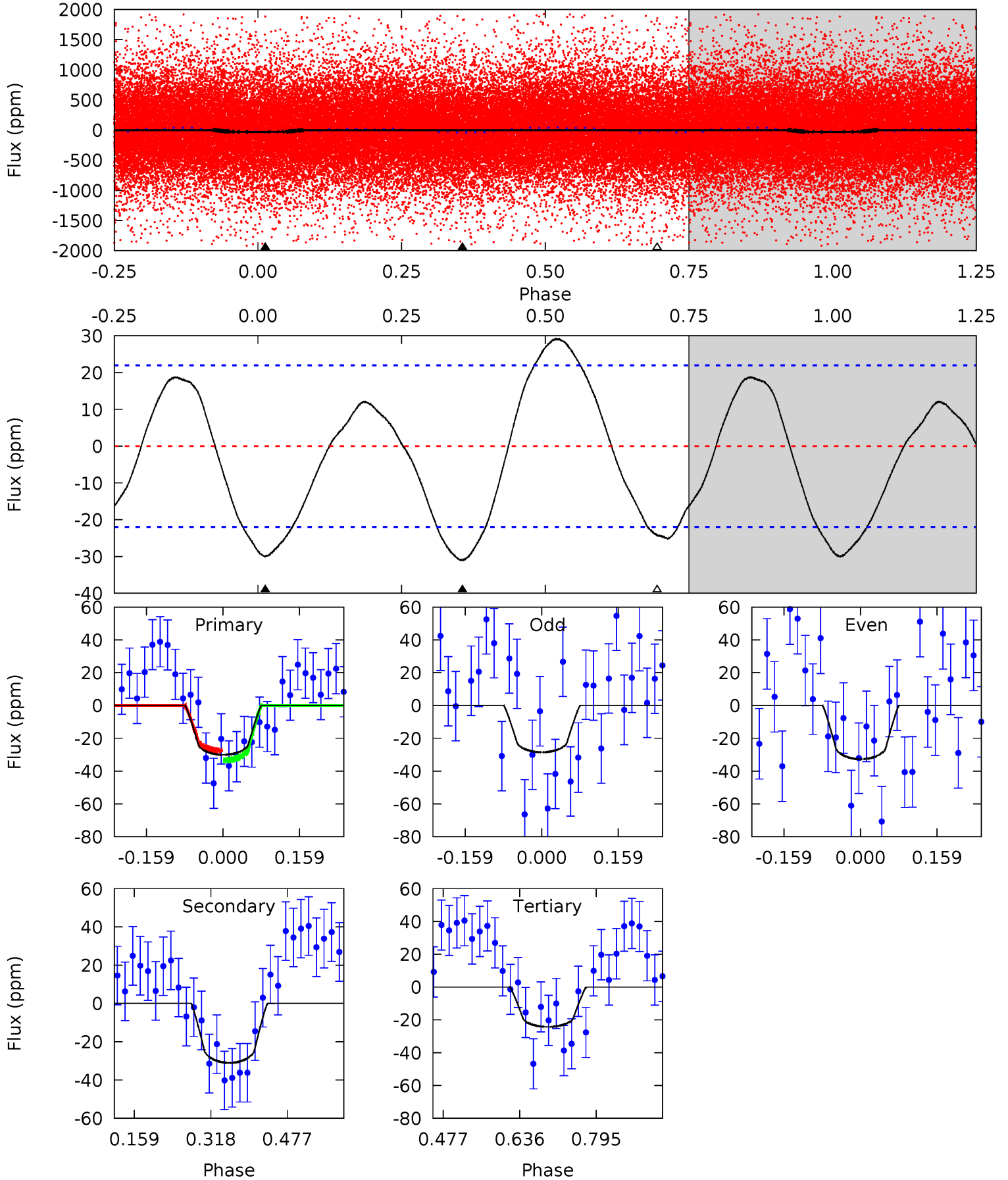
TCE 005036491-01 P= 0.736988 Days $T_0=131.712659$ (BKJD)



DV Model-Shift Uniqueness Test

005036491-01, P = 0.736976 Days, E = 130.970337 Days

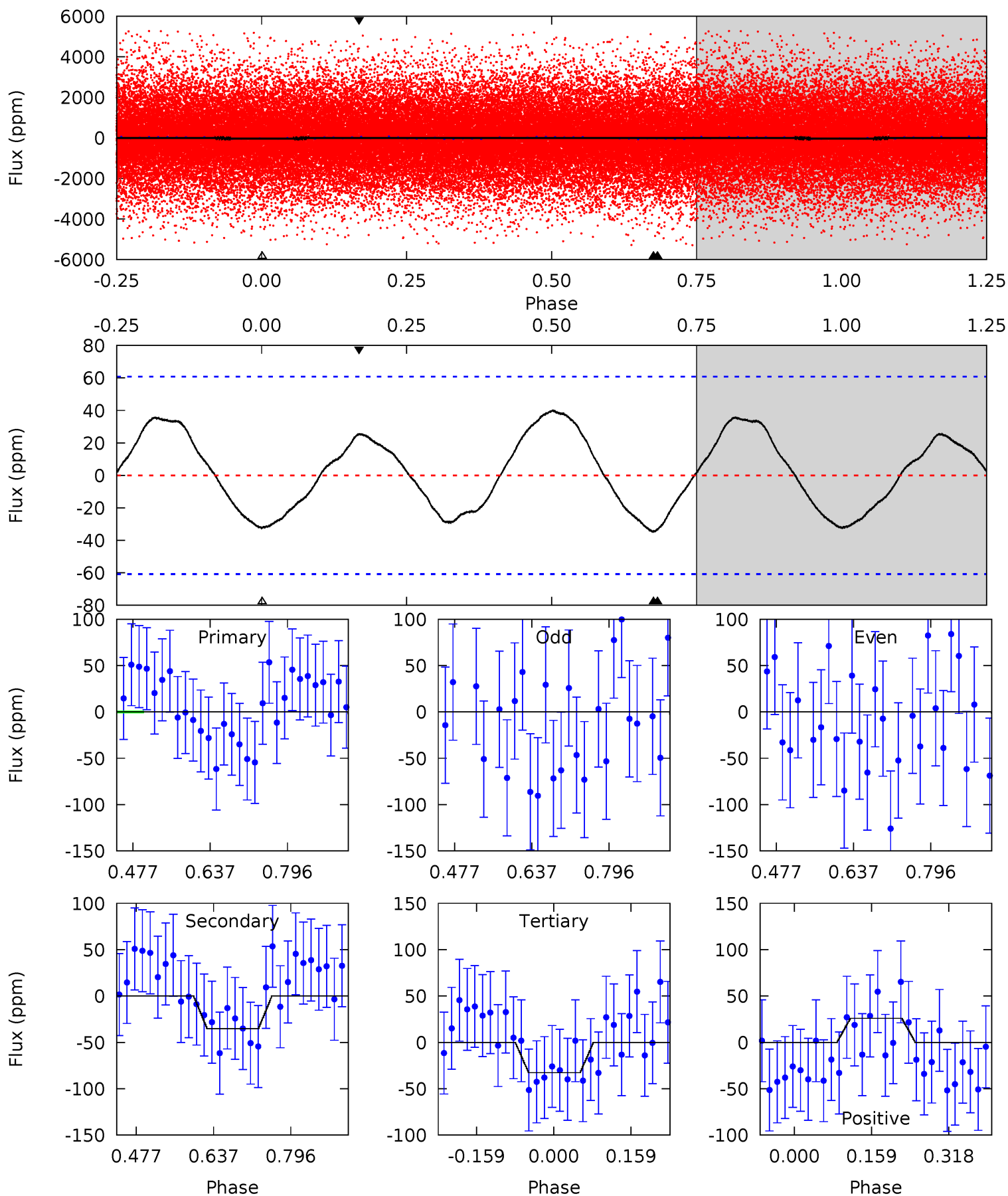
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.11 | 6.31 | 4.93 | 0 | 4.47 | 1.41 | 3.53 | 1.18 | 6.11 | 1.38 | 6.31 | 0.43 | 0.96 | 0.48 | 0.59 |



Alt Model-Shift Uniqueness Test

005036491-01, P = 0.736988 Days, E = 130.975671 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.48 | 2.58 | 2.40 | 1.90 | 4.47 | 1.41 | 1.59 | 0.08 | 0.58 | 0.18 | 0.68 | 0.57 | 0.76 | 0.54 | 0.03 |



Stellar Parameters For KIC 005036491

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|--|
| | 6170^{+169}_{-211} | $4.050^{+0.293}_{-0.158}$ | $0.100^{+0.250}_{-0.300}$ | $1.733^{+0.488}_{-0.597}$ | $1.230^{+0.189}_{-0.189}$ | $0.333^{+0.673}_{-0.151}$ |
| | +3%/-3% | +7%/-4% | +250%/-300% | +28%/-34% | +15%/-15% | +202%/-45% |
| 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 005036491-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -31 ± 5 | $1.16^{+0.97}_{-0.75}$ | 3769^{+324}_{-346} | 5597^{+5188}_{-1426} | $3.828^{+28.816}_{-2.690}$ |
| Alt. | -35 ± 14 | $1.21^{+0.96}_{-0.75}$ | 3787^{+297}_{-318} | 5619^{+4495}_{-1419} | $3.700^{+21.070}_{-2.610}$ |

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 $A_{\text{obs}} \gg 1.0$

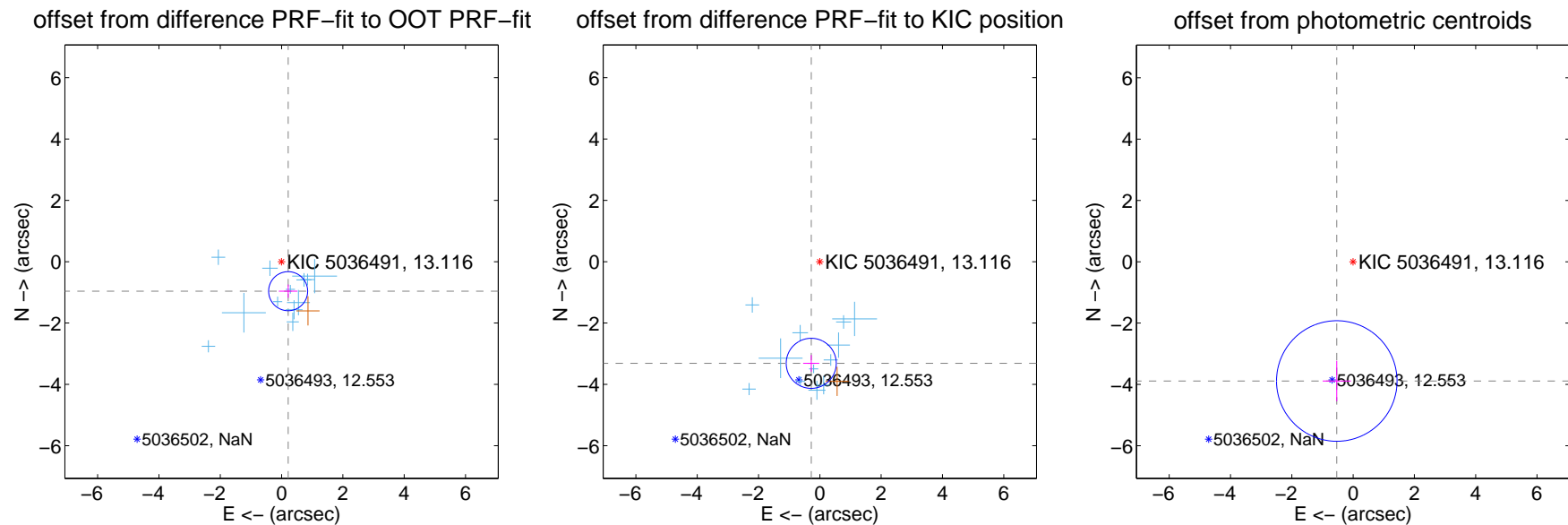
DV Centroid Data

Supplemental centroid analysis for 005036491-01. Kepler magnitude: 13.12. Transit SNR 5.61

There are 12 quarters with good PRF difference image offsets

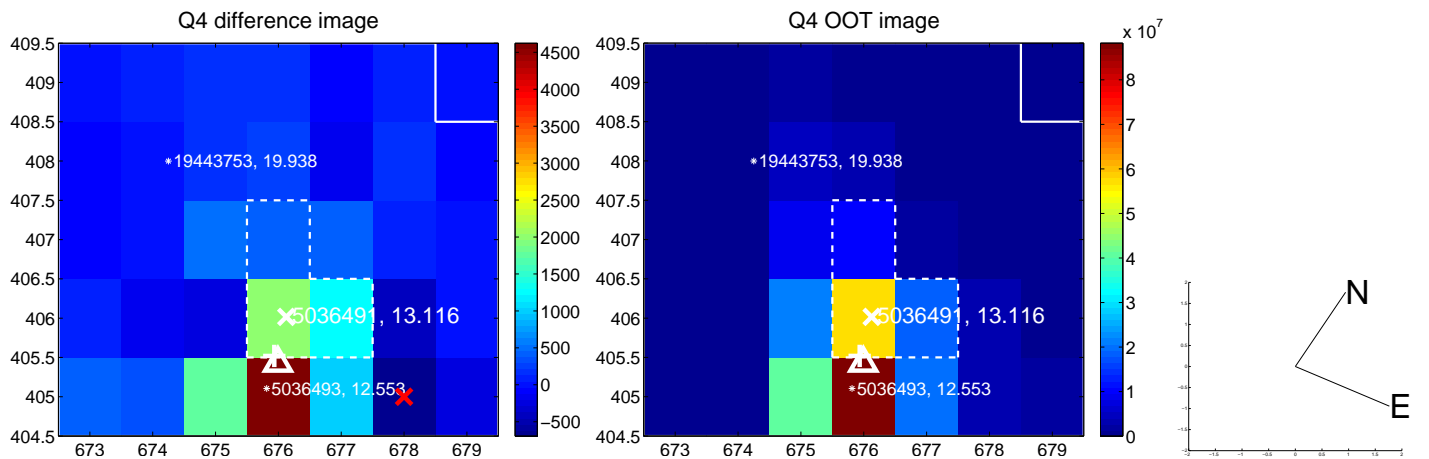
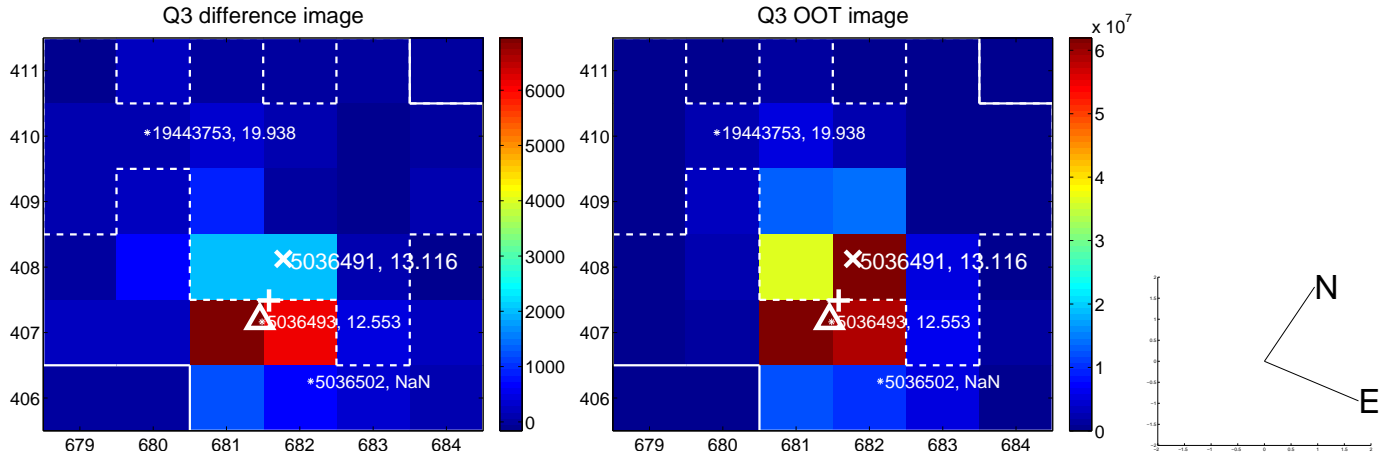
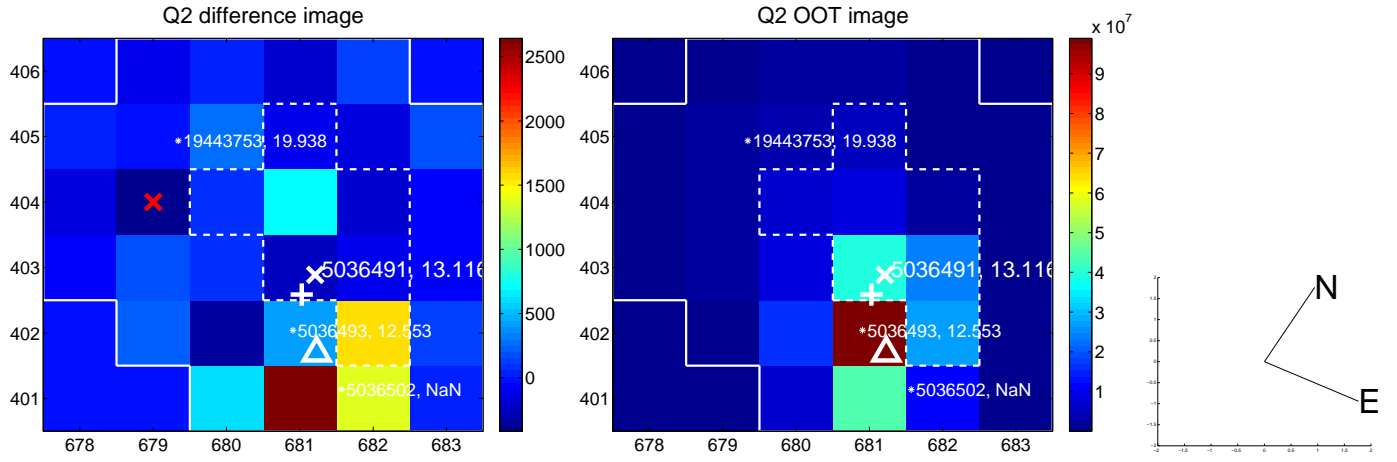
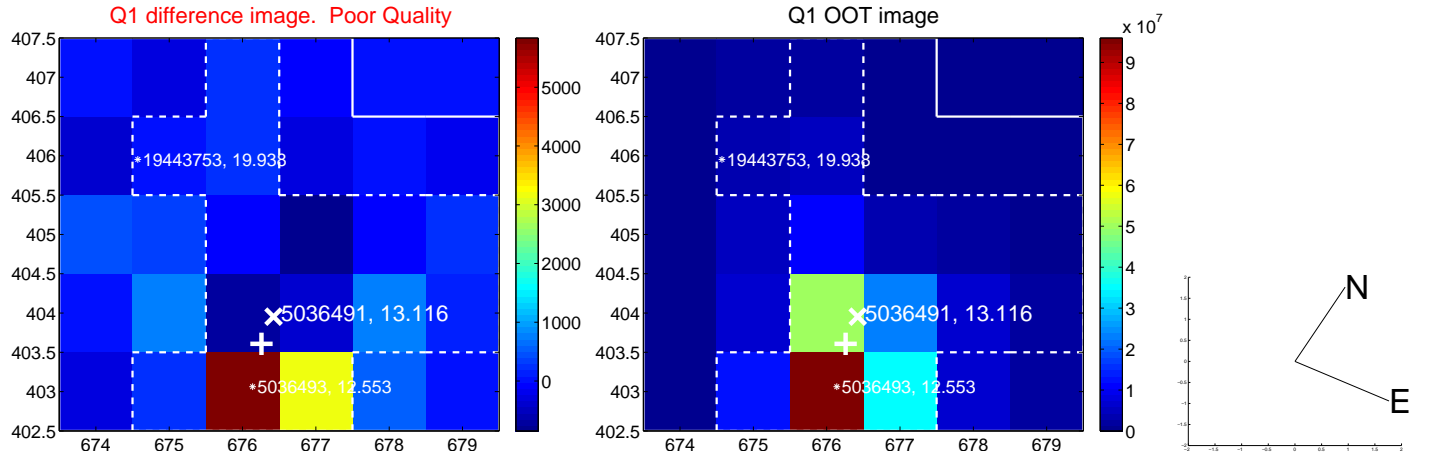
The direct PRF centroid is offset from the target star catalog position by about 1.48 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.985 ± 0.212 | 4.64 | -0.214 ± 0.304 | -0.961 ± 0.217 |
| PRF-fit source offset from KIC position | 3.325 ± 0.272 | 12.22 | 0.281 ± 0.263 | -3.313 ± 0.272 |
| photometric centroid source offset | 3.92 ± 0.66 | 5.99 | 0.53 ± 0.46 | -3.89 ± 0.66 |

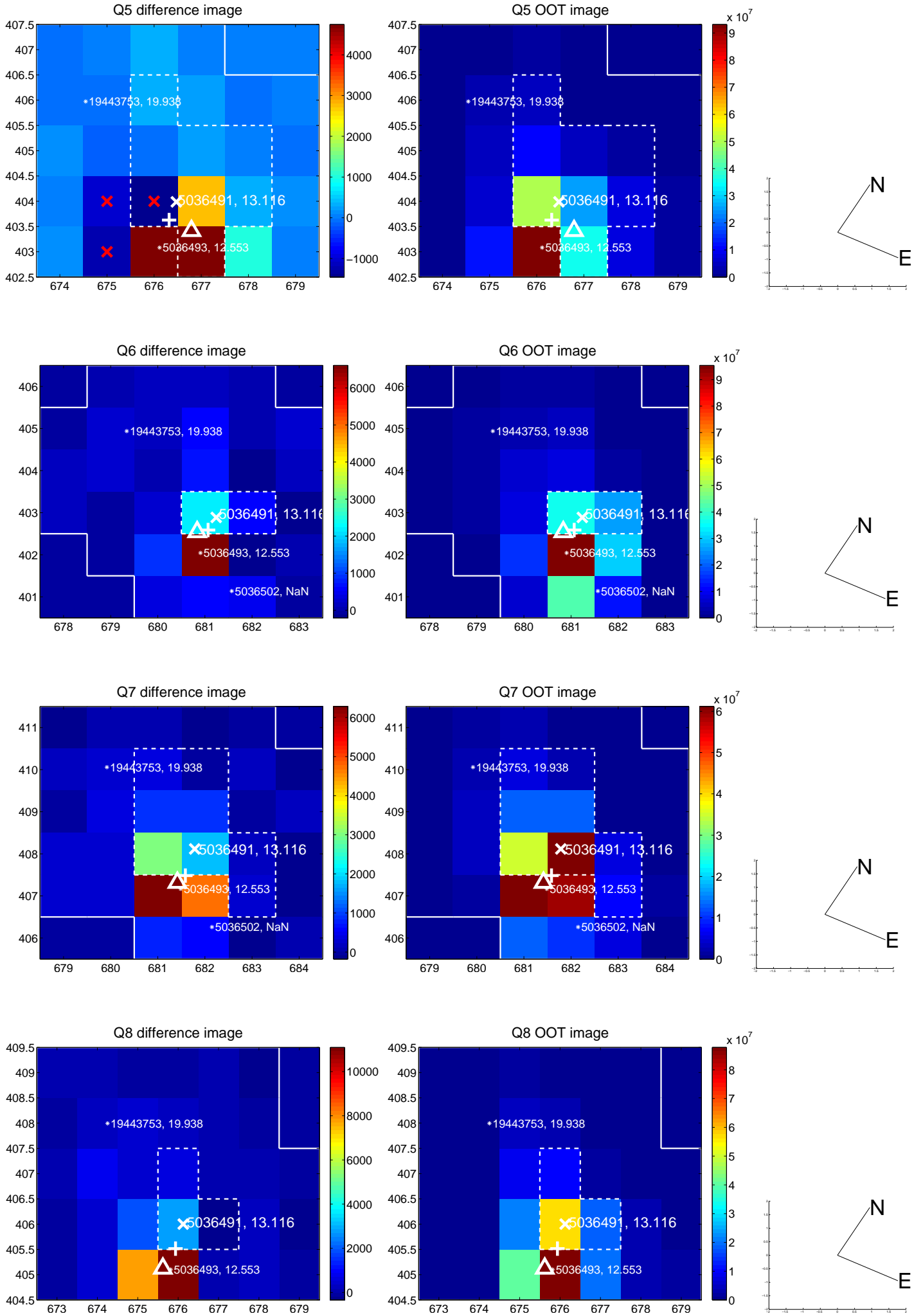


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

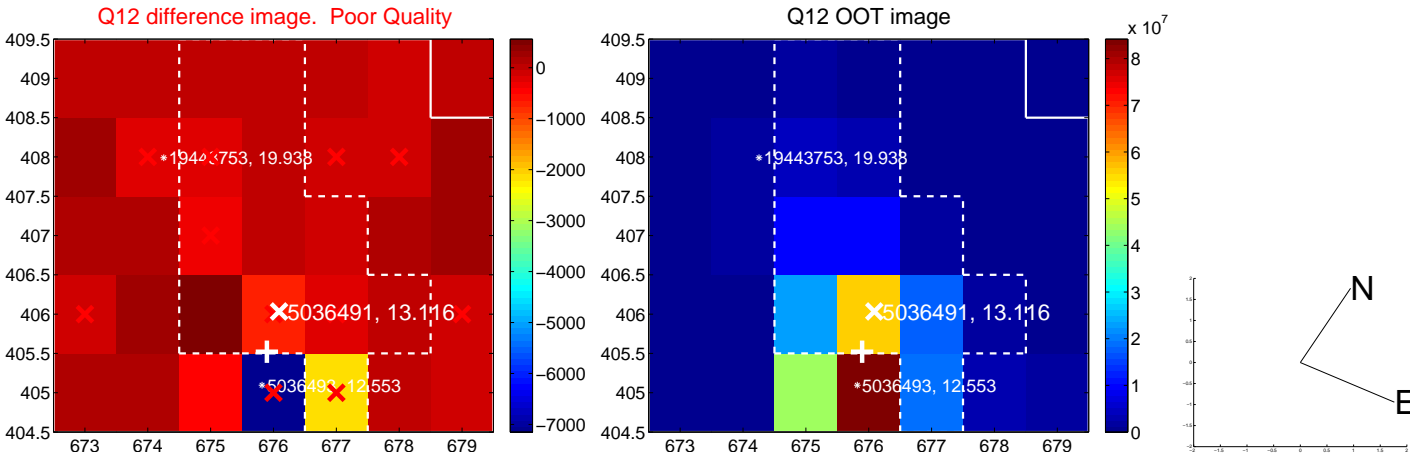
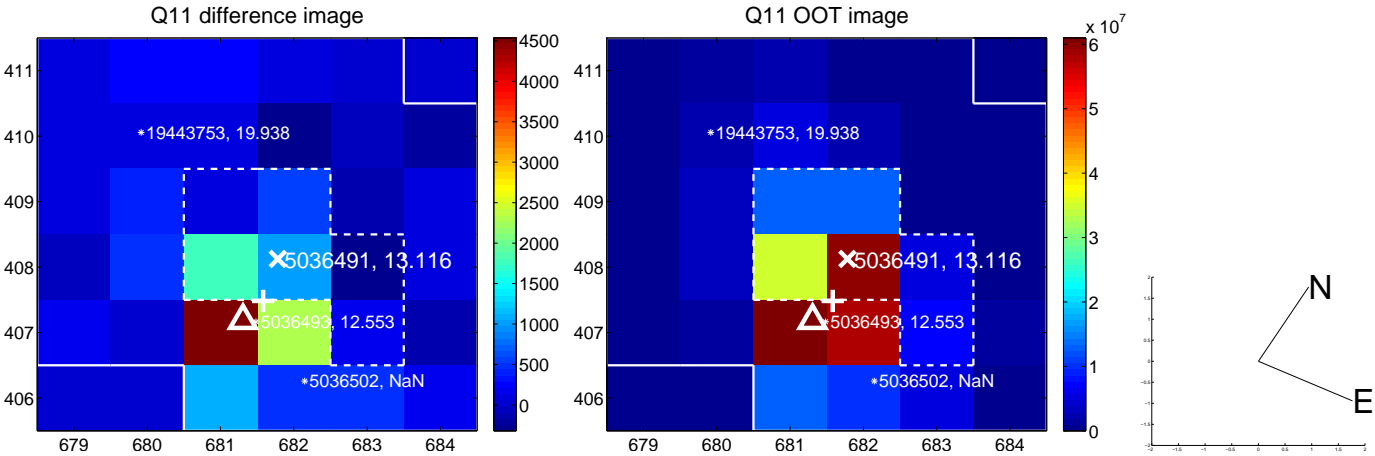
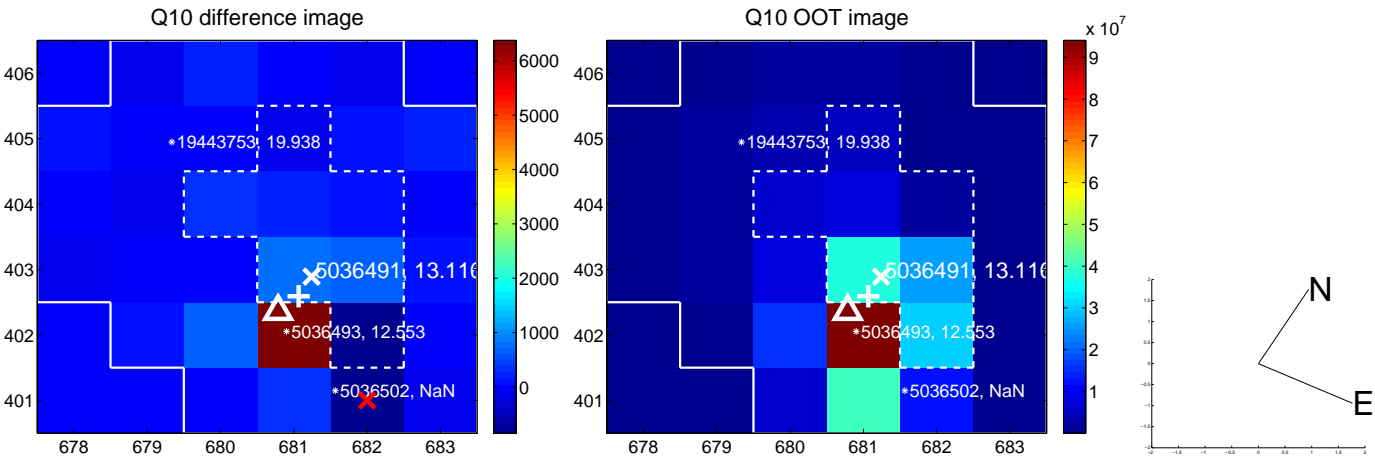
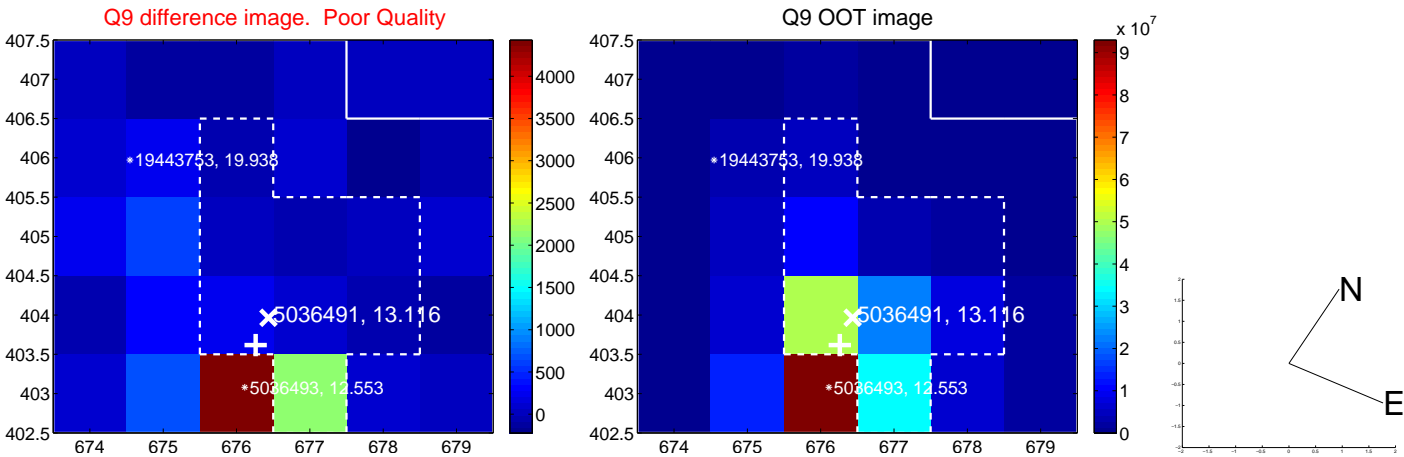
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



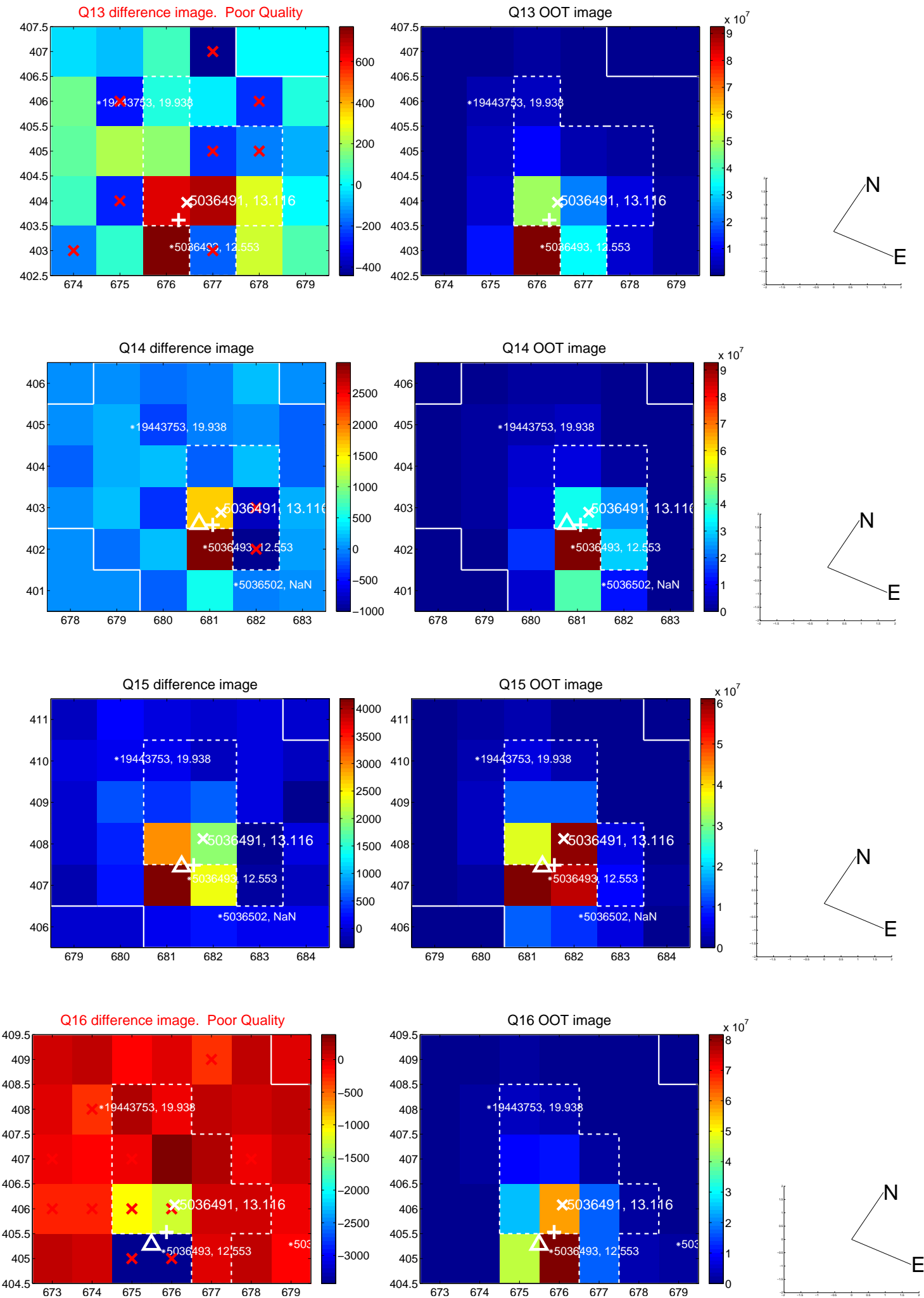
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



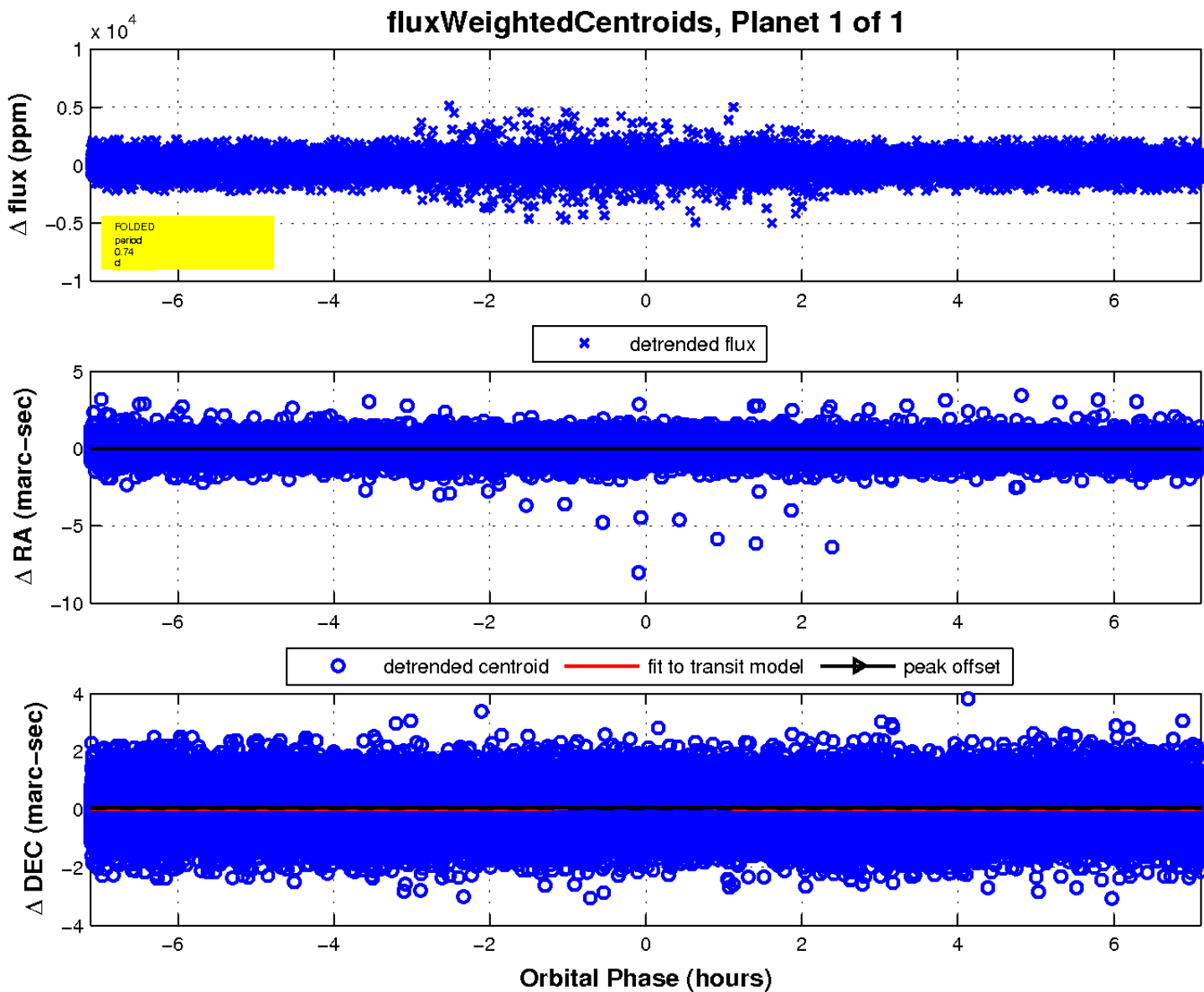
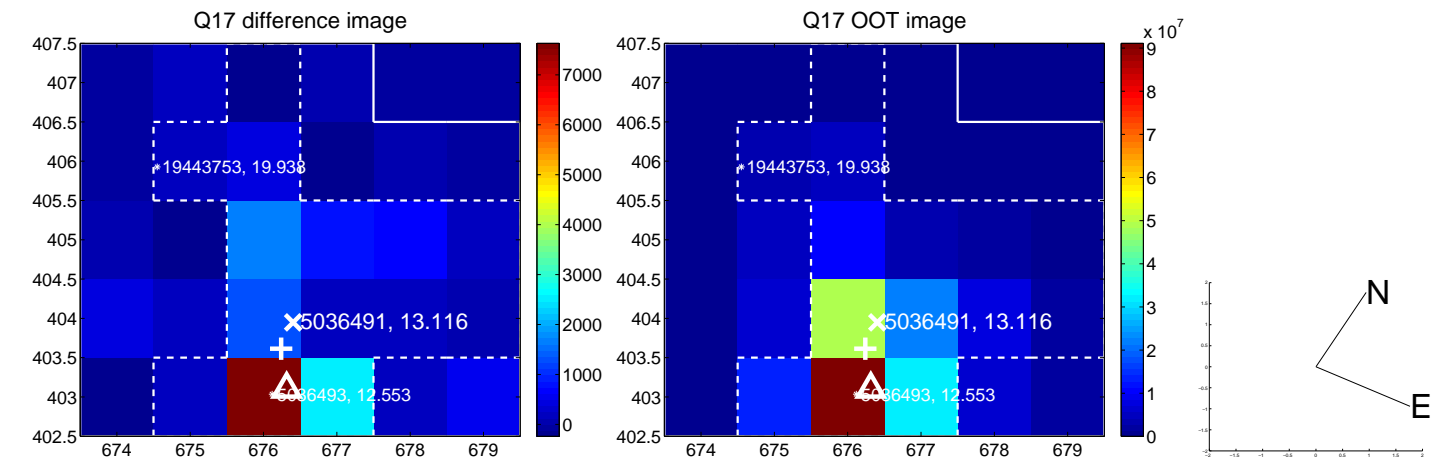
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

