# KIC 006364307

## 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) | $R_p$ ($R_\oplus$) | $S_p$ ($S_\oplus$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 006364307-01 | OBS | 5273.01 | 5.243562 | 132.749555 | 208.2 | 15.222 | 18.1 | 20.4 | 0.72 | 5558 | 2.09 | 148.85 |

## Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|---|---|---|---|---|---|---|---|---|
| 006364307-01 | OBS | FP | 0.00 | 0 | 0 | 1 | 1 | CENT_KIC_POS—HALO_GHOST—EPHEM_MATCH |

**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 006364307-01

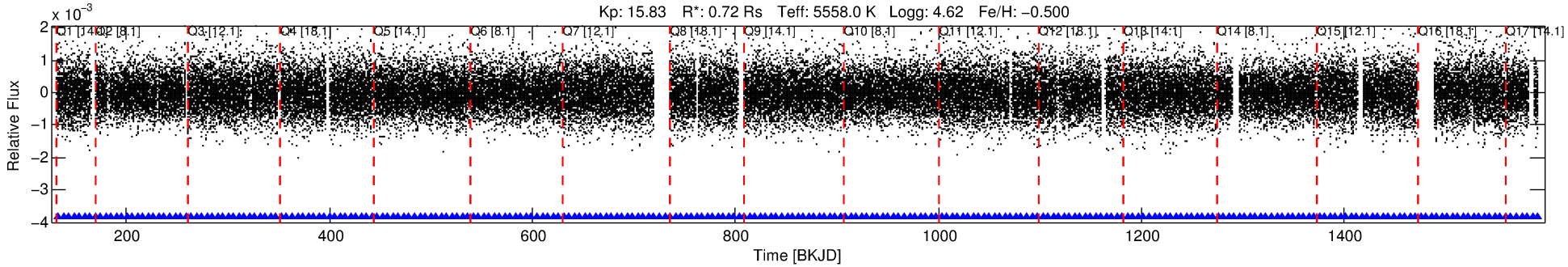
| TCE (1) | KIC | Parent (2) | Parent KIC | $P_1$:$P_2$ | Dist (″) | ΔRow | ΔCol | $m_2$ | $m_1$ | $D_2/D_1$ | Mechanism | Flag | $\sigma_P$ | $\sigma_T$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 006364307-01 | 6364307 | TT-Lyr-pri | 6364290 | 1:1 | 179.7 | -35 | 29 | 9.49 | 15.83 | 4106.30 | Direct-PRF | 0 | 1.56 | 2.27 |

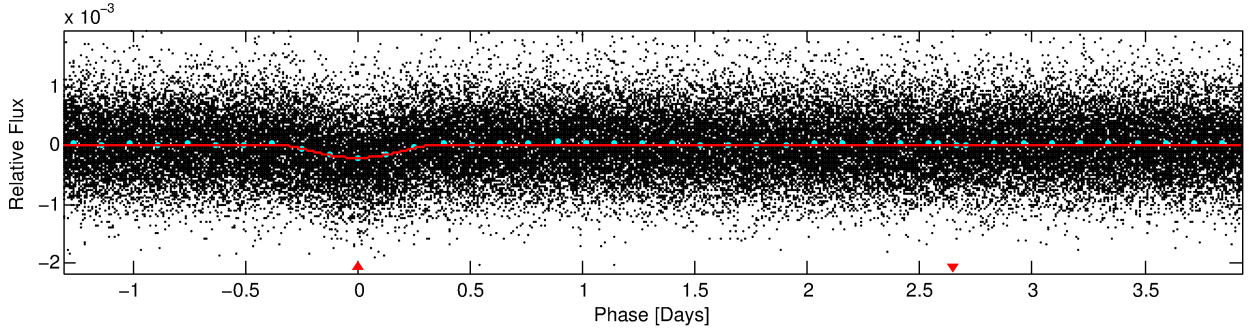
**Notes:** $P_1$:$P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. $m_2$ and $m_1$ are the magnitudes of the parent and child. $D_2/D_1$ is the parent's transit depth dividied by the child's. $\sigma_P$ and $\sigma_T$ are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have $\sigma_P$ and $\sigma_T$ very close to this cutoff should recieve extra scrutiny, especially if the period ratio is very large.

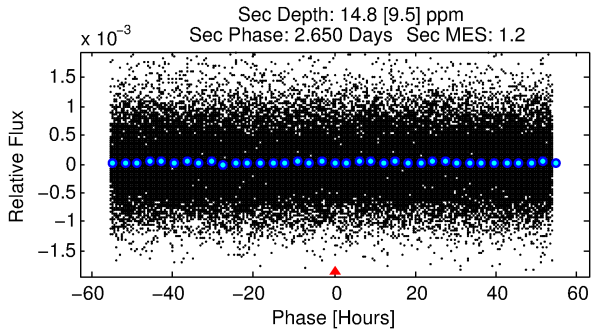
# DV One-Page Summary

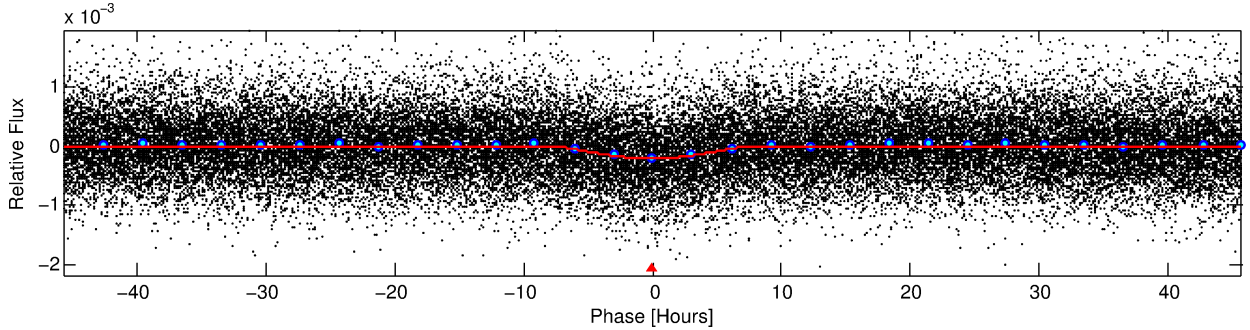
**KIC: 6364307 Candidate: 1 of 1 Period: 5.244 d**
**KOI: K05273.01 Corr: 0.798**

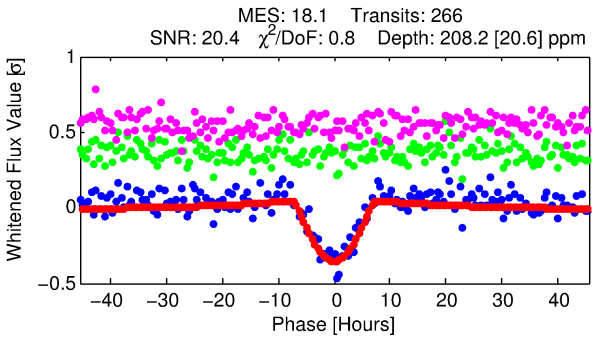
Kp: 15.83 R*: 0.72 Rs Teff: 5558.0 K Logg: 4.62 Fe/H: −0.500

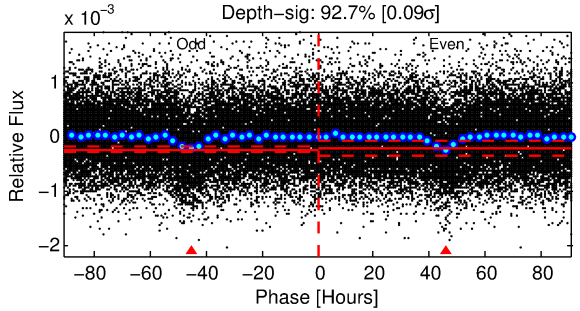


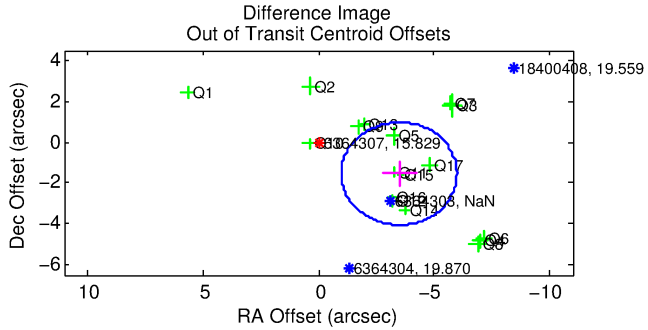




DV Fit Results:

Period = 5.24356 [0.00010] d
Epoch = 132.7496 [0.0162] BKJD
Rp/R* = 0.0265 [0.0399]
a/R* = 1.18 [0.09]
b = 1.00 [0.06]

Seff = 148.85 [37.65]
Teq = 891 [56] K
Rp = 2.09 [3.17] Re
a = 0.0547 [0.0085] AU

Ag = 5.58 [17.24] [0.27σ]
Teffp = 2117 [1630] K [0.75σ]

DV Diagnostic Results:

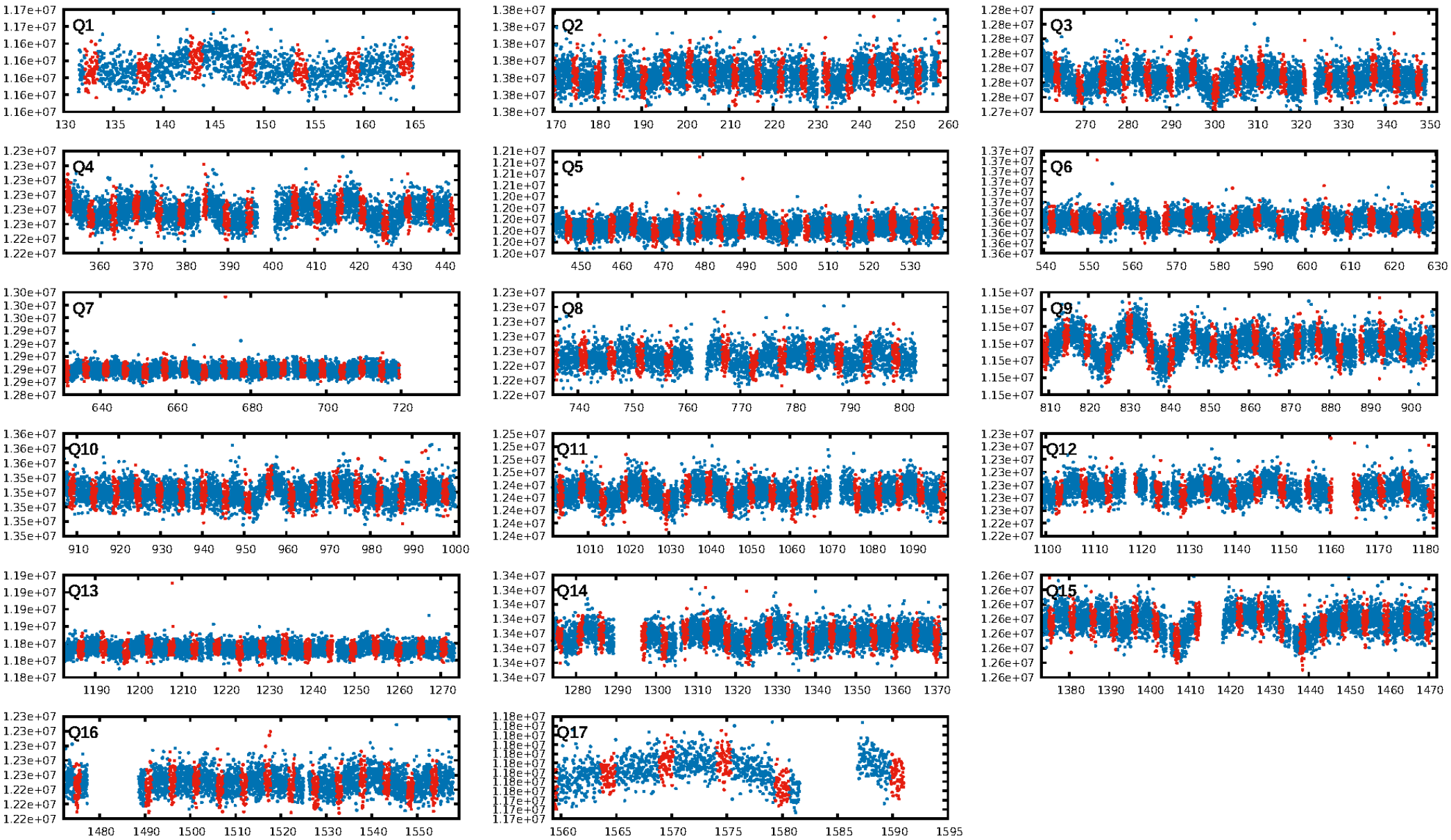
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 1.16e−65
RollingBand−fgt: 1.00 [253/253]
GhostDiagnostic−chr: −0.05943

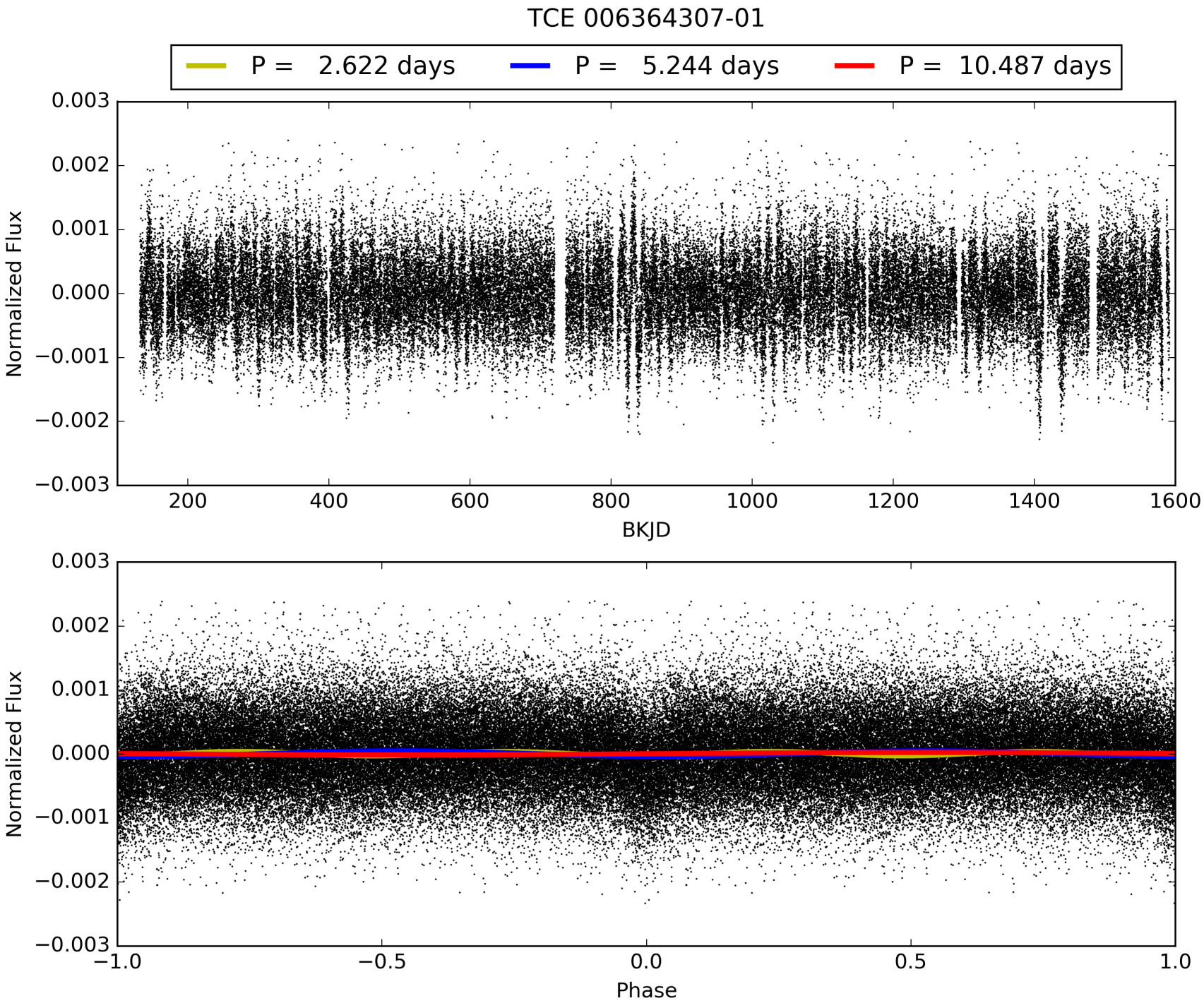
Centroid−sig: 0.1%
Centroid−so: 0.709 arcsec [1.16σ]
OotOffset−rm: 3.807 arcsec [4.55σ]
KicOffset−rm: 4.403 arcsec [5.36σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 0.06 [1/17]
DiffImageOverlap−fno: 1.00 [17/17]

**Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29−Jan−2016 11:13:59 Z**

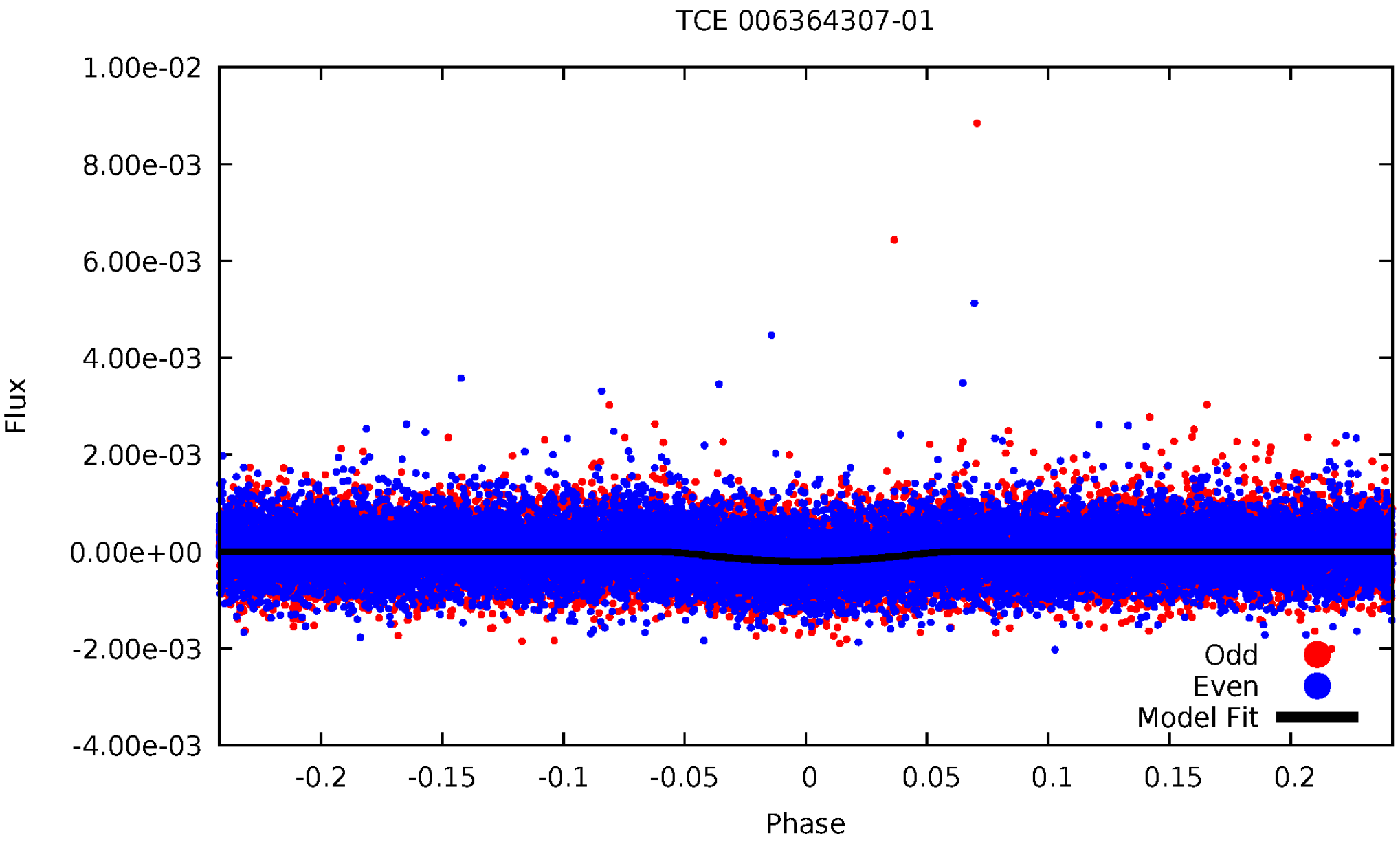
**This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center**

# TCE 006364307-01, PDC Light Curves

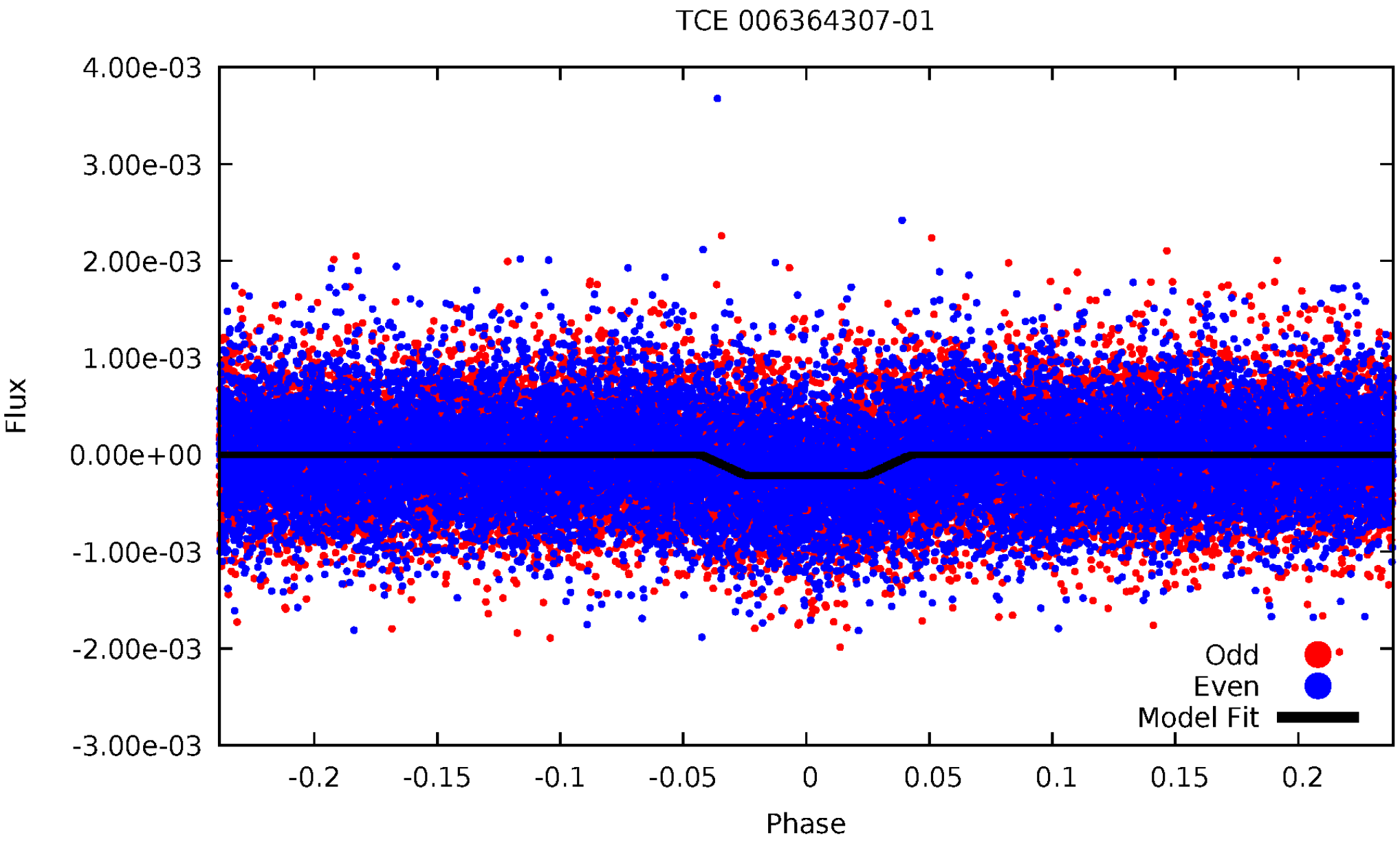



TCE 006364307-01
P = 2.622 days
P = 5.244 days
P = 10.487 days
Normalized Flux
BKJD
Normalized Flux
Phase

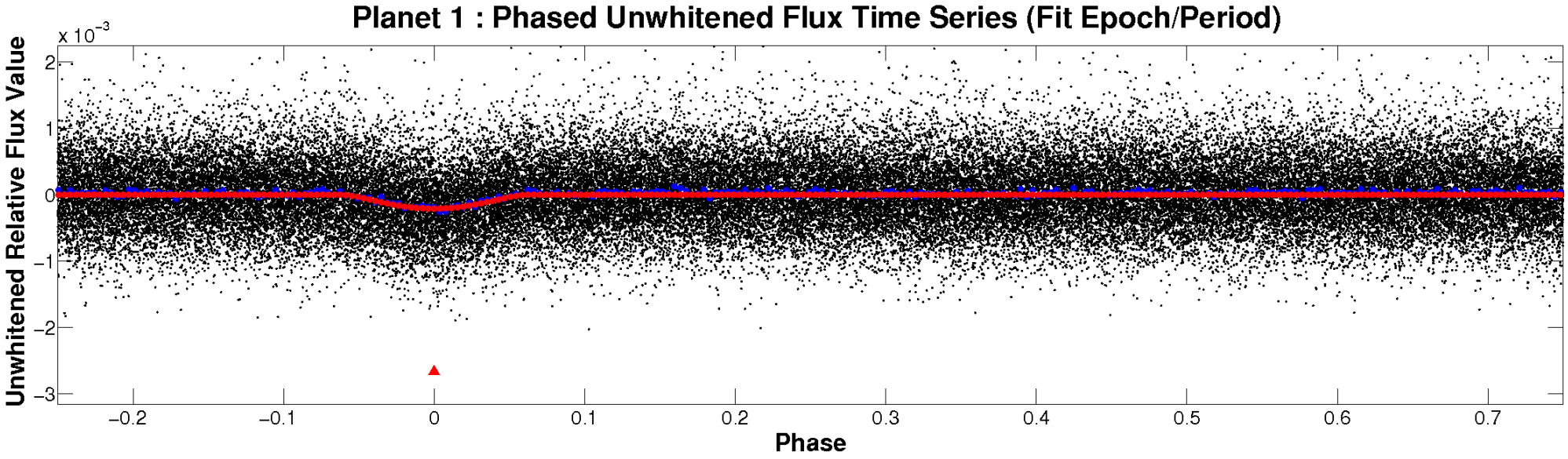
# DV Odd/Even

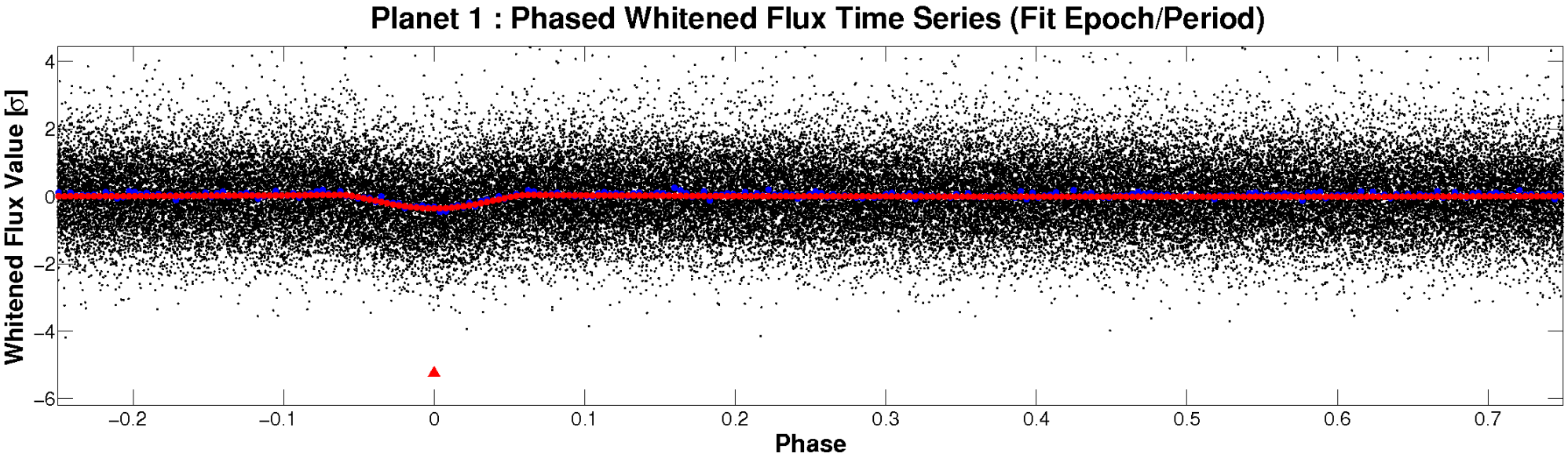

TCE 006364307-01
1.00e-02
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

**ALT Odd/Even**


TCE 006364307-01
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

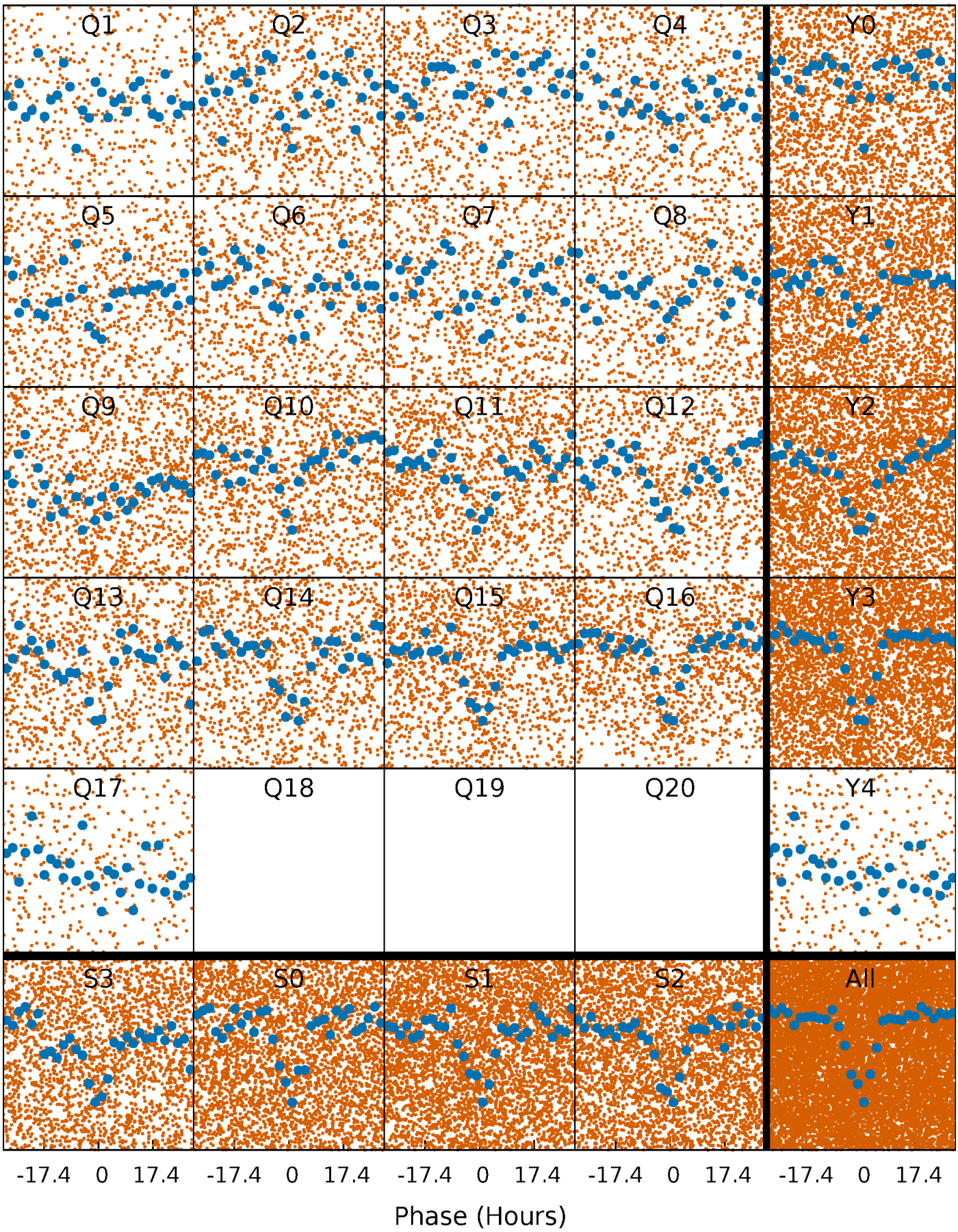
# Non-Whitened Vs. Whitened Light Curve



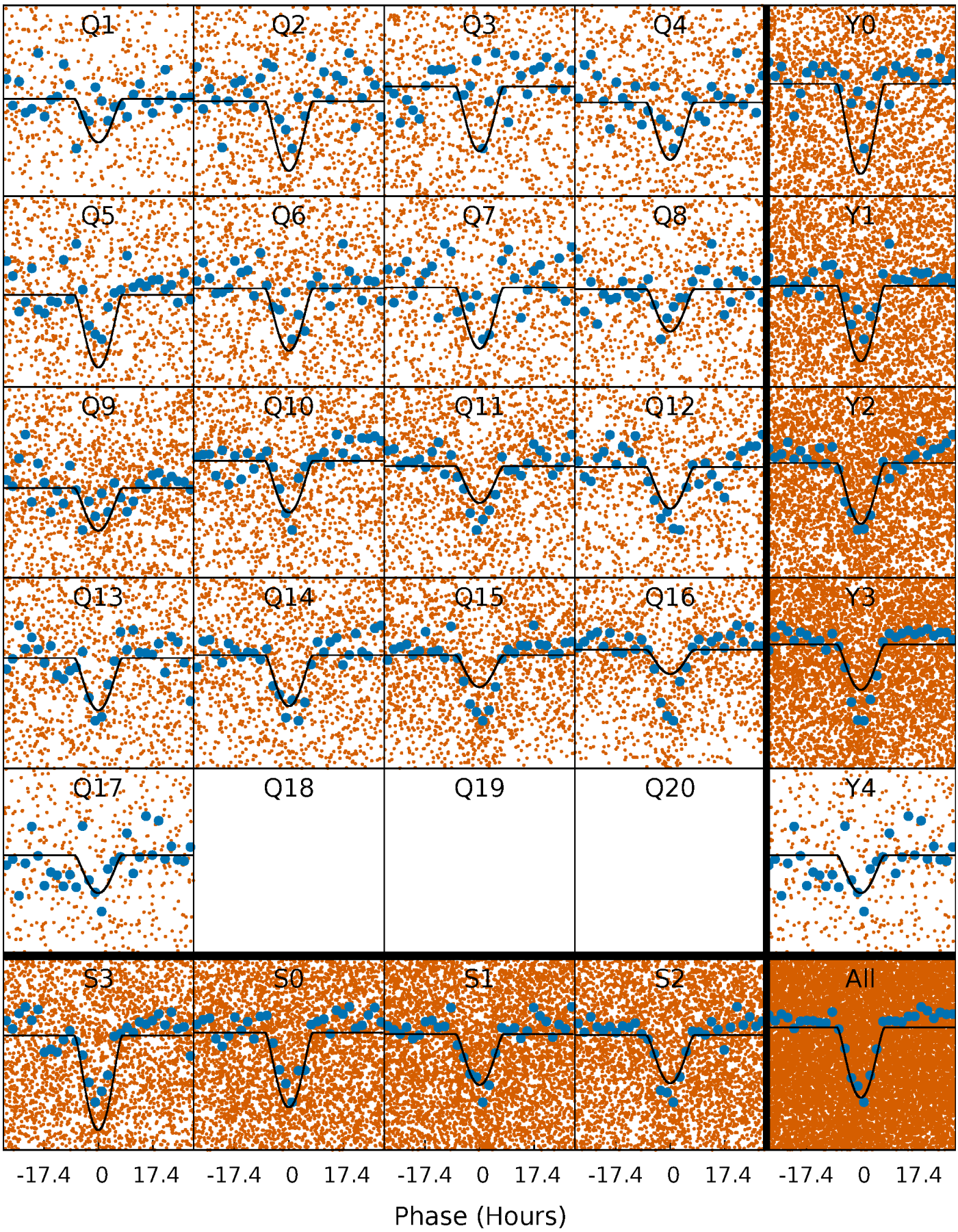
# PDC Quarter-Phased Transit Curves

TCE 006364307-01 P= 5.243562 Days $T_0$=132.749555 (BKJD)



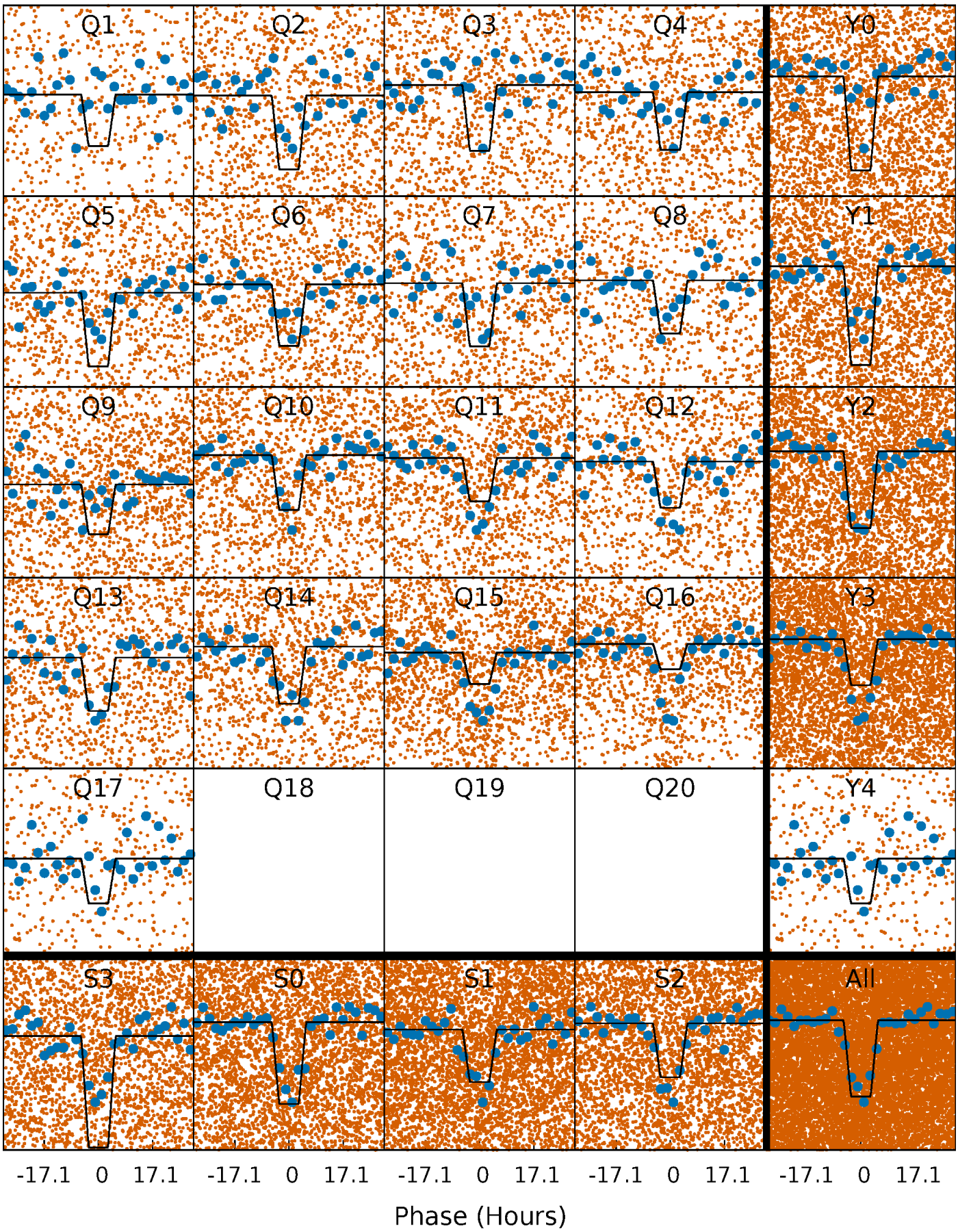
# DV Quarter-Phased Transit Curves

TCE 006364307-01 P= 5.243562 Days $T_0$=132.749555 (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

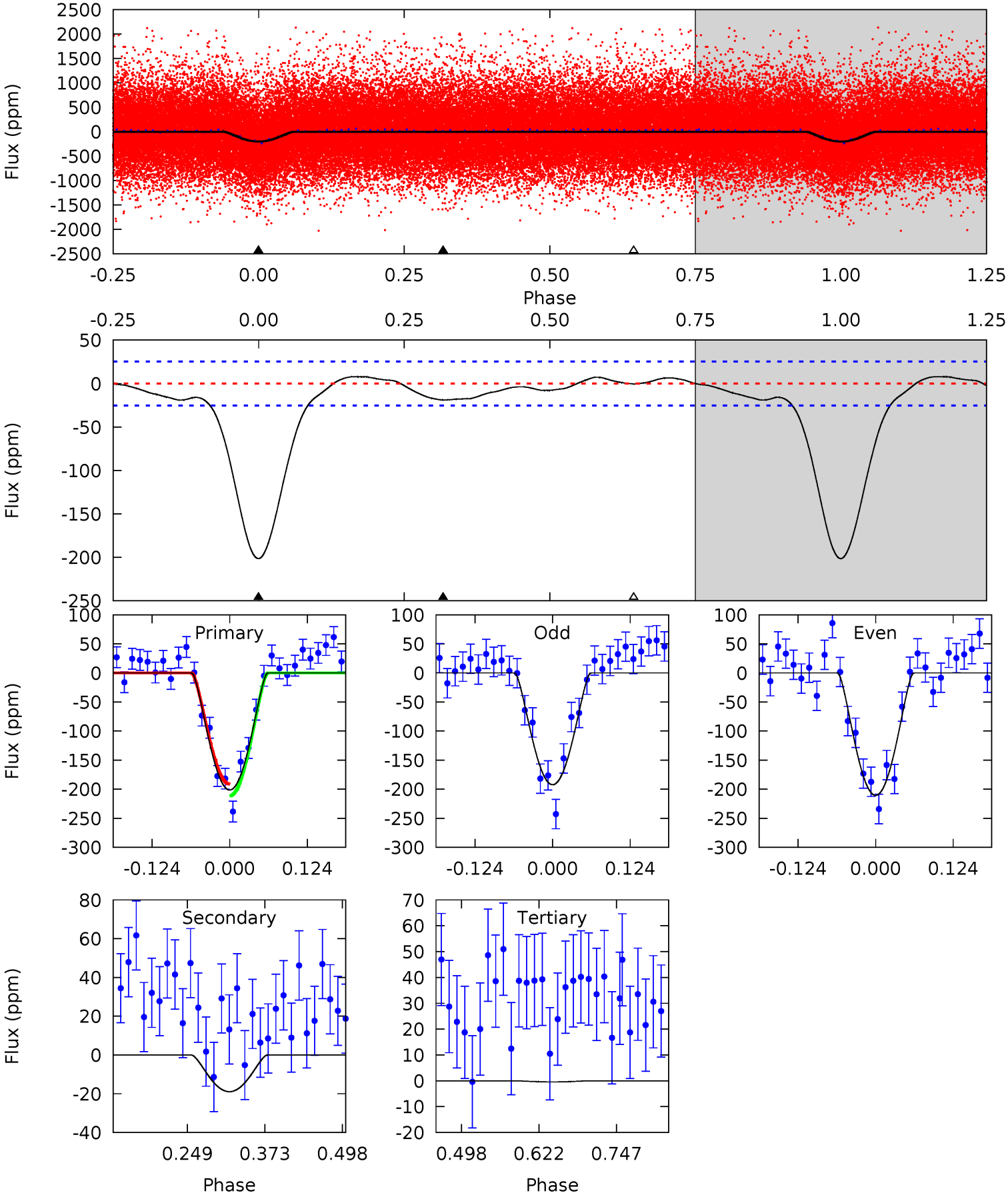
TCE 006364307-01 P= 5.243570 Days $T_0$=132.749540 (BKJD)



# DV Model-Shift Uniqueness Test

006364307-01, P = 5.243562 Days, E = 127.505993 Days

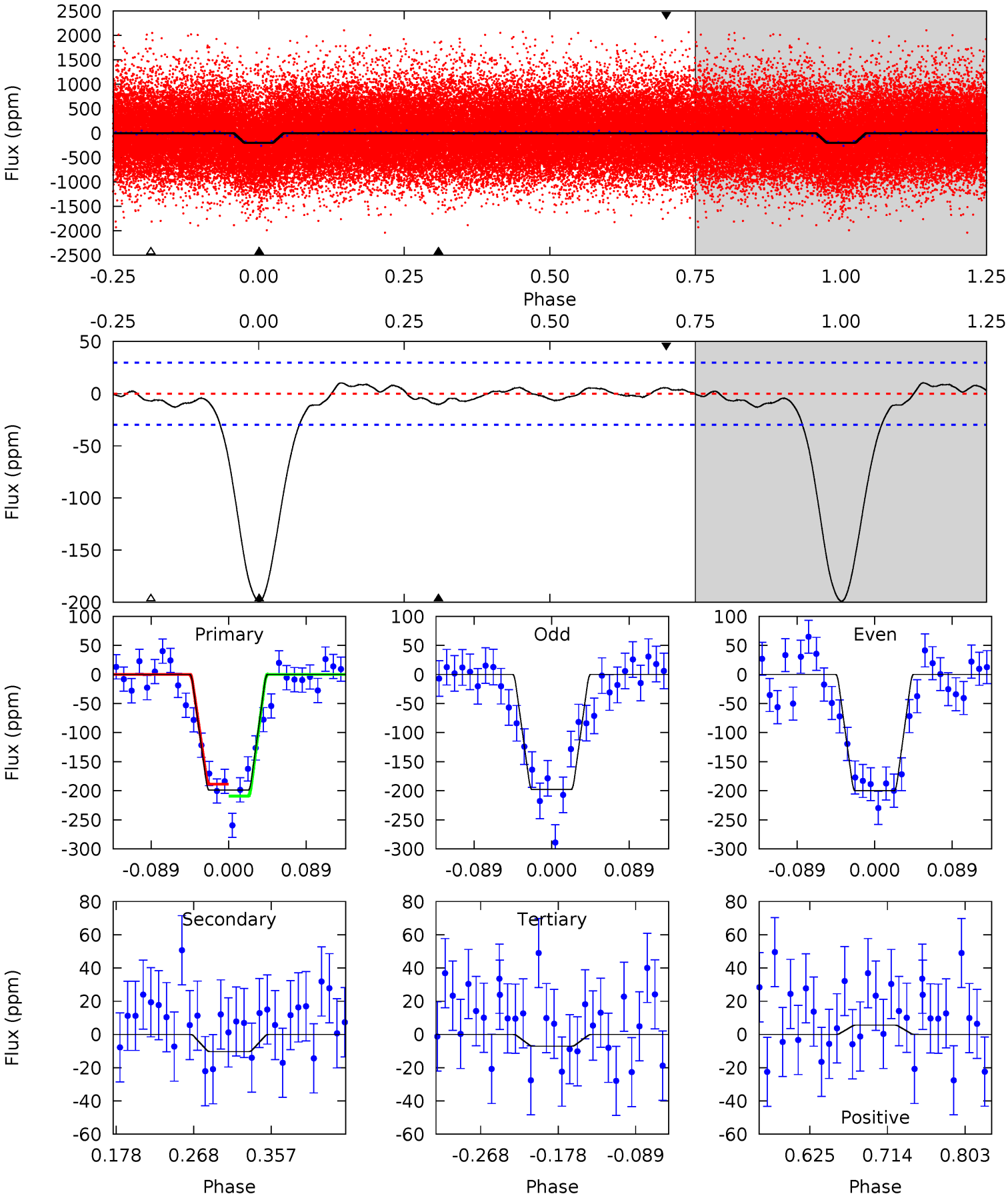
| Pri | Sec | Ter | Pos | $FA_1$ | $FA_2$ | $F_{Red}$ | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | 3.39 | 0.08 | 0 | 4.52 | 1.54 | 1.30 | 35.9 | 36.0 | 3.31 | 3.39 | 1.64 | 1.03 | 0.04 | 1.82 |



# Alt Model-Shift Uniqueness Test

006364307-01, P = 5.243570 Days, E = 127.505970 Days

| Pri | Sec | Ter | Pos | $FA_1$ | $FA_2$ | $F_{Red}$ | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30.6 | 1.59 | 1.09 | 0.87 | 4.59 | 1.70 | 0.85 | 29.5 | 29.8 | 0.51 | 0.73 | 0.15 | 1.10 | 0.05 | 1.57 |



Stellar Parameters For KIC 006364307

| | $T_{\rm eff}(K)$ | $\log(g)$ | [Fe/H] | $R$ ($R_\odot$) | $M(M_\odot)$ | $p_\star$ (g·cm$^{-3}$) |
|---|---|---|---|---|---|---|
| | $5558^{+166}_{-166}$ | $4.621^{+0.037}_{-0.120}$ | $-0.500^{+0.300}_{-0.300}$ | $0.722^{+0.136}_{-0.054}$ | $0.822^{+0.078}_{-0.095}$ | $3.076^{+0.499}_{-1.117}$ |
| | +3%/-3% | +1%/-3% | +60%/-60% | +19%/-7% | +9%/-12% | +16%/-36% |
| 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 006364307-01 / KOI 5273.01

| Detrend | Depth (ppm) | $R_p$ ($R_\oplus$) | $T_{max}$ (K) | $T_{obs}$ (K) | $A_{obs}$ |
|---|---|---|---|---|---|
| DV | -19±6 | $3.38^{+2.84}_{-2.19}$ | $1261^{+62}_{-49}$ | $2559^{+887}_{-440}$ | $2.517^{+16.692}_{-1.774}$ |
| Alt. | -10±6 | $2.82^{+2.48}_{-1.96}$ | $1265^{+62}_{-52}$ | $2443^{+1010}_{-832}$ | $1.942^{+17.902}_{-1.617}$ |

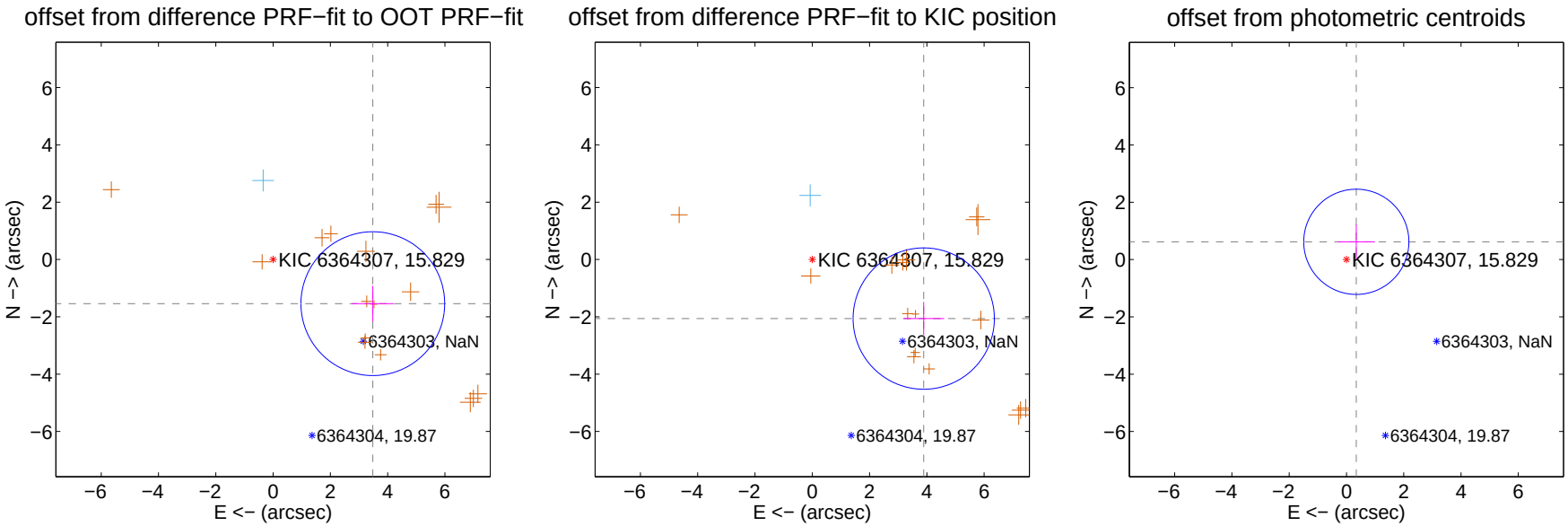
$T_{max}$ = Theoretical Maximum Planetary Temperature
$T_{obs}$ = Observed Planetary Temperature (Assuming A=0.3)
$A_{obs}$ = Observed Albedo (Assuming T=0)

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

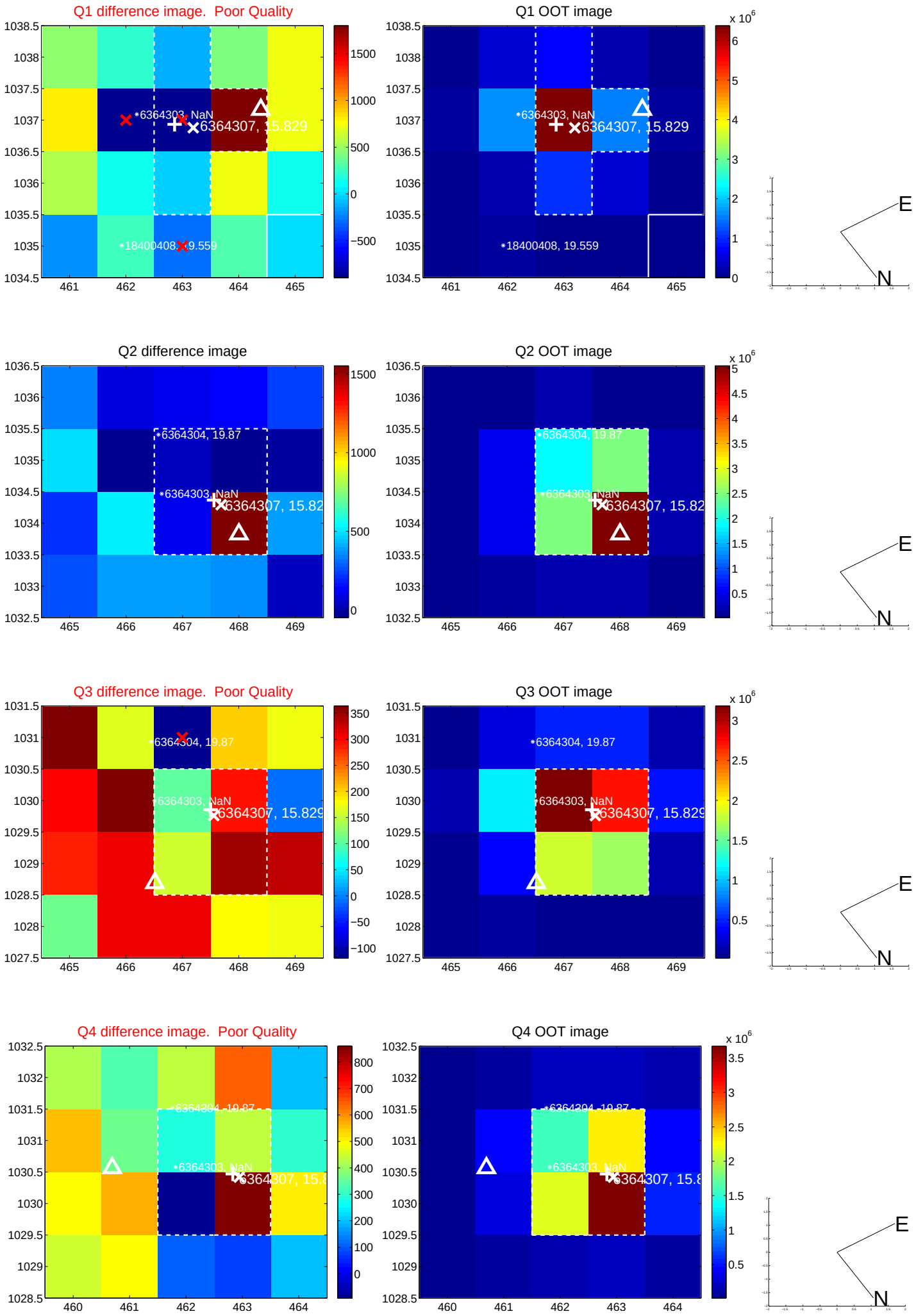
Supplemental centroid analysis for 006364307-01. Kepler magnitude: 15.83. Transit SNR 20.37
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 1.47 arcsec

| | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA | $\Delta$ Dec |
|---|---|---|---|---|
| PRF-fit source offset from OOT | 3.807 ± 0.836 | 4.55 | -3.481 ± 0.727 | -1.540 ± 0.621 |
| PRF-fit source offset from KIC position | 4.403 ± 0.822 | 5.36 | -3.890 ± 0.714 | -2.061 ± 0.581 |
| photometric centroid source offset | 0.71 ± 0.61 | 1.16 | -0.34 ± 0.65 | 0.62 ± 0.60 |

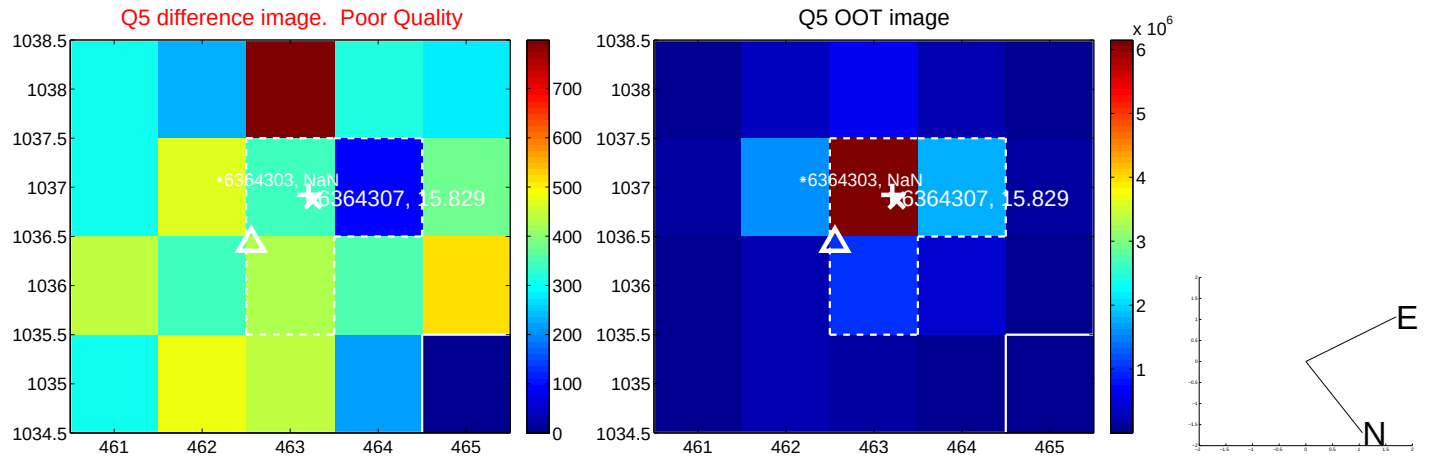


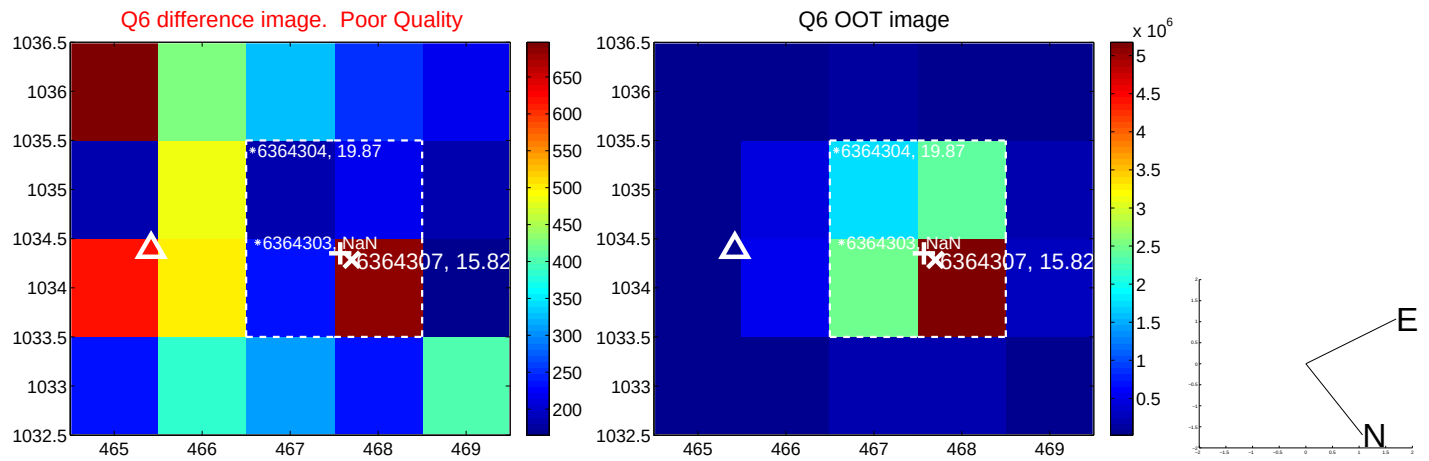

Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-$\sigma$ uncertainty. Blue circle: three-$\sigma$.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

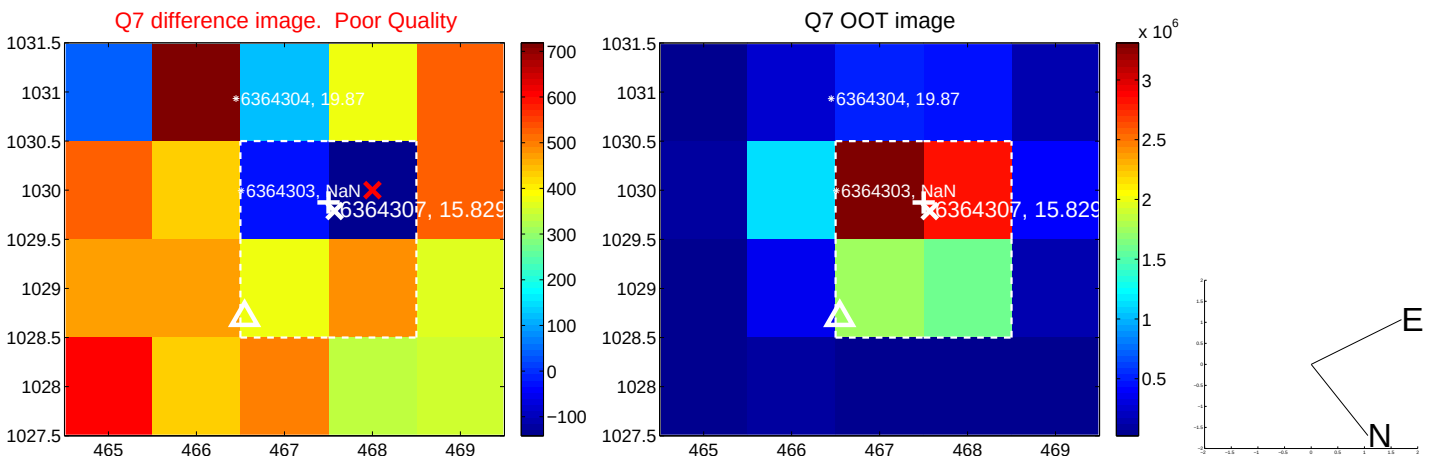
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

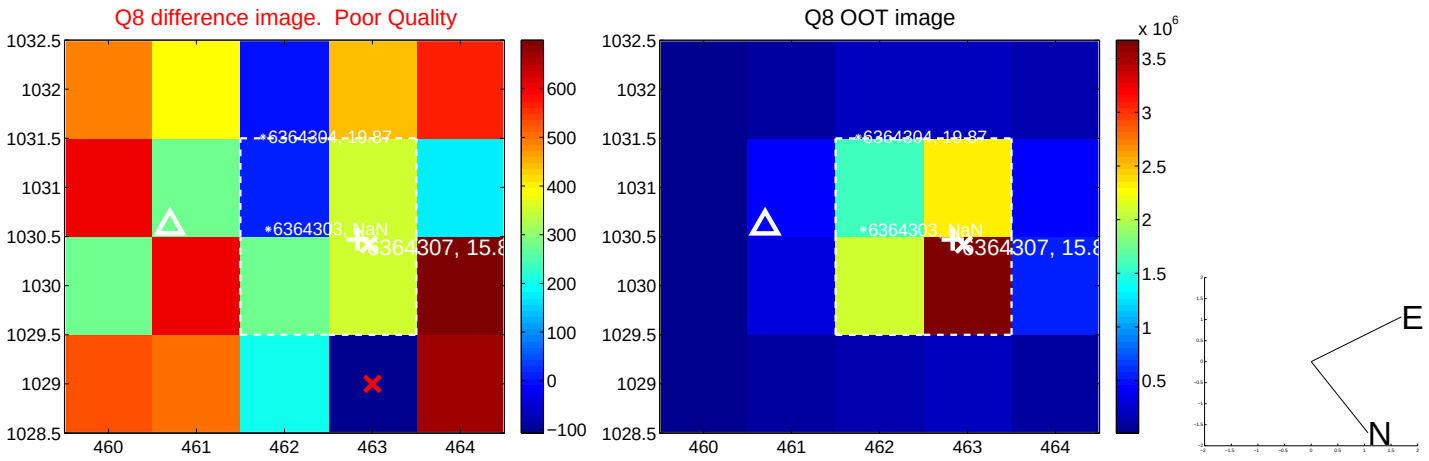


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

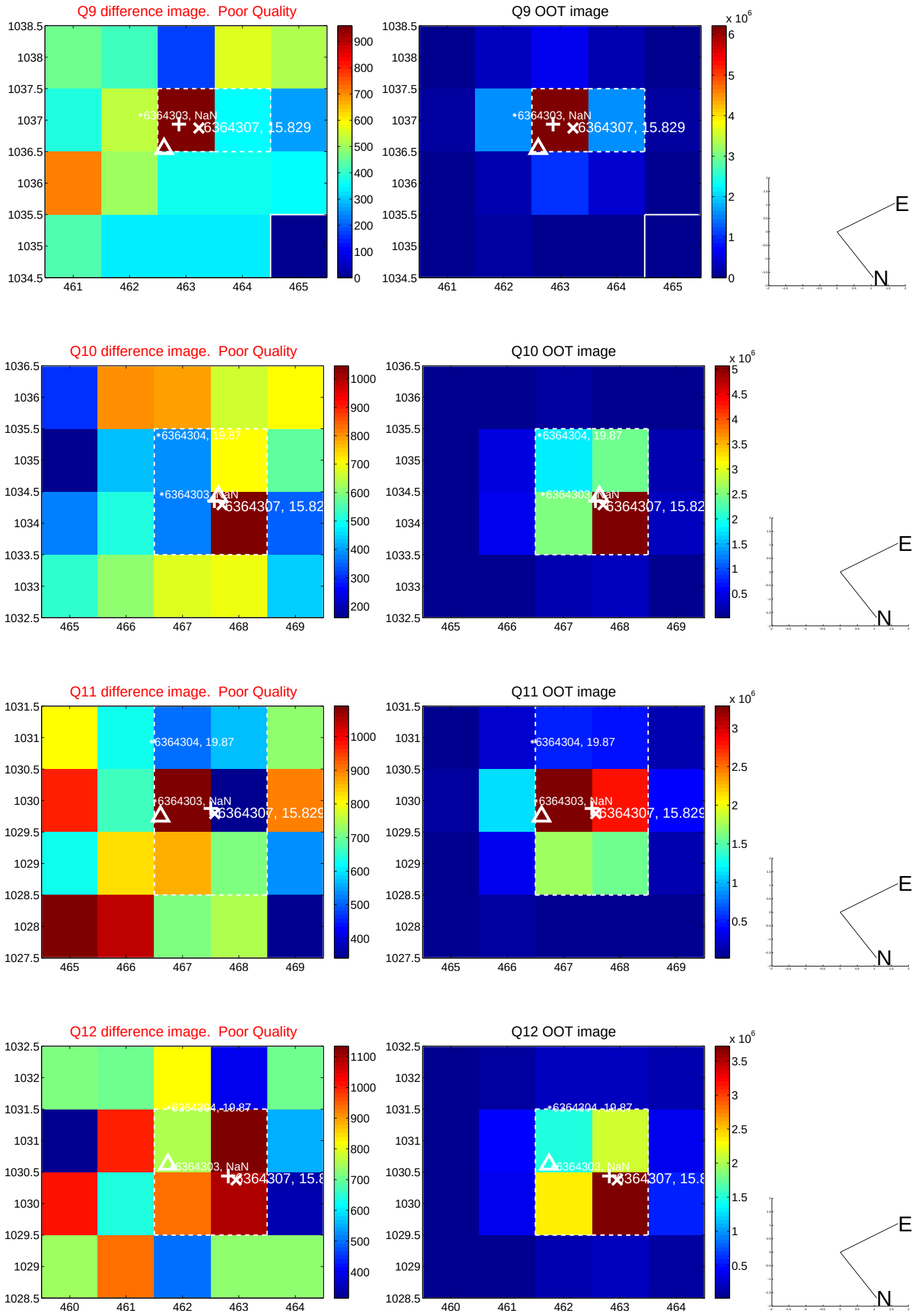


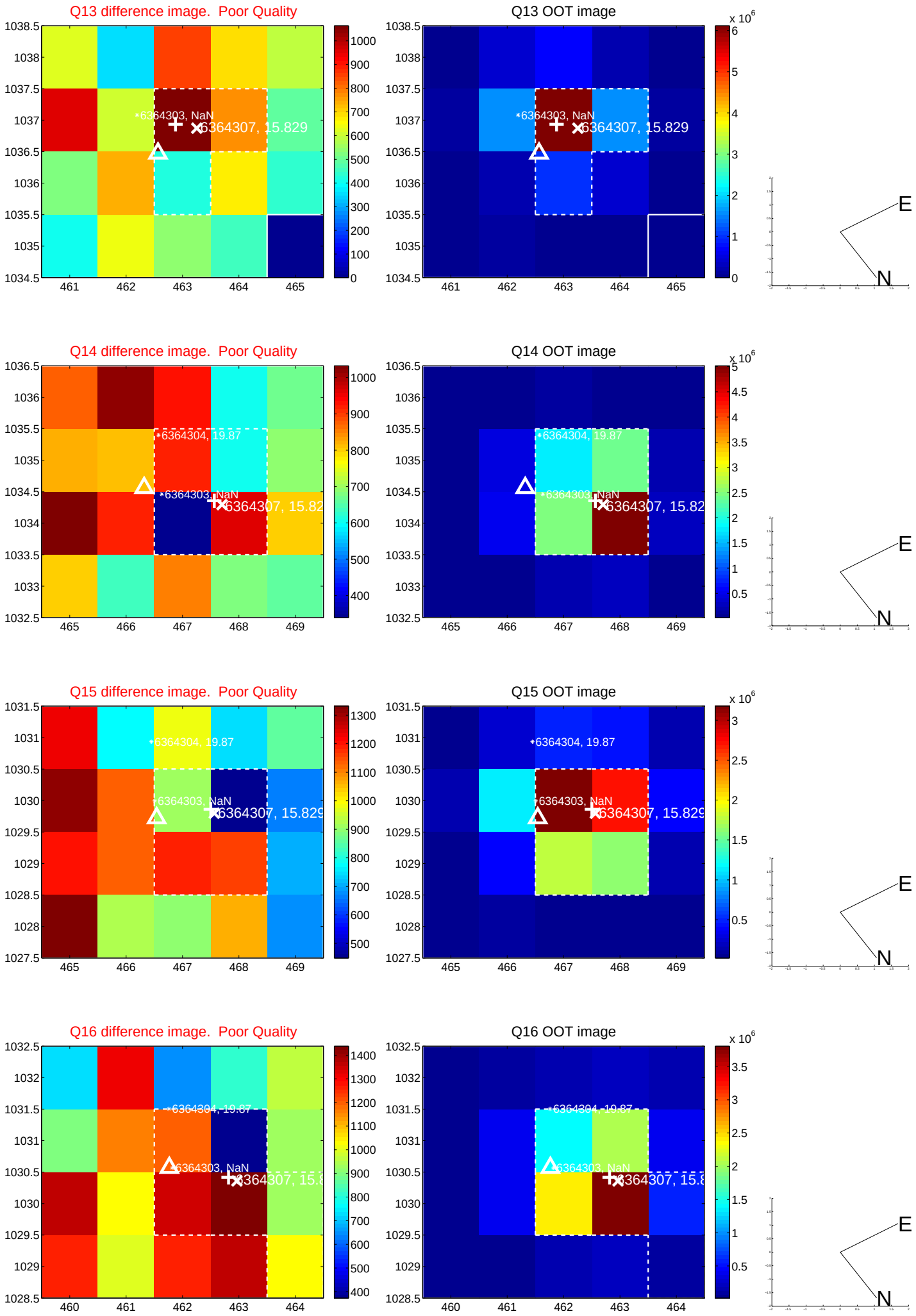



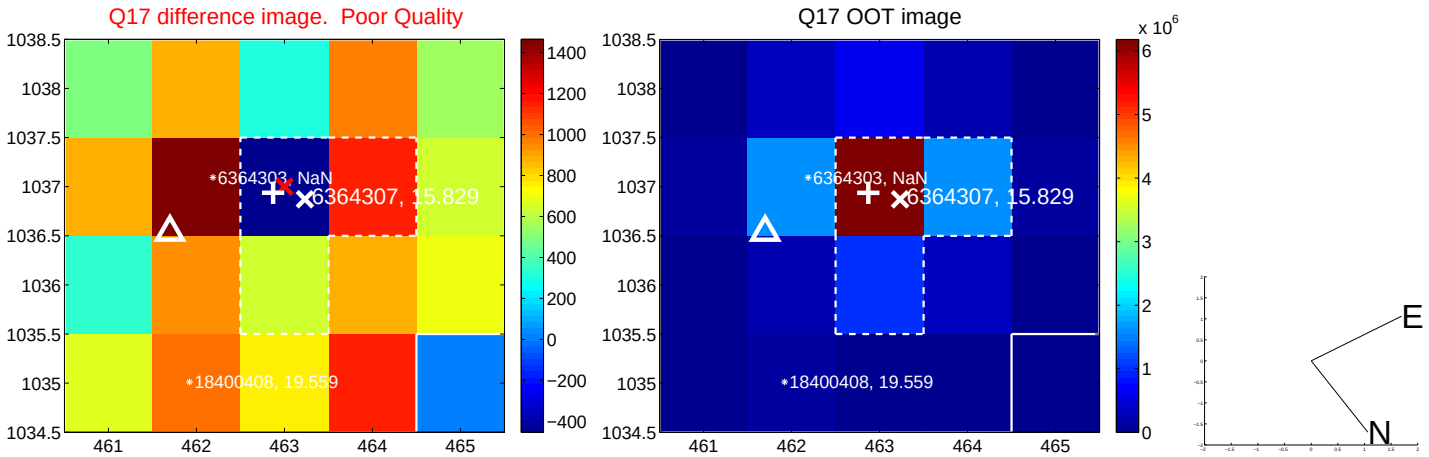
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

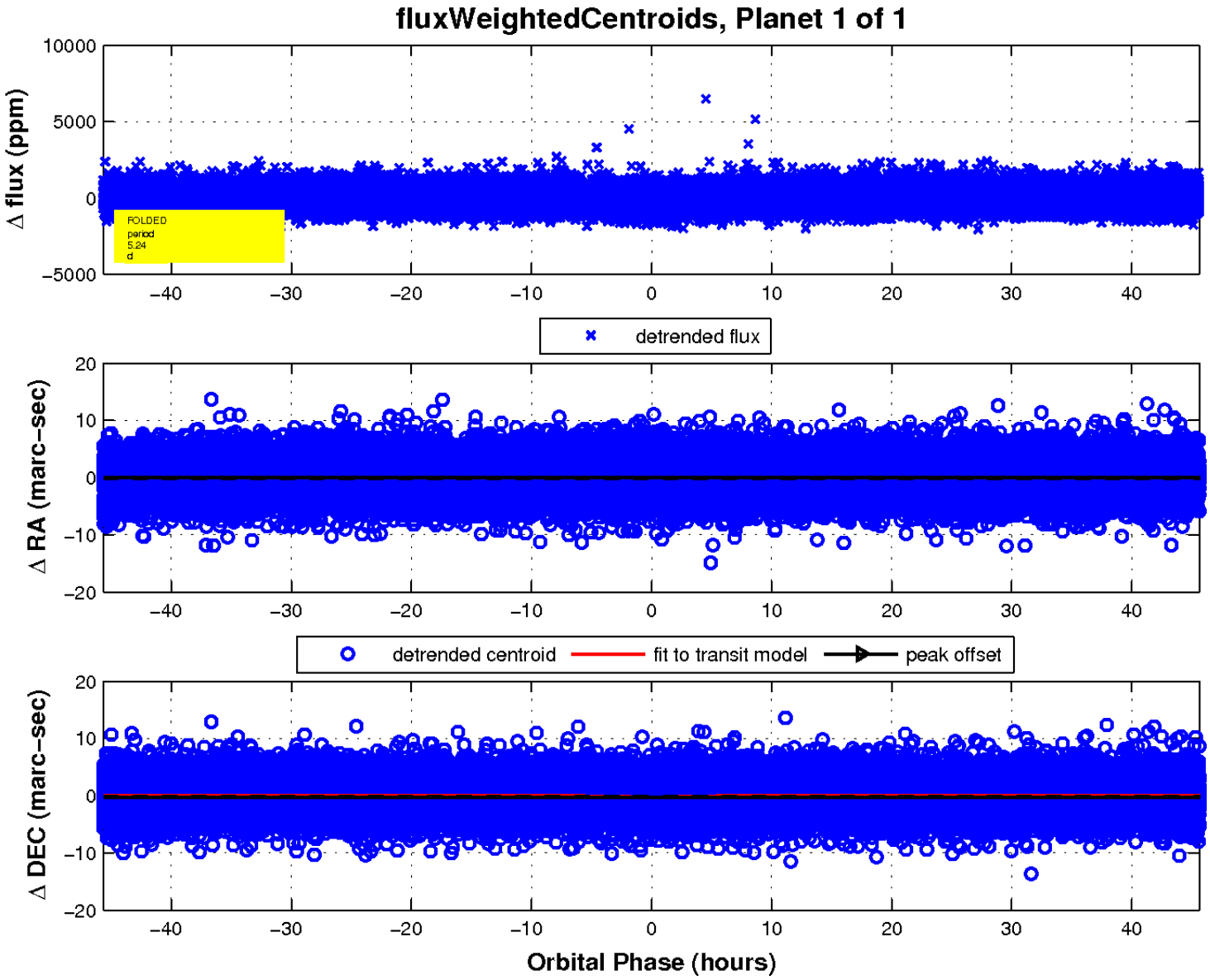


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

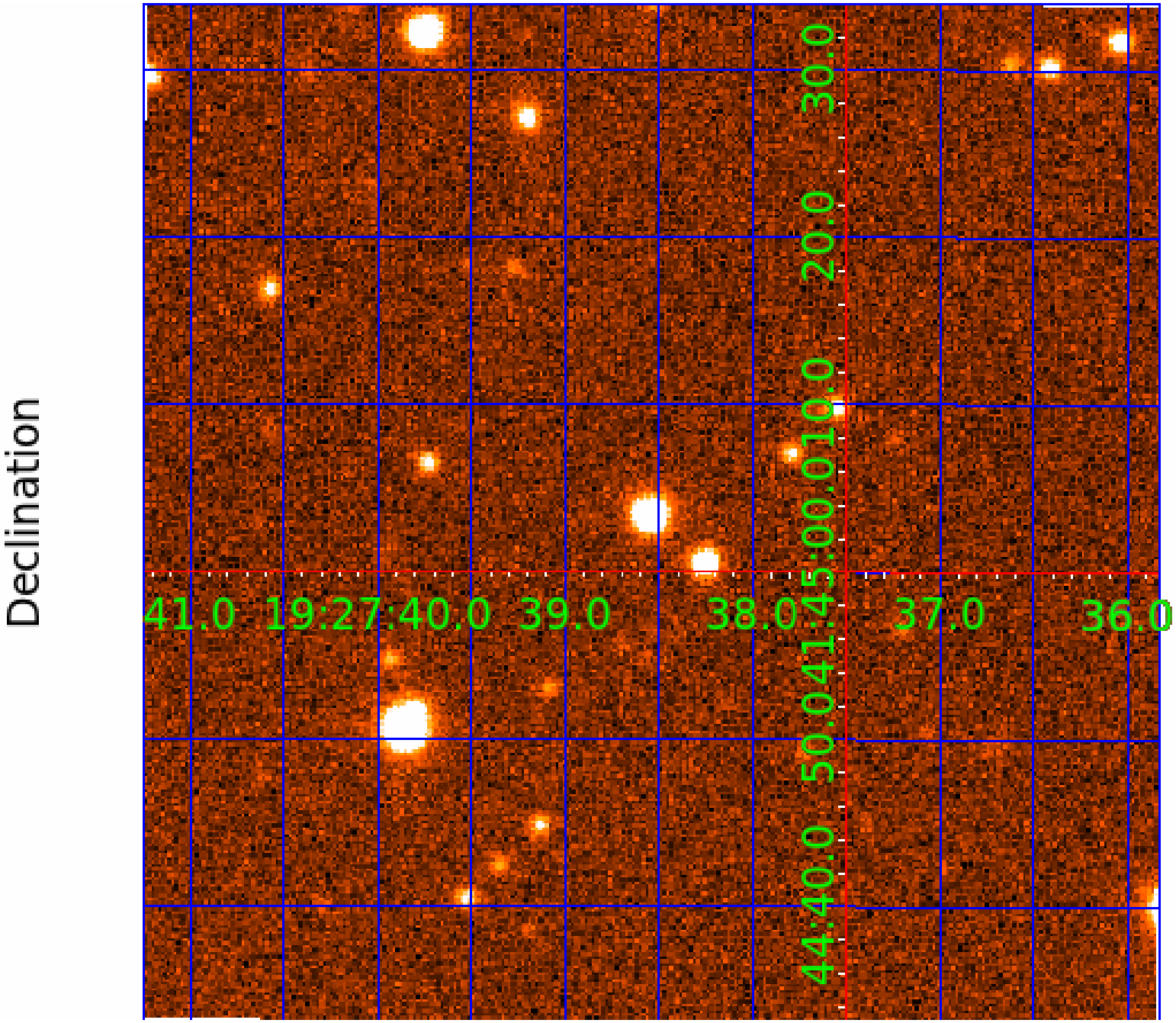


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



**UKIRT Image**


Declination
41.0
19:27:40.0
39.0
38.0
37.0
36.0
44:40.0
50.0
41:45:00.0
10.0
20.0
30.0