

KIC 011361646

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})
011361646-01	OBS	0330.01	7.974200	134.656138	285.1	5.622	41.2	44.4	1.08	5973	2.13	213.12
011361646-02	OBS	0330.02	1.888990	132.096290	62.5	3.458	14.3	16.6	1.08	5973	1.01	1454.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011361646-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011361646-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

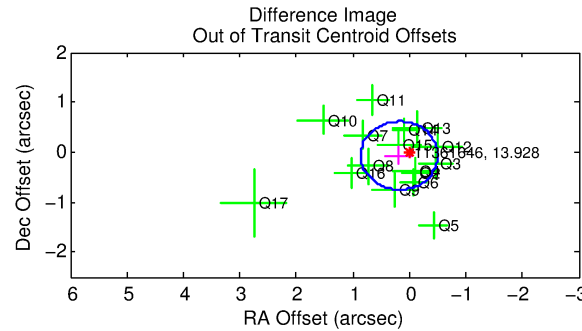
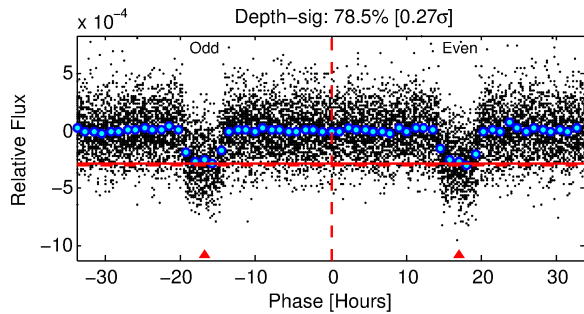
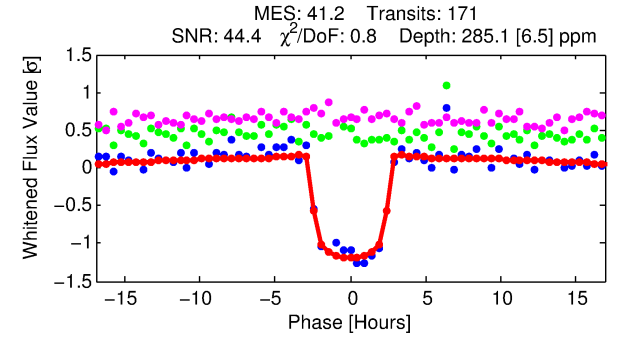
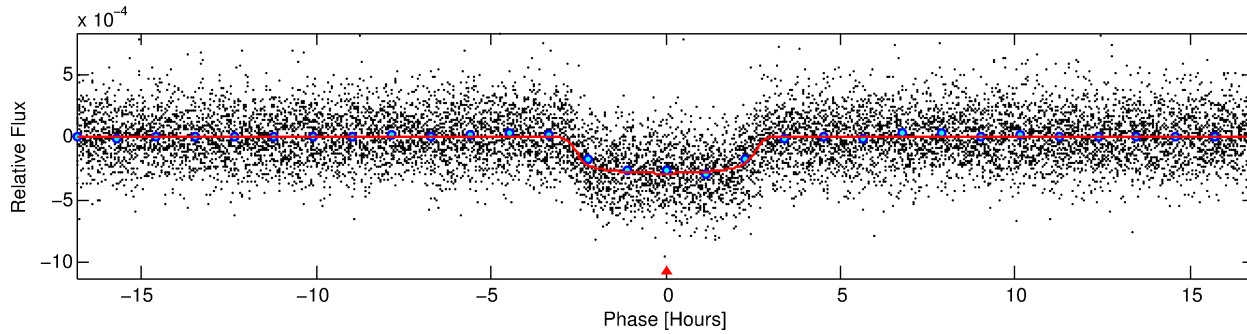
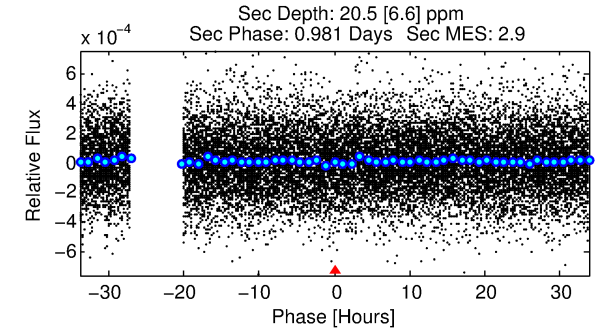
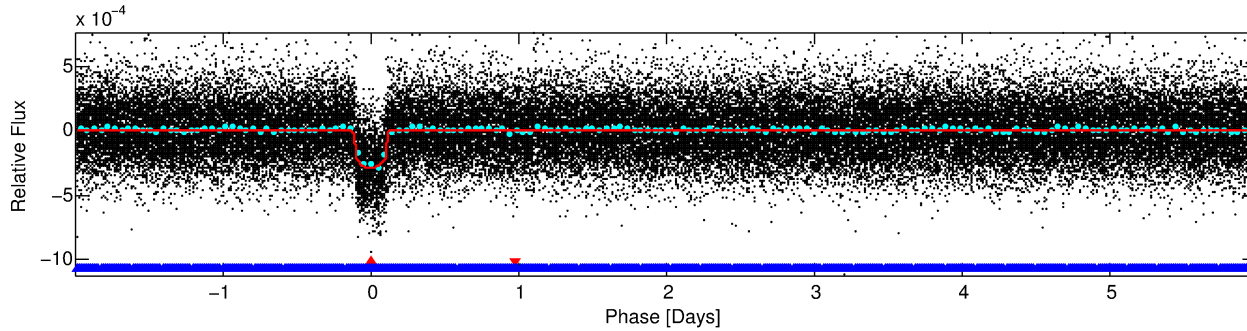
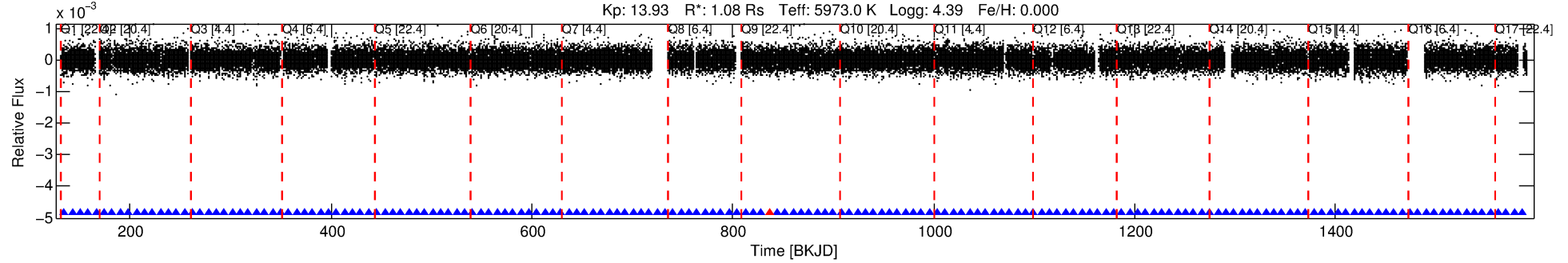
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011361646-01

No Significant Match Found

DV One-Page Summary

KIC: 11361646 Candidate: 1 of 2 Period: 7.974 d
KOI: K00330.01 Corr: 0.976



DV Fit Results:

Period = 7.97420 [0.00002] d
Epoch = 134.6561 [0.0021] BKJD
Rp/R* = 0.0181 [0.0011]
a/R* = 5.50 [1.52]
b = 0.89 [0.07]
Seff = 213.12 [48.77]
Teq = 974 [56] K
Rp = 2.13 [0.35] Re
a = 0.0791 [0.0110] AU
Ag = 15.49 [6.21] [2.33 sigma]
Teffp = 2989 [263] K [7.49 sigma]

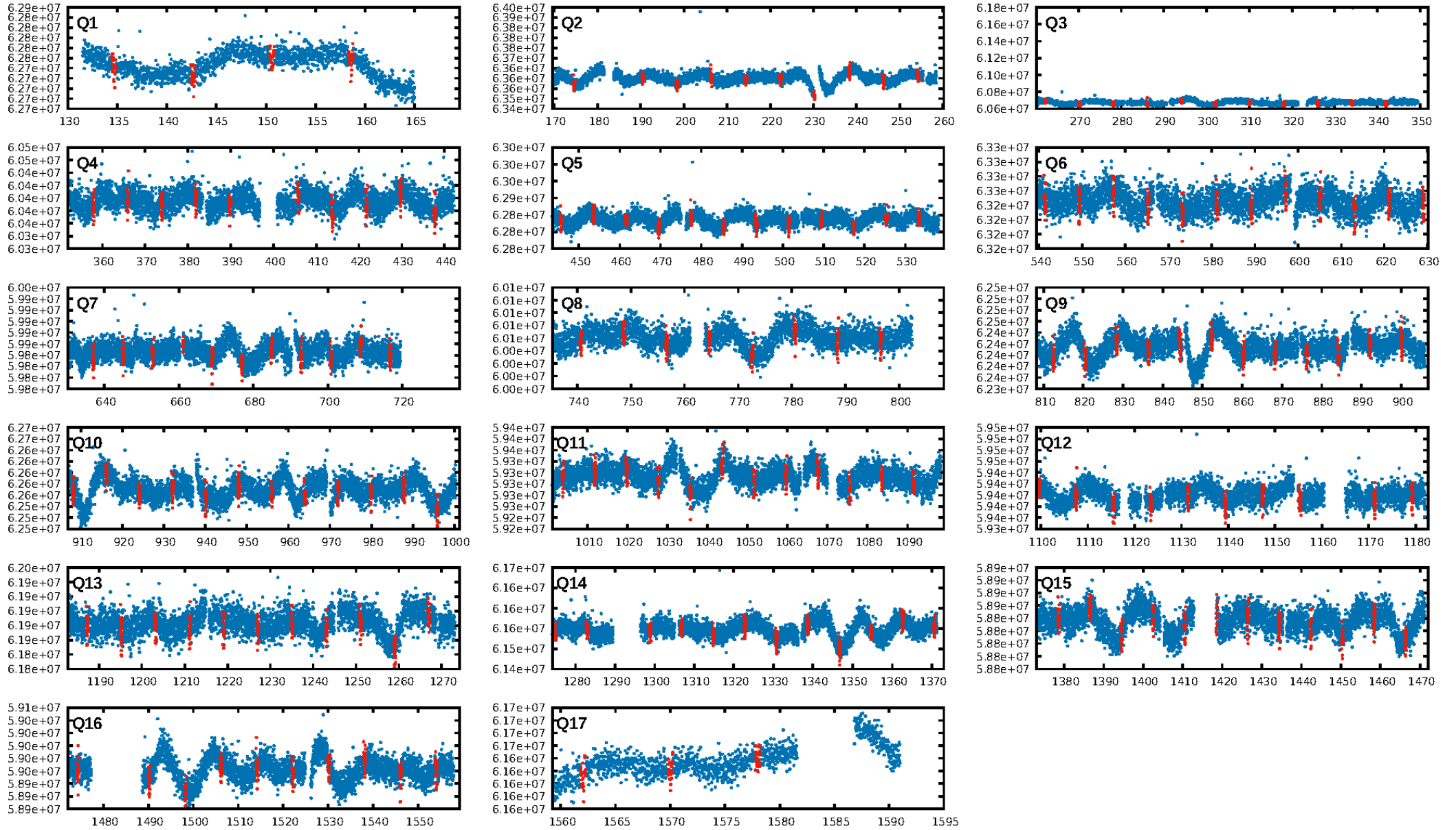
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.13 sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [163/164]
GhostDiagnostic-chr: 6.146
Centroid-sig: 41.3%
Centroid-so: 0.621 arcsec [2.20 sigma]
OotOffset-rm: 0.193 arcsec [0.85 sigma]
KicOffset-rm: 0.107 arcsec [0.51 sigma]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

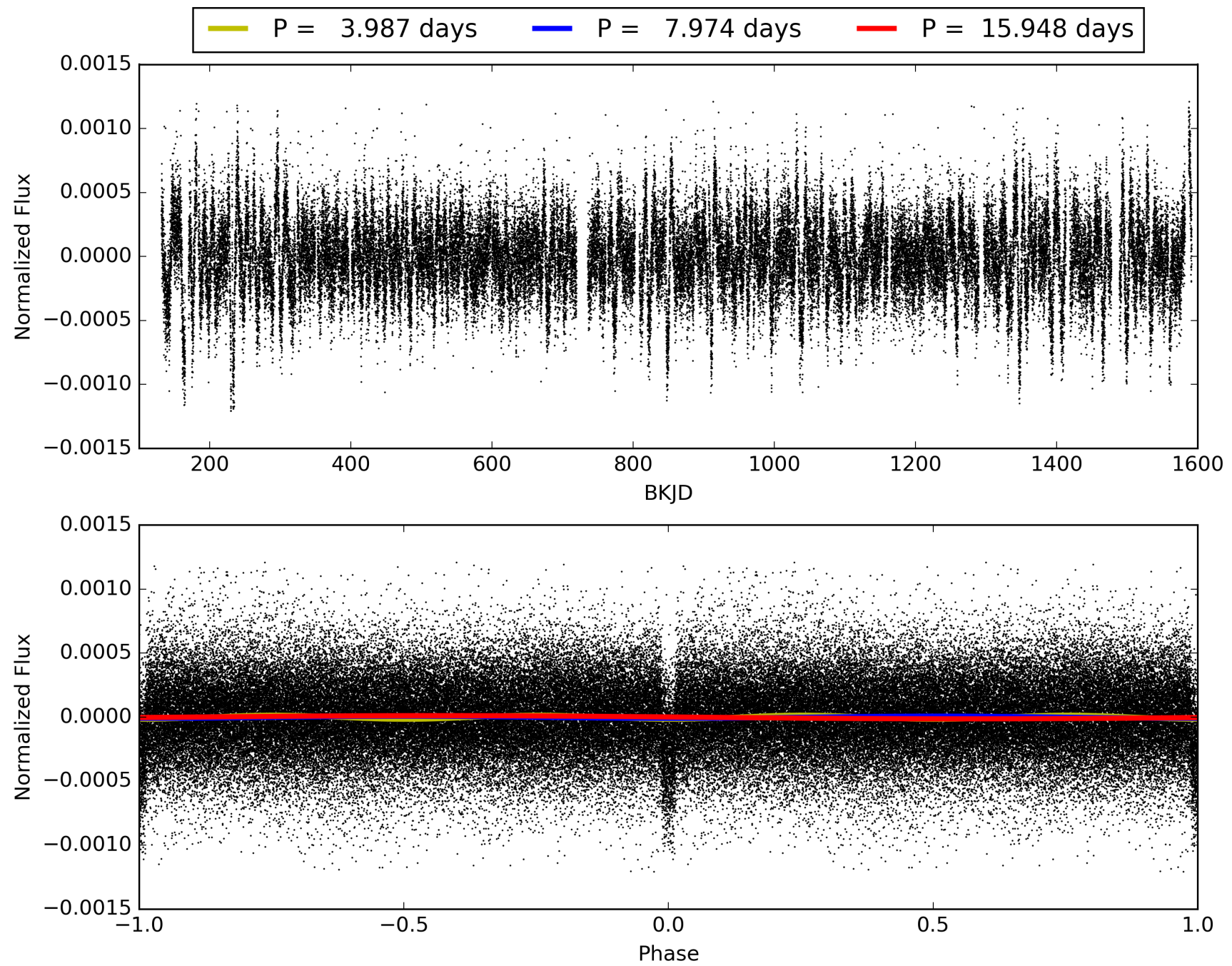
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:46:02 Z

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

TCE 011361646-01, PDC Light Curves

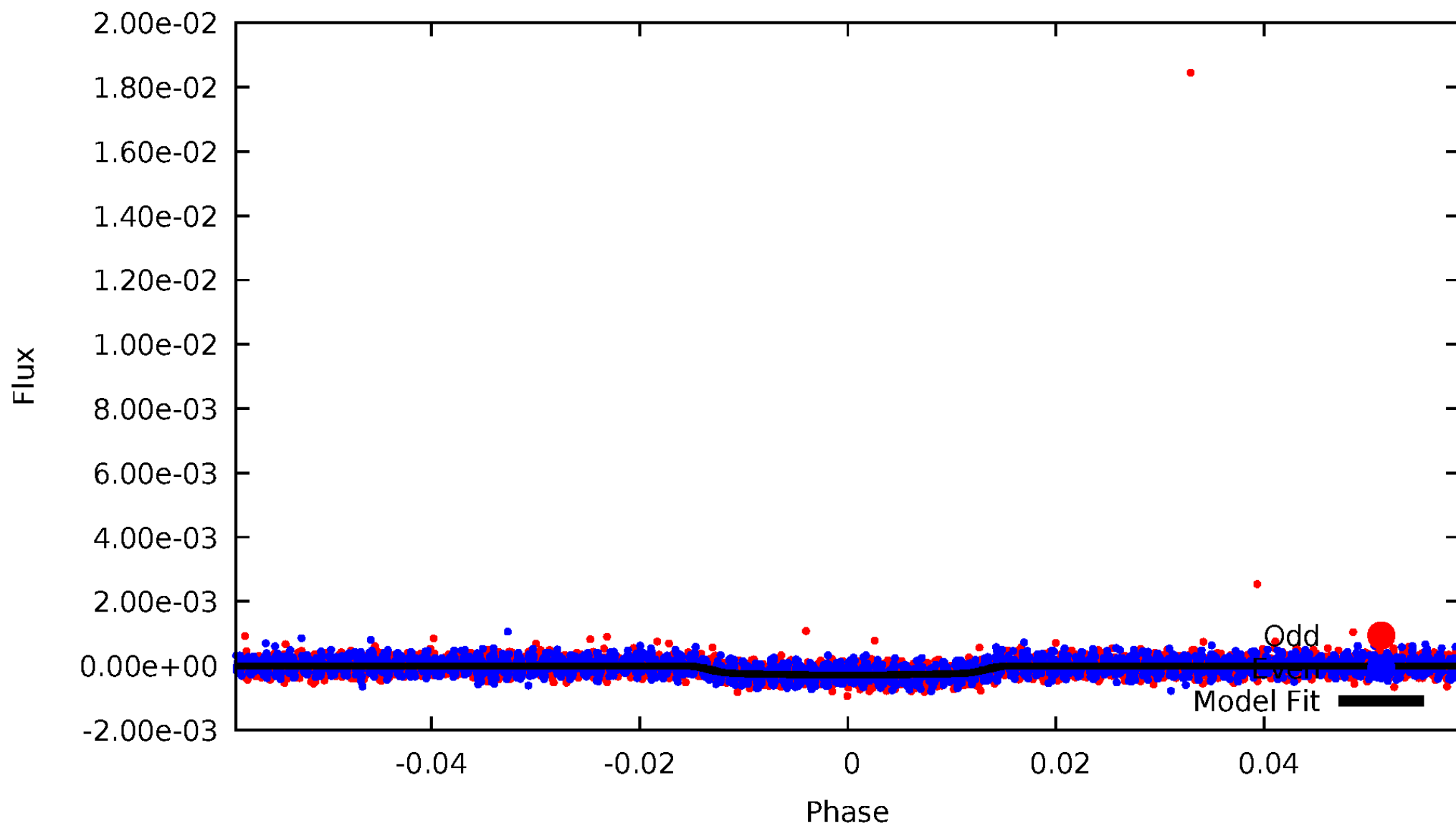


TCE 011361646-01



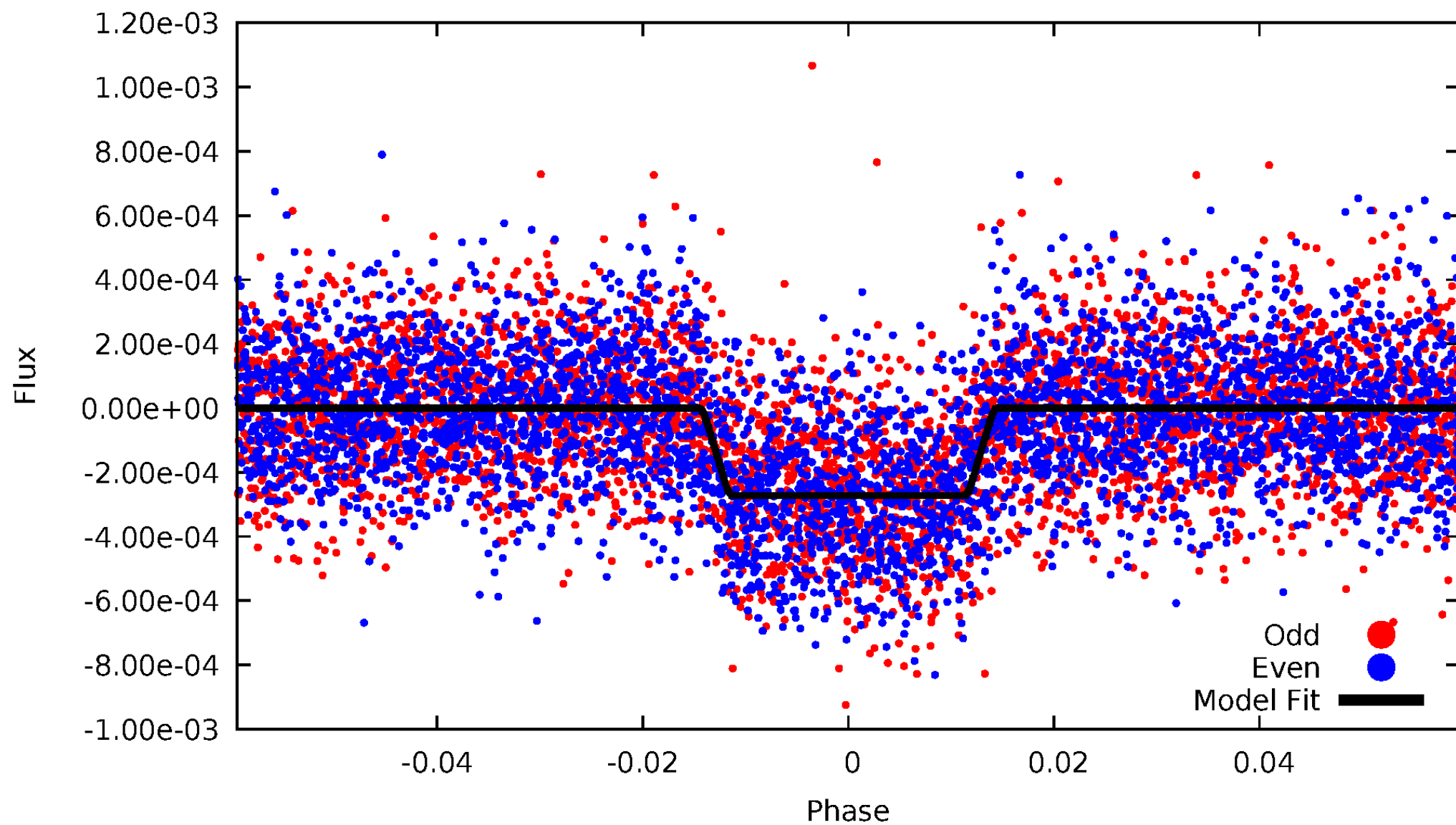
DV Odd/Even

TCE 011361646-01



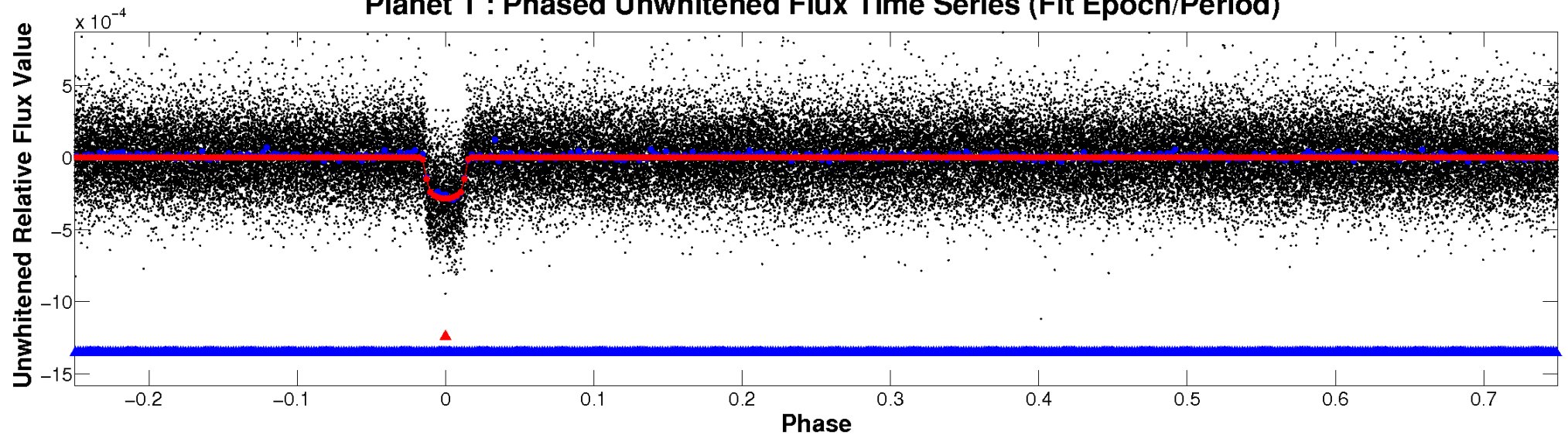
ALT Odd/Even

TCE 011361646-01

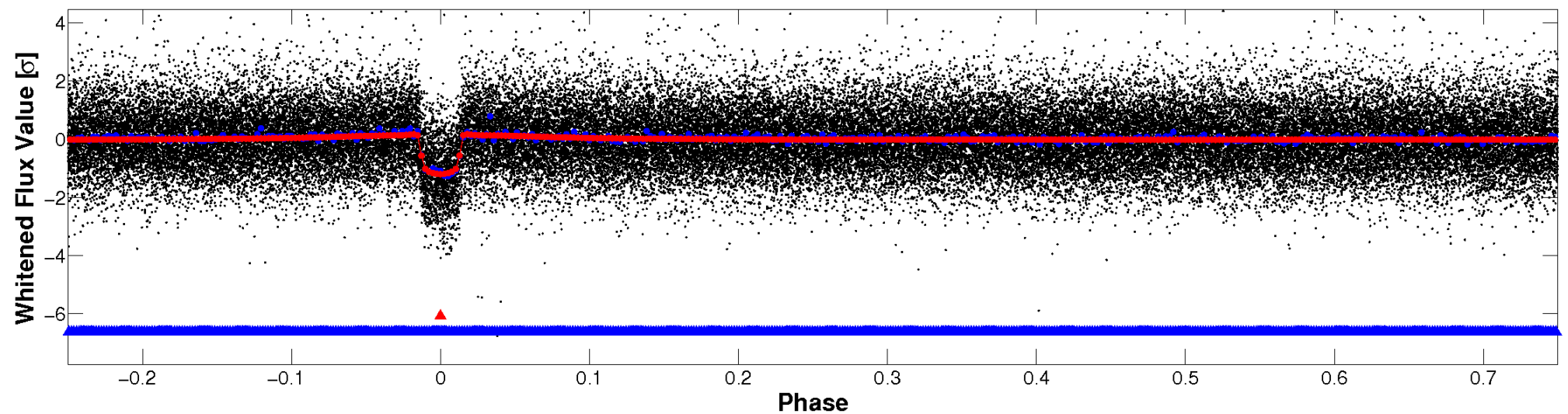


Non-Whitened Vs. Whitened Light Curve

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

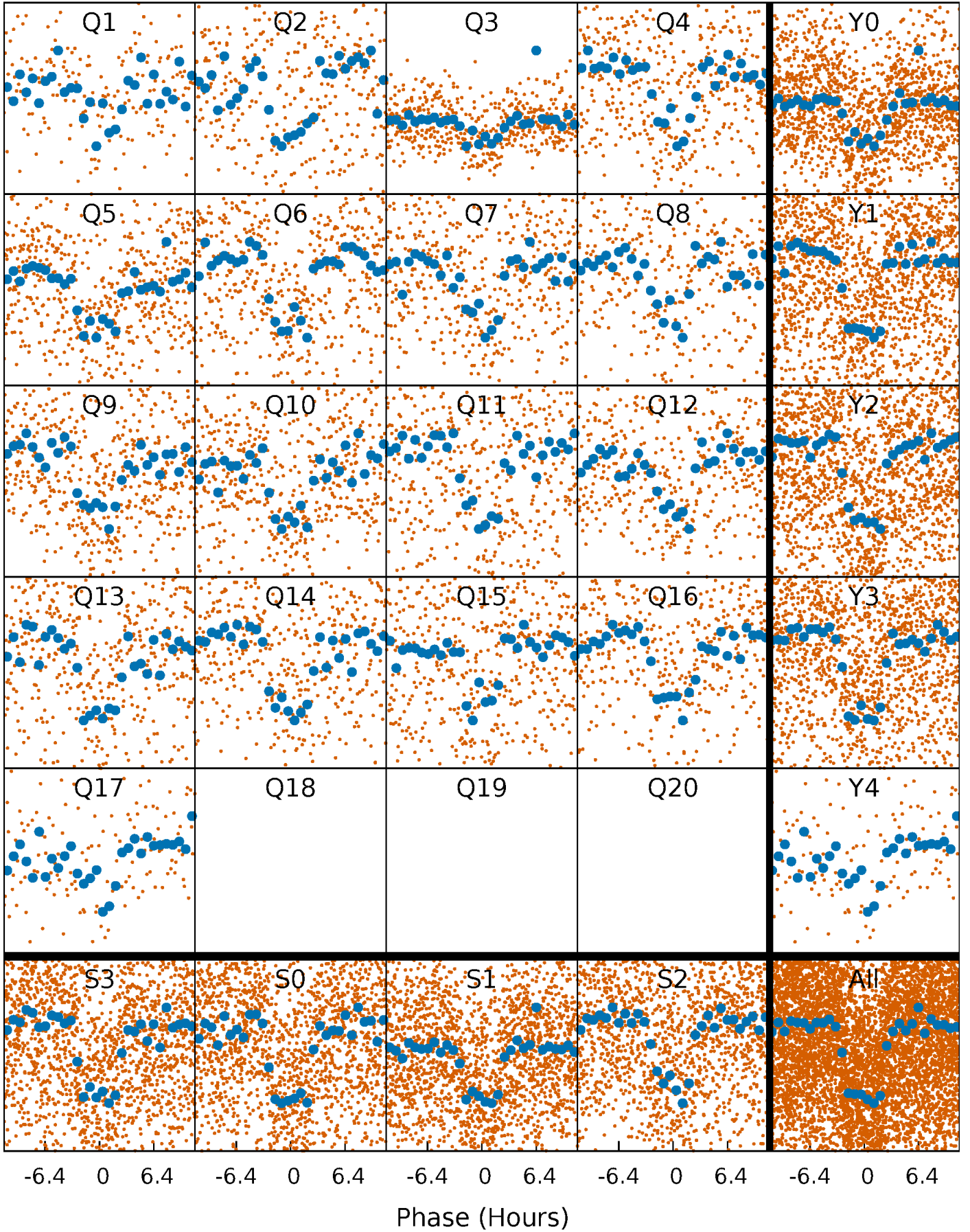


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



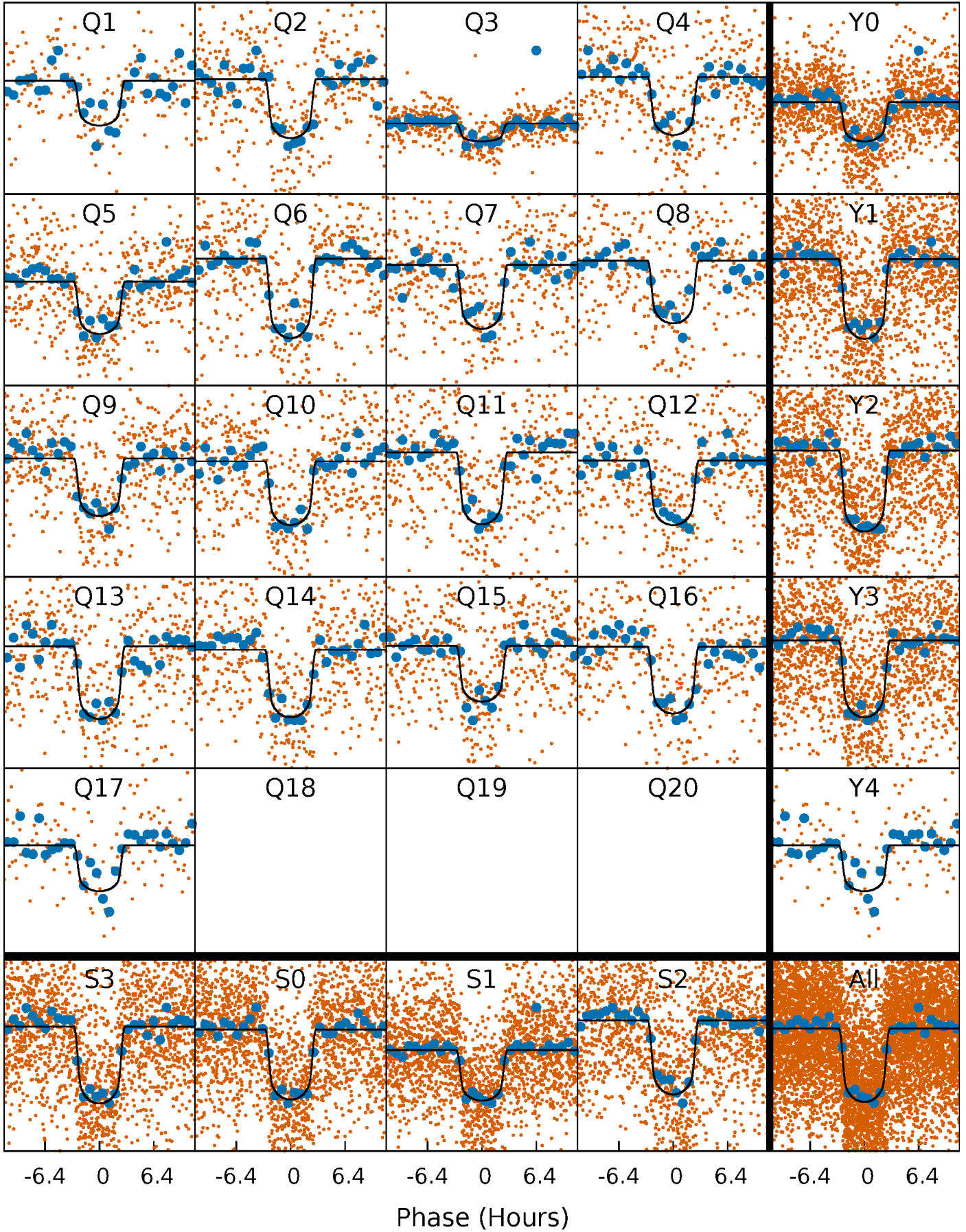
PDC Quarter-Phased Transit Curves

TCE 011361646-01 P= 7.974200 Days $T_0=134.656138$ (BKJD)



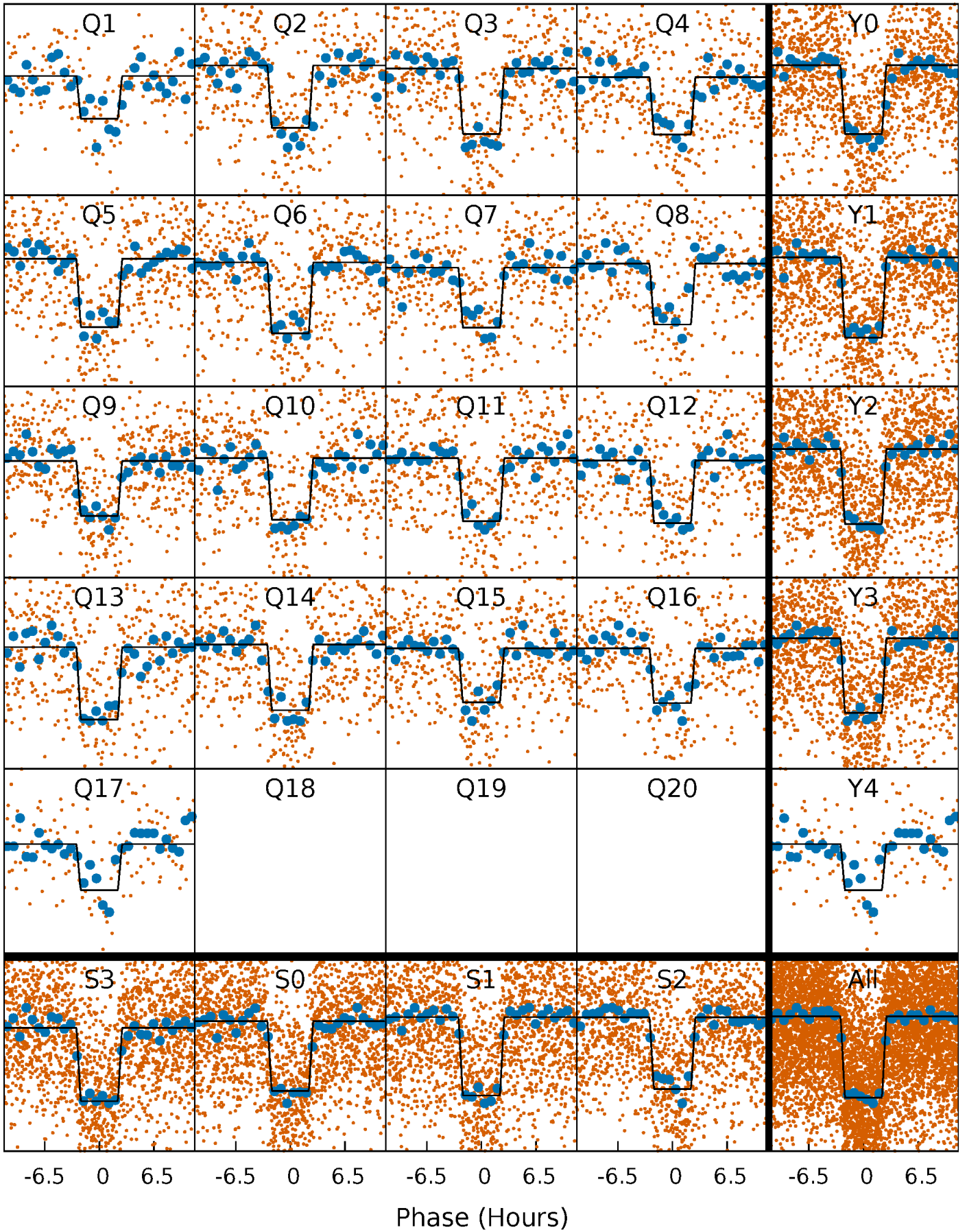
DV Quarter-Phased Transit Curves

TCE 011361646-01 P= 7.974200 Days $T_0=134.656138$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

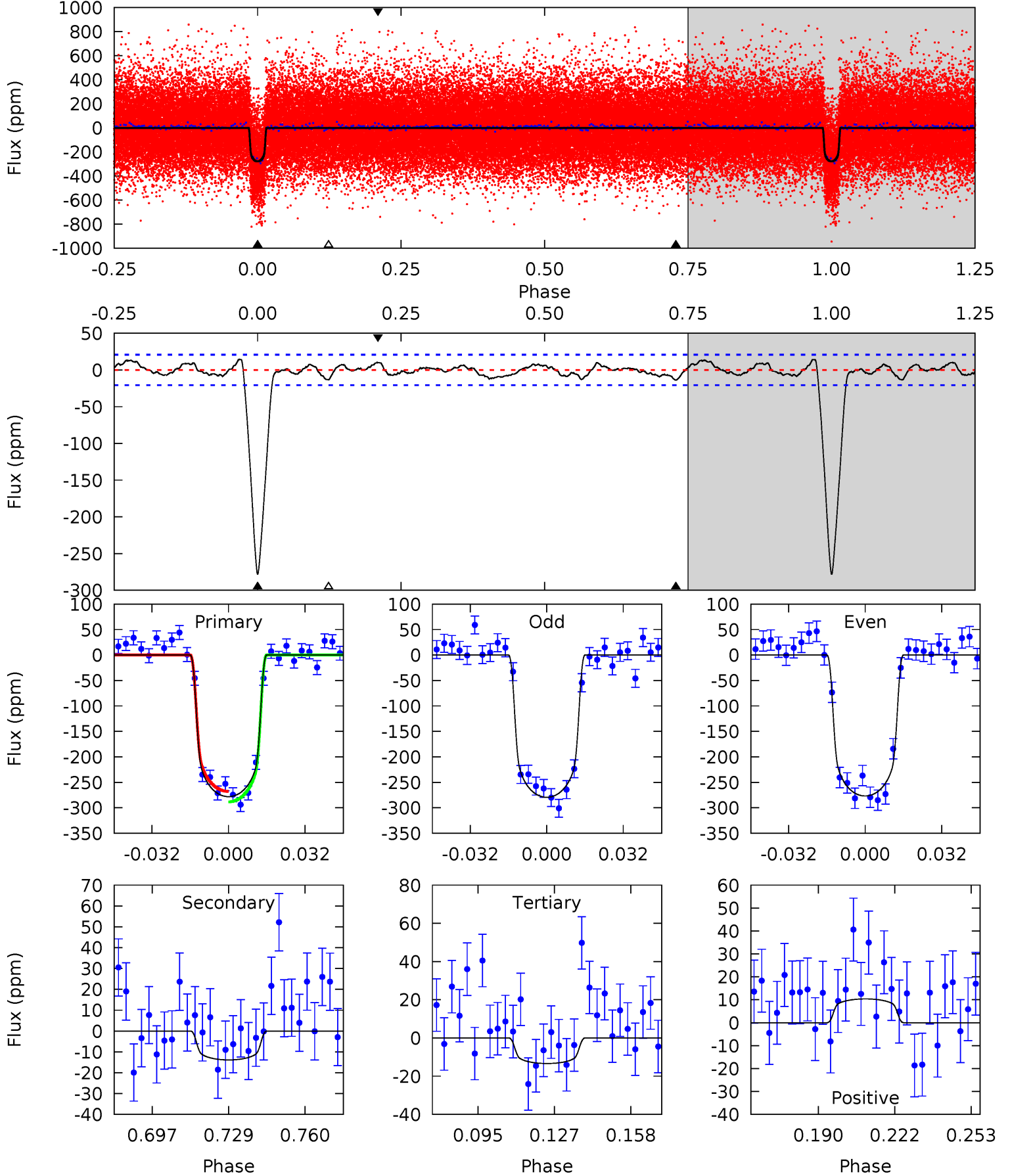
TCE 011361646-01 P= 7.974258 Days $T_0=134.651224$ (BKJD)



DV Model-Shift Uniqueness Test

011361646-01, P = 7.974200 Days, E = 126.681938 Days

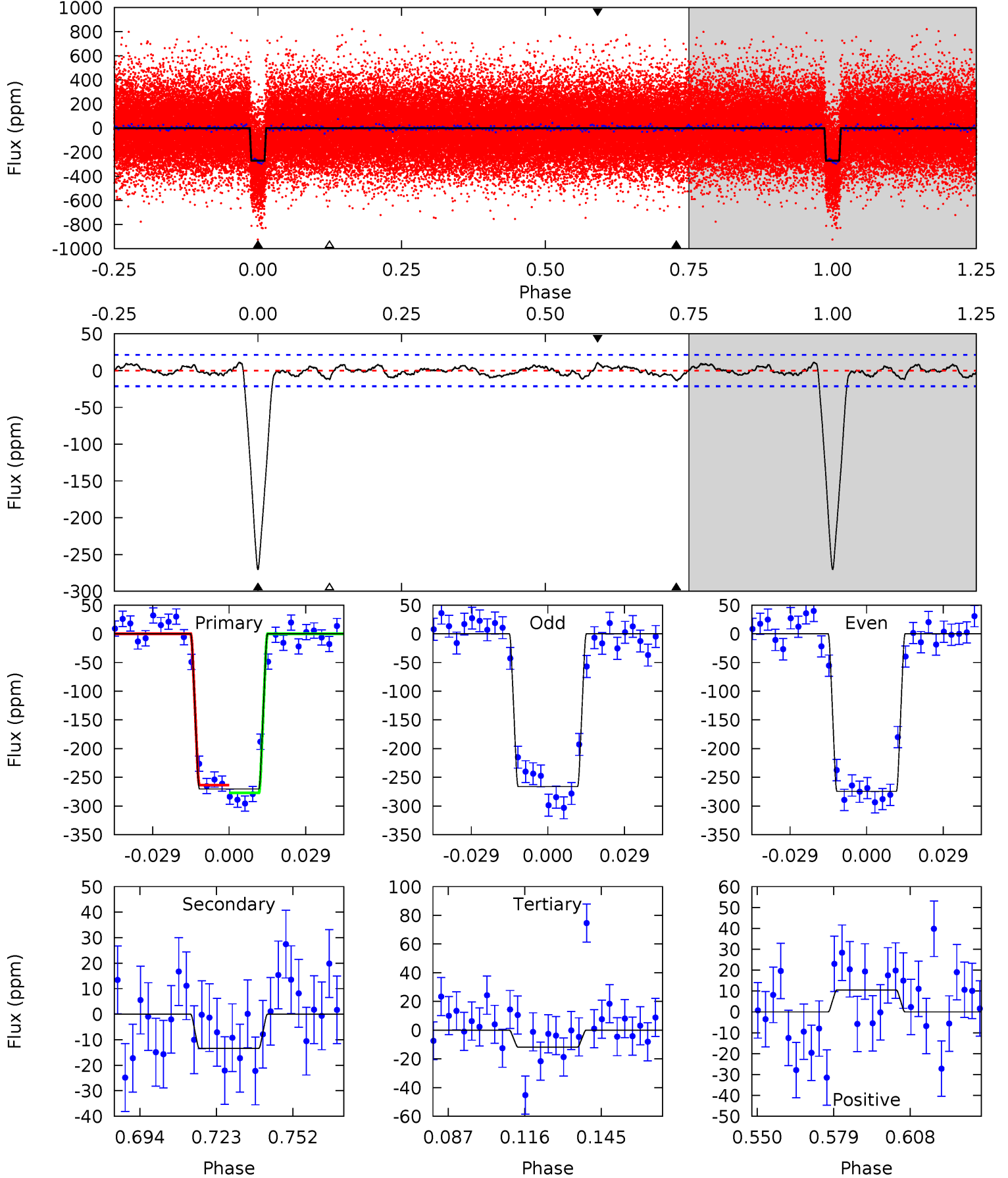
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.4	3.21	3.10	2.40	4.80	2.15	1.34	61.3	62.0	0.11	0.81	0.30	0.99	0.05	2.38



Alt Model-Shift Uniqueness Test

011361646-01, P = 7.974258 Days, E = 126.676966 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.8	3.01	2.65	2.35	4.82	2.18	1.09	58.2	58.5	0.36	0.66	0.94	0.99	0.04	1.52



Stellar Parameters For KIC 011361646

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5973^{+107}_{-131}	$4.386^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.081^{+0.168}_{-0.112}$	$1.036^{+0.075}_{-0.075}$	$1.154^{+0.368}_{-0.392}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+16%/-10%	+7%/-7%	+32%/-34%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 011361646-01 / KOI 0330.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 4	$2.15^{+0.22}_{-0.18}$	1365^{+61}_{-51}	3262^{+149}_{-186}	10^{+4}_{-3}
Alt.	-13 ± 4	$1.96^{+0.22}_{-0.18}$	1367^{+55}_{-53}	3329^{+174}_{-199}	12^{+5}_{-4}

T_{max} = Theoretical Maximum Planetary Temperature

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

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

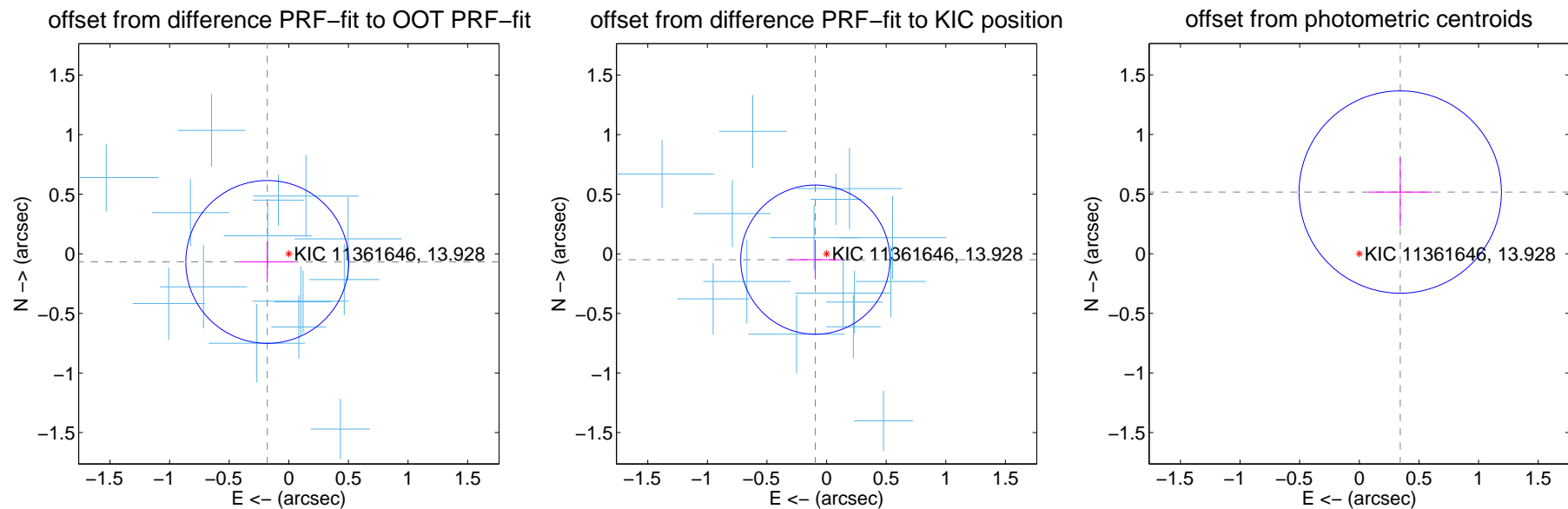
DV Centroid Data

Supplemental centroid analysis for 011361646-01. Kepler magnitude: 13.93. Transit SNR 44.41

There are 16 quarters with good PRF difference image offsets

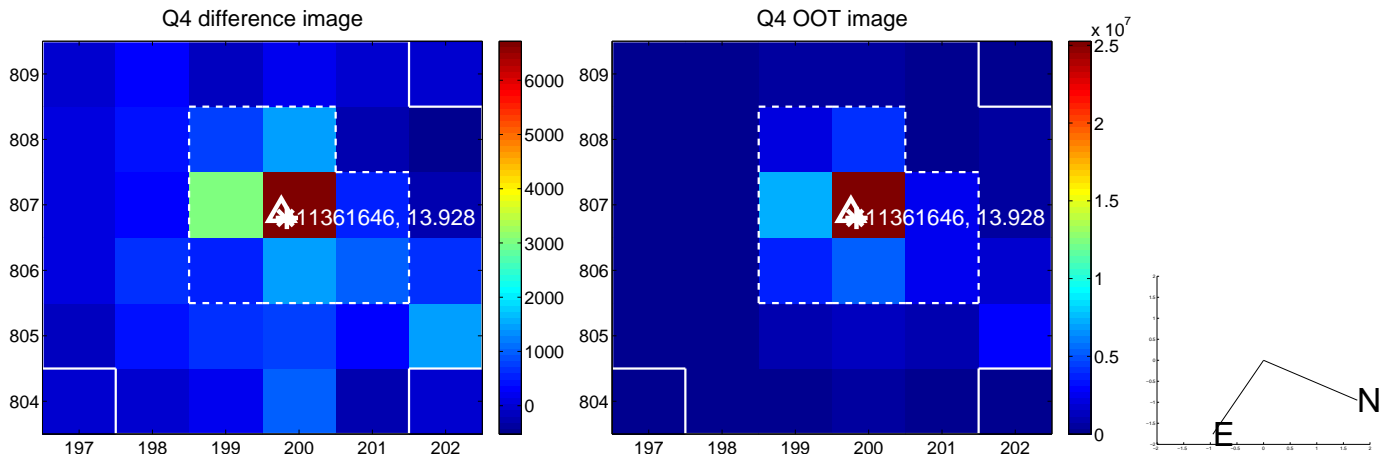
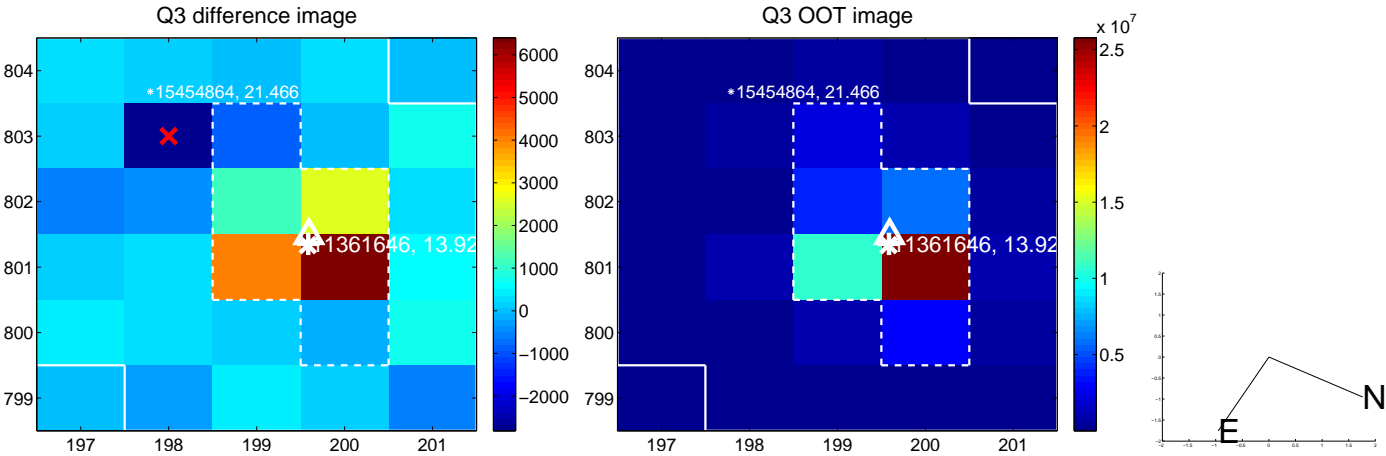
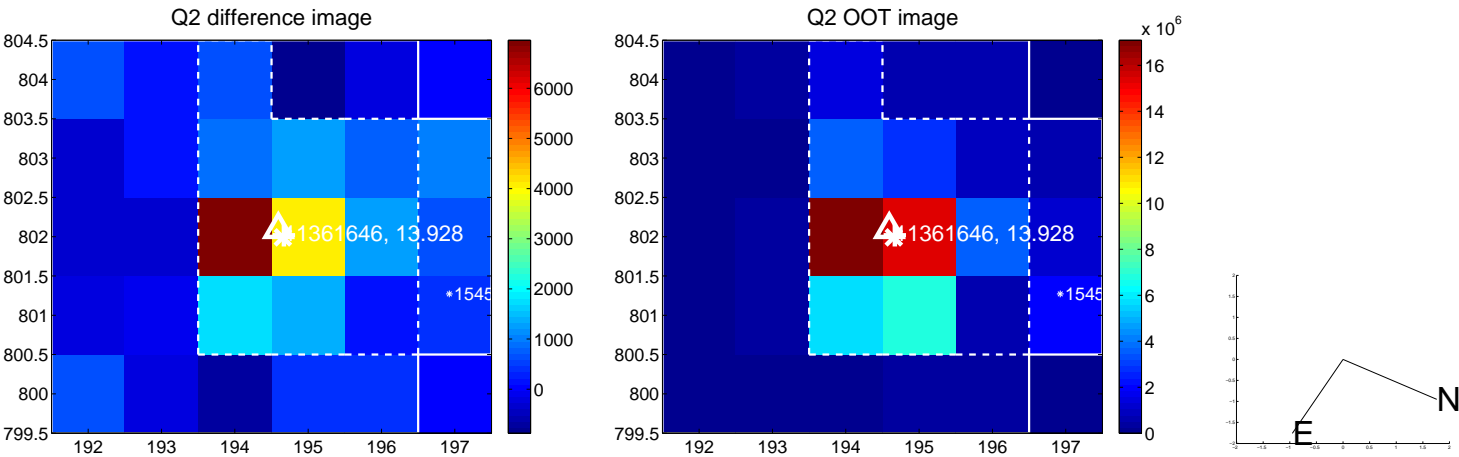
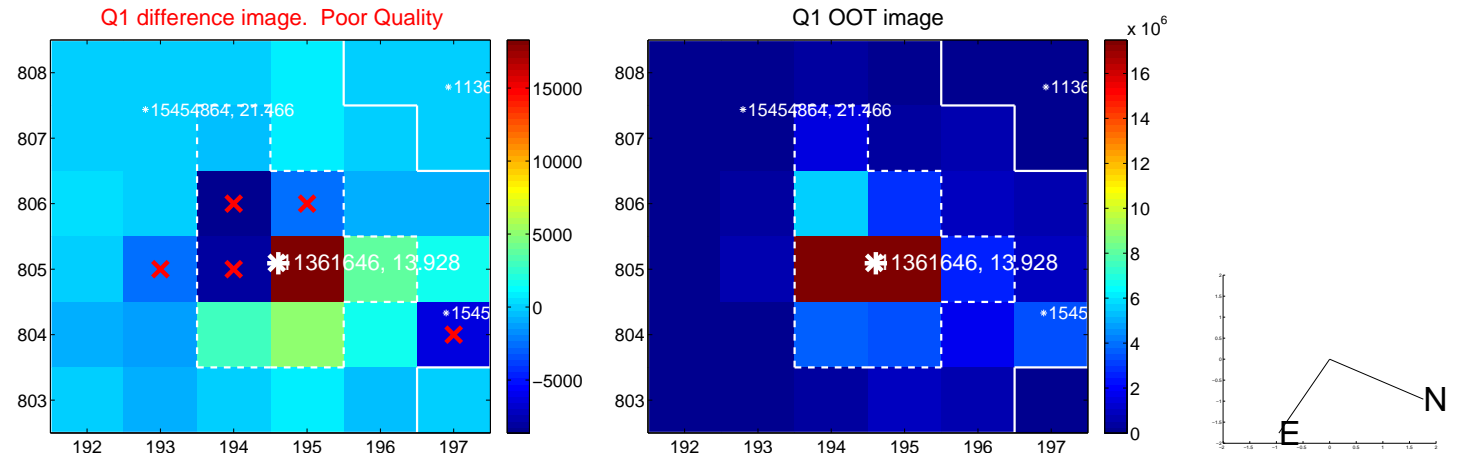
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.193 ± 0.228	0.85	0.181 ± 0.232	-0.068 ± 0.173
PRF-fit source offset from KIC position	0.107 ± 0.209	0.51	0.095 ± 0.218	-0.049 ± 0.166
photometric centroid source offset	0.62 ± 0.28	2.20	-0.34 ± 0.27	0.52 ± 0.29

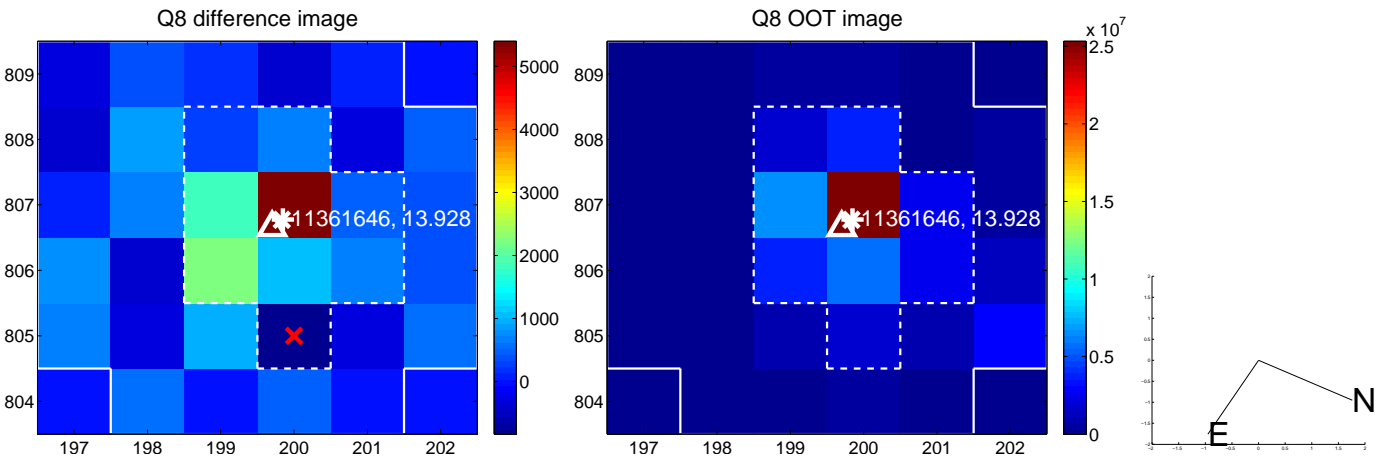
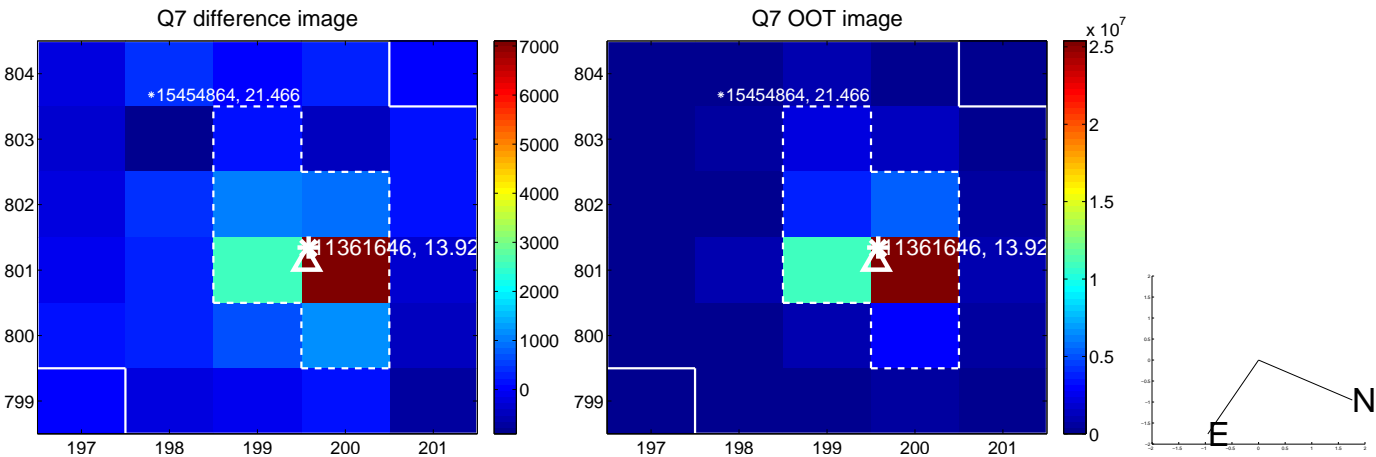
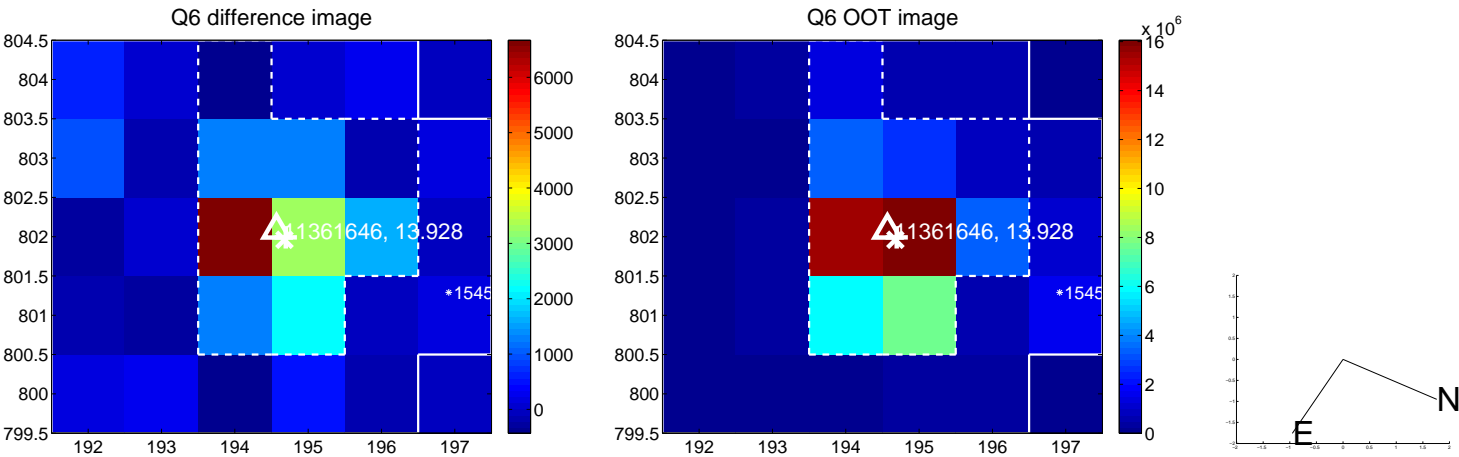
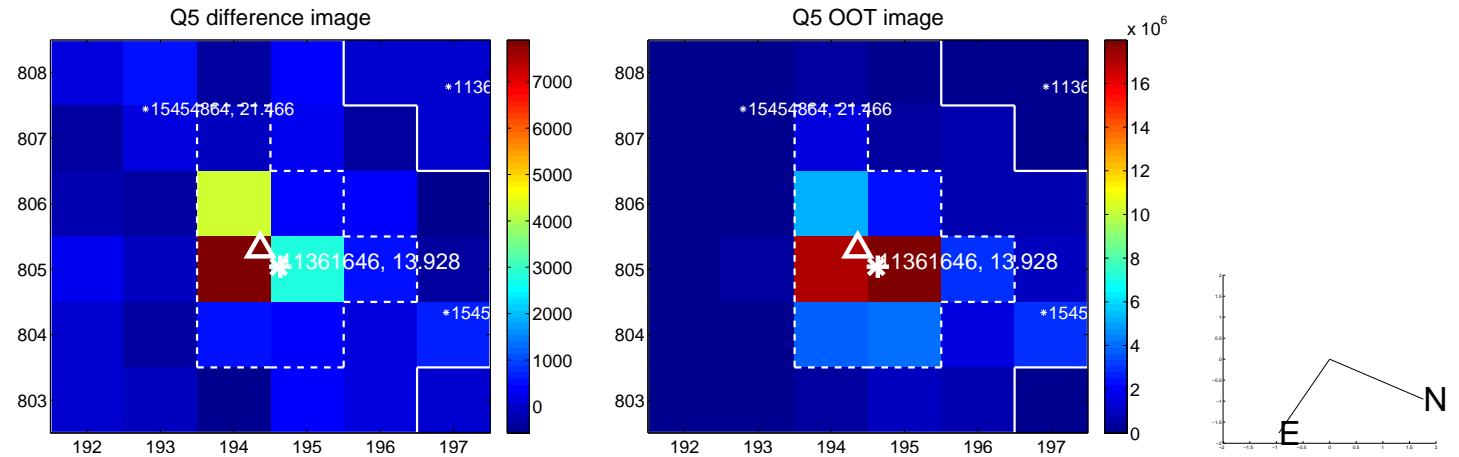


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

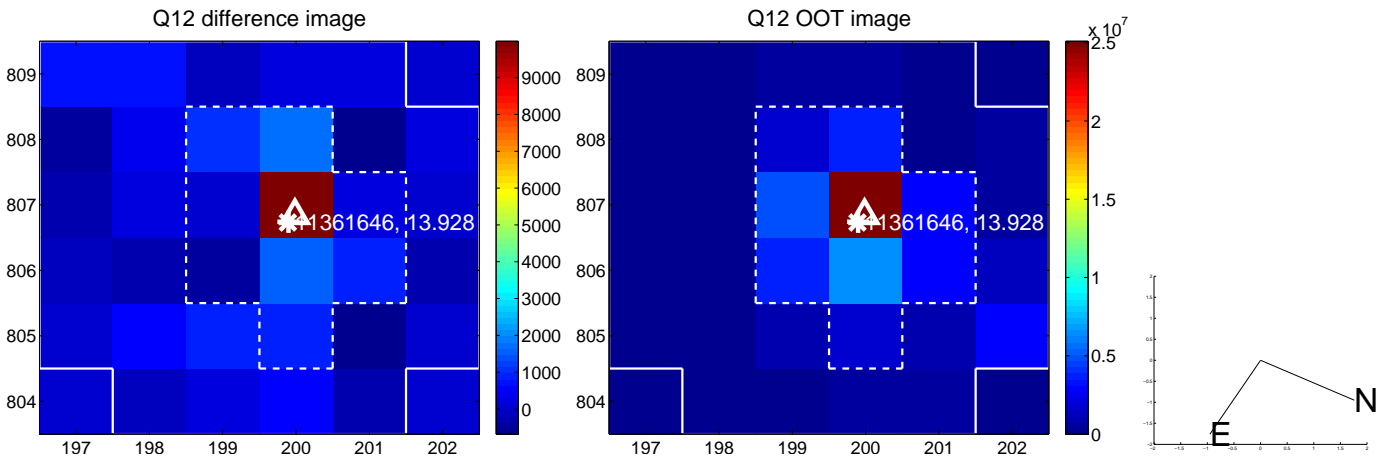
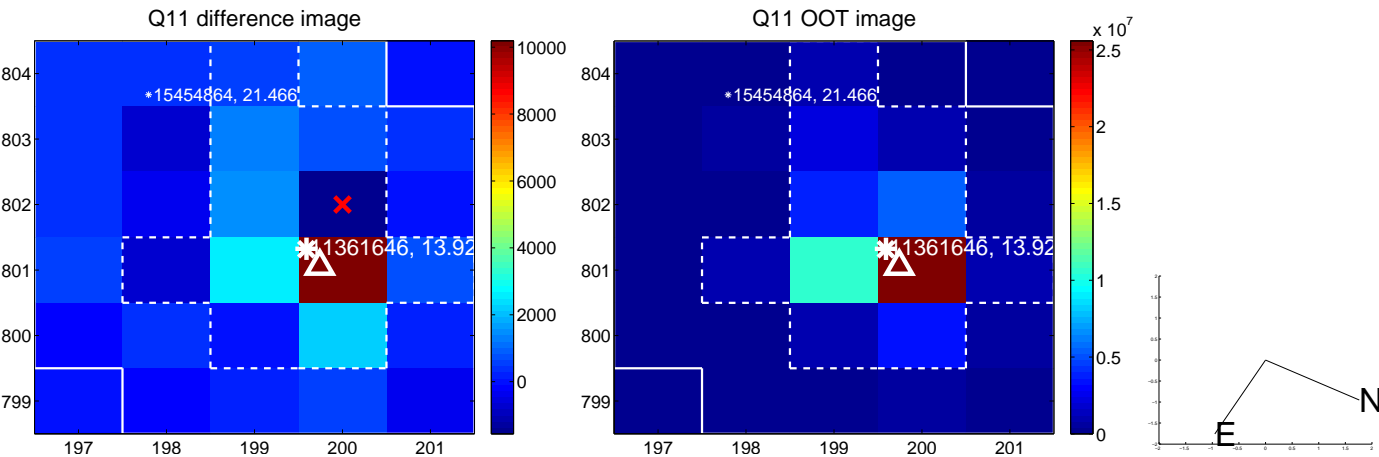
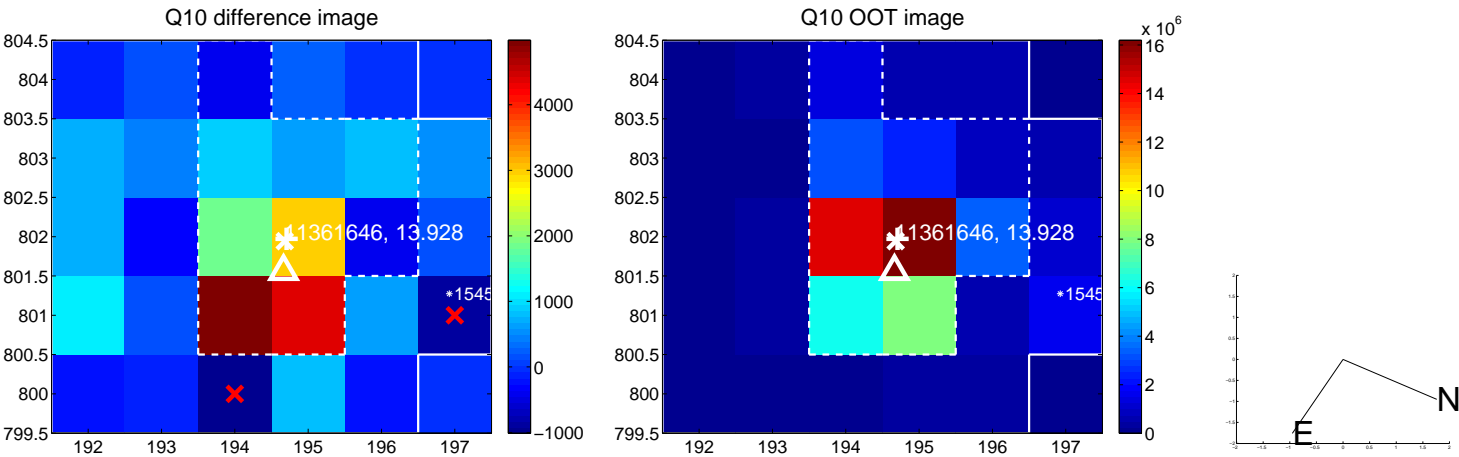
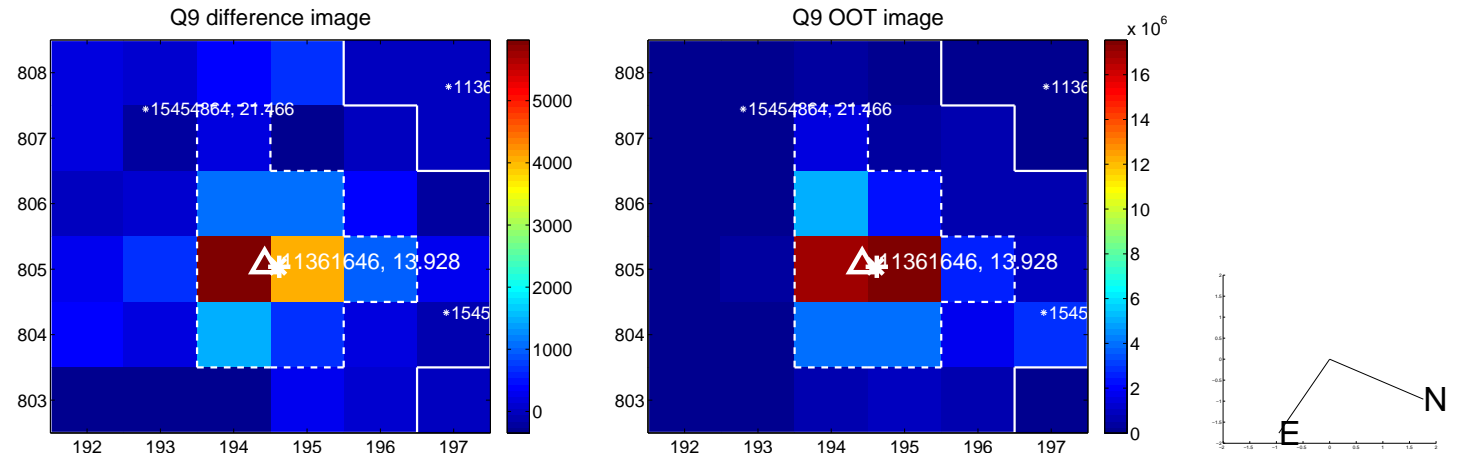
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



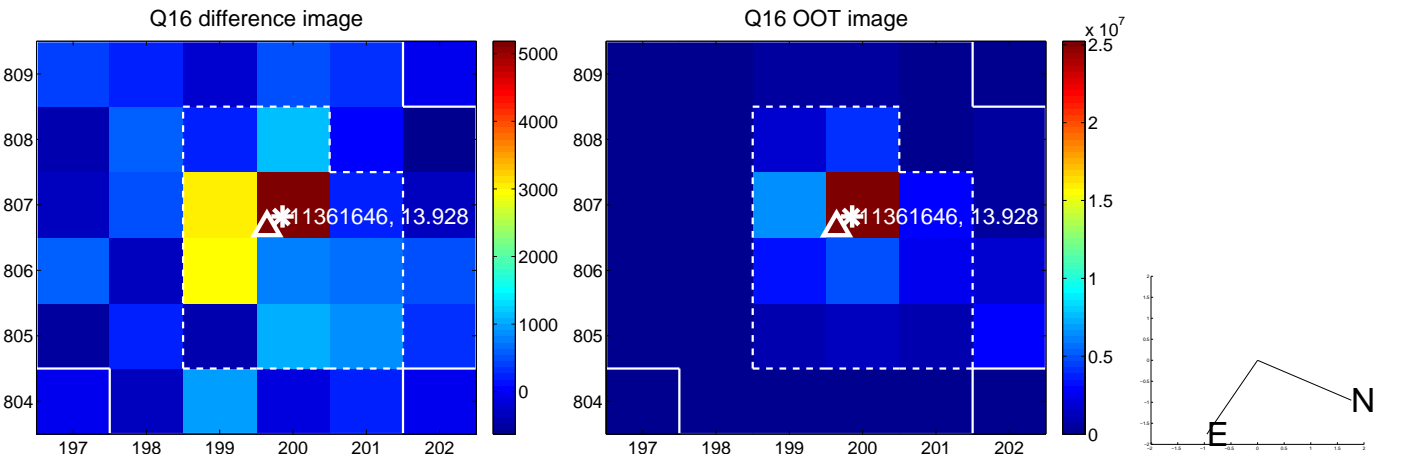
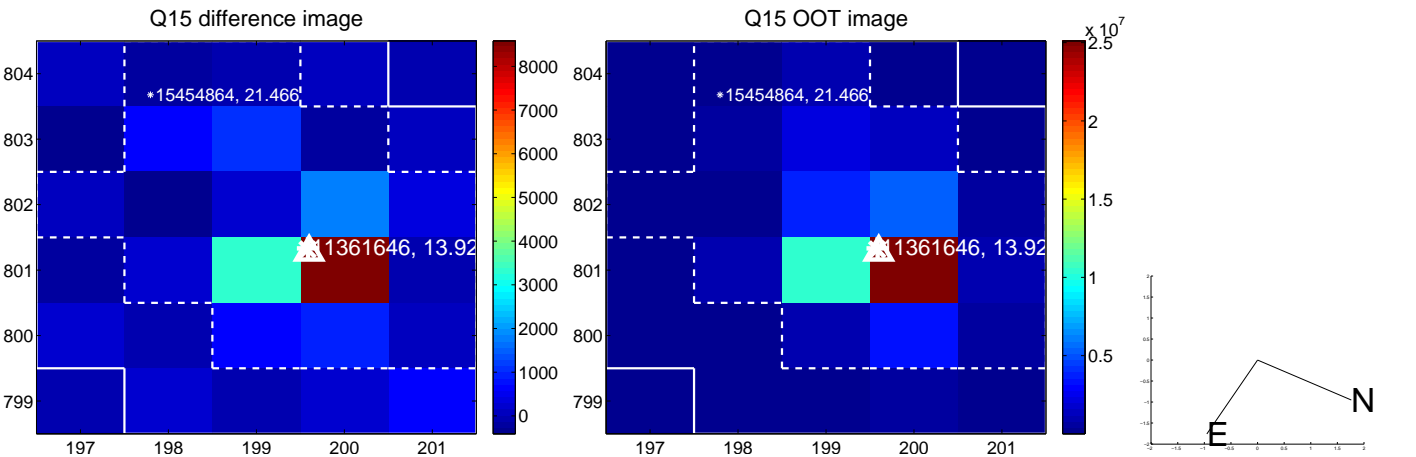
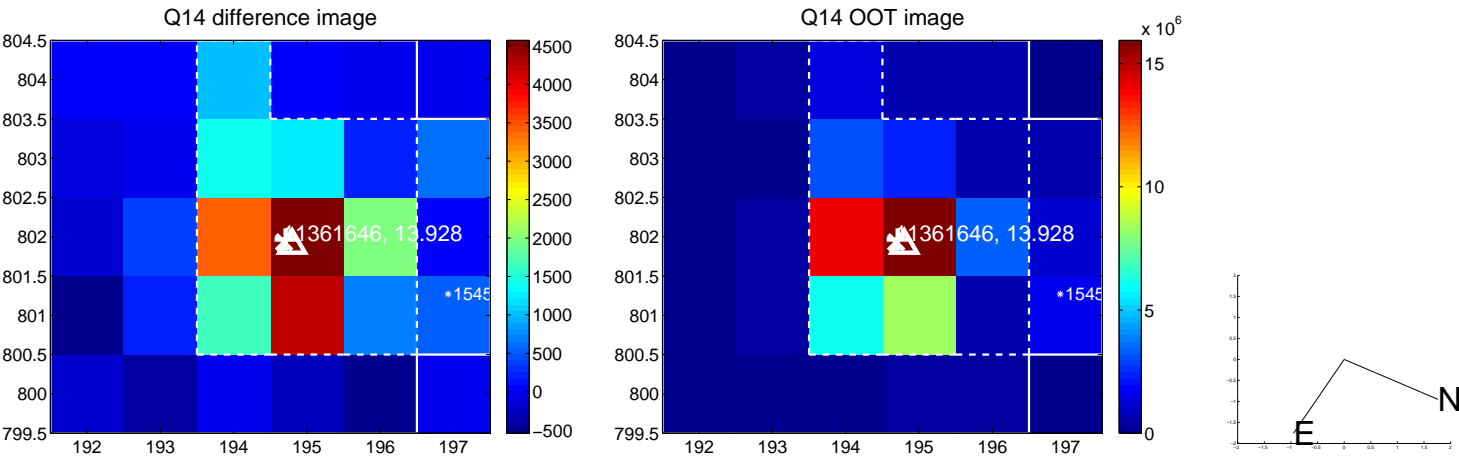
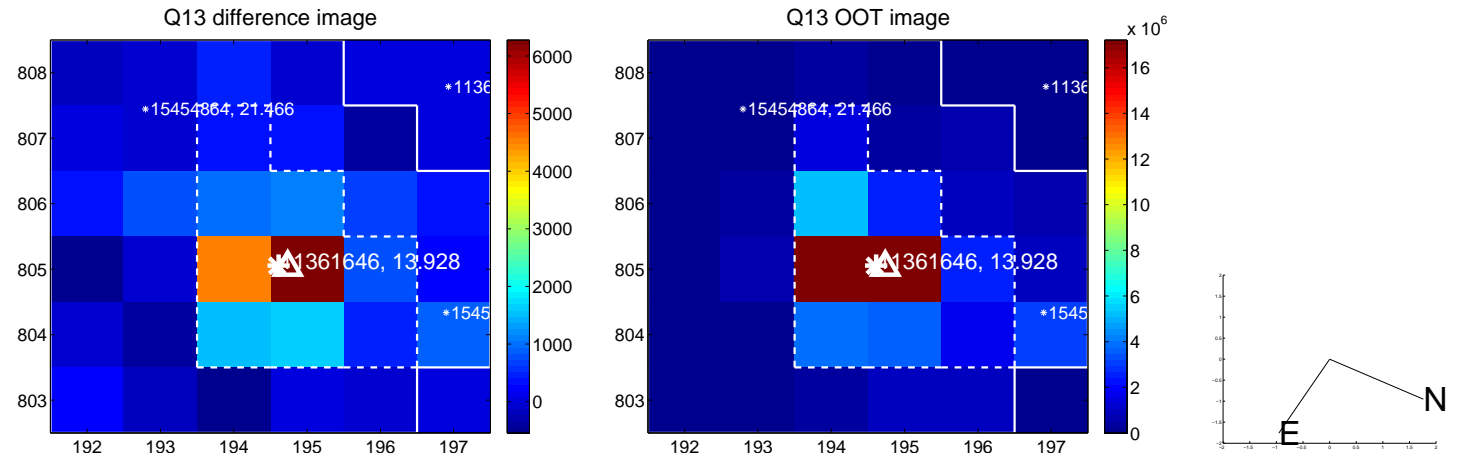
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



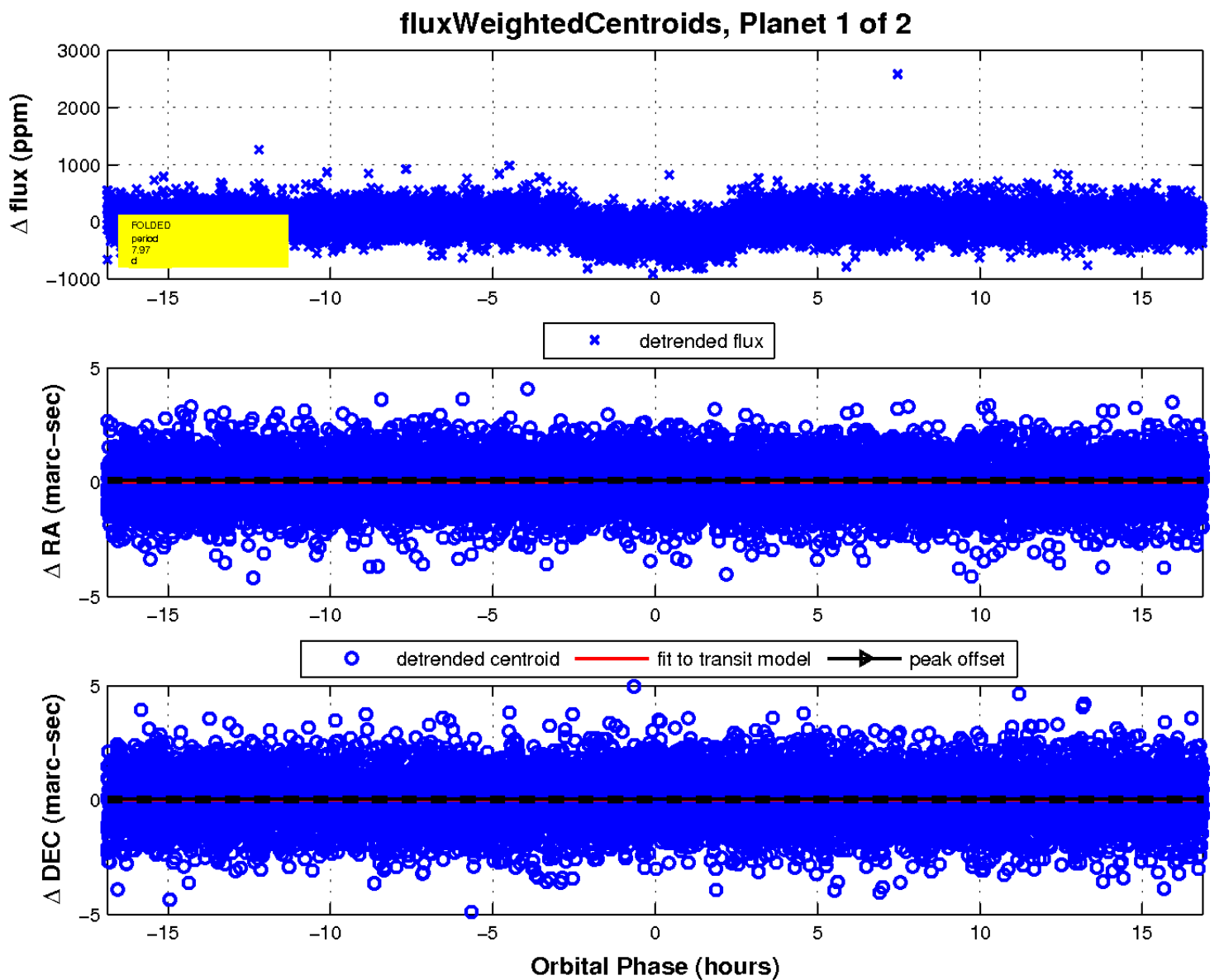
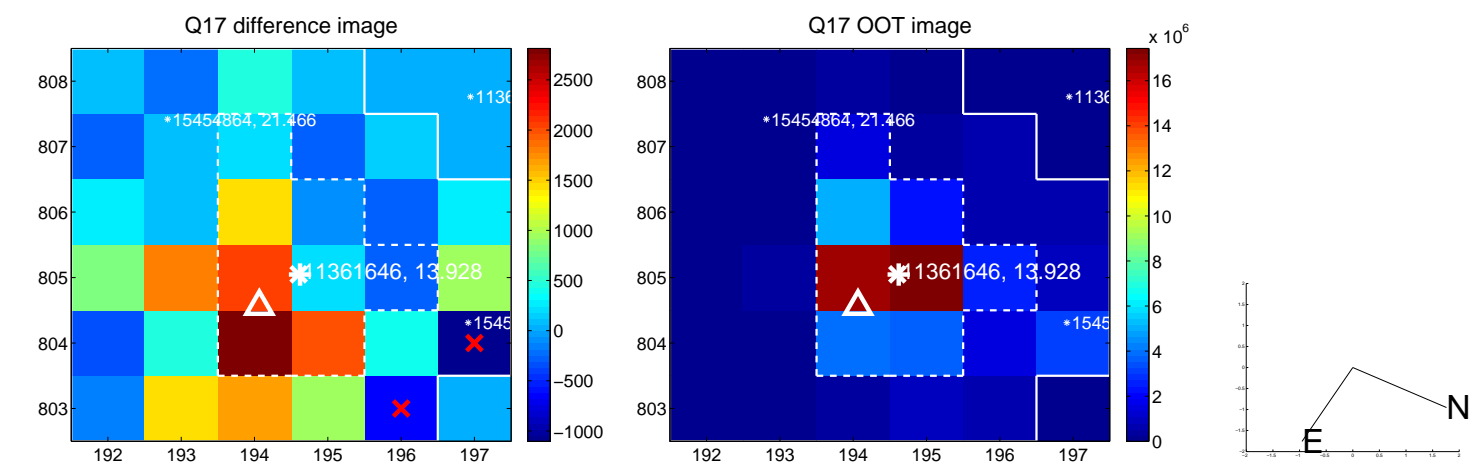
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

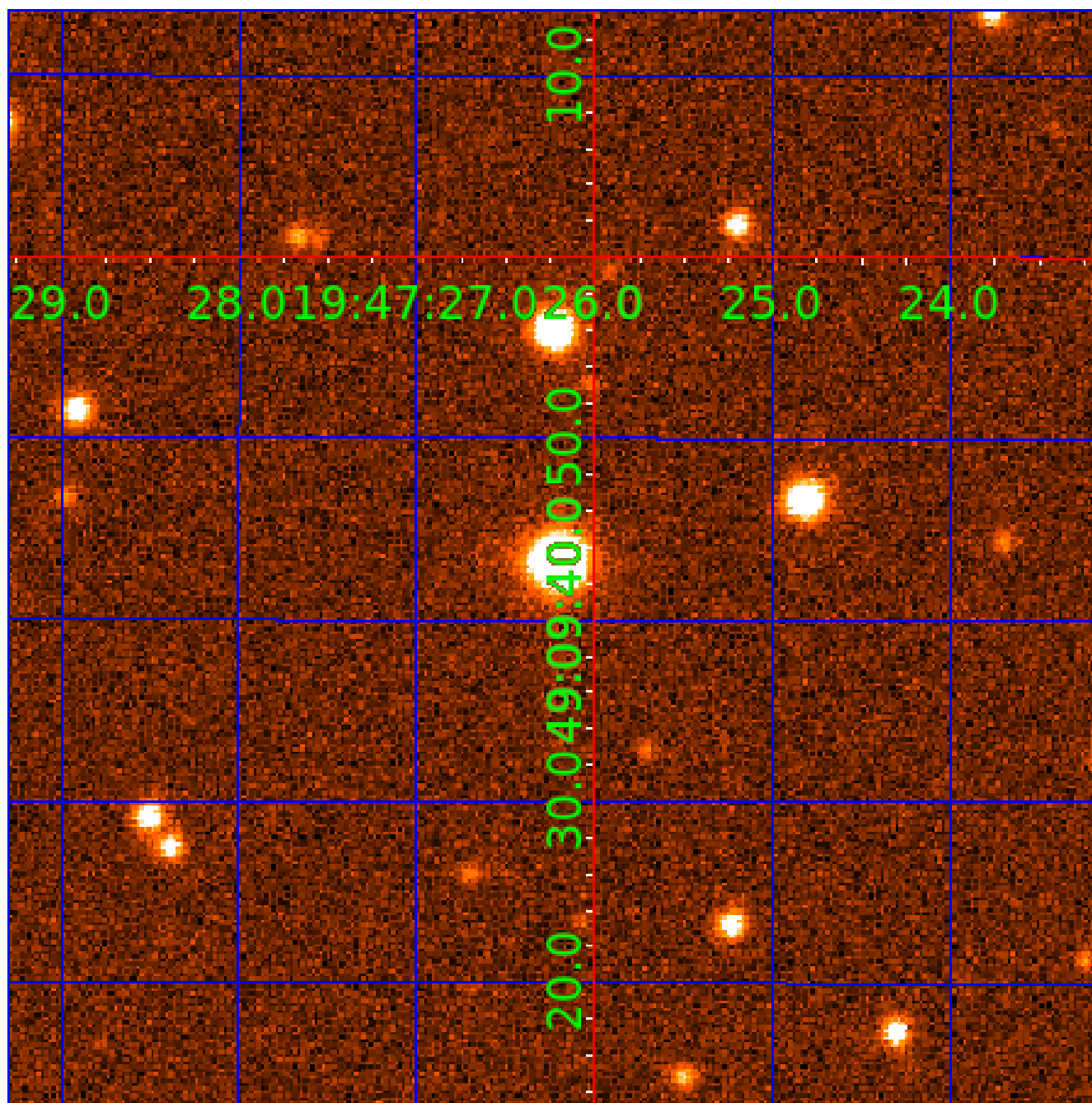


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011361646

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})
011361646-01	OBS	0330.01	7.974200	134.656138	285.1	5.622	41.2	44.4	1.08	5973	2.13	213.12
011361646-02	OBS	0330.02	1.888990	132.096290	62.5	3.458	14.3	16.6	1.08	5973	1.01	1454.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011361646-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011361646-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

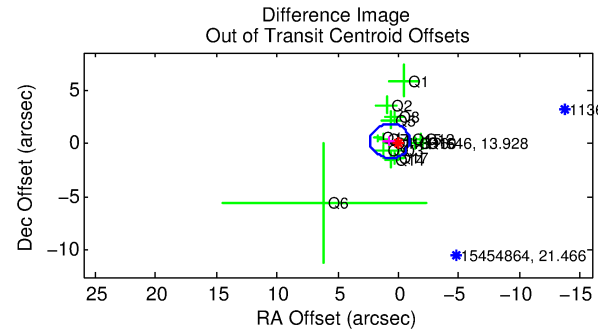
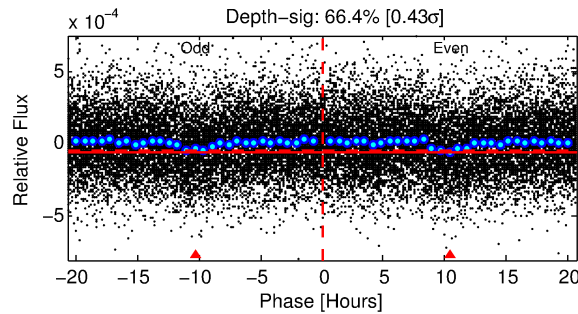
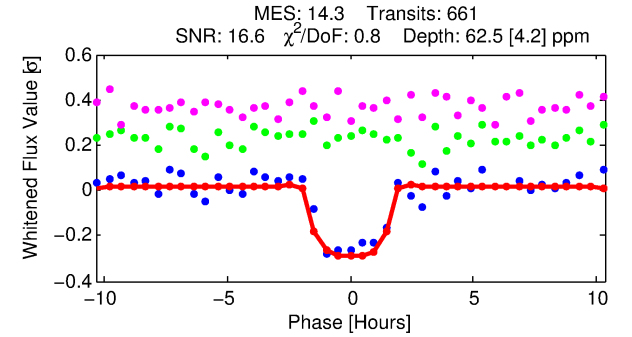
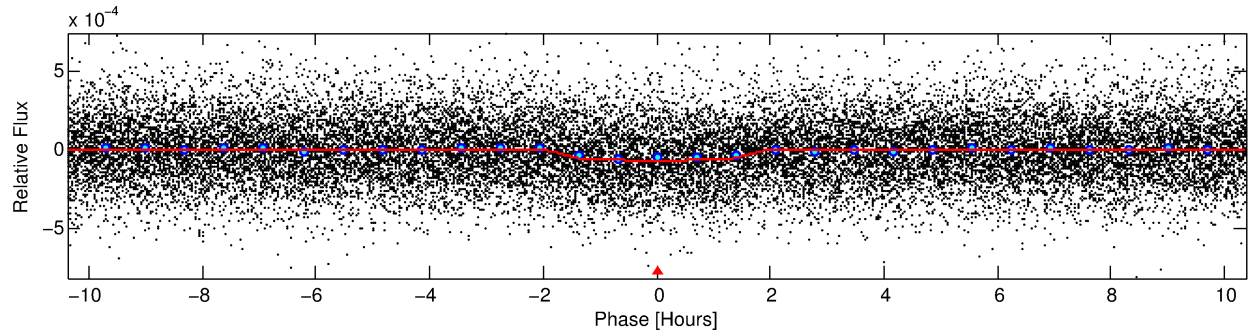
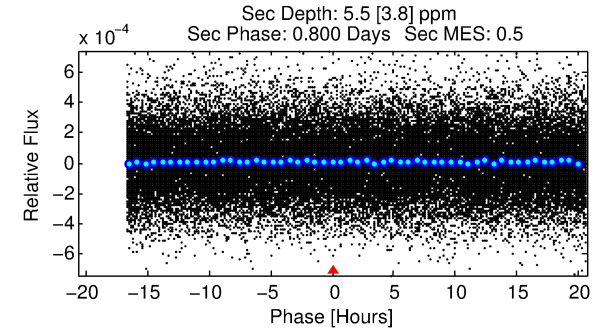
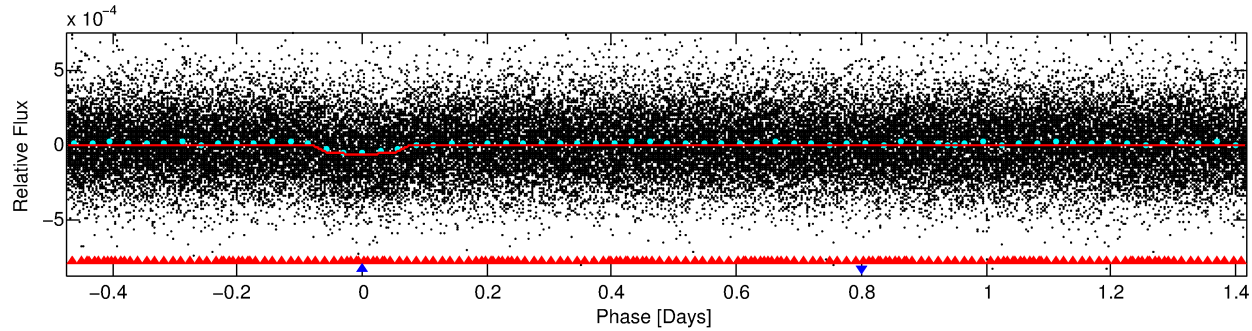
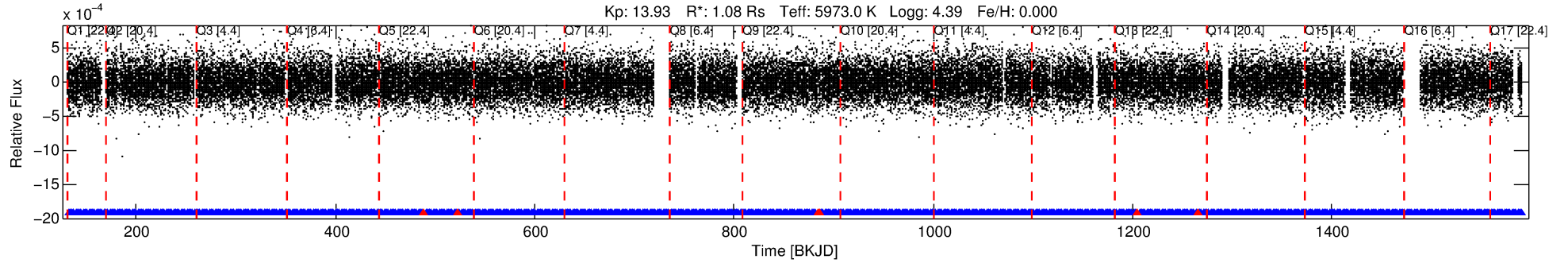
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011361646-02

No Significant Match Found

DV One-Page Summary

KIC: 11361646 Candidate: 2 of 2 Period: 1.889 d
KOI: K00330.02 Corr: 0.966



DV Fit Results:

Period = 1.88899 [0.00001] d
Epoch = 132.0963 [0.0027] BKJD
Rp/R* = 0.0085 [0.0030]
a/R* = 2.15 [3.04]
b = 0.89 [0.41]
Seff = 1454.04 [332.73]
Teff = 1575 [90] K
Rp = 1.01 [0.39] Re
a = 0.0303 [0.0042] AU
Ag = 2.72 [2.76] [0.62σ]
Teffp = 3125 [780] K [1.98σ]

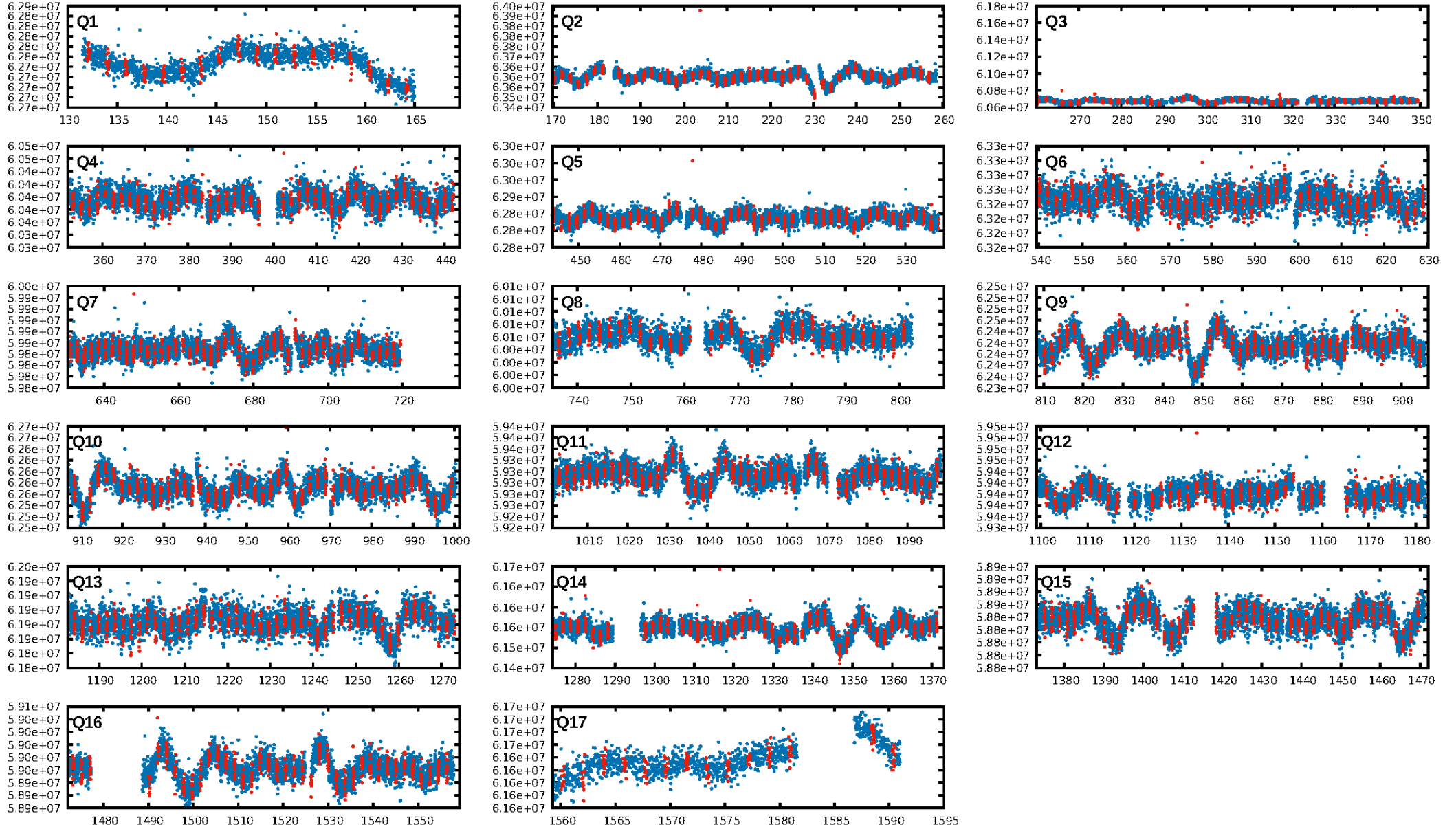
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [22.13σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.39e-46
RollingBand-fgt: 0.99 [625/631]
GhostDiagnostic-chr: 3.82
Centroid-sig: 6.2%
Centroid-so: 0.737 arcsec [0.99σ]
OotOffset-rm: 0.728 arcsec [1.35σ]
KicOffset-rm: 0.647 arcsec [1.21σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

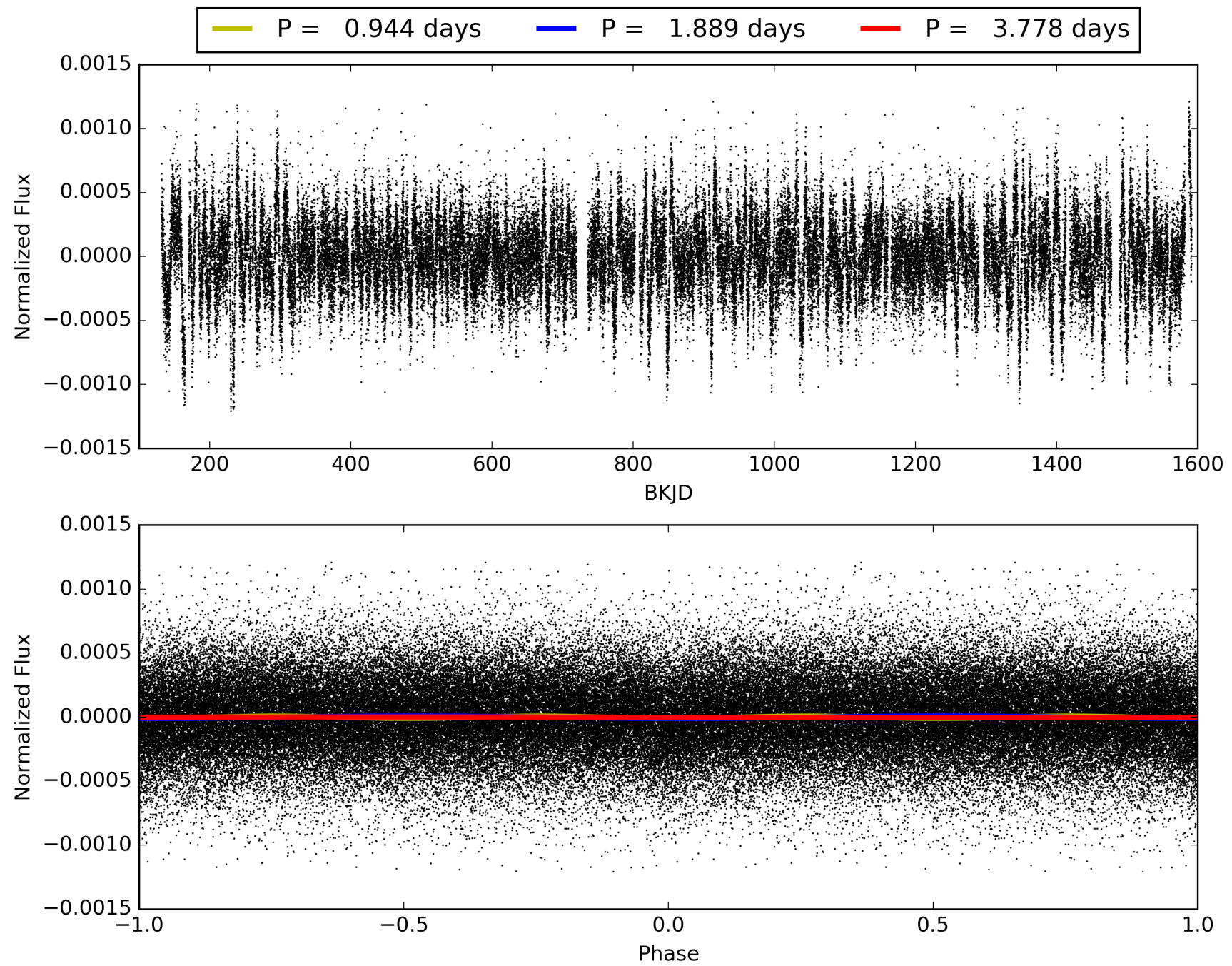
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:46:10 Z

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

TCE 011361646-02, PDC Light Curves

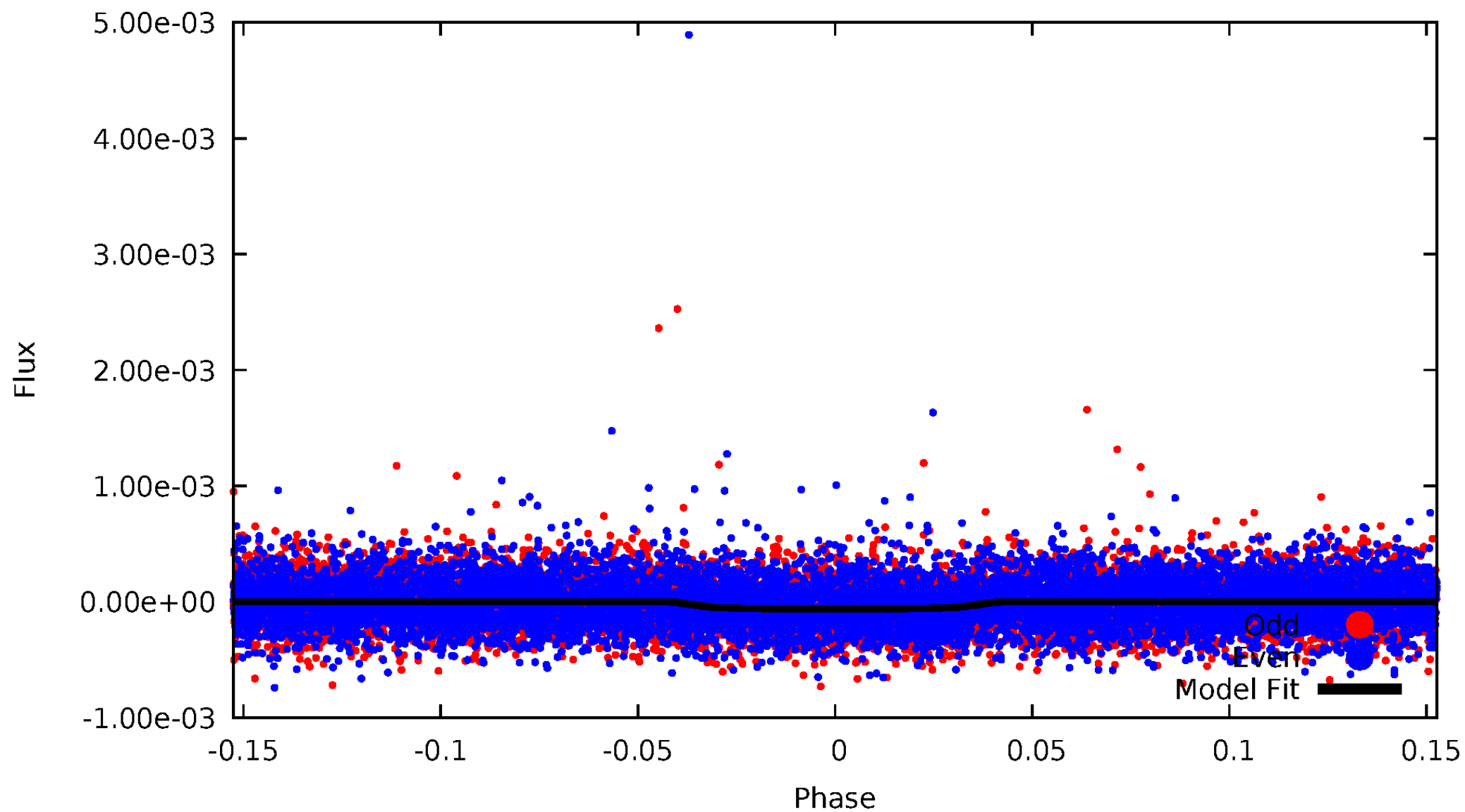


TCE 011361646-02



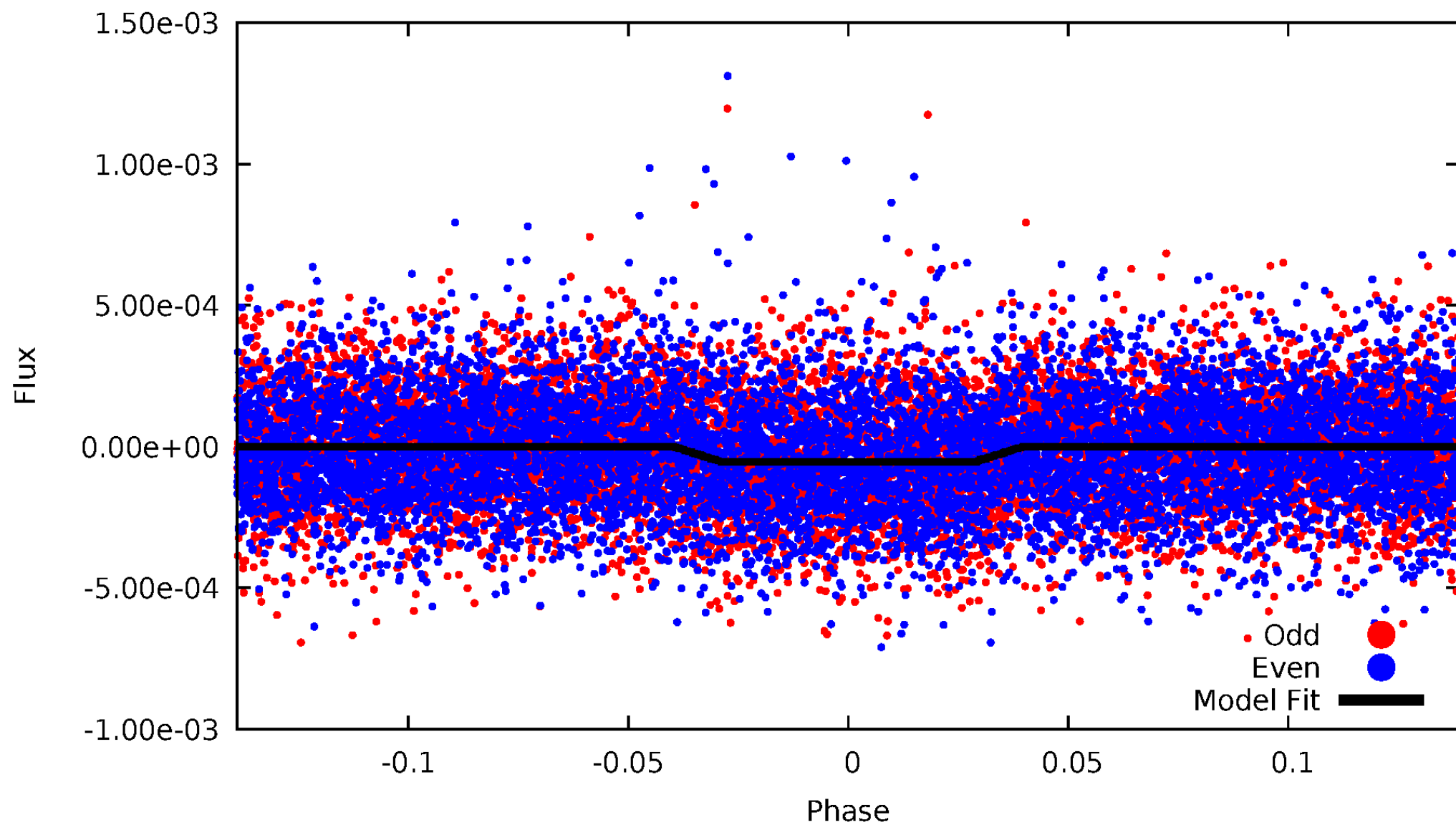
DV Odd/Even

TCE 011361646-02



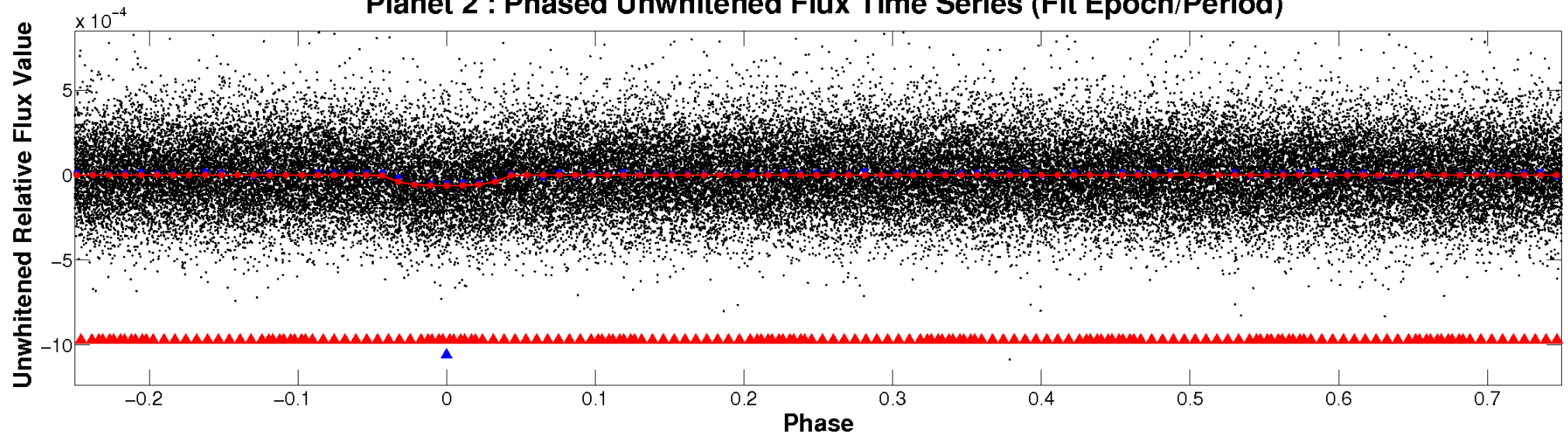
ALT Odd/Even

TCE 011361646-02

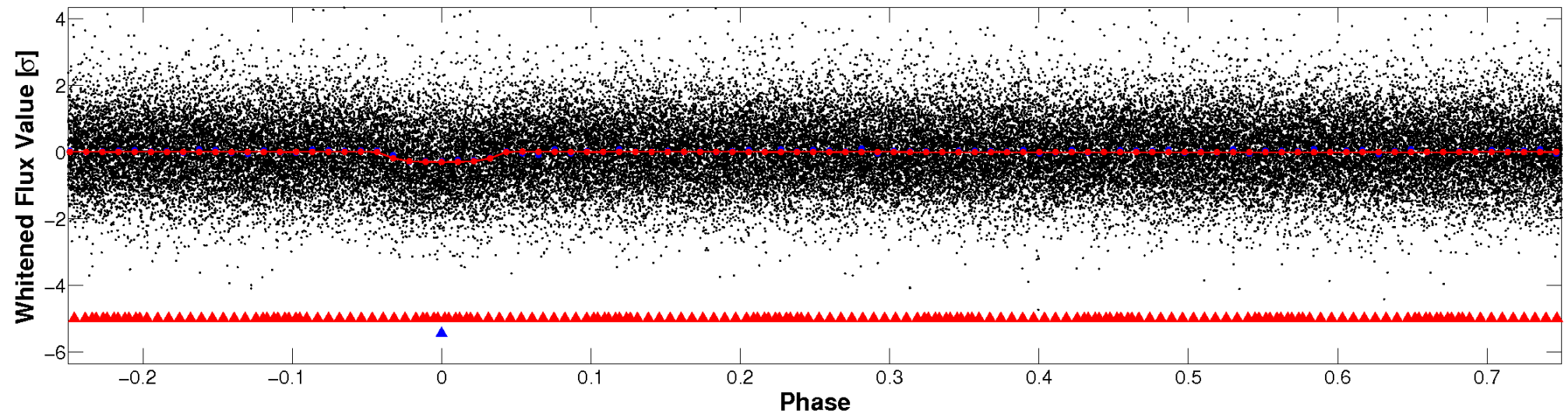


Non-Whitened Vs. Whitened Light Curve

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

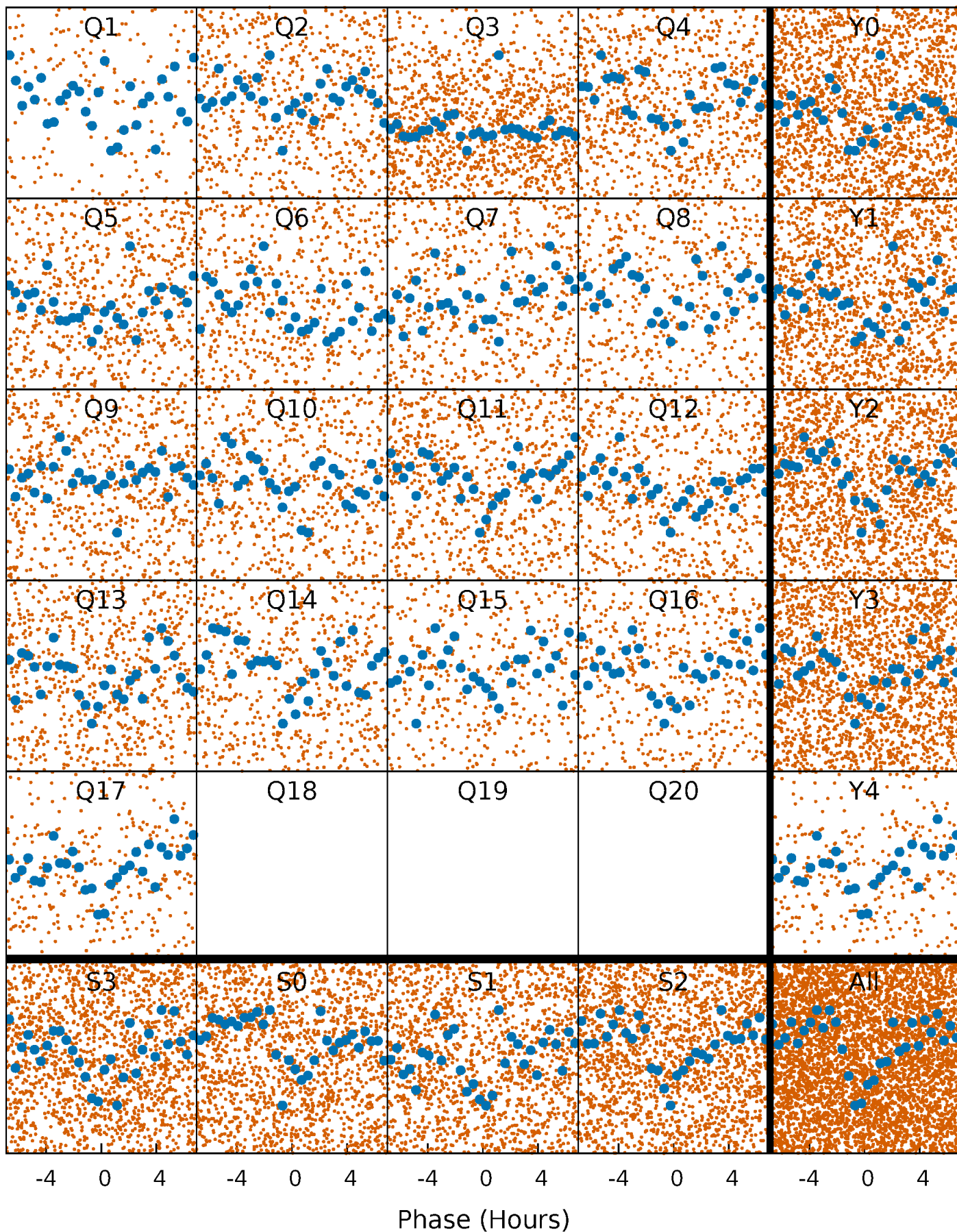


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



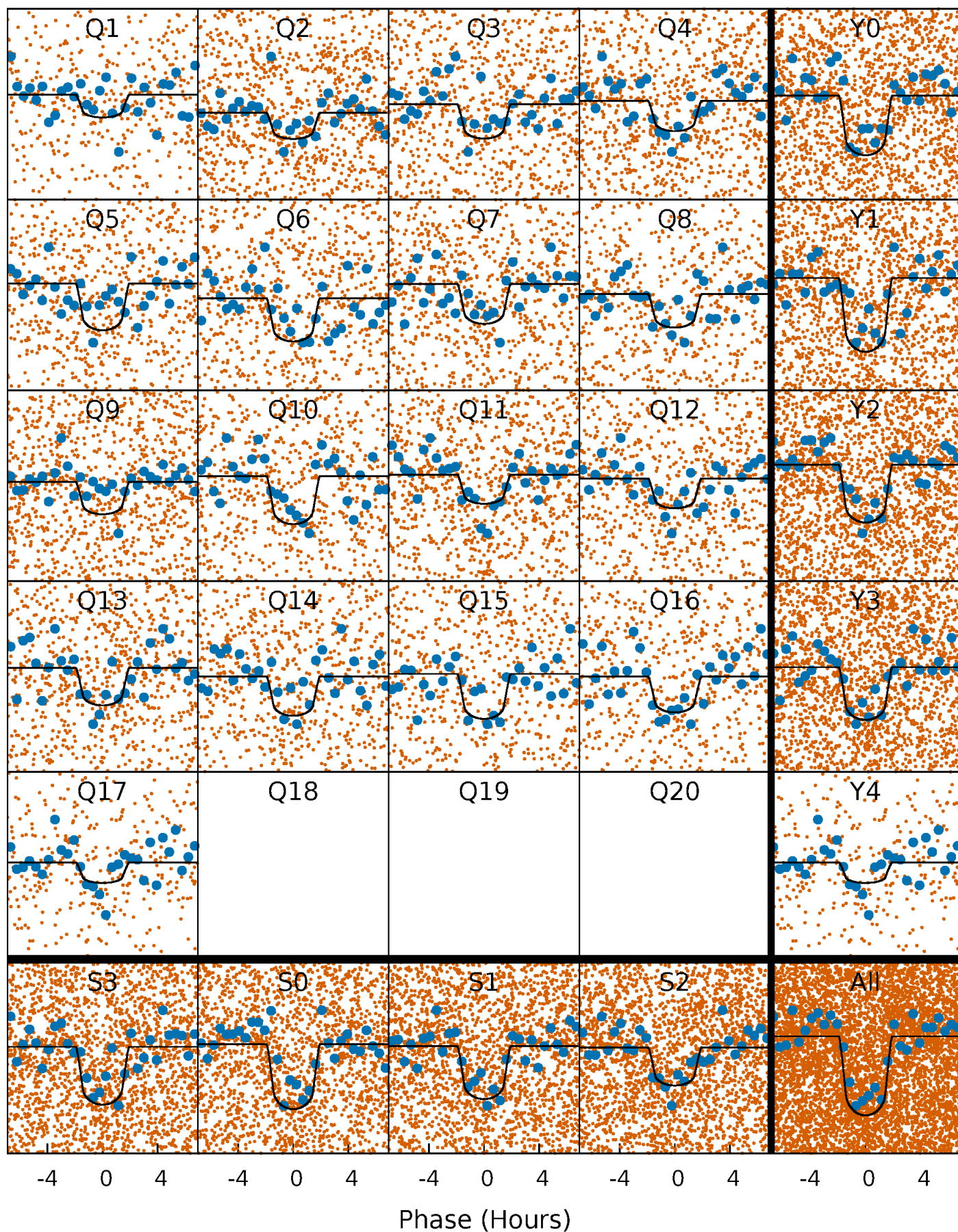
PDC Quarter-Phased Transit Curves

TCE 011361646-02 P= 1.888990 Days $T_0=132.096290$ (BKJD)



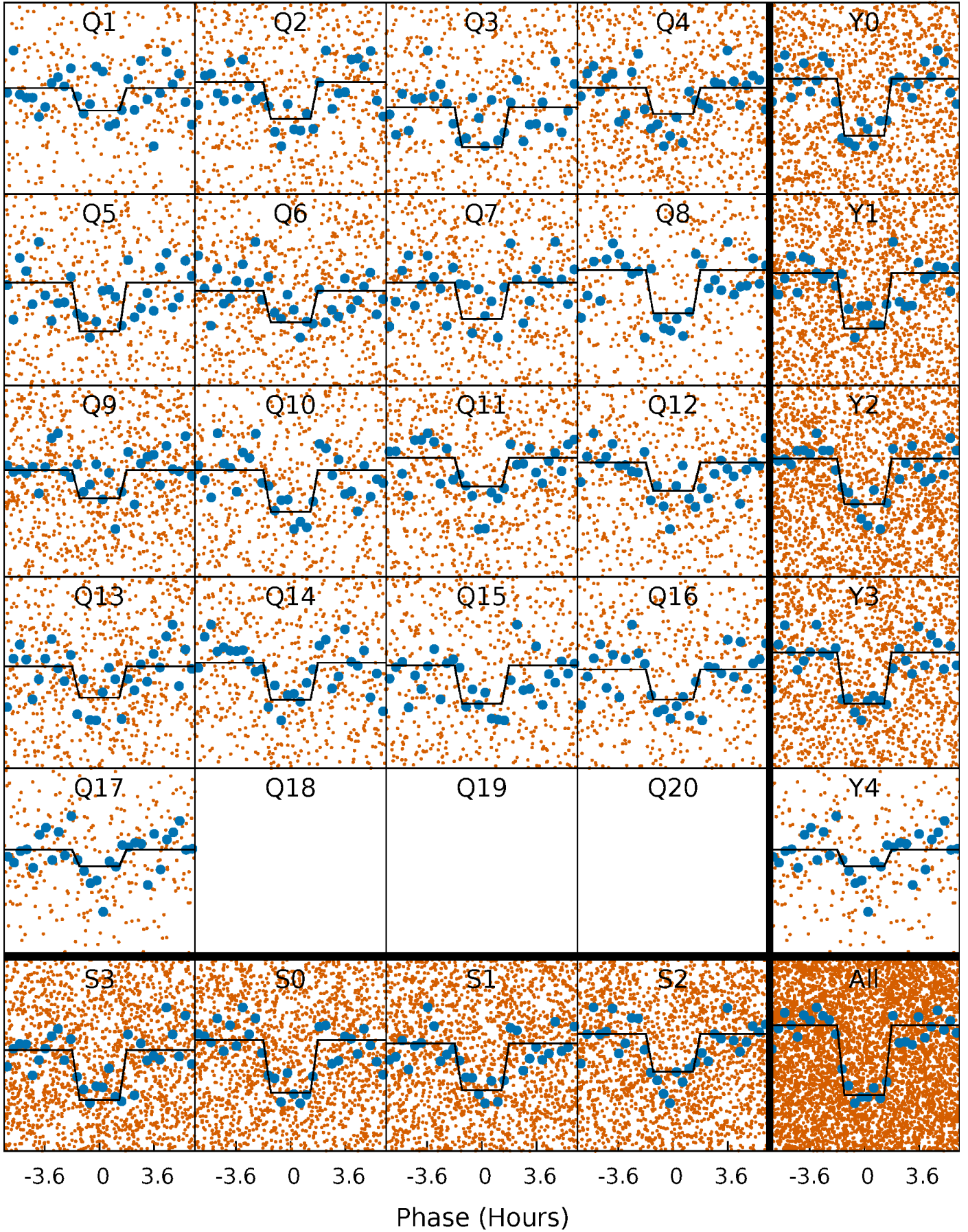
DV Quarter-Phased Transit Curves

TCE 011361646-02 P= 1.888990 Days $T_0=132.096290$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

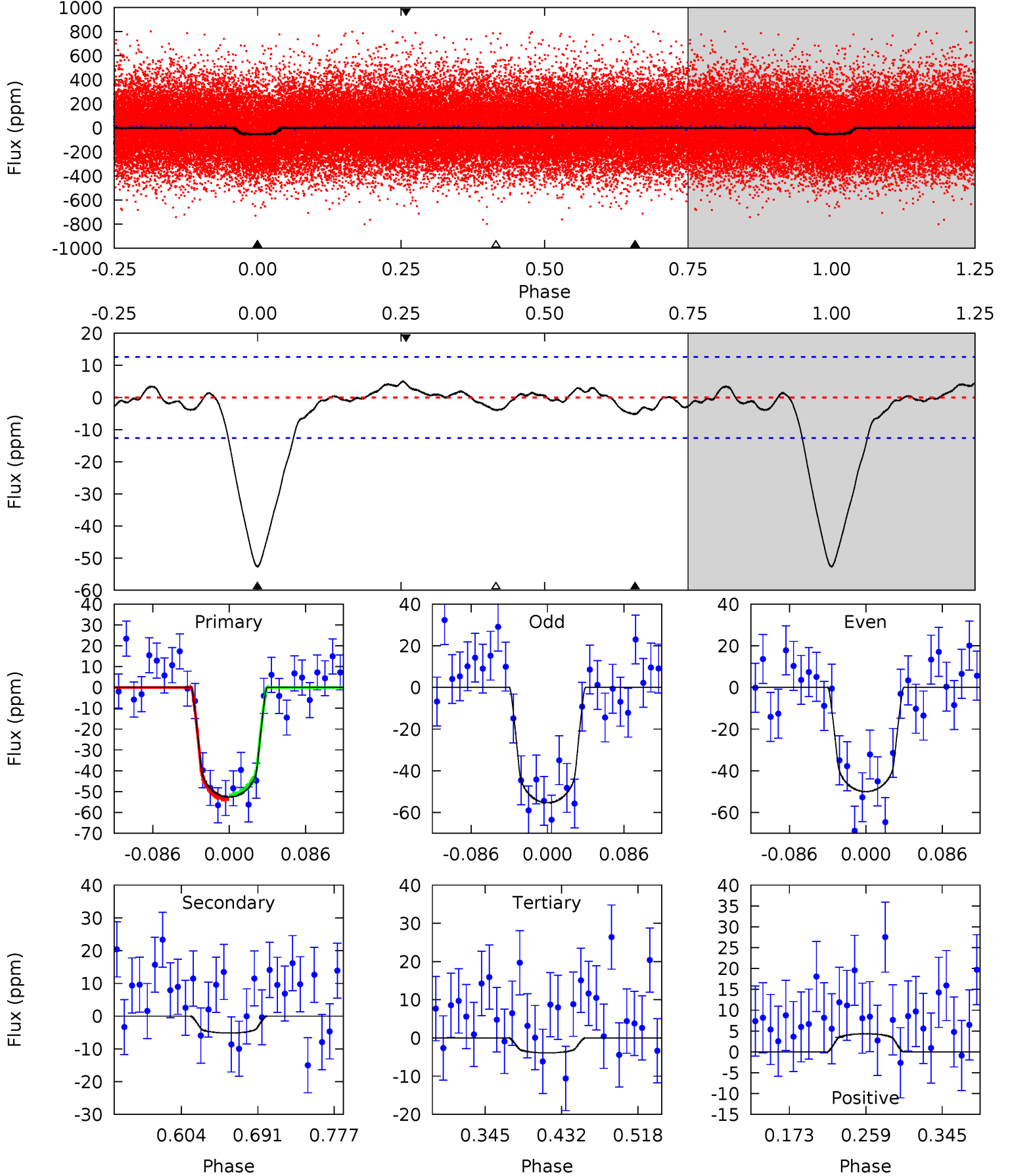
TCE 011361646-02 P= 1.888967 Days $T_0=132.106276$ (BKJD)



DV Model-Shift Uniqueness Test

011361646-02, P = 1.888990 Days, E = 130.207300 Days

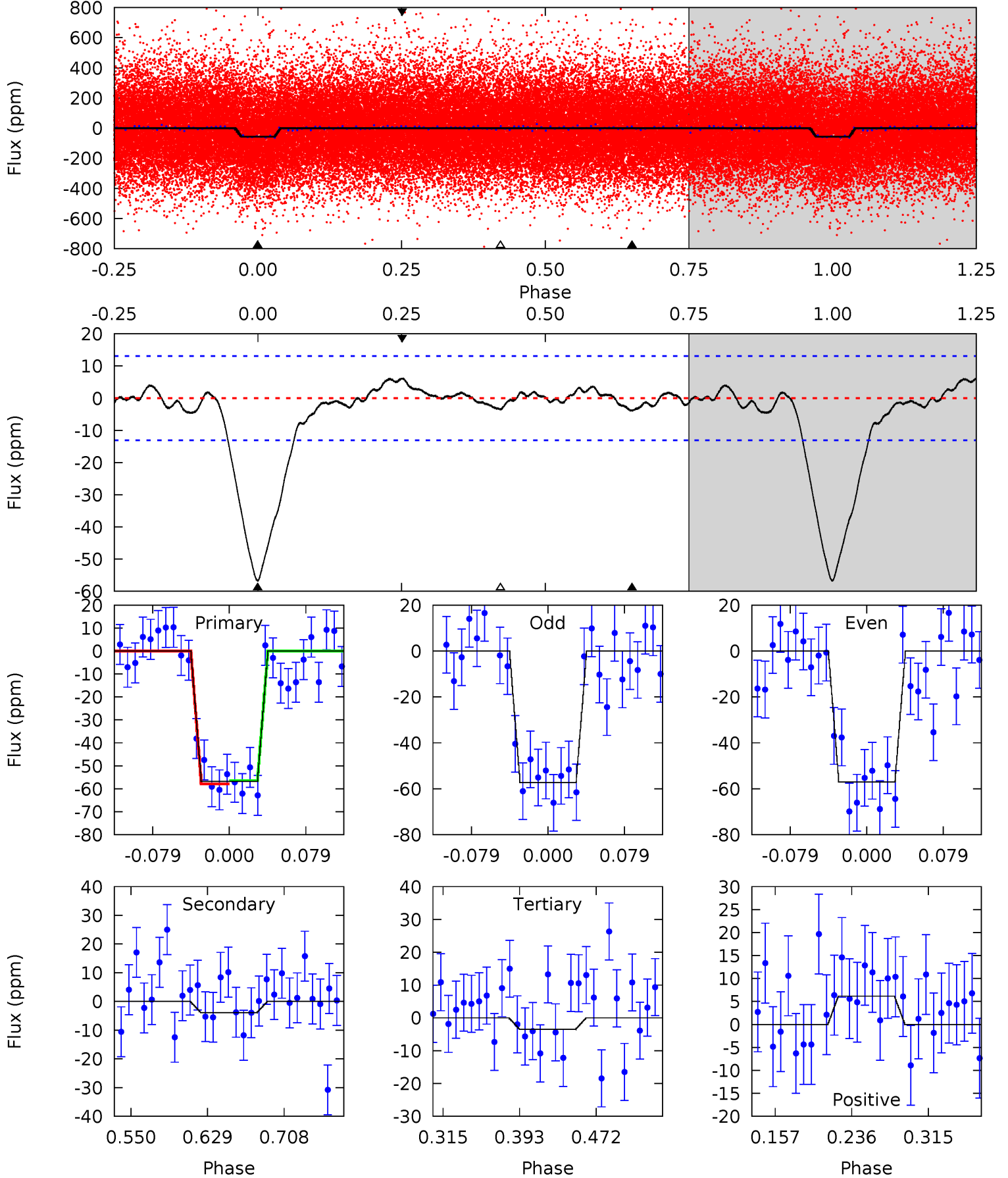
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	1.88	1.42	1.58	4.60	1.72	0.77	17.7	17.6	0.45	0.30	0.98	0.92	0.09	0.39



Alt Model-Shift Uniqueness Test

011361646-02, P = 1.888967 Days, E = 130.217309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	1.37	1.23	2.17	4.61	1.76	0.90	18.8	17.8	0.14	-0.80	0.05	0.92	0.10	0.24



Stellar Parameters For KIC 011361646

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5973^{+107}_{-131}	$4.386^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.081^{+0.168}_{-0.112}$	$1.036^{+0.075}_{-0.075}$	$1.154^{+0.368}_{-0.392}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+16%/-10%	+7%/-7%	+32%/-34%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 011361646-02 / KOI 0330.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5 ± 3	$1.03^{+0.37}_{-0.36}$	2208^{+97}_{-90}	3452^{+675}_{-546}	$2.490^{+3.942}_{-1.567}$
Alt.	-4 ± 3	$0.88^{+0.41}_{-0.35}$	2210^{+101}_{-84}	3410^{+791}_{-919}	$2.204^{+5.055}_{-1.719}$

T_{max} = Theoretical Maximum Planetary Temperature

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

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

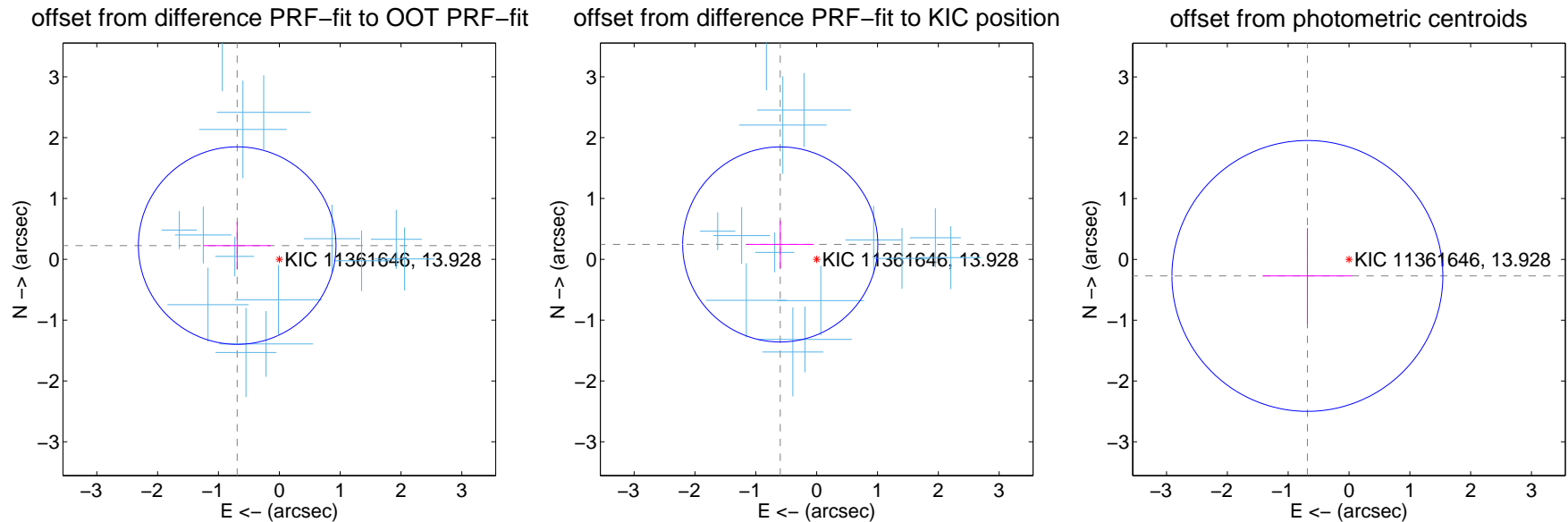
DV Centroid Data

Supplemental centroid analysis for 011361646-02. Kepler magnitude: 13.93. Transit SNR 16.63

There are 14 quarters with good PRF difference image offsets

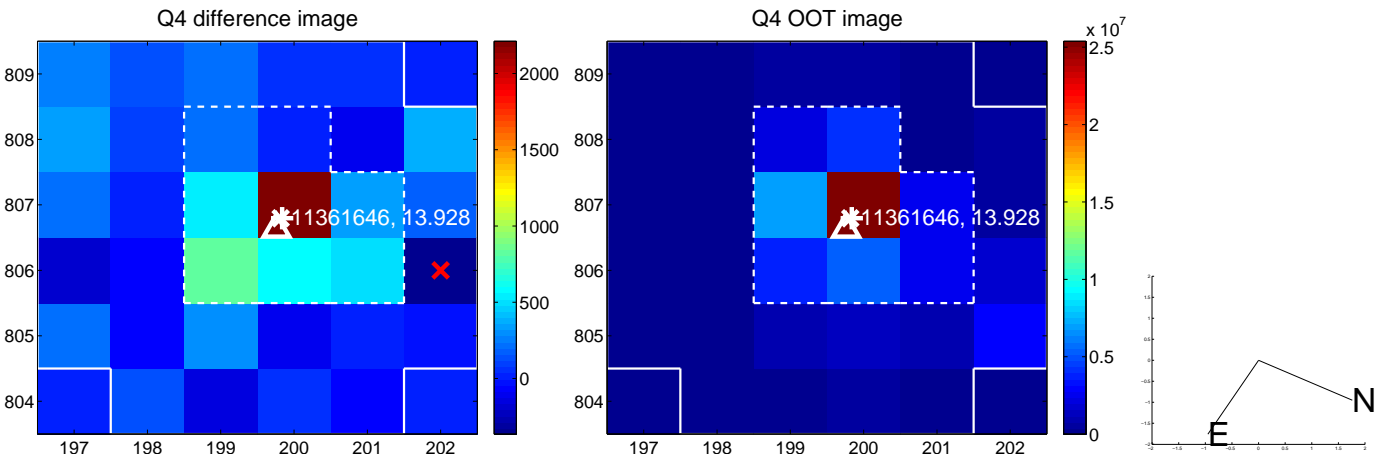
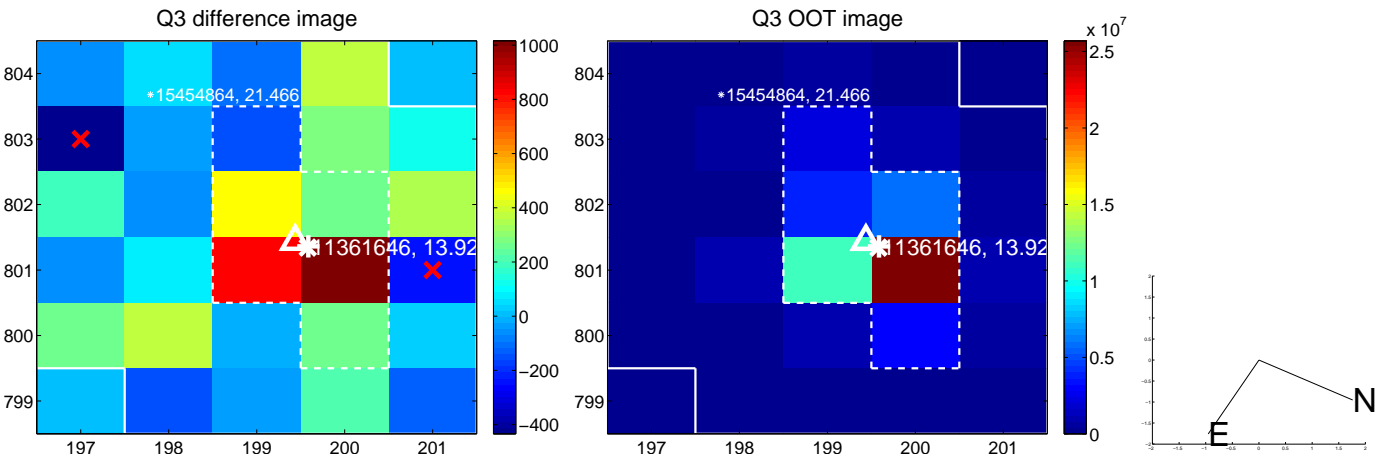
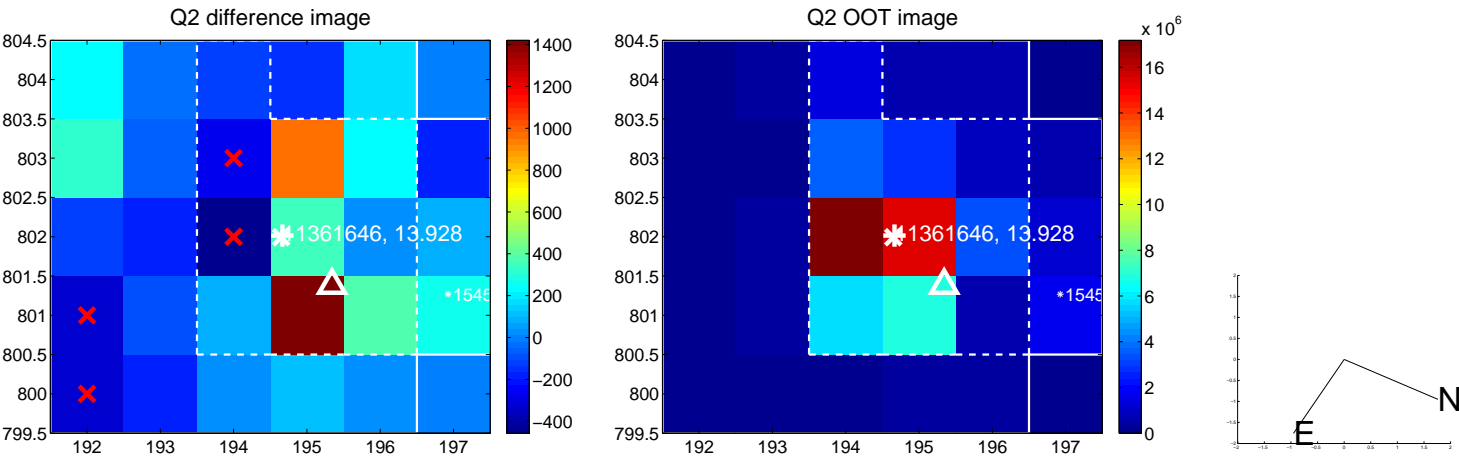
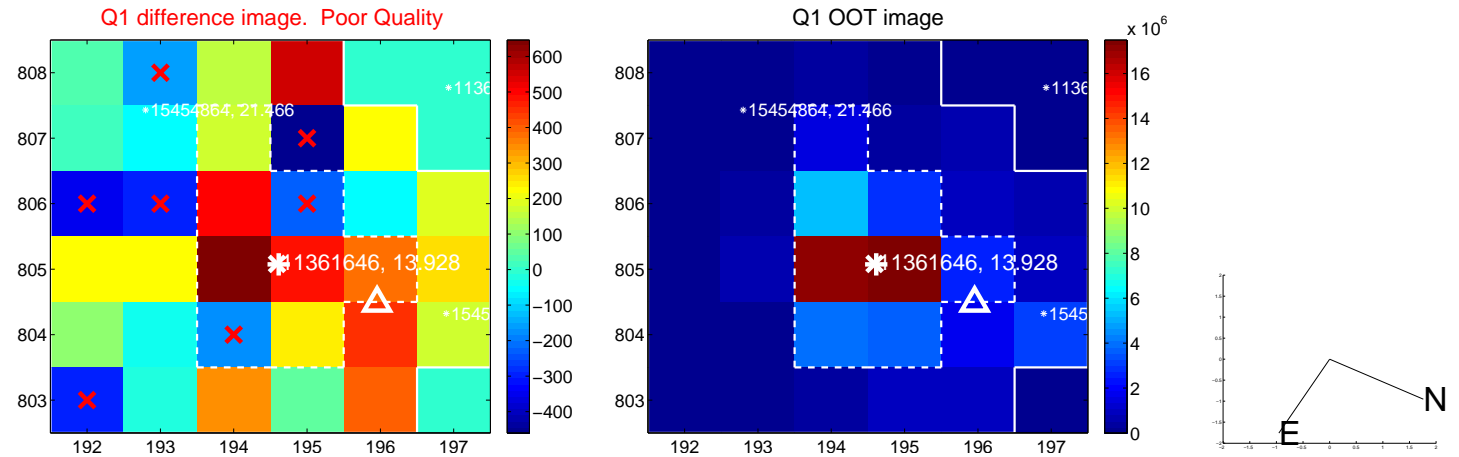
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.728 ± 0.541	1.35	0.692 ± 0.555	0.225 ± 0.392
PRF-fit source offset from KIC position	0.647 ± 0.535	1.21	0.599 ± 0.555	0.244 ± 0.392
photometric centroid source offset	0.74 ± 0.74	0.99	0.68 ± 0.73	-0.27 ± 0.79

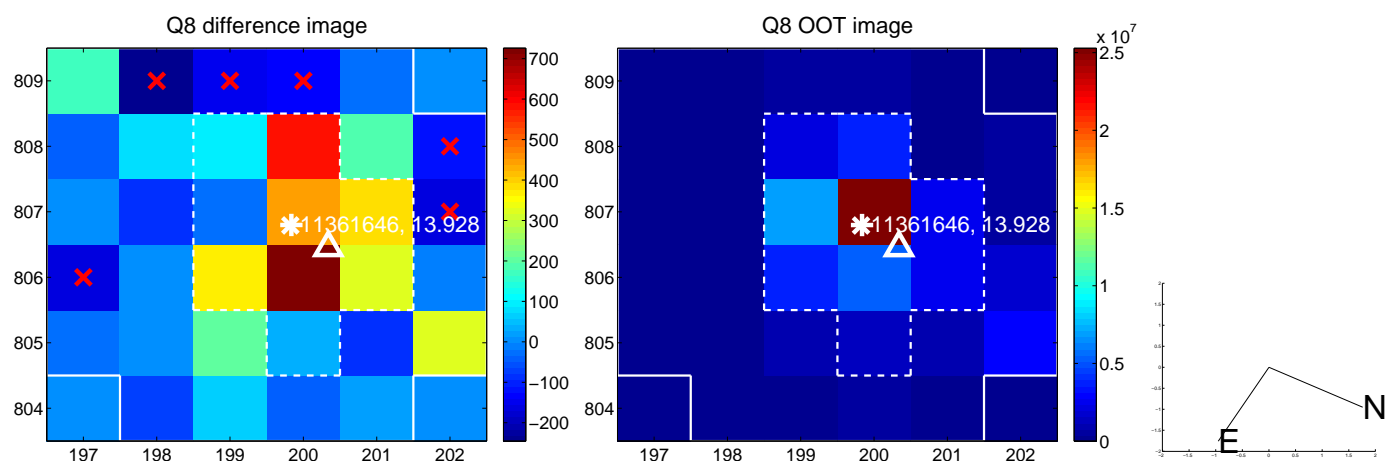
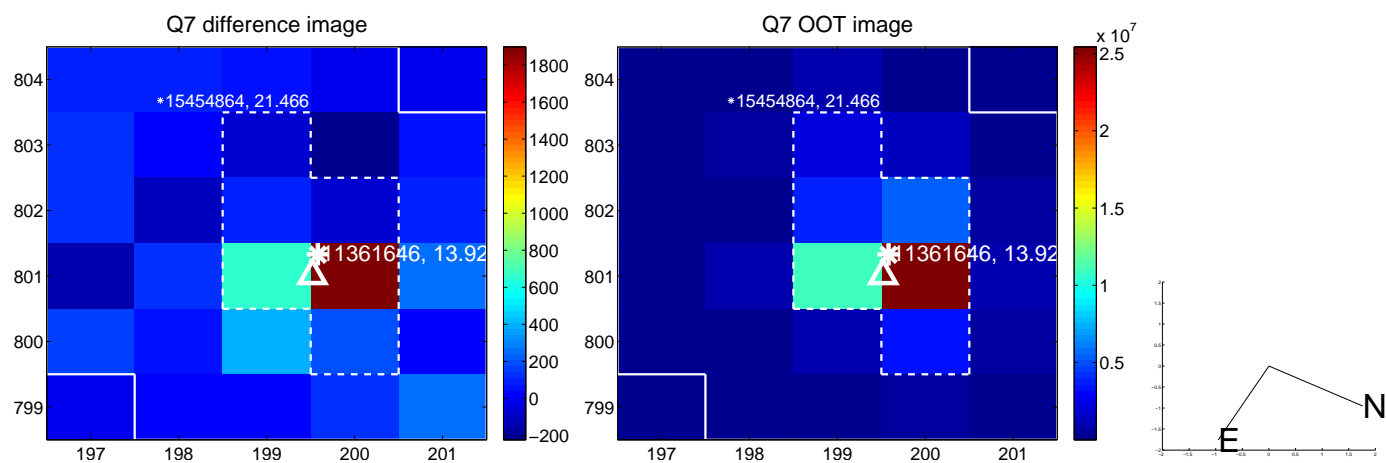
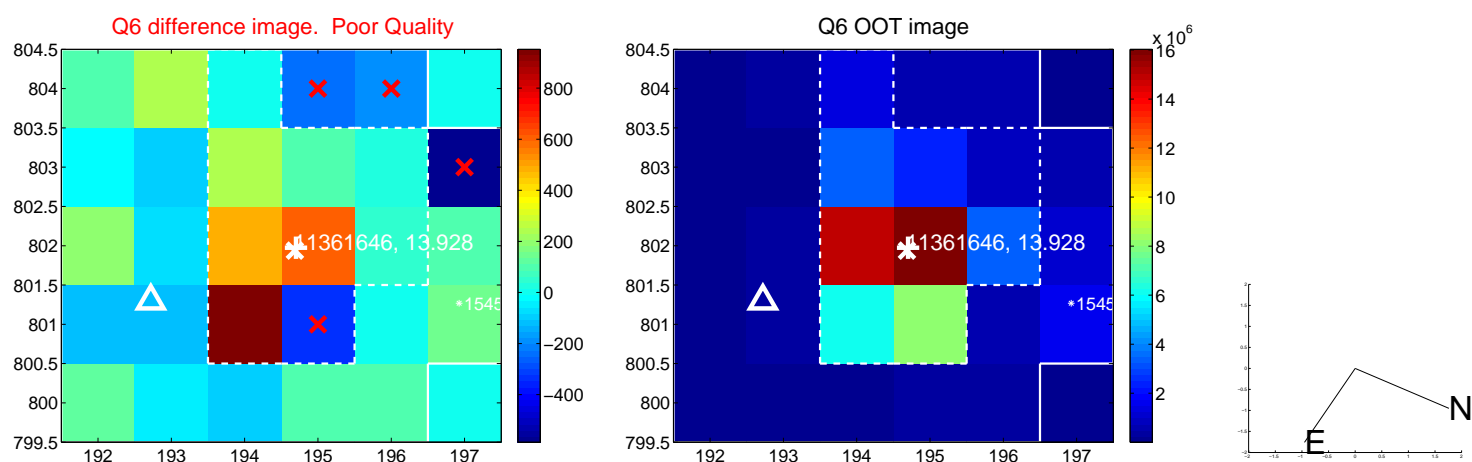
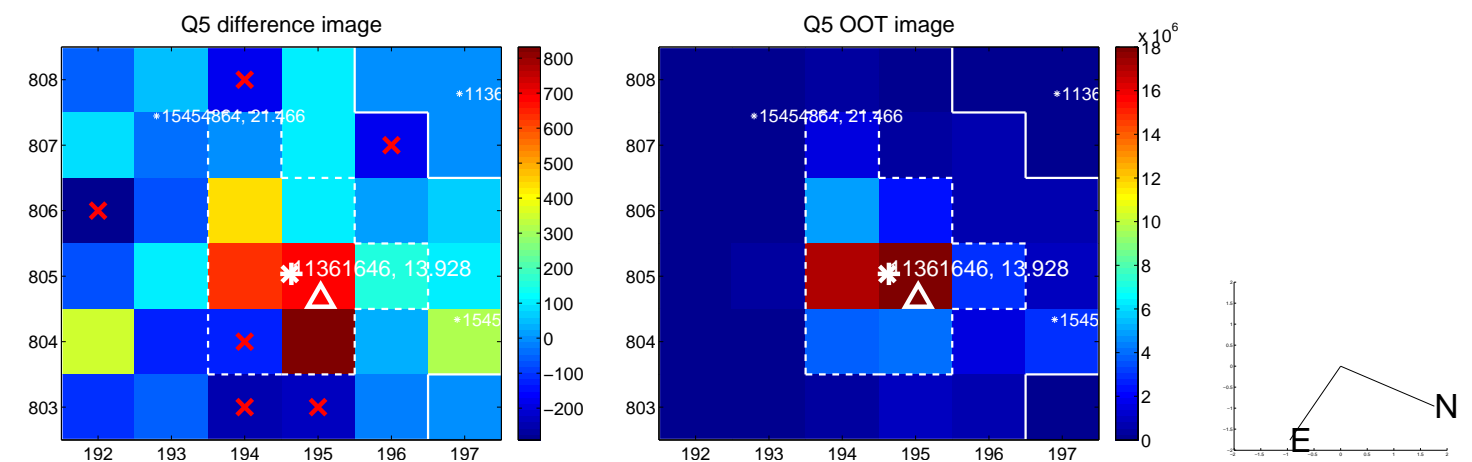


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

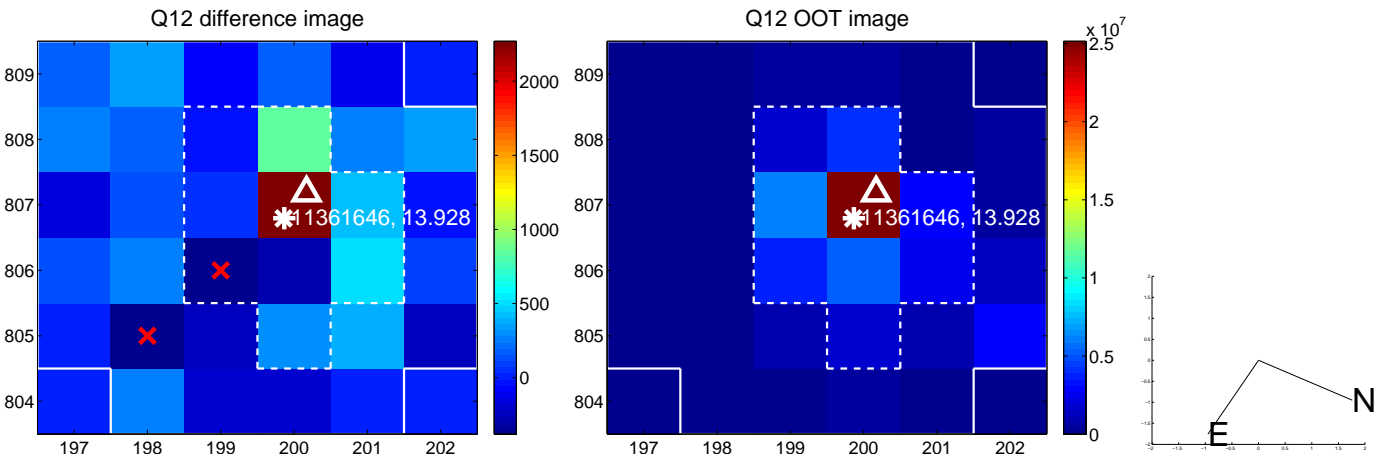
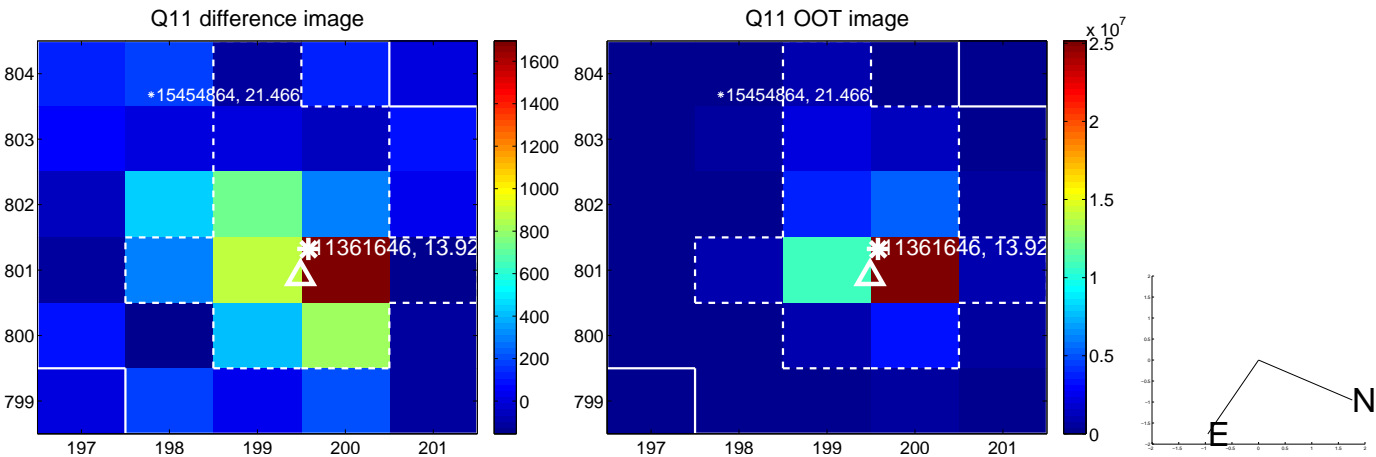
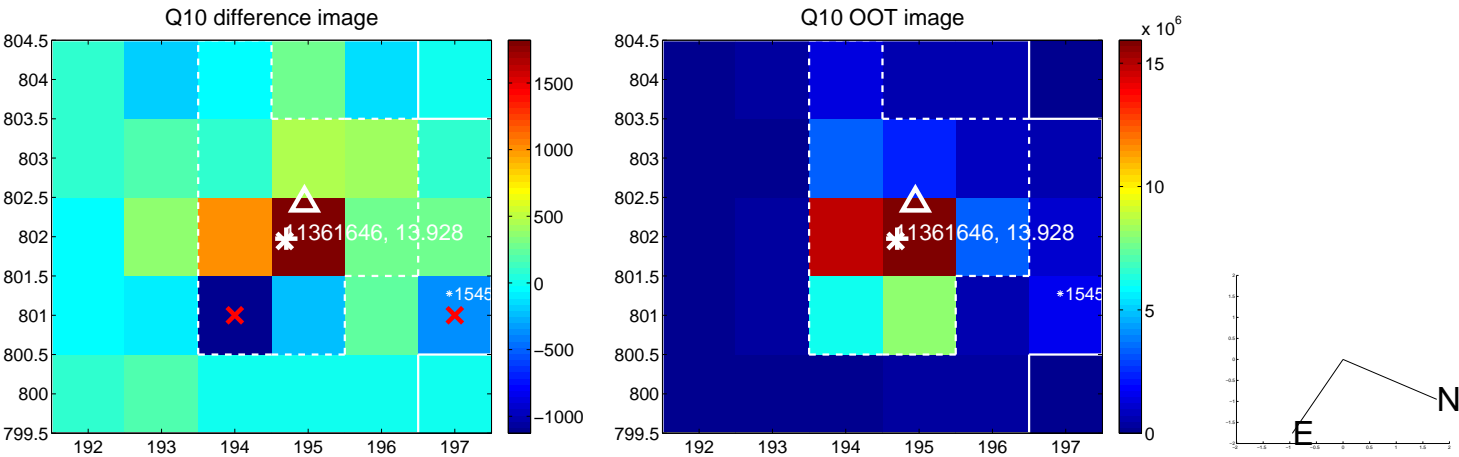
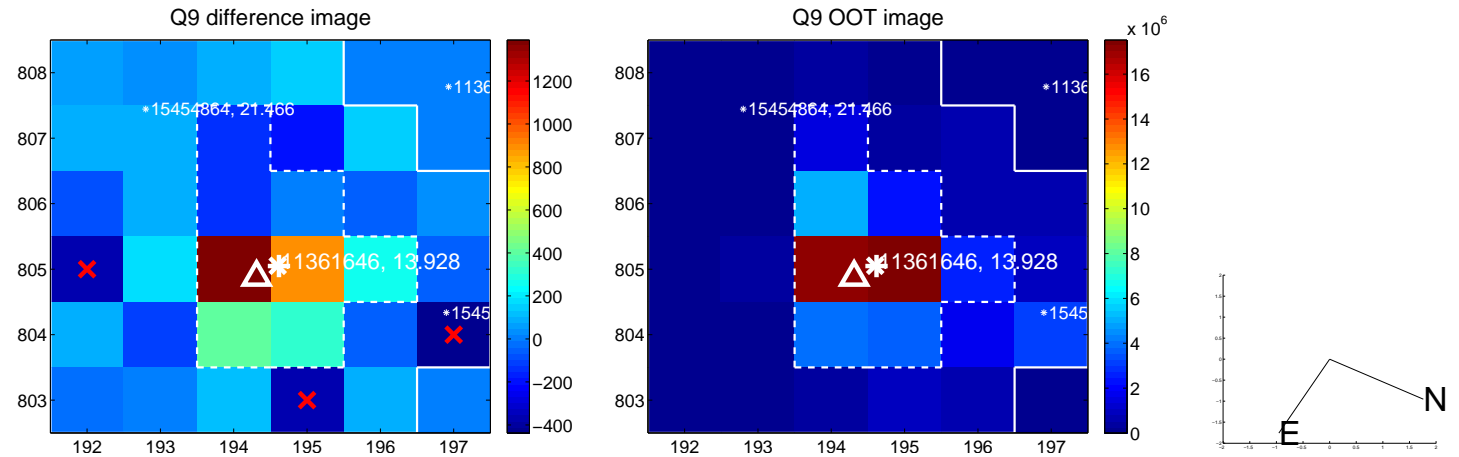
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



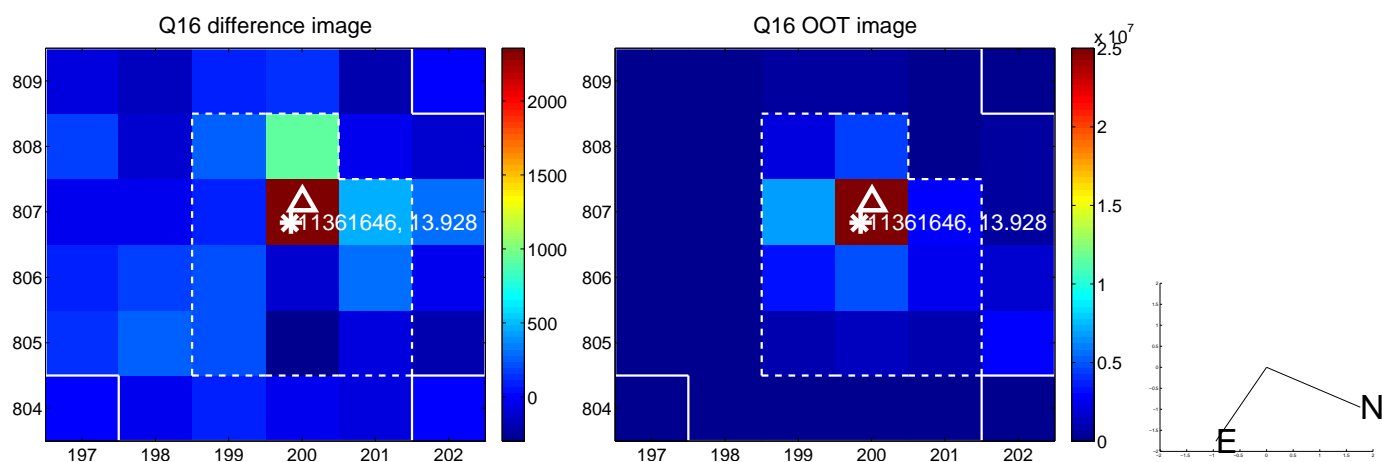
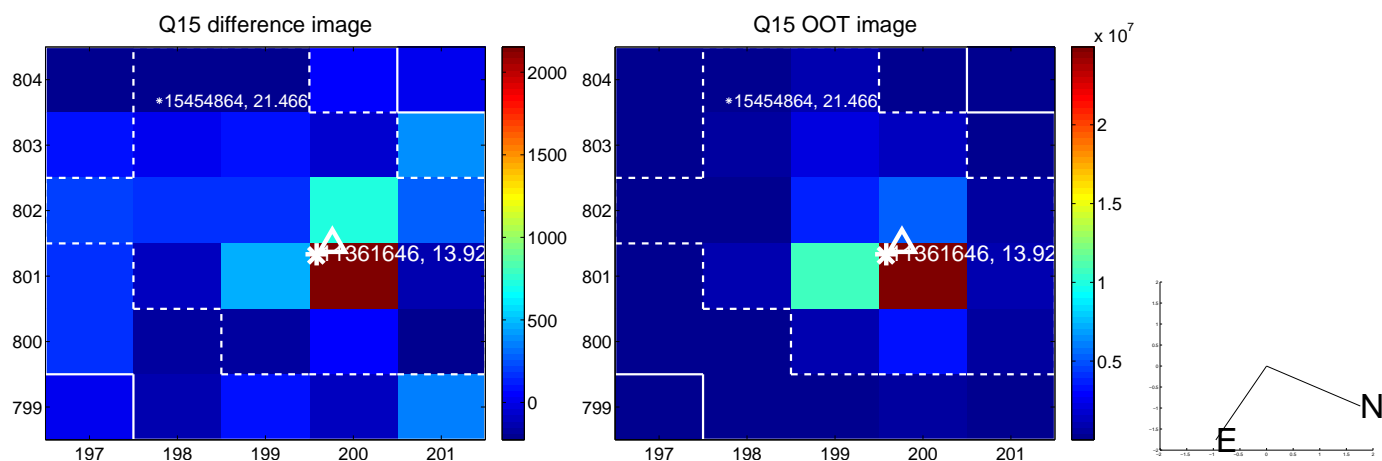
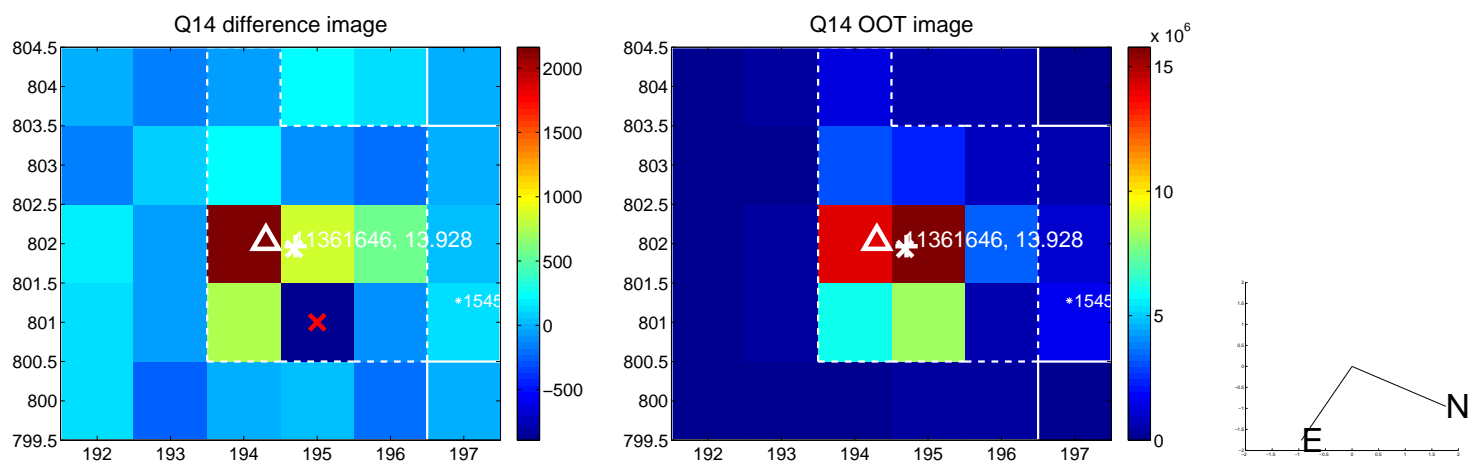
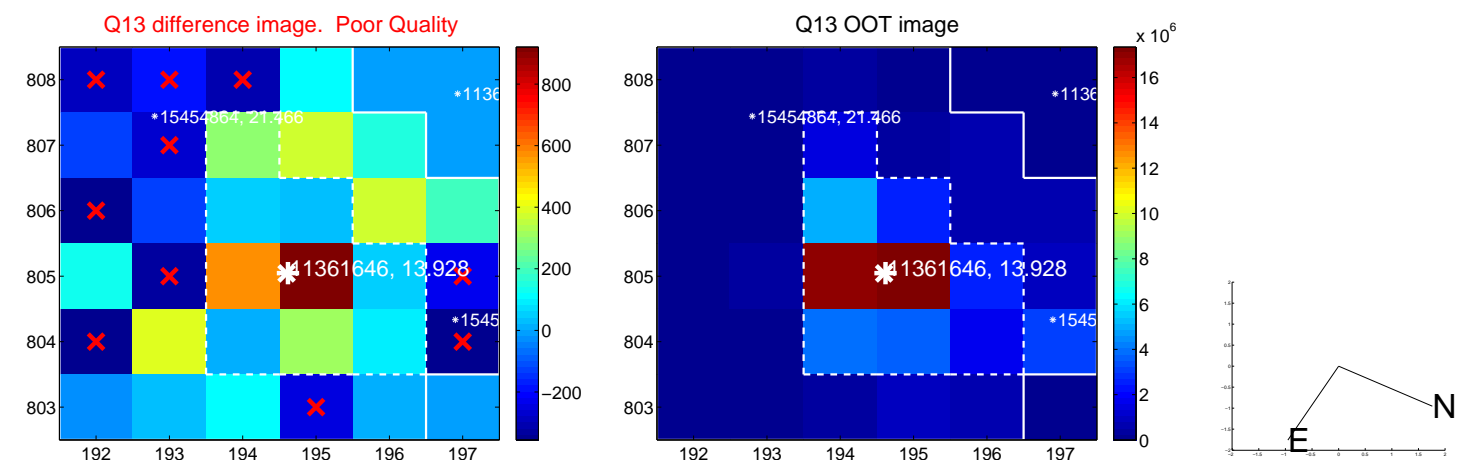
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



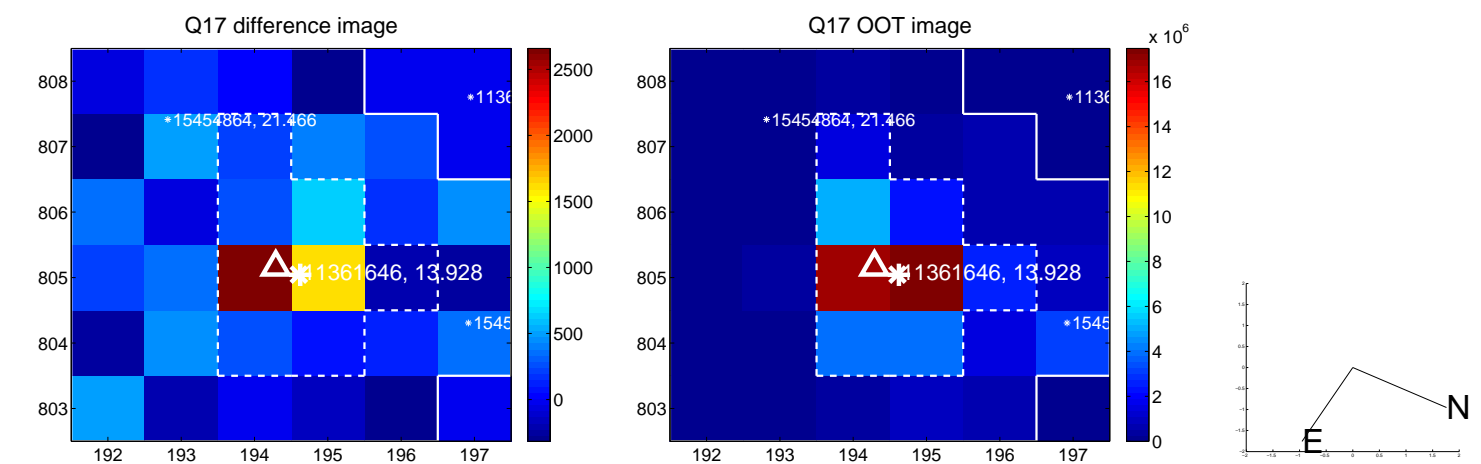
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



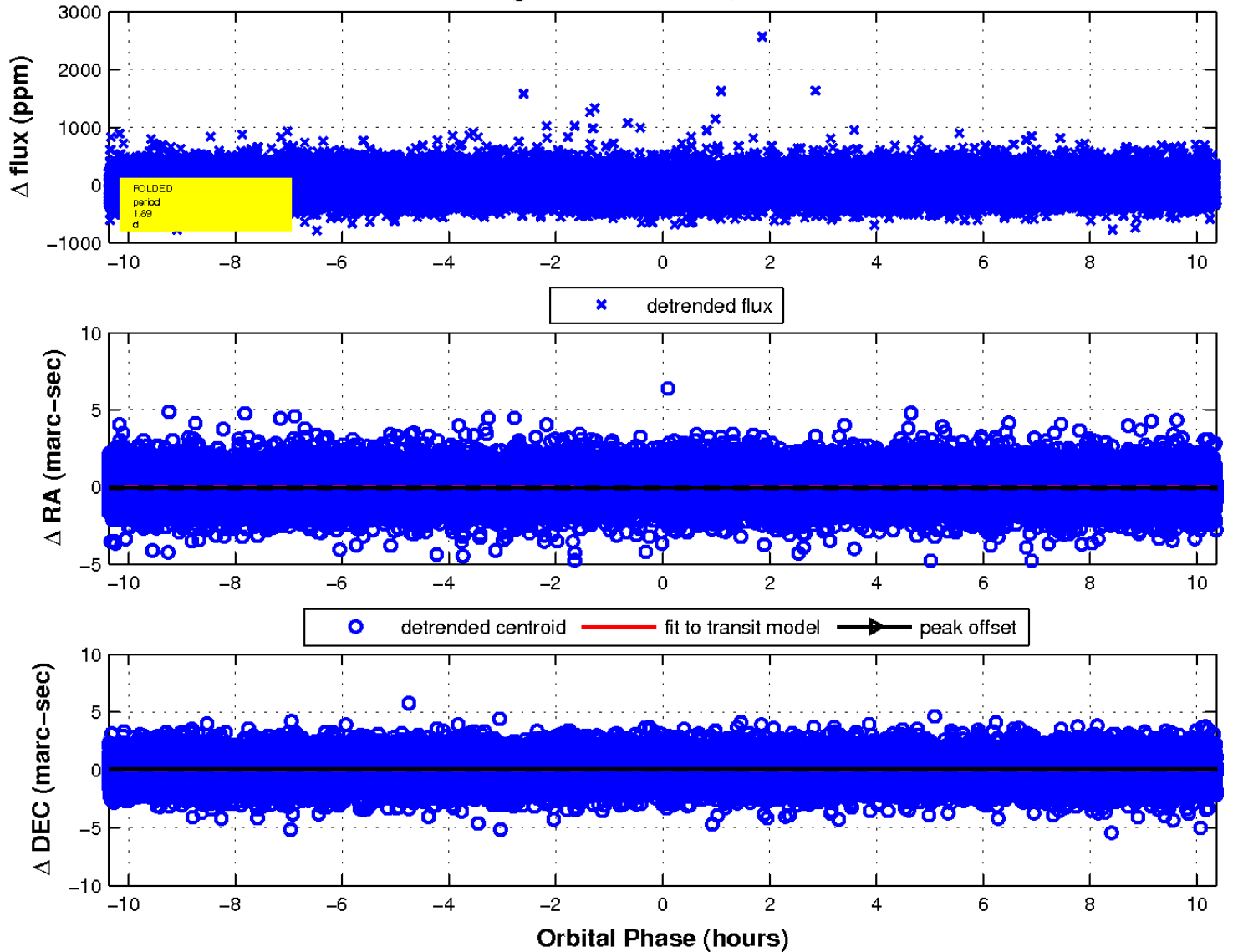
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

