

KIC 003440549

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003440549-01 | OBS | No | 414.240172 | 310.301933 | 199.4 | 21.431 | 8.1 | 8.2 | 1.16 | 6032 | 1.75 | 1.33 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 003440549-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL—LPP_DV—CENT_FEW_DIFFS |

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

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

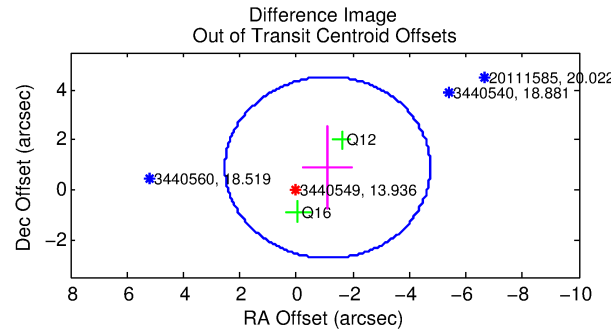
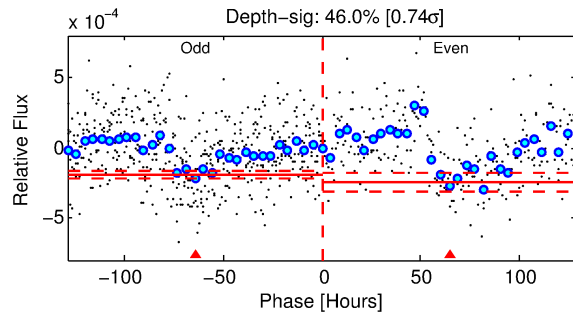
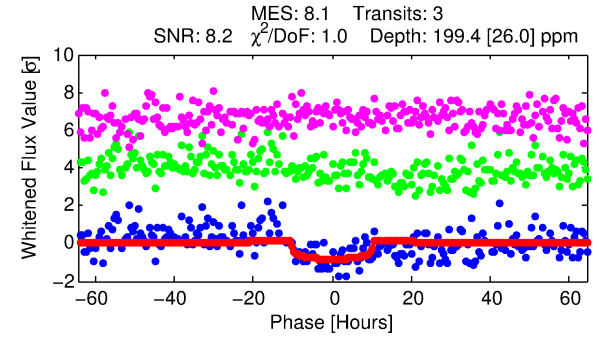
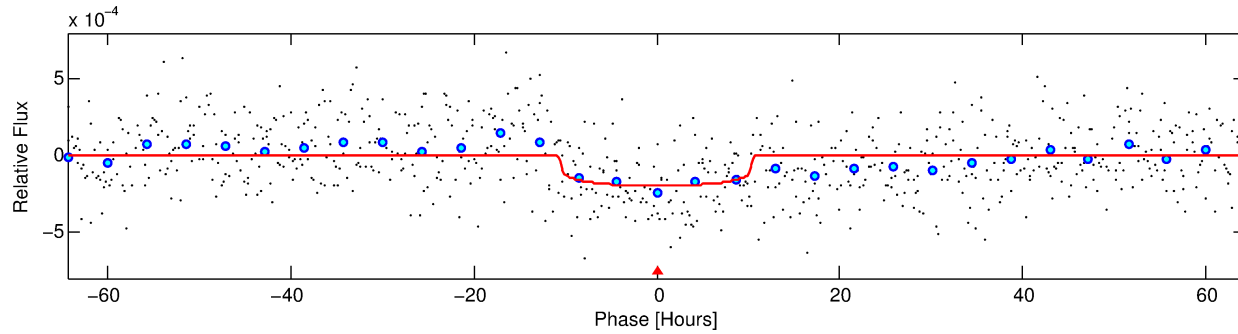
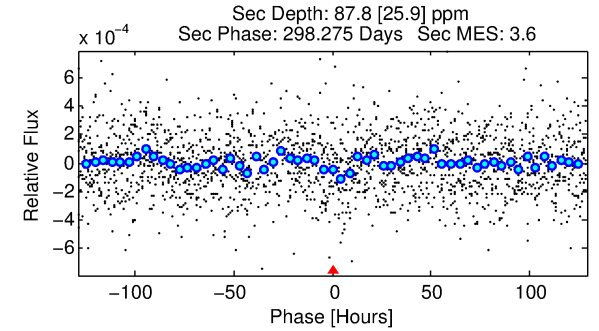
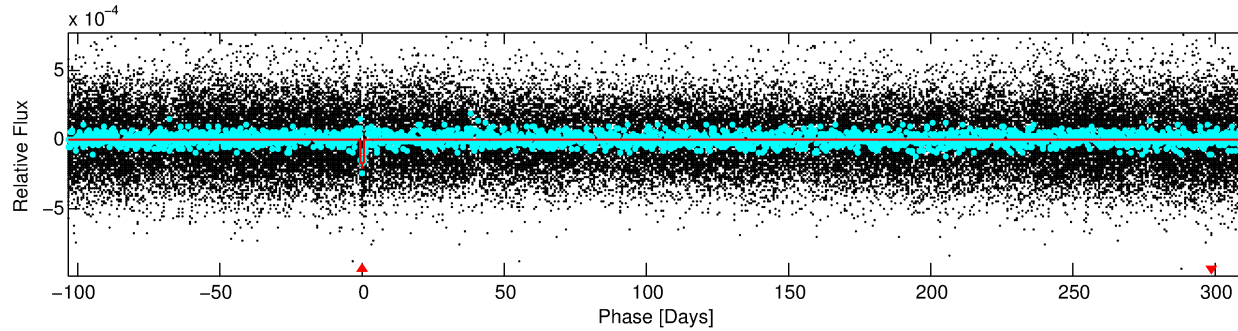
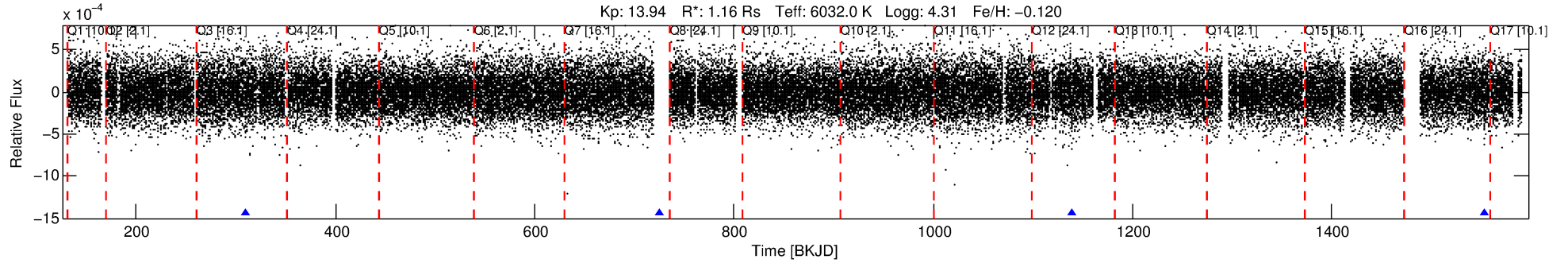
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003440549-01

No Significant Match Found

DV One-Page Summary

KIC: 3440549 Candidate: 1 of 1 Period: 414.240 d



DV Fit Results:

Period = 414.24017 [0.01538] d
Epoch = 310.3019 [0.0326] BKJD
Rp/R* = 0.0139 [0.0055]
a/R* = 105.57 [203.13]
b = 0.72 [1.30]
Seff = 1.33 [0.29]
Teq = 274 [15] K
Rp = 1.75 [0.75] Re
a = 1.0887 [0.1545] AU
Ag = 18637.11 [16247.88] [1.15σ]
Teffp = 4951 [1048] K [4.46σ]

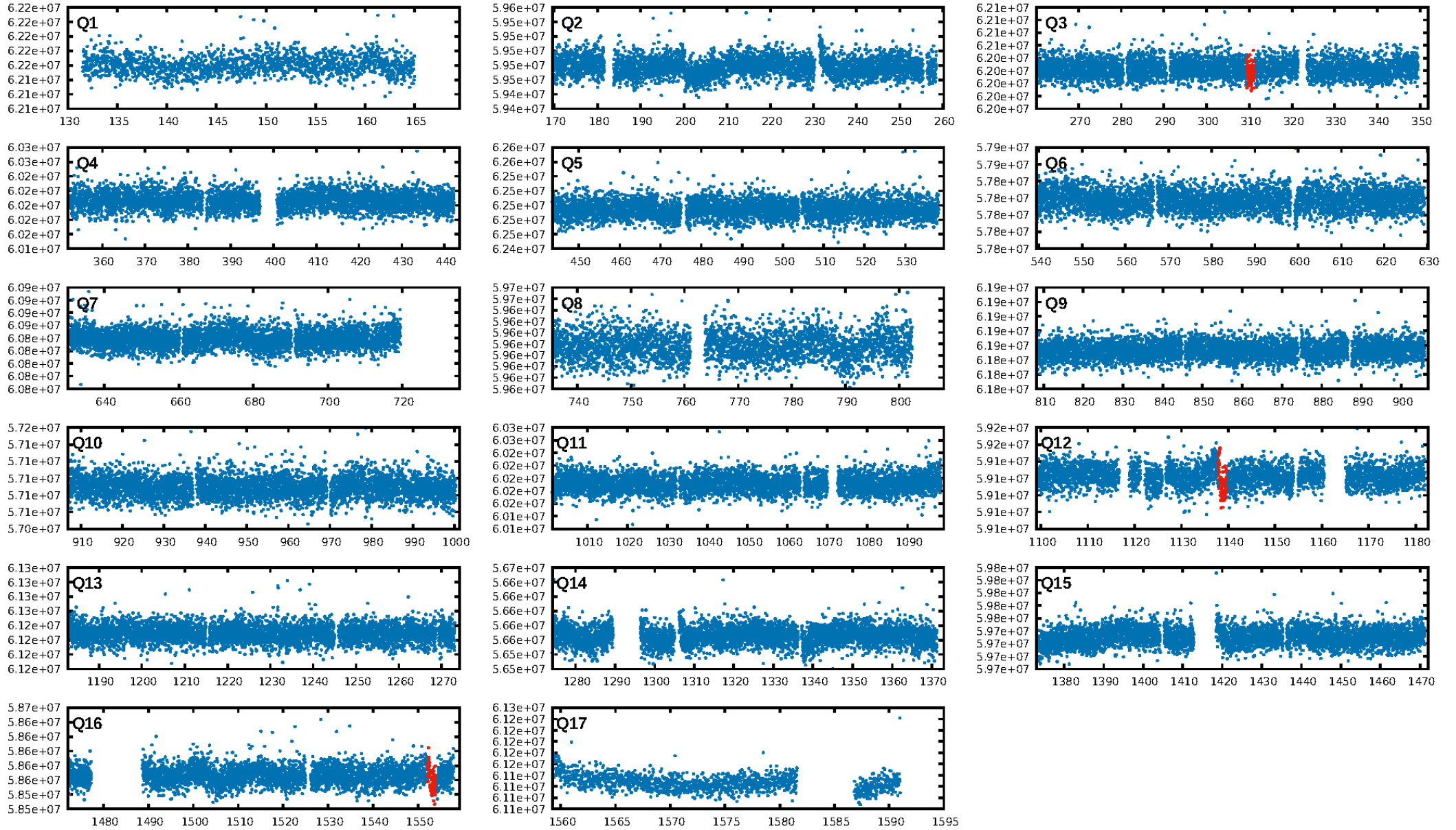
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.97e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 6.907
Centroid-sig: 80.3%
Centroid-so: 0.380 arcsec [0.23σ]
OotOffset-rm: 1.420 arcsec [1.17σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-rm: 1.375 arcsec [1.22σ]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

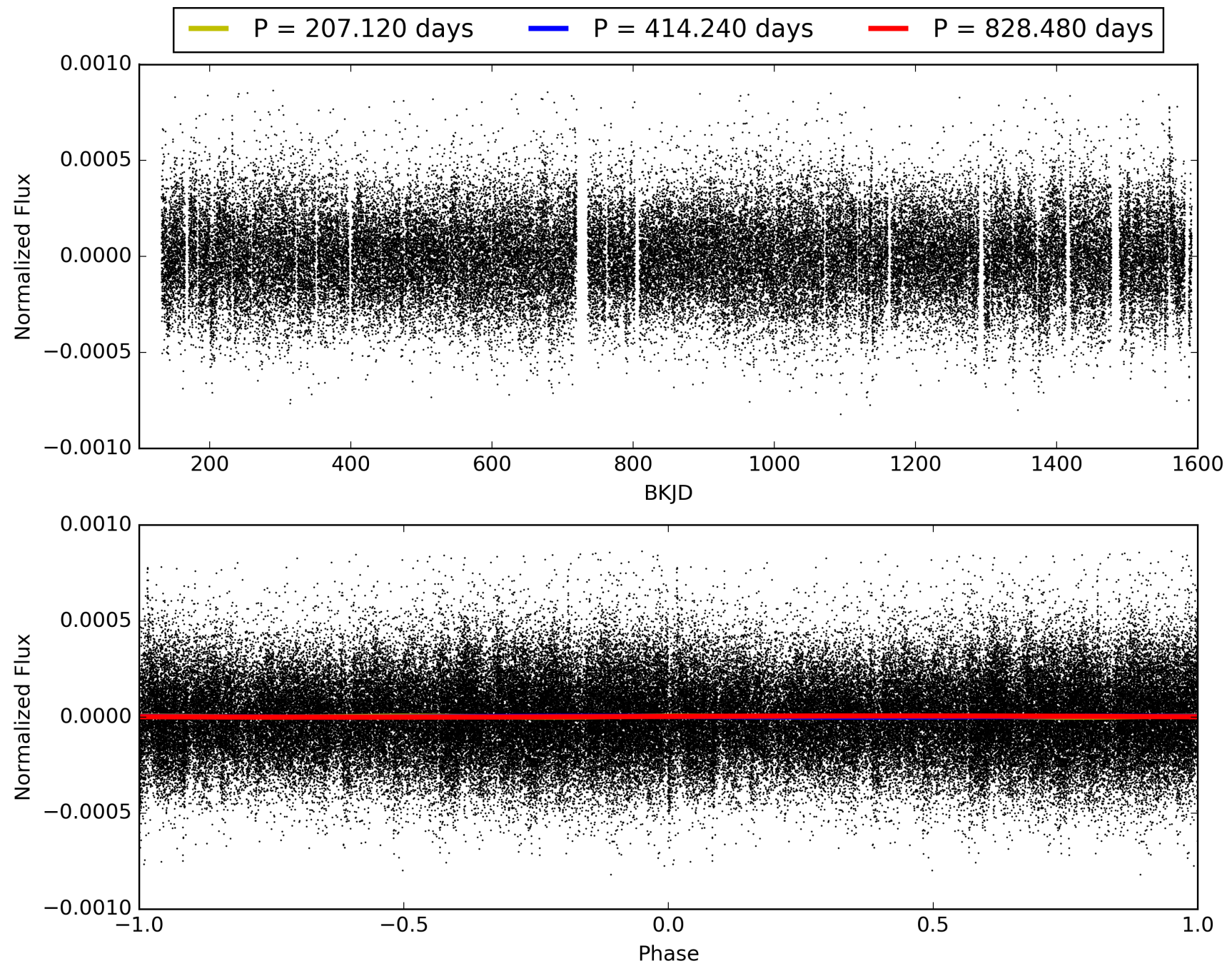
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:41:18 Z

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

TCE 003440549-01, PDC Light Curves

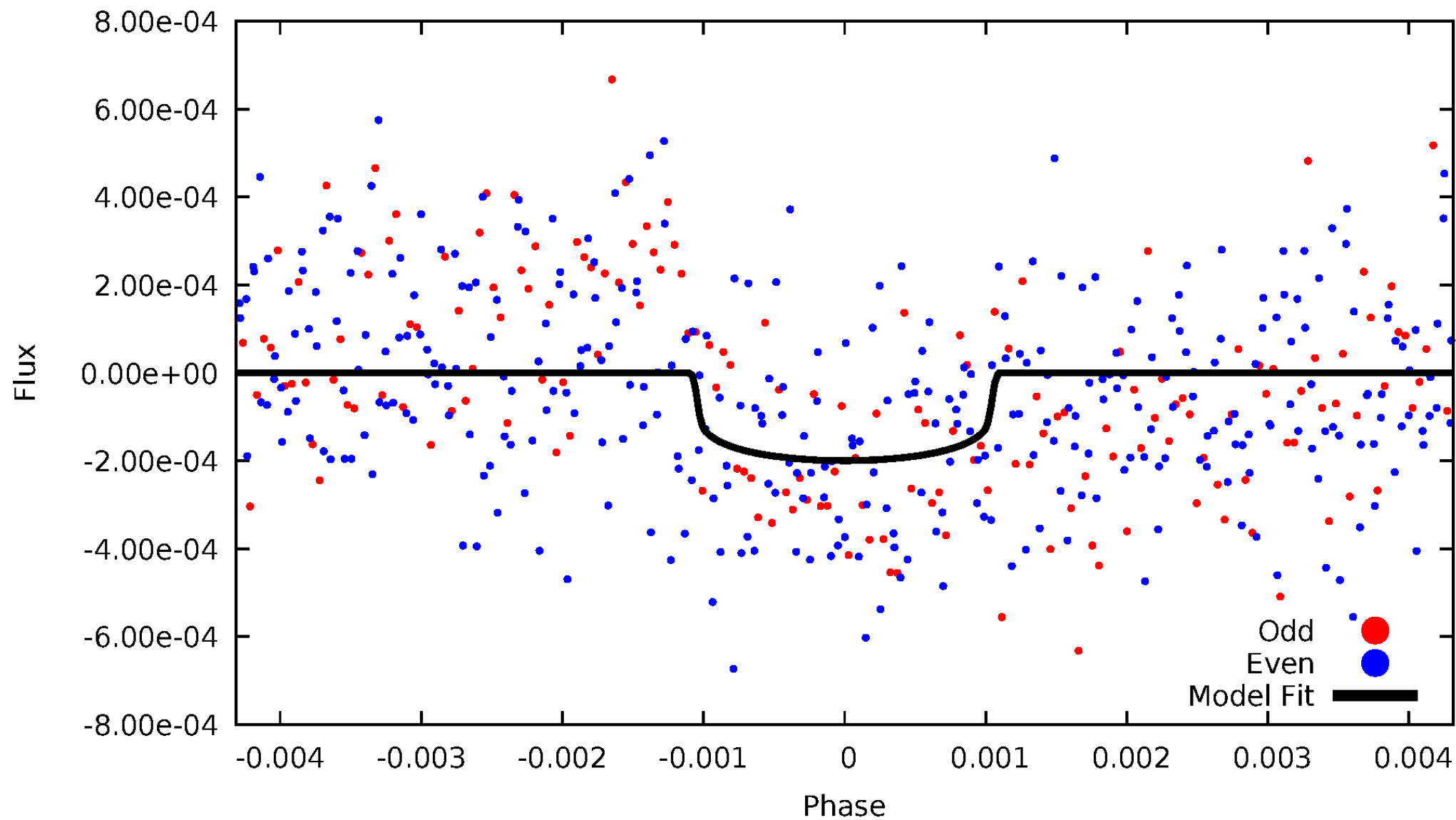


TCE 003440549-01



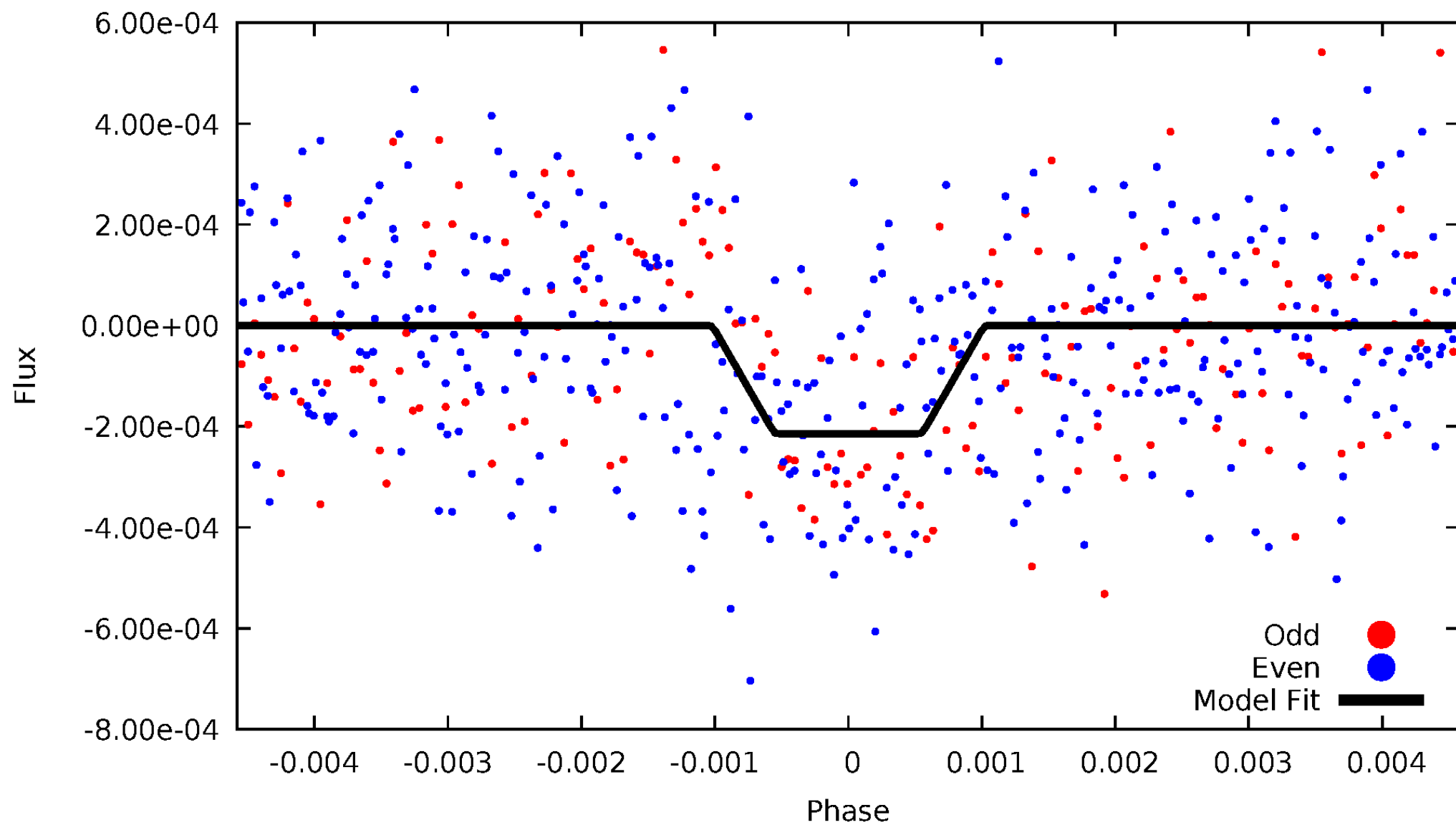
DV Odd/Even

TCE 003440549-01



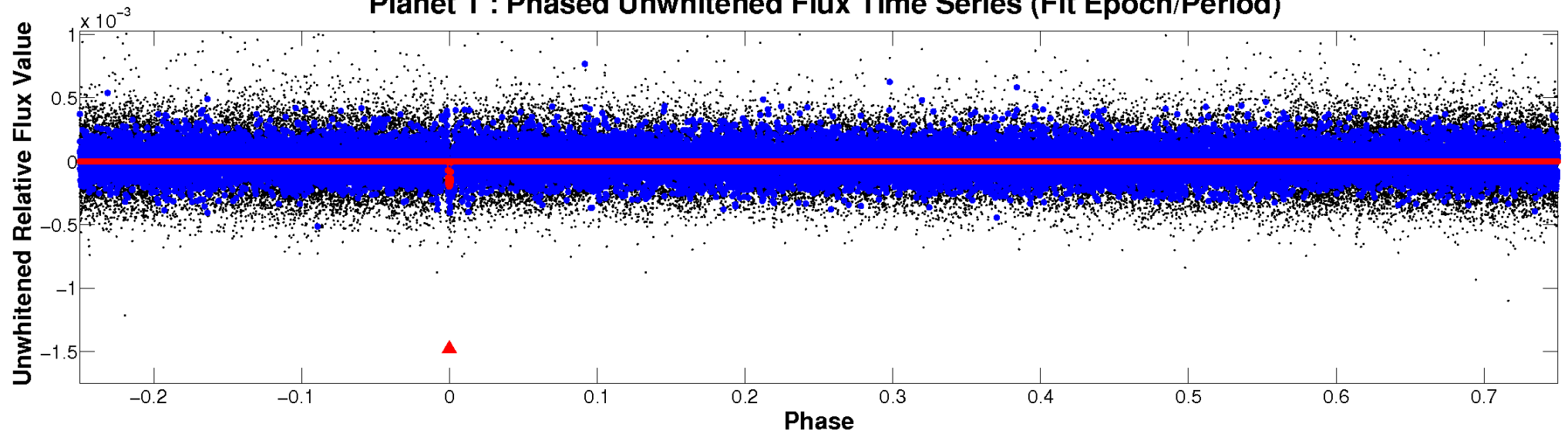
ALT Odd/Even

TCE 003440549-01

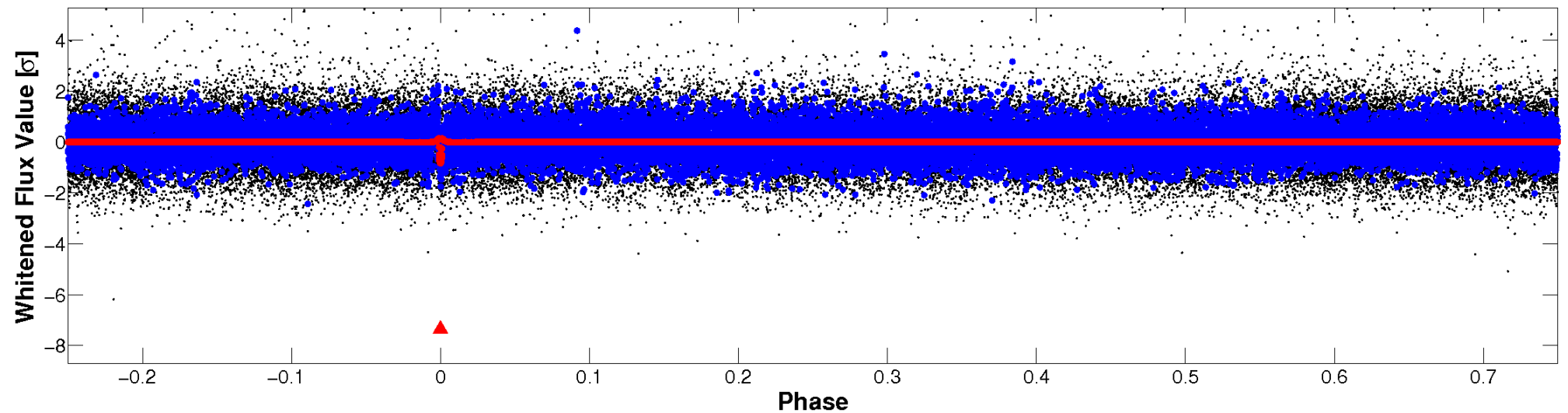


Non-Whitened Vs. Whitened Light Curve

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 003440549-01 P=414.240172 Days $T_0=310.301934$ (BKJD)



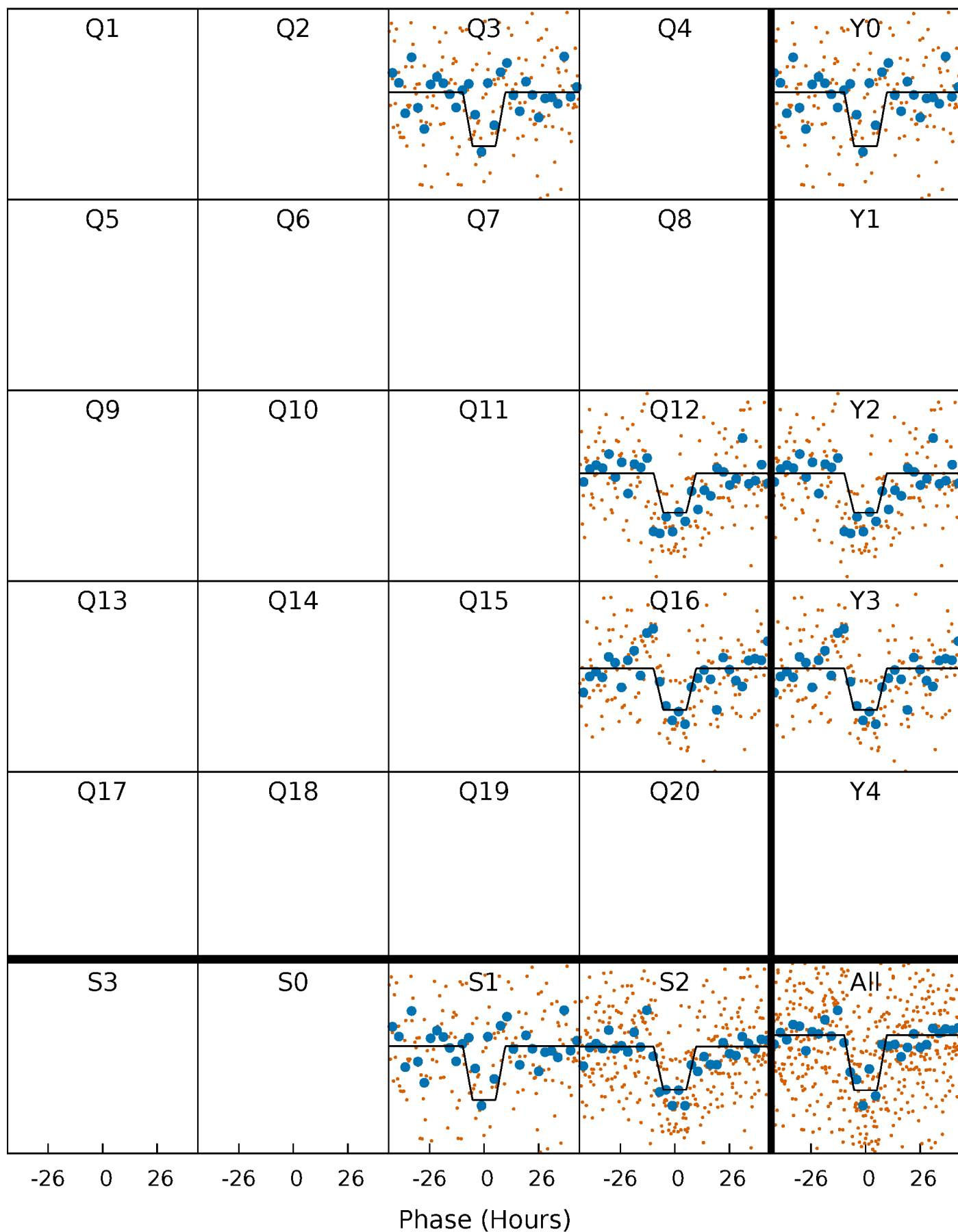
DV Quarter-Phased Transit Curves

TCE 003440549-01 P=414.240172 Days $T_0=310.301934$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

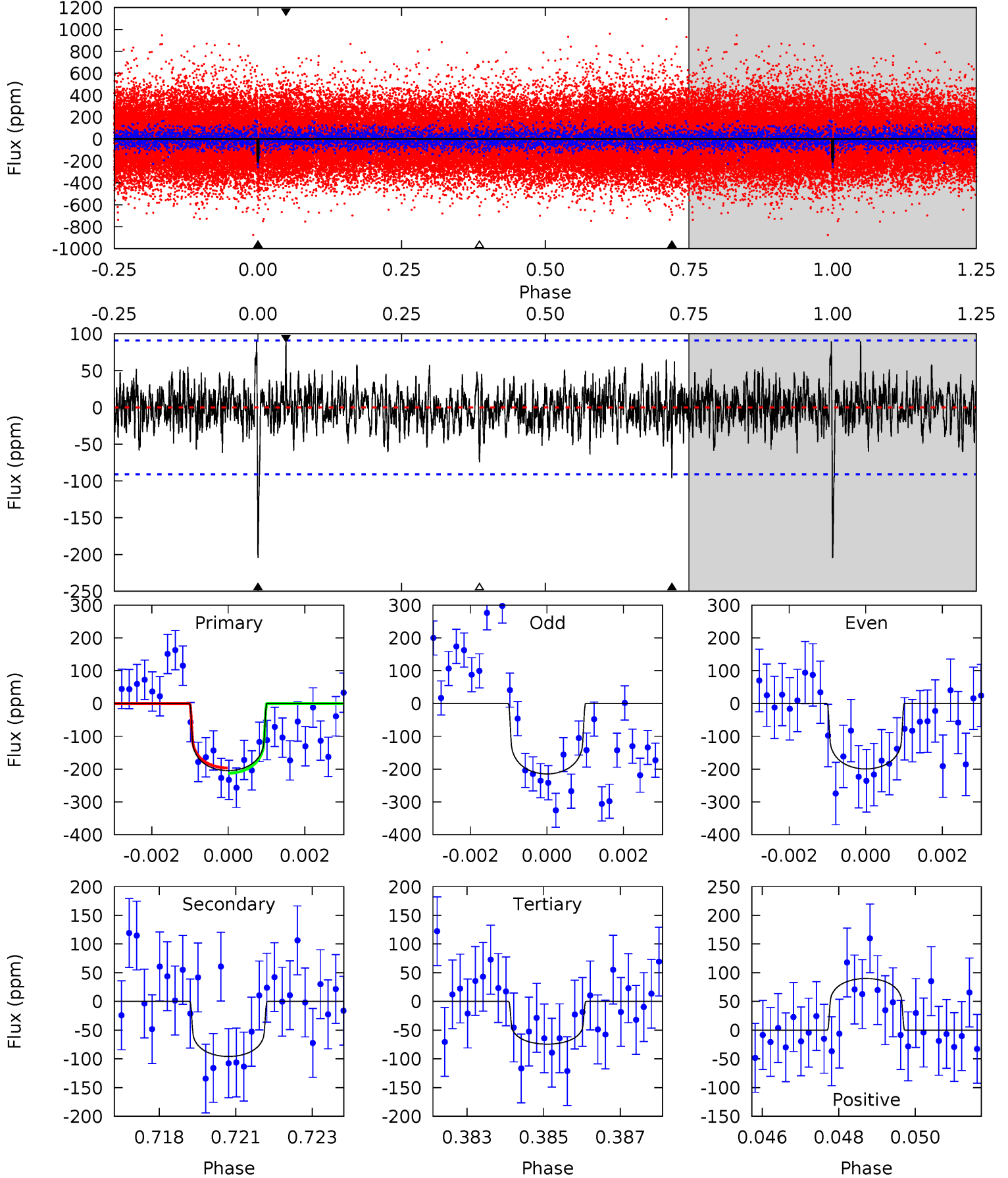
TCE 003440549-01 P=414.154205 Days $T_0=310.451650$ (BKJD)



DV Model-Shift Uniqueness Test

003440549-01, P = 414.240172 Days, E = 310.301934 Days

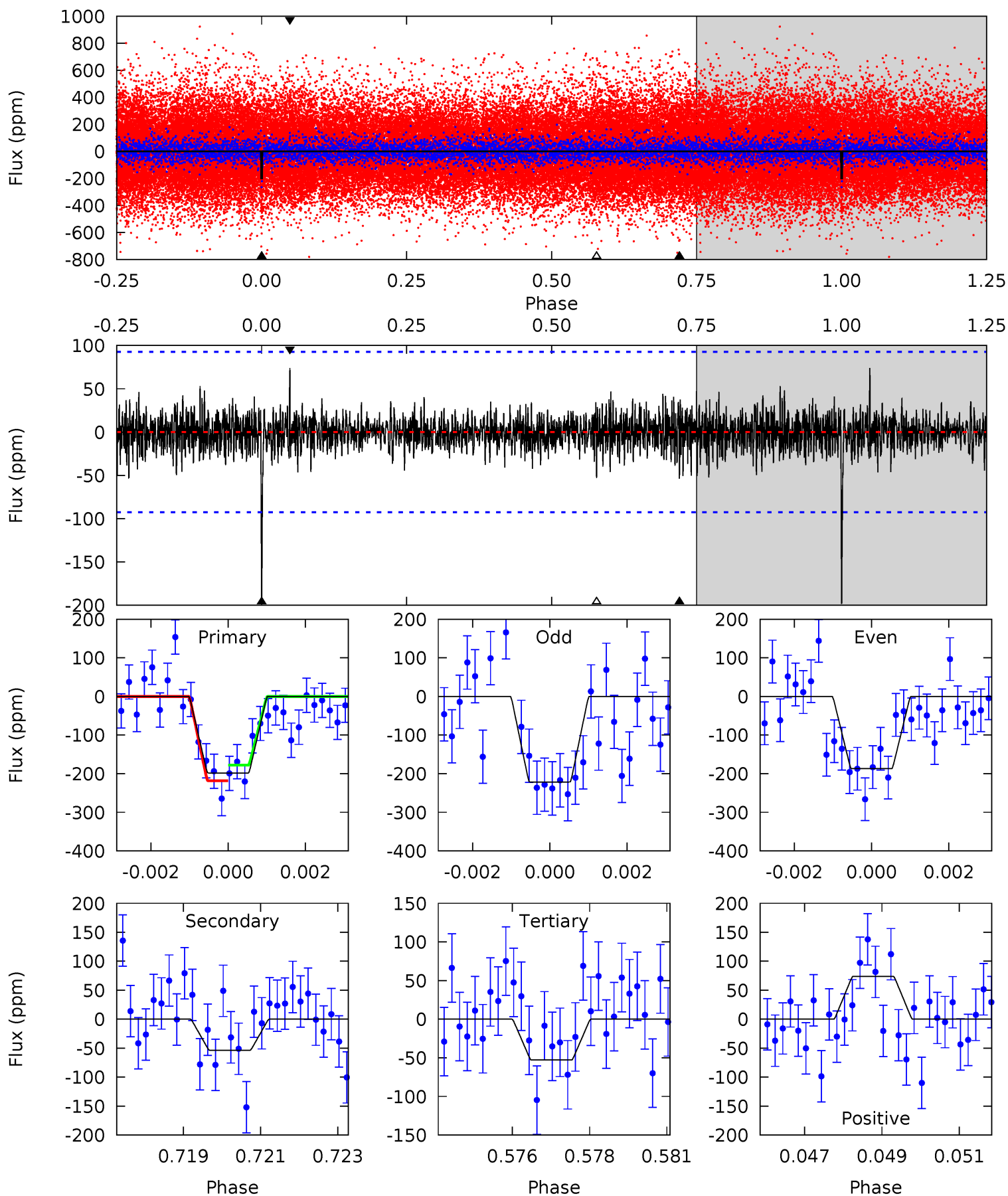
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.9 | 5.59 | 4.34 | 5.26 | 5.31 | 3.06 | 1.24 | 7.60 | 6.69 | 1.25 | 0.34 | 0.42 | 0.95 | 0.31 | 0.46 |



Alt Model-Shift Uniqueness Test

003440549-01, P = 414.154205 Days, E = 310.451650 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.4 | 3.09 | 3.04 | 4.24 | 5.32 | 3.08 | 0.88 | 8.37 | 7.16 | 0.05 | -1.16 | 0.95 | 0.90 | 0.27 | 1.16 |



Stellar Parameters For KIC 003440549

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6032^{+81}_{-81} | $4.314^{+0.120}_{-0.120}$ | $-0.120^{+0.150}_{-0.150}$ | $1.155^{+0.187}_{-0.153}$ | $1.001^{+0.075}_{-0.060}$ | $0.915^{+0.470}_{-0.310}$ |
| | +1%/-1% | +3%/-3% | +125%/-125% | +16%/-13% | +7%/-6% | +51%/-34% |
| Source | SPE68 | SPE68 | SPE68 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 003440549-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|-------------------|-----------------------|---------------------------|
| DV | -96 ± 17 | $1.77^{+0.68}_{-0.68}$ | 383^{+19}_{-16} | 5122^{+1278}_{-684} | 20301^{+32126}_{-10551} |
| Alt. | -54 ± 17 | $1.87^{+0.75}_{-0.72}$ | 383^{+17}_{-17} | 4444^{+1052}_{-585} | 9967^{+18235}_{-5410} |

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

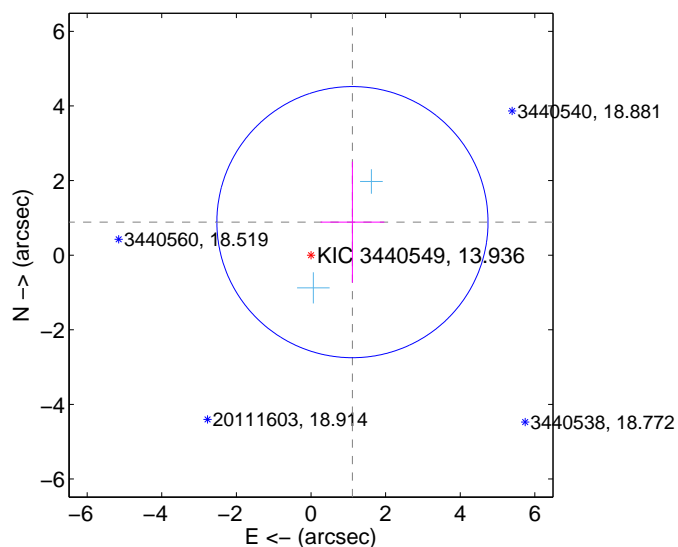
Supplemental centroid analysis for 003440549-01. Kepler magnitude: 13.94. Transit SNR 8.21

There are 2 quarters with good PRF difference image offsets

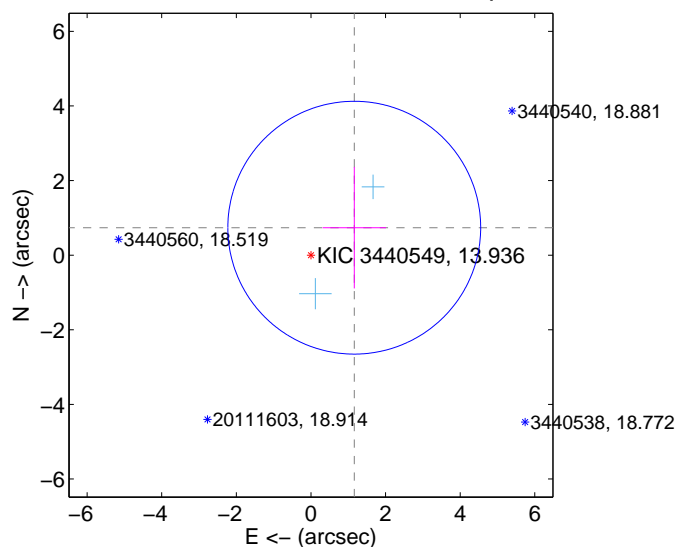
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.420 ± 1.211 | 1.17 | -1.111 ± 0.856 | 0.885 ± 1.621 |
| PRF-fit source offset from KIC position | 1.375 ± 1.130 | 1.22 | -1.161 ± 0.850 | 0.736 ± 1.628 |
| photometric centroid source offset | 0.38 ± 1.67 | 0.23 | -0.20 ± 1.77 | 0.33 ± 1.64 |

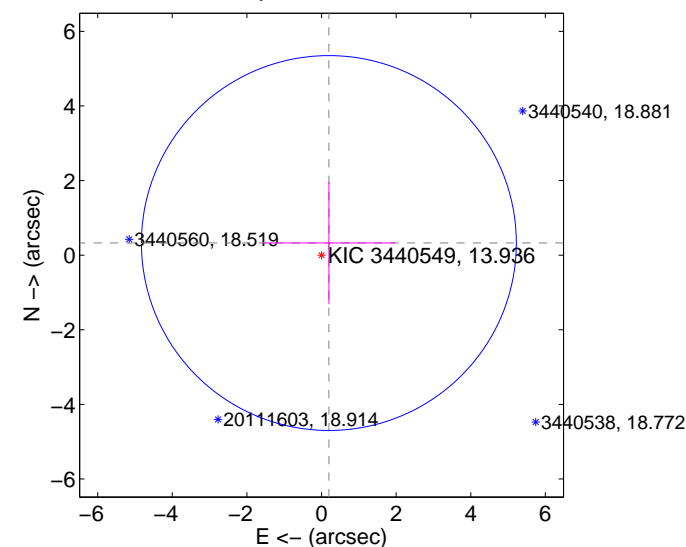
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



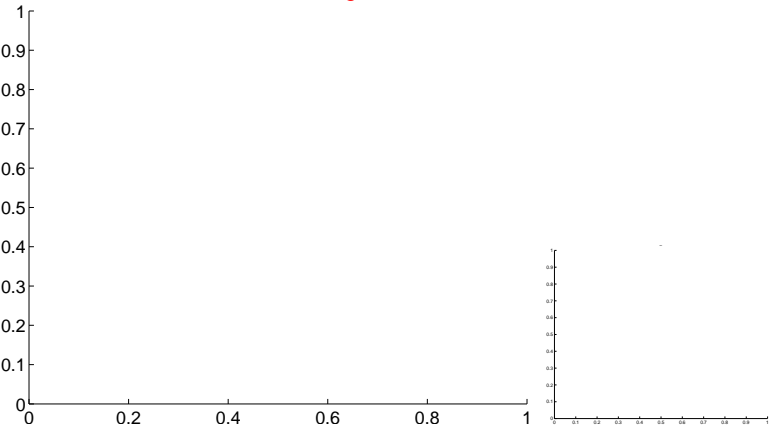
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

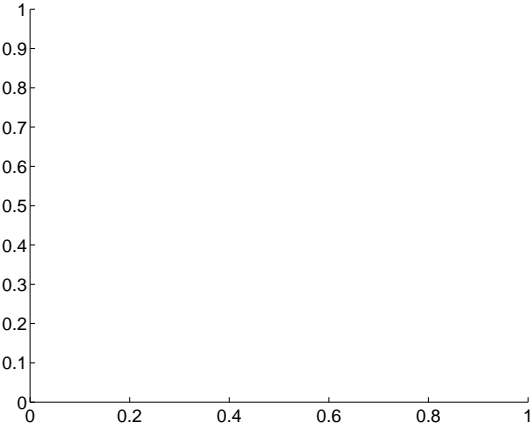
Q1 no difference image



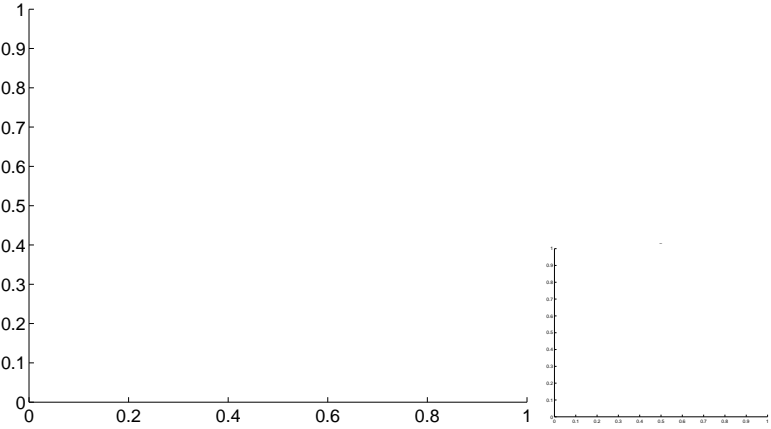
Q1 no OOT image



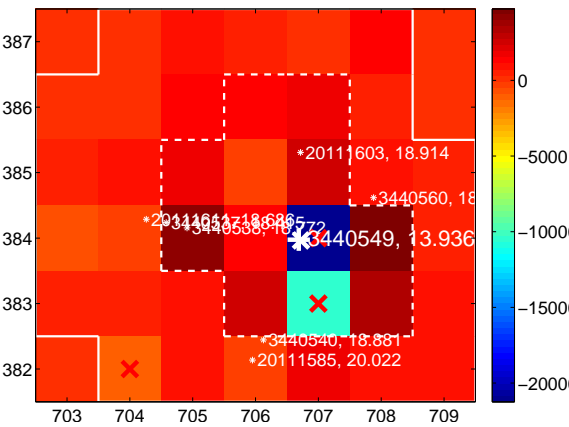
Q2 no difference image



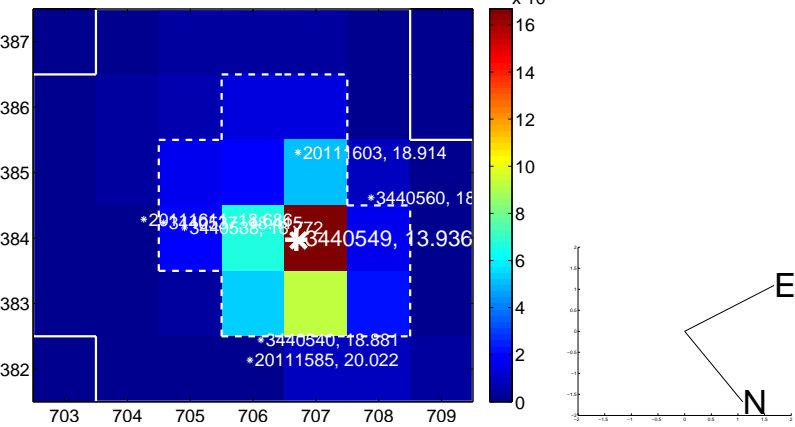
Q2 no OOT image



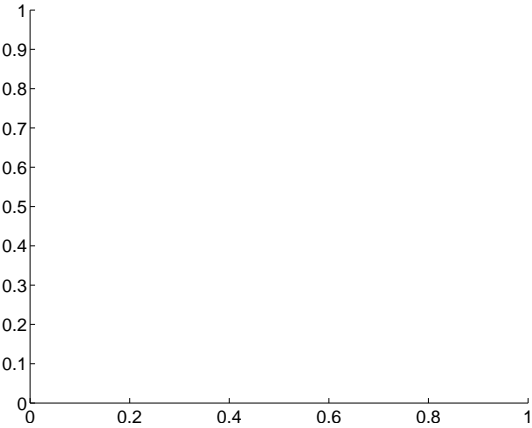
Q3 difference image. Poor Quality



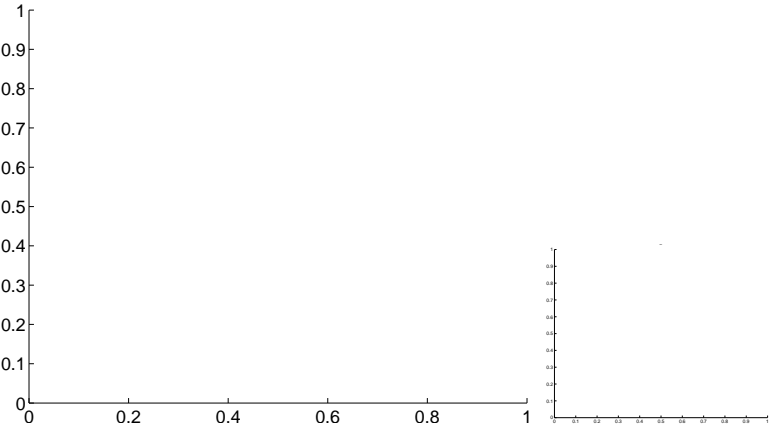
Q3 OOT image



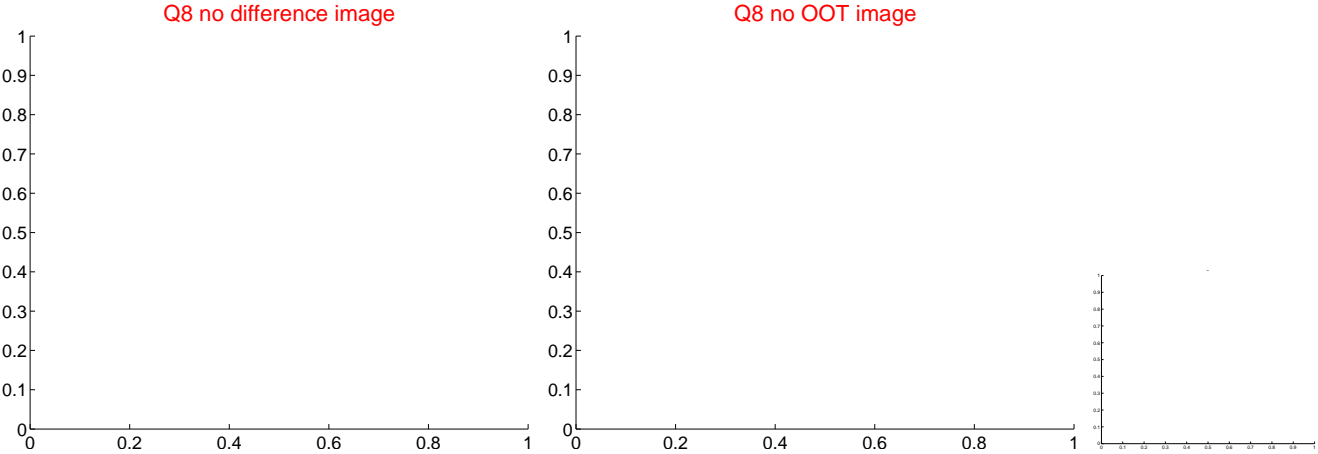
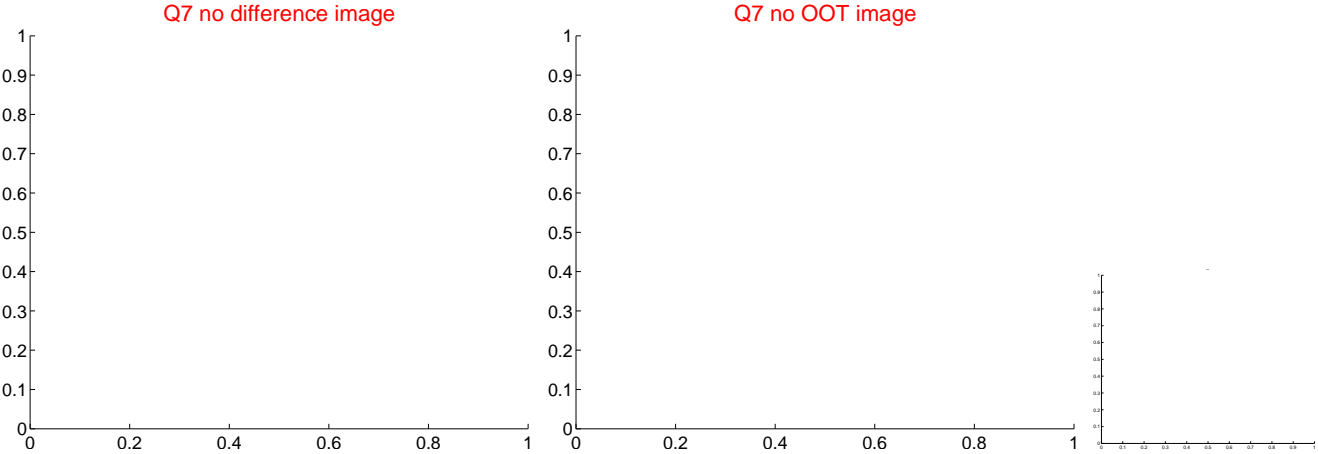
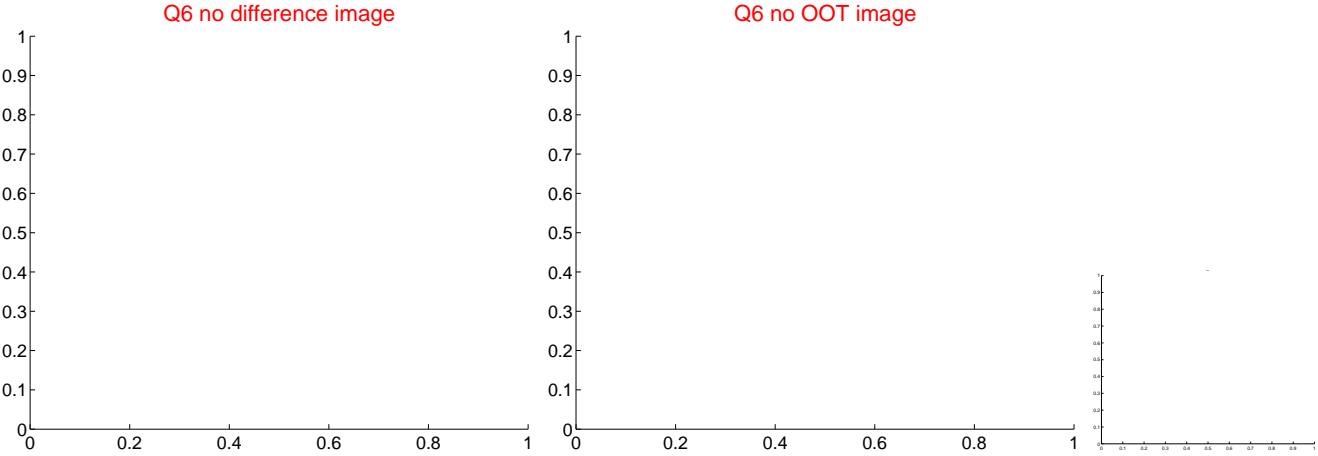
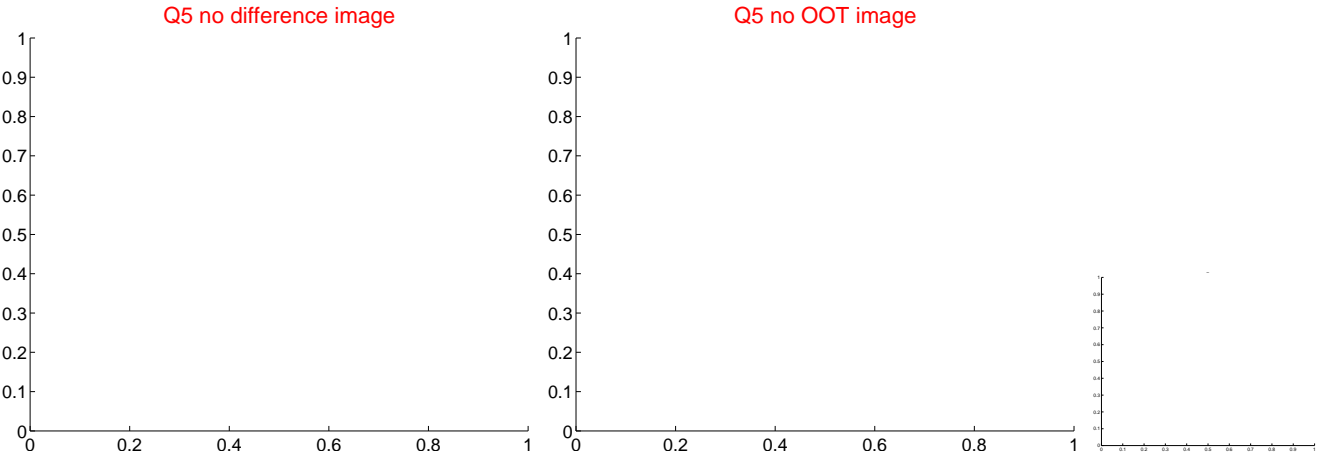
Q4 no difference image



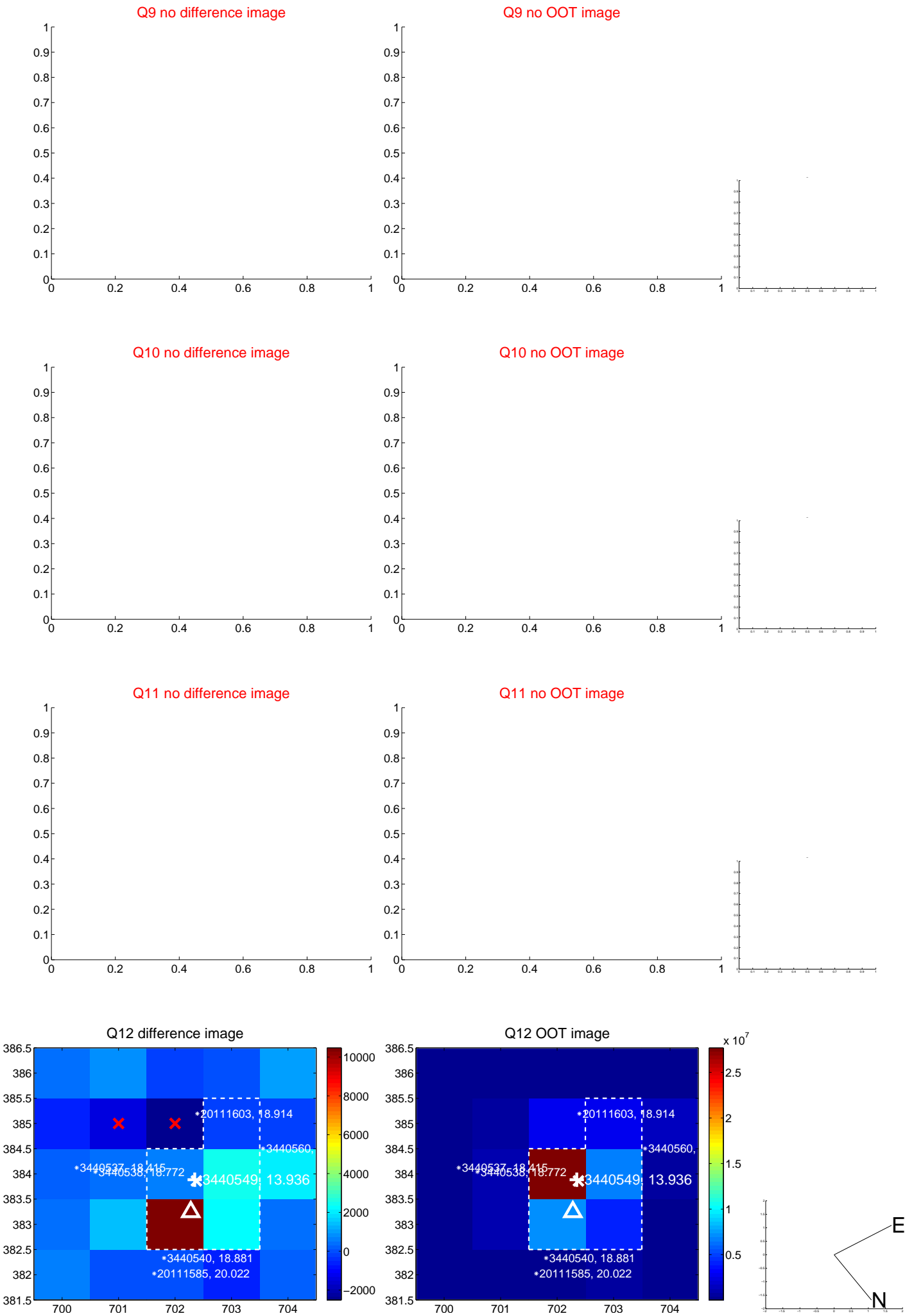
Q4 no OOT image



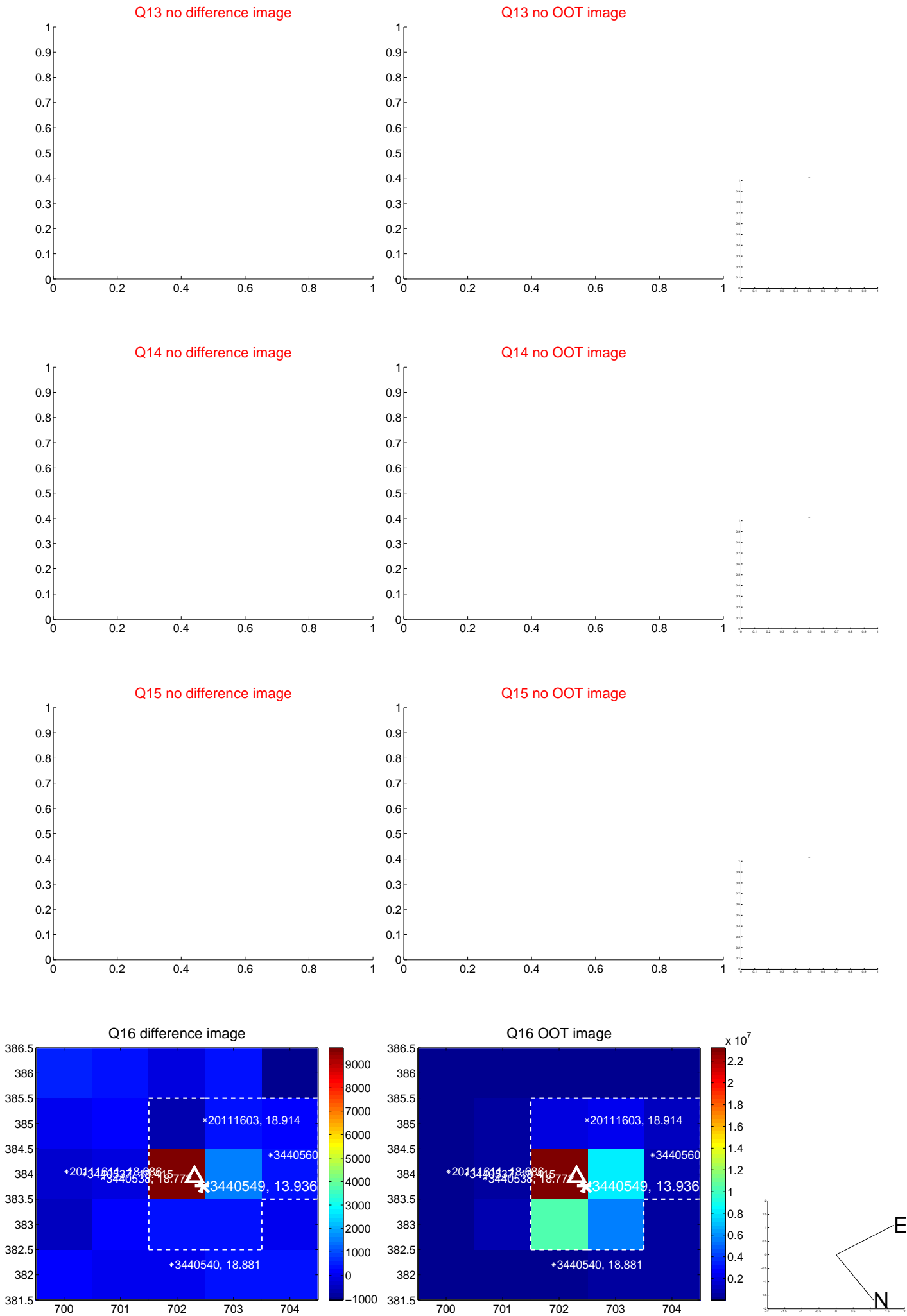
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



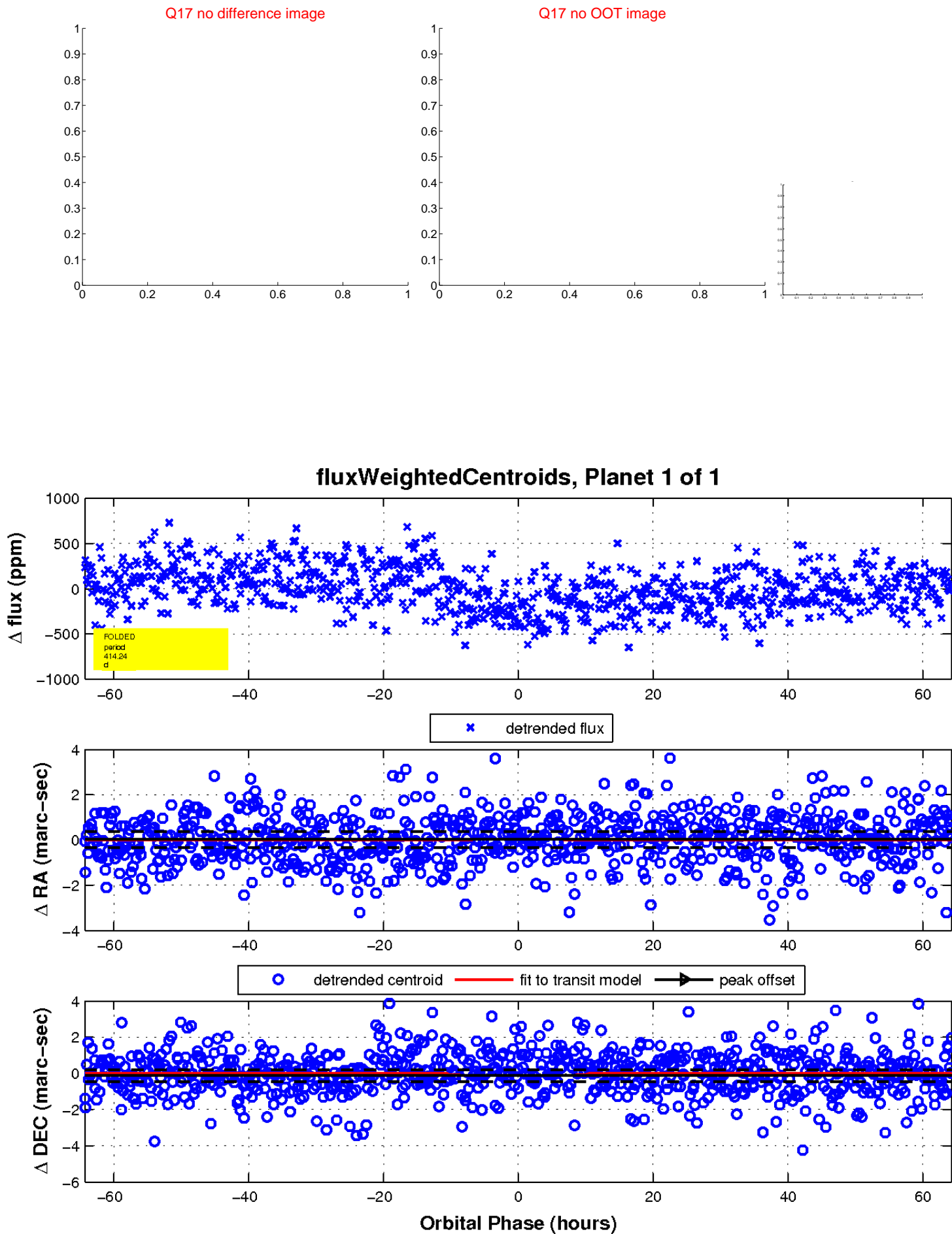
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

