

KIC 010341781

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010341781-01 | OBS | 8289.01 | 0.933641 | 131.601335 | 74.2 | 4.489 | 7.4 | 6.2 | 0.70 | 4604 | 0.58 | 714.94 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-------------------------------------|
| 010341781-01 | 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.

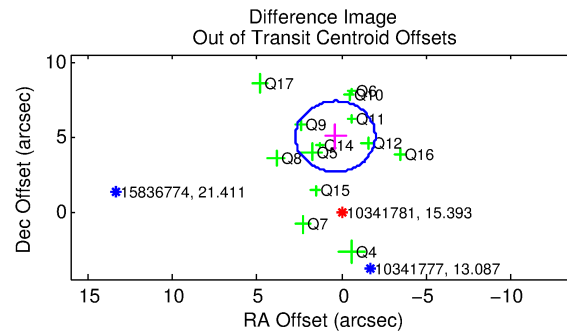
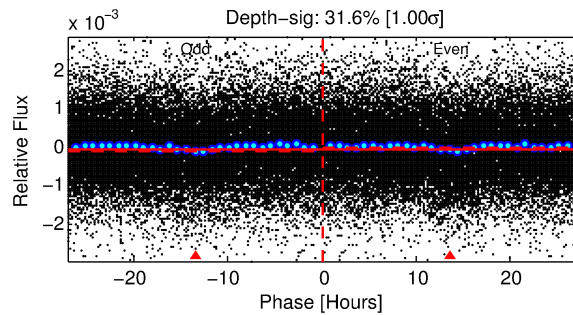
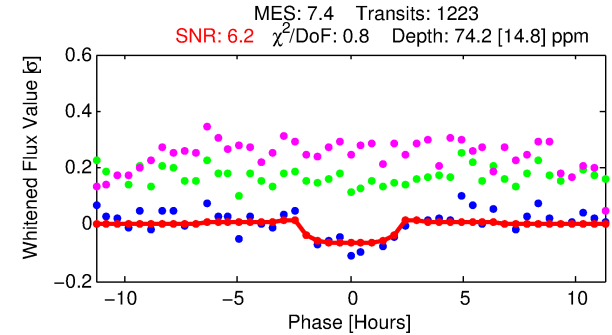
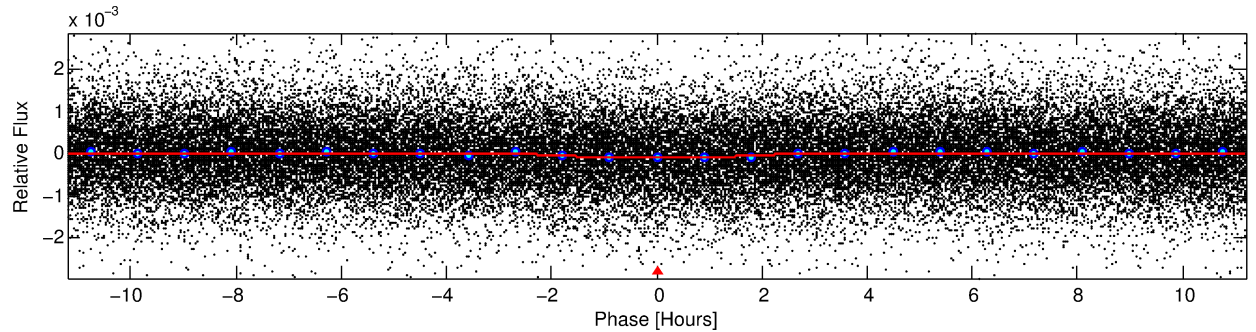
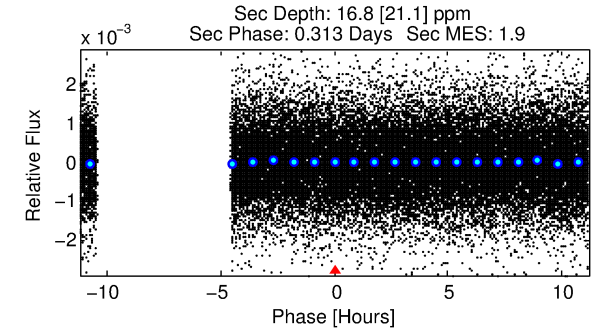
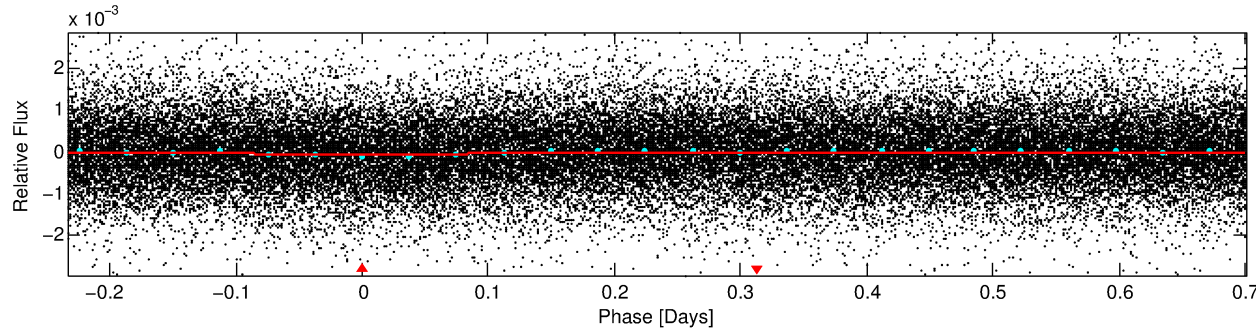
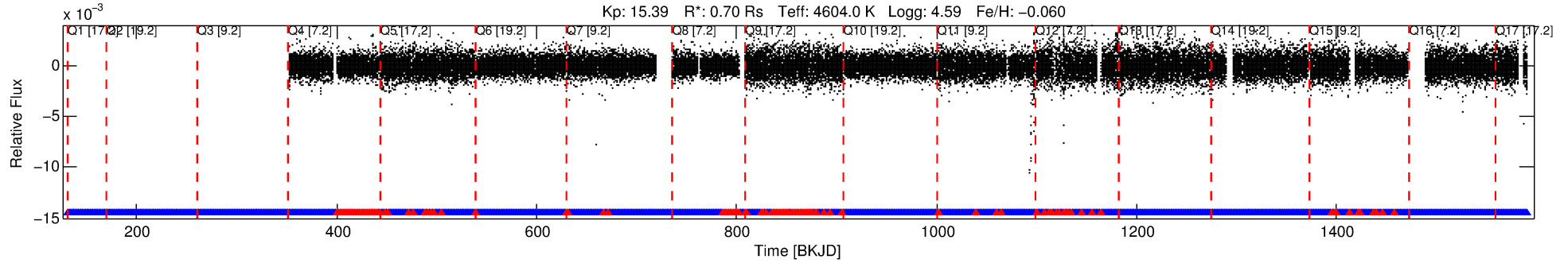
Ephemeris Match Information For 010341781-01

| TCE (1) | KIC | Parent (2) | Parent KIC | $P_1:P_2$ | Dist ($''$) | Δ Row | Δ Col | m_2 | m_1 | D_2/D_1 | Mechanism | Flag | σ_P | σ_T |
|--------------|----------|--------------|------------|-----------|---------------|--------------|--------------|-------|-------|-----------|------------|------|------------|------------|
| 010341781-01 | 10341781 | 010341755-01 | 10341755 | 1:1 | 24.4 | 0 | 6 | 15.67 | 15.40 | 1.01 | Direct-PRF | 1 | 4.46 | 2.68 |

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col 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 divided by the child's. σ_P and σ_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 σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10341781 Candidate: 1 of 1 Period: 0.934 d



DV Fit Results:

Period = 0.93364 [0.00002] d
Epoch = 131.6013 [0.0069] BKJD
Rp/R* = 0.0077 [0.0099]
a/R* = 1.67 [4.18]
b = 0.28 [13.25]
Seff = 714.94 [125.77]
Teq = 1319 [58] K
Rp = 0.58 [0.76] Re
a = 0.0165 [0.0012] AU
Ag = 7.45 [21.51] [0.30σ]
Teffp = 3367 [2433] K [0.84σ]

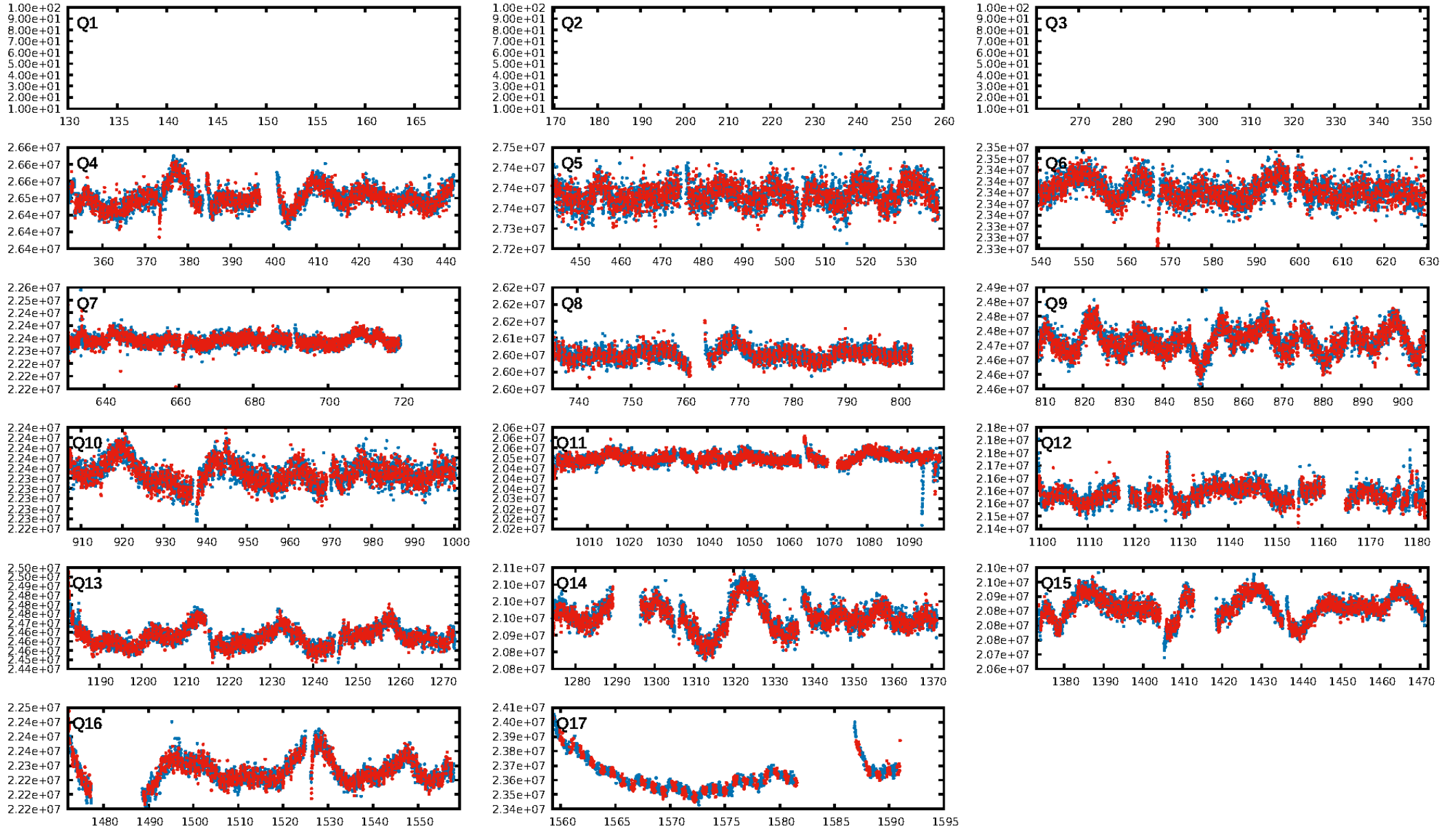
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.84e-12
RollingBand-fgt: 0.87 [1038/1194]
GhostDiagnostic-chr: 0.09532
Centroid-sig: 0.0%
Centroid-so: 1.520 arcsec [8.37σ]
OotOffset-rm: 5.031 arcsec [6.39σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-rm: 1.988 arcsec [2.70σ]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 1.00 [14/14]

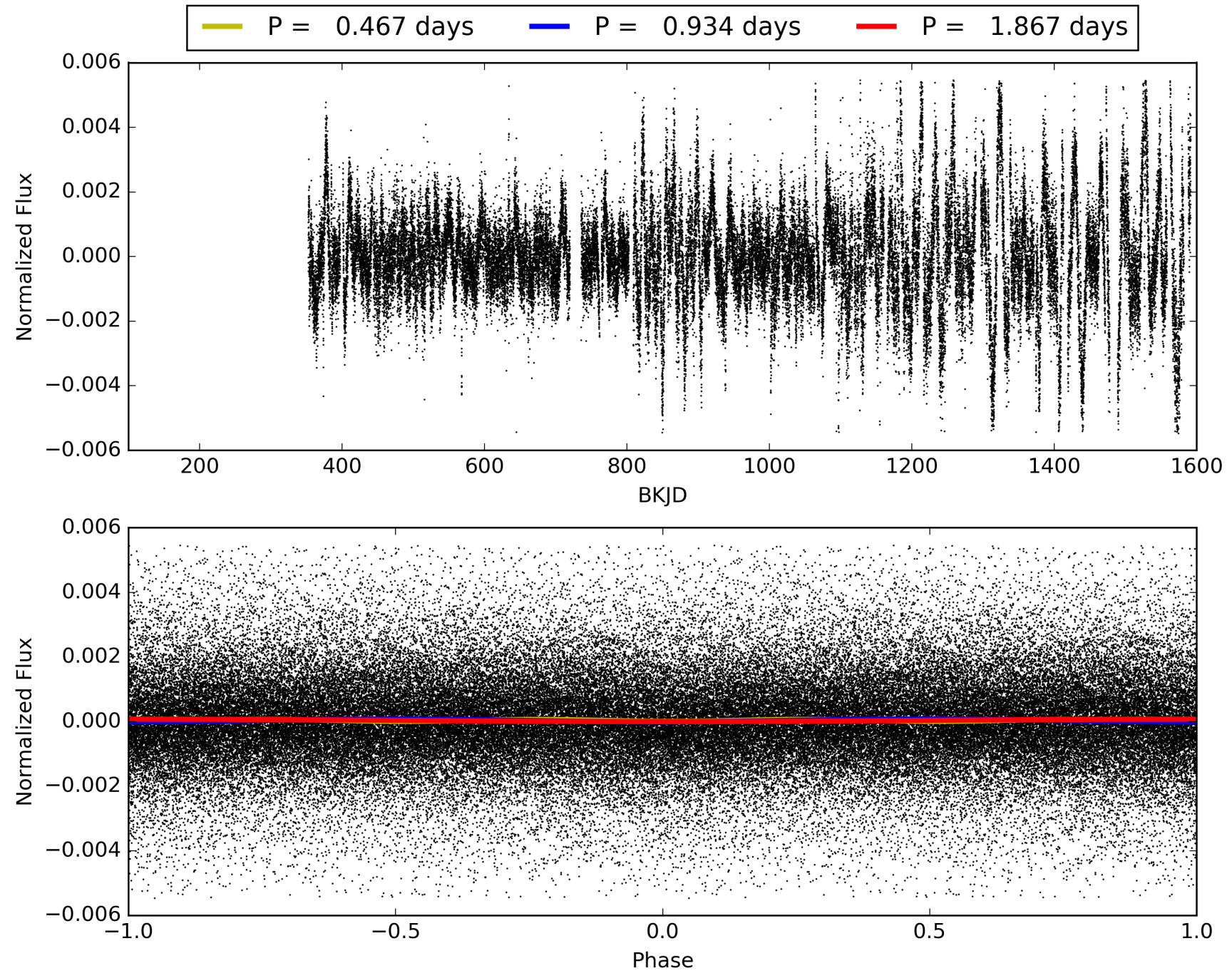
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:03:20 Z

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

TCE 010341781-01, PDC Light Curves

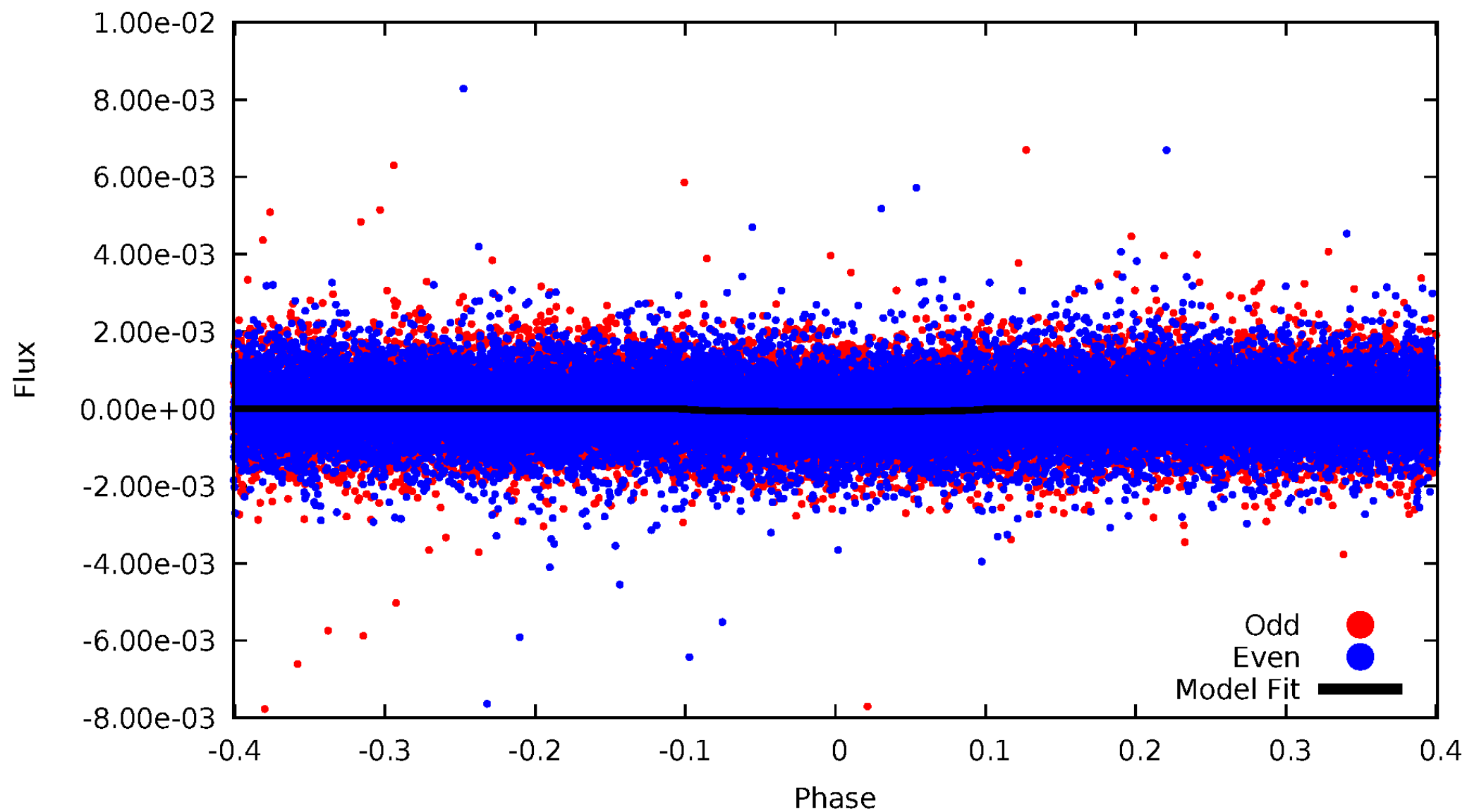


TCE 010341781-01



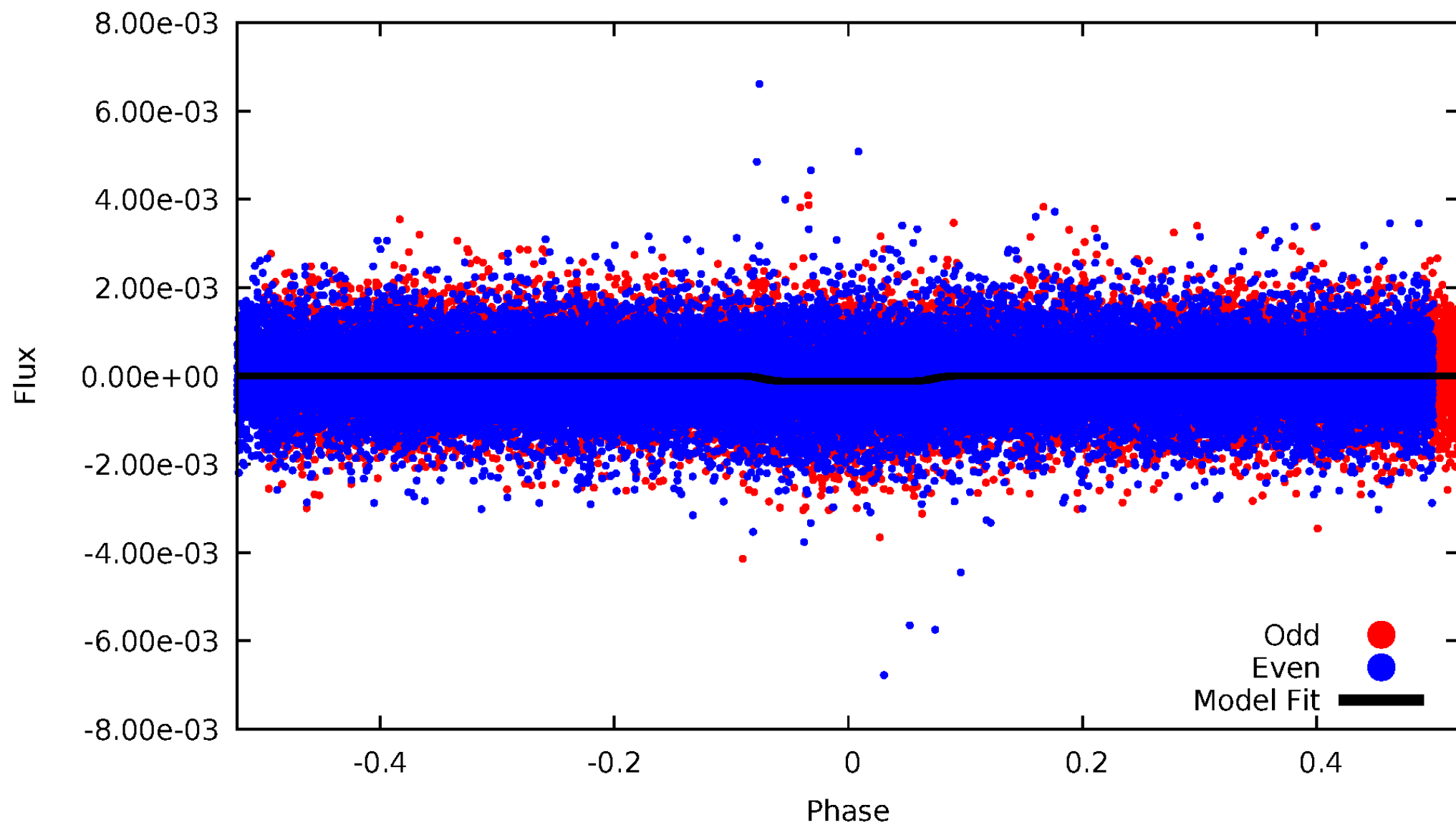
DV Odd/Even

TCE 010341781-01



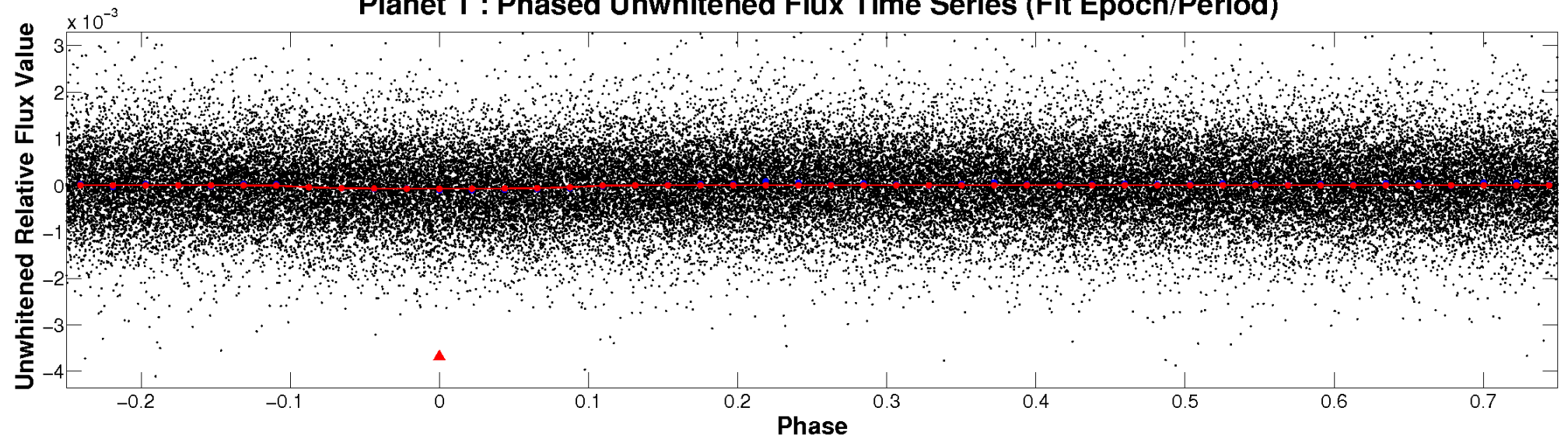
ALT Odd/Even

TCE 010341781-01

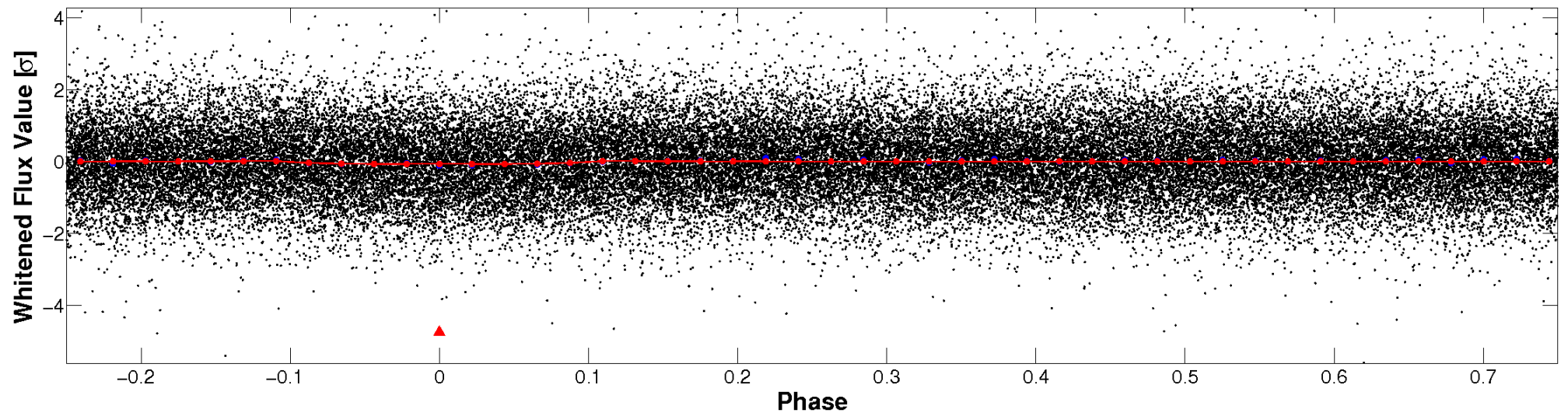


Non-Whitened Vs. Whitened Light Curve

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

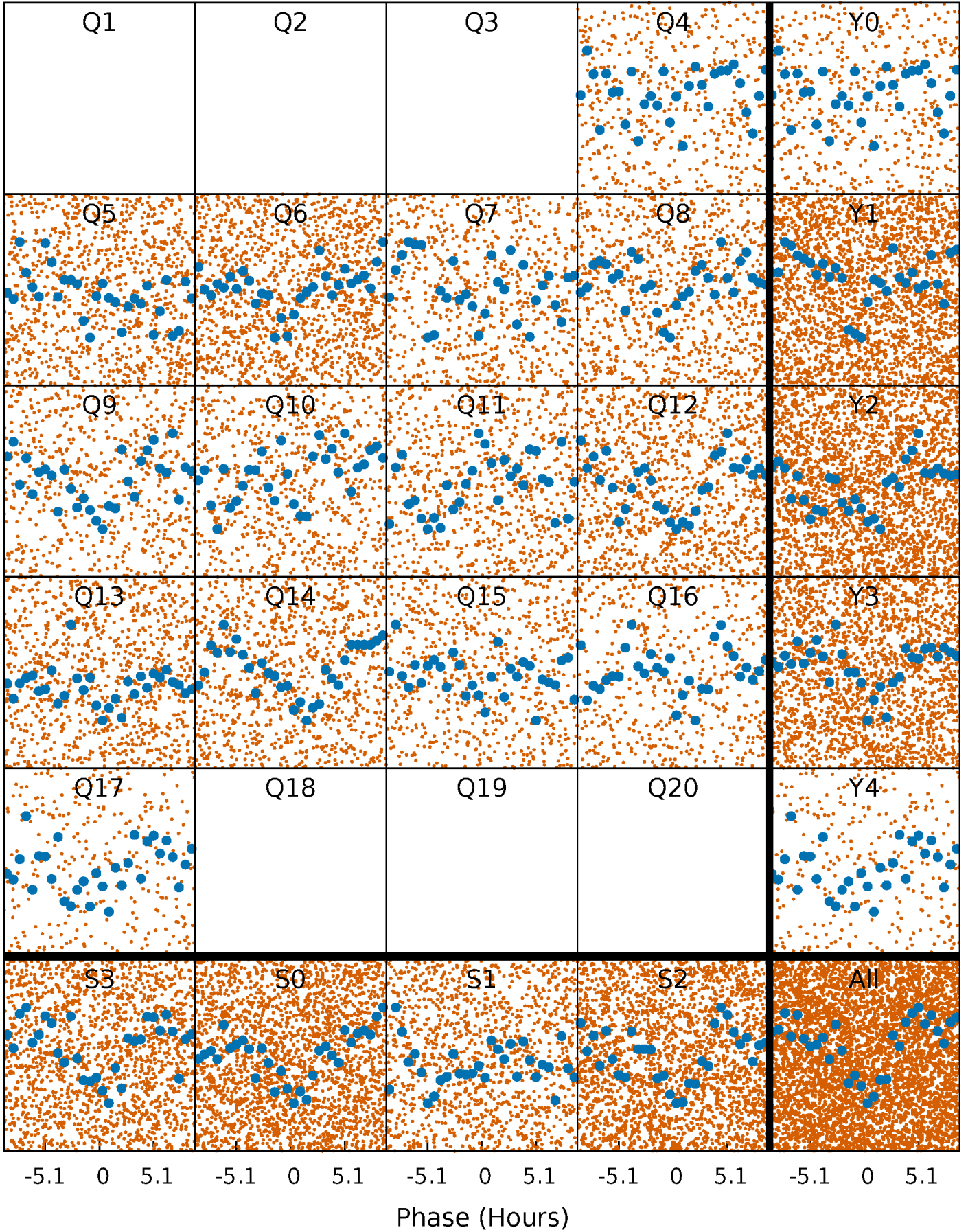


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



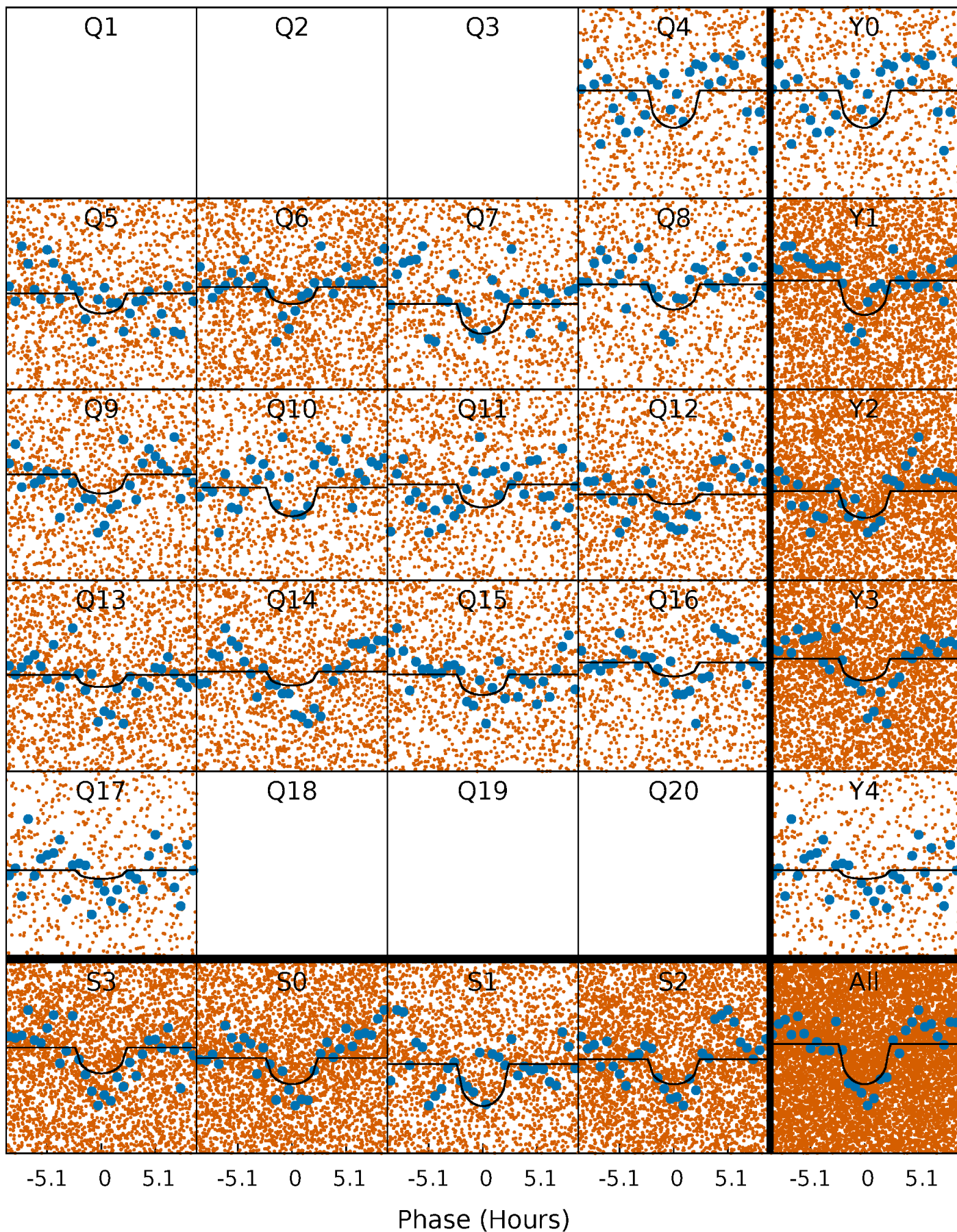
PDC Quarter-Phased Transit Curves

TCE 010341781-01 P= 0.933641 Days $T_0=131.601335$ (BKJD)



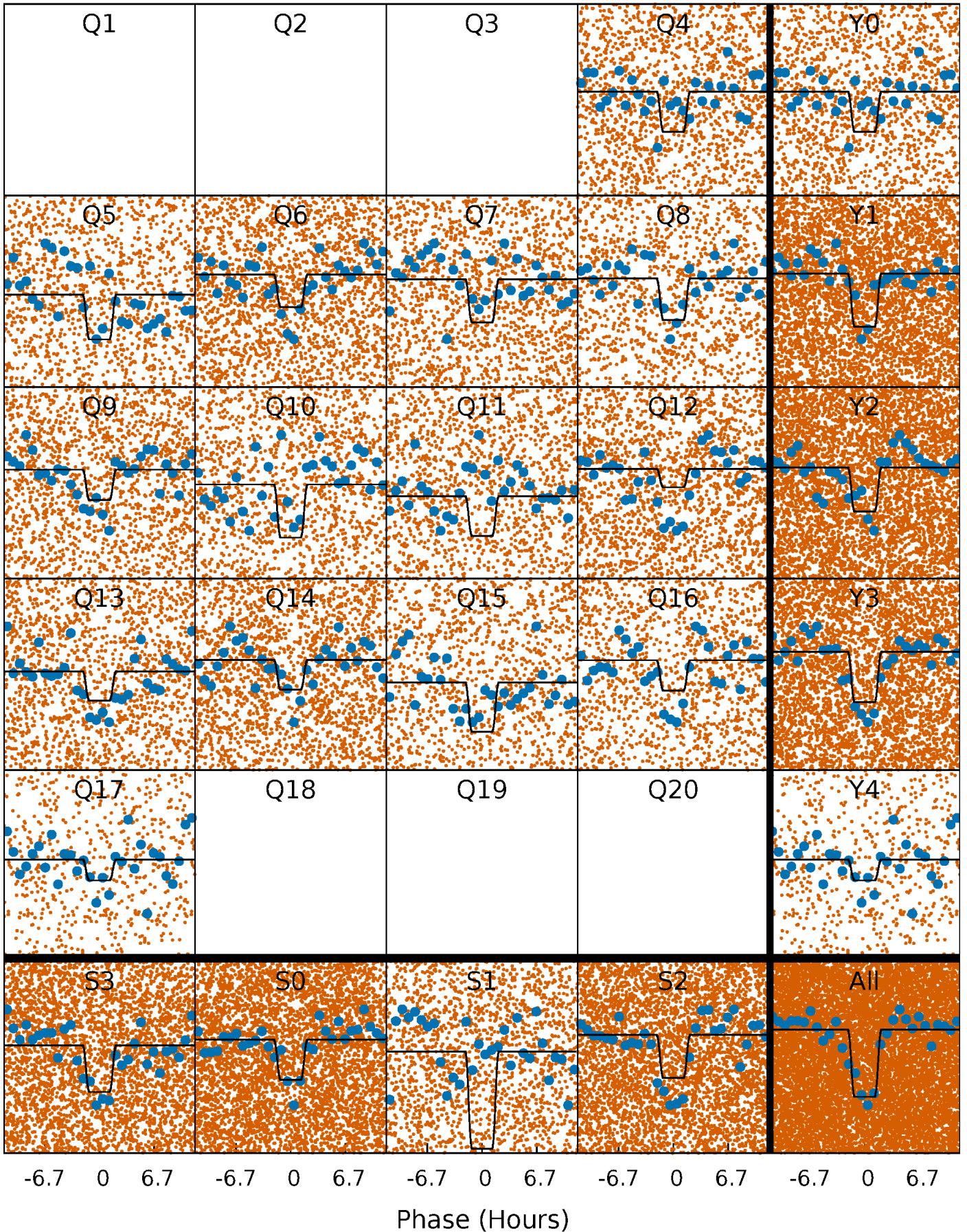
DV Quarter-Phased Transit Curves

TCE 010341781-01 P= 0.933641 Days $T_0=131.601335$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

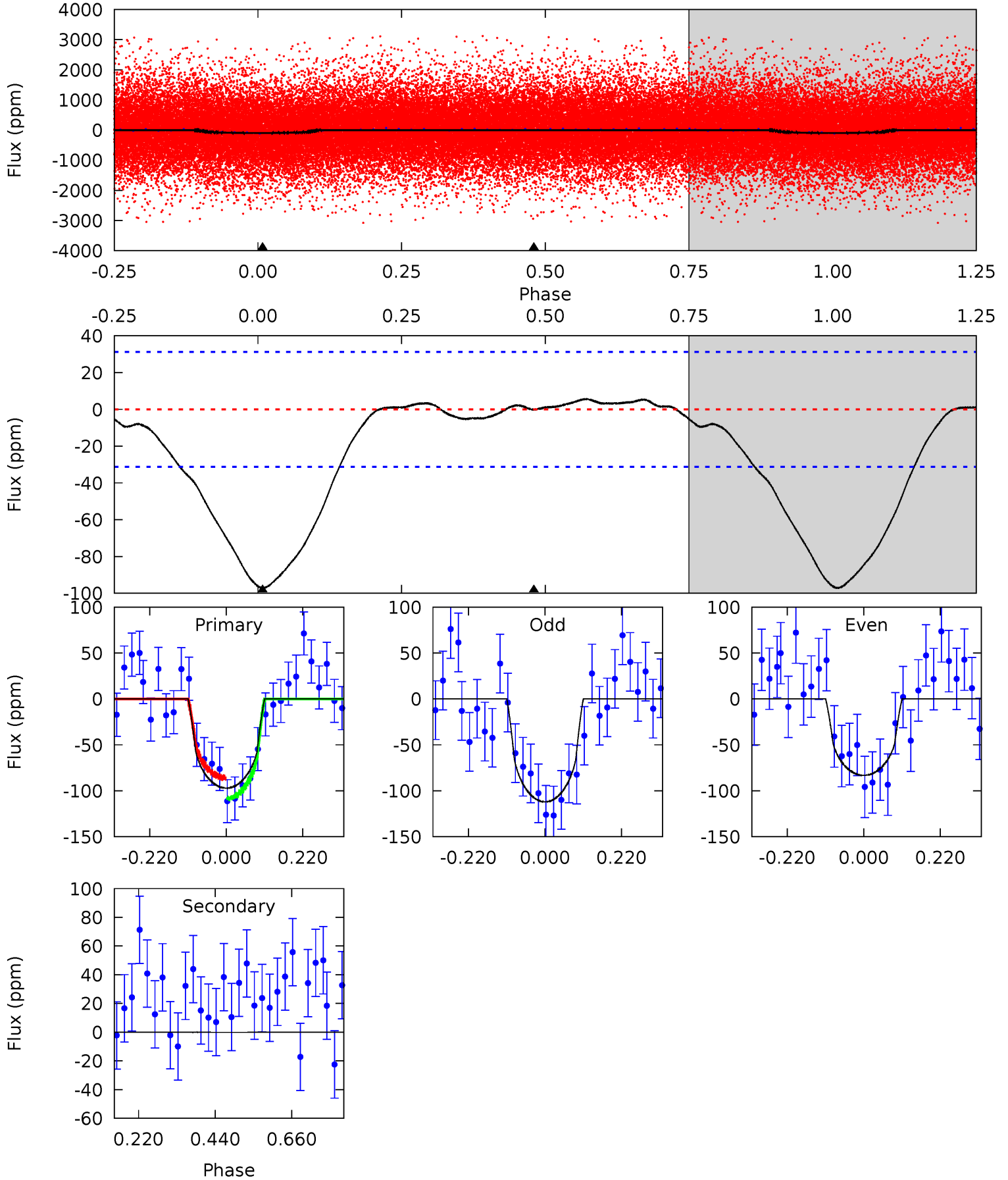
TCE 010341781-01 P= 0.933732 Days $T_0=131.527721$ (BKJD)



DV Model-Shift Uniqueness Test

010341781-01, P = 0.933641 Days, E = 131.601335 Days

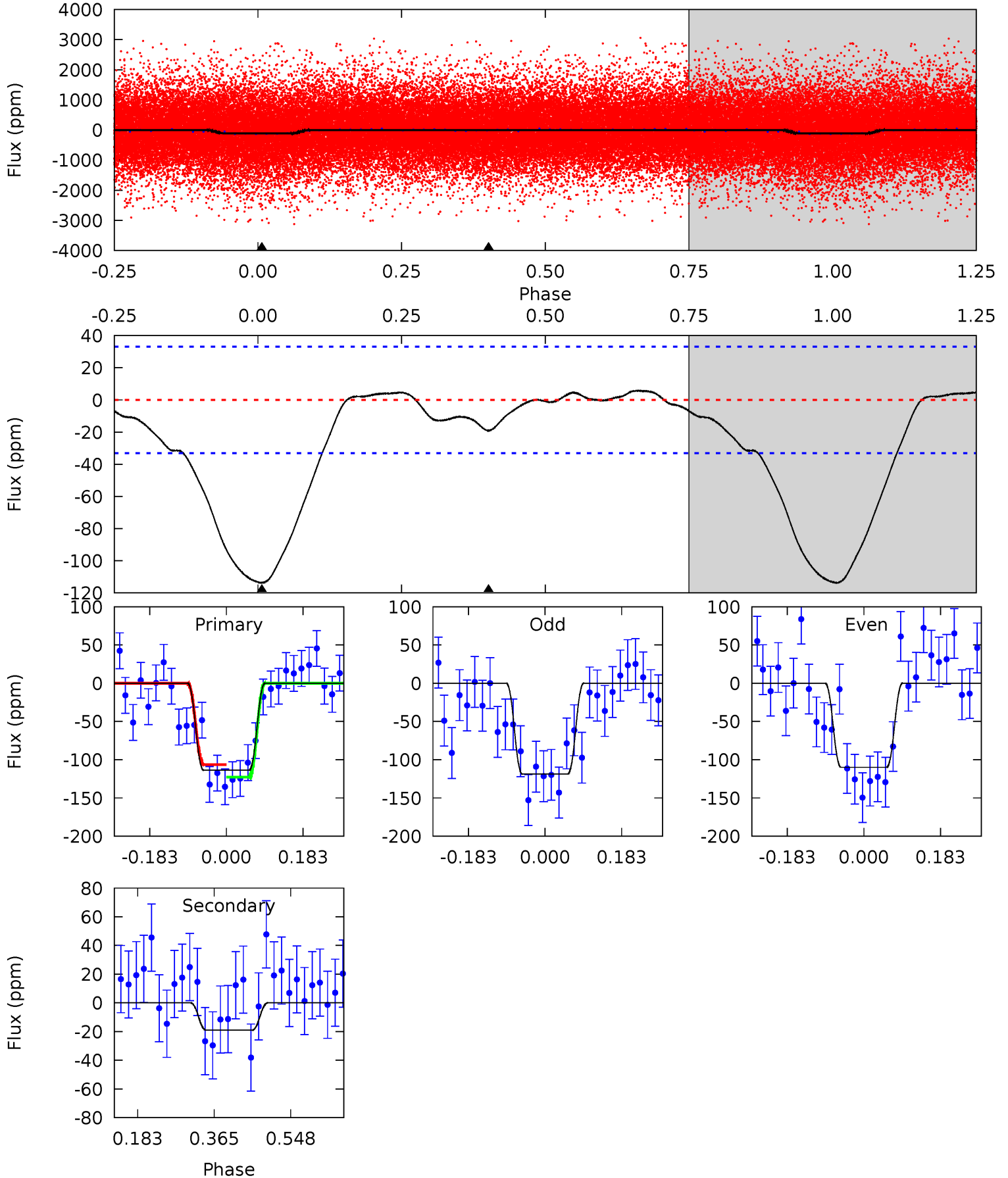
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.7 | 0.02 | 0 | 0 | 4.40 | 1.23 | 0.60 | 13.7 | 13.7 | 0.02 | 0.02 | 2.06 | 1.28 | 0.05 | 1.60 |



Alt Model-Shift Uniqueness Test

010341781-01, P = 0.933732 Days, E = 131.527721 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.2 | 2.56 | 0 | 0 | 4.44 | 1.33 | 0.99 | 15.2 | 15.2 | 2.56 | 2.56 | 0.58 | 1.50 | 0.05 | 1.11 |



Stellar Parameters For KIC 010341781

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (g \cdot \text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--------------------------------------|
| | 4604^{+165}_{-165} | $4.591^{+0.054}_{-0.027}$ | $-0.060^{+0.300}_{-0.300}$ | $0.696^{+0.045}_{-0.062}$ | $0.690^{+0.068}_{-0.056}$ | $2.880^{+0.666}_{-0.329}$ |
| | +4%/-4% | +1%/-1% | +500%/-500% | +6%/-9% | +10%/-8% | +23%/-11% |
| 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 010341781-01 / KOI 8289.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|--------------------|------------------------|----------------------------|
| DV | -0 ± 7 | $0.80^{+0.68}_{-0.53}$ | 1833^{+77}_{-74} | -2315^{+5437}_{-783} | $0.045^{+2.707}_{-2.236}$ |
| Alt. | -19 ± 7 | $0.93^{+0.70}_{-0.56}$ | 1836^{+71}_{-77} | 3136^{+1296}_{-600} | $2.968^{+18.428}_{-2.080}$ |

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 $A_{obs} \gg 1.0$

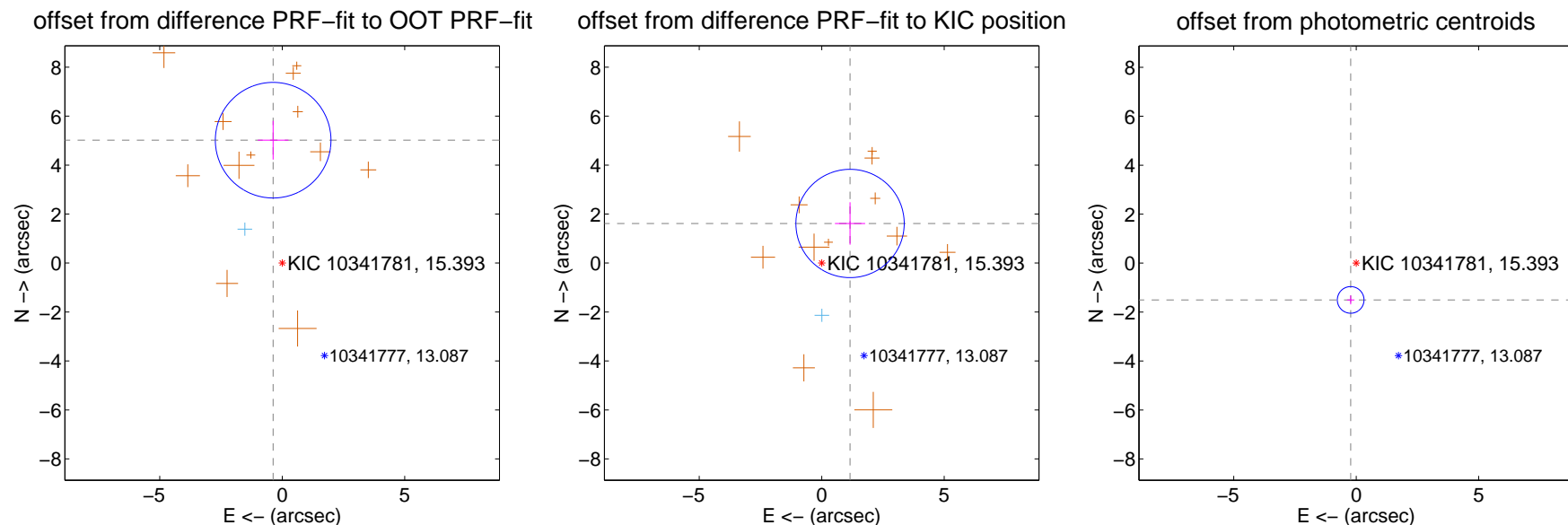
DV Centroid Data

Supplemental centroid analysis for 010341781-01. Kepler magnitude: 15.39. Transit SNR 6.24

There are 1 quarters with good PRF difference image offsets

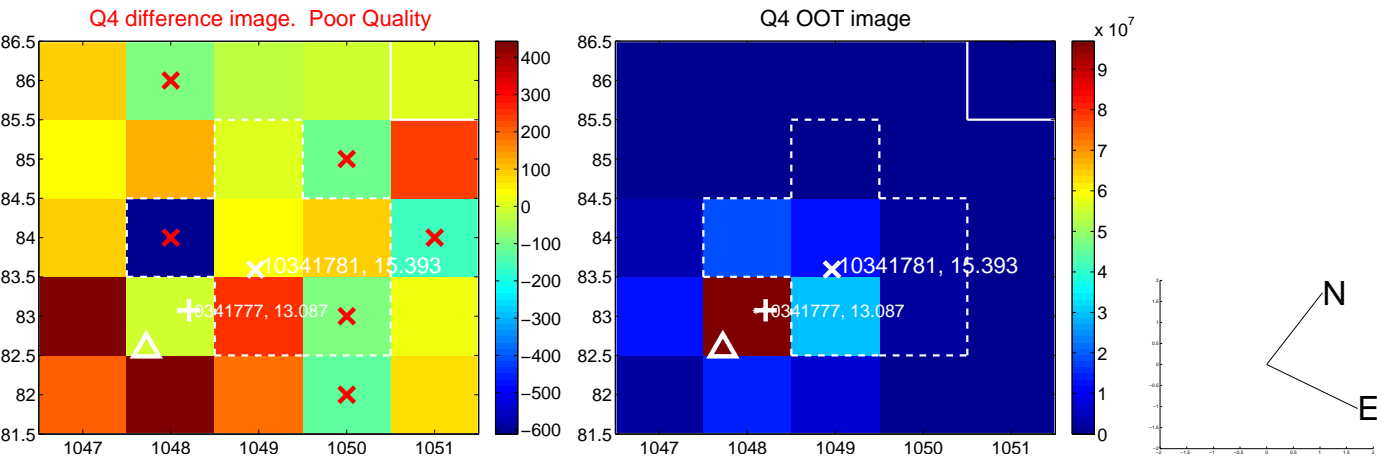
The OOT PRF centroid is offset from the target star catalog position by about 3.72 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 5.031 ± 0.787 | 6.39 | 0.370 ± 0.625 | 5.018 ± 0.792 |
| PRF-fit source offset from KIC position | 1.988 ± 0.737 | 2.70 | -1.157 ± 0.618 | 1.616 ± 0.866 |
| photometric centroid source offset | 1.52 ± 0.18 | 8.37 | 0.23 ± 0.15 | -1.50 ± 0.18 |

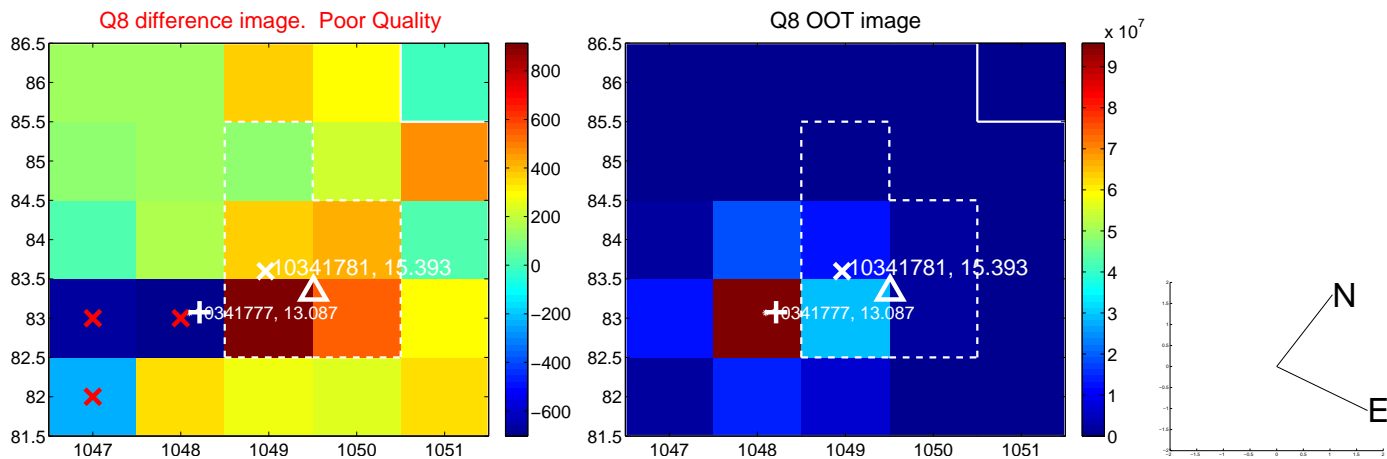
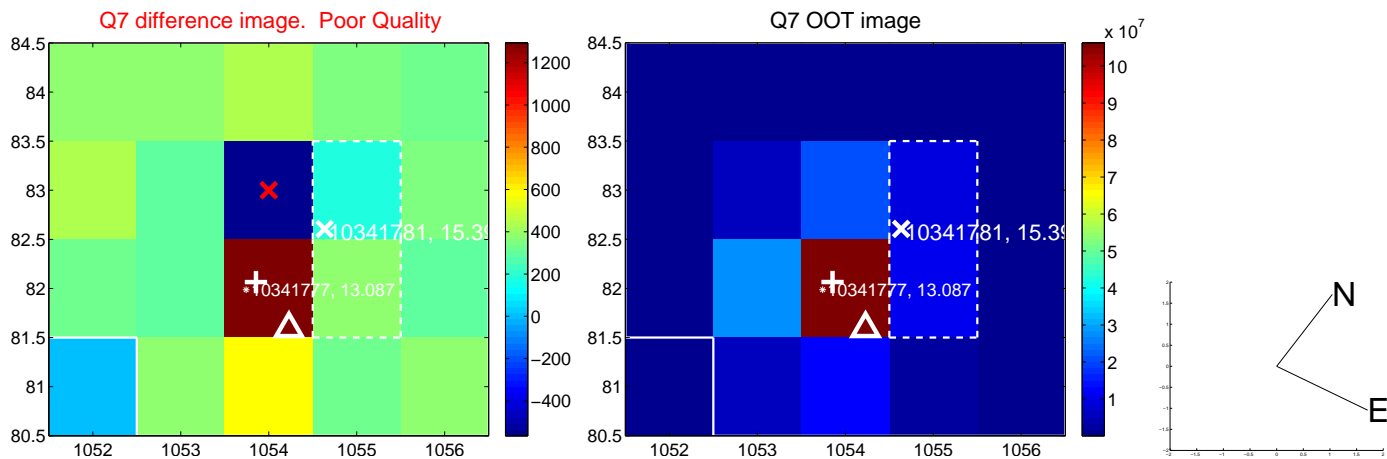
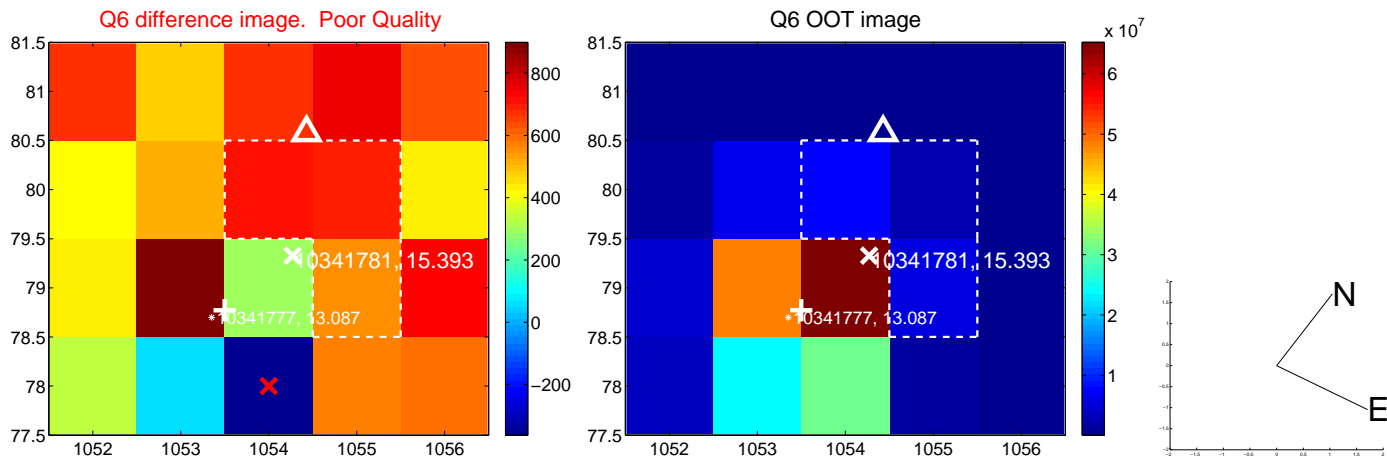
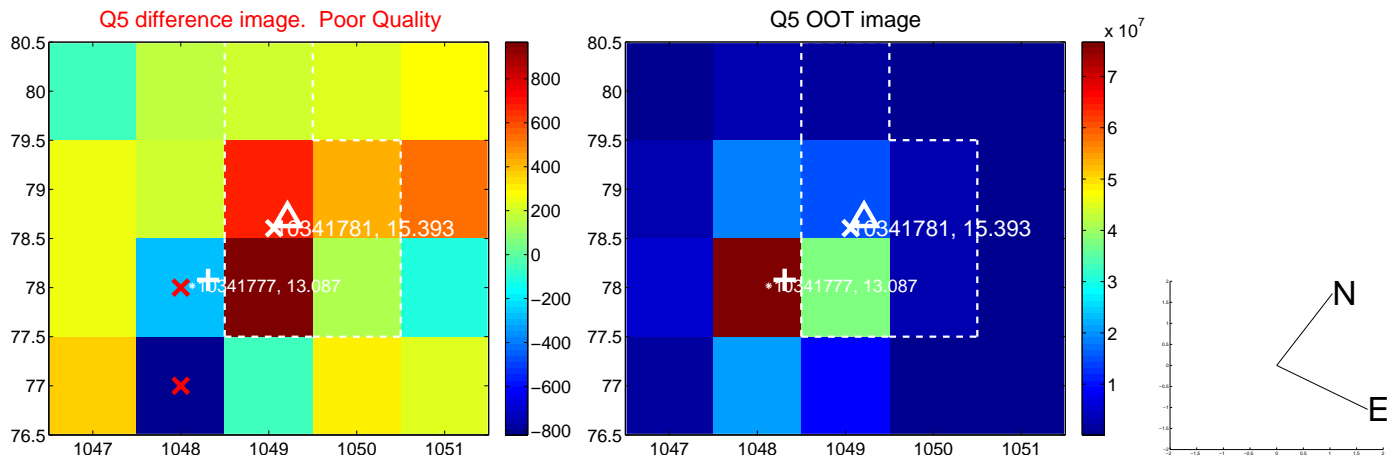


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

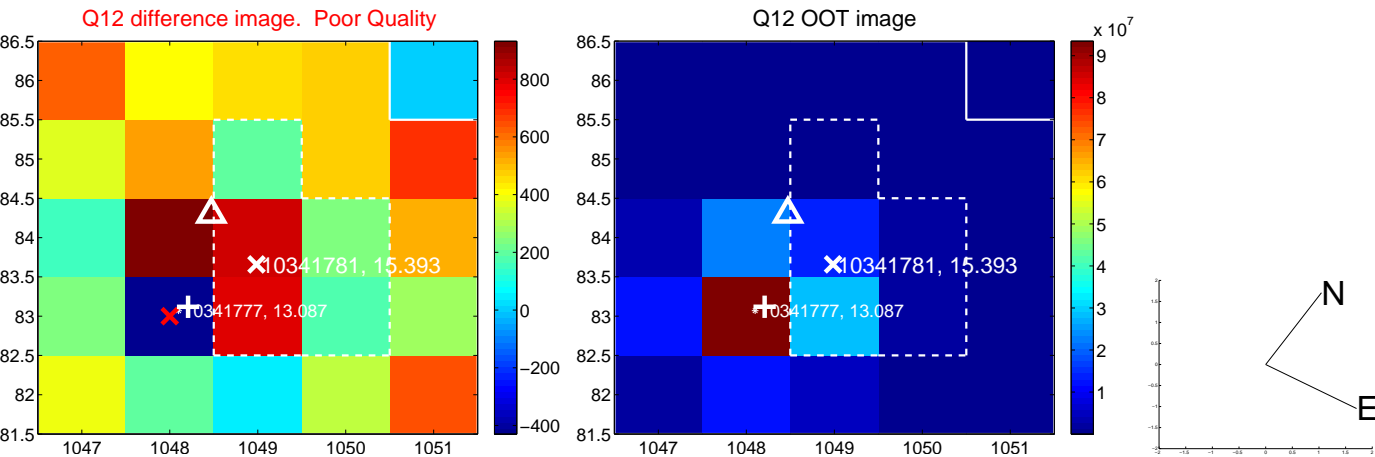
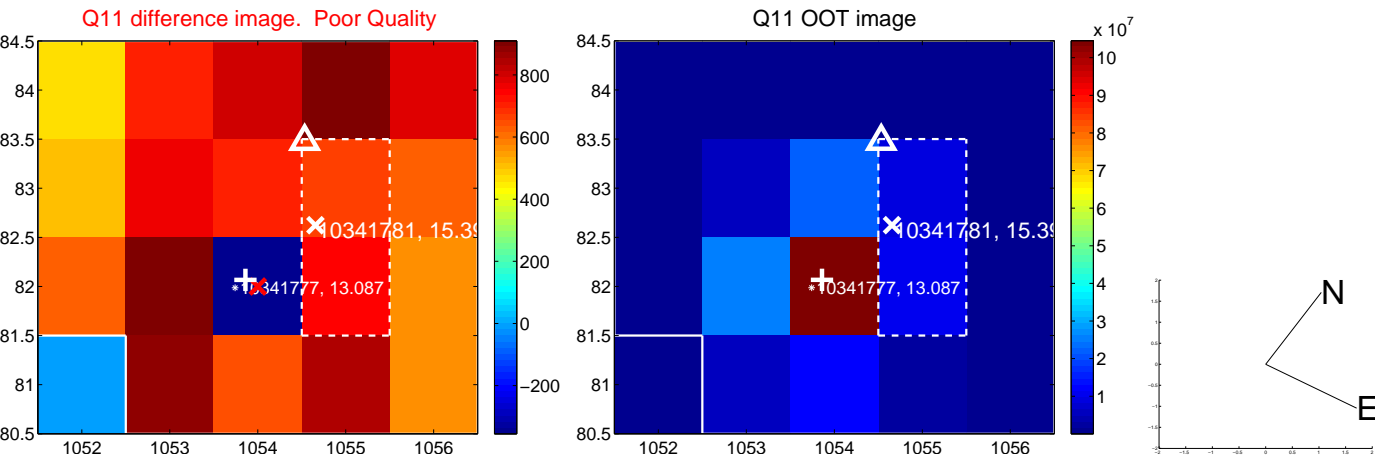
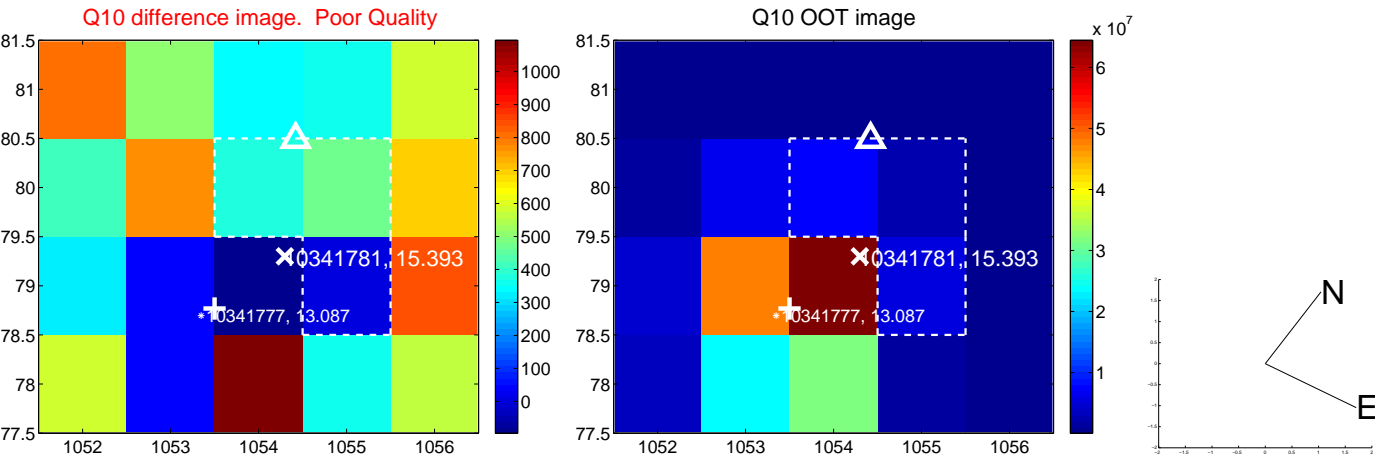
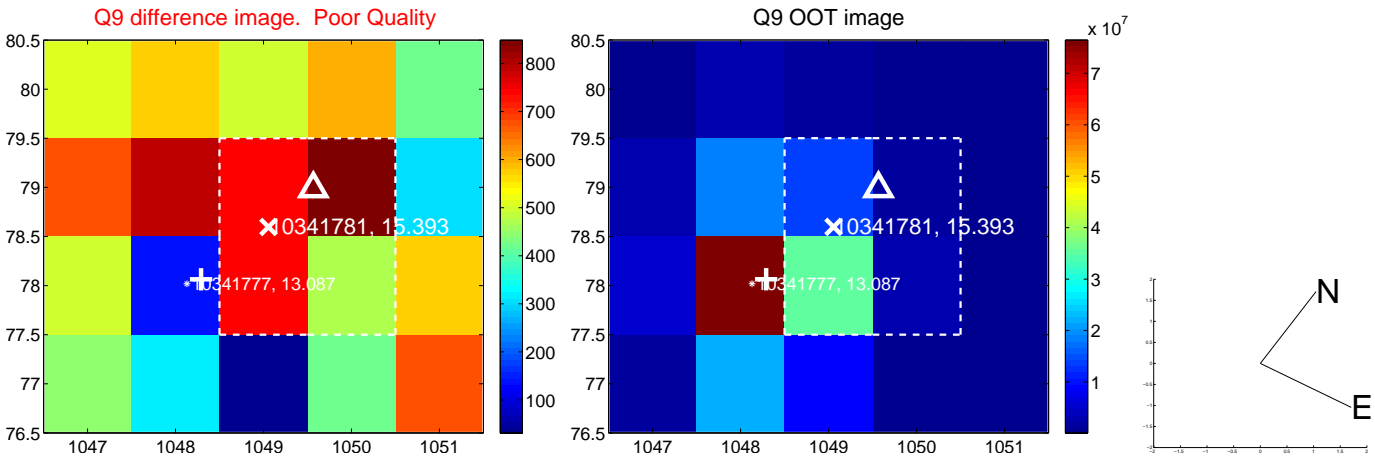
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



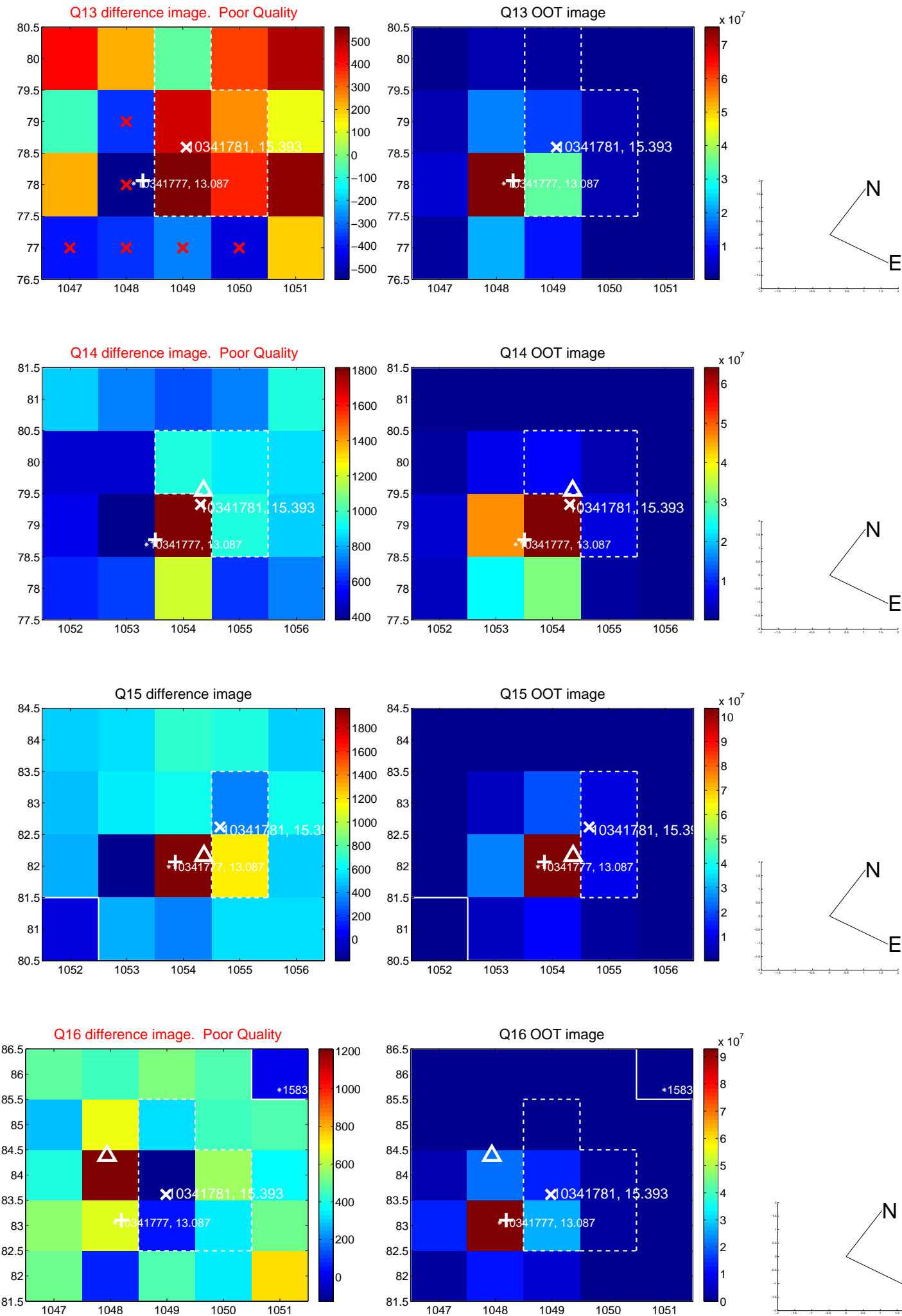
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



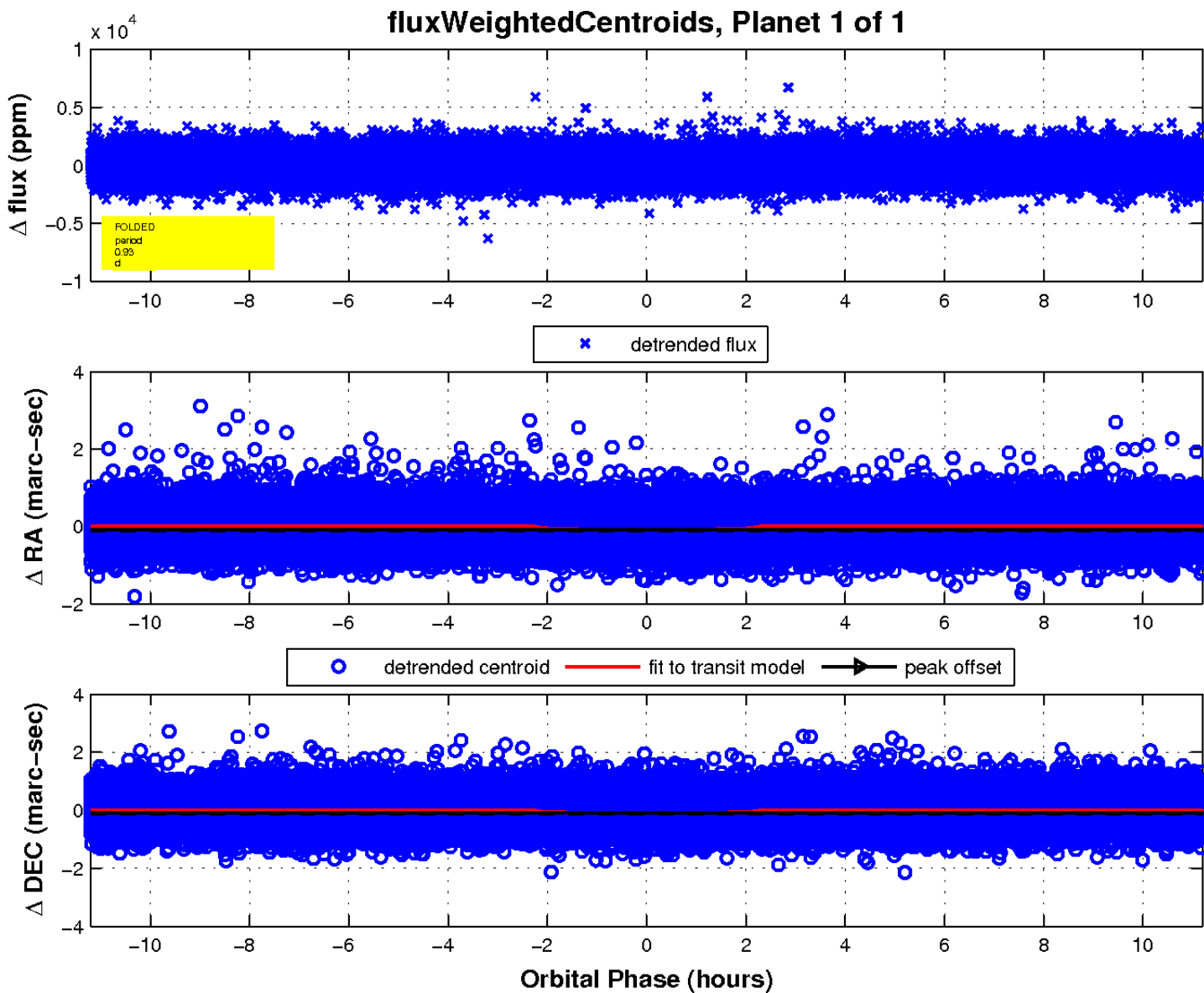
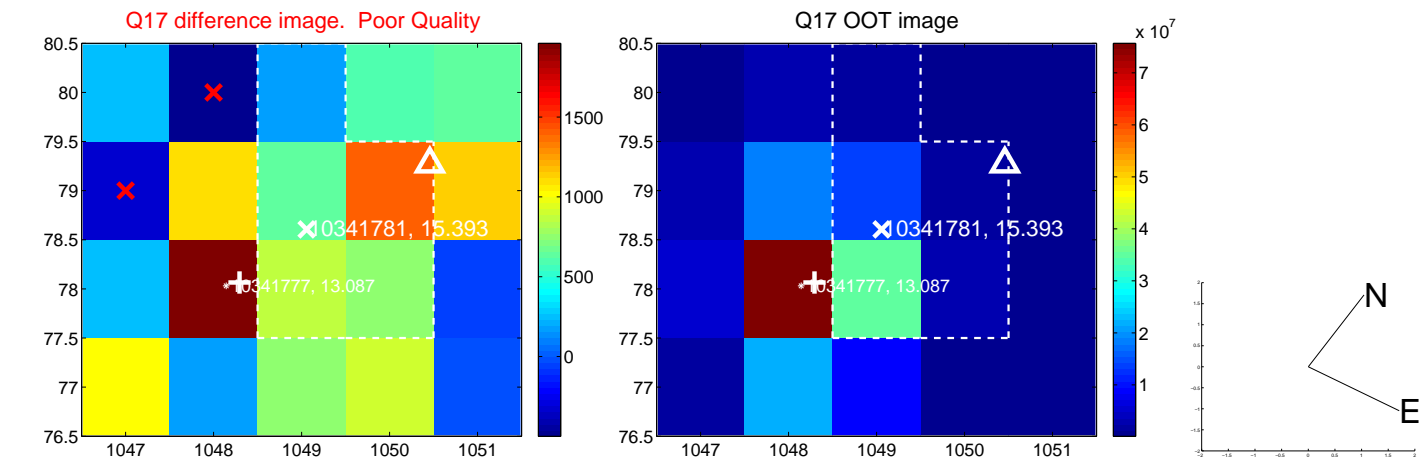
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UKIRT Image

Declination

