

KIC 005373377

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})
005373377-01	OBS	No	1.328250	131.929928	350.8	7.277	16.8	16.4	1.82	7725	4.38	13798.91
005373377-02	OBS	No	1.328252	132.593791	314.1	6.821	14.2	15.5	1.82	7725	4.16	13798.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005373377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005373377-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_KIC_POS—HALO_GHOST

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

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

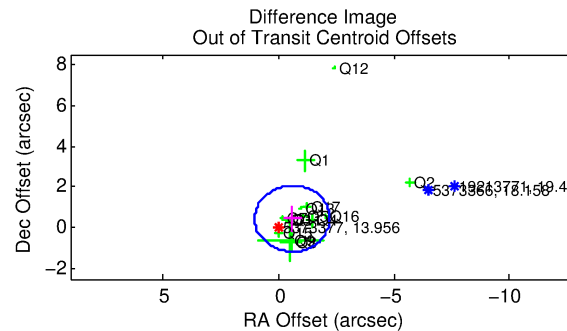
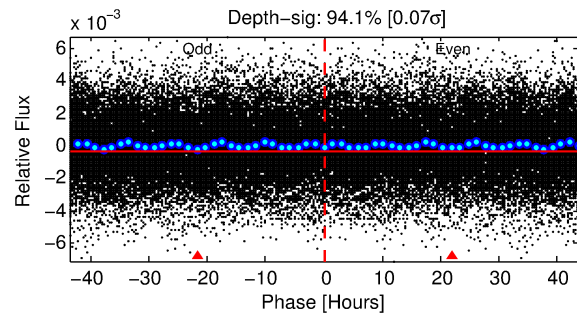
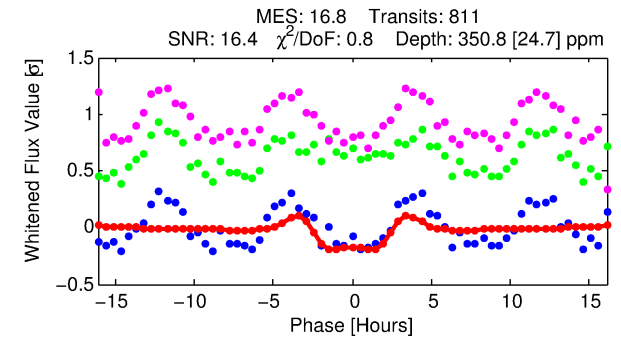
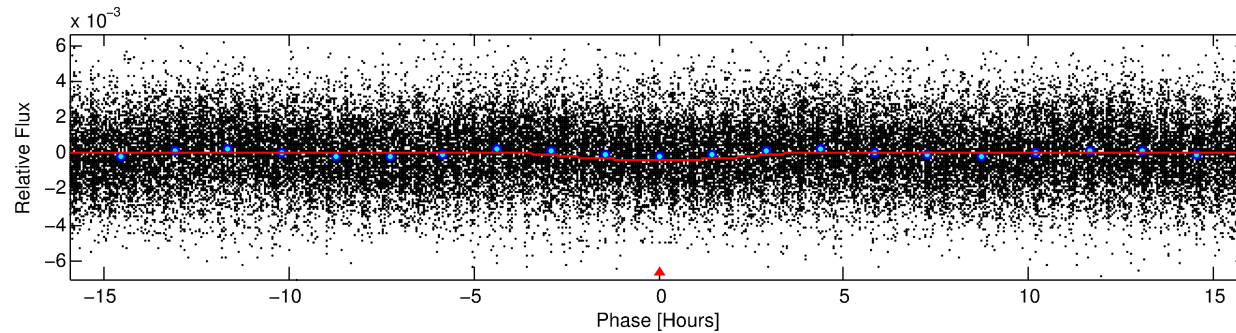
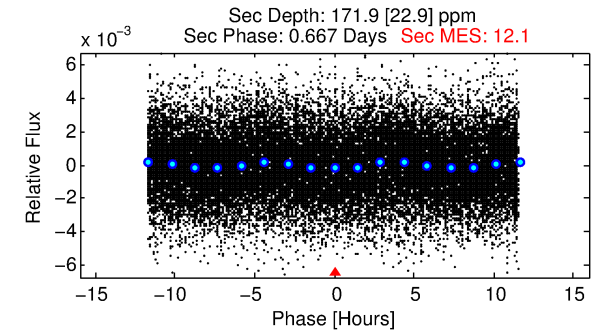
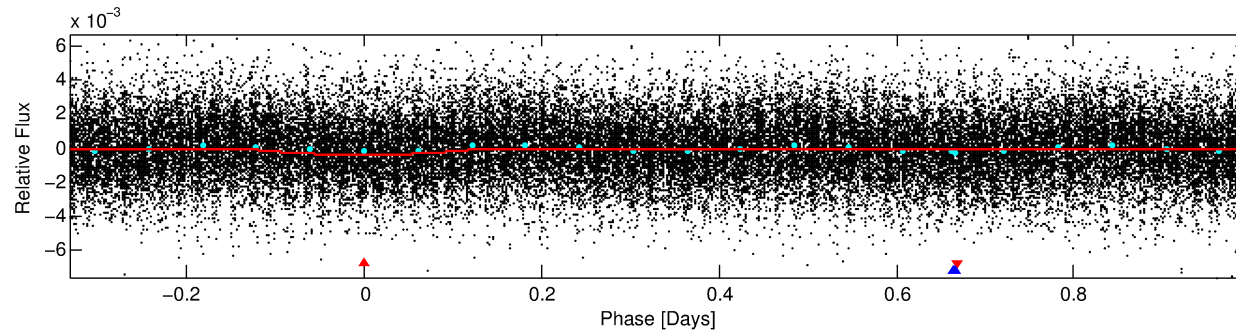
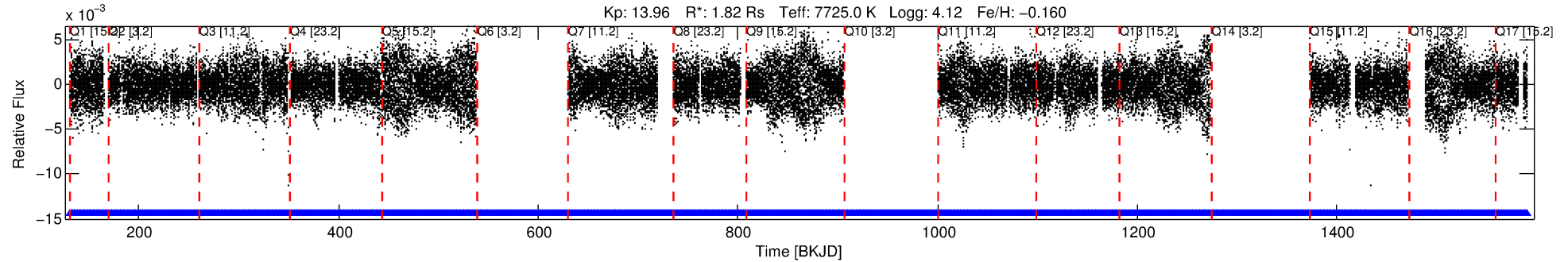
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005373377-01

No Significant Match Found

DV One-Page Summary

KIC: 5373377 Candidate: 1 of 2 Period: 1.328 d



DV Fit Results:

Period = 1.32825 [0.00001] d
Epoch = 131.9299 [0.0033] BKJD
Rp/R* = 0.0221 [0.0008]
a/R* = 1.08 [0.01]
b = 0.97 [0.00]
Seff = 13798.91 [4977.63]
Teq = 2764 [249] K
Rp = 4.38 [1.24] Re
a = 0.0276 [0.0063] AU
Ag = 3.77 [1.34] [2.06σ]
Teffp = 5952 [333] K [7.66σ]

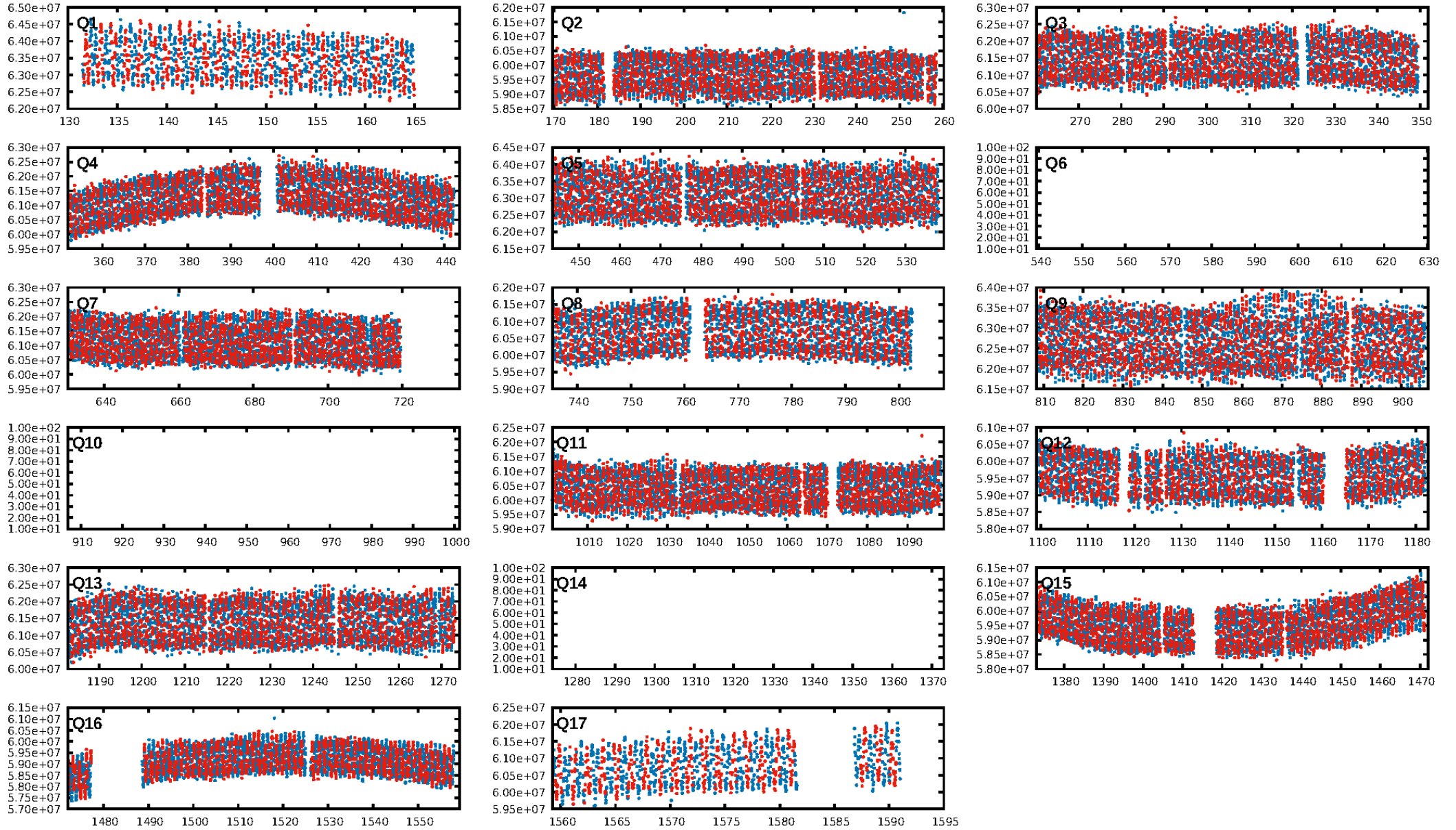
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [765/765]
GhostDiagnostic-chr: -0.8437
Centroid-sig: 33.8%
Centroid-so: 2.840 arcsec [11.42σ]
OotOffset-rm: 0.751 arcsec [1.39σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-rm: 0.123 arcsec [0.23σ]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/14]

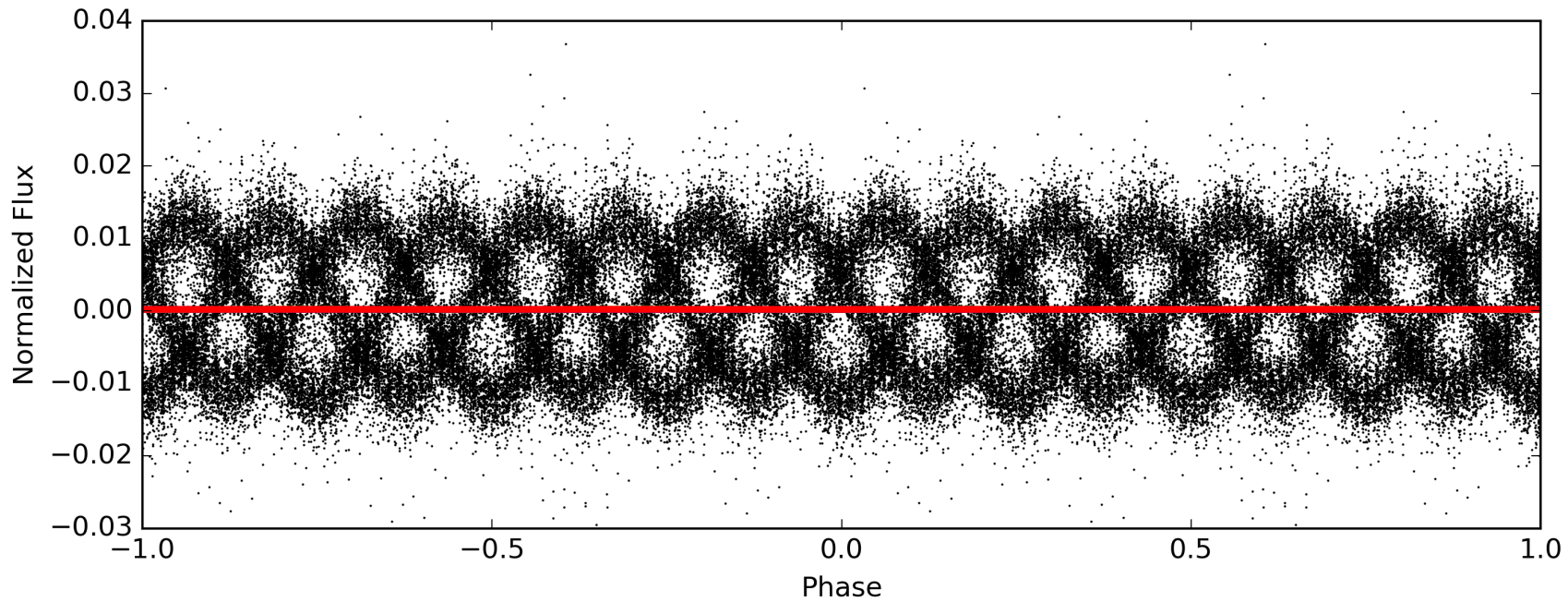
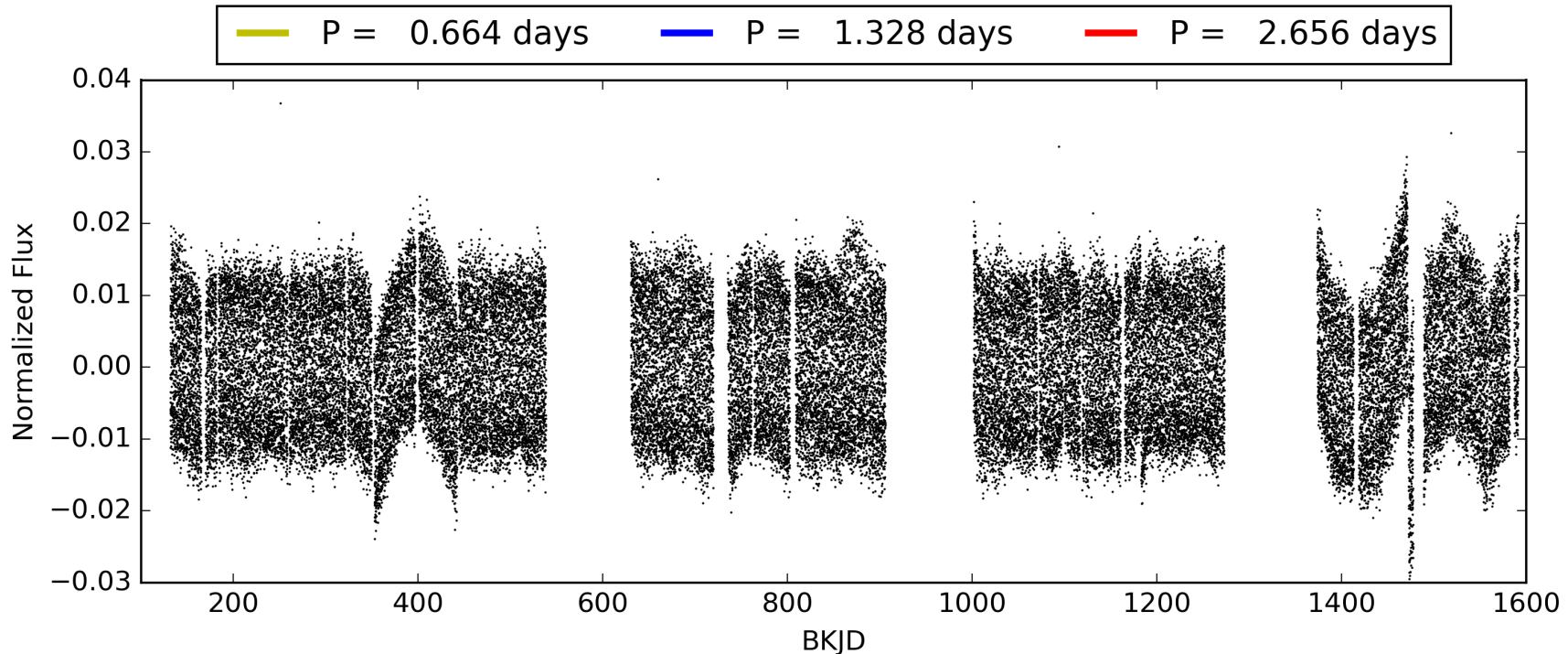
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005373377-01, PDC Light Curves

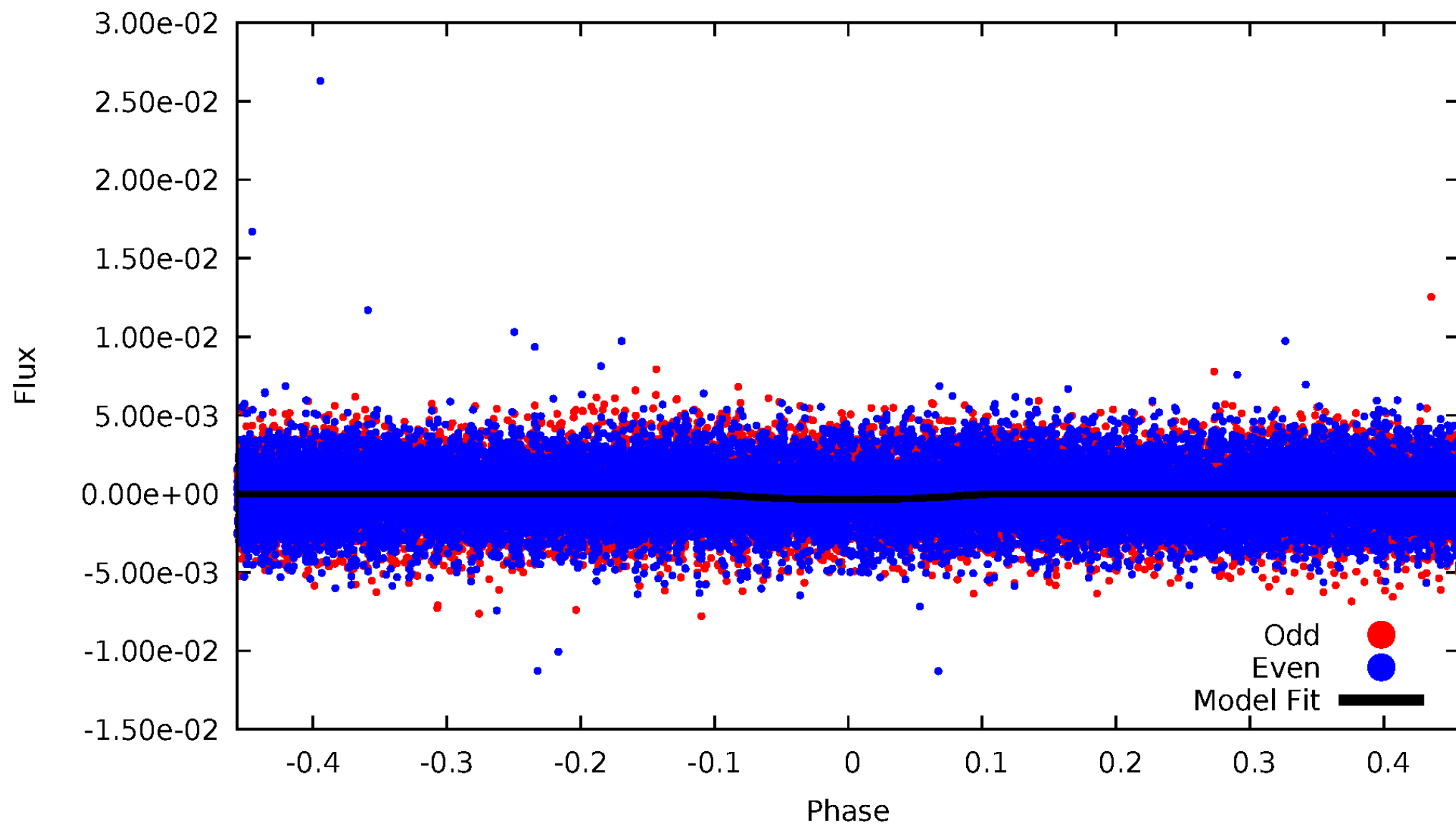


TCE 005373377-01



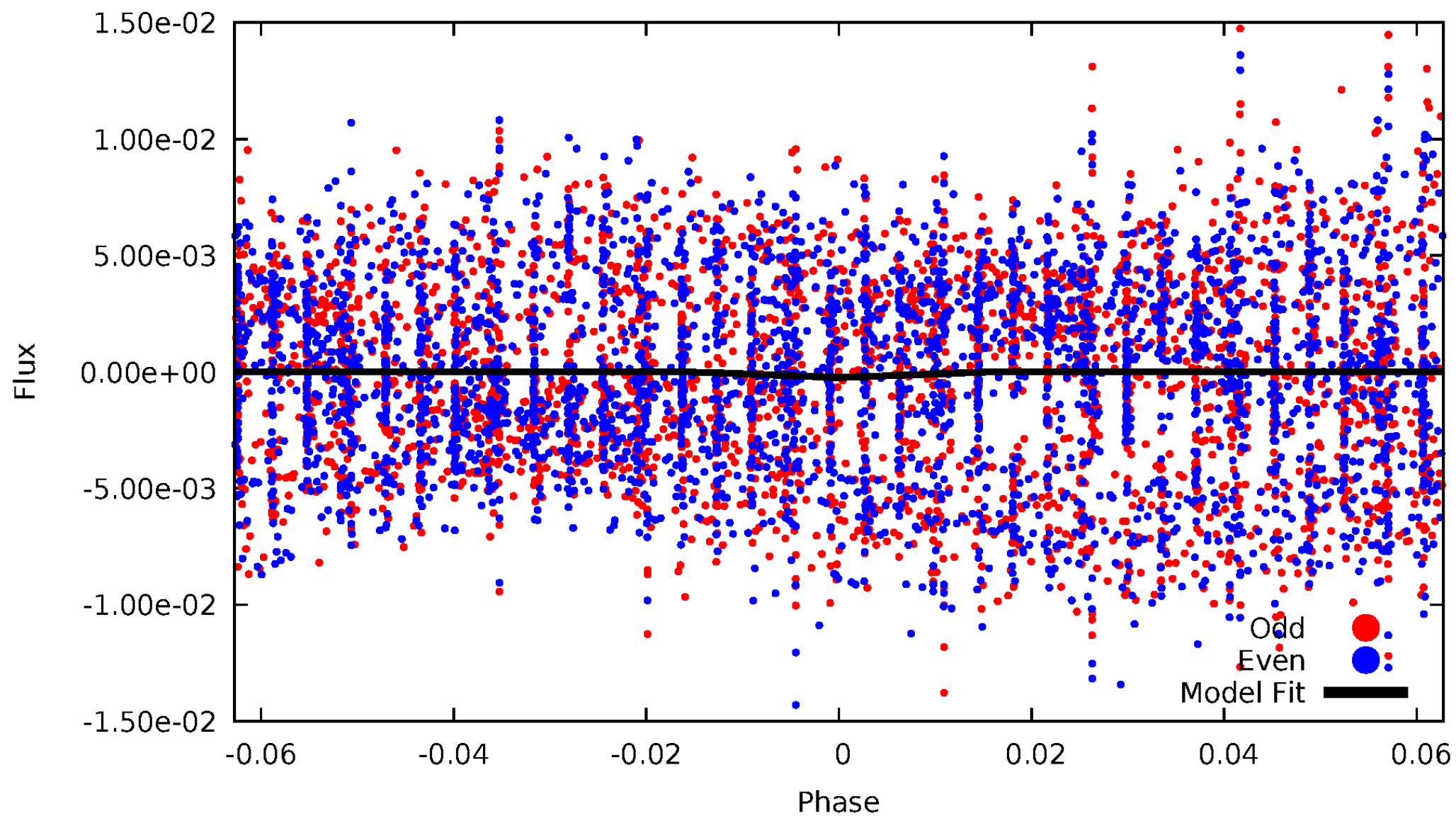
DV Odd/Even

TCE 005373377-01

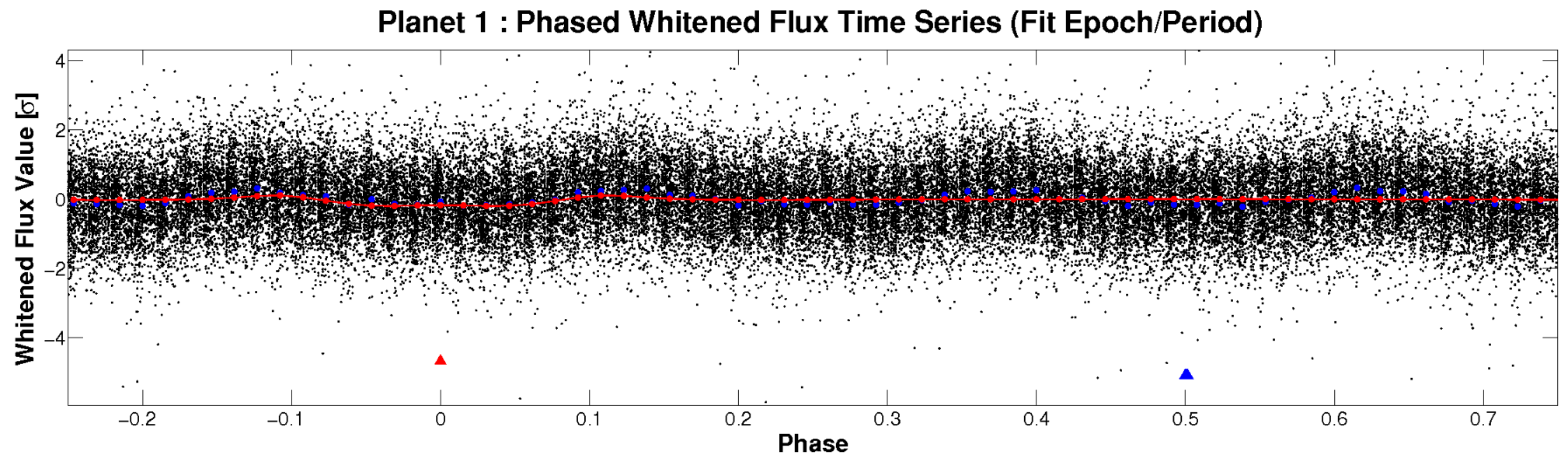
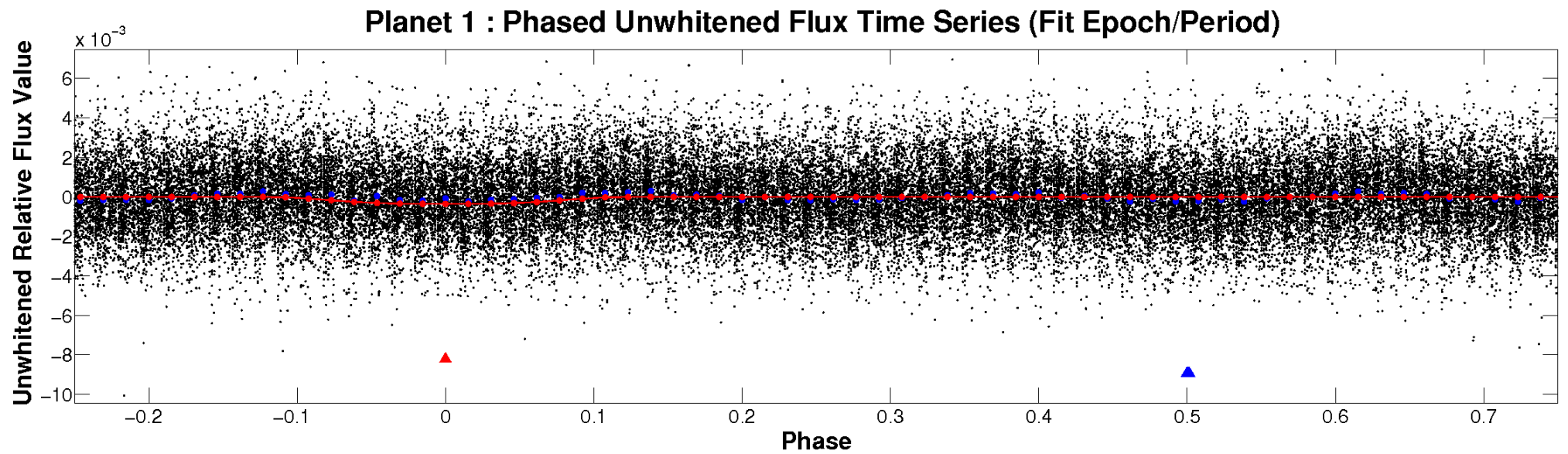


ALT Odd/Even

TCE 005373377-01

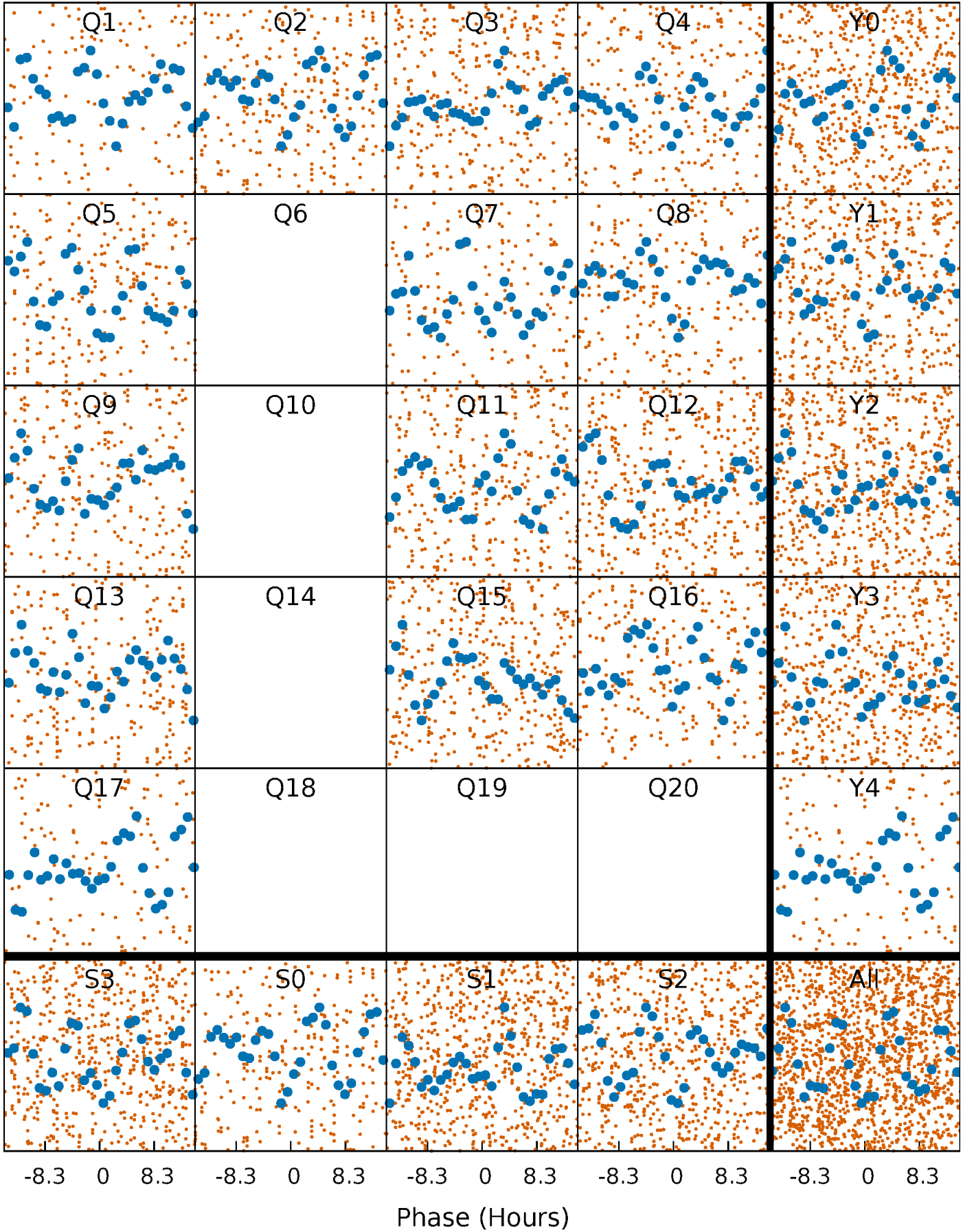


Non-Whitened Vs. Whitened Light Curve



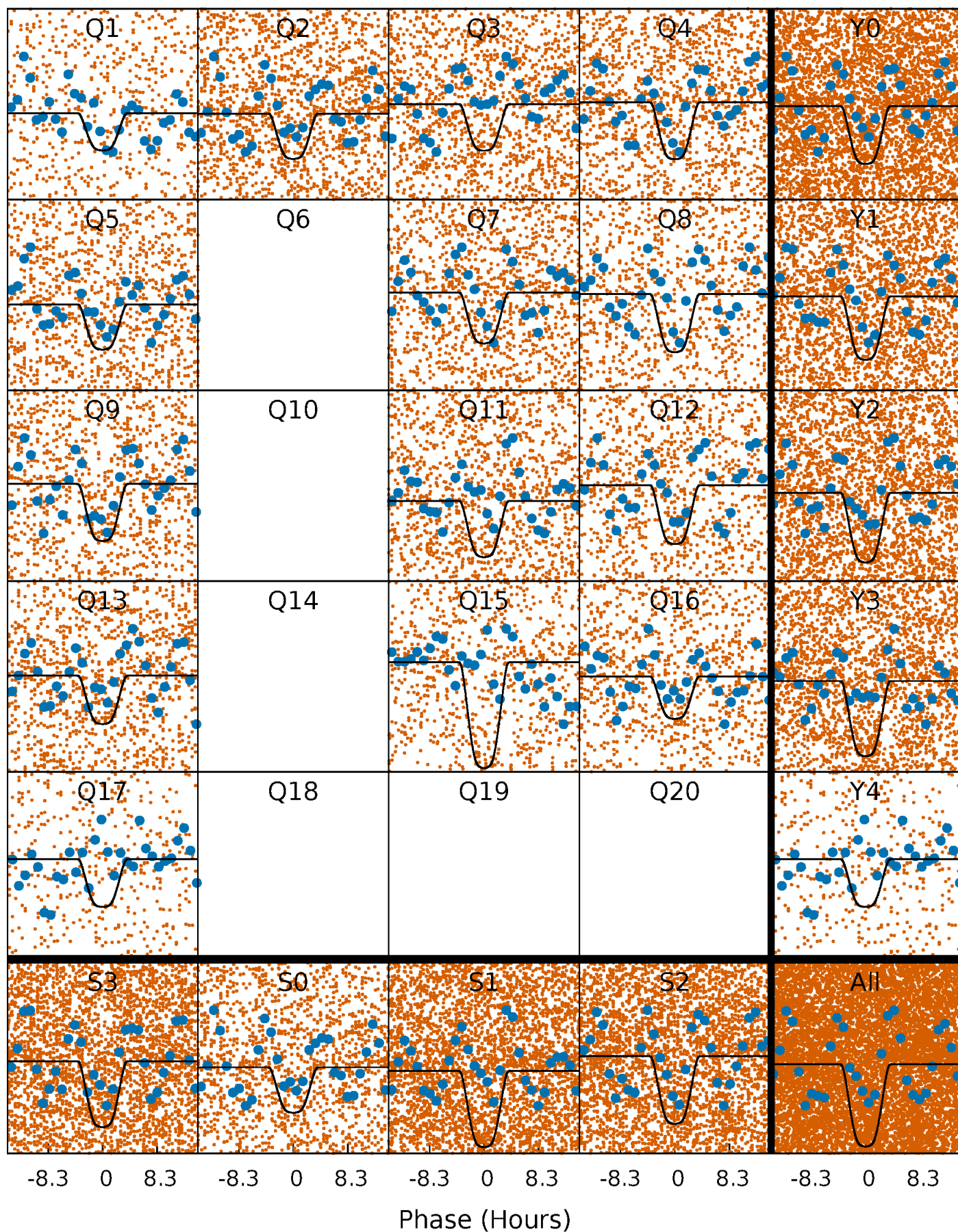
PDC Quarter-Phased Transit Curves

TCE 005373377-01 P= 1.328250 Days $T_0=131.929928$ (BKJD)



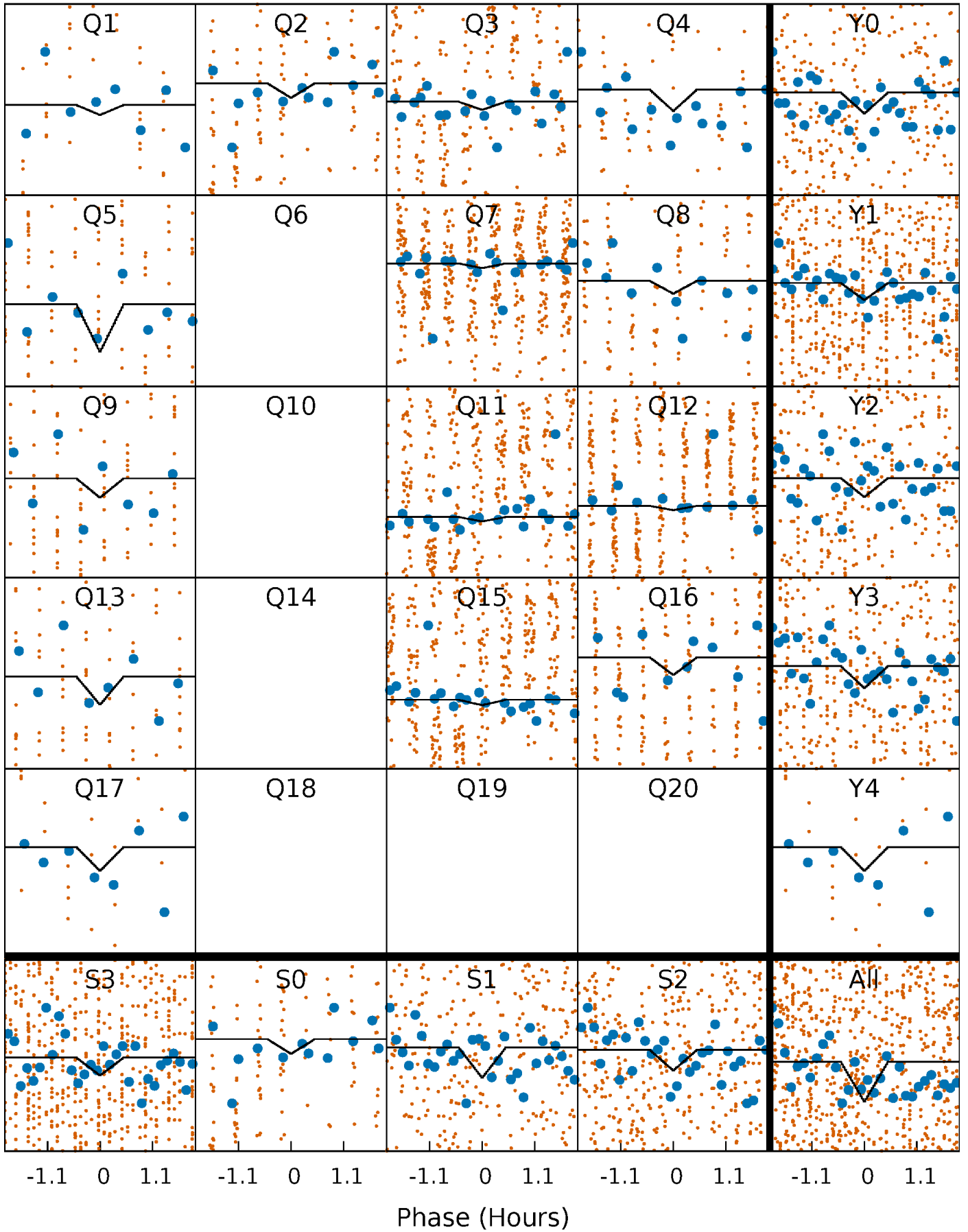
DV Quarter-Phased Transit Curves

TCE 005373377-01 P= 1.328250 Days $T_0=131.929928$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

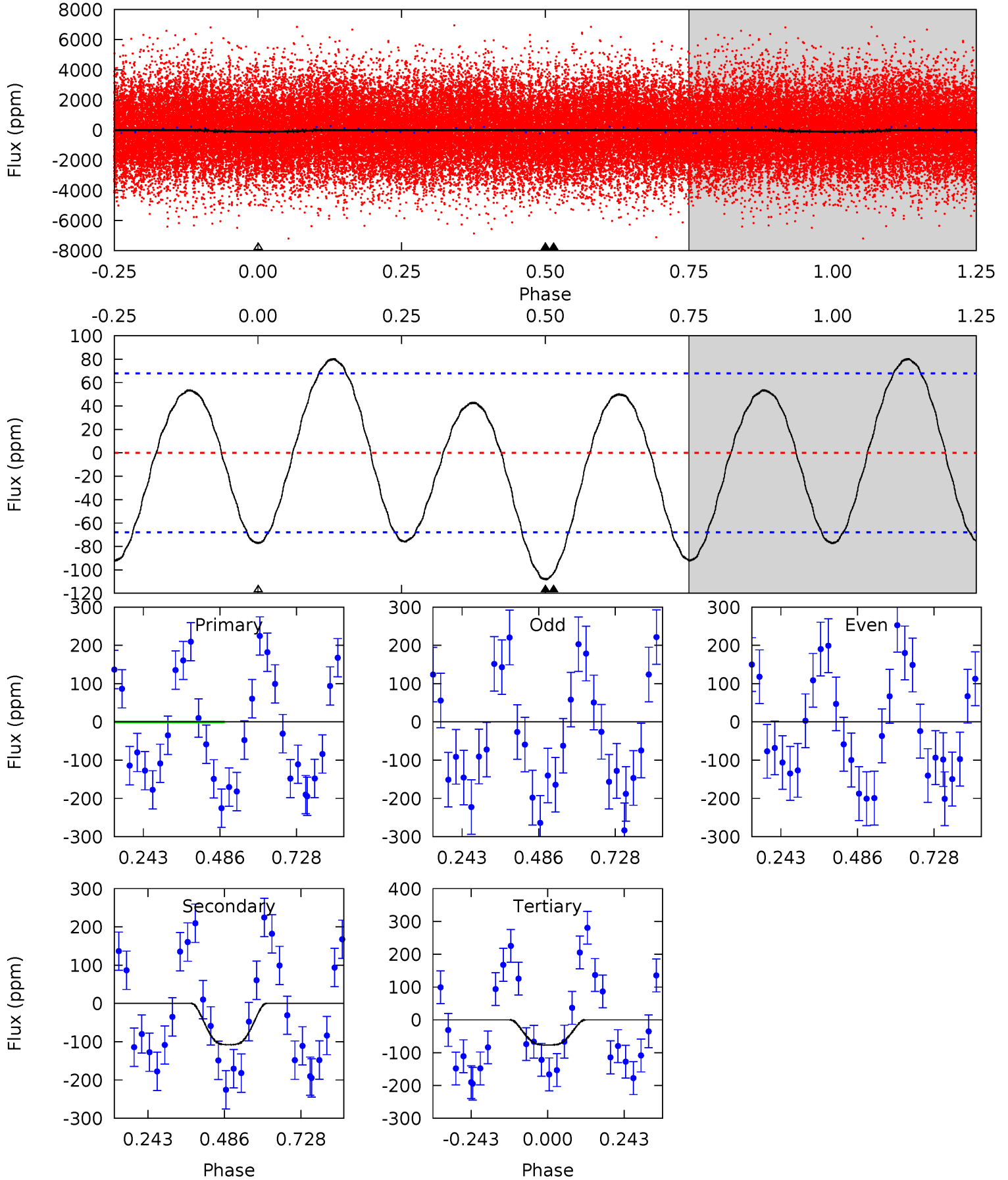
TCE 005373377-01 P= 1.328240 Days $T_0=131.906499$ (BKJD)



DV Model-Shift Uniqueness Test

005373377-01, P = 1.328250 Days, E = 130.601678 Days

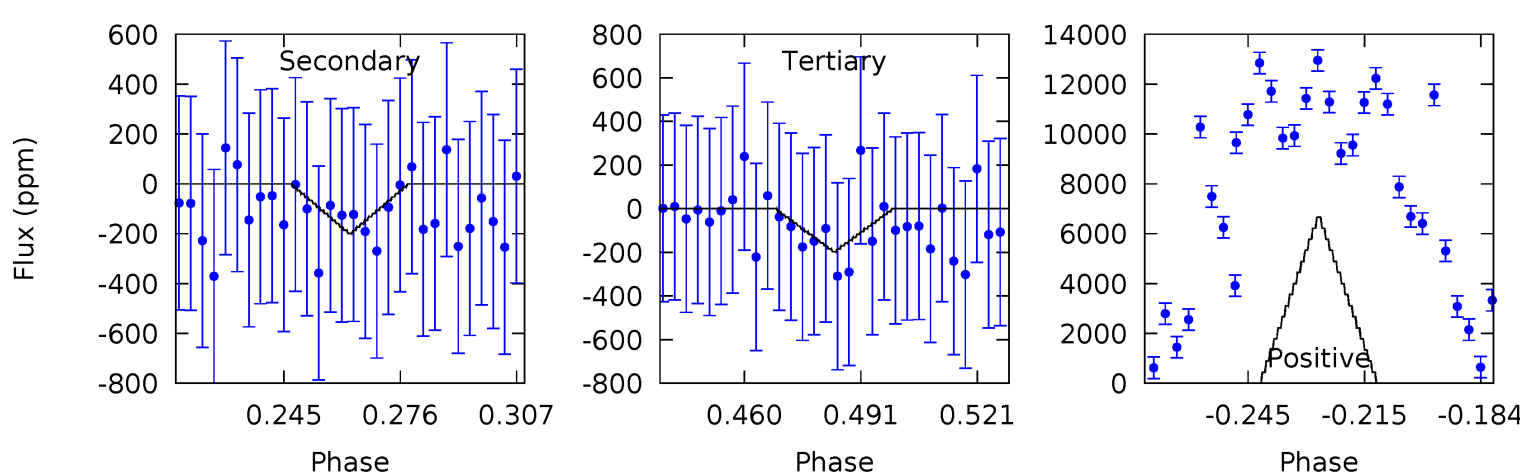
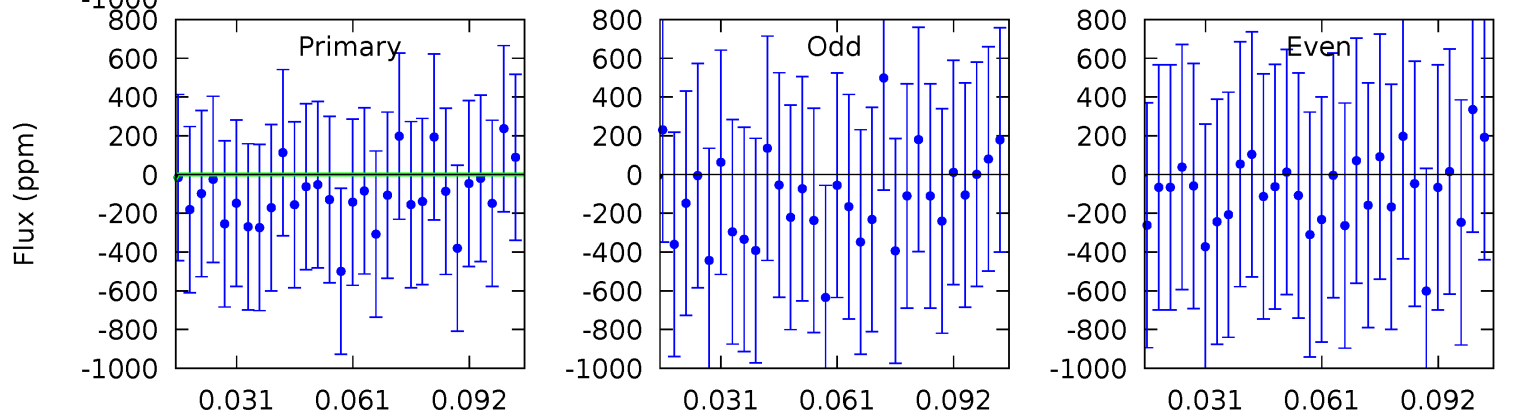
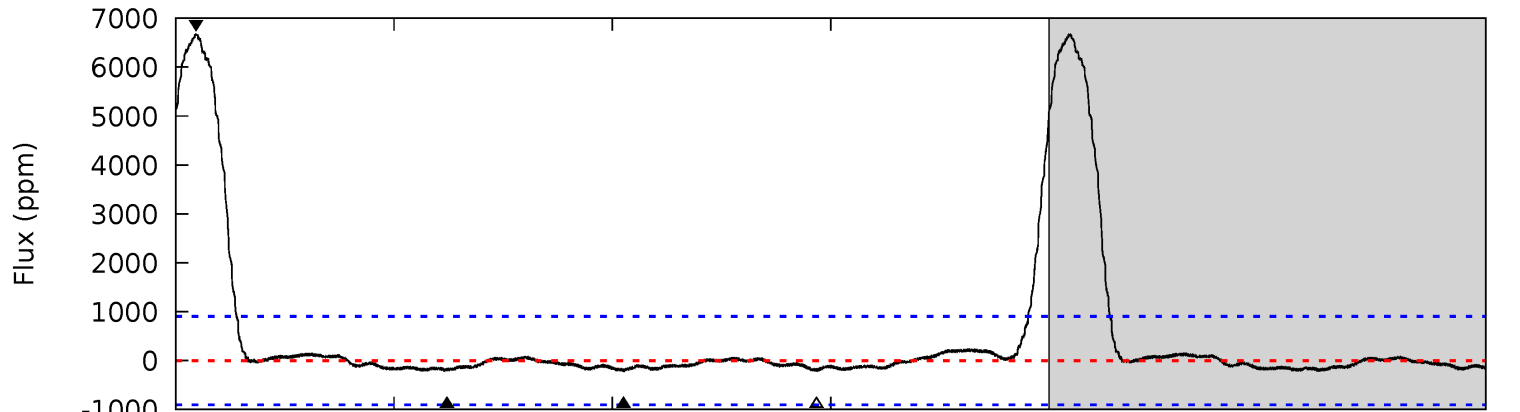
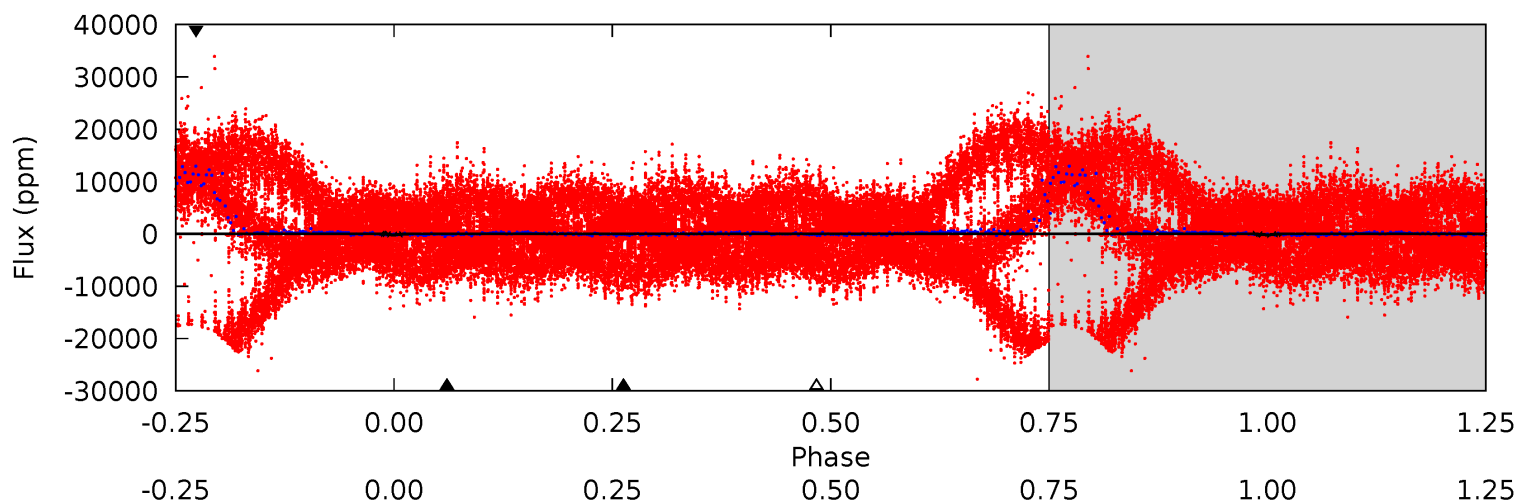
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.61	6.95	4.97	0	4.38	1.17	3.37	1.65	6.61	1.99	6.95	1.57	0.55	0.43	0.99



Alt Model-Shift Uniqueness Test

005373377-01, P = 1.328240 Days, E = 130.578259 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.05	1.06	1.05	35.4	4.81	2.16	7.03	-0.00	-34.4	0.01	-34.4	0.58	-0.33	0.97	0.04



Stellar Parameters For KIC 005373377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7725^{+211}_{-316}	$4.122^{+0.139}_{-0.170}$	$-0.160^{+0.200}_{-0.350}$	$1.818^{+0.512}_{-0.384}$	$1.596^{+0.197}_{-0.241}$	$0.374^{+0.264}_{-0.178}$
	+3%/-4%	+3%/-4%	+125%/-219%	+28%/-21%	+12%/-15%	+71%/-48%
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 005373377-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-108 ± 16	$4.37^{+0.69}_{-0.46}$	3863^{+267}_{-241}	5055^{+262}_{-239}	$2.288^{+0.685}_{-0.543}$
Alt.	-200 ± 188	$3.09^{+0.47}_{-0.36}$	3884^{+249}_{-283}	7203^{+1703}_{-3482}	$8.475^{+8.528}_{-7.854}$

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 $A_{obs} \gg 1.0$

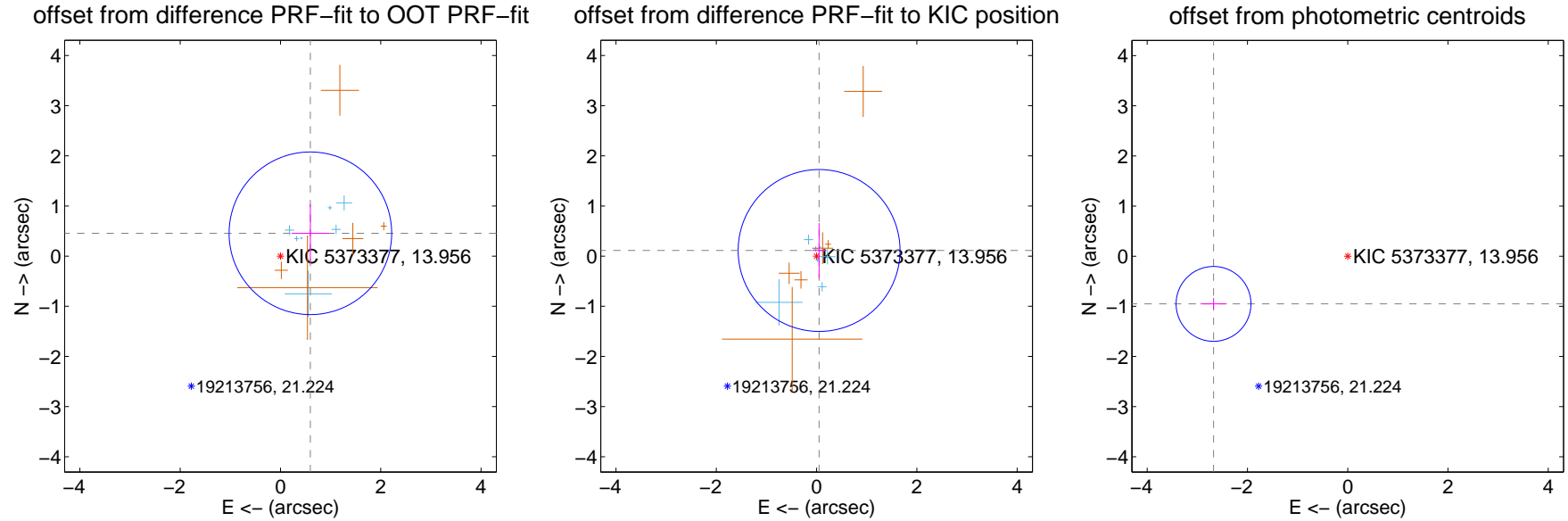
DV Centroid Data

Supplemental centroid analysis for 005373377-01. Kepler magnitude: 13.96. Transit SNR 16.41

There are 7 quarters with good PRF difference image offsets

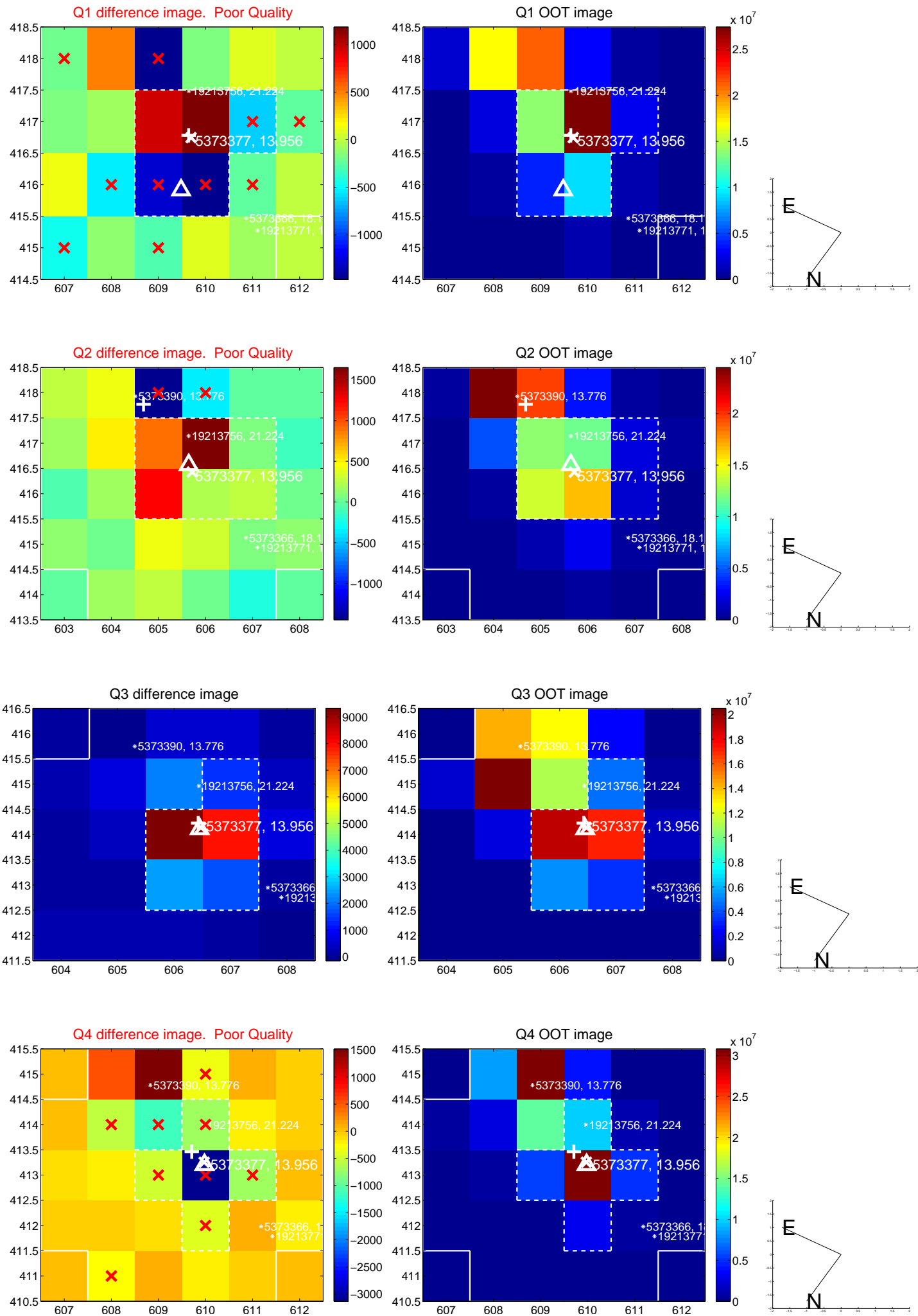
The direct PRF centroid is offset from the target star catalog position by about 1.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.751 ± 0.540	1.39	-0.597 ± 0.374	0.455 ± 0.578
PRF-fit source offset from KIC position	0.123 ± 0.538	0.23	-0.050 ± 0.136	0.112 ± 0.547
photometric centroid source offset	2.84 ± 0.25	11.42	2.68 ± 0.26	-0.95 ± 0.12

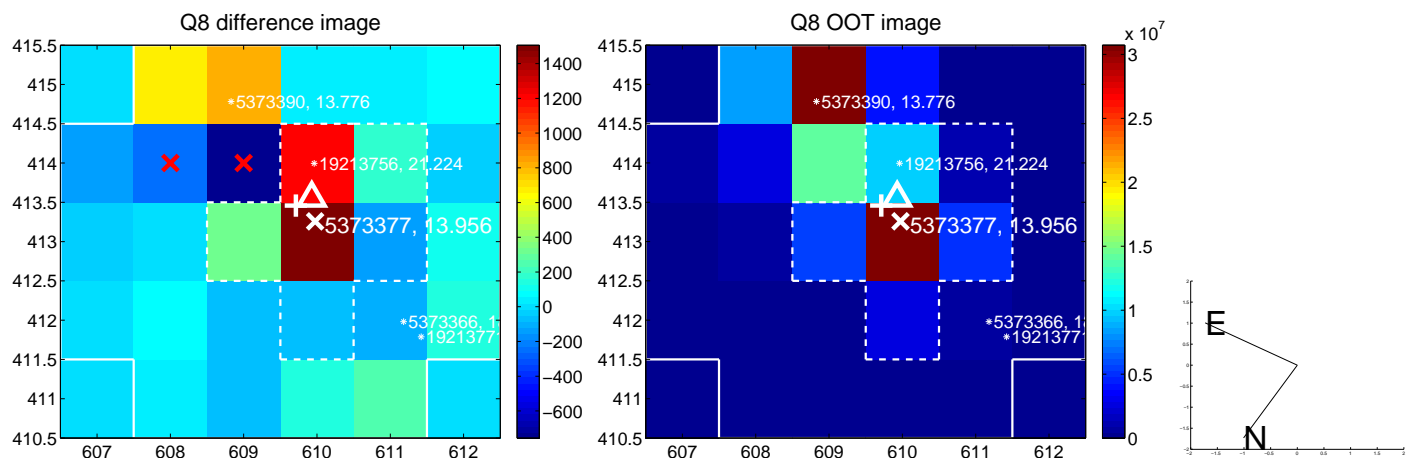
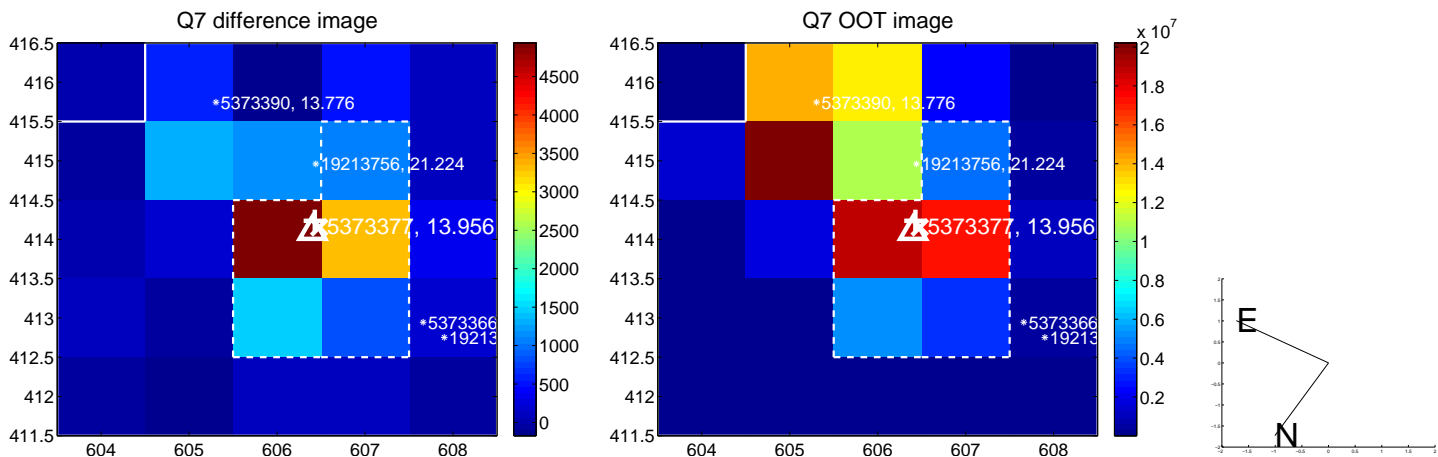
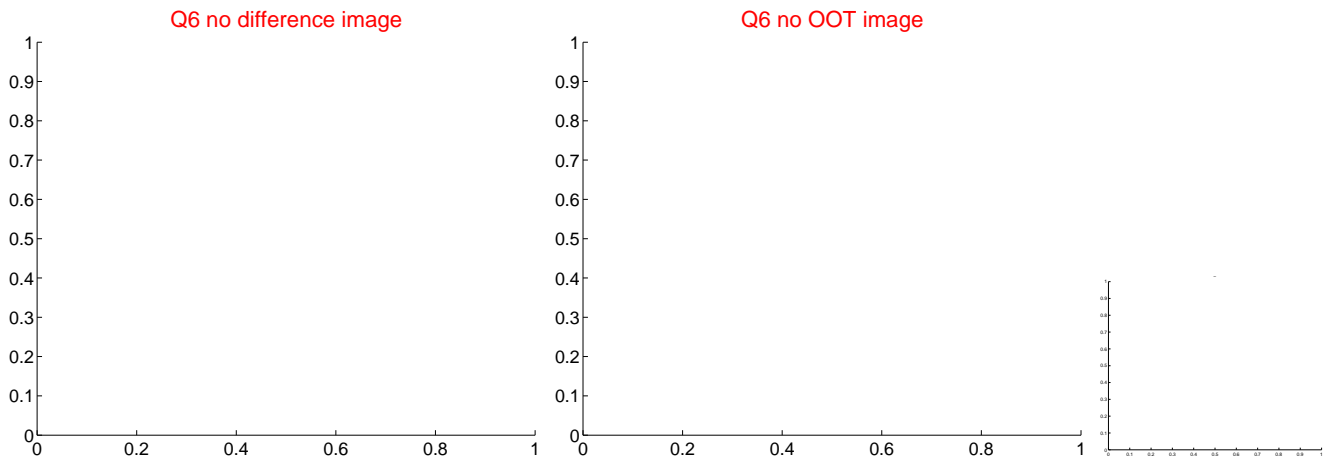
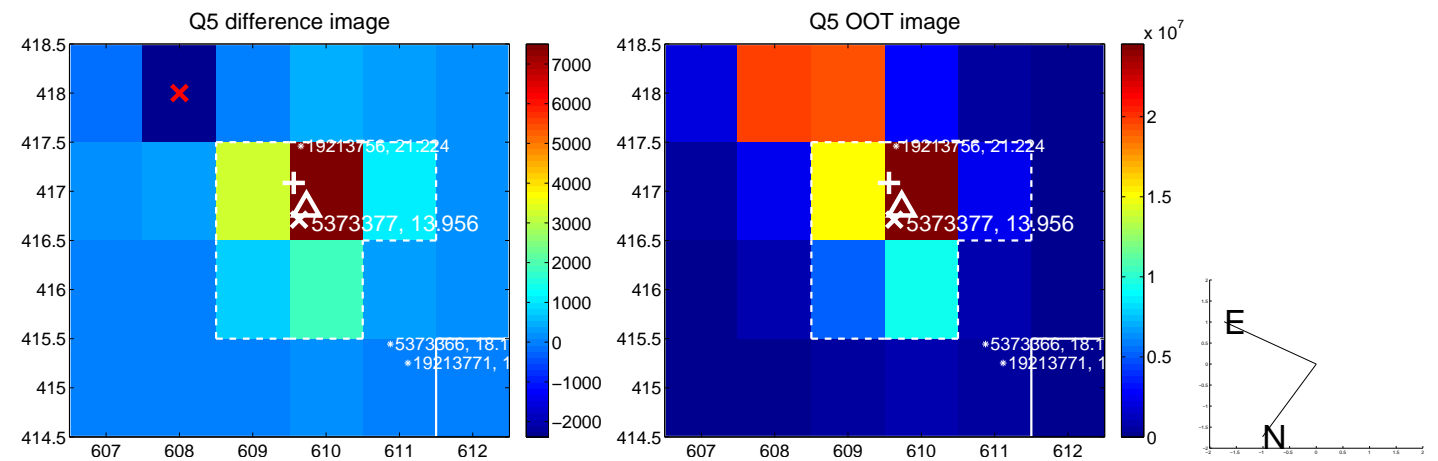


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

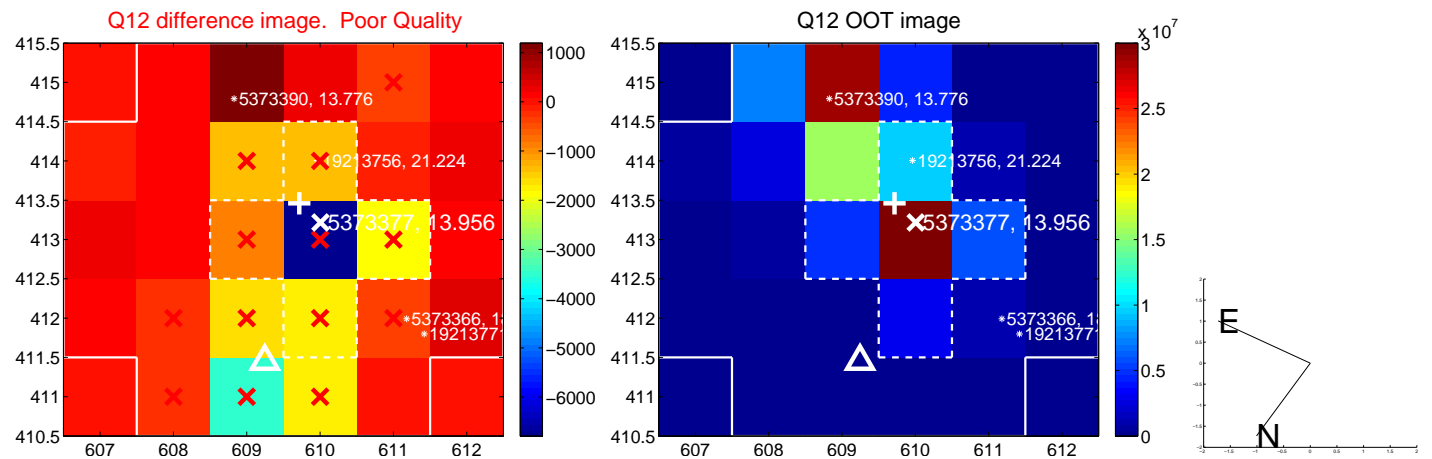
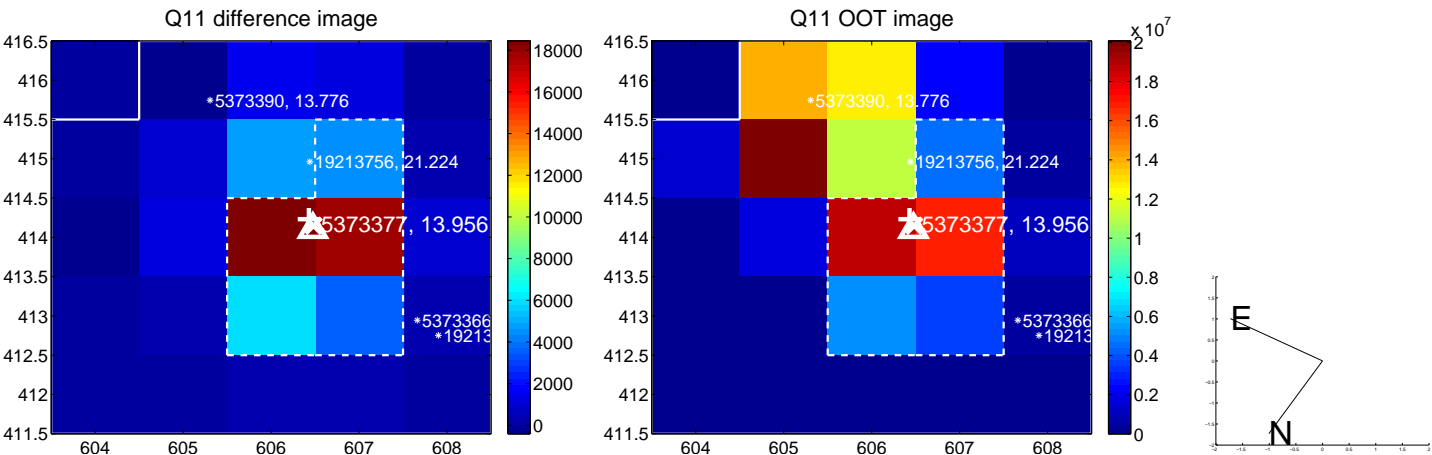
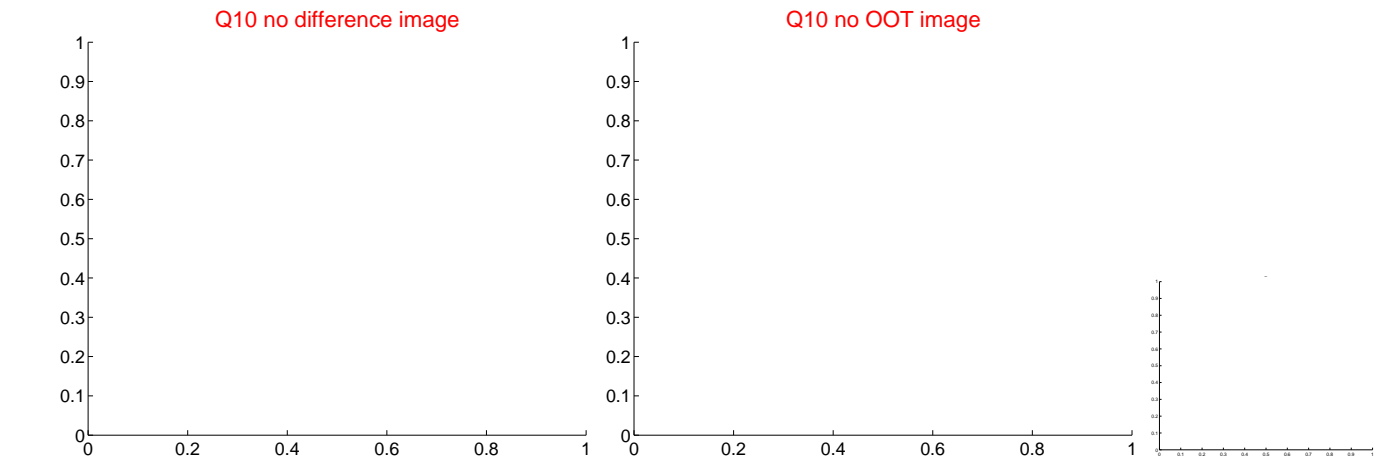
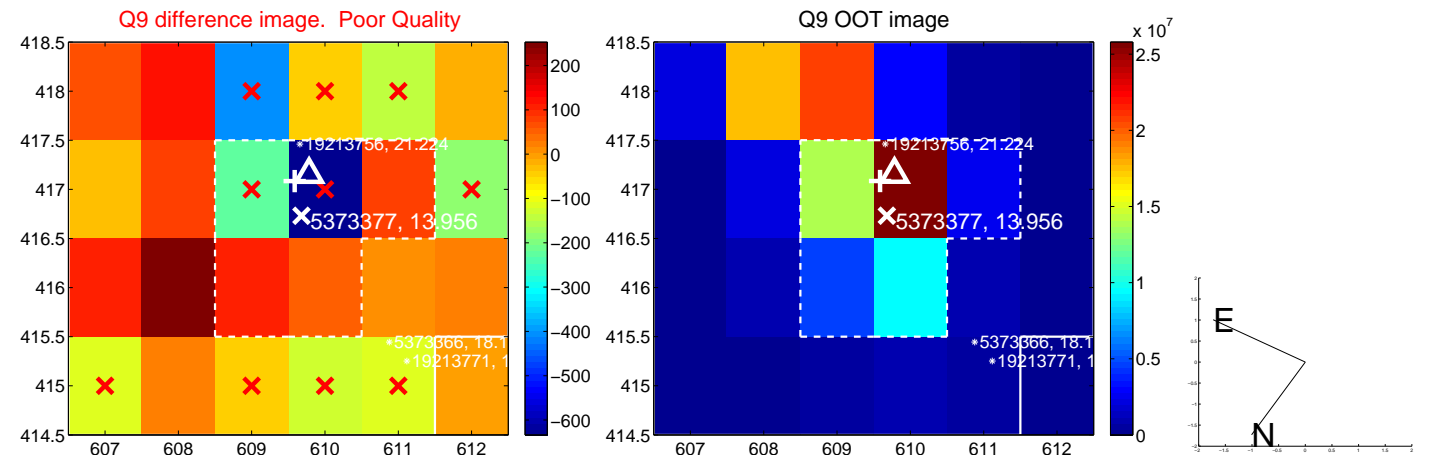
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



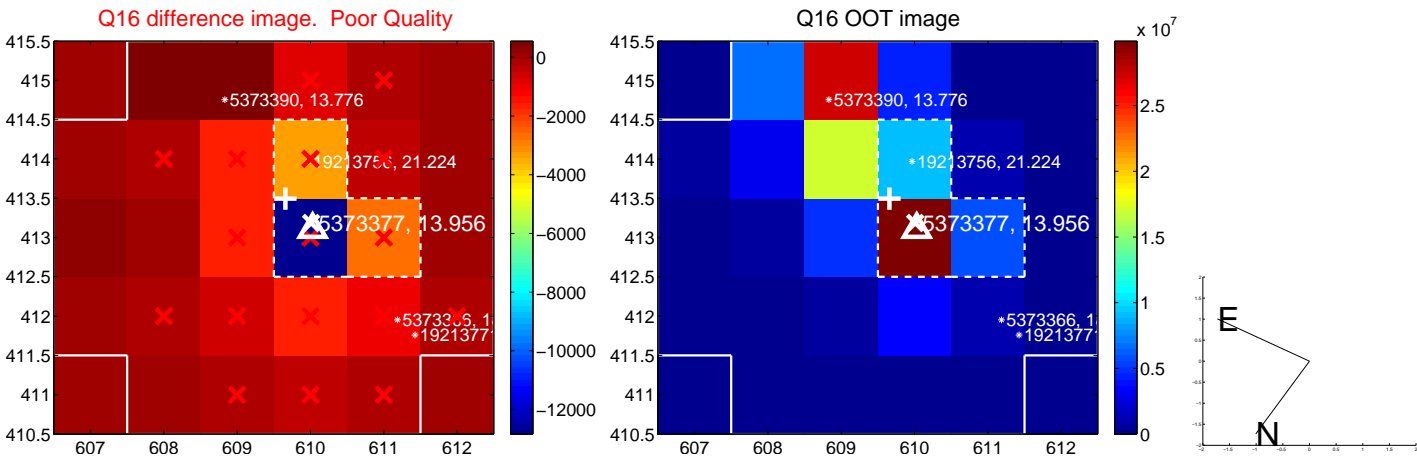
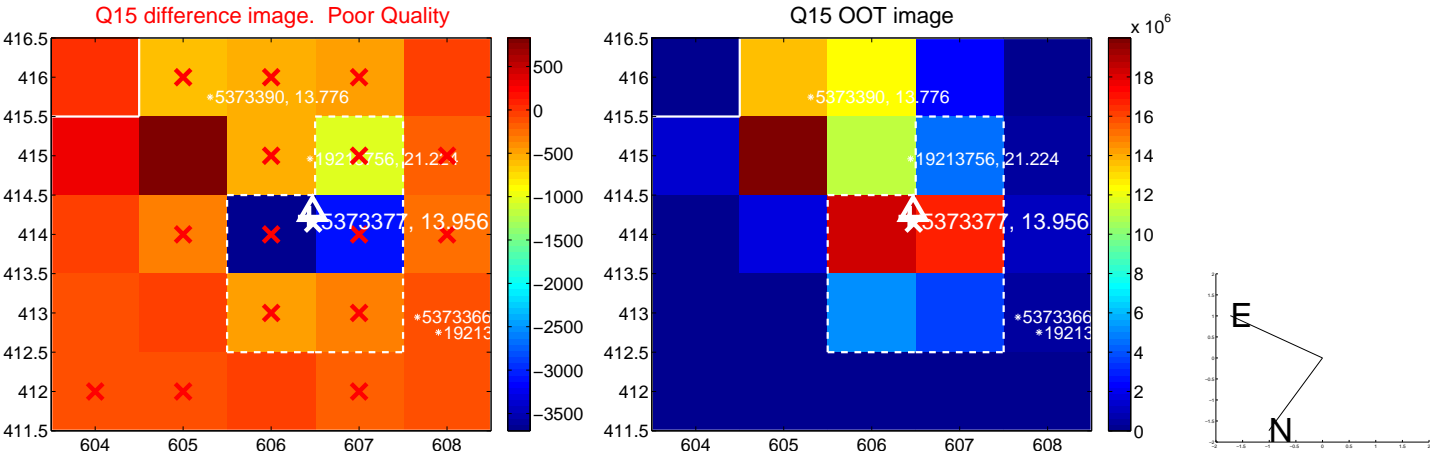
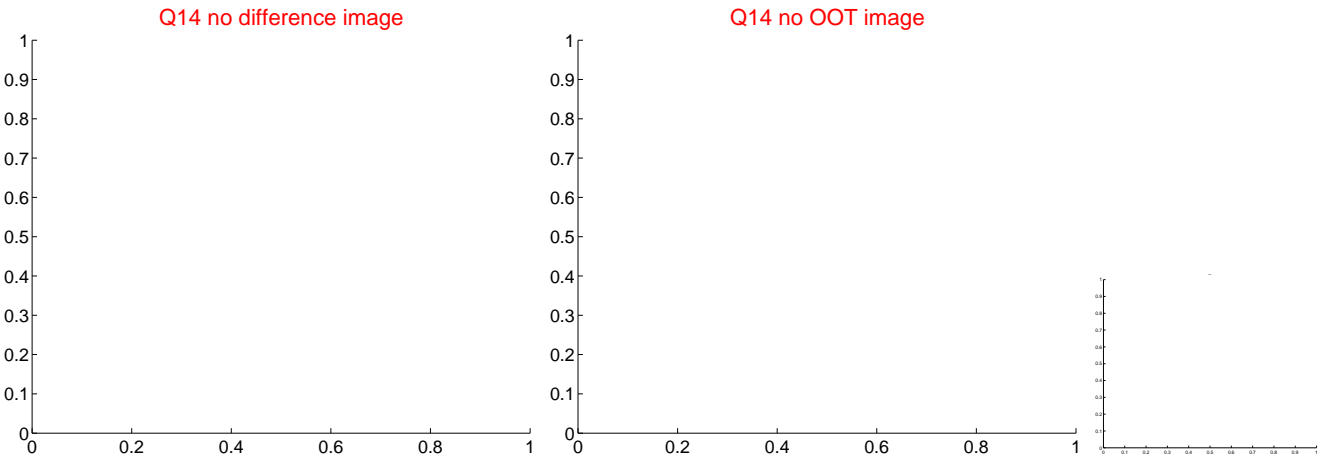
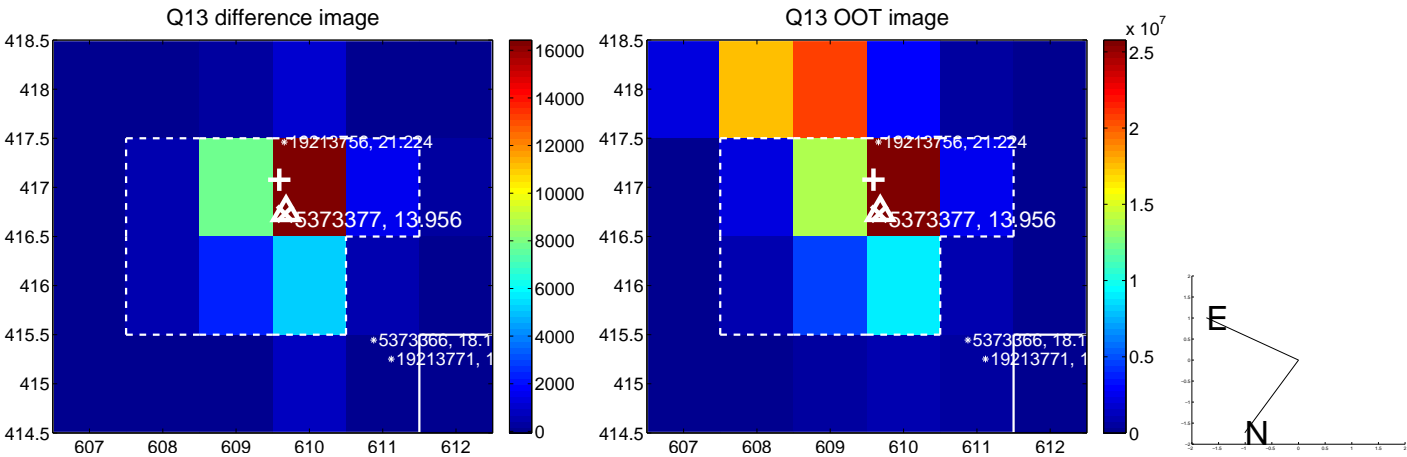
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



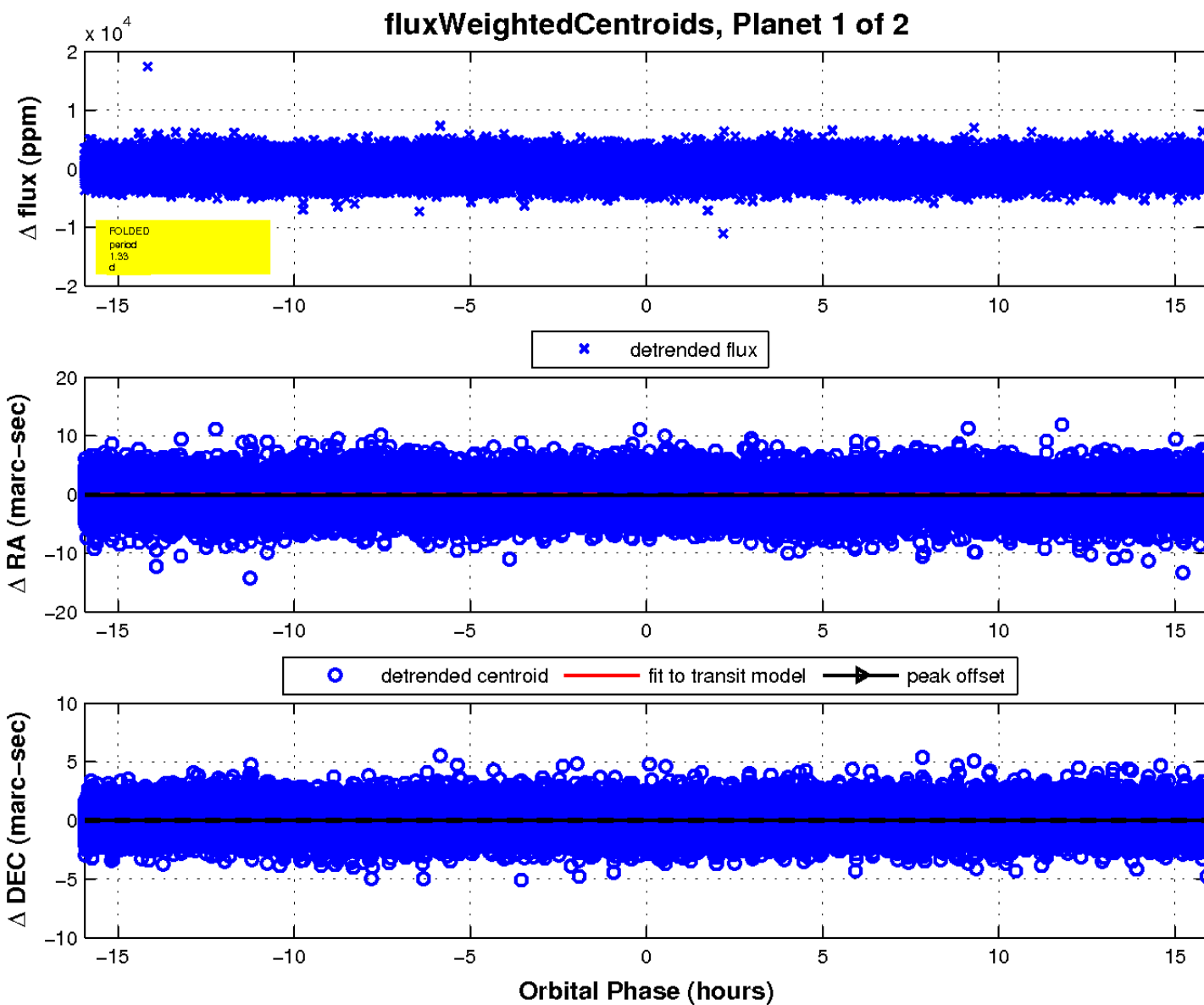
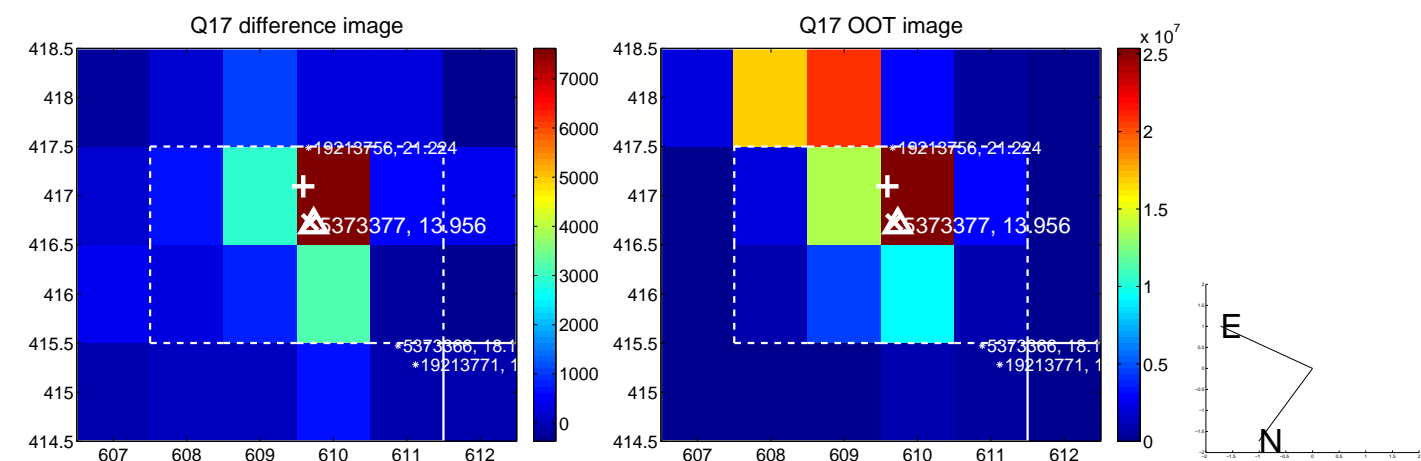
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

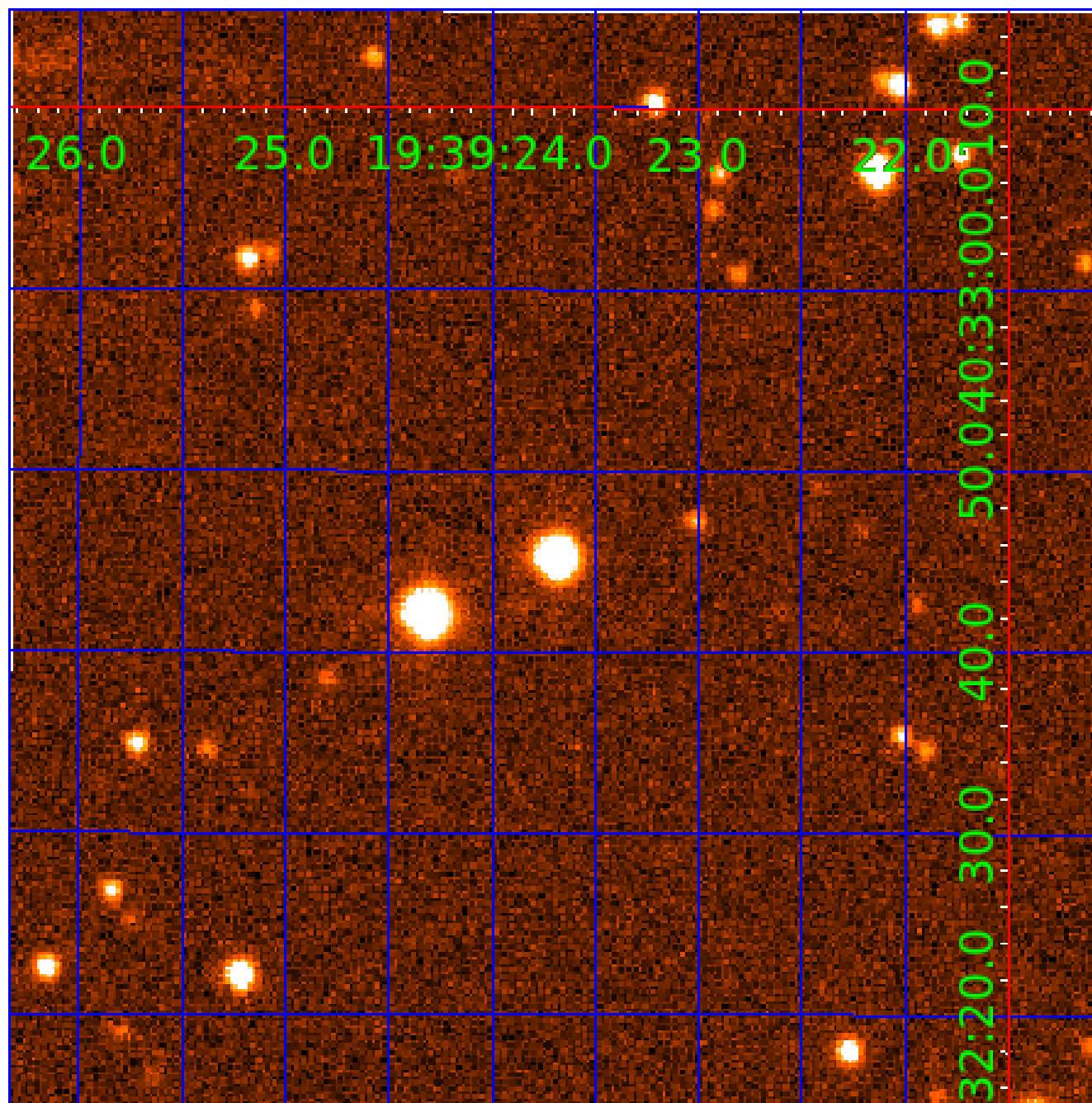


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005373377

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})
005373377-01	OBS	No	1.328250	131.929928	350.8	7.277	16.8	16.4	1.82	7725	4.38	13798.91
005373377-02	OBS	No	1.328252	132.593791	314.1	6.821	14.2	15.5	1.82	7725	4.16	13798.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005373377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005373377-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_KIC_POS—HALO_GHOST

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

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

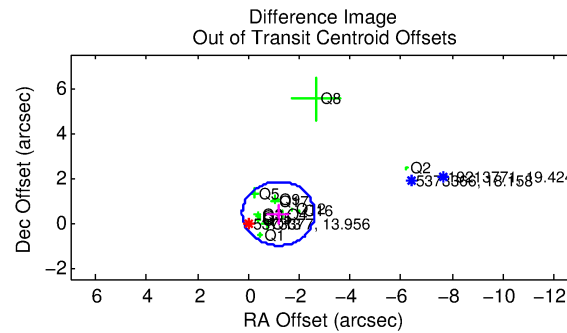
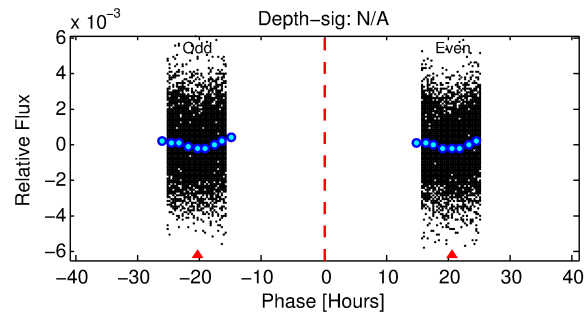
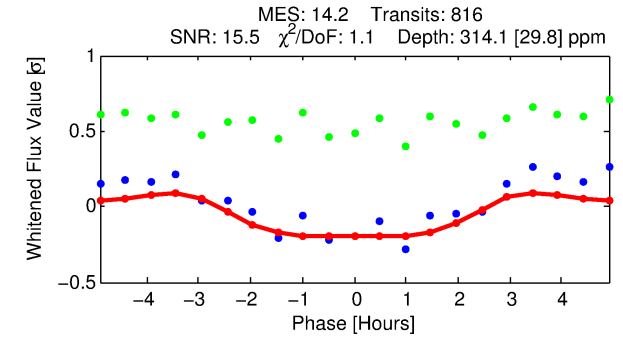
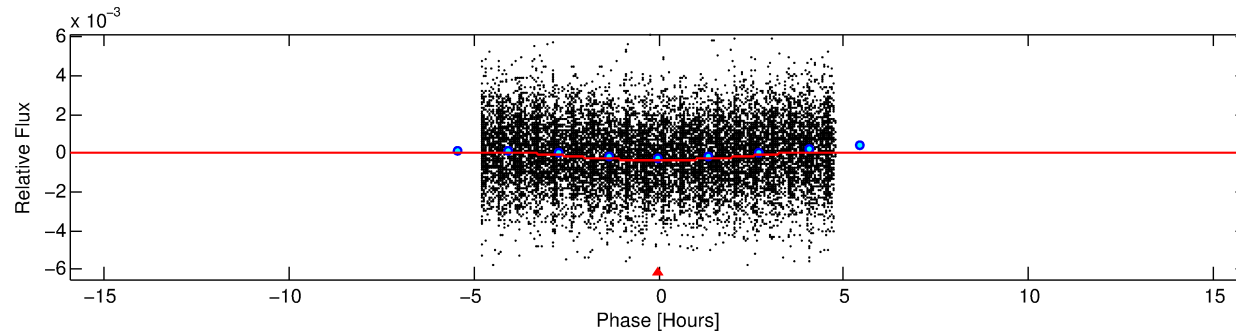
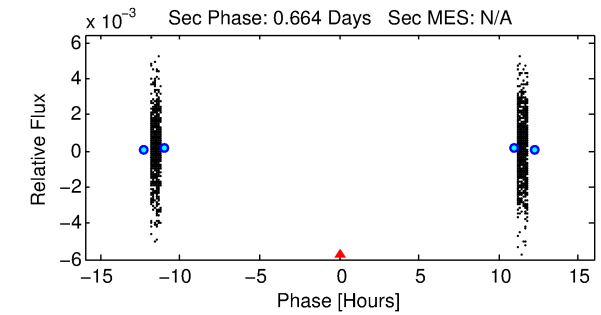
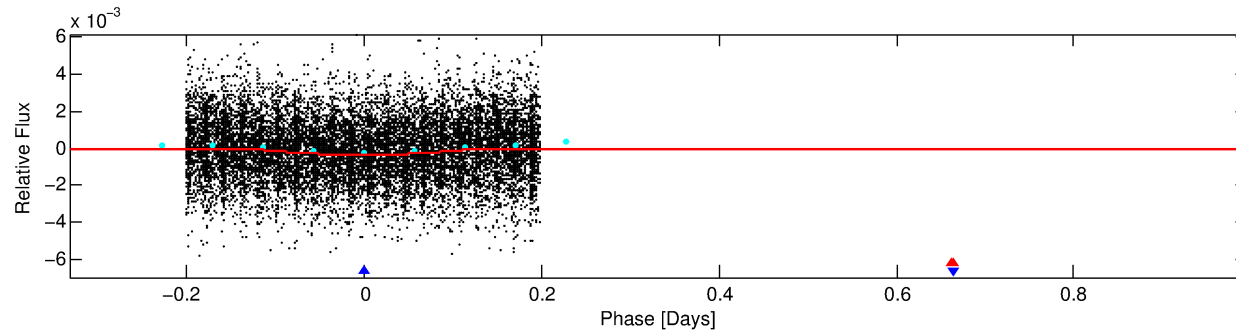
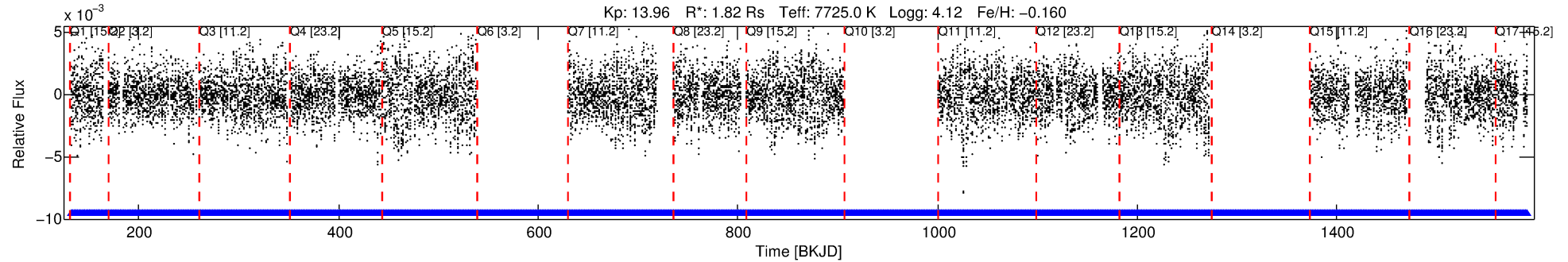
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005373377-02

No Significant Match Found

DV One-Page Summary

KIC: 5373377 Candidate: 2 of 2 Period: 1.328 d



DV Fit Results:

Period = 1.32825 [0.00001] d
Epoch = 132.5938 [0.0052] BKJD
Rp/R* = 0.0210 [0.0011]
a/R* = 1.09 [0.02]
b = 0.97 [0.01]
Seff = 13798.88 [4977.62]
Teq = 2764 [249] K
Rp = 4.16 [1.19] Re
a = 0.0276 [0.0063] AU

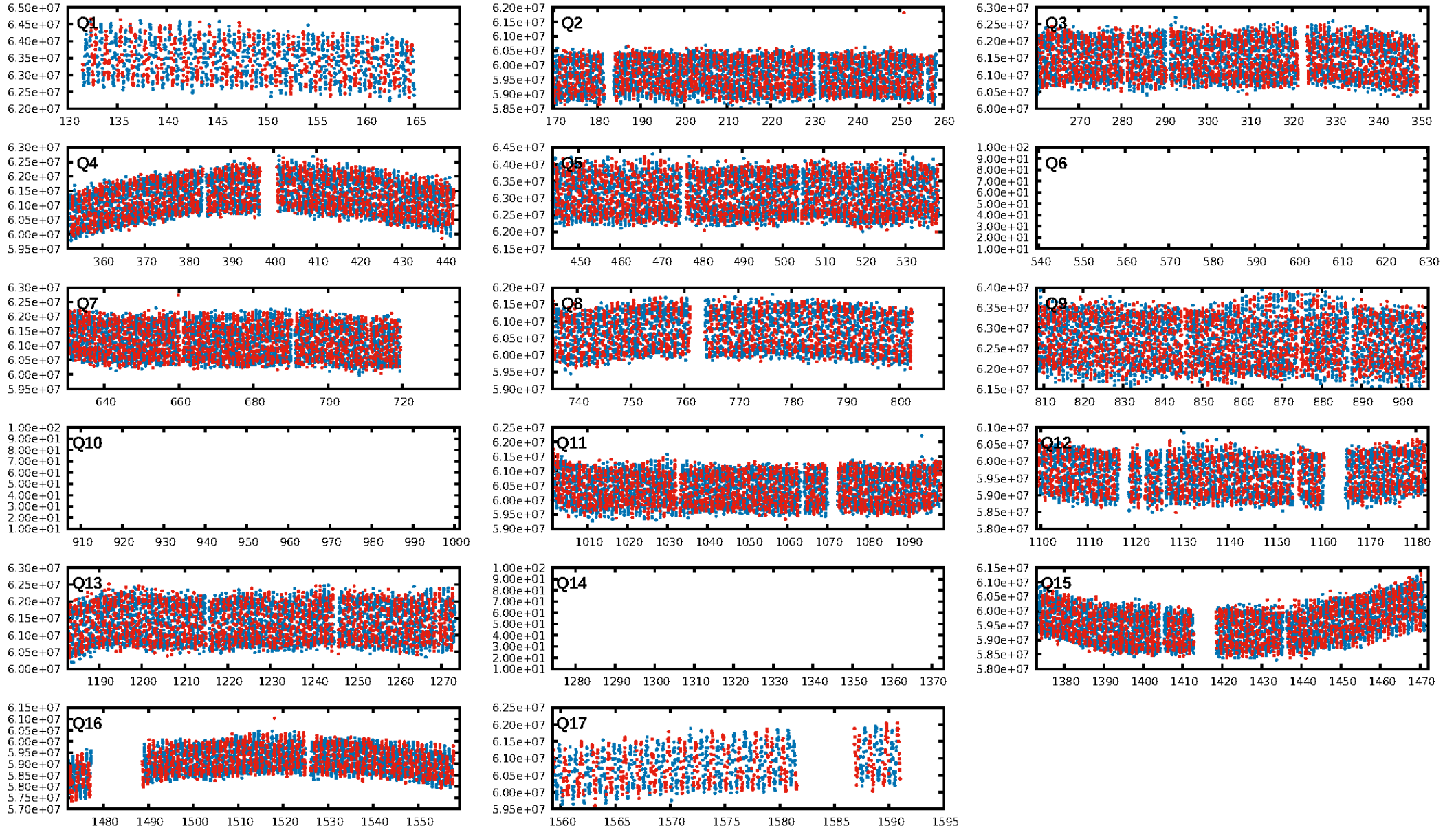
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [769/769]
GhostDiagnostic-chr: -0.1963
Centroid-sig: 1.5%
Centroid-so: 2.283 arcsec [8.09σ]
OotOffset-rm: 1.252 arcsec [2.64σ]
KicOffset-rm: 0.052 arcsec [0.28σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.71 [10/14]
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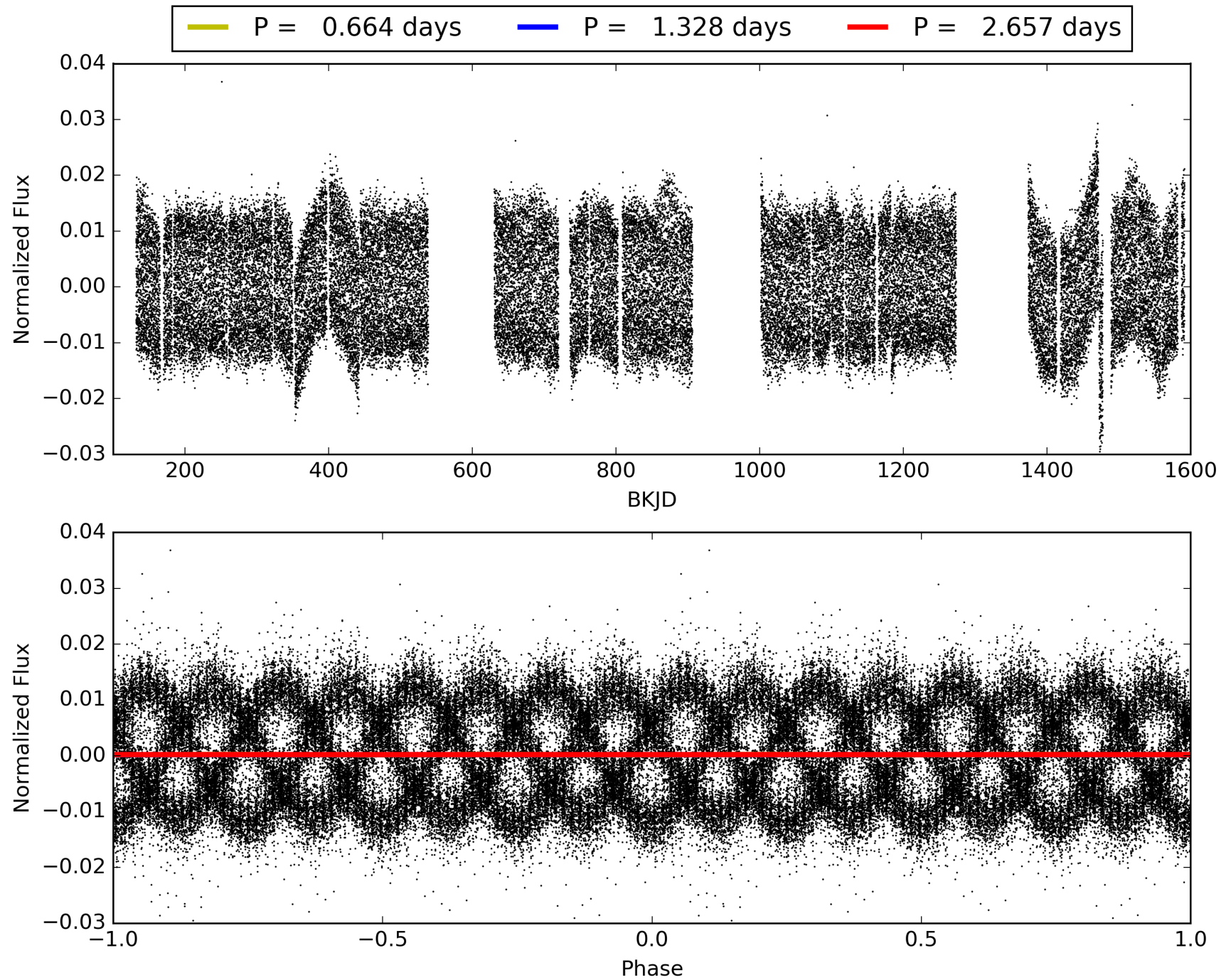
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:14:14 Z

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

TCE 005373377-02, PDC Light Curves

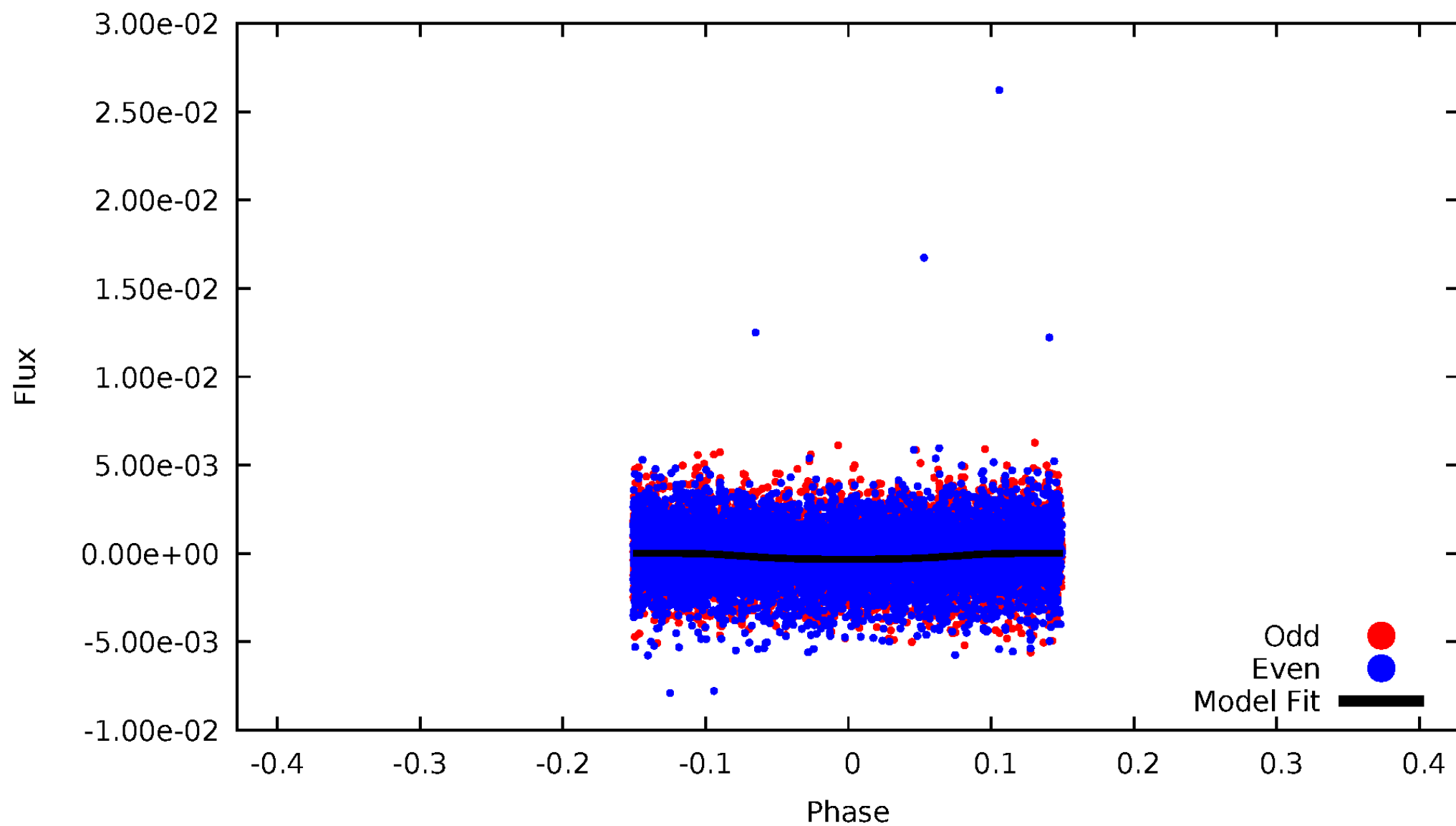


TCE 005373377-02



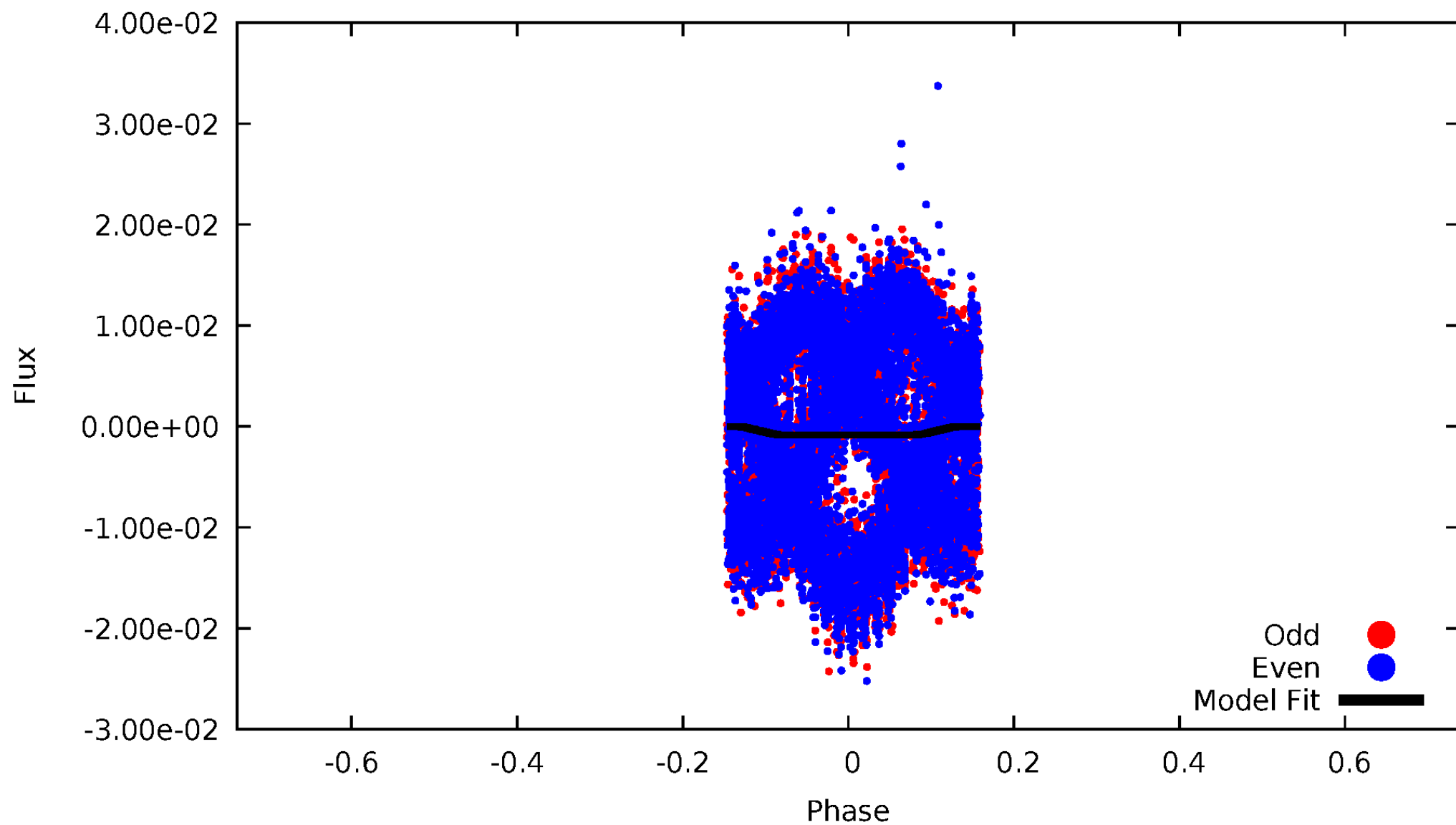
DV Odd/Even

TCE 005373377-02



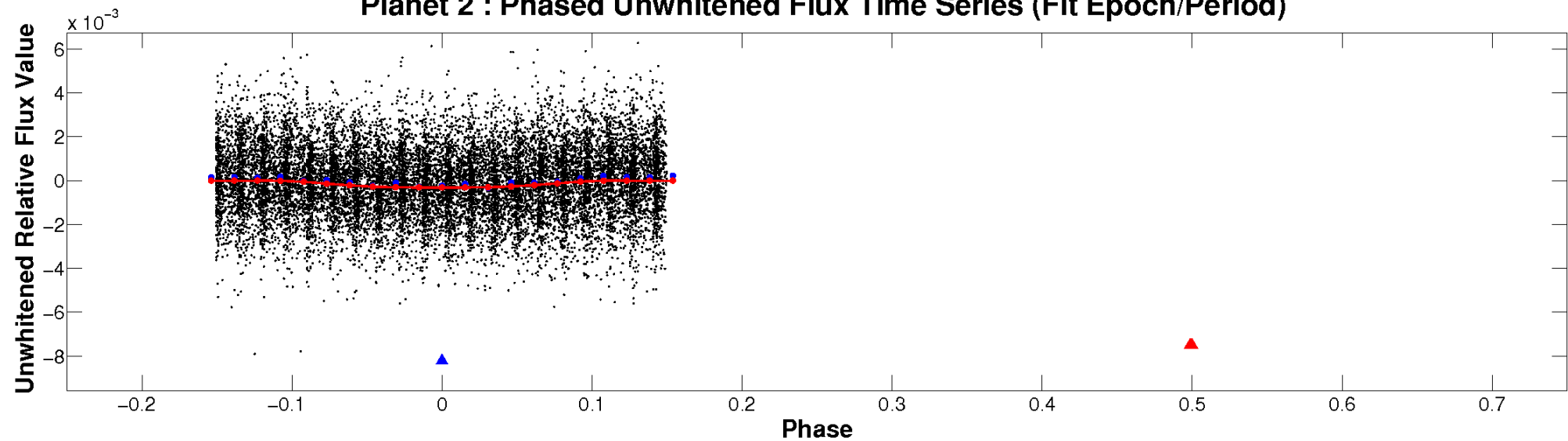
ALT Odd/Even

TCE 005373377-02

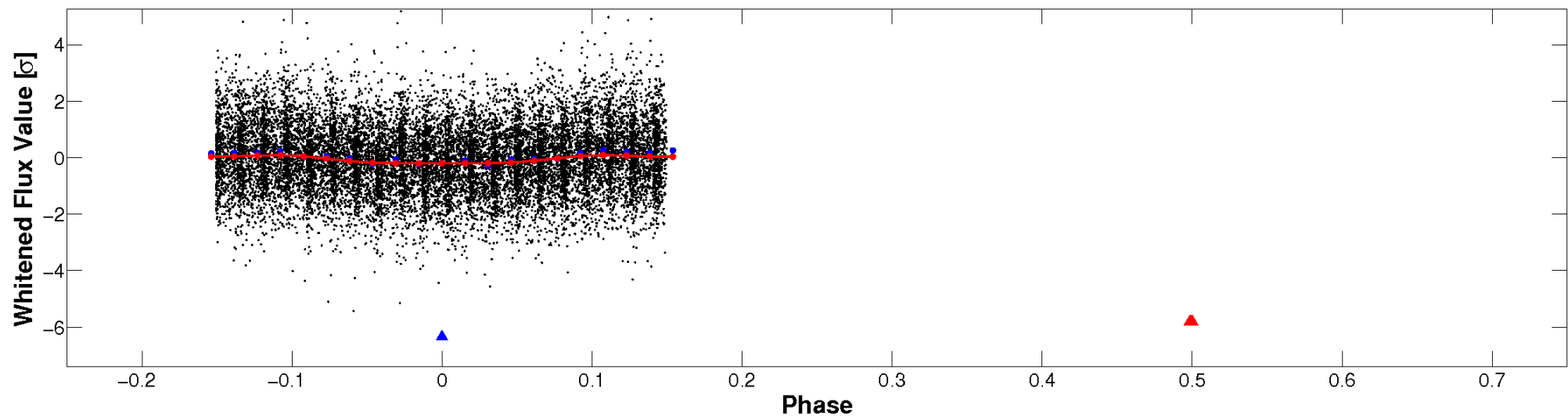


Non-Whitened Vs. Whitened Light Curve

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

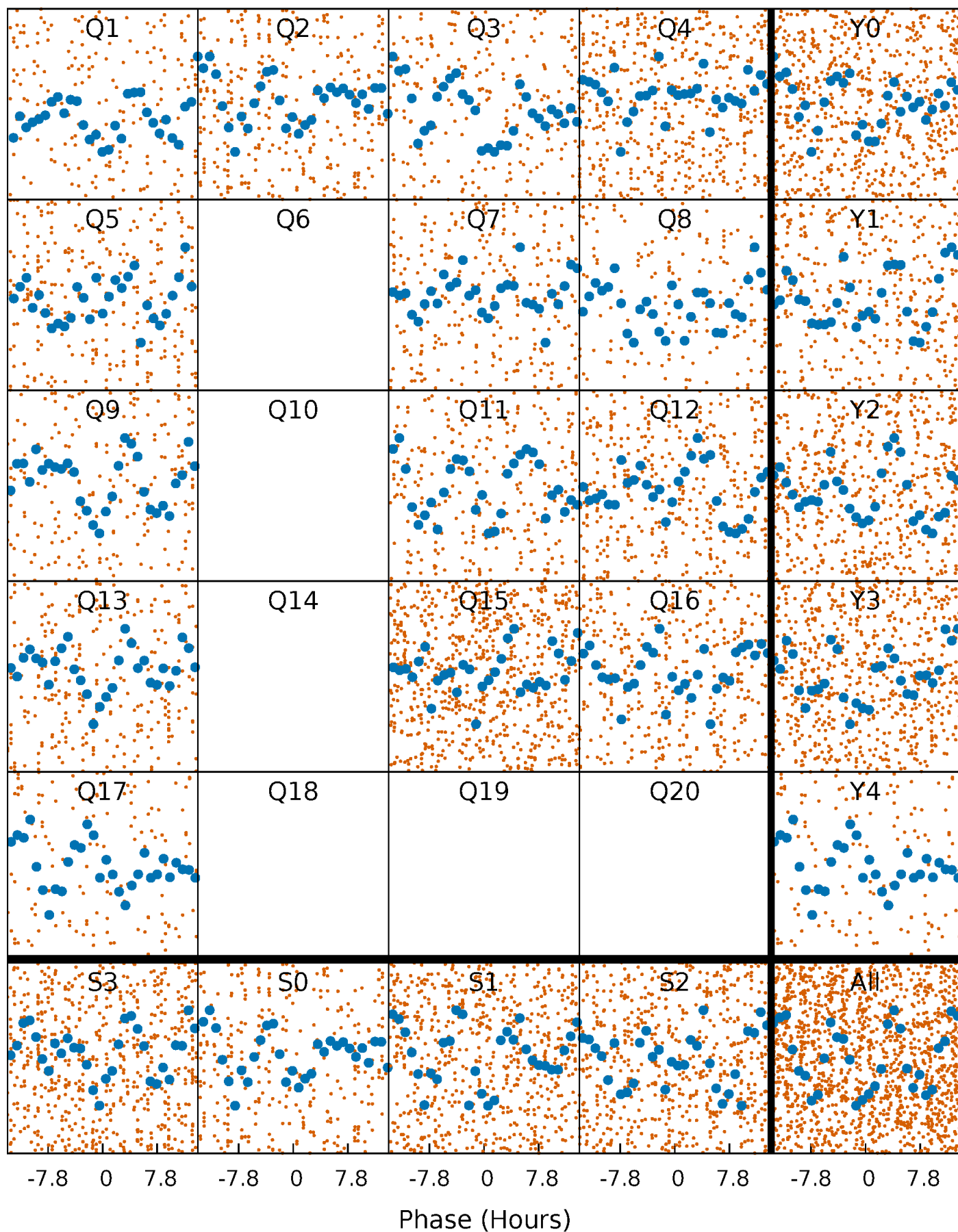


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



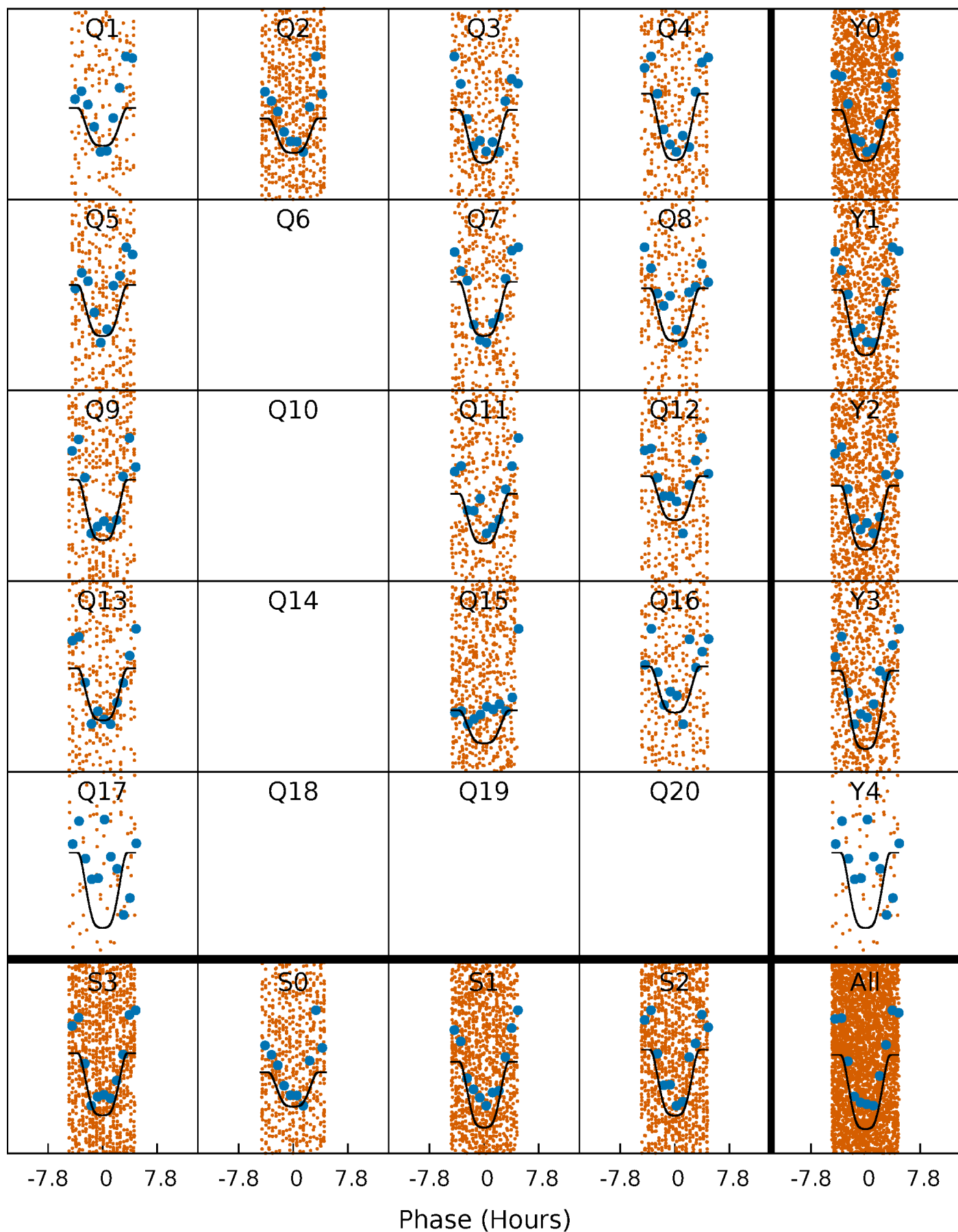
PDC Quarter-Phased Transit Curves

TCE 005373377-02 P= 1.328252 Days $T_0=132.593791$ (BKJD)



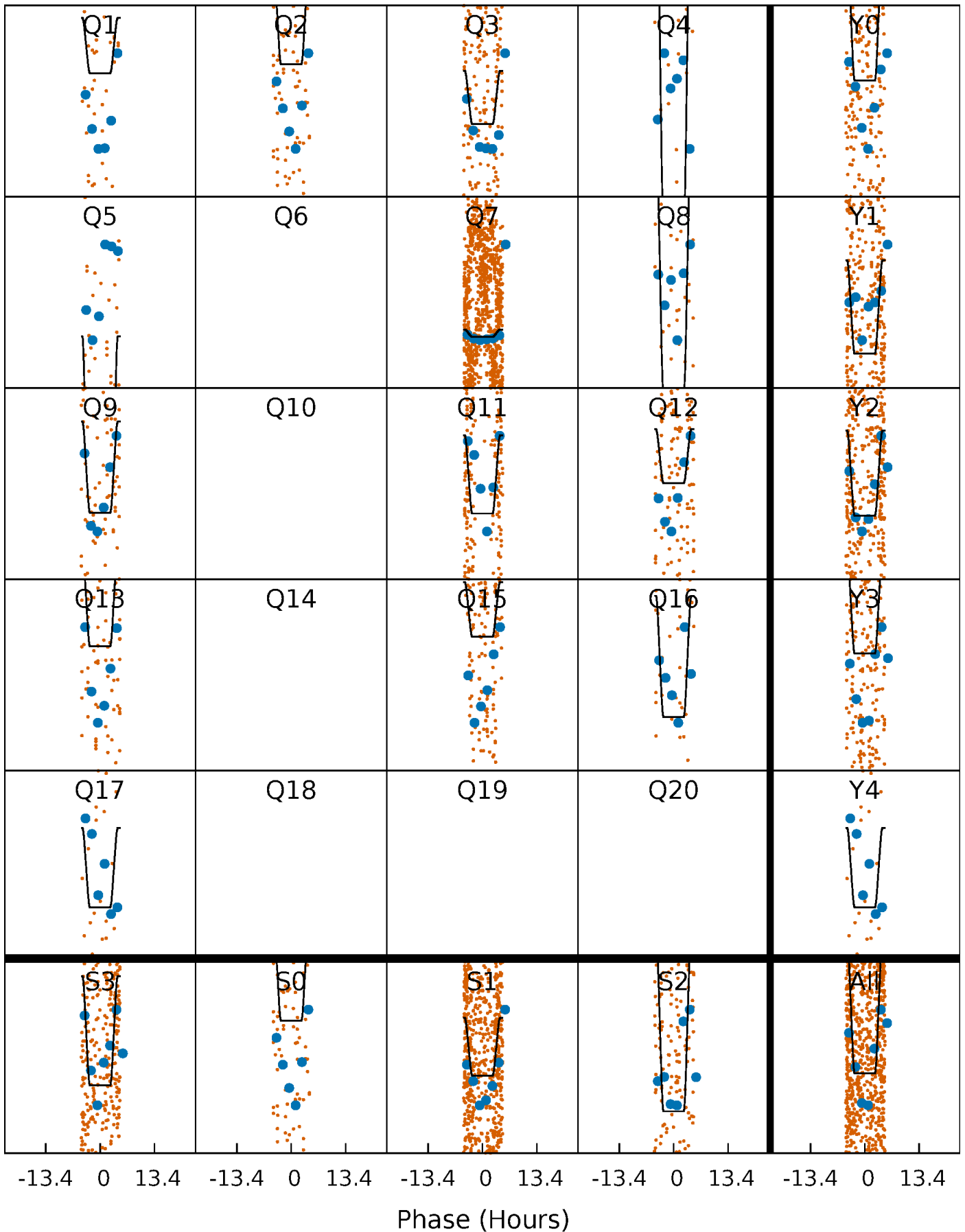
DV Quarter-Phased Transit Curves

TCE 005373377-02 P= 1.328252 Days $T_0=132.593791$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

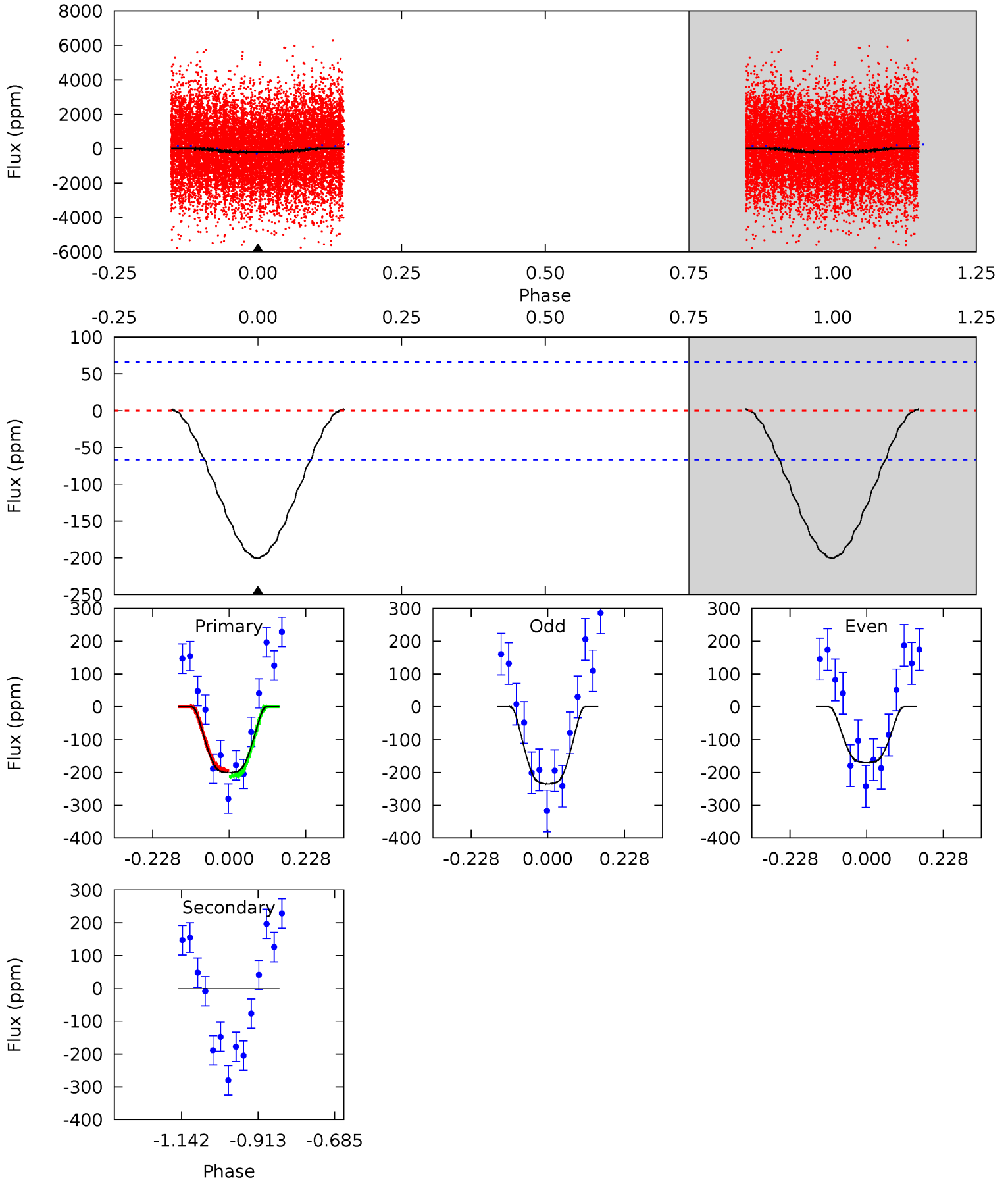
TCE 005373377-02 $P = 1.328240$ Days $T_0 = 132.591666$ (BKJD)



DV Model-Shift Uniqueness Test

005373377-02, P = 1.328252 Days, E = 131.265539 Days

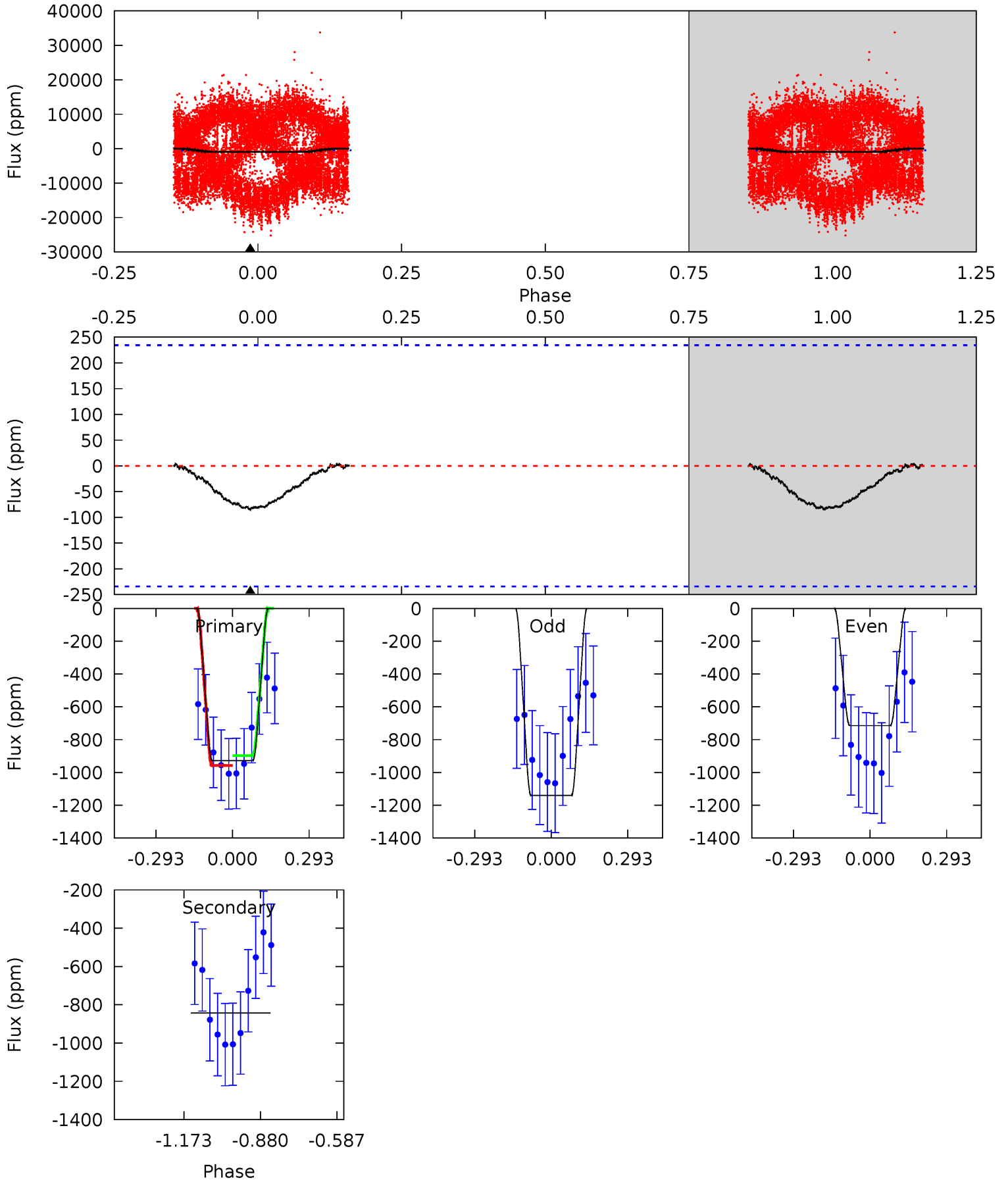
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	0	0	0	4.39	1.20	0.13	13.2	13.2	0	0	2.16	1.01	0.01	0.63



Alt Model-Shift Uniqueness Test

005373377-02, P = 1.328240 Days, E = 131.263426 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.58	0	0	0	4.33	1.05	0.04	1.58	1.58	0	0	0.36	0	0.06	0.41



Stellar Parameters For KIC 005373377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7725^{+211}_{-316}	$4.122^{+0.139}_{-0.170}$	$-0.160^{+0.200}_{-0.350}$	$1.818^{+0.512}_{-0.384}$	$1.596^{+0.197}_{-0.241}$	$0.374^{+0.264}_{-0.178}$
	+3%/-4%	+3%/-4%	+125%/-219%	+28%/-21%	+12%/-15%	+71%/-48%
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 005373377-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 15	$4.16^{+0.62}_{-0.53}$	3855^{+288}_{-247}	-3593^{+6473}_{-519}	$-0.000^{+0.372}_{-0.390}$
Alt.	0 ± 54	$5.75^{+0.85}_{-0.68}$	3842^{+271}_{-252}	-3635^{+7265}_{-775}	$-0.025^{+0.684}_{-0.684}$

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 $A_{obs} \gg 1.0$

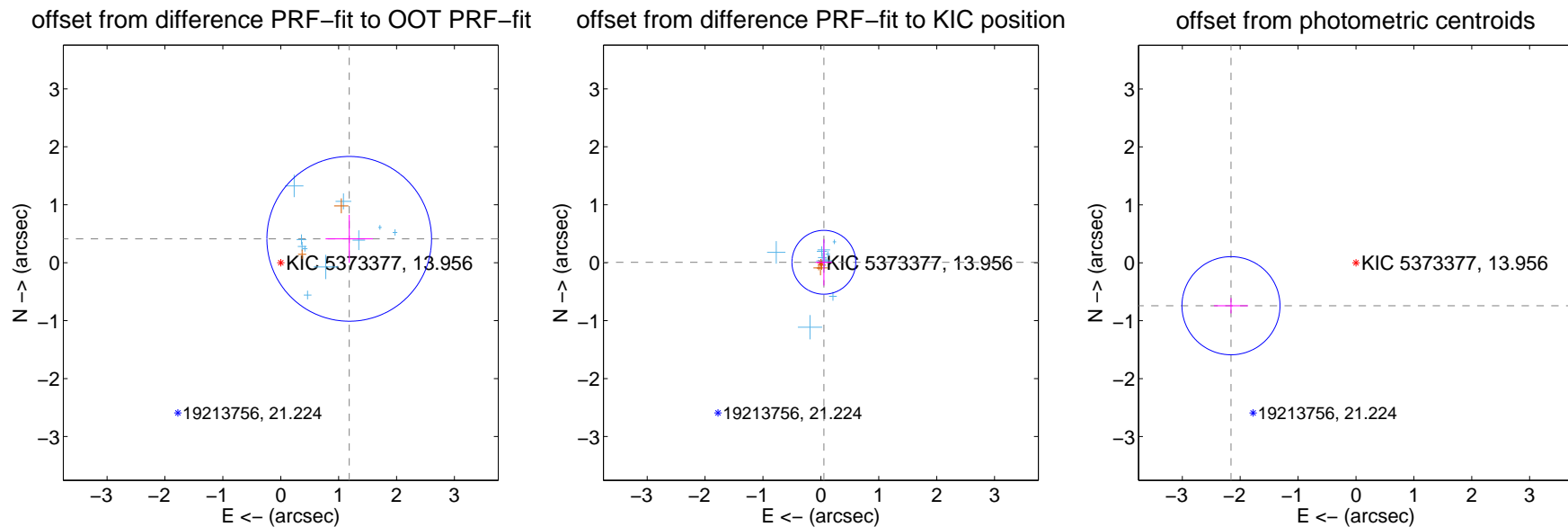
DV Centroid Data

Supplemental centroid analysis for 005373377-02. Kepler magnitude: 13.96. Transit SNR 15.45

There are 10 quarters with good PRF difference image offsets

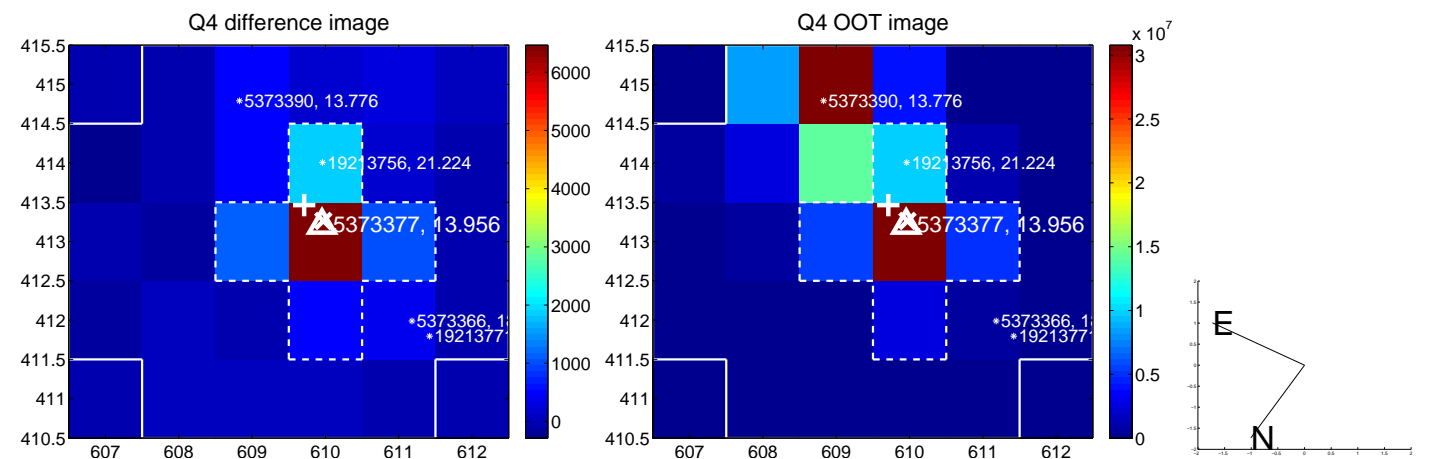
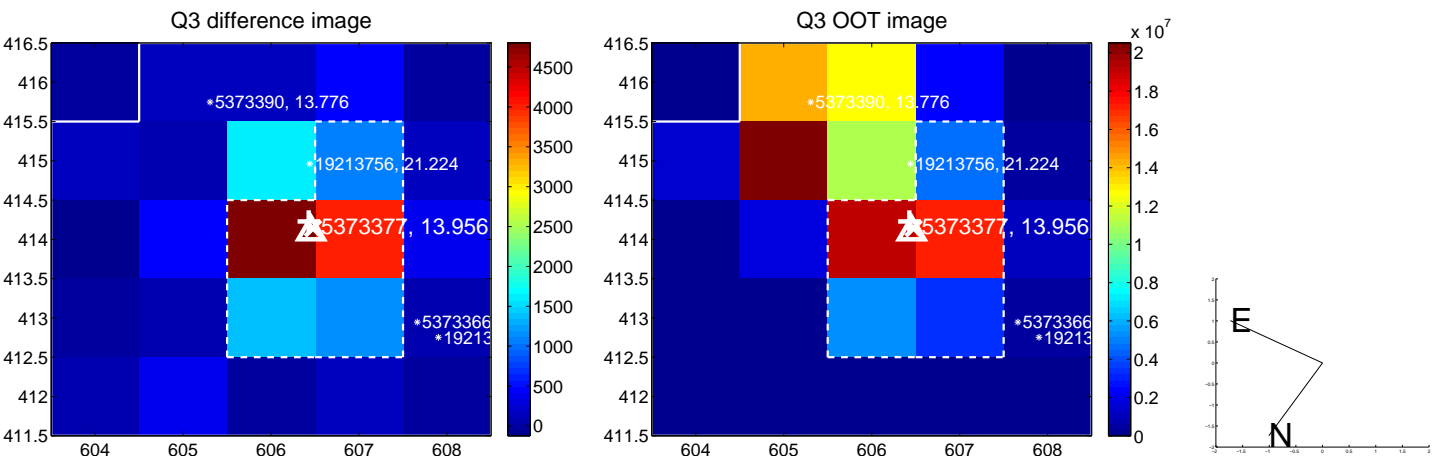
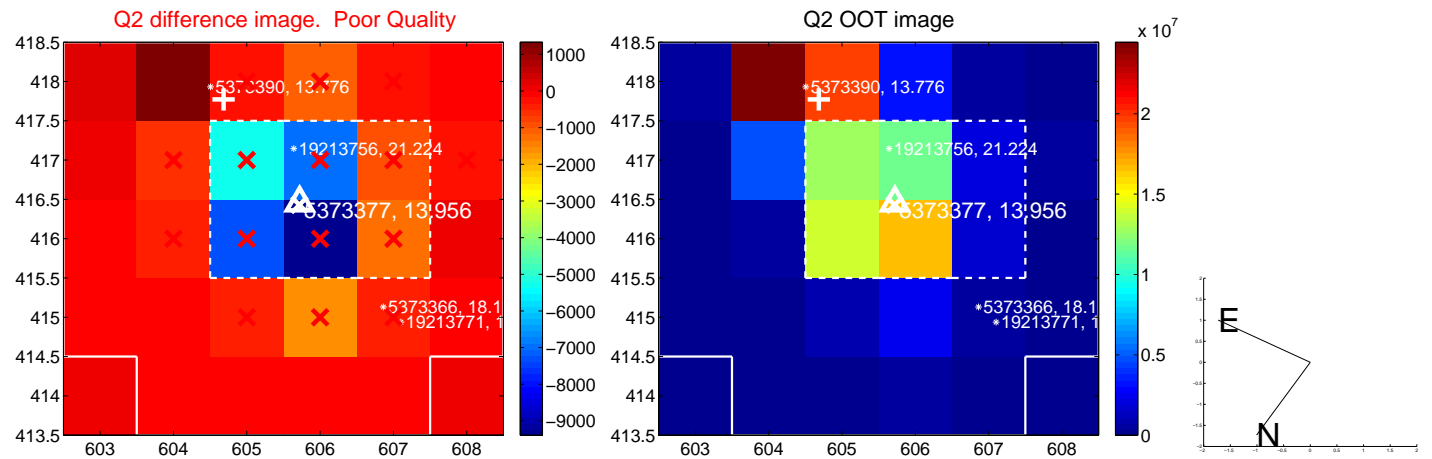
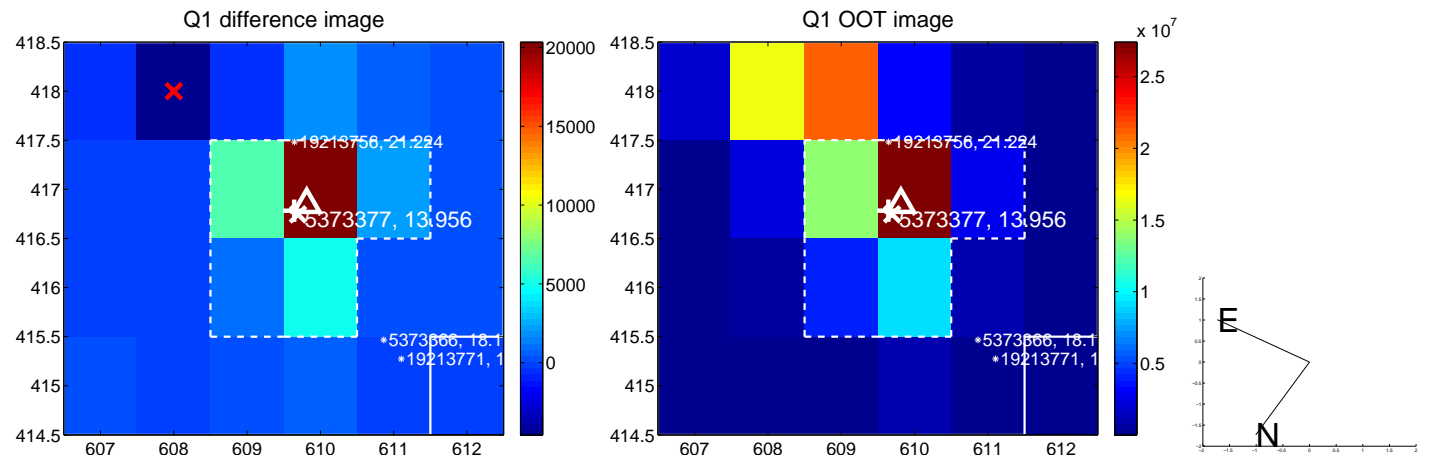
The direct PRF centroid is offset from the target star catalog position by about 1.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.252 ± 0.474	2.64	-1.182 ± 0.408	0.412 ± 0.413
PRF-fit source offset from KIC position	0.052 ± 0.184	0.28	-0.052 ± 0.141	0.007 ± 0.401
photometric centroid source offset	2.28 ± 0.28	8.09	2.16 ± 0.29	-0.74 ± 0.13

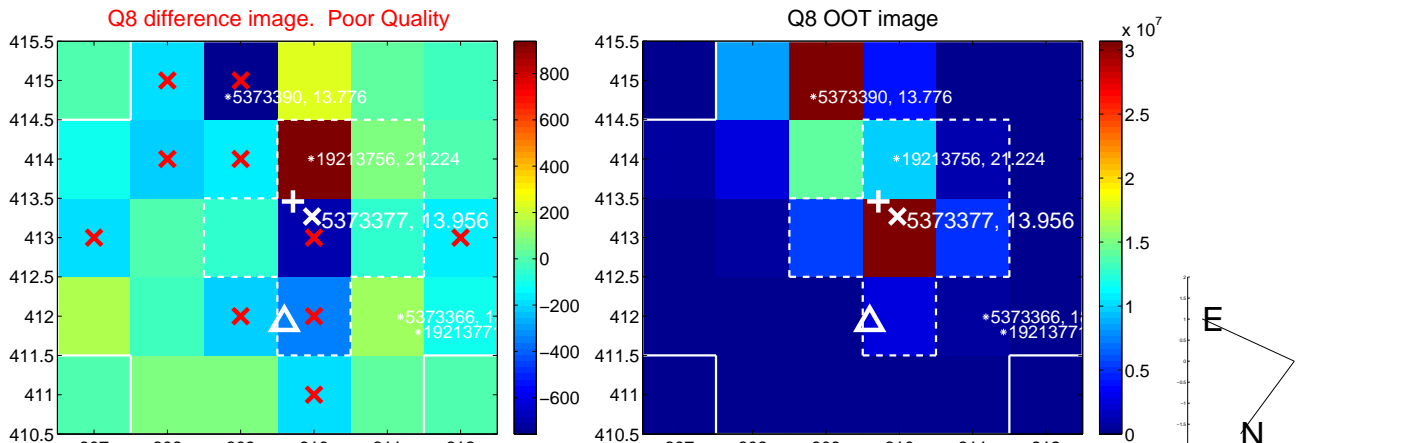
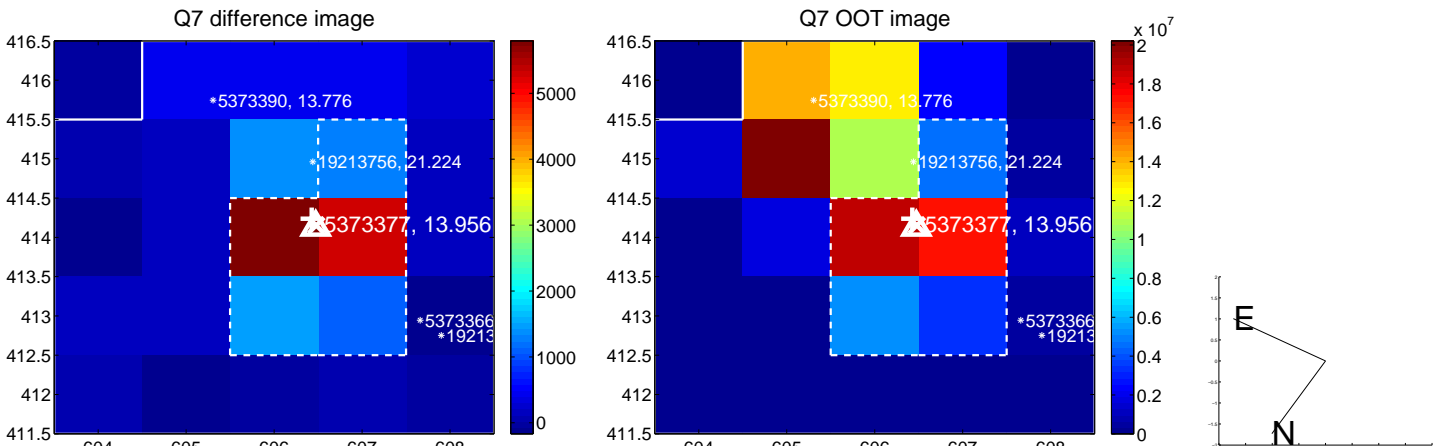
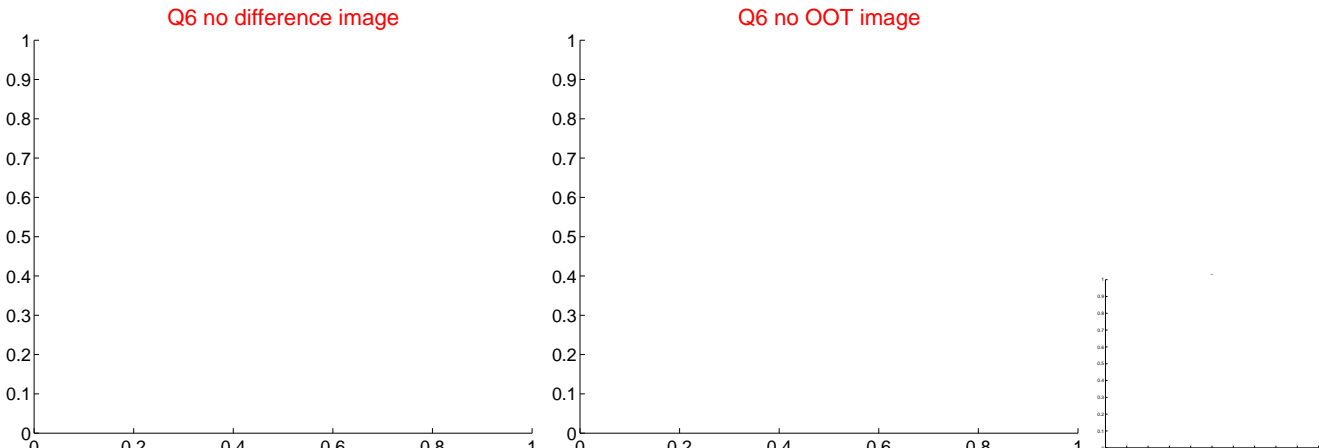
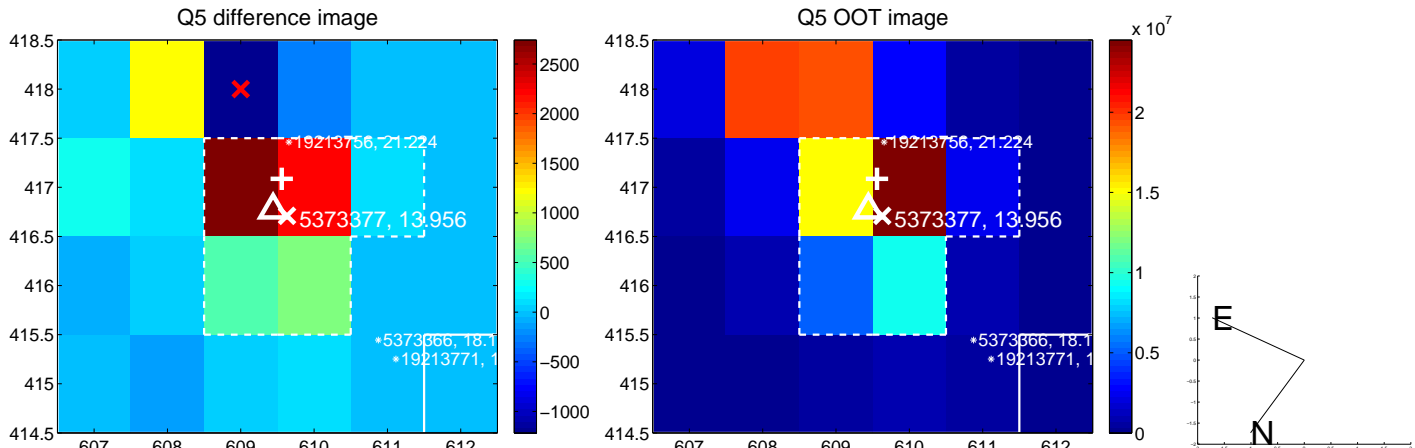


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

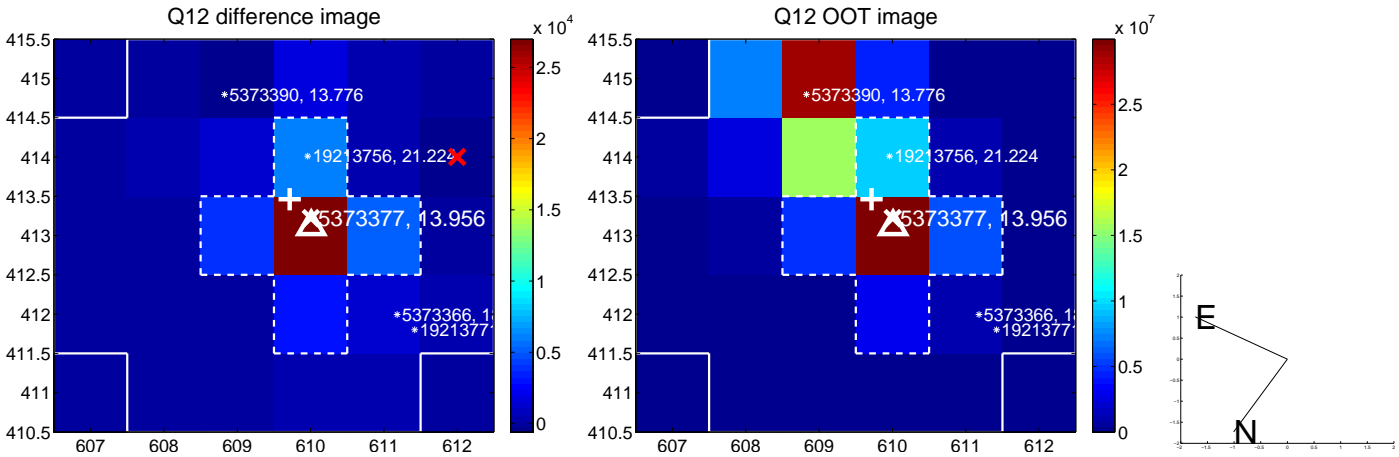
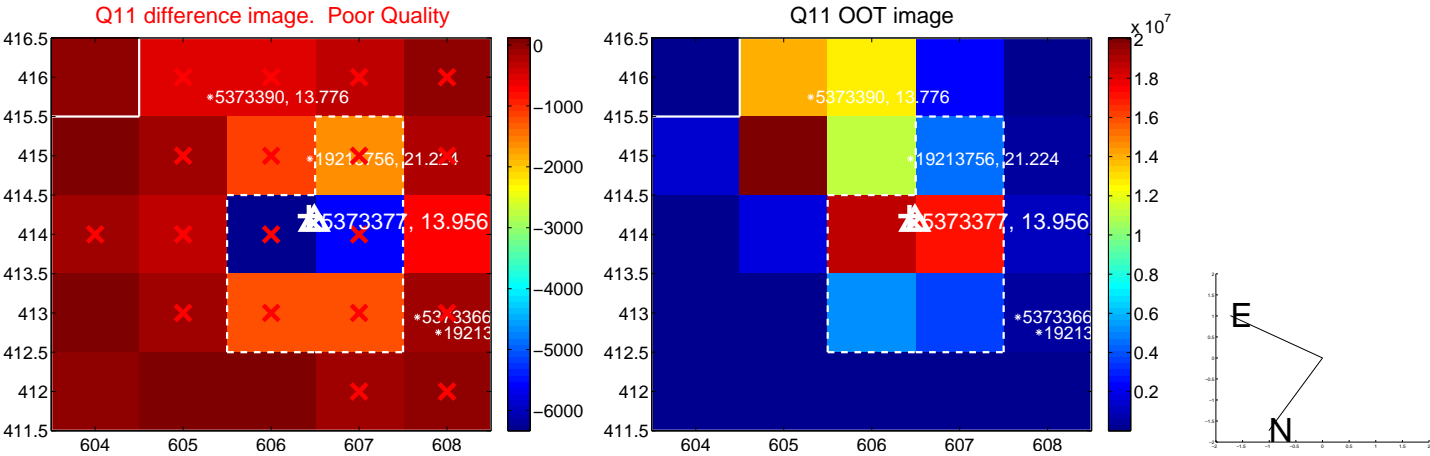
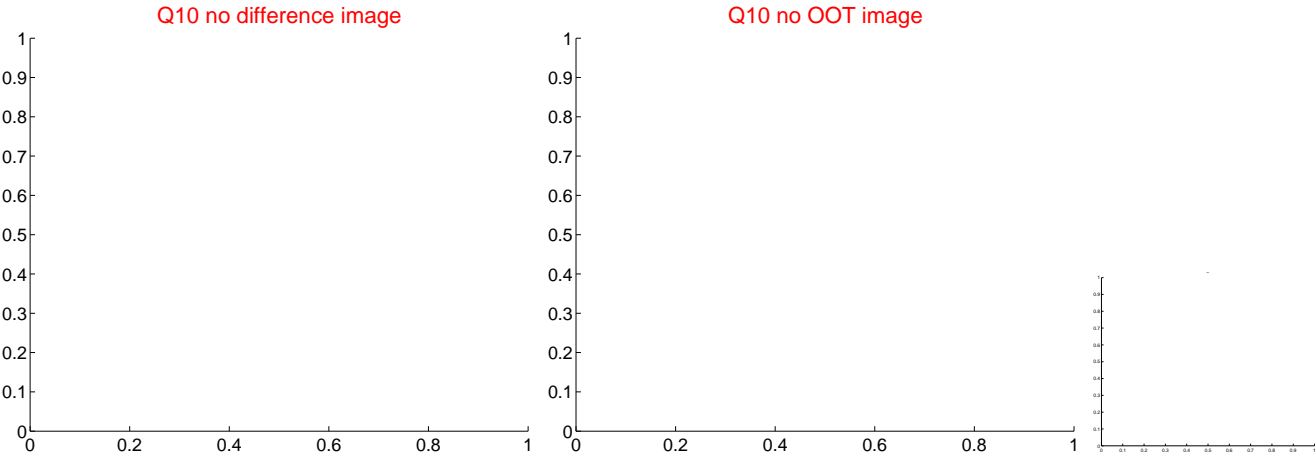
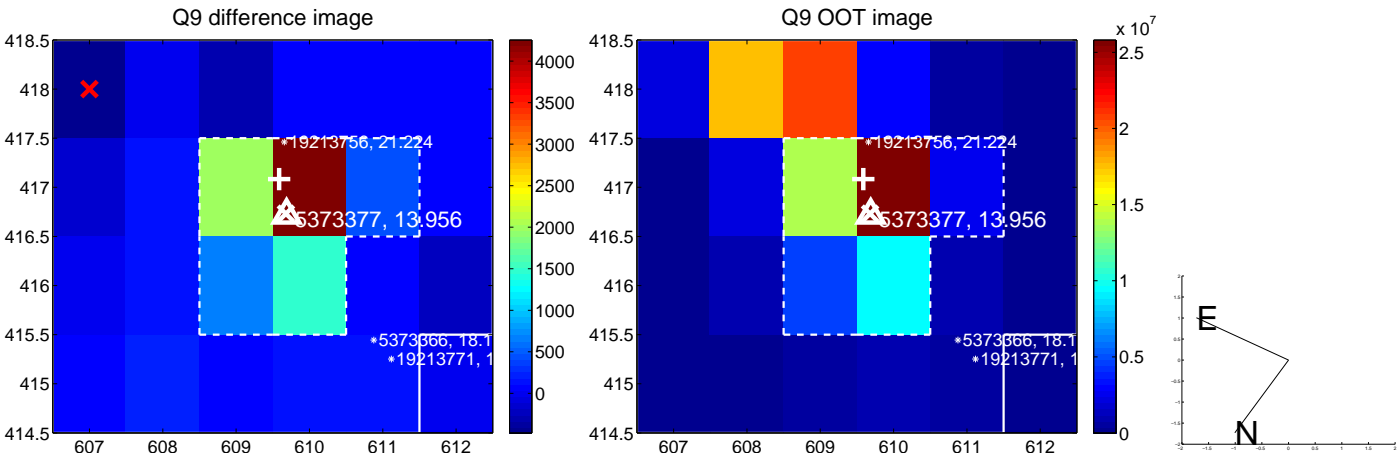
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



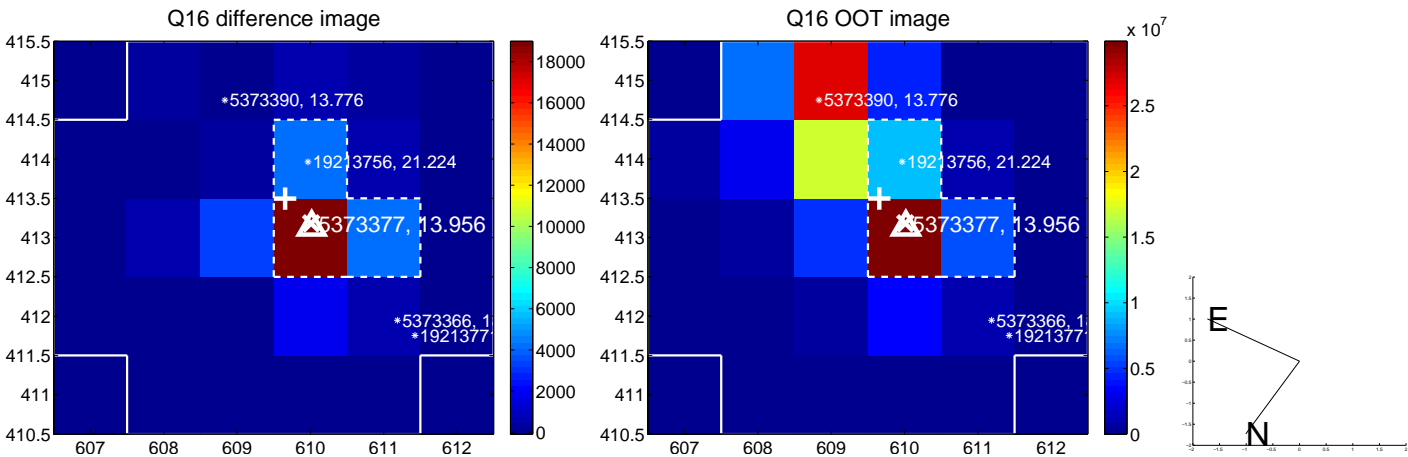
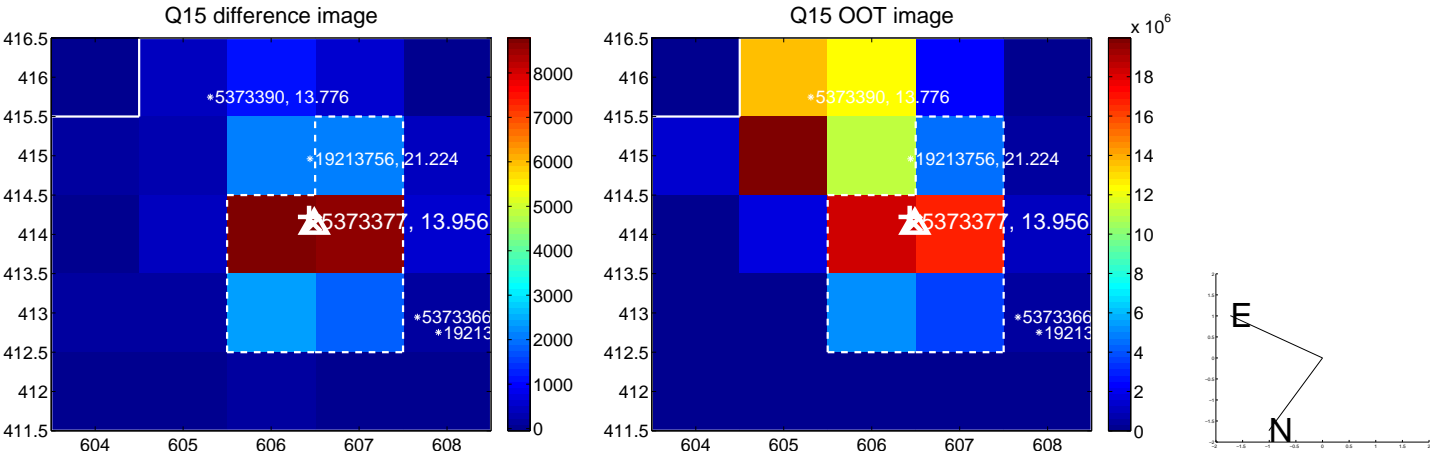
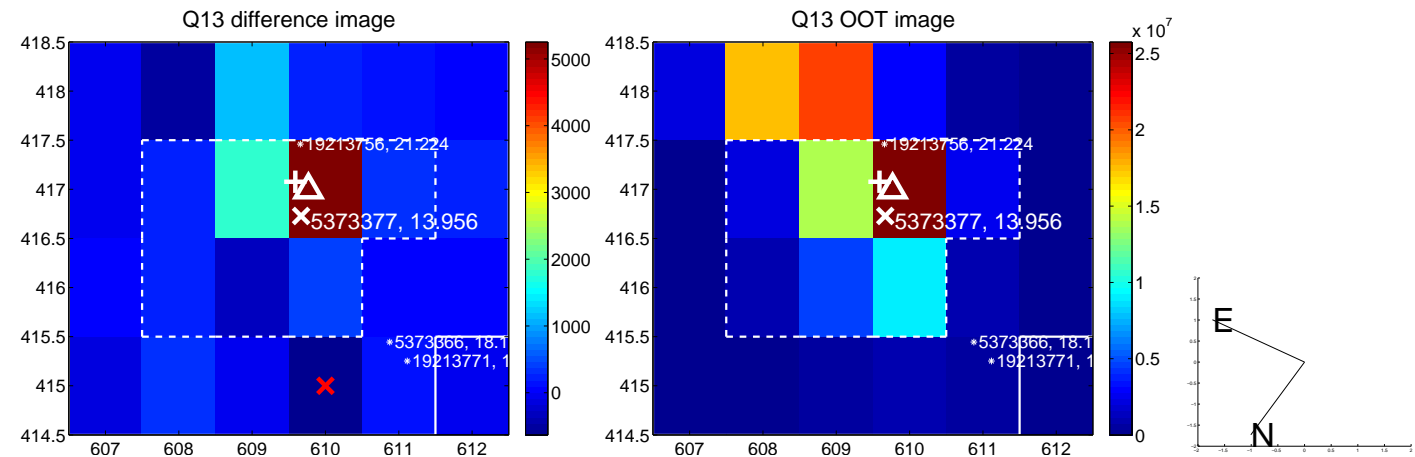
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



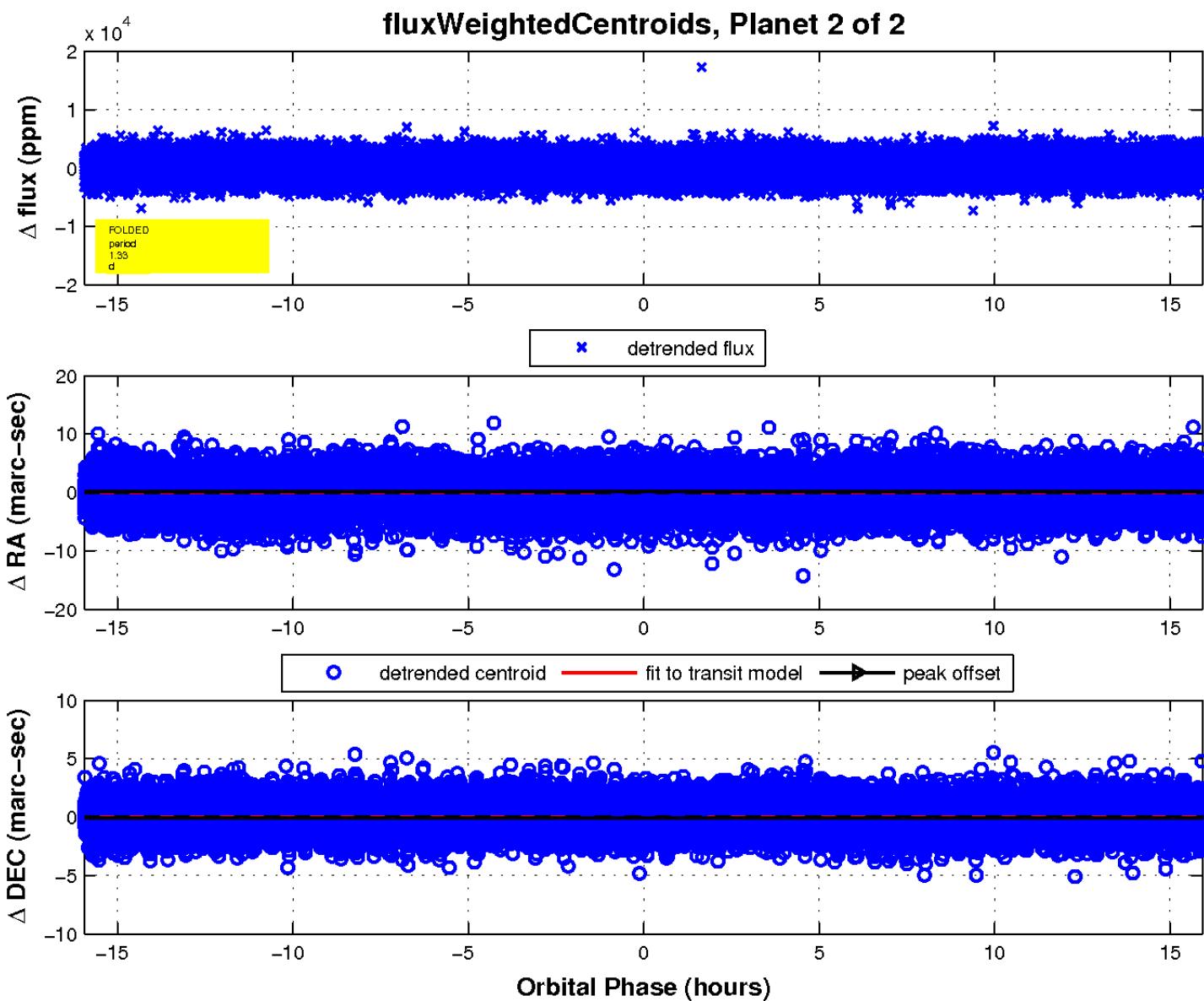
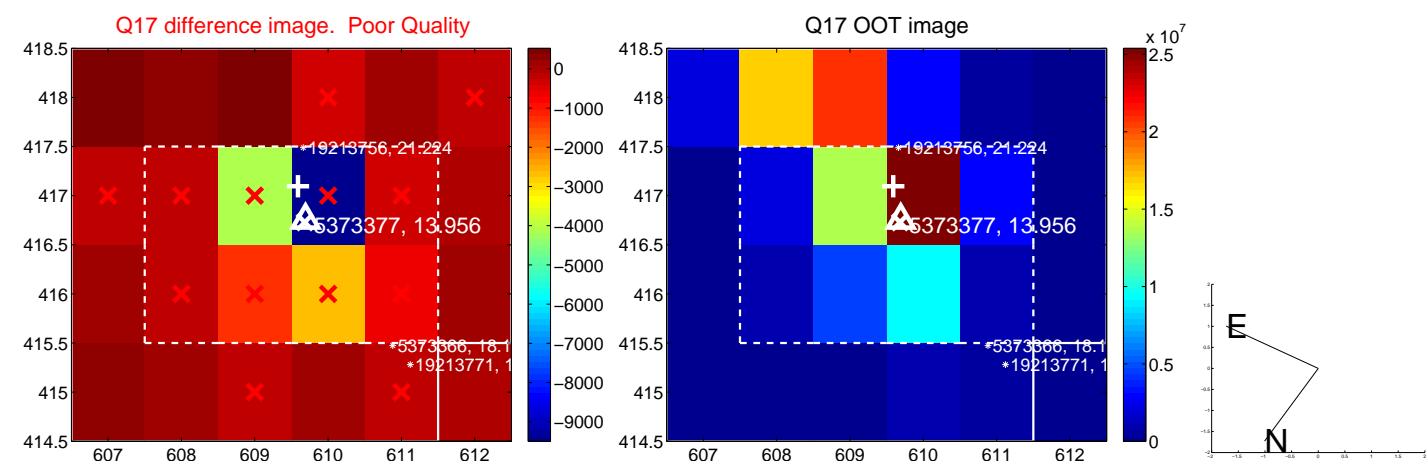
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

