

KIC 007281356

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})
007281356-01	OBS	No	0.566650	131.923667	3.4	3.723	10.8	1.2	1.00	6247	0.19	7374.61
007281356-02	OBS	No	66.604590	161.370287	765.8	1.337	9.4	7.4	1.00	6247	3.13	12.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007281356-01	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—EPHEM_MATCH
007281356-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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 007281356-01

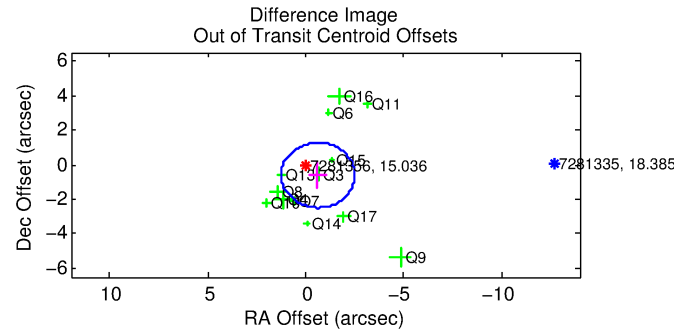
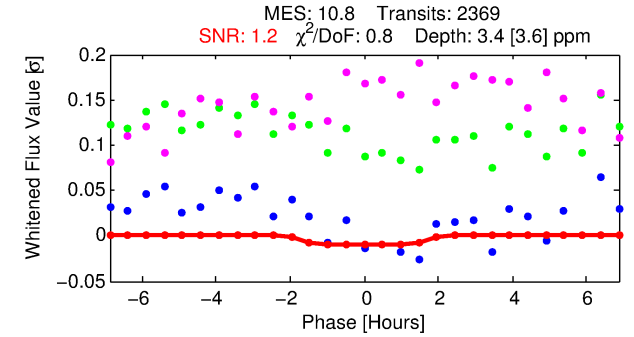
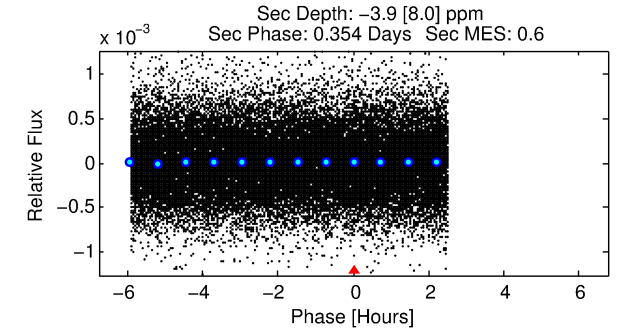
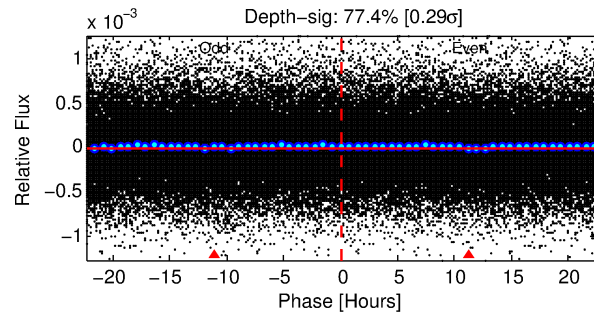
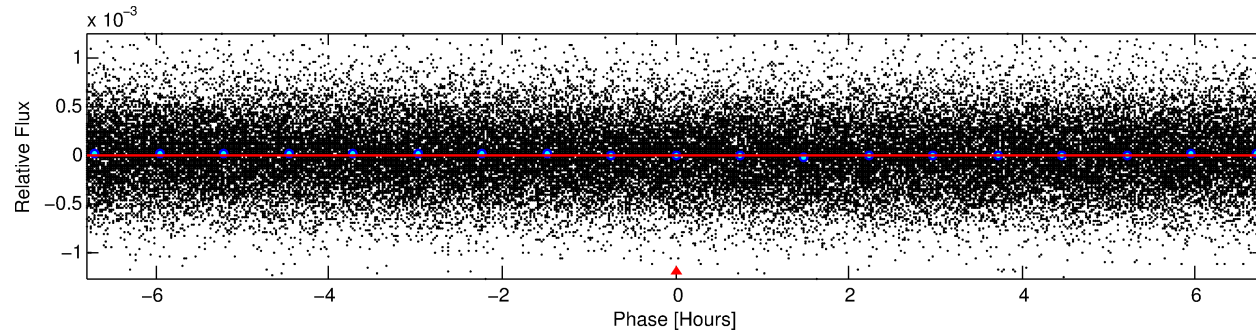
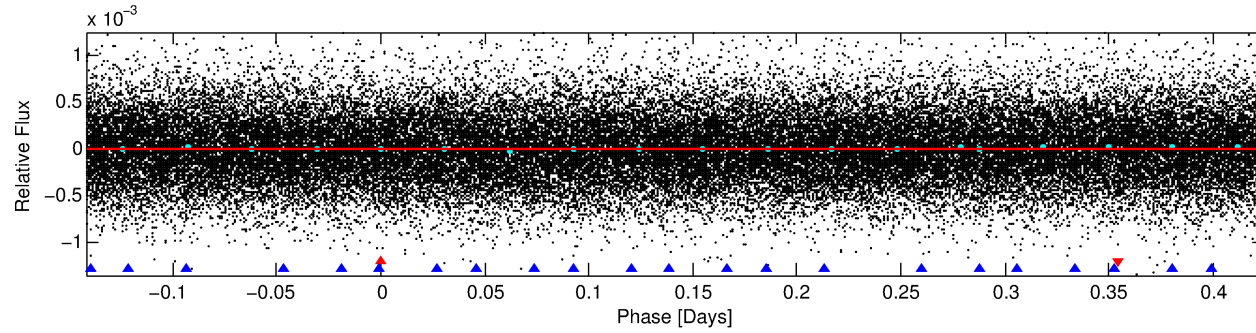
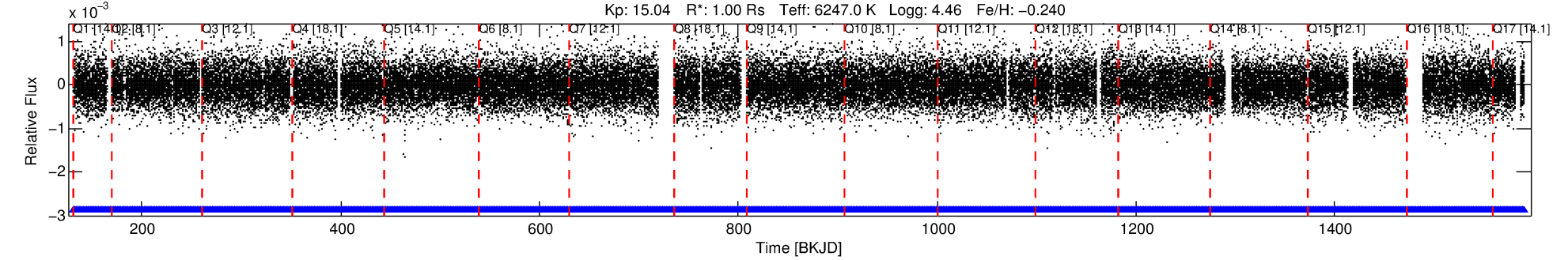
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007281356-01	7281356	RR-Lyr-pri	7198959	1:1	590.8	17	147	7.86	15.03	207770.00	Direct-PRF	0	3.63	16.51

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7281356 Candidate: 1 of 2 Period: 0.567 d
KOI: K06853 Corr: No Ephemeris Match

Kp: 15.04 R*: 1.00 Rs Teff: 6247.0 K Logg: 4.46 Fe/H: -0.240



DV Fit Results:

Period = 0.56665 [0.00009] d
Epoch = 131.9237 [0.0383] BKJD
Rp/R* = 0.0017 [0.0052]
a/R* = 1.25 [6.77]
b = 0.51 [22.47]
Seff = 7374.61 [3203.24]
Teq = 2363 [257] K
Rp = 0.19 [0.57] Re
a = 0.0136 [0.0038] AU
Ag = N/A
Teffp = N/A

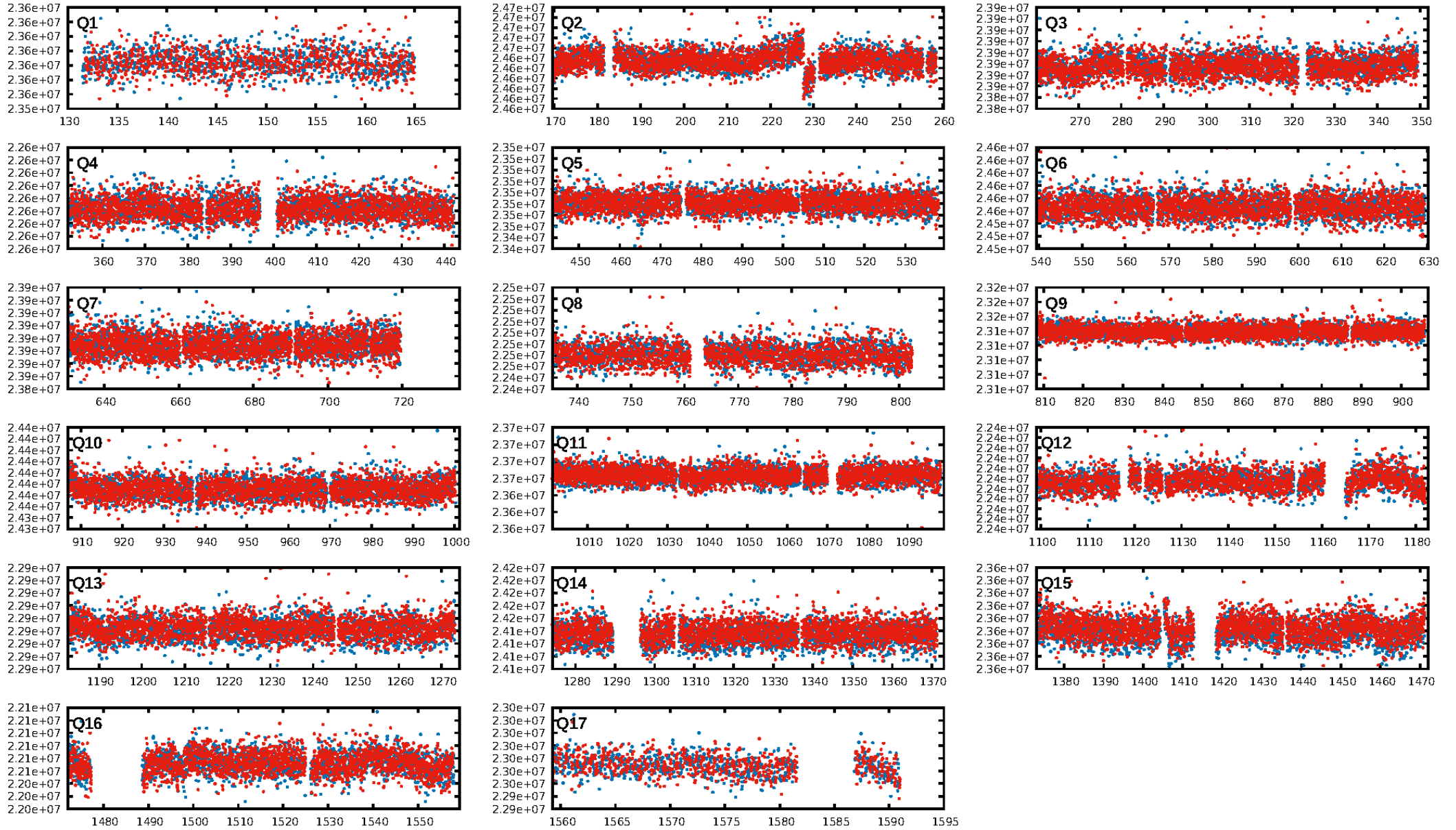
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [400.65σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.40e-21
RollingBand-fgt: 1.00 [2262/2262]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.868 arcsec [1.39σ]
KicOffset-rm: 0.911 arcsec [1.46σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 1.00 [17/17]

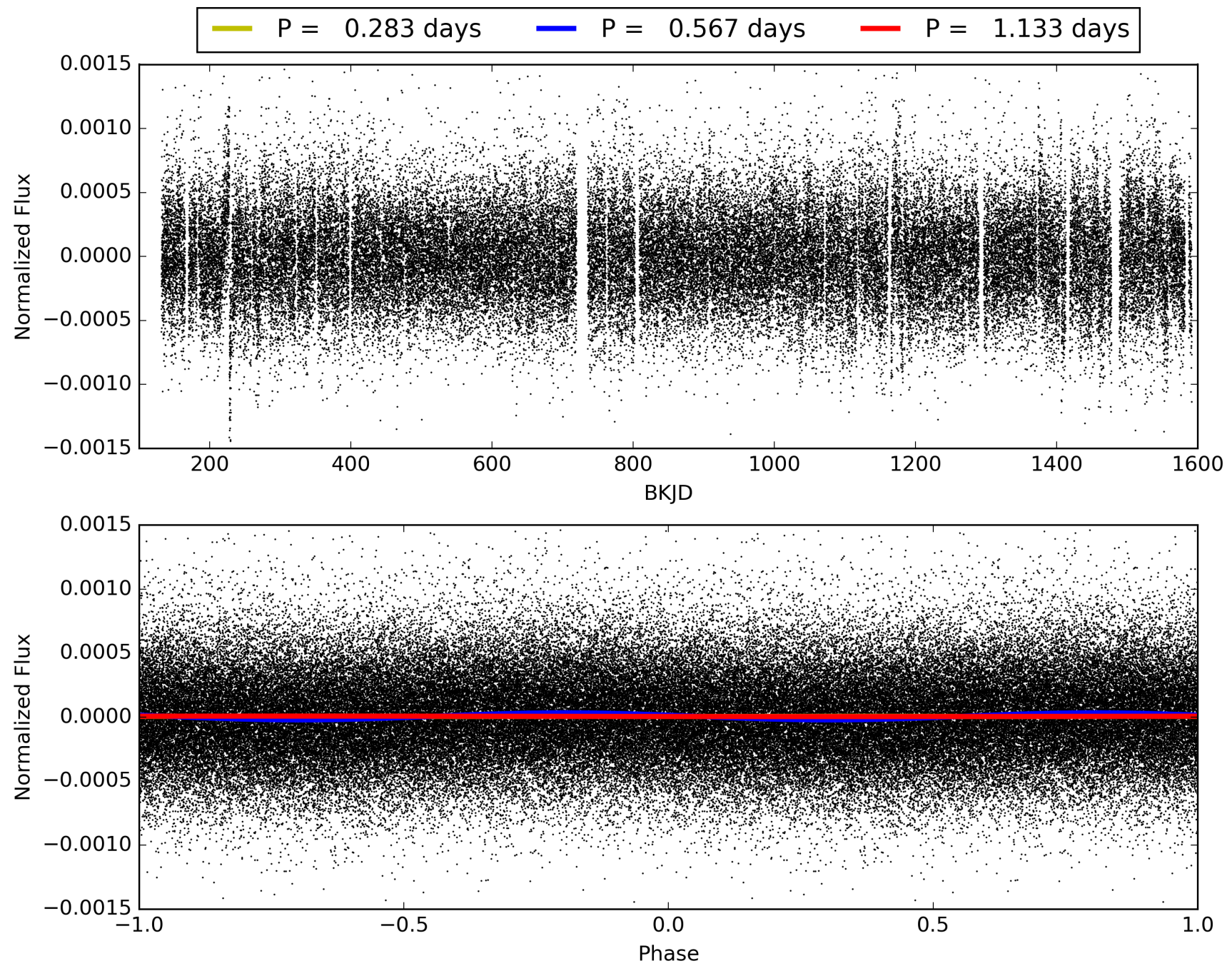
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007281356-01, PDC Light Curves

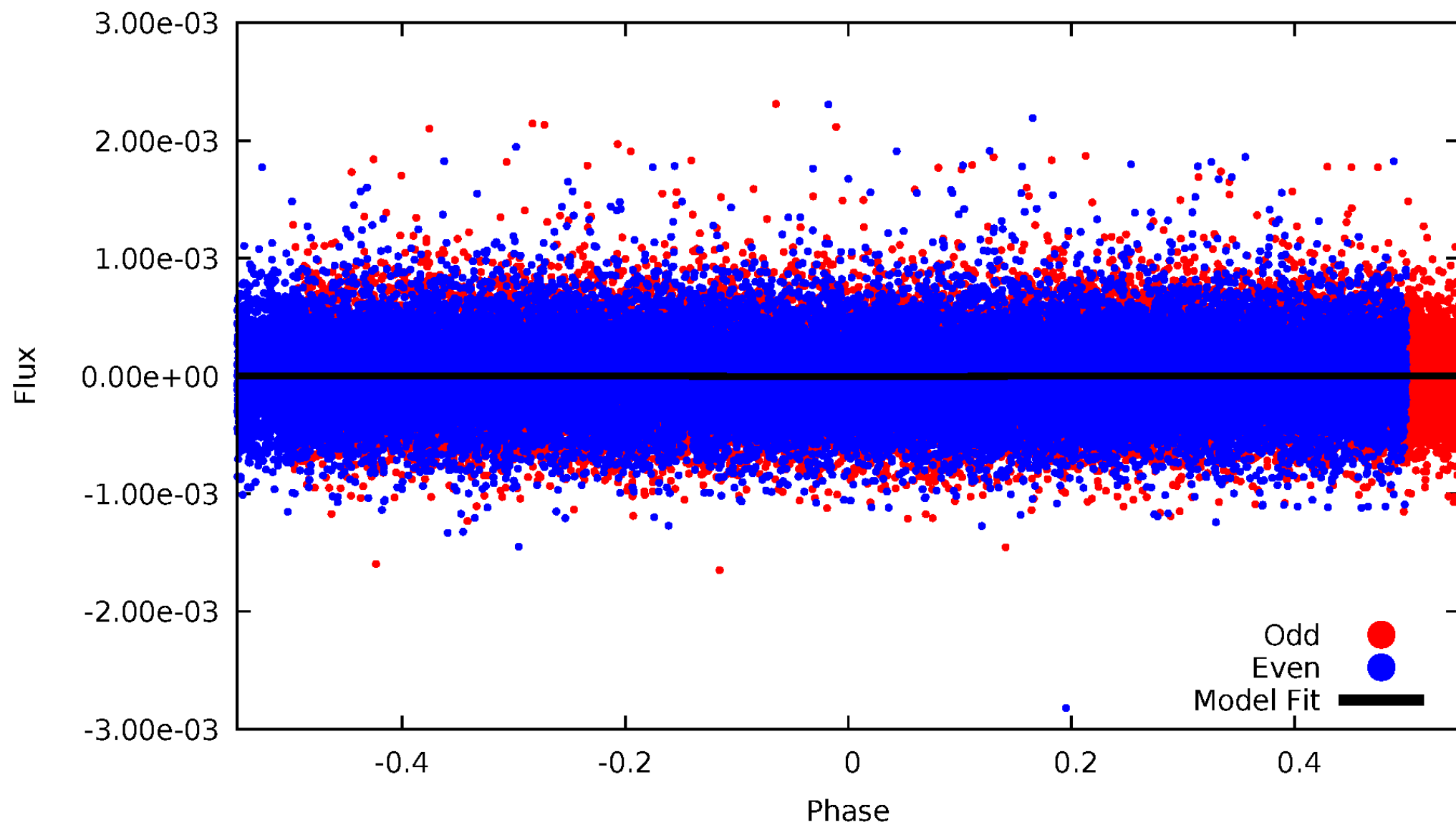


TCE 007281356-01



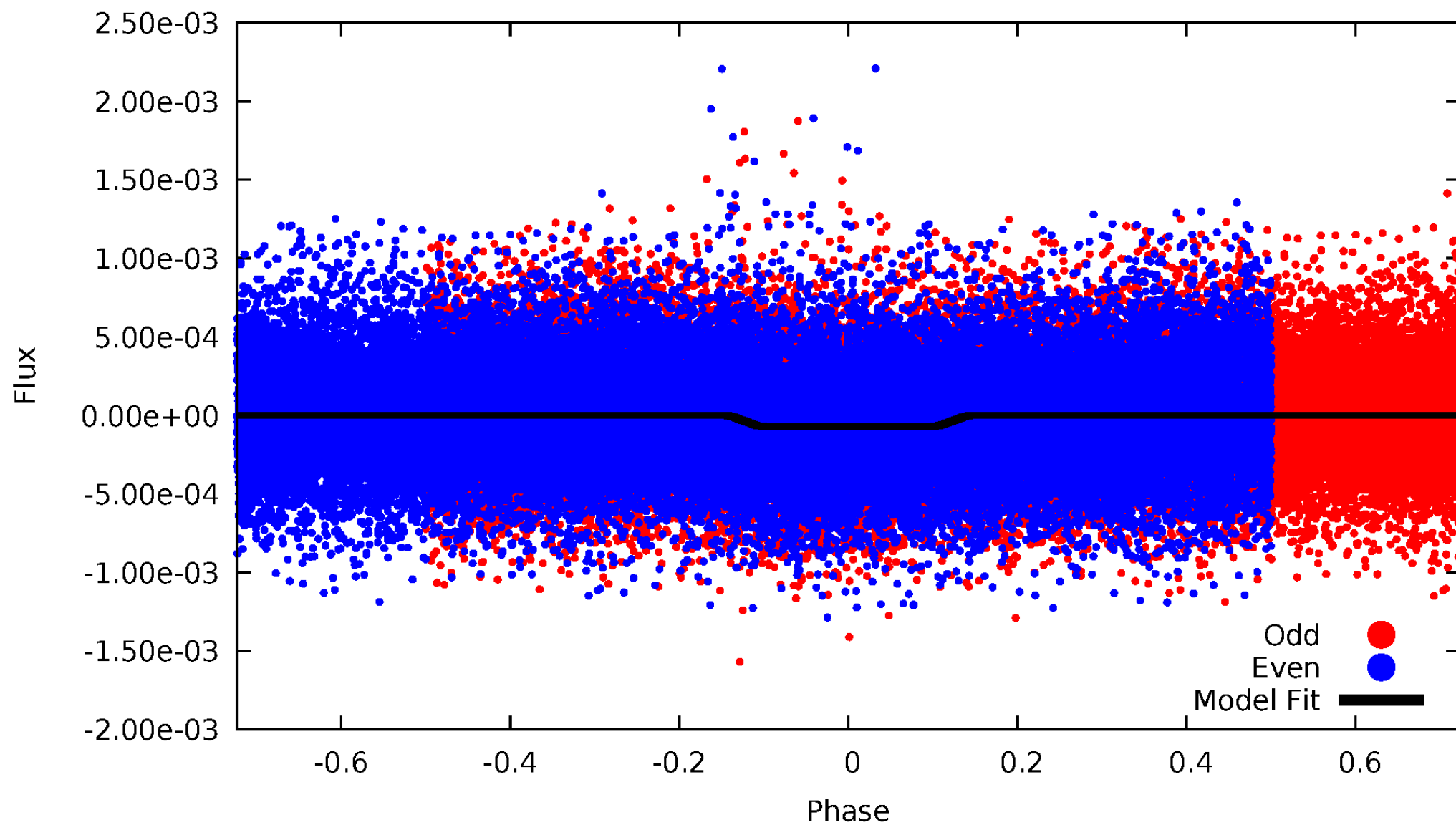
DV Odd/Even

TCE 007281356-01



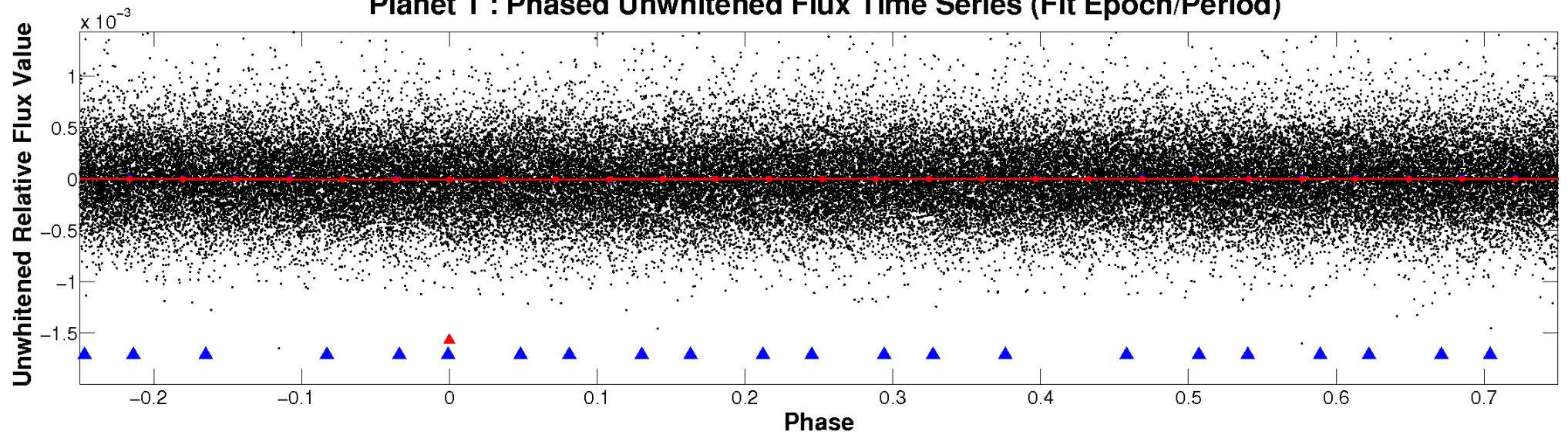
ALT Odd/Even

TCE 007281356-01

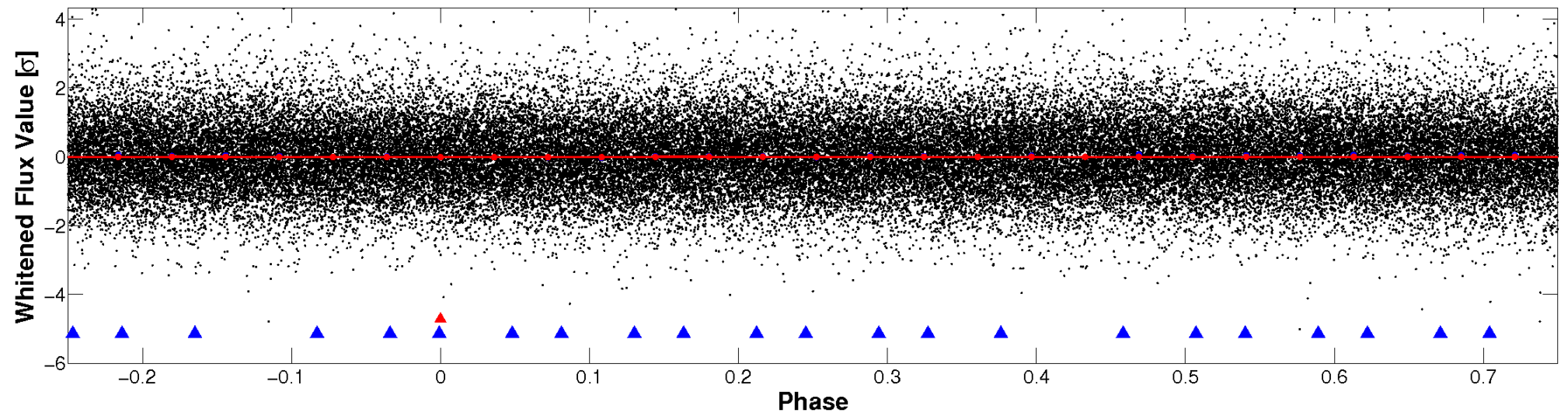


Non-Whitened Vs. Whitened Light Curve

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

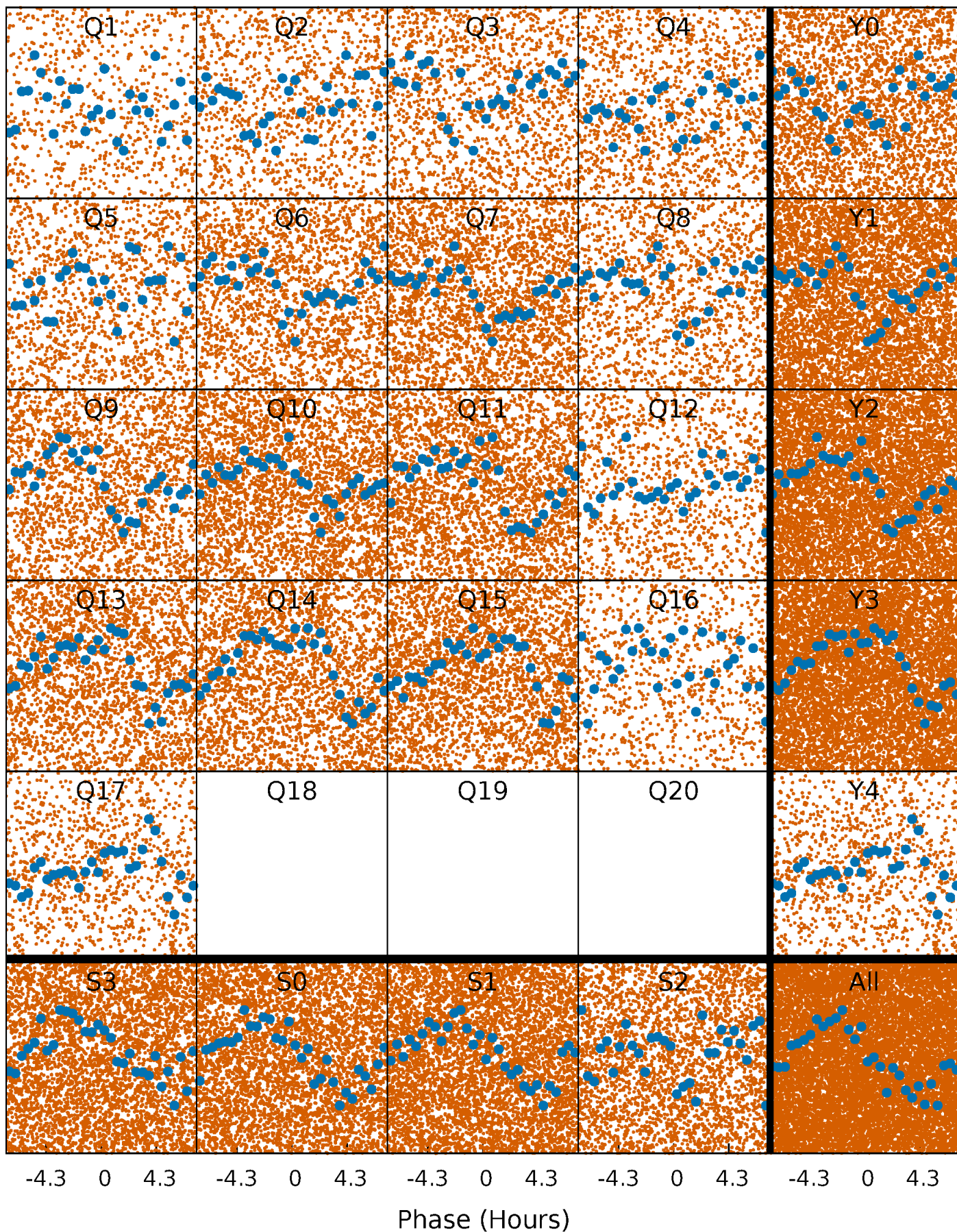


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



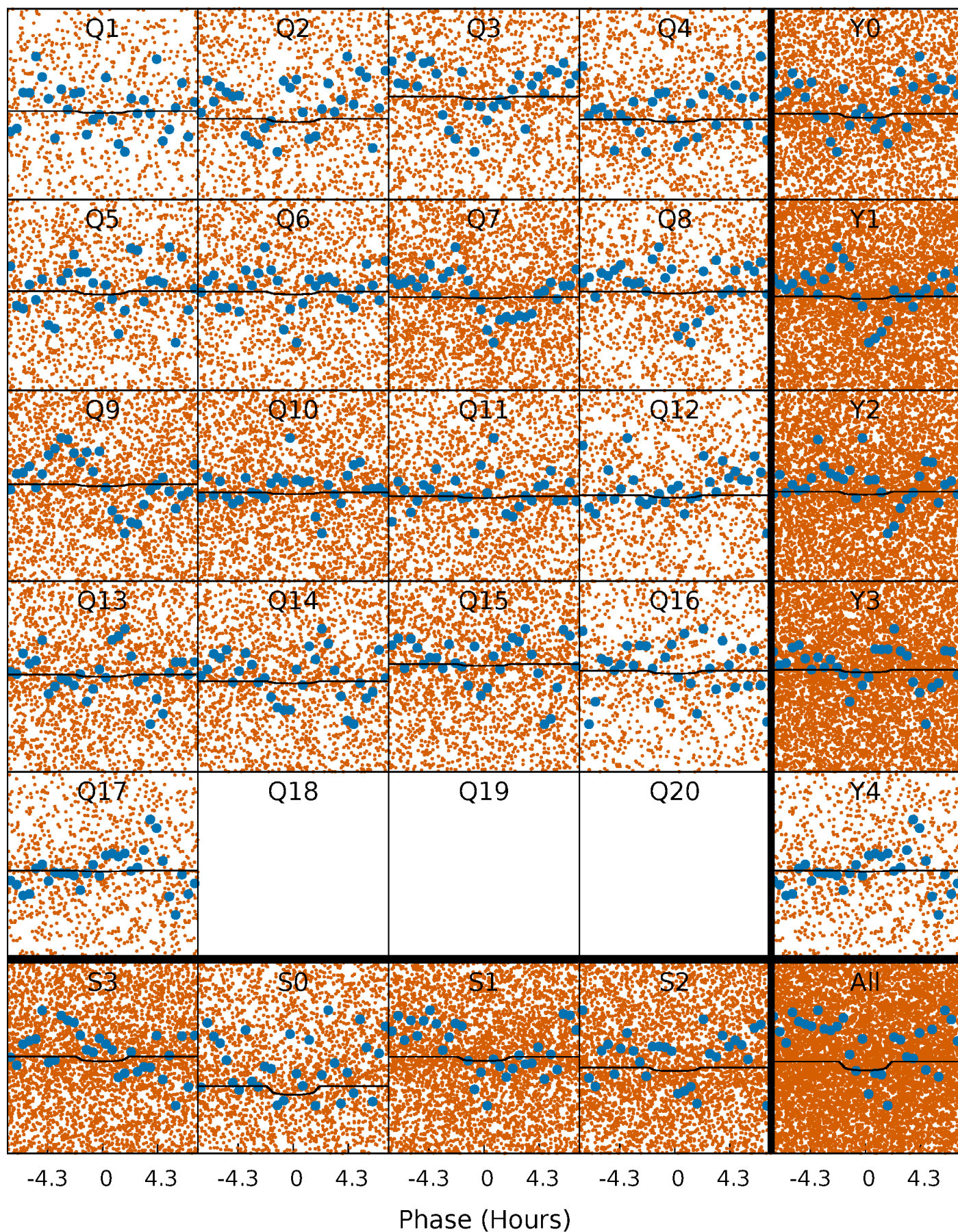
PDC Quarter-Phased Transit Curves

TCE 007281356-01 P= 0.566650 Days $T_0=131.923666$ (BKJD)



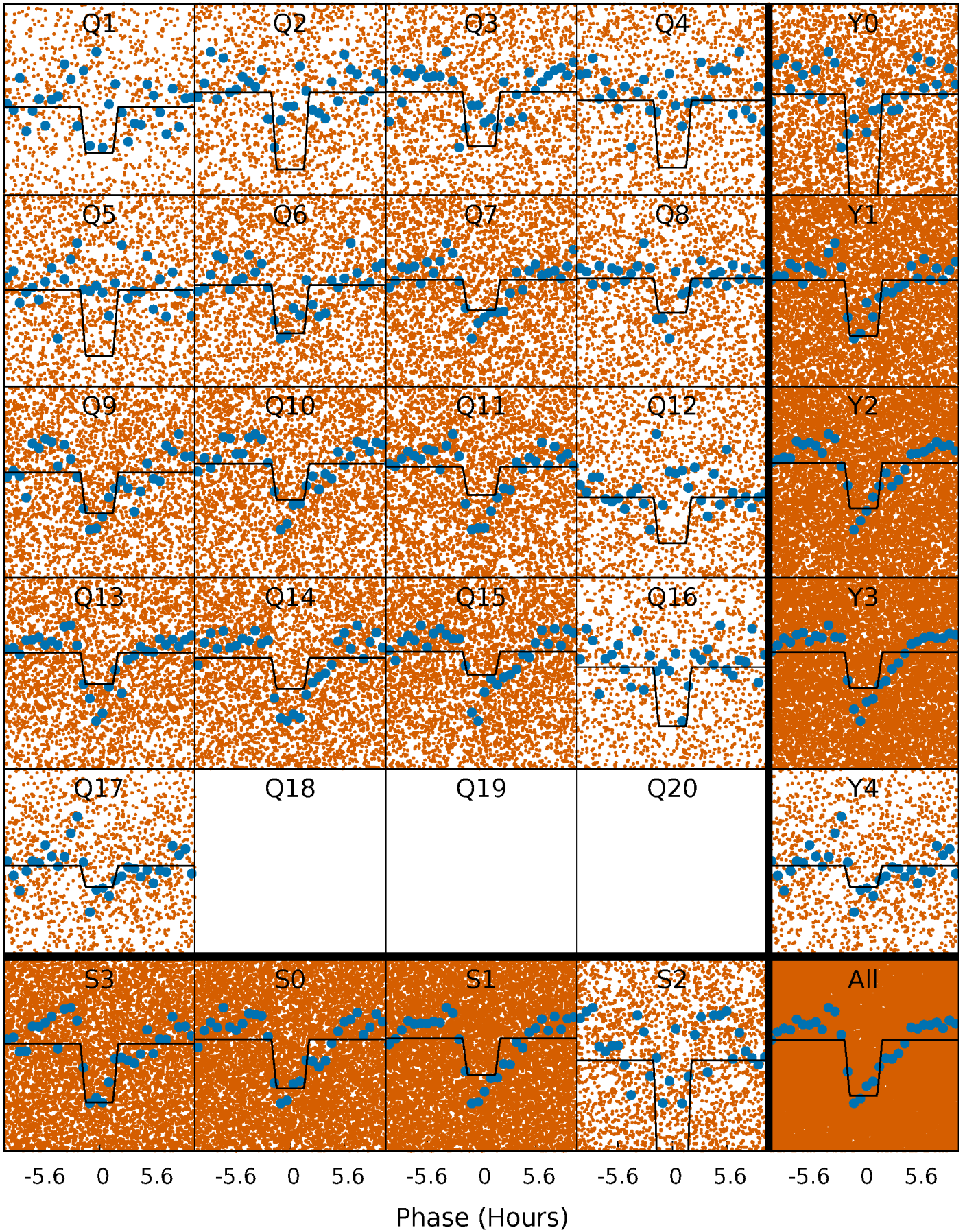
DV Quarter-Phased Transit Curves

TCE 007281356-01 P= 0.566650 Days $T_0=131.923666$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

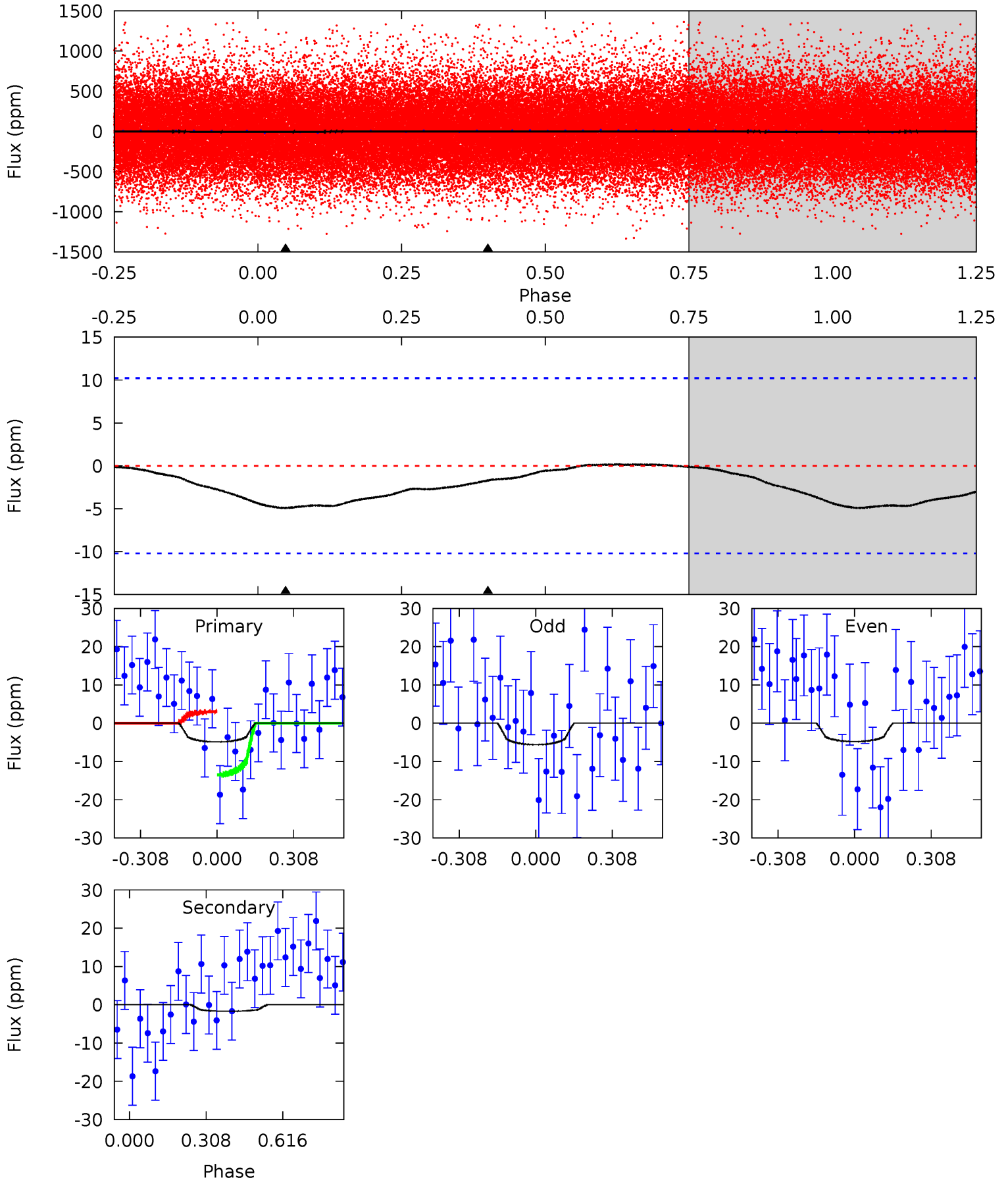
TCE 007281356-01 P= 0.566782 Days $T_0=131.853563$ (BKJD)



DV Model-Shift Uniqueness Test

007281356-01, P = 0.566650 Days, E = 131.357016 Days

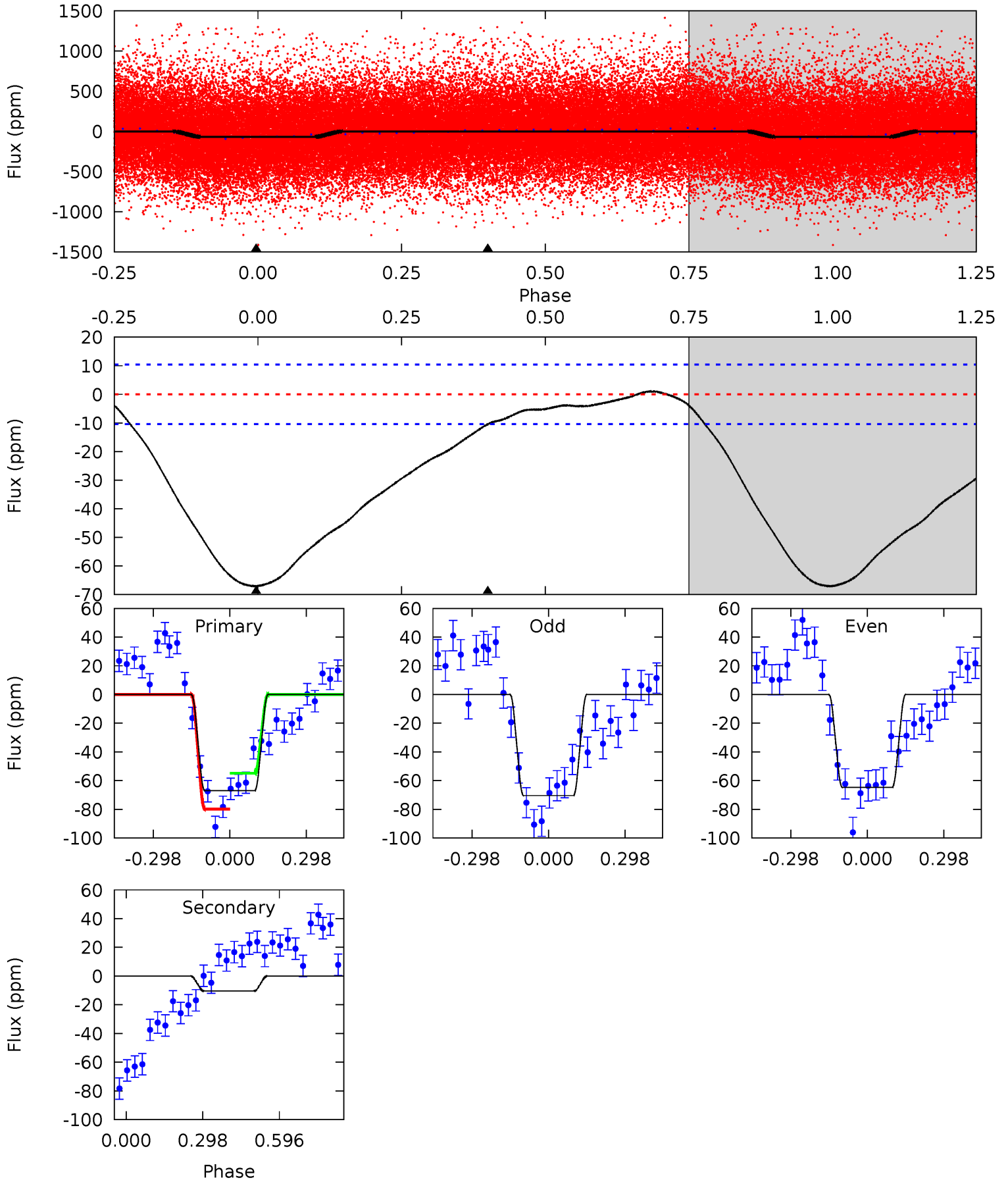
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.08	0.72	0	0	4.32	1.02	0.05	2.08	2.08	0.72	0.72	0.17	0.52	0.03	2.25



Alt Model-Shift Uniqueness Test

007281356-01, P = 0.566782 Days, E = 131.286781 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	4.34	0	0	4.33	1.04	0.53	27.9	27.9	4.34	4.34	1.20	0.96	0.02	5.22



Stellar Parameters For KIC 007281356

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6247^{+169}_{-225}	$4.458^{+0.056}_{-0.224}$	$-0.240^{+0.250}_{-0.300}$	$1.002^{+0.335}_{-0.112}$	$1.045^{+0.144}_{-0.129}$	$1.464^{+0.430}_{-0.787}$
	+3%/-4%	+1%/-5%	+104%/-125%	+33%/-11%	+14%/-12%	+29%/-54%
Source	PHO1	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 007281356-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 2	$0.51^{+0.47}_{-0.38}$	3377^{+253}_{-176}	2995^{+3062}_{-6592}	$0.446^{+6.089}_{-0.628}$
Alt.	-10 ± 2	$1.03^{+0.63}_{-0.56}$	3364^{+270}_{-181}	3722^{+1716}_{-1071}	$0.929^{+4.091}_{-0.576}$

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 $A_{obs} \gg 1.0$

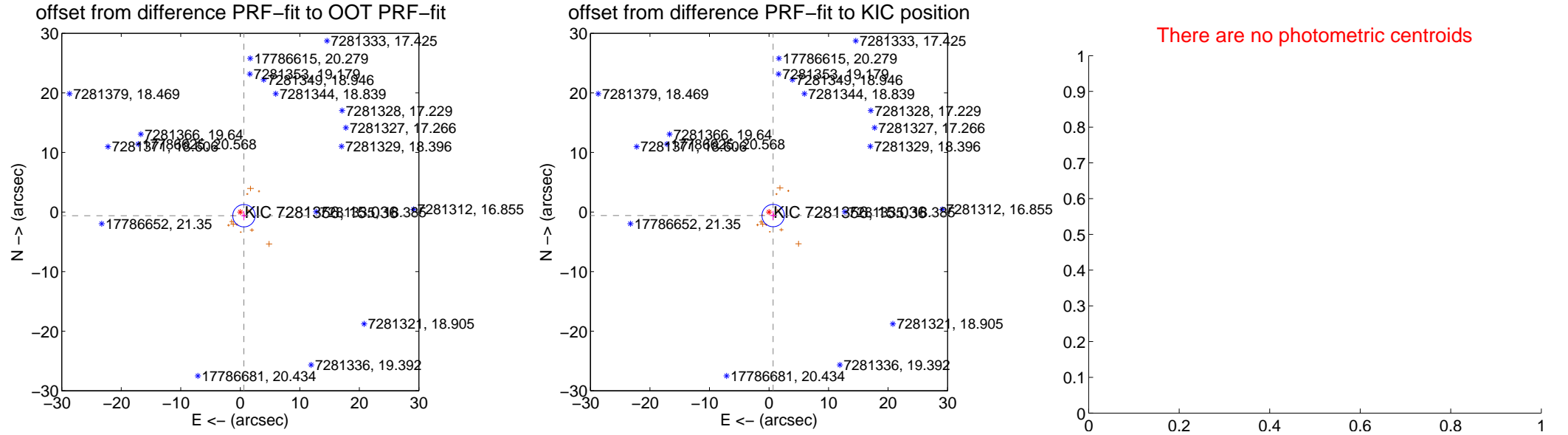
DV Centroid Data

Supplemental centroid analysis for 007281356-01. Kepler magnitude: 15.04. Transit SNR 1.17

There are 0 quarters with good PRF difference image offsets

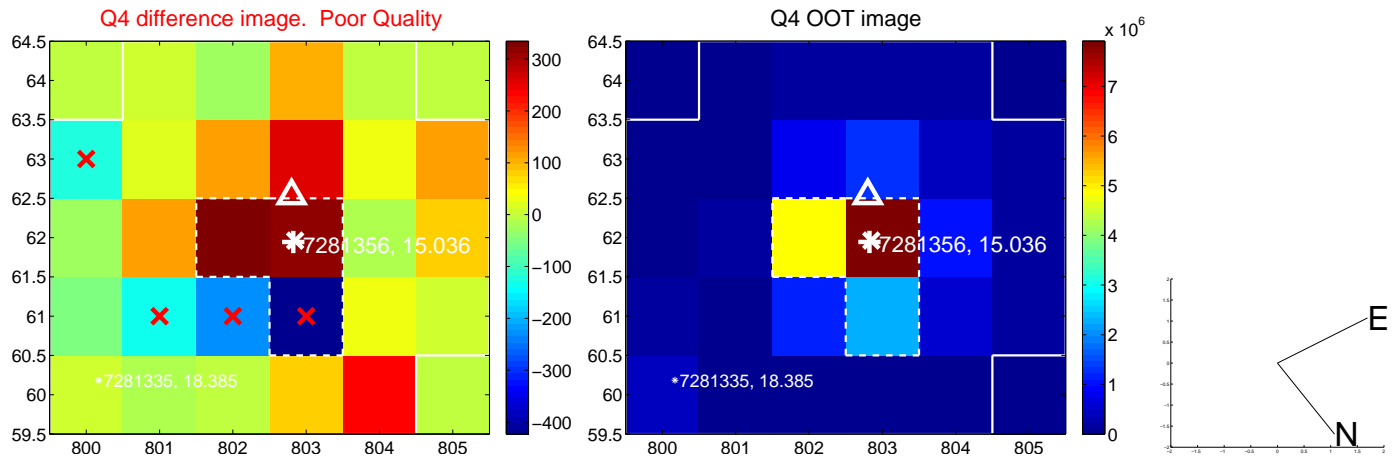
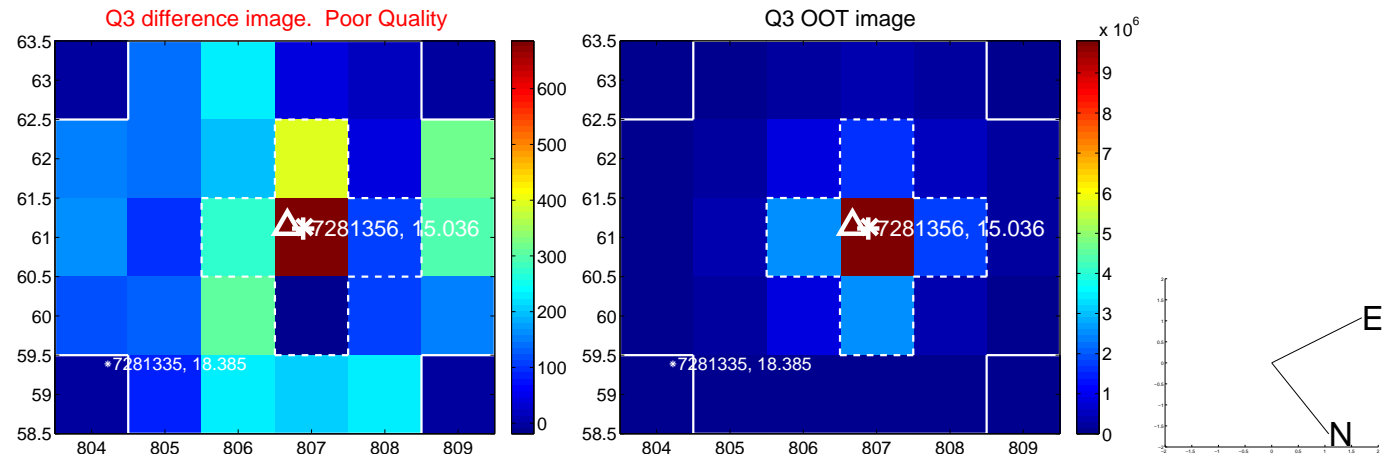
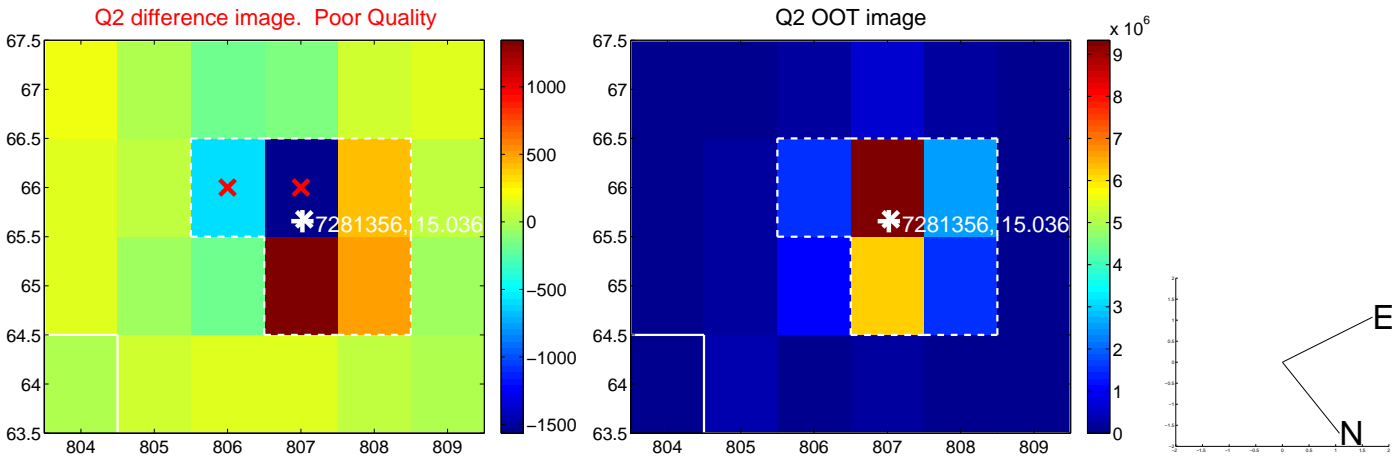
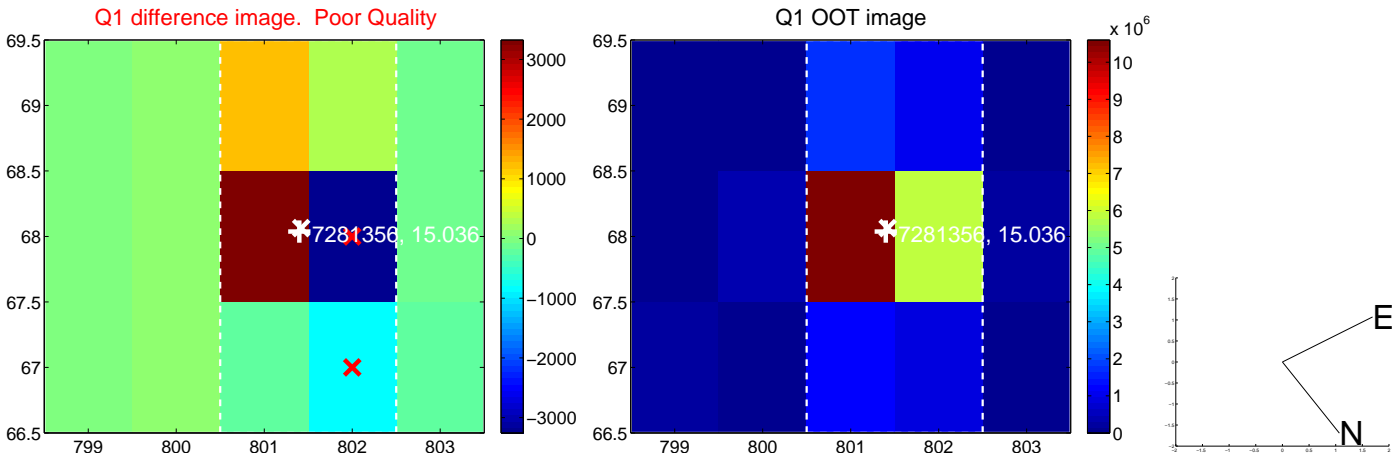
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.868 ± 0.626	1.39	-0.610 ± 0.465	-0.617 ± 0.750
PRF-fit source offset from KIC position	0.911 ± 0.626	1.46	-0.694 ± 0.525	-0.591 ± 0.773
photometric centroid source offset	—	—	—	—

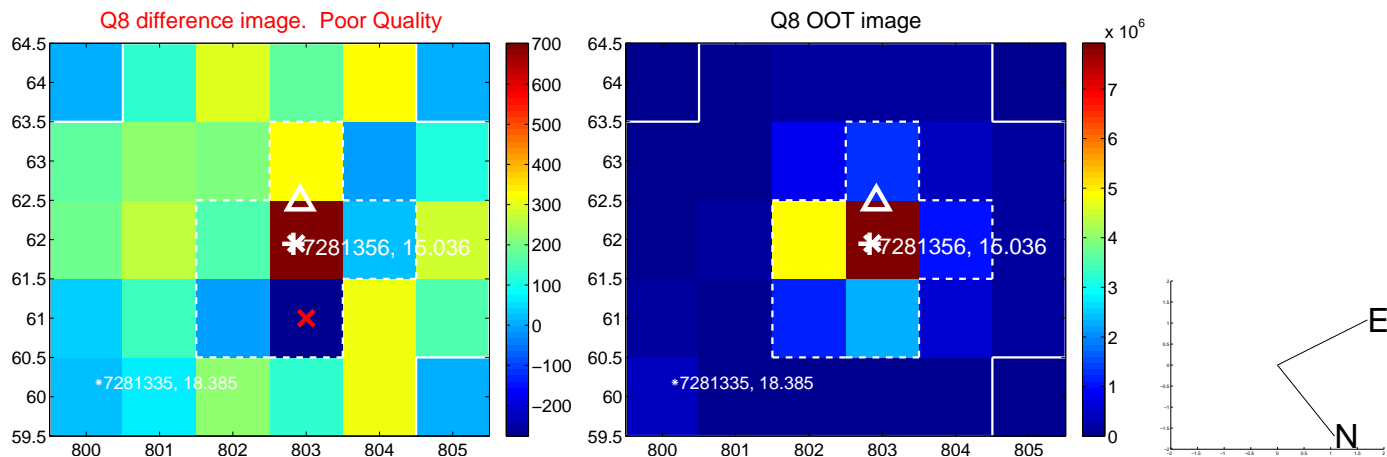
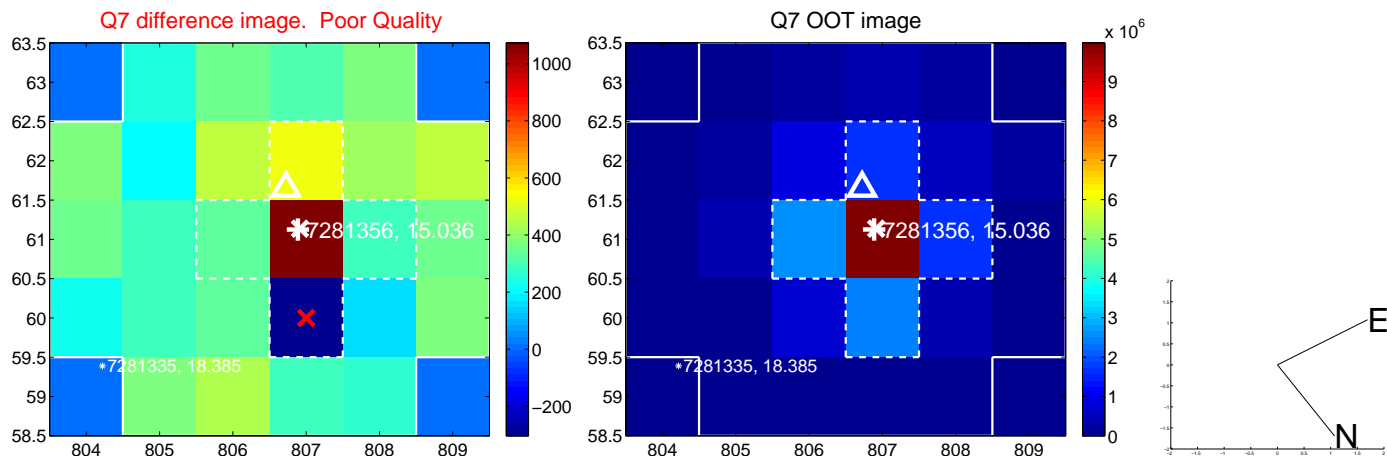
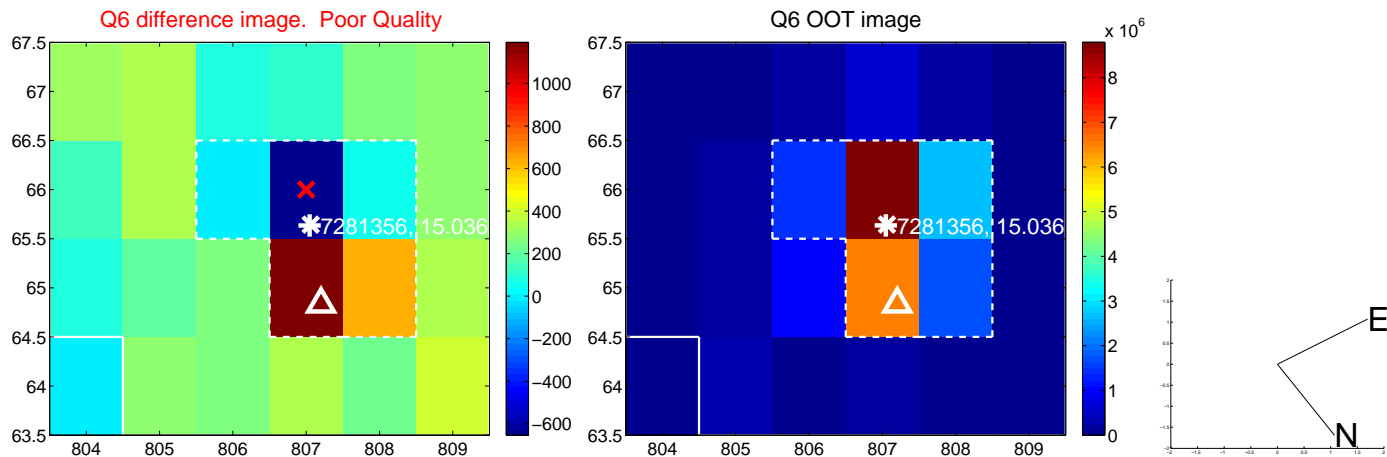
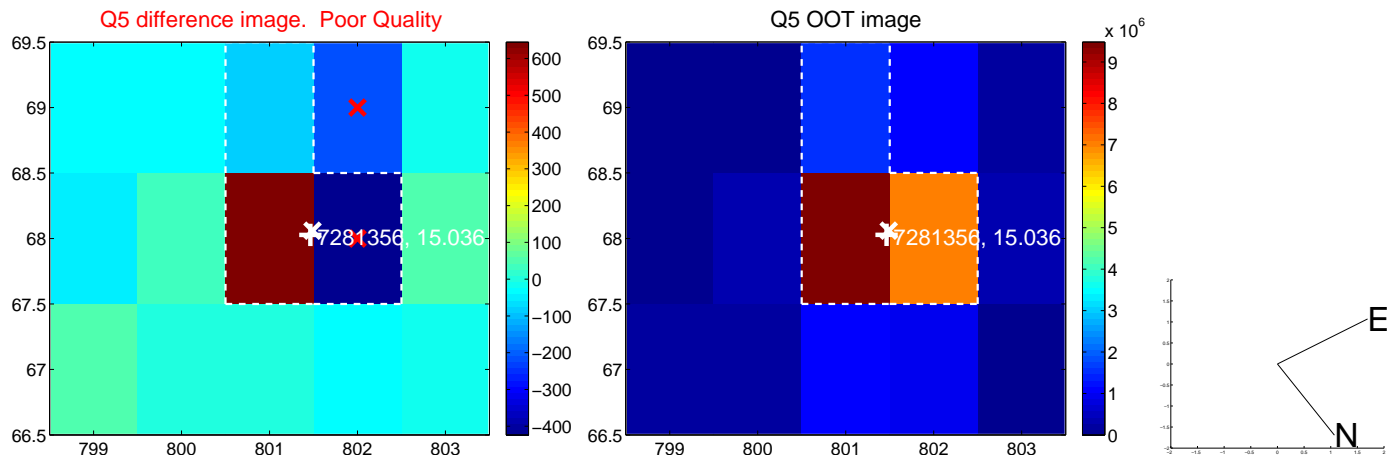


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

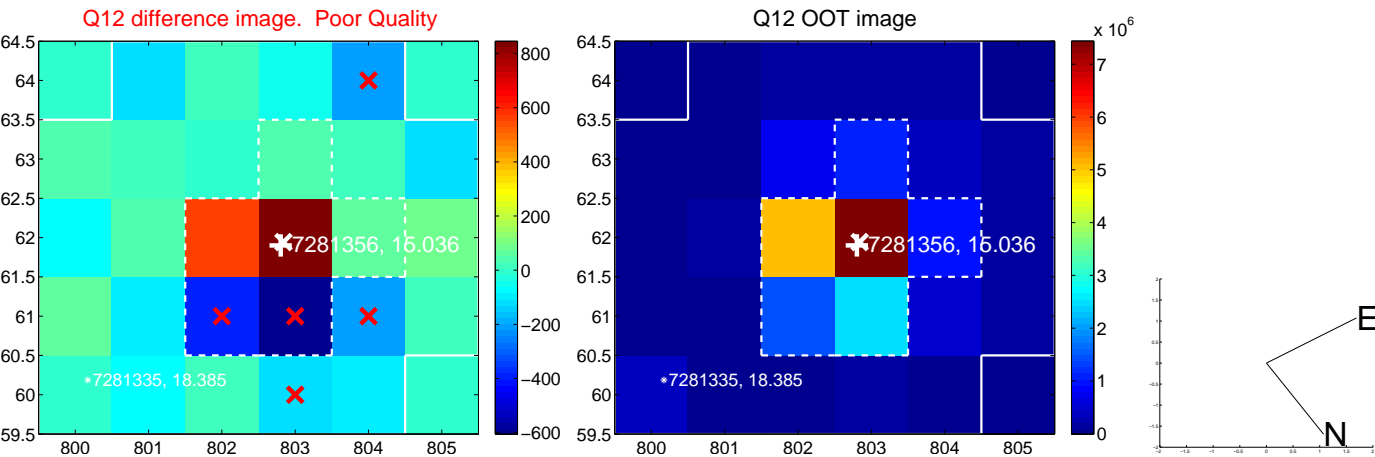
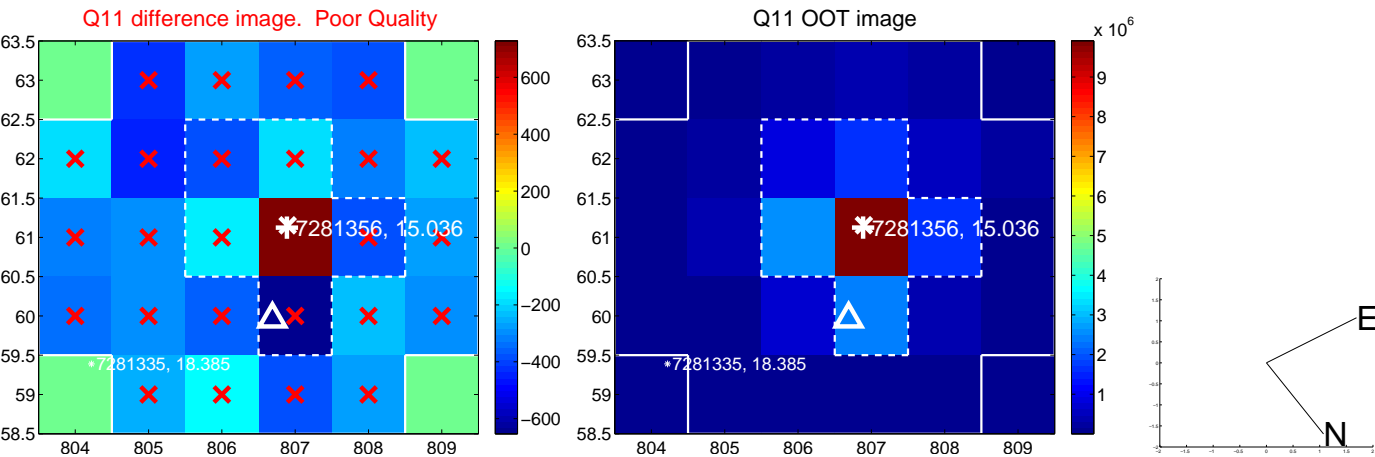
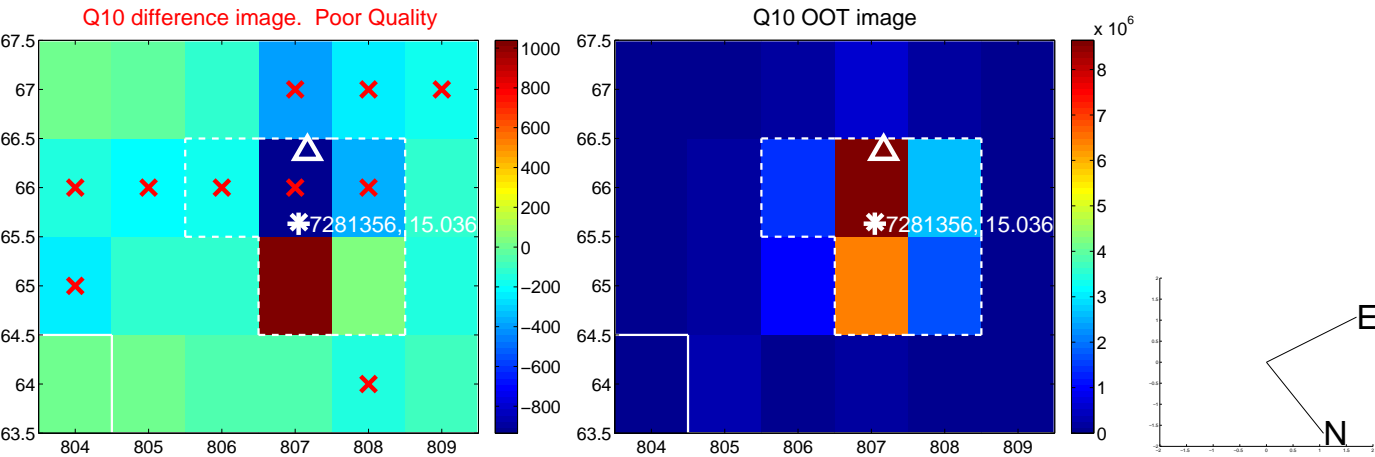
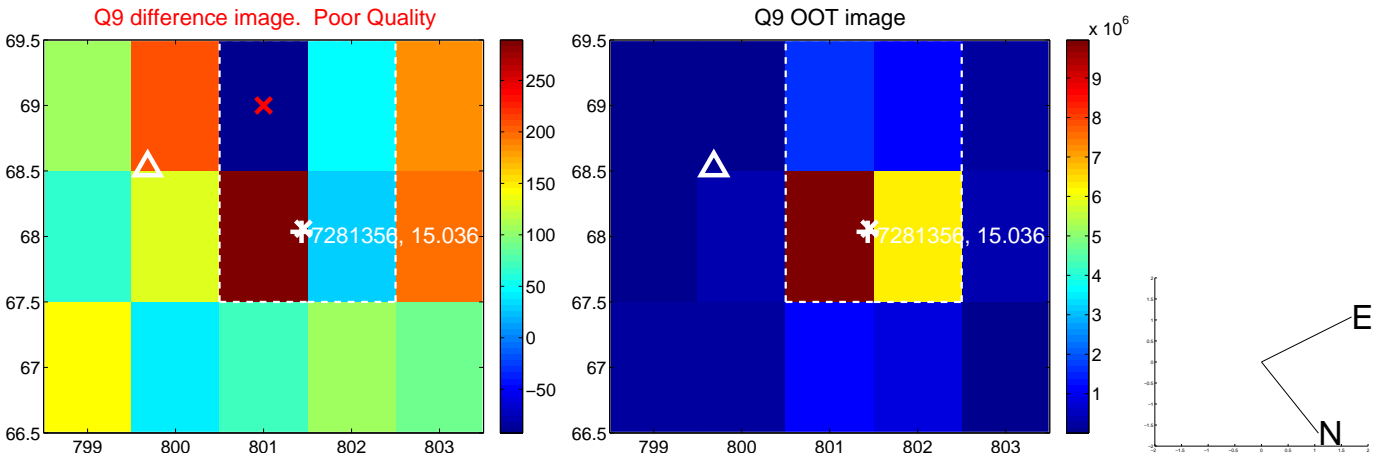
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



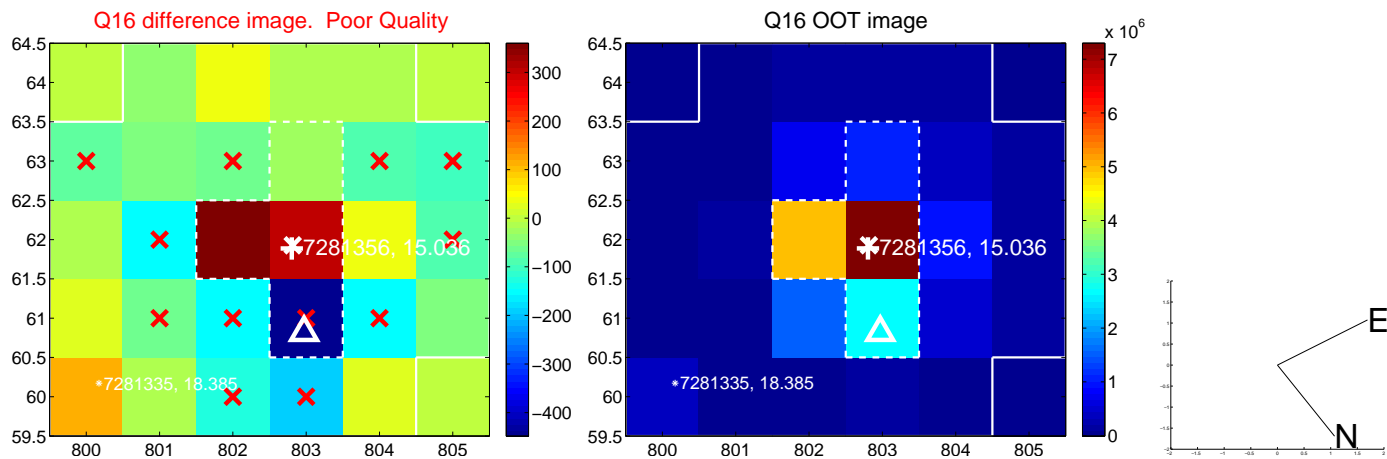
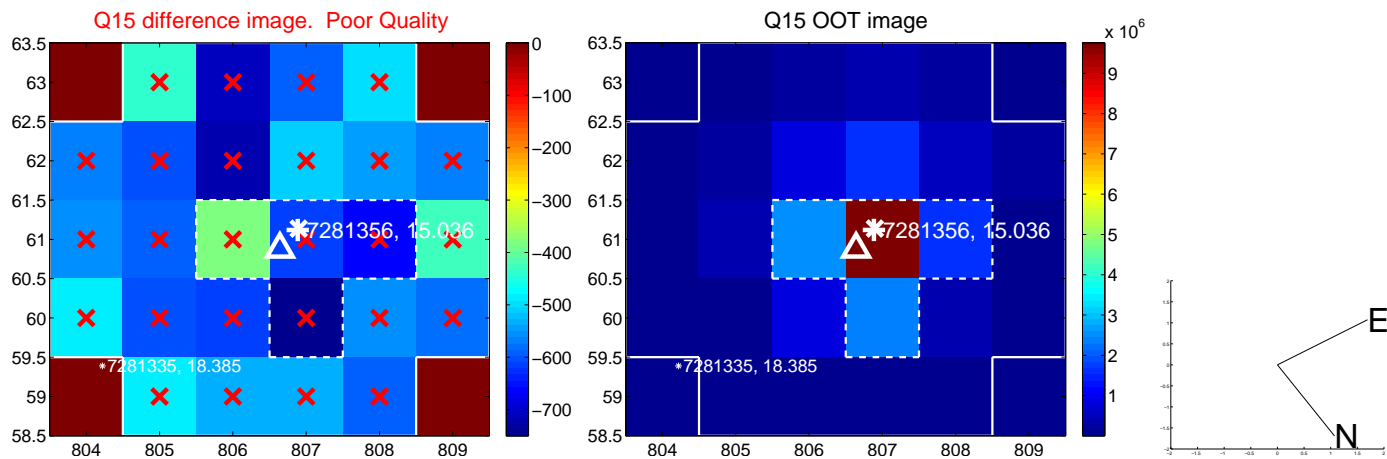
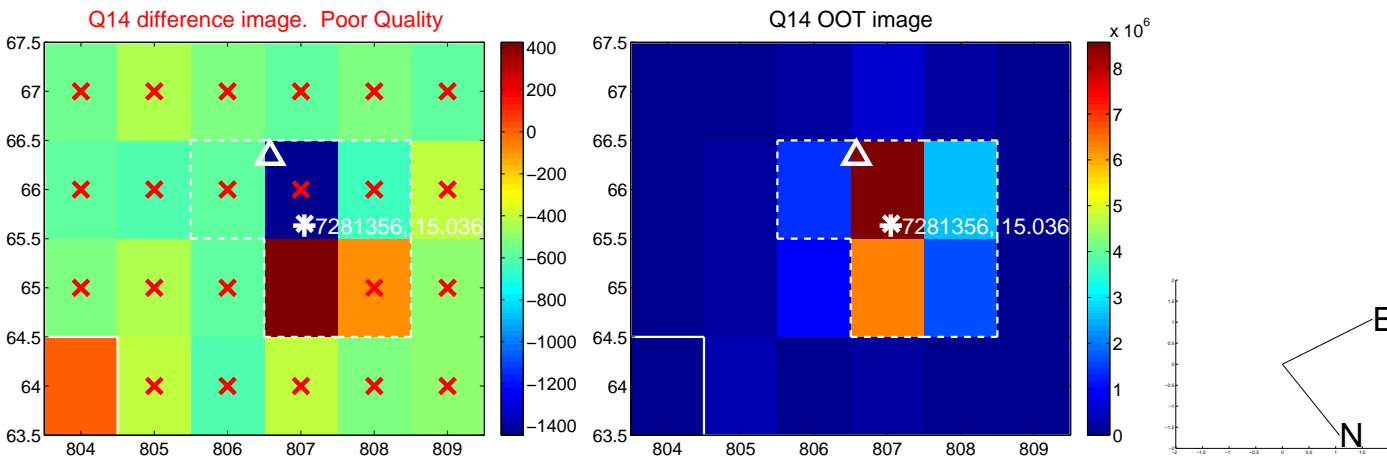
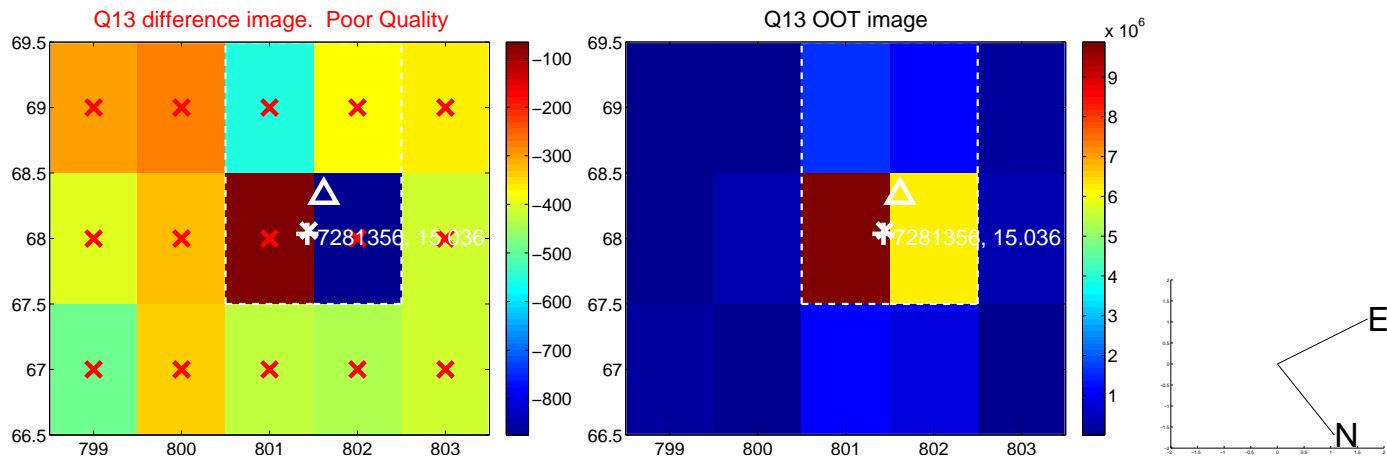
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



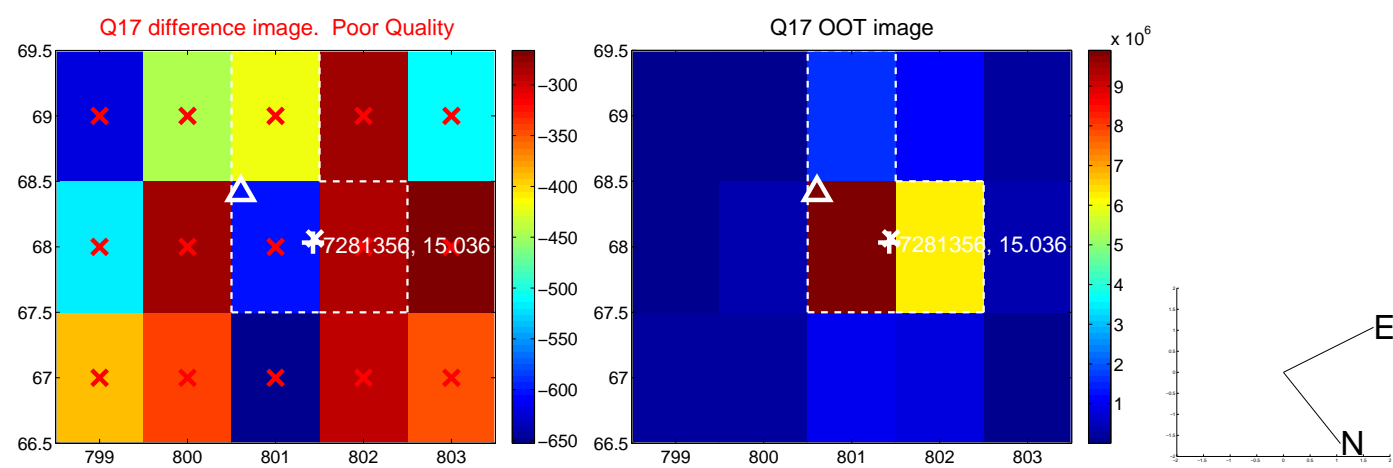
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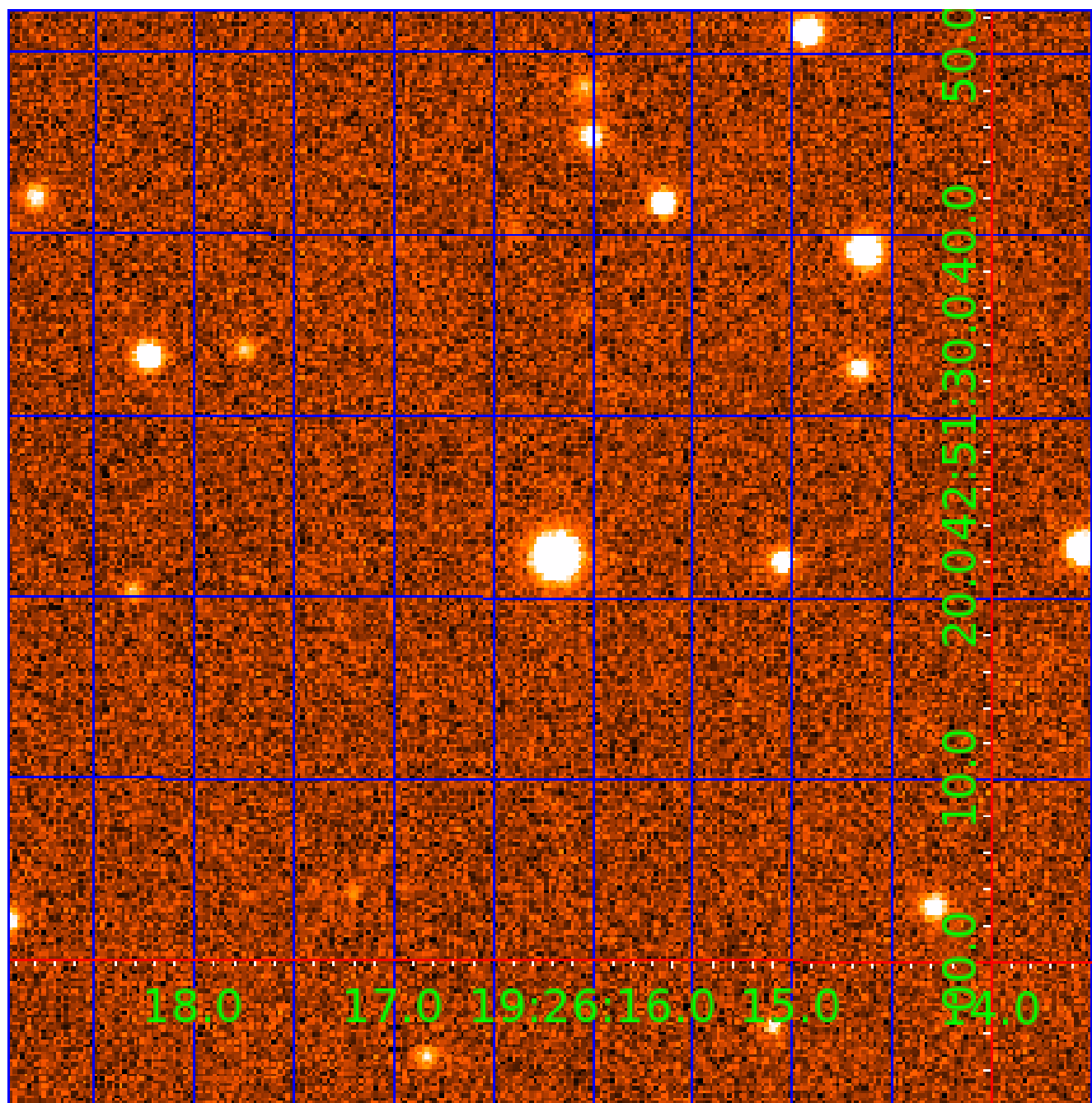
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 007281356

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})
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007281356-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

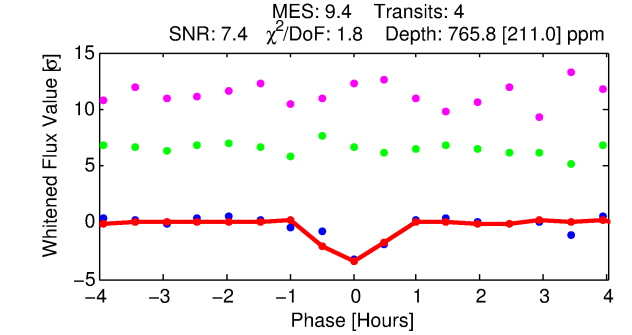
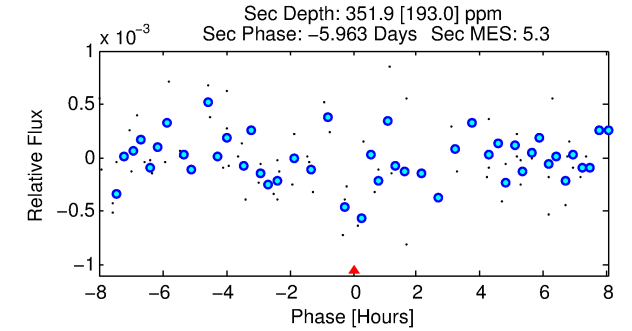
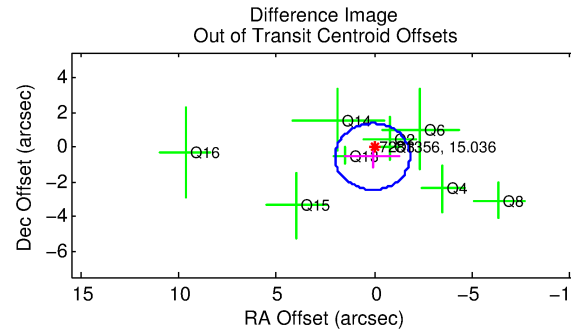
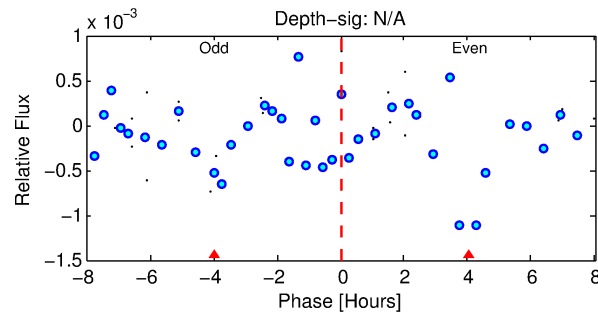
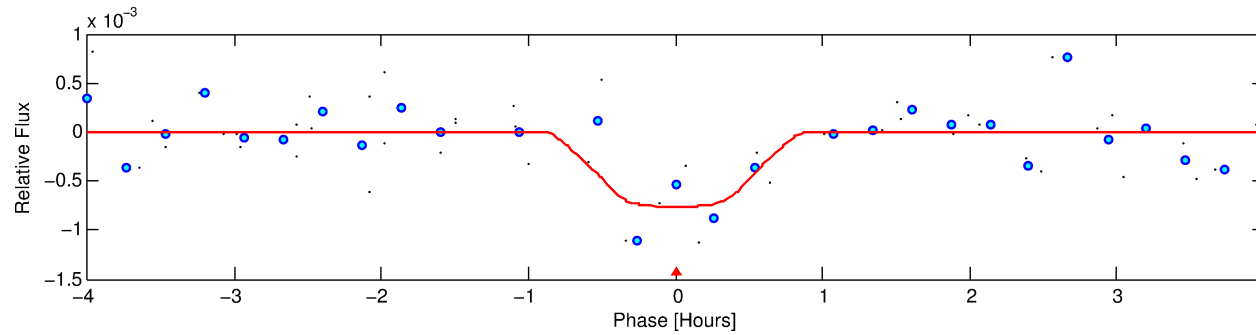
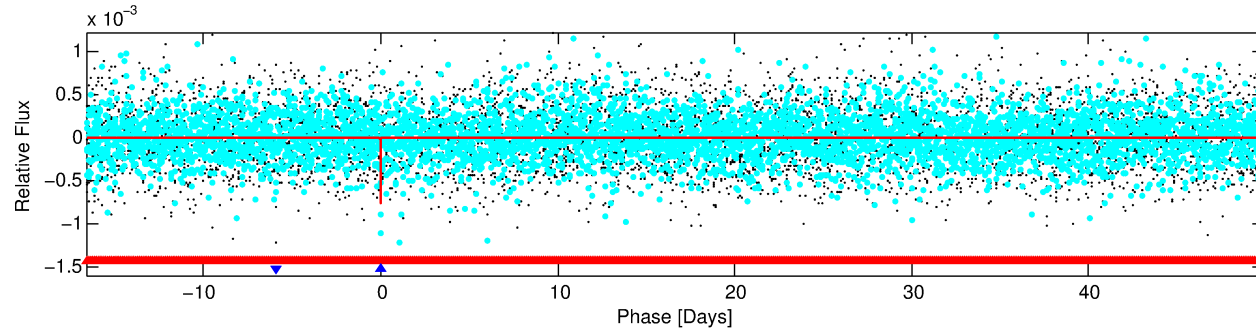
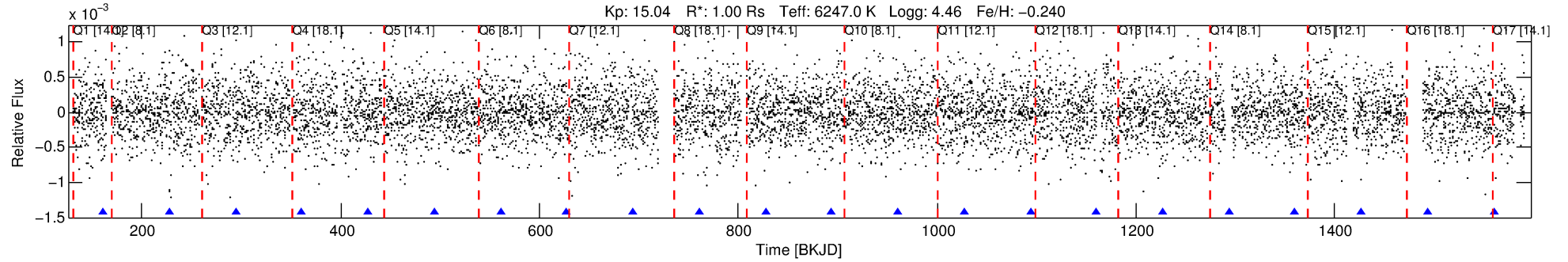
Ephemeris Match Information For 007281356-02

No Significant Match Found

DV One-Page Summary

KIC: 7281356 Candidate: 2 of 2 Period: 66.605 d

KOI: K06853 Corr: No Ephemeris Match



DV Fit Results:

Period = 66.60459 [0.00088] d
Epoch = 161.3703 [0.0074] BKJD
Rp/R* = 0.0286 [0.0696]
a/R* = 229.57 [2926.70]
b = 0.83 [4.73]
Seff = 12.81 [5.56]
Teff = 482 [52] K
Rp = 3.13 [7.68] Re
a = 0.3270 [0.0921] AU
Ag = 2115.37 [10393.66] [0.20] σ
Teffp = 5058 [6194] K [0.74] σ

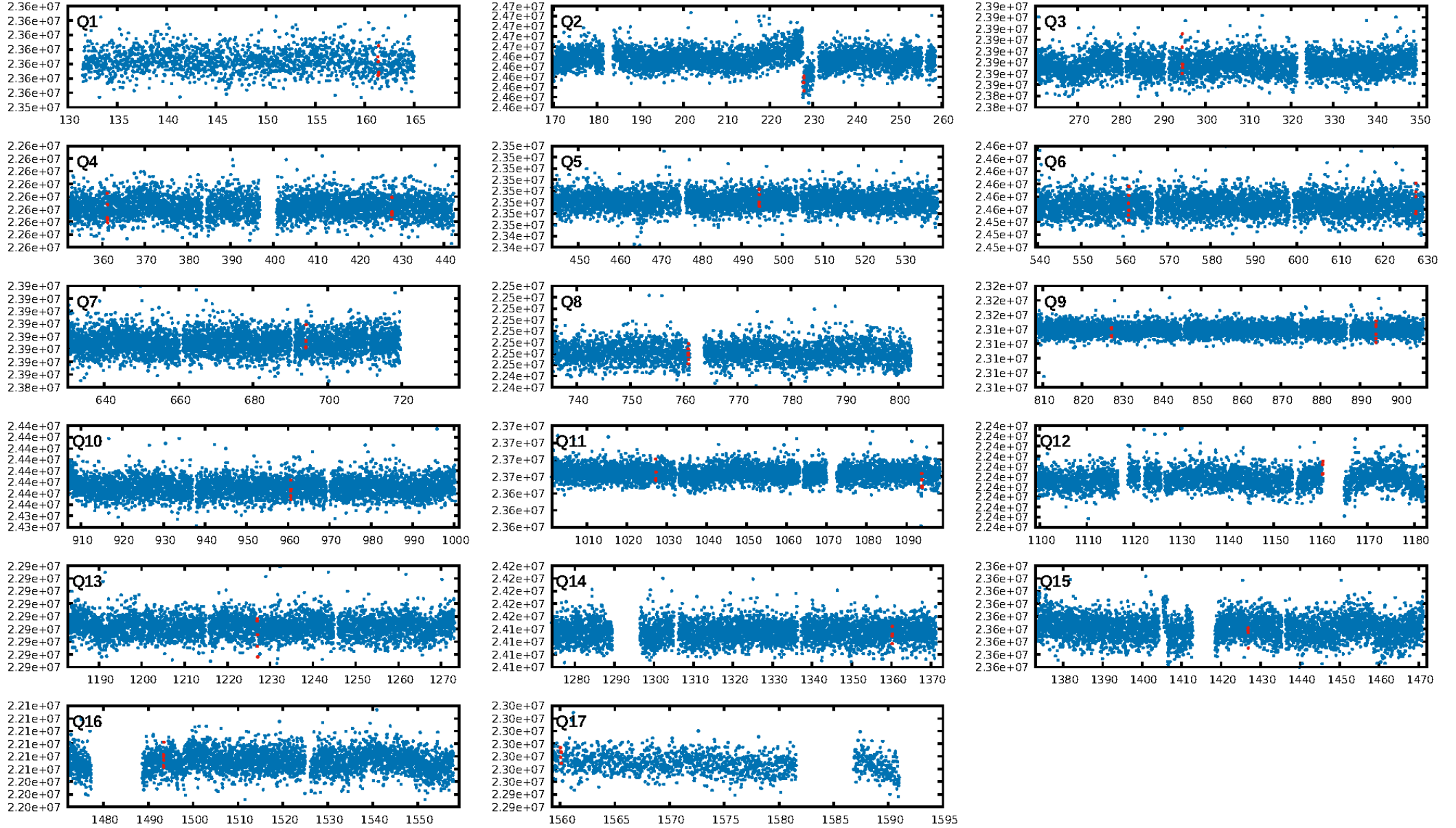
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [400.65 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.9%
ModelChiSquareGof-sig: 91.8%
Bootstrap-pfa: 4.24e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.534
Centroid-sig: 20.0%
Centroid-so: 1.136 arcsec [1.24 σ]
OotOffset-rm: 0.540 arcsec [0.84 σ]
KicOffset-rm: 0.498 arcsec [0.88 σ]
OotOffset-st: 3/2/3/1 [9]
KicOffset-st: 3/2/3/1 [9]
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DiffImageOverlap-fno: 0.00 [0/14]

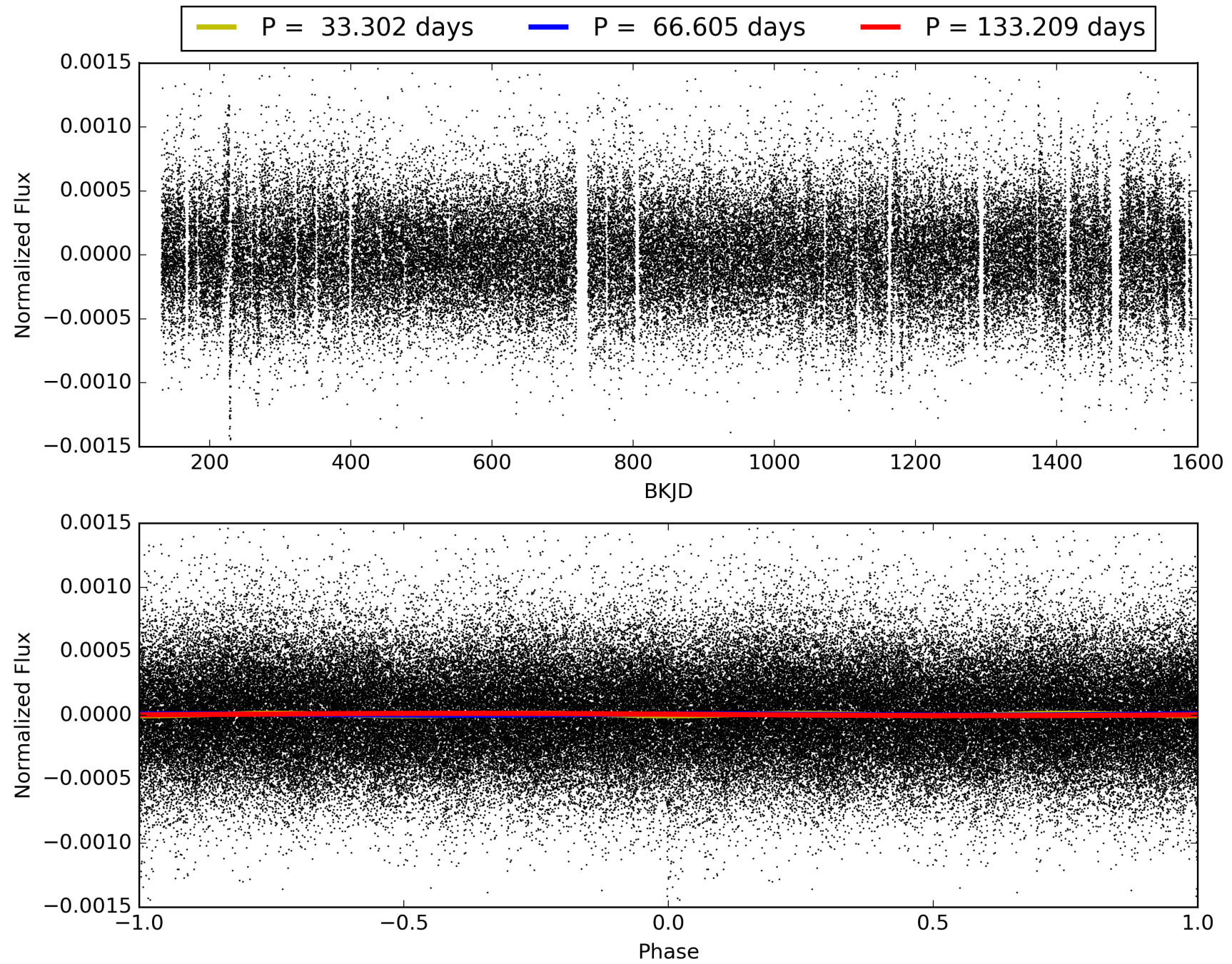
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:56:14 Z

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

TCE 007281356-02, PDC Light Curves

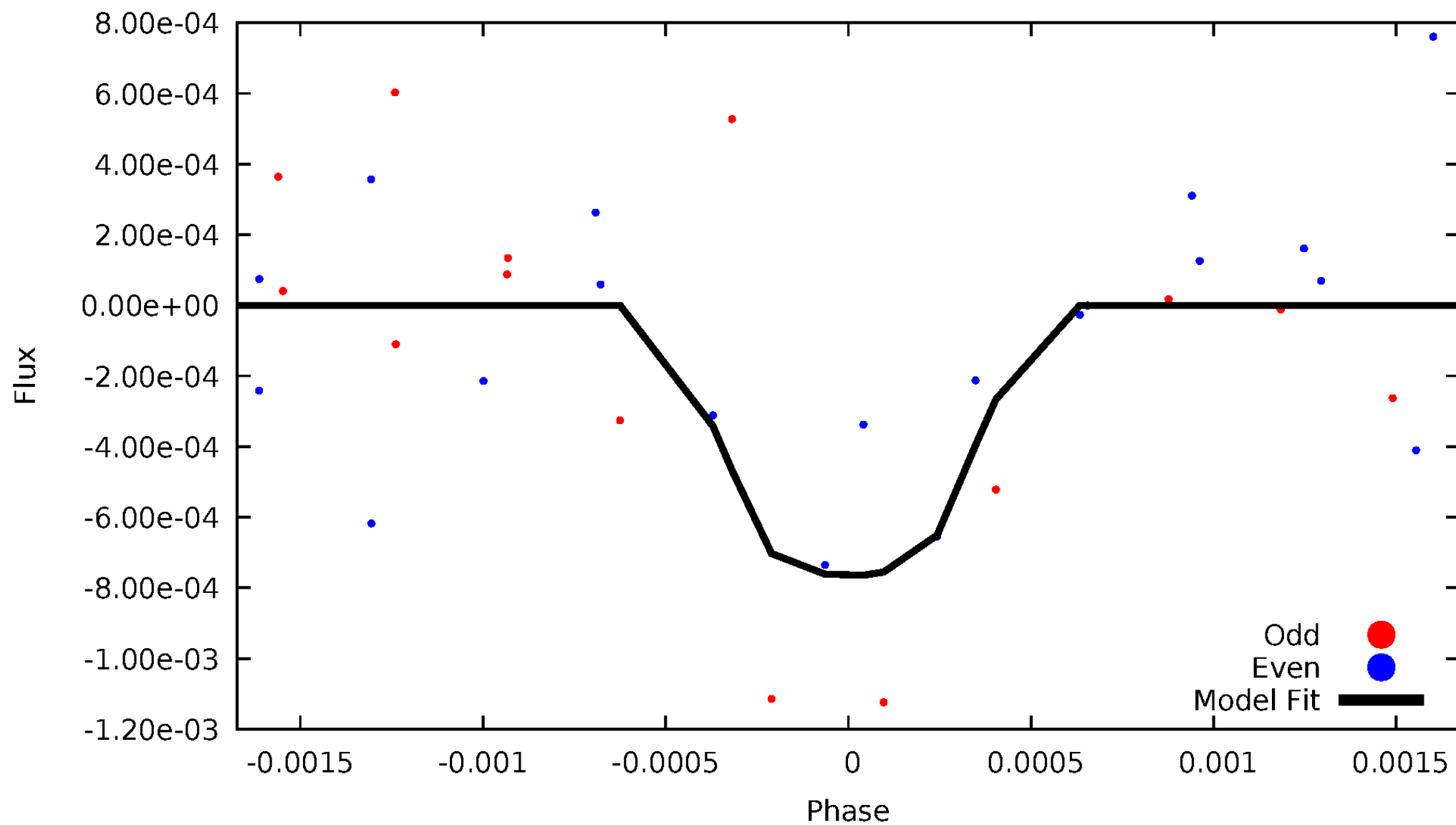


TCE 007281356-02



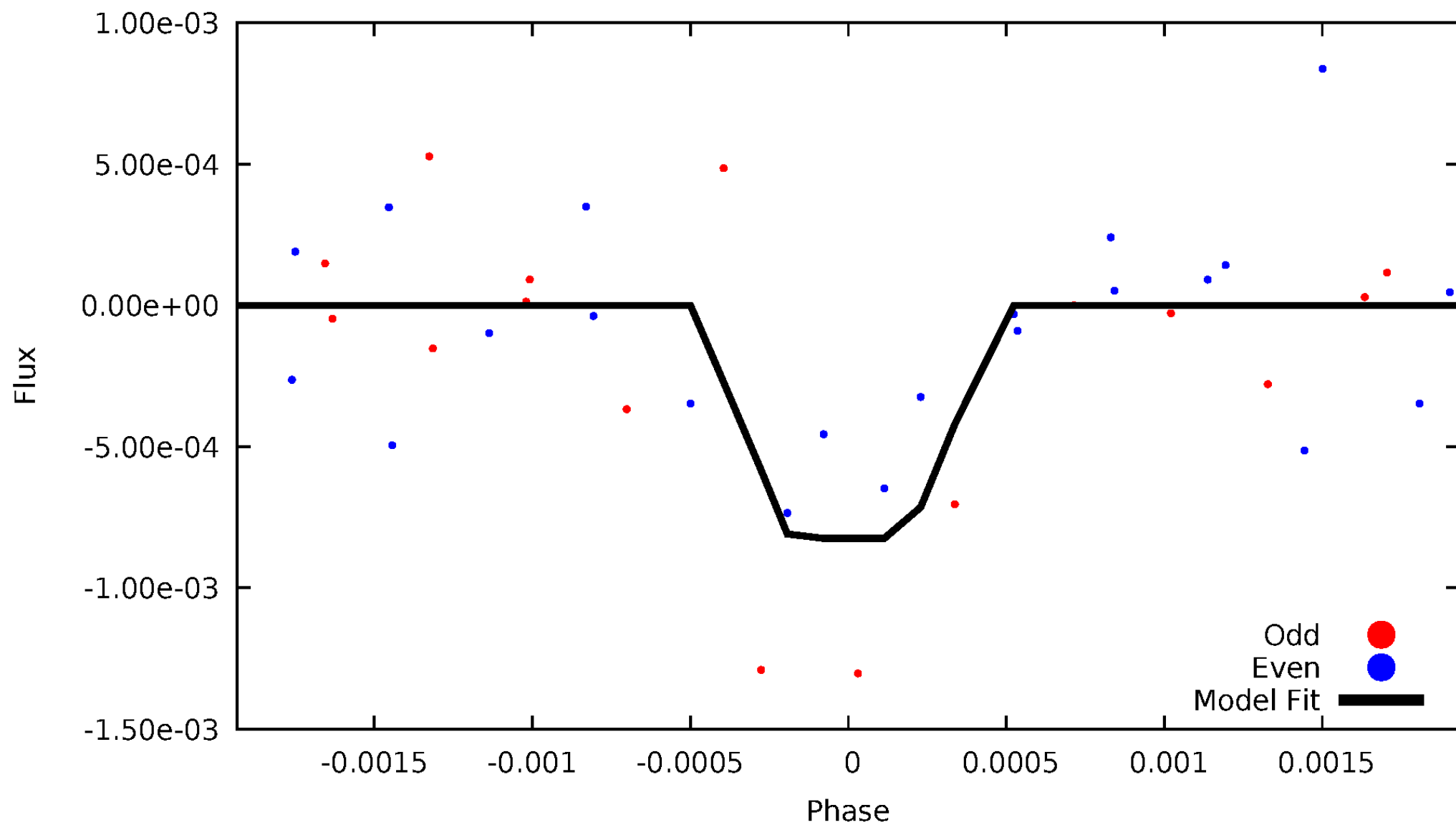
DV Odd/Even

TCE 007281356-02



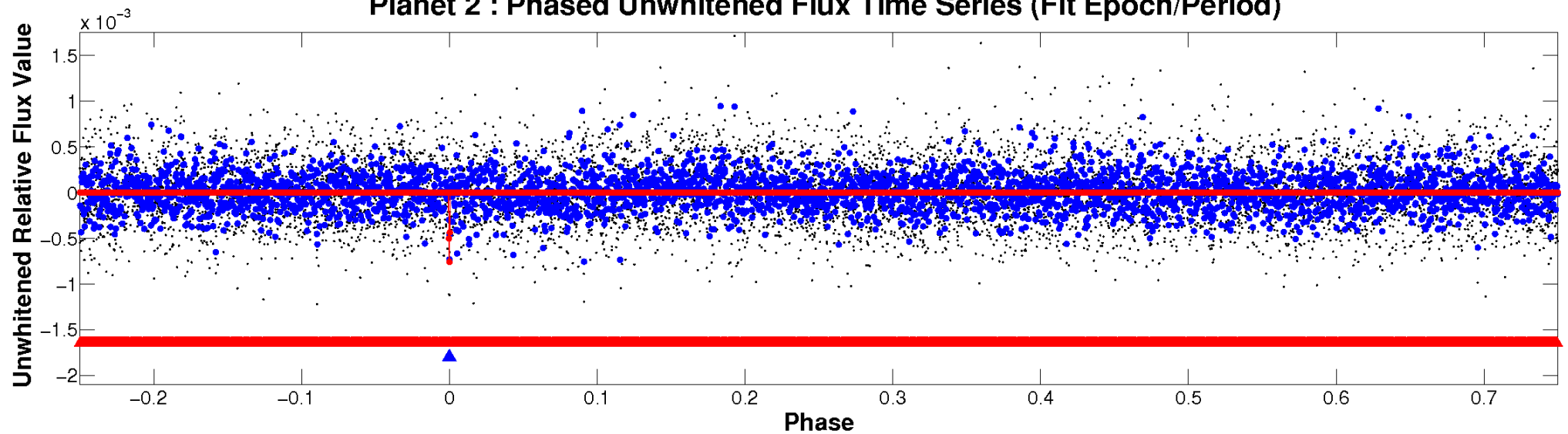
ALT Odd/Even

TCE 007281356-02

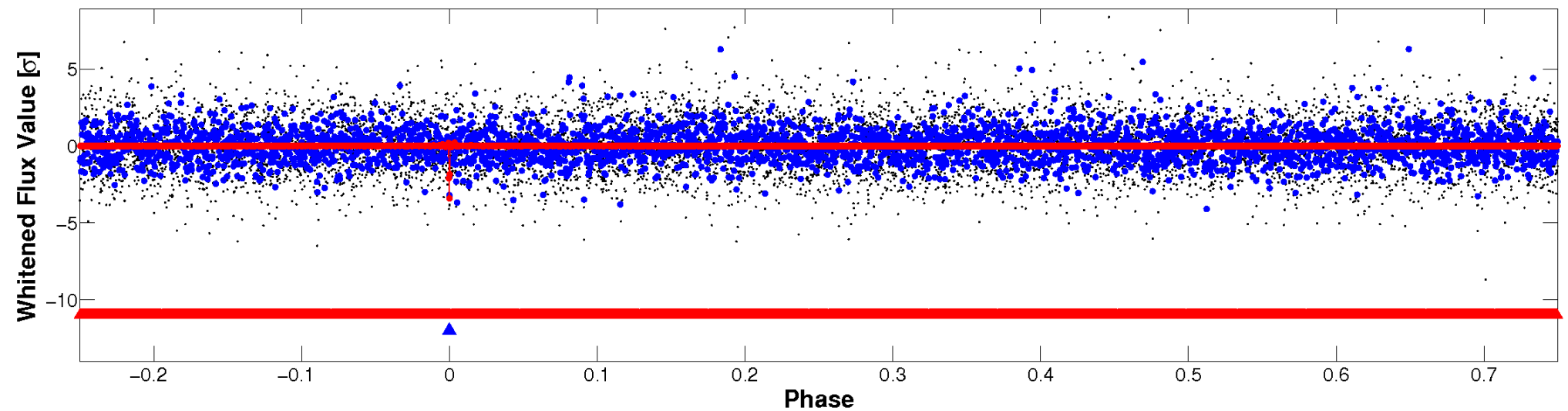


Non-Whitened Vs. Whitened Light Curve

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

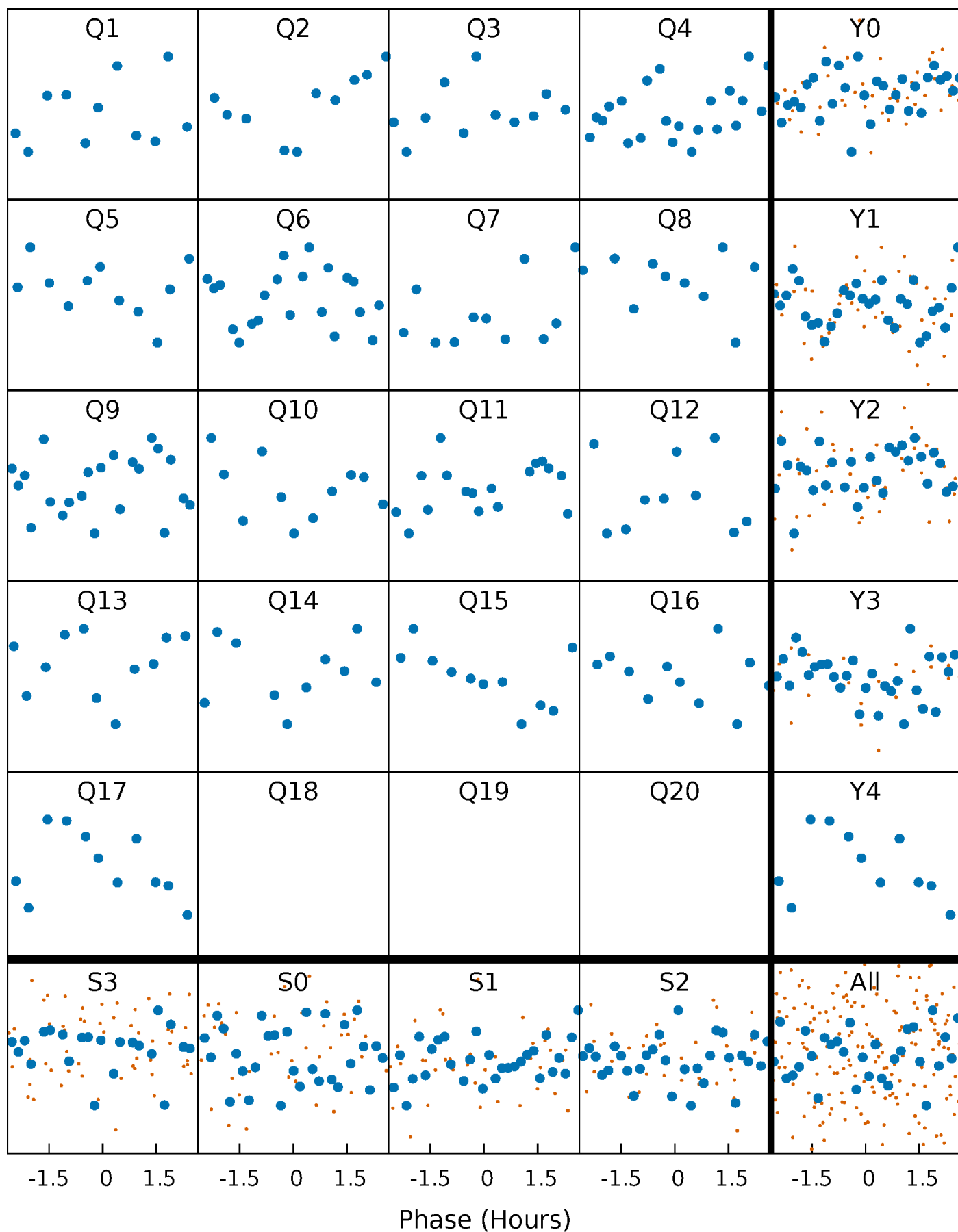


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



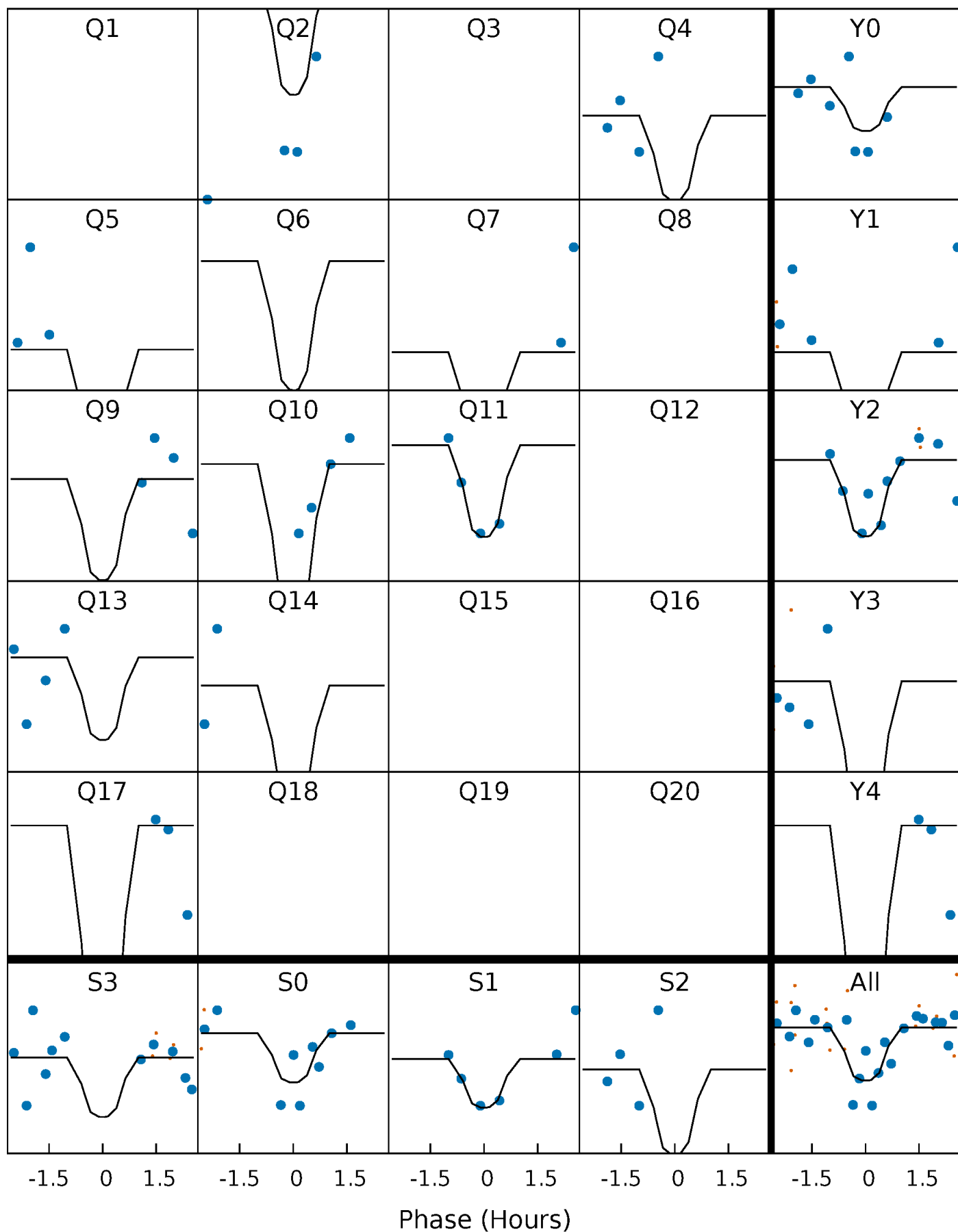
PDC Quarter-Phased Transit Curves

TCE 007281356-02 P= 66.604590 Days $T_0=161.370287$ (BKJD)



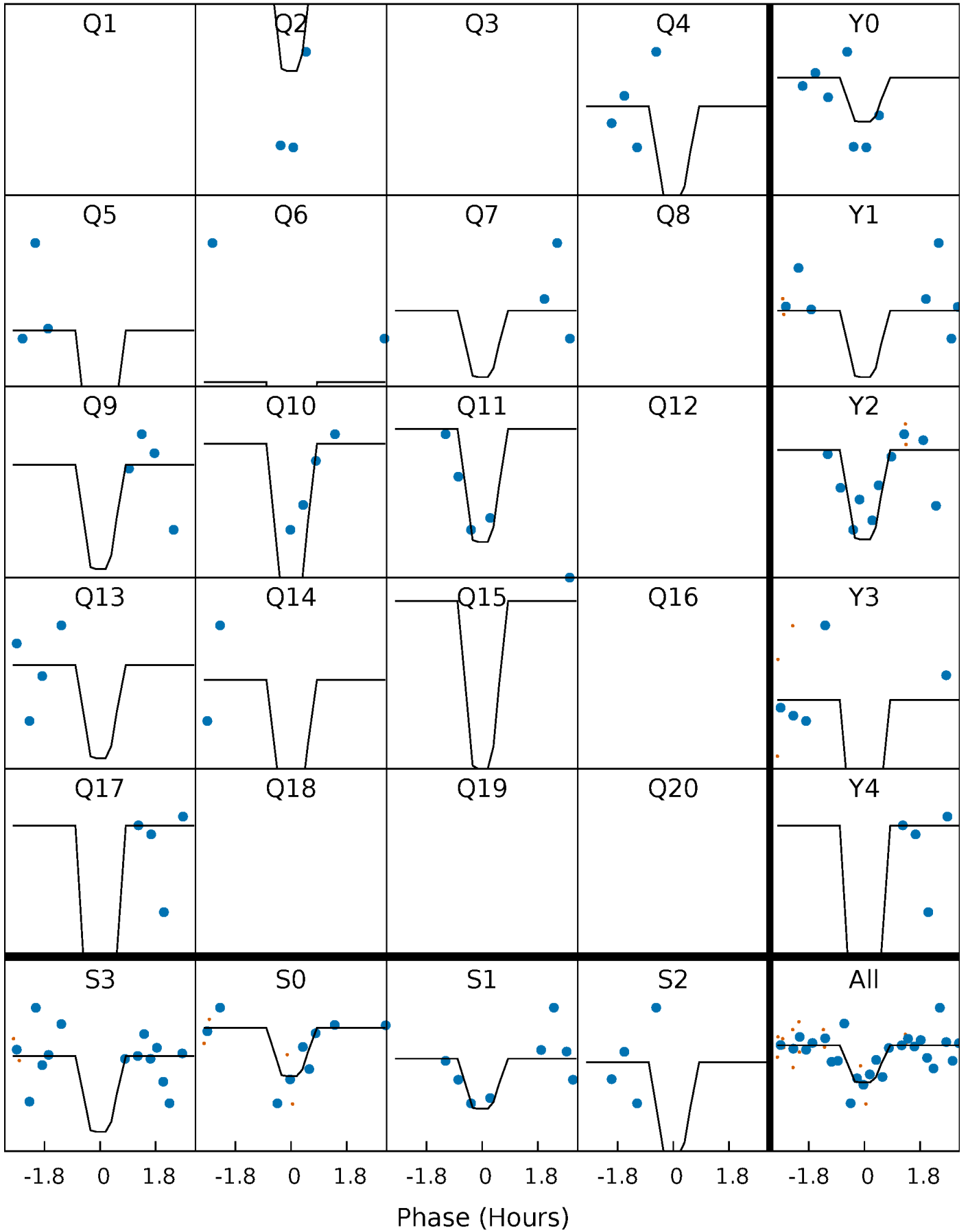
DV Quarter-Phased Transit Curves

TCE 007281356-02 P= 66.604590 Days $T_0=161.370287$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

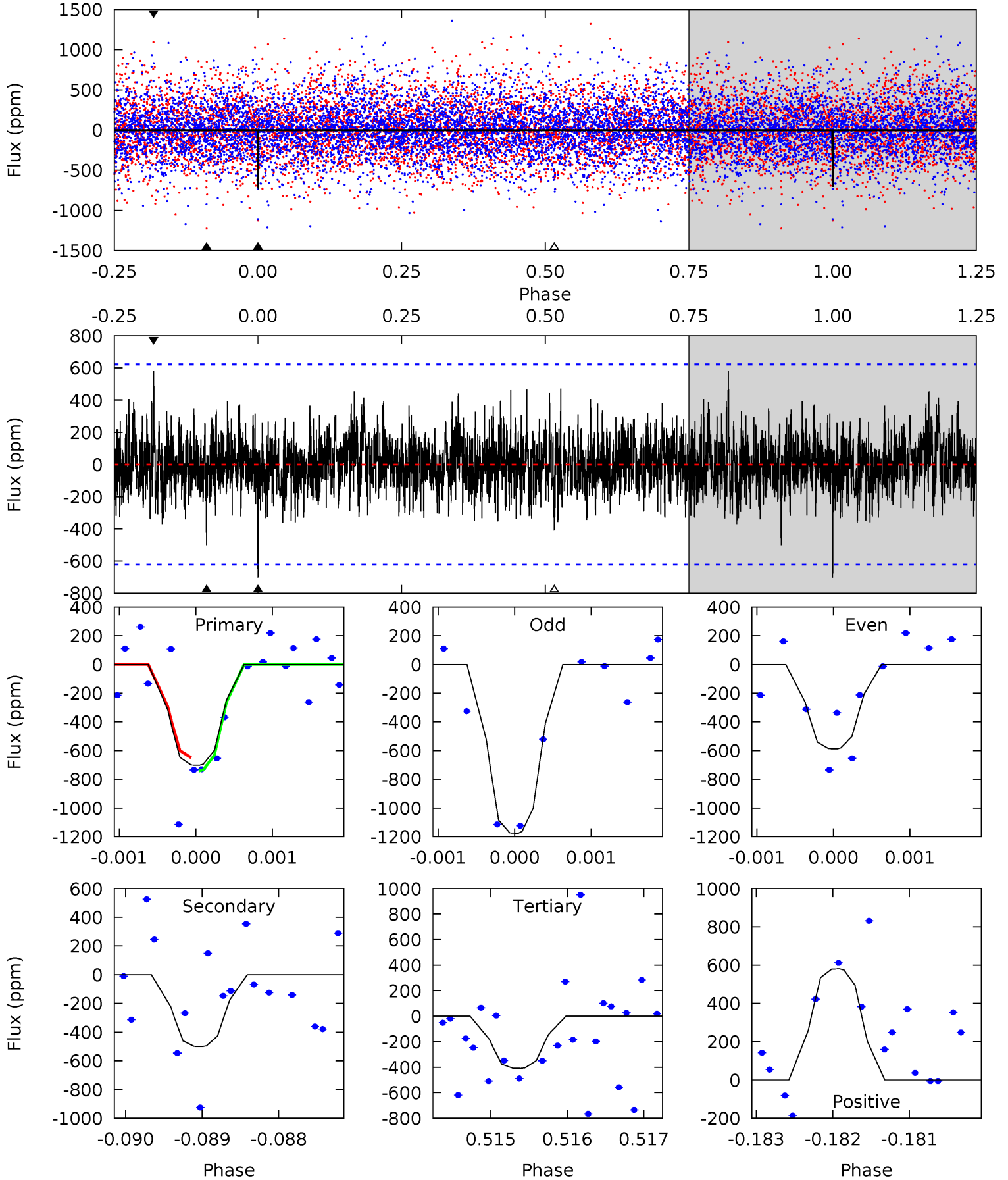
TCE 007281356-02 P= 66.604909 Days $T_0=161.374401$ (BKJD)



DV Model-Shift Uniqueness Test

007281356-02, P = 66.604590 Days, E = 94.765697 Days

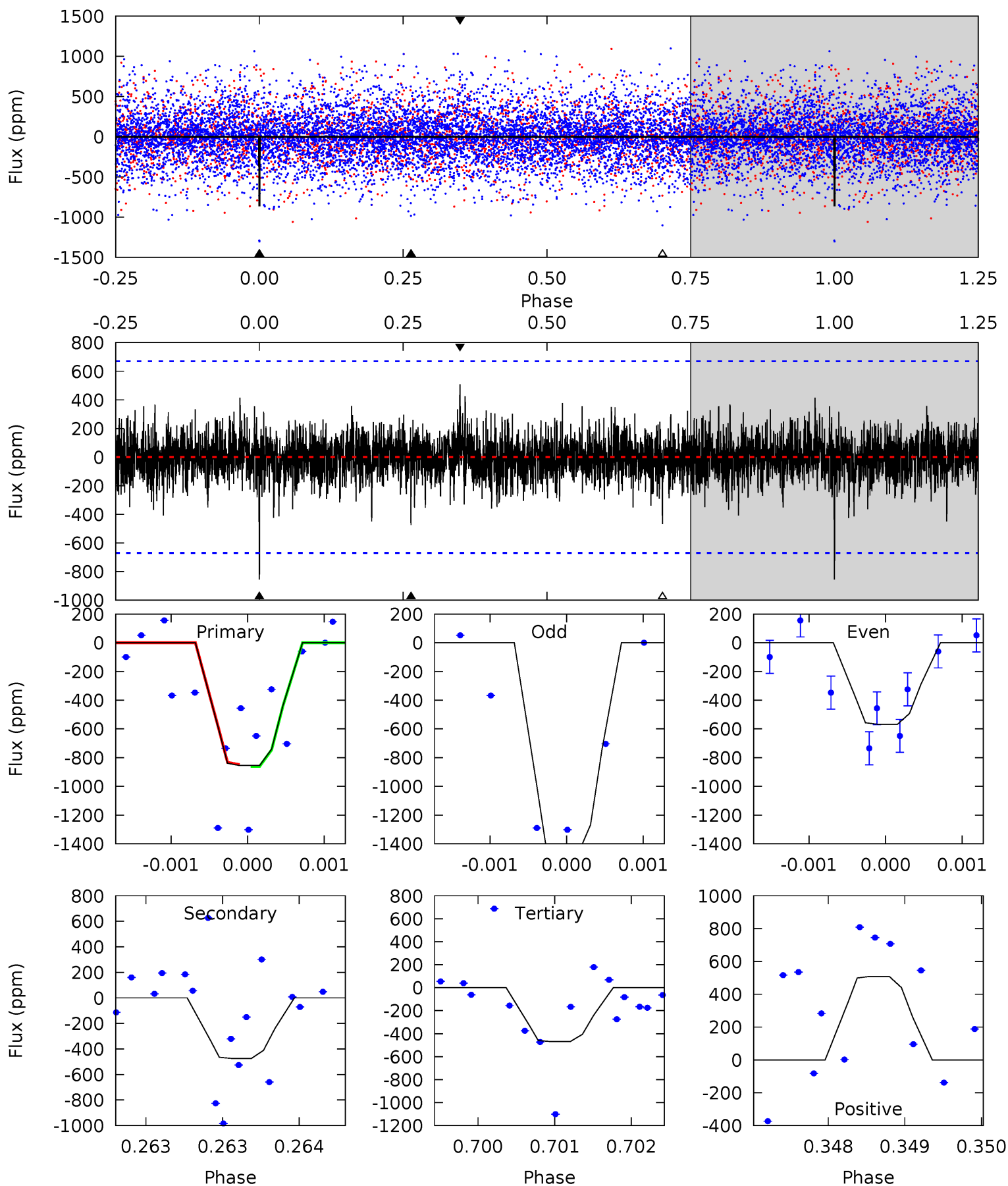
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.16	4.39	3.58	5.09	5.45	3.29	1.19	2.58	1.07	0.81	-0.71	2.50	1.02	0.45	0.40



Alt Model-Shift Uniqueness Test

007281356-02, P = 66.604909 Days, E = 94.769492 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.04	3.90	3.85	4.18	5.51	3.38	0.95	3.18	2.85	0.05	-0.28	3.47	1.23	0.37	0.05



Stellar Parameters For KIC 007281356

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6247^{+169}_{-225}	$4.458^{+0.056}_{-0.224}$	$-0.240^{+0.250}_{-0.300}$	$1.002^{+0.335}_{-0.112}$	$1.045^{+0.144}_{-0.129}$	$1.464^{+0.430}_{-0.787}$
	+3%/-4%	+1%/-5%	+104%/-125%	+33%/-11%	+14%/-12%	+29%/-54%
Source	PHO1	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 007281356-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-501 ± 114	$6.94^{+6.58}_{-4.55}$	691^{+59}_{-38}	4047^{+2504}_{-772}	585^{+4353}_{-431}
Alt.	-474 ± 122	$7.19^{+6.72}_{-4.89}$	685^{+56}_{-34}	3999^{+2653}_{-768}	521^{+4893}_{-380}

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 $A_{obs} \gg 1.0$

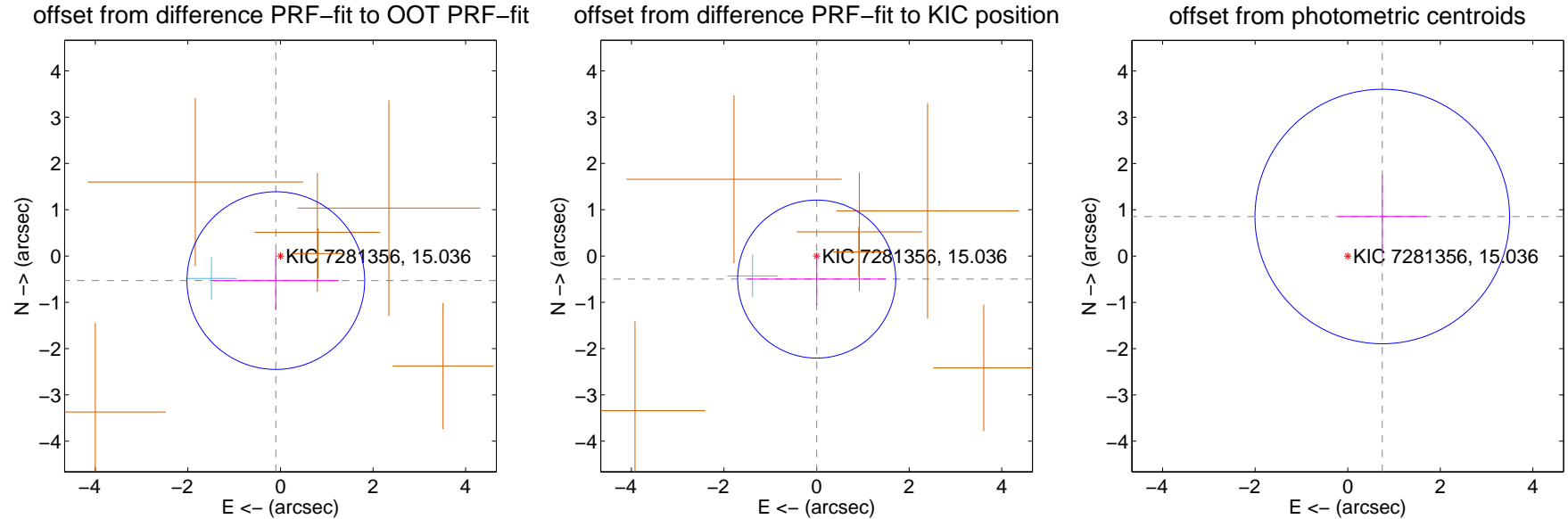
DV Centroid Data

Supplemental centroid analysis for 007281356-02. Kepler magnitude: 15.04. Transit SNR 7.44

There are 1 quarters with good PRF difference image offsets

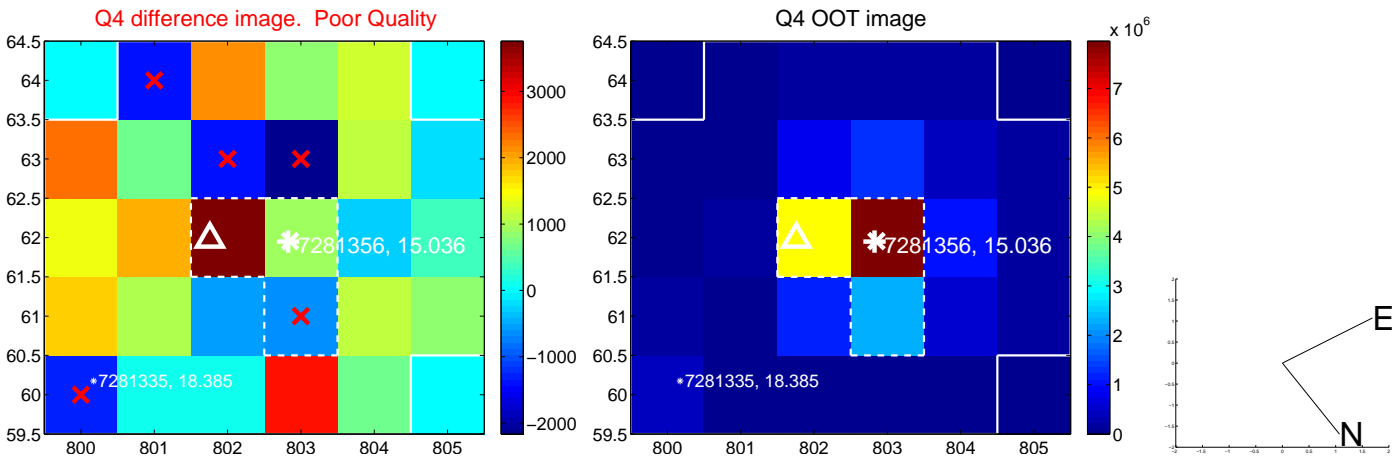
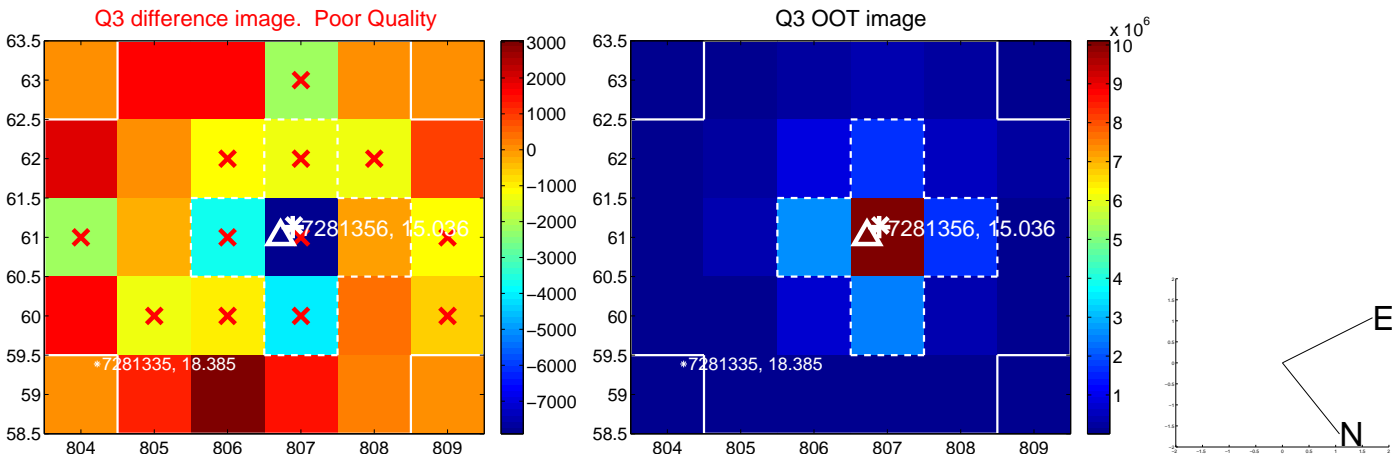
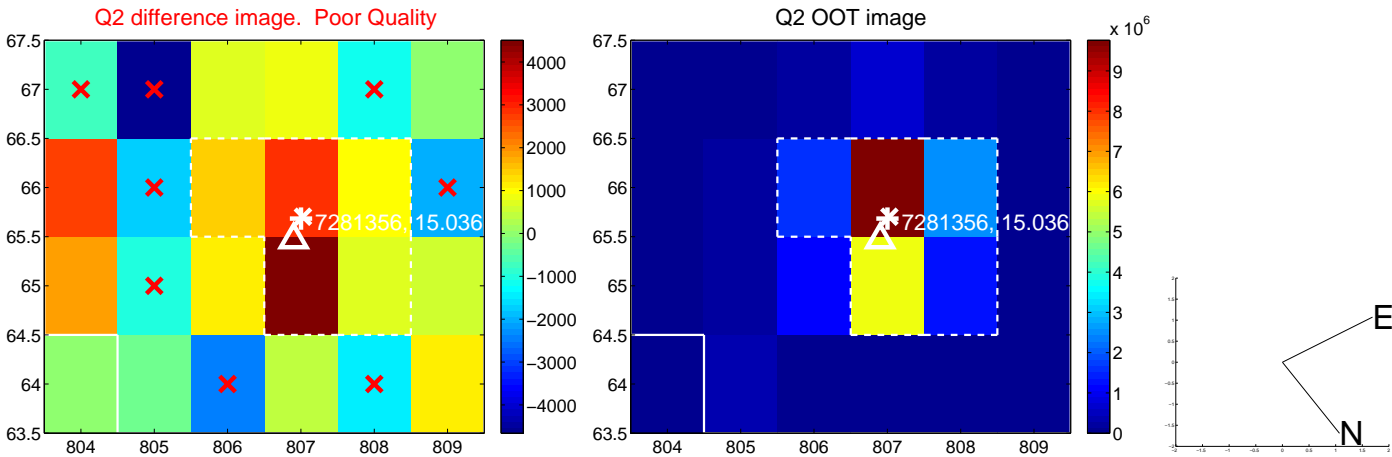
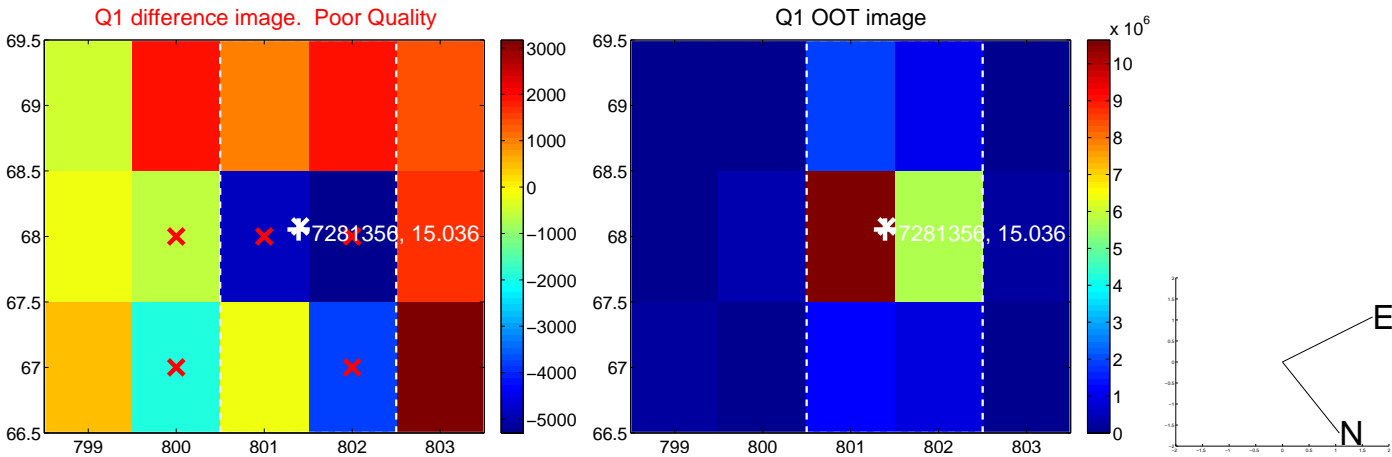
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.540 ± 0.640	0.84	0.100 ± 1.363	-0.531 ± 0.624
PRF-fit source offset from KIC position	0.498 ± 0.569	0.88	-0.002 ± 1.494	-0.498 ± 0.567
photometric centroid source offset	1.14 ± 0.92	1.24	-0.75 ± 0.95	0.86 ± 0.89

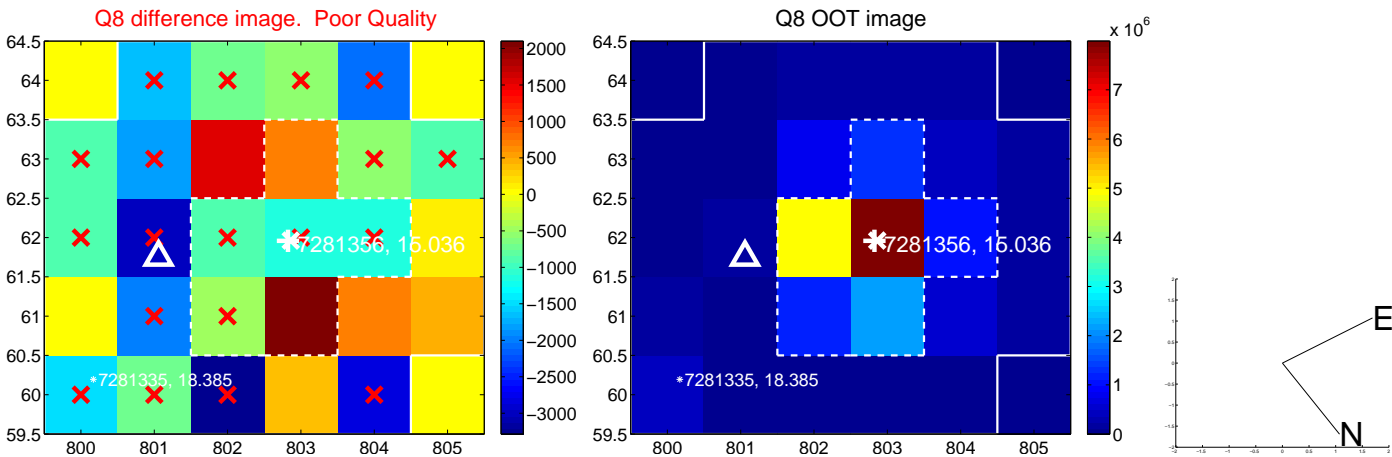
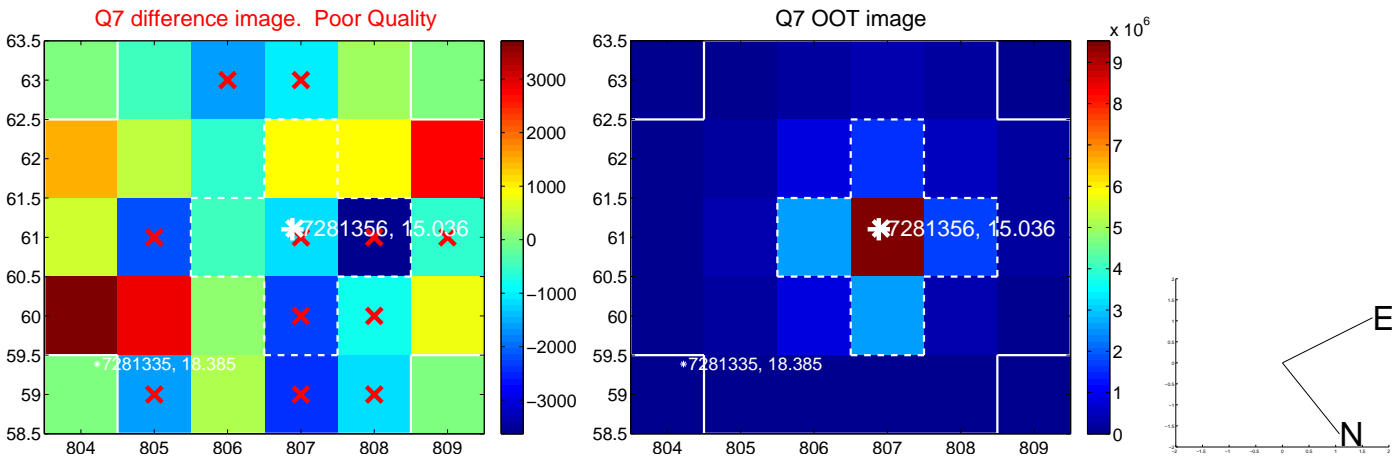
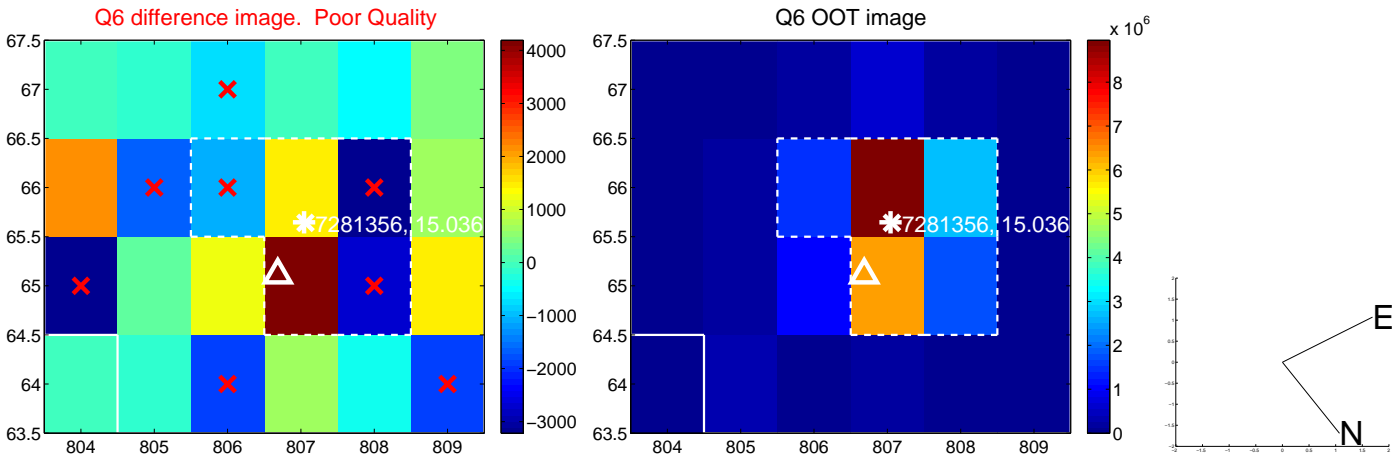
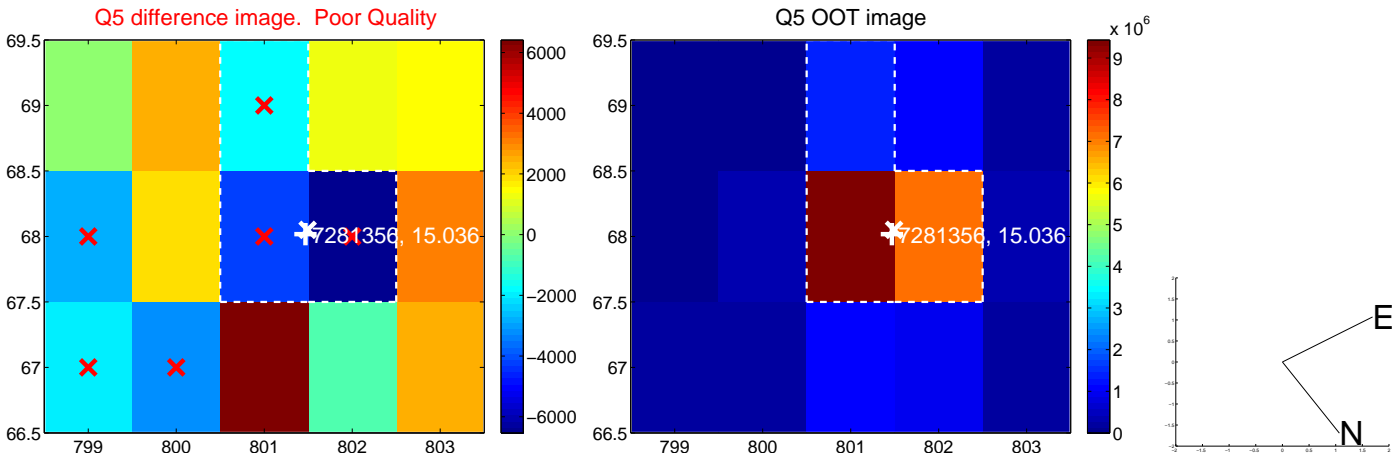


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

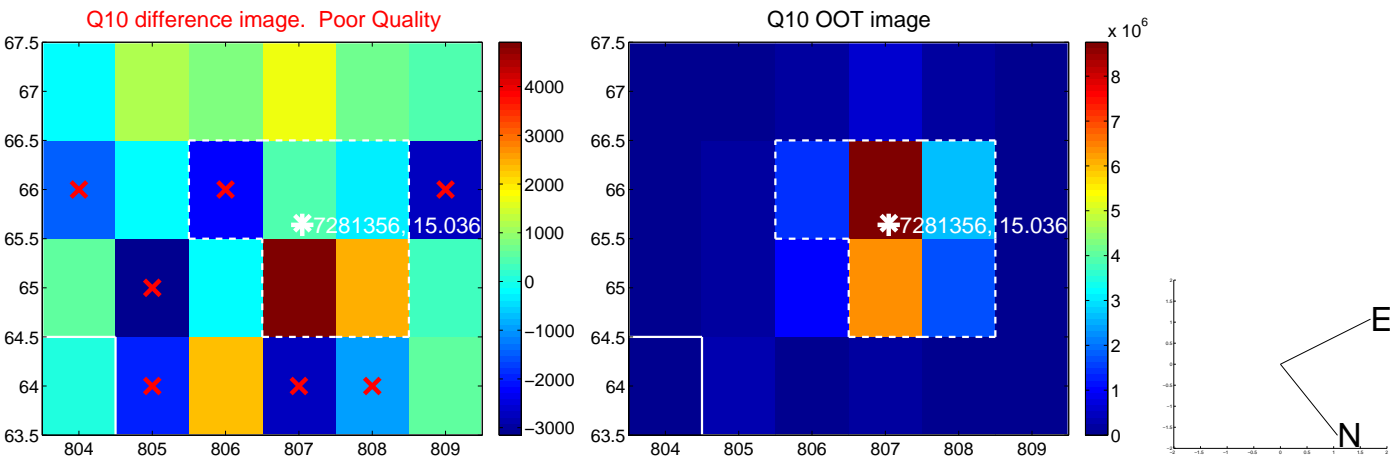
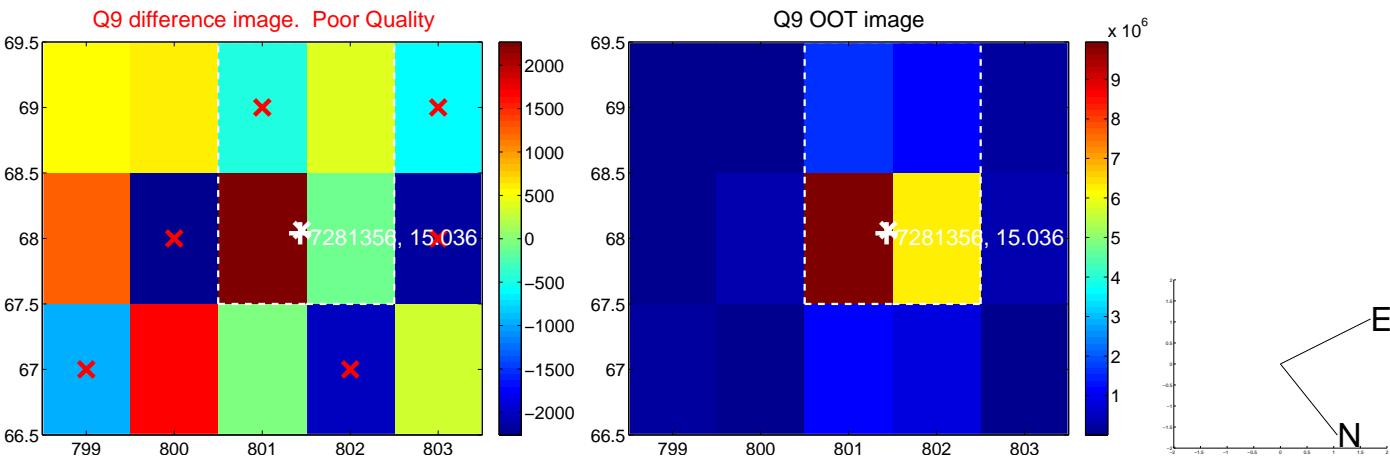
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



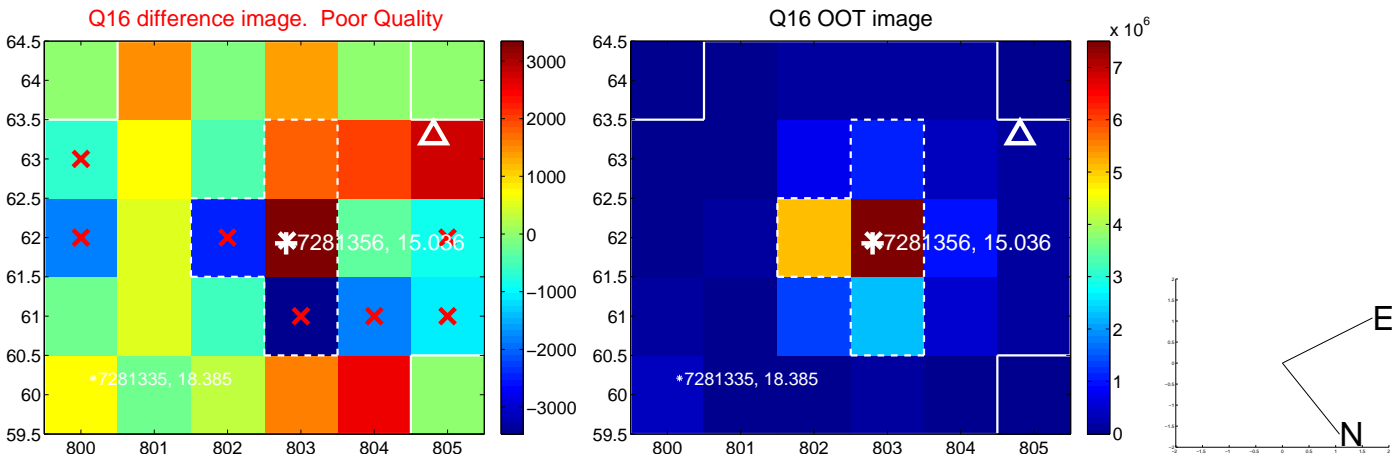
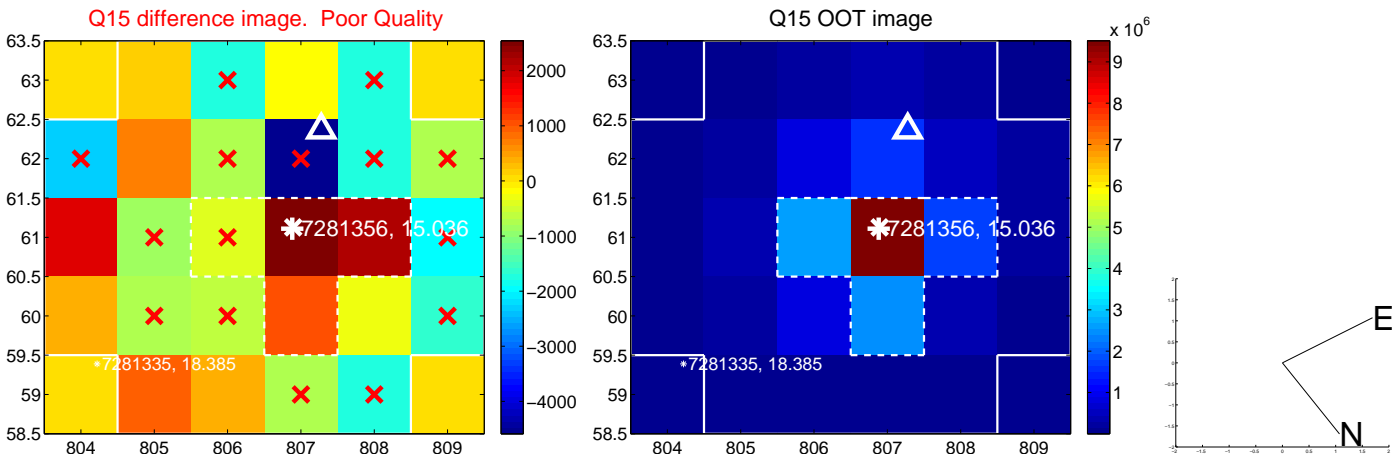
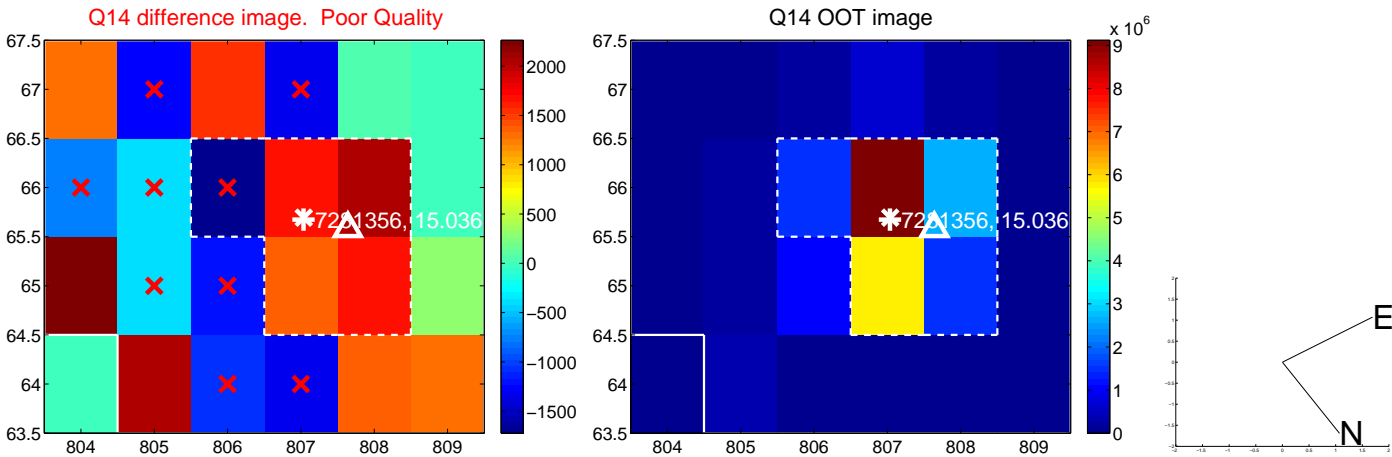
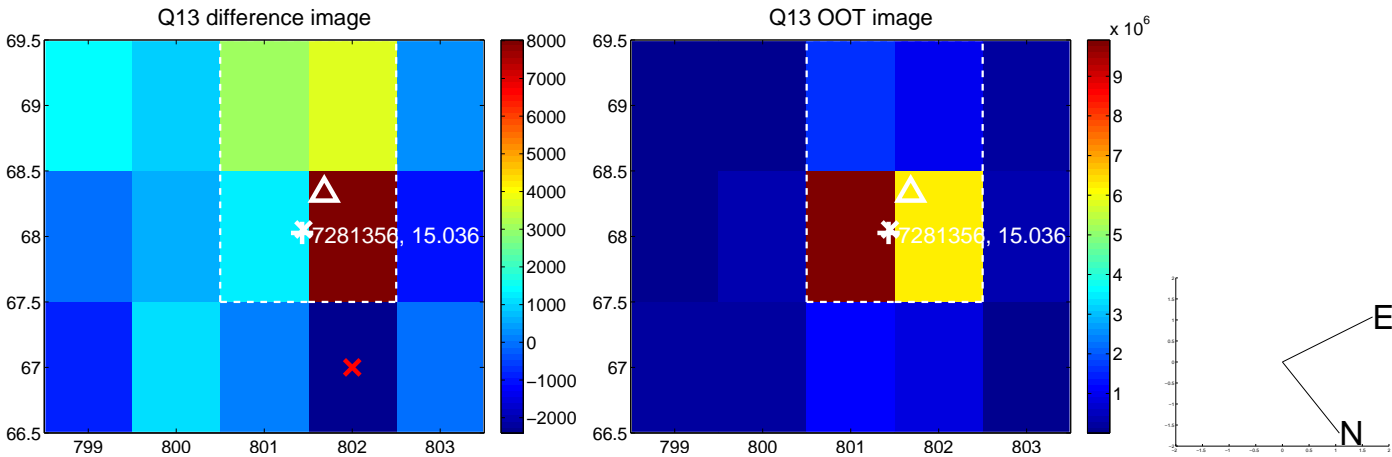
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



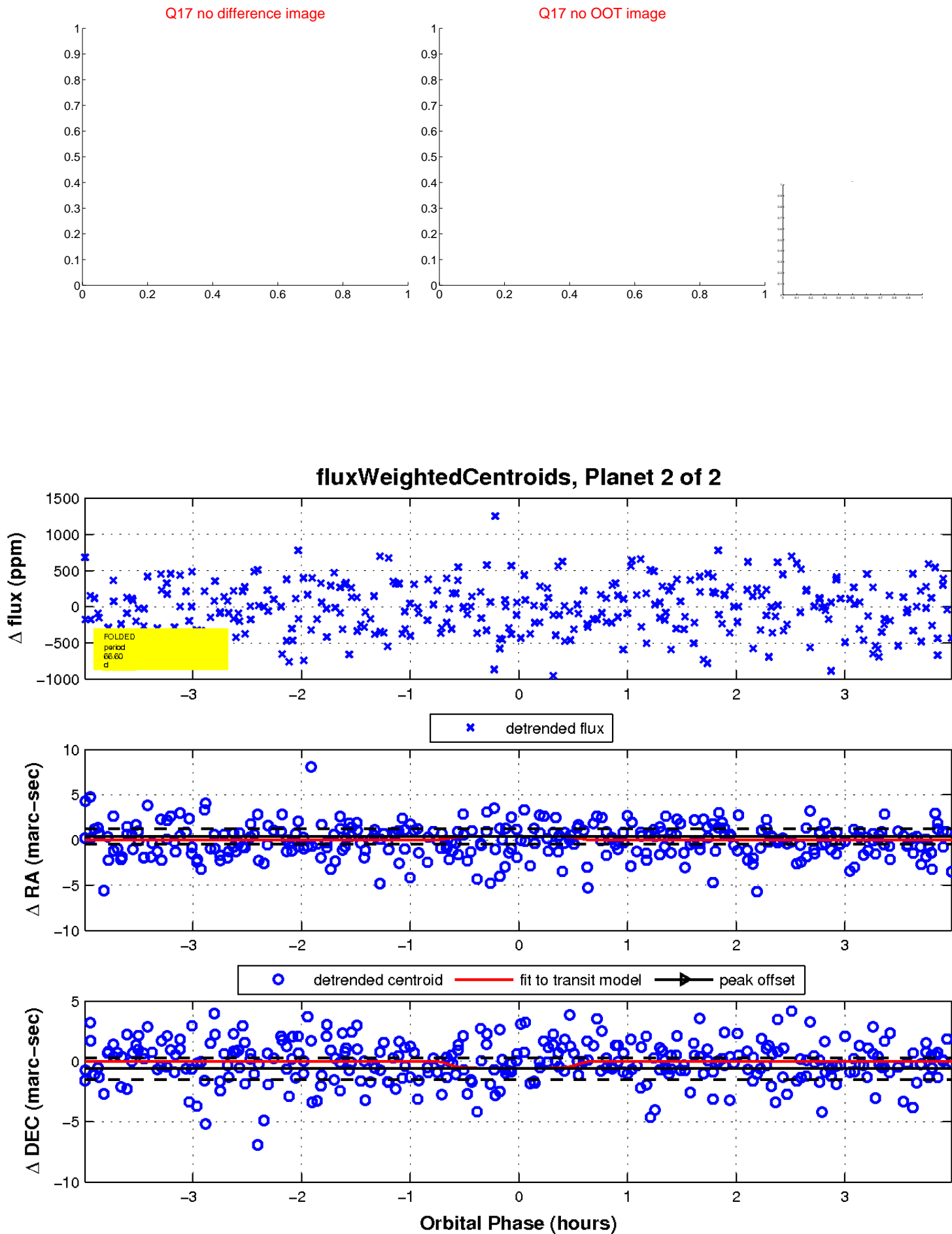
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

Declination

