

KIC 007116466

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})
007116466-01	OBS	No	0.566758	131.846683	35.9	3.630	10.0	5.9	0.83	5454	0.54	3260.45
007116466-02	OBS	No	24.977907	136.505750	559.2	2.507	8.7	6.6	0.83	5454	2.35	20.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116466-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007116466-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

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

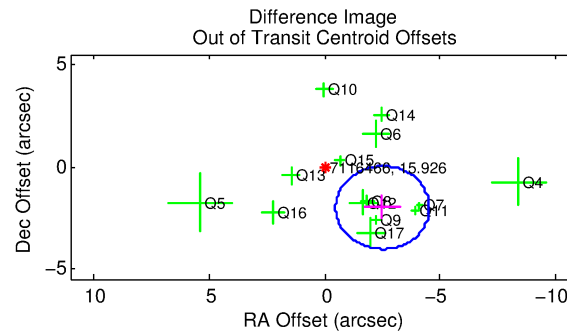
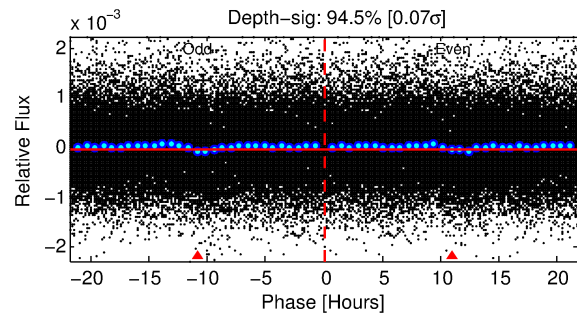
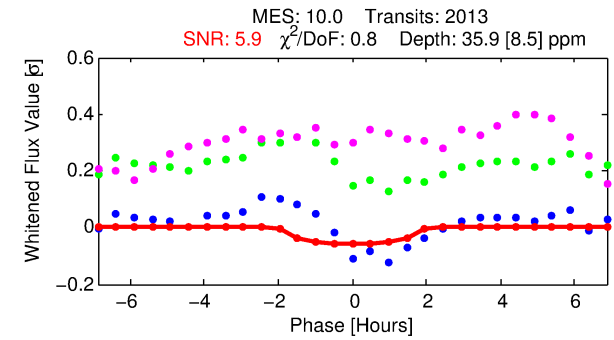
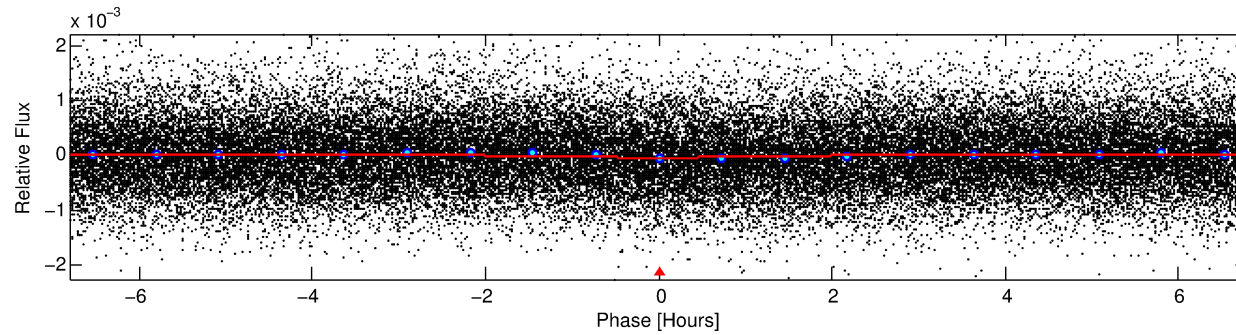
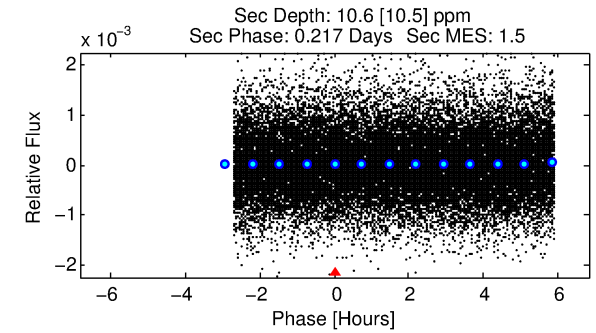
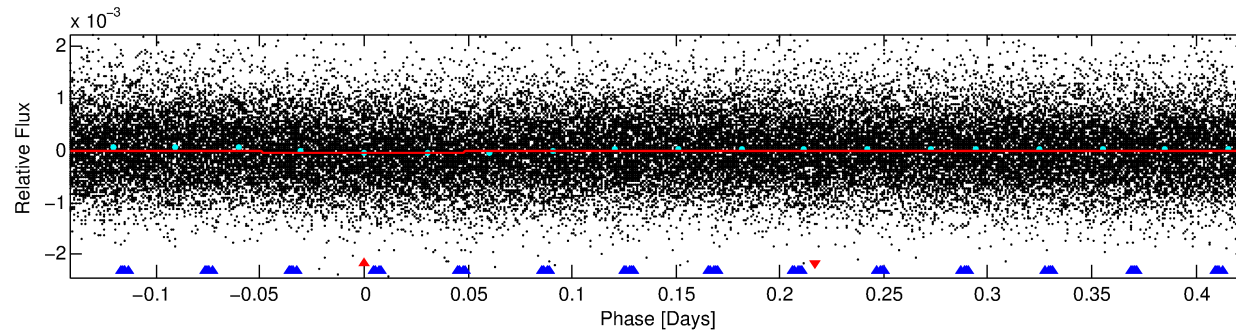
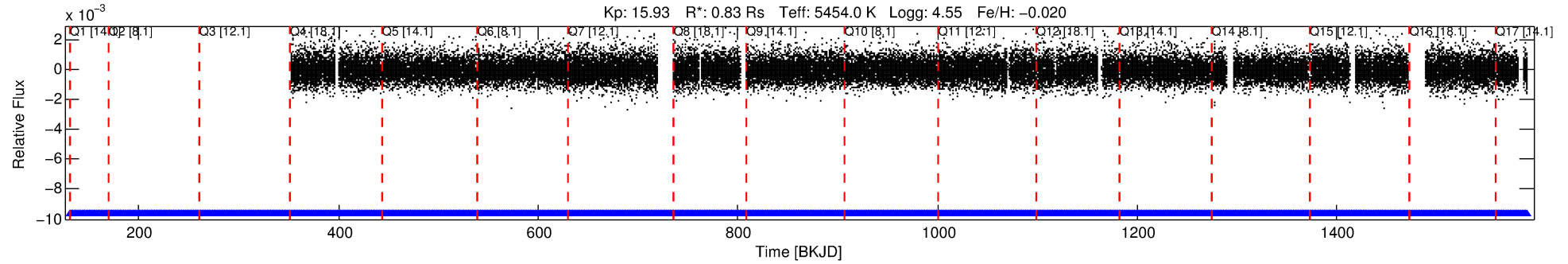
Ephemeris Match Information For 007116466-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007116466-01	7116466	RR-Lyr-pri	7198959	1:1	635.1	140	-76	7.86	15.92	17314.00	Direct-PRF	0	2.01	23.57

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7116466 Candidate: 1 of 2 Period: 0.567 d



DV Fit Results:

Period = 0.56676 [0.00002] d
Epoch = 131.8467 [0.0073] BKJD
Rp/R* = 0.0060 [0.0094]
a/R* = 1.17 [1.96]
b = 0.76 [3.61]
Seff = 3260.45 [1020.04]
Teq = 1927 [151] K
Rp = 0.54 [0.86] Re
a = 0.0129 [0.0025] AU
Ag = 3.32 [10.89] [0.21σ]
Teffp = 4021 [3290] K [0.64σ]

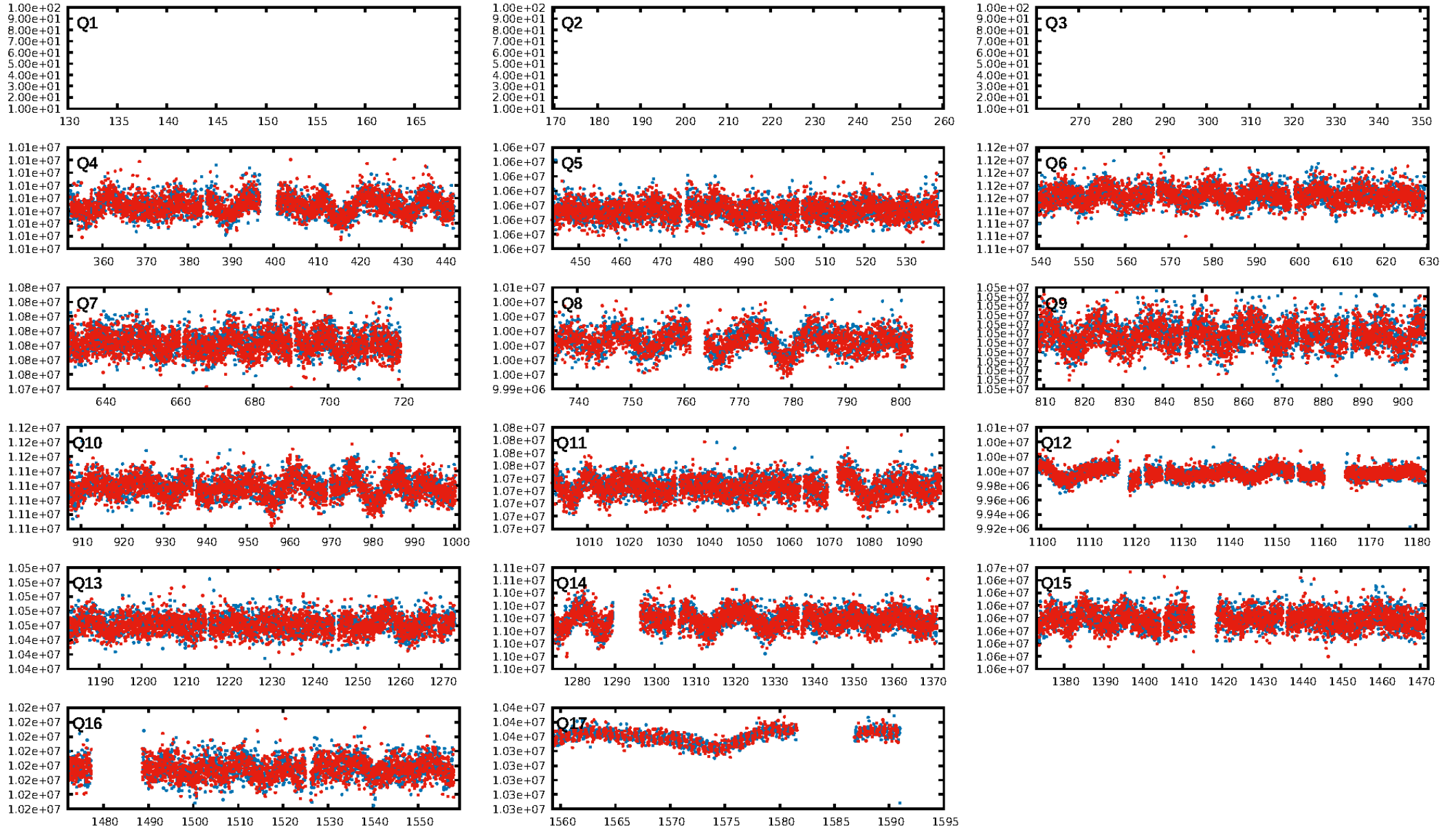
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [132.81σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.95e-15
RollingBand-fgt: 1.00 [1966/1966]
GhostDiagnostic-chr: -0.2337
Centroid-sig: 4.1%
Centroid-so: 3.127 arcsec [1.42σ]
OotOffset-rm: 3.208 arcsec [4.74σ]
KicOffset-rm: 3.298 arcsec [4.70σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.14 [2/14]
DiffImageOverlap-fno: 1.00 [14/14]

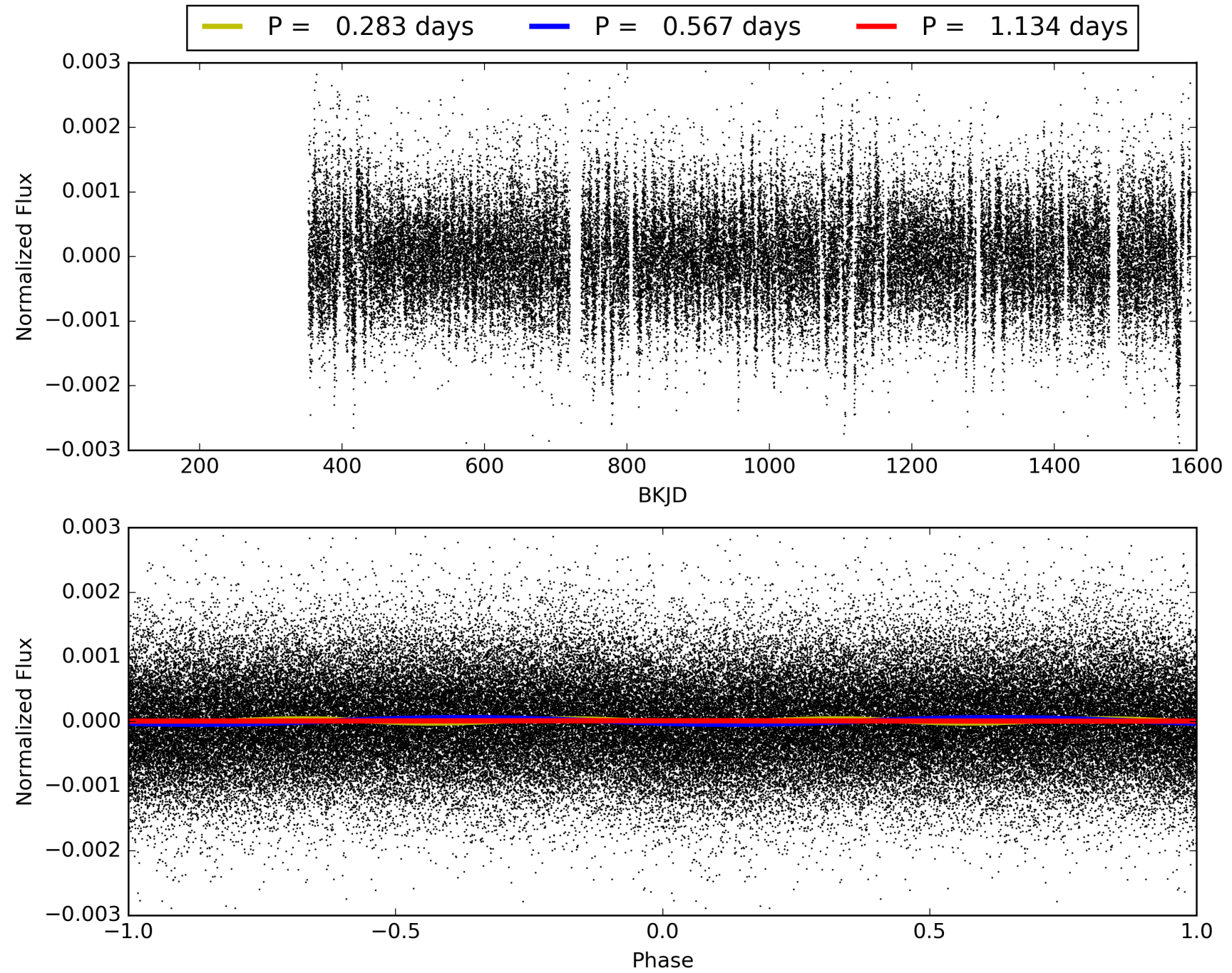
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:21:48 Z

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

TCE 007116466-01, PDC Light Curves

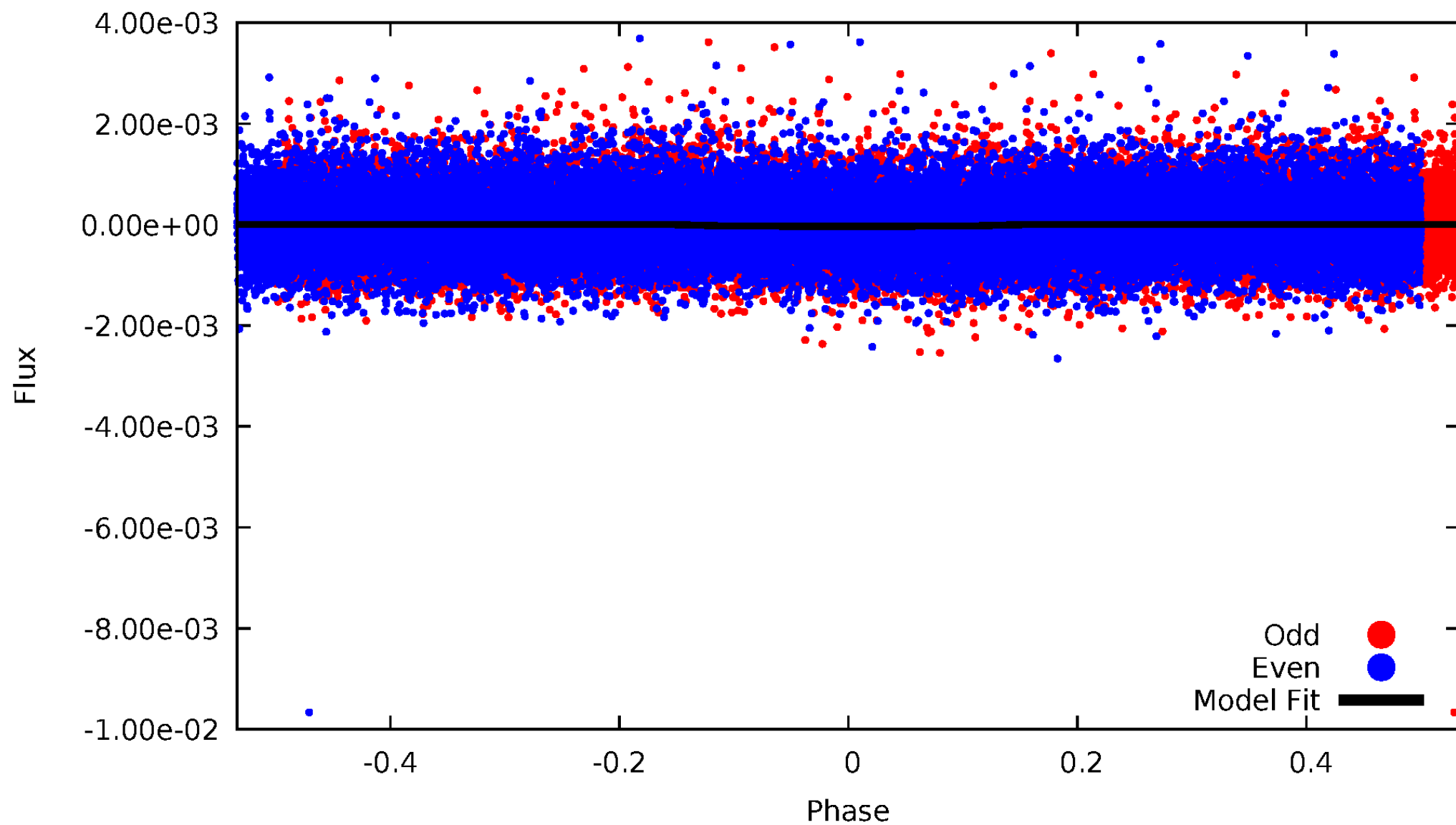


TCE 007116466-01



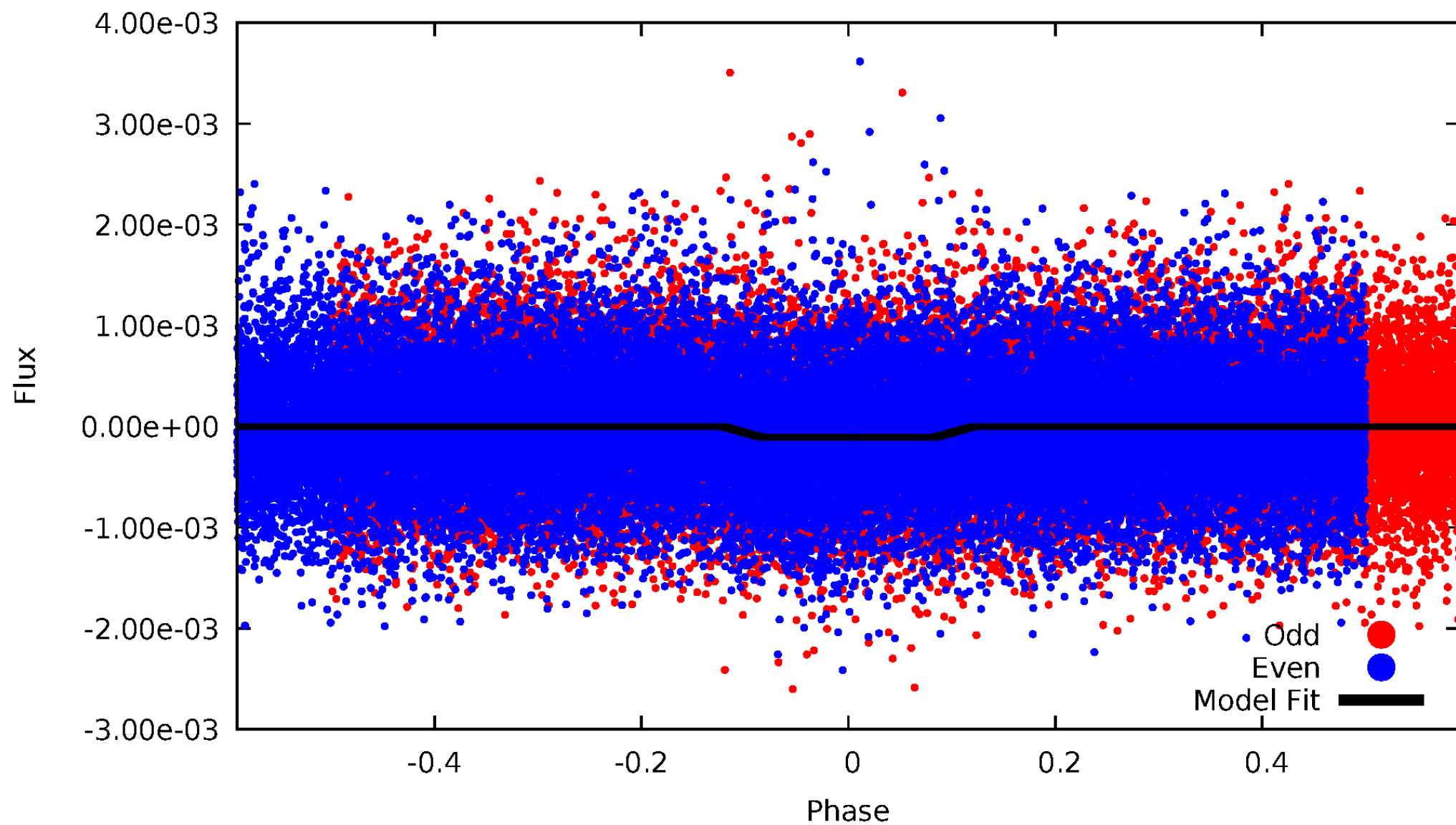
DV Odd/Even

TCE 007116466-01

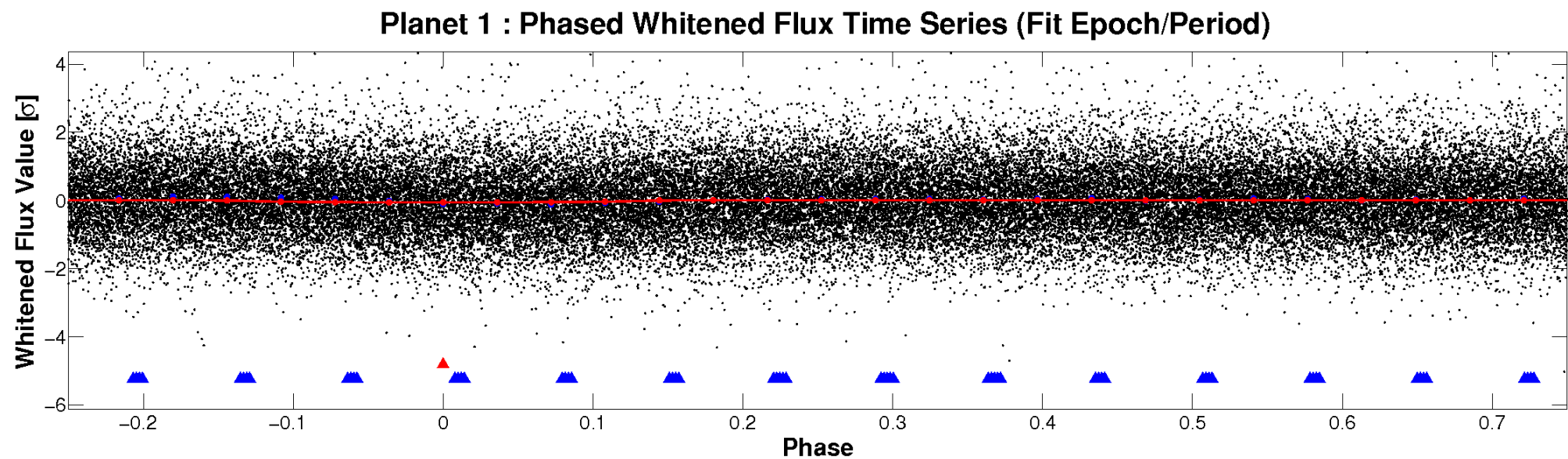
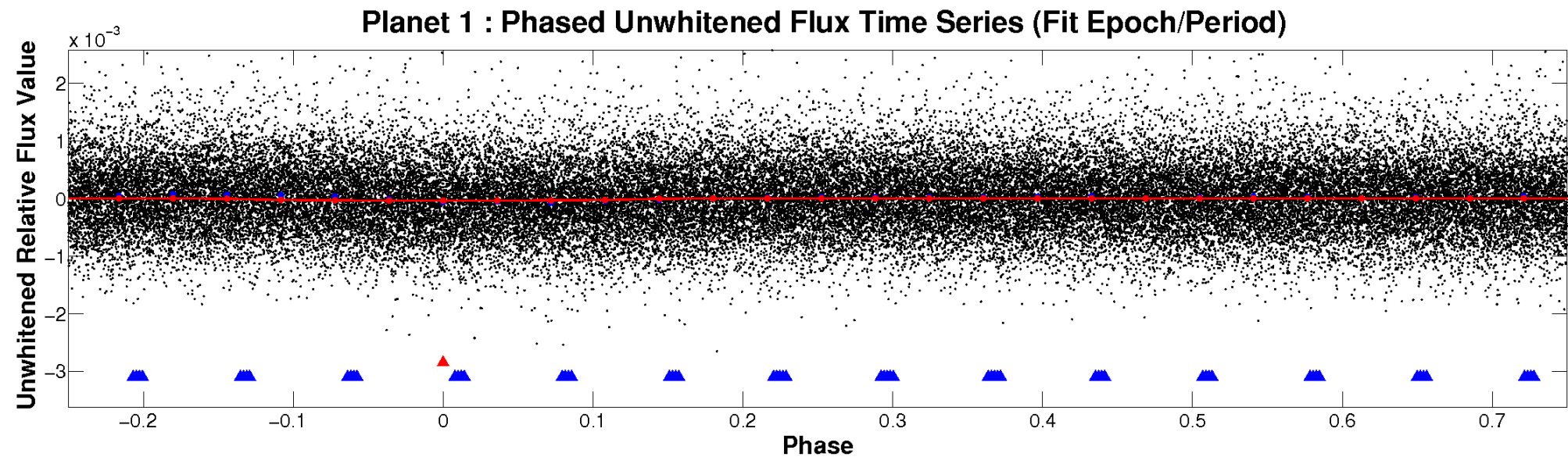


ALT Odd/Even

TCE 007116466-01

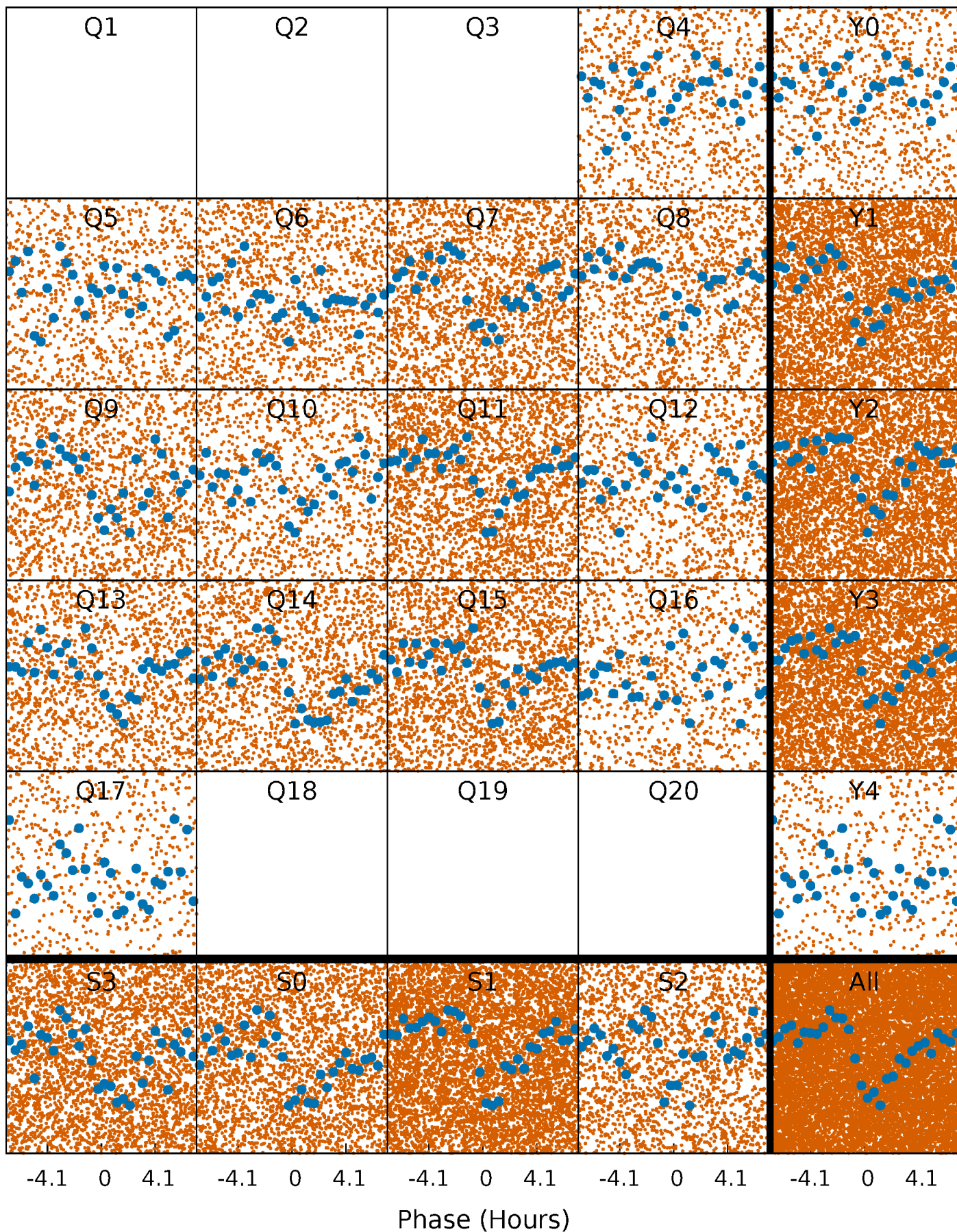


Non-Whitened Vs. Whitened Light Curve



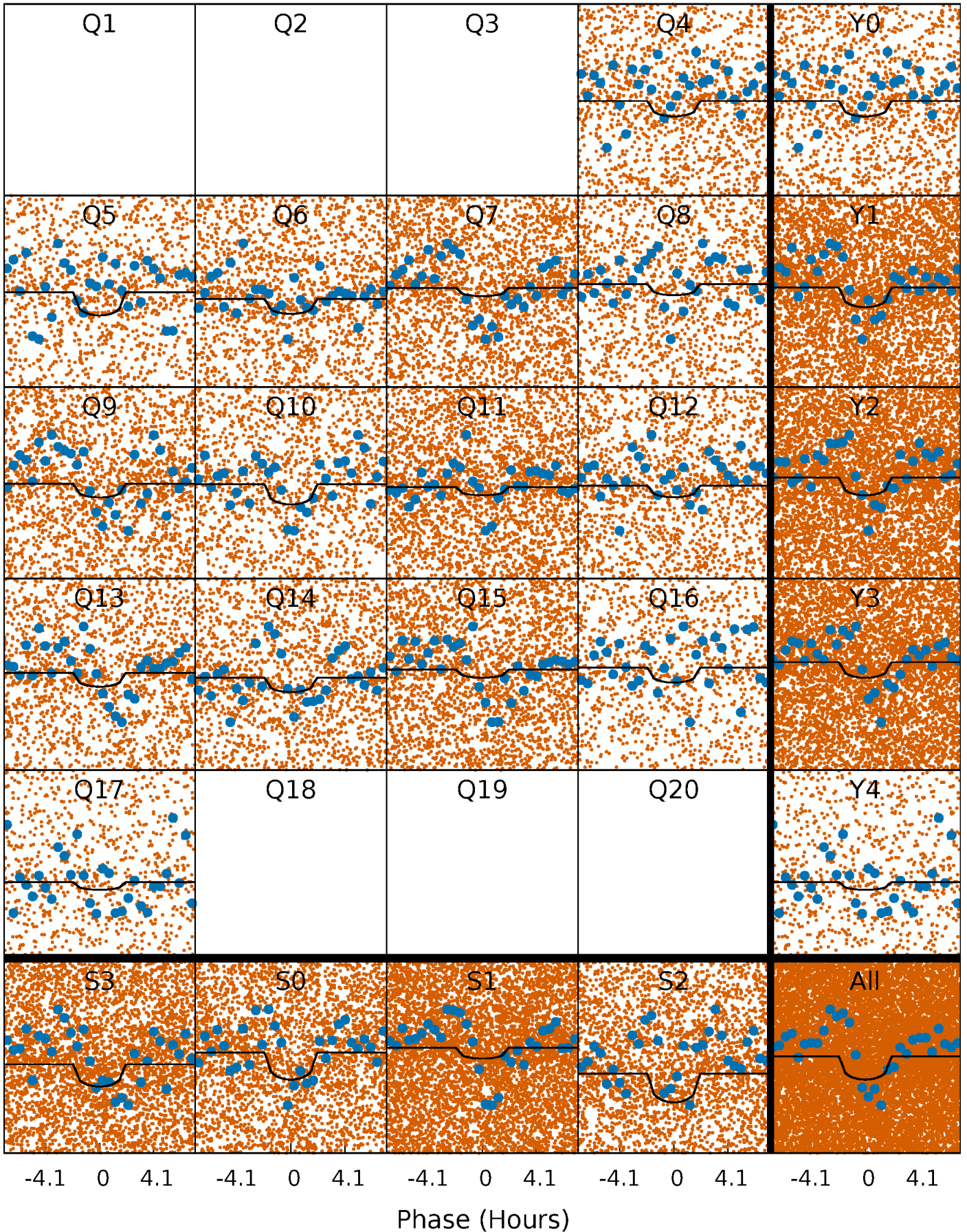
PDC Quarter-Phased Transit Curves

TCE 007116466-01 P= 0.566758 Days $T_0=131.846683$ (BKJD)



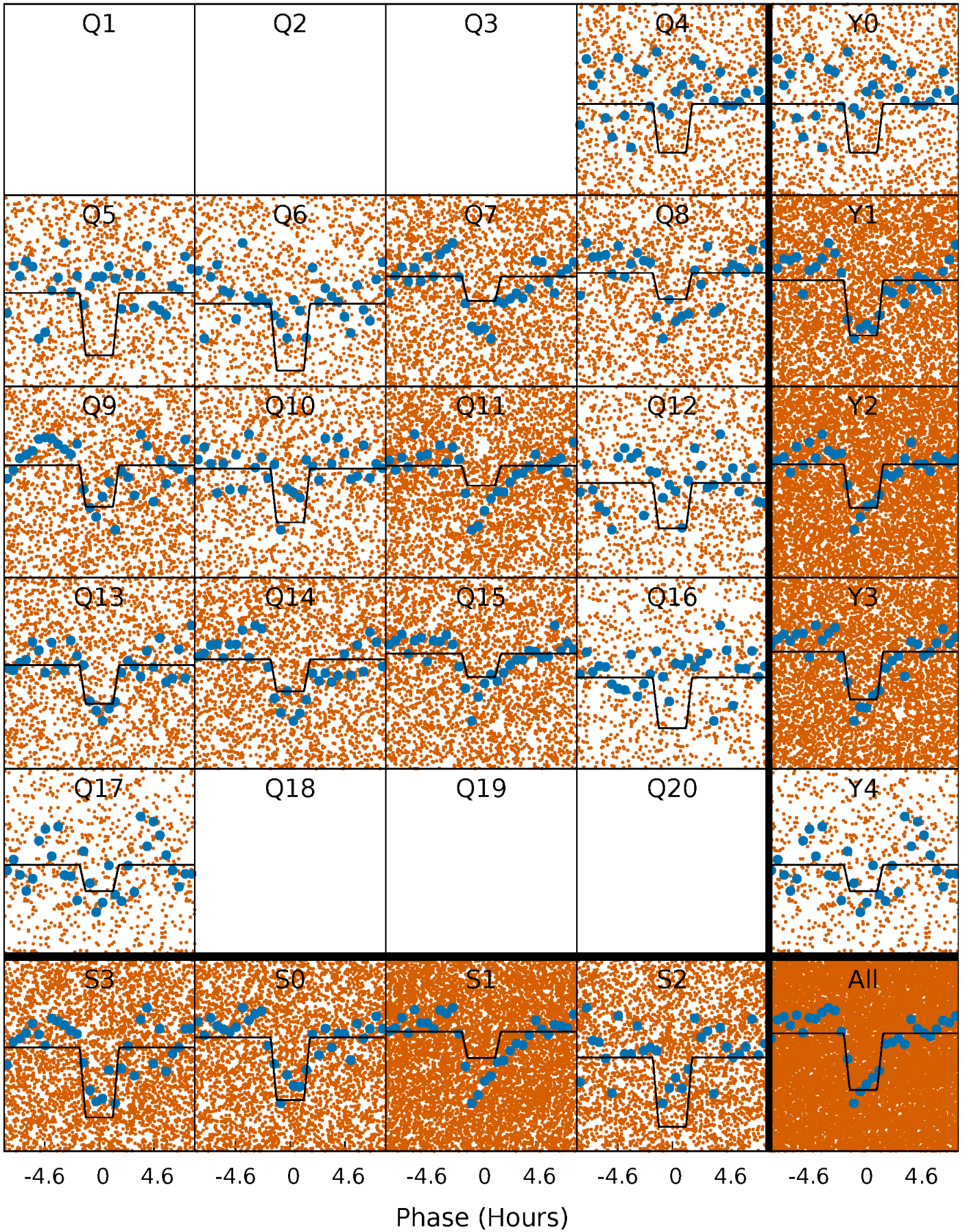
DV Quarter-Phased Transit Curves

TCE 007116466-01 P= 0.566758 Days $T_0=131.846683$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

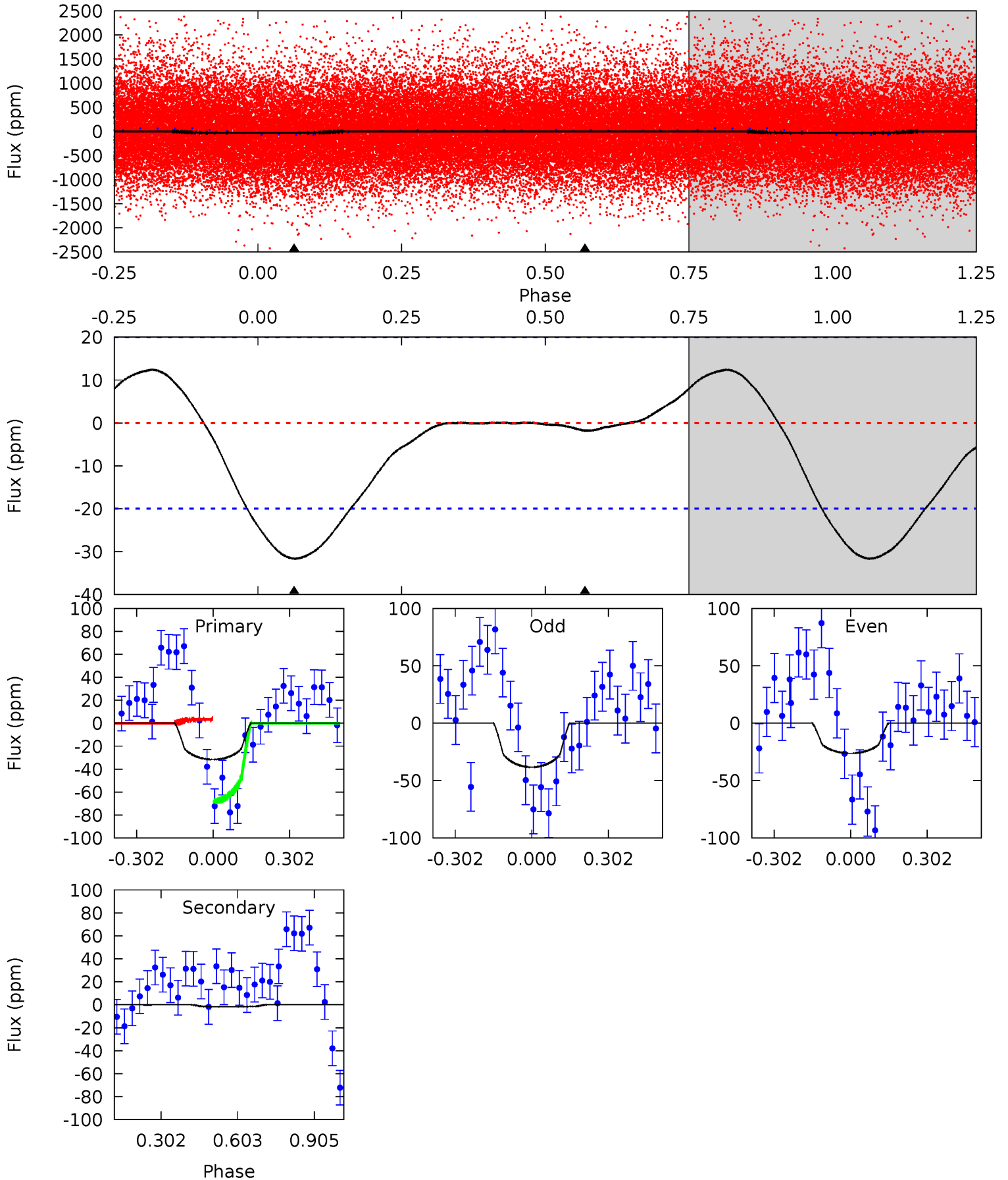
TCE 007116466-01 P= 0.566795 Days $T_0=131.826756$ (BKJD)



DV Model-Shift Uniqueness Test

007116466-01, $P = 0.566758$ Days, $E = 131.846683$ Days

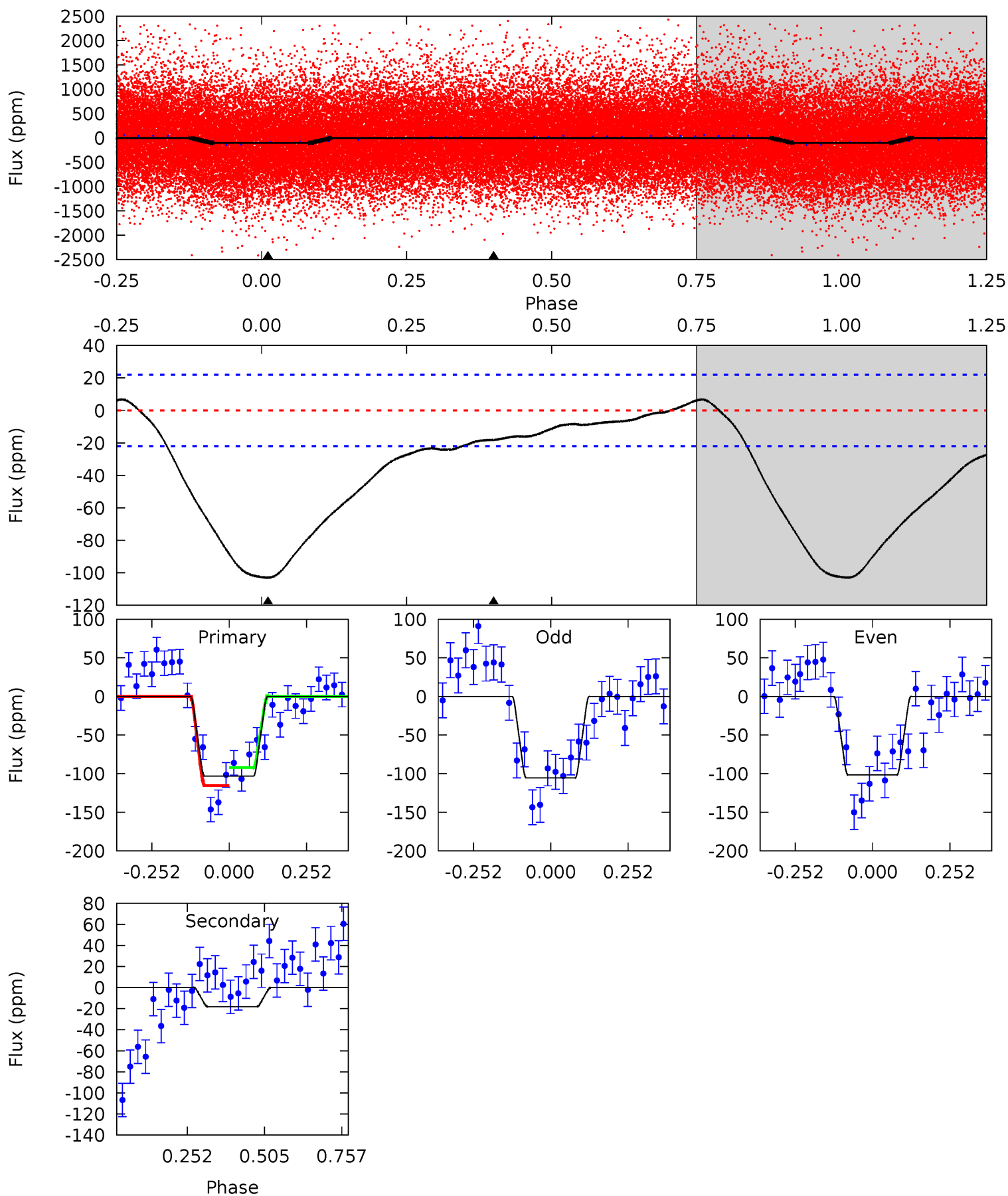
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.86	0.39	0	0	4.33	1.03	1.38	6.86	6.86	0.39	0.39	1.32	1.18	0.28	7.12



Alt Model-Shift Uniqueness Test

007116466-01, $P = 0.566795$ Days, $E = 131.826756$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	3.60	0	0	4.37	1.14	0.64	20.5	20.5	3.60	3.60	0.38	0.96	0.06	2.32



Stellar Parameters For KIC 007116466

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5454^{+197}_{-180}	$4.554^{+0.038}_{-0.152}$	$-0.020^{+0.250}_{-0.300}$	$0.830^{+0.187}_{-0.067}$	$0.900^{+0.082}_{-0.091}$	$2.217^{+0.455}_{-0.955}$
	+4%/-3%	+1%/-3%	+1250%/-1500%	+23%/-8%	+9%/-10%	+21%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007116466-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 5	$0.87^{+0.78}_{-0.56}$	2749^{+167}_{-122}	-2743^{+6482}_{-520}	$0.122^{+1.594}_{-0.424}$
Alt.	-18 ± 5	$1.10^{+0.84}_{-0.68}$	2738^{+174}_{-122}	3517^{+1713}_{-916}	$1.316^{+7.418}_{-0.897}$

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

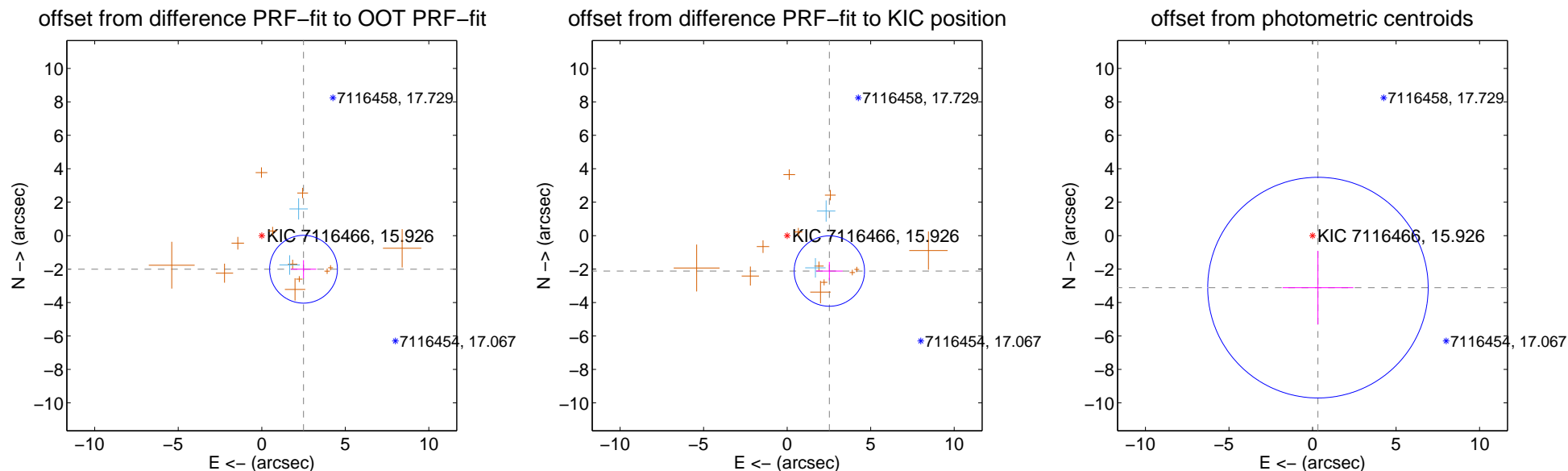
DV Centroid Data

Supplemental centroid analysis for 007116466-01. Kepler magnitude: 15.93. Transit SNR 5.91

There are 2 quarters with good PRF difference image offsets

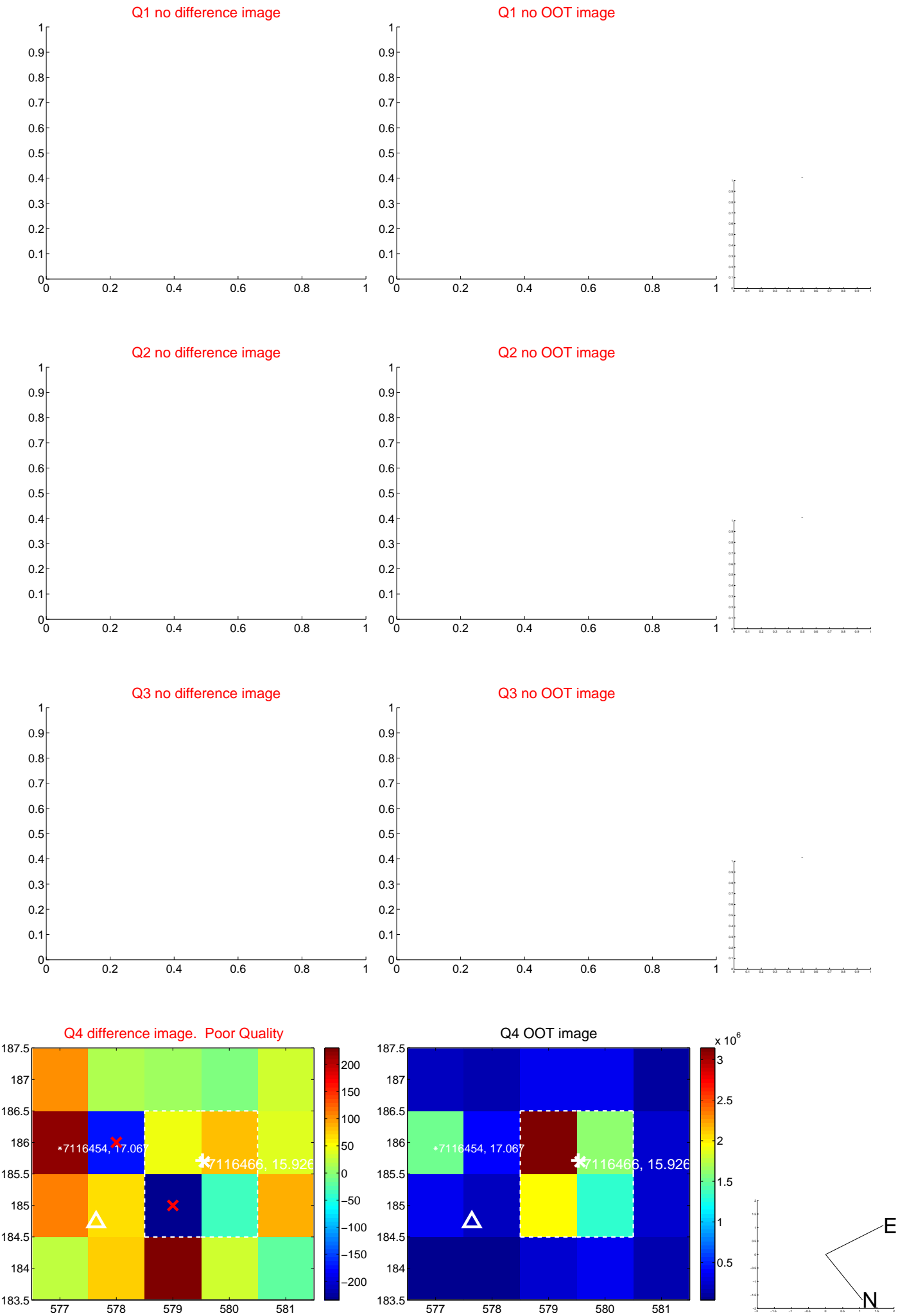
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.208 ± 0.676	4.74	-2.500 ± 0.764	-2.010 ± 0.545
PRF-fit source offset from KIC position	3.298 ± 0.702	4.70	-2.528 ± 0.799	-2.118 ± 0.548
photometric centroid source offset	3.13 ± 2.20	1.42	-0.32 ± 2.12	-3.11 ± 2.20

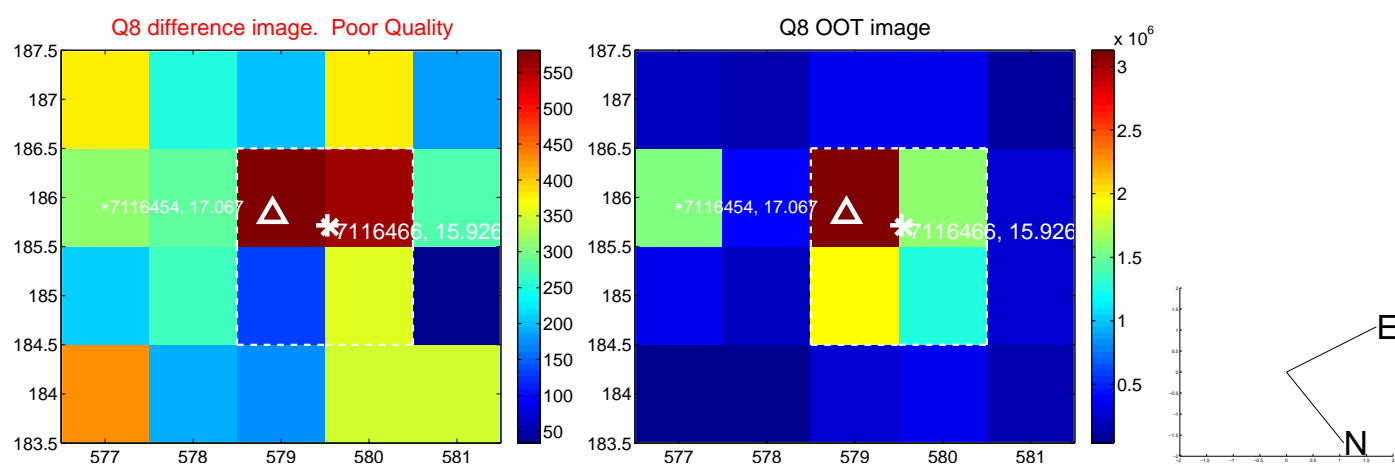
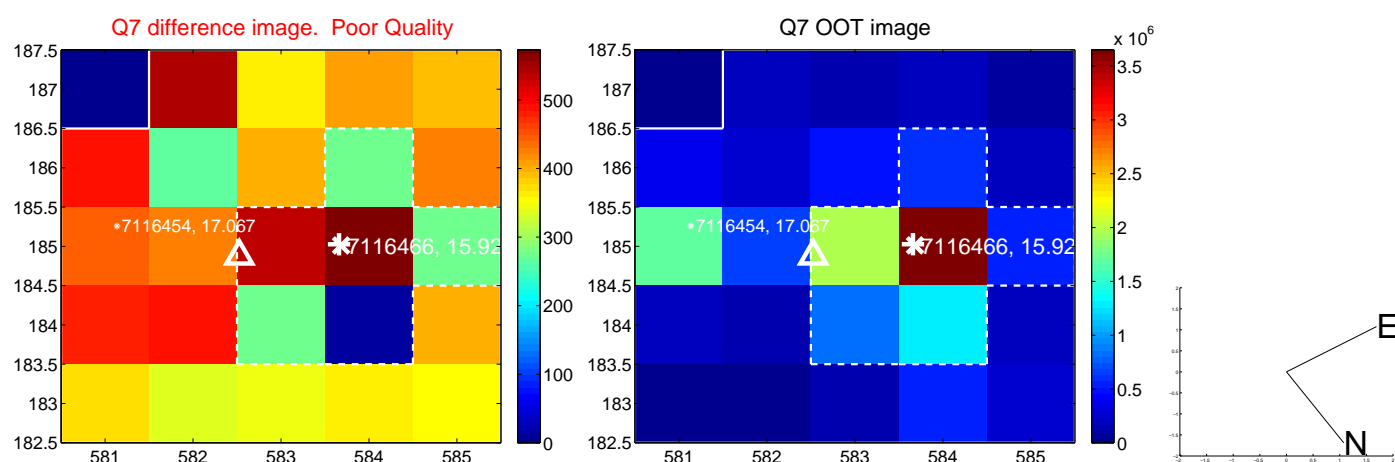
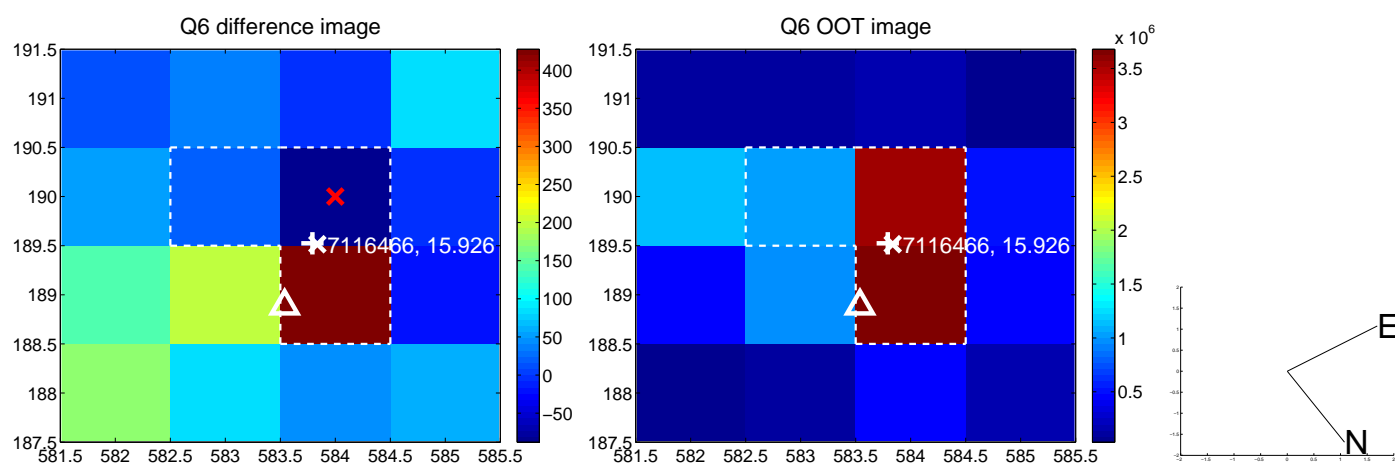
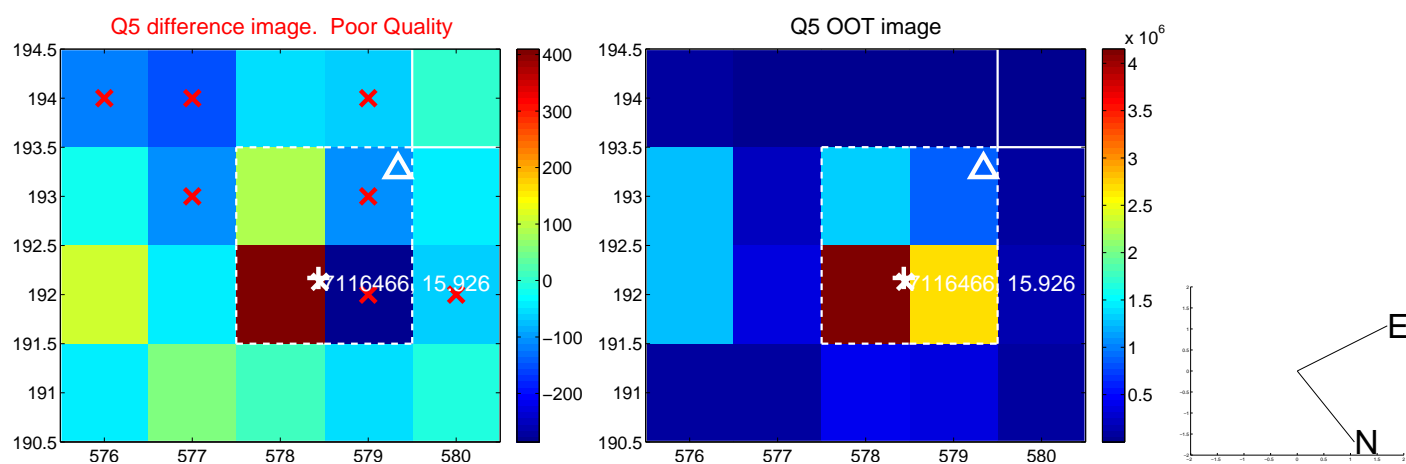


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

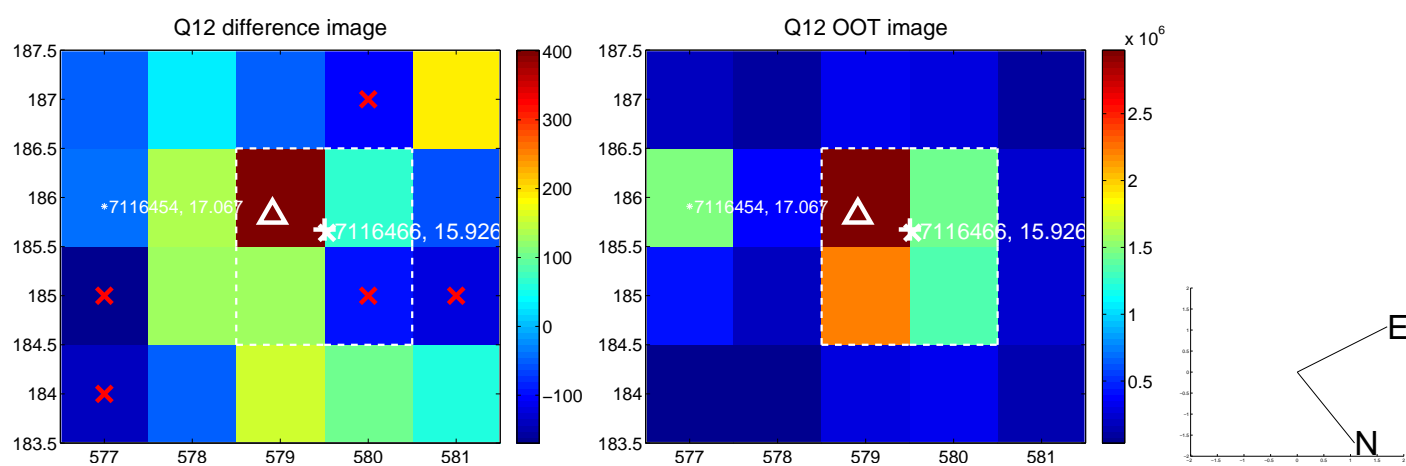
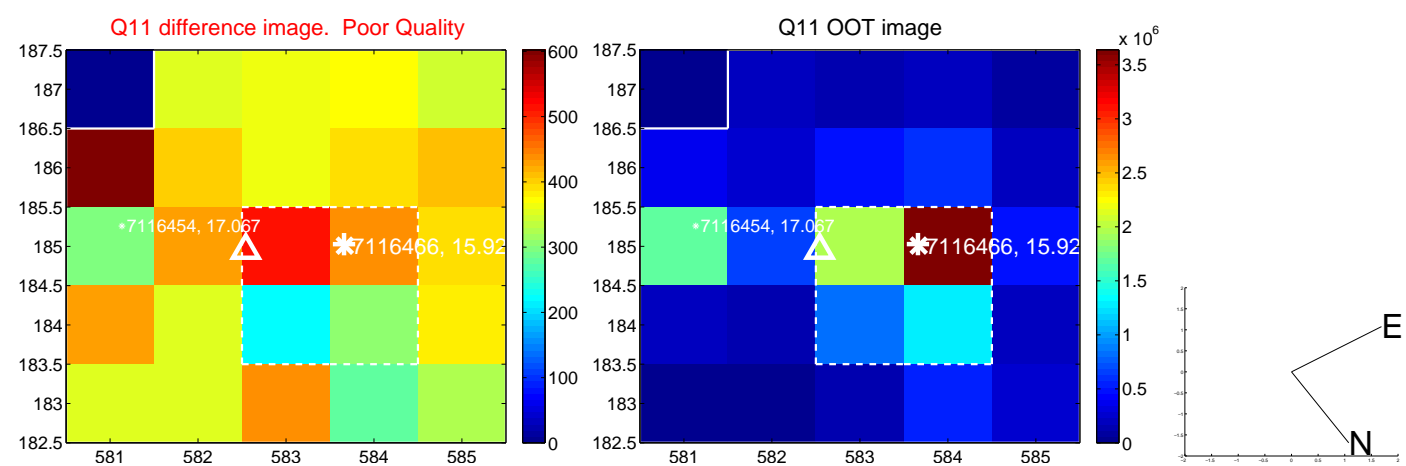
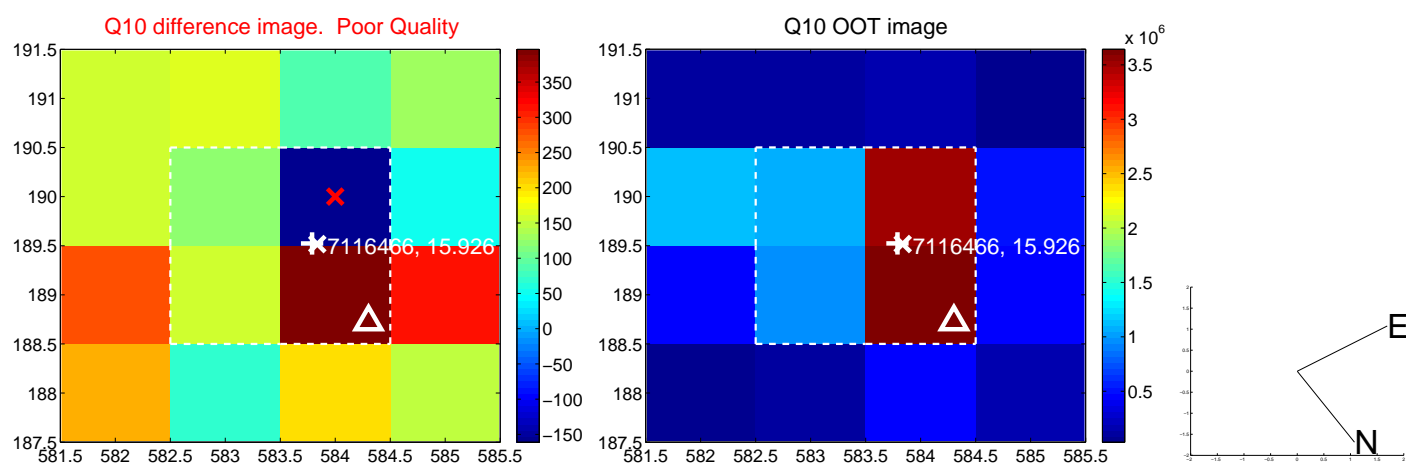
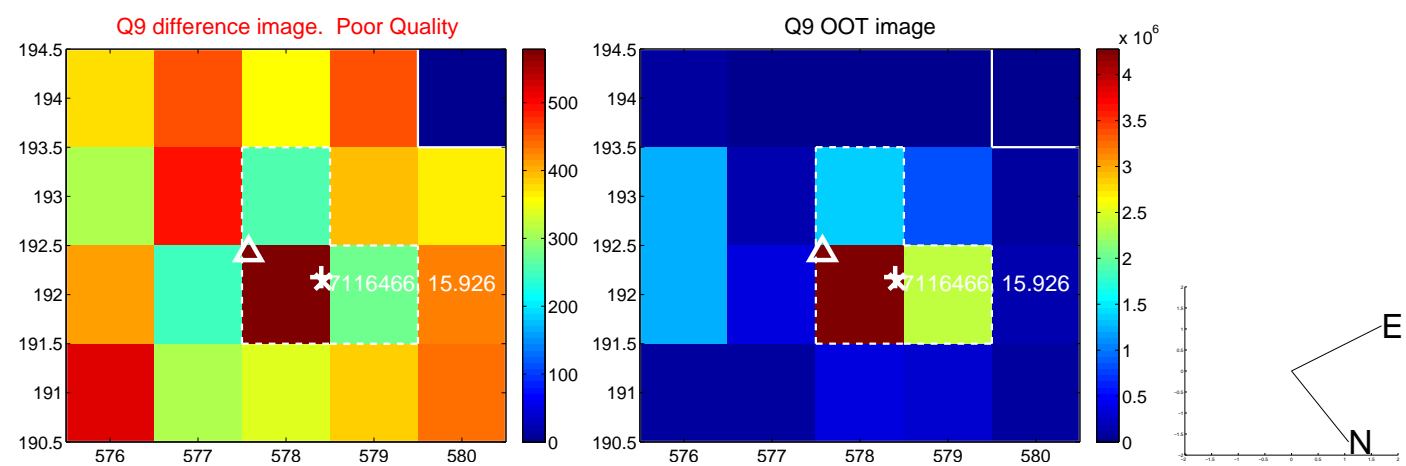
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



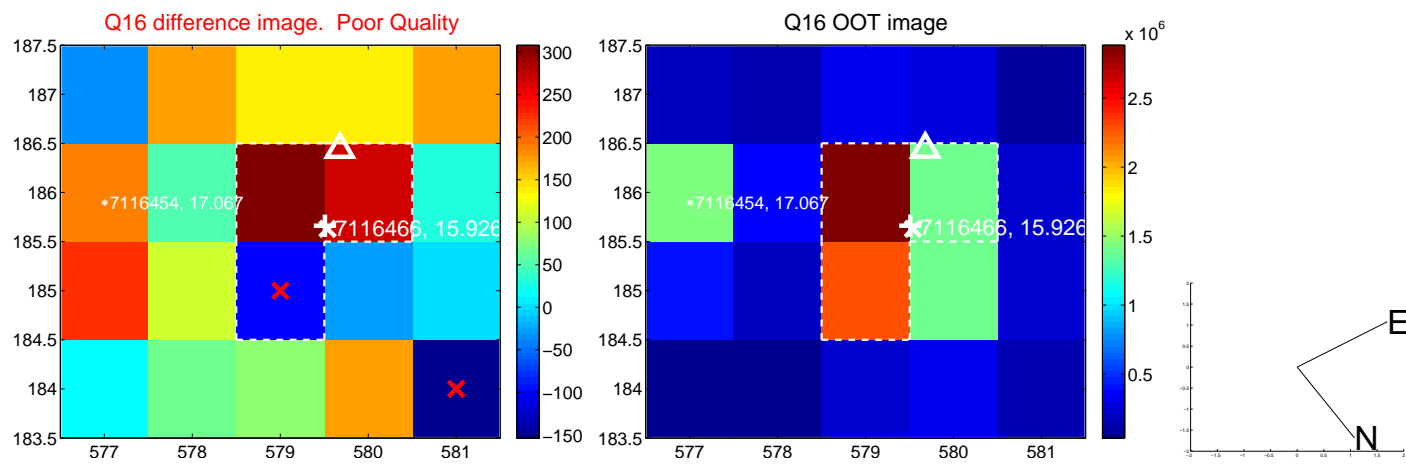
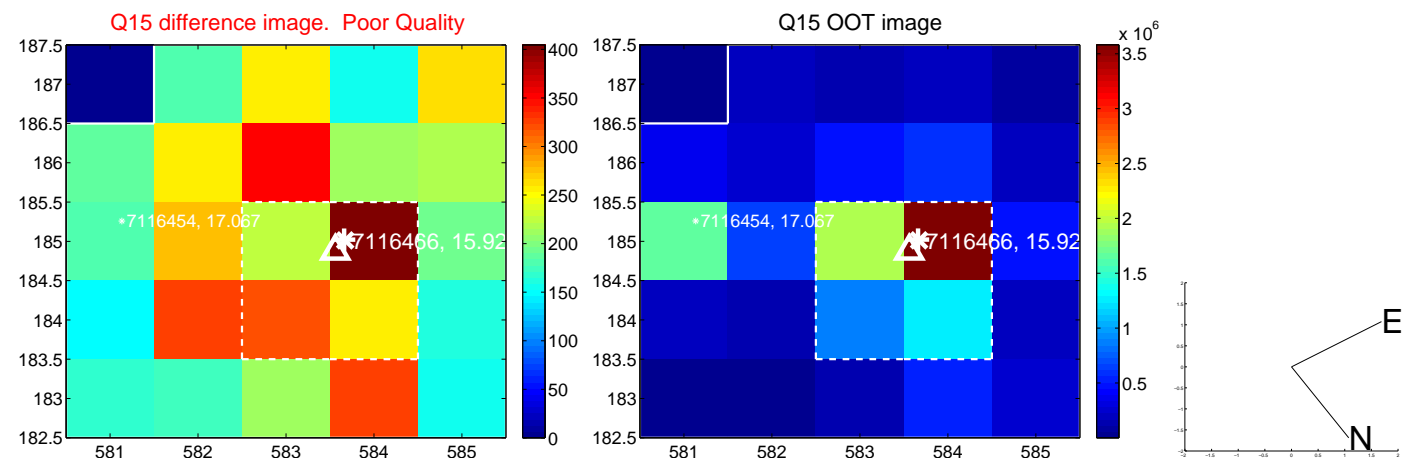
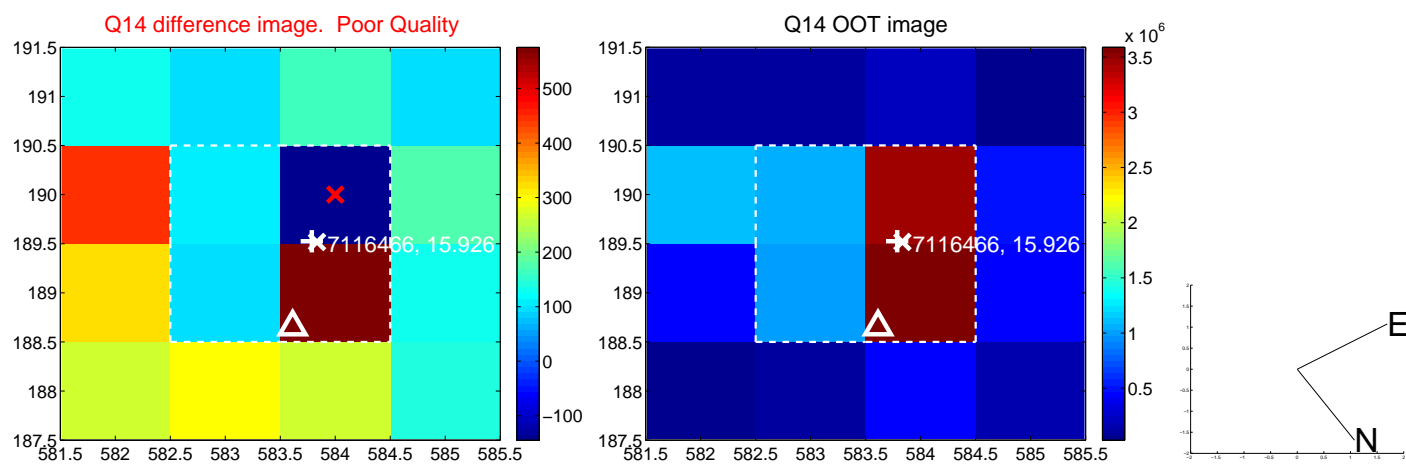
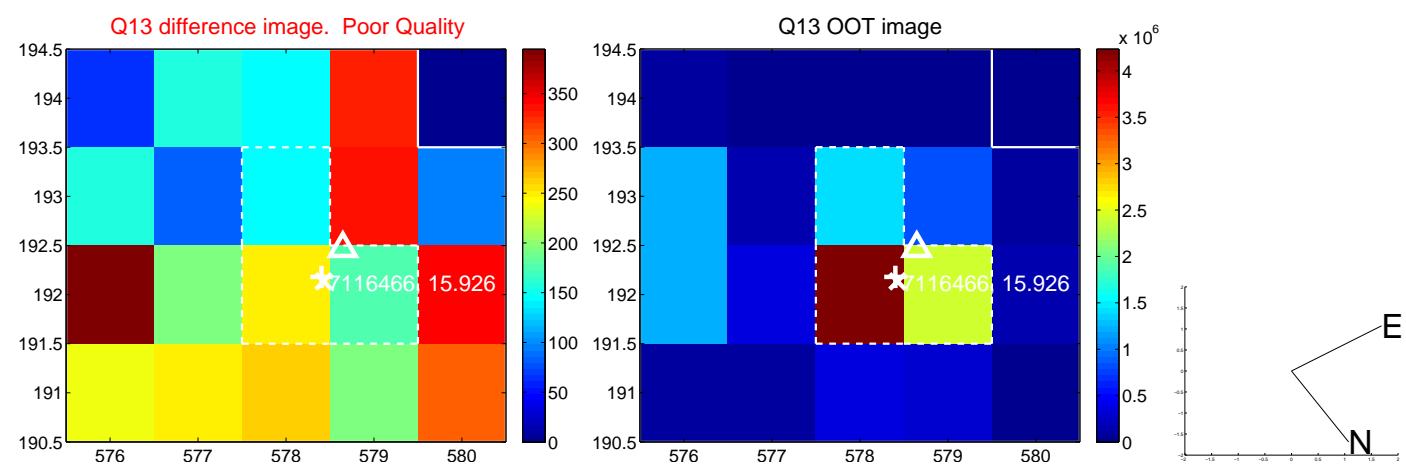
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



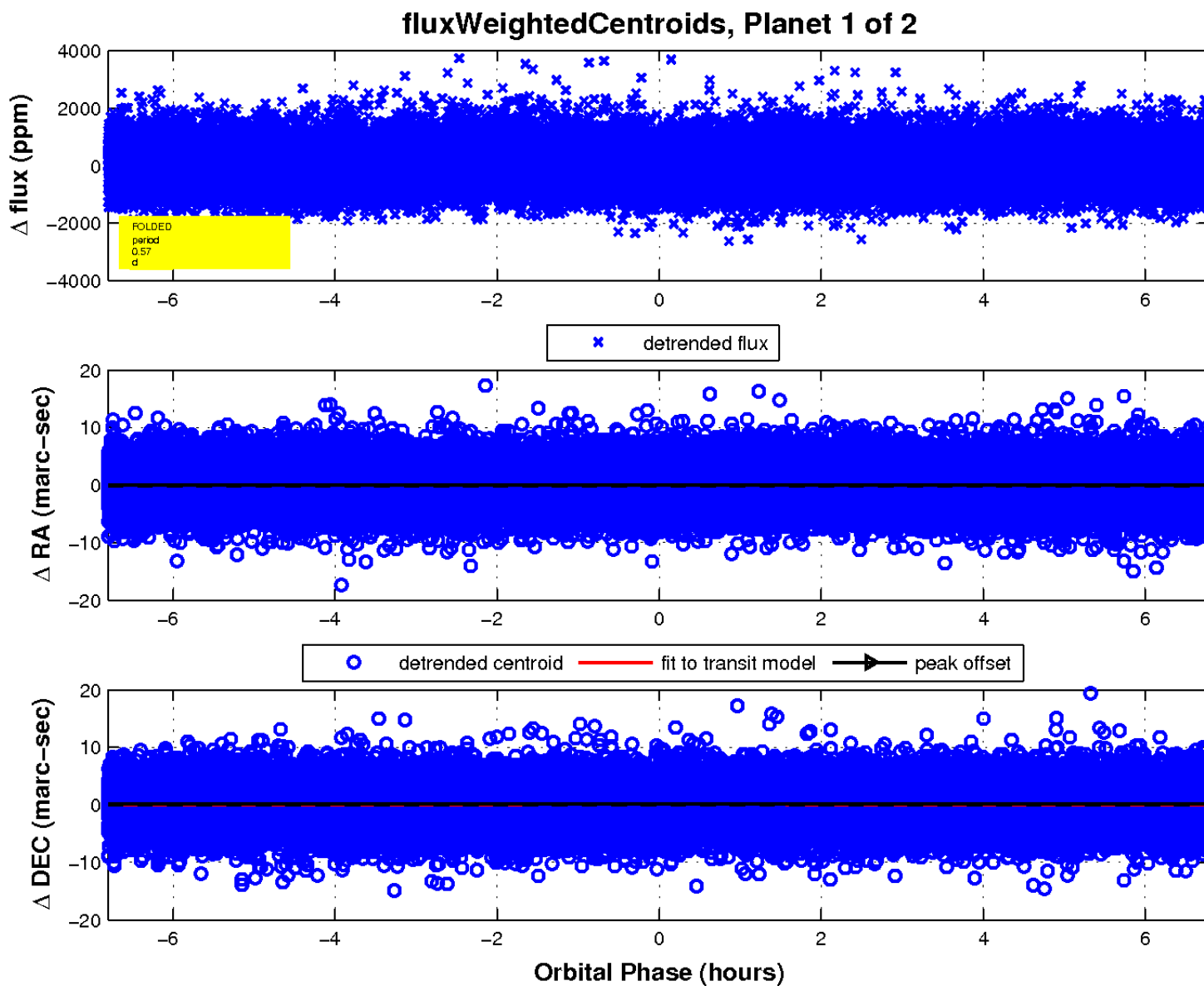
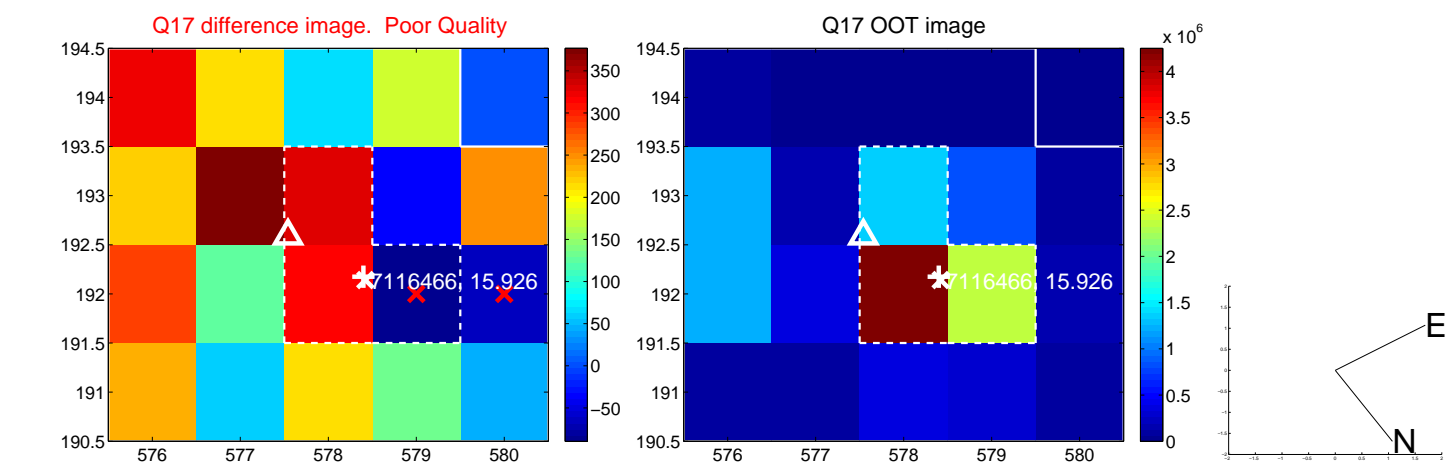
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

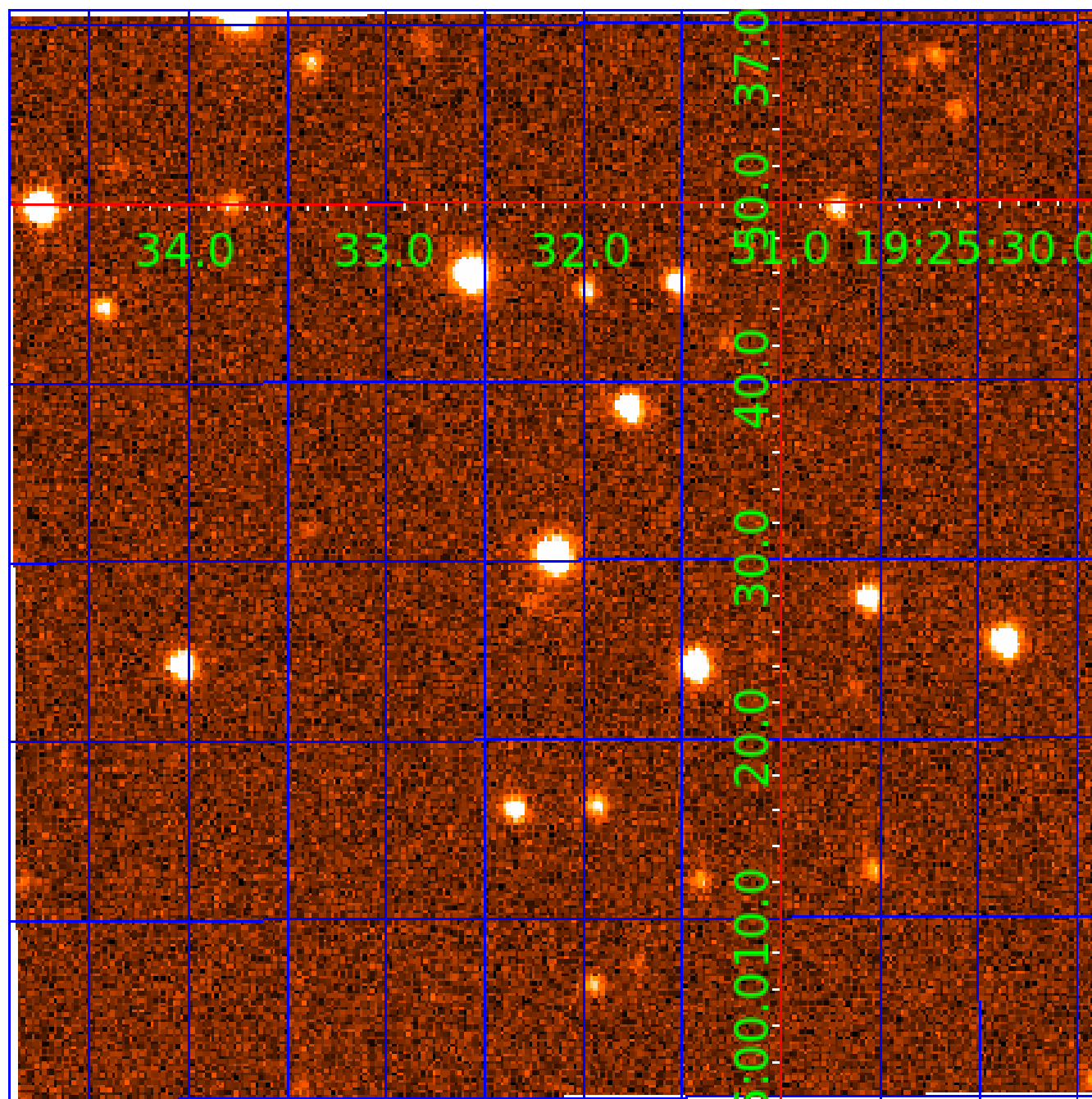


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007116466

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})
007116466-01	OBS	No	0.566758	131.846683	35.9	3.630	10.0	5.9	0.83	5454	0.54	3260.45
007116466-02	OBS	No	24.977907	136.505750	559.2	2.507	8.7	6.6	0.83	5454	2.35	20.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116466-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007116466-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

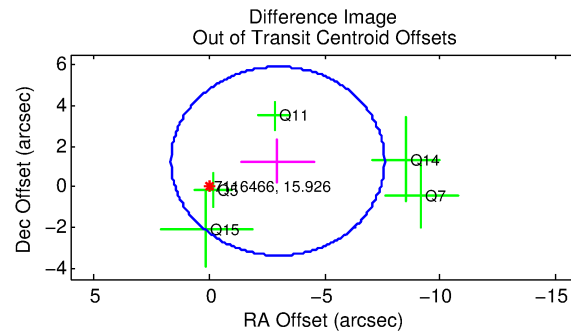
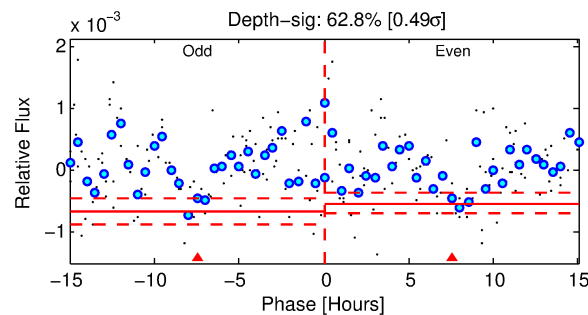
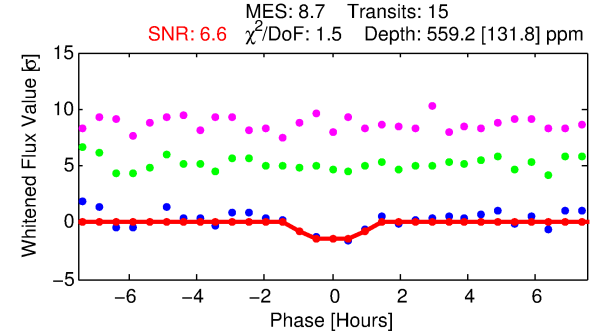
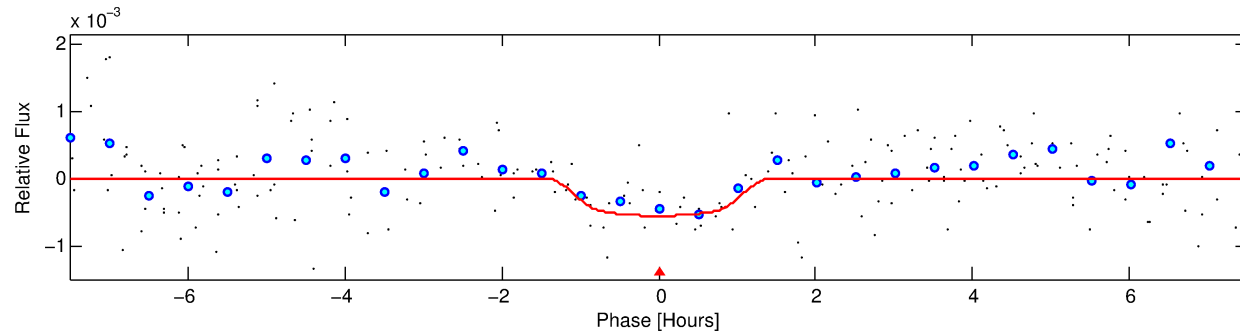
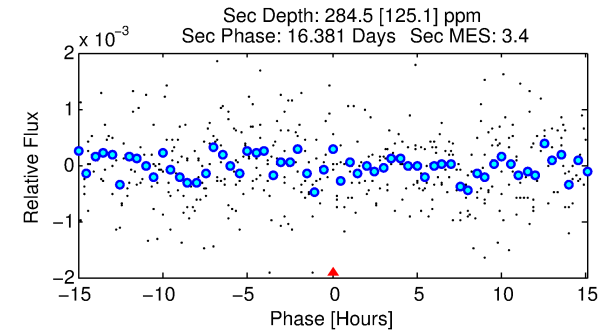
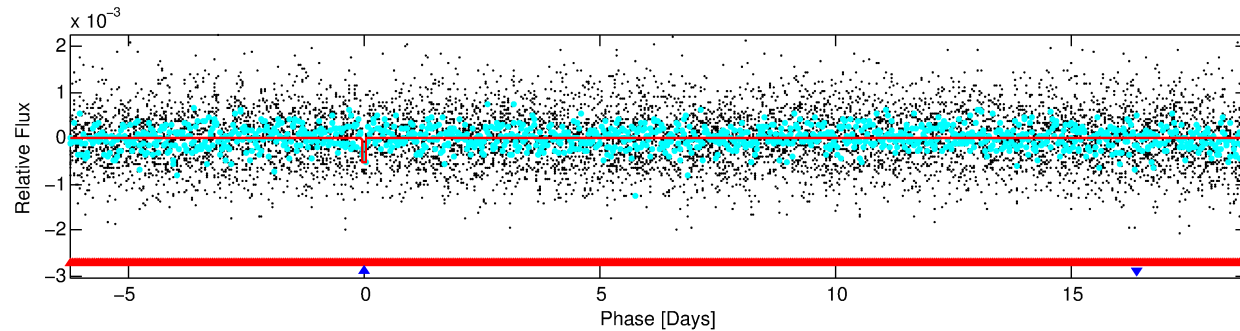
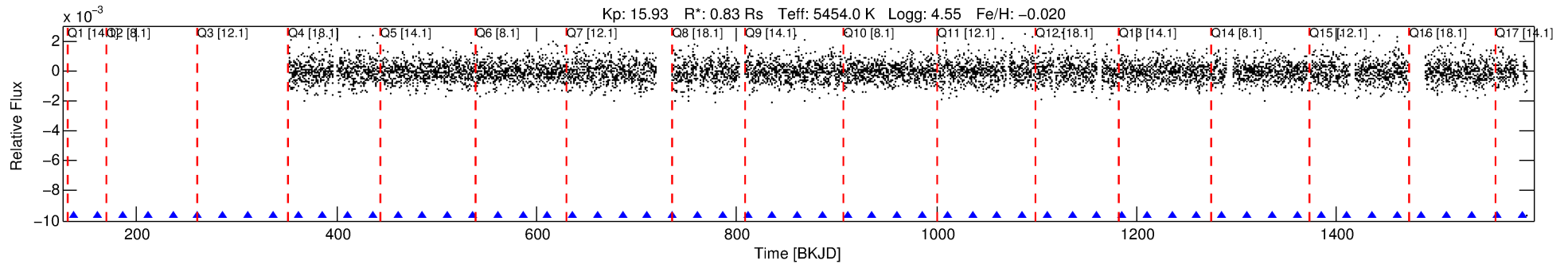
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007116466-02

No Significant Match Found

DV One-Page Summary

KIC: 7116466 Candidate: 2 of 2 Period: 24.978 d



DV Fit Results:

Period = 24.97791 [0.00052] d
Epoch = 136.5057 [0.0179] BKJD
Rp/R* = 0.0260 [0.0221]
a/R* = 37.83 [134.87]
b = 0.90 [0.79]
Seff = 20.94 [6.55]
Teff = 545 [43] K
Rp = 2.35 [2.07] Re
a = 0.1615 [0.0307] AU
Ag = 736.96 [1312.46] [0.56σ]
Teffp = 4394 [1939] K [1.98σ]

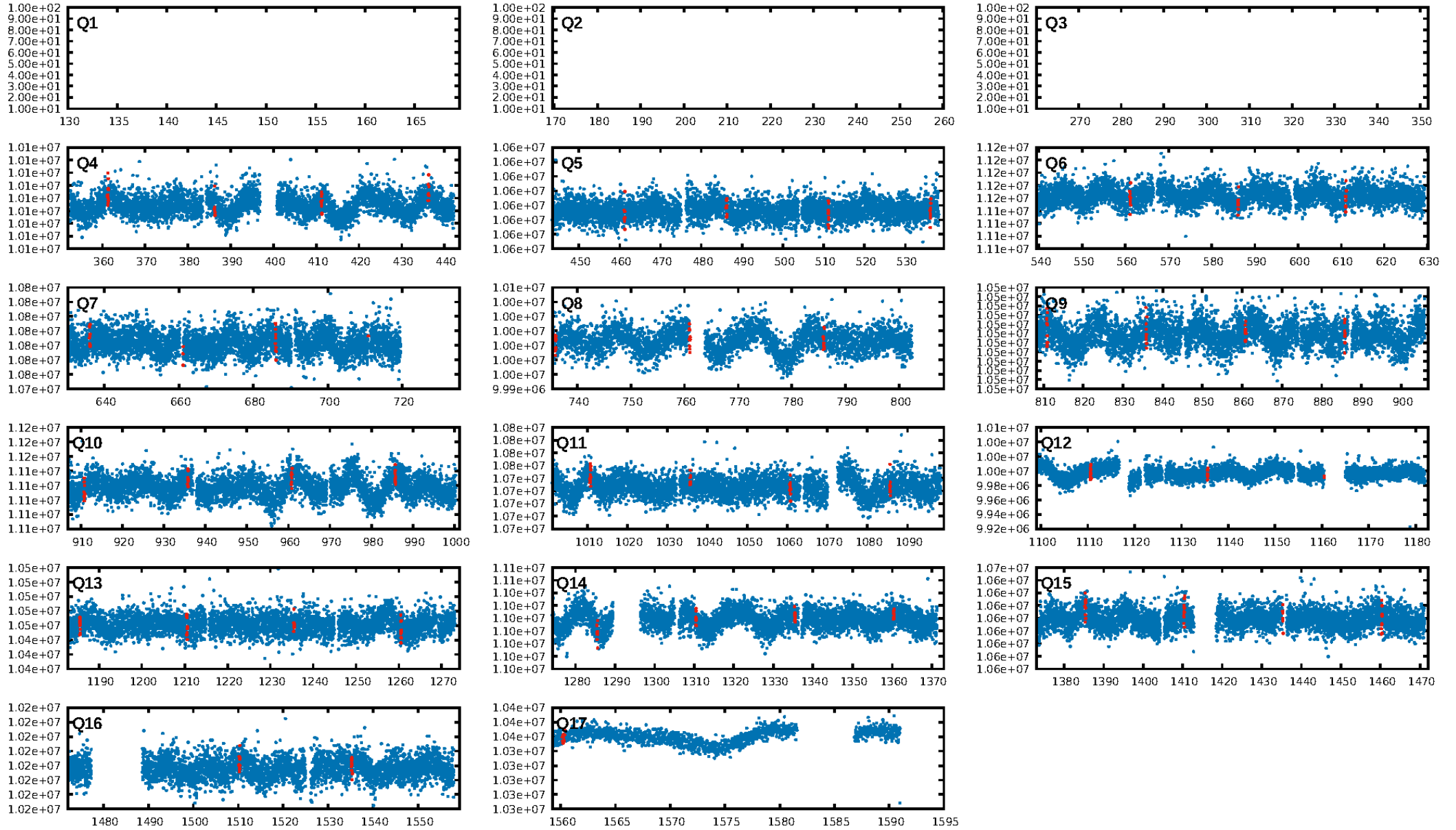
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.81σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 33.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.99e-18
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 0.4665
Centroid-sig: 80.7%
Centroid-so: 0.586 arcsec [0.51σ]
OotOffset-rm: 3.235 arcsec [2.10σ]
OotOffset-st: 1/3/0/1 [5]
KicOffset-rm: 3.186 arcsec [1.82σ]
KicOffset-st: 1/3/0/1 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 0.00 [0/13]

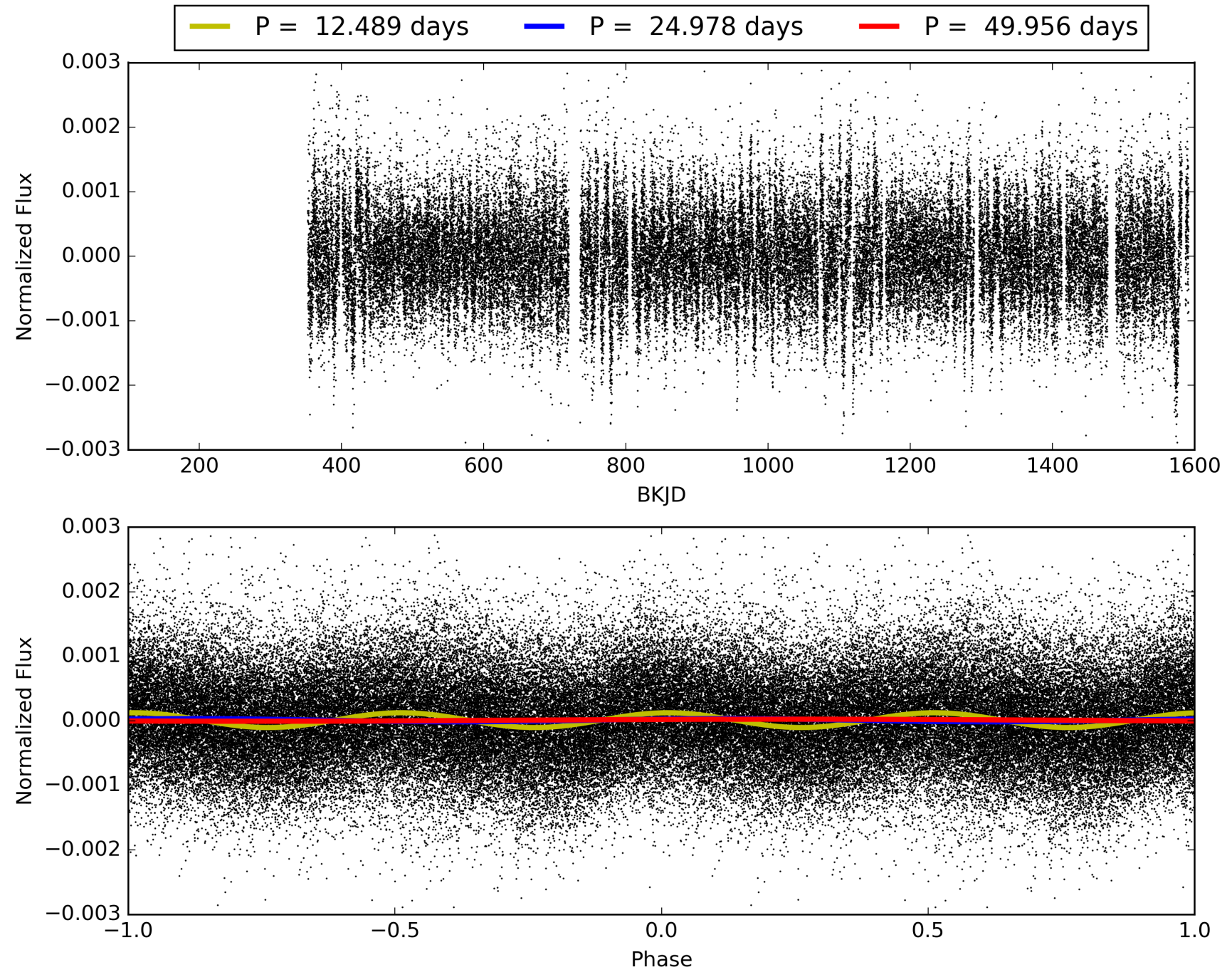
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:21:58 Z

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

TCE 007116466-02, PDC Light Curves

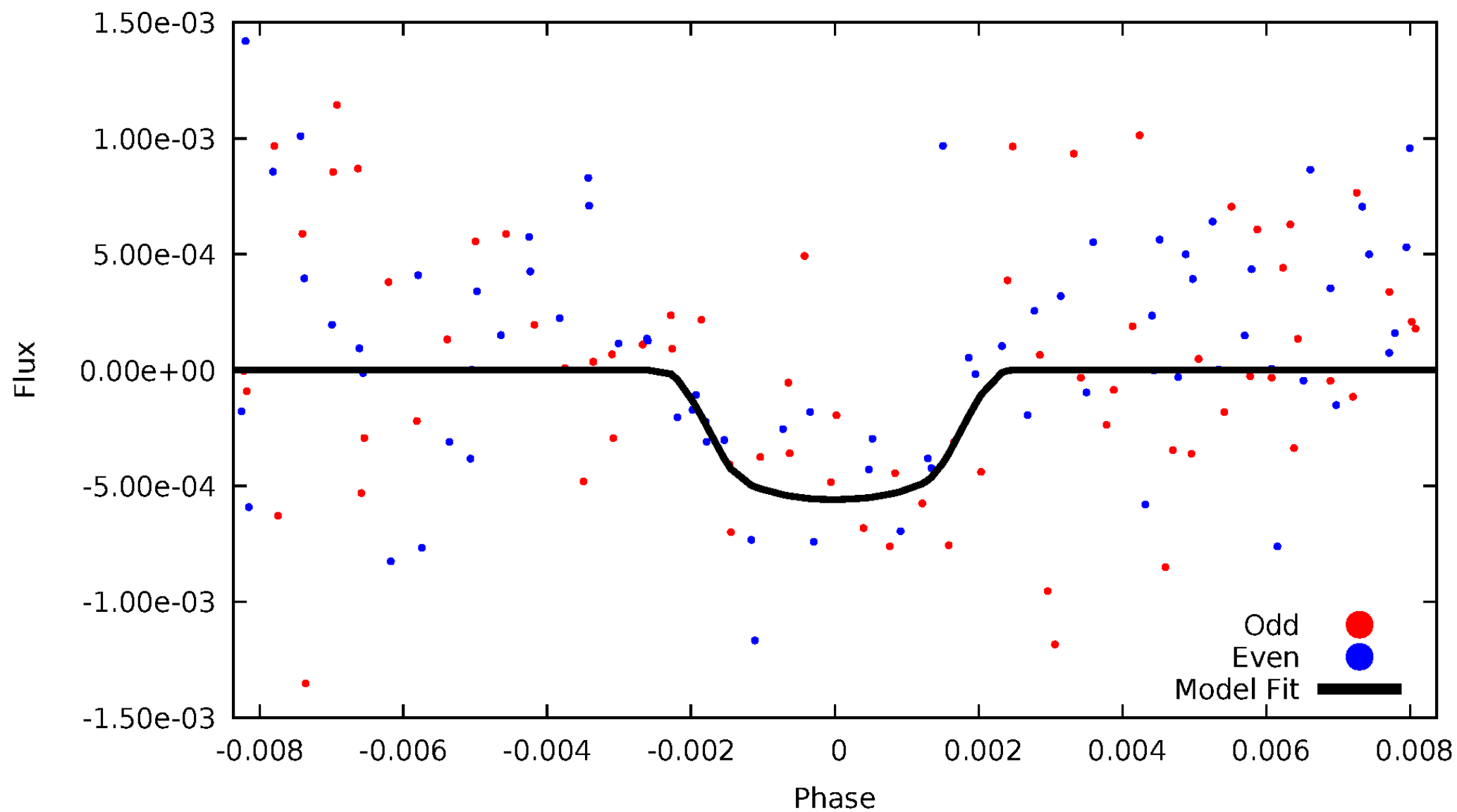


TCE 007116466-02



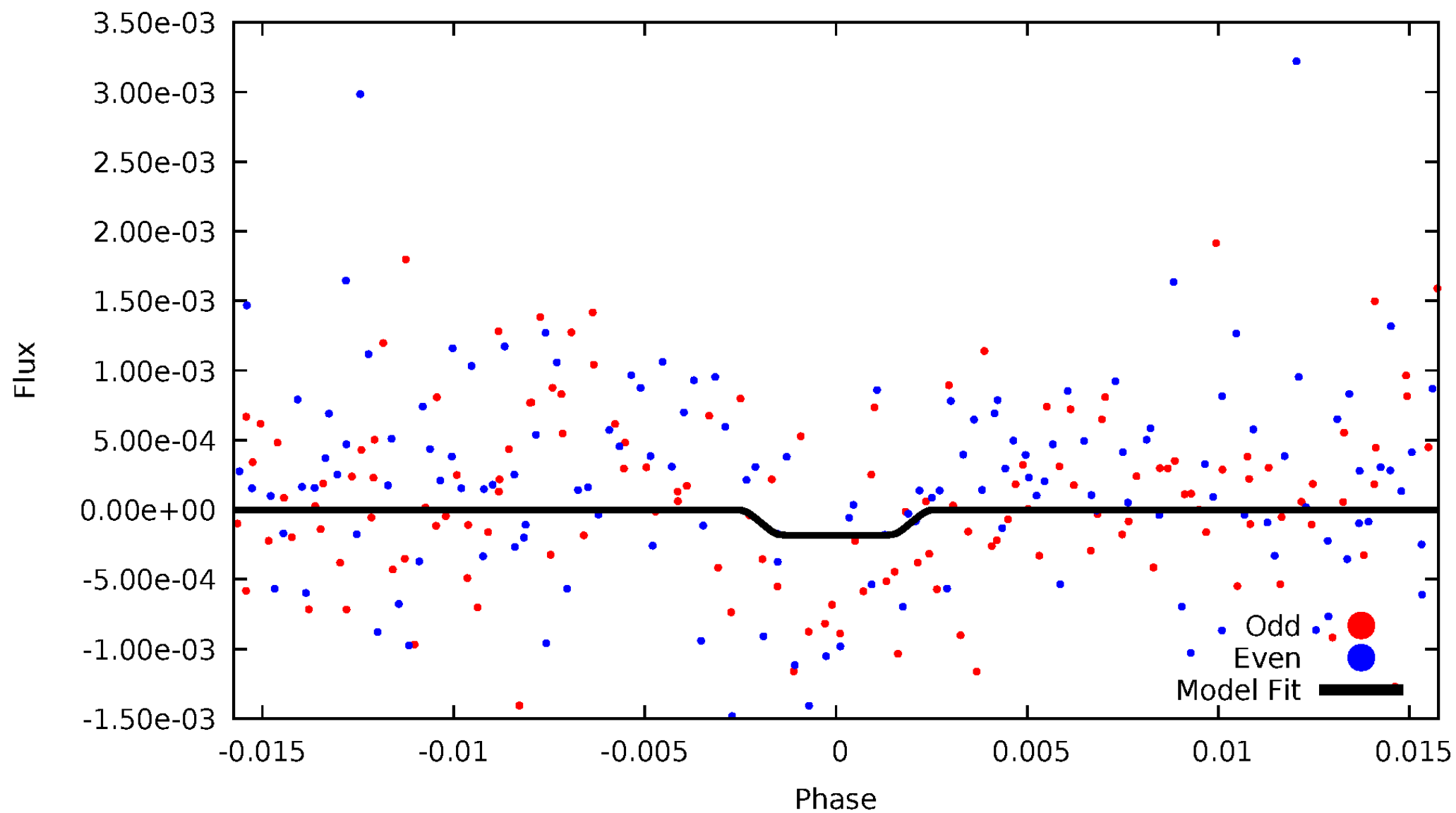
DV Odd/Even

TCE 007116466-02



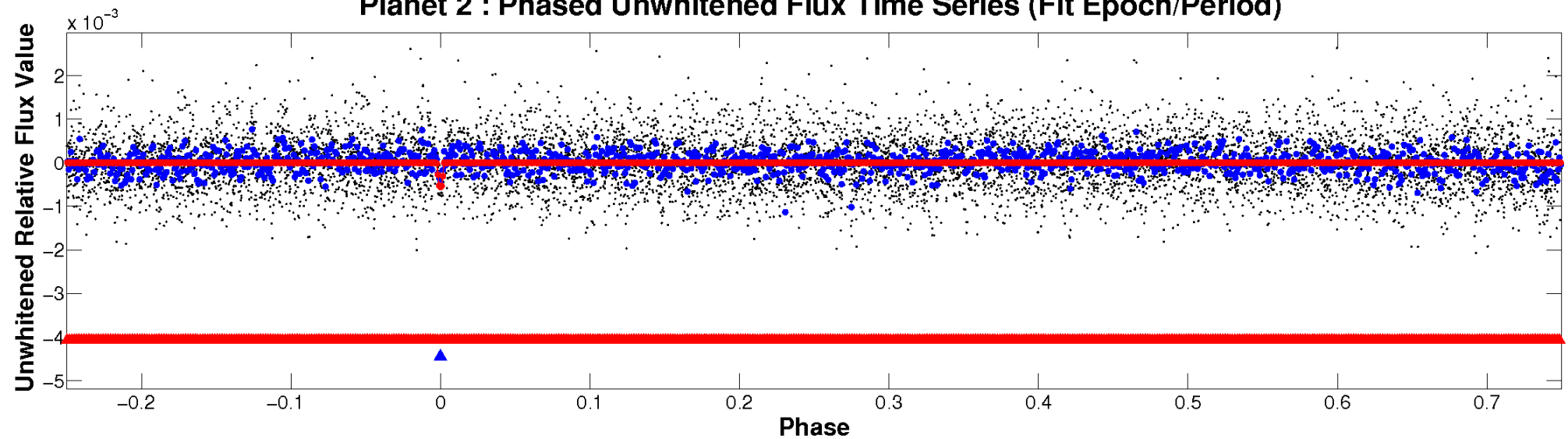
ALT Odd/Even

TCE 007116466-02

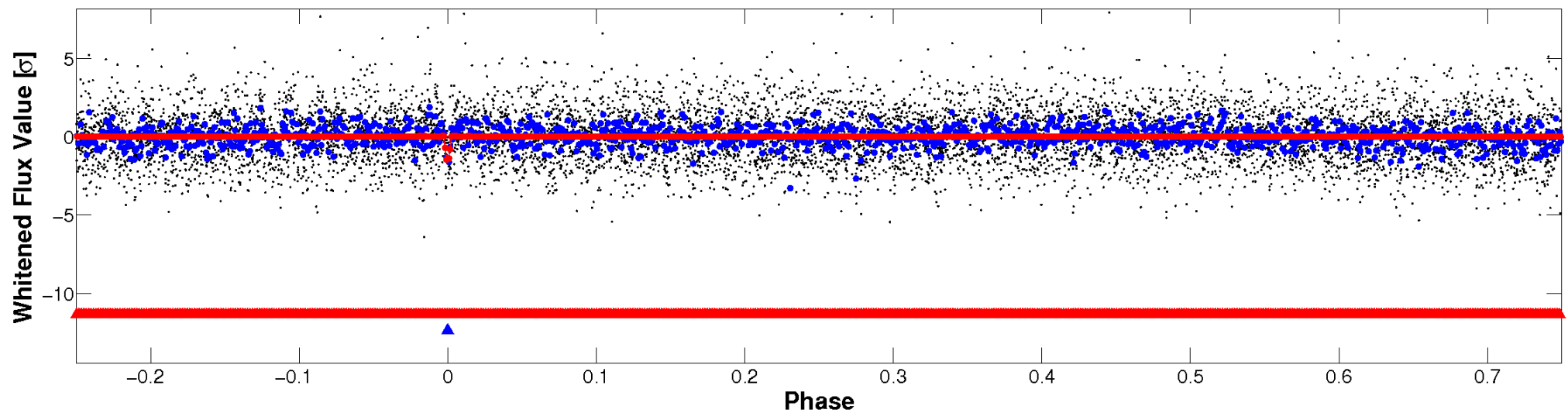


Non-Whitened Vs. Whitened Light Curve

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

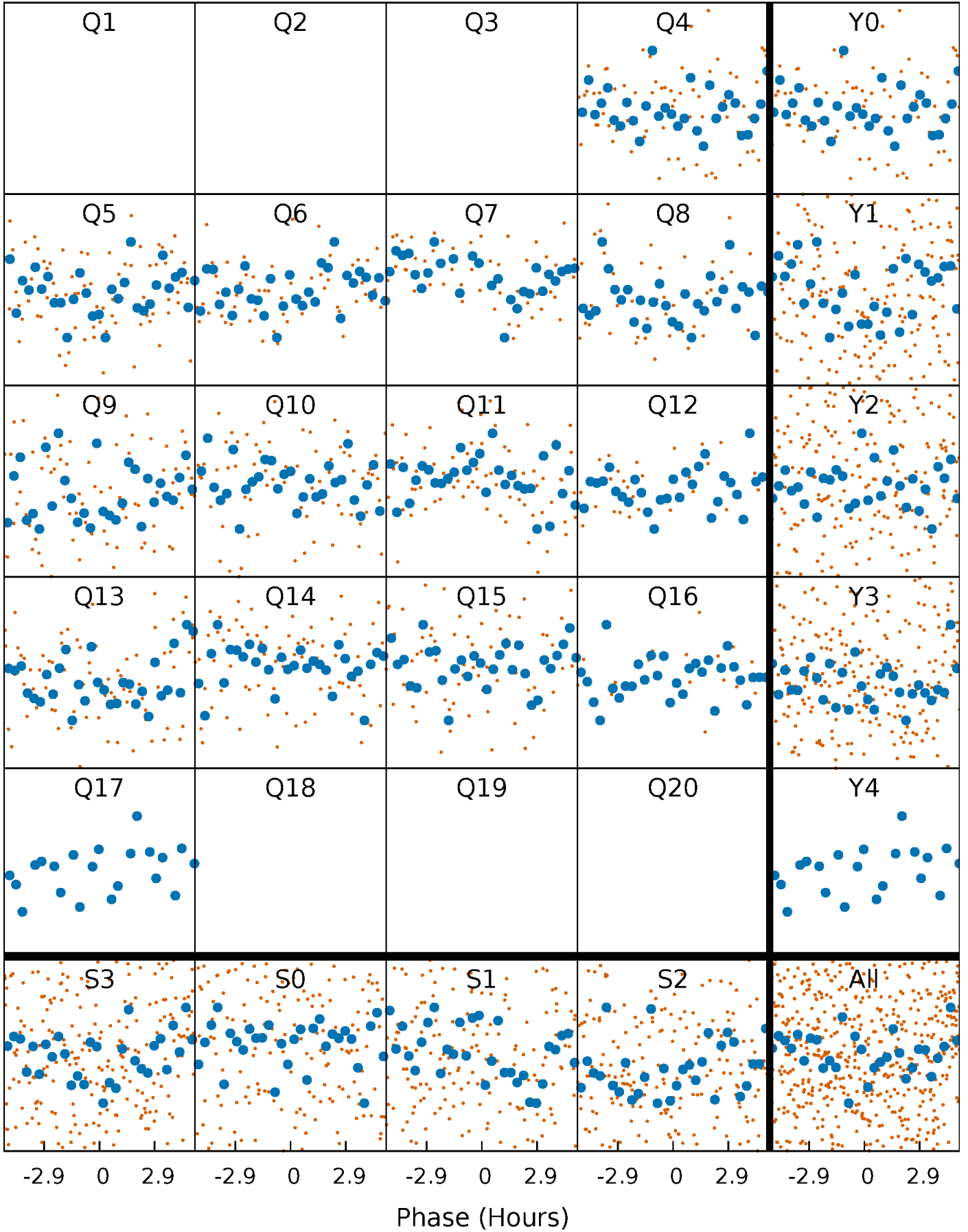


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



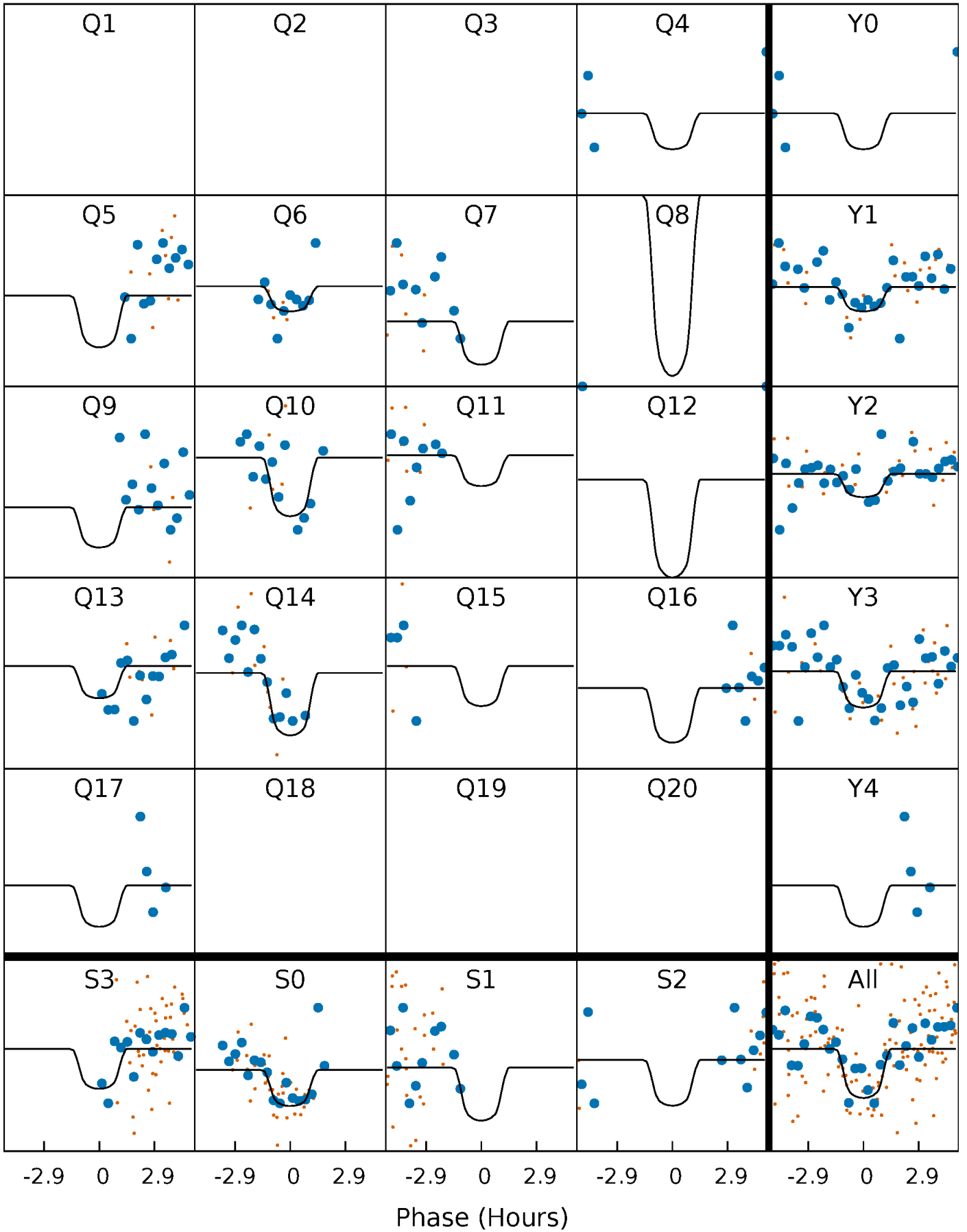
PDC Quarter-Phased Transit Curves

TCE 007116466-02 P= 24.977907 Days $T_0=136.505750$ (BKJD)



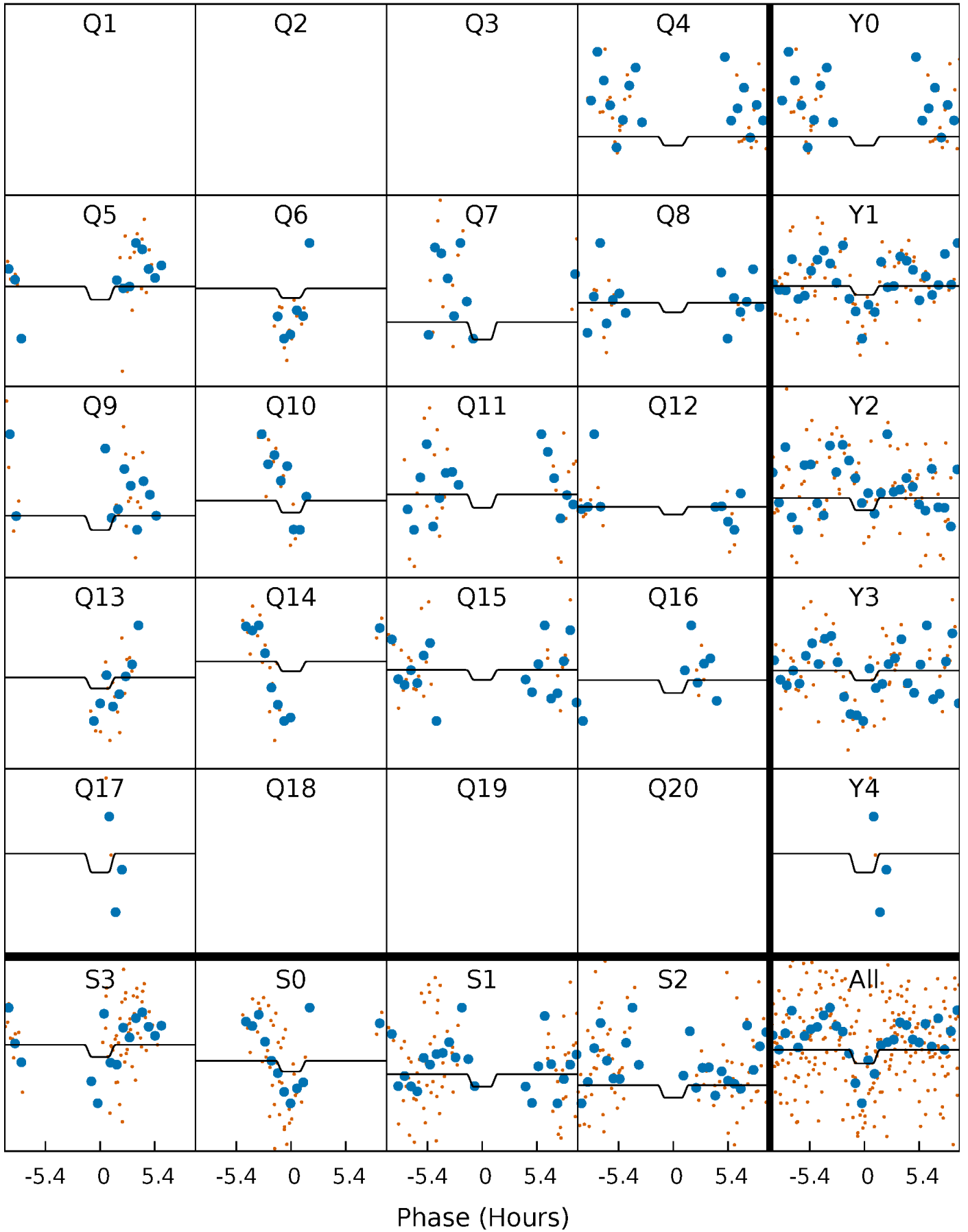
DV Quarter-Phased Transit Curves

TCE 007116466-02 P= 24.977907 Days $T_0=136.505750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

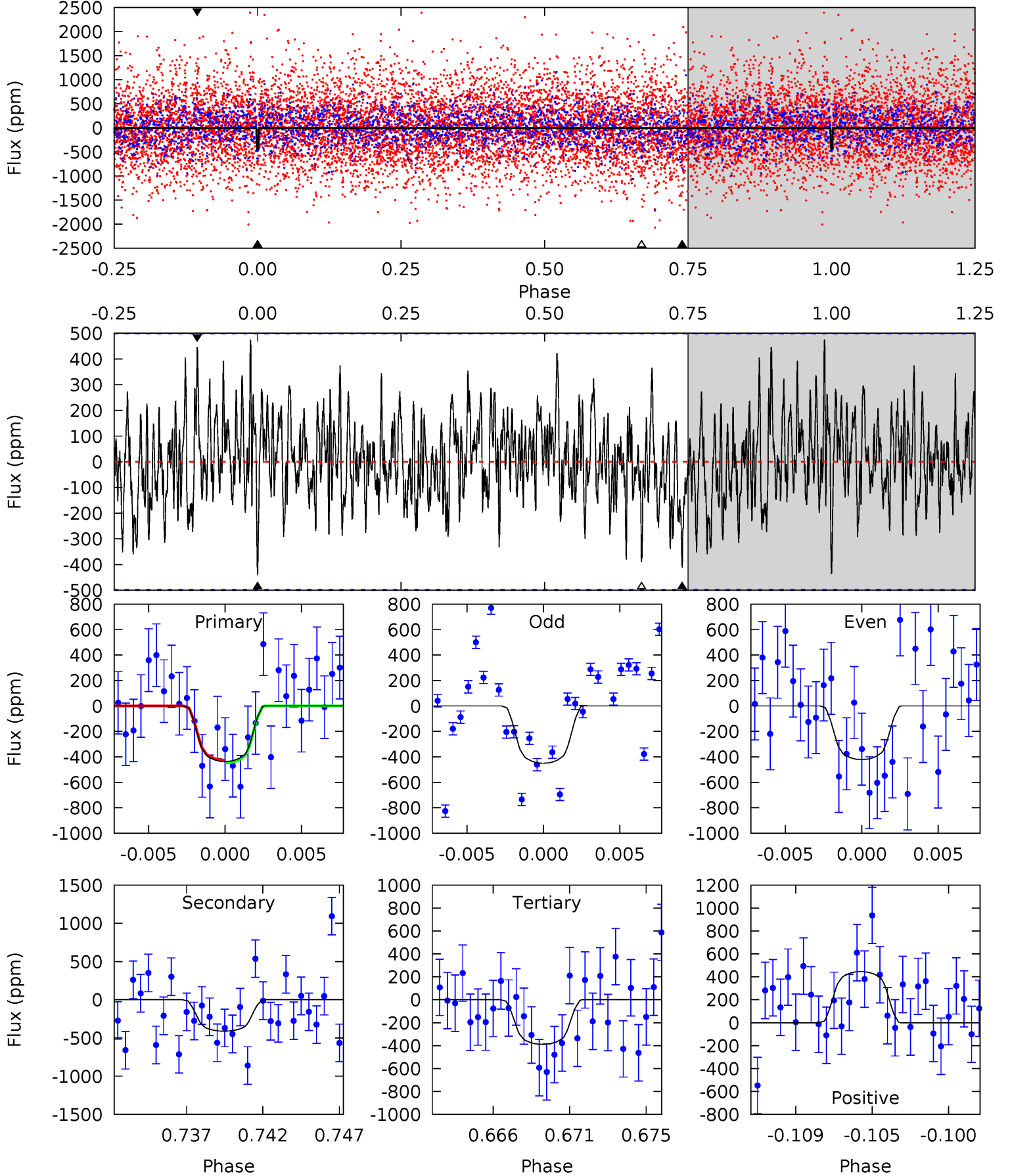
TCE 007116466-02 P= 24.979656 Days $T_0=136.464000$ (BKJD)



DV Model-Shift Uniqueness Test

007116466-02, $P = 24.977907$ Days, $E = 136.505750$ Days

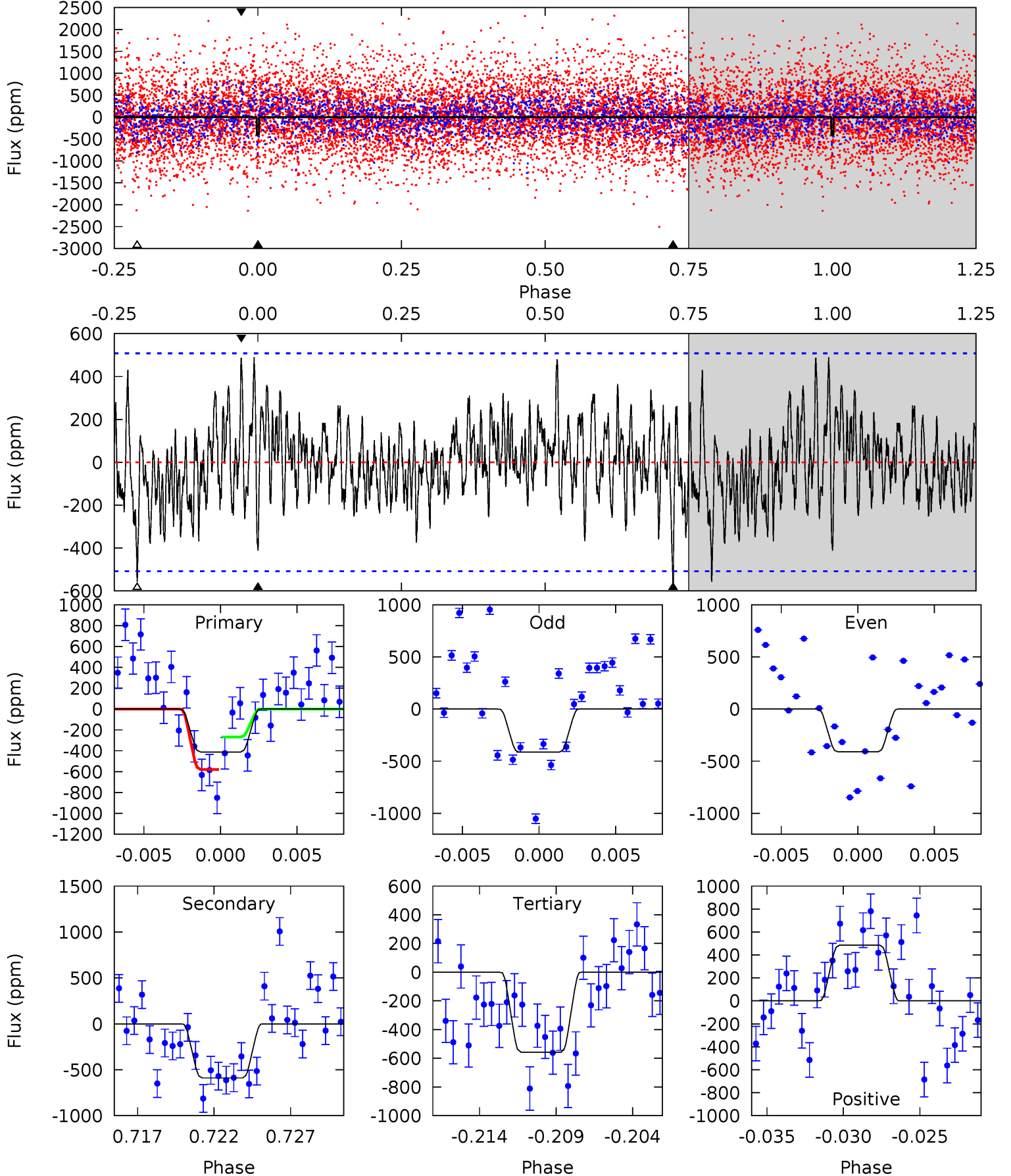
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.52	4.26	4.03	4.62	5.17	2.82	1.46	0.49	-0.10	0.23	-0.36	0.15	0.67	0.52	0.12



Alt Model-Shift Uniqueness Test

007116466-02, $P = 24.979656$ Days, $E = 136.464000$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.18	5.99	5.66	4.93	5.16	2.81	1.55	-1.48	-0.76	0.33	1.05	0.01	1.03	0.45	1.58



Stellar Parameters For KIC 007116466

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5454^{+197}_{-180}	$4.554^{+0.038}_{-0.152}$	$-0.020^{+0.250}_{-0.300}$	$0.830^{+0.187}_{-0.067}$	$0.900^{+0.082}_{-0.091}$	$2.217^{+0.455}_{-0.955}$
	+4%/-3%	+1%/-3%	+1250%/-1500%	+23%/-8%	+9%/-10%	+21%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007116466-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-411 ± 97	$2.80^{+1.81}_{-1.73}$	777^{+45}_{-37}	4630^{+2682}_{-837}	741^{+3906}_{-490}
Alt.	-590 ± 99	$2.09^{+1.76}_{-1.34}$	781^{+44}_{-39}	5660^{+5157}_{-1303}	1814^{+13338}_{-1268}

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 $A_{obs} \gg 1.0$

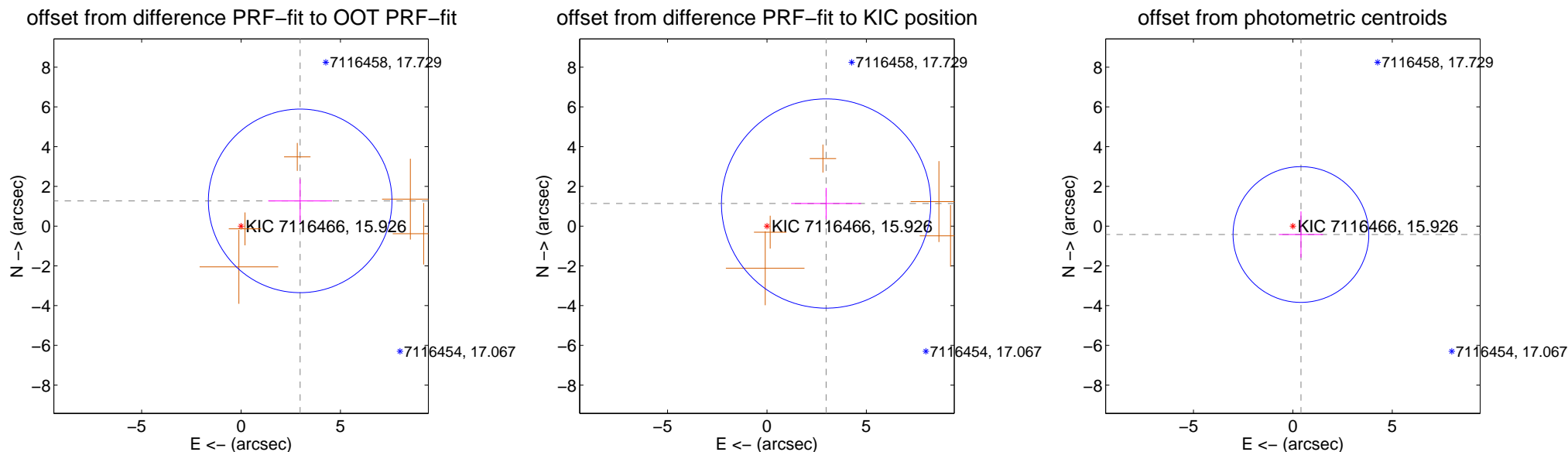
DV Centroid Data

Supplemental centroid analysis for 007116466-02. Kepler magnitude: 15.93. Transit SNR 6.62

There are 0 quarters with good PRF difference image offsets

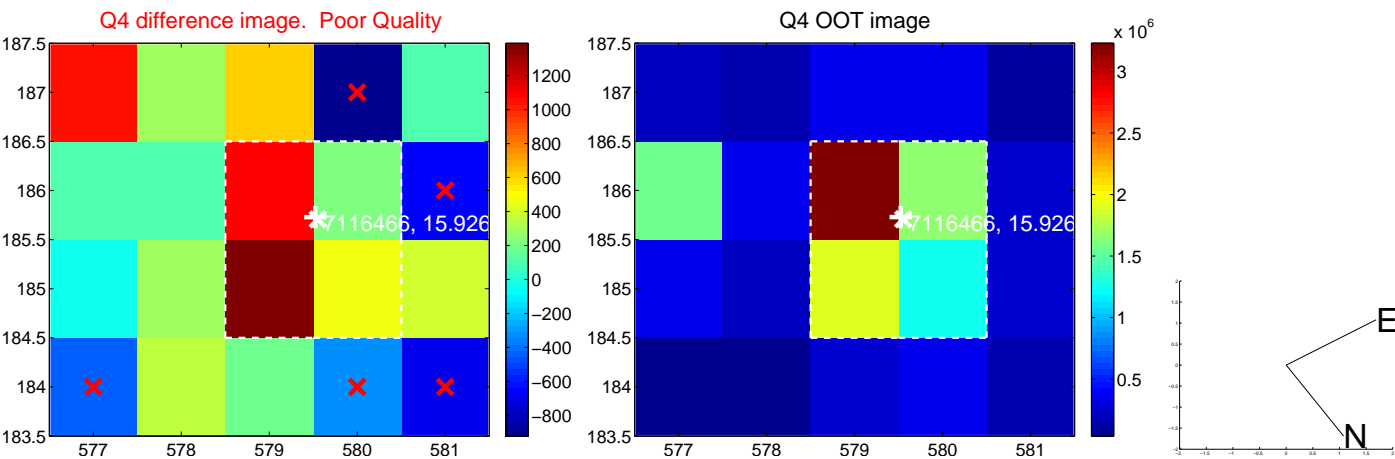
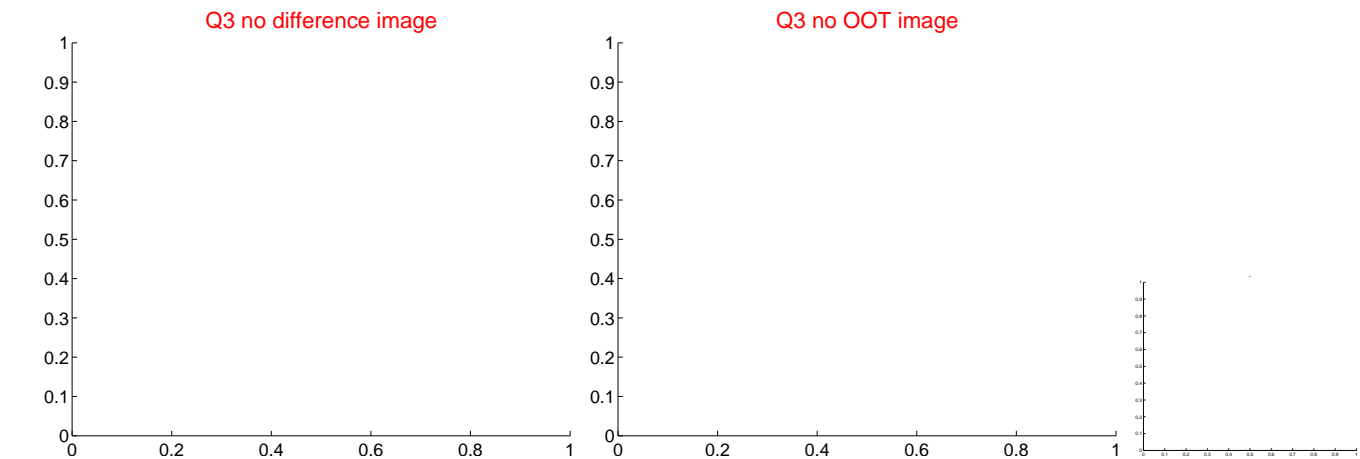
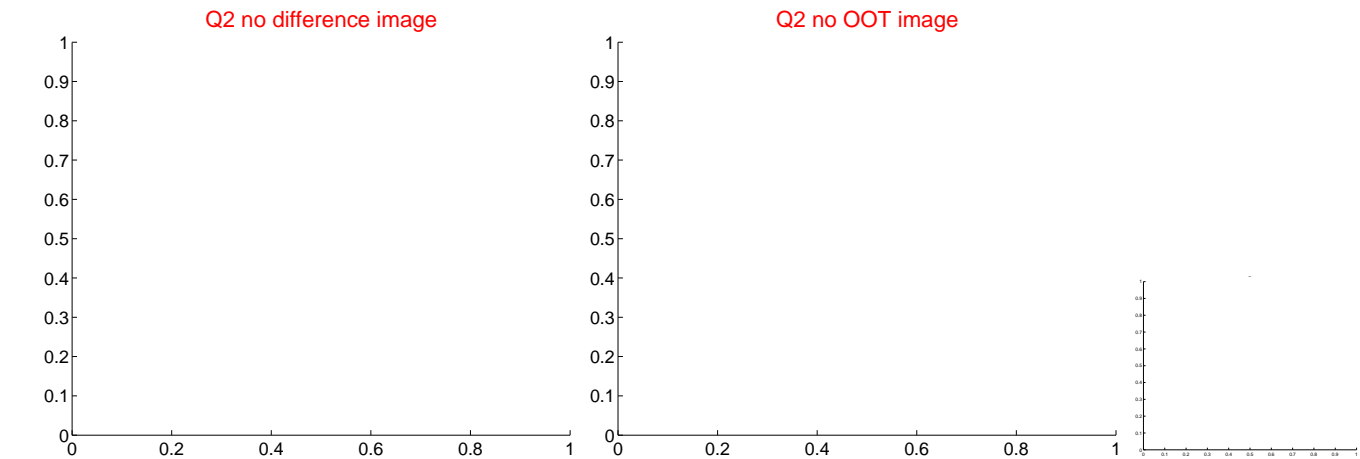
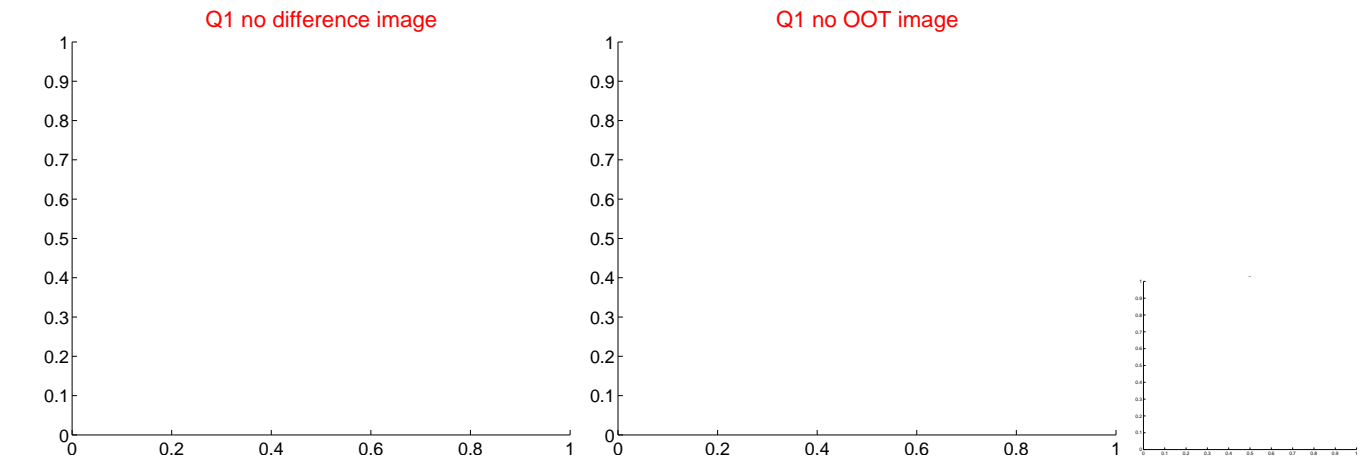
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.235 ± 1.540	2.10	-2.975 ± 1.608	1.271 ± 1.093
PRF-fit source offset from KIC position	3.186 ± 1.755	1.82	-2.976 ± 1.760	1.138 ± 0.785
photometric centroid source offset	0.59 ± 1.14	0.51	-0.41 ± 1.11	-0.42 ± 1.16

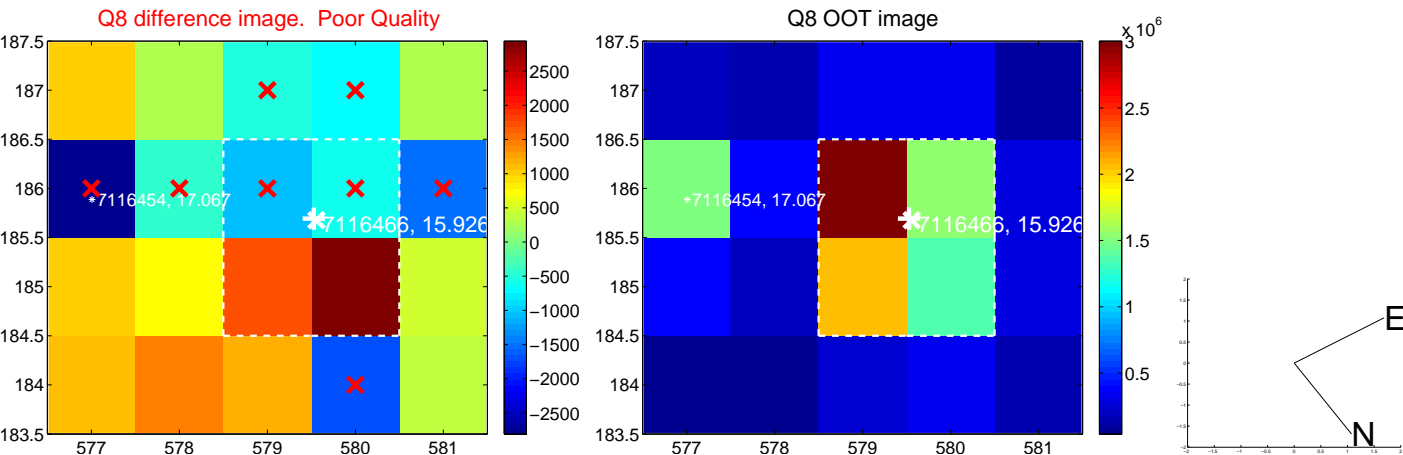
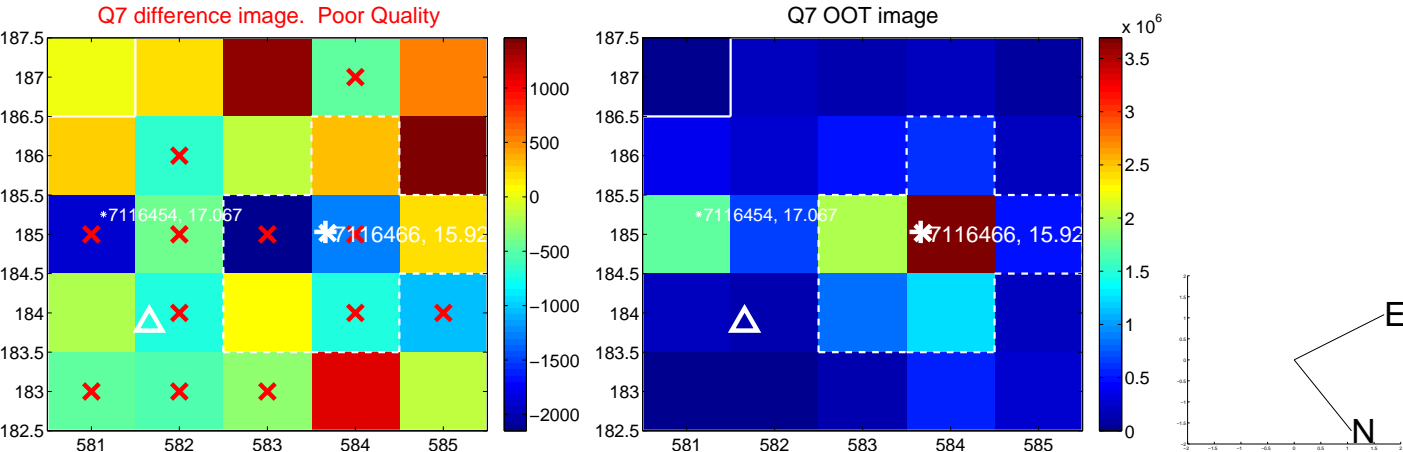
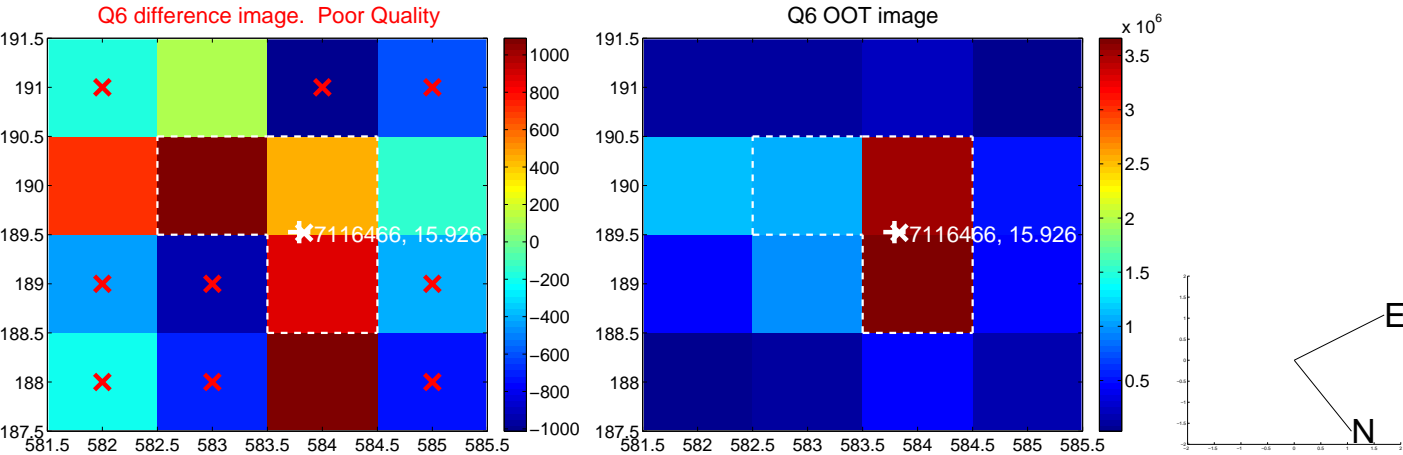
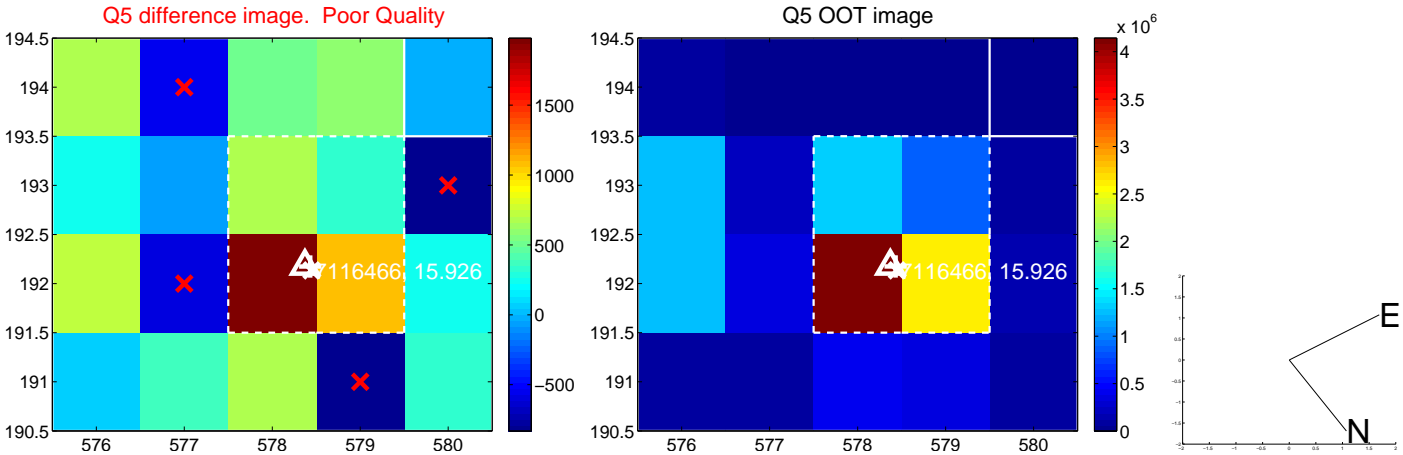


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

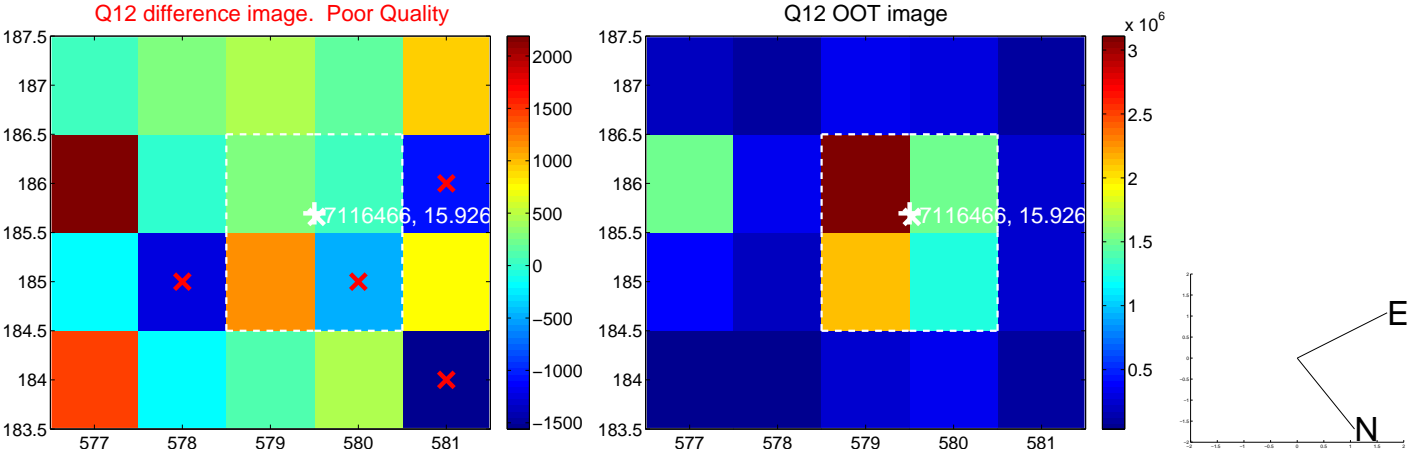
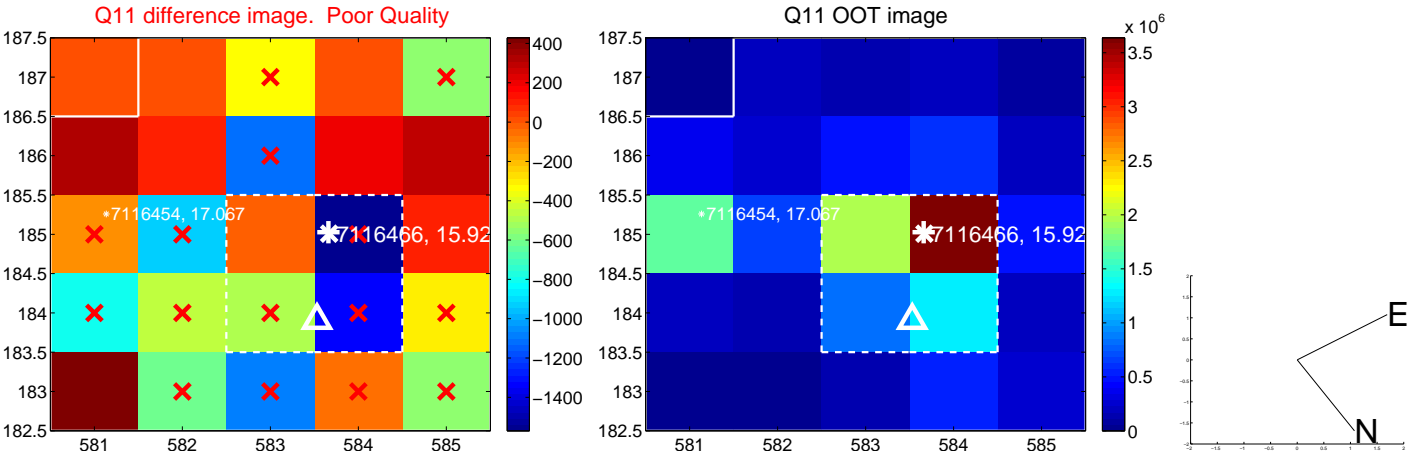
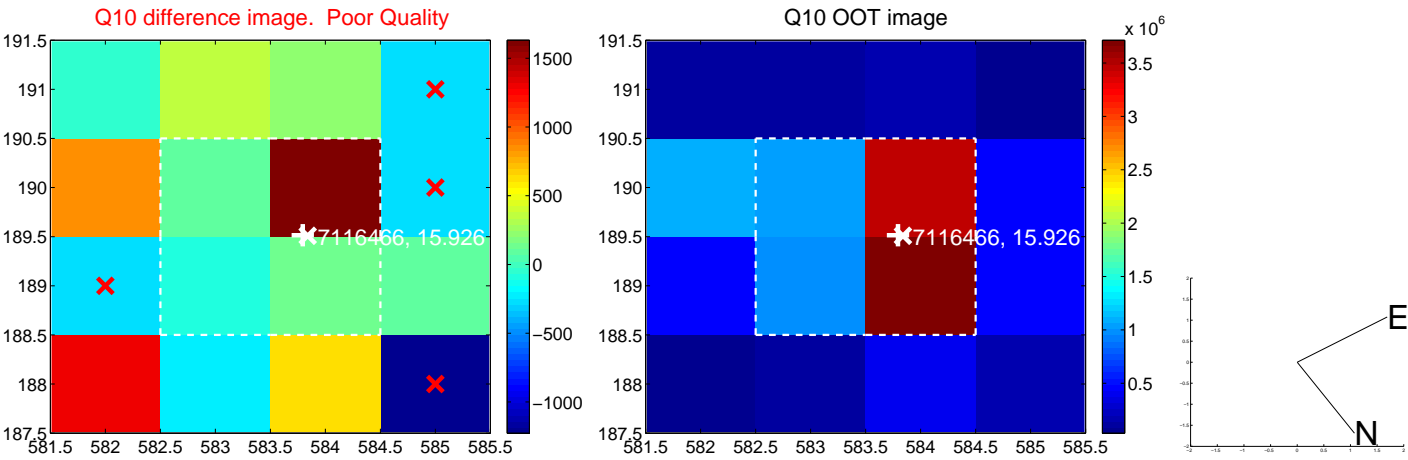
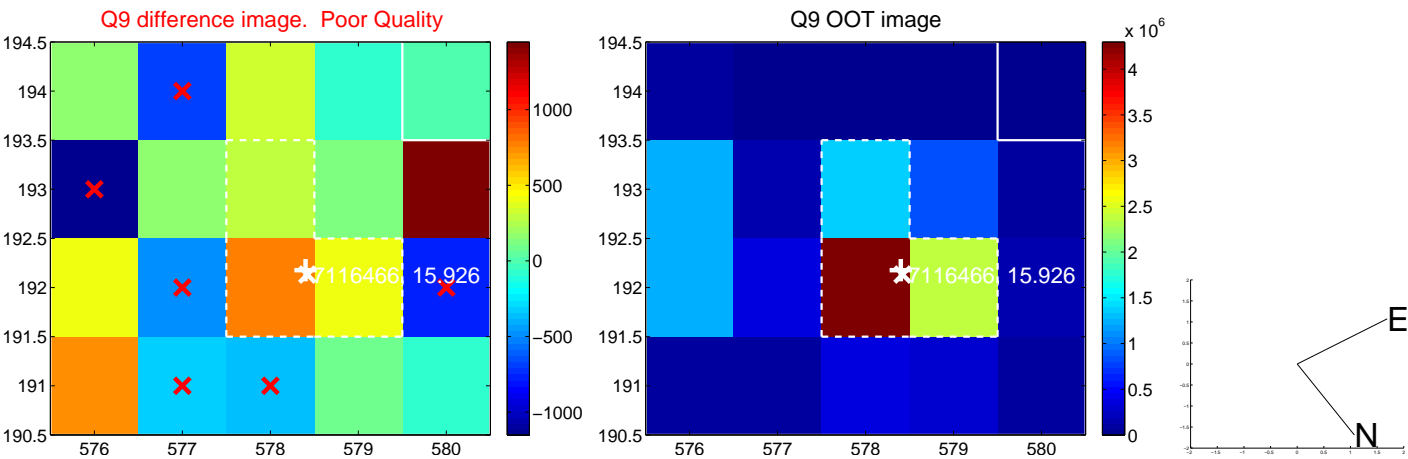
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



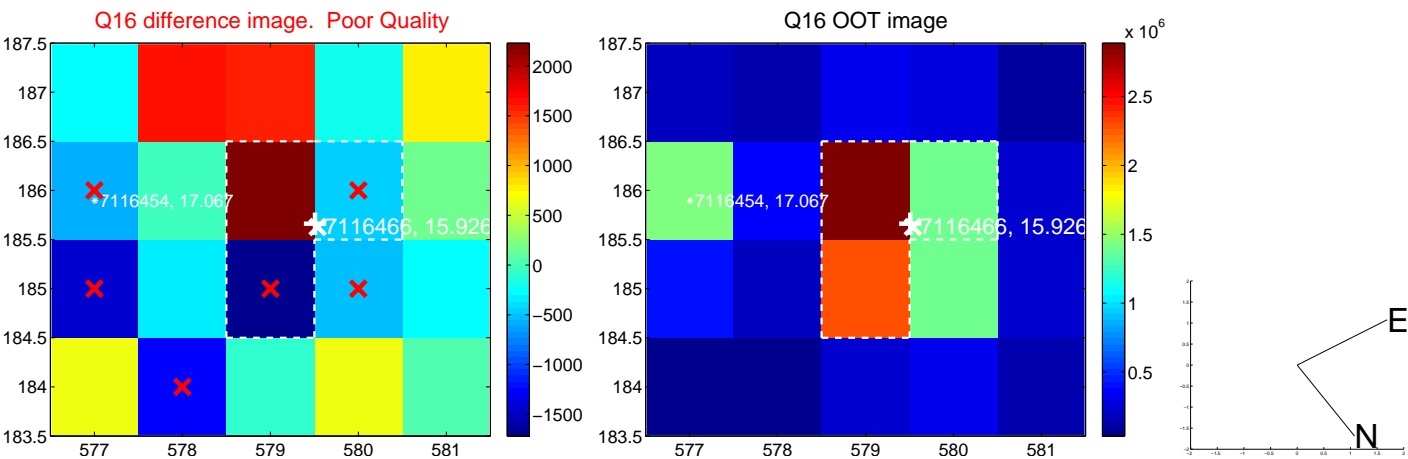
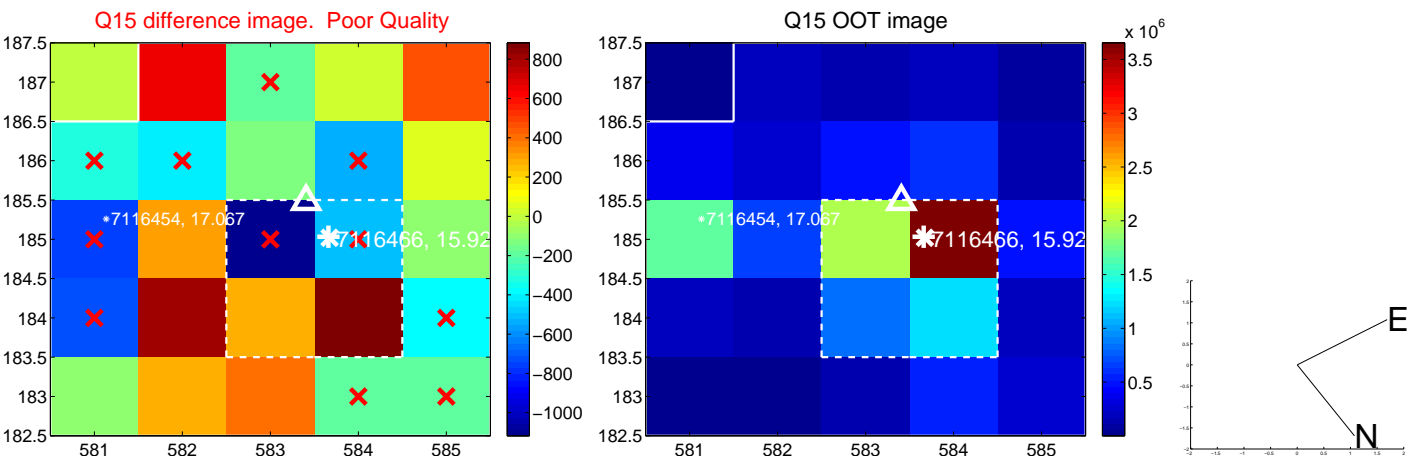
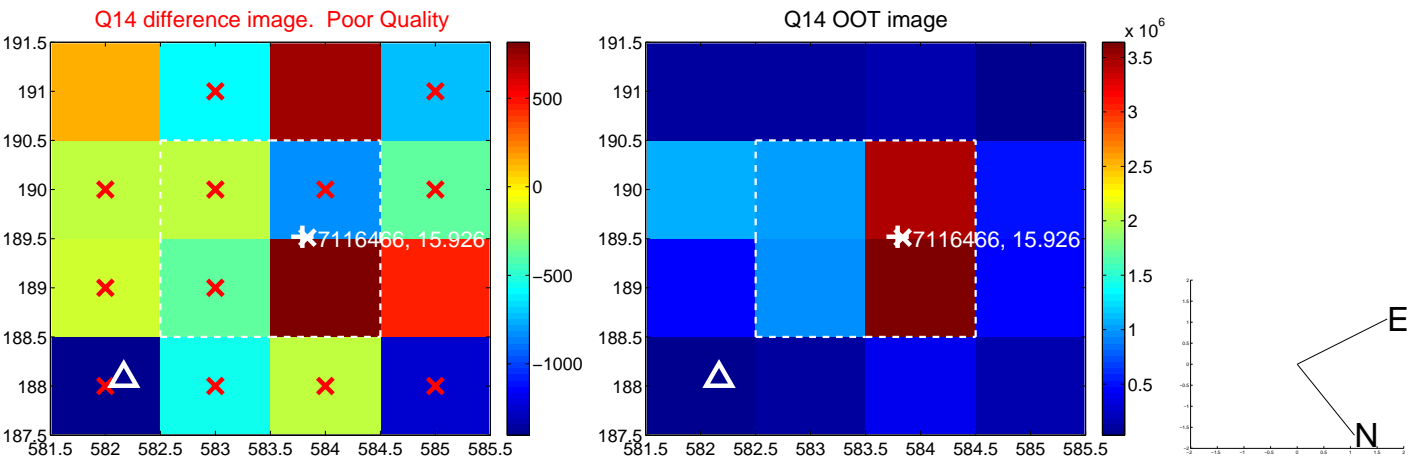
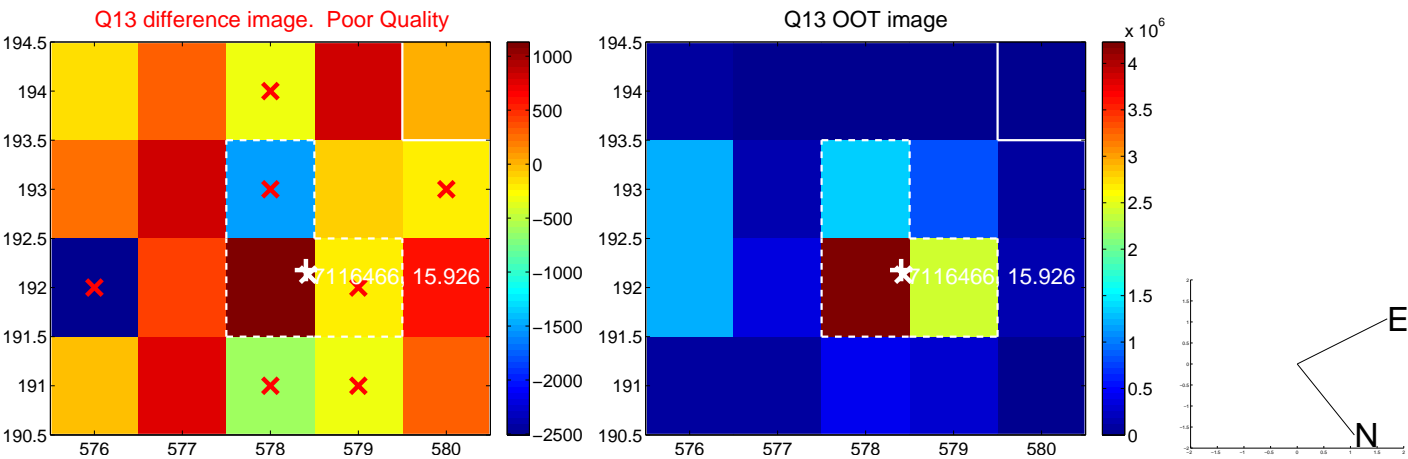
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



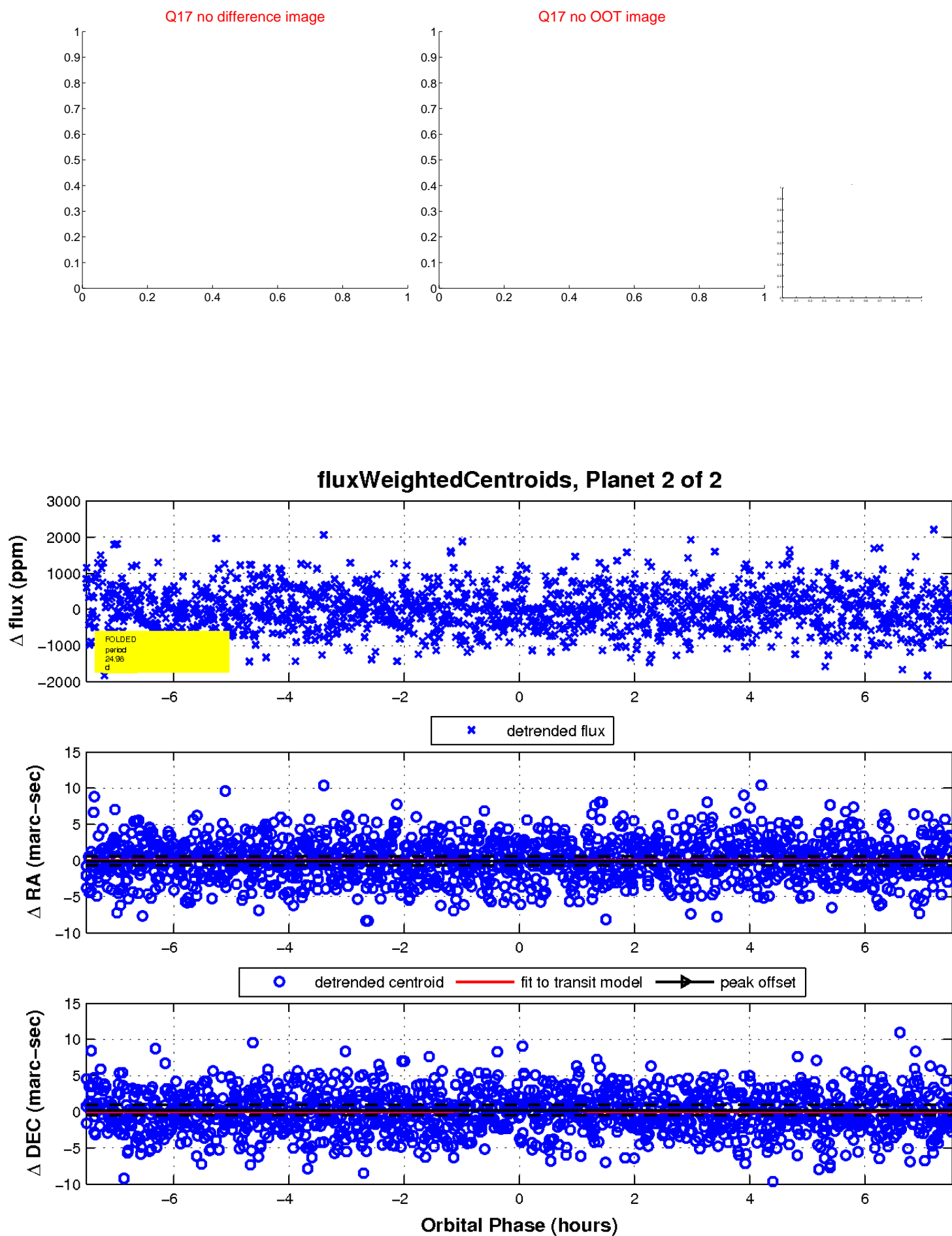
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

