

# KIC 006701115

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006701115-01 | OBS      | No   | 0.829585      | 131.868443   | 22.5        | 5.905            | 14.9 | 14.9 | 3.54                        | 6818            | 1.95                   | 52798.56               |
| 006701115-02 | OBS      | No   | 29.848155     | 153.053528   | 300.0       | 1.877            | 15.7 | 10.1 | 3.54                        | 6818            | 6.57                   | 444.51                 |
| 006701115-03 | OBS      | No   | 44.782361     | 152.191257   | 463.7       | 1.004            | 15.9 | 11.9 | 3.54                        | 6818            | 7.79                   | 258.80                 |
| 006701115-04 | OBS      | No   | 26.557114     | 151.353132   | 251.7       | 1.837            | 10.8 | 9.5  | 3.54                        | 6818            | 6.68                   | 519.43                 |
| 006701115-05 | OBS      | No   | 41.290841     | 164.010708   | 218.6       | 2.692            | 10.4 | 8.0  | 3.54                        | 6818            | 5.47                   | 288.38                 |
| 006701115-06 | OBS      | No   | 43.573962     | 154.221616   | 289.1       | 2.000            | 11.0 | -1.0 | 3.54                        | 6818            | 6.09                   | 268.41                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 006701115-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT  |
| 006701115-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT  |
| 006701115-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT                             |
| 006701115-04 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT  |
| 006701115-05 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT                    |
| 006701115-06 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

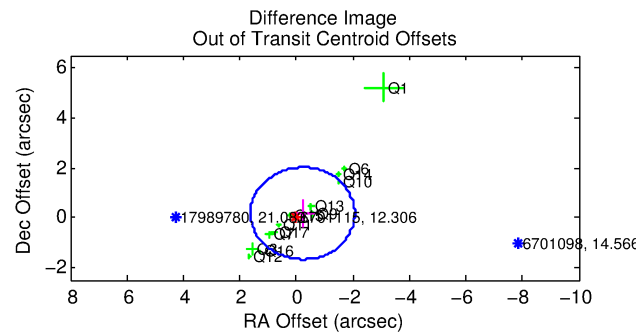
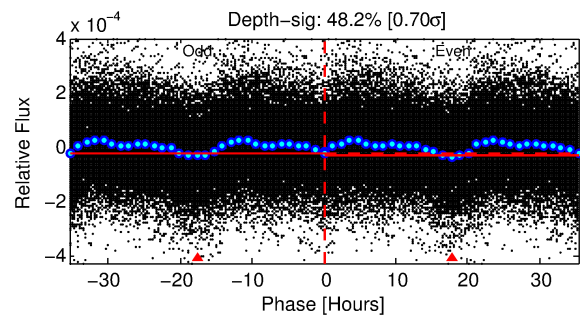
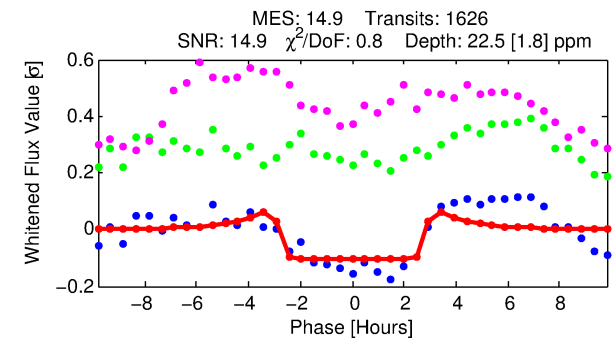
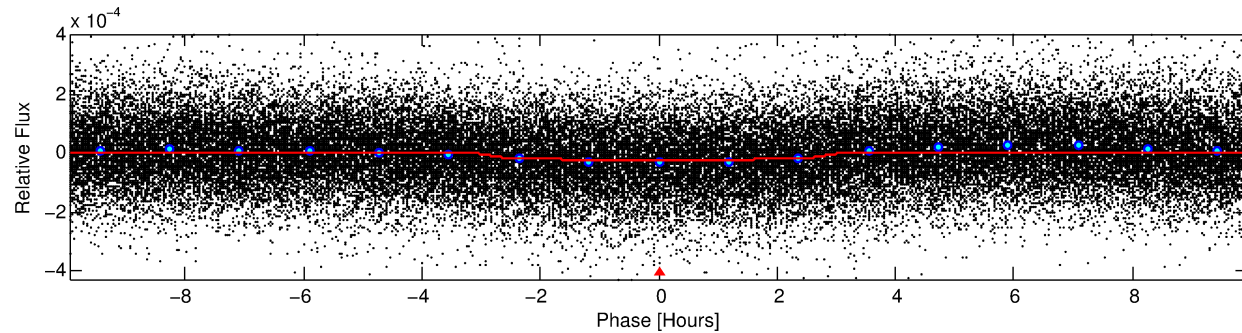
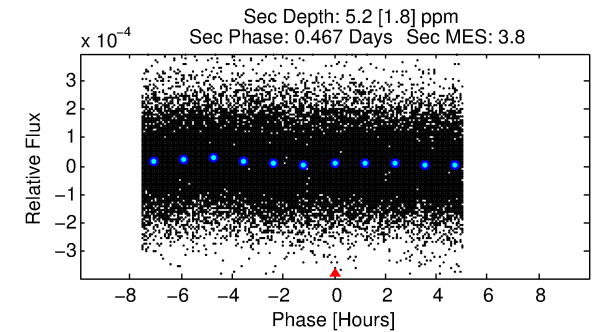
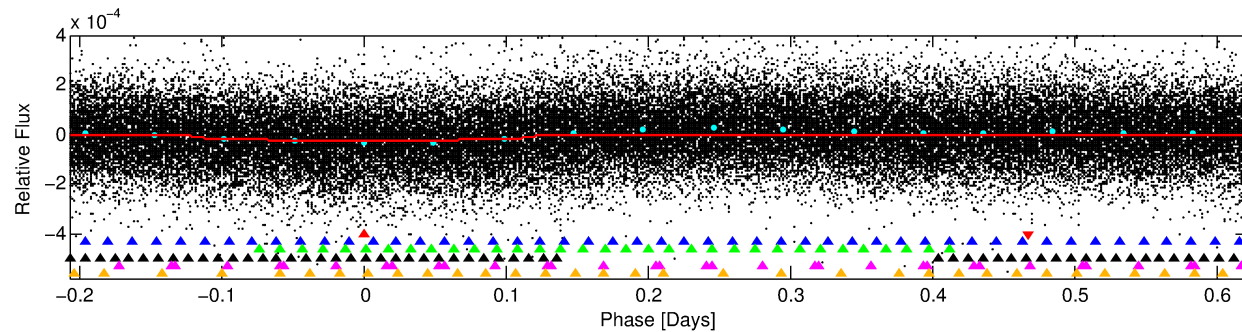
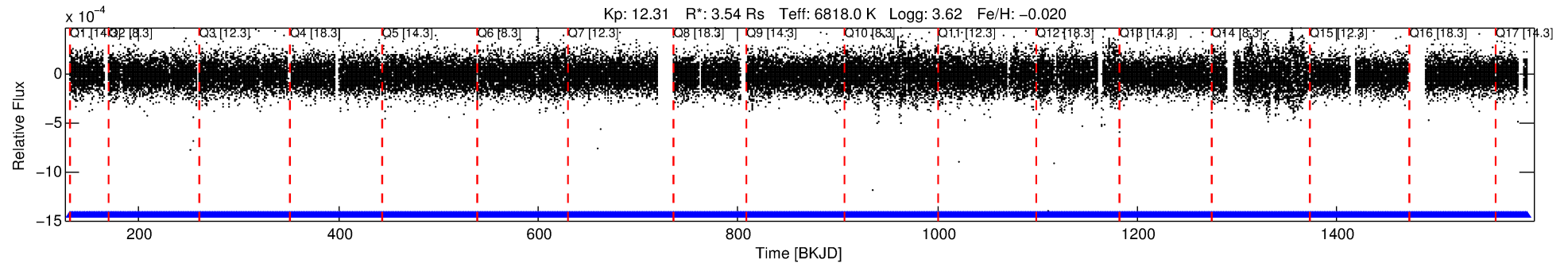
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006701115-01

No Significant Match Found

# DV One-Page Summary

KIC: 6701115 Candidate: 1 of 6 Period: 0.830 d



## DV Fit Results:

Period = 0.82958 [0.00001] d  
Epoch = 131.8684 [0.0022] BKJD  
Rp/R\* = 0.0051 [0.0011]  
a/R\* = 1.06 [0.15]  
b = 0.90 [0.29]  
Seff = 52798.56 [28995.20]  
Teq = 3865 [531] K  
Rp = 1.95 [0.86] Re  
a = 0.0215 [0.0074] AU  
Ag = 0.35 [0.27] [-2.45σ]  
Teffp = 4586 [655] K [0.85σ]

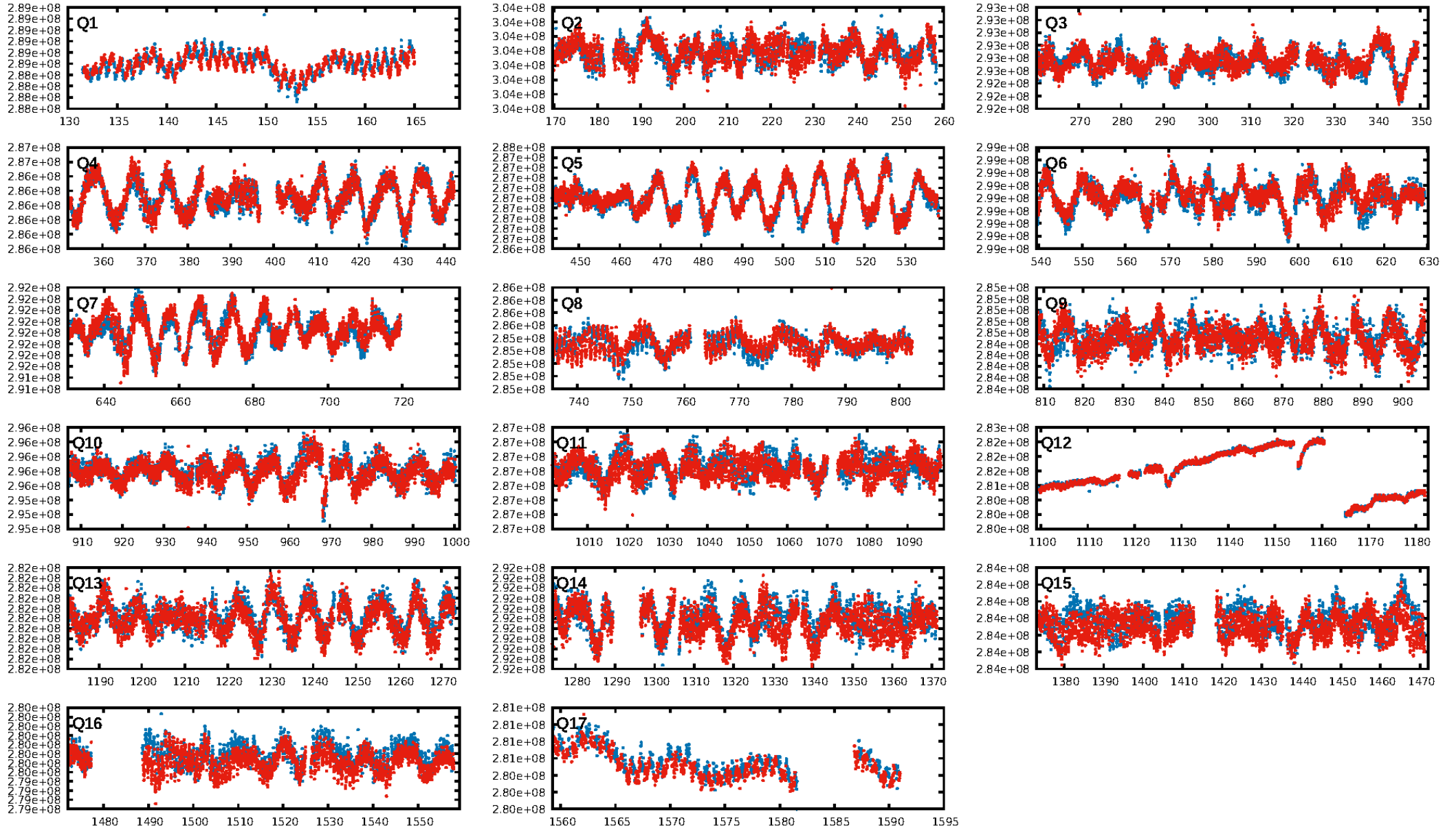
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [99.84σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.71e-38  
RollingBand-fgt: 1.00 [1552/1552]  
GhostDiagnostic-chr: 0.7696  
Centroid-sig: N/A  
Centroid-so: 1.918 arcsec [4.96σ]  
OotOffset-rm: 0.276 arcsec [0.45σ]  
KicOffset-rm: 0.410 arcsec [0.78σ]  
OotOffset-st: 3/4/2/4 [13]  
KicOffset-st: 3/4/2/4 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [17/17]

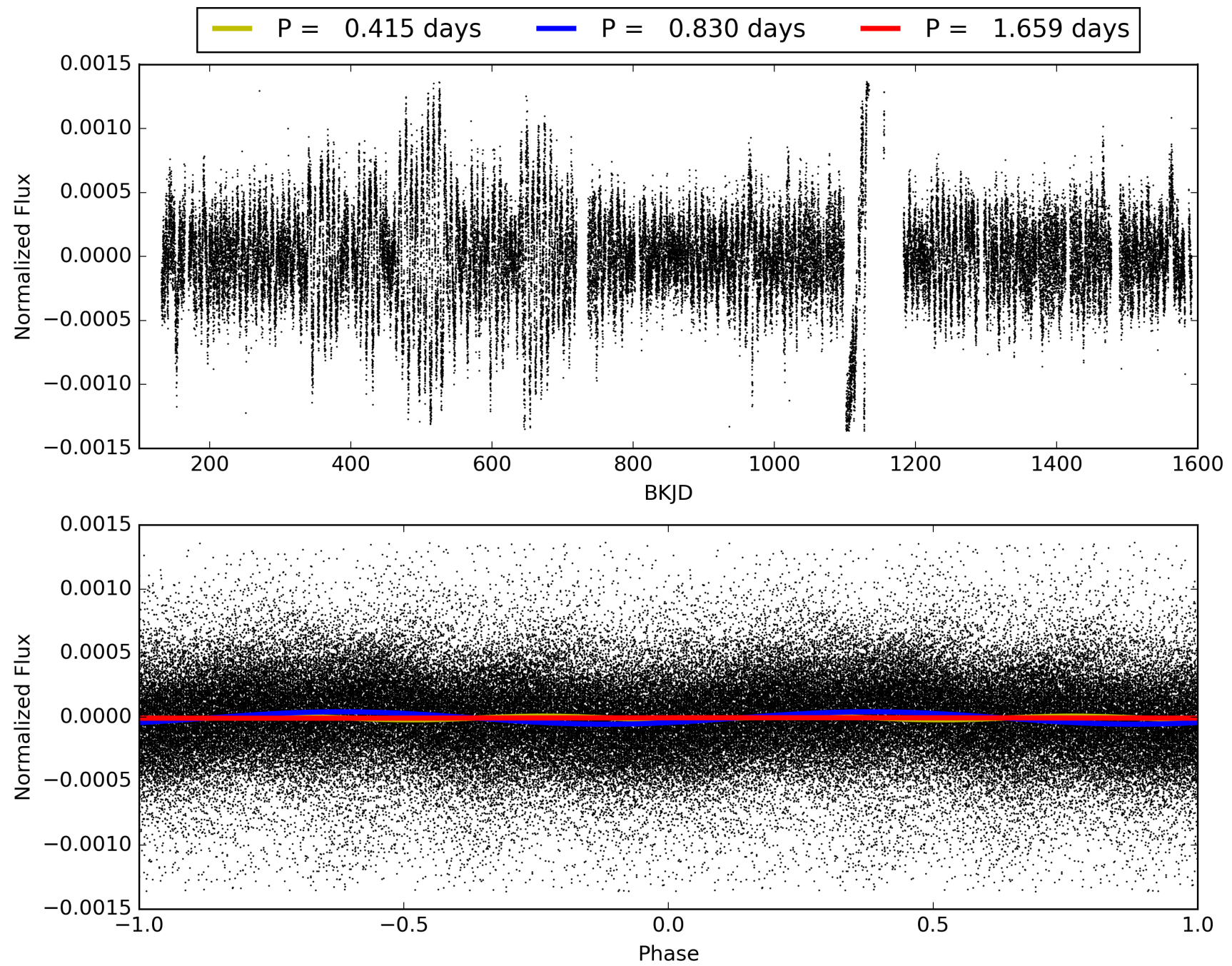
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 03:13:41 Z

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

# TCE 006701115-01, PDC Light Curves



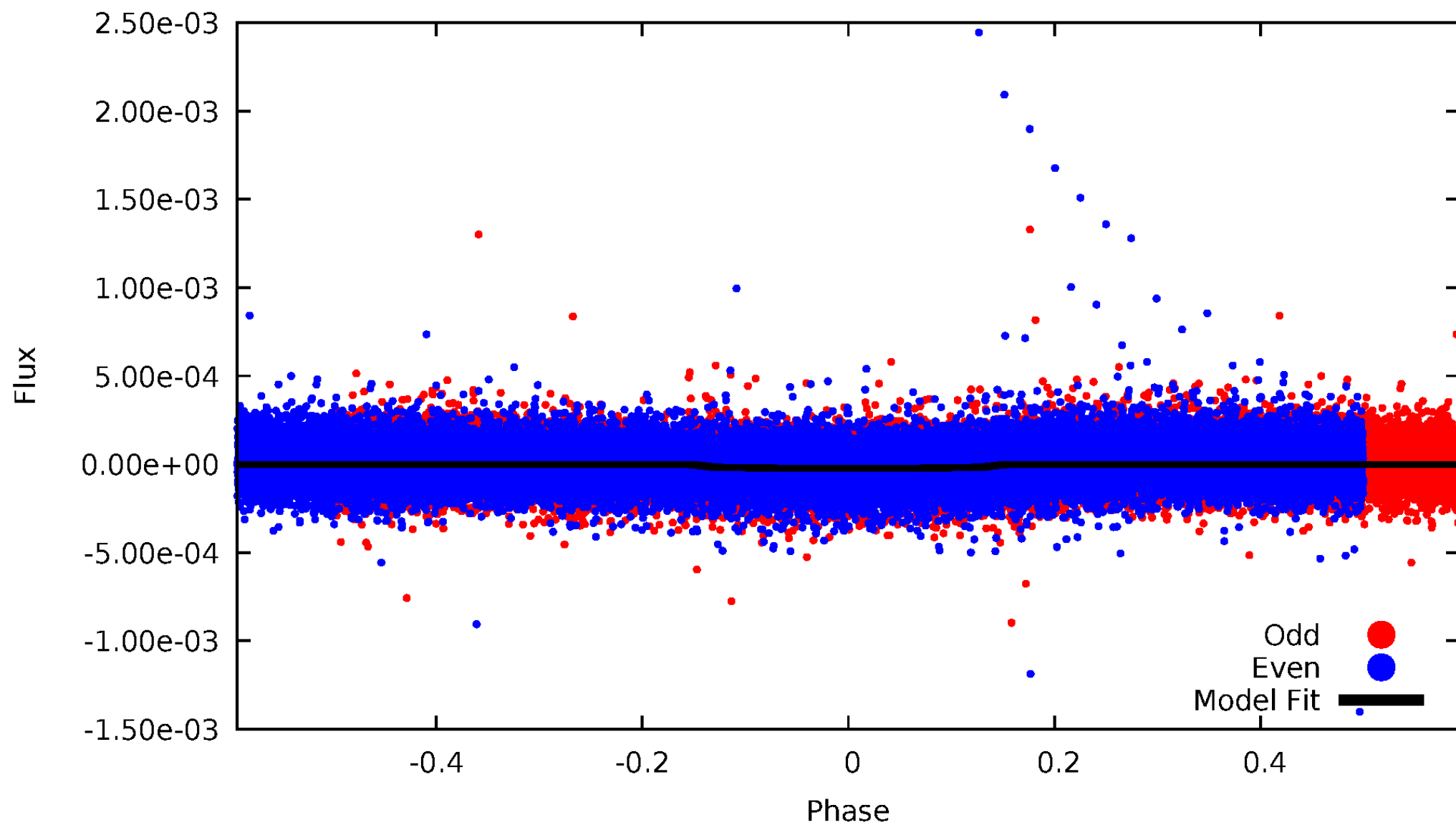
TCE 006701115-01





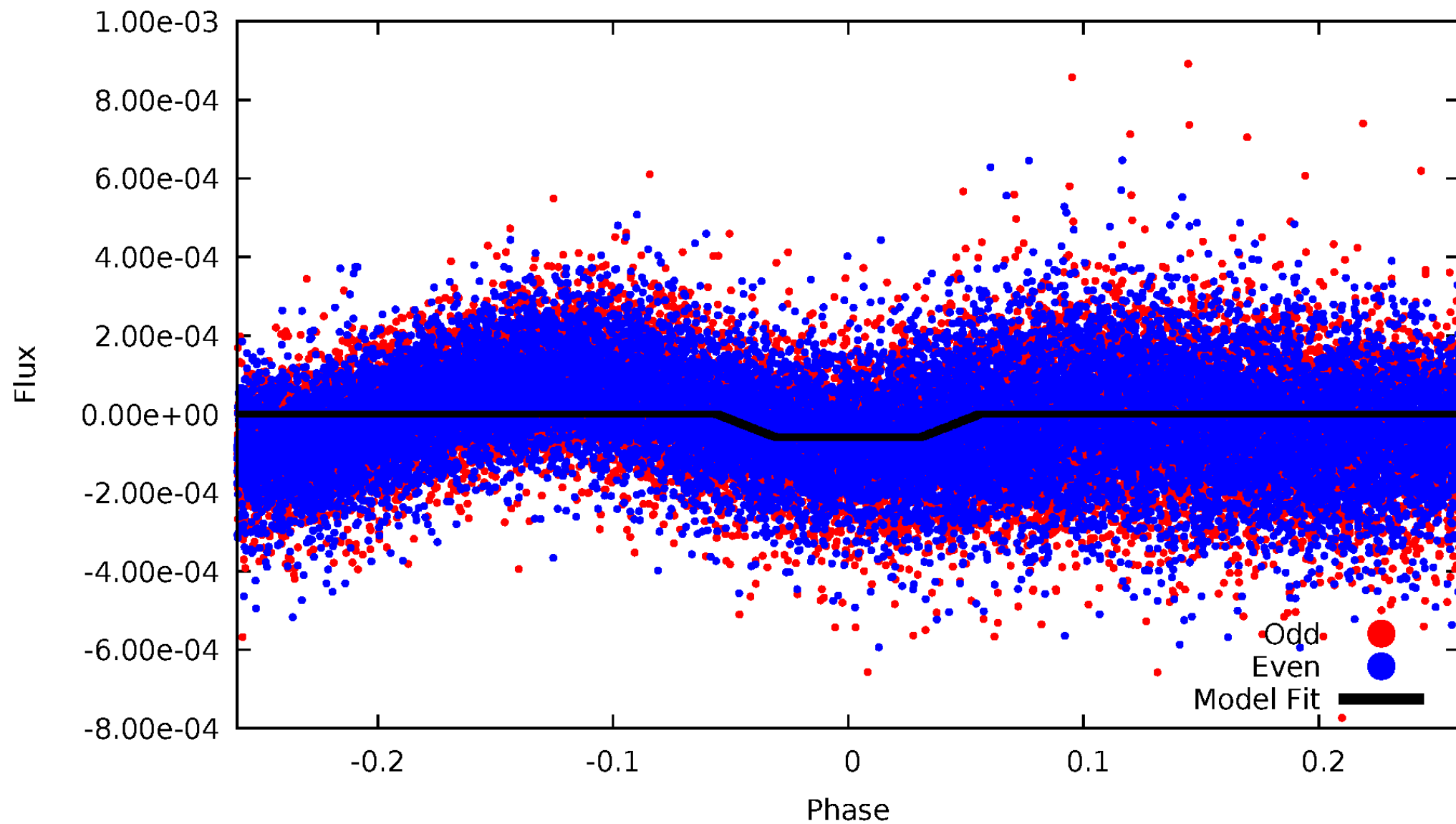
# DV Odd/Even

TCE 006701115-01



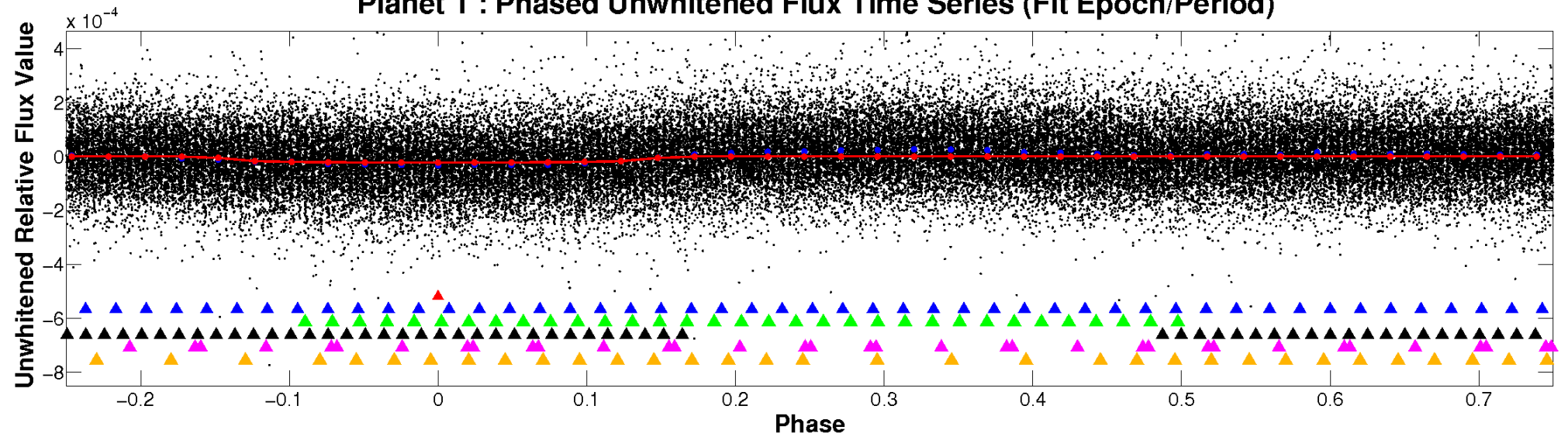
# ALT Odd/Even

TCE 006701115-01

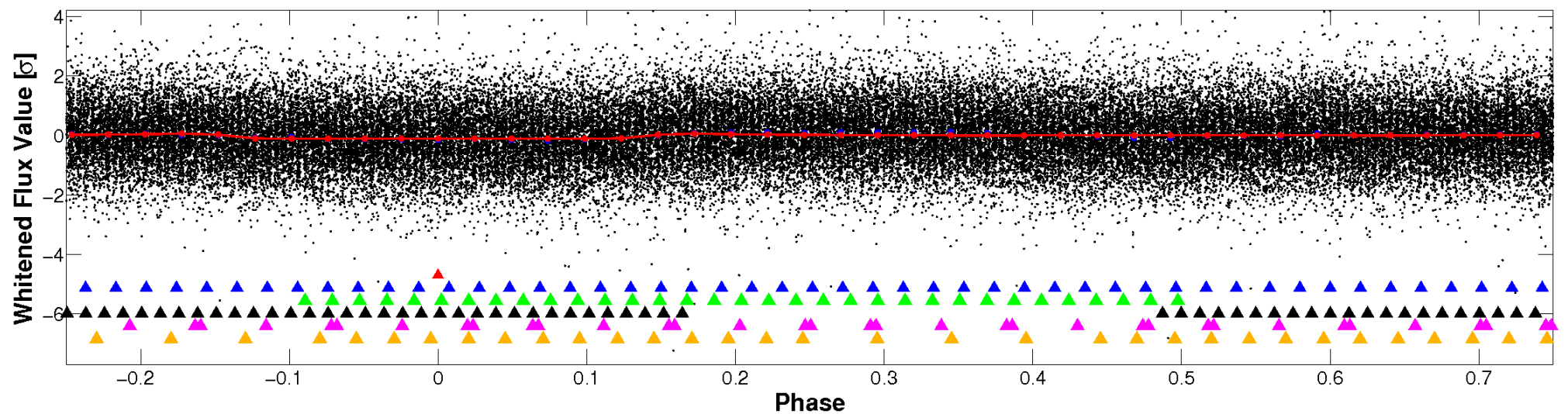


# Non-Whitened Vs. Whitened Light Curve

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

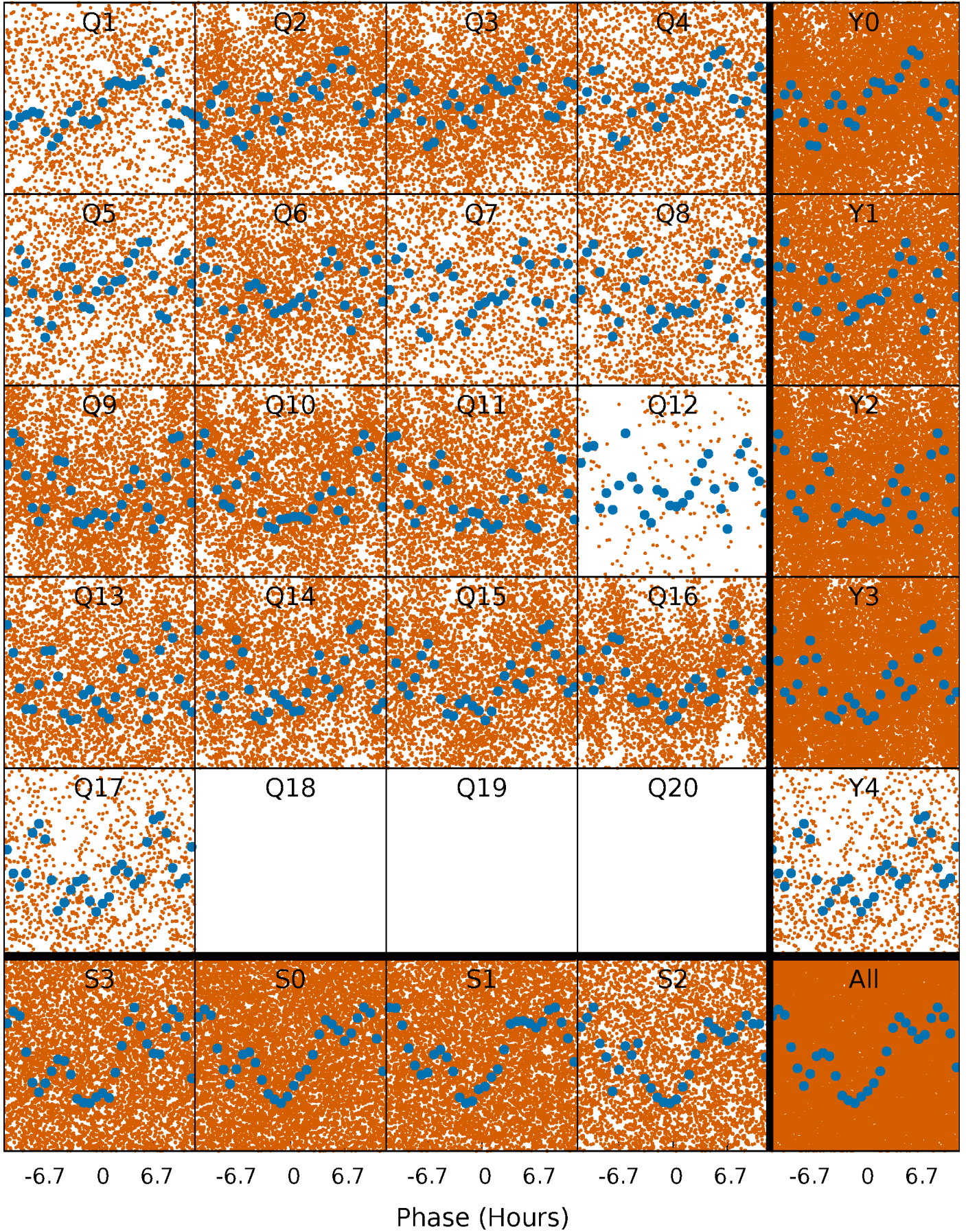


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

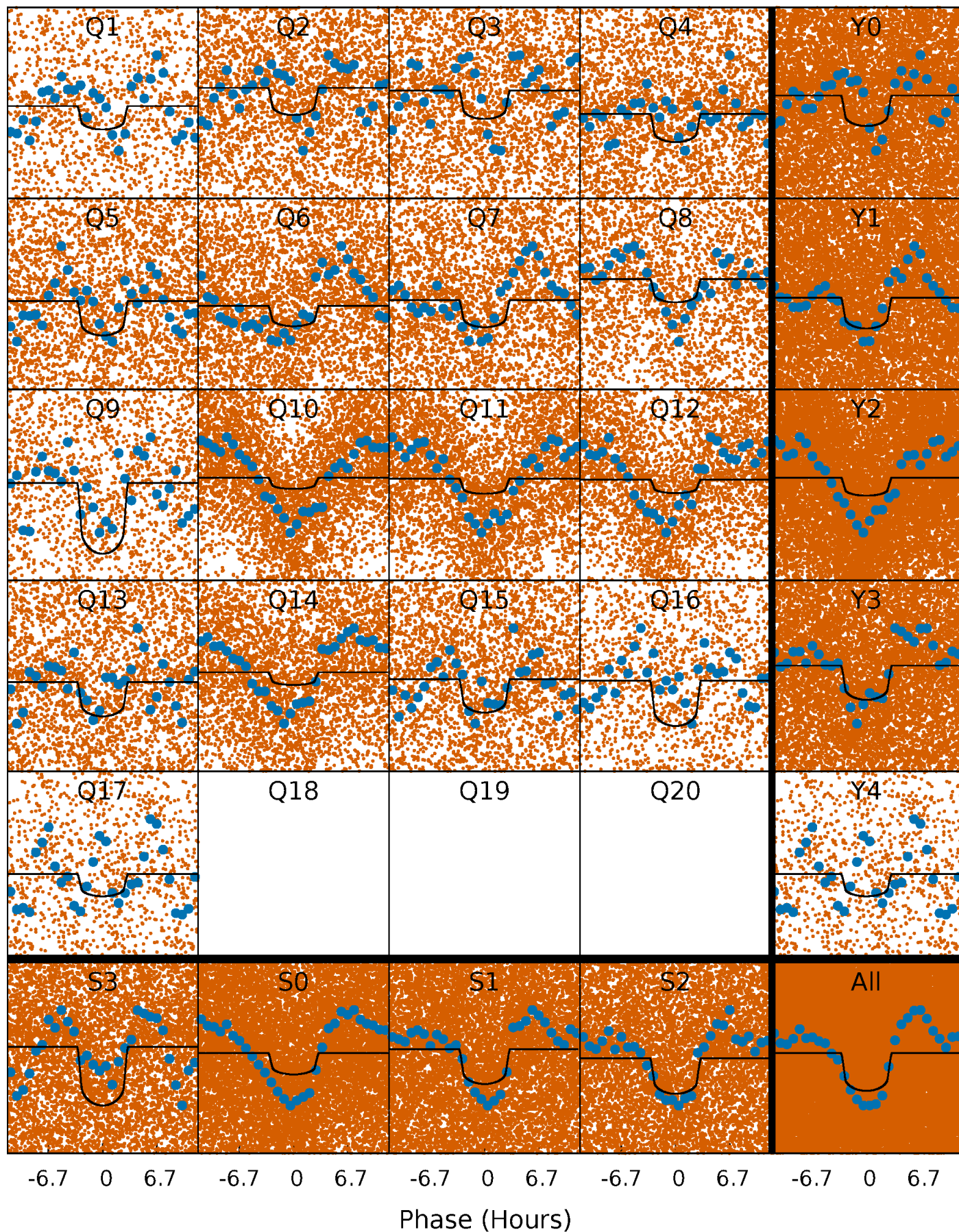
TCE 006701115-01 P= 0.829585 Days  $T_0=131.868443$  (BKJD)





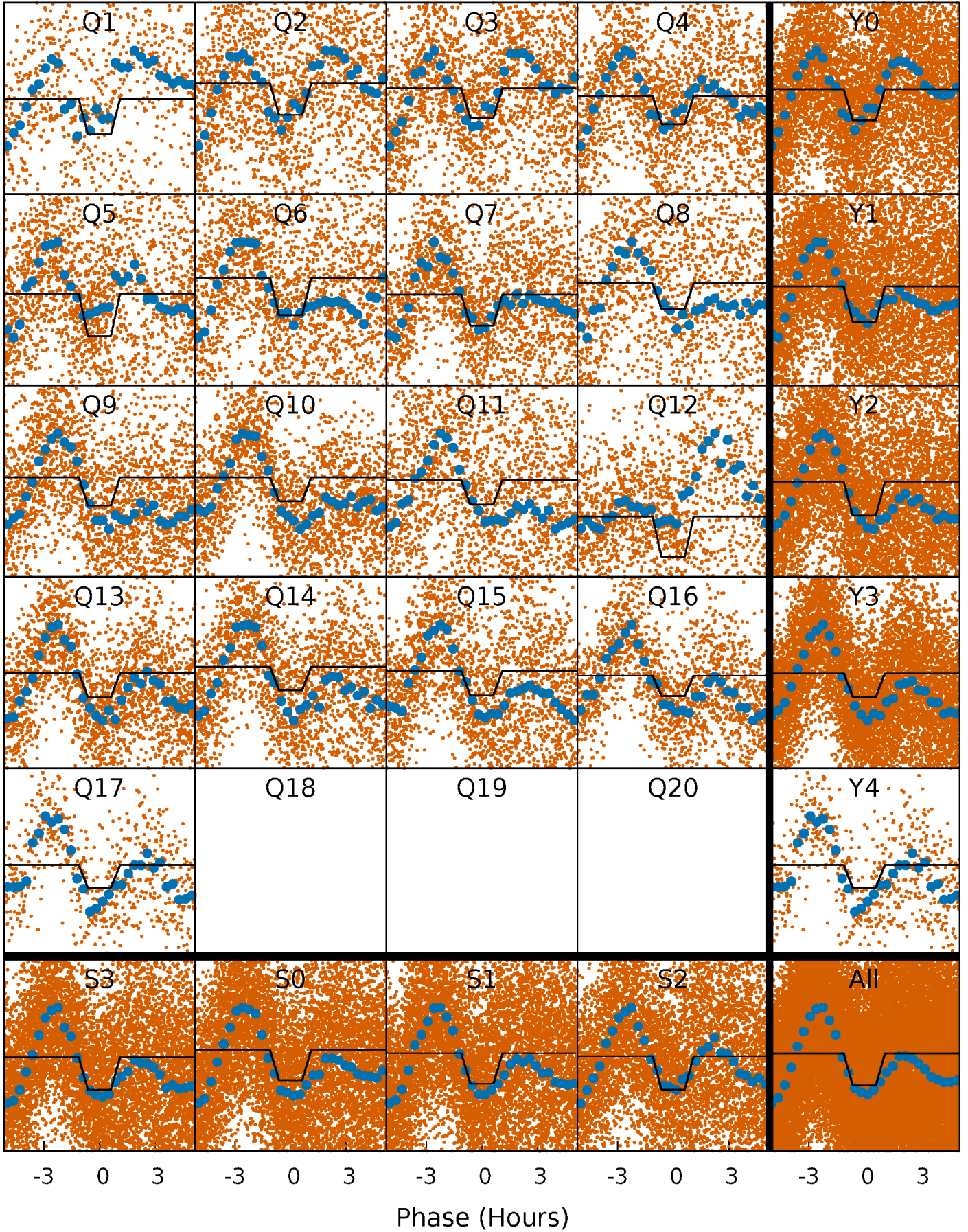
# DV Quarter-Phased Transit Curves

TCE 006701115-01 P= 0.829585 Days  $T_0=131.868443$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006701115-01 P= 0.829477 Days  $T_0=131.853233$  (BKJD)

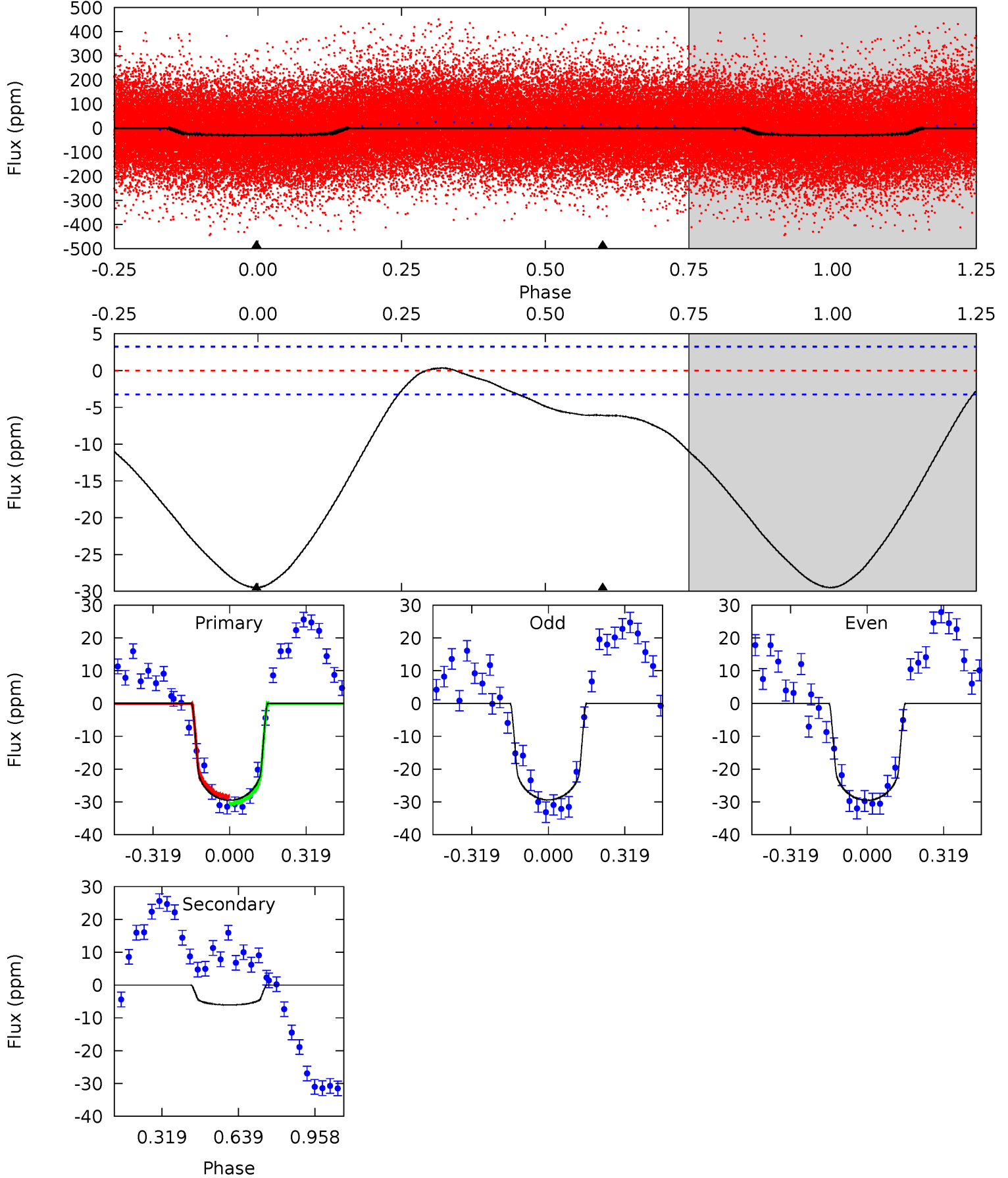




# DV Model-Shift Uniqueness Test

006701115-01, P = 0.829585 Days, E = 131.038858 Days

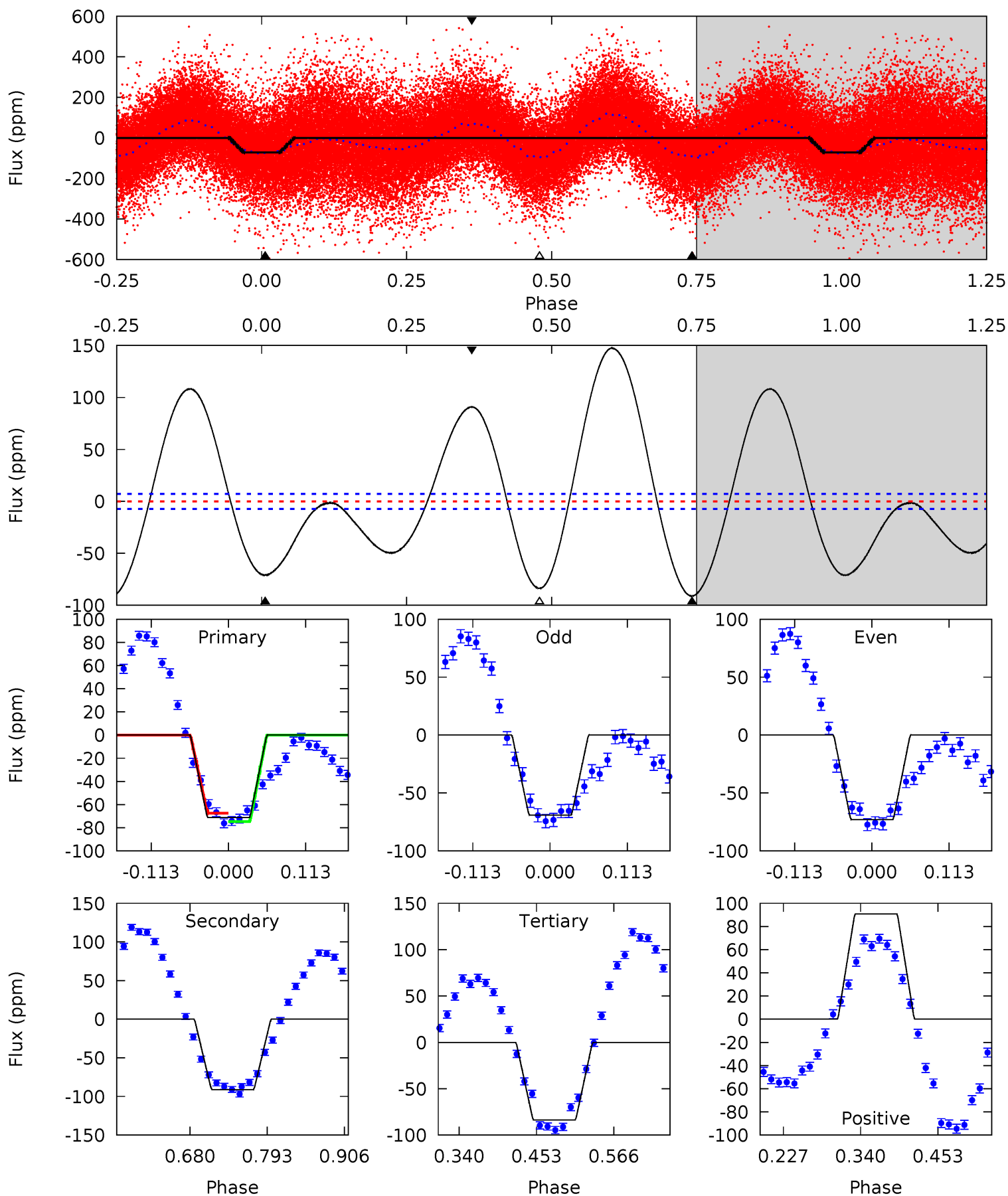
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 39.1 | 8.07 | 0   | 0   | 4.31            | 1.00            | 1.19             | 39.1    | 39.1    | 8.07    | 8.07    | 0.08    | 1.03 | 0.01  | 1.40 |



# Alt Model-Shift Uniqueness Test

006701115-01, P = 0.829477 Days, E = 131.023756 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 44.6 | 57.2 | 52.6 | 57.0 | 4.54            | 1.58            | 42.9             | -7.94   | -12.4   | 4.63    | 0.19    | 1.21    | 1.10 | 0.62  | 2.26 |





### Stellar Parameters For KIC 006701115

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M (M_{\odot})$           | $\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
|        | $6818^{+163}_{-224}$ | $3.621^{+0.306}_{-0.054}$ | $-0.020^{+0.250}_{-0.250}$ | $3.543^{+0.335}_{-1.341}$ | $1.913^{+0.181}_{-0.392}$ | $0.061^{+0.129}_{-0.012}$                    |
|        | +2%/-3%              | +8%/-1%                   | +1250%/-1250%              | +9%/-38%                  | +9%/-20%                  | +213%/-20%                                   |
| Source | PHO1                 | FLK73                     | 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 006701115-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$  | $A_{\text{obs}}$          |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------------|
| DV      | $-6 \pm 1$  | $1.79^{+0.51}_{-0.46}$ | $5251^{+283}_{-460}$ | $3986^{+904}_{-6540}$ | $0.473^{+0.384}_{-0.181}$ |
| Alt.    | $-91 \pm 2$ | $2.77^{+0.54}_{-0.58}$ | $5257^{+285}_{-414}$ | $7502^{+818}_{-656}$  | $3.004^{+1.632}_{-0.870}$ |

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = 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

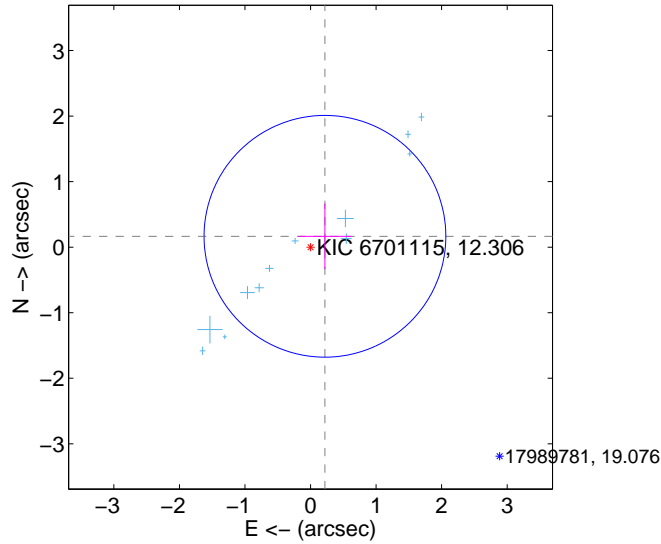
Supplemental centroid analysis for 006701115-01. Kepler magnitude: 12.31. Transit SNR 14.86

There are 12 quarters with good PRF difference image offsets

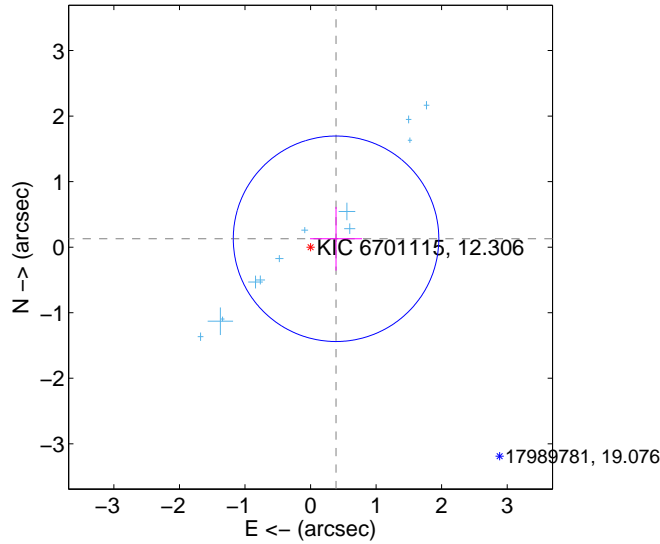
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.276 \pm 0.615$  | 0.45                | $-0.220 \pm 0.404$ | $0.166 \pm 0.501$ |
| PRF-fit source offset from KIC position | $0.410 \pm 0.523$  | 0.78                | $-0.389 \pm 0.397$ | $0.128 \pm 0.485$ |
| photometric centroid source offset      | $1.92 \pm 0.39$    | 4.96                | $1.90 \pm 0.39$    | $0.24 \pm 0.33$   |

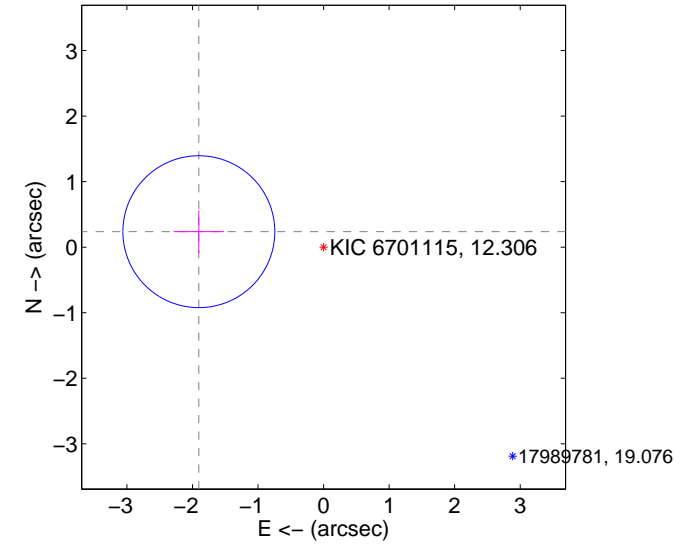
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

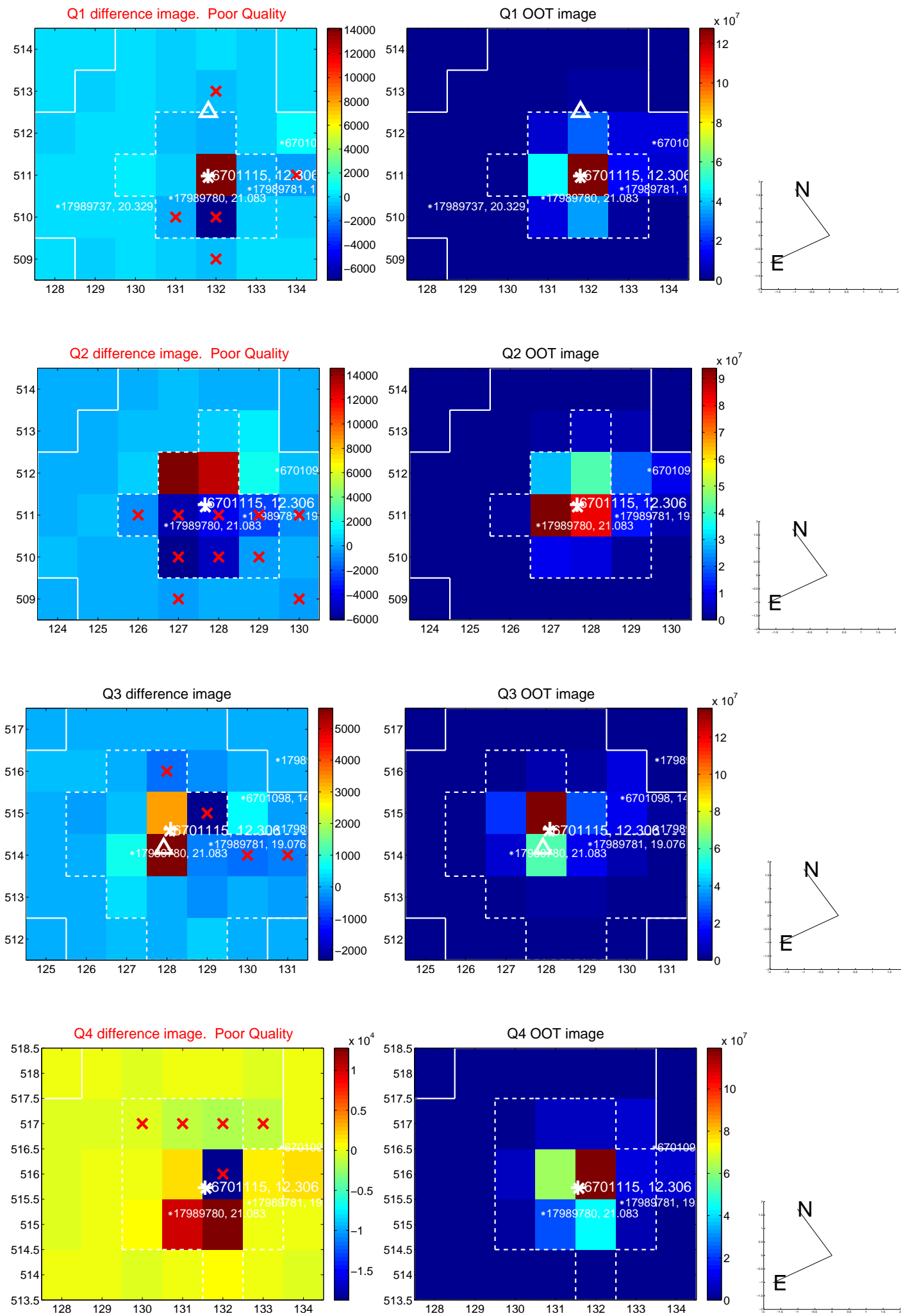


offset from photometric centroids

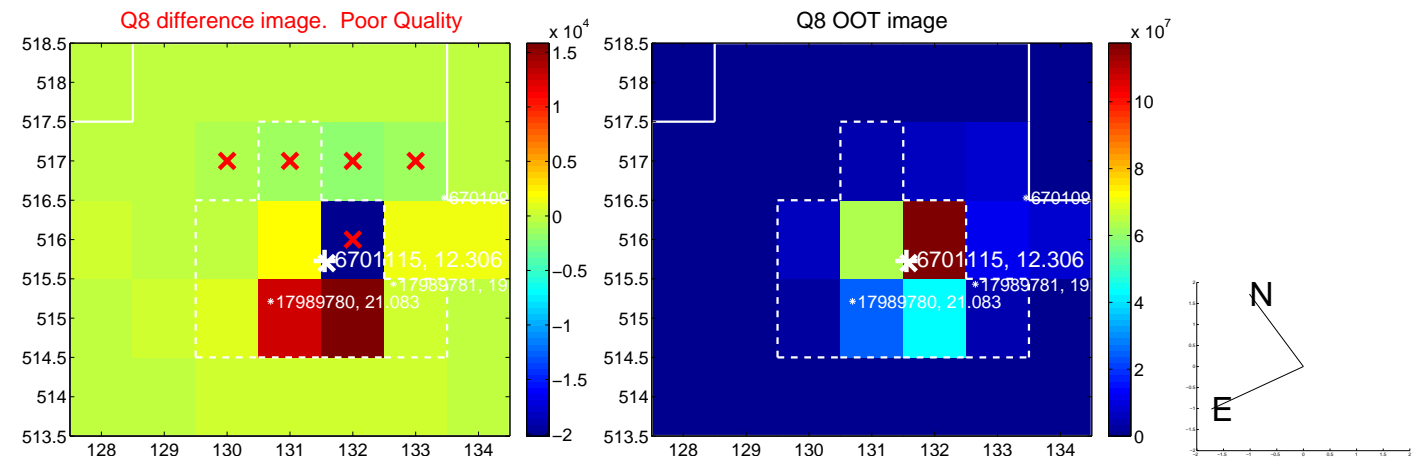
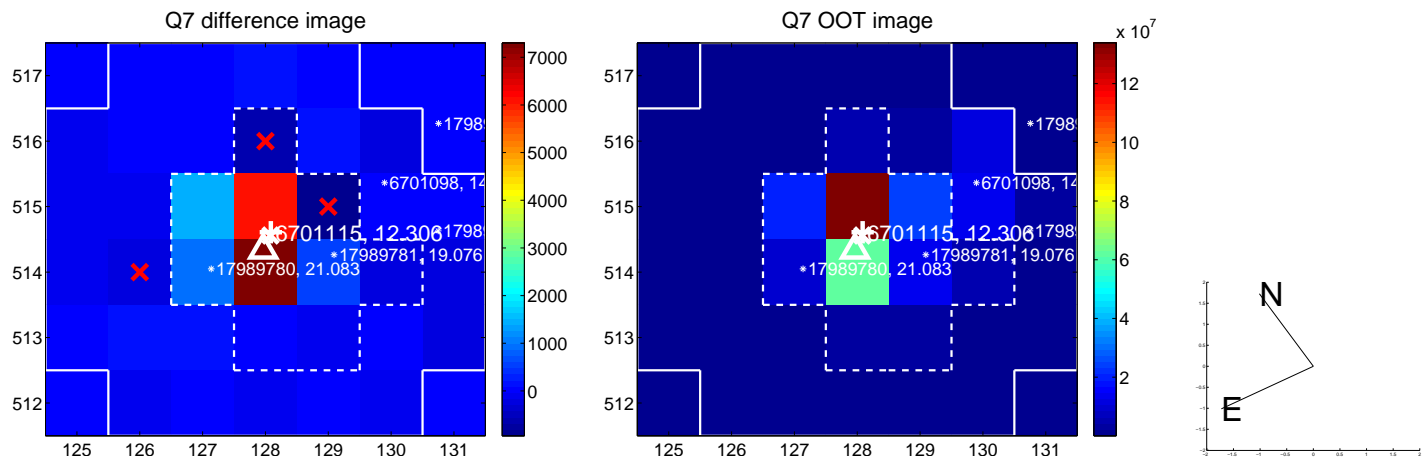
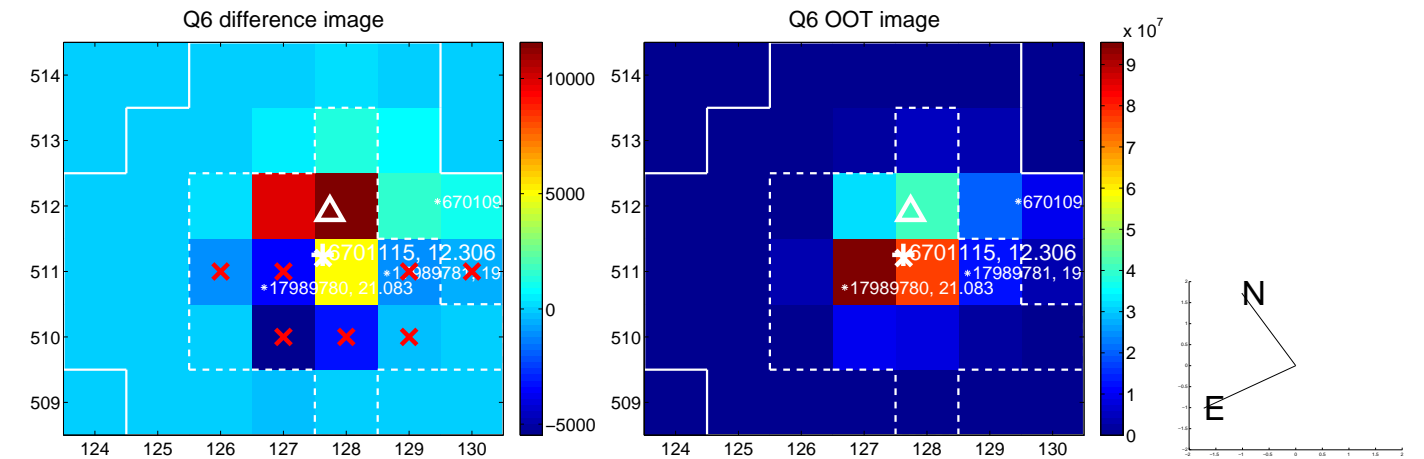
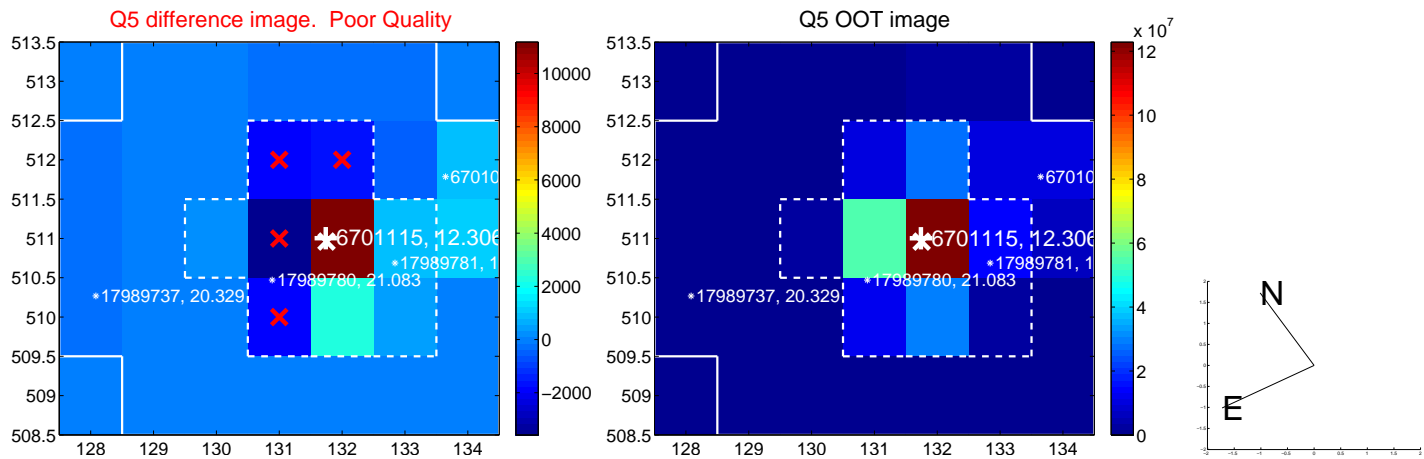


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

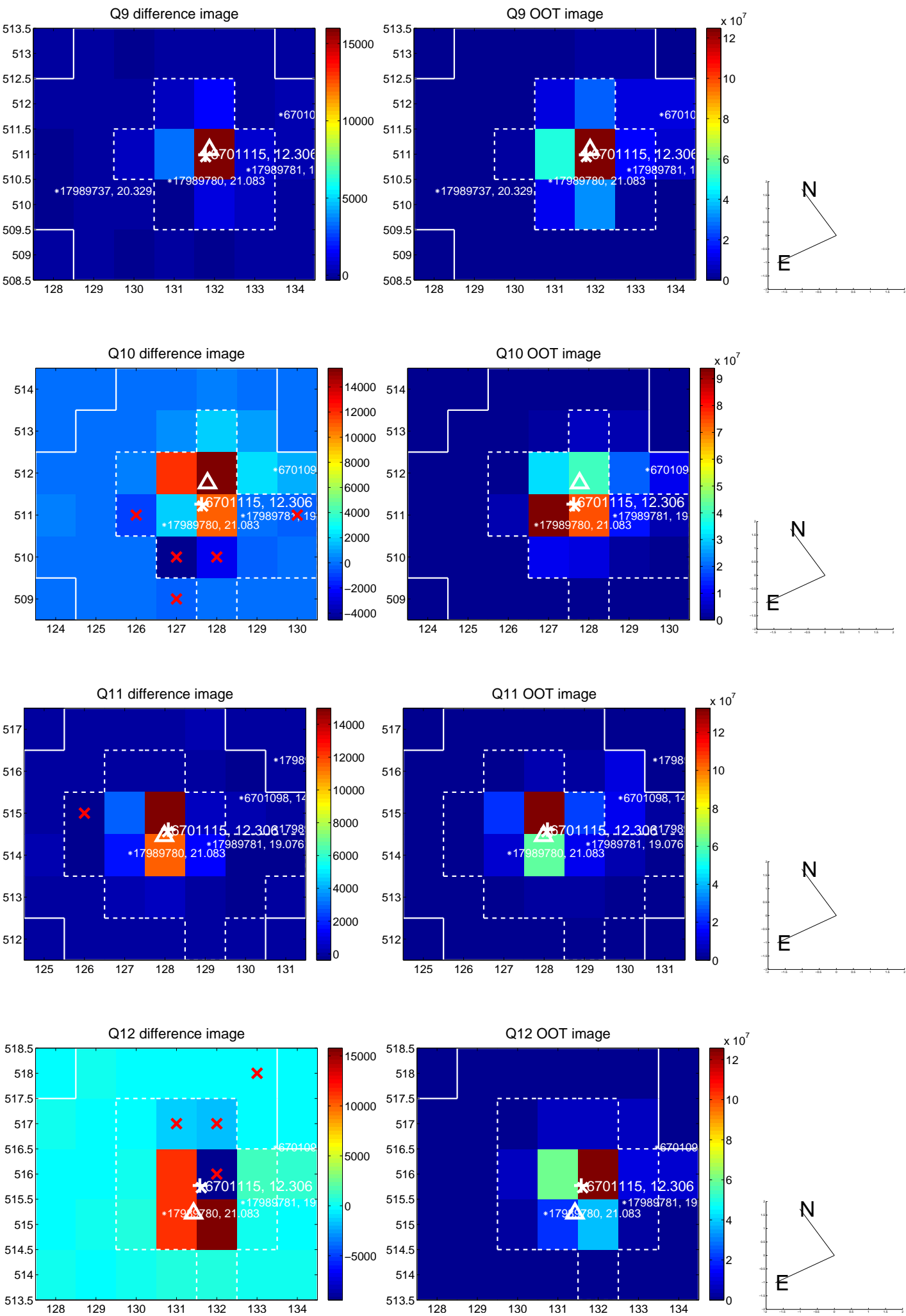


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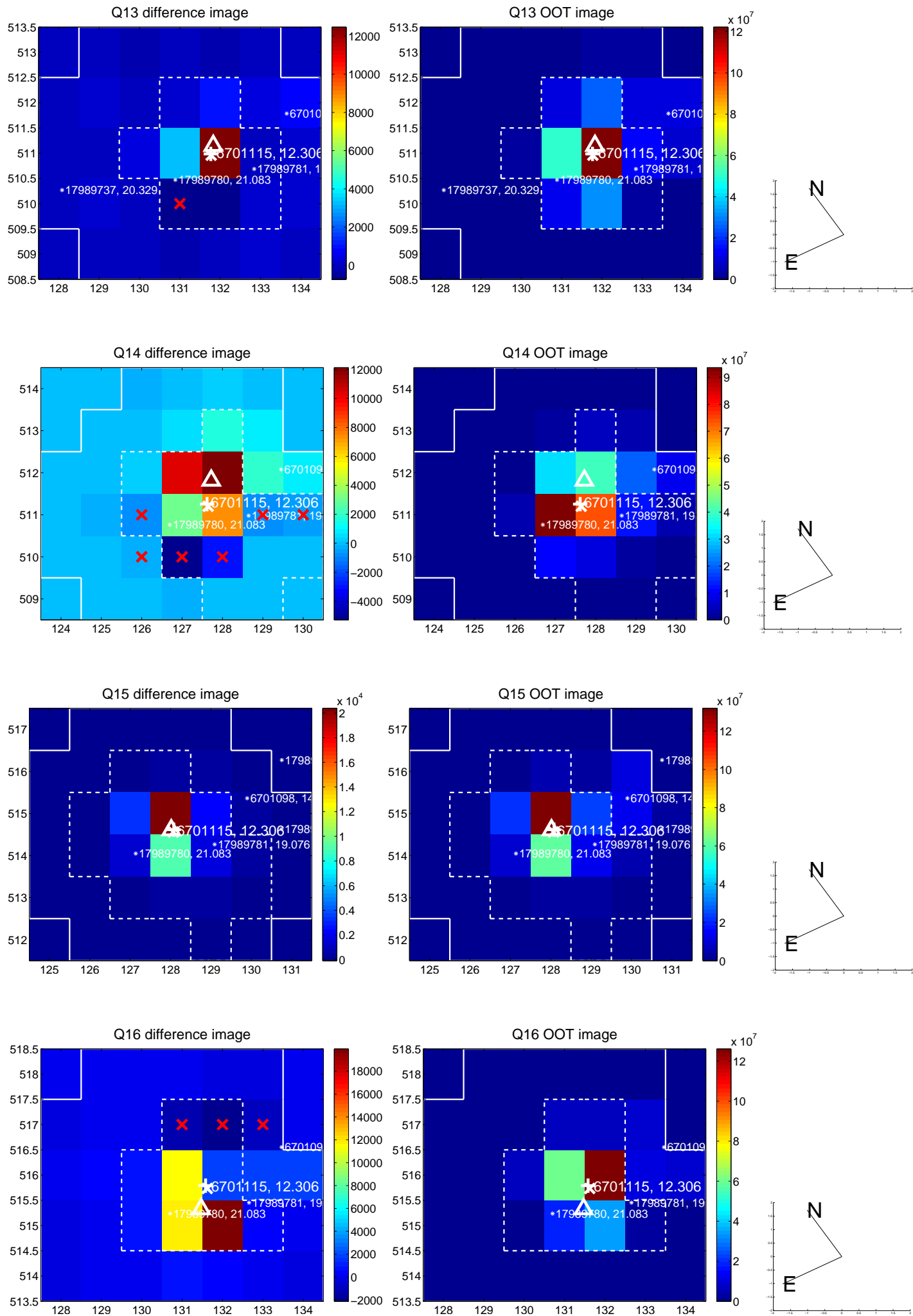




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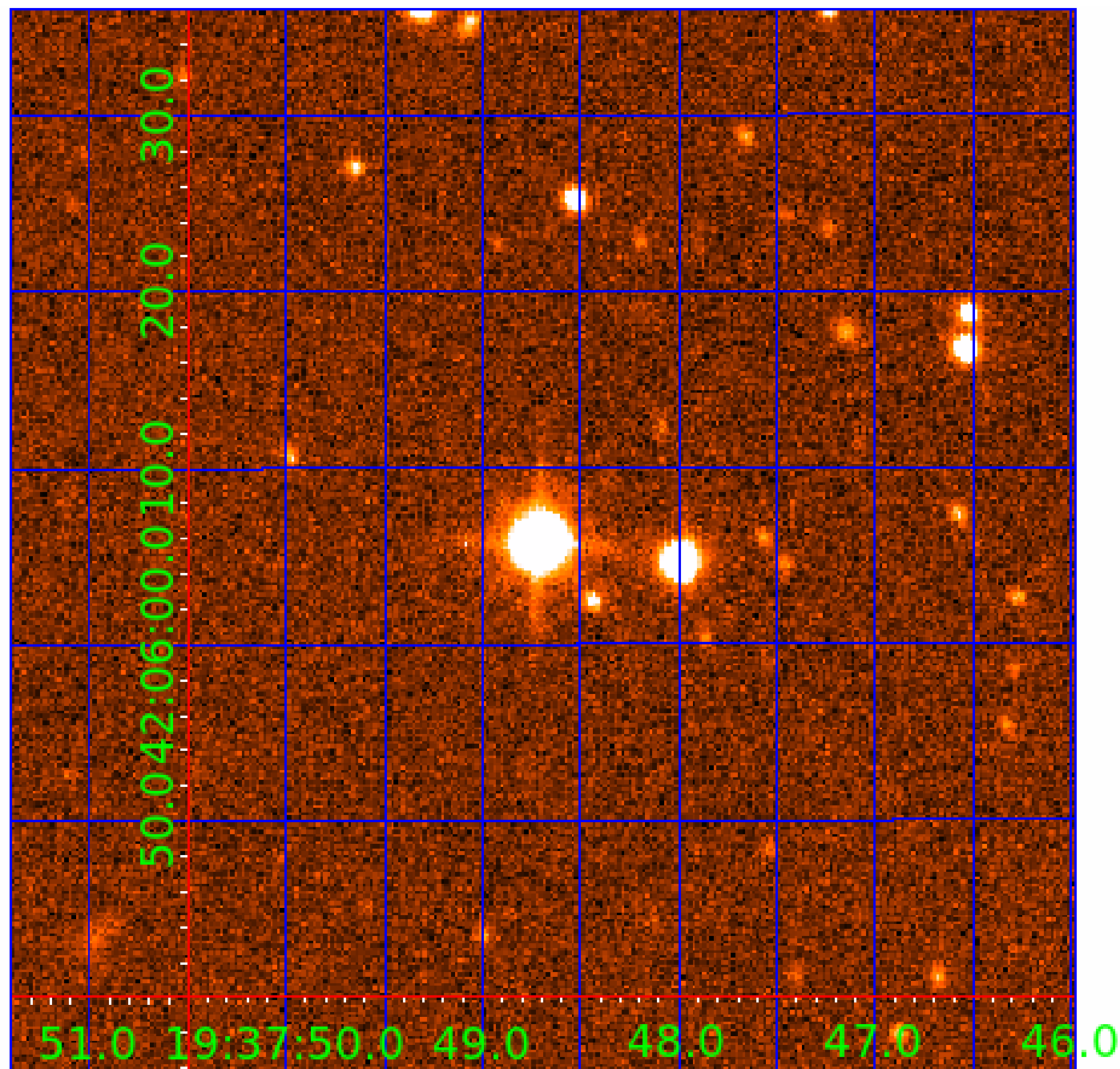
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination





# KIC 006701115

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006701115-01 | OBS      | No   | 0.829585      | 131.868443   | 22.5        | 5.905            | 14.9 | 14.9 | 3.54                        | 6818            | 1.95                   | 52798.56               |
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| 006701115-06 | OBS      | No   | 43.573962     | 154.221616   | 289.1       | 2.000            | 11.0 | -1.0 | 3.54                        | 6818            | 6.09                   | 268.41                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 006701115-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT  |
| 006701115-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT  |
| 006701115-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT                             |
| 006701115-04 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT  |
| 006701115-05 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT                    |
| 006701115-06 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

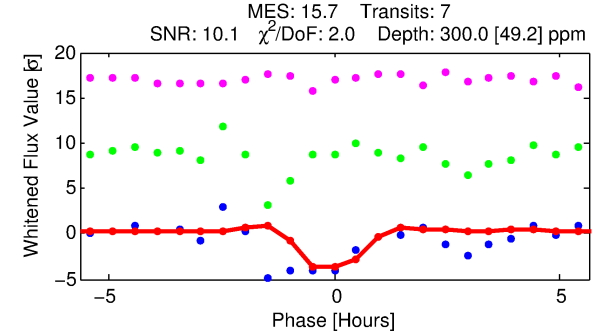
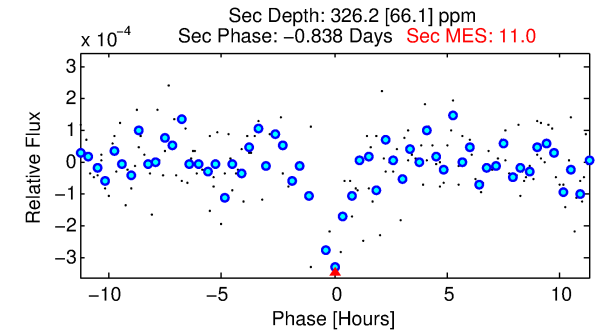
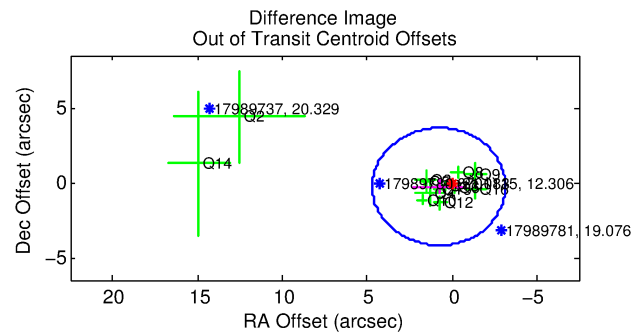
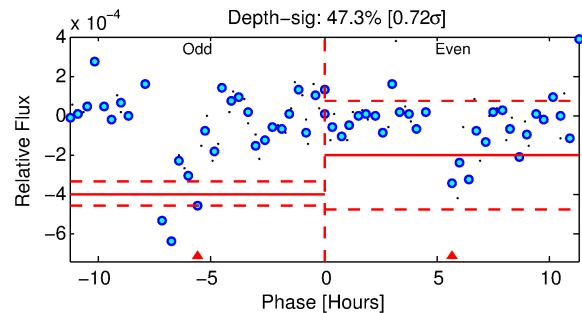
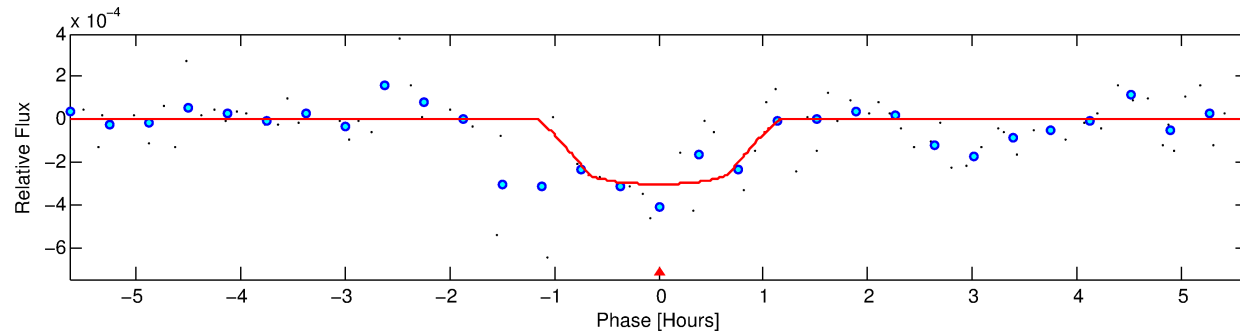
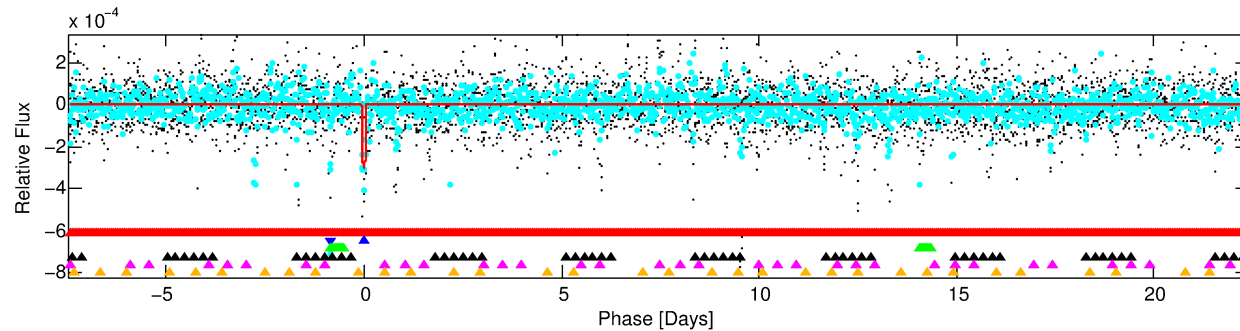
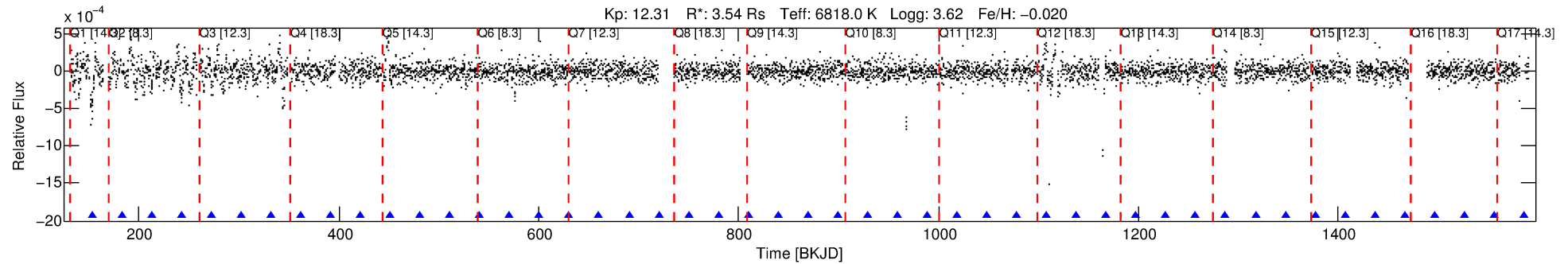
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006701115-02

No Significant Match Found

# DV One-Page Summary

KIC: 6701115 Candidate: 2 of 6 Period: 29.848 d



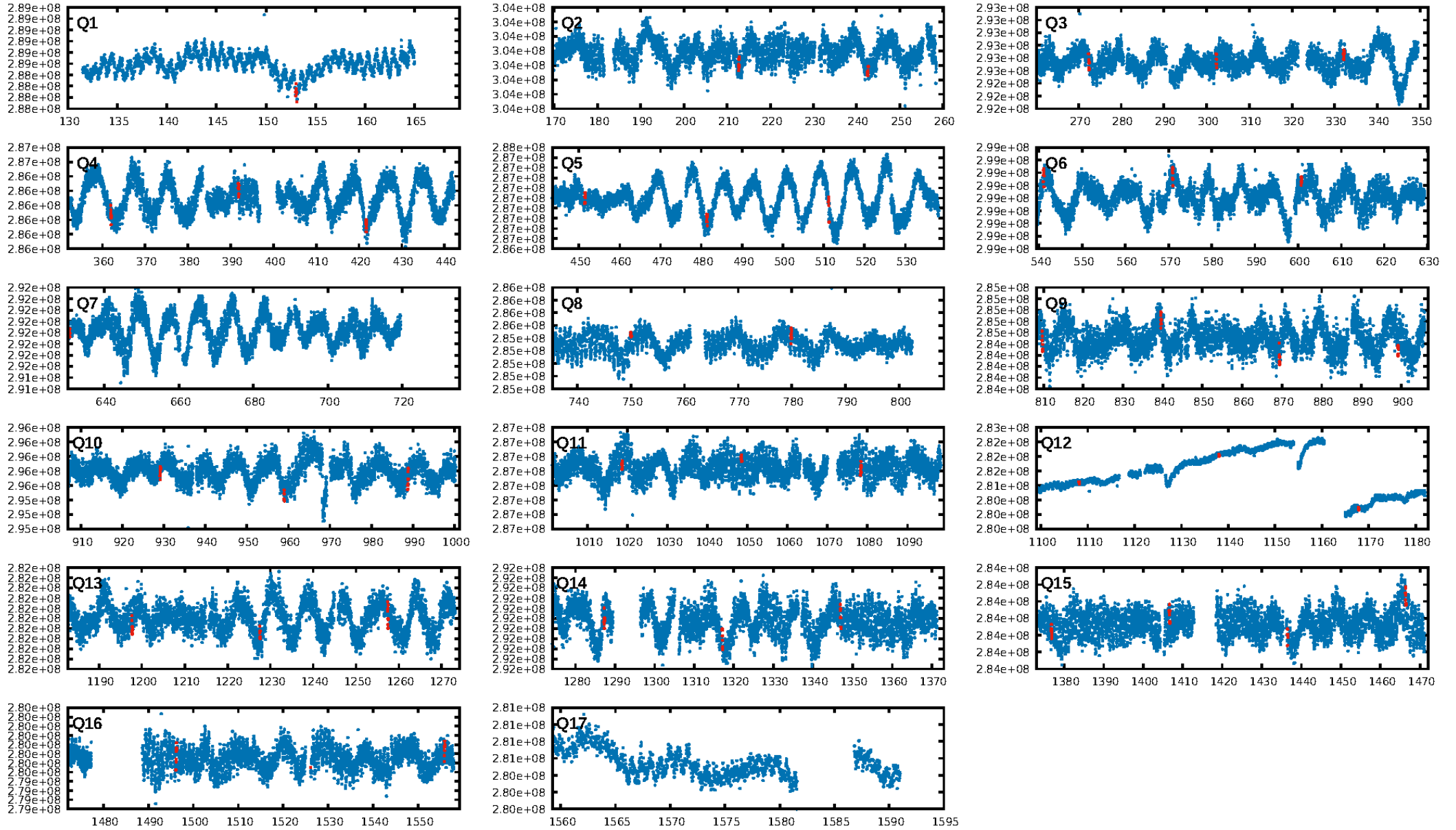
## DV Fit Results:

Period = 29.84816 [0.00021] d  
Epoch = 153.0535 [0.0044] BKJD  
Rp/R\* = 0.0170 [0.0262]  
a/R\* = 90.98 [816.03]  
b = 0.69 [6.91]  
Seff = 444.51 [244.11]  
Teq = 1171 [161] K  
Rp = 6.57 [10.42] Re  
a = 0.2338 [0.0806] AU  
Ag = 227.58 [713.14] [0.32σ]  
Teffp = 7031 [5433] K [1.08σ]

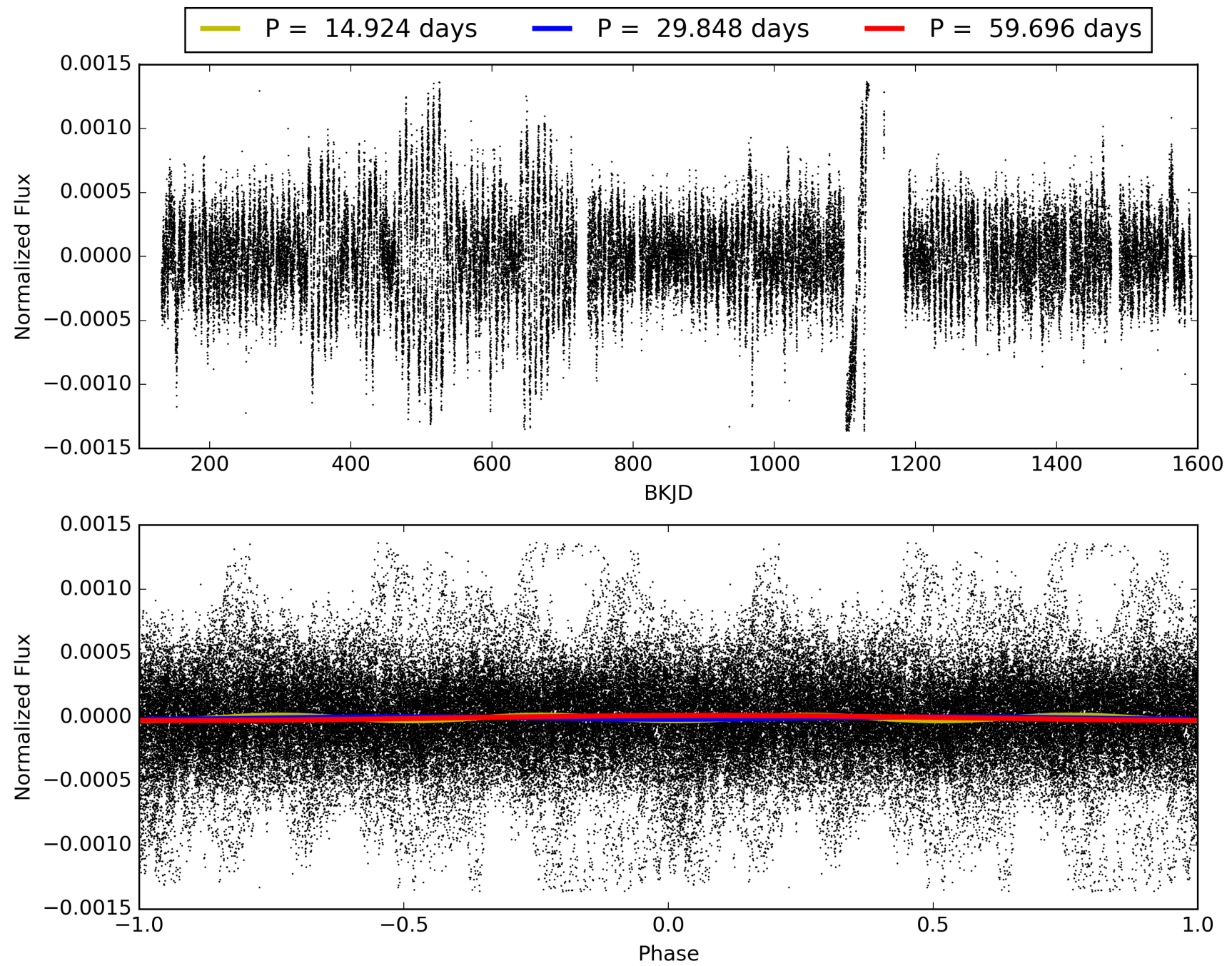
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.07σ]  
LongPeriod-sig: 100.0% [83.66σ]  
ModelChiSquare2-sig: 1.8%  
ModelChiSquareGof-sig: 98.5%  
Bootstrap-pfa: 2.37e-37  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: -0.9807  
Centroid-sig: N/A  
Centroid-so: 0.940 arcsec [3.22σ]  
OotOffset-rm: 0.814 arcsec [0.62σ]  
KicOffset-rm: 0.729 arcsec [0.49σ]  
OotOffset-st: 4/2/4/3 [13]  
KicOffset-st: 4/2/4/3 [13]  
DiffImageQuality-fgm: 0.38 [5/13]  
DiffImageOverlap-fno: 0.13 [2/15]

# TCE 006701115-02, PDC Light Curves

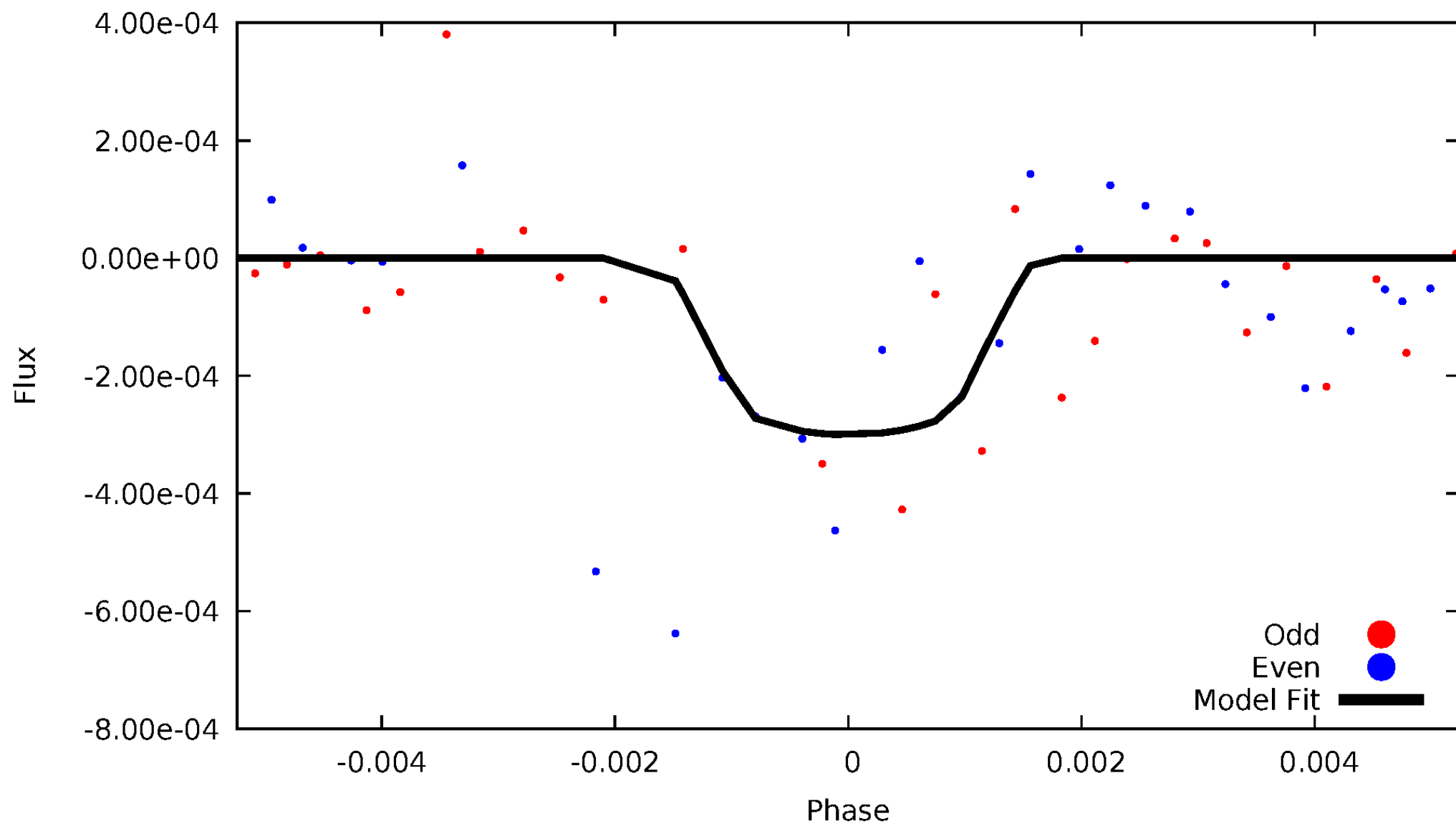


TCE 006701115-02



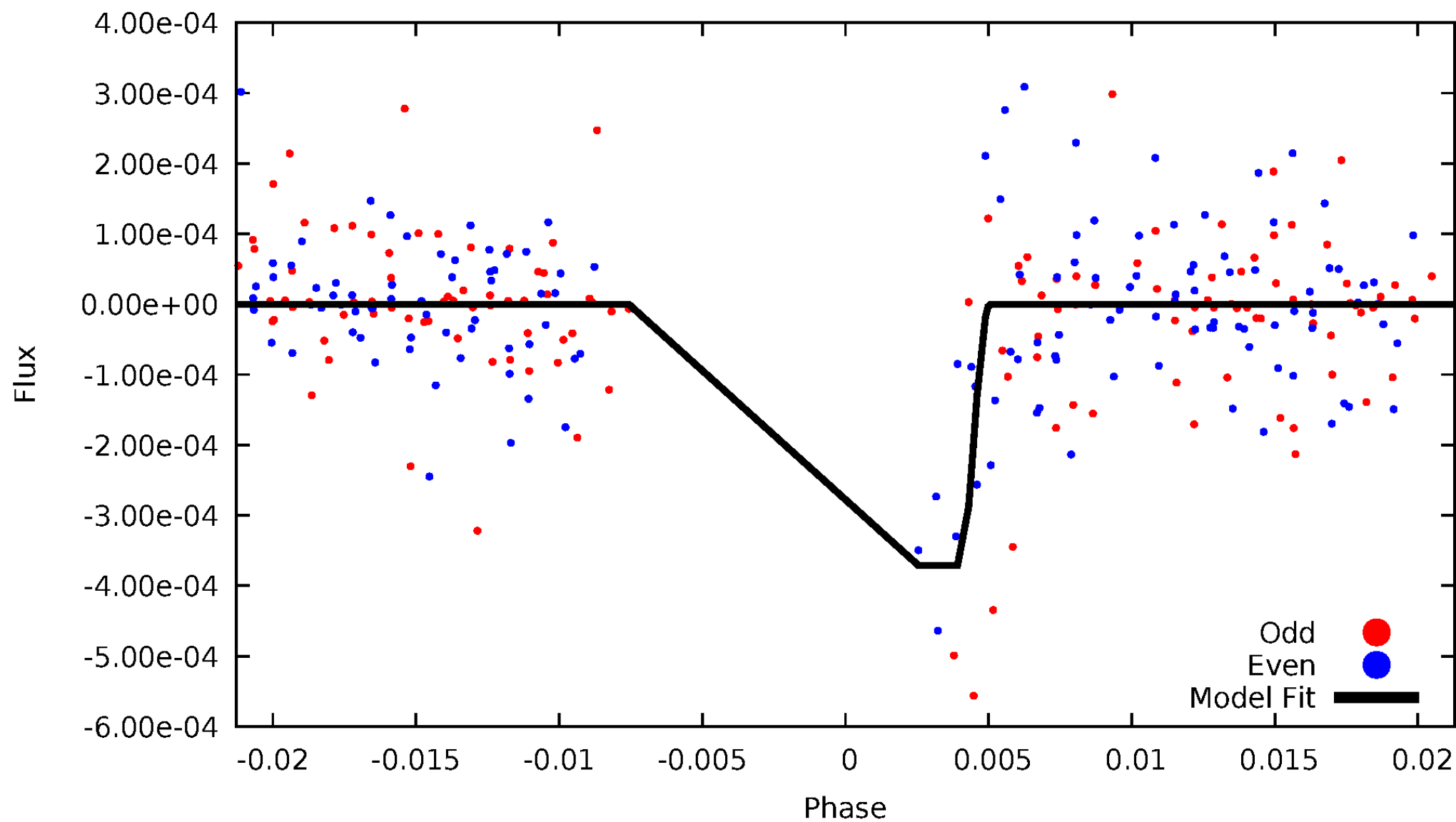
# DV Odd/Even

TCE 006701115-02



# ALT Odd/Even

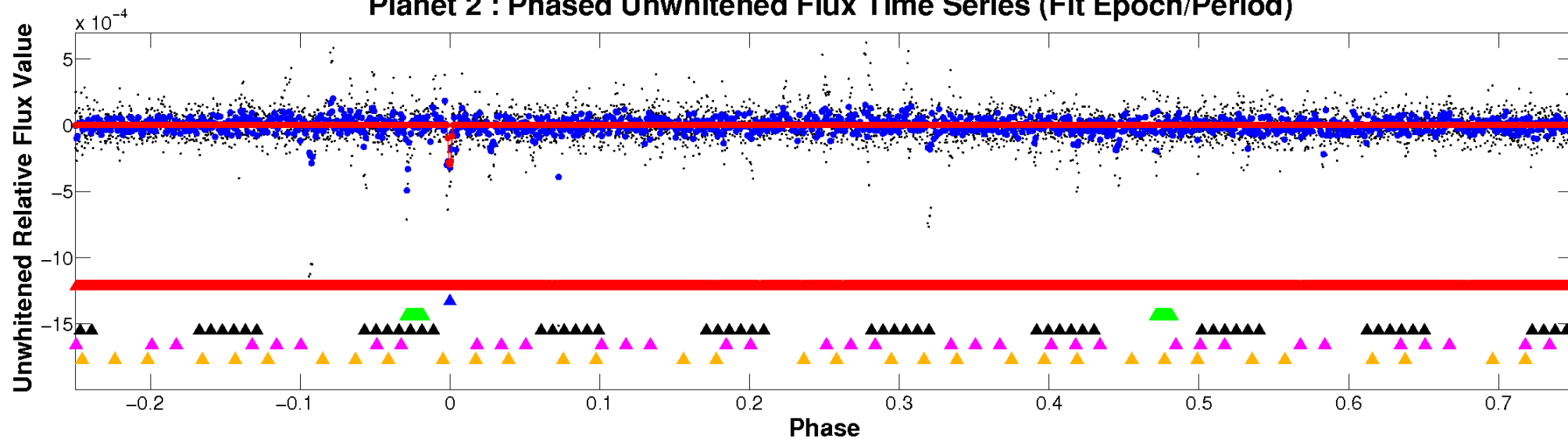
TCE 006701115-02



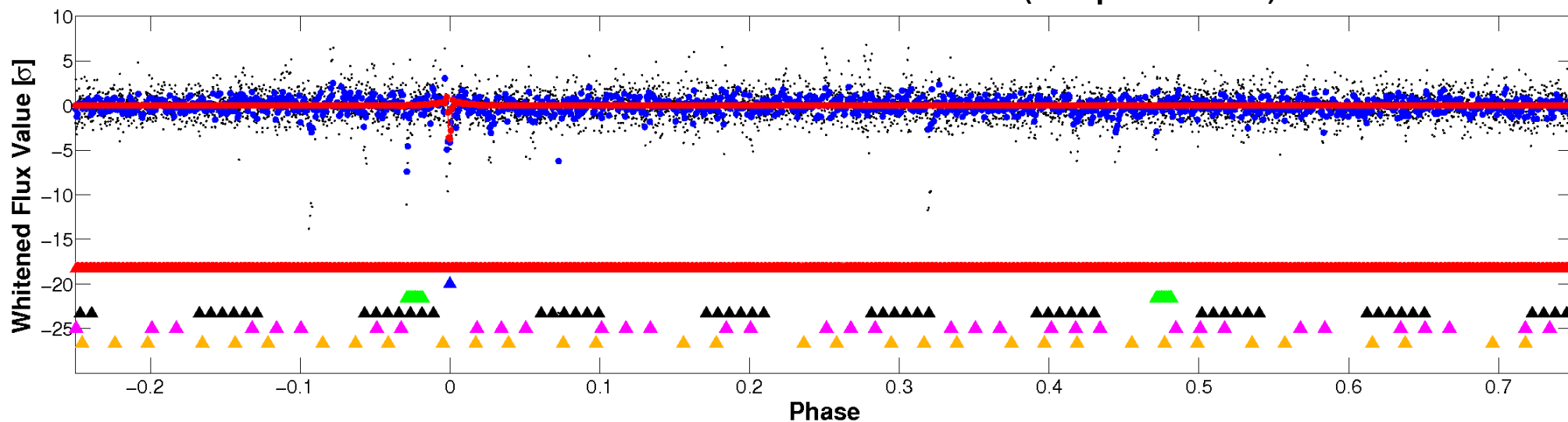


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

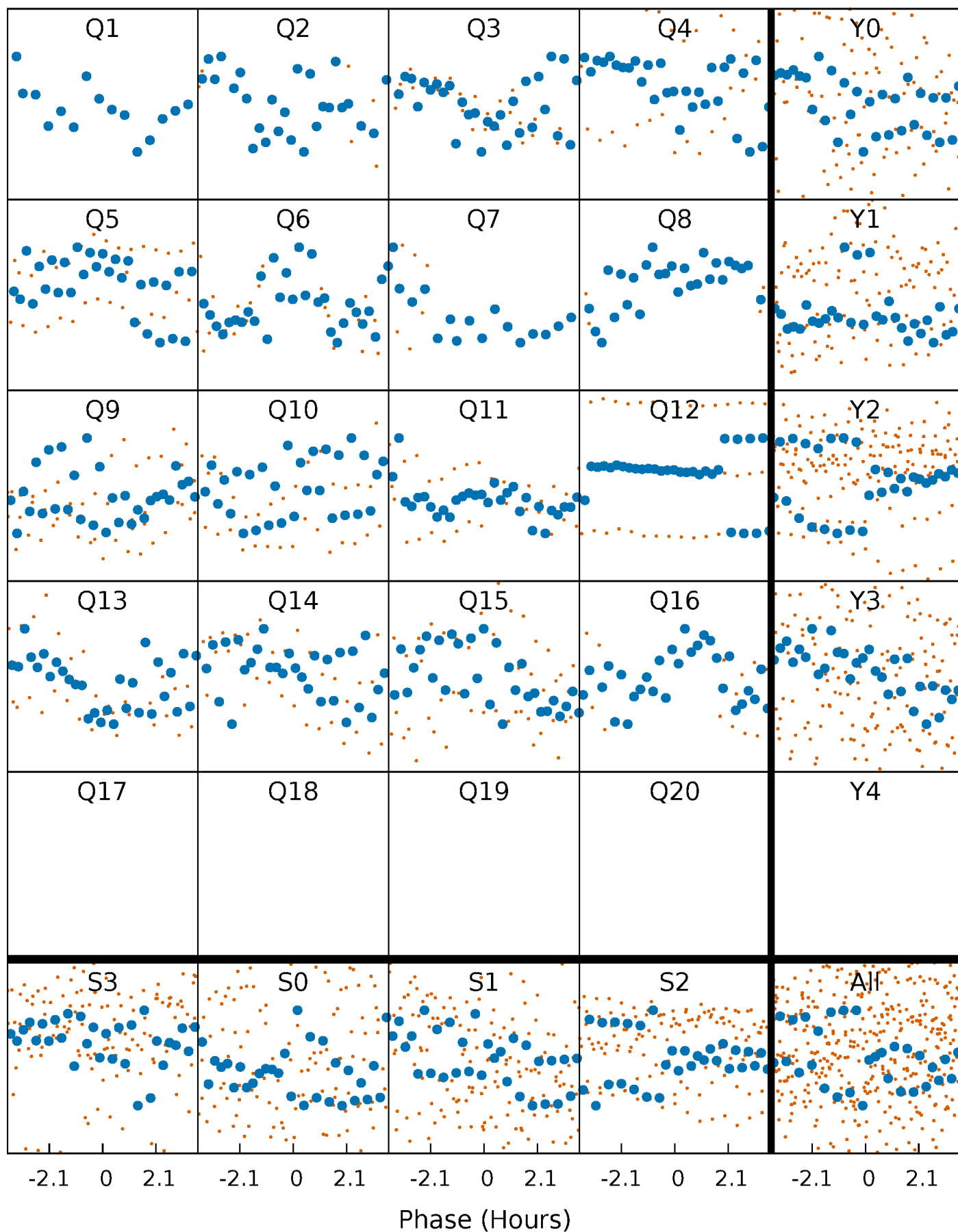


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



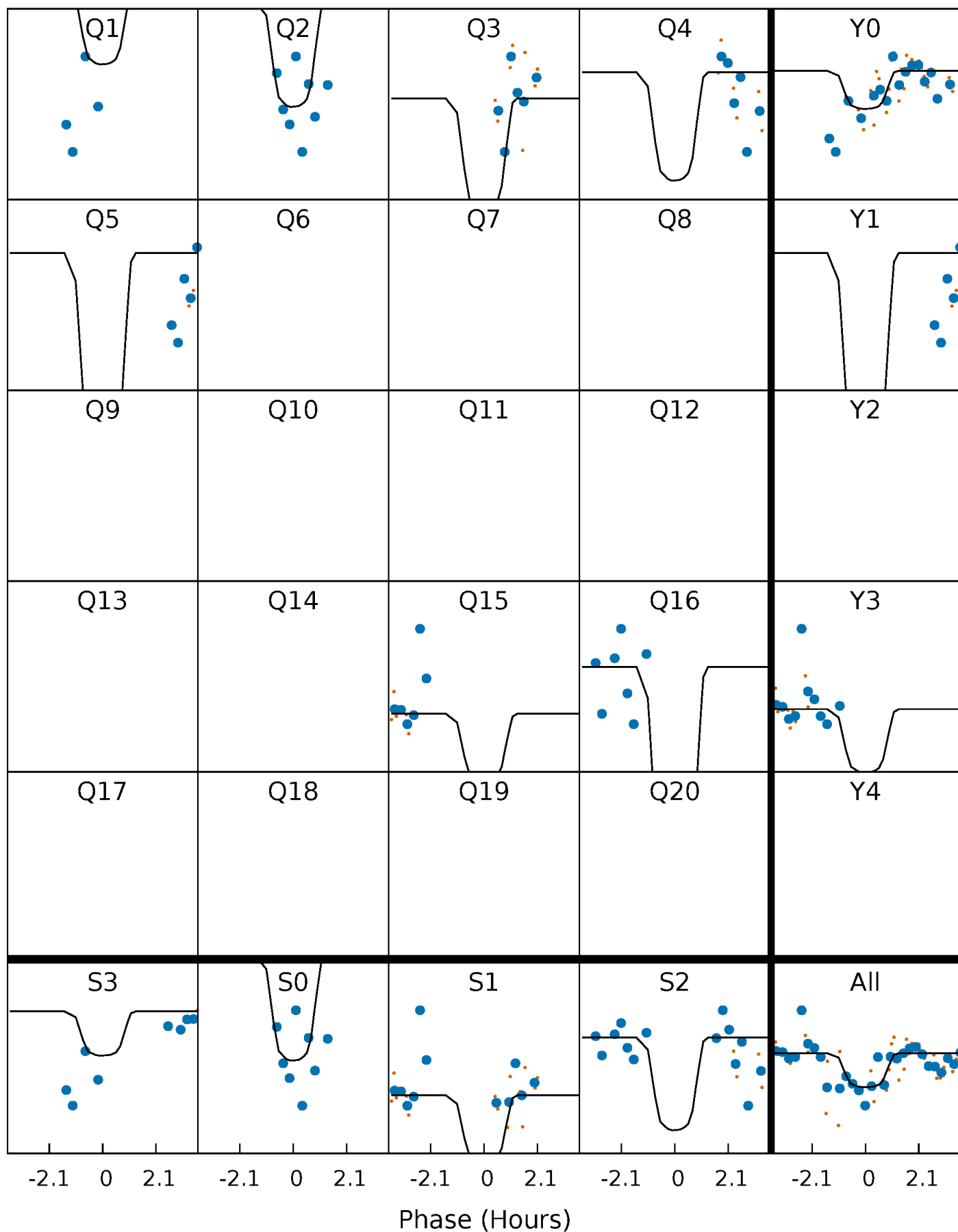
# PDC Quarter-Phased Transit Curves

TCE 006701115-02 P= 29.848155 Days  $T_0=153.053528$  (BKJD)



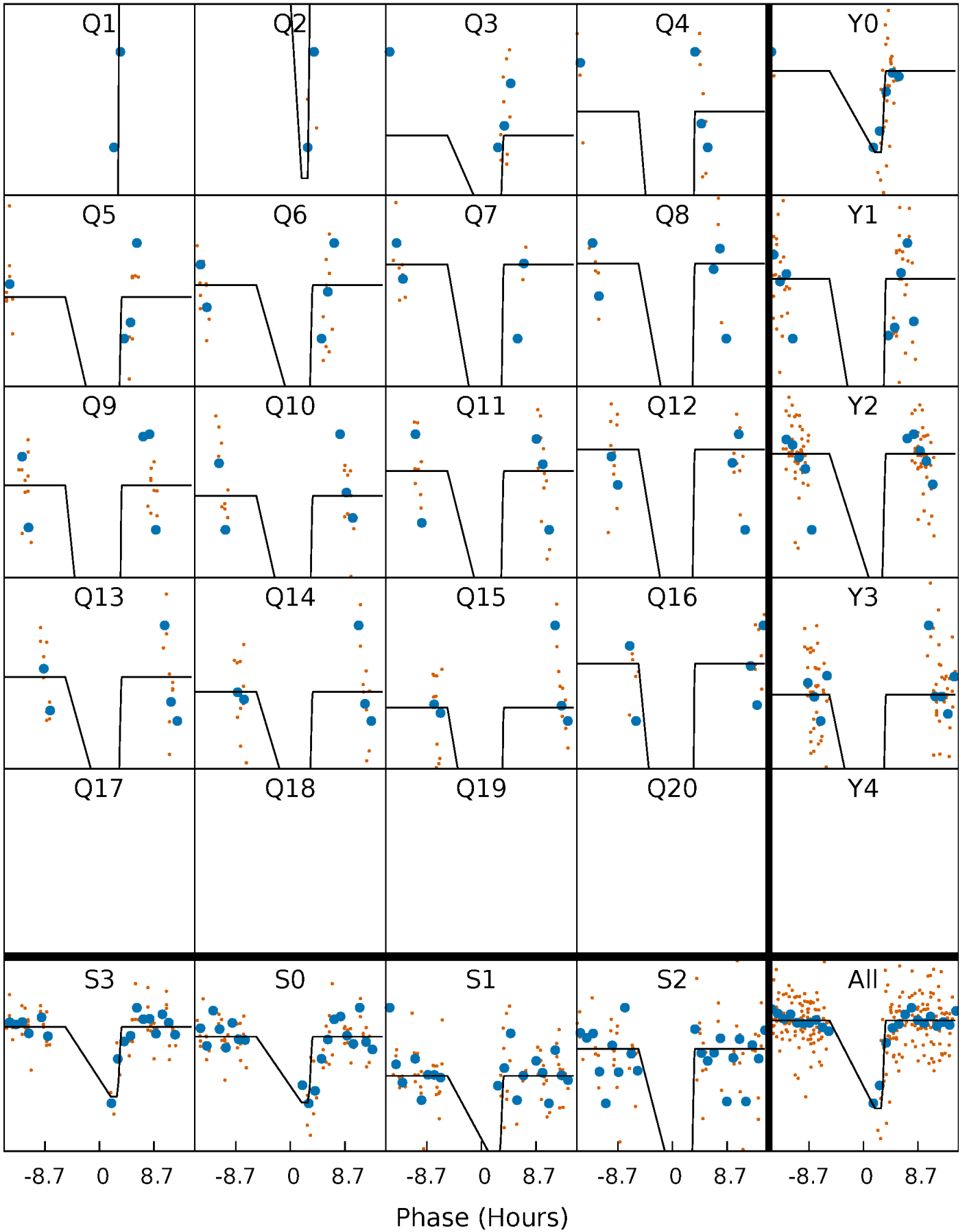
# DV Quarter-Phased Transit Curves

TCE 006701115-02 P= 29.848155 Days  $T_0=153.053528$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

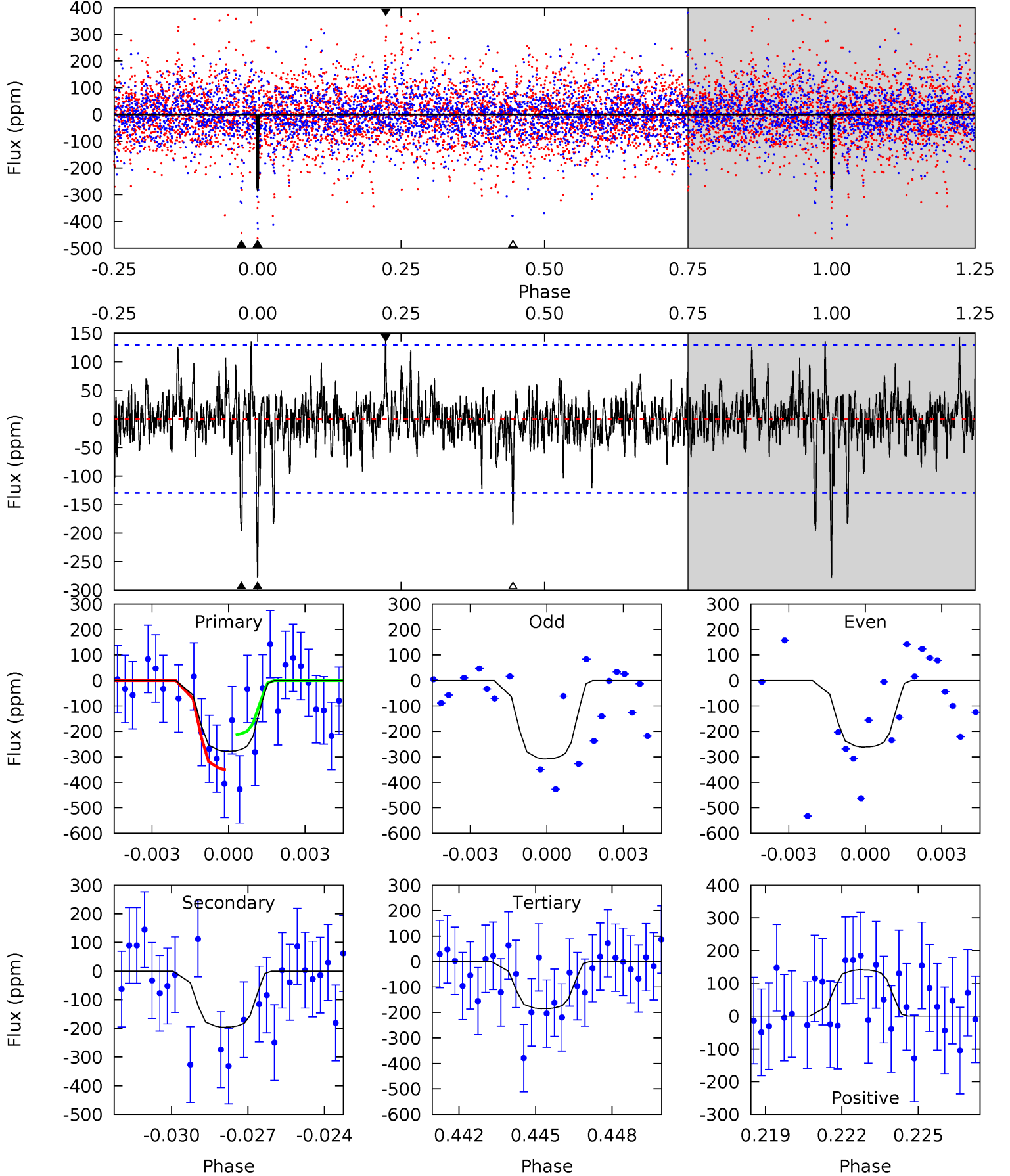
TCE 006701115-02 P= 29.855060 Days  $T_0=152.912831$  (BKJD)



# DV Model-Shift Uniqueness Test

006701115-02, P = 29.848155 Days, E = 123.205373 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.3 | 7.93 | 7.51 | 5.75 | 5.25            | 2.96            | 1.40             | 3.77    | 5.53    | 0.42    | 2.18    | 0.90    | 0.93 | 0.34  | 2.77 |

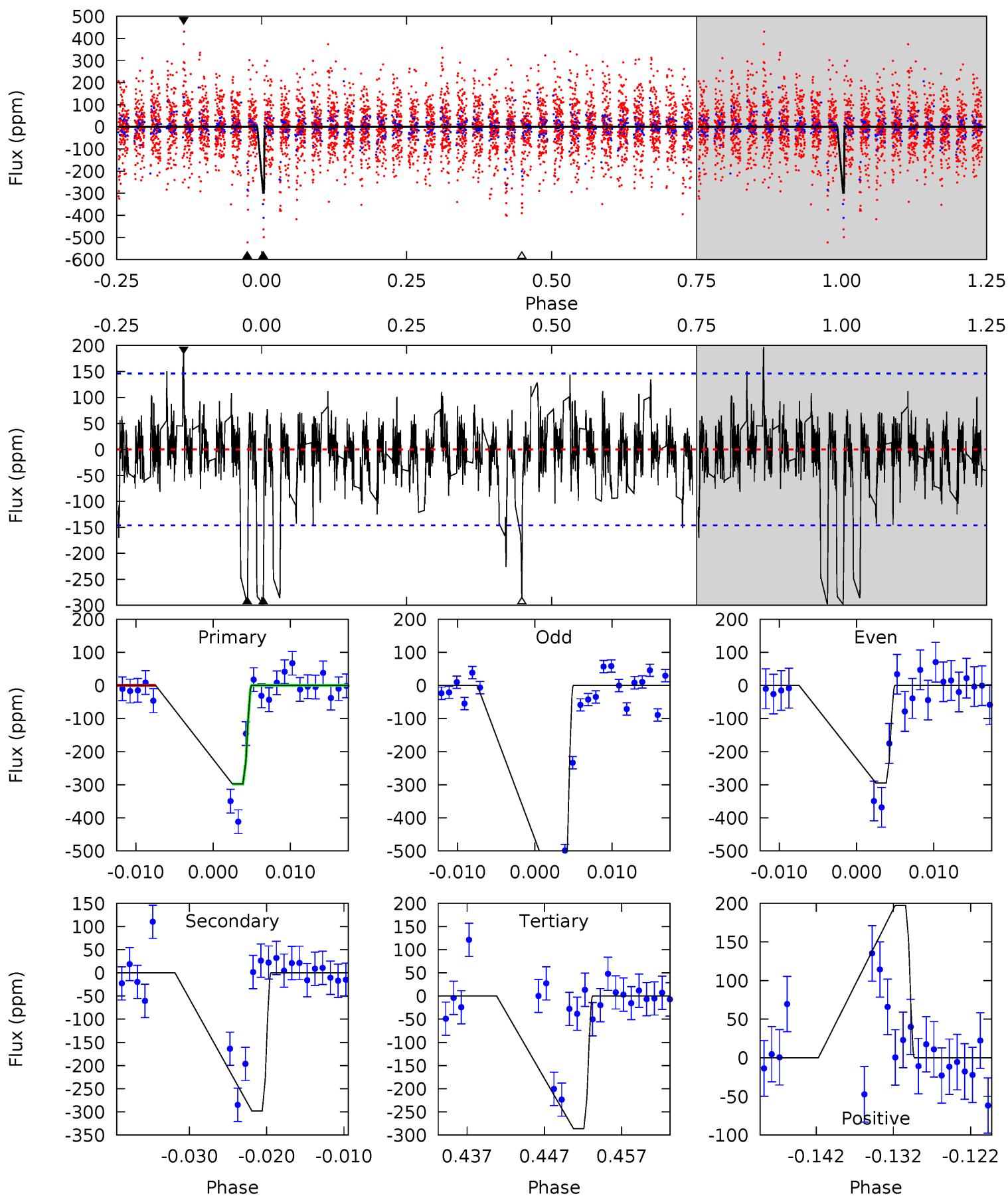




# Alt Model-Shift Uniqueness Test

006701115-02, P = 29.855060 Days, E = 123.057771 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 10.2 | 10.2 | 9.83 | 6.78 | 5.02            | 2.57            | 1.48             | 0.41    | 3.45    | 0.40    | 3.45    | 4.77    | 1.00 | 0.40  | 0   |



### Stellar Parameters For KIC 006701115

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6818^{+163}_{-224}$ | $3.621^{+0.306}_{-0.054}$ | $-0.020^{+0.250}_{-0.250}$ | $3.543^{+0.335}_{-1.341}$ | $1.913^{+0.181}_{-0.392}$ | $0.061^{+0.129}_{-0.012}$                 |
|        | +2%/-3%              | +8%/-1%                   | +1250%/-1250%              | +9%/-38%                  | +9%/-20%                  | +213%/-20%                                |
| Source | PHO1                 | FLK73                     | 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 006701115-02 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$       | $T_{obs} (K)$          | $A_{obs}$          |
|---------|---------------|------------------------|---------------------|------------------------|--------------------|
| DV      | $-196 \pm 25$ | $8.65^{+8.27}_{-6.03}$ | $1586^{+91}_{-158}$ | $5132^{+4848}_{-1154}$ | $79^{+720}_{-59}$  |
| Alt.    | $-298 \pm 29$ | $9.26^{+8.66}_{-6.17}$ | $1592^{+80}_{-137}$ | $5529^{+4827}_{-1235}$ | $107^{+807}_{-78}$ |

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

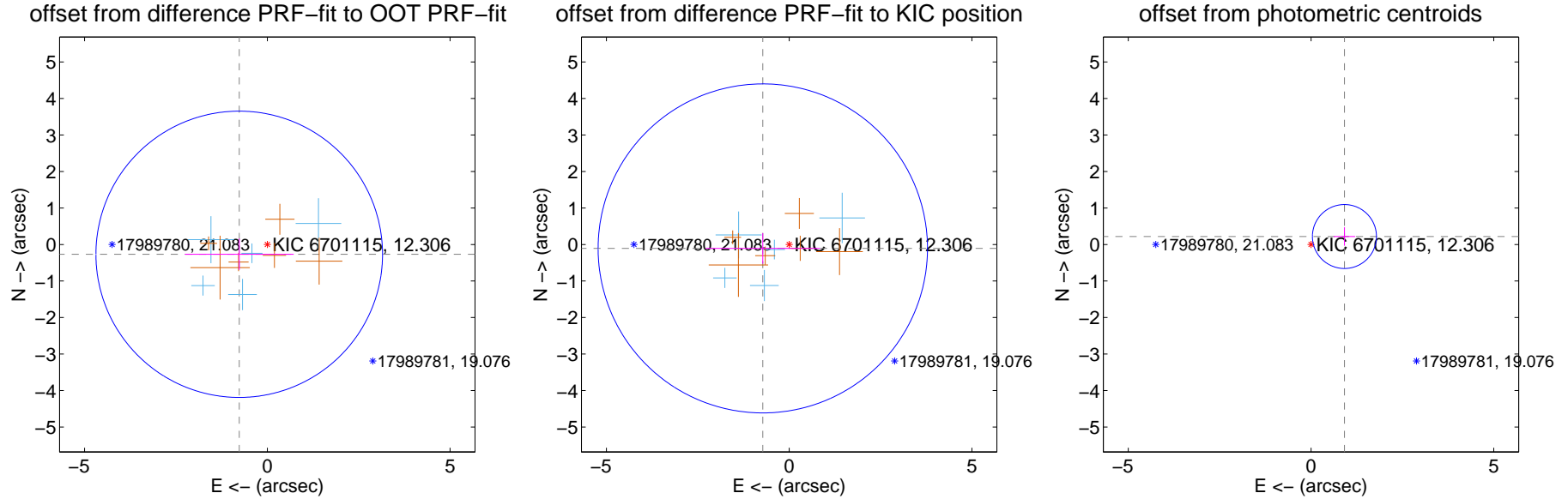
## DV Centroid Data

Supplemental centroid analysis for 006701115-02. Kepler magnitude: 12.31. Transit SNR 10.09

There are 5 quarters with good PRF difference image offsets

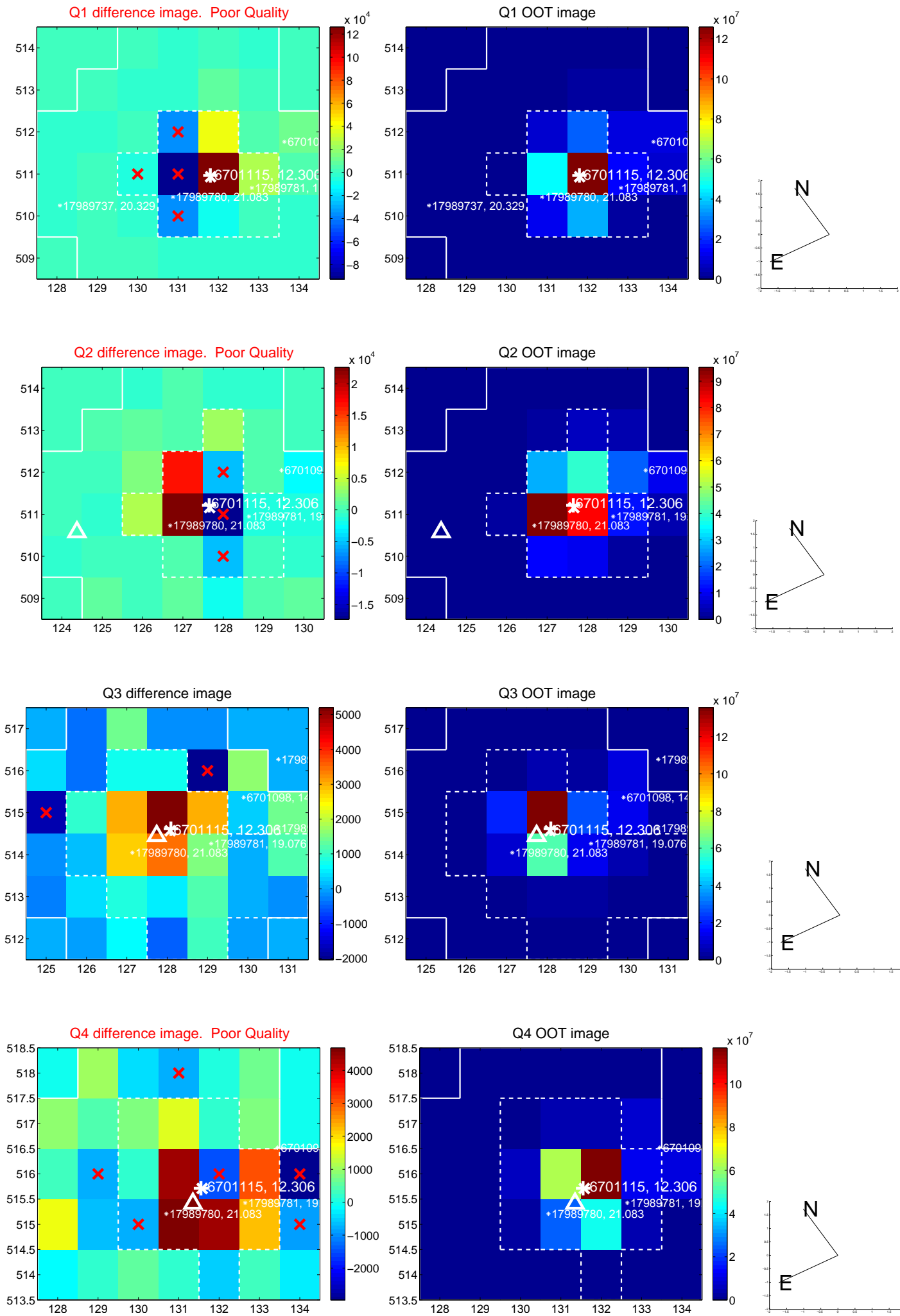
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $0.814 \pm 1.307$  | 0.62                | $0.768 \pm 1.489$ | $-0.268 \pm 0.430$ |
| PRF-fit source offset from KIC position | $0.729 \pm 1.502$  | 0.49                | $0.721 \pm 1.565$ | $-0.107 \pm 0.418$ |
| photometric centroid source offset      | $0.94 \pm 0.29$    | <b>3.22</b>         | $-0.91 \pm 0.29$  | $0.22 \pm 0.25$    |

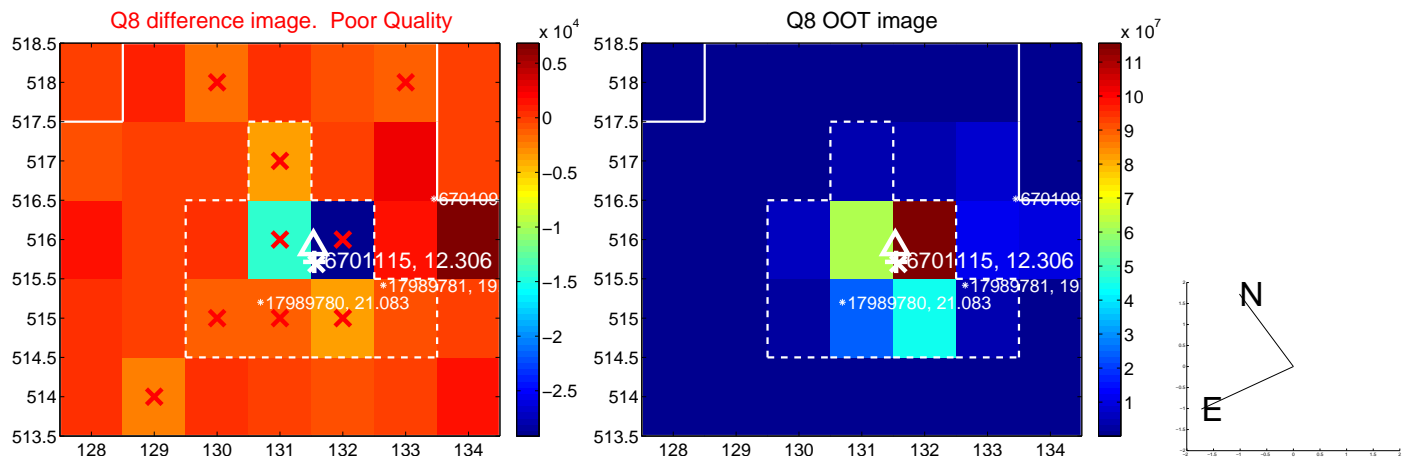
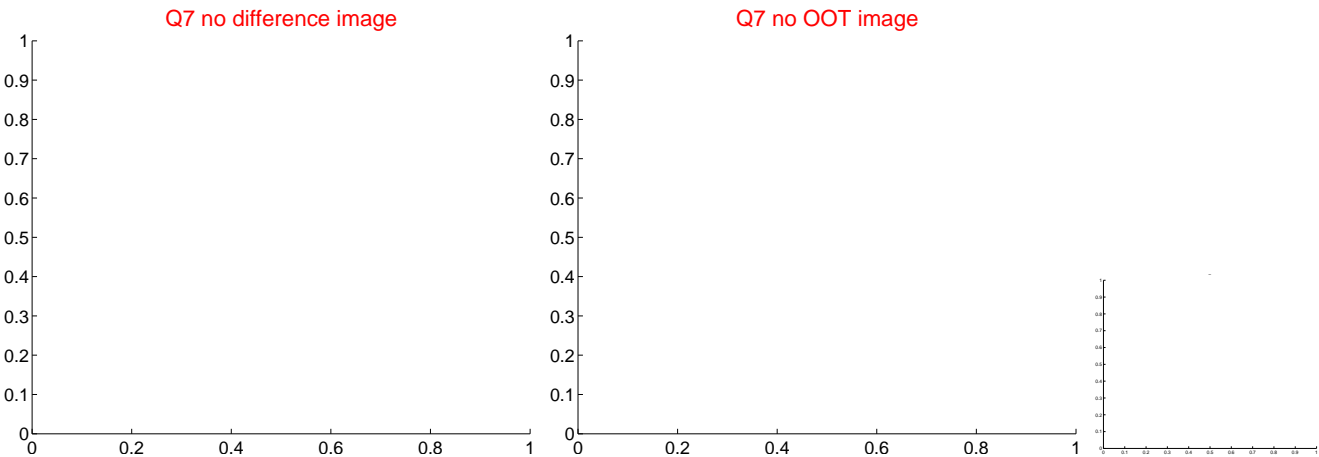
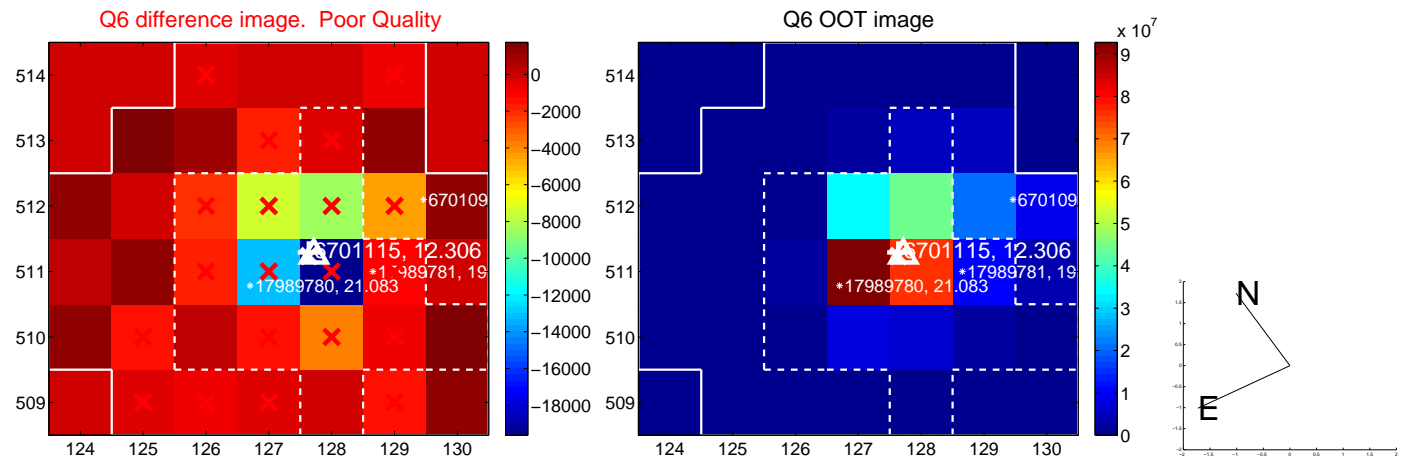
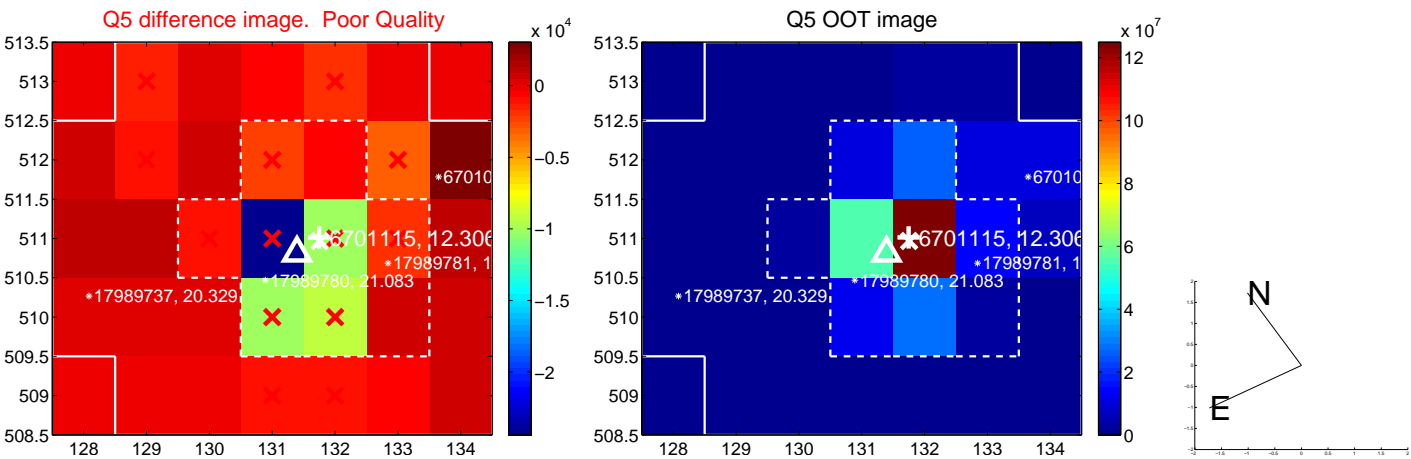


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

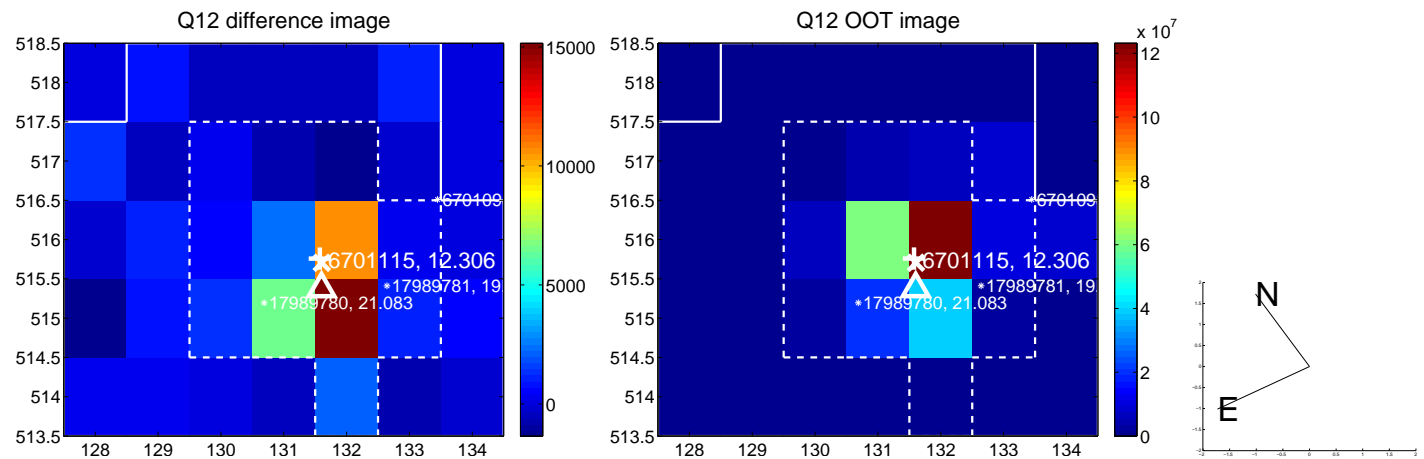
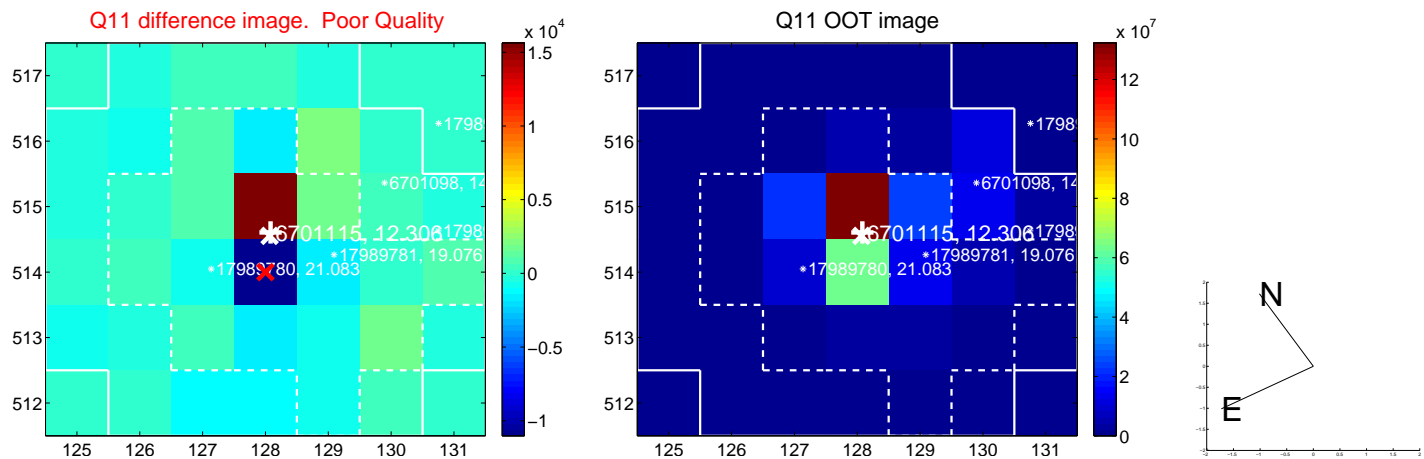
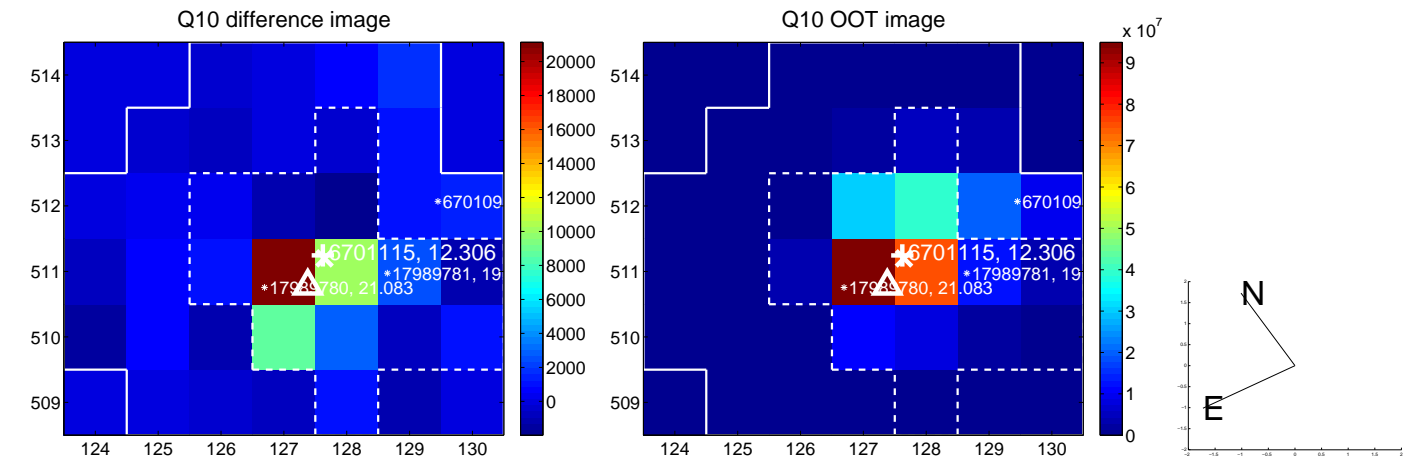
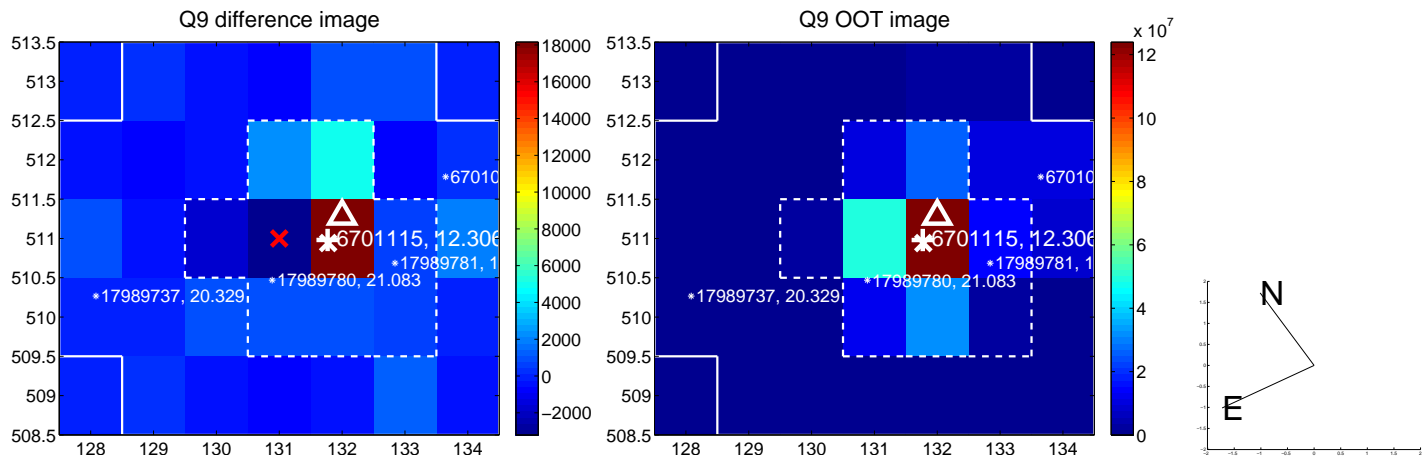


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

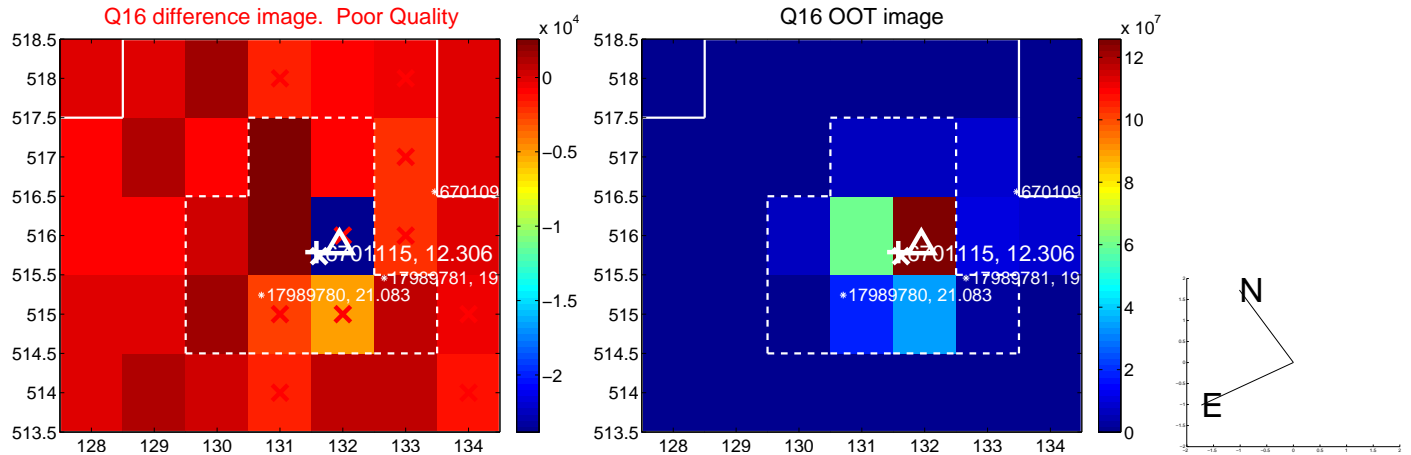
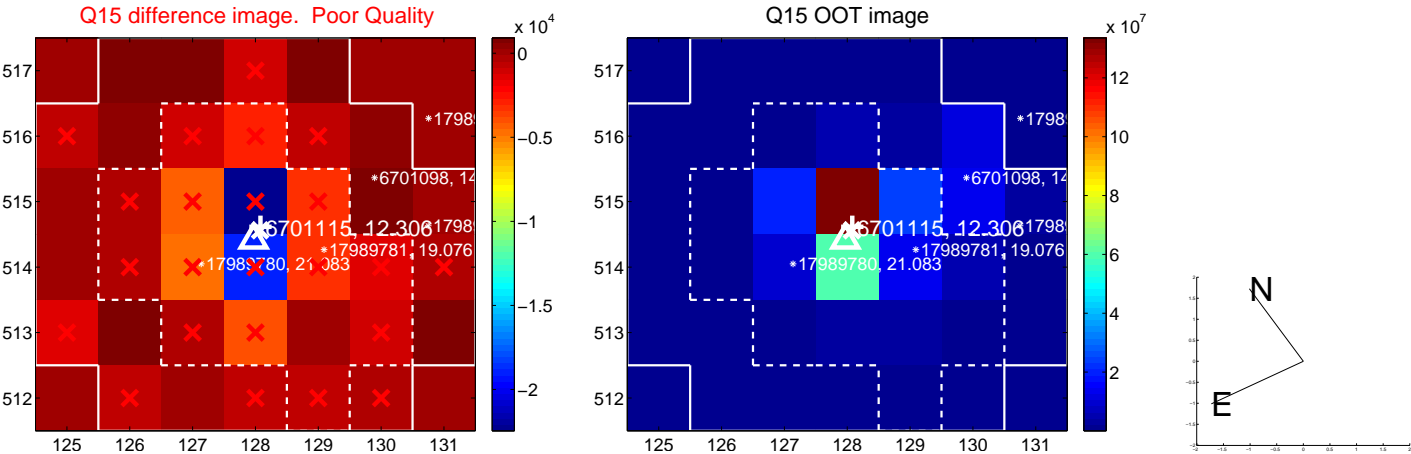
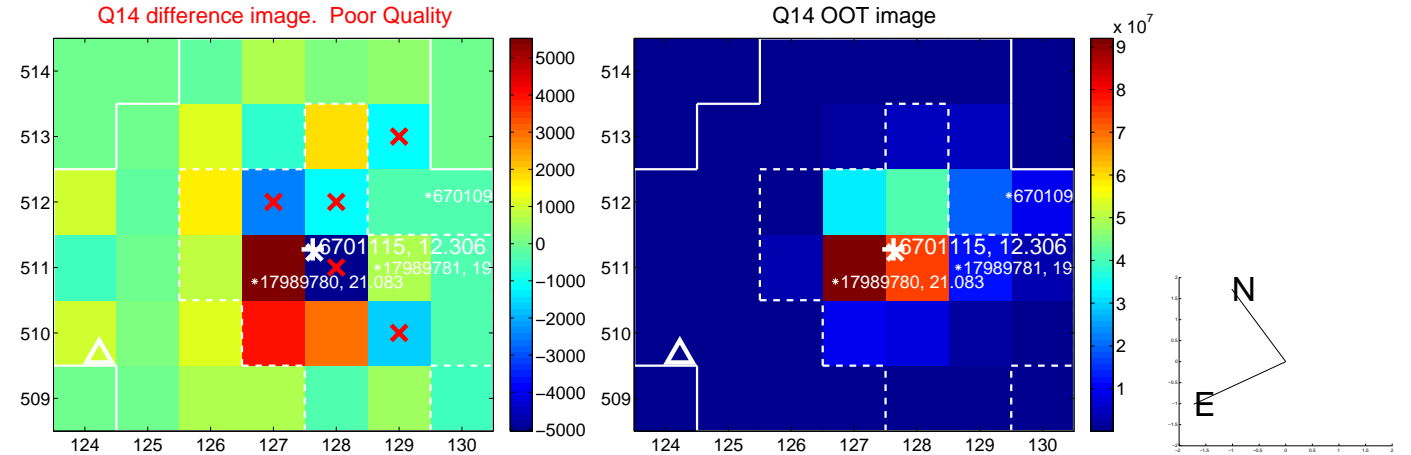
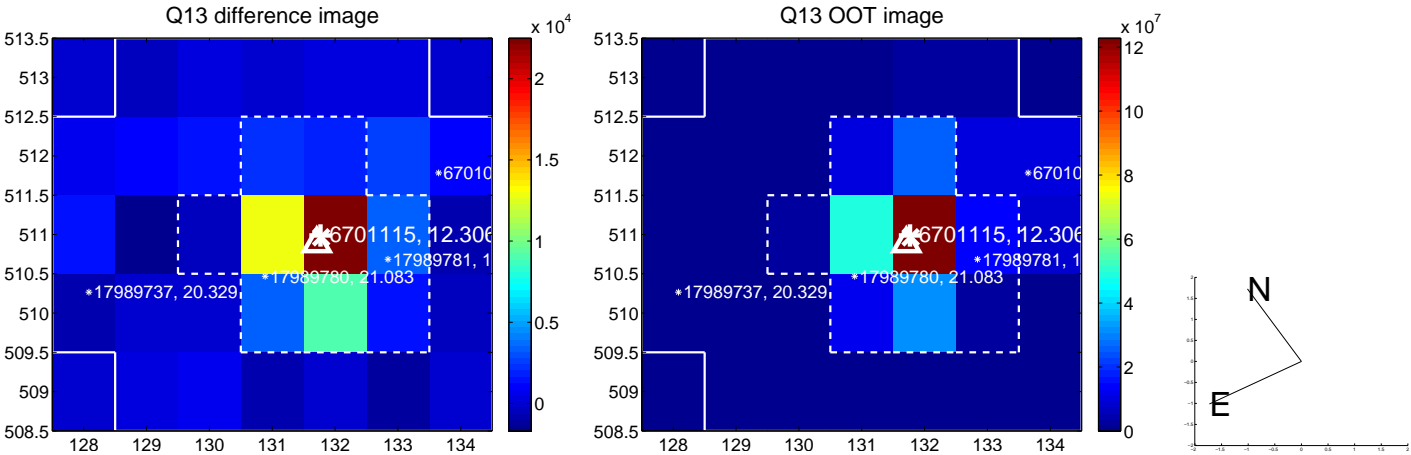




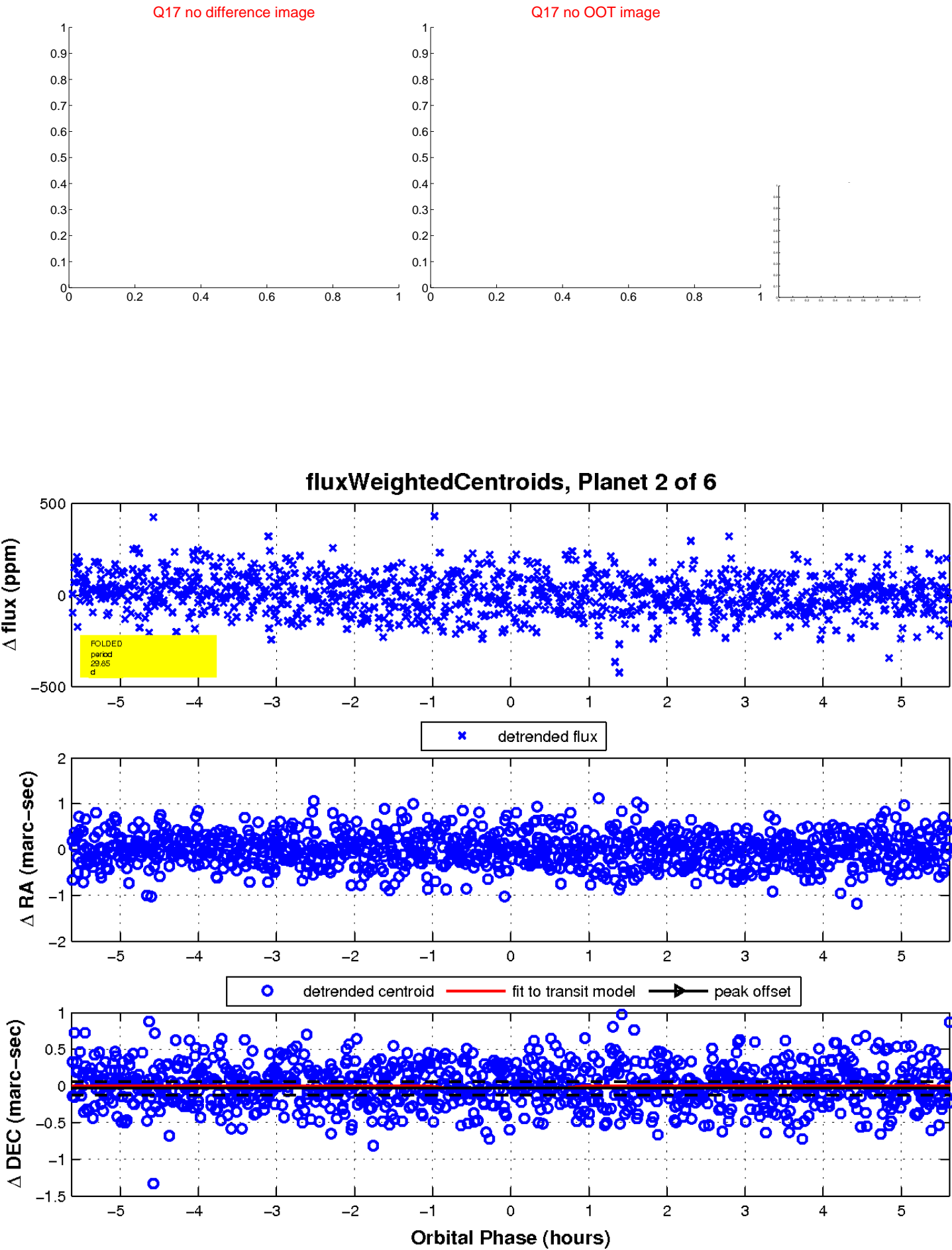
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

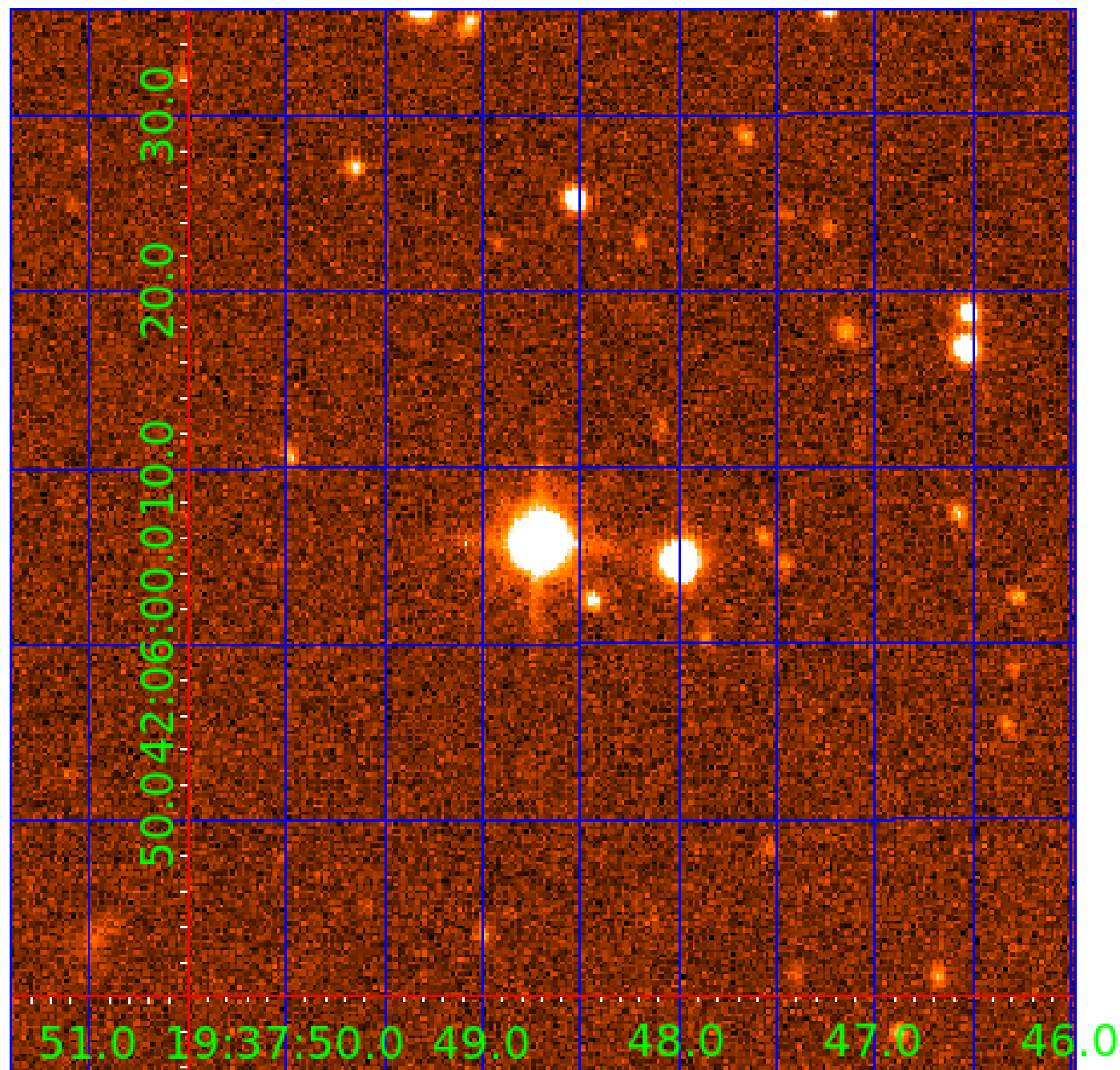


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006701115

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006701115-01 | OBS      | No   | 0.829585      | 131.868443   | 22.5        | 5.905            | 14.9 | 14.9 | 3.54                        | 6818            | 1.95                   | 52798.56               |
| 006701115-02 | OBS      | No   | 29.848155     | 153.053528   | 300.0       | 1.877            | 15.7 | 10.1 | 3.54                        | 6818            | 6.57                   | 444.51                 |
| 006701115-03 | OBS      | No   | 44.782361     | 152.191257   | 463.7       | 1.004            | 15.9 | 11.9 | 3.54                        | 6818            | 7.79                   | 258.80                 |
| 006701115-04 | OBS      | No   | 26.557114     | 151.353132   | 251.7       | 1.837            | 10.8 | 9.5  | 3.54                        | 6818            | 6.68                   | 519.43                 |
| 006701115-05 | OBS      | No   | 41.290841     | 164.010708   | 218.6       | 2.692            | 10.4 | 8.0  | 3.54                        | 6818            | 5.47                   | 288.38                 |
| 006701115-06 | OBS      | No   | 43.573962     | 154.221616   | 289.1       | 2.000            | 11.0 | -1.0 | 3.54                        | 6818            | 6.09                   | 268.41                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 006701115-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT  |
| 006701115-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT  |
| 006701115-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT                             |
| 006701115-04 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT  |
| 006701115-05 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT                    |
| 006701115-06 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

**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](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

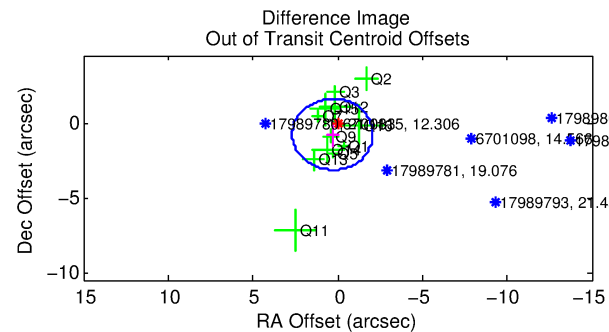
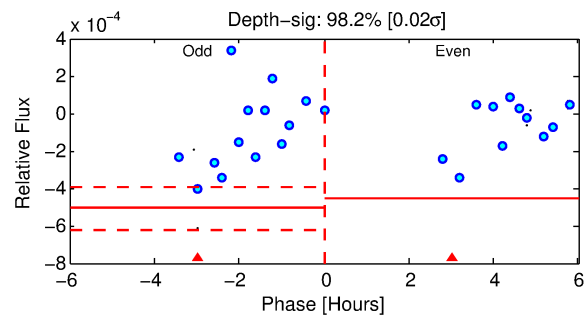
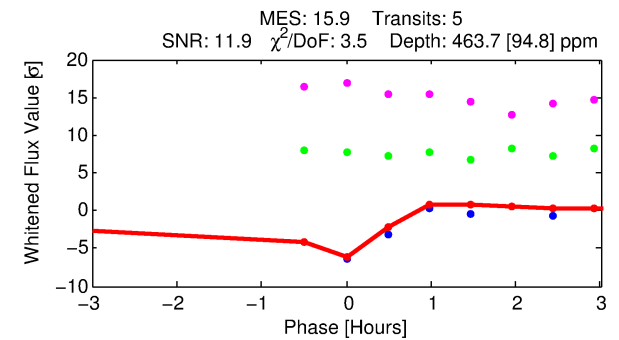
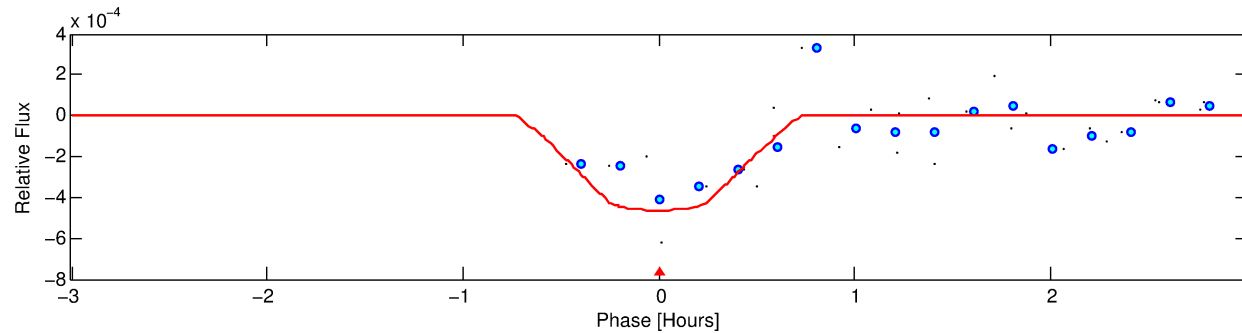
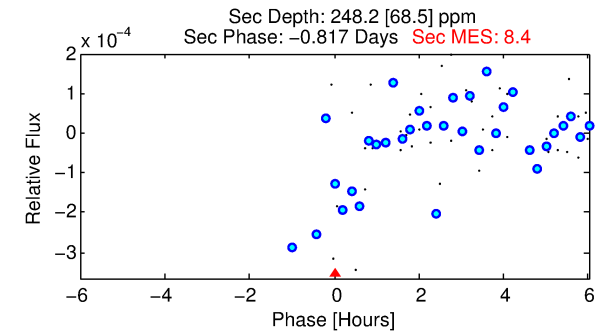
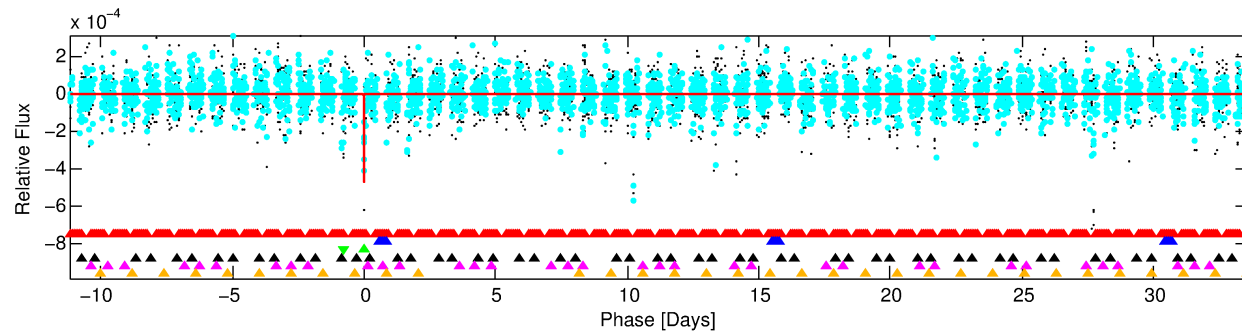
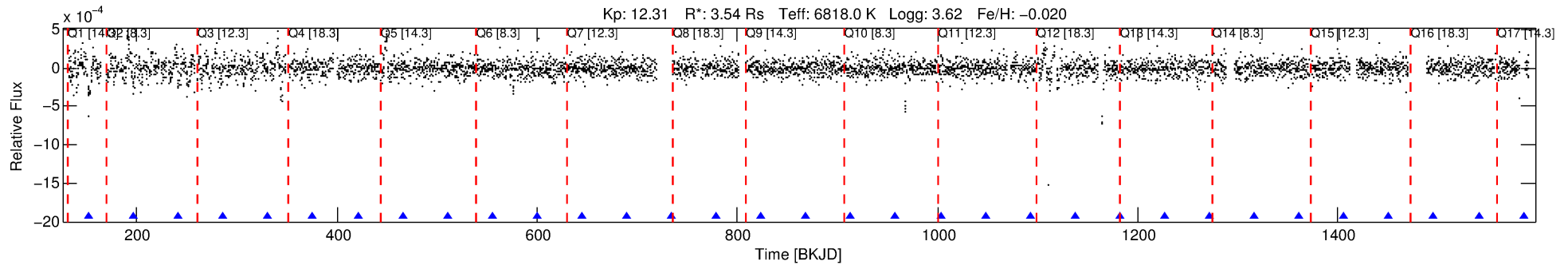
## Ephemeris Match Information For 006701115-03

No Significant Match Found



# DV One-Page Summary

KIC: 6701115 Candidate: 3 of 6 Period: 44.782 d



## DV Fit Results:

Period = 44.78236 [0.00264] d  
Epoch = 152.1913 [0.0032] BKJD  
Rp/R\* = 0.0201 [0.1589]  
a/R\* = 339.39 [14246.73]  
b = 0.22 [186.71]  
Seff = 258.80 [142.12]  
Teq = 1023 [140] K  
Rp = 7.79 [61.51] Re  
a = 0.3064 [0.1056] AU  
Ag = 211.41 [3337.93] [0.06 $\sigma$ ]  
Teffp = 6030 [23788] K [0.21 $\sigma$ ]

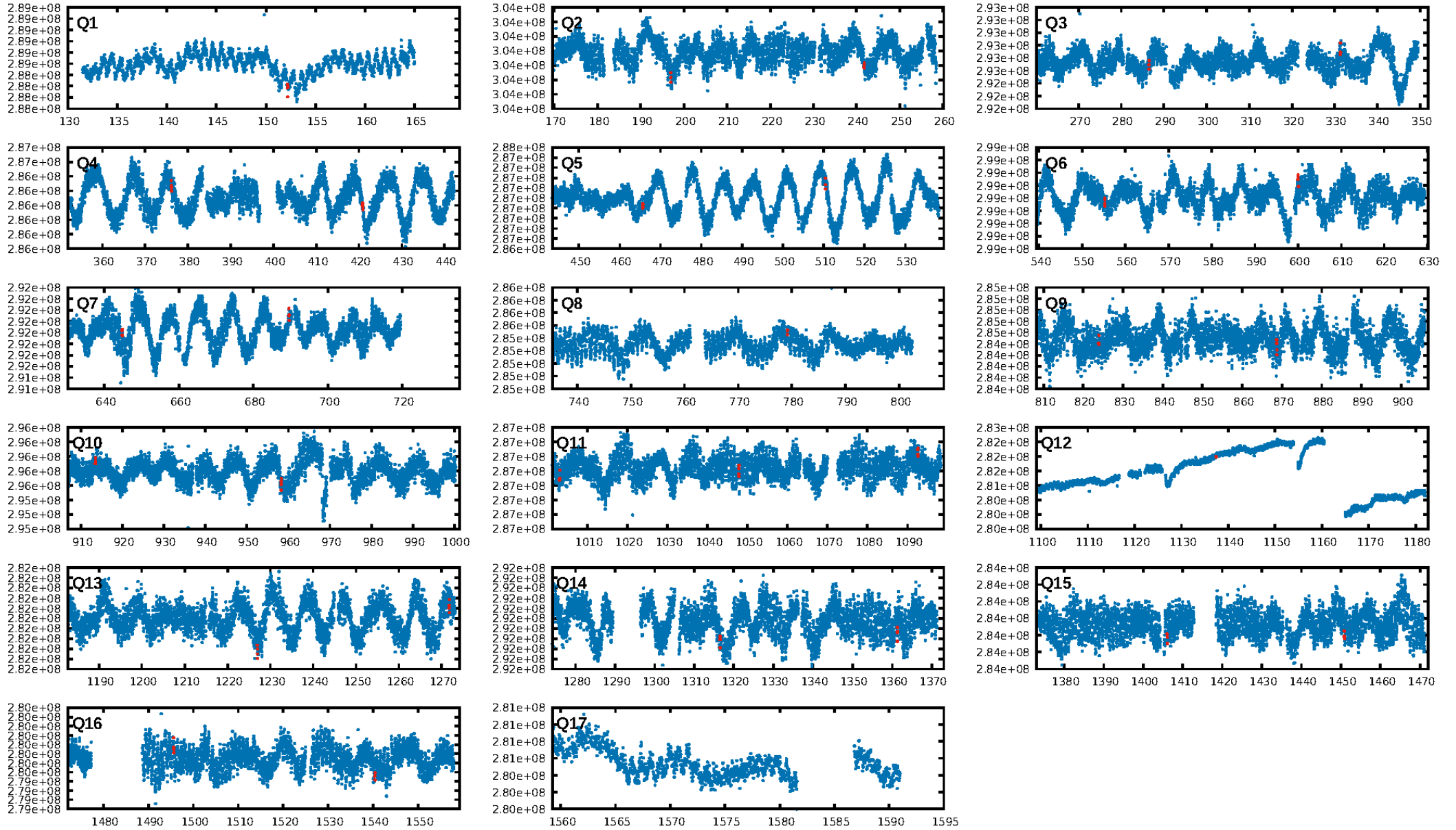
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.96 $\sigma$ ]  
LongPeriod-sig: N/A  
**ModelChiSquare2-sig: 0.1%**  
ModelChiSquareGof-sig: 11.4%  
Bootstrap-pfa: 1.73e-33  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -2.708  
Centroid-sig: N/A  
Centroid-so: 0.870 arcsec [2.90 $\sigma$ ]  
OotOffset-rm: 0.832 arcsec [1.05 $\sigma$ ]  
OotOffset-st: 2/4/2/4 [12]  
KicOffset-rm: 0.660 arcsec [0.94 $\sigma$ ]  
KicOffset-st: 2/4/2/4 [12]  
DiffImageQuality-fgm: 0.50 [6/12]  
DiffImageOverlap-fno: 0.19 [3/16]

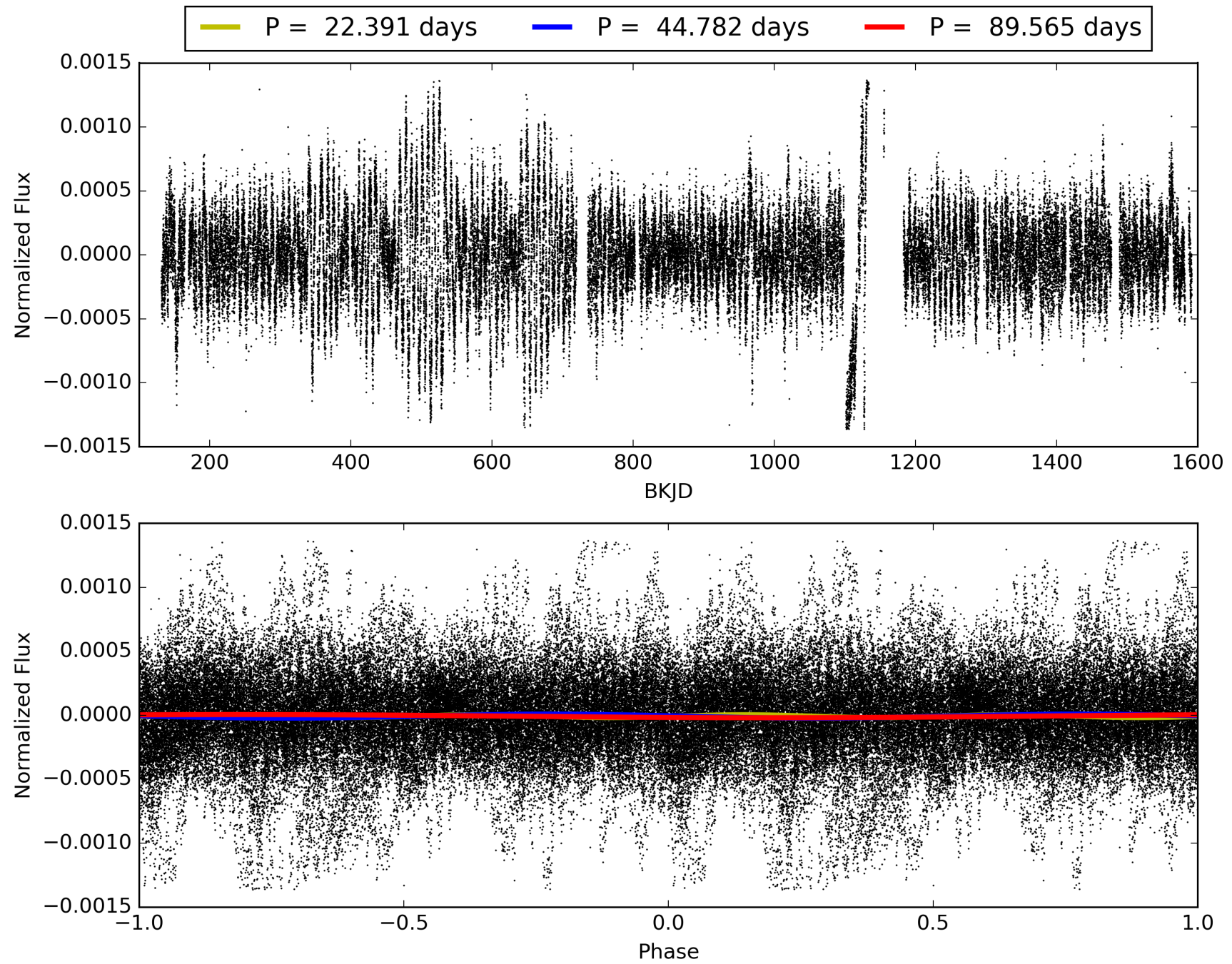
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 03:13:55 Z

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

# TCE 006701115-03, PDC Light Curves

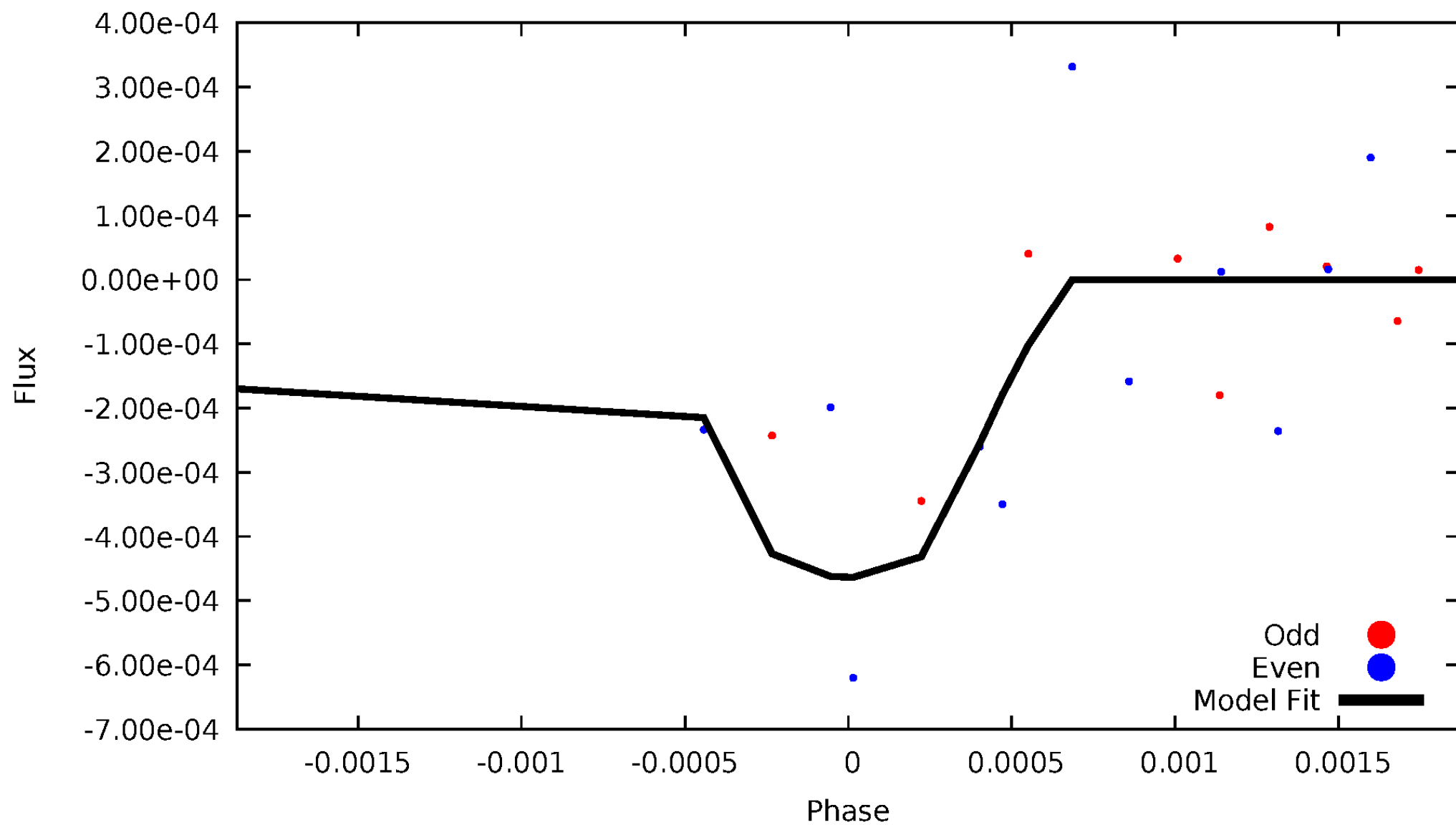


TCE 006701115-03



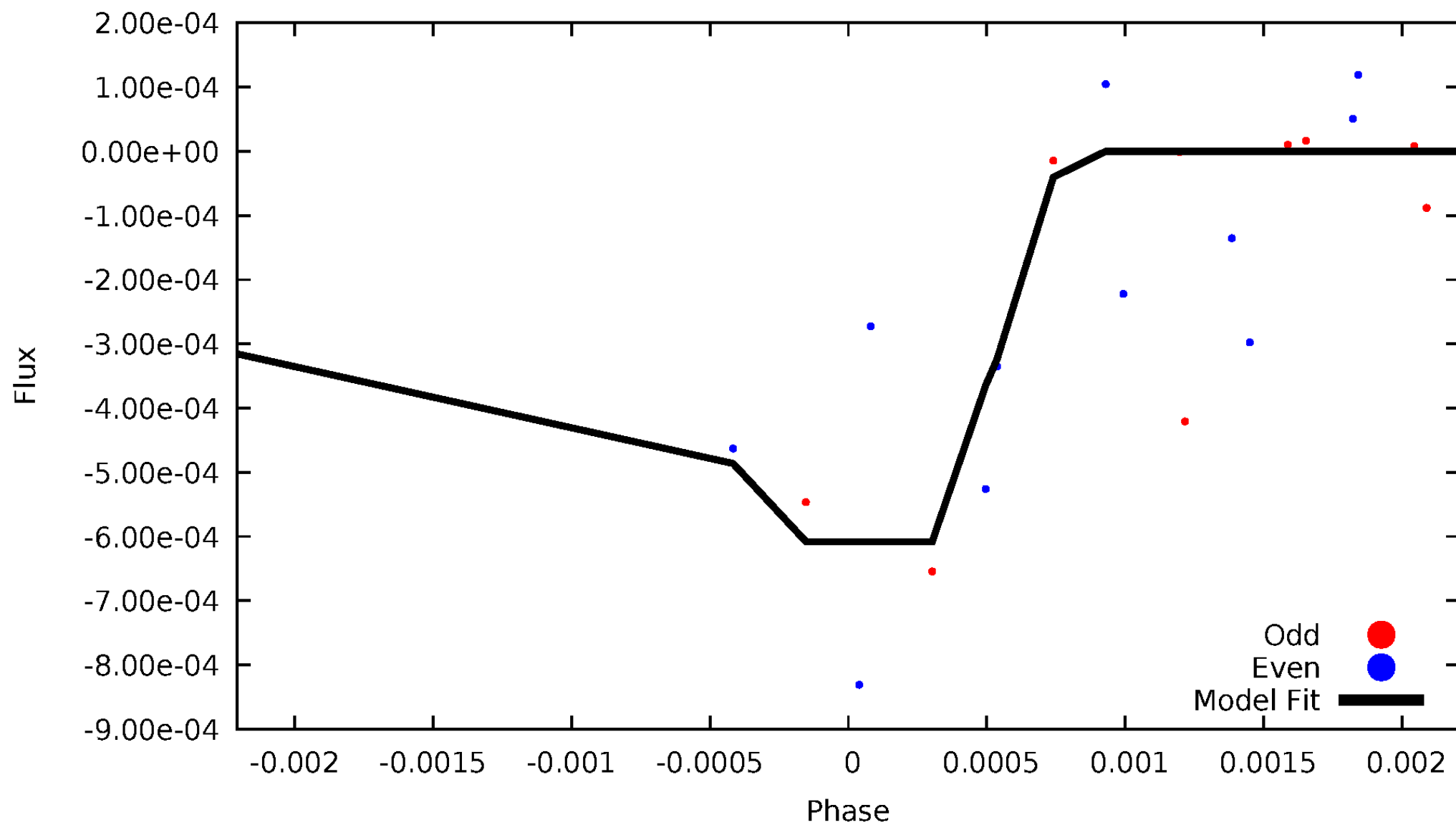
# DV Odd/Even

TCE 006701115-03



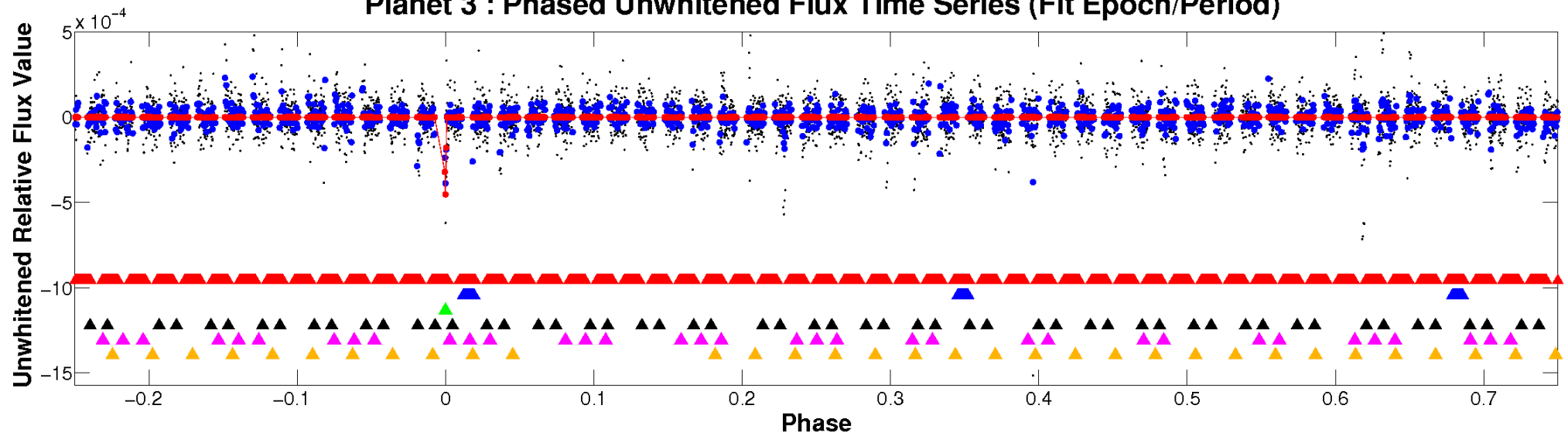
# ALT Odd/Even

TCE 006701115-03

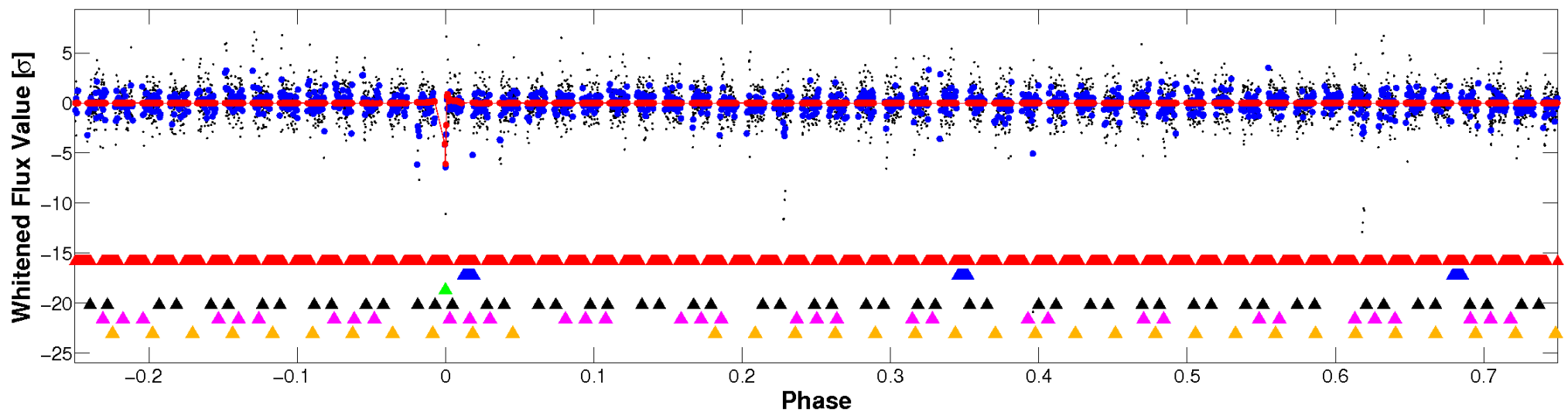


# Non-Whitened Vs. Whitened Light Curve

## Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



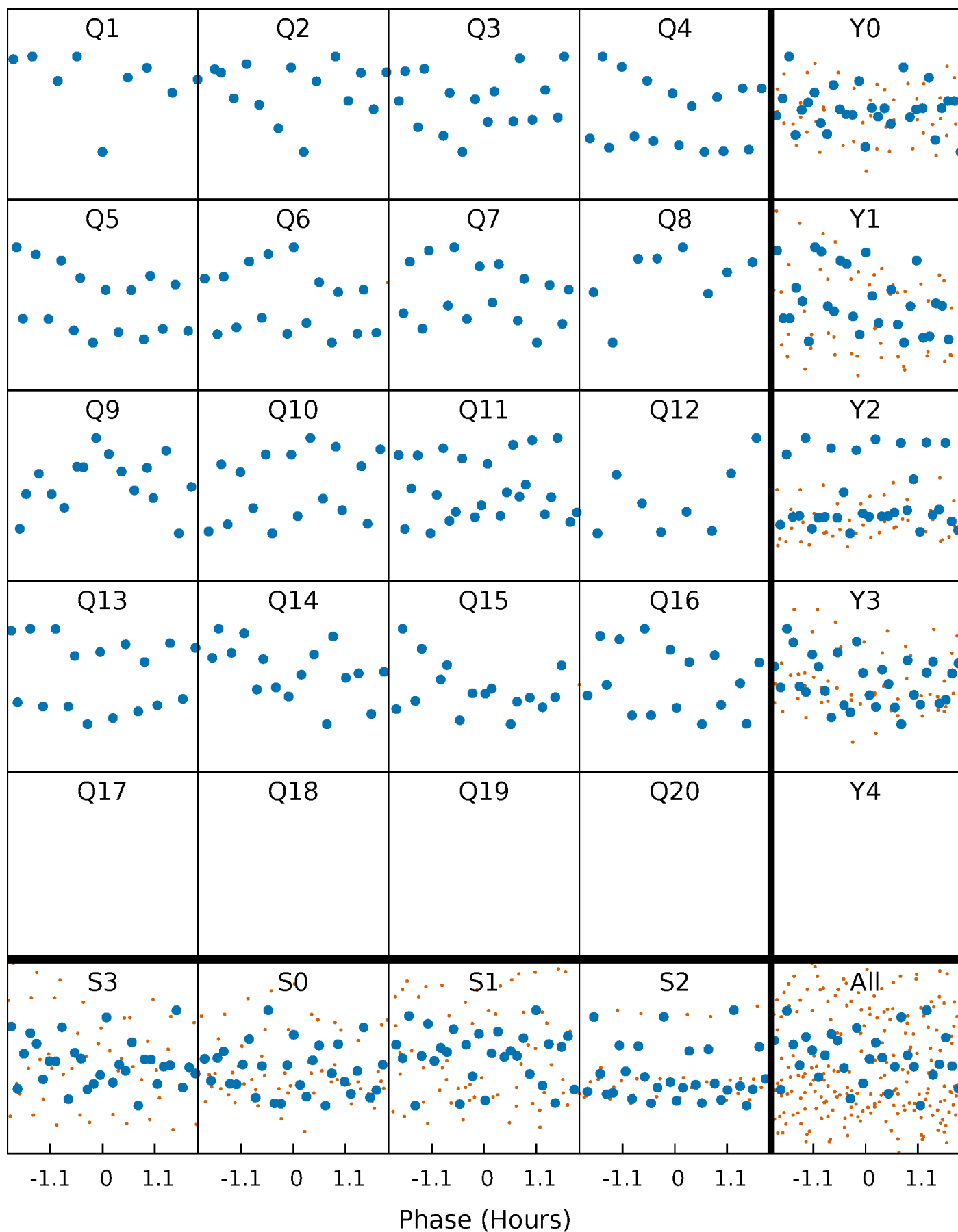
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





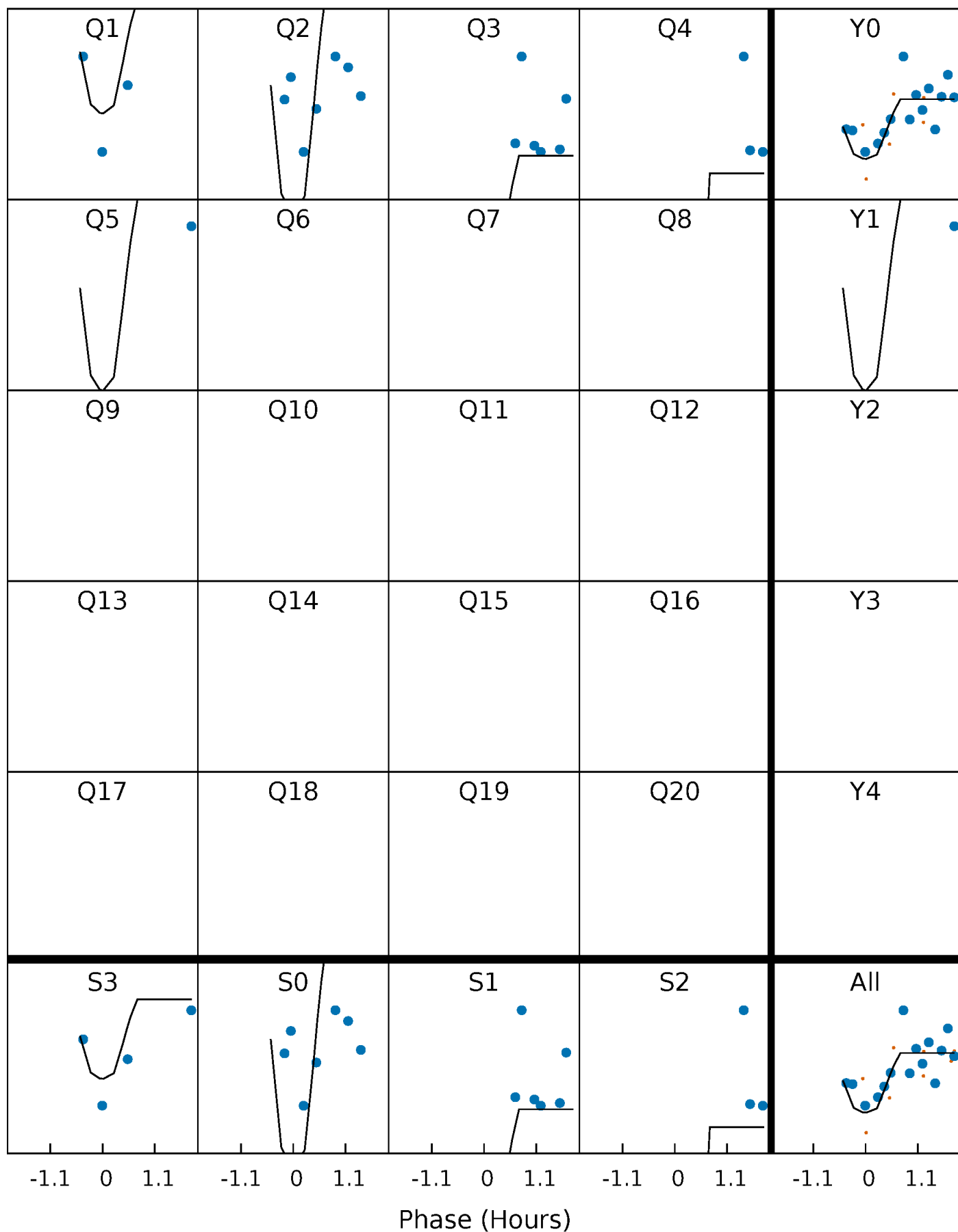
# PDC Quarter-Phased Transit Curves

TCE 006701115-03 P= 44.782361 Days  $T_0=152.191257$  (BKJD)



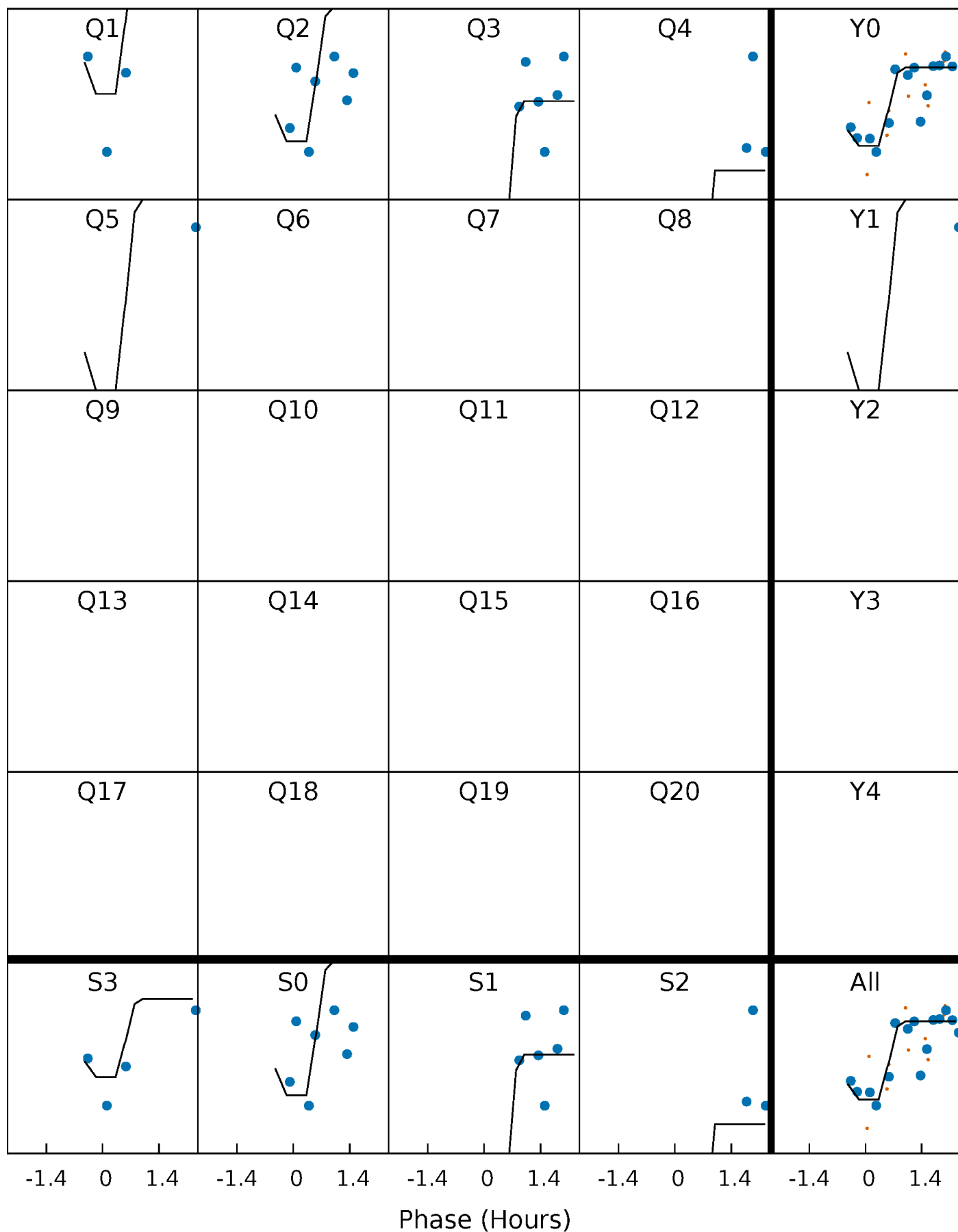
# DV Quarter-Phased Transit Curves

TCE 006701115-03 P= 44.782361 Days  $T_0=152.191257$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

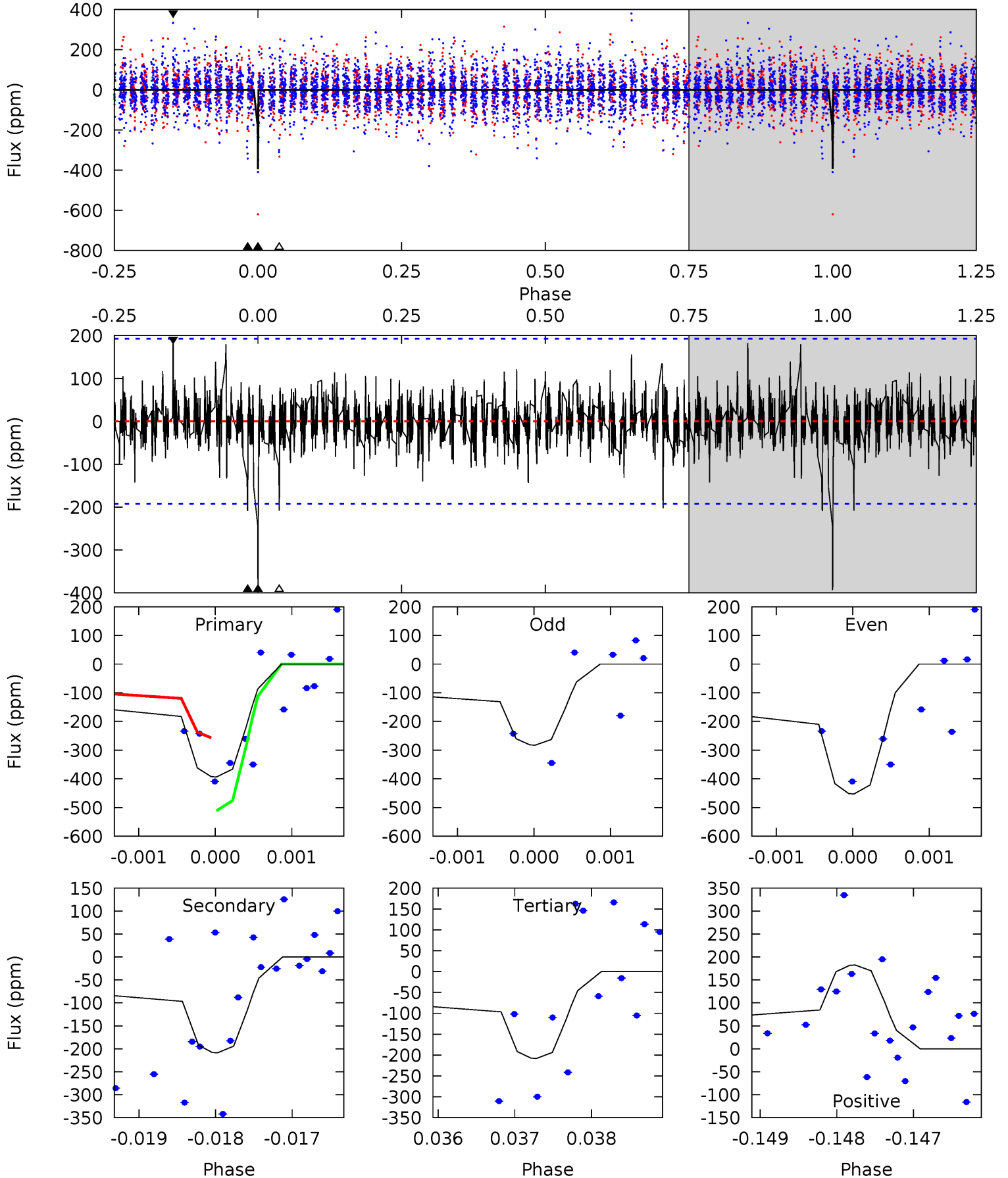
TCE 006701115-03 P= 44.779904 Days  $T_0=152.190130$  (BKJD)



# DV Model-Shift Uniqueness Test

006701115-03, P = 44.782361 Days, E = 107.408896 Days

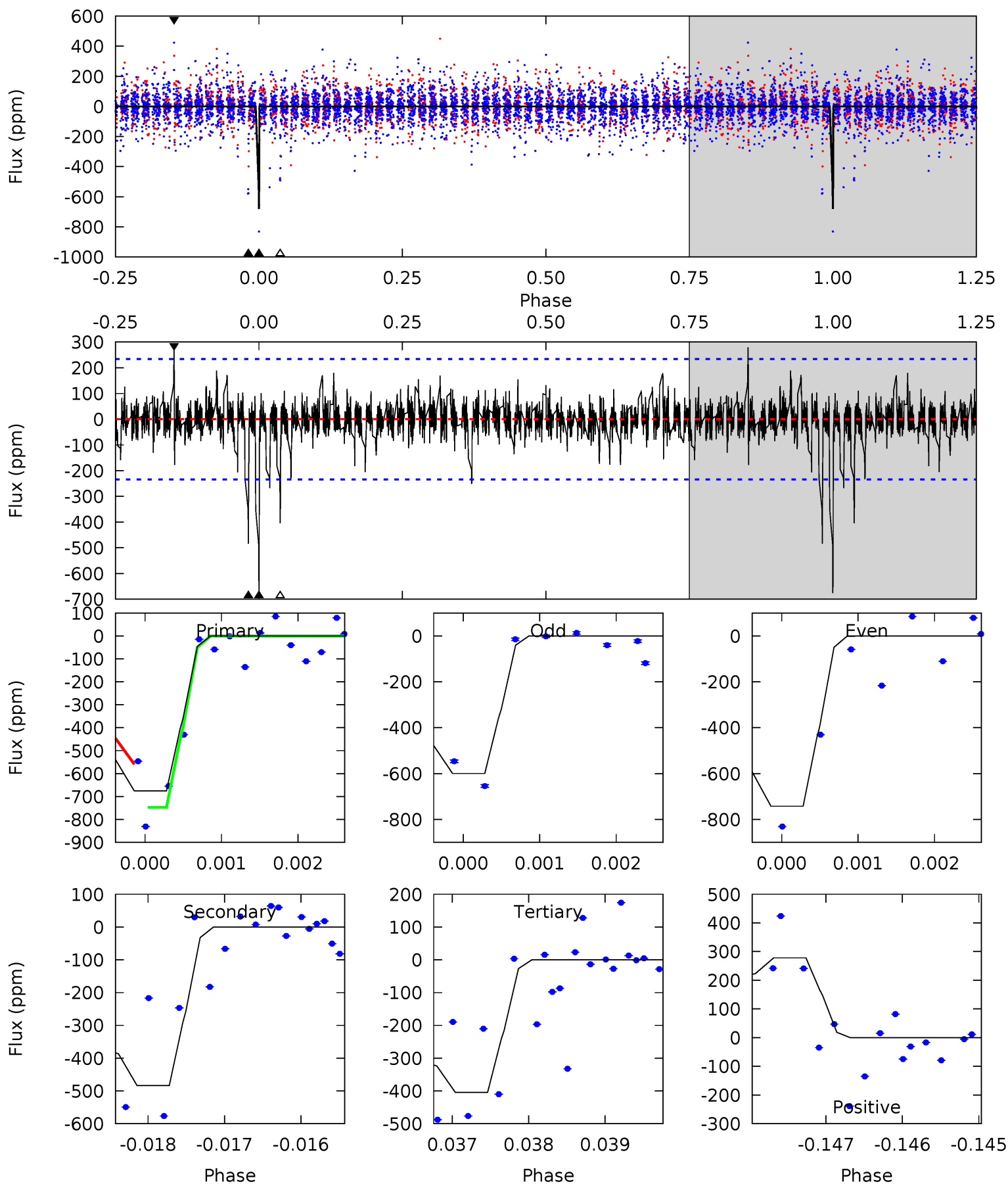
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.1 | 5.91 | 5.89 | 5.16 | 5.45            | 3.29            | 1.18             | 5.25    | 5.98    | 0.02    | 0.75    | 2.32    | 1.27 | 0.32  | 3.42 |



# Alt Model-Shift Uniqueness Test

006701115-03, P = 44.779904 Days, E = 107.410226 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.7 | 11.2 | 9.40 | 6.47 | 5.44            | 3.27            | 1.16             | 6.30    | 9.23    | 1.84    | 4.77    | 1.58    | 0.95 | 0.29  | 0.00 |



### Stellar Parameters For KIC 006701115

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6818^{+163}_{-224}$ | $3.621^{+0.306}_{-0.054}$ | $-0.020^{+0.250}_{-0.250}$ | $3.543^{+0.335}_{-1.341}$ | $1.913^{+0.181}_{-0.392}$ | $0.061^{+0.129}_{-0.012}$                     |
|        | +2%/-3%              | +8%/-1%                   | +1250%/-1250%              | +9%/-38%                  | +9%/-20%                  | +213%/-20%                                    |
| Source | PHO1                 | FLK73                     | 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 006701115-03 / KOI

| Detrend | Depth (ppm)   | $R_p$ ( $R_{\oplus}$ )    | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K)  | $A_{\text{obs}}$           |
|---------|---------------|---------------------------|----------------------|-----------------------|----------------------------|
| DV      | $-209 \pm 35$ | $41.11^{+43.48}_{-28.28}$ | $1399^{+67}_{-121}$  | $3015^{+1414}_{-541}$ | $6.091^{+57.309}_{-4.547}$ |
| Alt.    | $-484 \pm 43$ | $44.85^{+44.16}_{-32.40}$ | $1394^{+69}_{-113}$  | $3369^{+1867}_{-616}$ | $12^{+145}_{-9}$           |

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

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



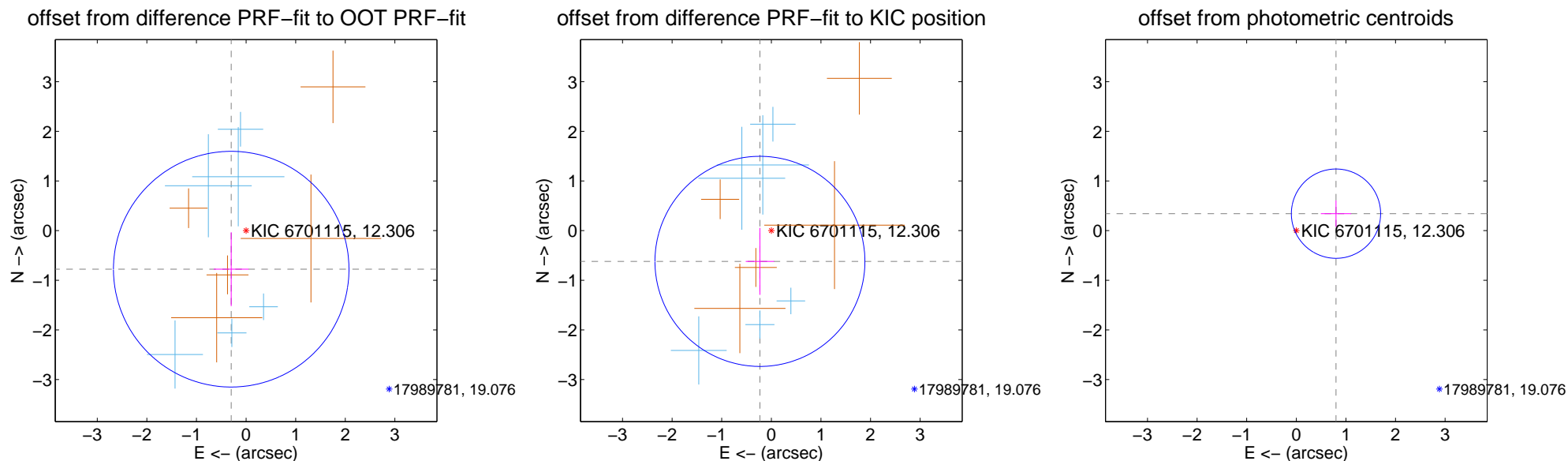
## DV Centroid Data

Supplemental centroid analysis for 006701115-03. Kepler magnitude: 12.31. Transit SNR 11.91

There are 6 quarters with good PRF difference image offsets

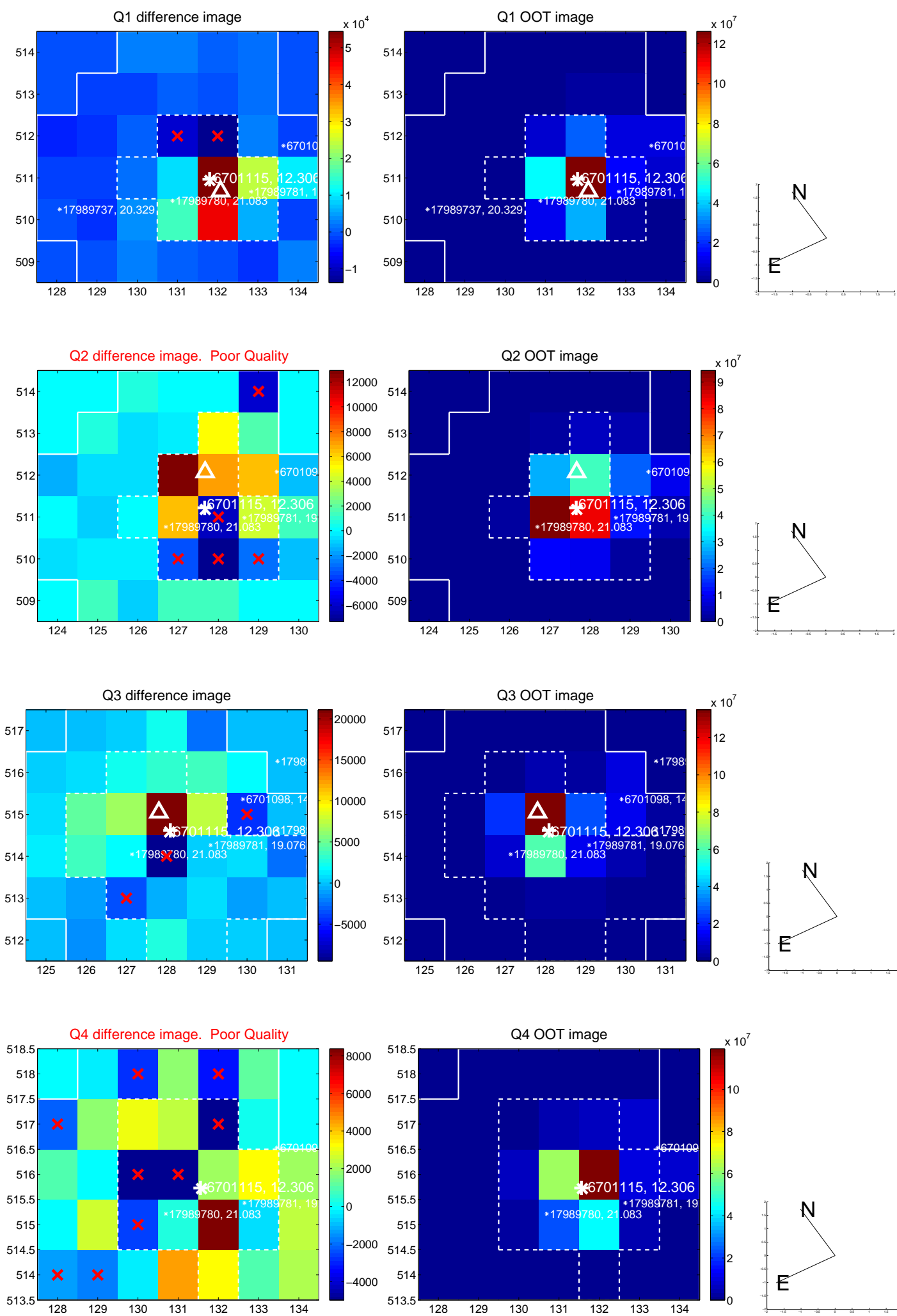
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $0.832 \pm 0.791$  | 1.05                | $0.299 \pm 0.351$ | $-0.776 \pm 0.744$ |
| PRF-fit source offset from KIC position | $0.660 \pm 0.705$  | 0.94                | $0.230 \pm 0.286$ | $-0.619 \pm 0.675$ |
| photometric centroid source offset      | $0.87 \pm 0.30$    | 2.90                | $-0.80 \pm 0.31$  | $0.34 \pm 0.26$    |

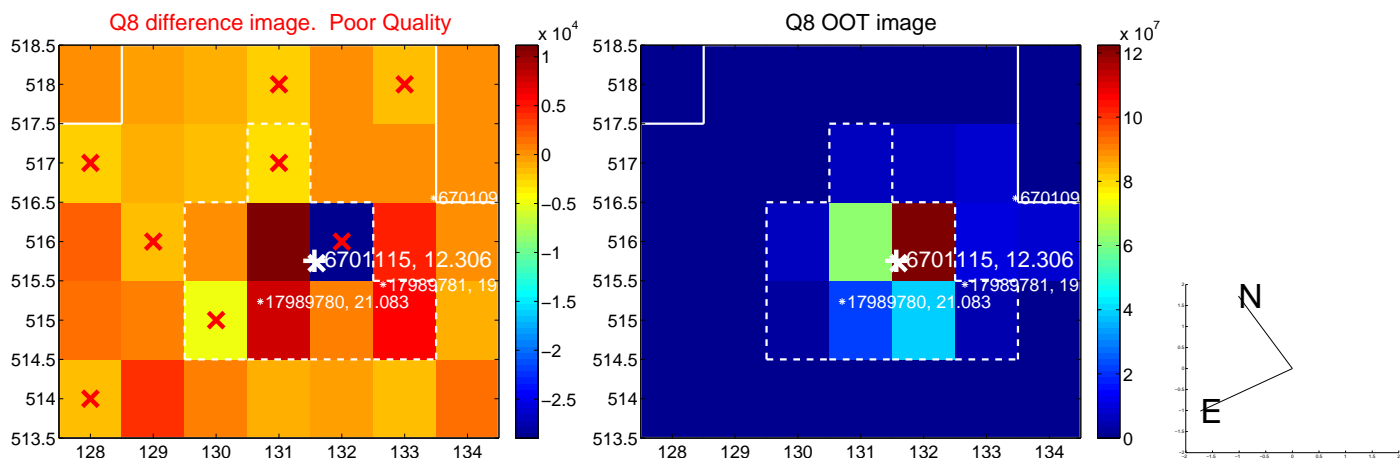
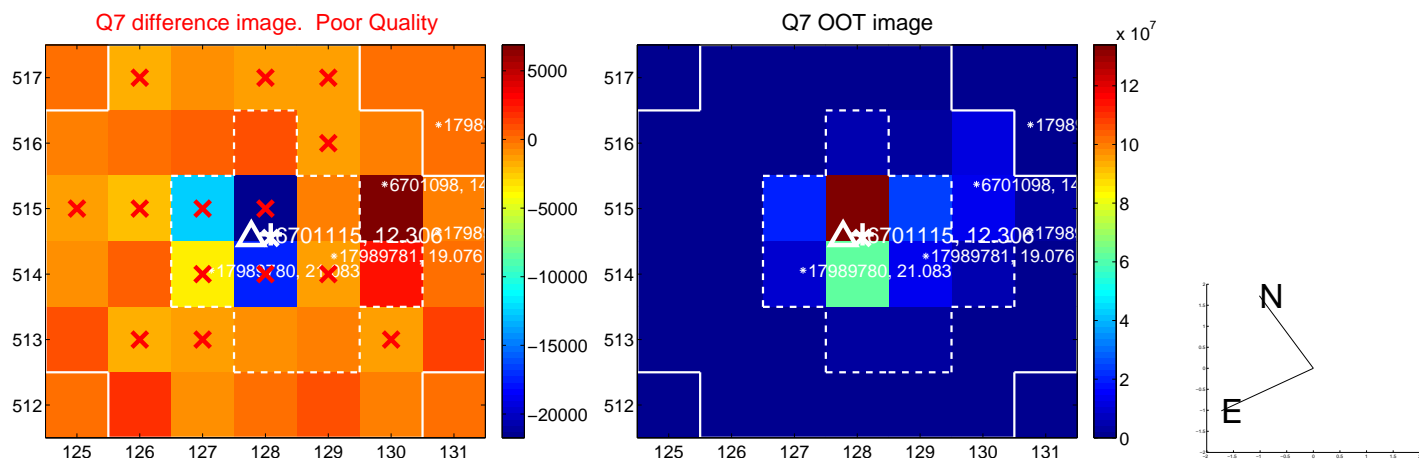
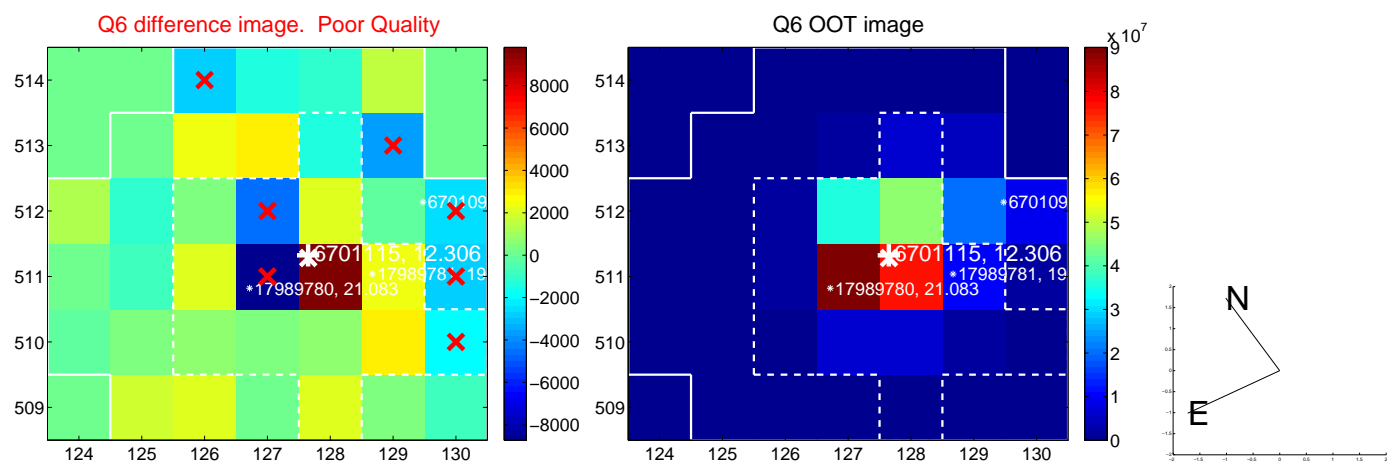
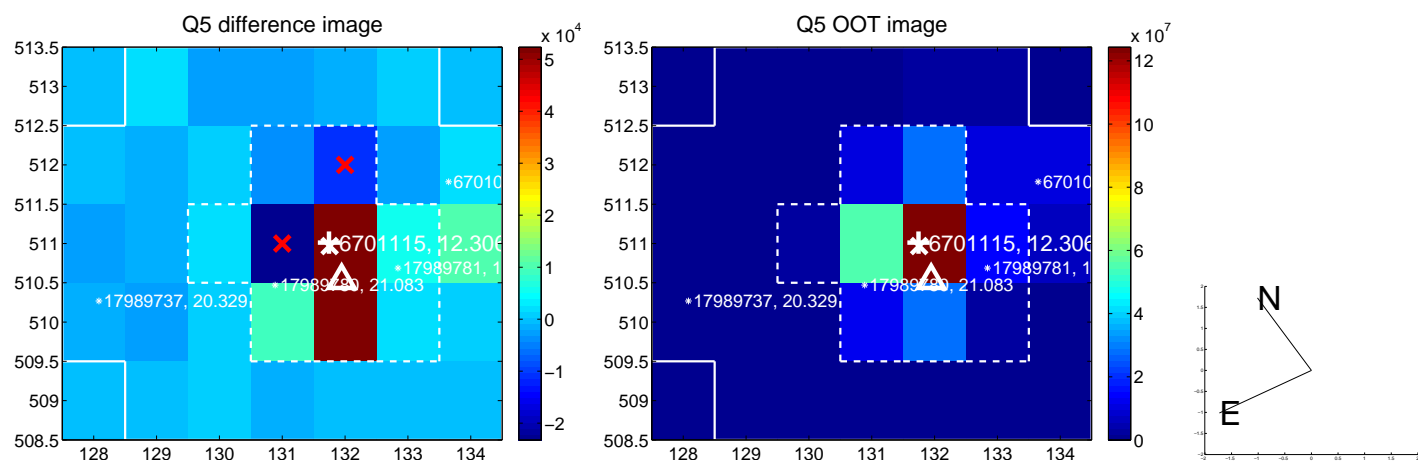


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

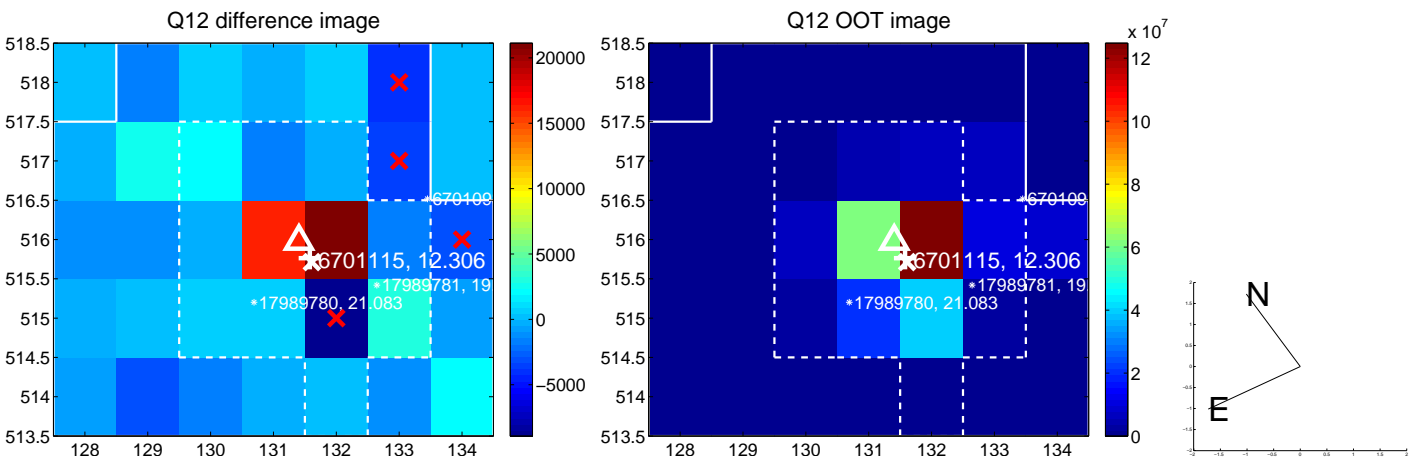
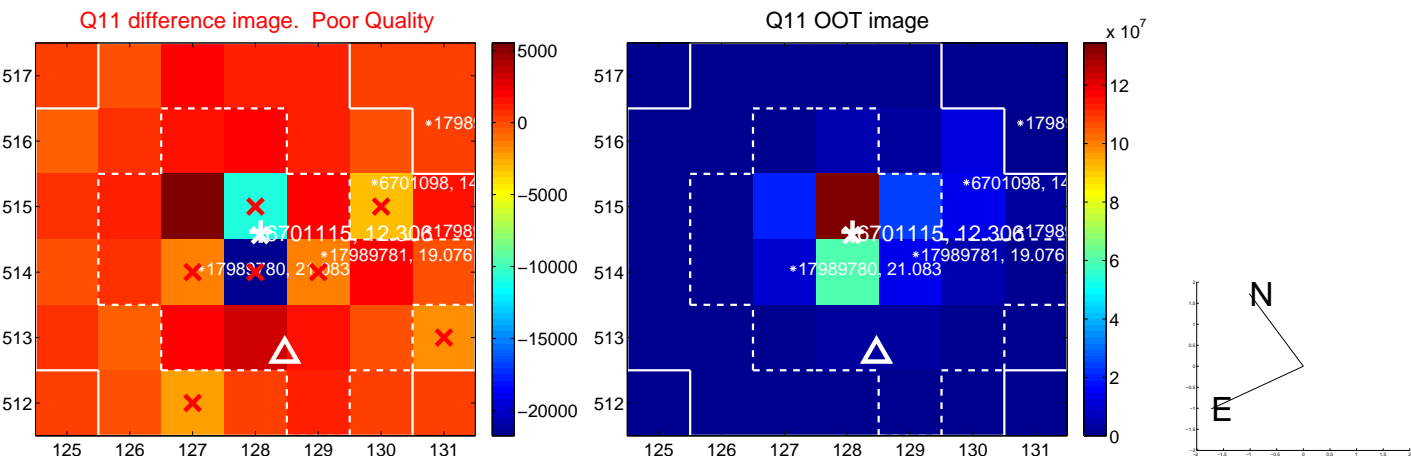
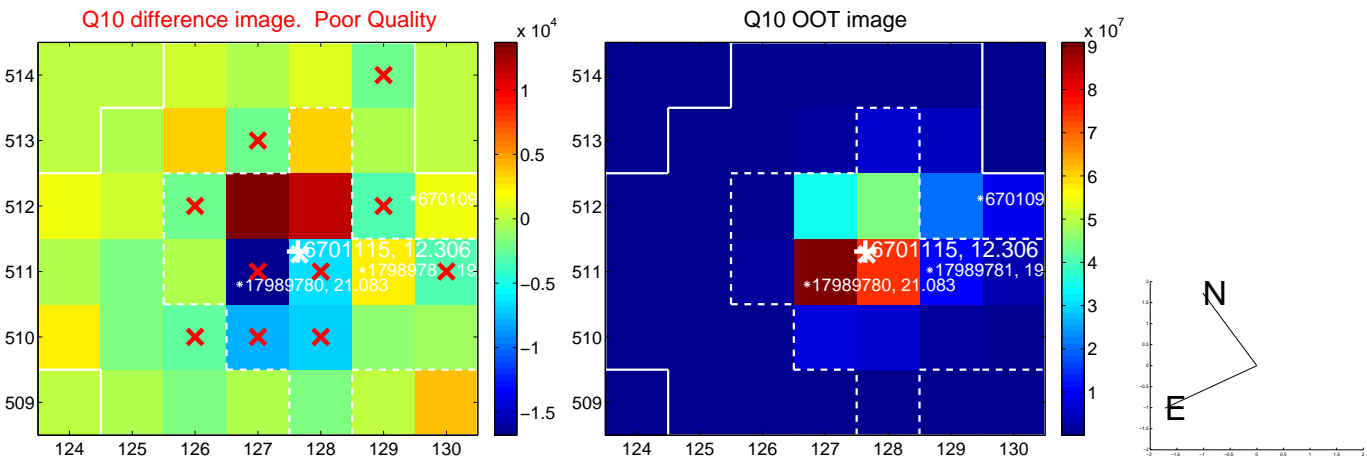
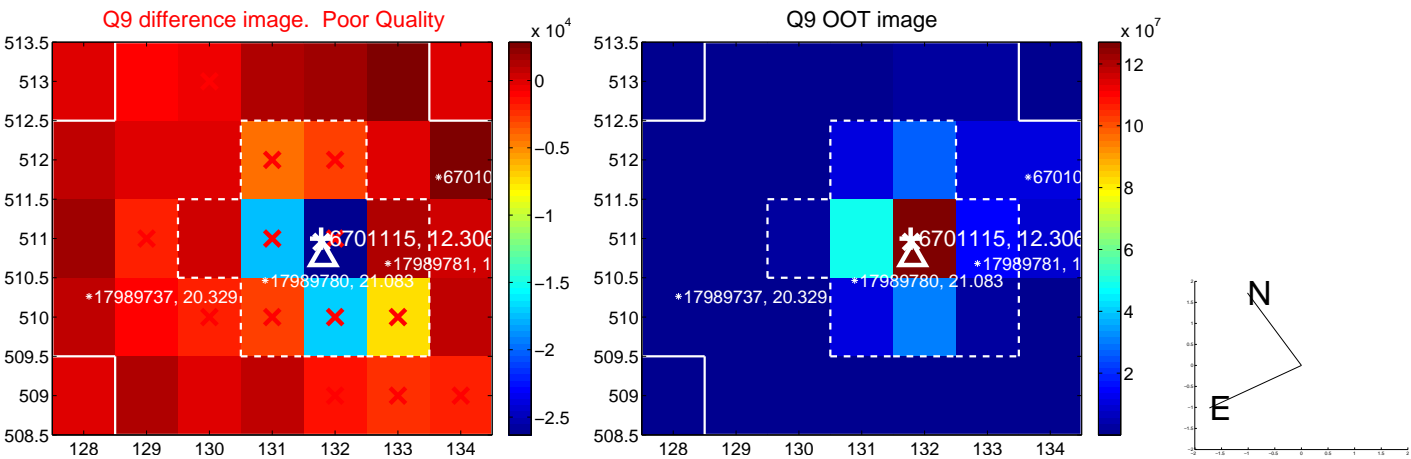
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



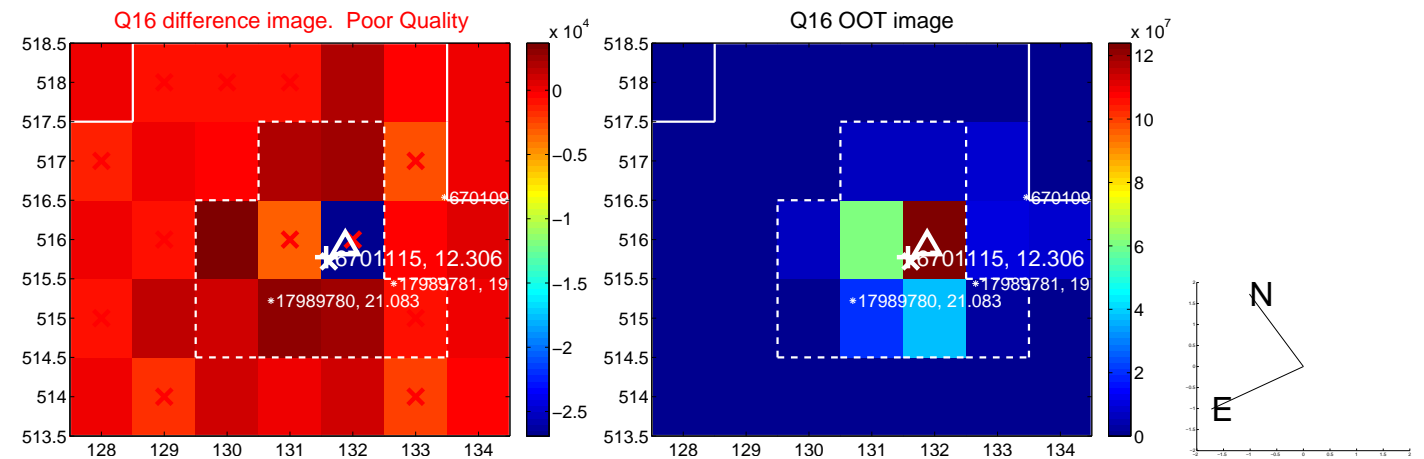
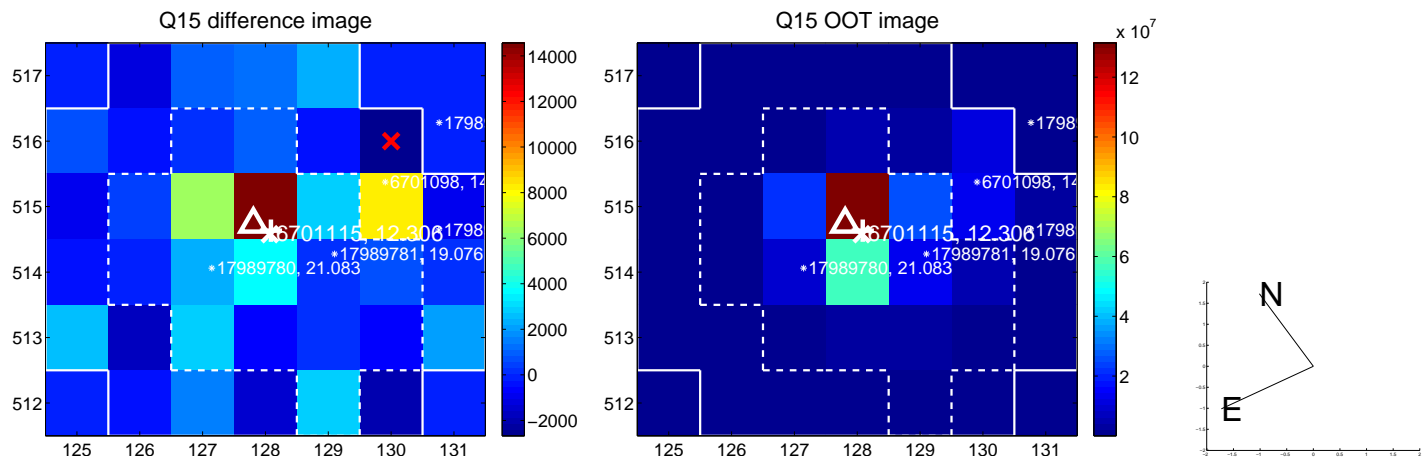
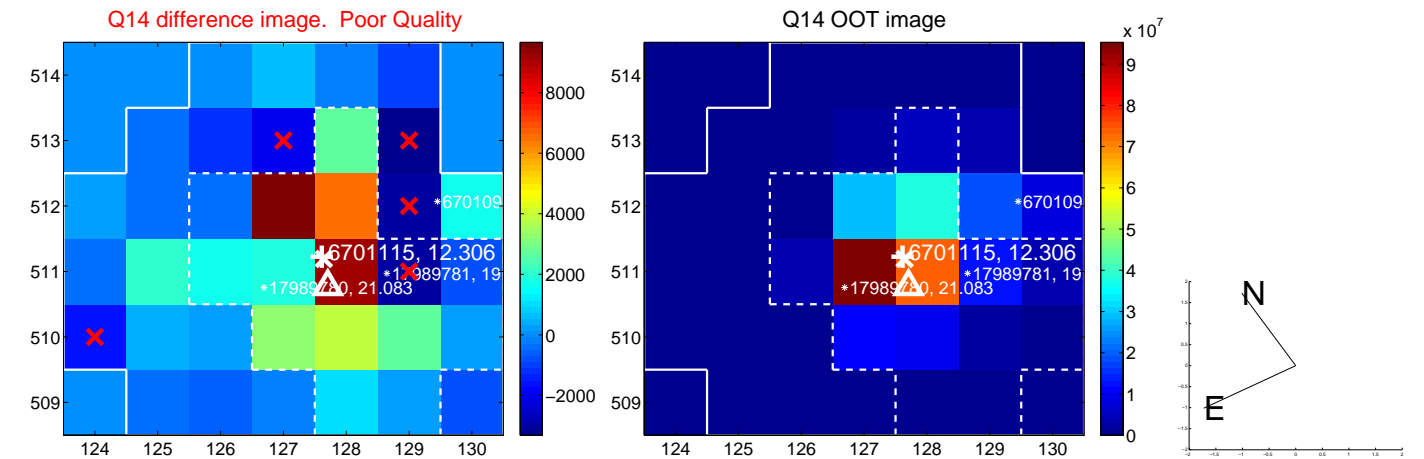
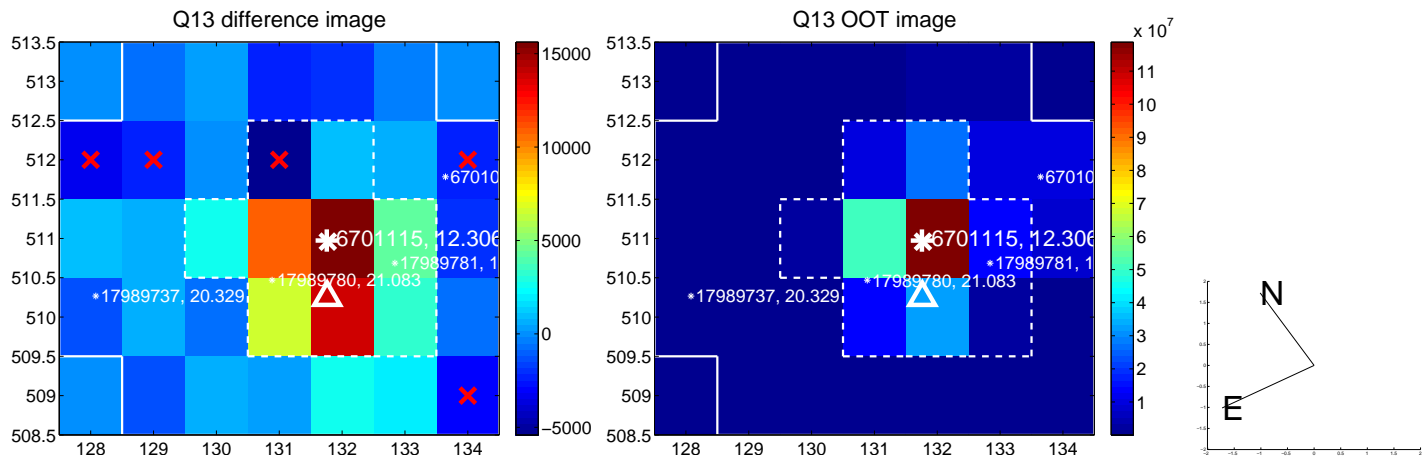
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



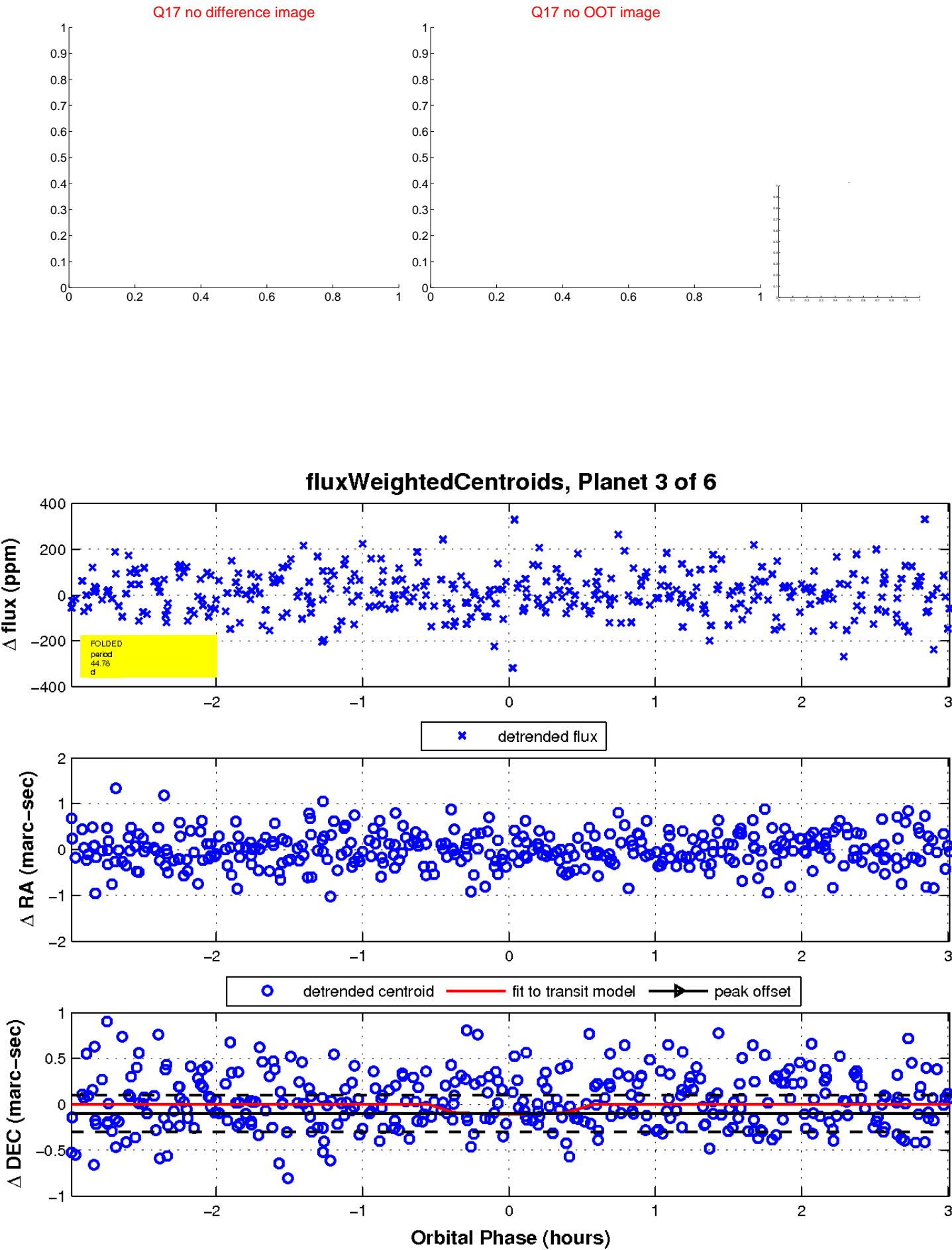
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



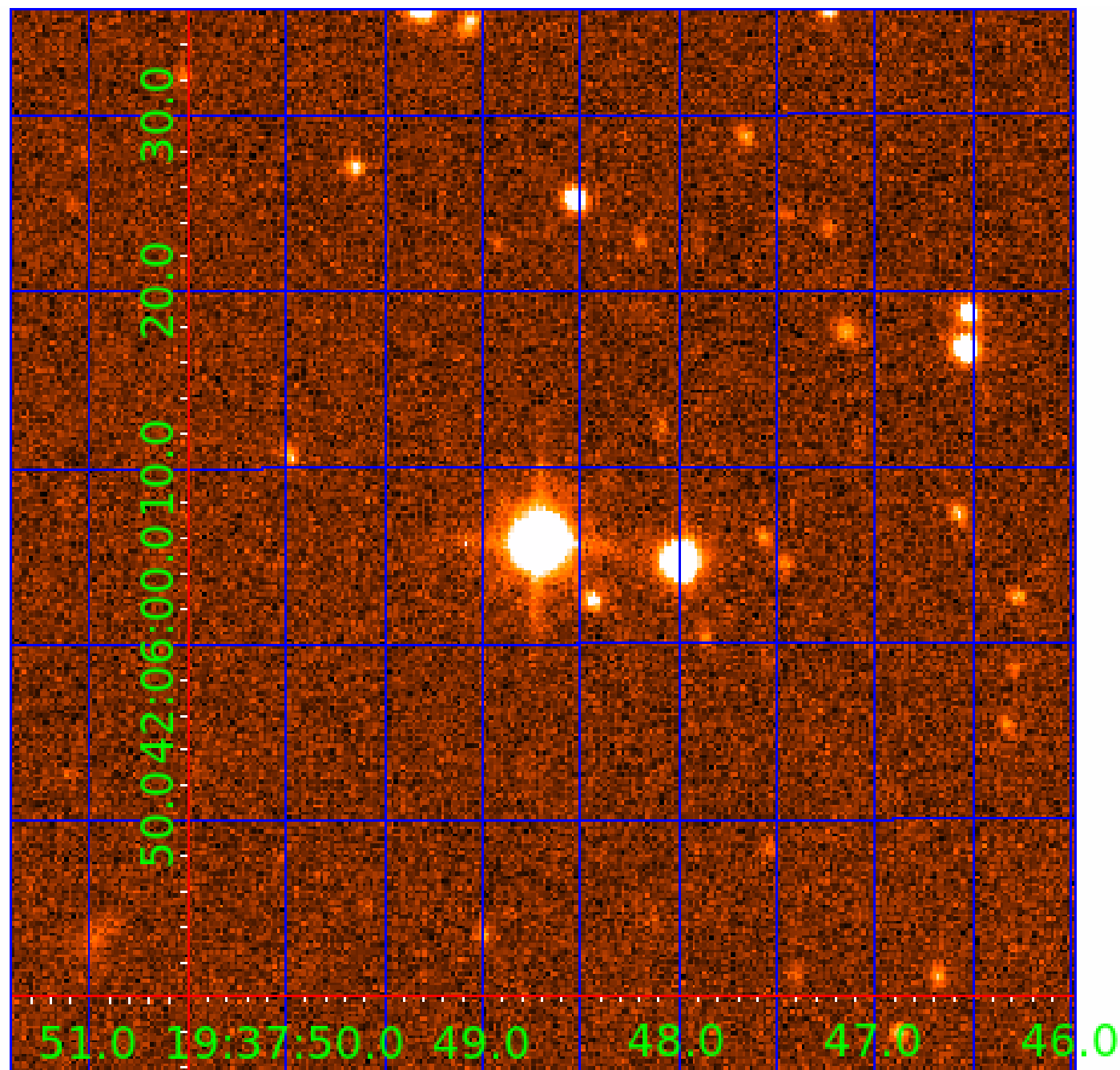
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 006701115

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006701115-01 | OBS      | No   | 0.829585      | 131.868443   | 22.5        | 5.905            | 14.9 | 14.9 | 3.54                        | 6818            | 1.95                   | 52798.56               |
| 006701115-02 | OBS      | No   | 29.848155     | 153.053528   | 300.0       | 1.877            | 15.7 | 10.1 | 3.54                        | 6818            | 6.57                   | 444.51                 |
| 006701115-03 | OBS      | No   | 44.782361     | 152.191257   | 463.7       | 1.004            | 15.9 | 11.9 | 3.54                        | 6818            | 7.79                   | 258.80                 |
| 006701115-04 | OBS      | No   | 26.557114     | 151.353132   | 251.7       | 1.837            | 10.8 | 9.5  | 3.54                        | 6818            | 6.68                   | 519.43                 |
| 006701115-05 | OBS      | No   | 41.290841     | 164.010708   | 218.6       | 2.692            | 10.4 | 8.0  | 3.54                        | 6818            | 5.47                   | 288.38                 |
| 006701115-06 | OBS      | No   | 43.573962     | 154.221616   | 289.1       | 2.000            | 11.0 | -1.0 | 3.54                        | 6818            | 6.09                   | 268.41                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 006701115-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT  |
| 006701115-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT  |
| 006701115-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT                             |
| 006701115-04 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT  |
| 006701115-05 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT                    |
| 006701115-06 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

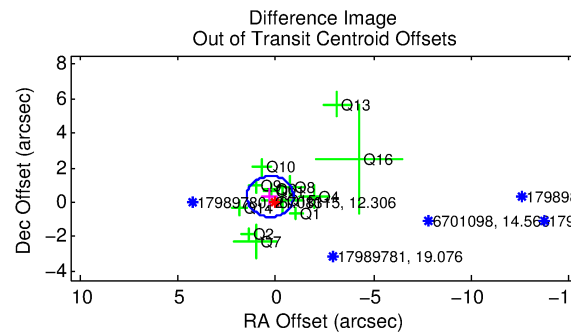
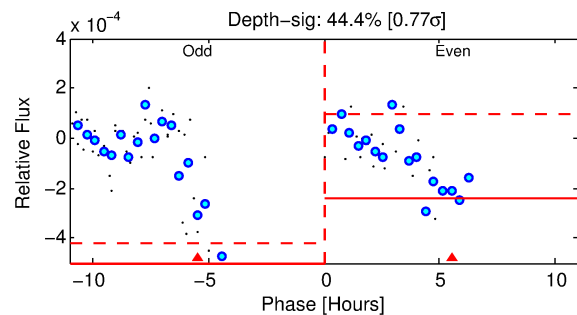
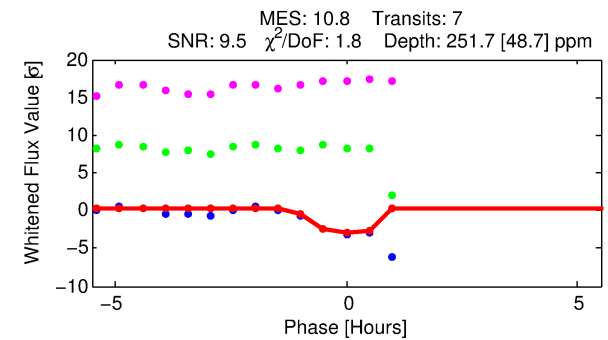
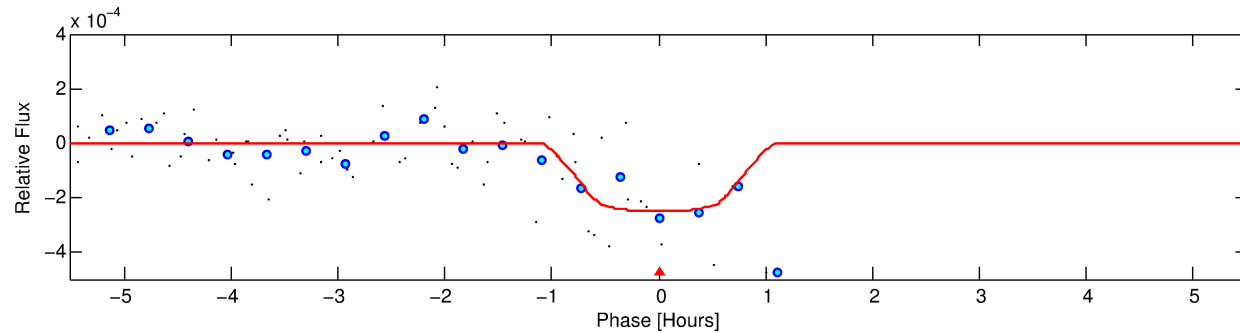
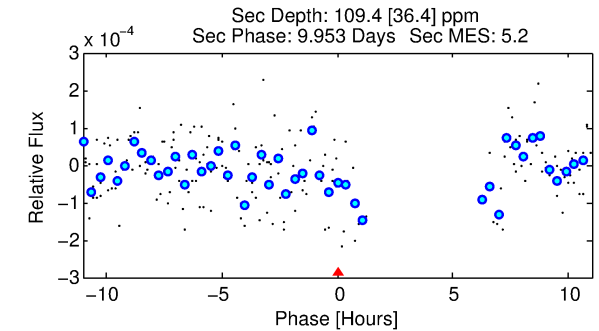
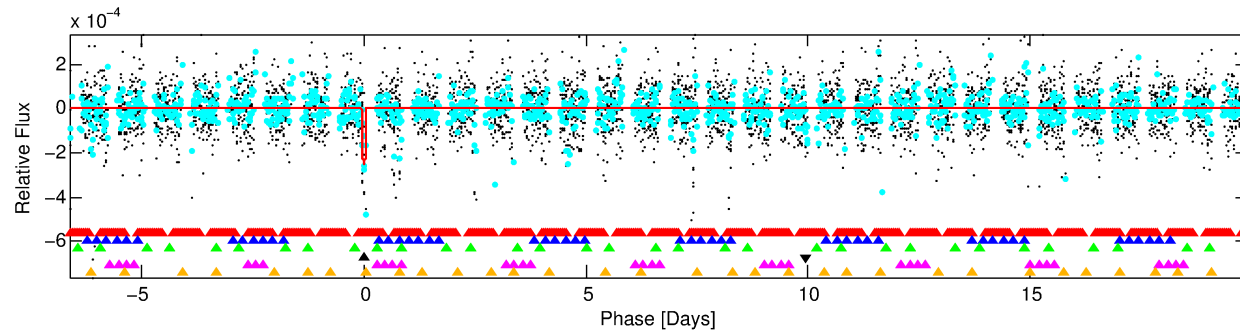
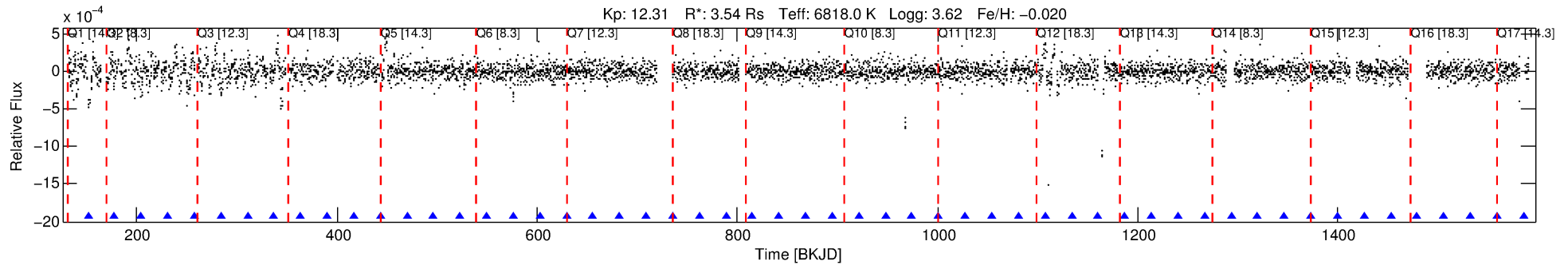
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006701115-04

No Significant Match Found

# DV One-Page Summary

KIC: 6701115 Candidate: 4 of 6 Period: 26.557 d



## DV Fit Results:

Period = 26.55711 [0.00184] d  
Epoch = 151.3531 [0.0059] BKJD  
Rp/R\* = 0.0173 [0.0132]  
a/R\* = 47.55 [214.61]  
b = 0.92 [0.75]  
Seff = 519.43 [285.25]  
Teq = 1217 [167] K  
Rp = 6.68 [5.71] Re  
a = 0.2163 [0.0746] AU  
Ag = 63.10 [104.54] [0.59 $\sigma$ ]  
Teffp = 5305 [2088] K [1.95 $\sigma$ ]

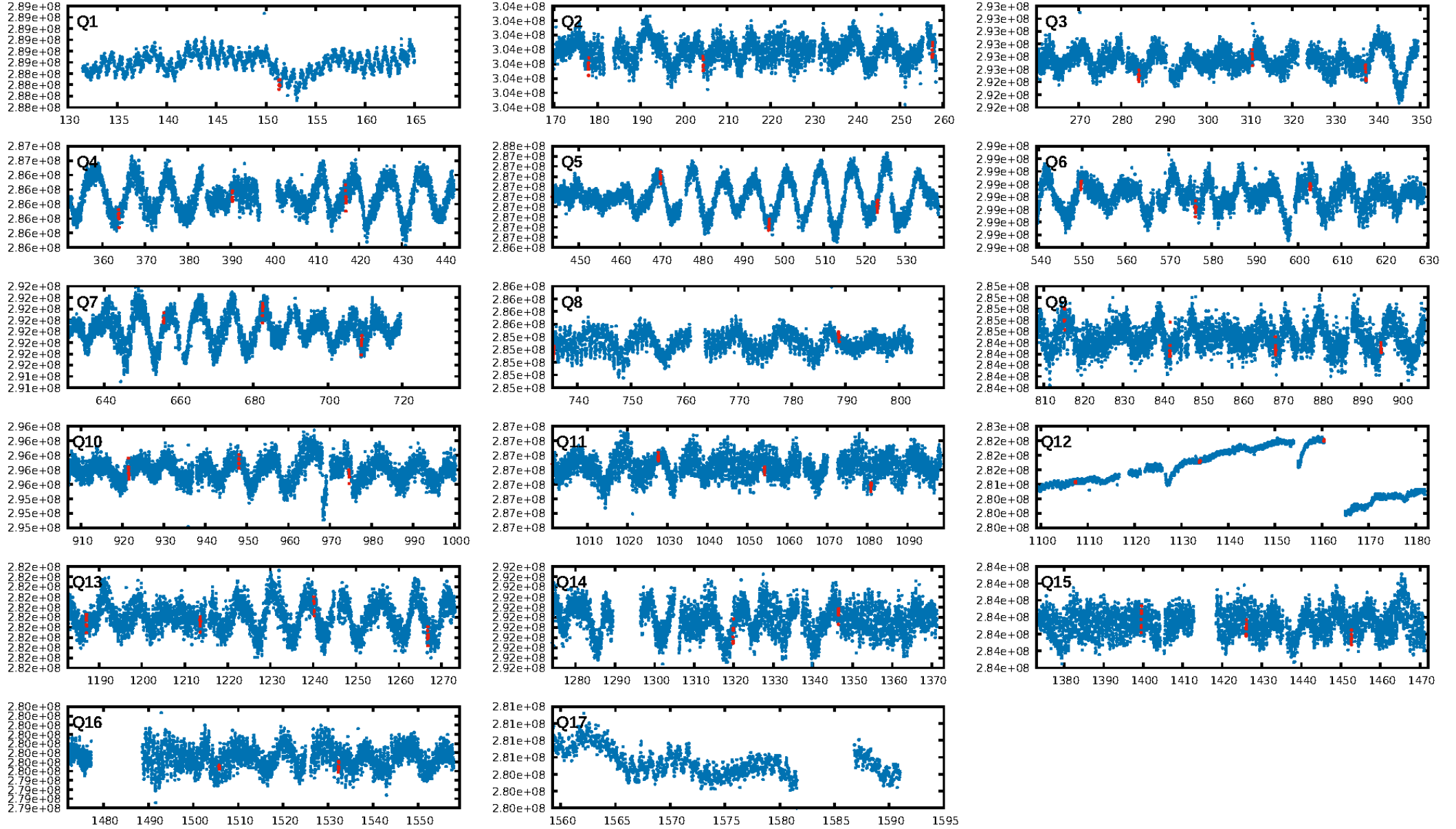
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.84 $\sigma$ ]  
LongPeriod-sig: 100.0% [30.07 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 52.7%  
Bootstrap-pfa: 3.80e-21  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 0.884  
Centroid-sig: N/A  
Centroid-so: 0.458 arcsec [1.32 $\sigma$ ]  
OotOffset-rm: 0.441 arcsec [1.12 $\sigma$ ]  
KicOffset-rm: 0.548 arcsec [1.37 $\sigma$ ]  
OotOffset-st: 4/3/3/3 [13]  
KicOffset-st: 4/3/3/3 [13]  
DiffImageQuality-fgm: 0.62 [8/13]  
DiffImageOverlap-fno: 0.19 [3/16]

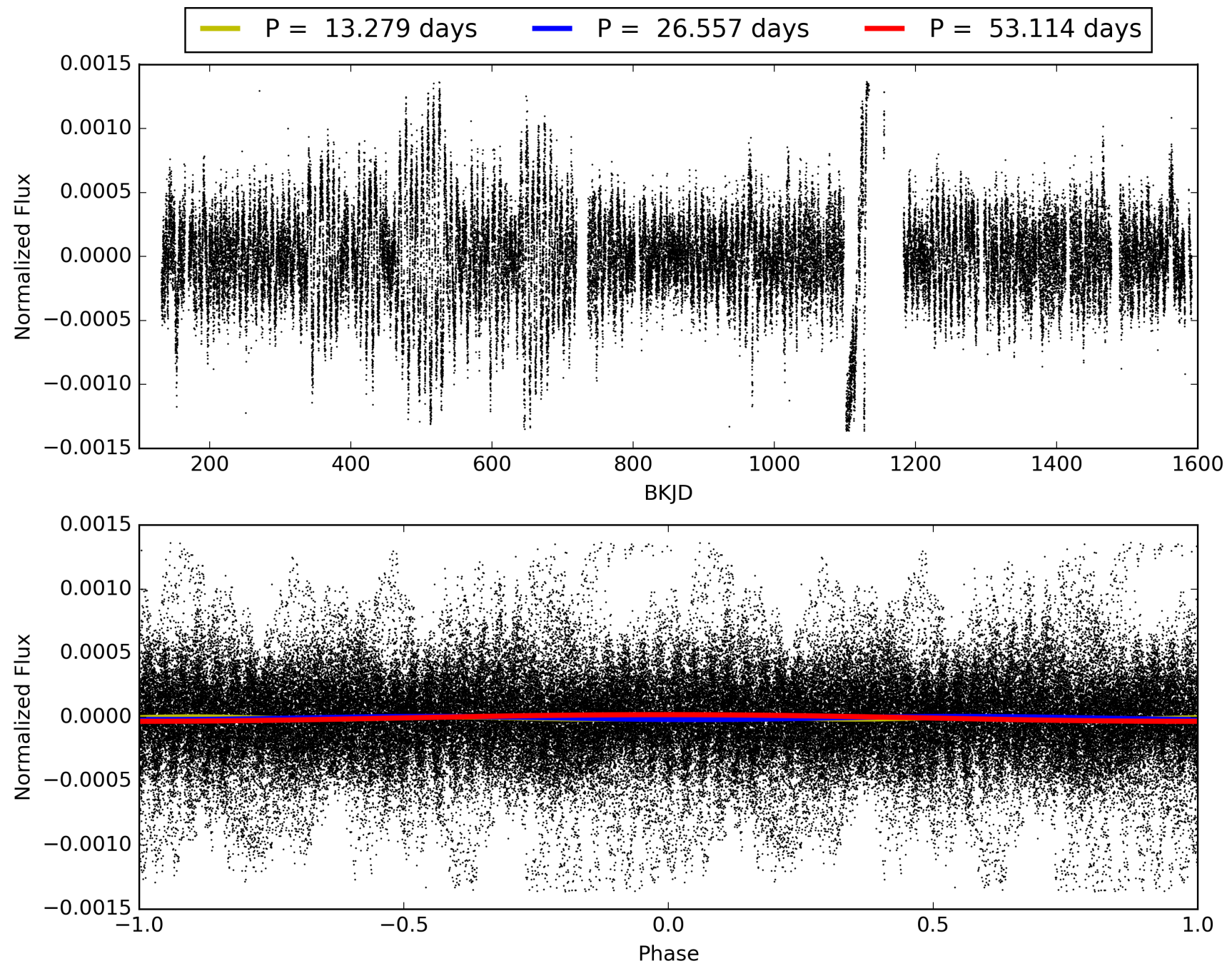
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 03:13:59 Z

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

# TCE 006701115-04, PDC Light Curves

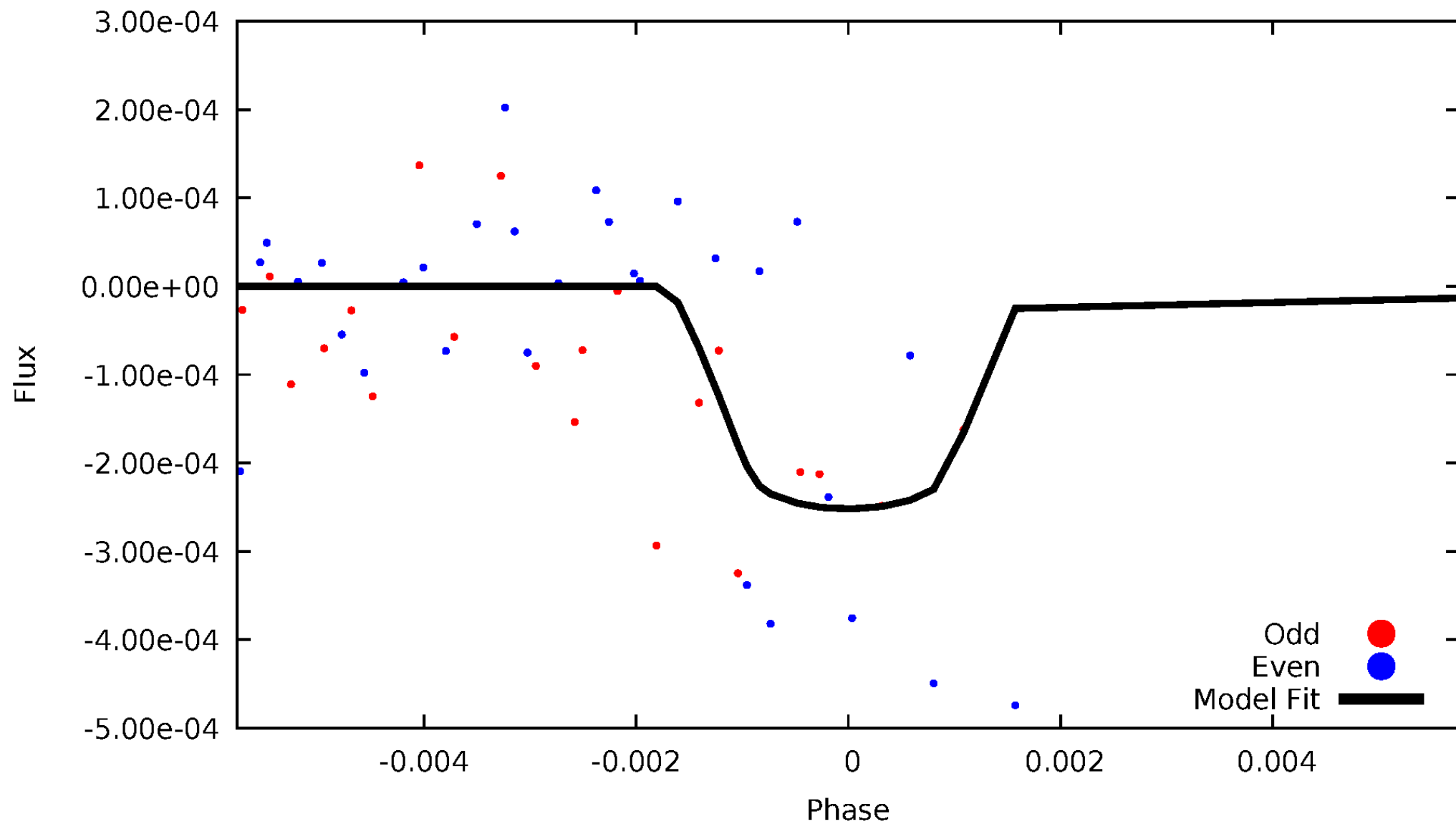


TCE 006701115-04



# DV Odd/Even

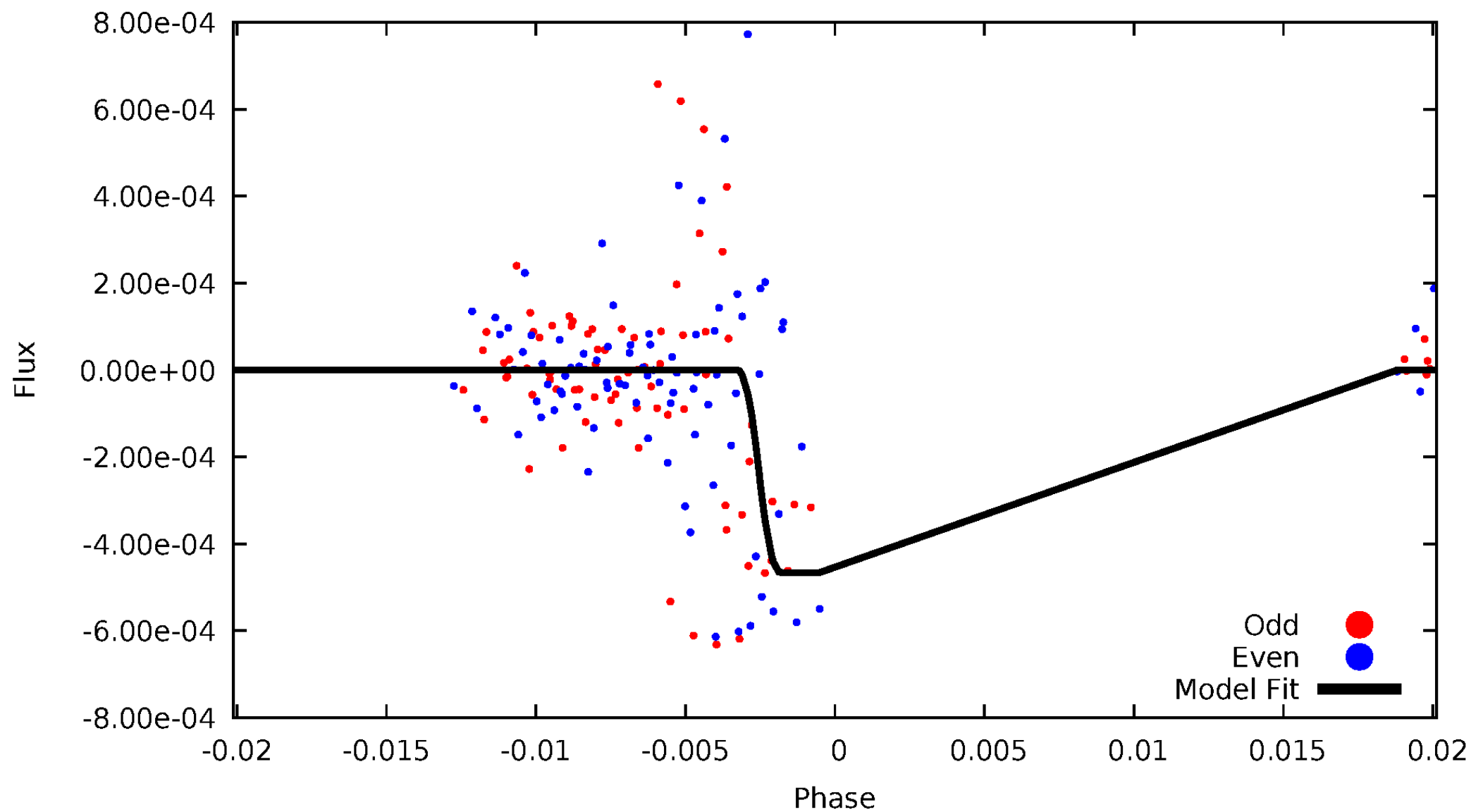
TCE 006701115-04





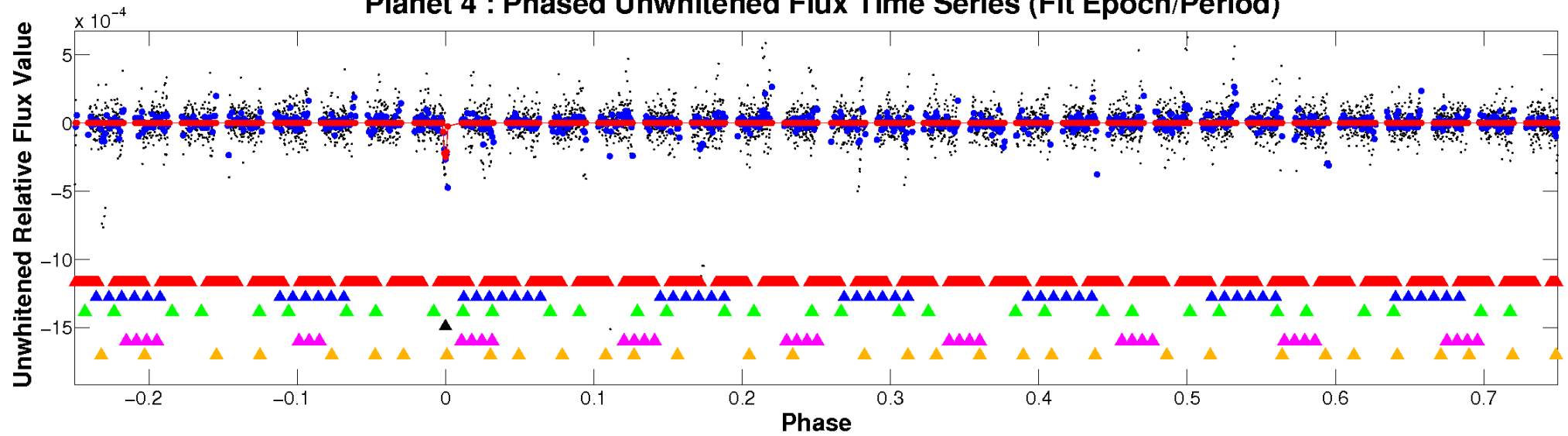
# ALT Odd/Even

TCE 006701115-04

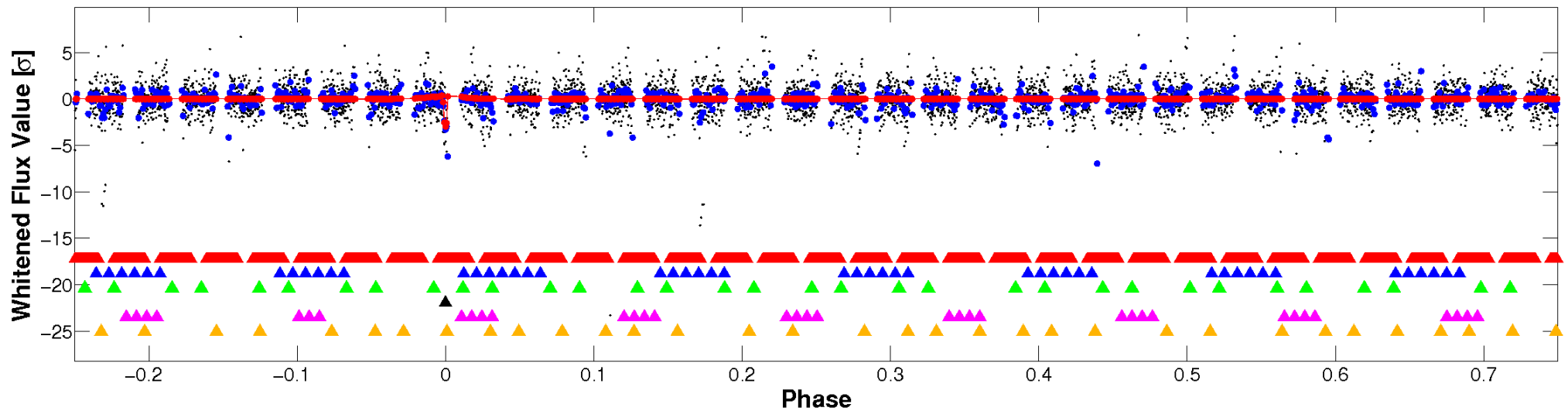


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

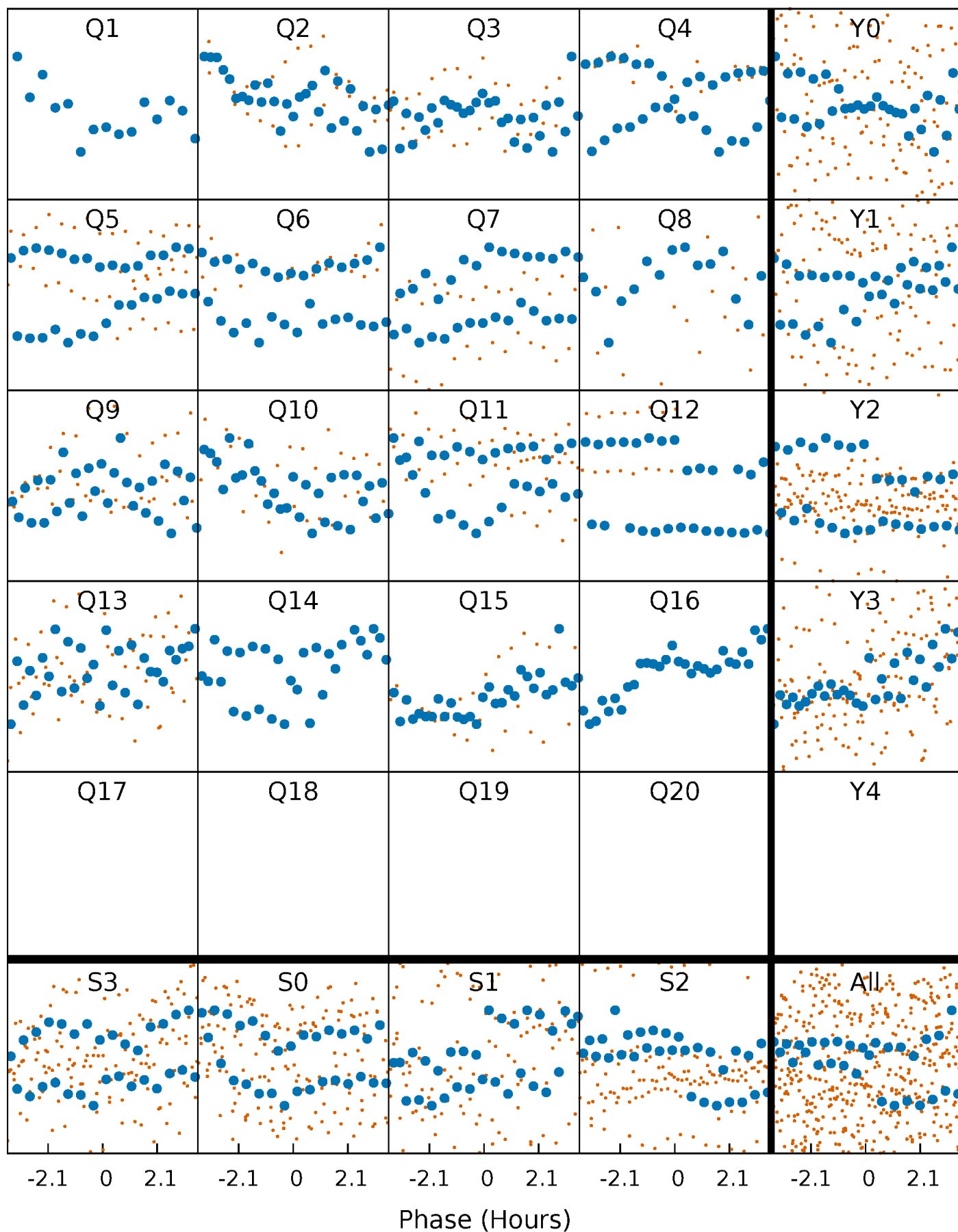


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



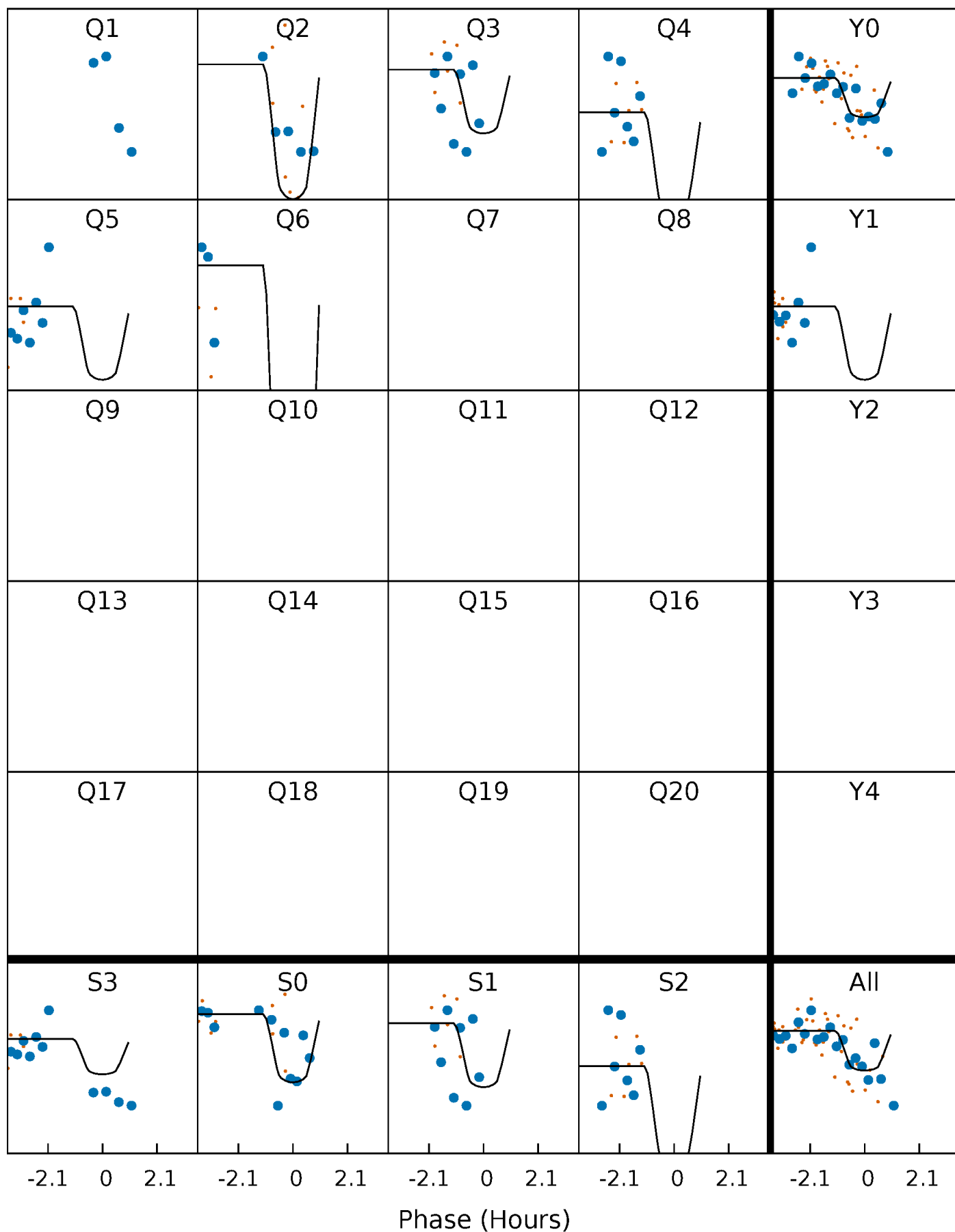
# PDC Quarter-Phased Transit Curves

TCE 006701115-04 P= 26.557114 Days  $T_0=151.353132$  (BKJD)



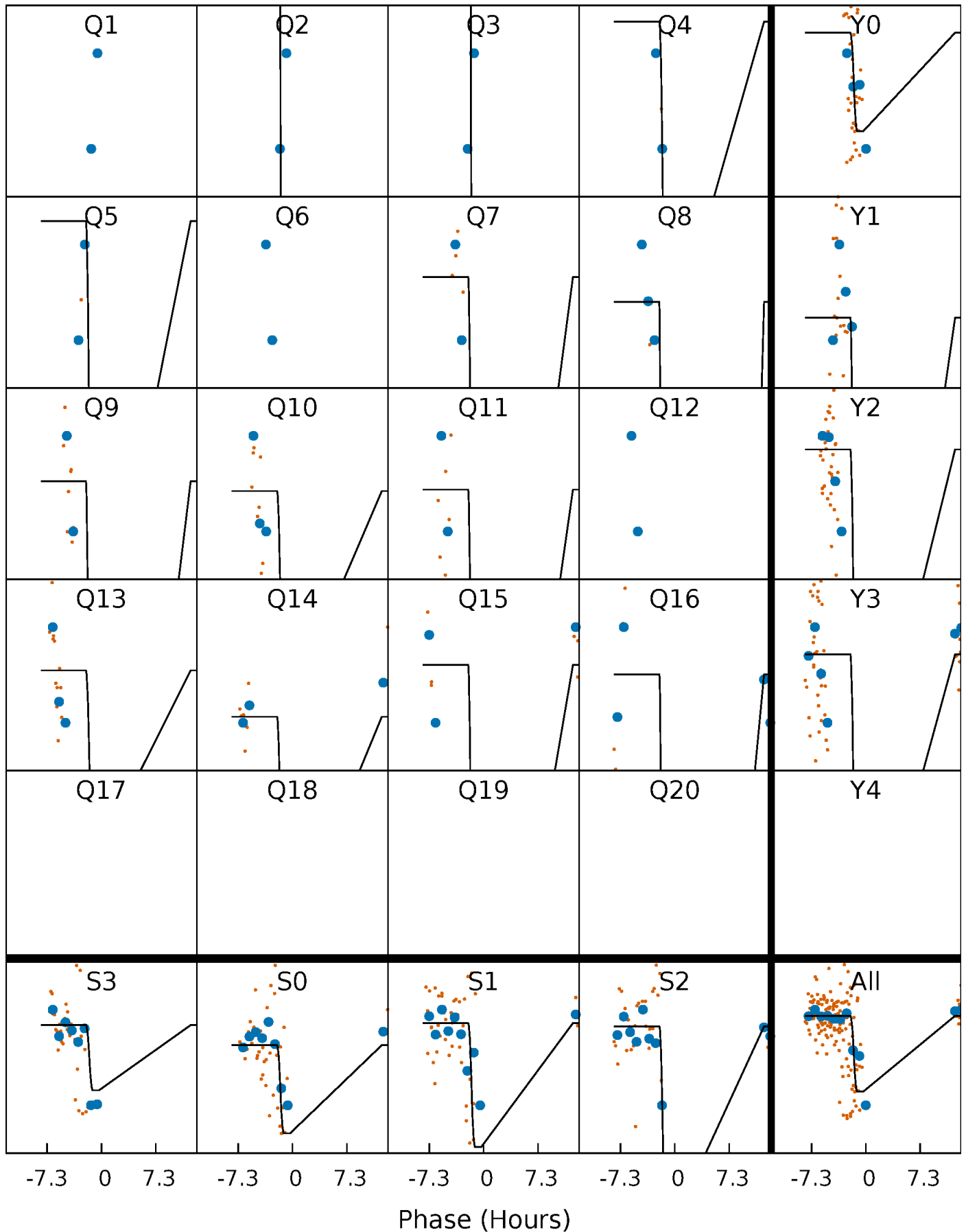
# DV Quarter-Phased Transit Curves

TCE 006701115-04 P= 26.557114 Days  $T_0=151.353132$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

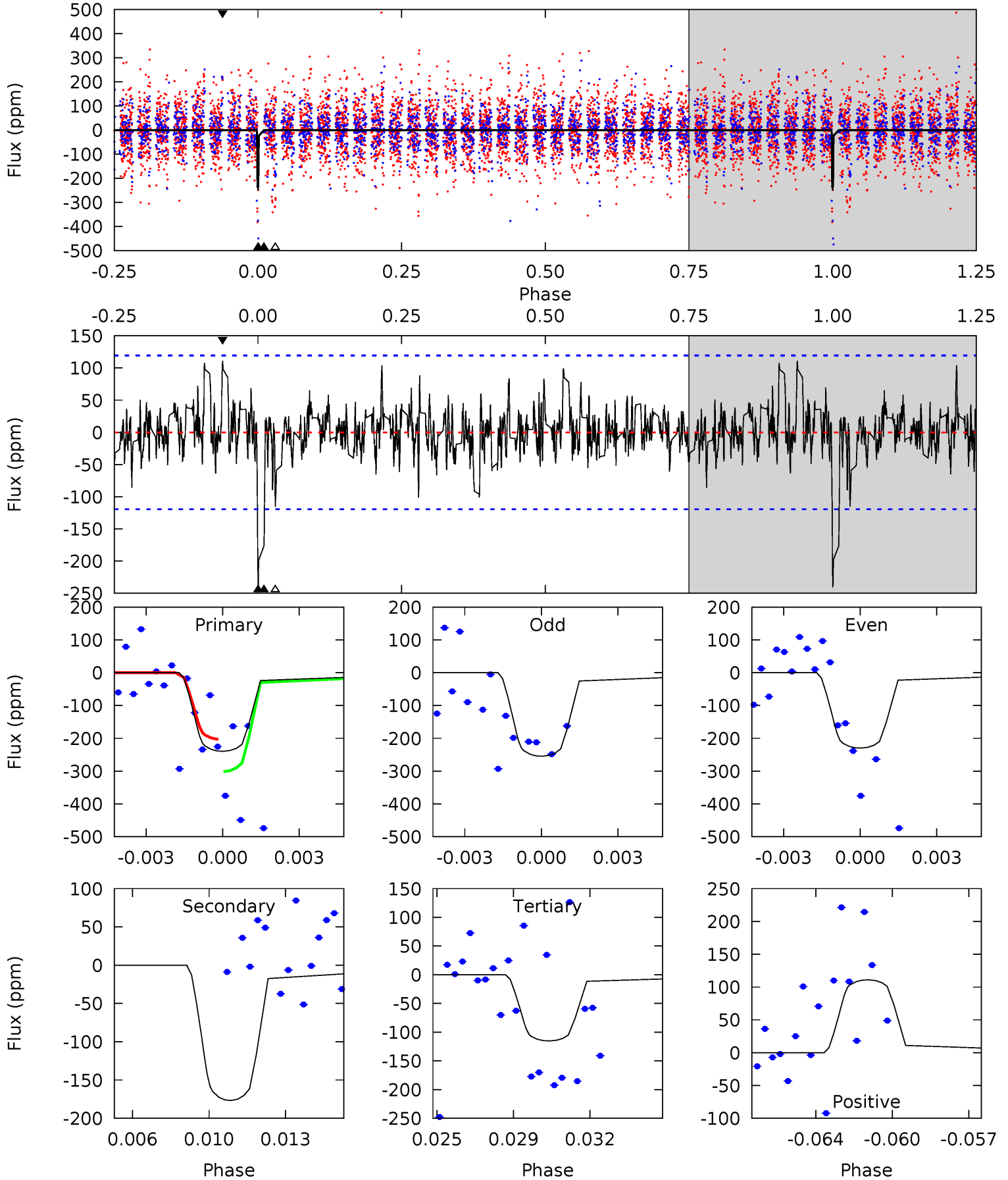
TCE 006701115-04 P= 26.551772 Days  $T_0=151.408613$  (BKJD)



# DV Model-Shift Uniqueness Test

006701115-04, P = 26.557114 Days, E = 124.796018 Days

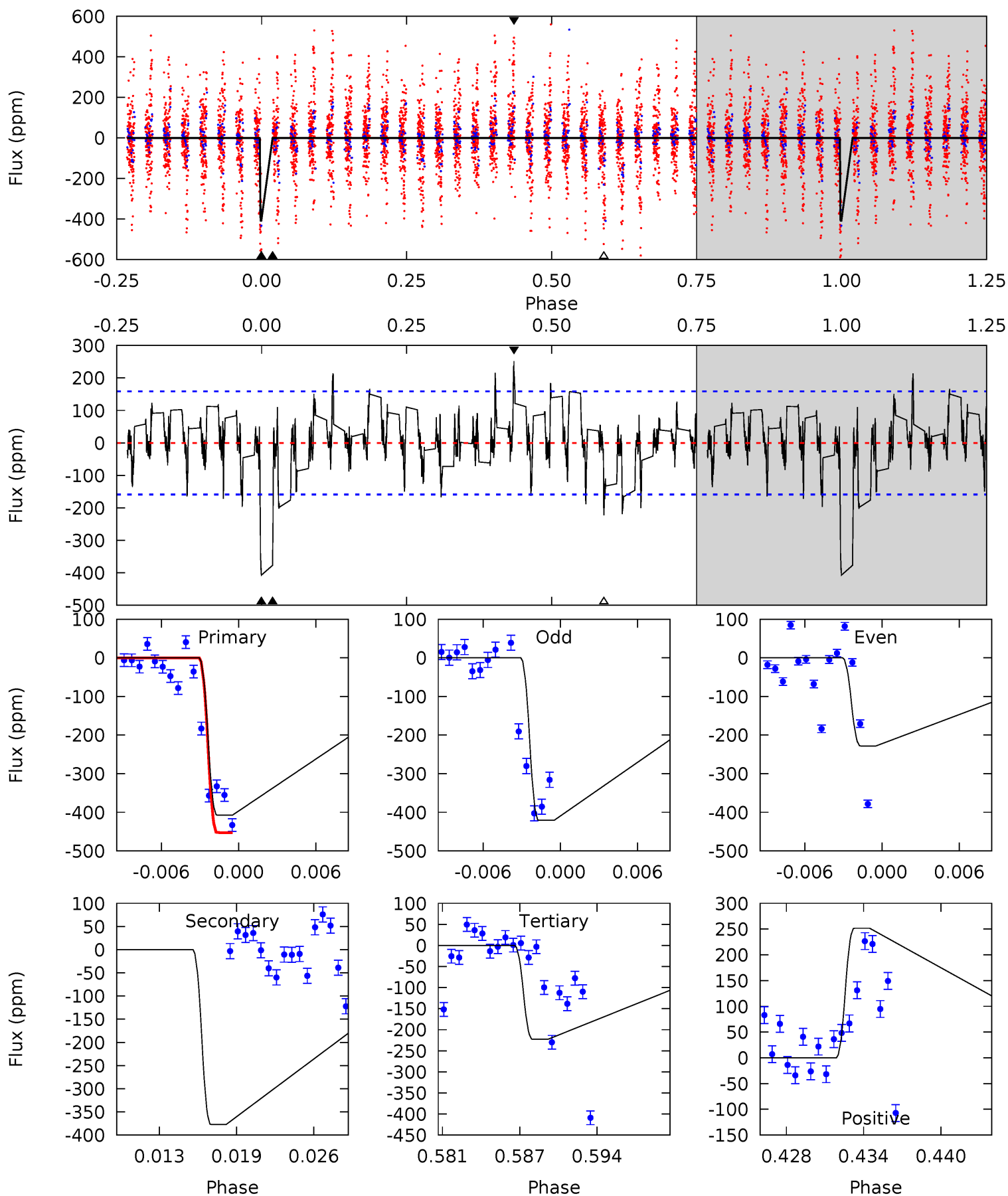
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.5 | 7.77 | 5.06 | 4.88 | 5.24            | 2.95            | 1.20             | 5.47    | 5.65    | 2.70    | 2.89    | 0.55    | 0.80 | 0.32  | 2.01 |



# Alt Model-Shift Uniqueness Test

006701115-04, P = 26.551772 Days, E = 124.856841 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 13.1 | 12.1 | 7.17 | 8.10 | 5.11            | 2.73            | 1.99             | 5.95    | 5.02    | 4.97    | 4.04    | 3.14    | 0   | 0.38  | 0   |





### Stellar Parameters For KIC 006701115

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6818^{+163}_{-224}$ | $3.621^{+0.306}_{-0.054}$ | $-0.020^{+0.250}_{-0.250}$ | $3.543^{+0.335}_{-1.341}$ | $1.913^{+0.181}_{-0.392}$ | $0.061^{+0.129}_{-0.012}$                 |
|        | +2%/-3%              | +8%/-1%                   | +1250%/-1250%              | +9%/-38%                  | +9%/-20%                  | +213%/-20%                                |
| Source | PHO1                 | FLK73                     | 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 006701115-04 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$       | $T_{obs} (K)$          | $A_{obs}$          |
|---------|---------------|------------------------|---------------------|------------------------|--------------------|
| DV      | $-177 \pm 23$ | $6.42^{+4.73}_{-3.58}$ | $1647^{+95}_{-138}$ | $5712^{+3395}_{-1117}$ | $108^{+409}_{-71}$ |
| Alt.    | $-377 \pm 31$ | $7.99^{+5.21}_{-4.26}$ | $1660^{+83}_{-142}$ | $6210^{+3536}_{-1179}$ | $151^{+530}_{-95}$ |

$T_{max}$  = 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

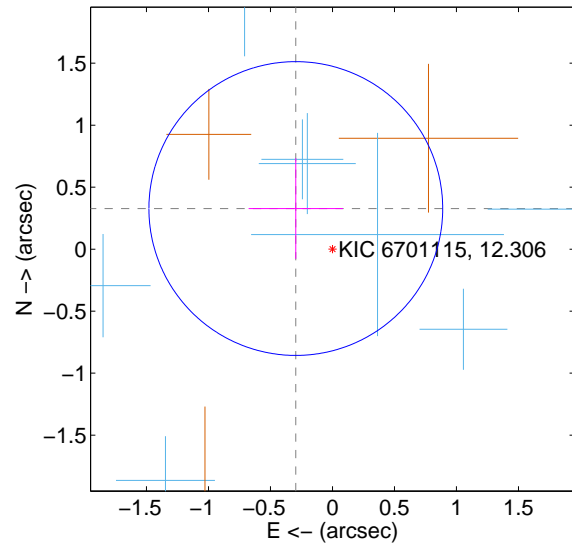
Supplemental centroid analysis for 006701115-04. Kepler magnitude: 12.31. Transit SNR 9.49

There are 8 quarters with good PRF difference image offsets

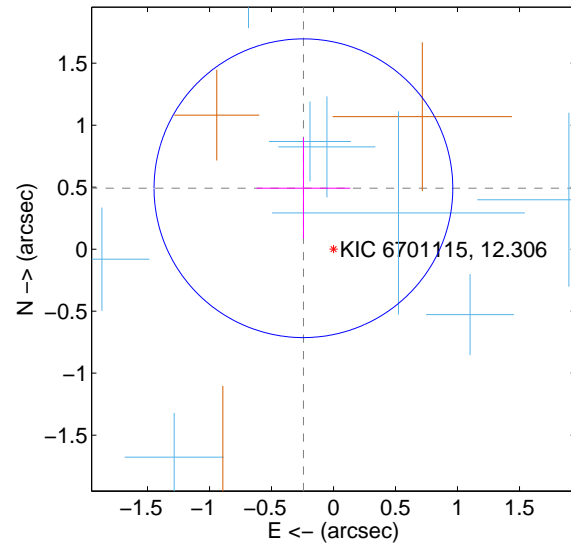
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $0.441 \pm 0.395$  | 1.12                | $0.296 \pm 0.381$ | $0.328 \pm 0.406$ |
| PRF-fit source offset from KIC position | $0.548 \pm 0.402$  | 1.37                | $0.243 \pm 0.379$ | $0.492 \pm 0.407$ |
| photometric centroid source offset      | $0.46 \pm 0.35$    | 1.32                | $-0.36 \pm 0.36$  | $0.28 \pm 0.32$   |

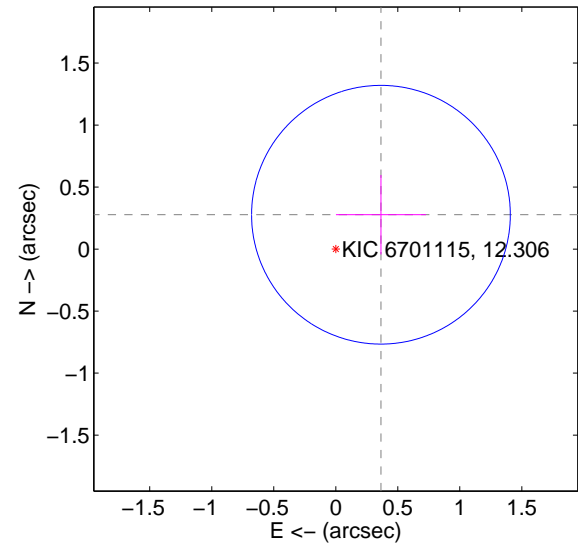
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

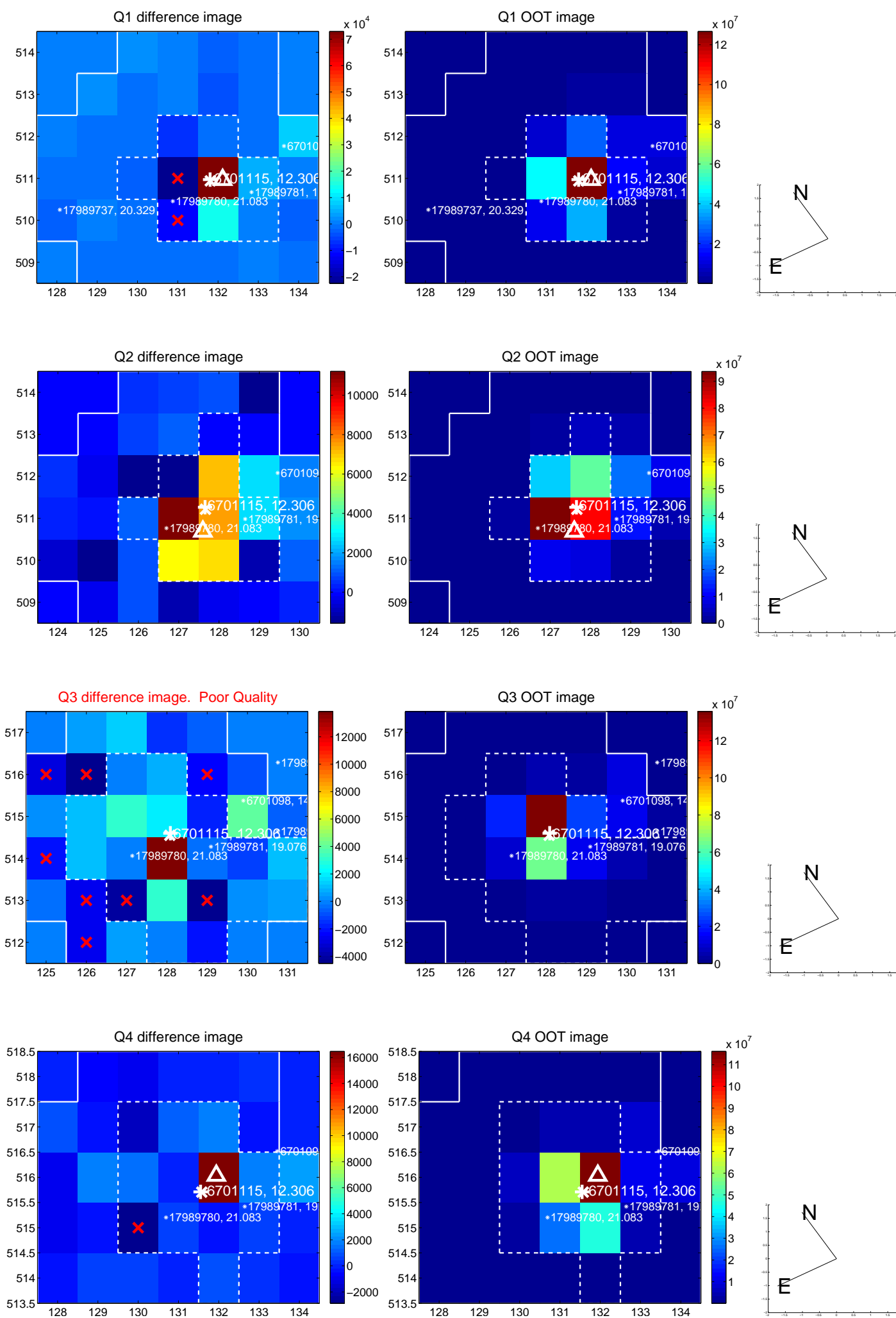


offset from photometric centroids

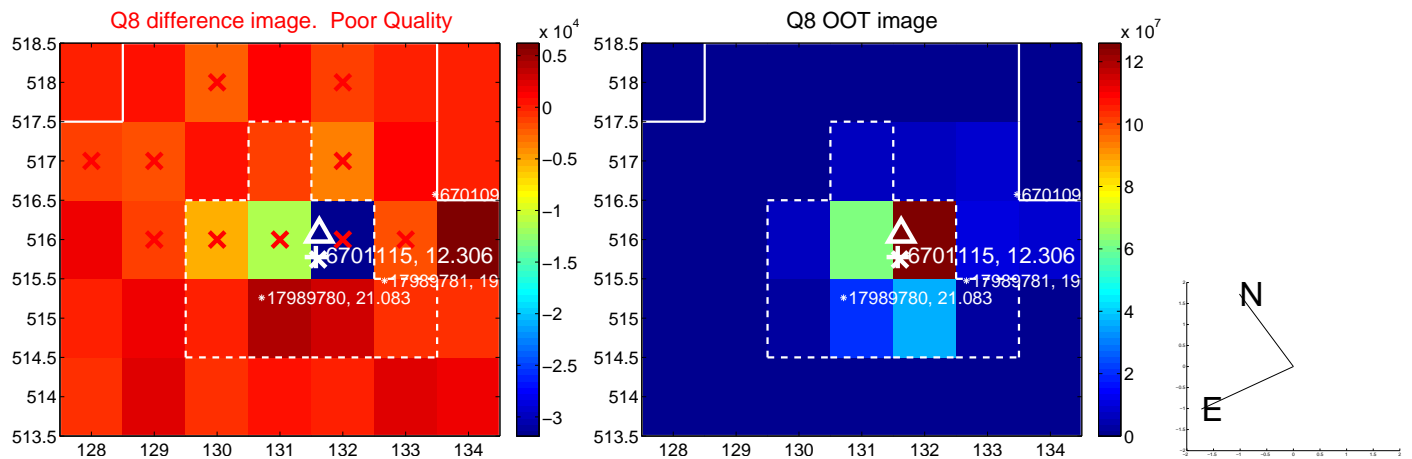
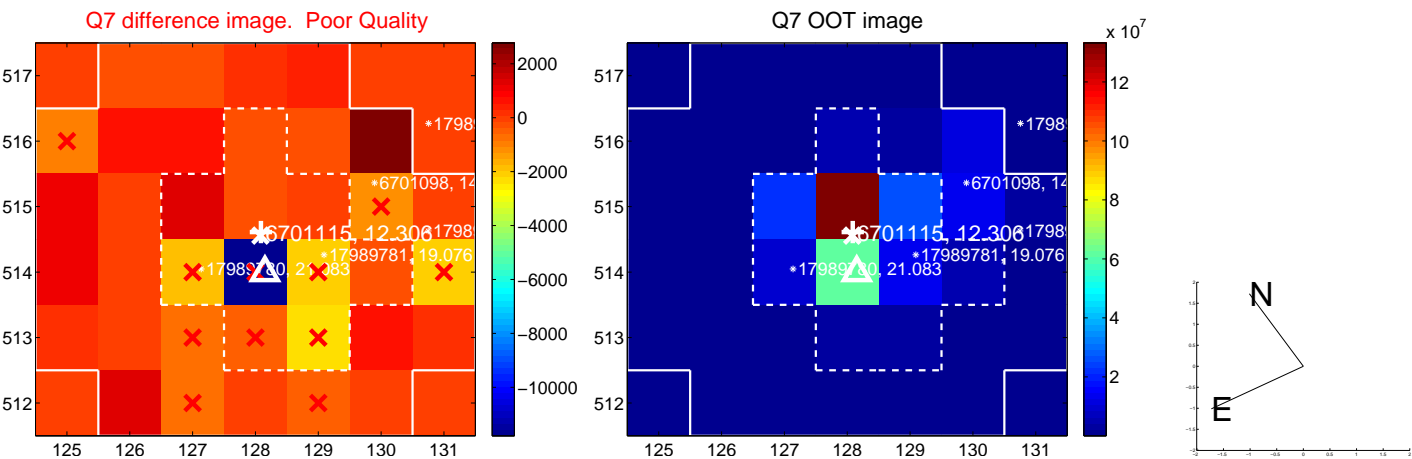
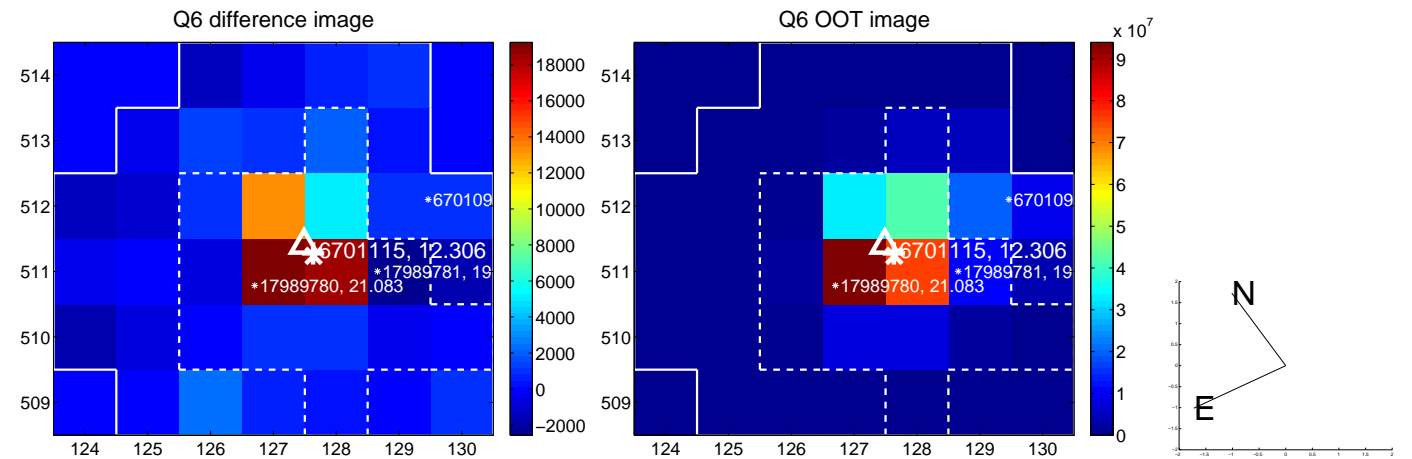
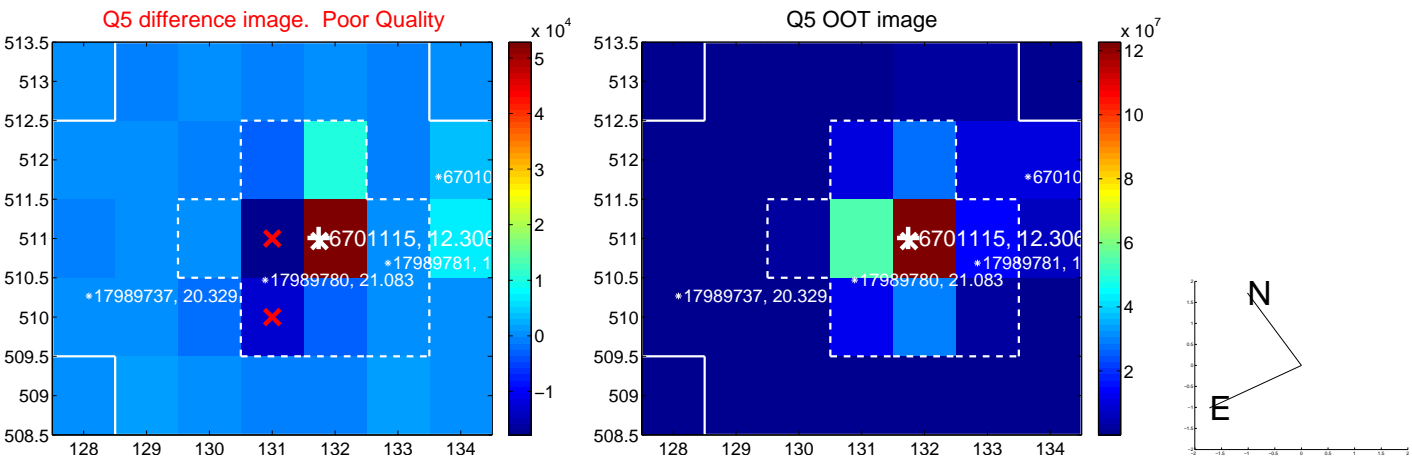


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

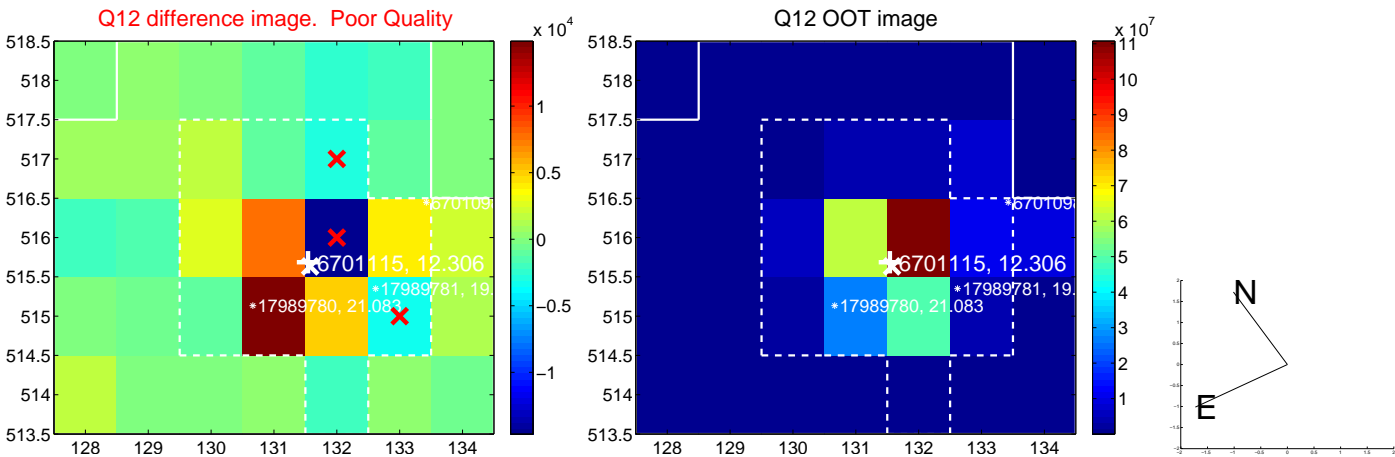
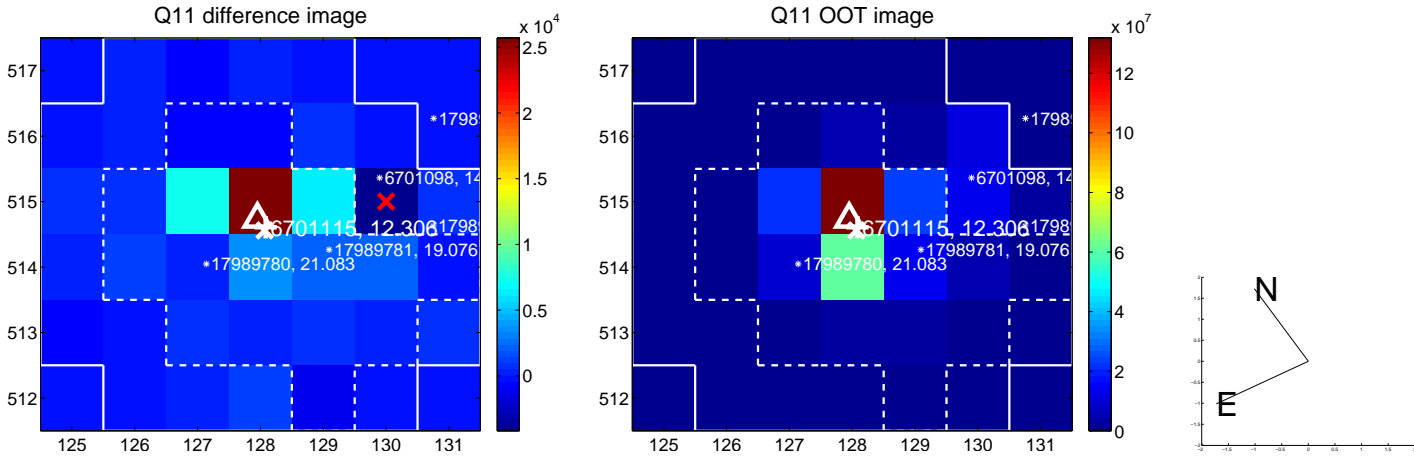
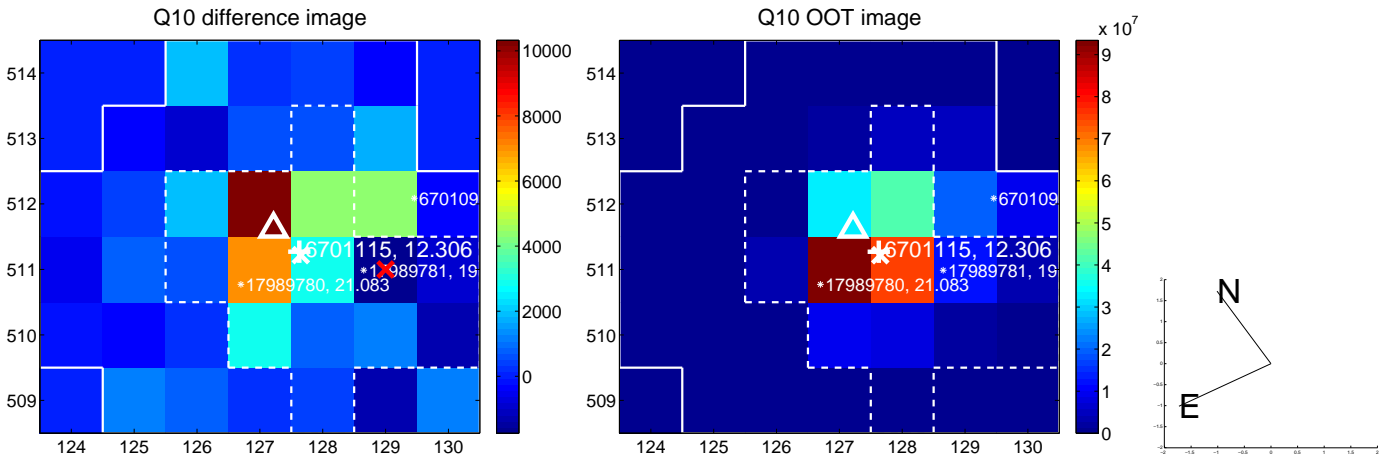
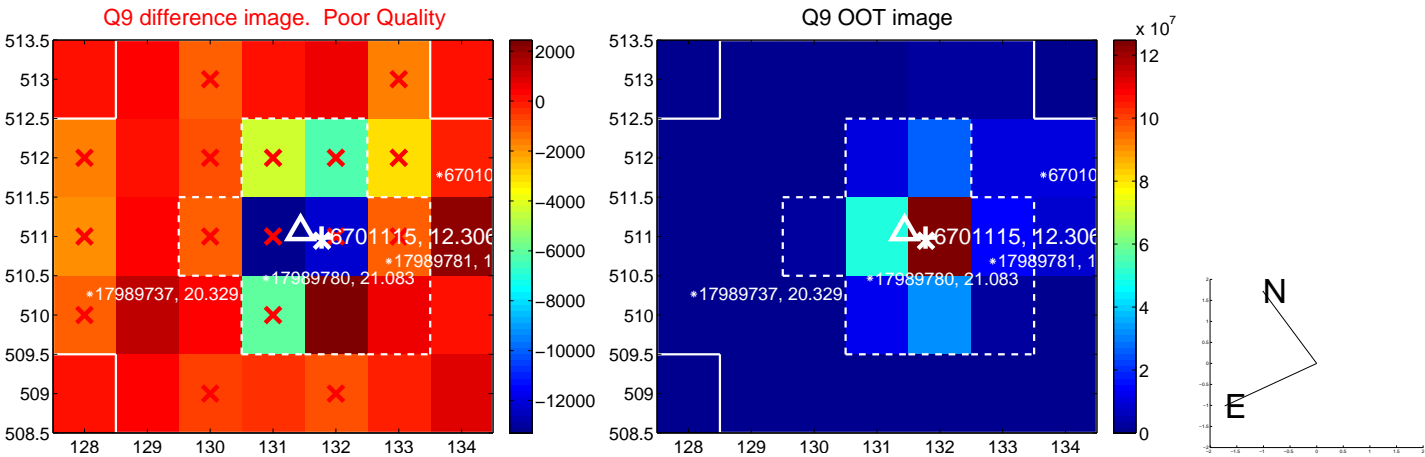
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



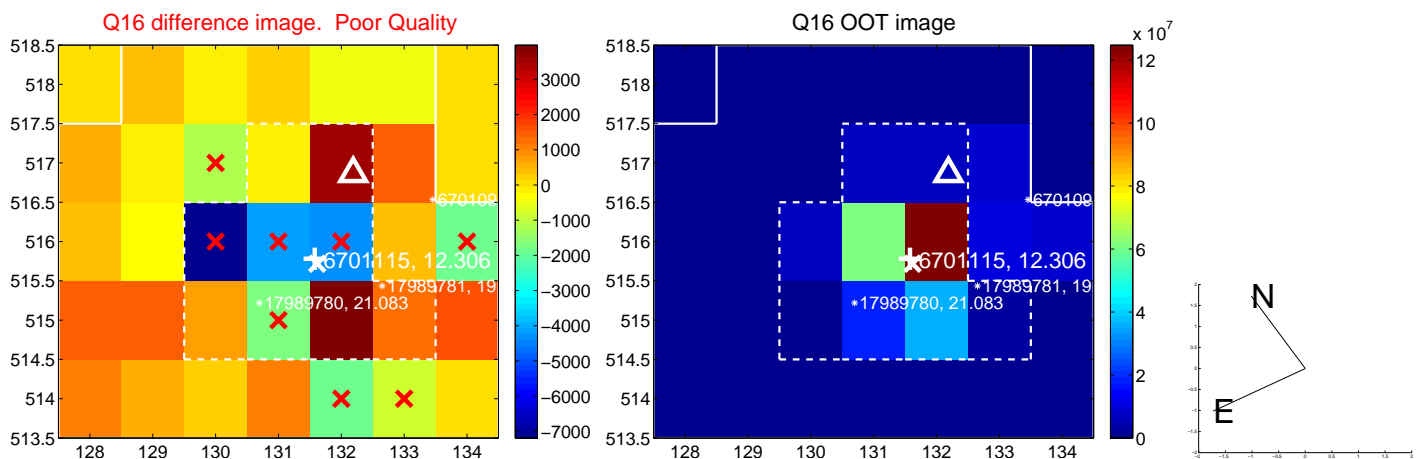
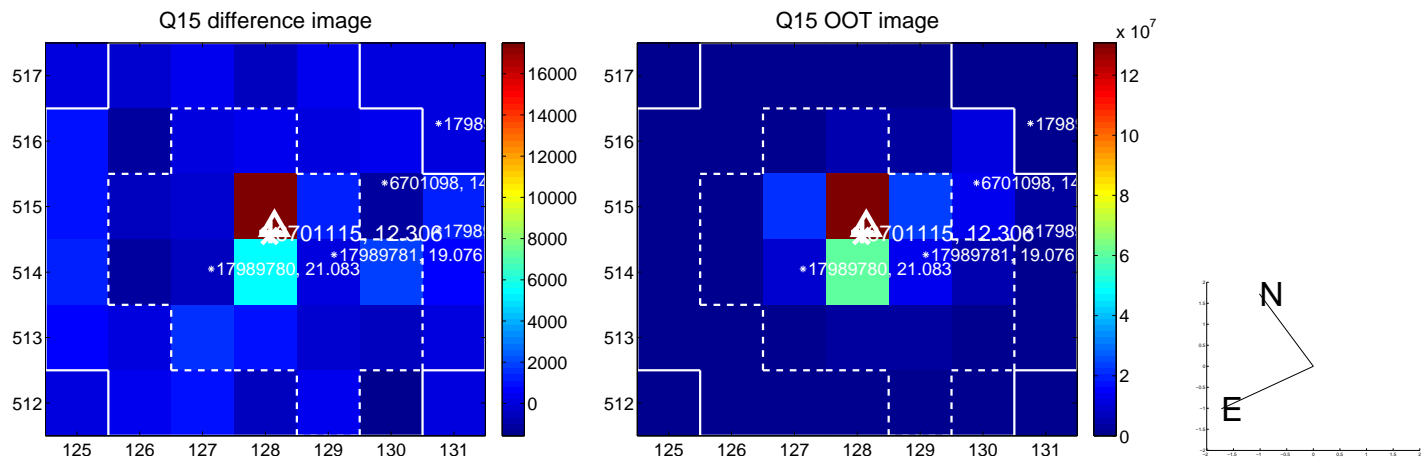
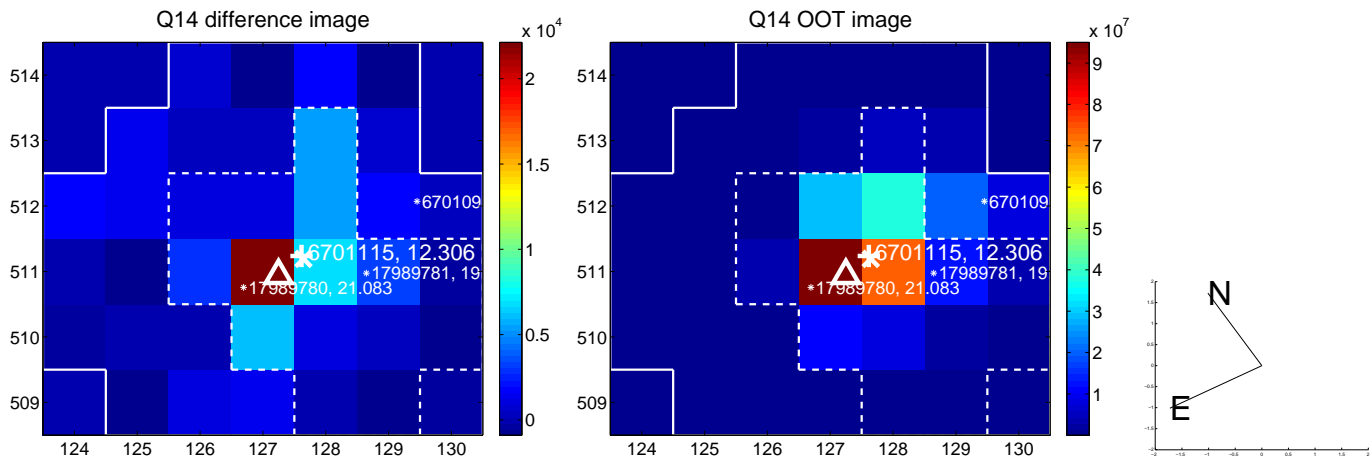
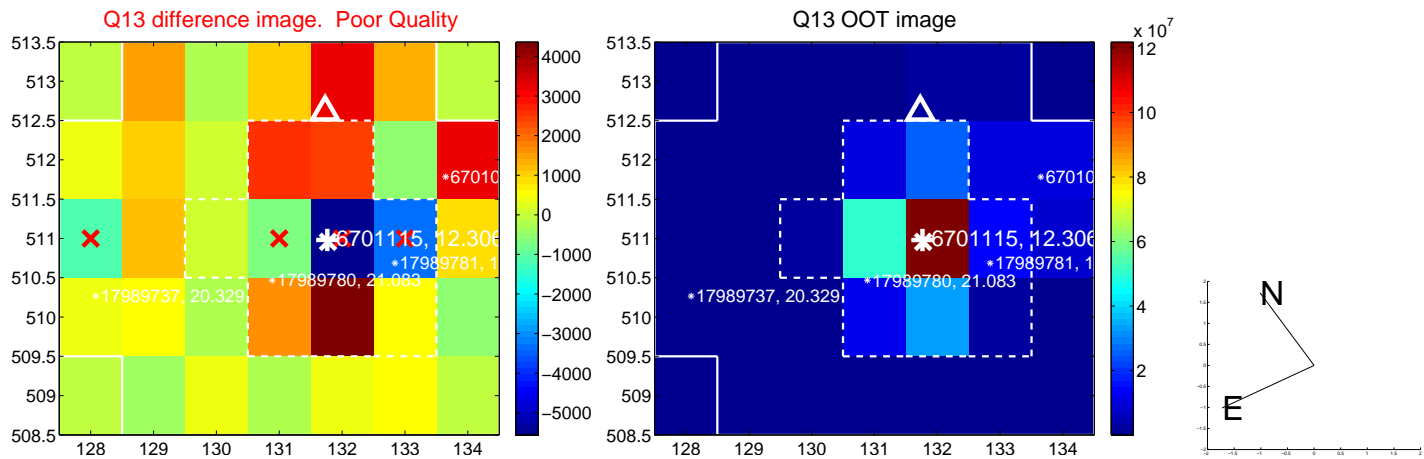
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



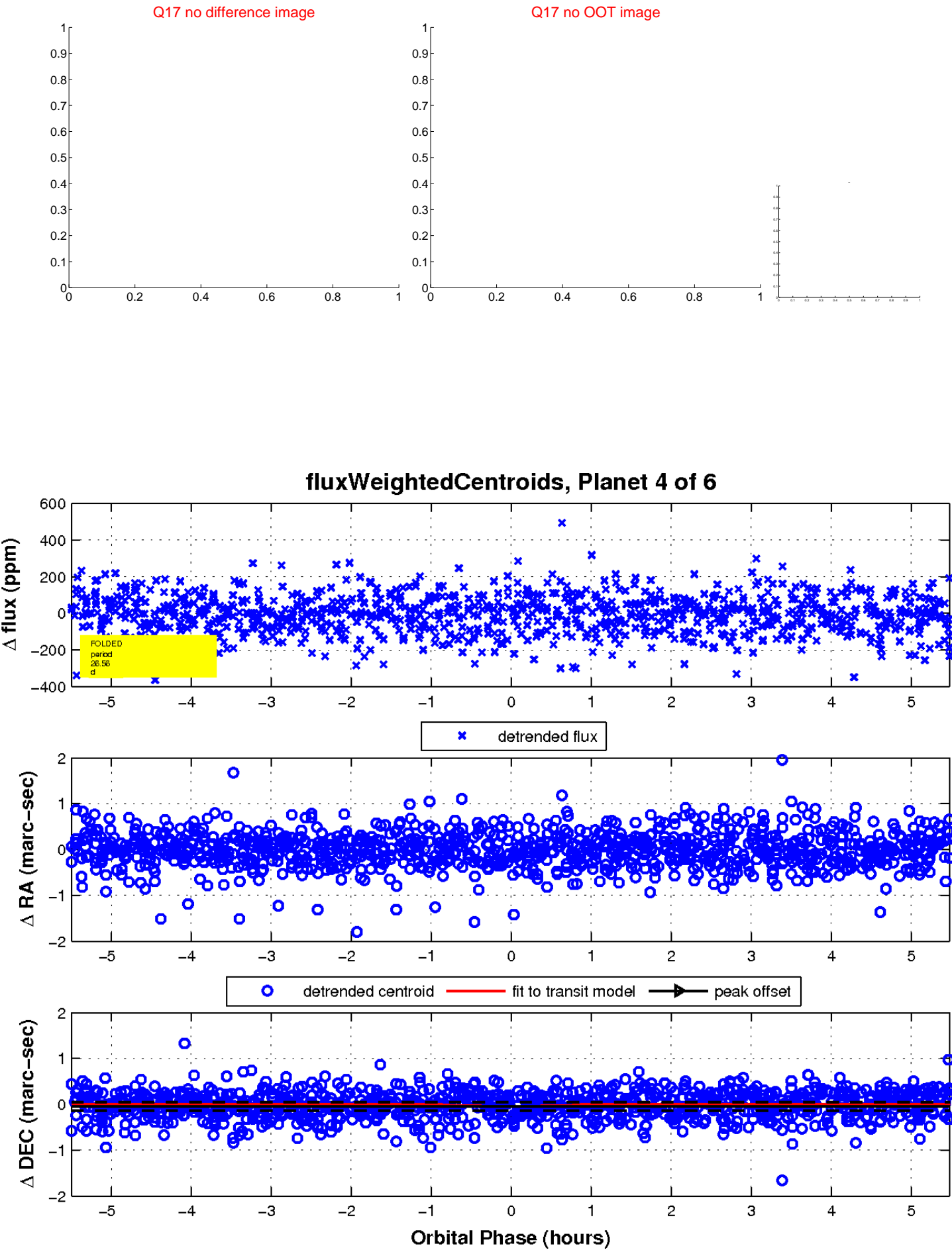
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



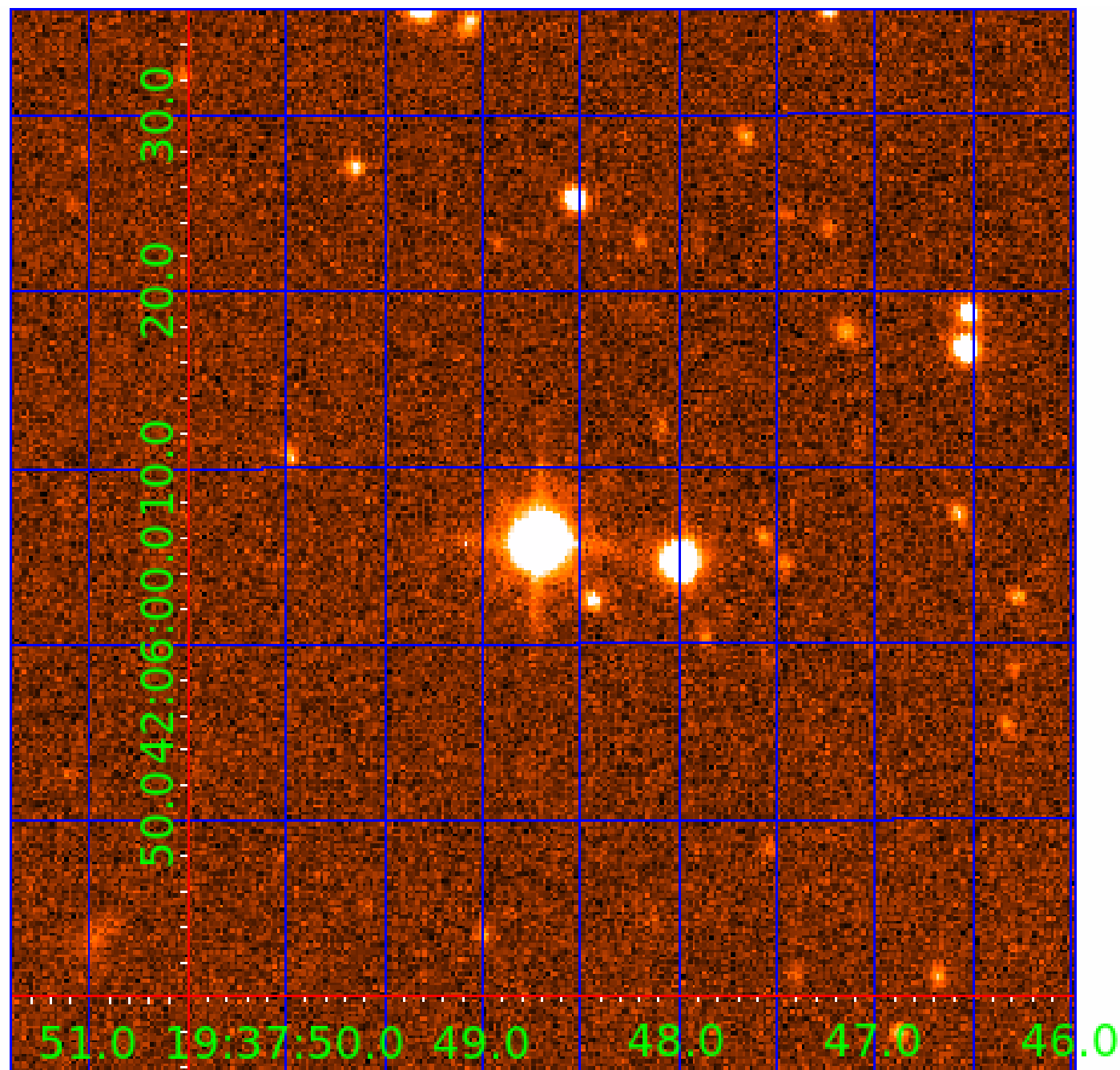
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 006701115

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006701115-01 | OBS      | No   | 0.829585      | 131.868443   | 22.5        | 5.905            | 14.9 | 14.9 | 3.54                        | 6818            | 1.95                   | 52798.56               |
| 006701115-02 | OBS      | No   | 29.848155     | 153.053528   | 300.0       | 1.877            | 15.7 | 10.1 | 3.54                        | 6818            | 6.57                   | 444.51                 |
| 006701115-03 | OBS      | No   | 44.782361     | 152.191257   | 463.7       | 1.004            | 15.9 | 11.9 | 3.54                        | 6818            | 7.79                   | 258.80                 |
| 006701115-04 | OBS      | No   | 26.557114     | 151.353132   | 251.7       | 1.837            | 10.8 | 9.5  | 3.54                        | 6818            | 6.68                   | 519.43                 |
| 006701115-05 | OBS      | No   | 41.290841     | 164.010708   | 218.6       | 2.692            | 10.4 | 8.0  | 3.54                        | 6818            | 5.47                   | 288.38                 |
| 006701115-06 | OBS      | No   | 43.573962     | 154.221616   | 289.1       | 2.000            | 11.0 | -1.0 | 3.54                        | 6818            | 6.09                   | 268.41                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 006701115-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT  |
| 006701115-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT  |
| 006701115-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT                             |
| 006701115-04 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT  |
| 006701115-05 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT                    |
| 006701115-06 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

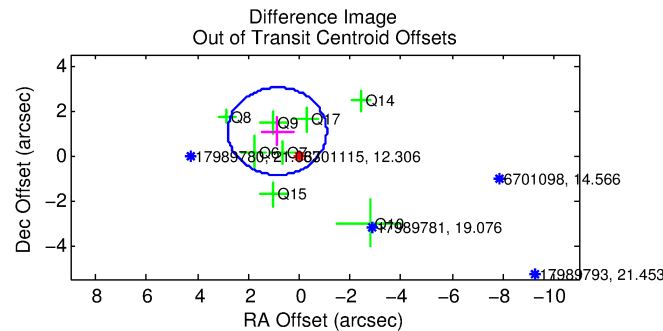
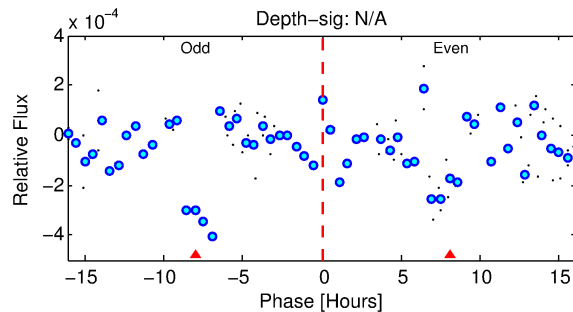
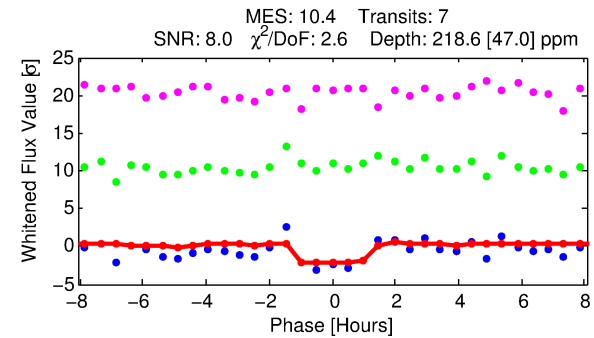
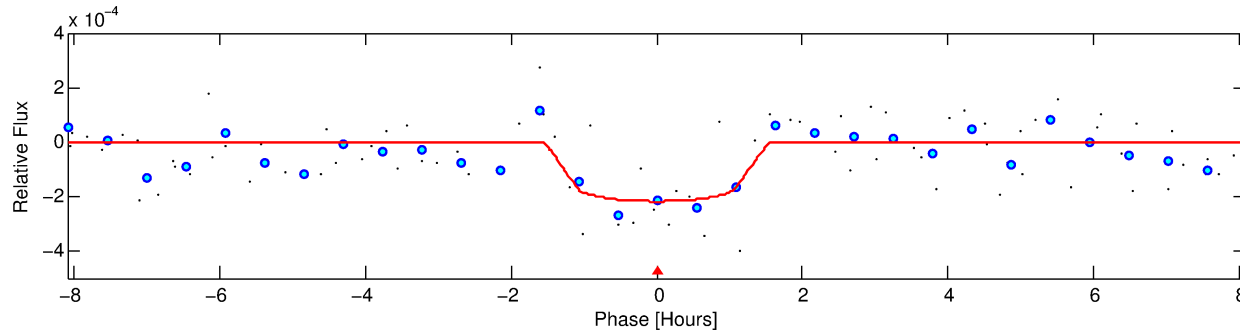
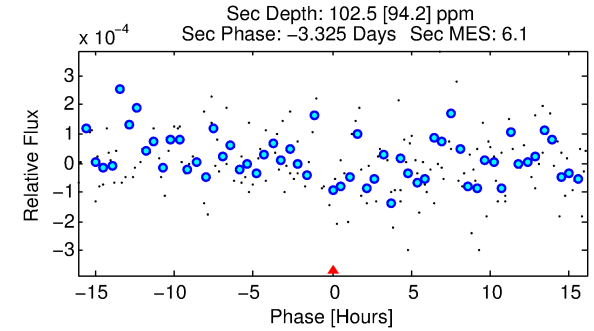
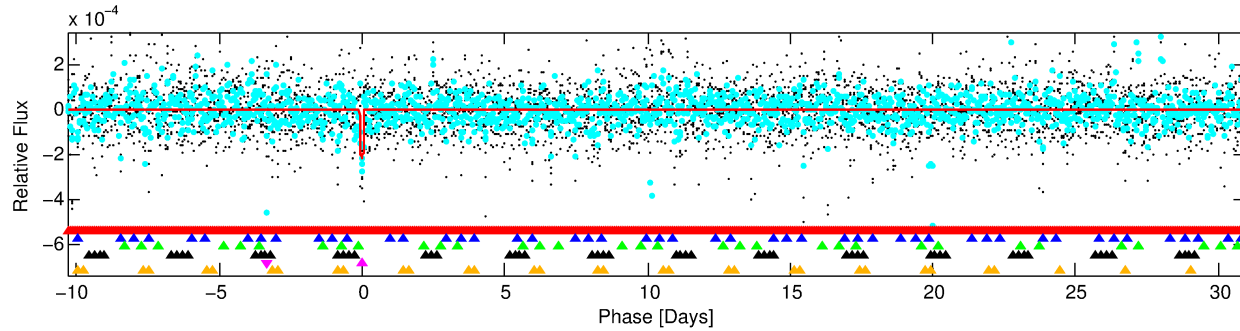
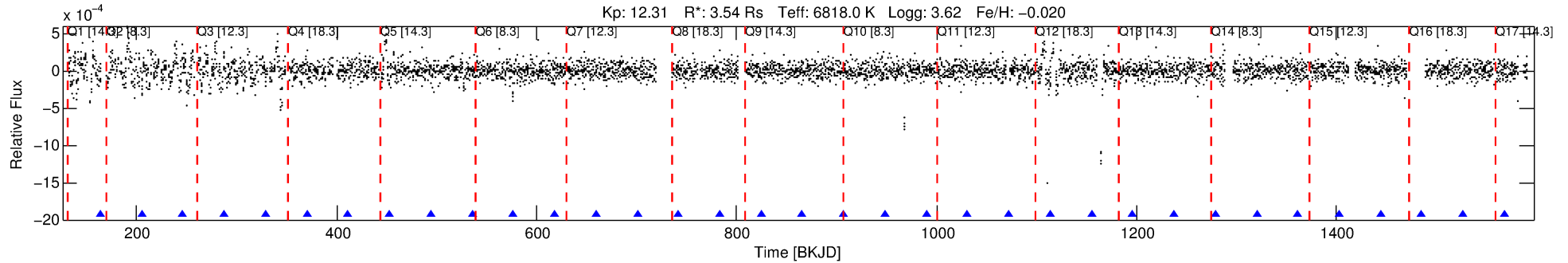
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006701115-05

No Significant Match Found

# DV One-Page Summary

KIC: 6701115 Candidate: 5 of 6 Period: 41.291 d



## DV Fit Results:

Period = 41.29084 [0.00074] d  
Epoch = 164.0107 [0.0136] BKJD  
Rp/R\* = 0.0142 [0.0190]  
a/R\* = 98.58 [747.50]  
b = 0.57 [9.18]  
Seff = 288.38 [158.37]  
Teq = 1051 [144] K  
Rp = 5.47 [7.63] Re  
a = 0.2903 [0.1001] AU  
Ag = 158.52 [457.36] [0.34σ]  
Teffp = 5765 [4091] K [1.15σ]

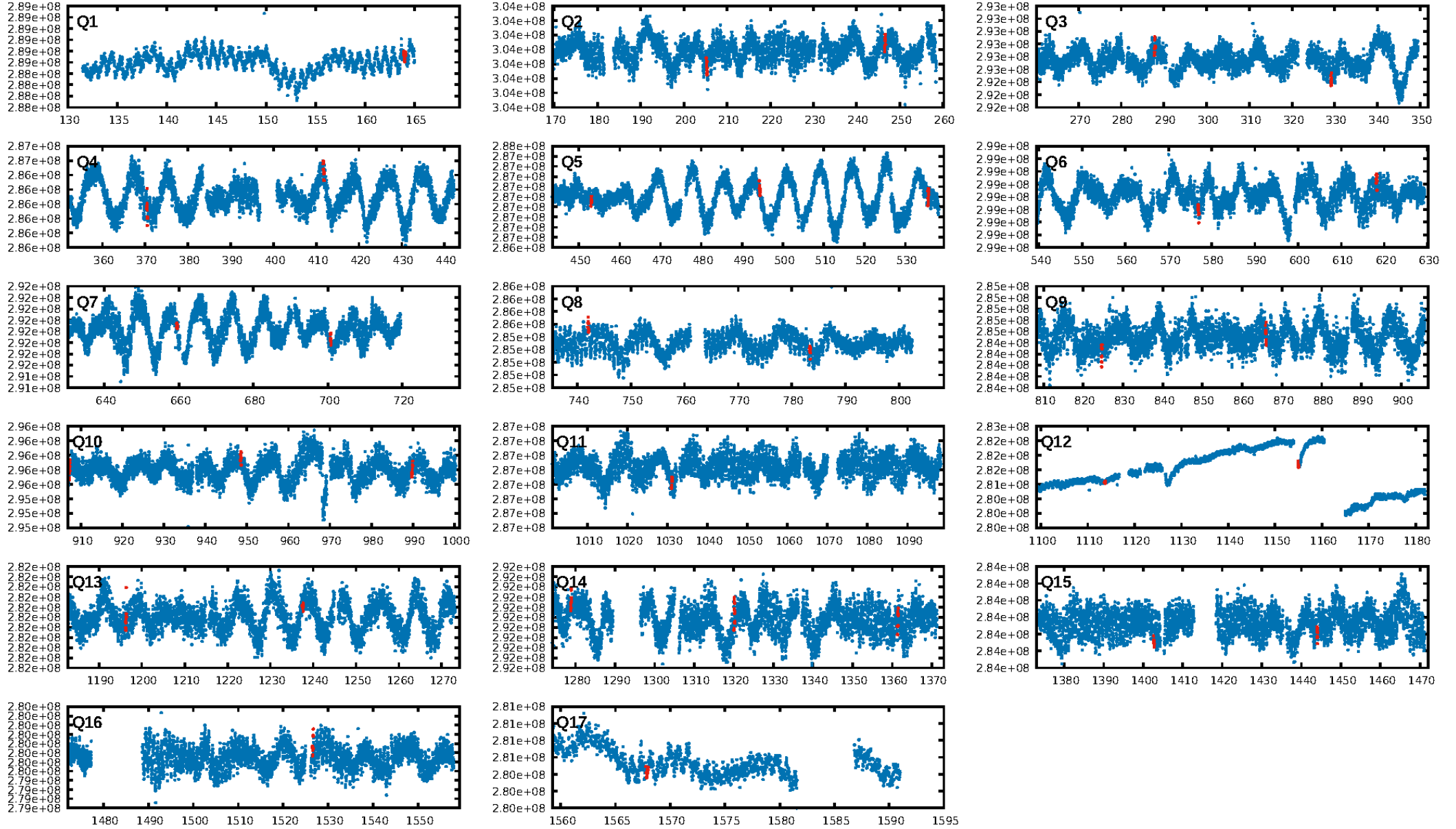
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [83.66σ]  
LongPeriod-sig: 100.0% [16.34σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 94.1%  
Bootstrap-pfa: 2.78e-17  
RollingBand-fgt: 1.00 [7/7]  
GhostDiagnostic-chr: 1.303  
Centroid-sig: N/A  
Centroid-so: 0.952 arcsec [2.63σ]  
OotOffset-rm: 1.383 arcsec [2.13σ]  
OotOffset-st: 3/2/1/2 [8]  
KicOffset-rm: 1.476 arcsec [2.07σ]  
KicOffset-st: 3/2/1/2 [8]  
DiffImageQuality-fgm: 0.38 [3/8]  
DiffImageOverlap-fno: 0.00 [0/16]

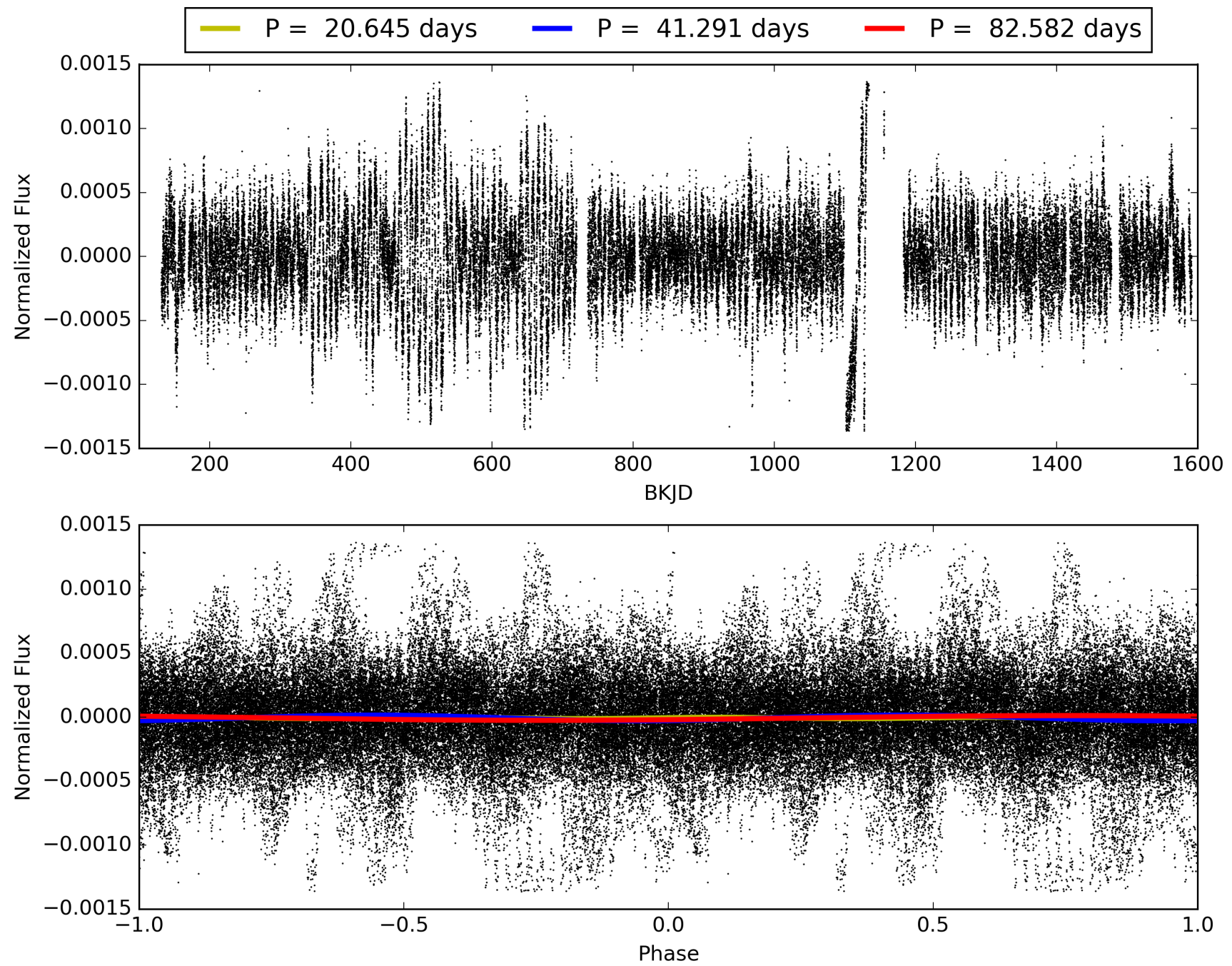
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 03:14:02 Z

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

# TCE 006701115-05, PDC Light Curves

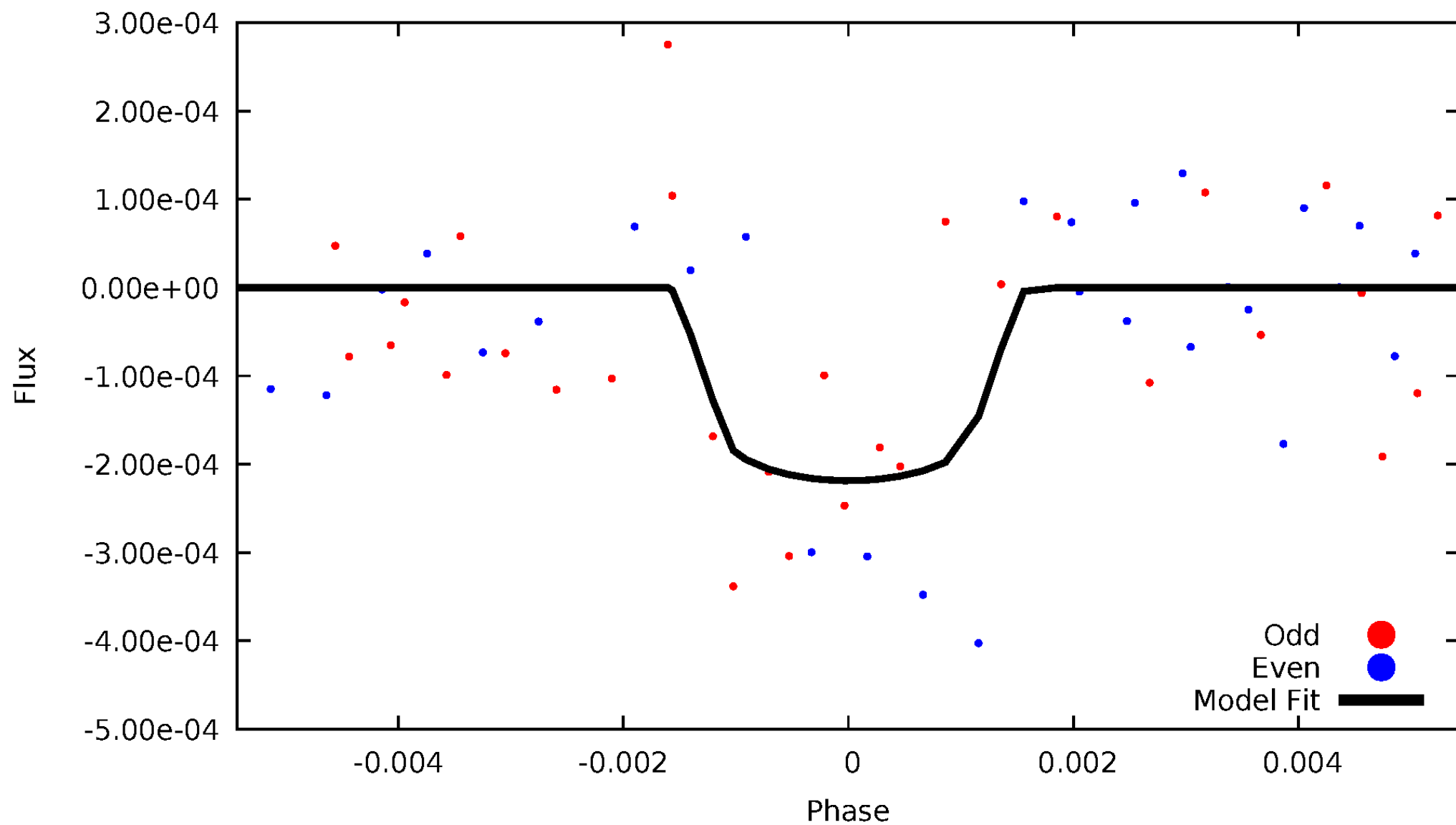


TCE 006701115-05



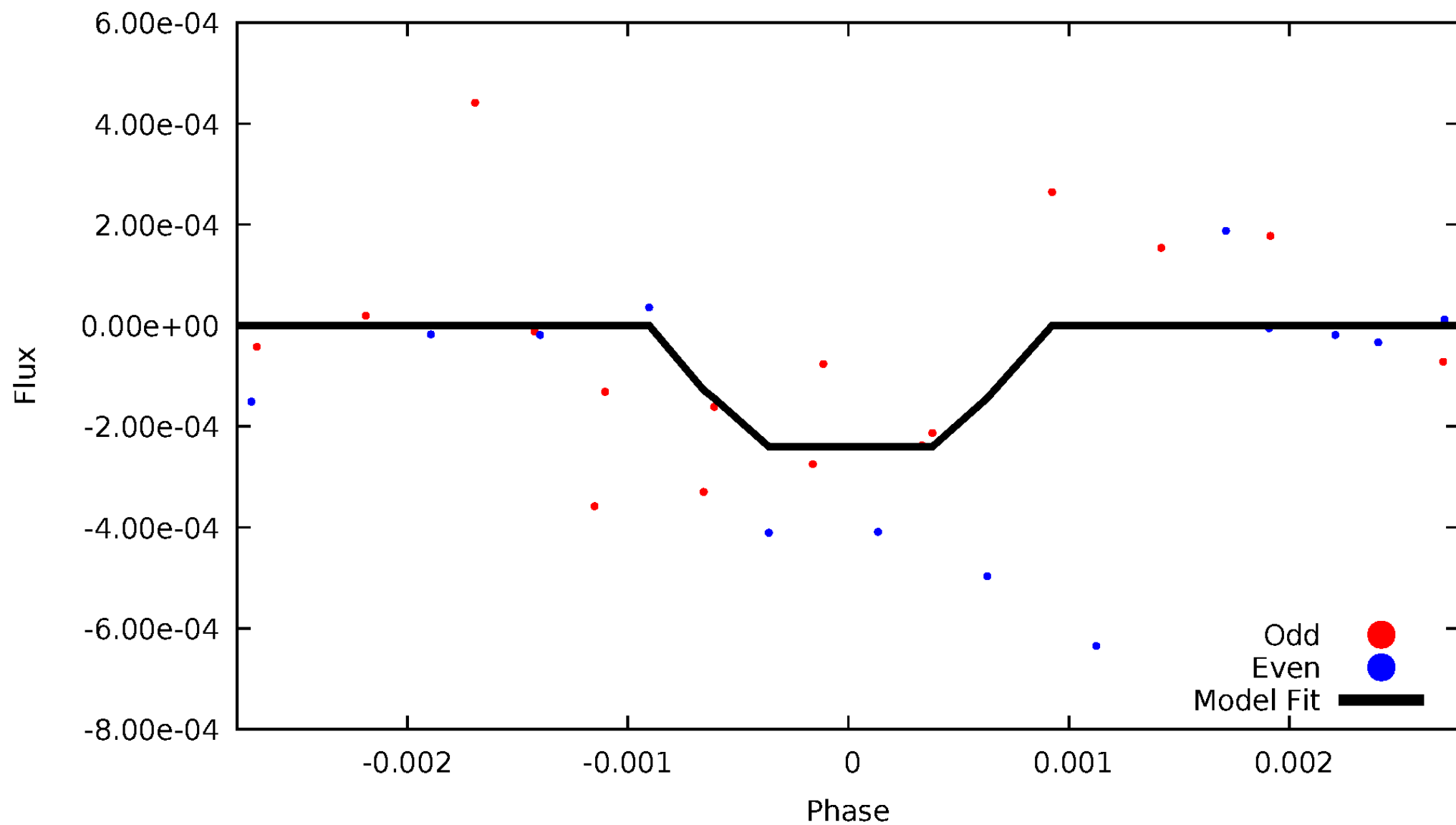
# DV Odd/Even

TCE 006701115-05



# ALT Odd/Even

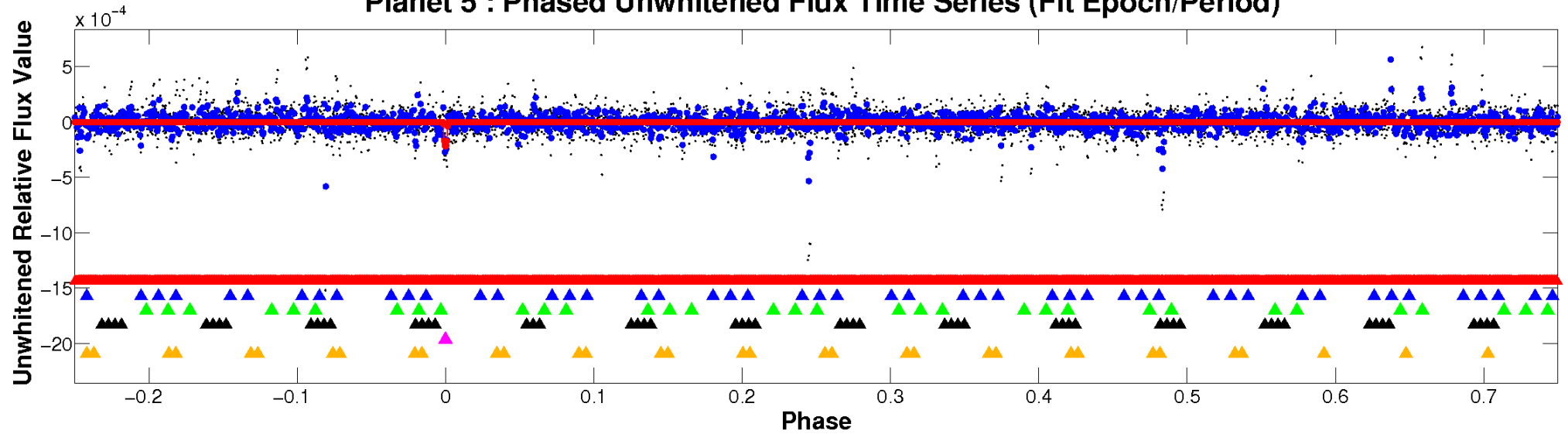
TCE 006701115-05



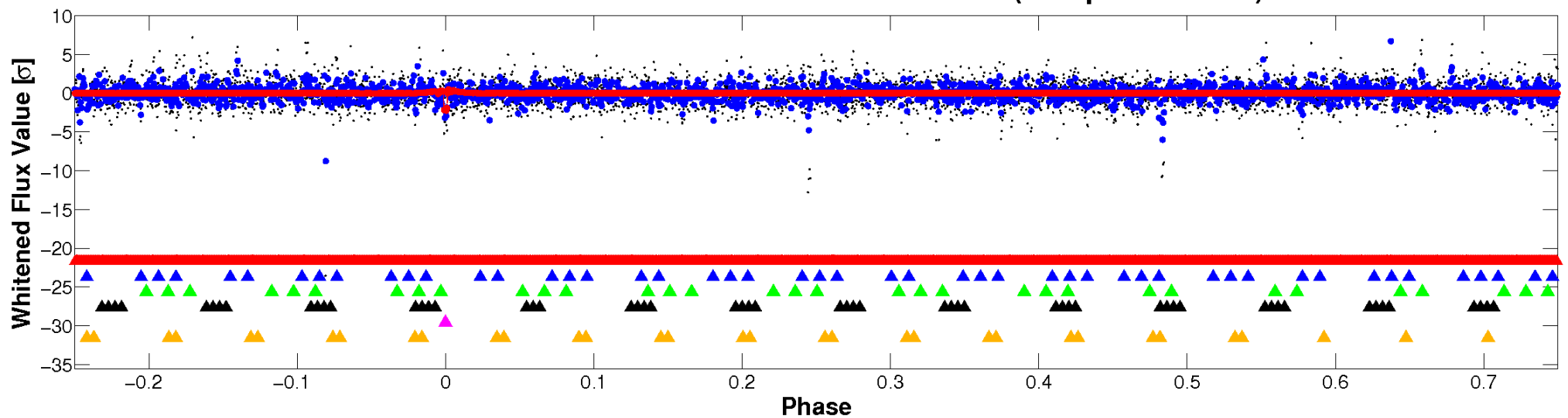


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

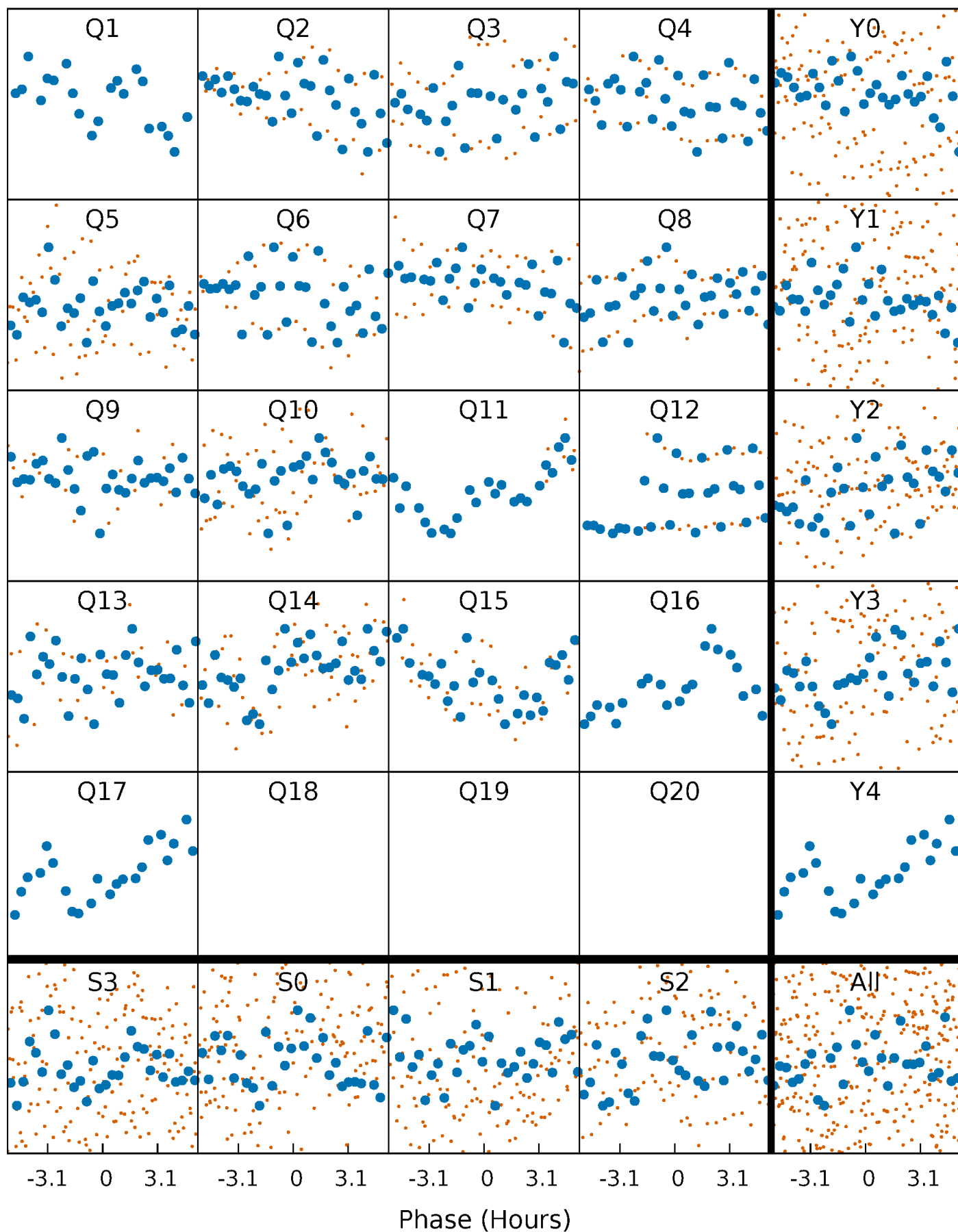


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



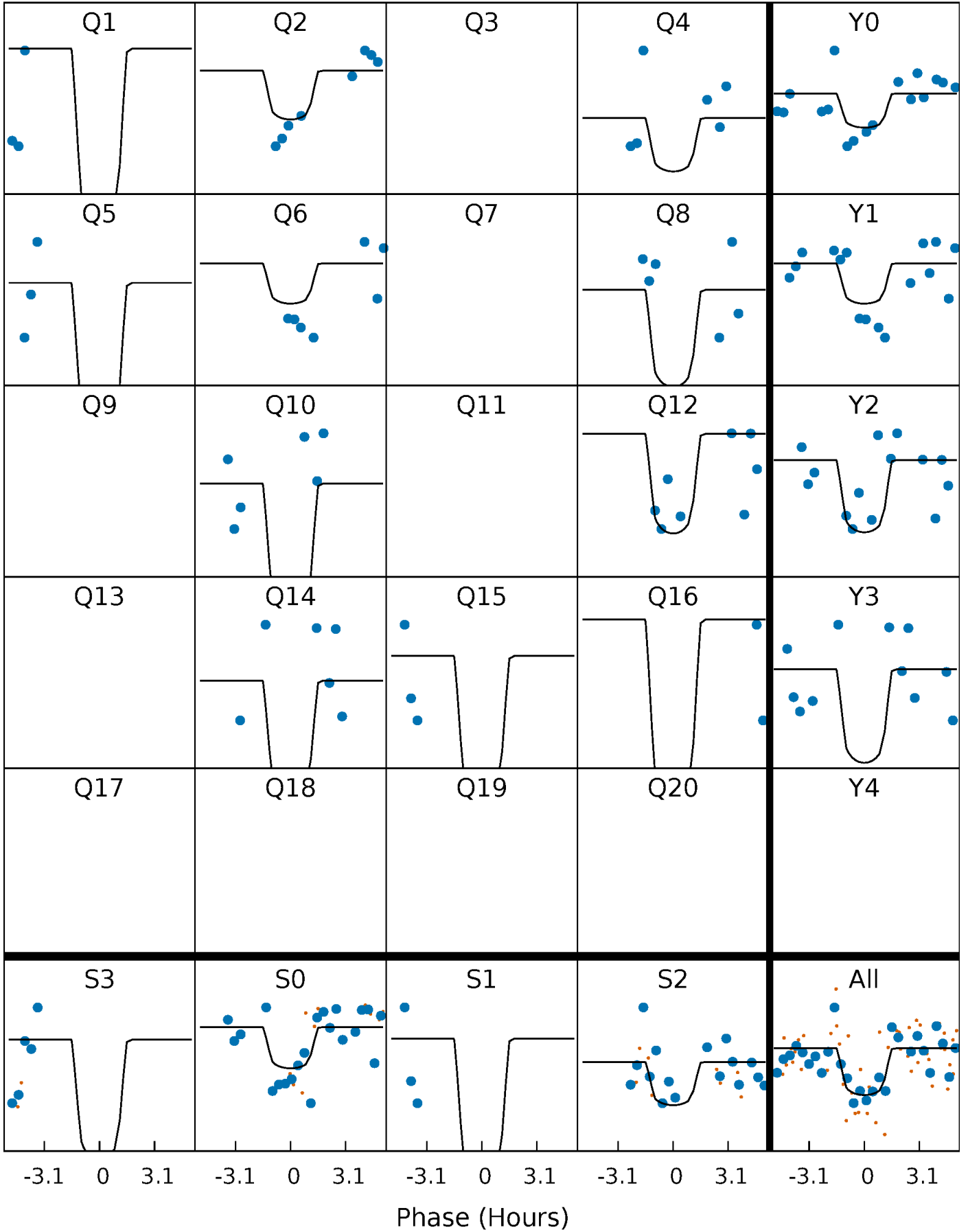
# PDC Quarter-Phased Transit Curves

TCE 006701115-05     $P = 41.290841$  Days     $T_0 = 164.010708$  (BKJD)



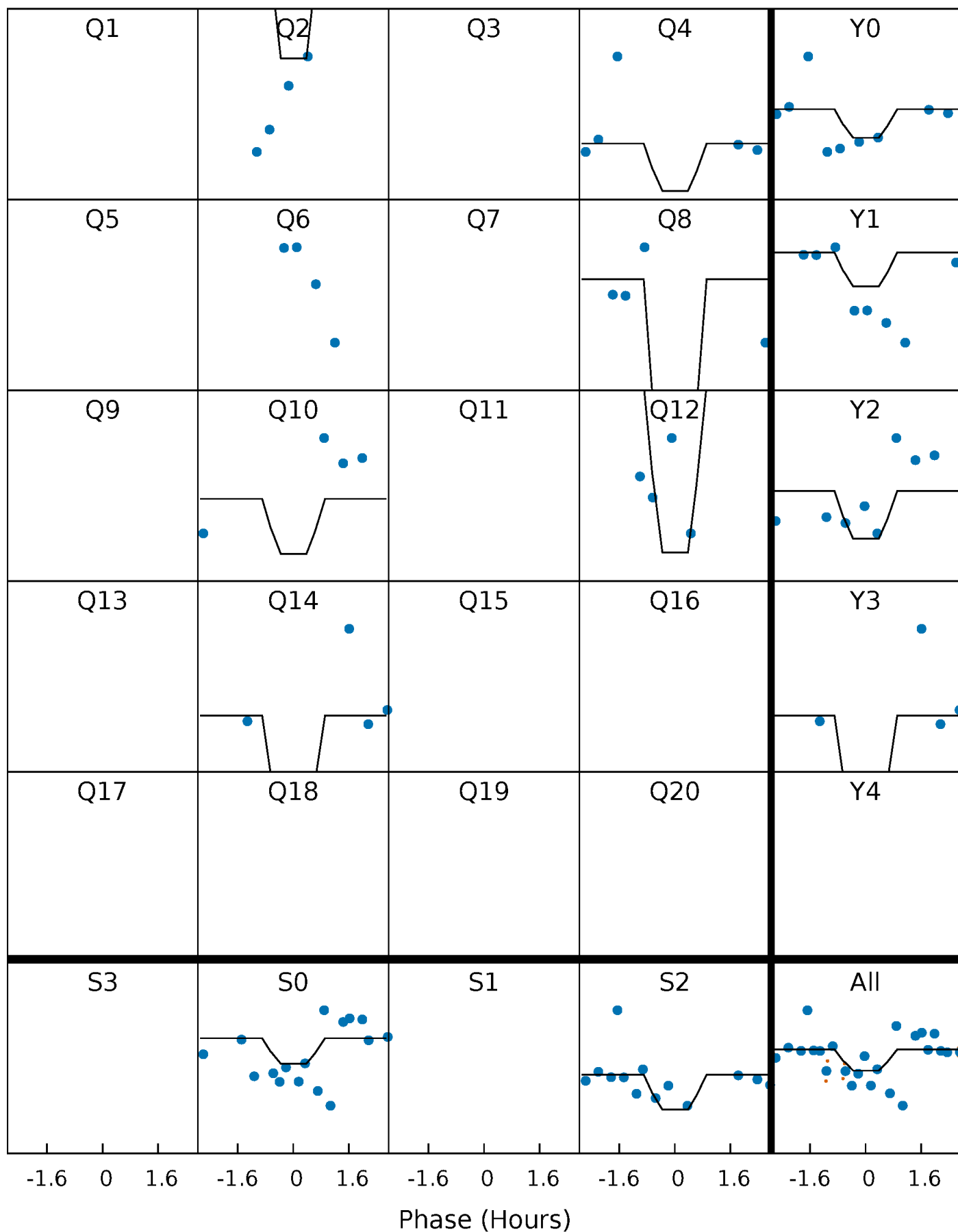
# DV Quarter-Phased Transit Curves

TCE 006701115-05   P= 41.290841 Days    $T_0=164.010708$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

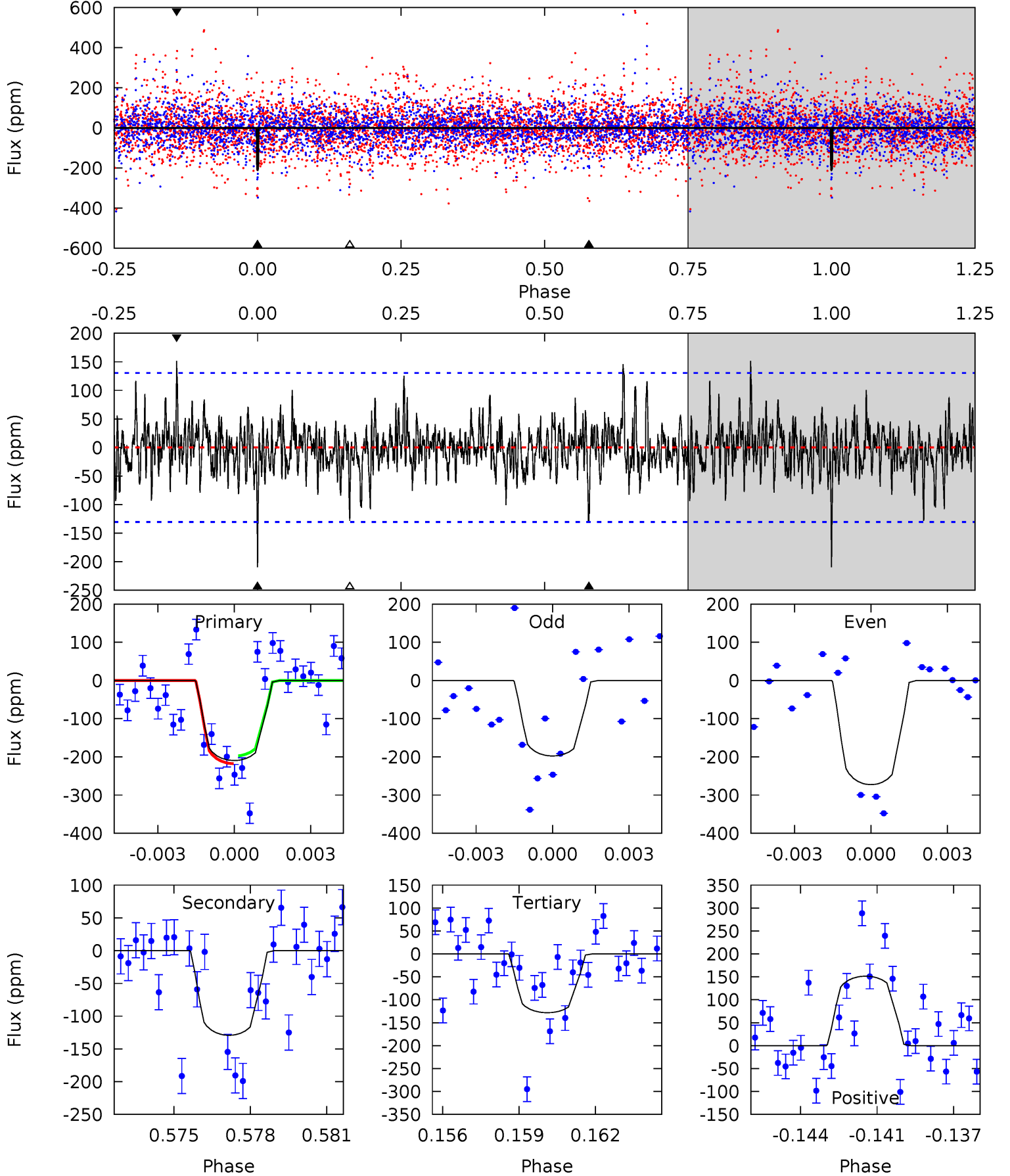
TCE 006701115-05 P= 41.290412 Days  $T_0=164.016409$  (BKJD)



# DV Model-Shift Uniqueness Test

006701115-05,  $P = 41.290841$  Days,  $E = 122.719867$  Days

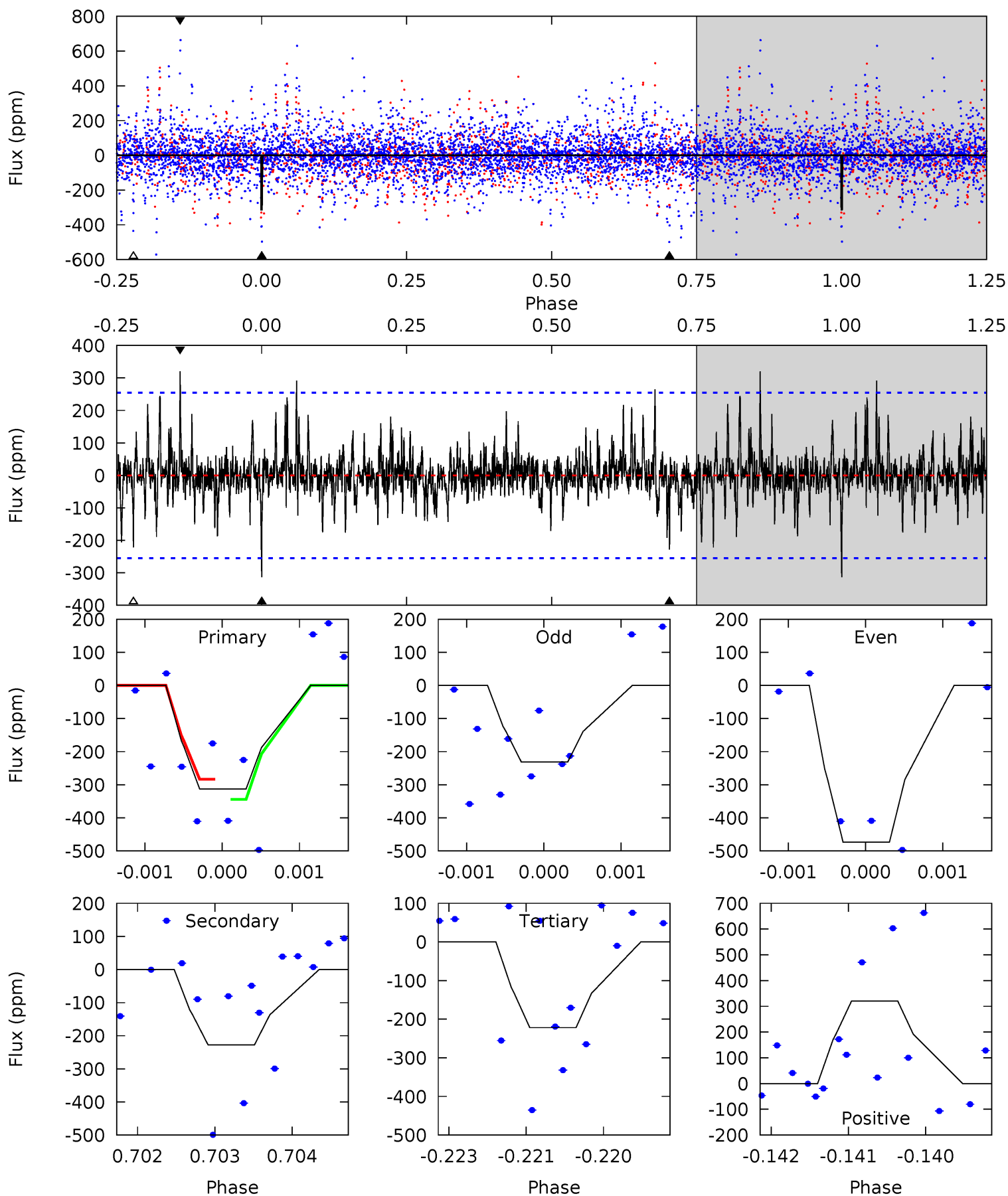
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.42 | 5.20 | 5.16 | 6.08 | 5.25            | 2.96            | 1.36             | 3.26    | 2.34    | 0.04    | -0.89   | 1.48    | 0.76 | 0.42  | 0.41 |



# Alt Model-Shift Uniqueness Test

006701115-05, P = 41.290412 Days, E = 122.725997 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.65 | 4.84 | 4.71 | 6.79 | 5.41            | 3.23            | 1.17             | 1.94    | -0.15   | 0.13    | -1.95   | 2.28    | 1.04 | 0.51  | 0.66 |



### Stellar Parameters For KIC 006701115

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6818^{+163}_{-224}$ | $3.621^{+0.306}_{-0.054}$ | $-0.020^{+0.250}_{-0.250}$ | $3.543^{+0.335}_{-1.341}$ | $1.913^{+0.181}_{-0.392}$ | $0.061^{+0.129}_{-0.012}$                 |
|        | +2%/-3%              | +8%/-1%                   | +1250%/-1250%              | +9%/-38%                  | +9%/-20%                  | +213%/-20%                                |
| Source | PHO1                 | FLK73                     | 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 006701115-05 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$       | $T_{obs} (K)$          | $A_{obs}$            |
|---------|---------------|------------------------|---------------------|------------------------|----------------------|
| DV      | $-129 \pm 25$ | $7.14^{+6.64}_{-4.12}$ | $1438^{+73}_{-116}$ | $5202^{+3118}_{-1196}$ | $118^{+587}_{-87}$   |
| Alt.    | $-228 \pm 47$ | $7.16^{+6.21}_{-4.58}$ | $1431^{+73}_{-123}$ | $5774^{+4869}_{-1315}$ | $204^{+1348}_{-146}$ |

$T_{max}$  = 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

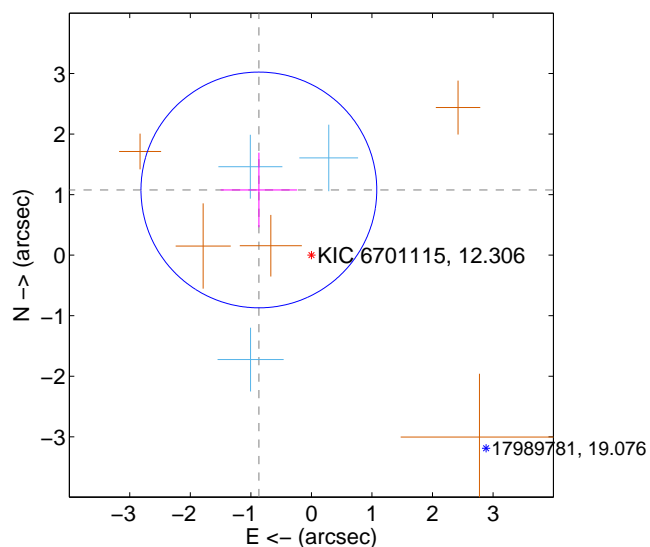
Supplemental centroid analysis for 006701115-05. Kepler magnitude: 12.31. Transit SNR 7.98

There are 3 quarters with good PRF difference image offsets

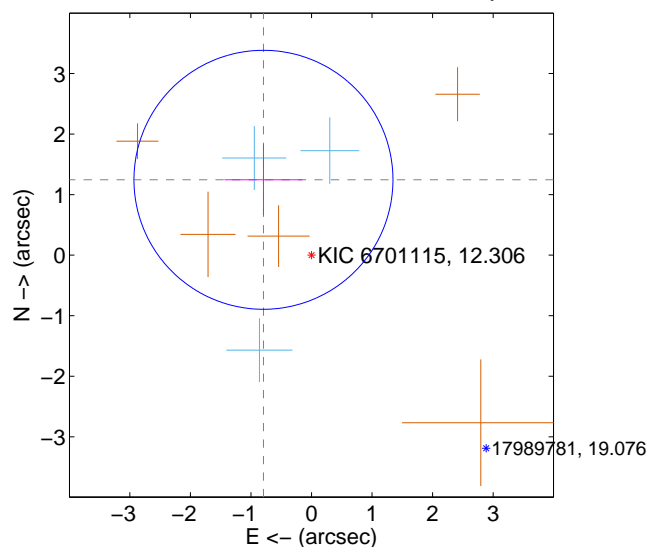
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $1.383 \pm 0.649$  | 2.13                | $0.867 \pm 0.631$ | $1.077 \pm 0.616$ |
| PRF-fit source offset from KIC position | $1.476 \pm 0.713$  | 2.07                | $0.793 \pm 0.645$ | $1.244 \pm 0.585$ |
| photometric centroid source offset      | $0.95 \pm 0.36$    | 2.63                | $-0.64 \pm 0.39$  | $0.70 \pm 0.33$   |

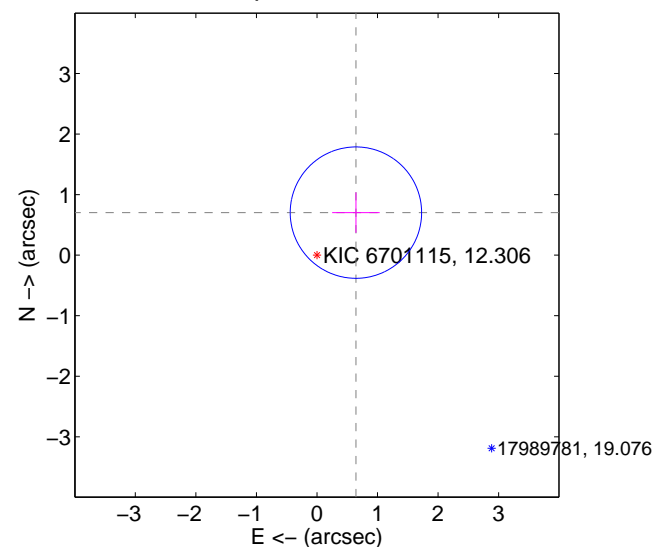
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

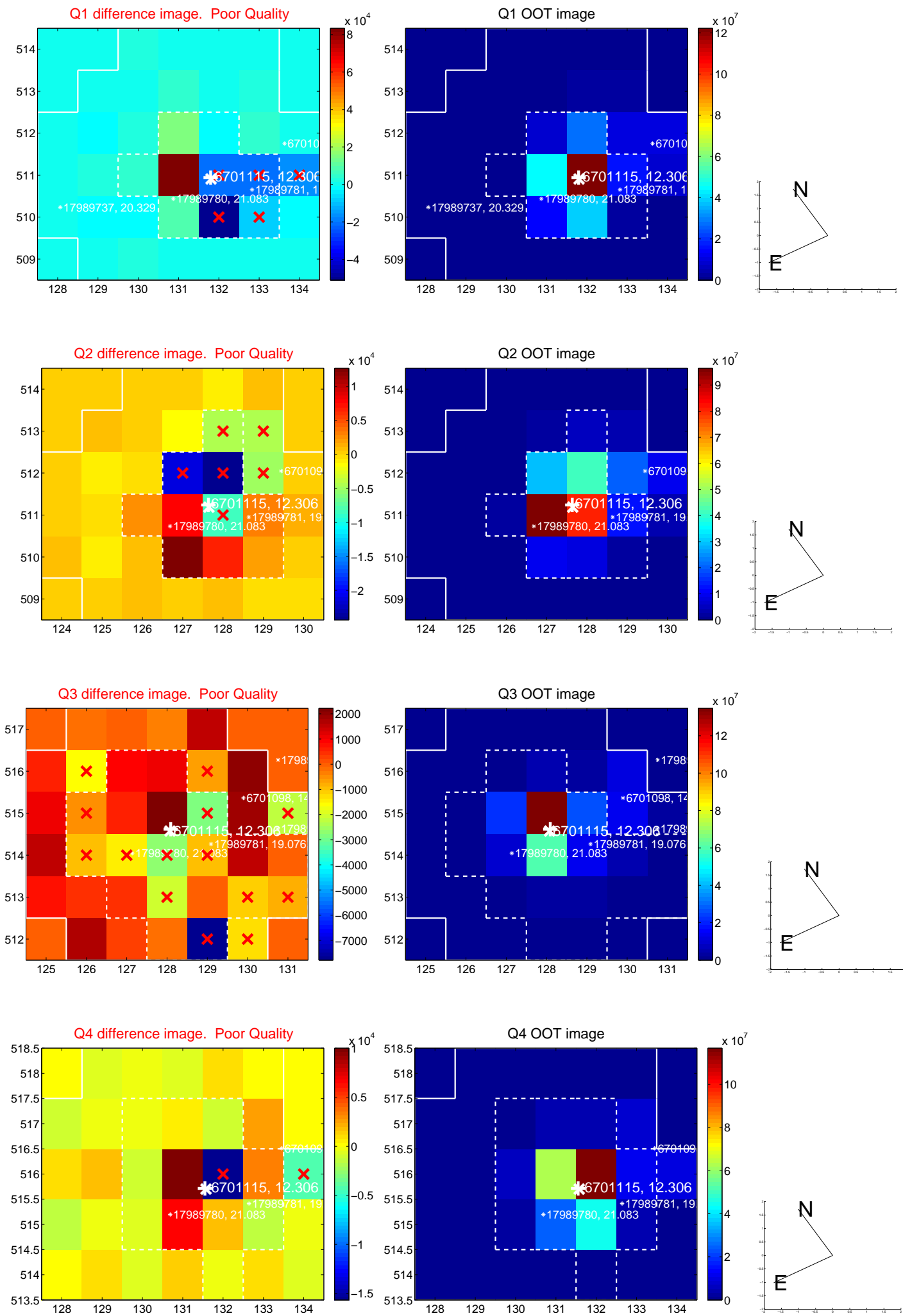


offset from photometric centroids

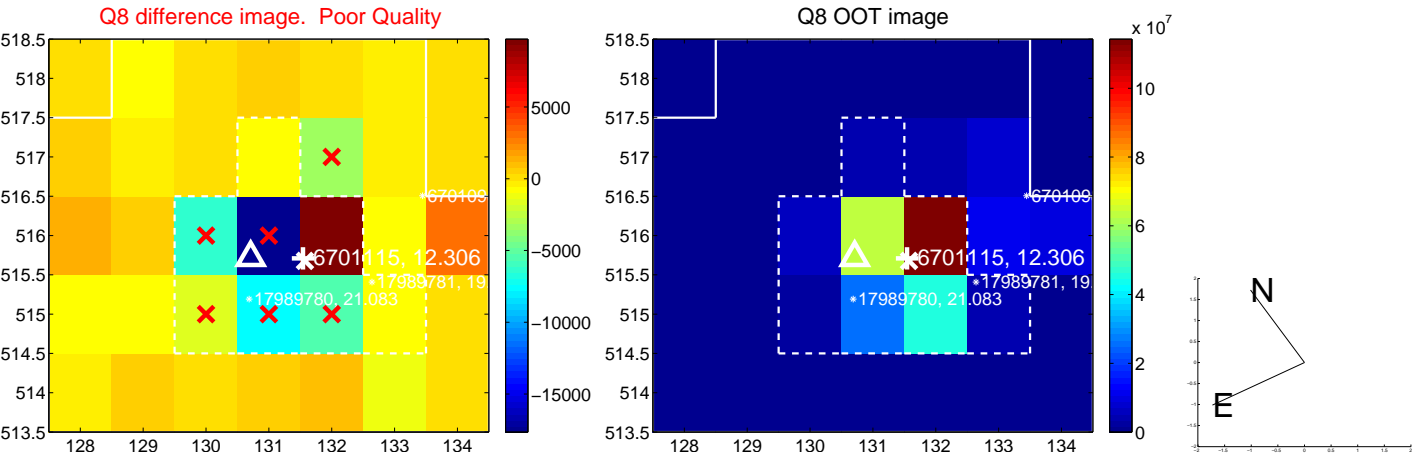
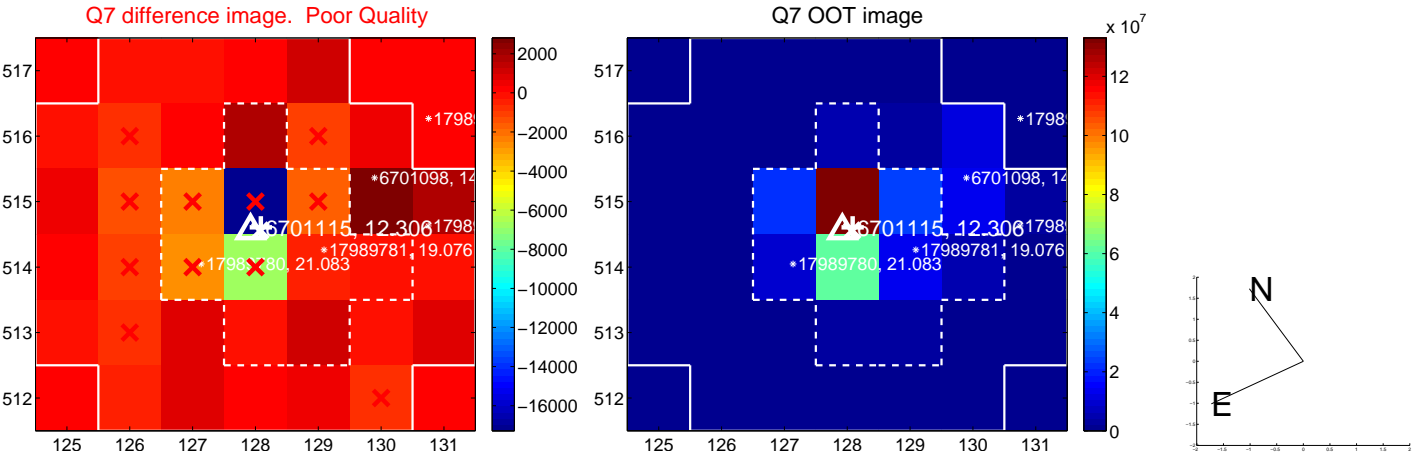
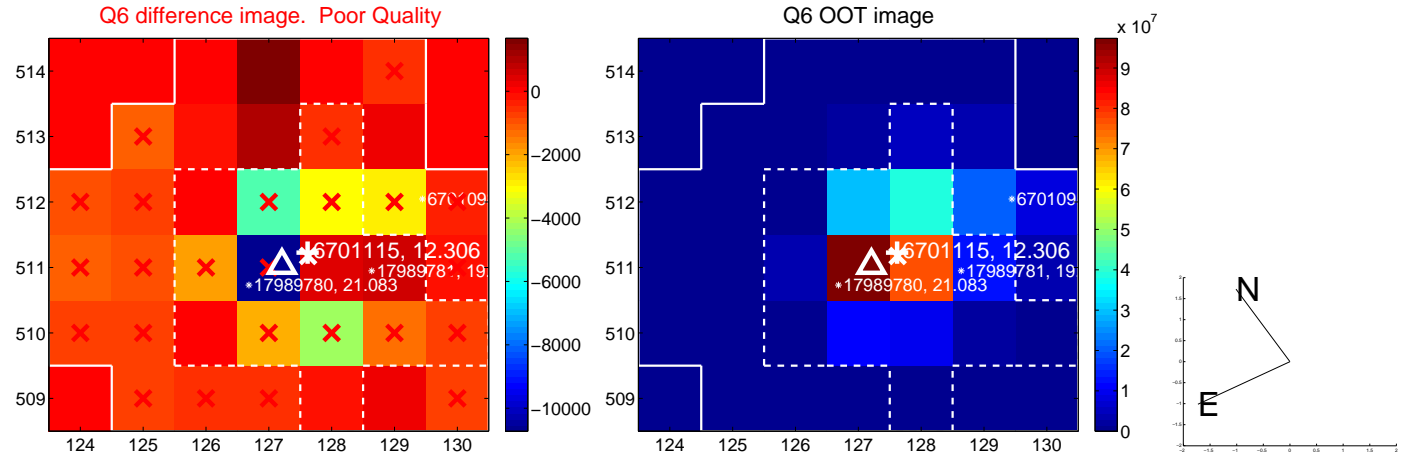
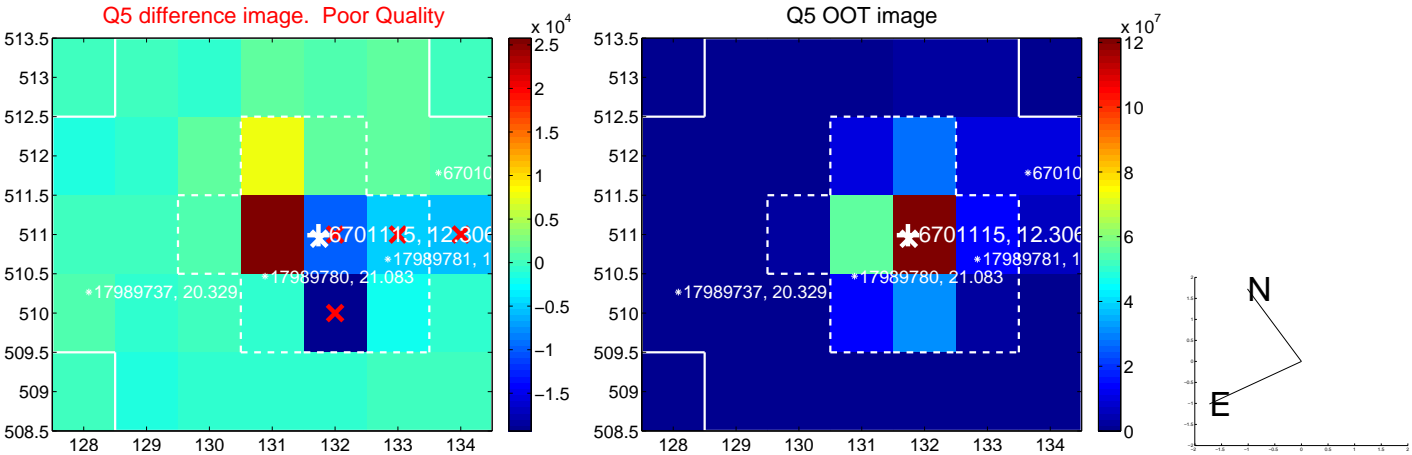


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

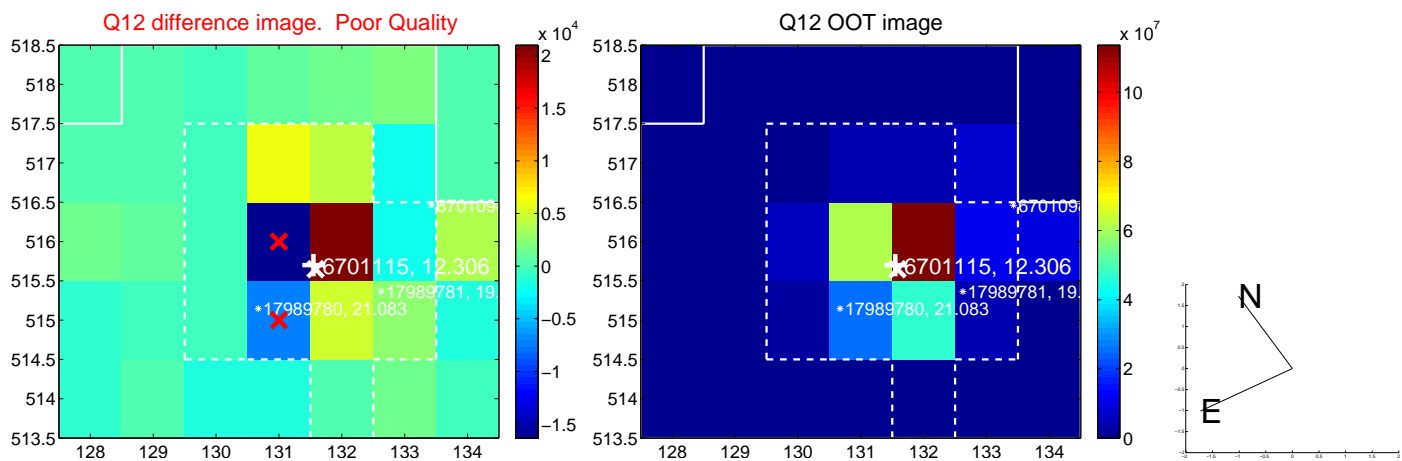
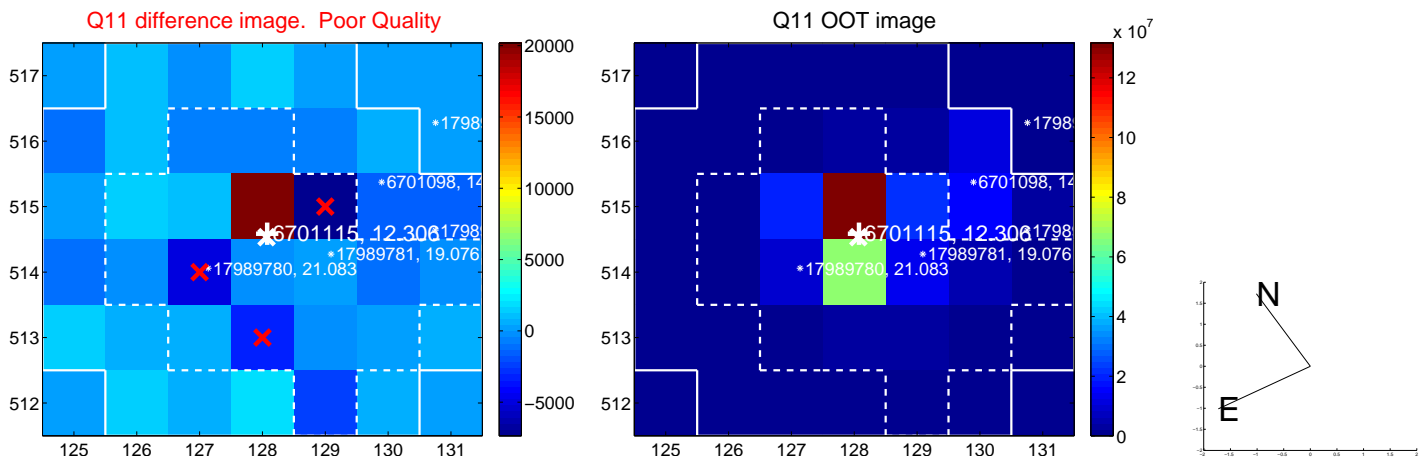
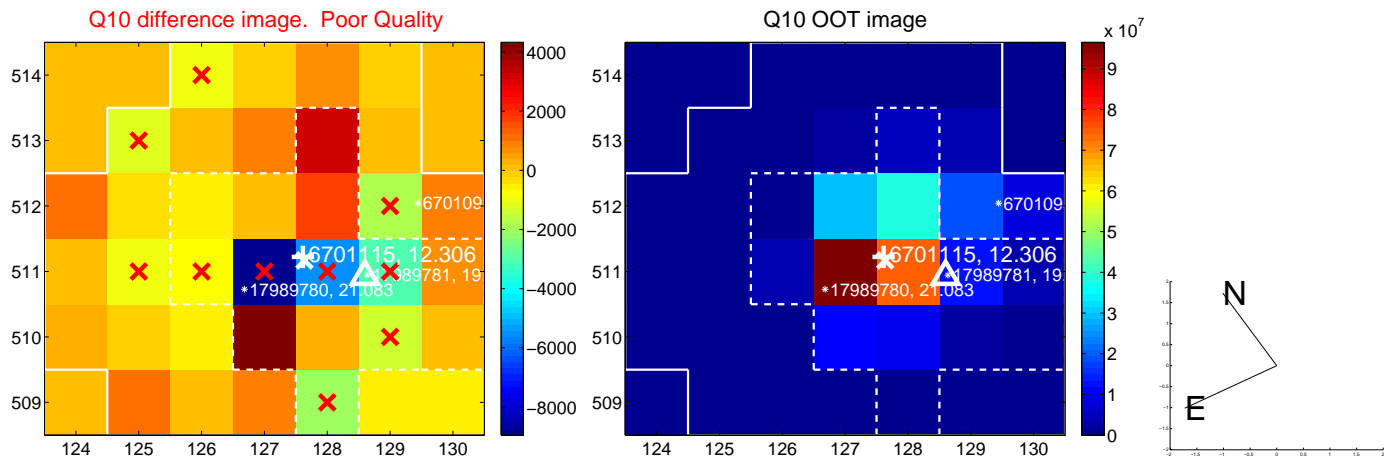
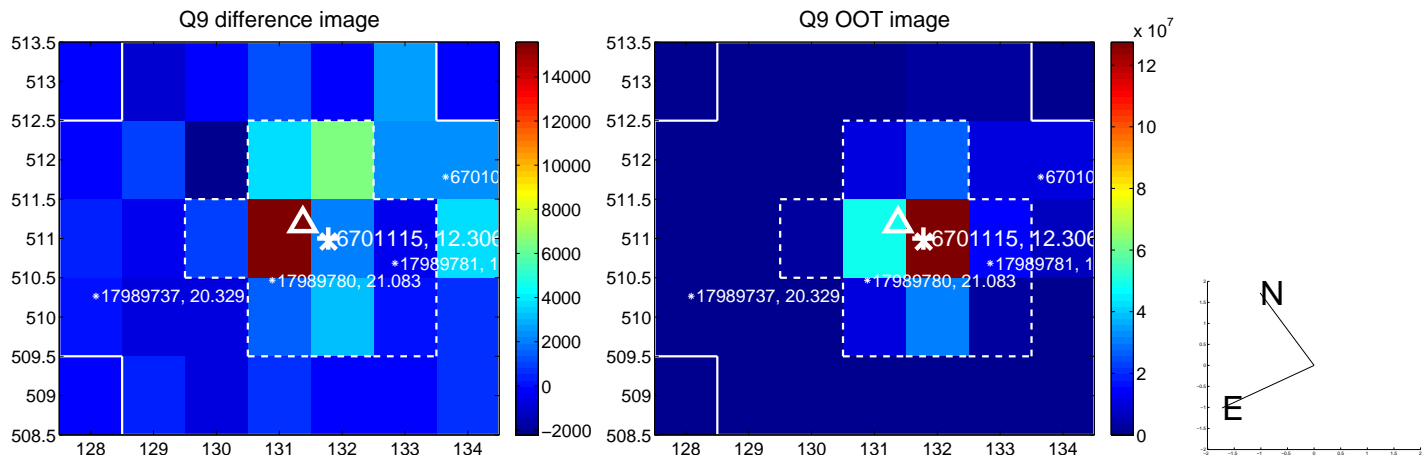
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



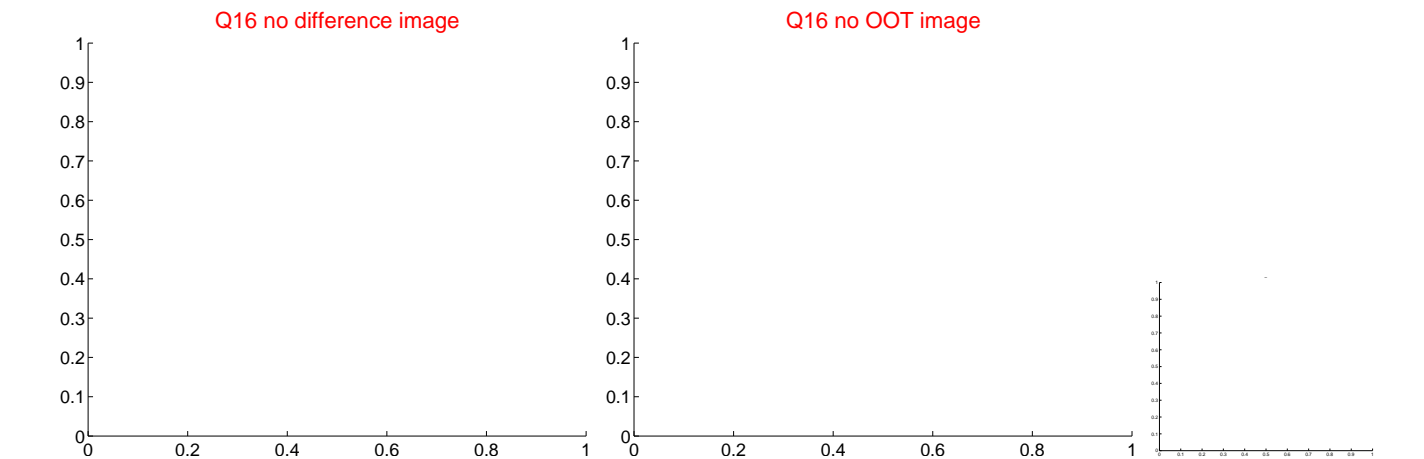
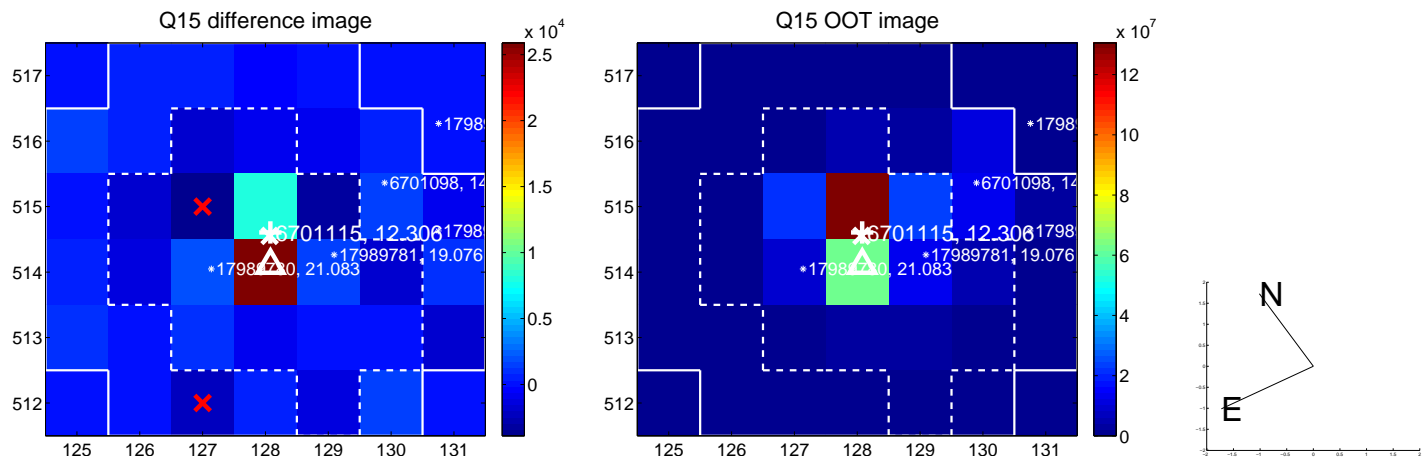
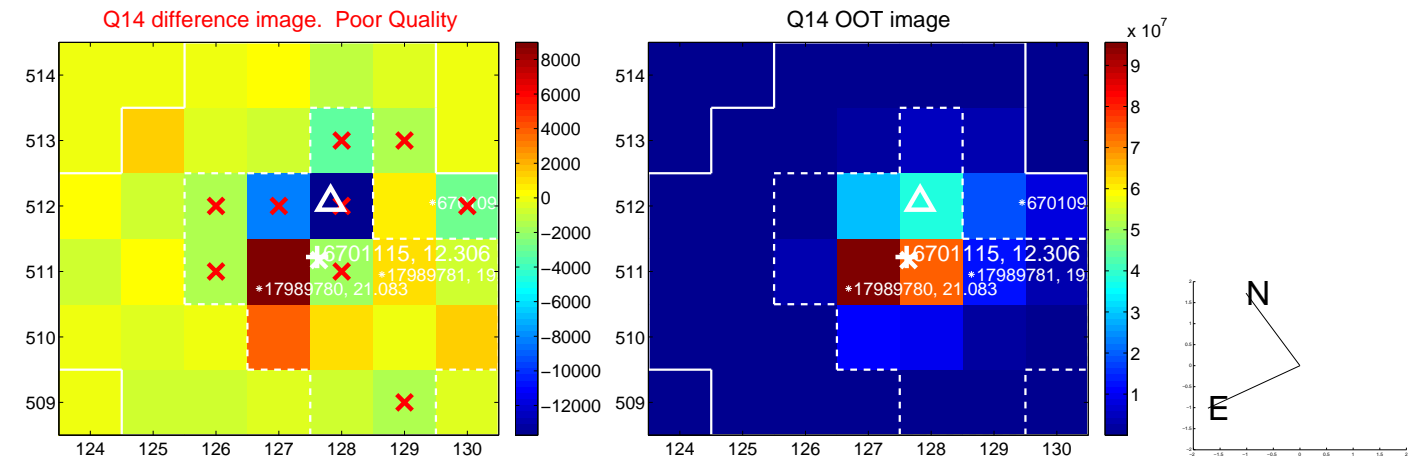
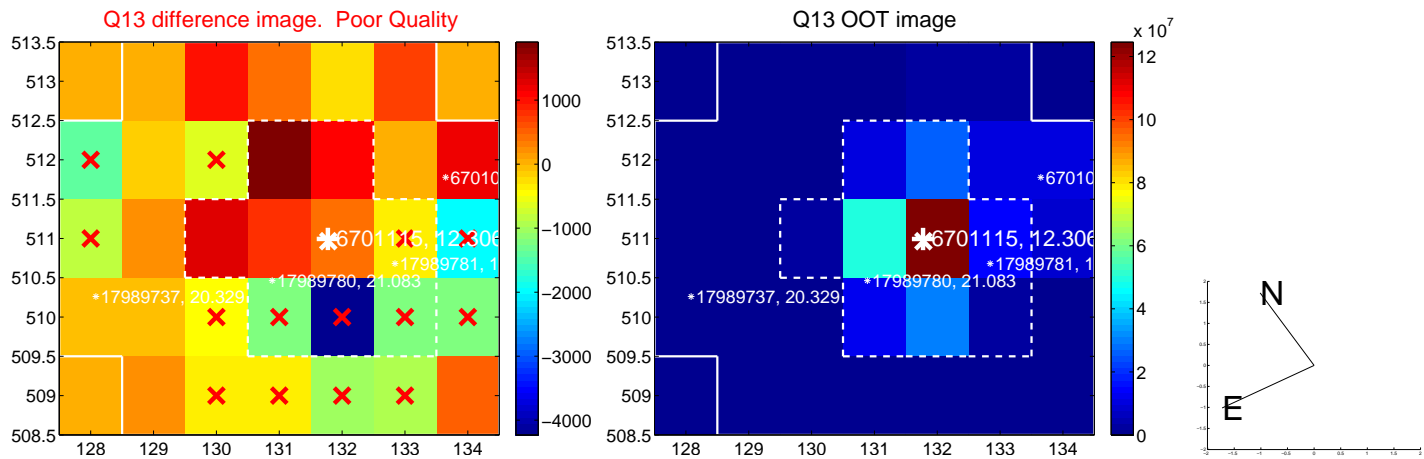
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



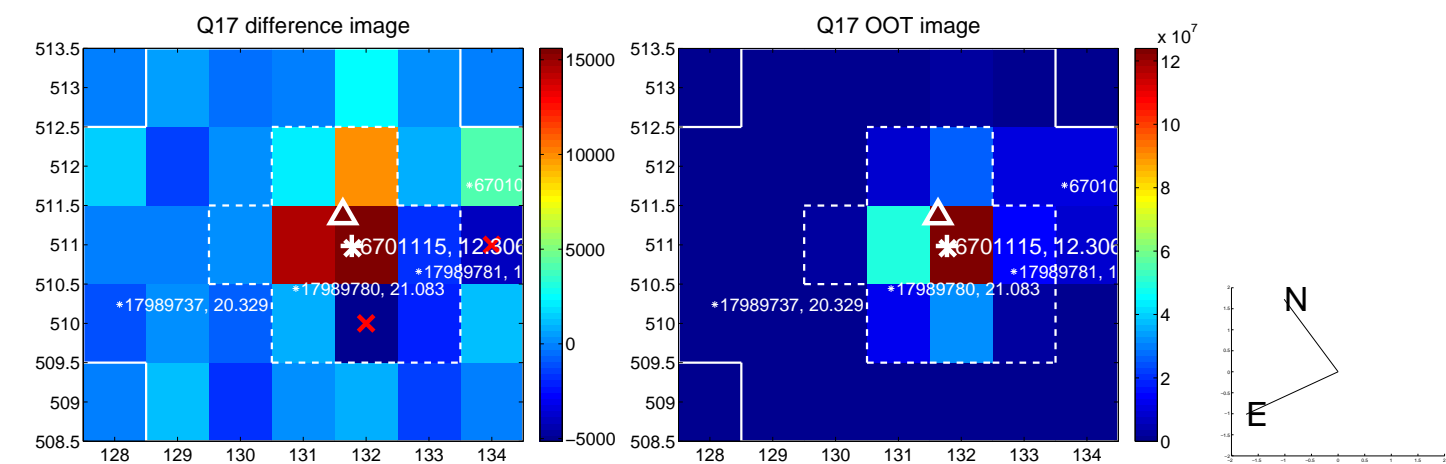
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



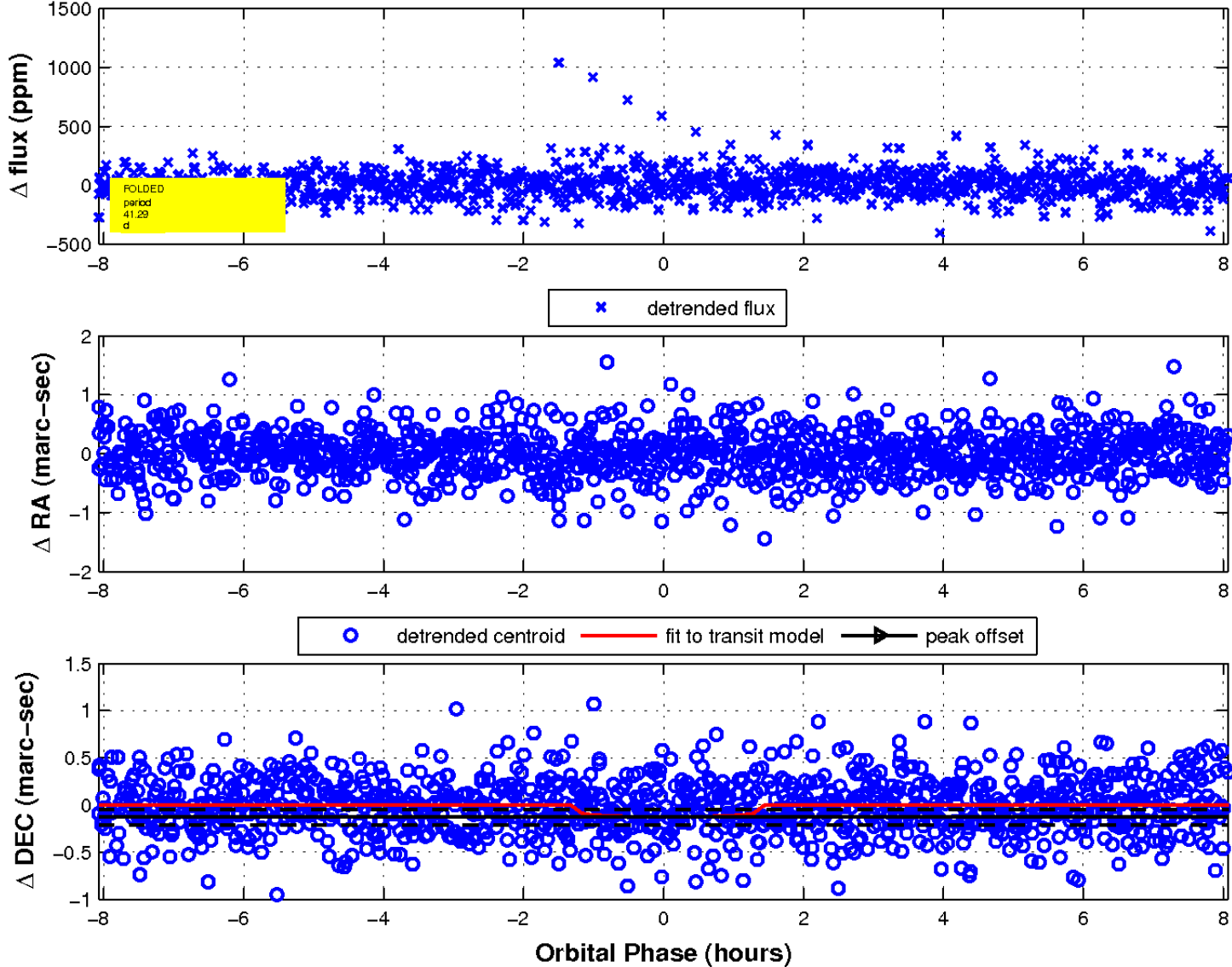
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

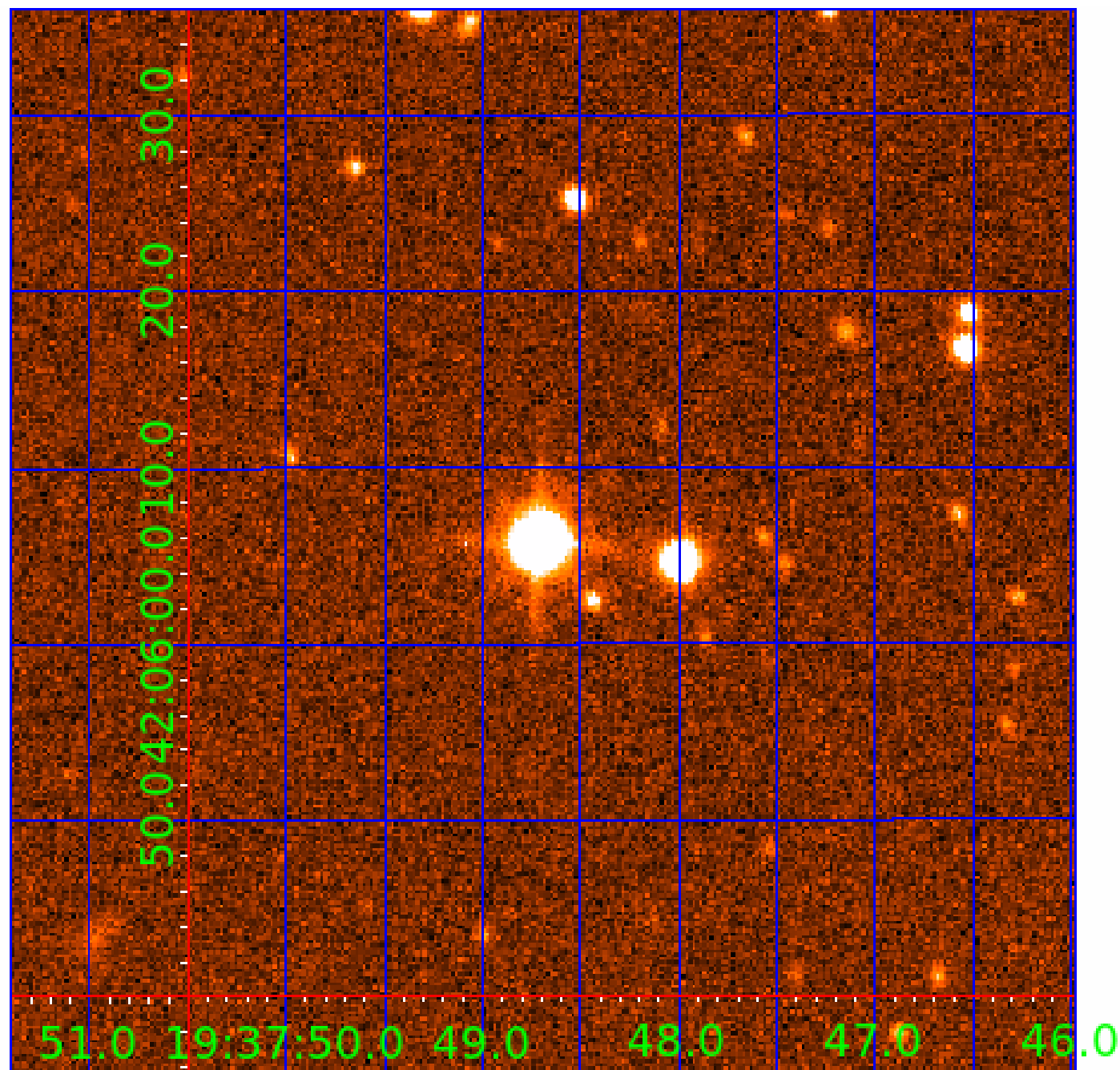


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination





# KIC 006701115

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006701115-01 | OBS      | No   | 0.829585      | 131.868443   | 22.5        | 5.905            | 14.9 | 14.9 | 3.54                        | 6818            | 1.95                   | 52798.56               |
| 006701115-02 | OBS      | No   | 29.848155     | 153.053528   | 300.0       | 1.877            | 15.7 | 10.1 | 3.54                        | 6818            | 6.57                   | 444.51                 |
| 006701115-03 | OBS      | No   | 44.782361     | 152.191257   | 463.7       | 1.004            | 15.9 | 11.9 | 3.54                        | 6818            | 7.79                   | 258.80                 |
| 006701115-04 | OBS      | No   | 26.557114     | 151.353132   | 251.7       | 1.837            | 10.8 | 9.5  | 3.54                        | 6818            | 6.68                   | 519.43                 |
| 006701115-05 | OBS      | No   | 41.290841     | 164.010708   | 218.6       | 2.692            | 10.4 | 8.0  | 3.54                        | 6818            | 5.47                   | 288.38                 |
| 006701115-06 | OBS      | No   | 43.573962     | 154.221616   | 289.1       | 2.000            | 11.0 | -1.0 | 3.54                        | 6818            | 6.09                   | 268.41                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 006701115-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT  |
| 006701115-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT  |
| 006701115-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT                             |
| 006701115-04 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT  |
| 006701115-05 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT                    |
| 006701115-06 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

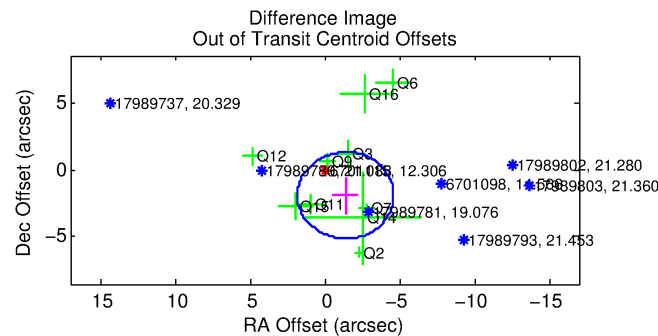
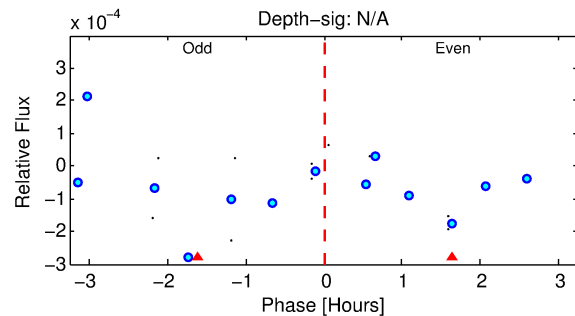
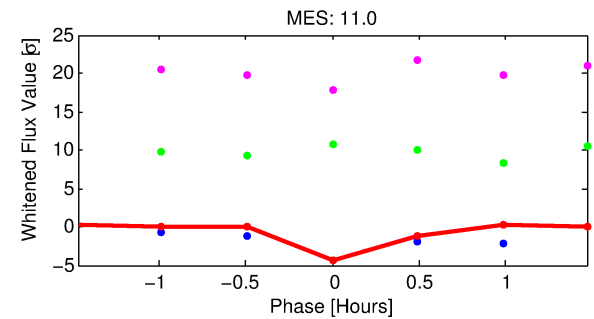
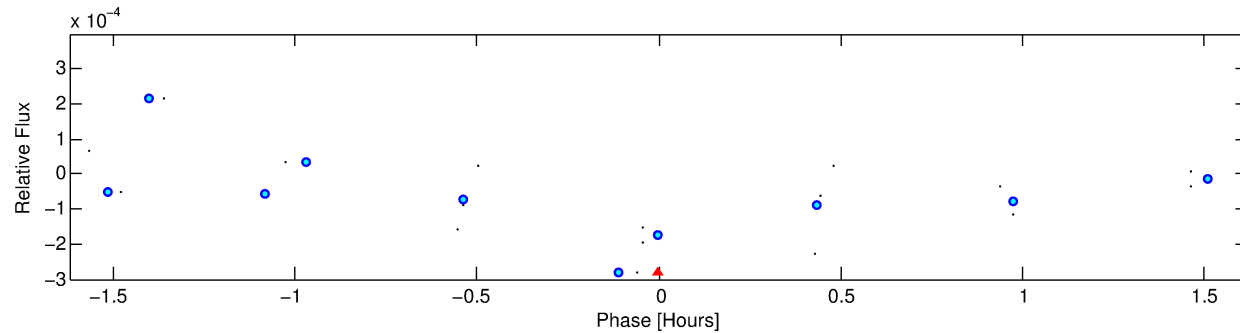
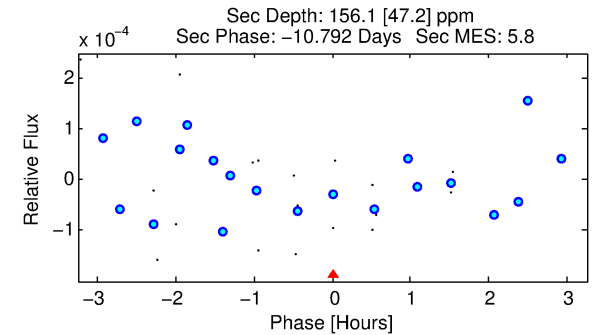
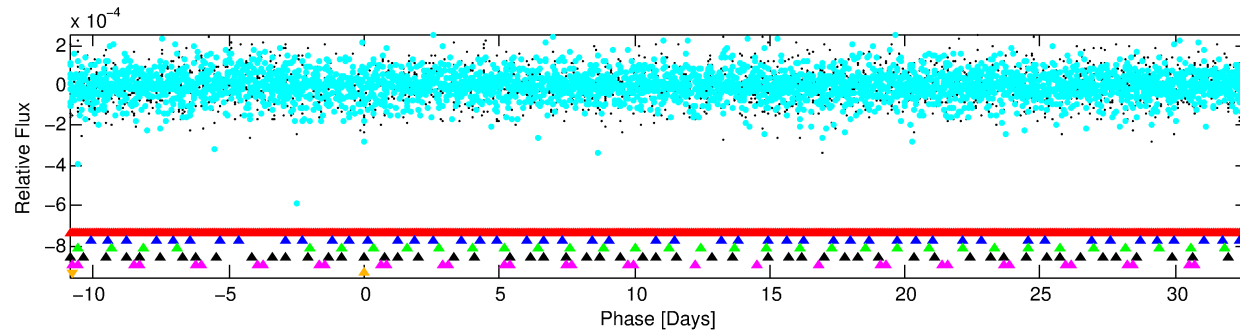
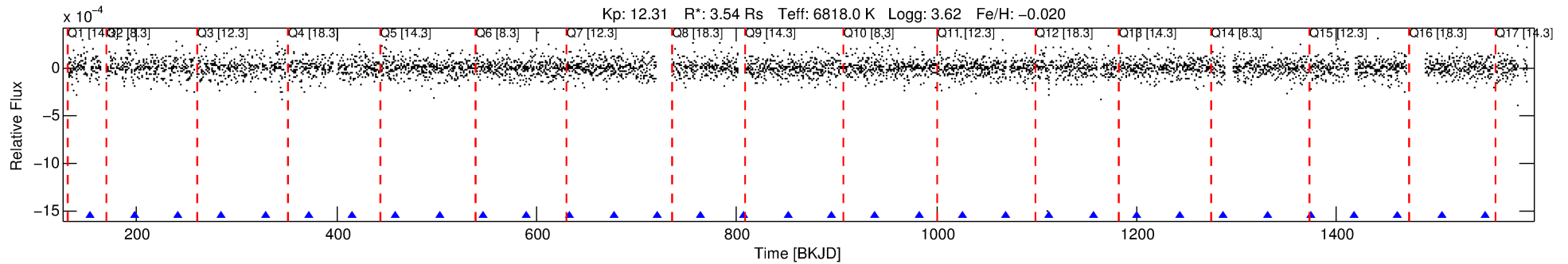
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006701115-06

No Significant Match Found

# DV One-Page Summary

KIC: 6701115 Candidate: 6 of 6 Period: 43.574 d



## TPS TCE Results:

Period = 43.57396 d  
Epoch = 154.2216 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

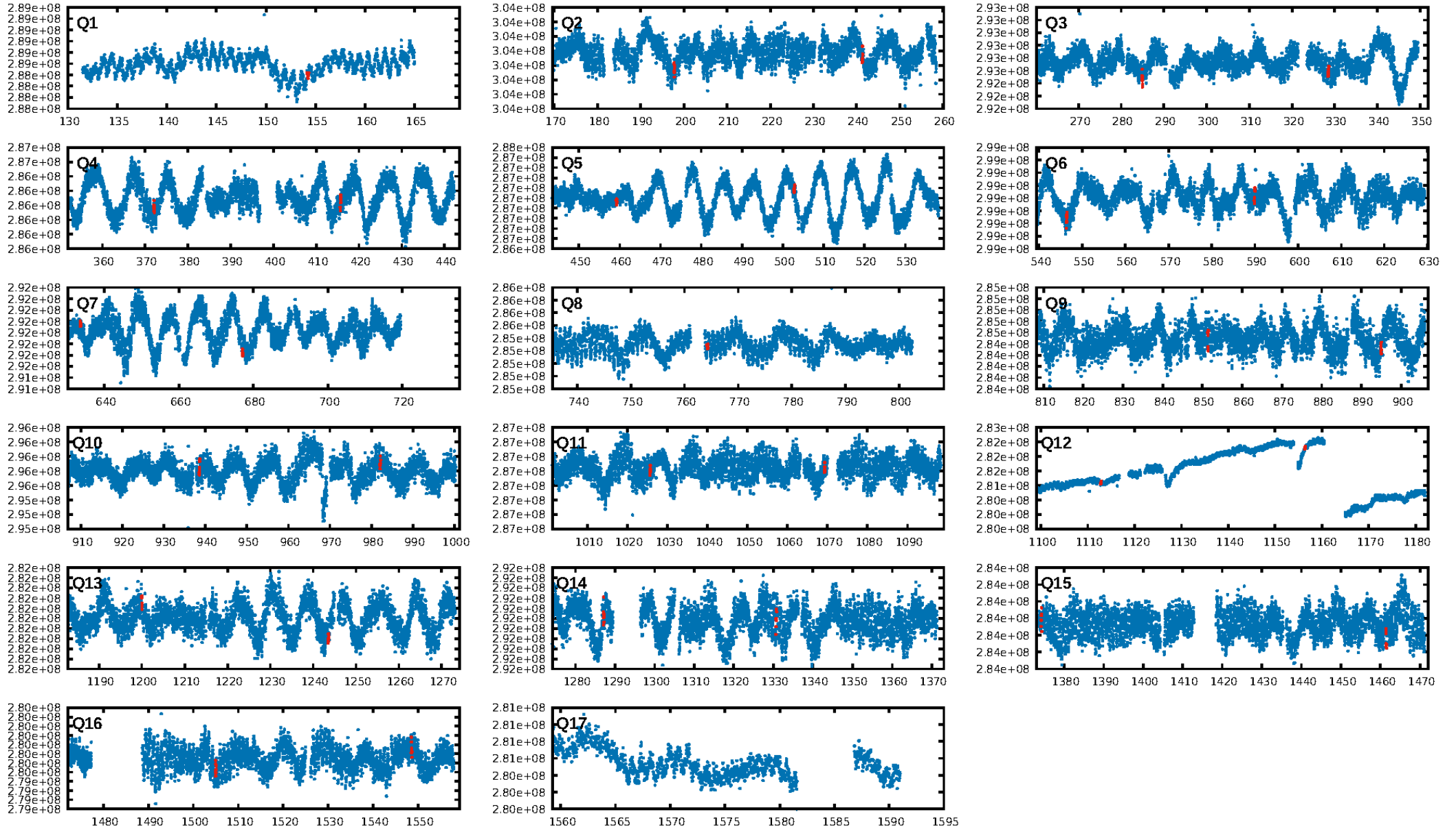
ShortPeriod-sig: 100.0% [16.34σ]  
LongPeriod-sig: 100.0% [12.96σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.78e-17  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -0.8567

Centroid-sig: N/A  
Centroid-so: 0.970 arcsec [2.44σ]  
OotOffset-rm: 2.359 arcsec [2.20σ]  
KicOffset-rm: 2.270 arcsec [2.06σ]  
OotOffset-st: 3/4/2/1 [10]  
KicOffset-st: 3/4/2/1 [10]  
DiffImageQuality-fgm: 0.30 [3/10]  
DiffImageOverlap-fno: 0.33 [4/12]

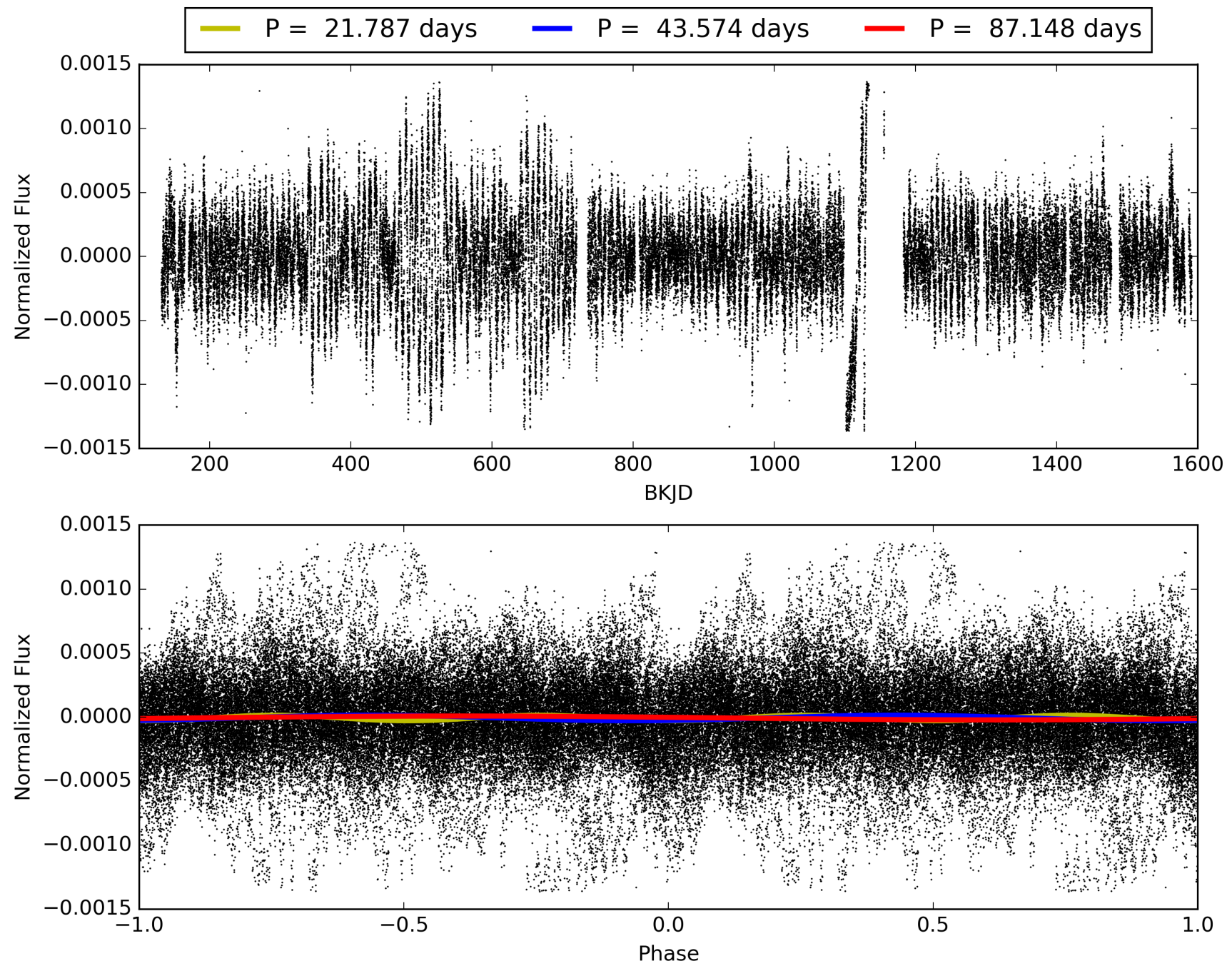
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 03:14:06 Z

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

# TCE 006701115-06, PDC Light Curves

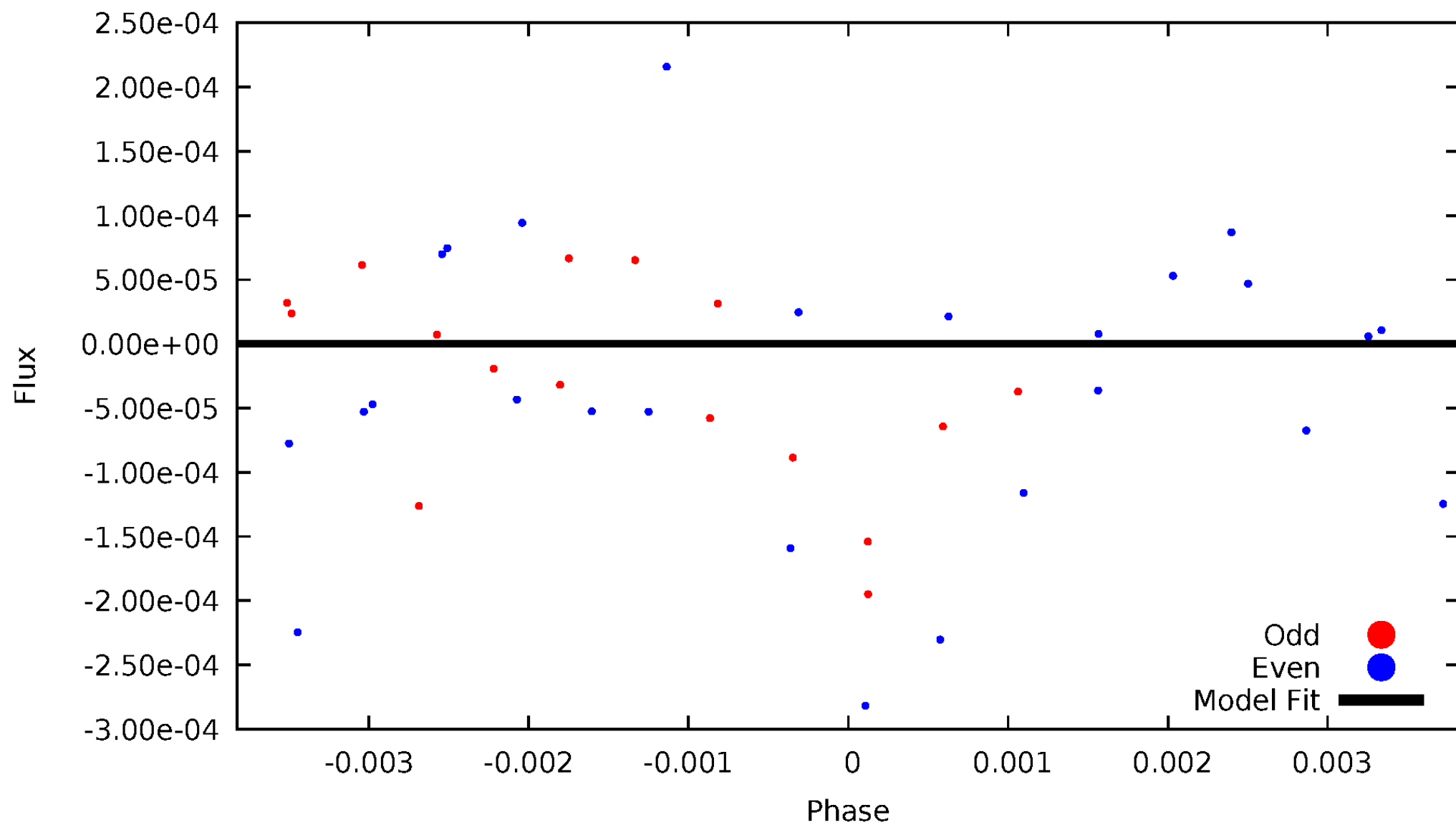


TCE 006701115-06



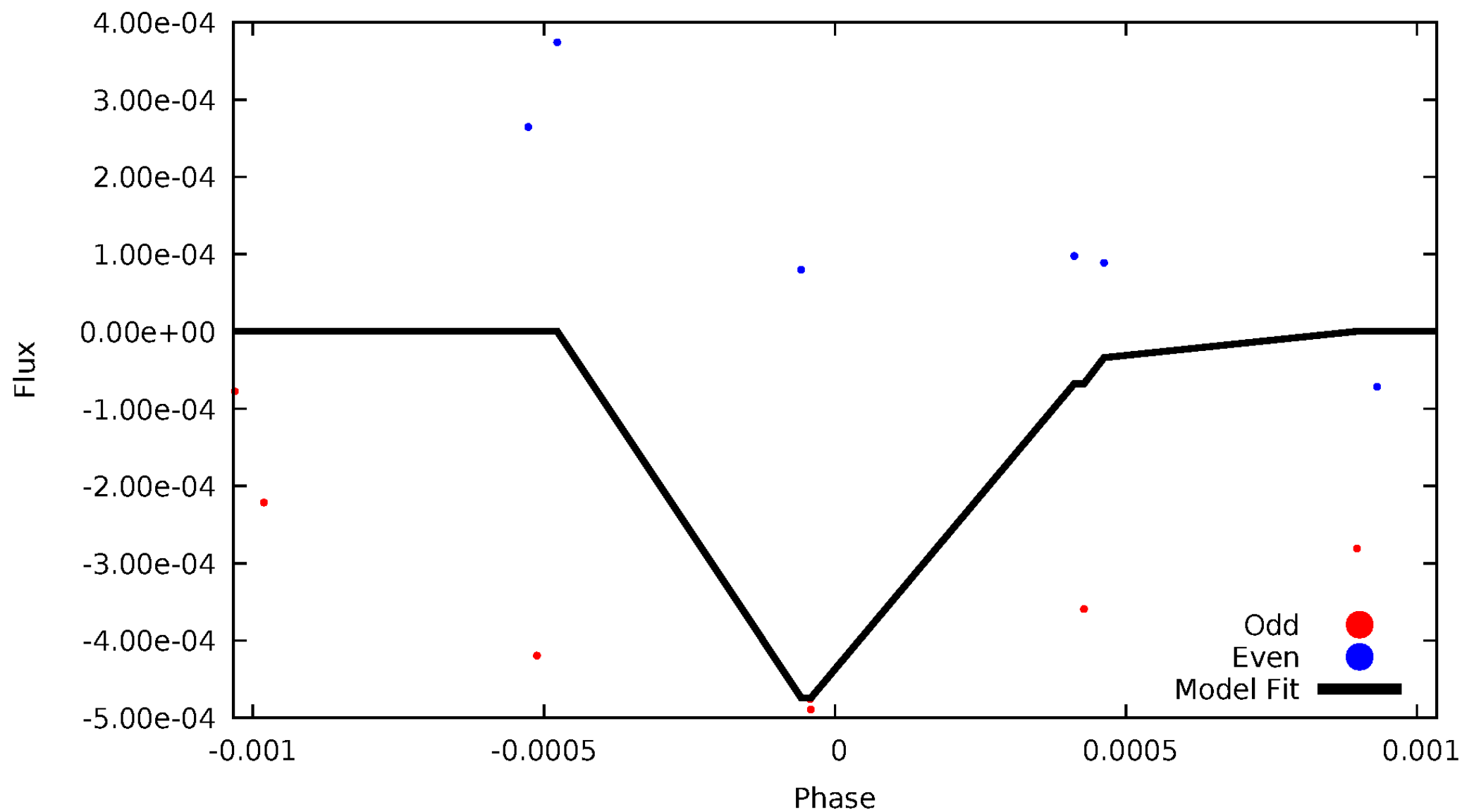
# DV Odd/Even

TCE 006701115-06



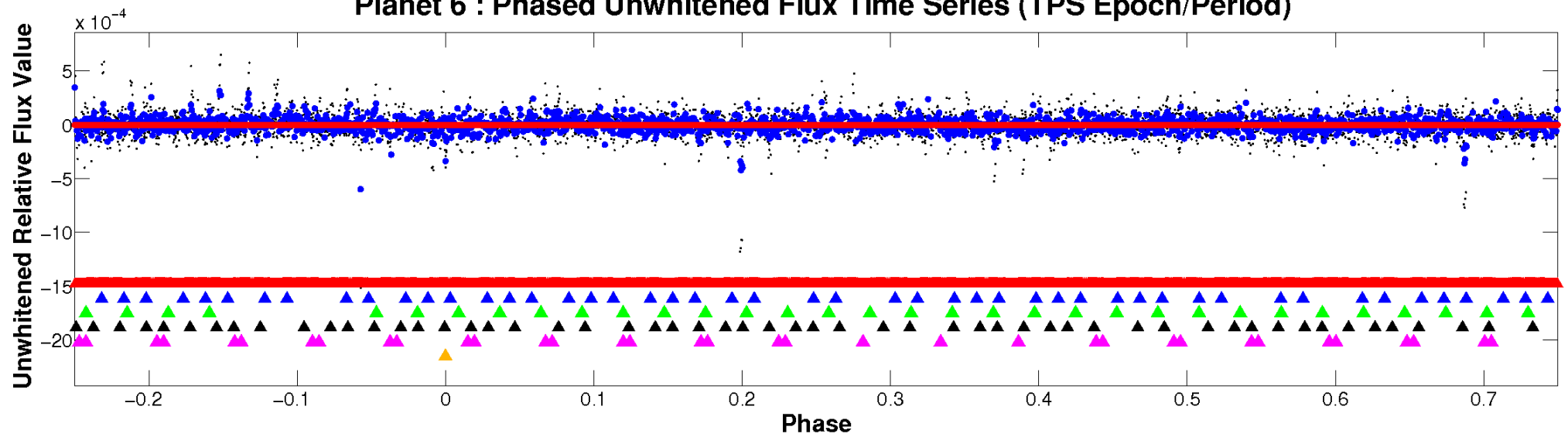
# ALT Odd/Even

TCE 006701115-06

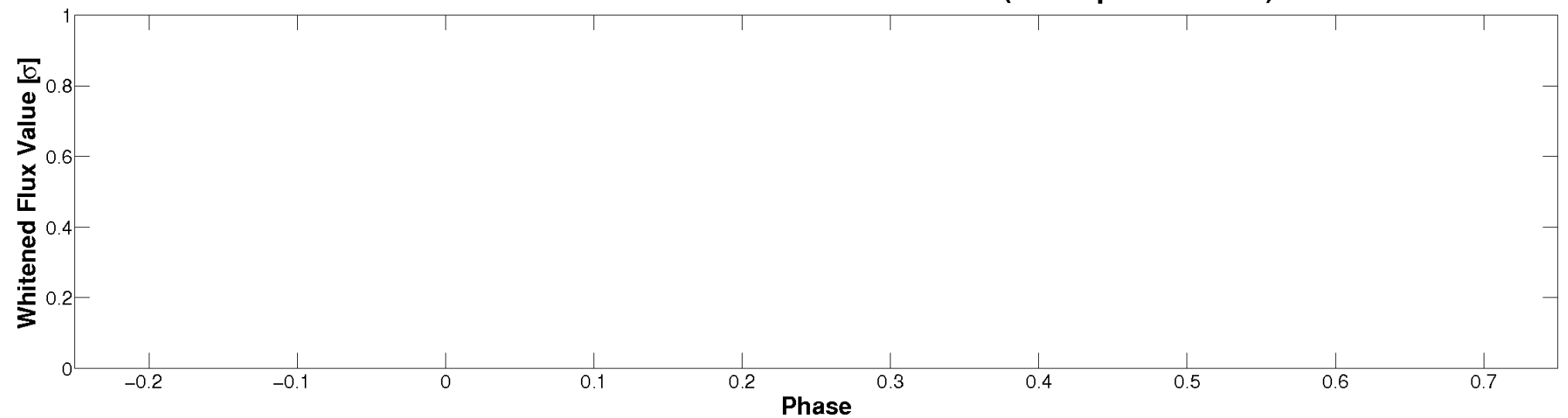


# Non-Whitened Vs. Whitened Light Curve

**Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

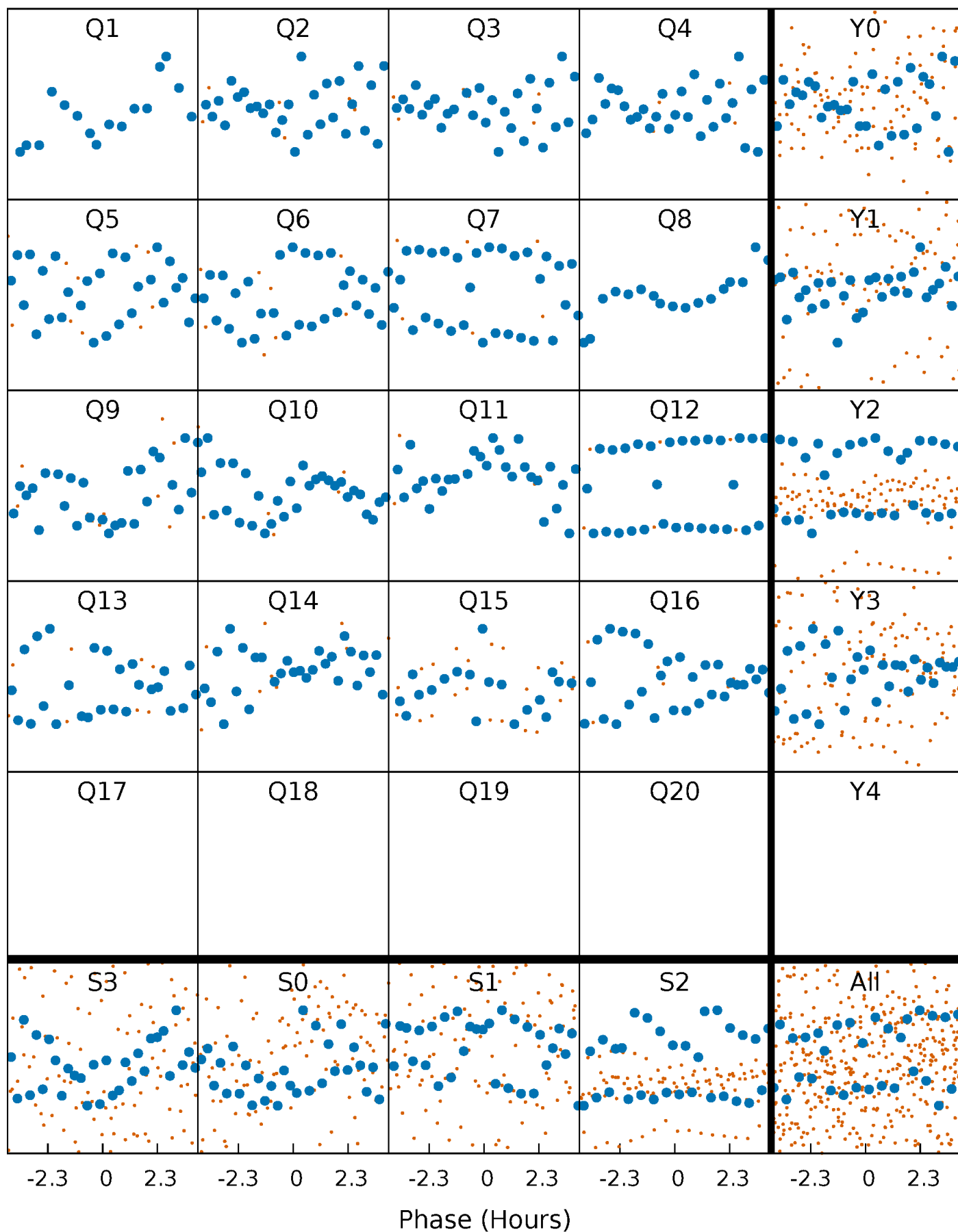


**Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

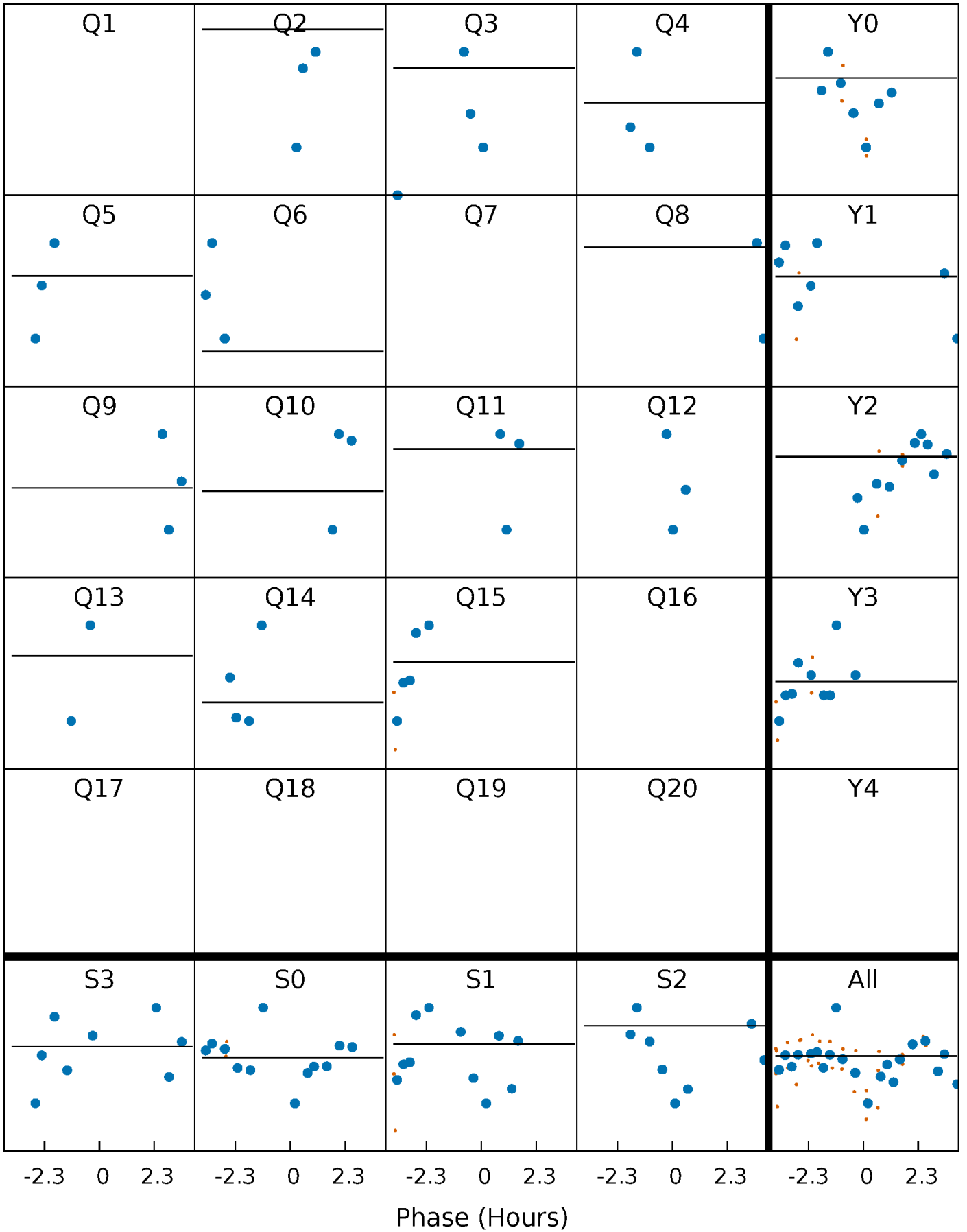
TCE 006701115-06 P= 43.573962 Days  $T_0=154.221616$  (BKJD)





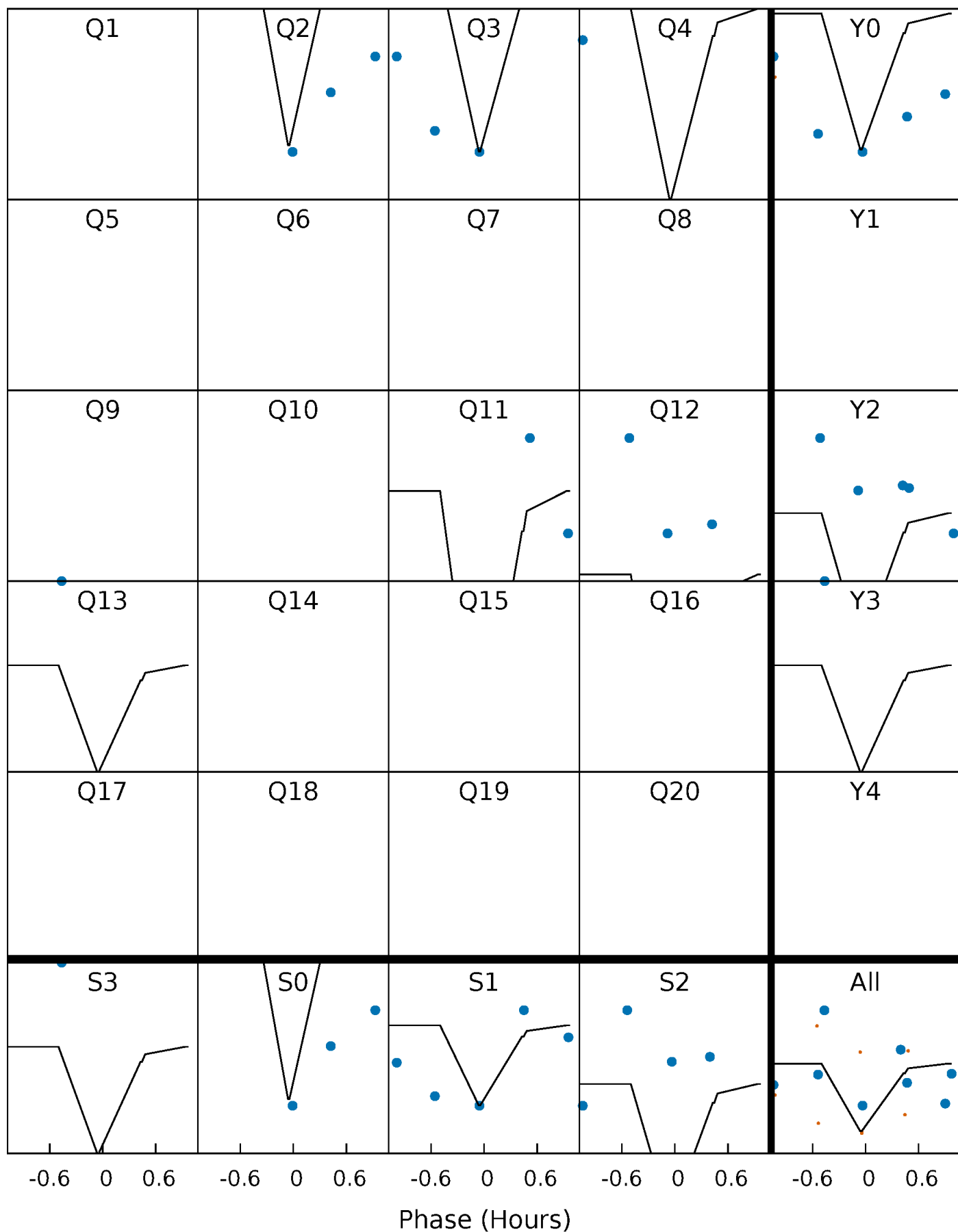
# DV Quarter-Phased Transit Curves

TCE 006701115-06 P= 43.573962 Days  $T_0=154.221616$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

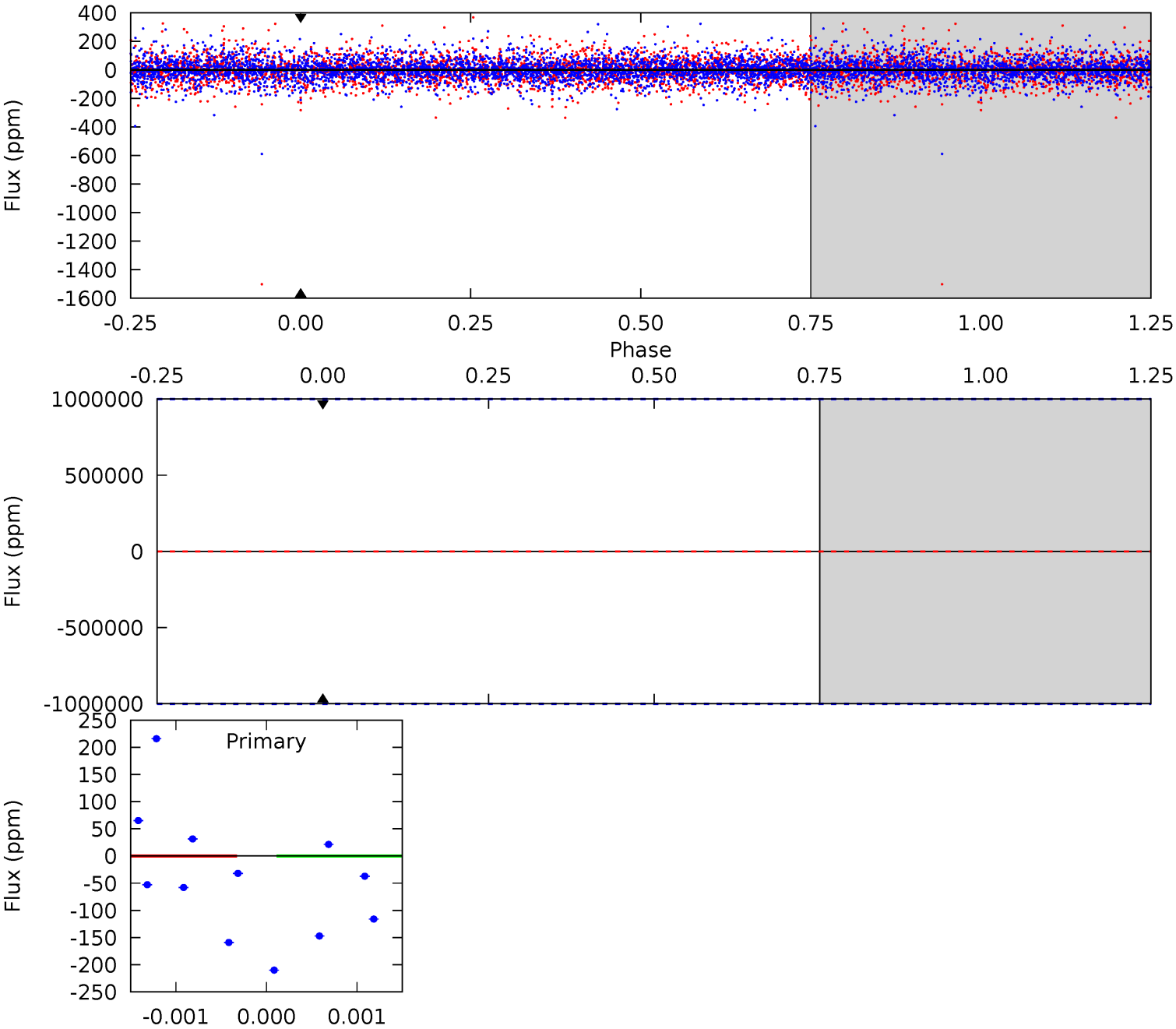
TCE 006701115-06 P= 43.573962 Days  $T_0=154.228799$  (BKJD)



# DV Model-Shift Uniqueness Test

006701115-06, P = 43.573962 Days, E = 110.647654 Days

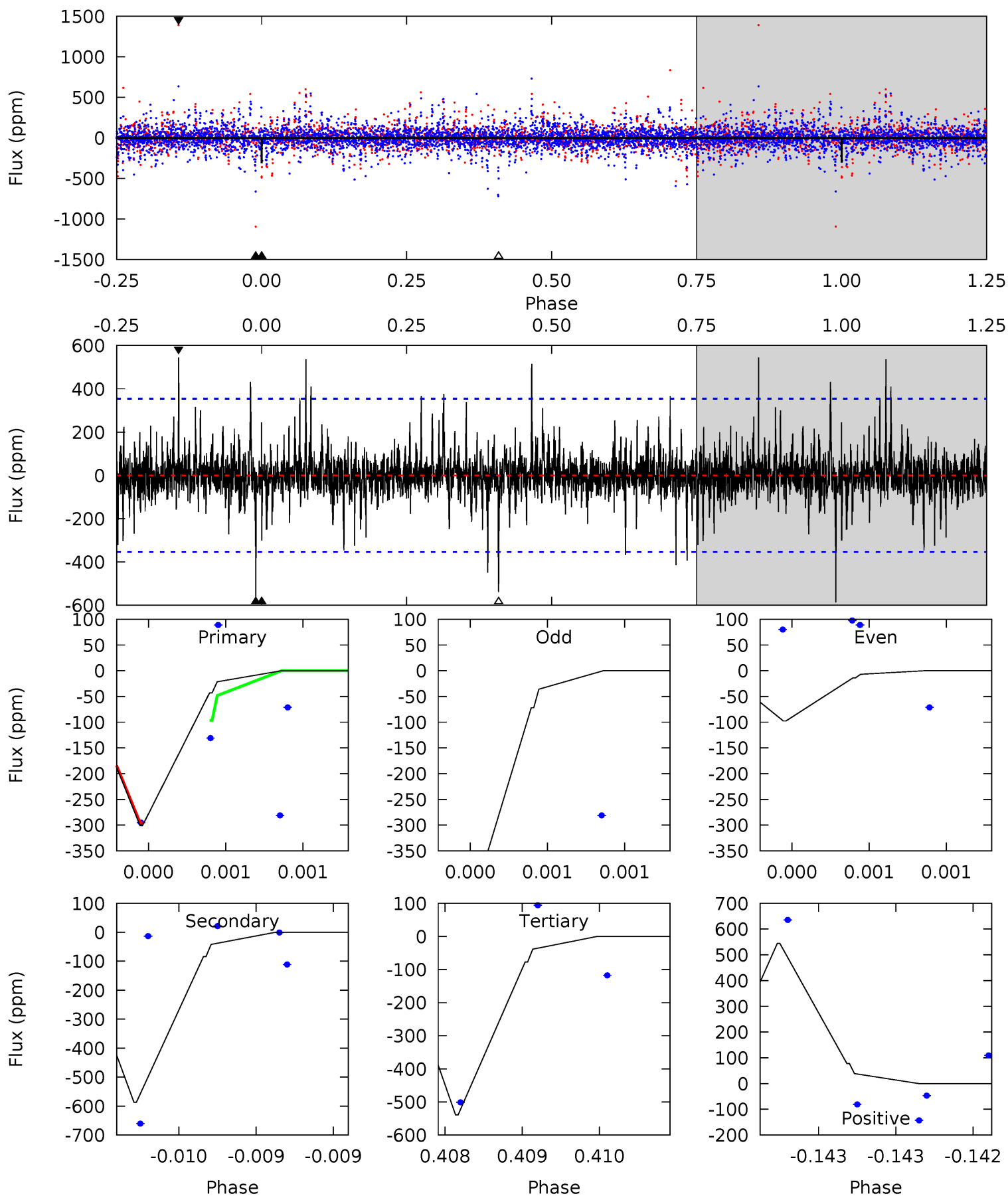
| Pri | Sec | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0   | 0   | 0   | 0   | 1.00            | 1.00            | 1.00             | 0       | 0       | 0       | 0       | 0       | 0   | 0     | 0   |



# Alt Model-Shift Uniqueness Test

006701115-06, P = 43.573962 Days, E = 110.654837 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.73 | 9.22 | 8.48 | 8.55 | 5.57            | 3.47            | 1.30             | -3.75   | -3.83   | 0.74    | 0.66    | 1.62    | 1.00 | 0.48  | 1.59 |



### Stellar Parameters For KIC 006701115

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6818^{+163}_{-224}$ | $3.621^{+0.306}_{-0.054}$ | $-0.020^{+0.250}_{-0.250}$ | $3.543^{+0.335}_{-1.341}$ | $1.913^{+0.181}_{-0.392}$ | $0.061^{+0.129}_{-0.012}$                     |
|        | +2%/-3%              | +8%/-1%                   | +1250%/-1250%              | +9%/-38%                  | +9%/-20%                  | +213%/-20%                                    |
| Source | PHO1                 | FLK73                     | 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 006701115-06 / KOI

| Detrend | Depth (ppm)     | $R_p$ ( $R_{\oplus}$ )    | $T_{max}$ (K)       | $T_{obs}$ (K)            | $A_{obs}$               |
|---------|-----------------|---------------------------|---------------------|--------------------------|-------------------------|
| DV      | $0 \pm 1000000$ | $25.05^{+31.80}_{-16.78}$ | $1404^{+74}_{-129}$ | $5245^{+31027}_{-34766}$ | $149^{+16565}_{-11531}$ |
| Alt.    | $-586 \pm 64$   | $27.12^{+32.15}_{-18.44}$ | $1403^{+71}_{-122}$ | $4060^{+2645}_{-903}$    | $39^{+373}_{-30}$       |

$T_{max}$  = 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

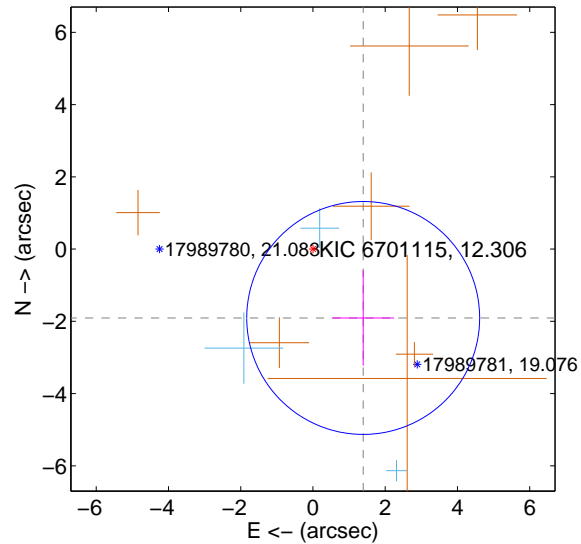
Supplemental centroid analysis for 006701115-06. Kepler magnitude: 12.31. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

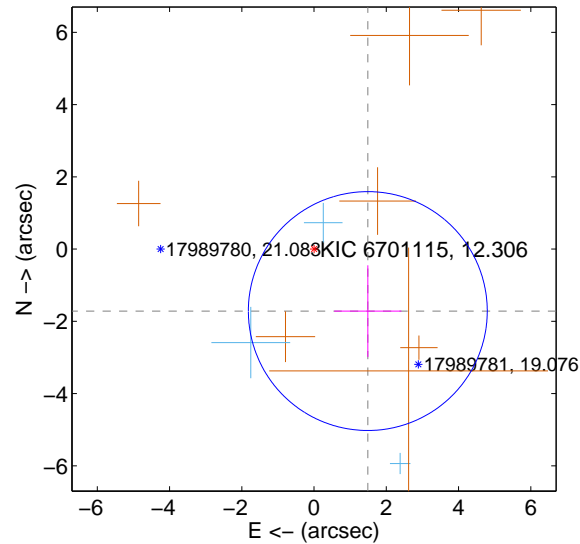
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $2.359 \pm 1.074$  | 2.20                | $-1.390 \pm 0.858$ | $-1.906 \pm 1.319$ |
| PRF-fit source offset from KIC position | $2.270 \pm 1.102$  | 2.06                | $-1.487 \pm 0.930$ | $-1.715 \pm 1.268$ |
| photometric centroid source offset      | $0.97 \pm 0.40$    | 2.44                | $-0.95 \pm 0.40$   | $0.18 \pm 0.36$    |

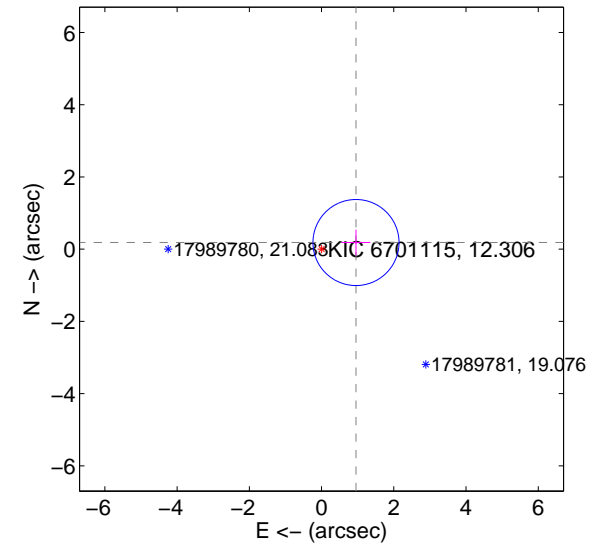
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

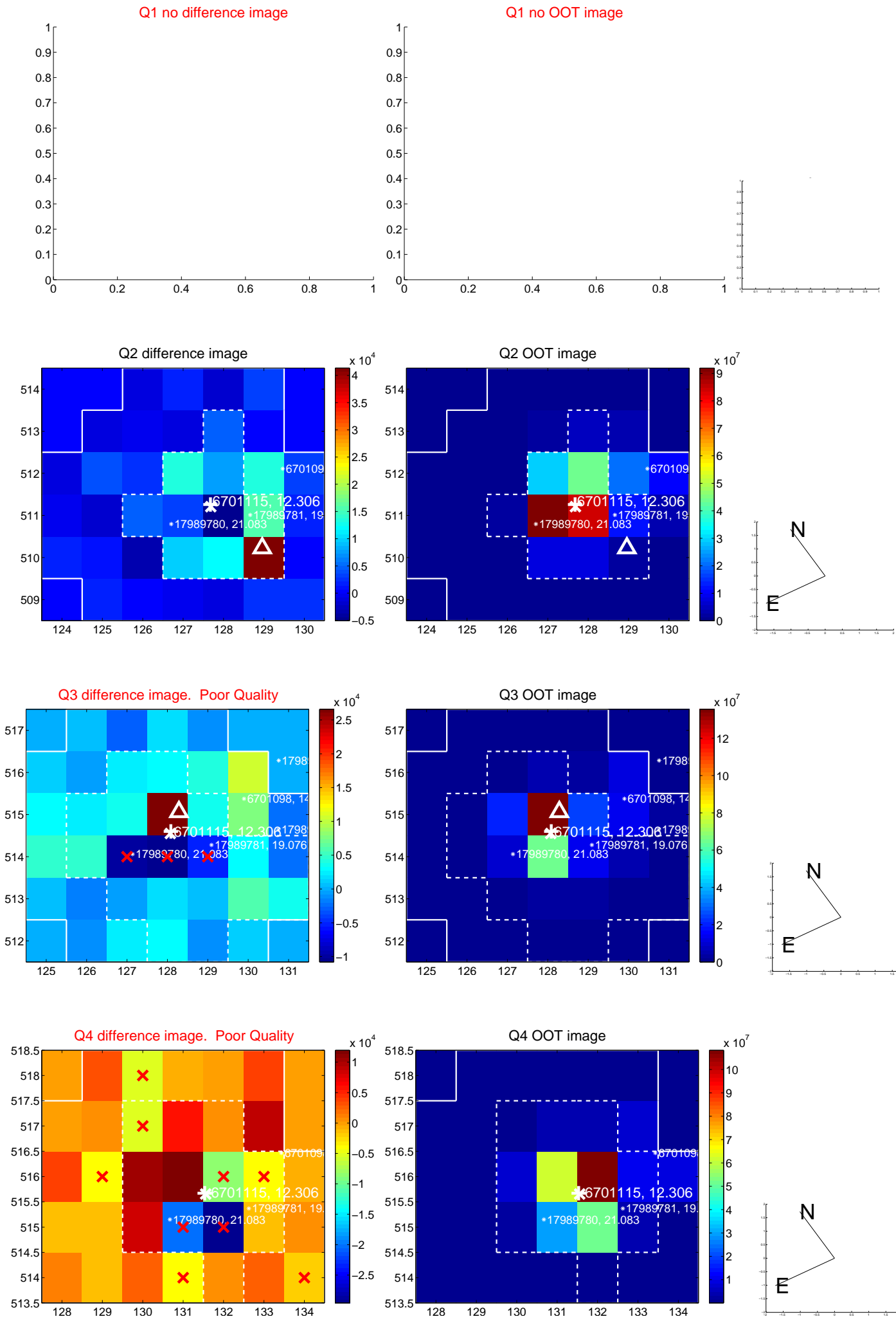


offset from photometric centroids

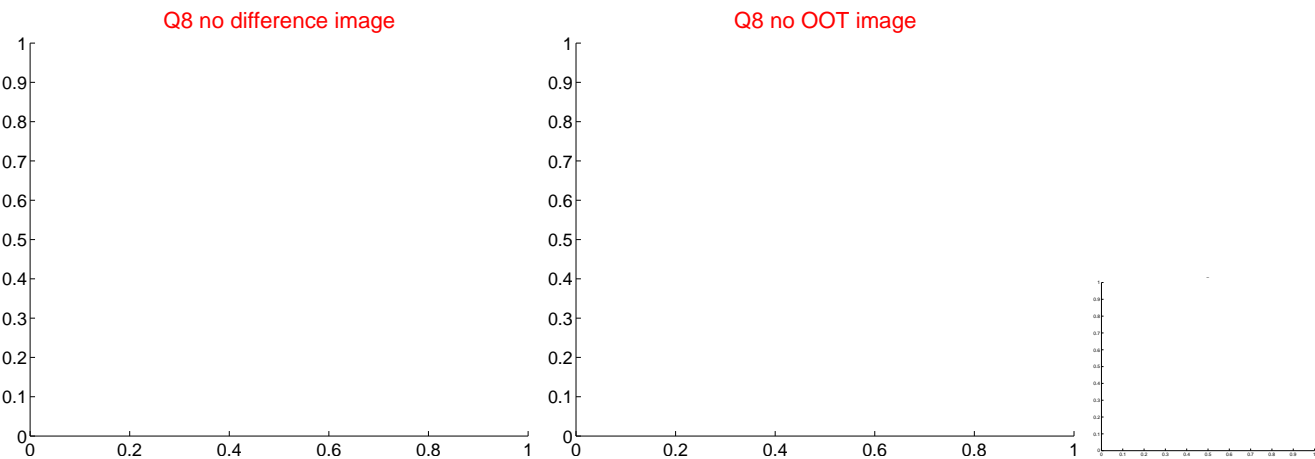
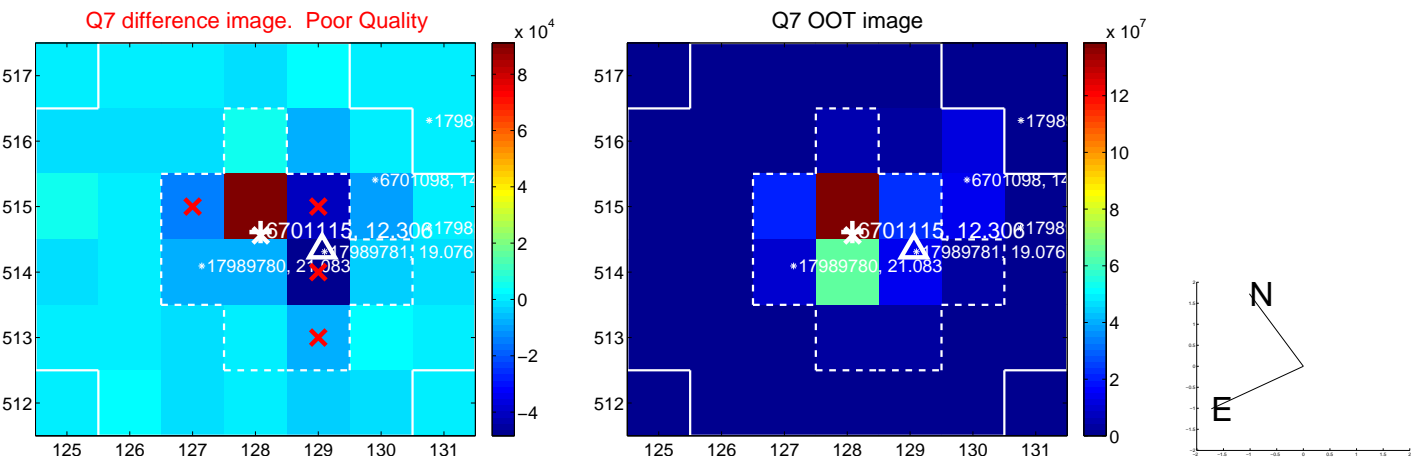
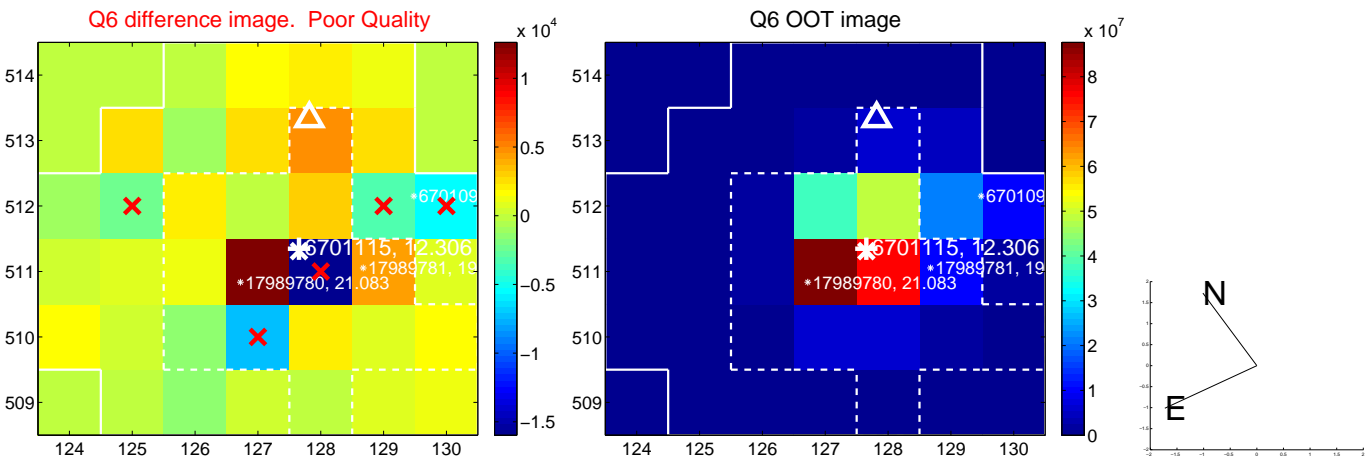
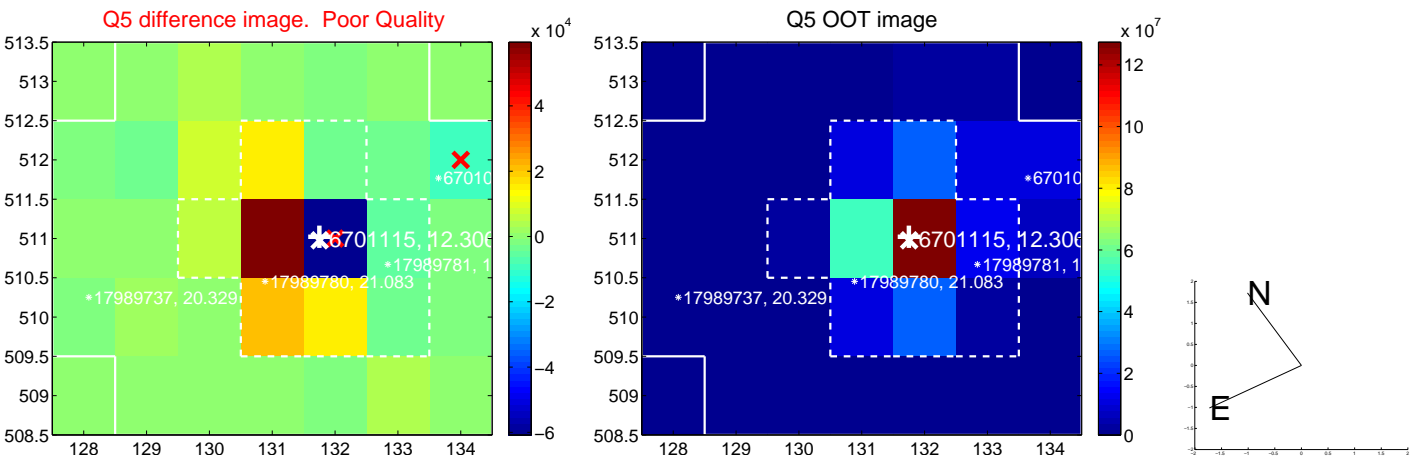


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

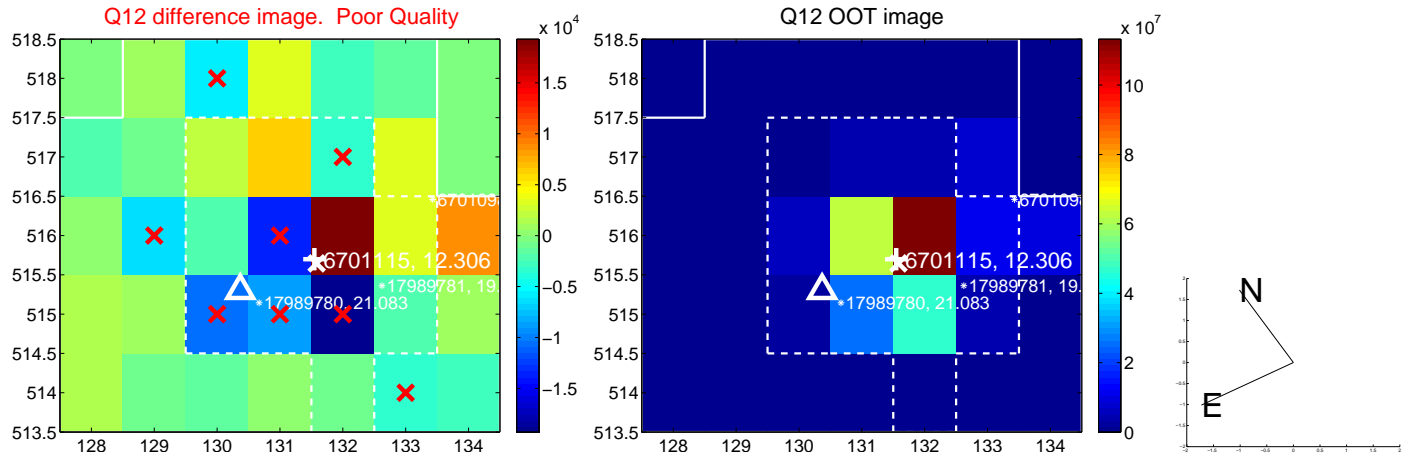
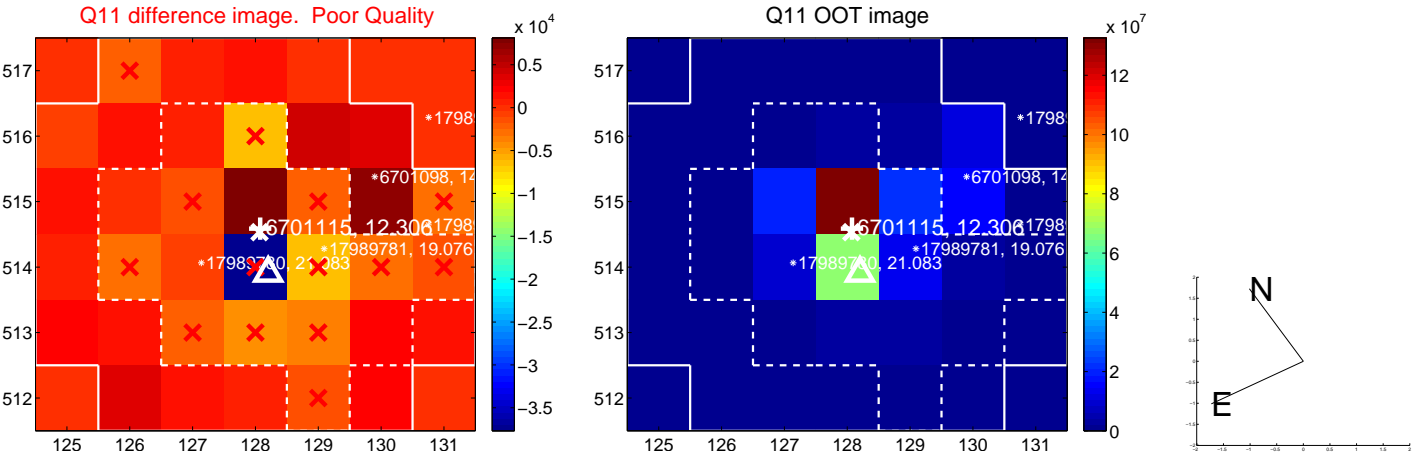
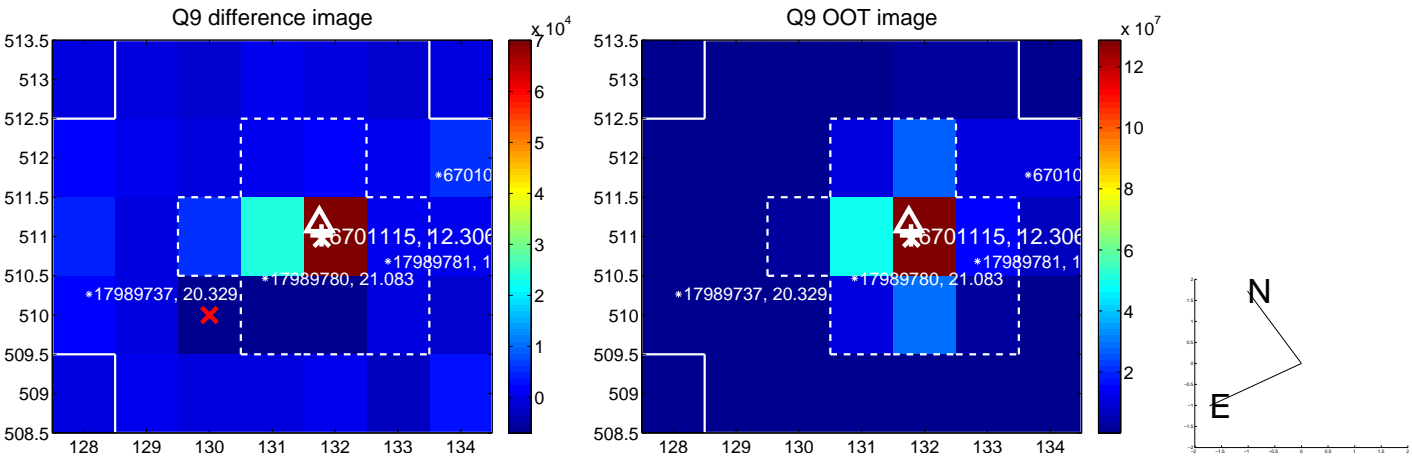


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

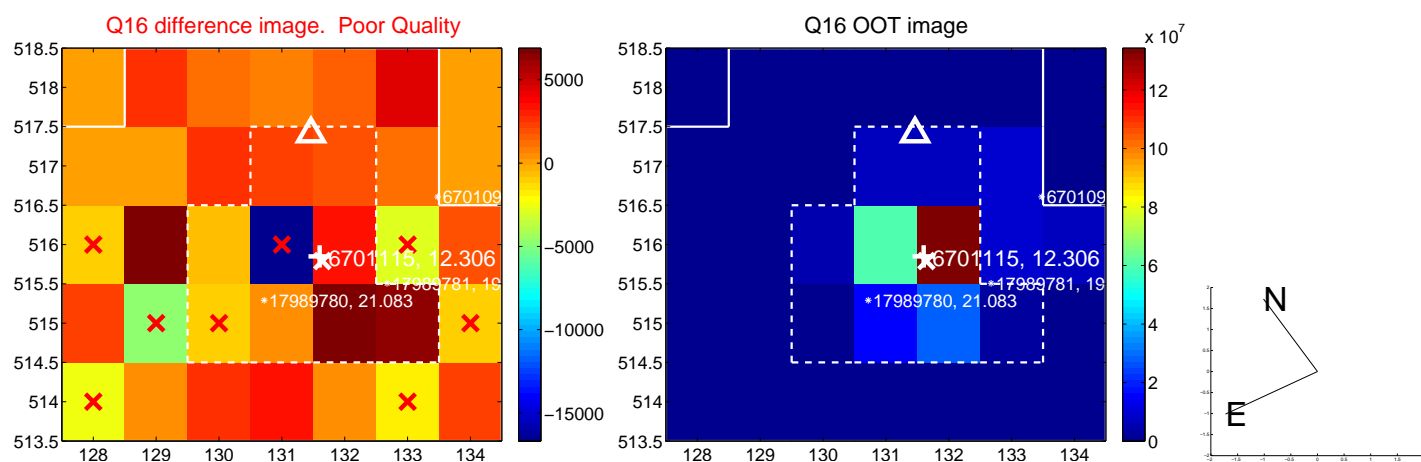
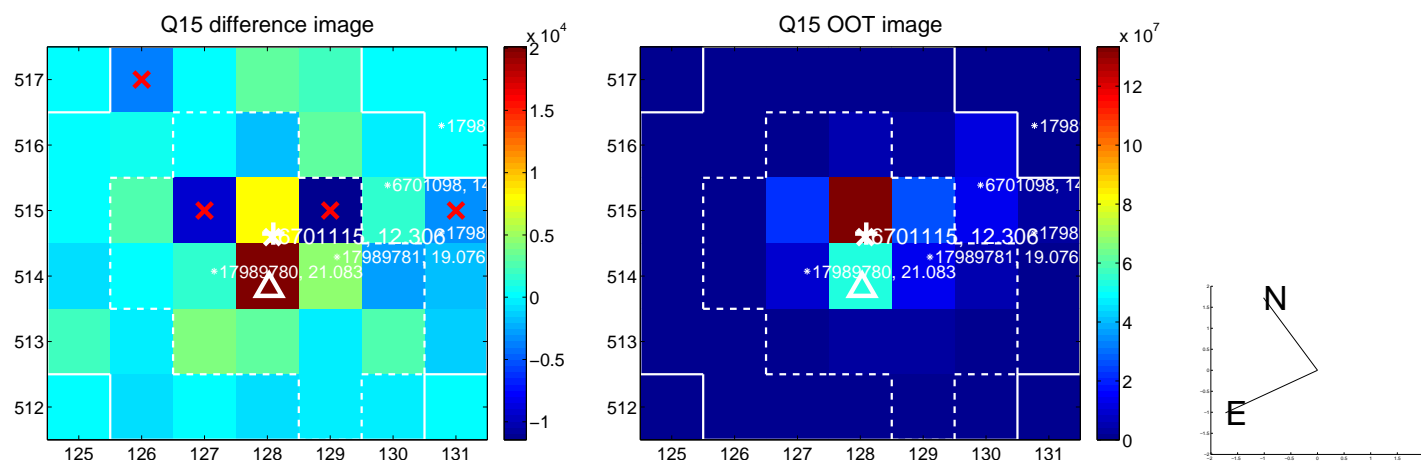
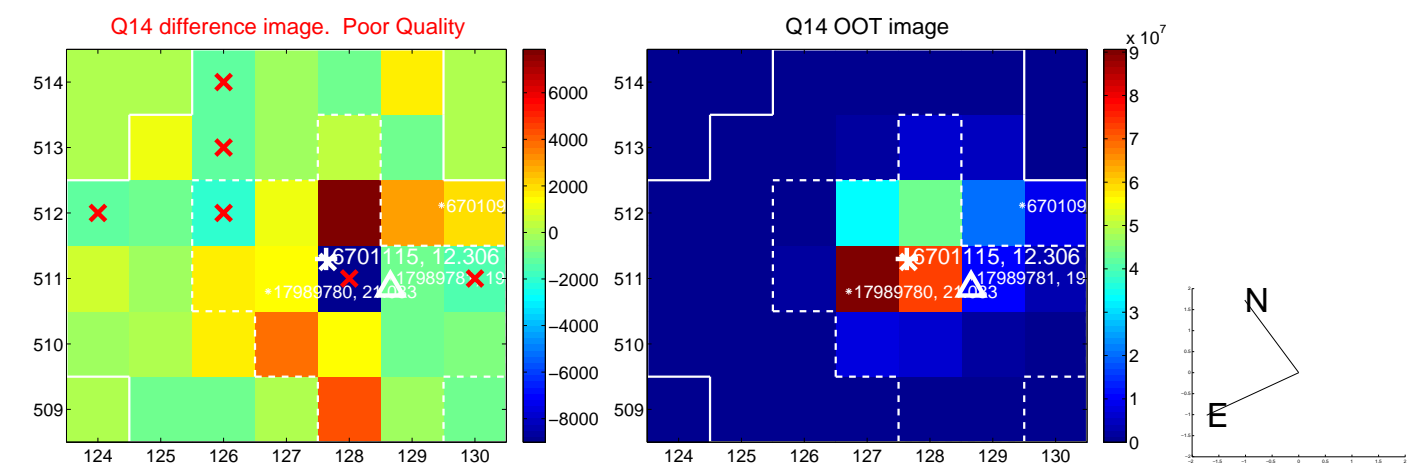
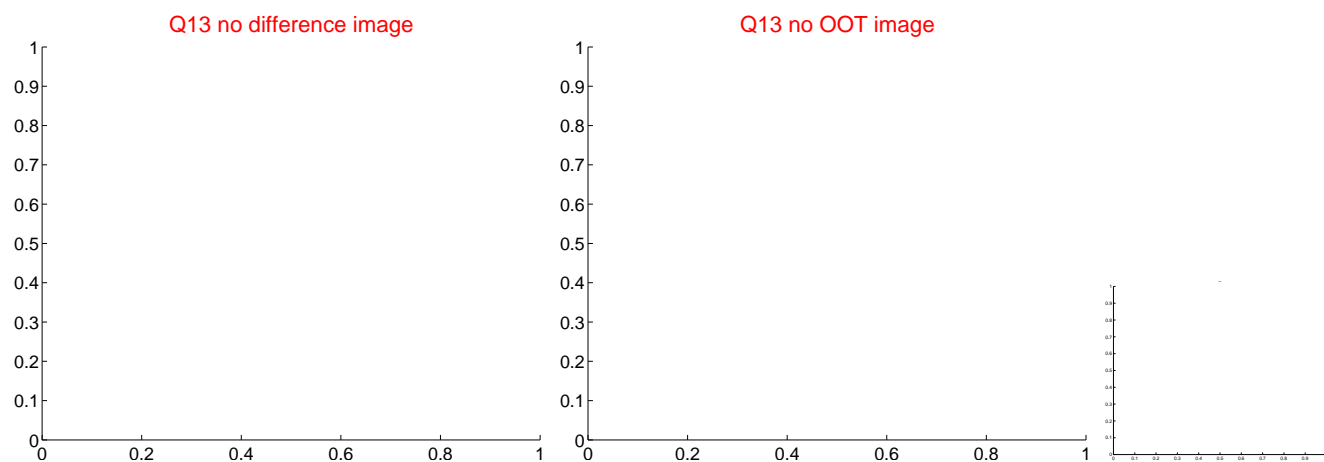




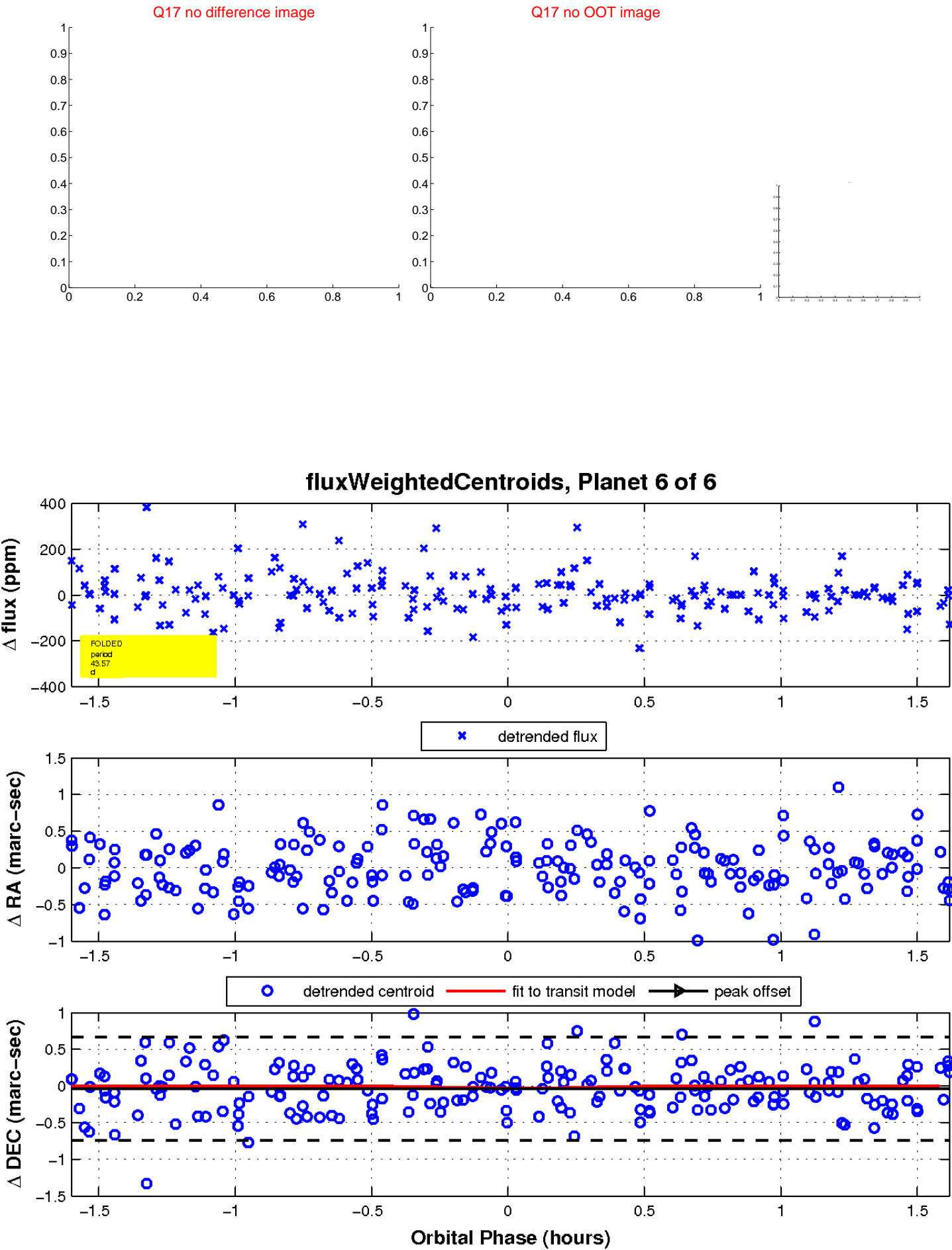
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

