

KIC 004383955

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})
004383955-01	OBS	No	4.909981	134.765187	86.2	22.513	10.9	11.2	2.50	7892	2.76	4422.82
004383955-02	OBS	No	4.909939	132.331316	76.8	32.442	8.8	11.5	2.50	7892	2.27	4422.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004383955-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004383955-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

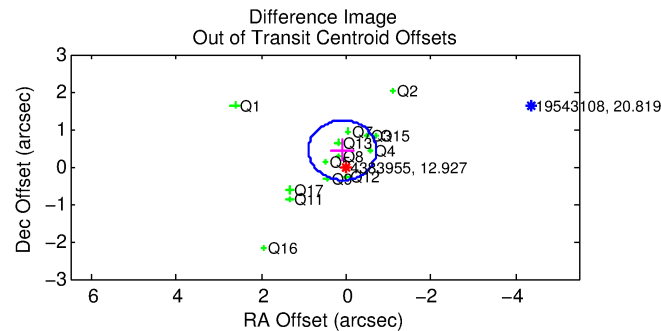
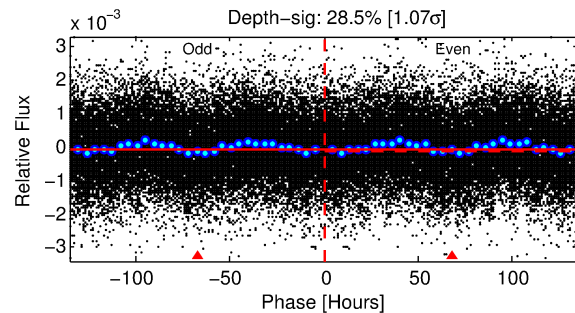
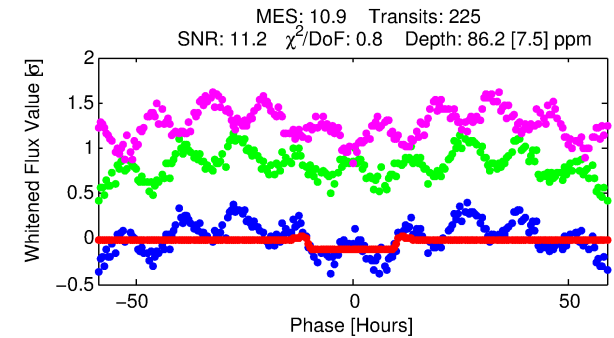
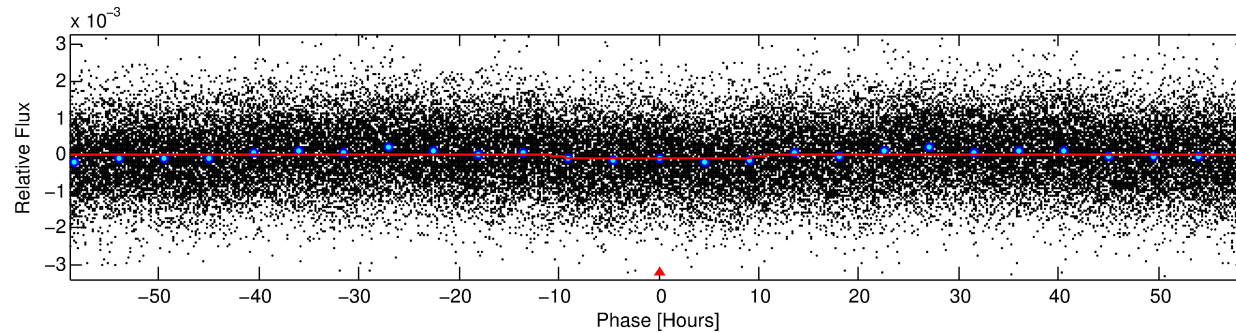
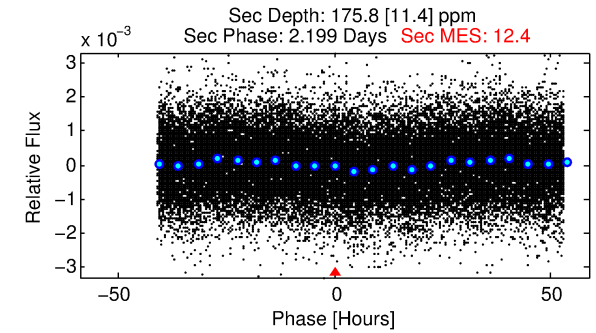
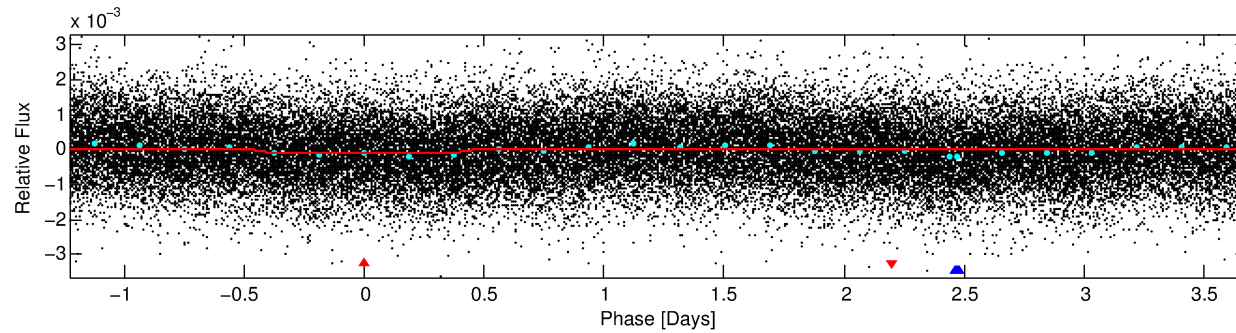
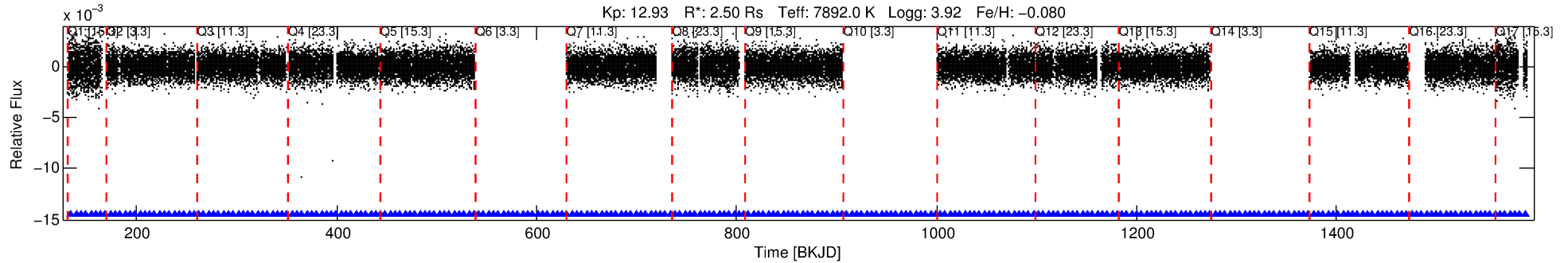
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004383955-01

No Significant Match Found

DV One-Page Summary

KIC: 4383955 Candidate: 1 of 2 Period: 4.910 d



DV Fit Results:

Period = 4.90998 [0.00014] d
Epoch = 134.7652 [0.0222] BKJD
Rp/R* = 0.0101 [0.0008]
a/R* = 1.16 [0.13]
b = 0.93 [0.06]
Seff = 4422.82 [2077.93]
Teq = 2079 [244] K
Rp = 2.76 [0.95] Re
a = 0.0700 [0.0205] AU
Ag = 62.03 [29.30] [2.08σ]
Teffp = 9023 [540] K [11.72σ]

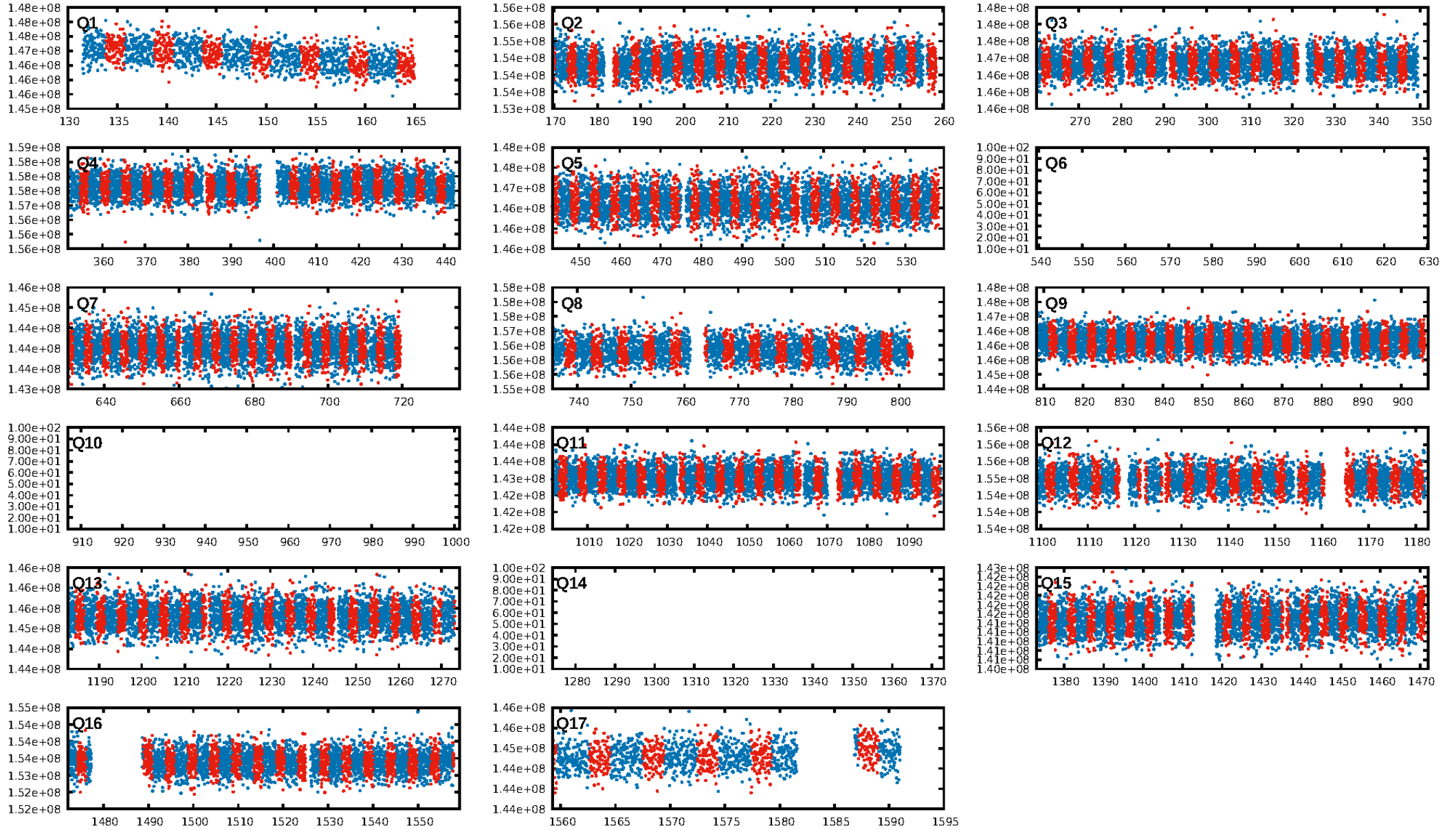
DV Diagnostic Results:

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 [213/213]
GhostDiagnostic-chr: 3.04
Centroid-sig: 16.3%
Centroid-so: 0.632 arcsec [1.56σ]
OotOffset-rm: 0.446 arcsec [1.67σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-rm: 0.502 arcsec [1.61σ]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

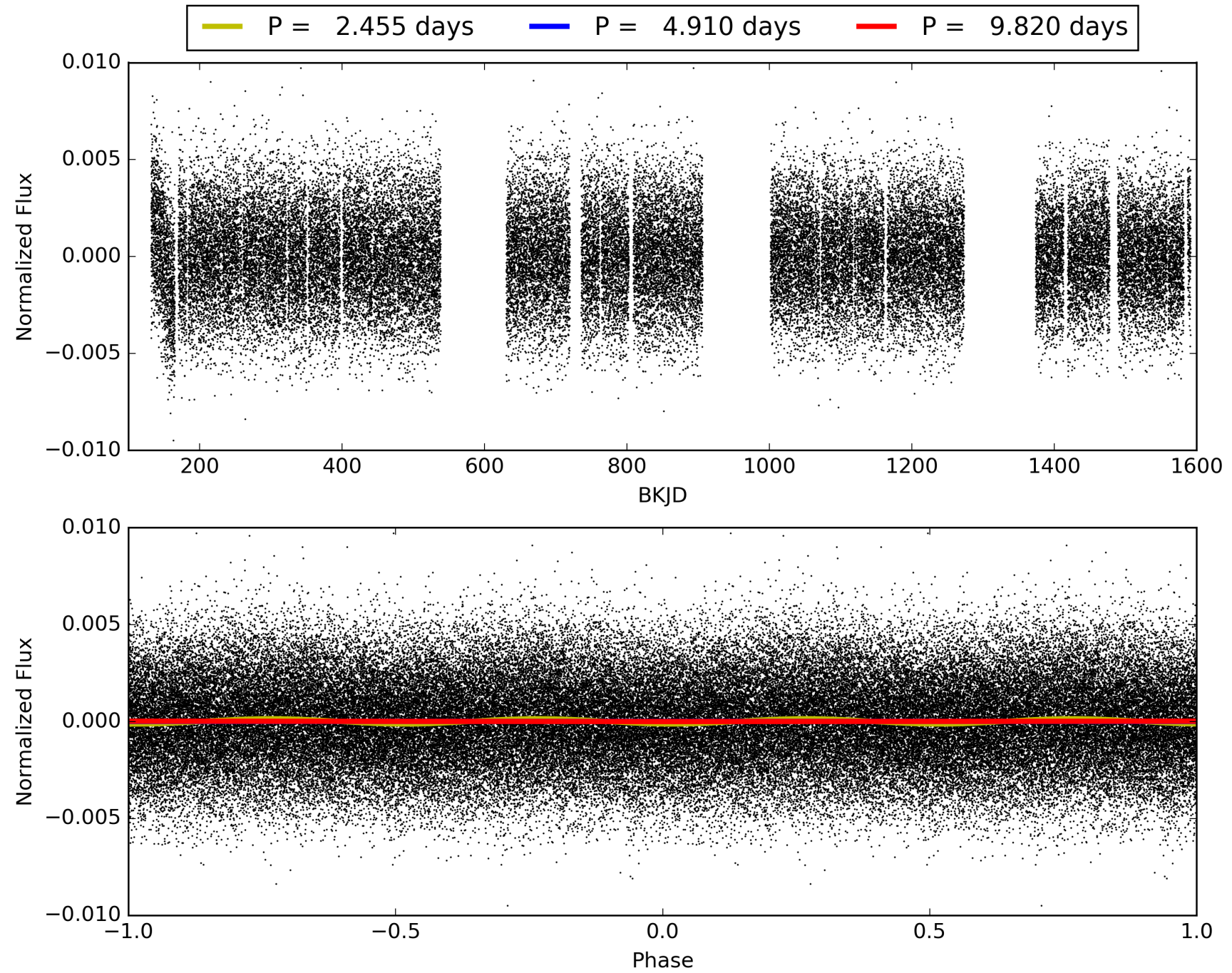
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:59:03 Z

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

TCE 004383955-01, PDC Light Curves

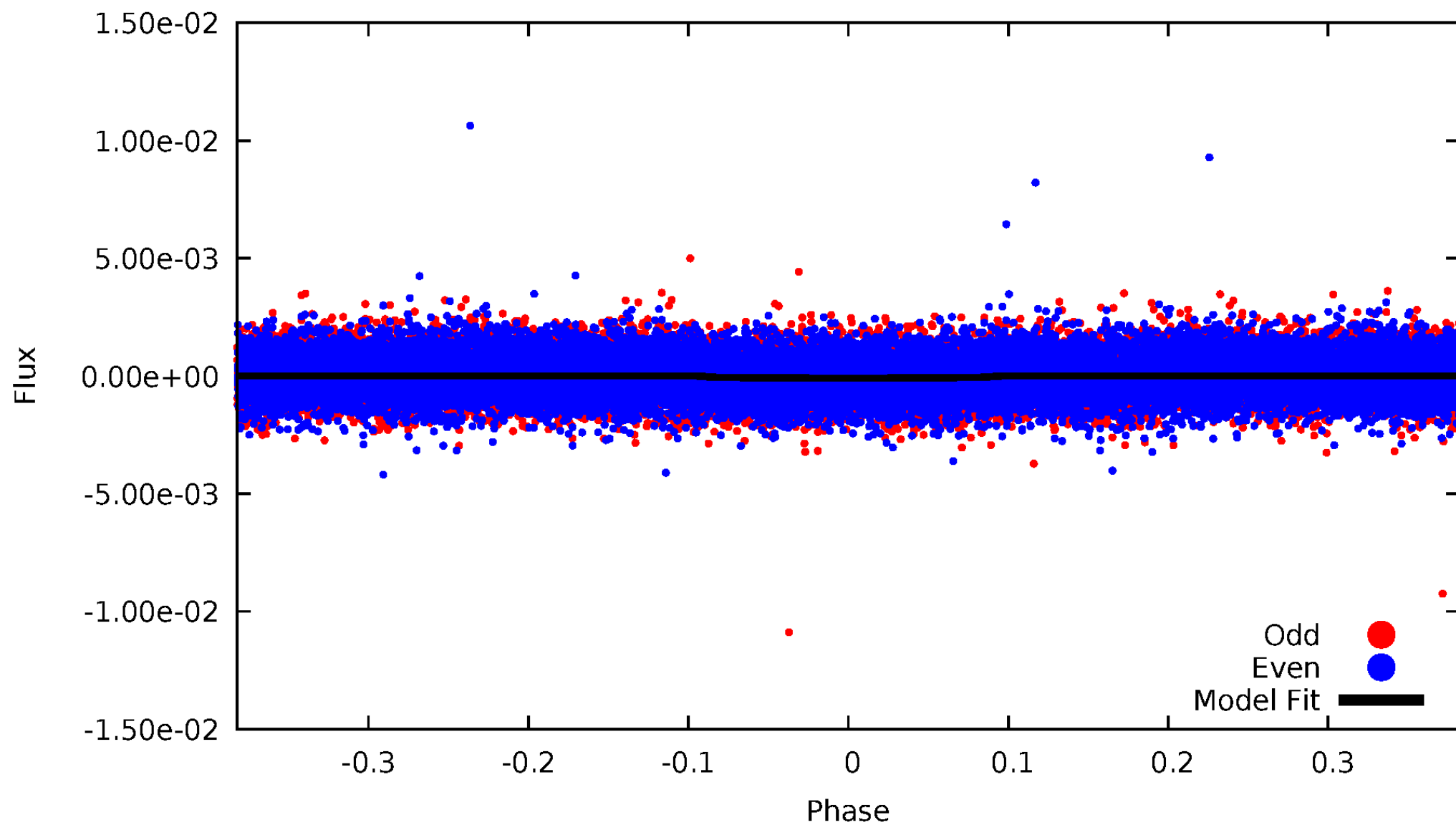


TCE 004383955-01



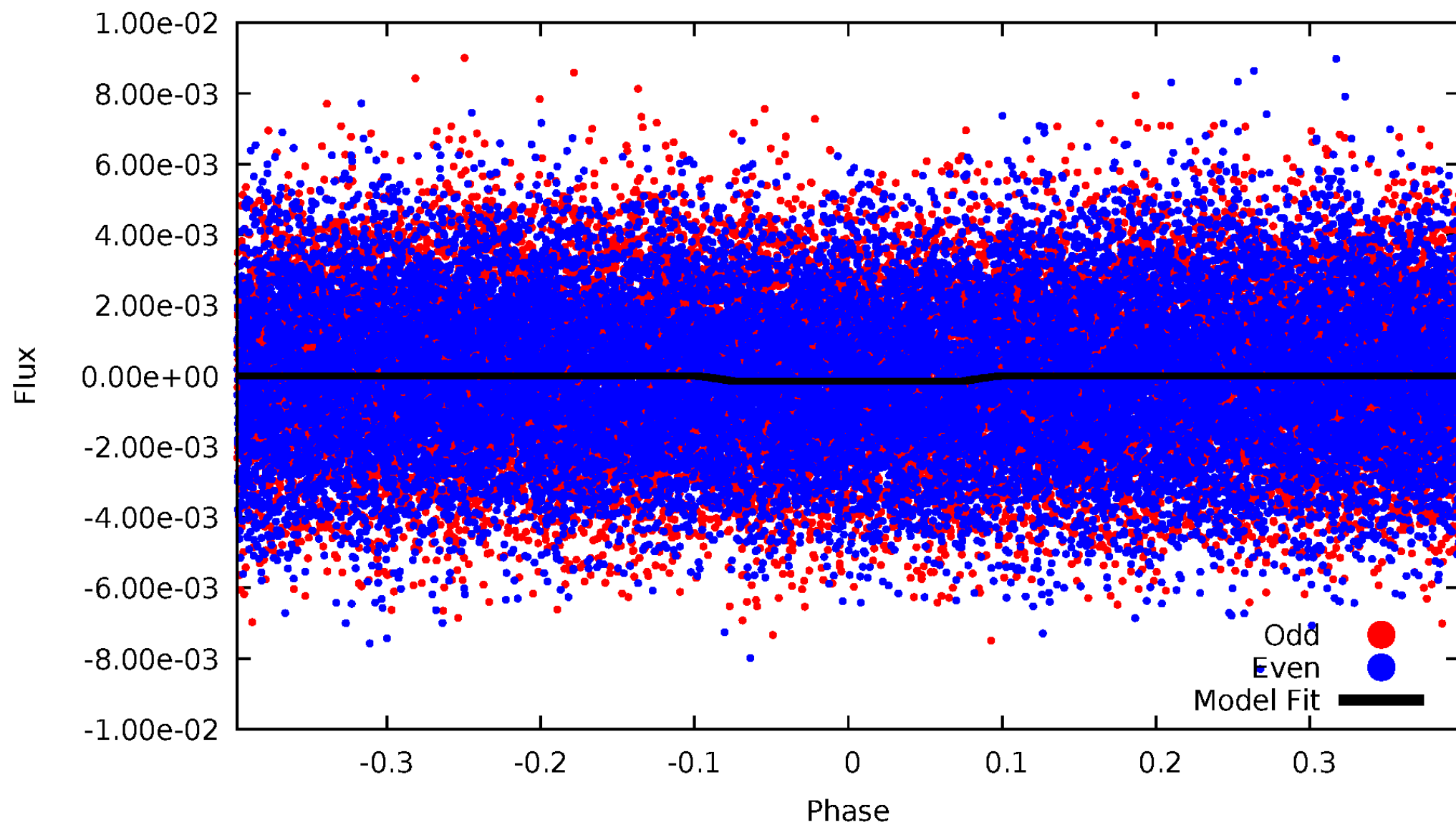
DV Odd/Even

TCE 004383955-01



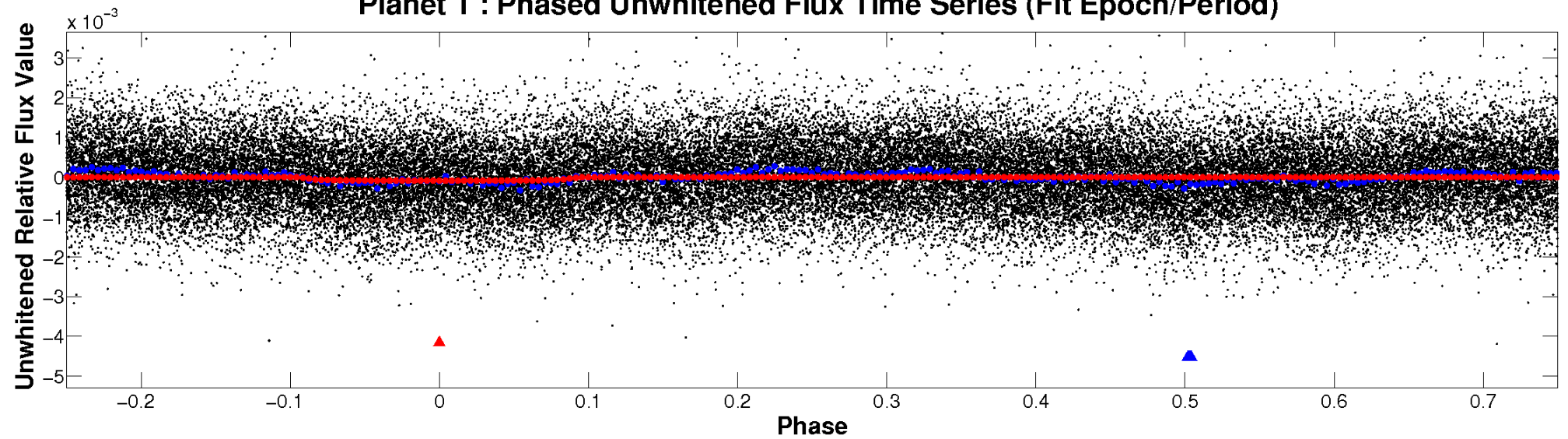
ALT Odd/Even

TCE 004383955-01

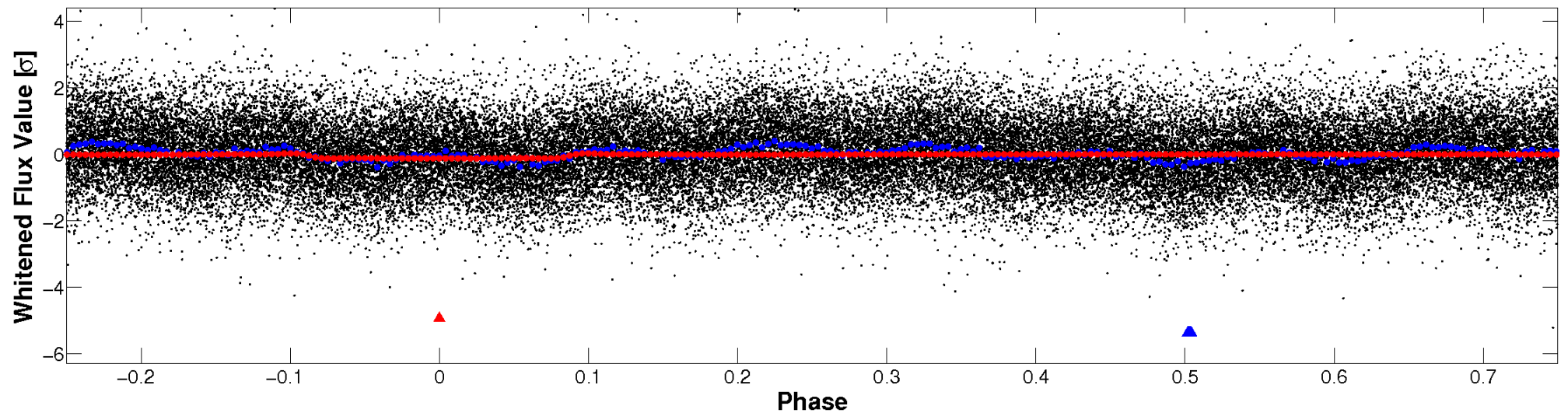


Non-Whitened Vs. Whitened Light Curve

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

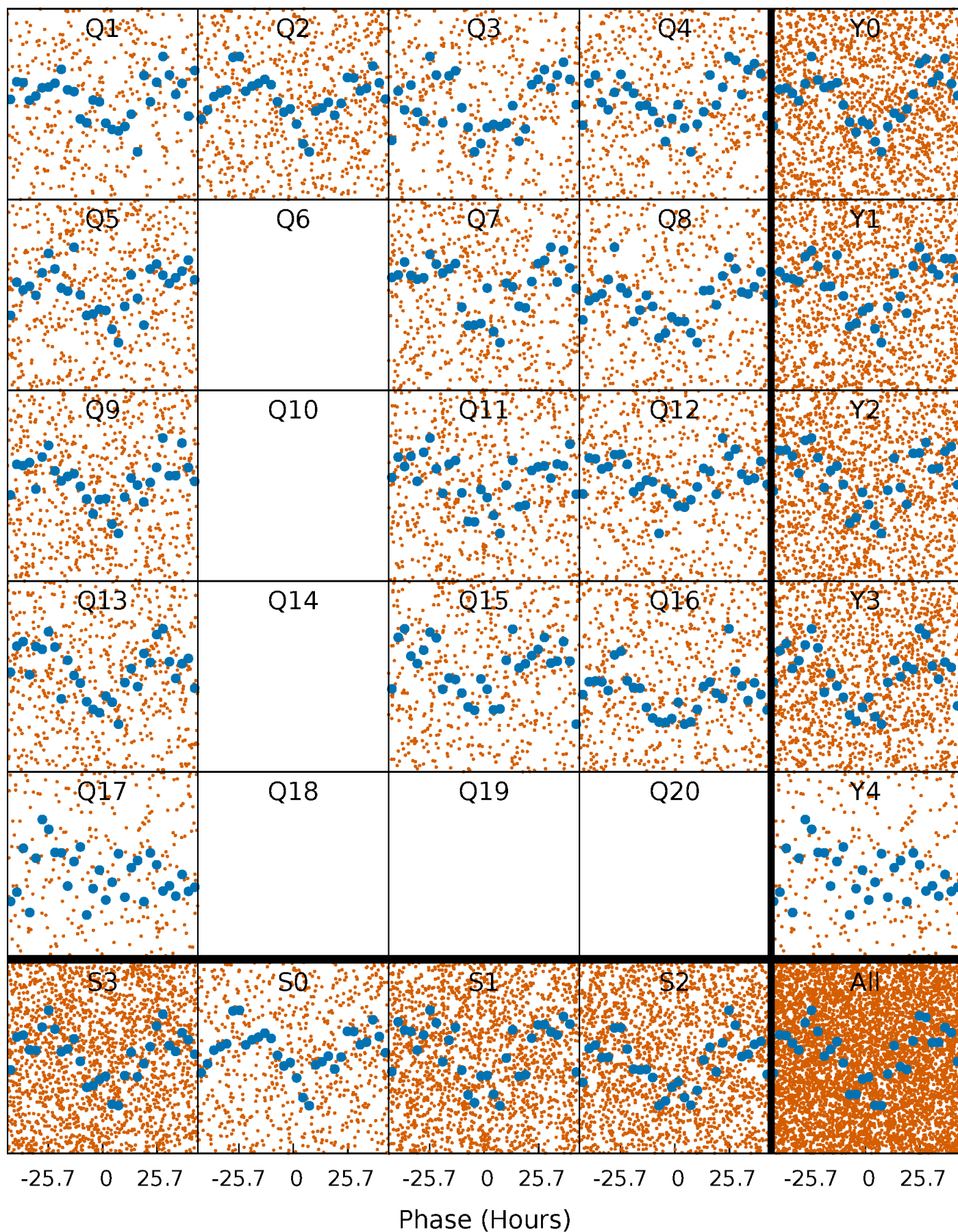


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



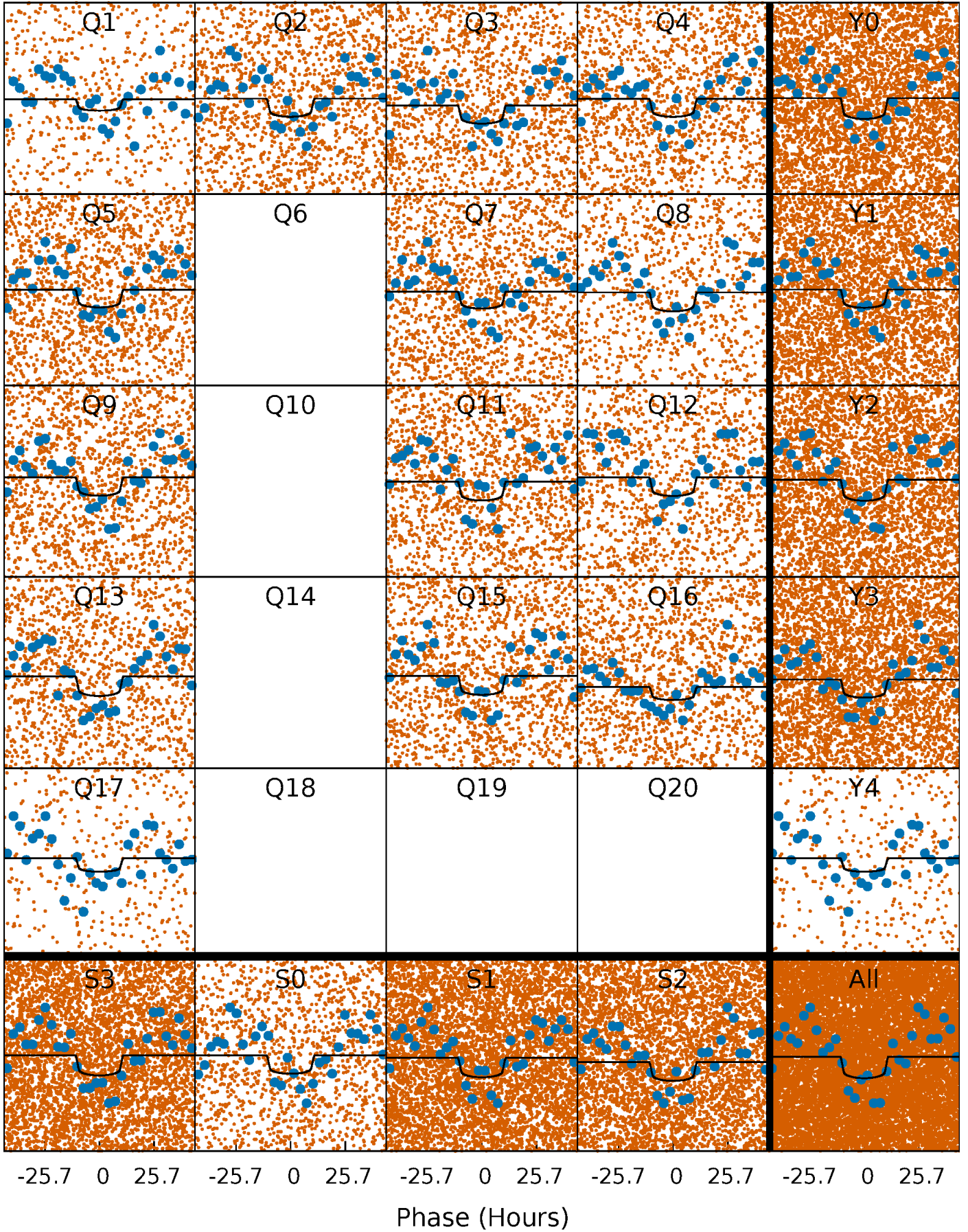
PDC Quarter-Phased Transit Curves

TCE 004383955-01 P= 4.909981 Days $T_0=134.765187$ (BKJD)



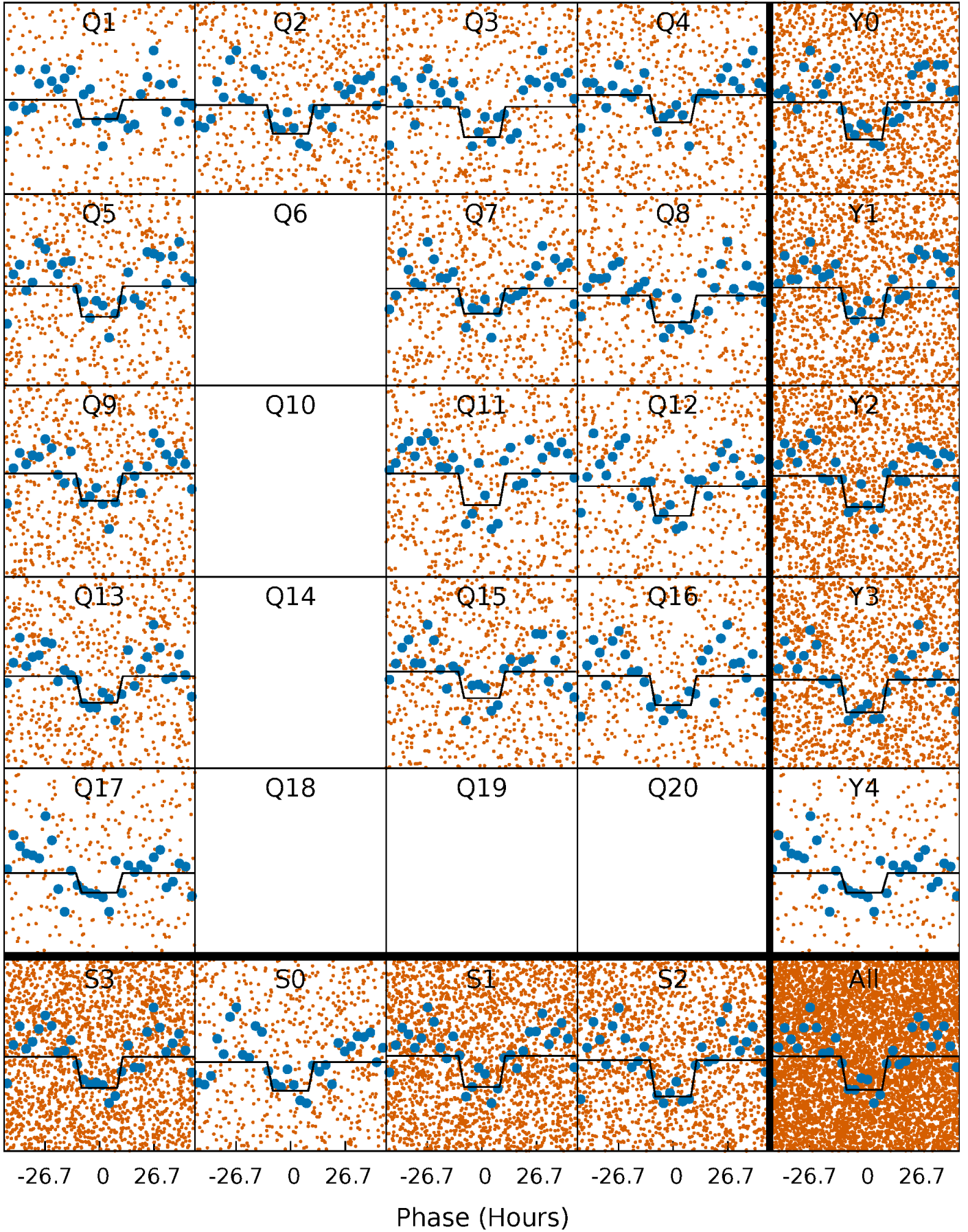
DV Quarter-Phased Transit Curves

TCE 004383955-01 P= 4.909981 Days $T_0=134.765187$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

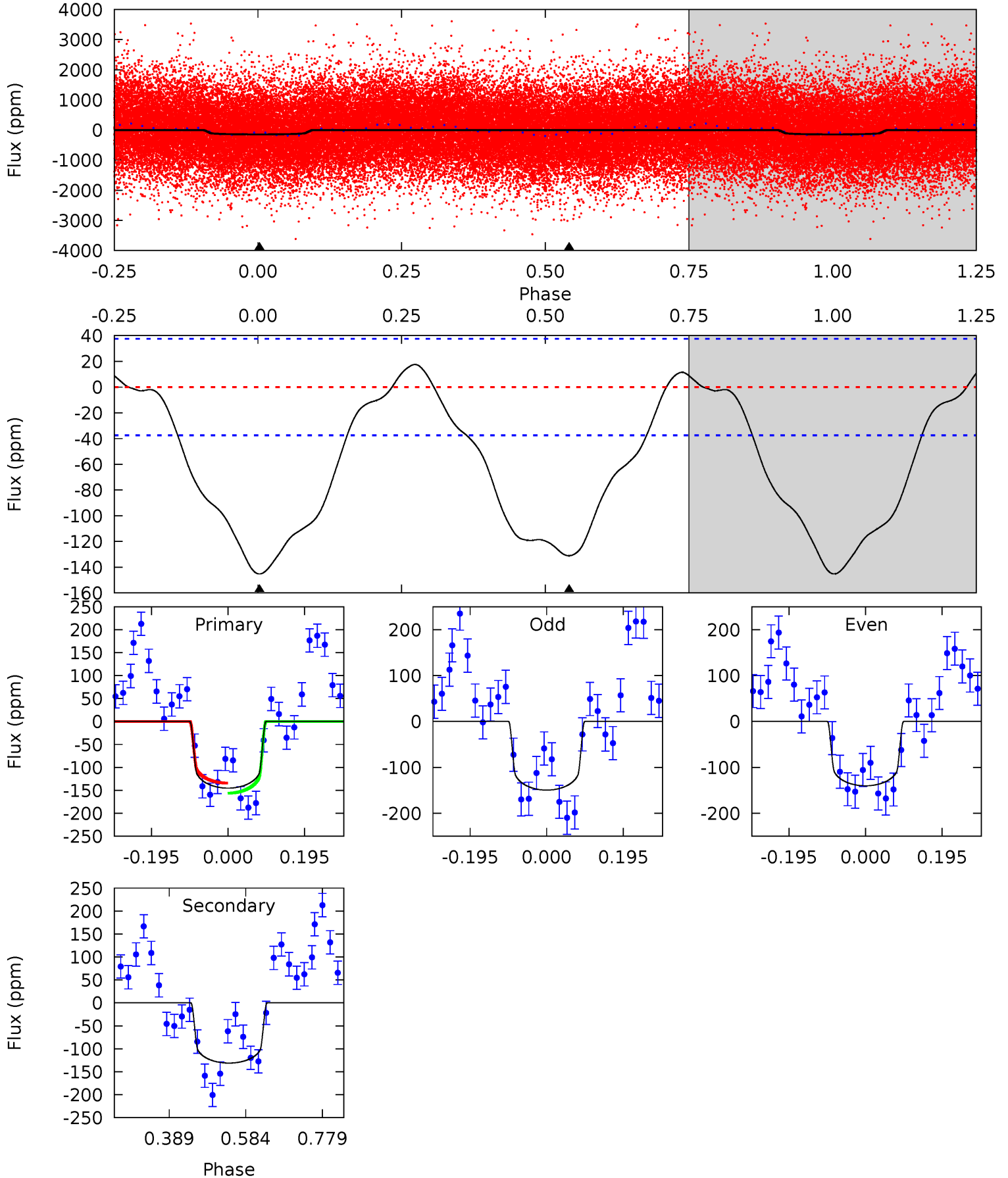
TCE 004383955-01 P= 4.909770 Days $T_0=134.812011$ (BKJD)



DV Model-Shift Uniqueness Test

004383955-01, P = 4.909981 Days, E = 129.855206 Days

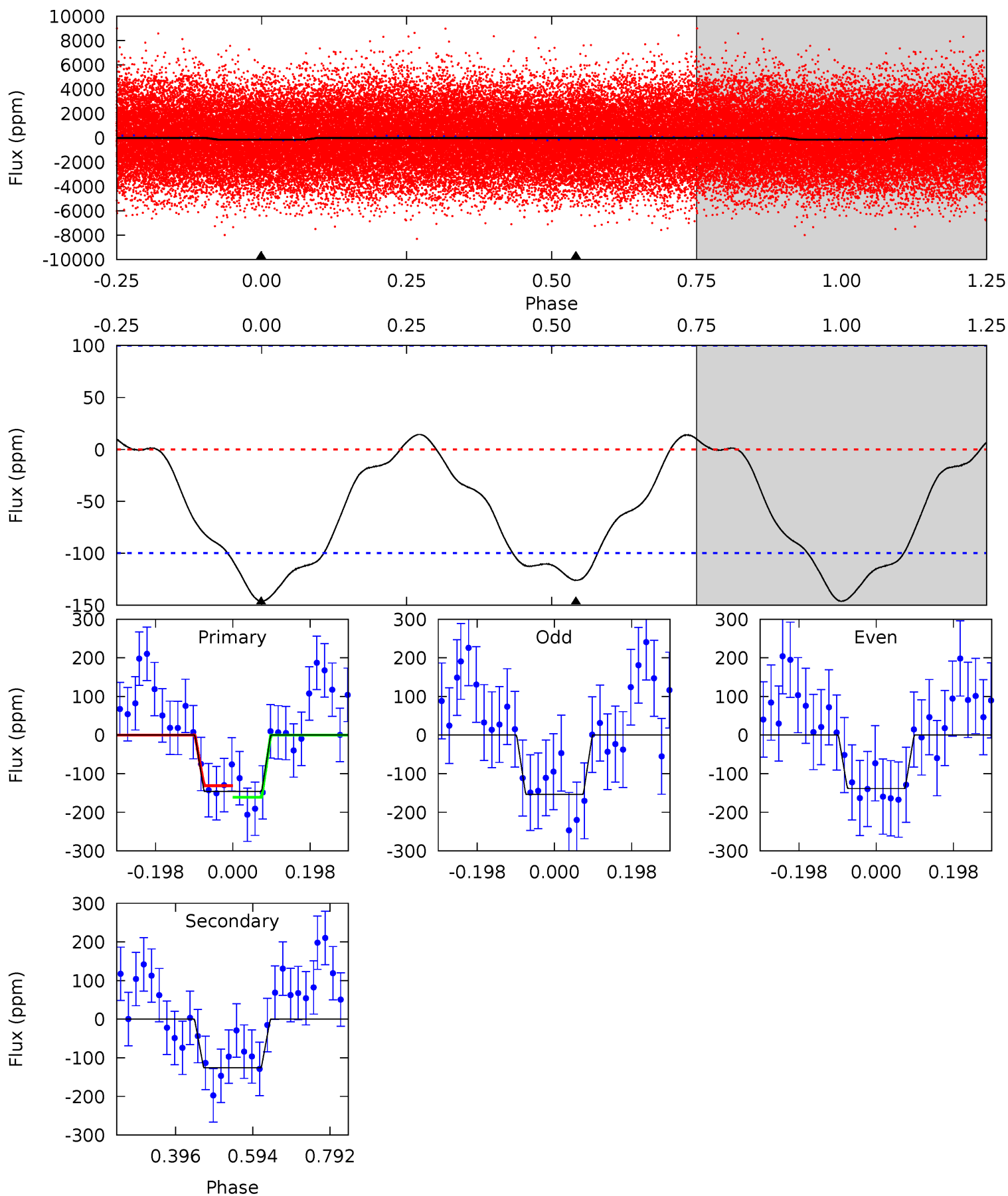
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	15.5	0	0	4.42	1.30	1.40	17.1	17.1	15.5	15.5	0.56	1.01	0.11	1.30



Alt Model-Shift Uniqueness Test

004383955-01, P = 4.909770 Days, E = 129.902241 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.46	5.58	0	0	4.42	1.29	0.55	6.46	6.46	5.58	5.58	0.34	0.96	0.09	0.67



Stellar Parameters For KIC 004383955

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7892^{+218}_{-327}	$3.921^{+0.247}_{-0.133}$	$-0.080^{+0.150}_{-0.350}$	$2.496^{+0.449}_{-0.833}$	$1.894^{+0.105}_{-0.394}$	$0.172^{+0.293}_{-0.059}$
	+3%/-4%	+6%/-3%	+188%/-438%	+18%/-33%	+6%/-21%	+171%/-35%
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 004383955-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-131 \pm 8	$2.68^{+0.39}_{-0.53}$	2868^{+217}_{-252}	8502^{+582}_{-552}	48^{+22}_{-12}
Alt.	-126 \pm 23	$3.23^{+0.45}_{-0.54}$	2868^{+189}_{-230}	7451^{+582}_{-544}	32^{+15}_{-9}

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 $A_{obs} \gg 1.0$

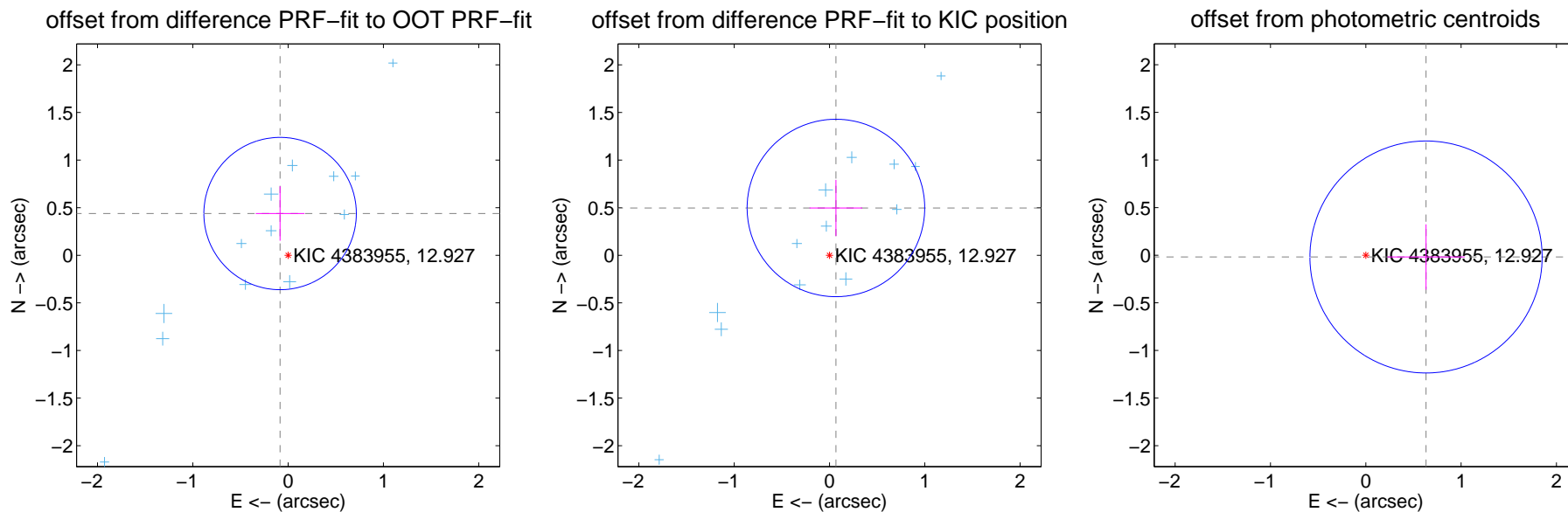
DV Centroid Data

Supplemental centroid analysis for 004383955-01. Kepler magnitude: 12.93. Transit SNR 11.21

There are 14 quarters with good PRF difference image offsets

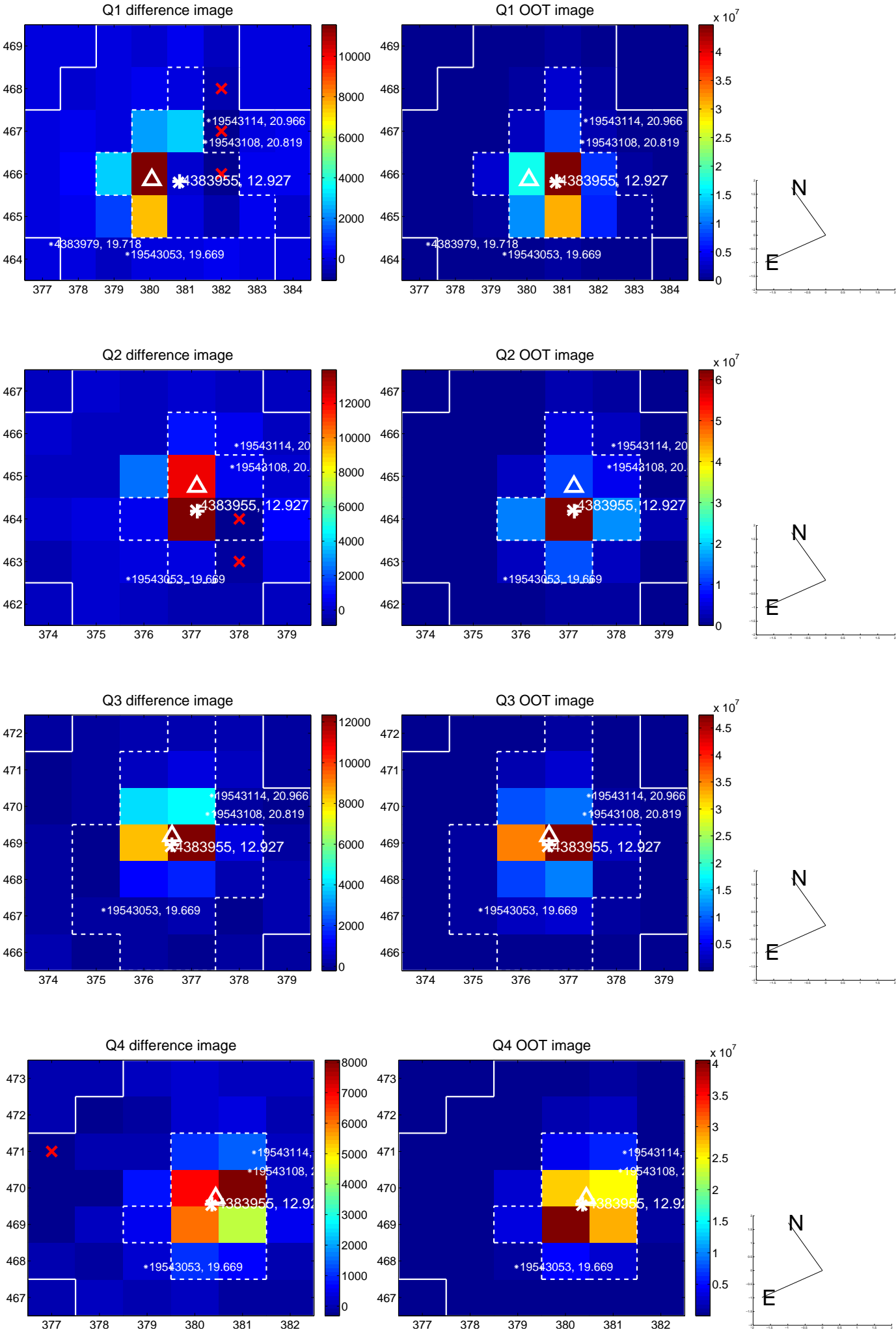
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.446 ± 0.267	1.67	0.084 ± 0.256	0.438 ± 0.286
PRF-fit source offset from KIC position	0.502 ± 0.311	1.61	-0.067 ± 0.277	0.497 ± 0.295
photometric centroid source offset	0.63 ± 0.41	1.56	-0.63 ± 0.41	-0.02 ± 0.34

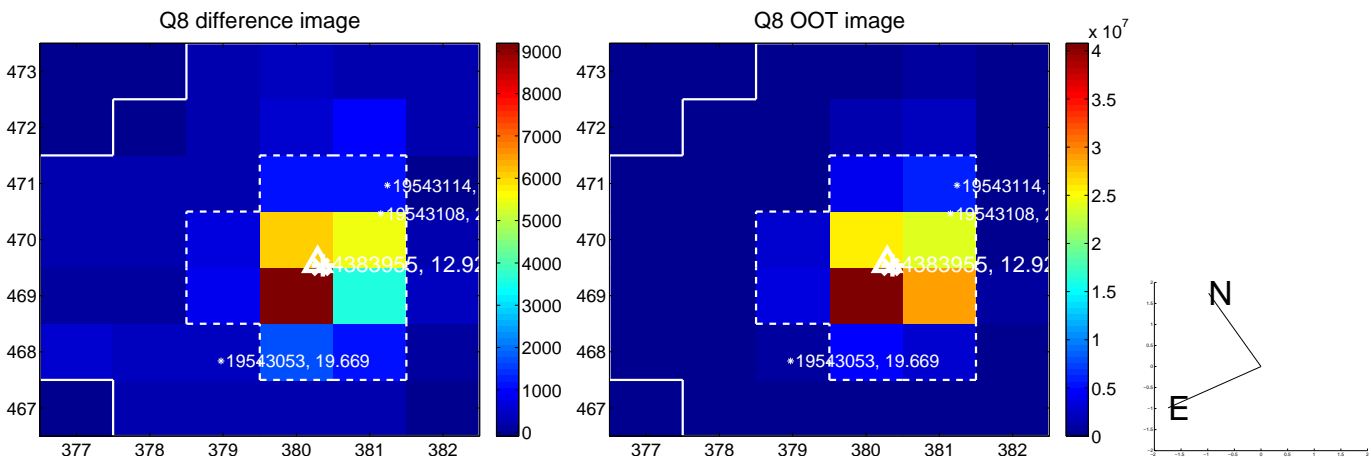
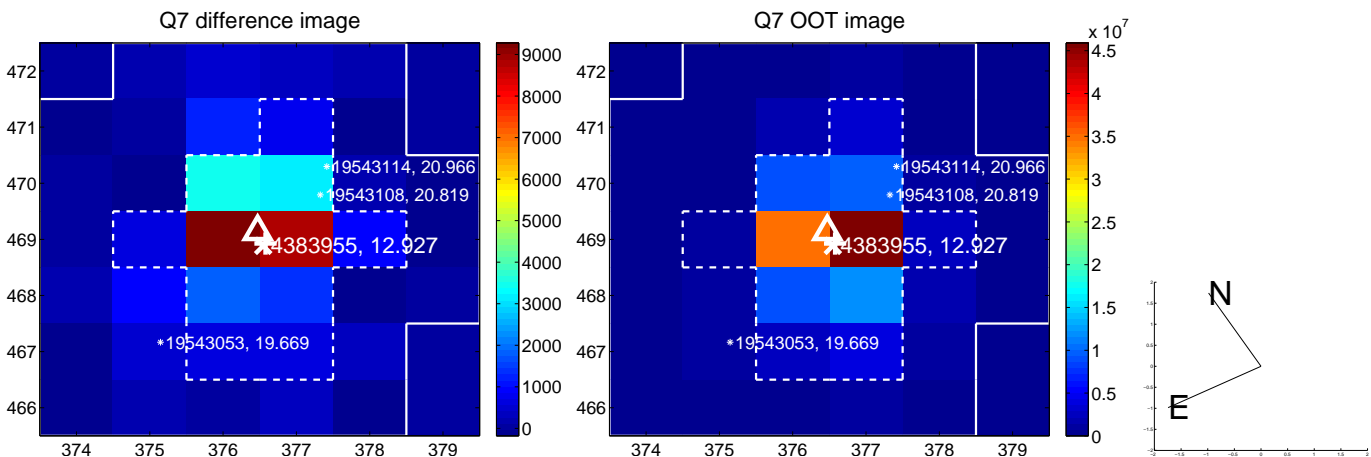
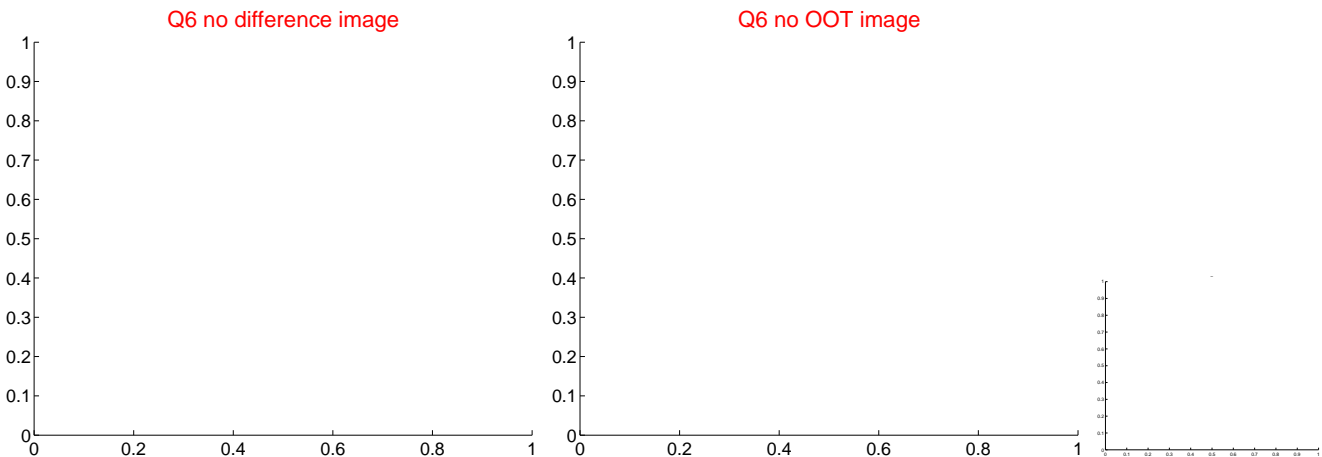
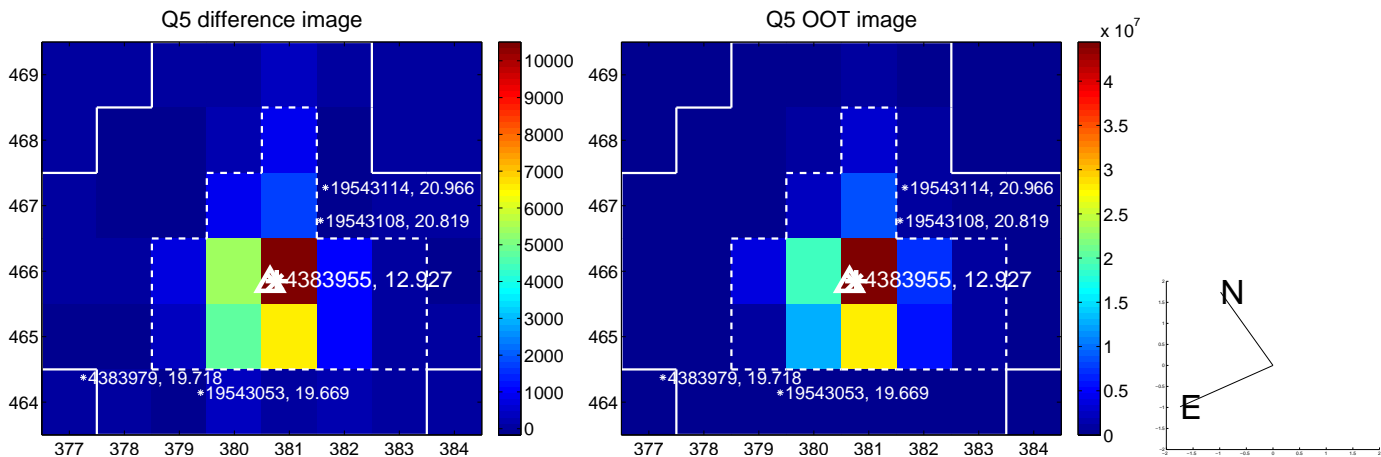


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

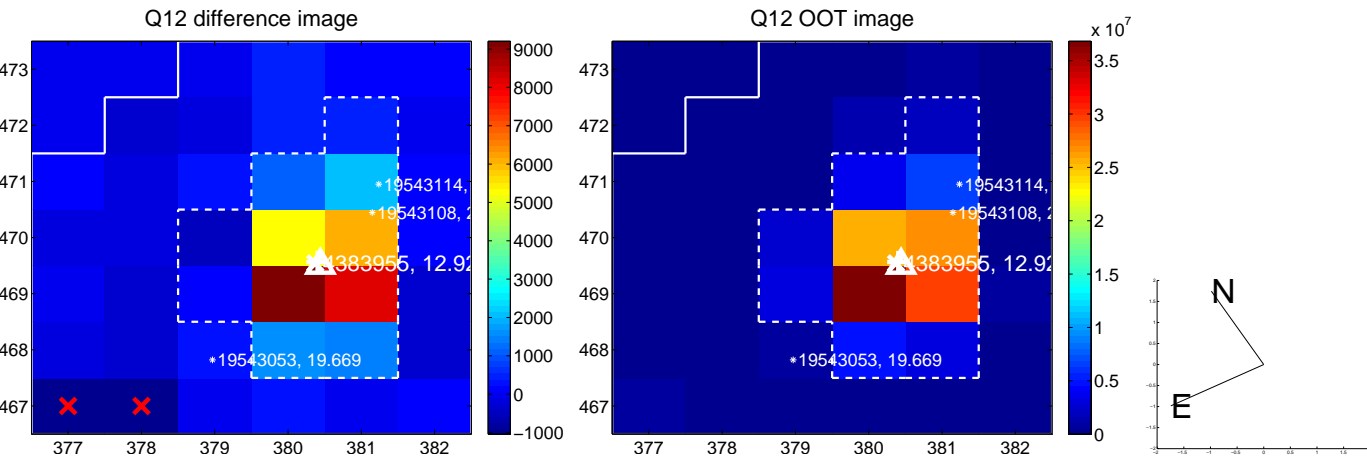
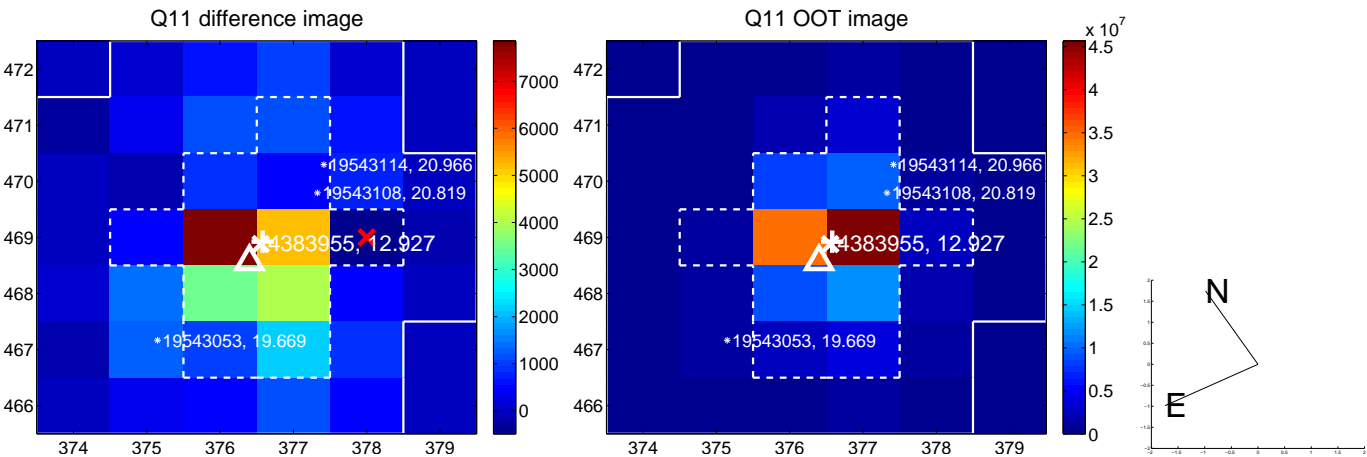
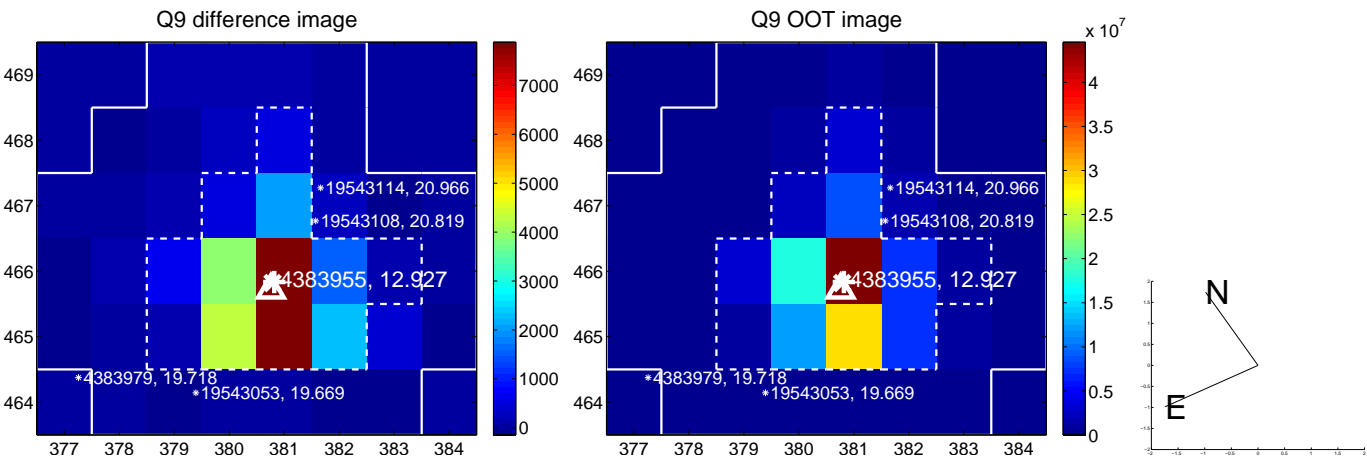
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



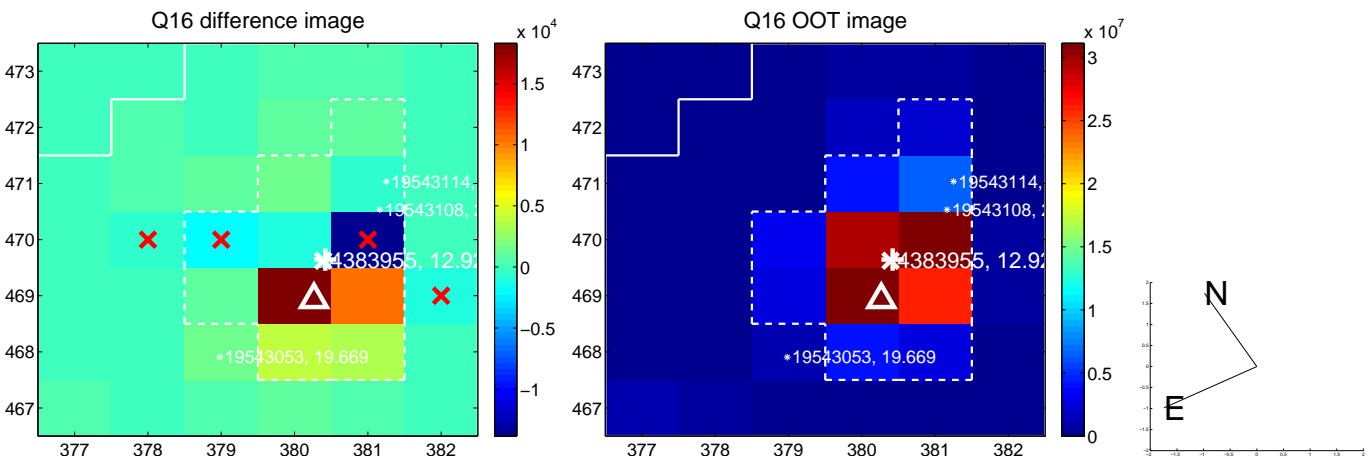
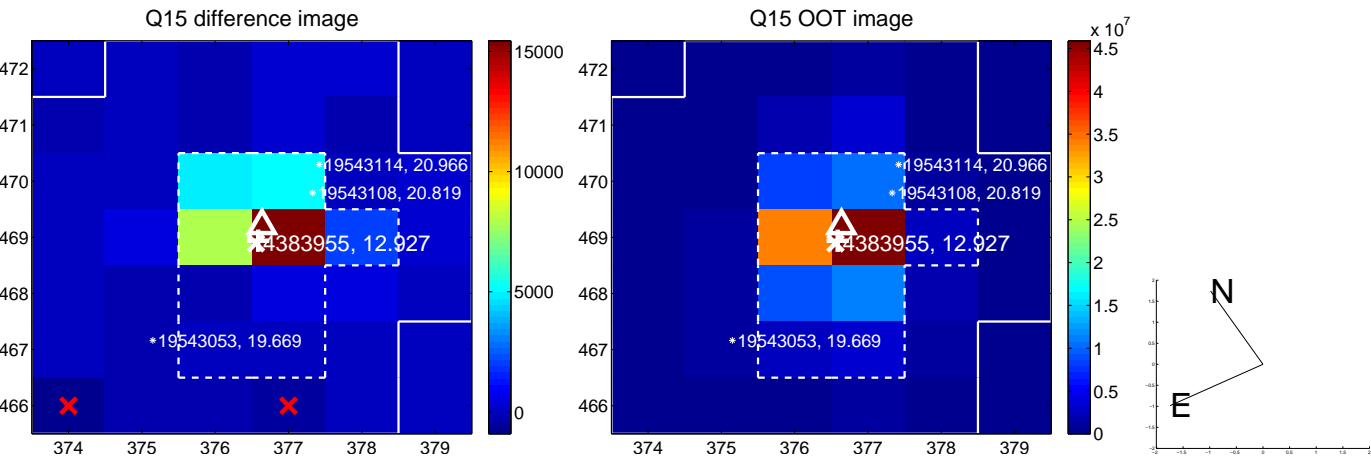
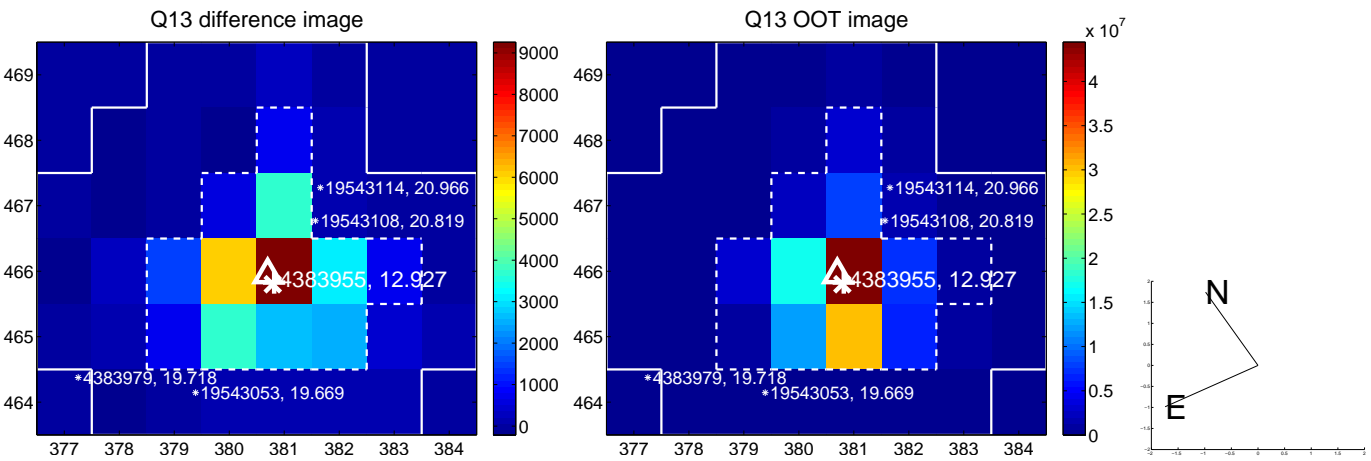
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



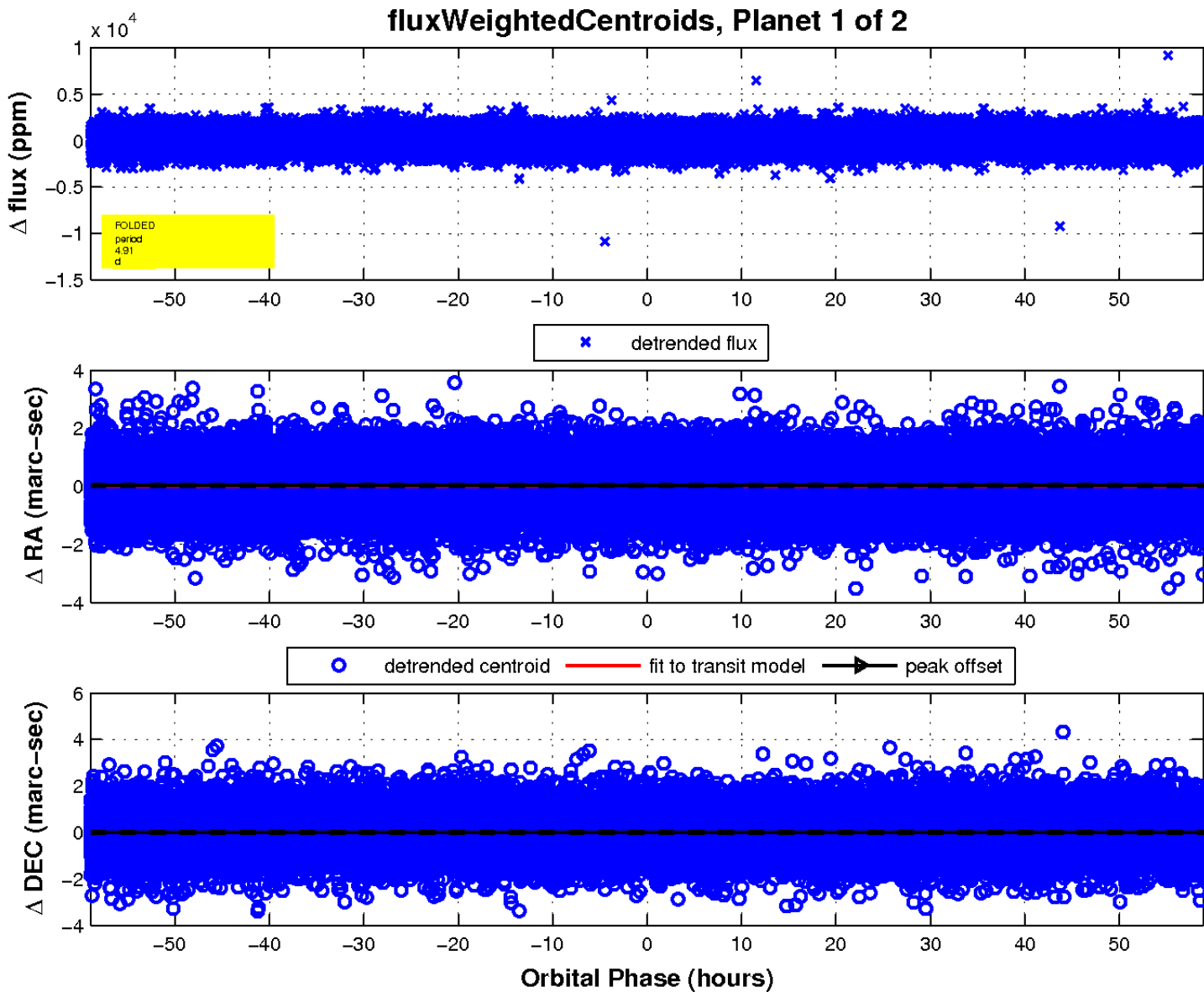
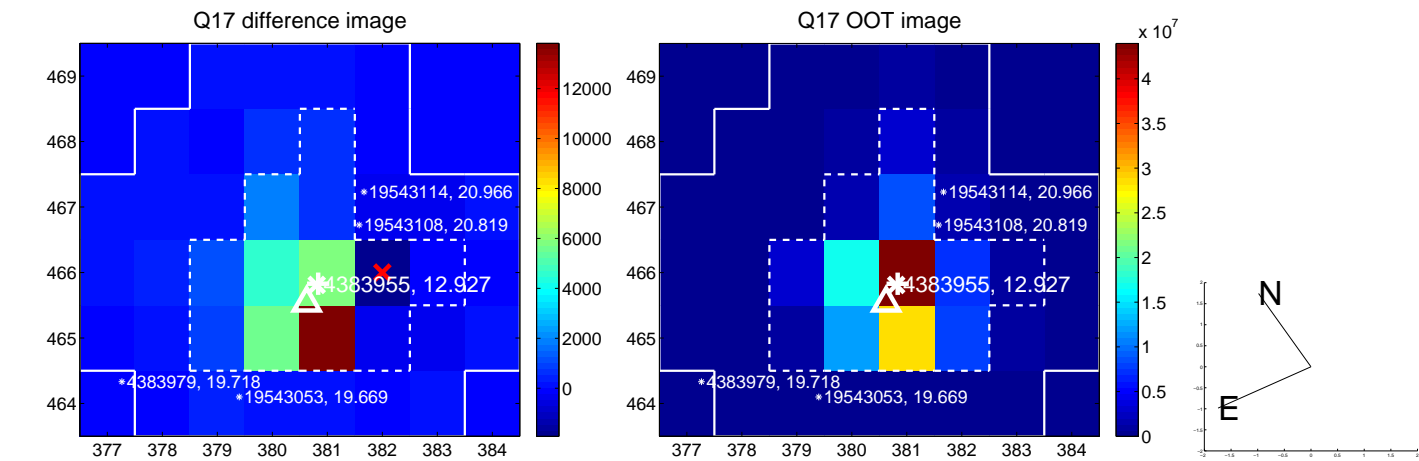
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



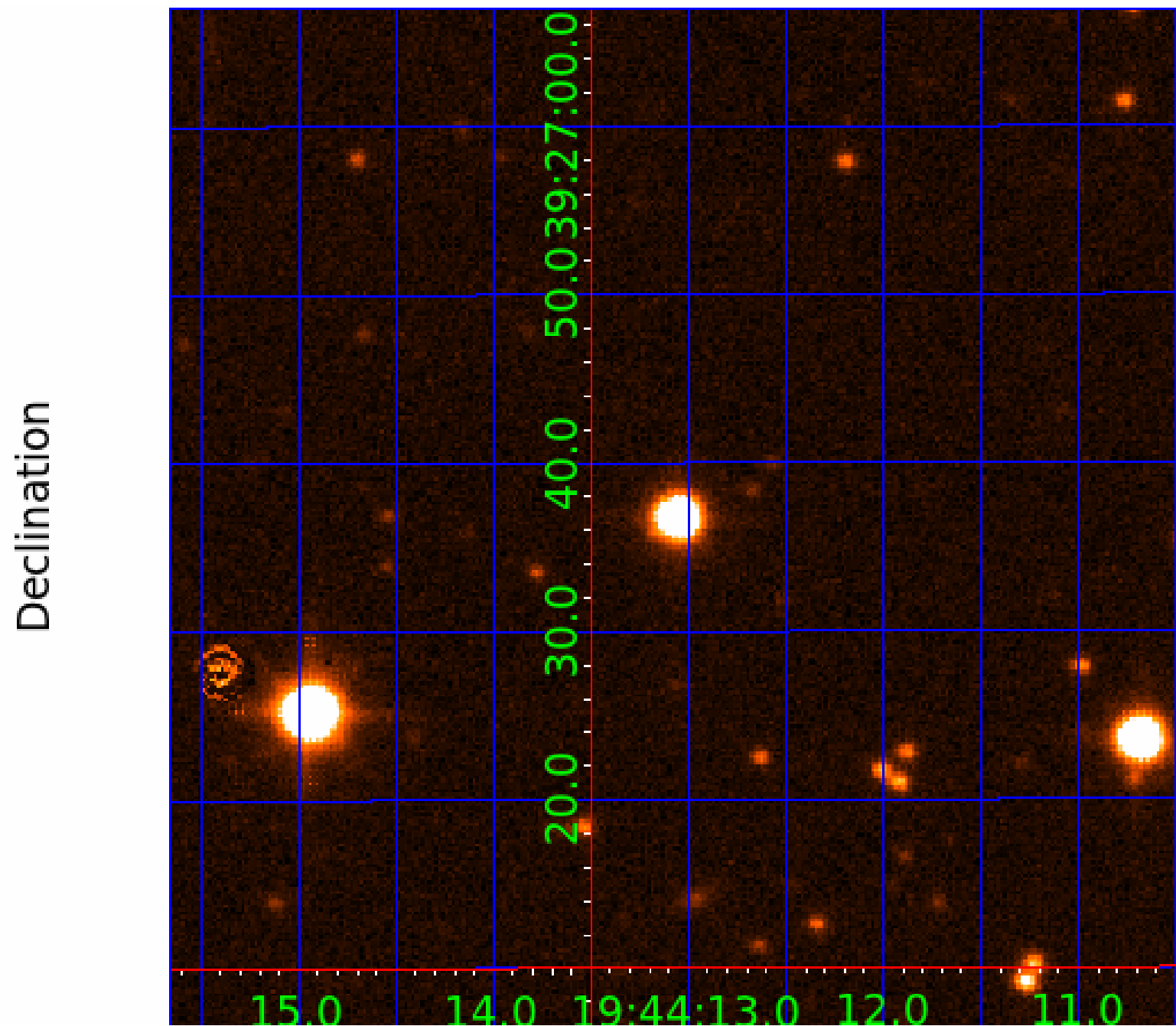
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004383955

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})
004383955-01	OBS	No	4.909981	134.765187	86.2	22.513	10.9	11.2	2.50	7892	2.76	4422.82
004383955-02	OBS	No	4.909939	132.331316	76.8	32.442	8.8	11.5	2.50	7892	2.27	4422.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004383955-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004383955-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

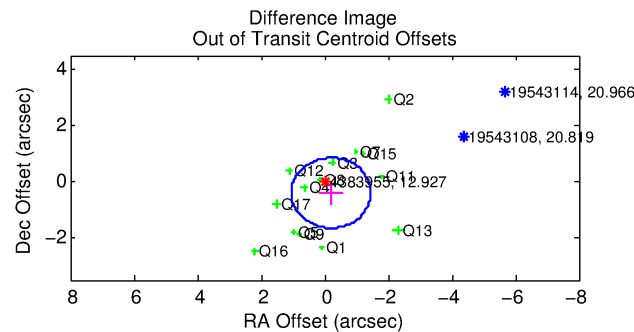
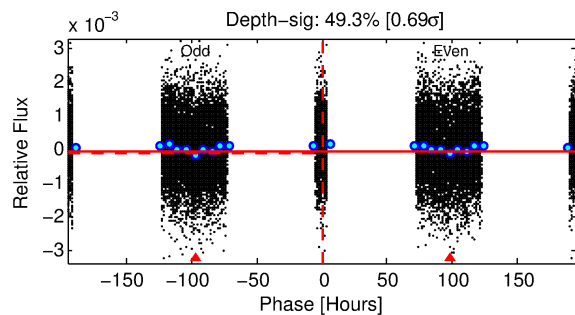
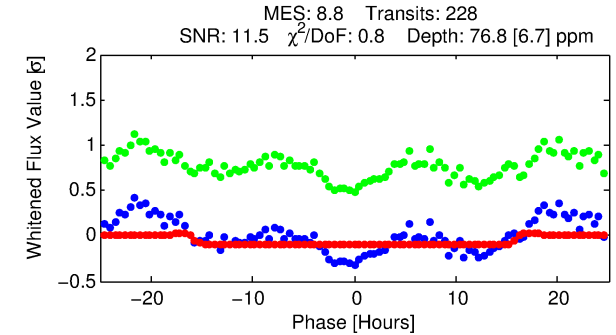
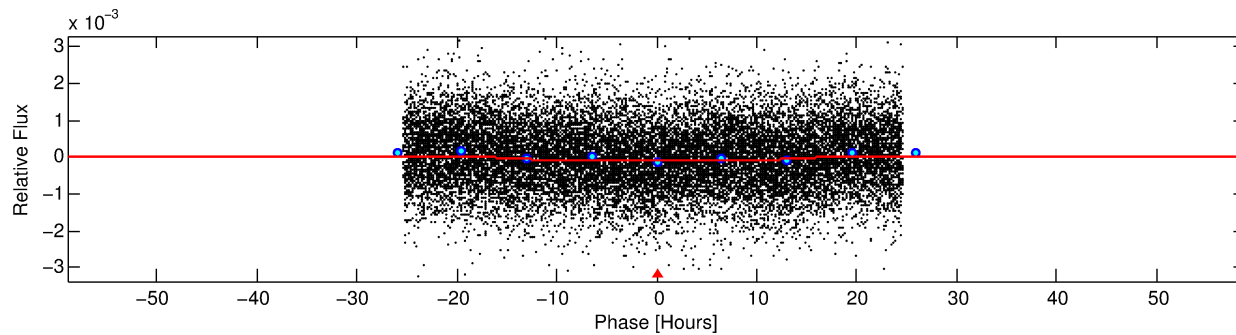
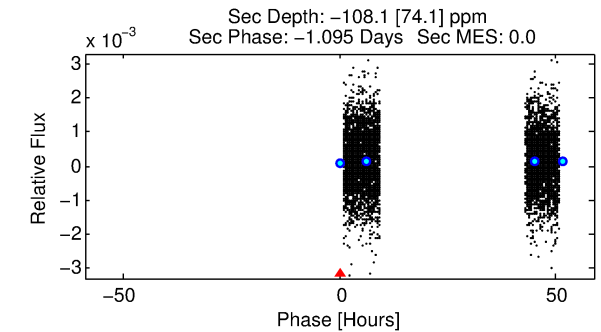
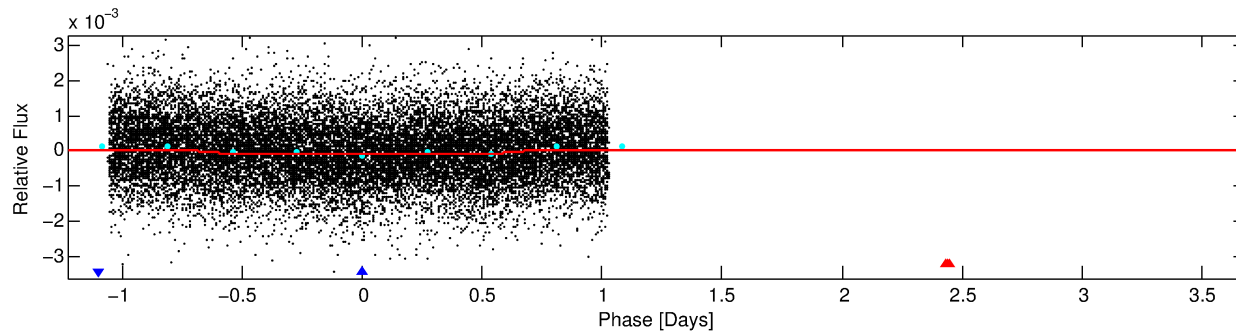
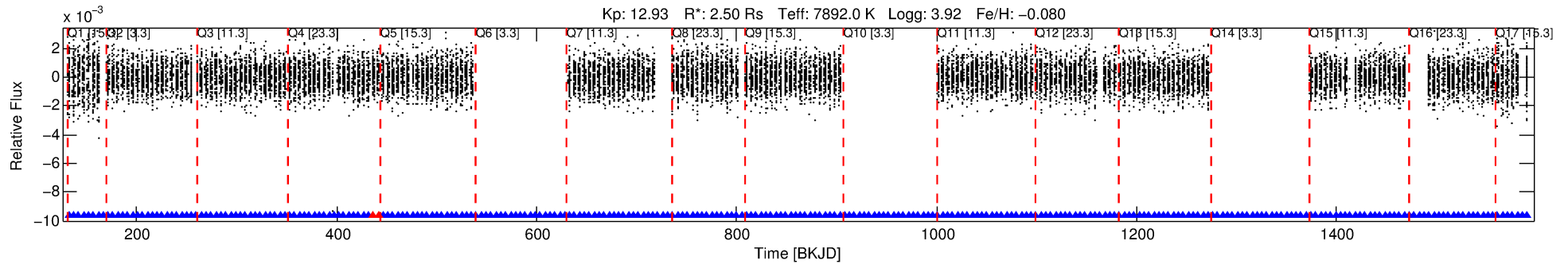
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004383955-02

No Significant Match Found

DV One-Page Summary

KIC: 4383955 Candidate: 2 of 2 Period: 4.910 d



DV Fit Results:

Period = 4.90994 [0.00013] d
Epoch = 132.3313 [0.0204] BKJD
Rp/R* = 0.0083 [0.0045]
a/R* = 1.25 [1.48]
b = 0.50 [4.89]
Seff = 4422.87 [2077.96]
Teq = 2079 [244] K
Rp = 2.27 [1.45] Re
a = 0.0700 [0.0205] AU
Ag = N/A
Teffp = N/A

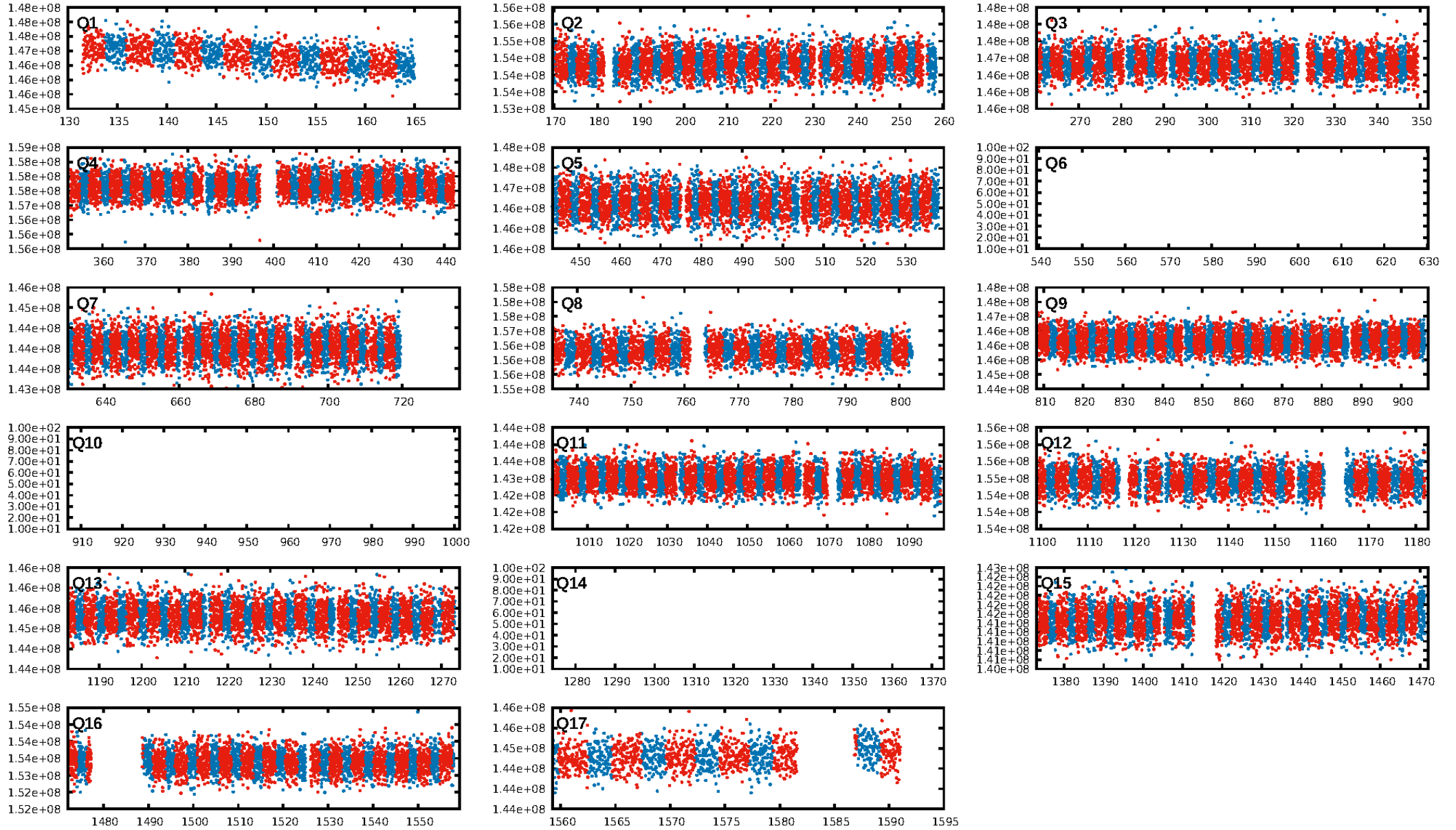
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [213/215]
GhostDiagnostic-chr: 1.639
Centroid-sig: 39.8%
Centroid-so: 0.314 arcsec [0.87σ]
OotOffset-rm: 0.447 arcsec [1.07σ]
KicOffset-rm: 0.500 arcsec [1.24σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 0.00 [0/14]

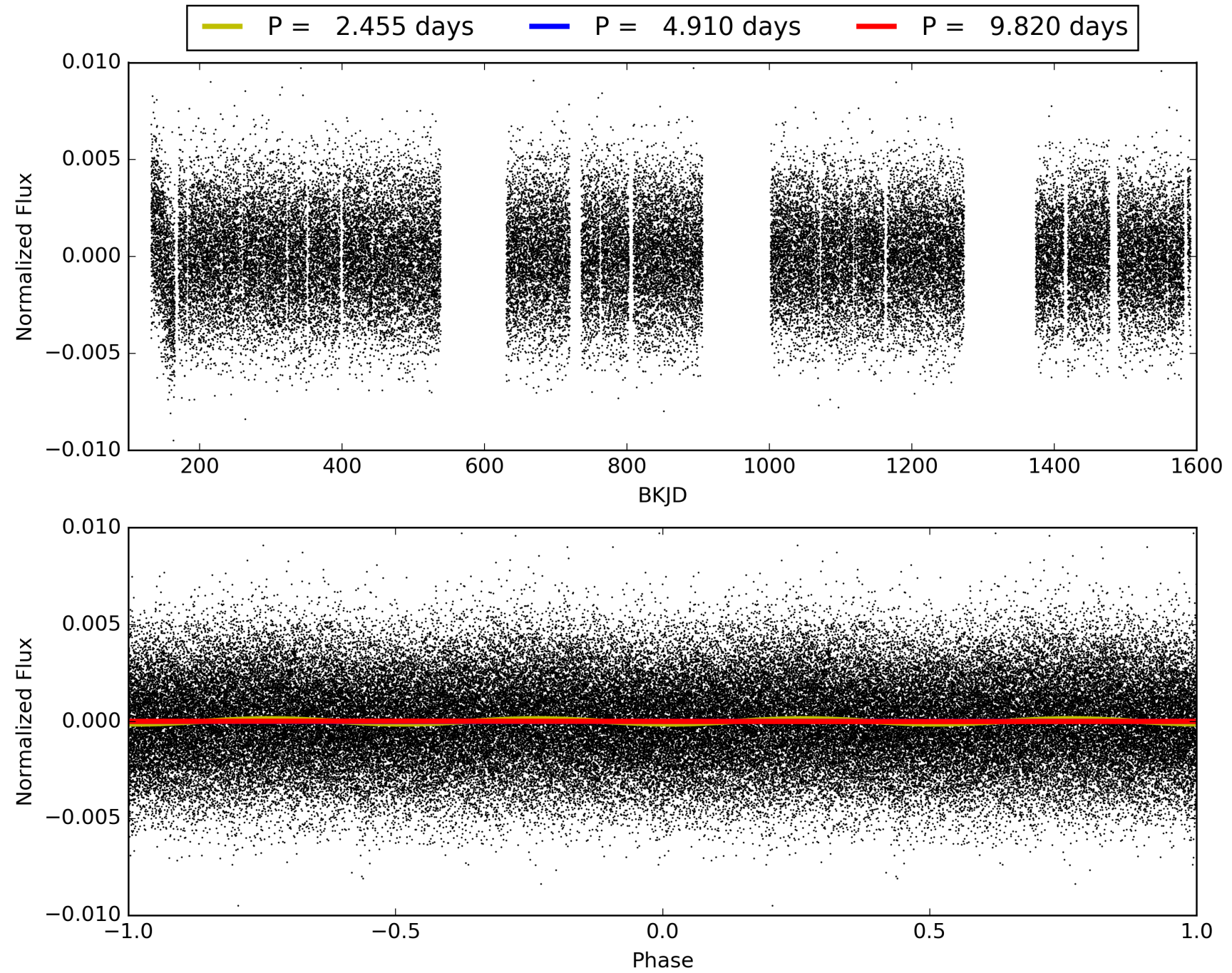
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:59:16 Z

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

TCE 004383955-02, PDC Light Curves

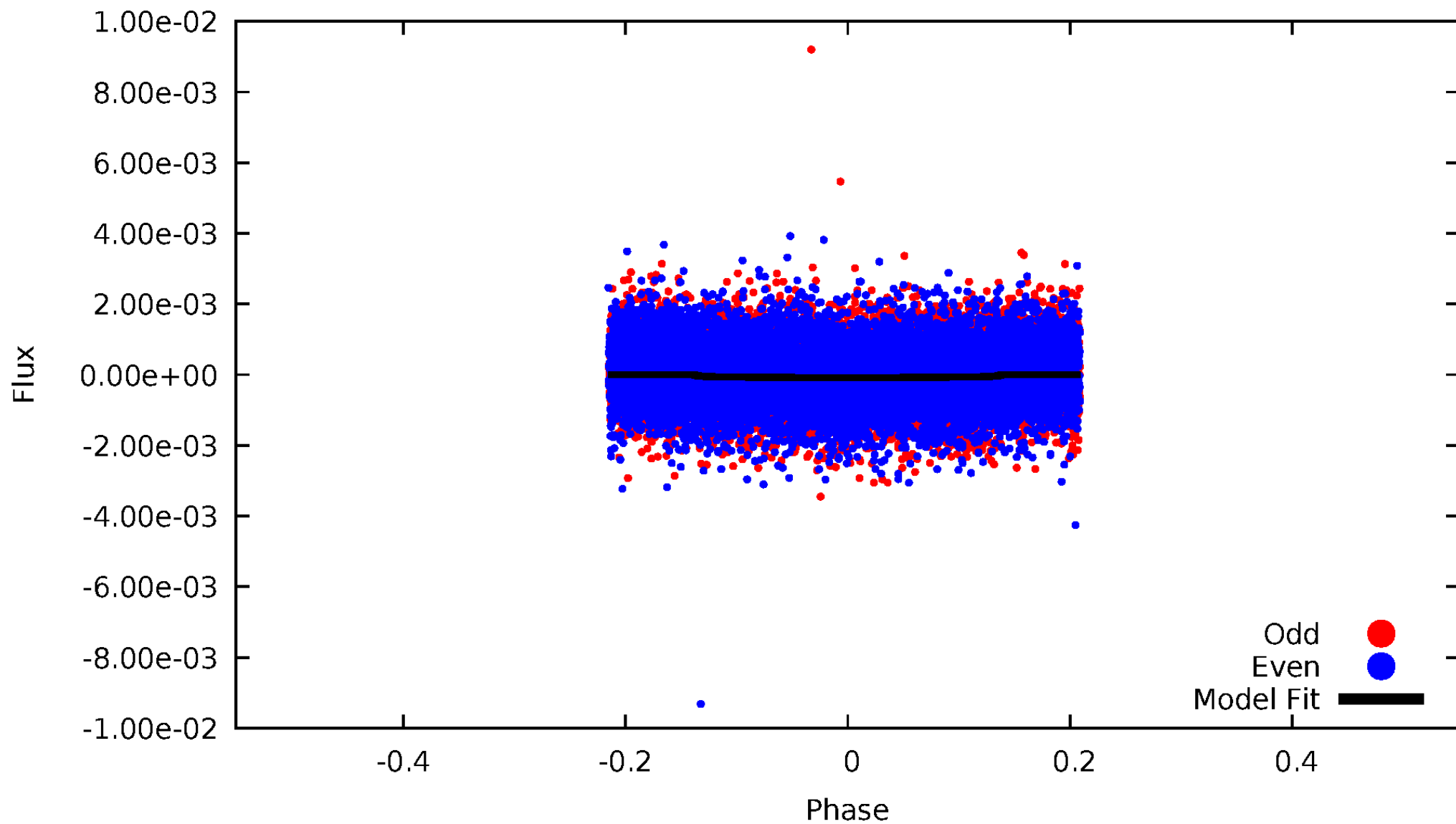


TCE 004383955-02



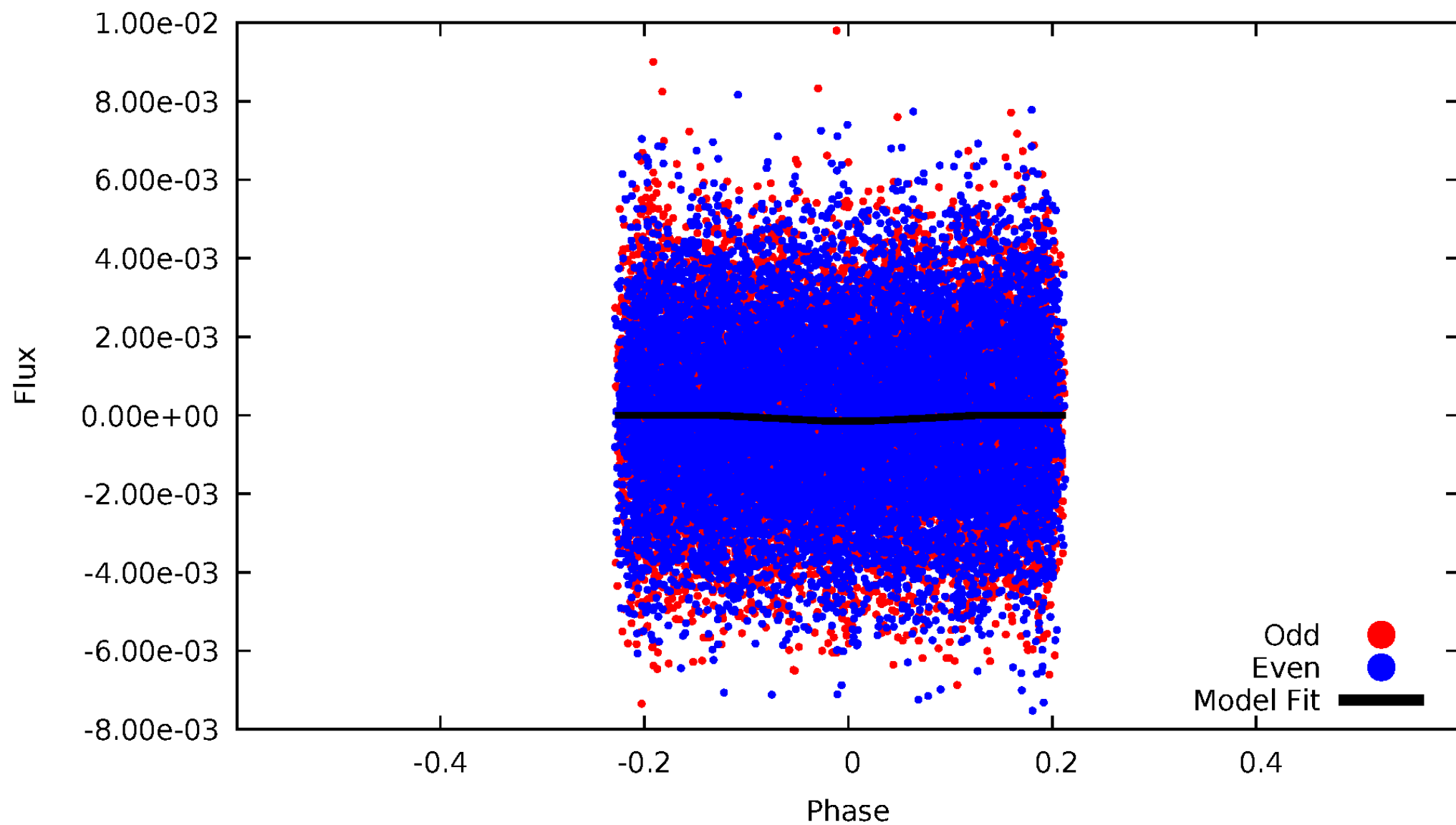
DV Odd/Even

TCE 004383955-02



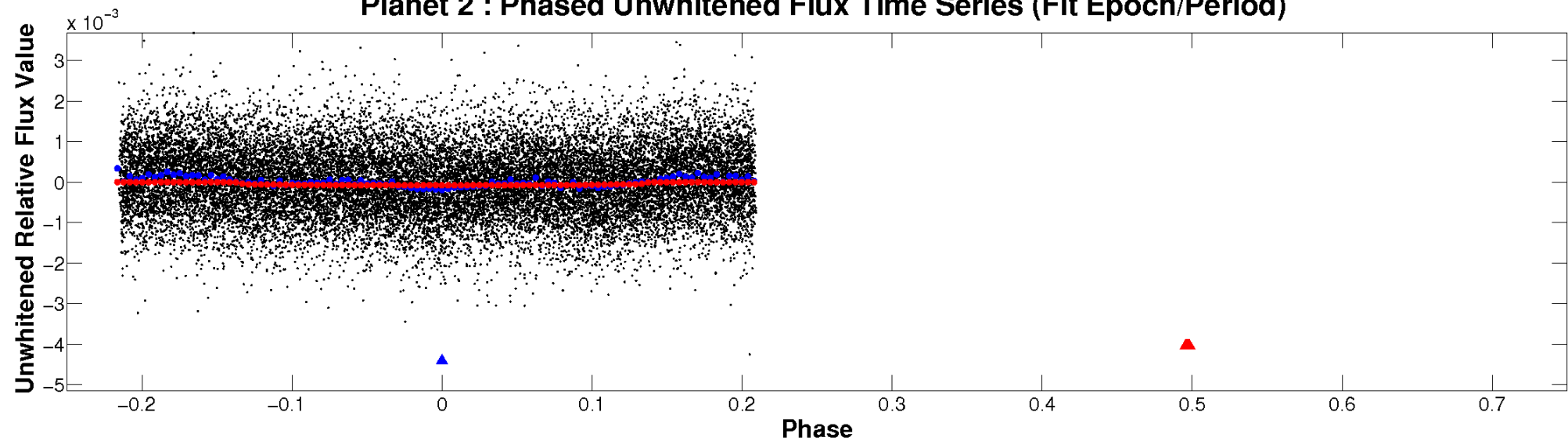
ALT Odd/Even

TCE 004383955-02

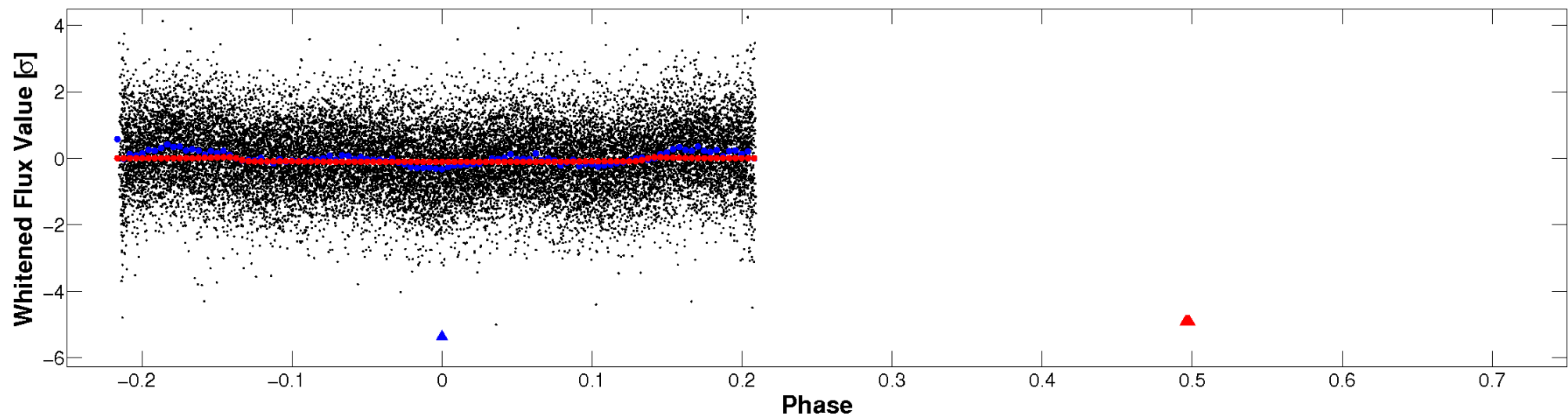


Non-Whitened Vs. Whitened Light Curve

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

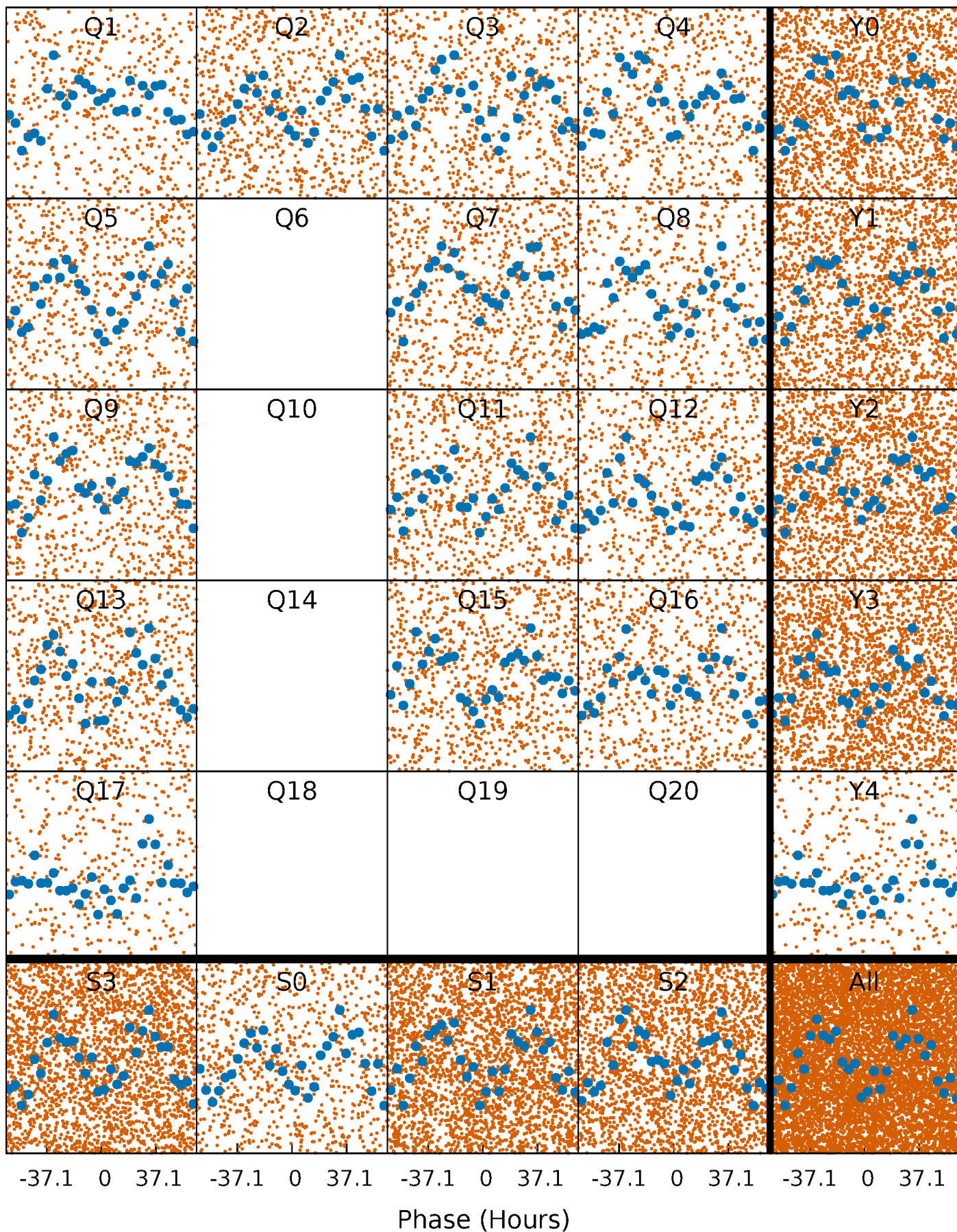


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



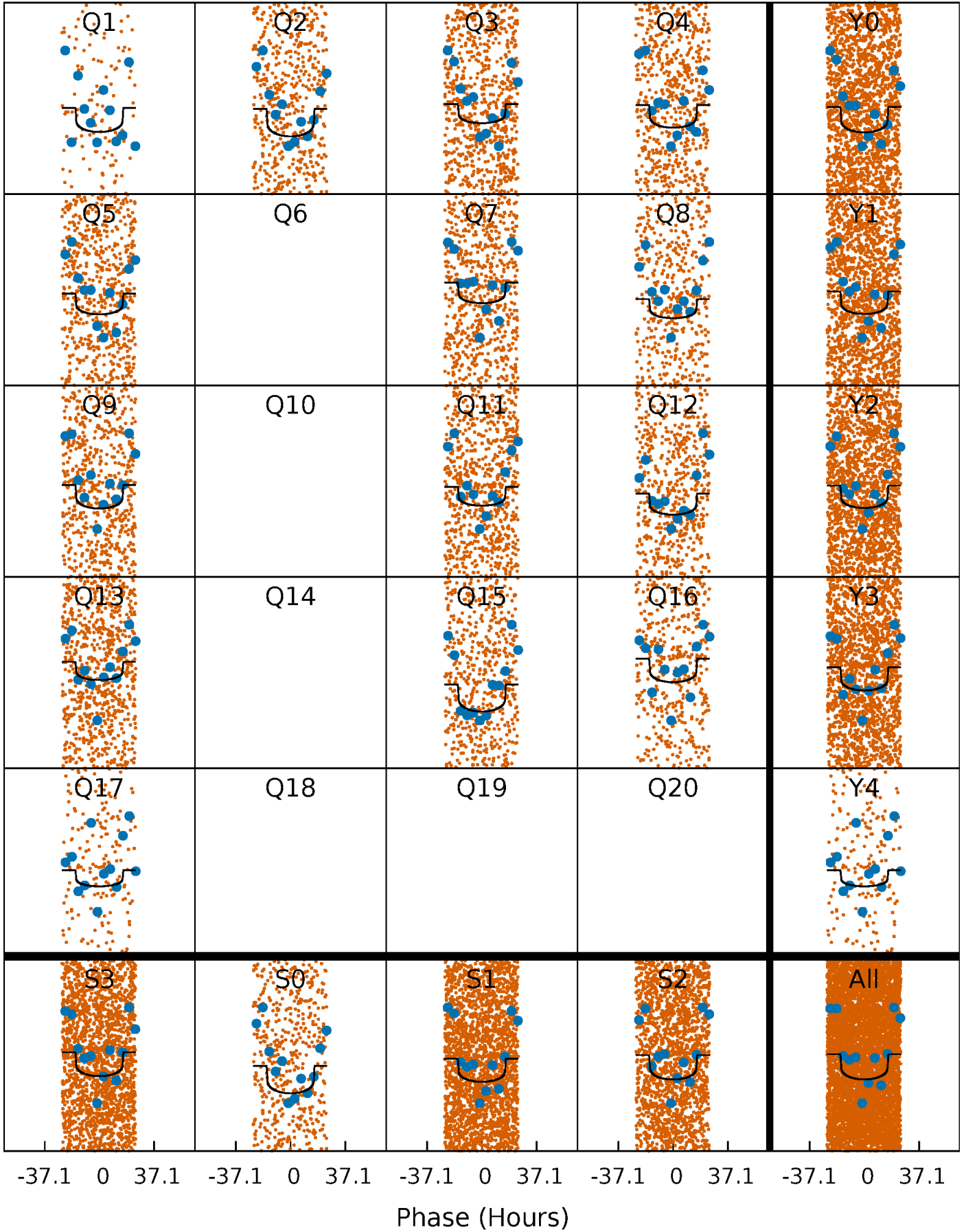
PDC Quarter-Phased Transit Curves

TCE 004383955-02 P= 4.909939 Days $T_0=132.331316$ (BKJD)



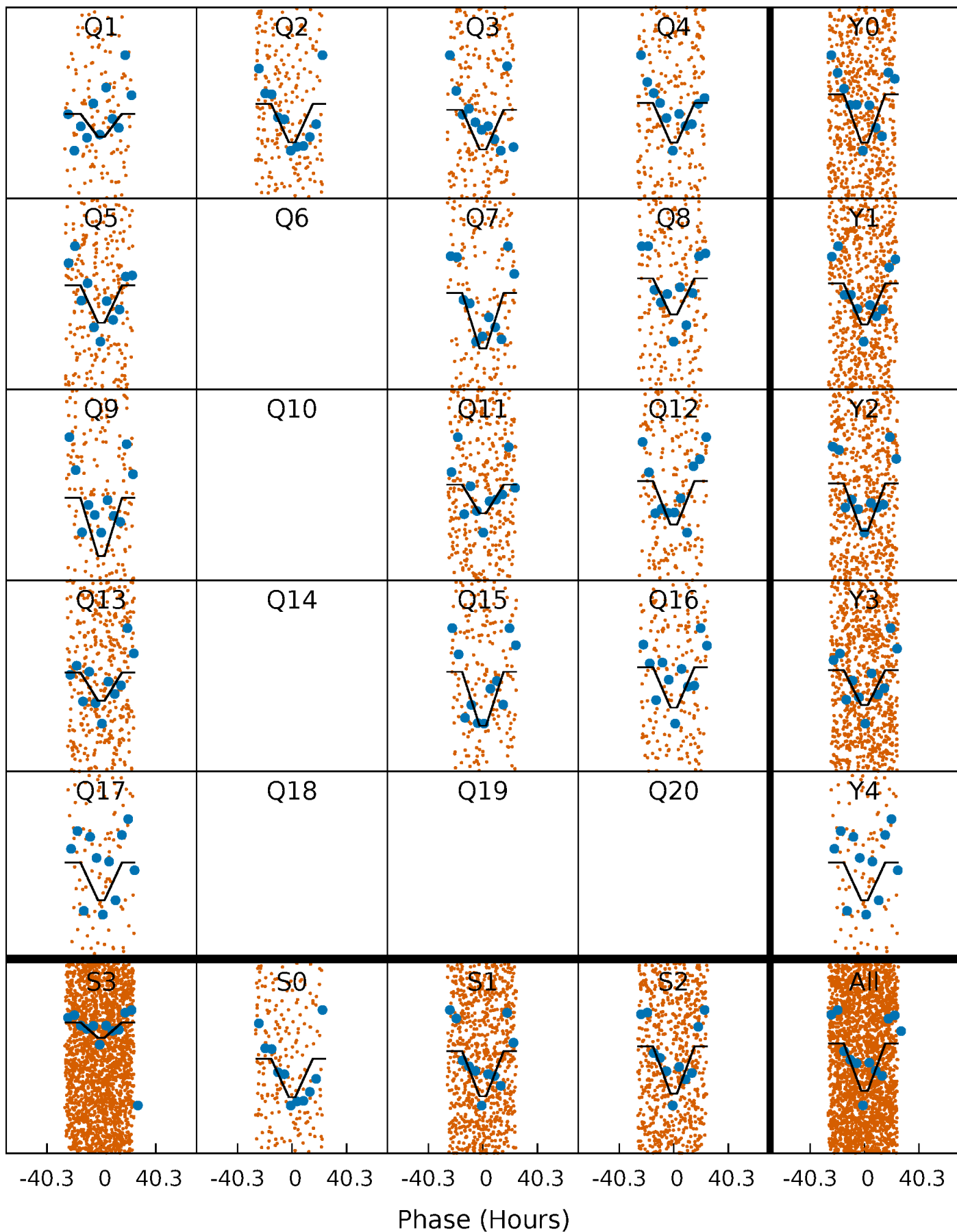
DV Quarter-Phased Transit Curves

TCE 004383955-02 P= 4.909939 Days $T_0=132.331316$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

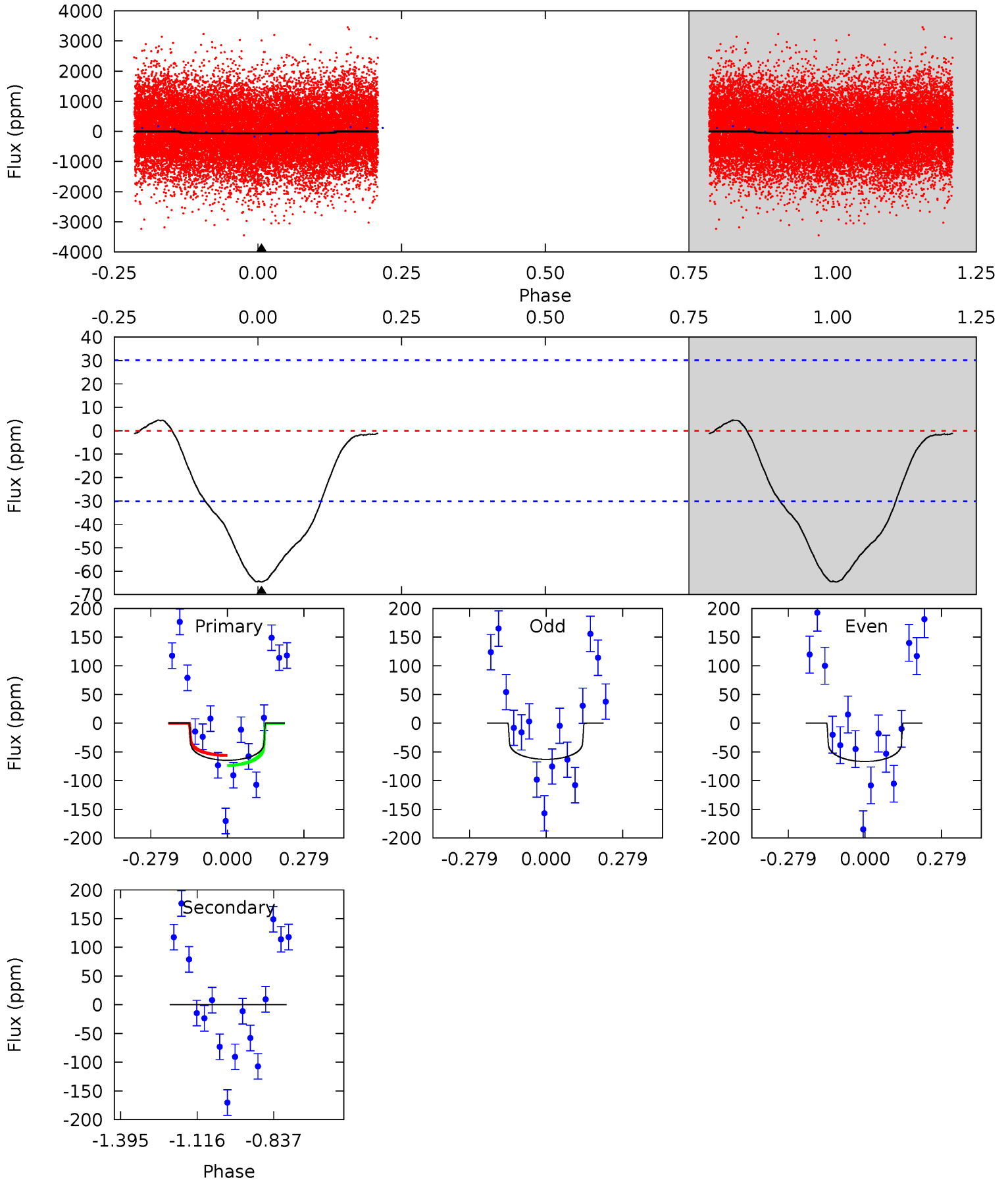
TCE 004383955-02 P= 4.909650 Days $T_0=132.399597$ (BKJD)



DV Model-Shift Uniqueness Test

004383955-02, P = 4.909939 Days, E = 127.421377 Days

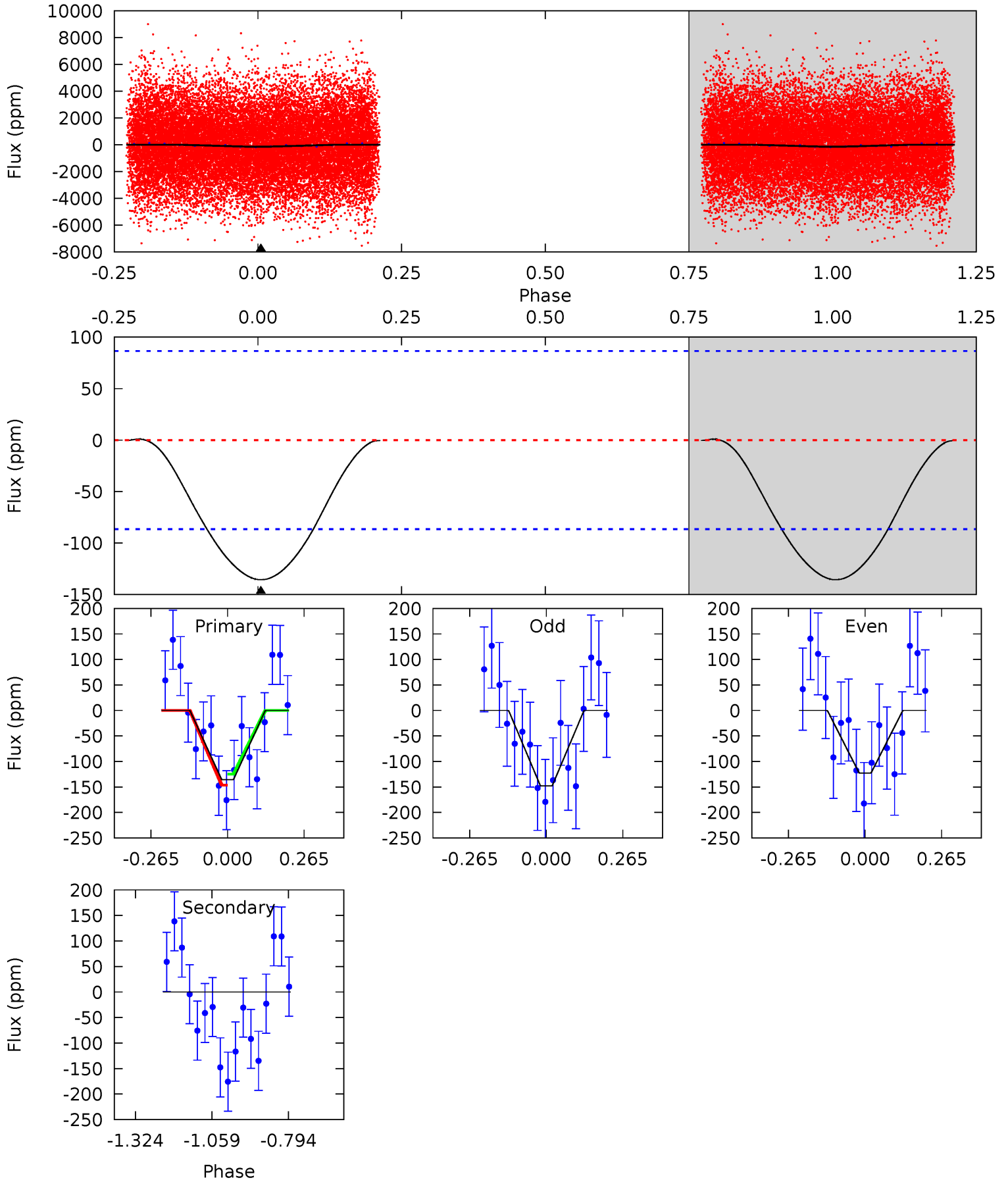
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.31	0	0	0	4.34	1.08	0.24	9.31	9.31	0	0	0.27	1.35	0.07	1.27



Alt Model-Shift Uniqueness Test

004383955-02, P = 4.909650 Days, E = 127.489947 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.83	0	0	0	4.36	1.12	0.06	6.83	6.83	0	0	0.63	1.00	0.01	0.55



Stellar Parameters For KIC 004383955

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7892^{+218}_{-327}	$3.921^{+0.247}_{-0.133}$	$-0.080^{+0.150}_{-0.350}$	$2.496^{+0.449}_{-0.833}$	$1.894^{+0.105}_{-0.394}$	$0.172^{+0.293}_{-0.059}$
	+3%/-4%	+6%/-3%	+188%/-438%	+18%/-33%	+6%/-21%	+171%/-35%
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 004383955-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 7	$2.21^{+1.21}_{-1.08}$	2885^{+188}_{-260}	-3054^{+7568}_{-1752}	$-0.107^{+4.272}_{-5.124}$
Alt.	0 ± 20	$3.14^{+1.42}_{-1.23}$	2866^{+195}_{-243}	-2635^{+7421}_{-2294}	$0.177^{+5.392}_{-5.838}$

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 $A_{obs} \gg 1.0$

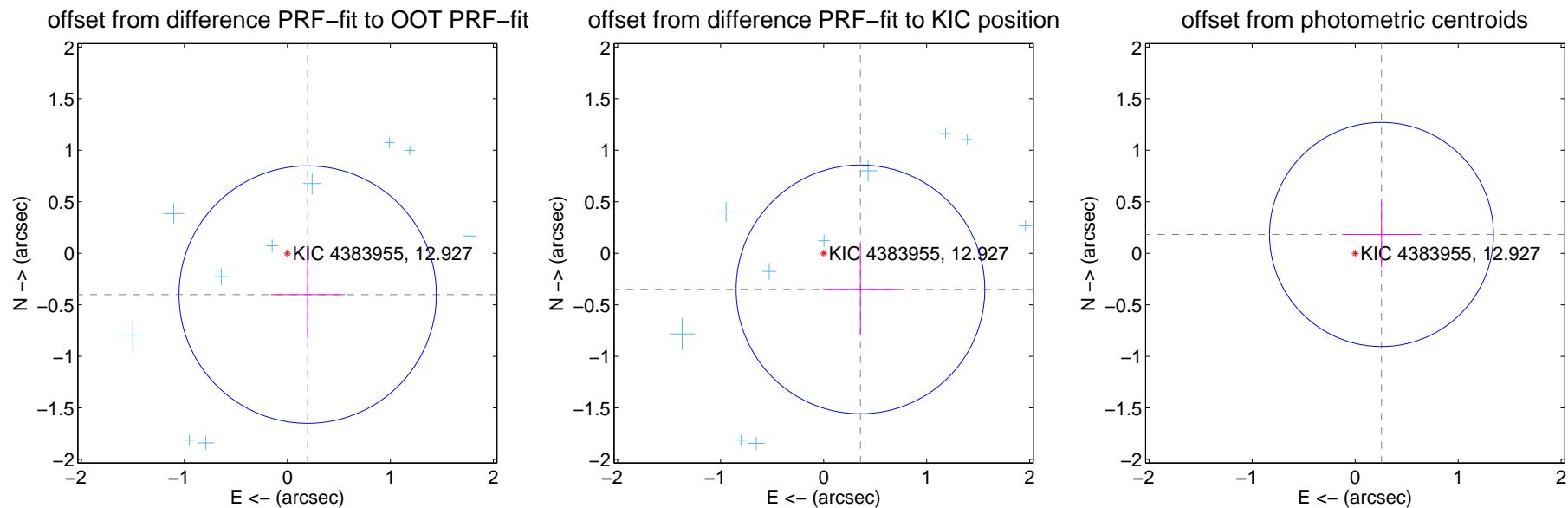
DV Centroid Data

Supplemental centroid analysis for 004383955-02. Kepler magnitude: 12.93. Transit SNR 11.49

There are 13 quarters with good PRF difference image offsets

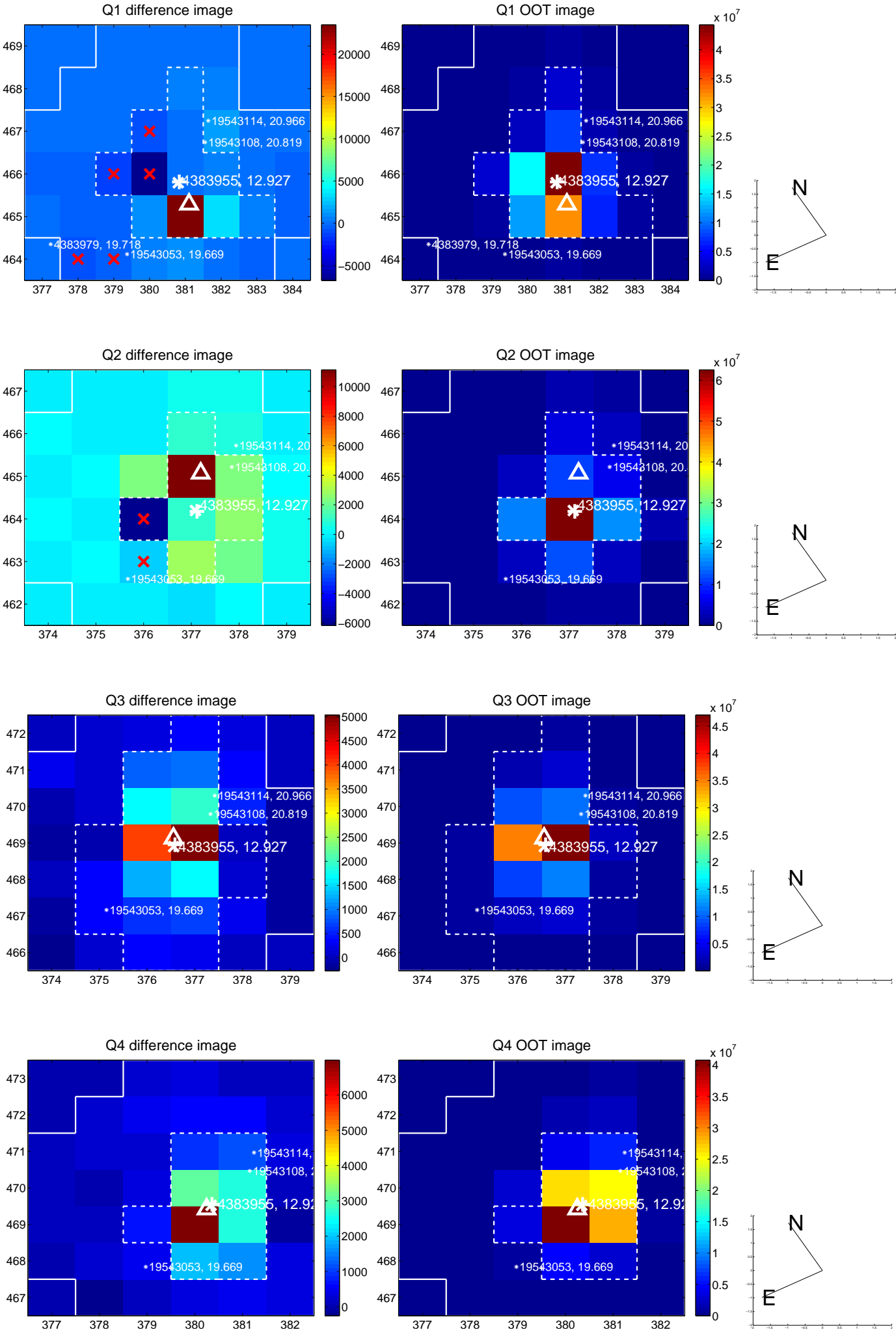
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.447 ± 0.416	1.07	-0.197 ± 0.359	-0.401 ± 0.429
PRF-fit source offset from KIC position	0.500 ± 0.402	1.24	-0.357 ± 0.365	-0.350 ± 0.438
photometric centroid source offset	0.31 ± 0.36	0.87	-0.26 ± 0.38	0.18 ± 0.32

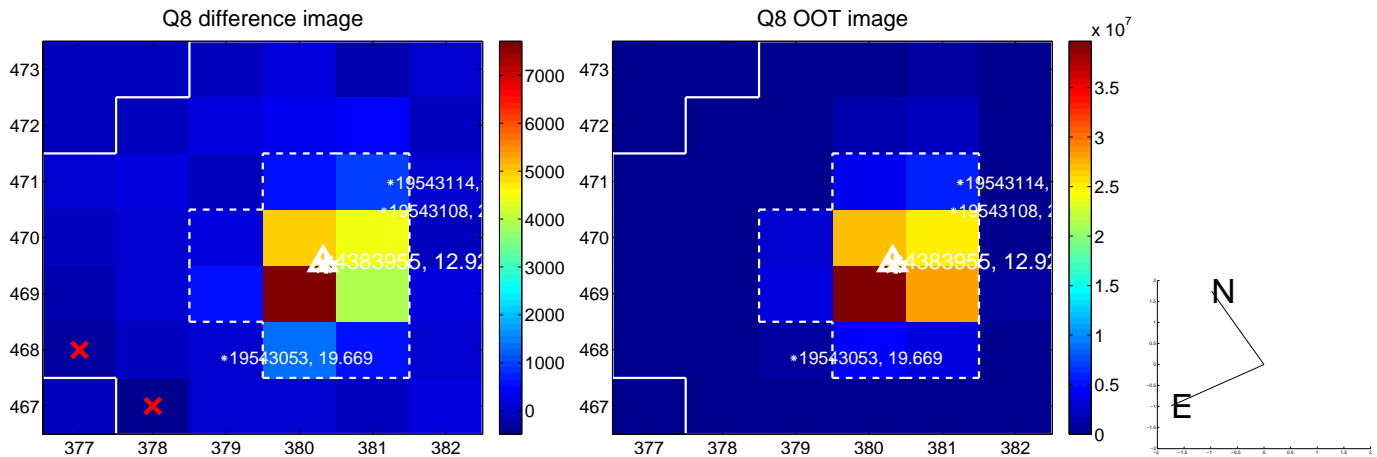
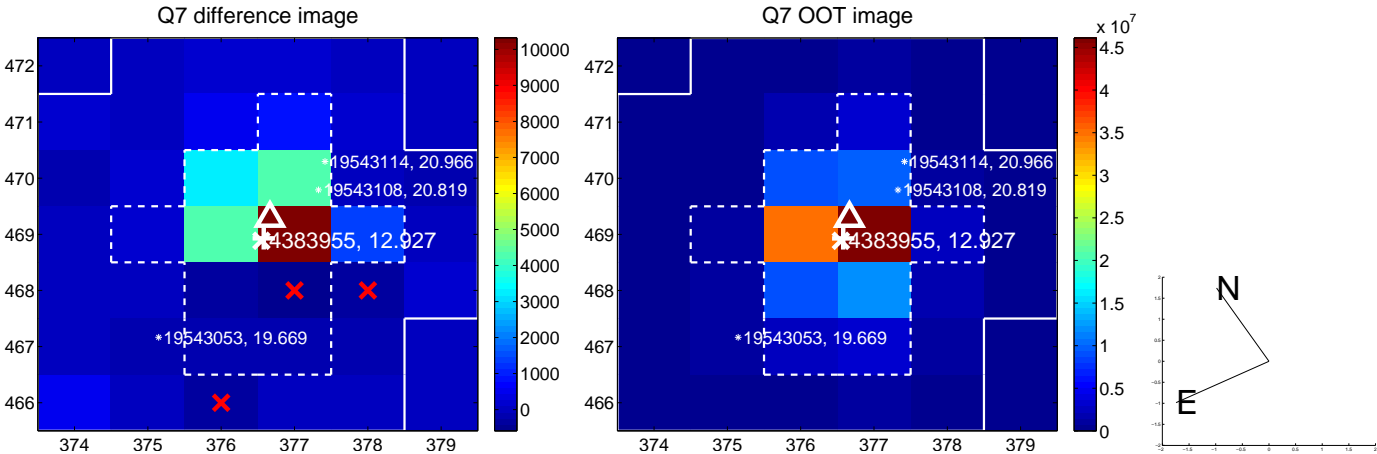
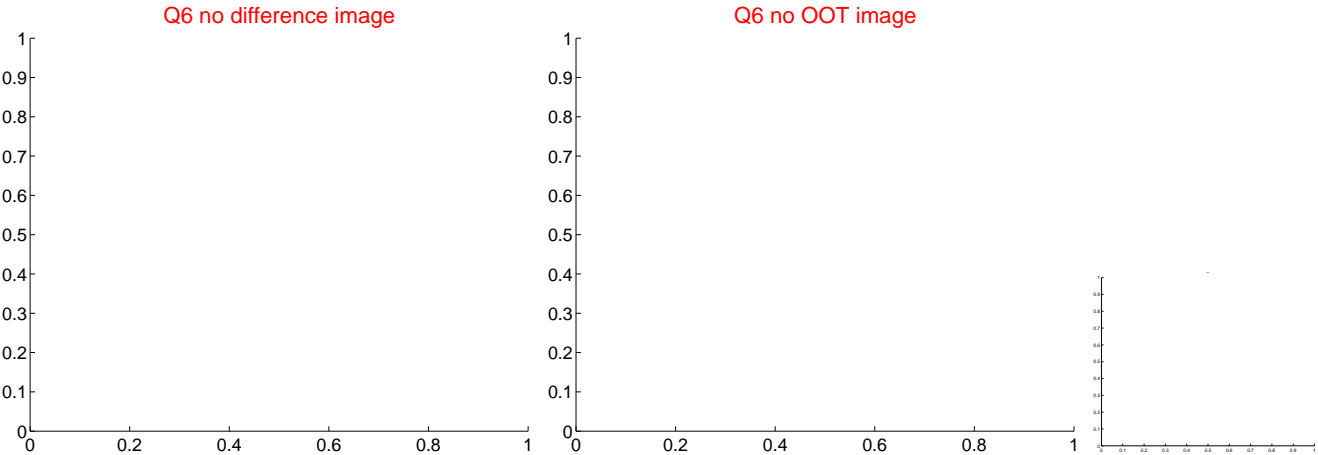
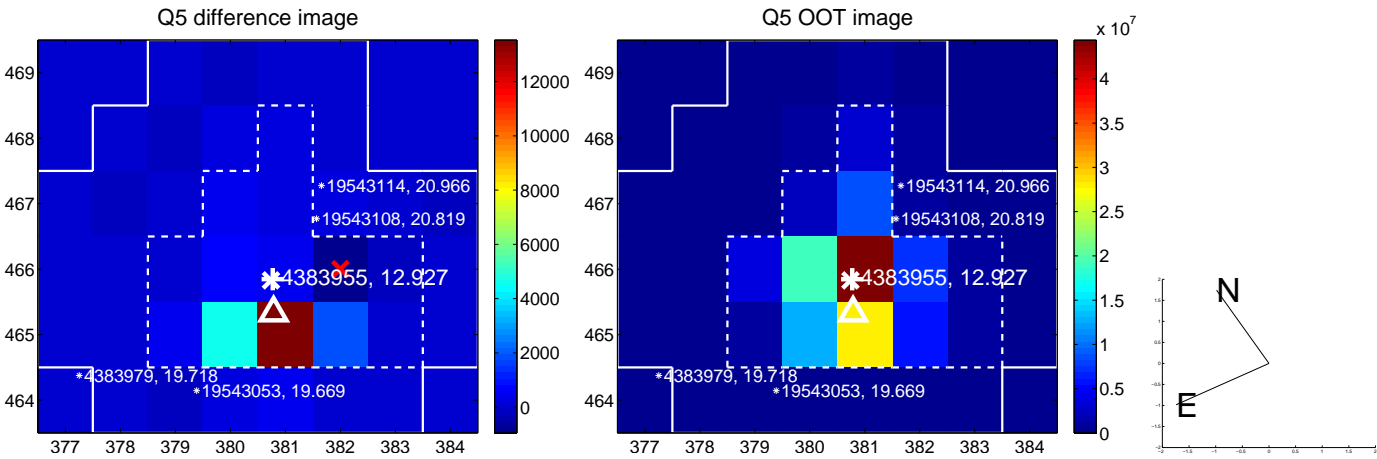


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

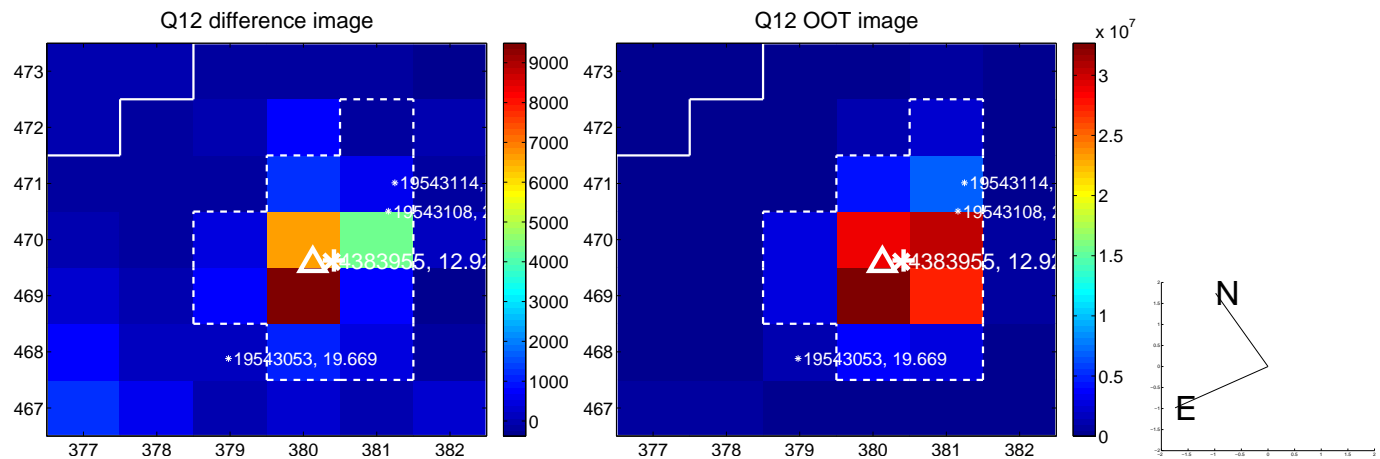
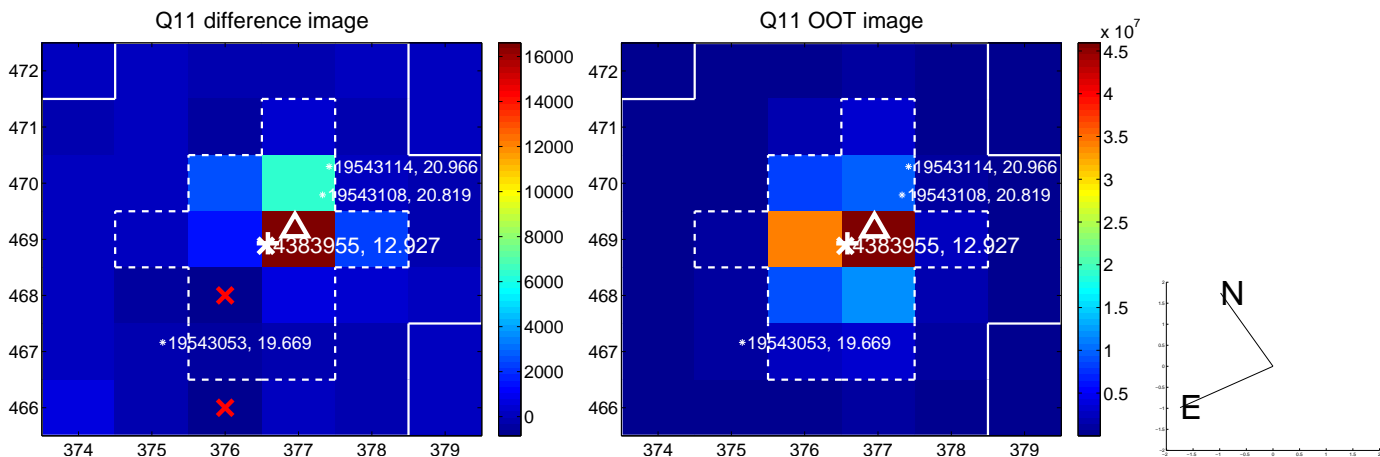
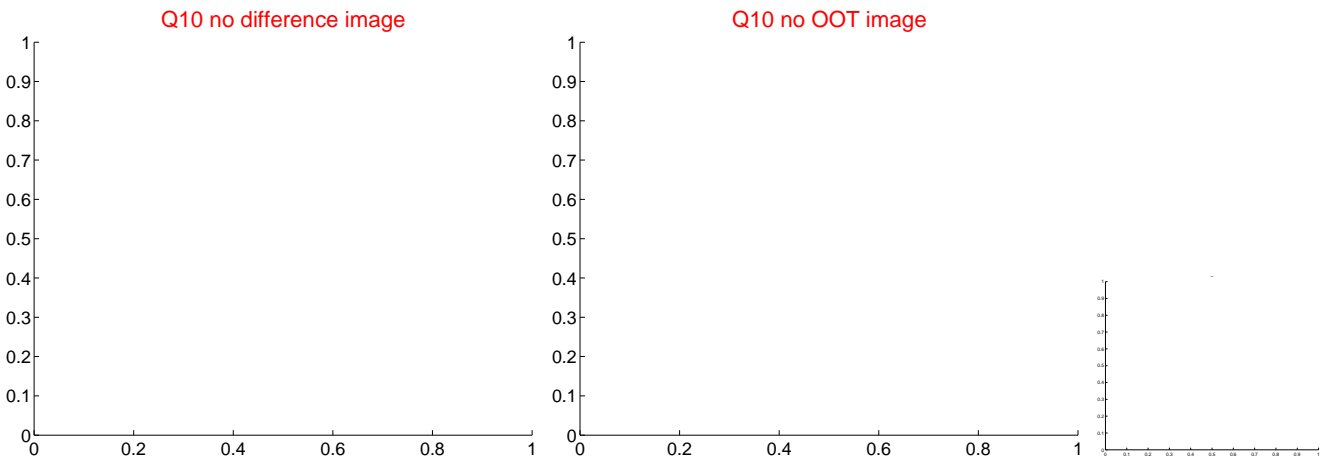
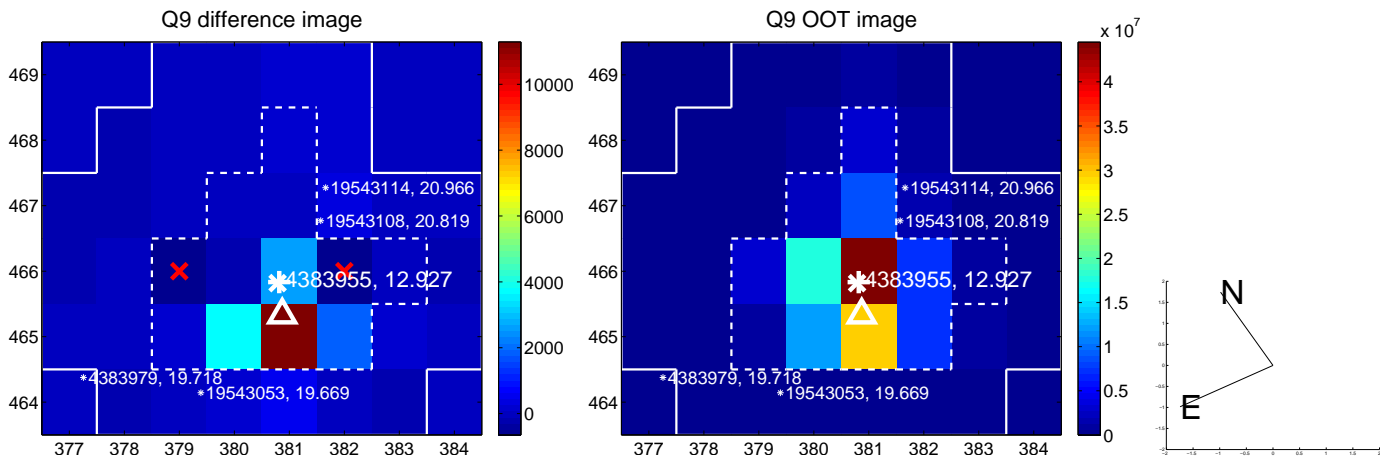
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



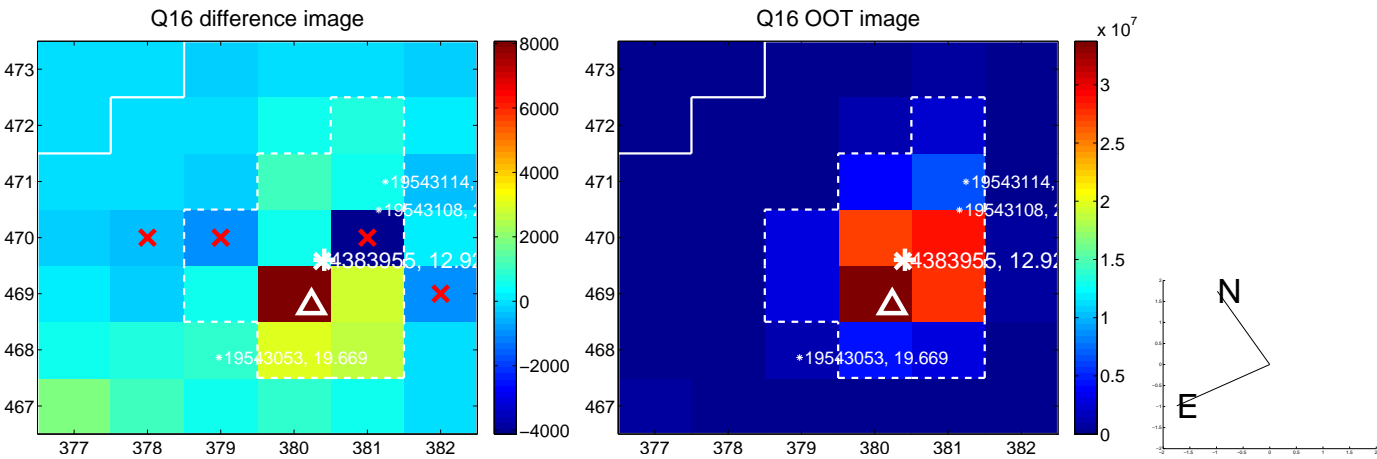
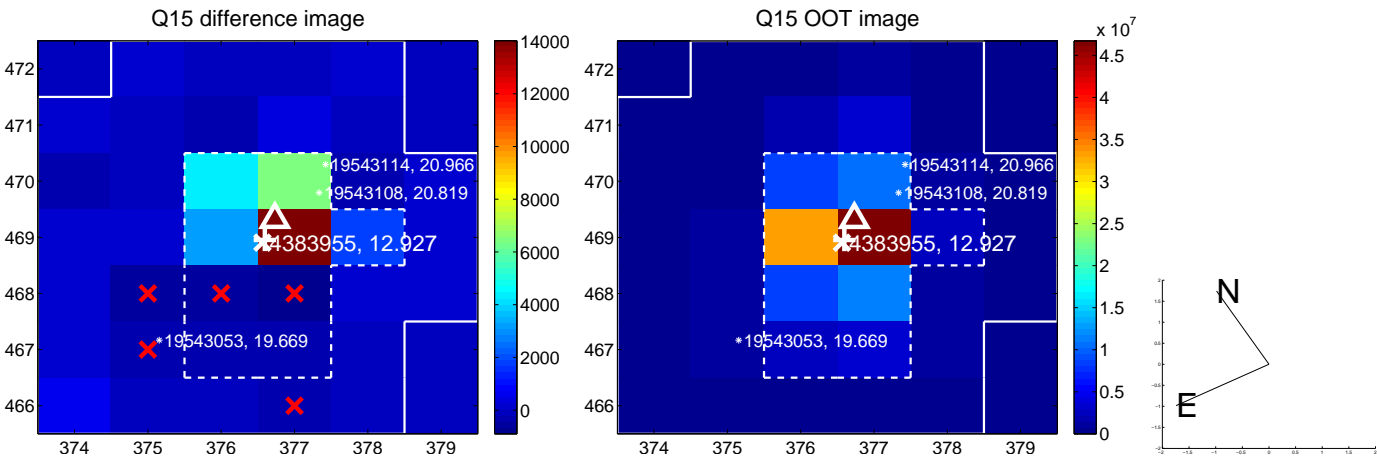
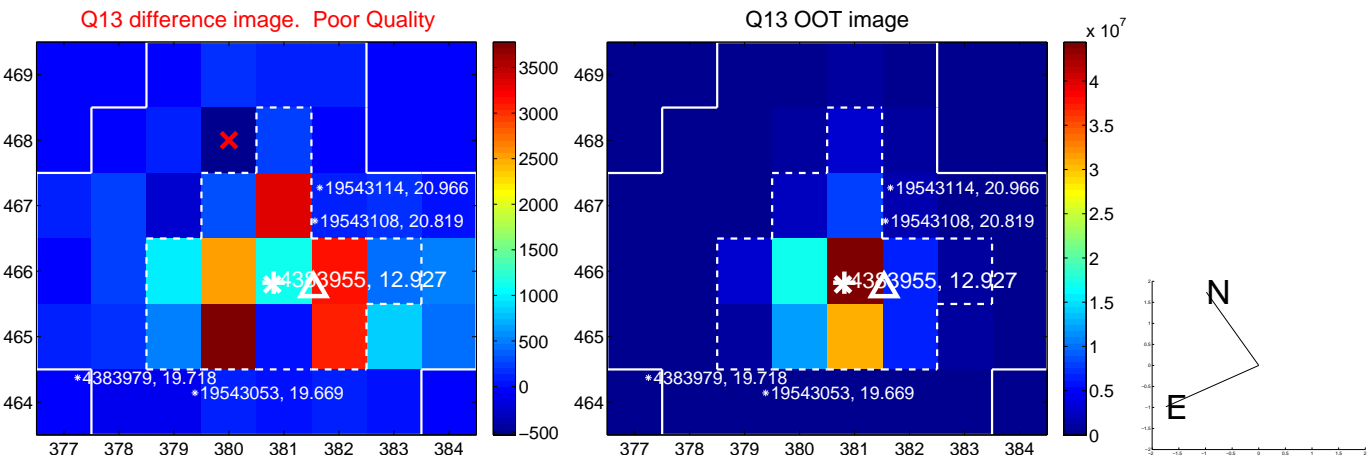
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



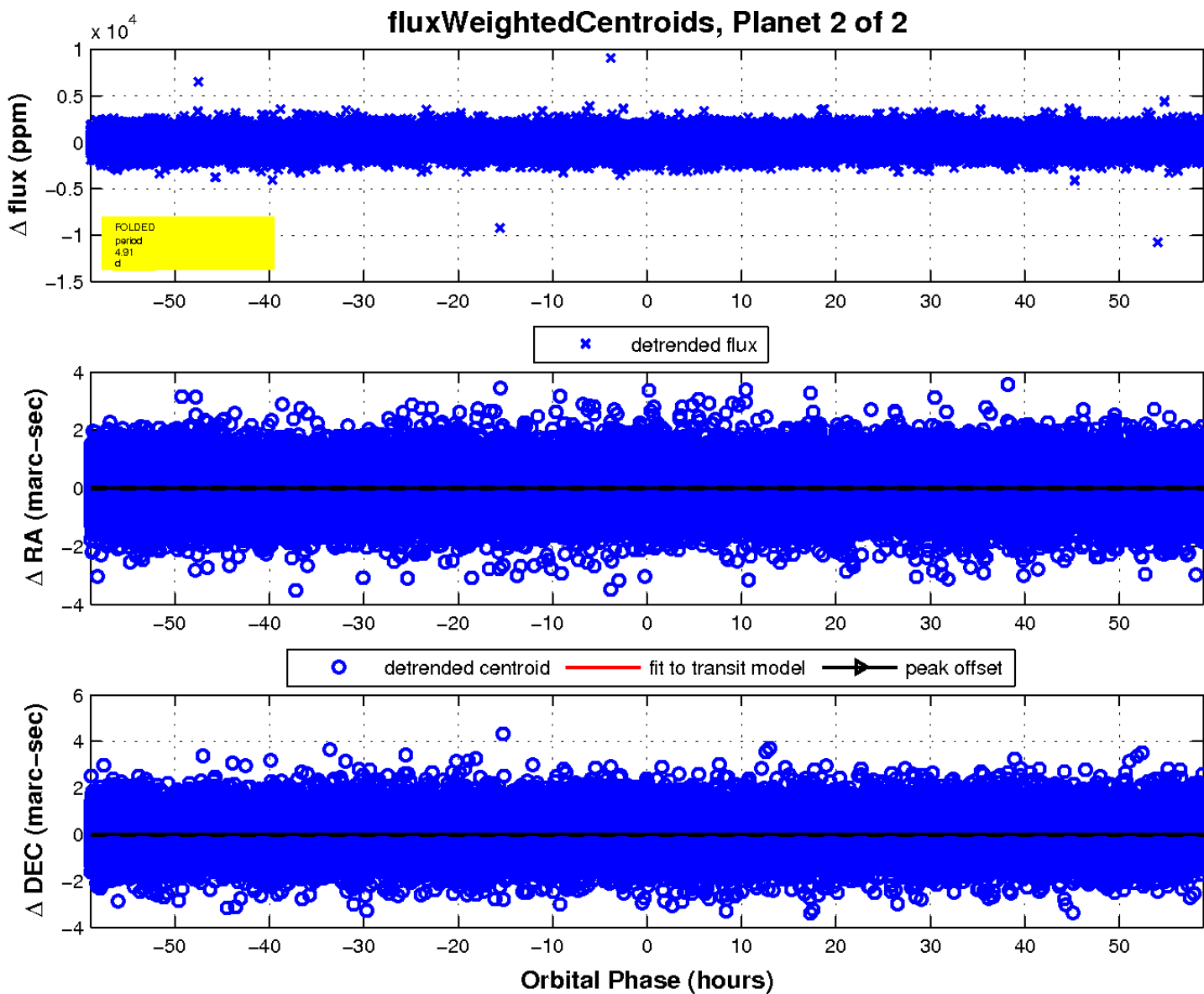
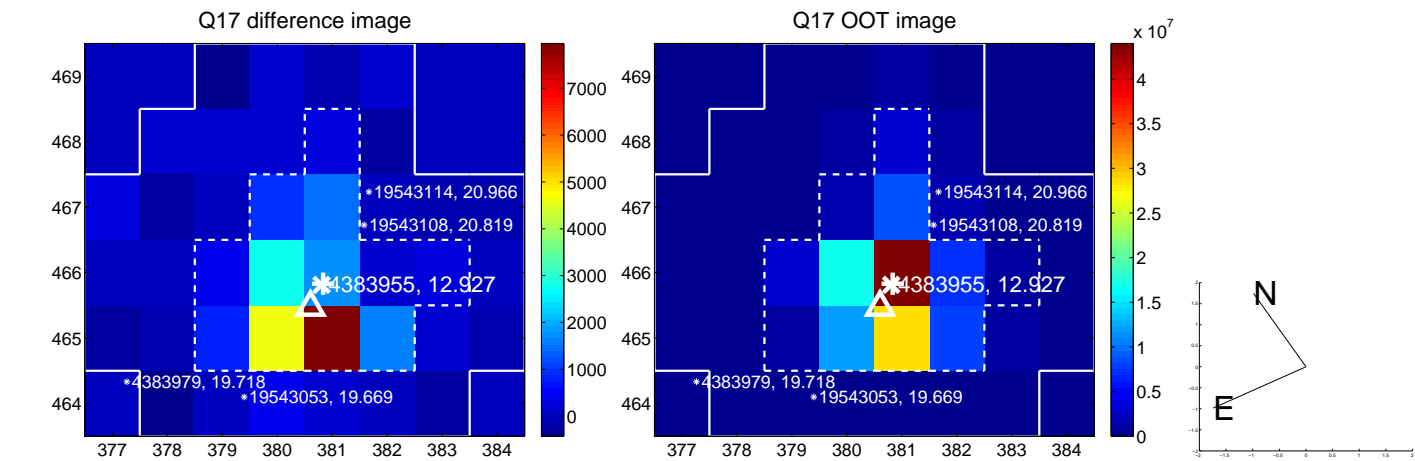
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UKIRT Image

Declination

