

KIC 010677193

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})
010677193-01	OBS	No	0.635838	131.695037	16.6	2.080	9.5	9.0	2.08	7334	0.98	38840.14
010677193-02	OBS	No	0.635839	131.859158	18.2	2.222	8.1	9.0	2.08	7334	1.03	38840.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010677193-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010677193-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

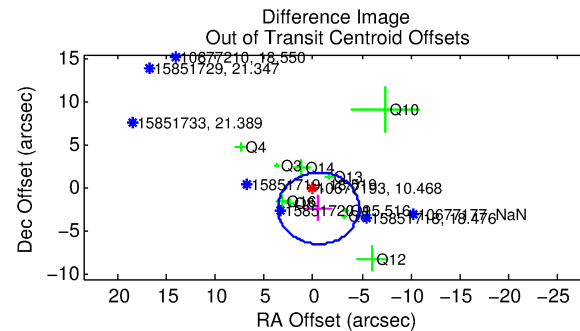
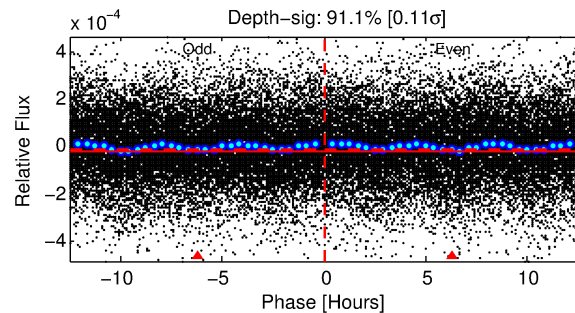
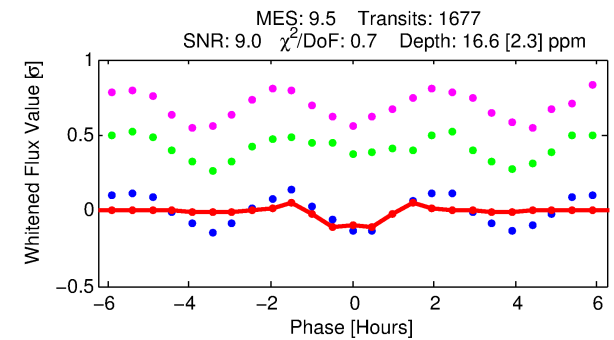
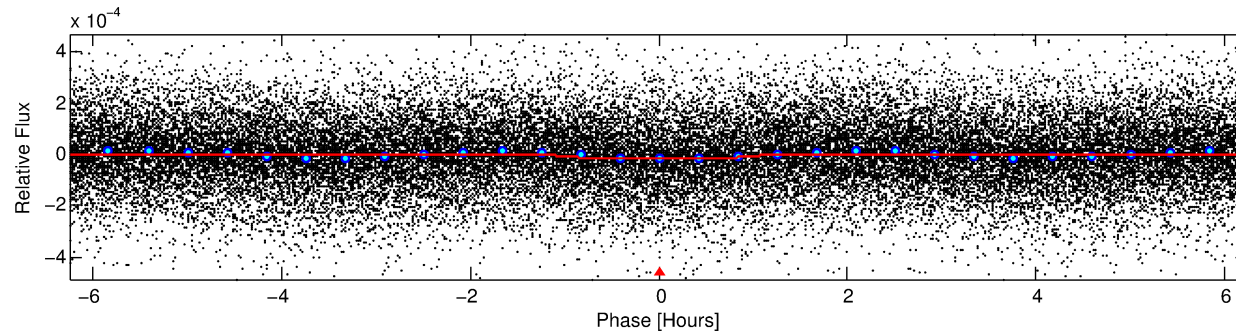
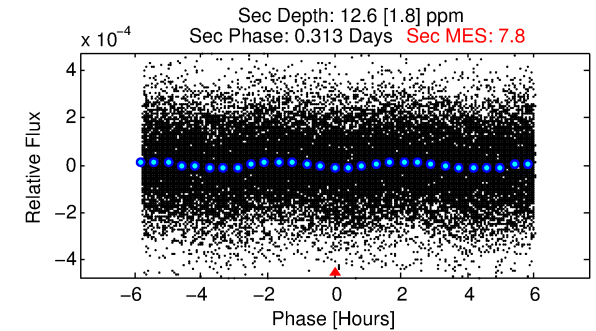
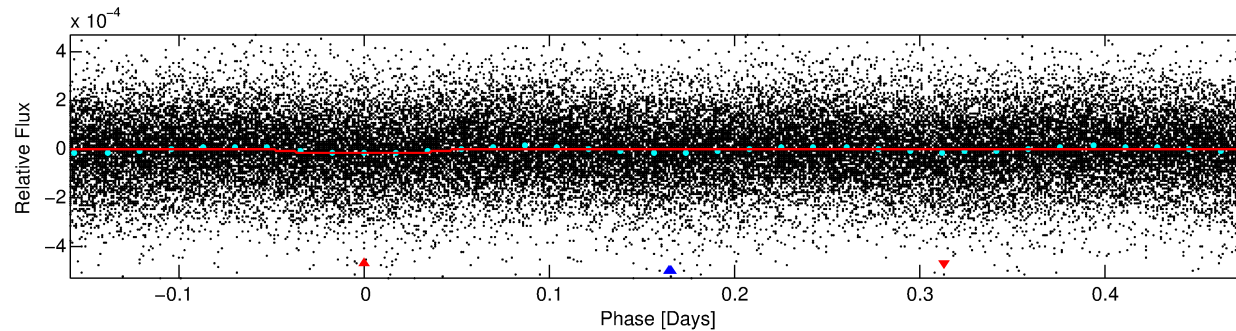
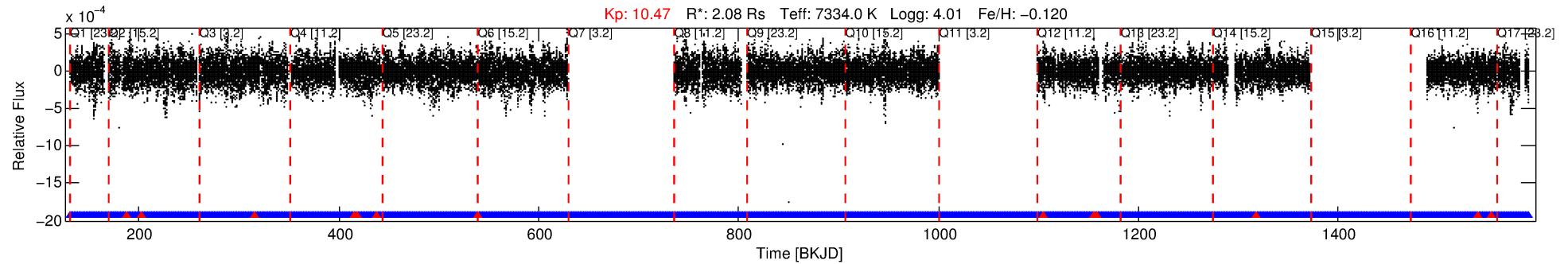
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010677193-01

No Significant Match Found

DV One-Page Summary

KIC: 10677193 Candidate: 1 of 2 Period: 0.636 d



DV Fit Results:

Period = 0.63584 [0.00001] d
Epoch = 131.6950 [0.0016] BKJD
Rp/R* = 0.0043 [0.0007]
a/R* = 1.40 [0.65]
b = 0.90 [0.20]
Seff = 38840.14 [10316.88]
Teq = 3580 [238] K
Rp = 0.98 [0.24] Re
a = 0.0170 [0.0029] AU
Ag = 2.06 [0.92] [1.15σ]
Teffp = 6631 [607] K [4.68σ]

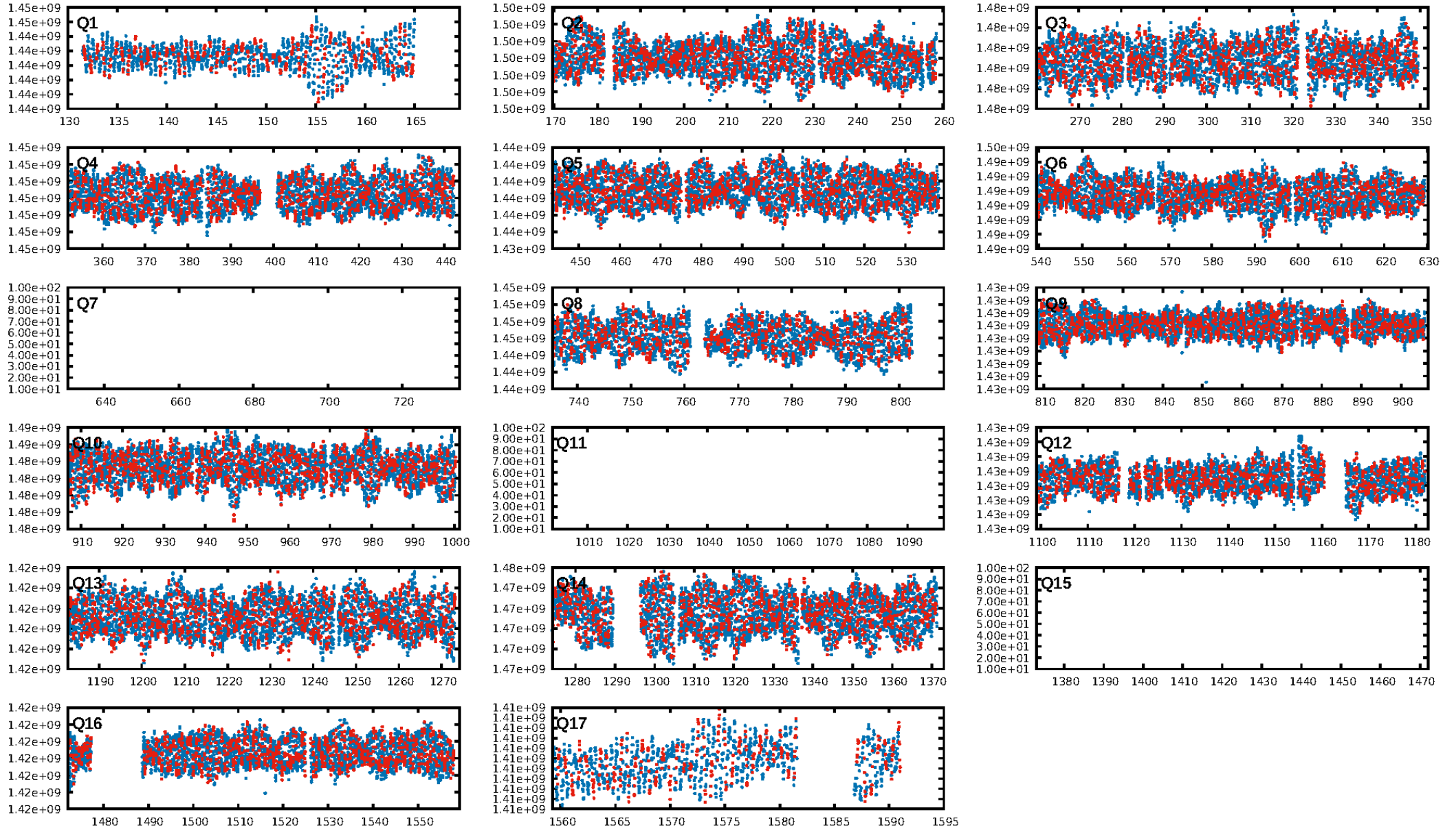
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.57e-19
RollingBand-fgt: 0.99 [1569/1582]
GhostDiagnostic-chr: 2.254
Centroid-sig: 3.0%
Centroid-so: 1.037 arcsec [1.82σ]
OotOffset-rm: 2.375 arcsec [1.72σ]
OotOffset-st: 2/1/4/3 [10]
KicOffset-rm: 1.442 arcsec [0.99σ]
KicOffset-st: 2/1/4/3 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.00 [0/14]

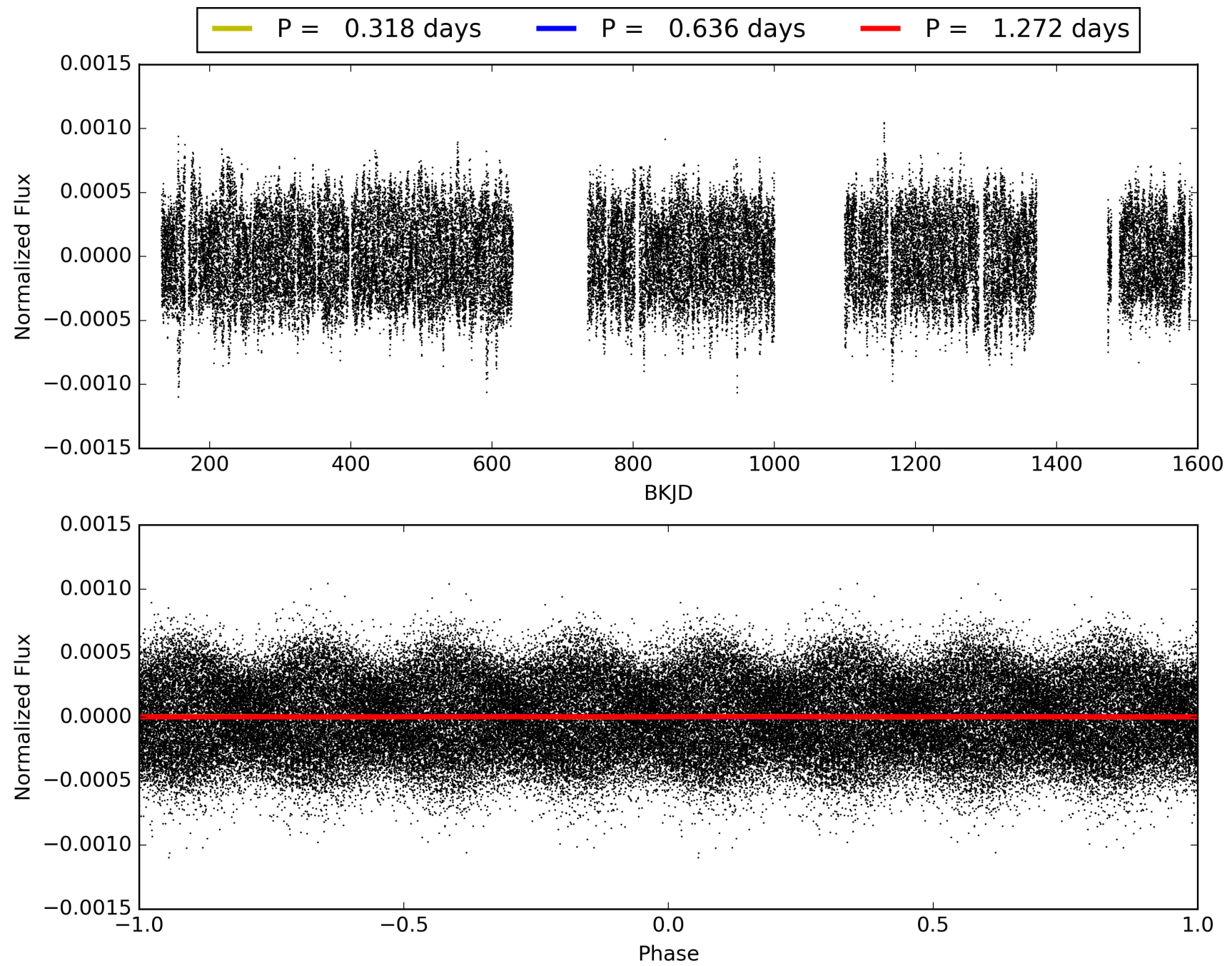
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:33:50 Z

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

TCE 010677193-01, PDC Light Curves

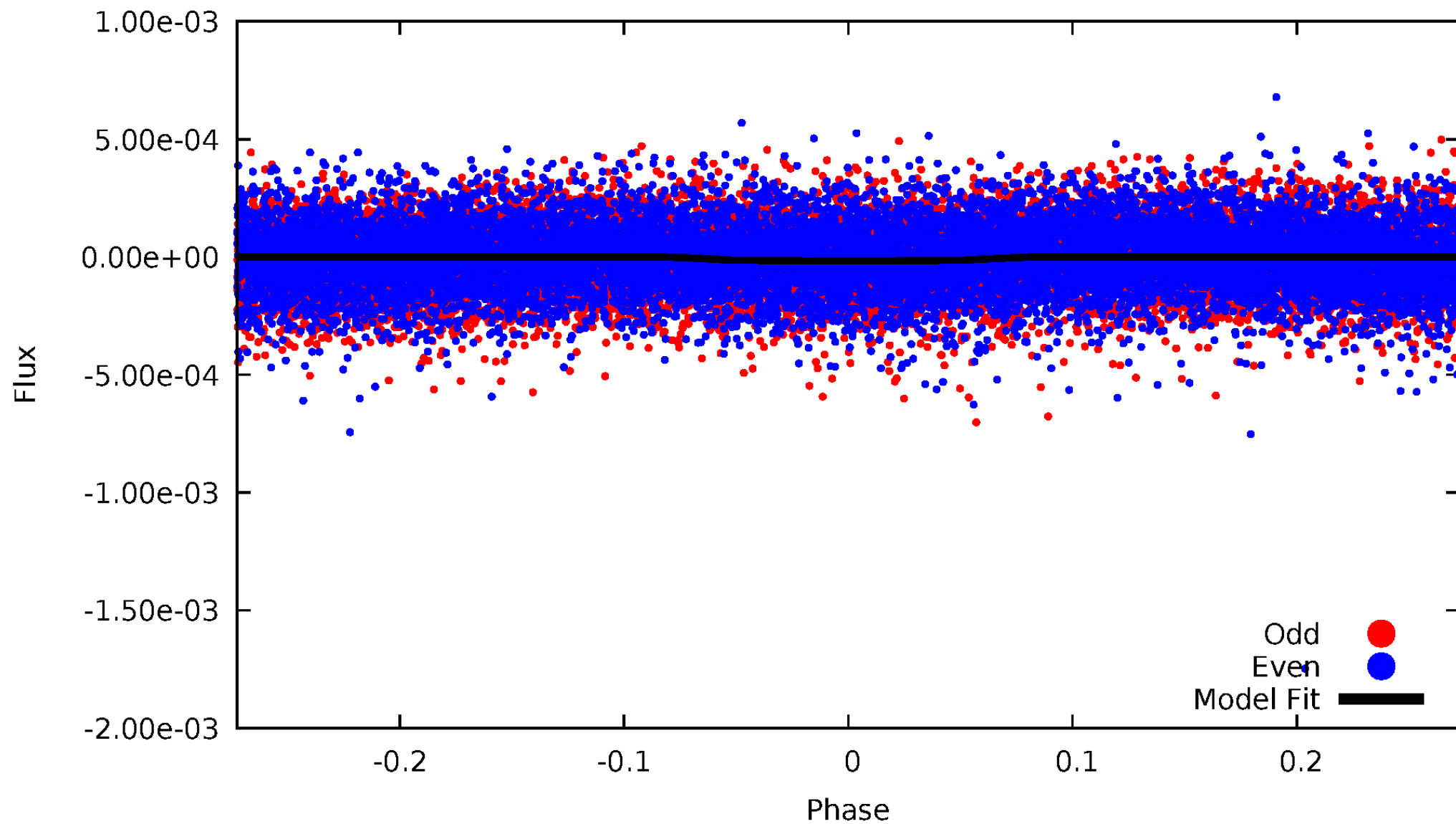


TCE 010677193-01



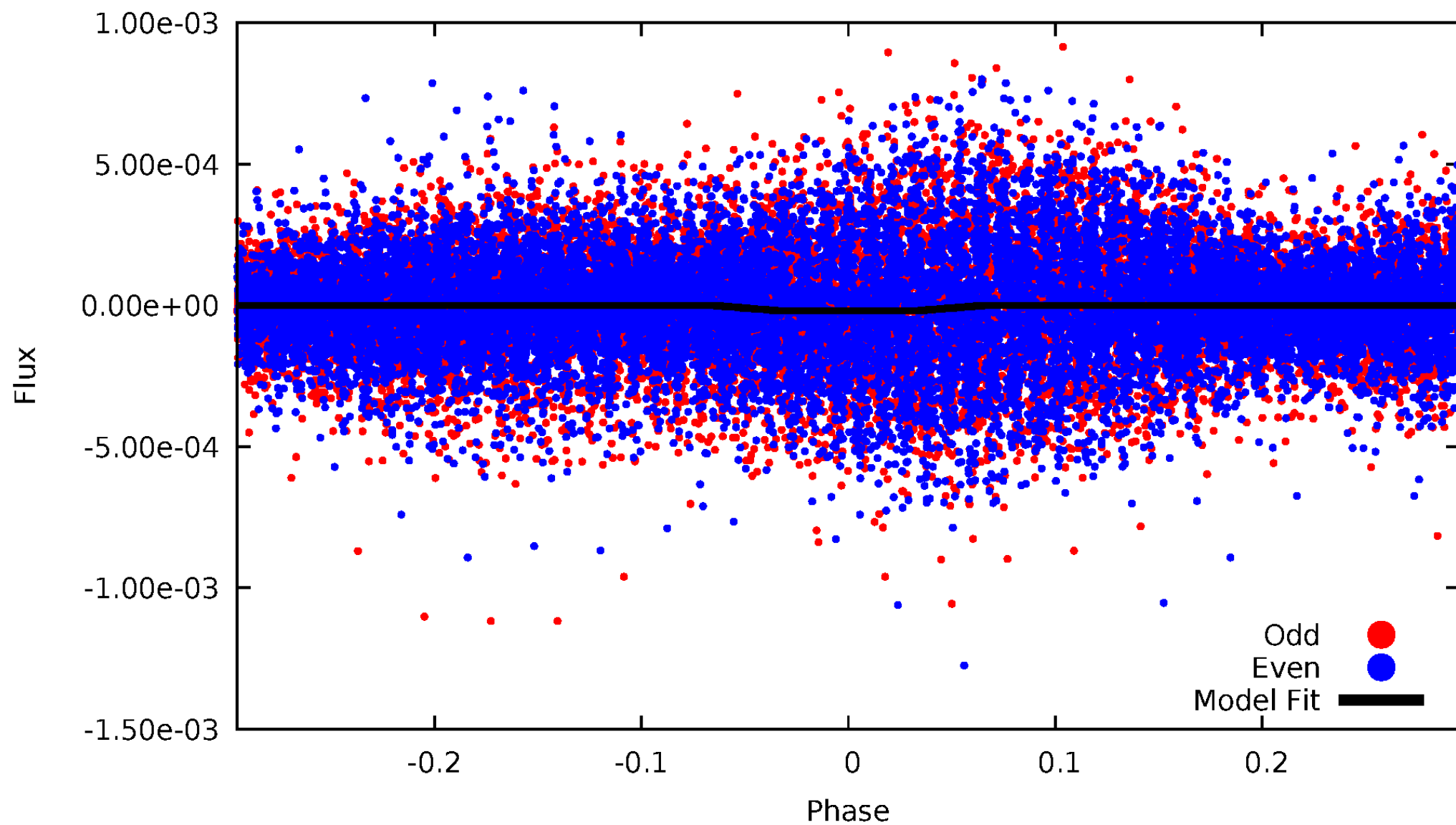
DV Odd/Even

TCE 010677193-01



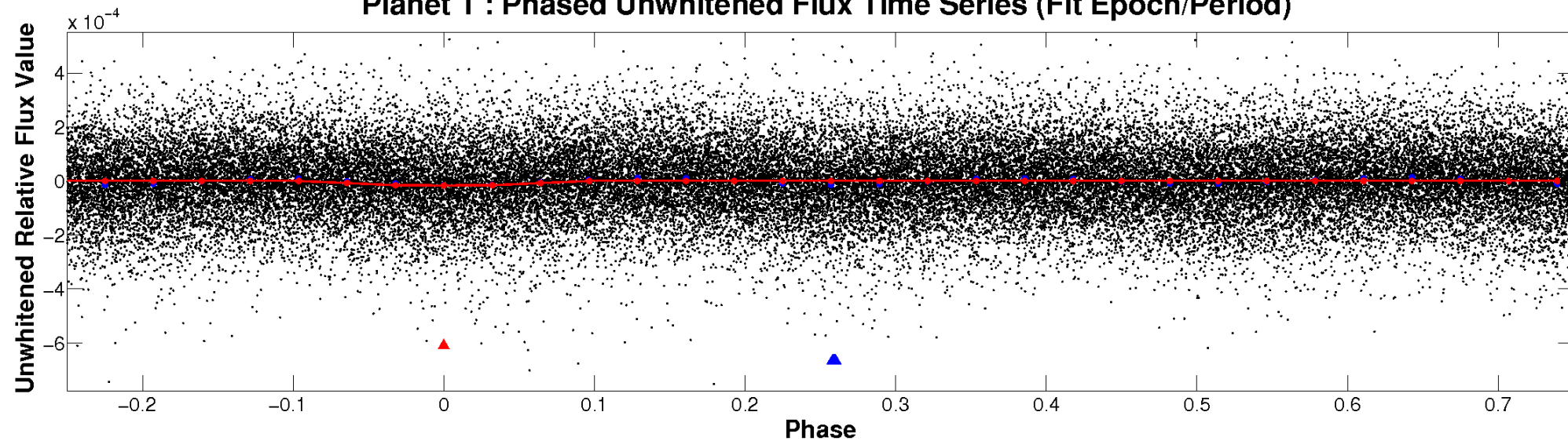
ALT Odd/Even

TCE 010677193-01

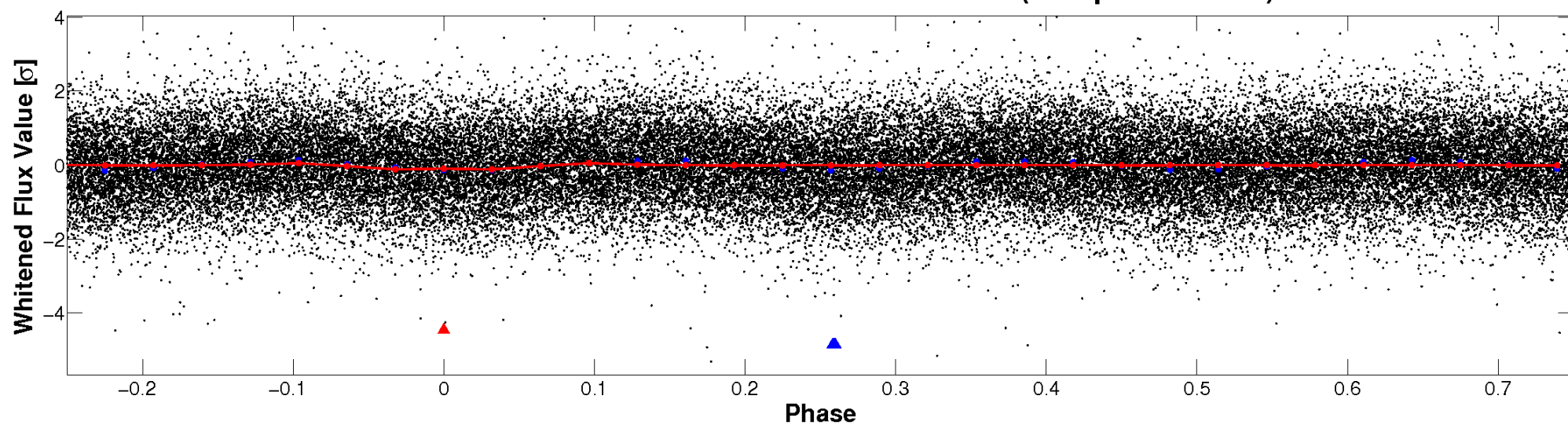


Non-Whitened Vs. Whitened Light Curve

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

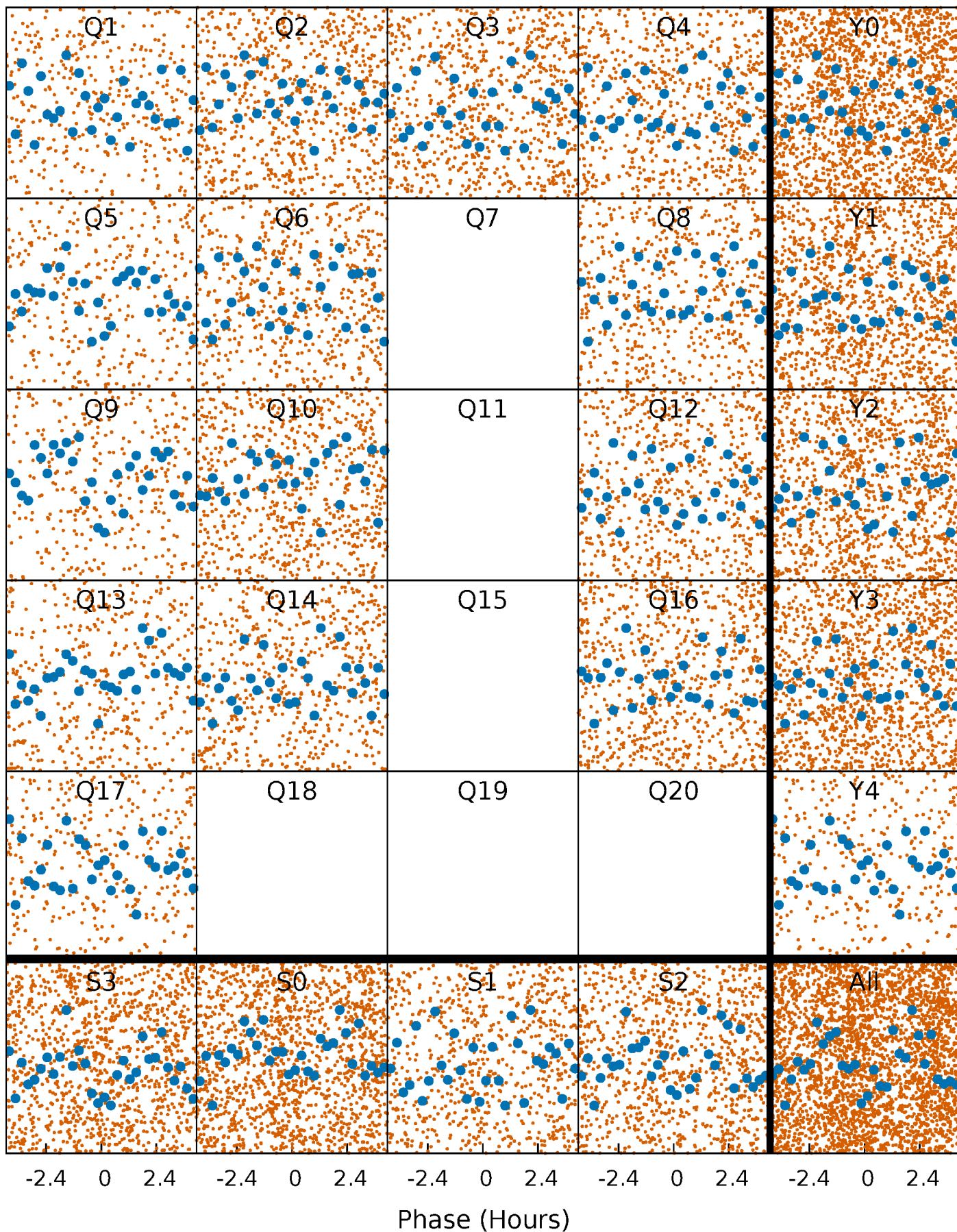


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



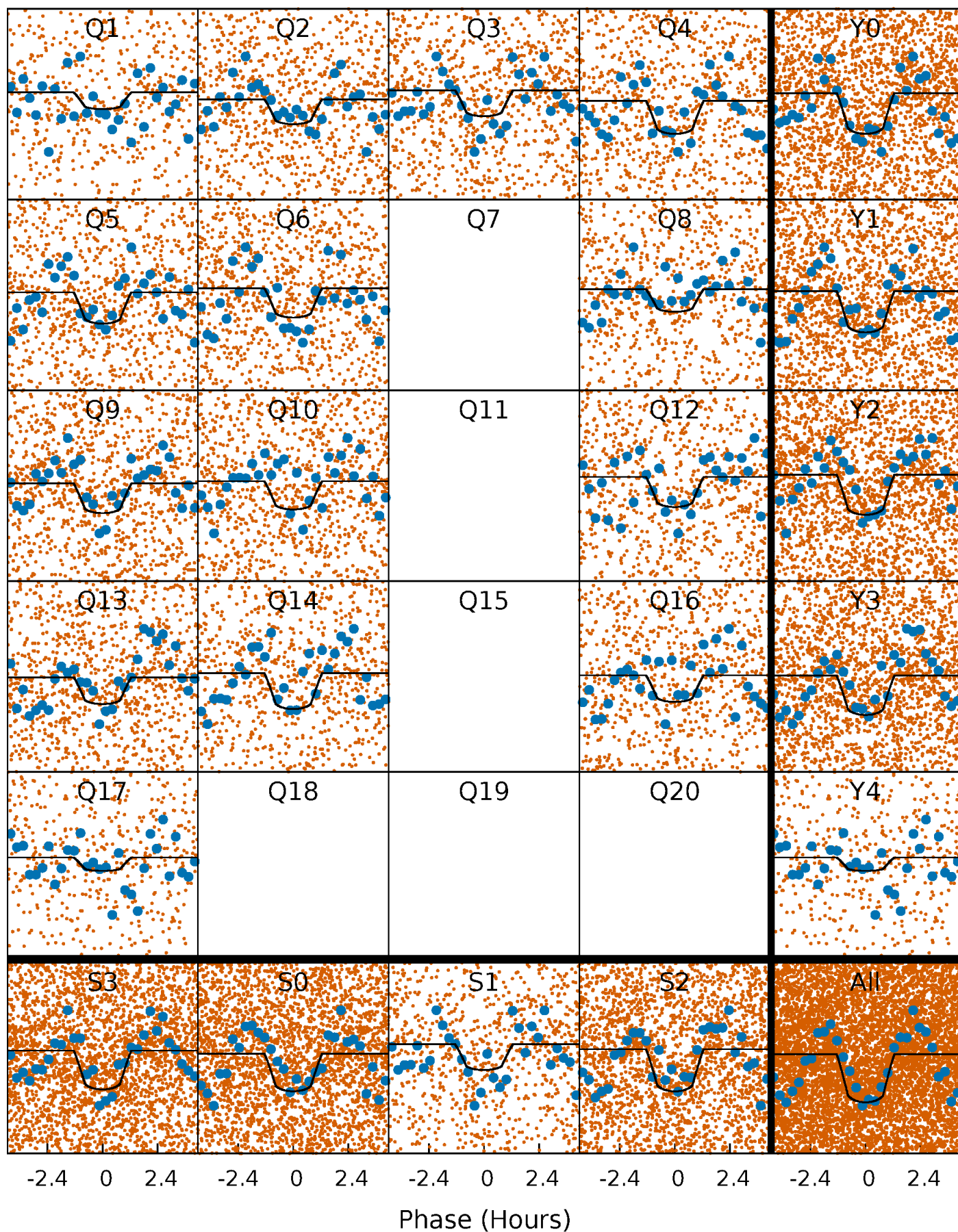
PDC Quarter-Phased Transit Curves

TCE 010677193-01 P= 0.635838 Days $T_0=131.695037$ (BKJD)



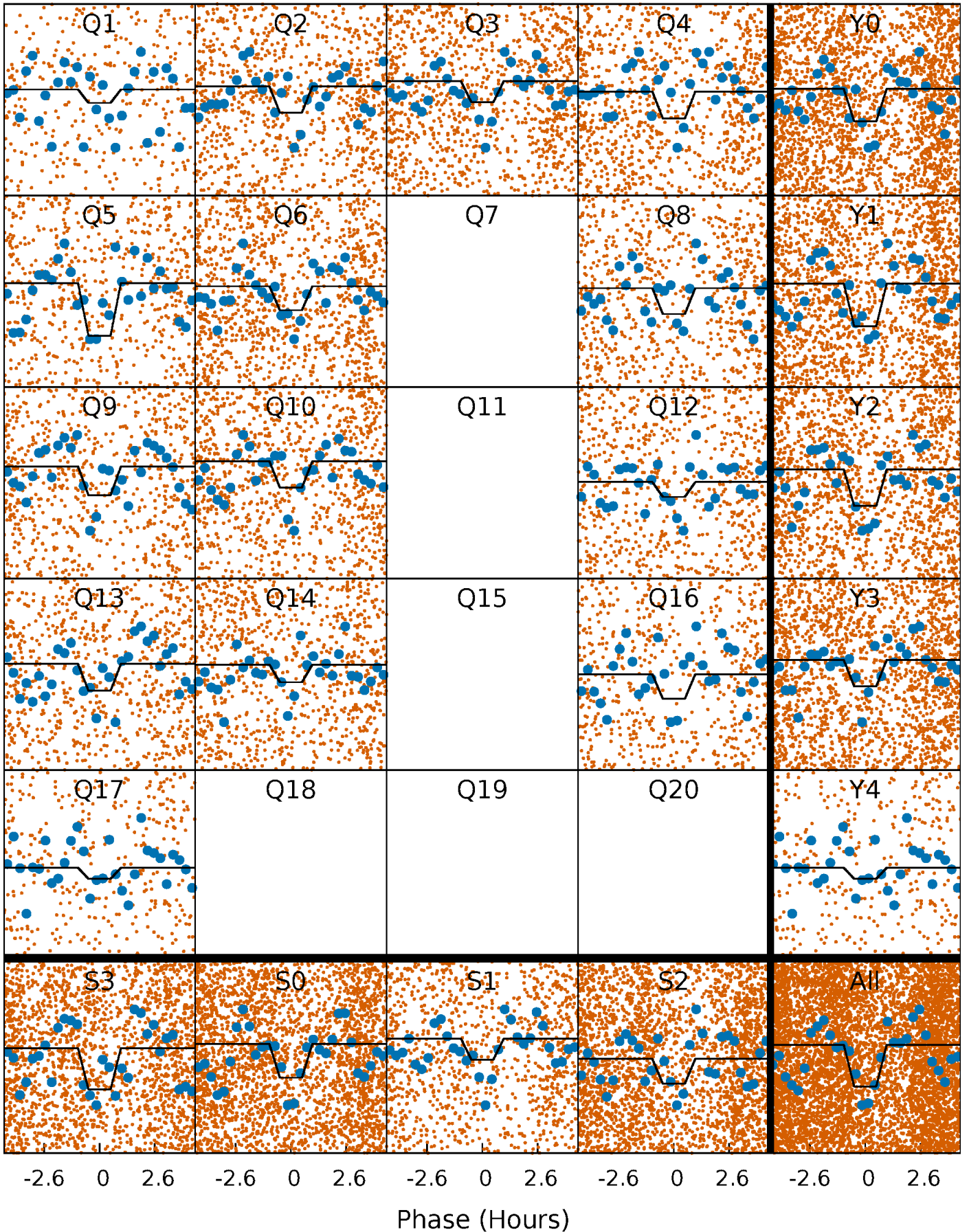
DV Quarter-Phased Transit Curves

TCE 010677193-01 P= 0.635838 Days $T_0=131.695037$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

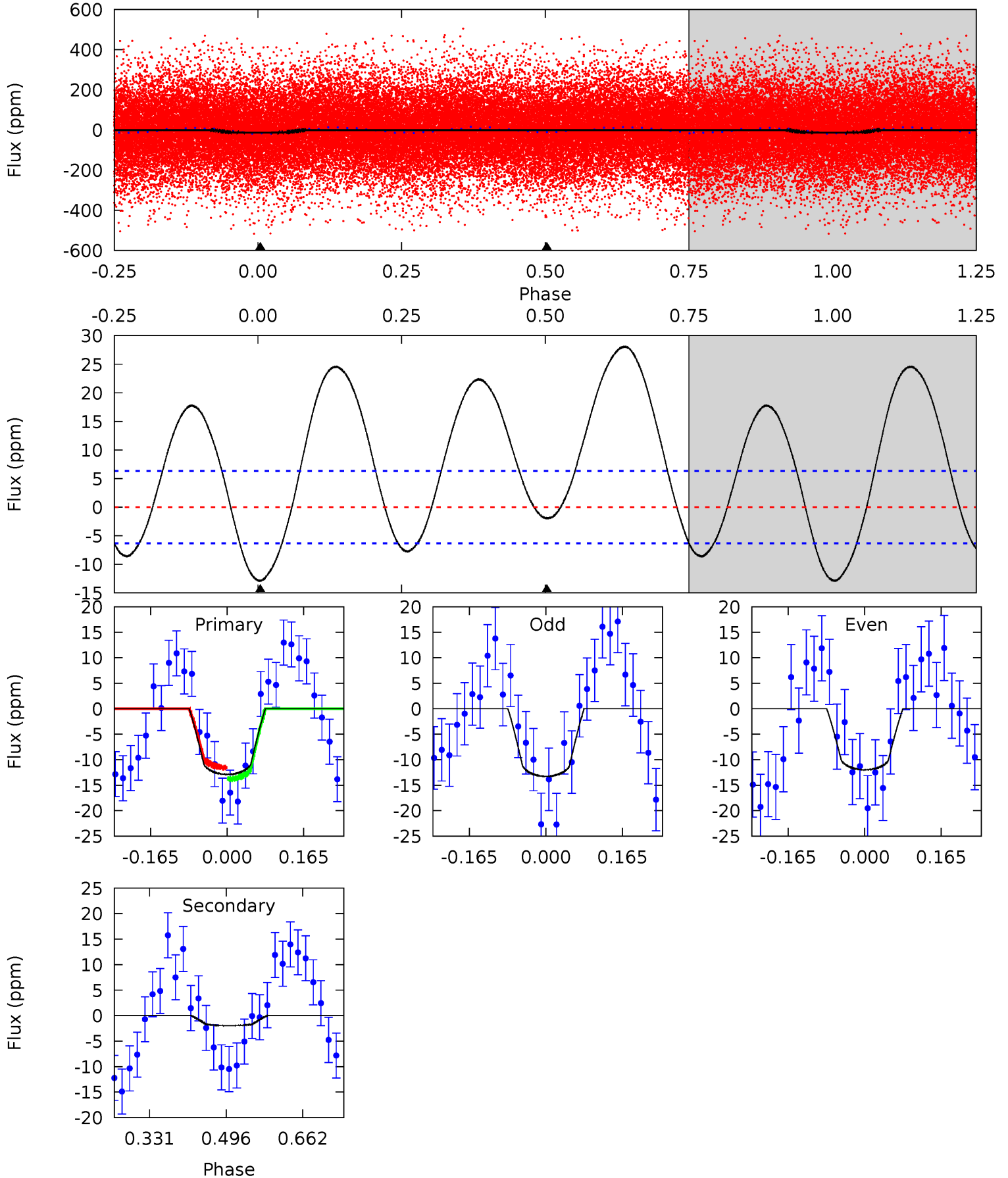
TCE 010677193-01 P= 0.635842 Days $T_0=131.694783$ (BKJD)



DV Model-Shift Uniqueness Test

010677193-01, P = 0.635838 Days, E = 131.059199 Days

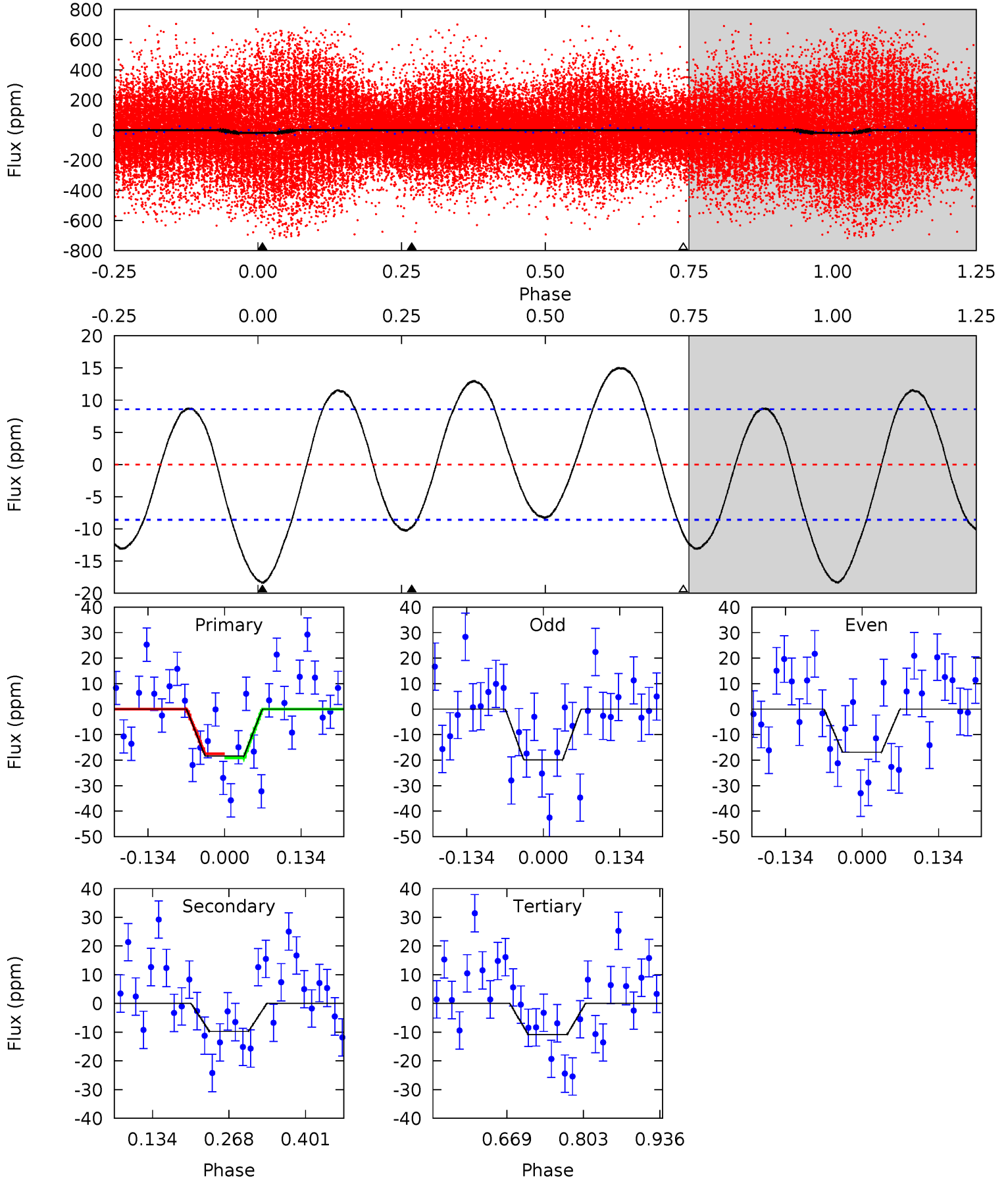
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.07	1.38	0	0	4.46	1.39	6.19	9.07	9.07	1.38	1.38	0.45	1.34	0.69	0.79



Alt Model-Shift Uniqueness Test

010677193-01, P = 0.635842 Days, E = 131.058941 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.63	5.11	5.67	0	4.50	1.50	4.52	3.96	9.63	-0.56	5.11	0.77	0.72	0.45	0.40



Stellar Parameters For KIC 010677193

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7334^{+73}_{-87}	$4.010^{+0.150}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$2.076^{+0.346}_{-0.385}$	$1.605^{+0.145}_{-0.145}$	$0.253^{+0.179}_{-0.090}$
	+1%/-1%	+4%/-3%	+125%/-125%	+17%/-19%	+9%/-9%	+71%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010677193-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 1	$0.95^{+0.20}_{-0.16}$	4957^{+235}_{-241}	3015^{+1386}_{-7027}	$0.335^{+0.330}_{-0.245}$
Alt.	-10 ± 2	$0.97^{+0.21}_{-0.19}$	4988^{+229}_{-252}	5849^{+785}_{-638}	$1.642^{+0.922}_{-0.591}$

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

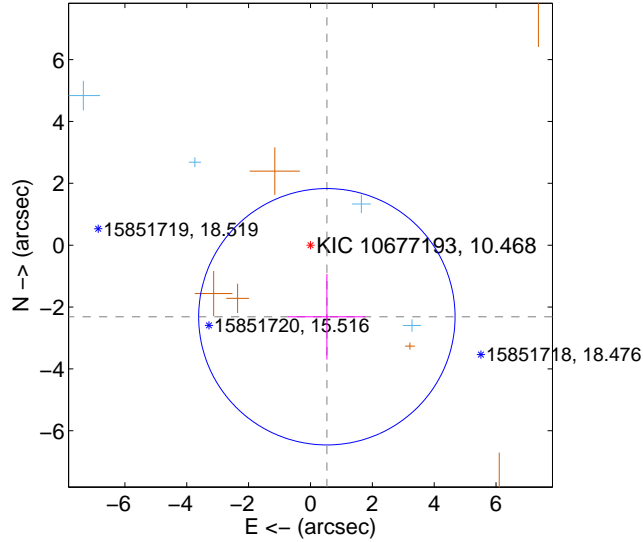
Supplemental centroid analysis for 010677193-01. **Kepler magnitude: 10.47.** Transit SNR 9.03

There are 4 quarters with good PRF difference image offsets

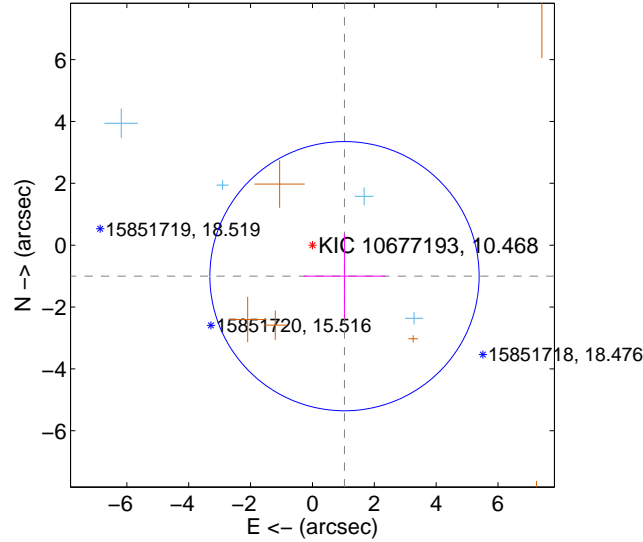
The direct PRF centroid is offset from the target star catalog position by about 1.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.375 ± 1.382	1.72	-0.530 ± 1.250	-2.315 ± 1.384
PRF-fit source offset from KIC position	1.442 ± 1.451	0.99	-1.037 ± 1.323	-1.003 ± 1.362
photometric centroid source offset	1.04 ± 0.57	1.82	-0.27 ± 0.72	-1.00 ± 0.56

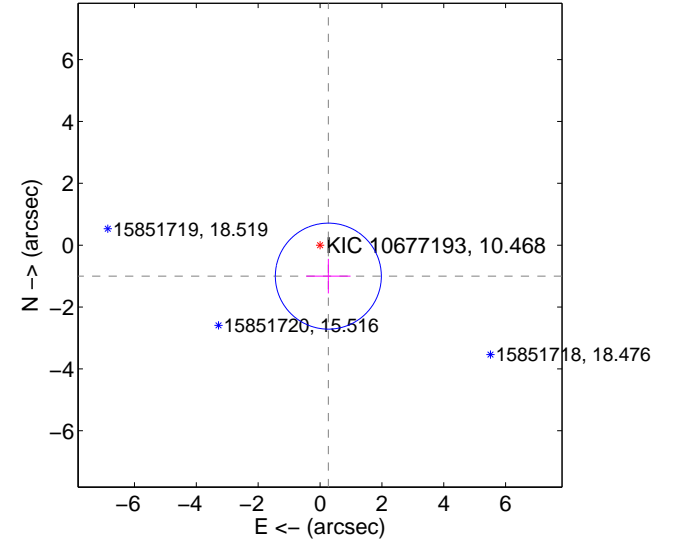
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

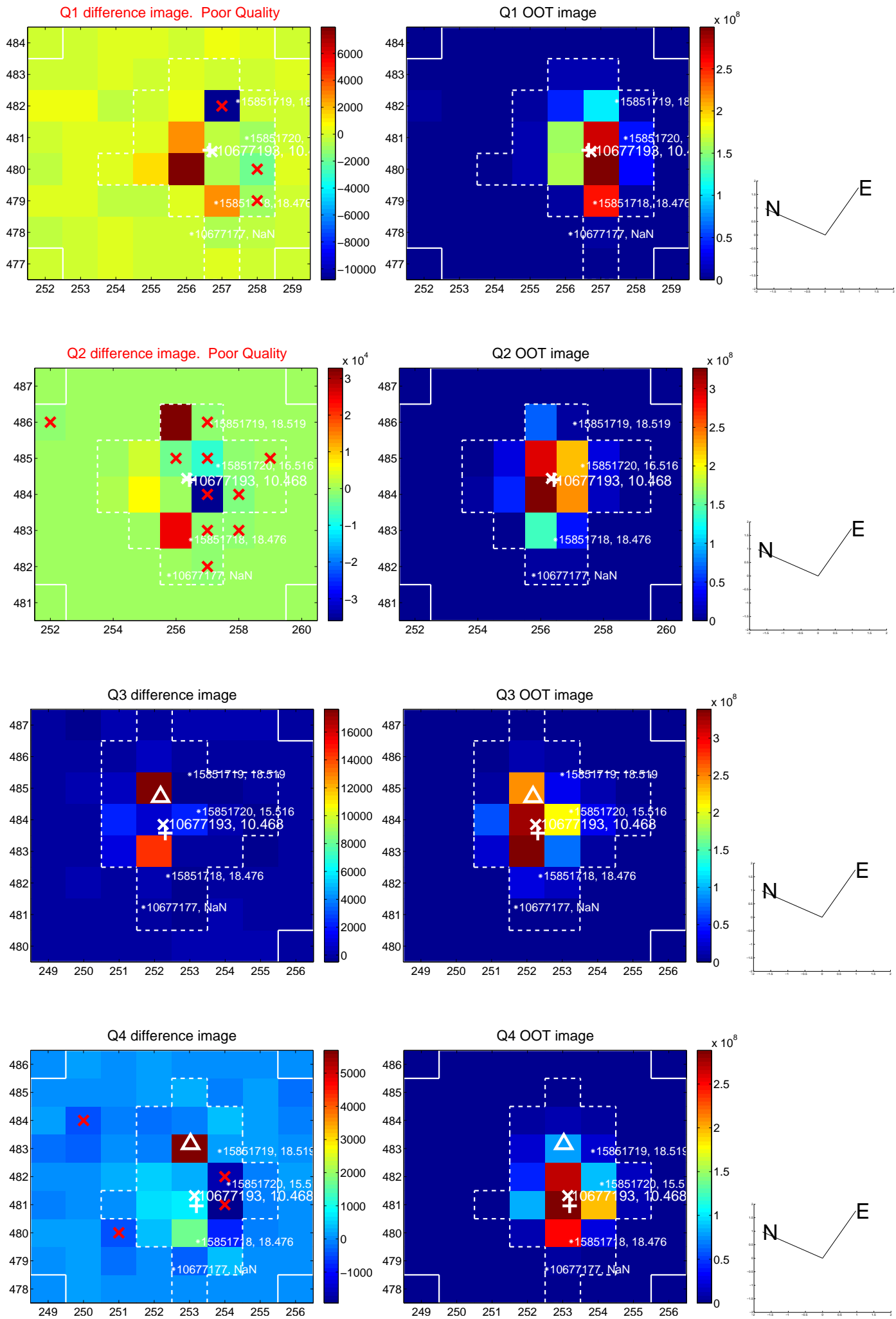


offset from photometric centroids

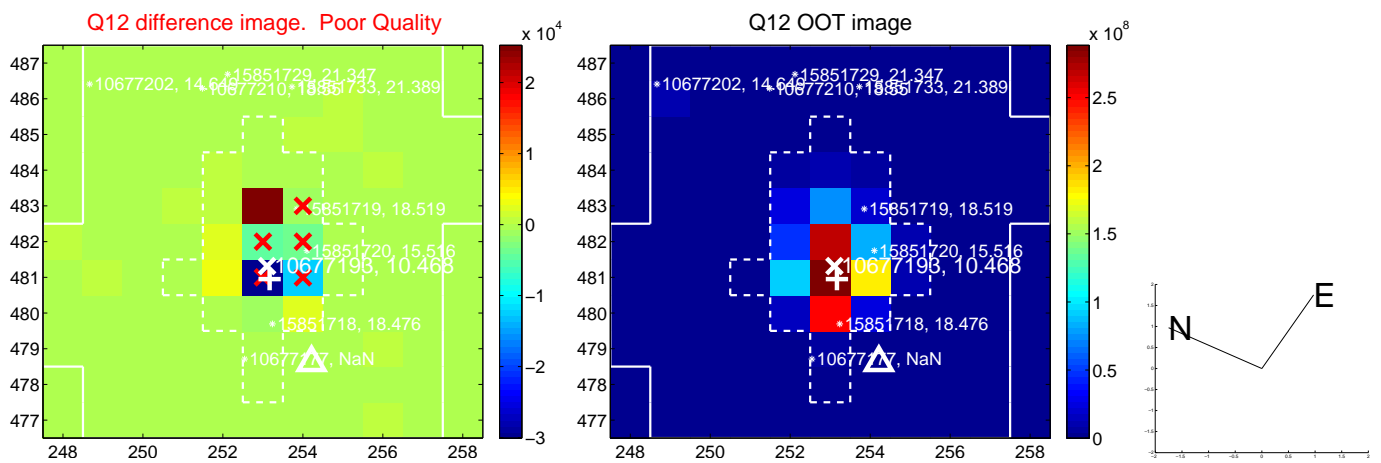
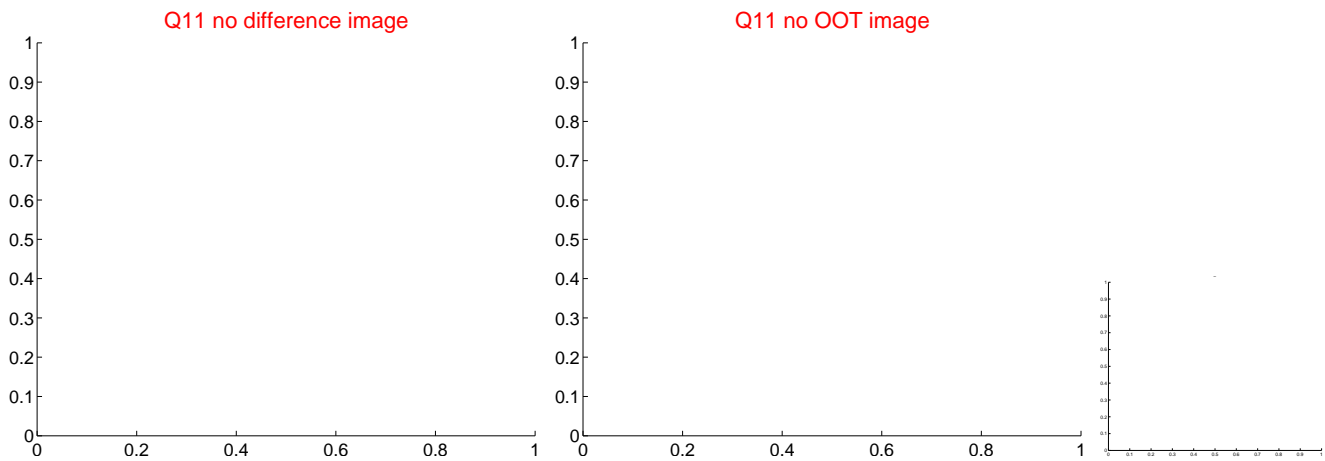
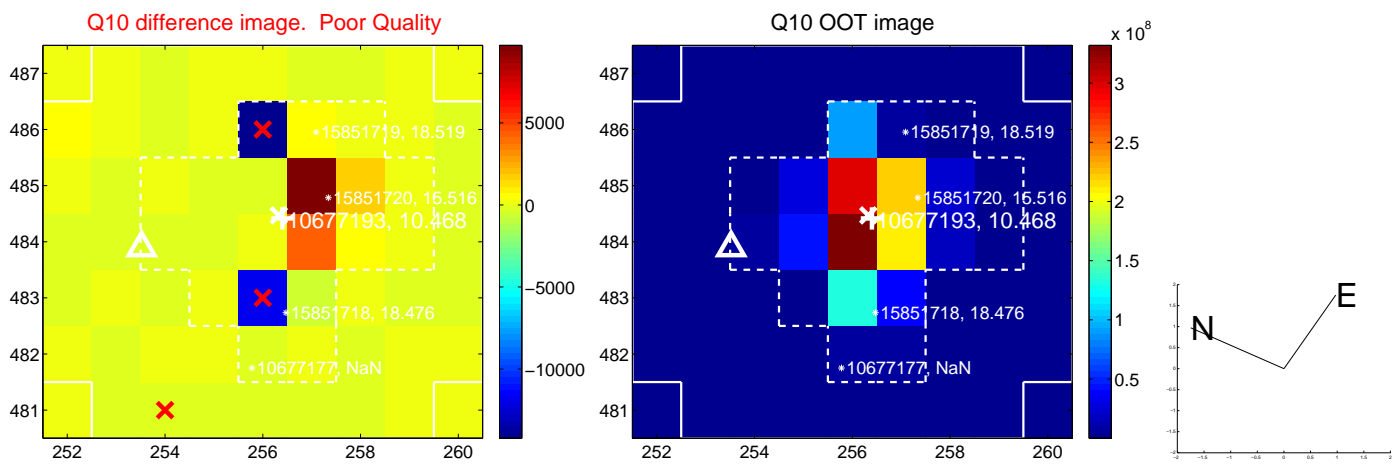
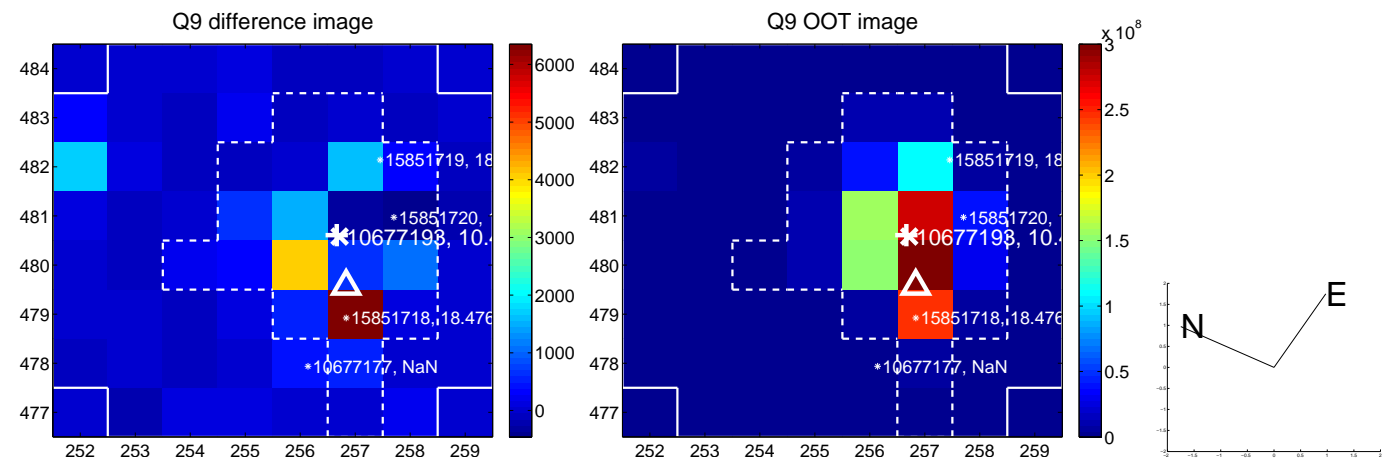


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

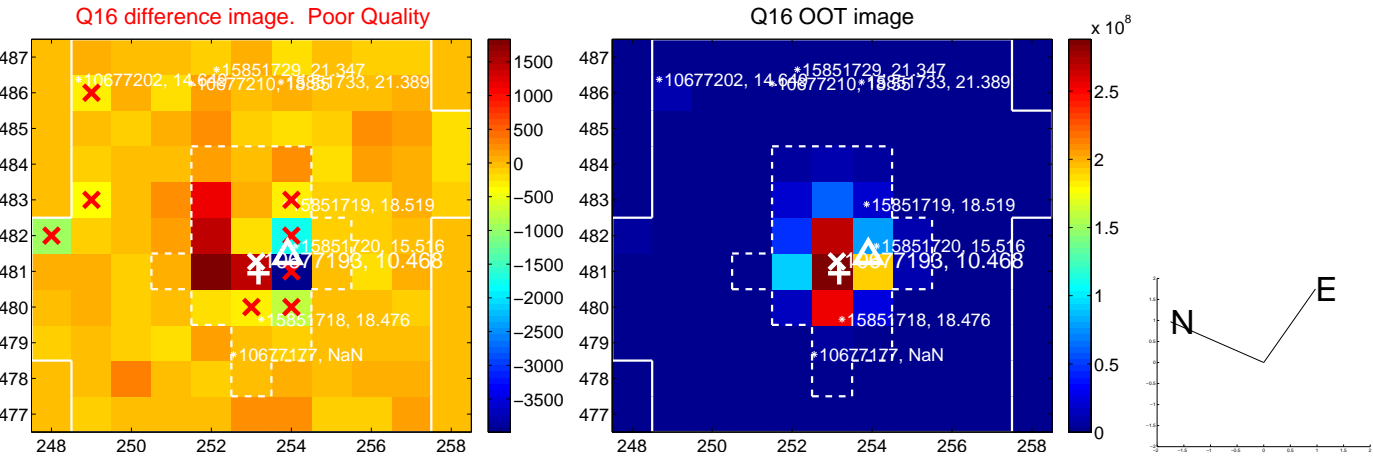
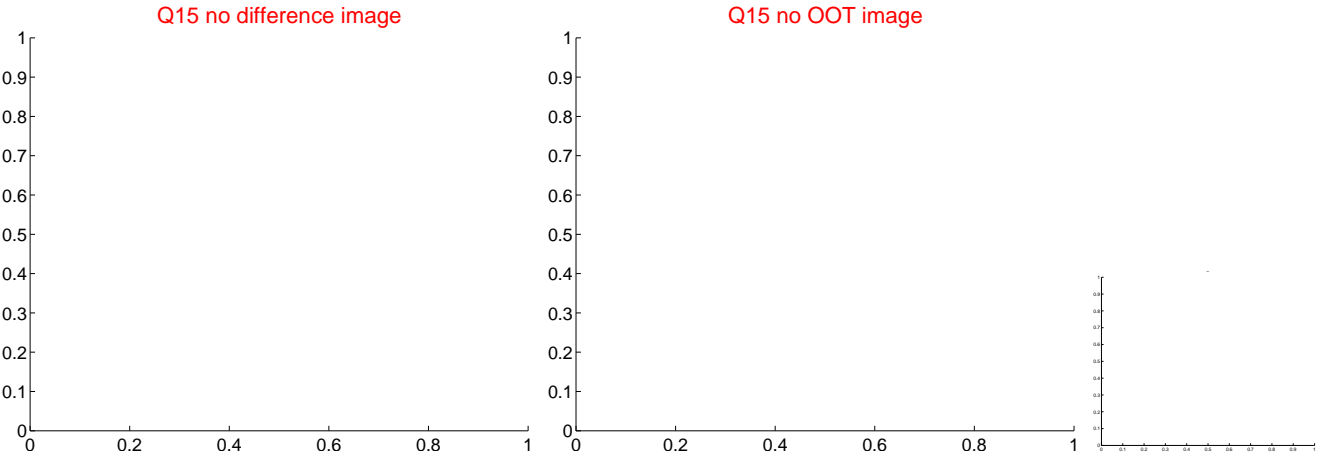
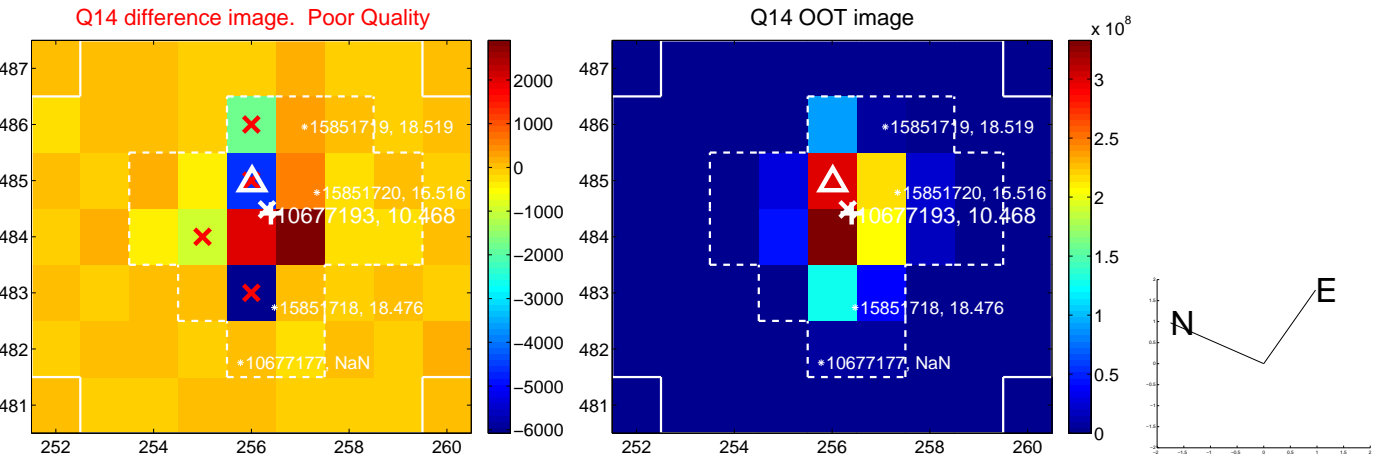
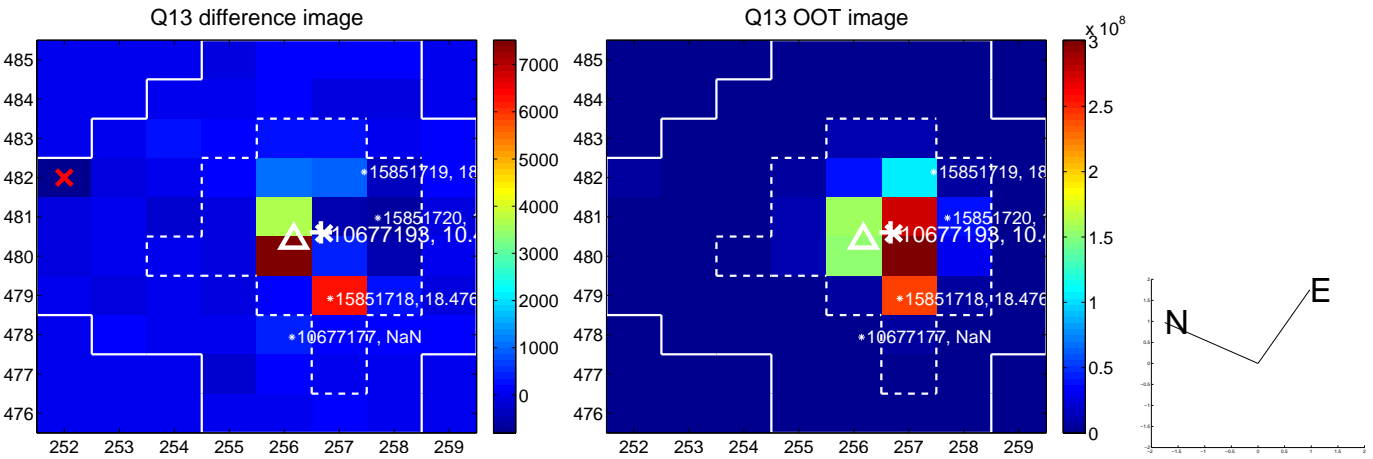
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



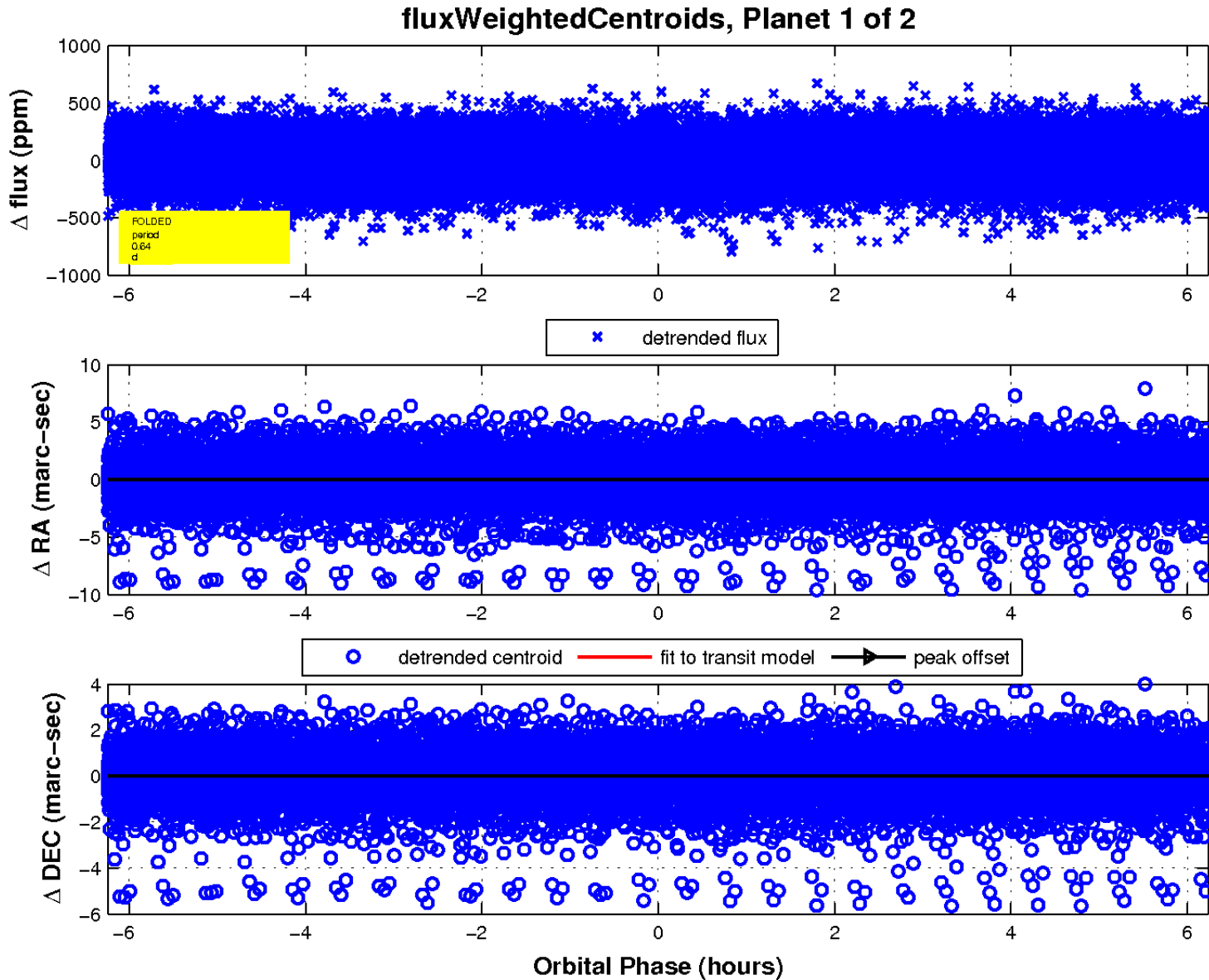
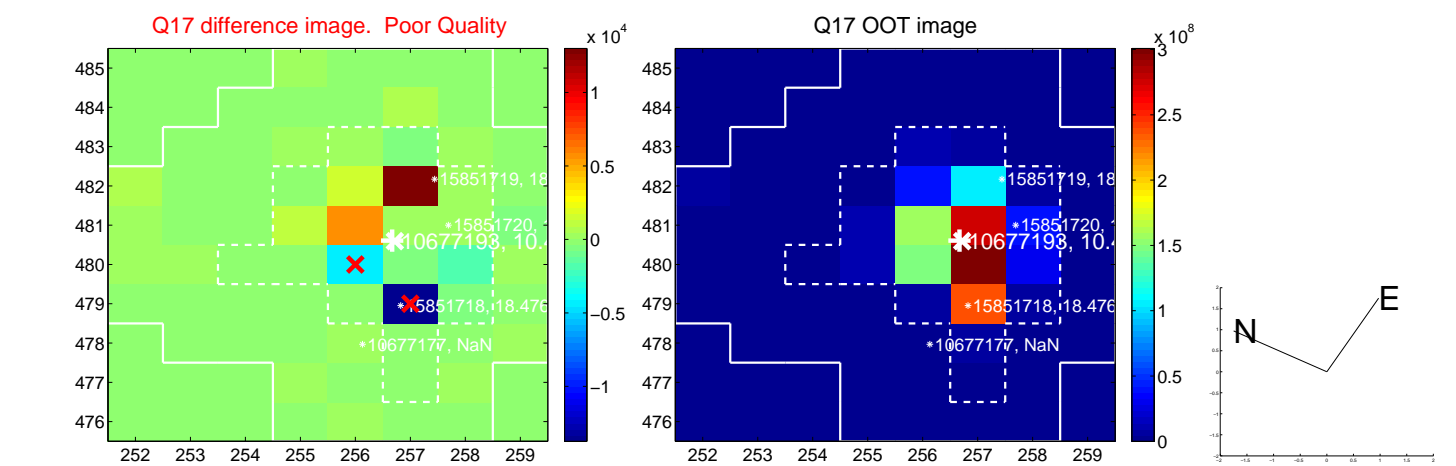
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

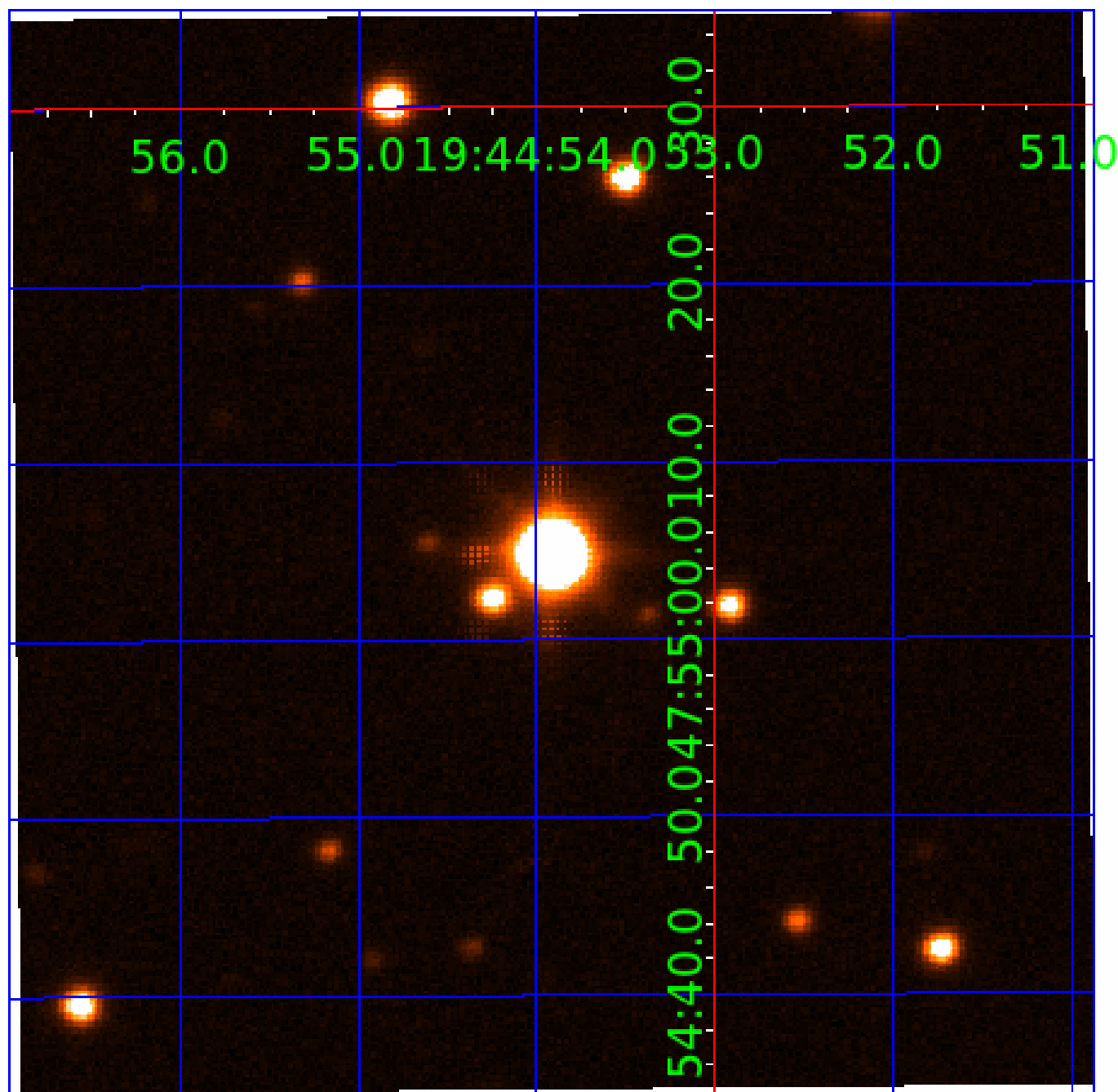


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010677193

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})
010677193-01	OBS	No	0.635838	131.695037	16.6	2.080	9.5	9.0	2.08	7334	0.98	38840.14
010677193-02	OBS	No	0.635839	131.859158	18.2	2.222	8.1	9.0	2.08	7334	1.03	38840.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010677193-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010677193-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

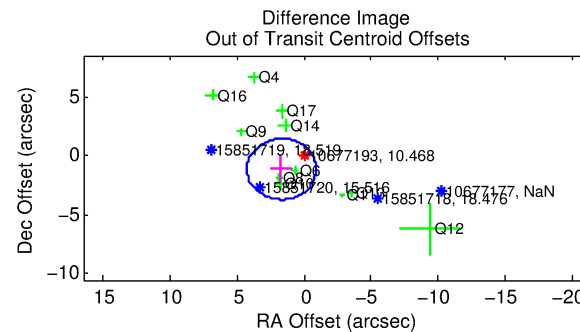
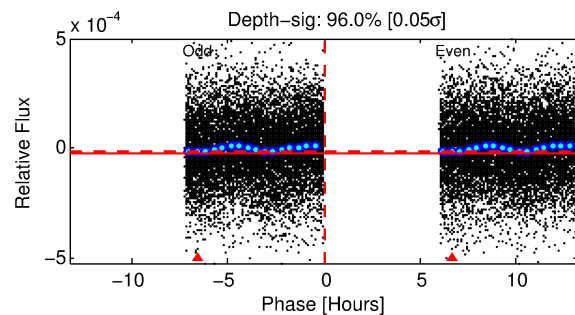
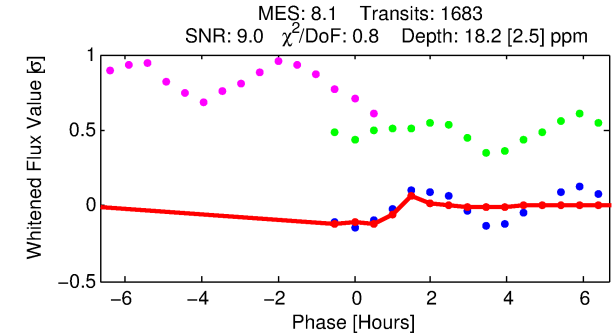
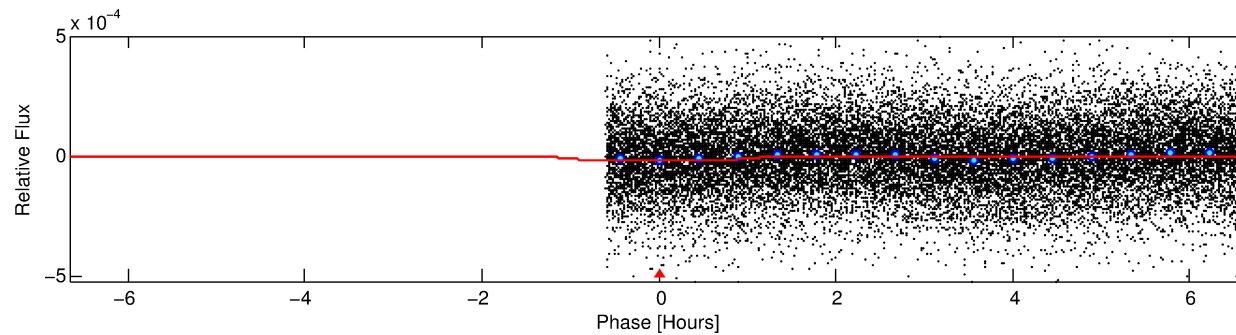
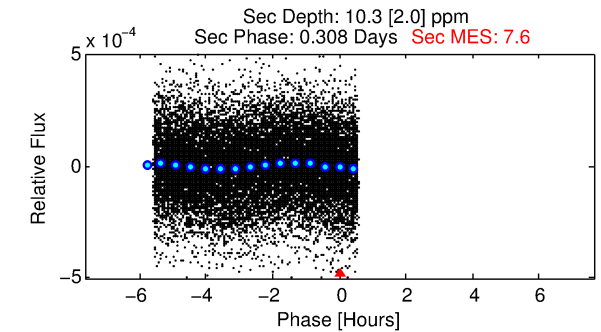
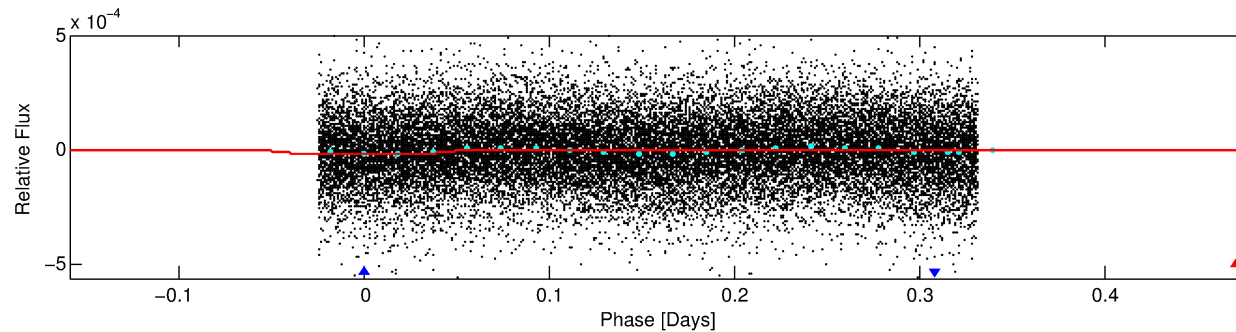
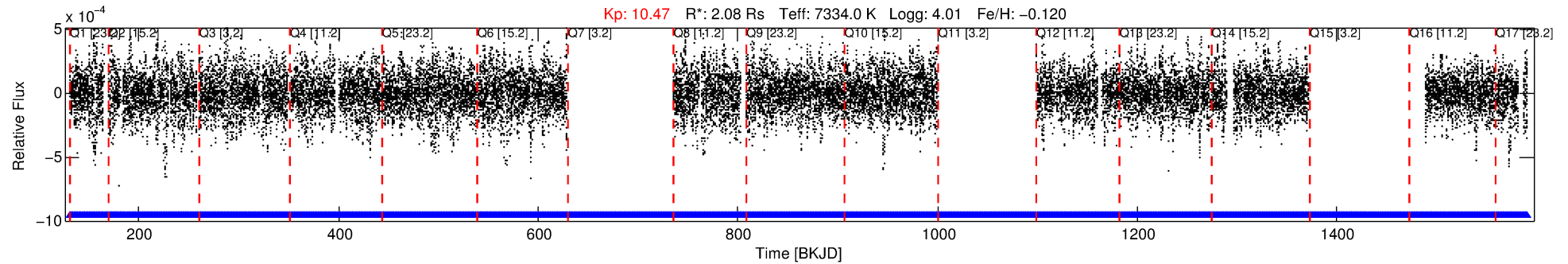
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010677193-02

No Significant Match Found

DV One-Page Summary

KIC: 10677193 Candidate: 2 of 2 Period: 0.636 d



DV Fit Results:

Period = 0.63584 [0.00001] d
Epoch = 131.8592 [0.0048] BKJD
Rp/R* = 0.0045 [0.0012]
a/R* = 1.35 [1.00]
b = 0.90 [0.34]
Seff = 38840.09 [10316.87]
Teq = 3580 [238] K
Rp = 1.03 [0.34] Re
a = 0.0170 [0.0029] AU
Ag = 1.54 [0.97] [0.56σ]
Teffp = 6167 [885] K [2.82σ]

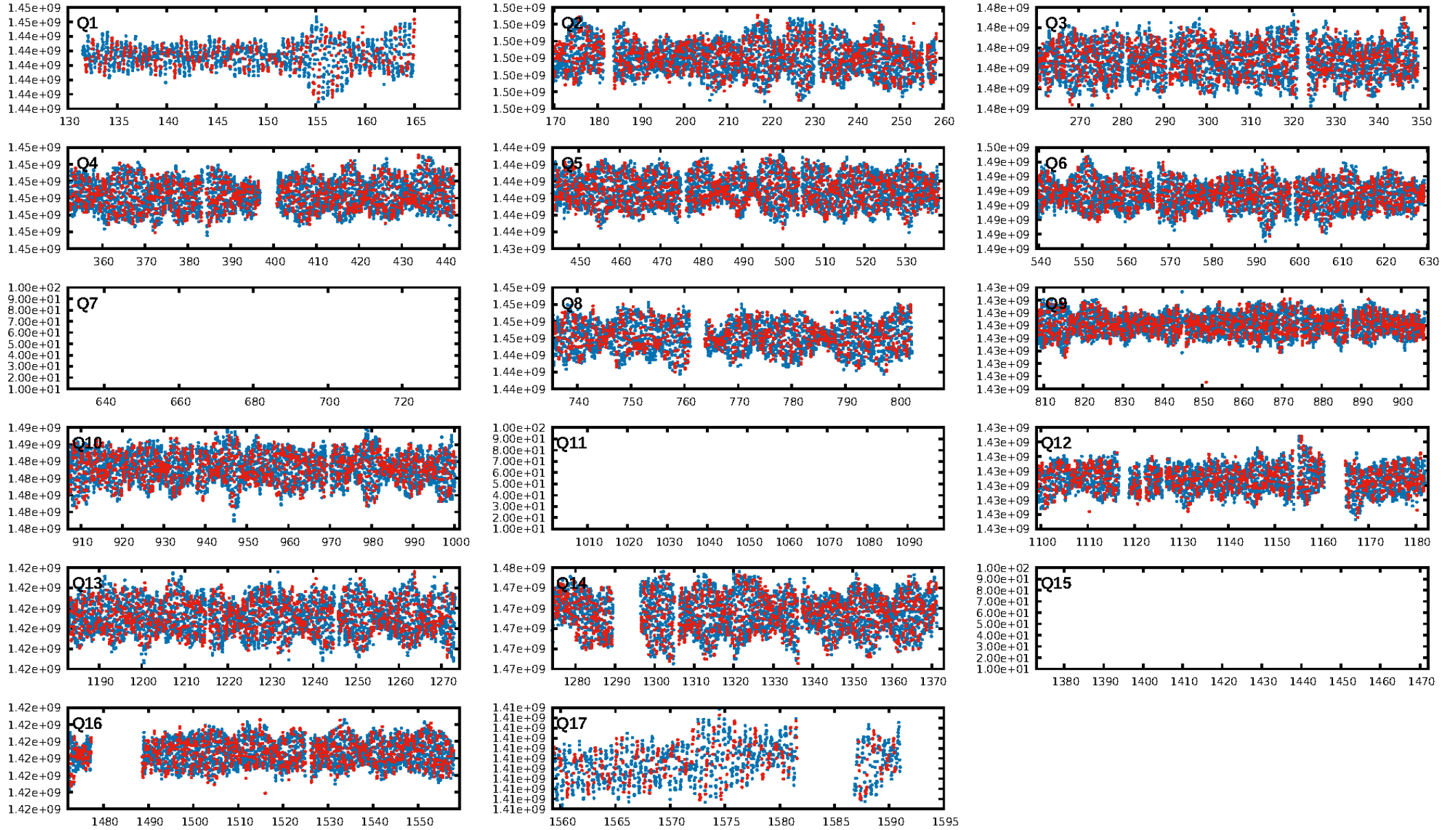
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.14e-15
RollingBand-fgt: 1.00 [1588/1588]
GhostDiagnostic-chr: 2.641
Centroid-sig: 24.6%
Centroid-so: 0.638 arcsec [1.27σ]
OotOffset-rm: 2.045 arcsec [2.38σ]
KicOffset-rm: 1.808 arcsec [2.13σ]
OotOffset-st: 3/0/4/4 [11]
KicOffset-st: 3/0/4/4 [11]
DiffImageQuality-fgm: 0.09 [1/11]
DiffImageOverlap-fno: 0.00 [0/14]

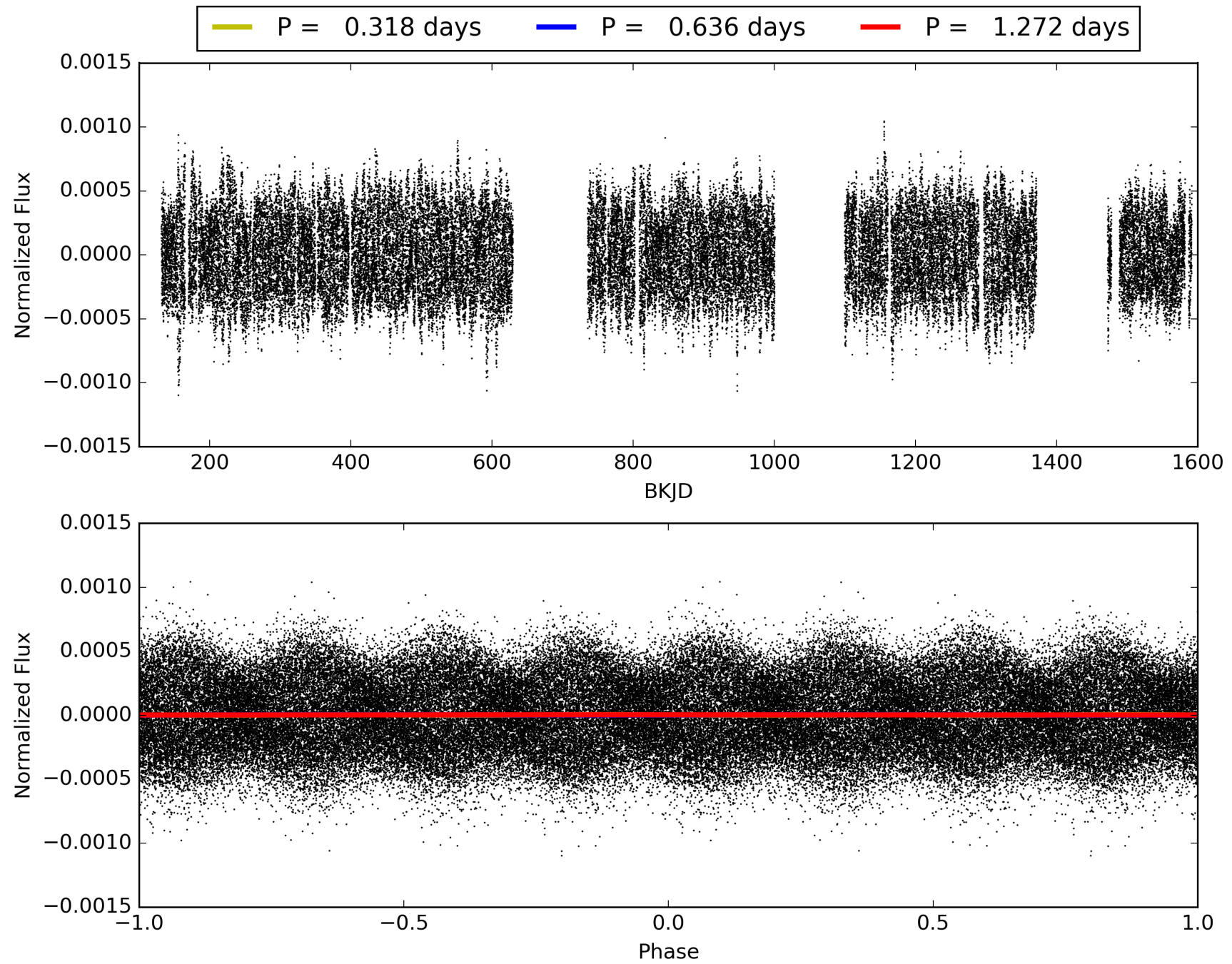
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:34:01 Z

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

TCE 010677193-02, PDC Light Curves

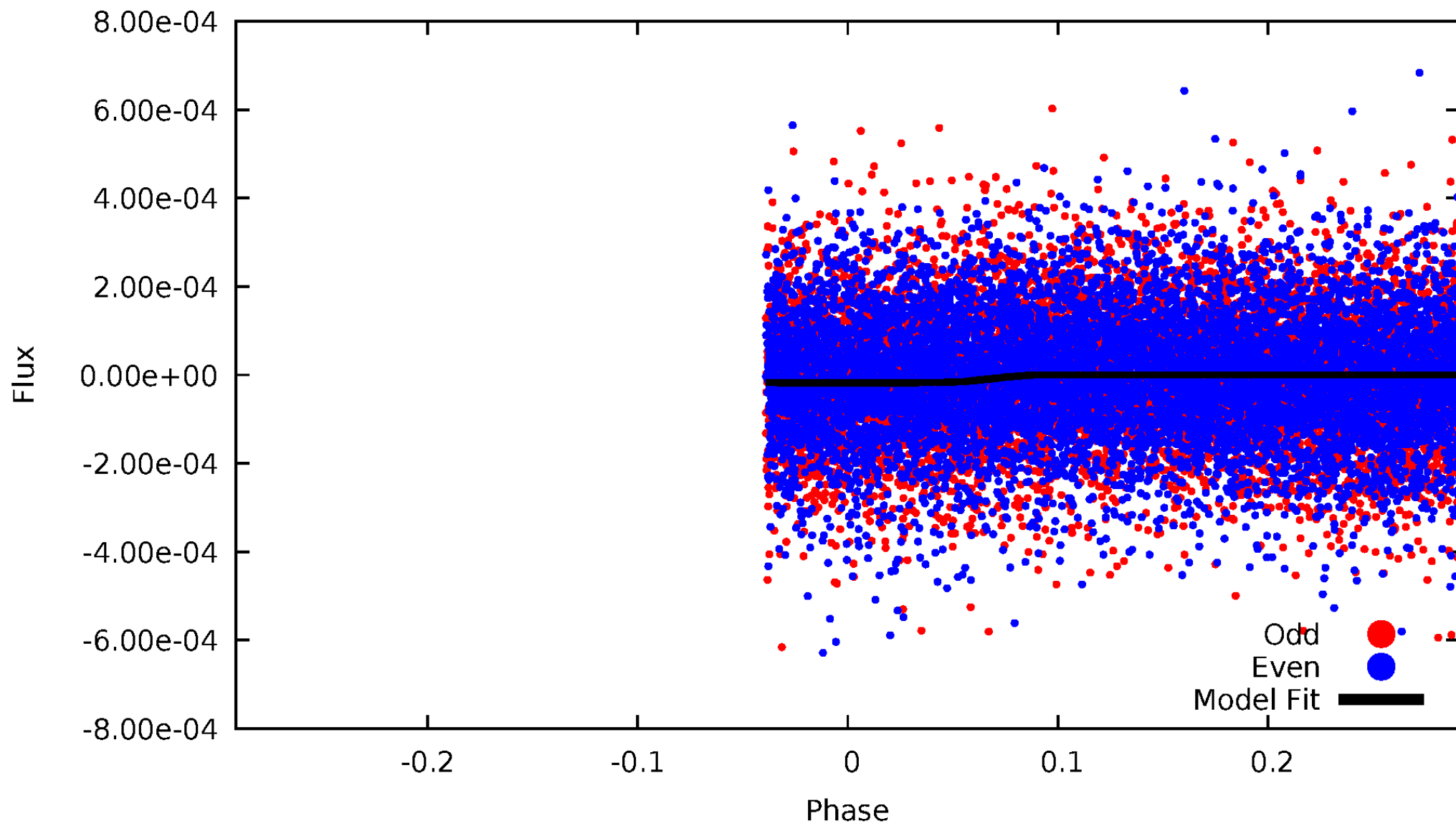


TCE 010677193-02



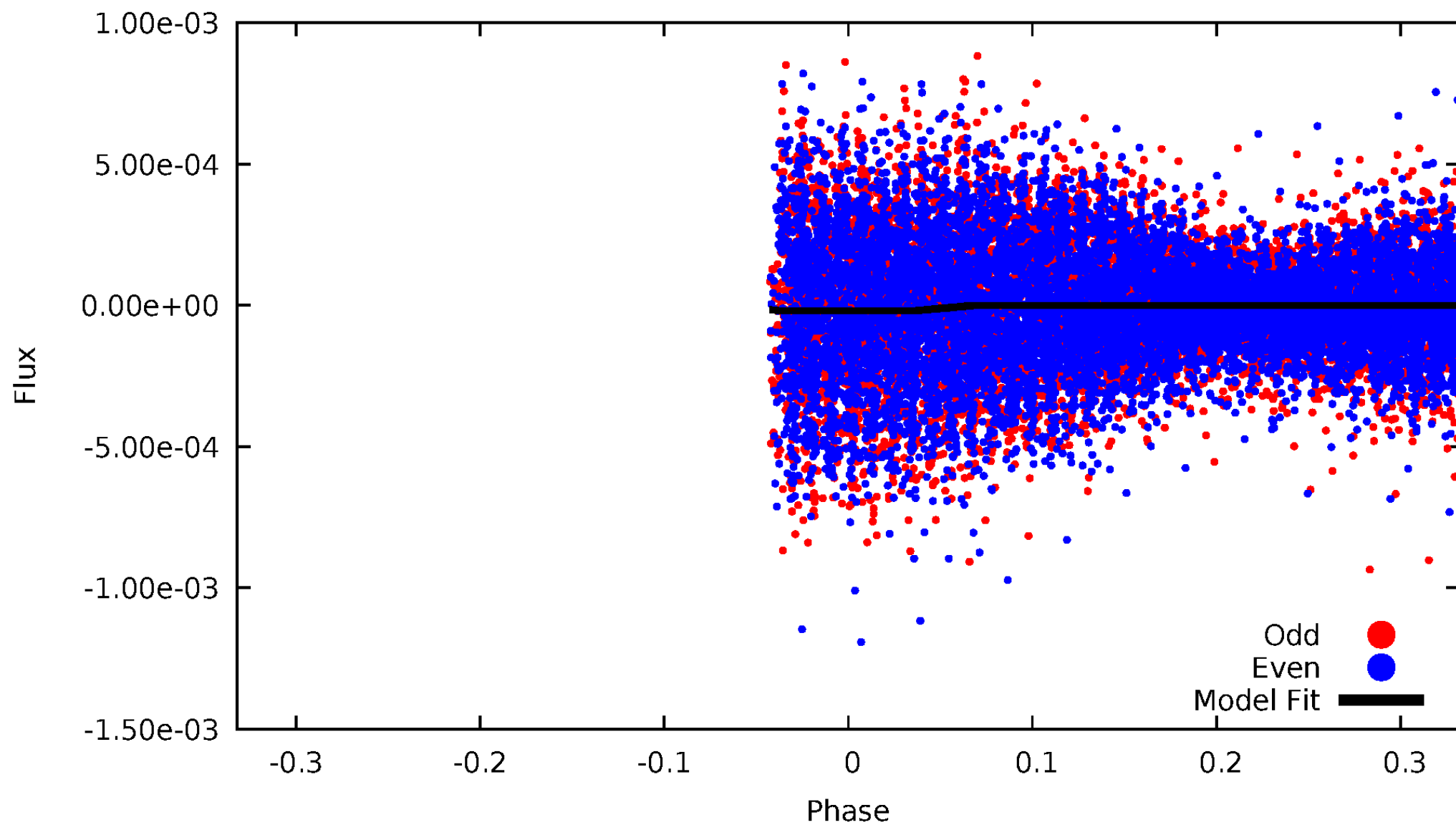
DV Odd/Even

TCE 010677193-02



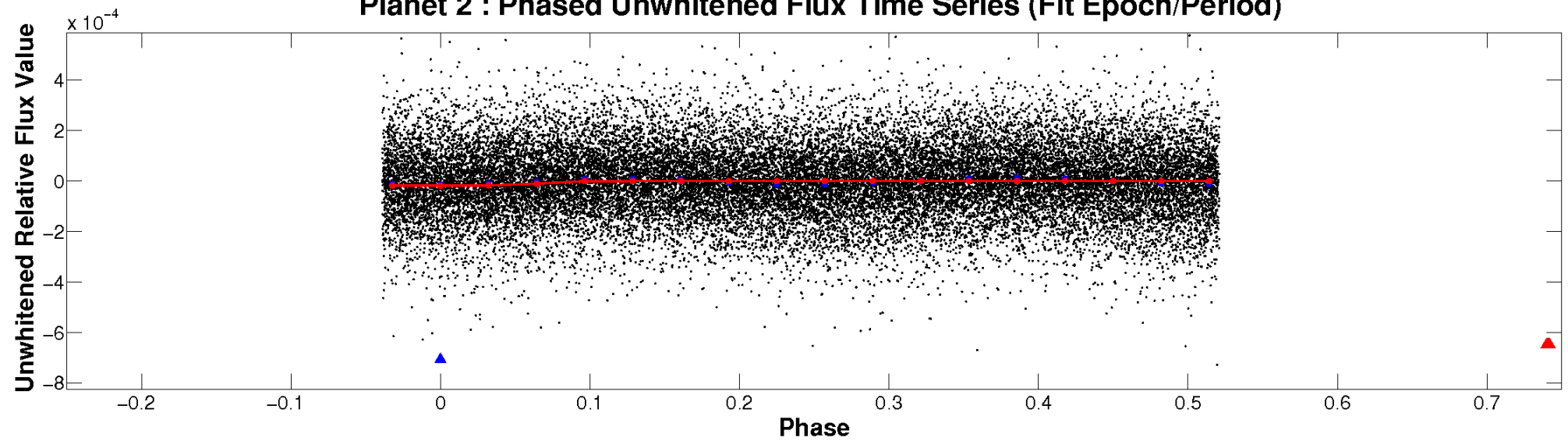
ALT Odd/Even

TCE 010677193-02

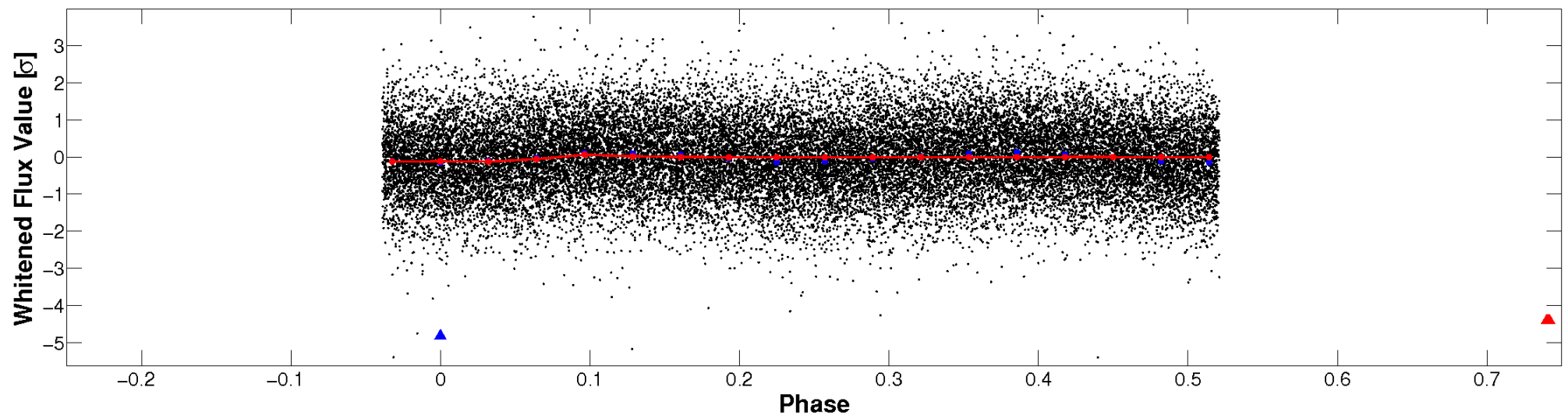


Non-Whitened Vs. Whitened Light Curve

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

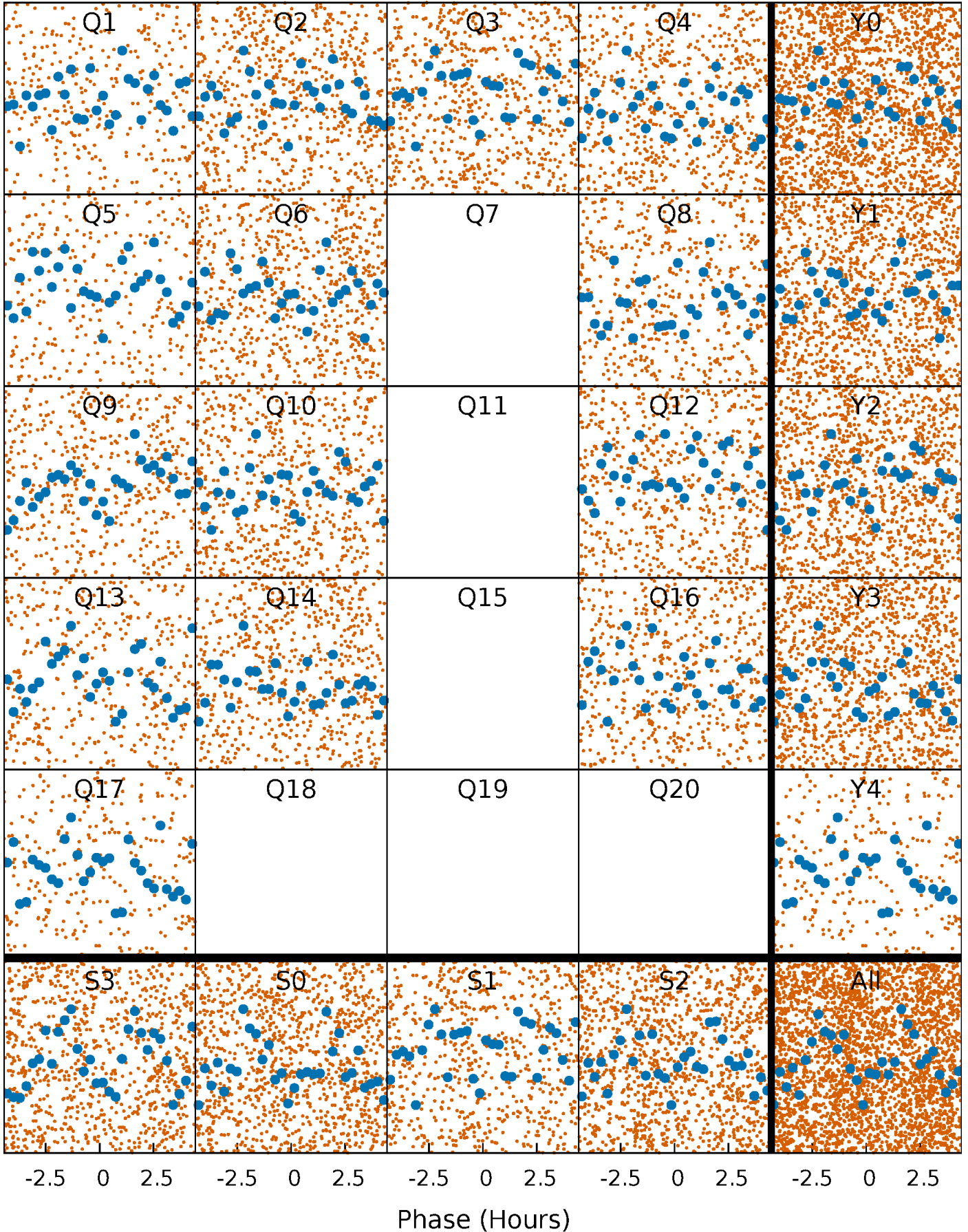


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



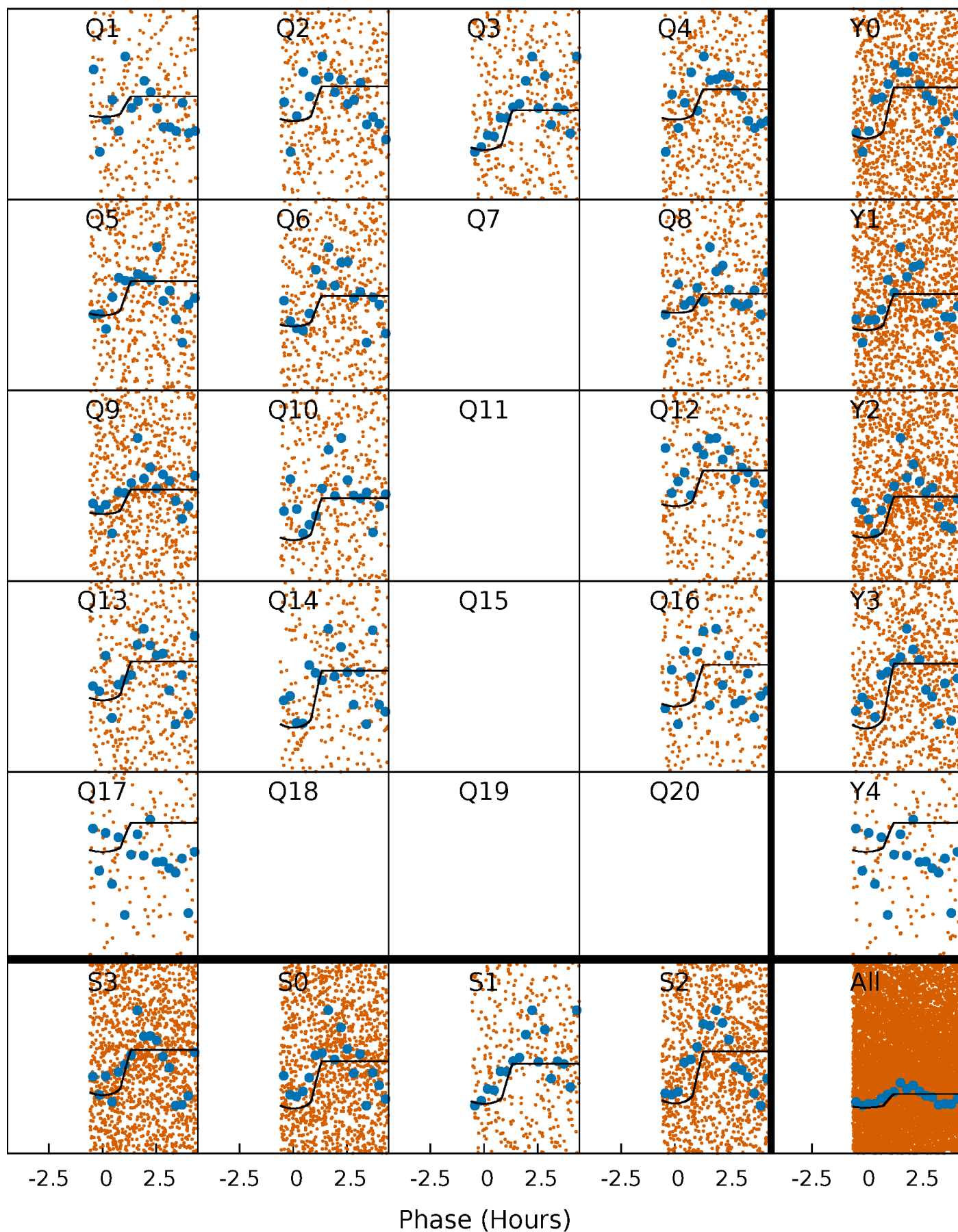
PDC Quarter-Phased Transit Curves

TCE 010677193-02 P= 0.635839 Days $T_0=131.859158$ (BKJD)



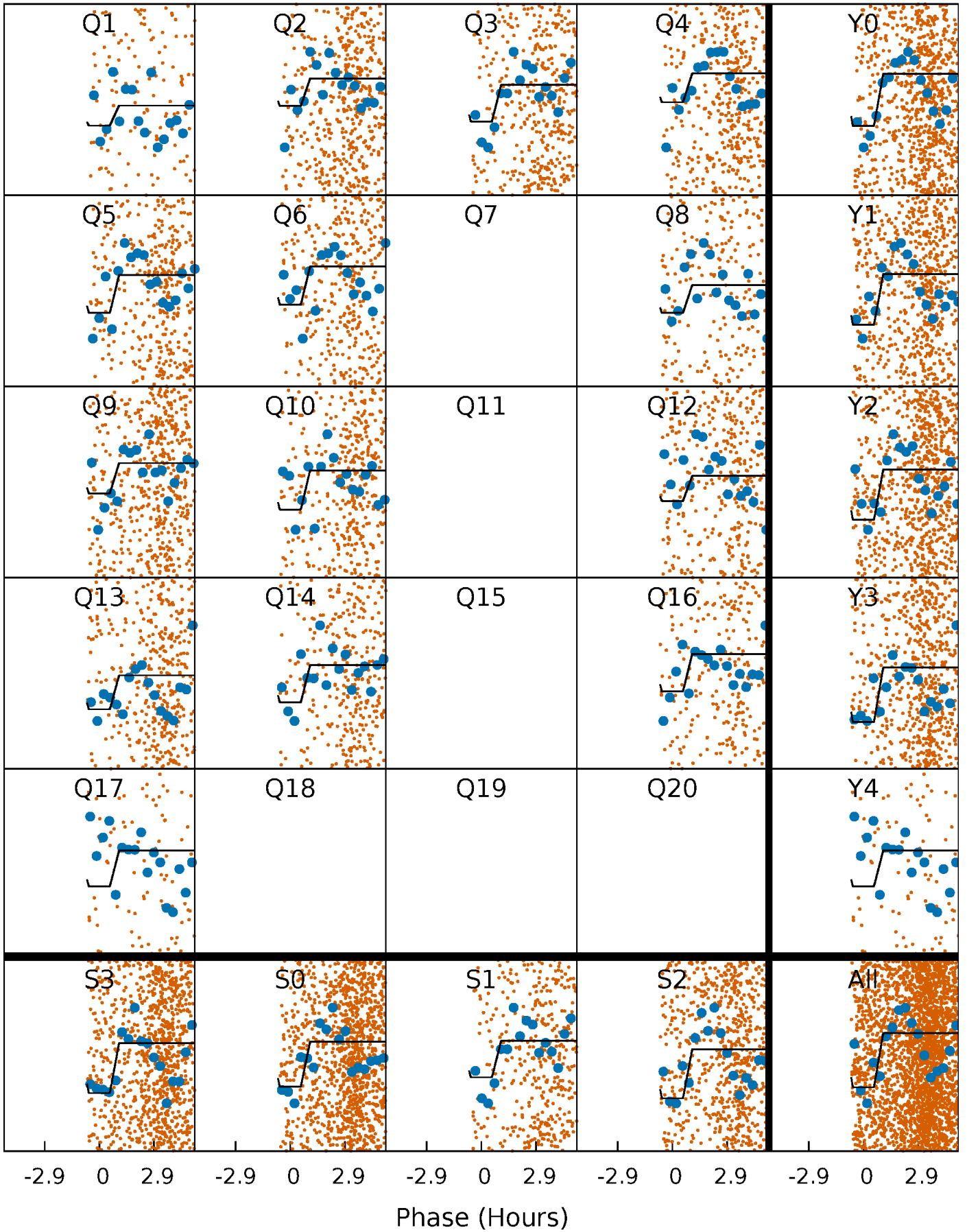
DV Quarter-Phased Transit Curves

TCE 010677193-02 $P = 0.635839$ Days $T_0 = 131.859158$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

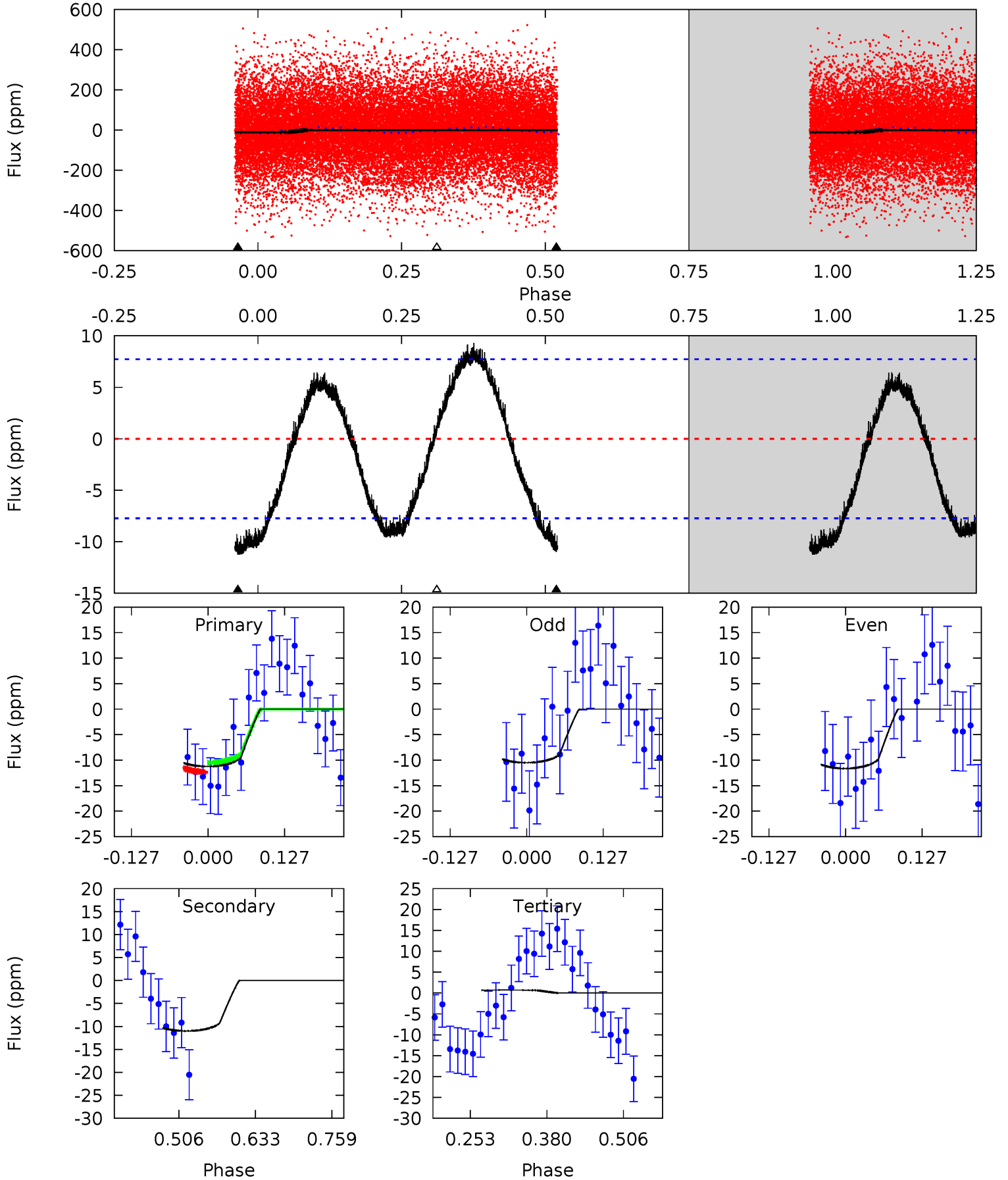
TCE 010677193-02 P= 0.635842 Days $T_0=131.854408$ (BKJD)



DV Model-Shift Uniqueness Test

010677193-02, P = 0.635839 Days, E = 131.223319 Days

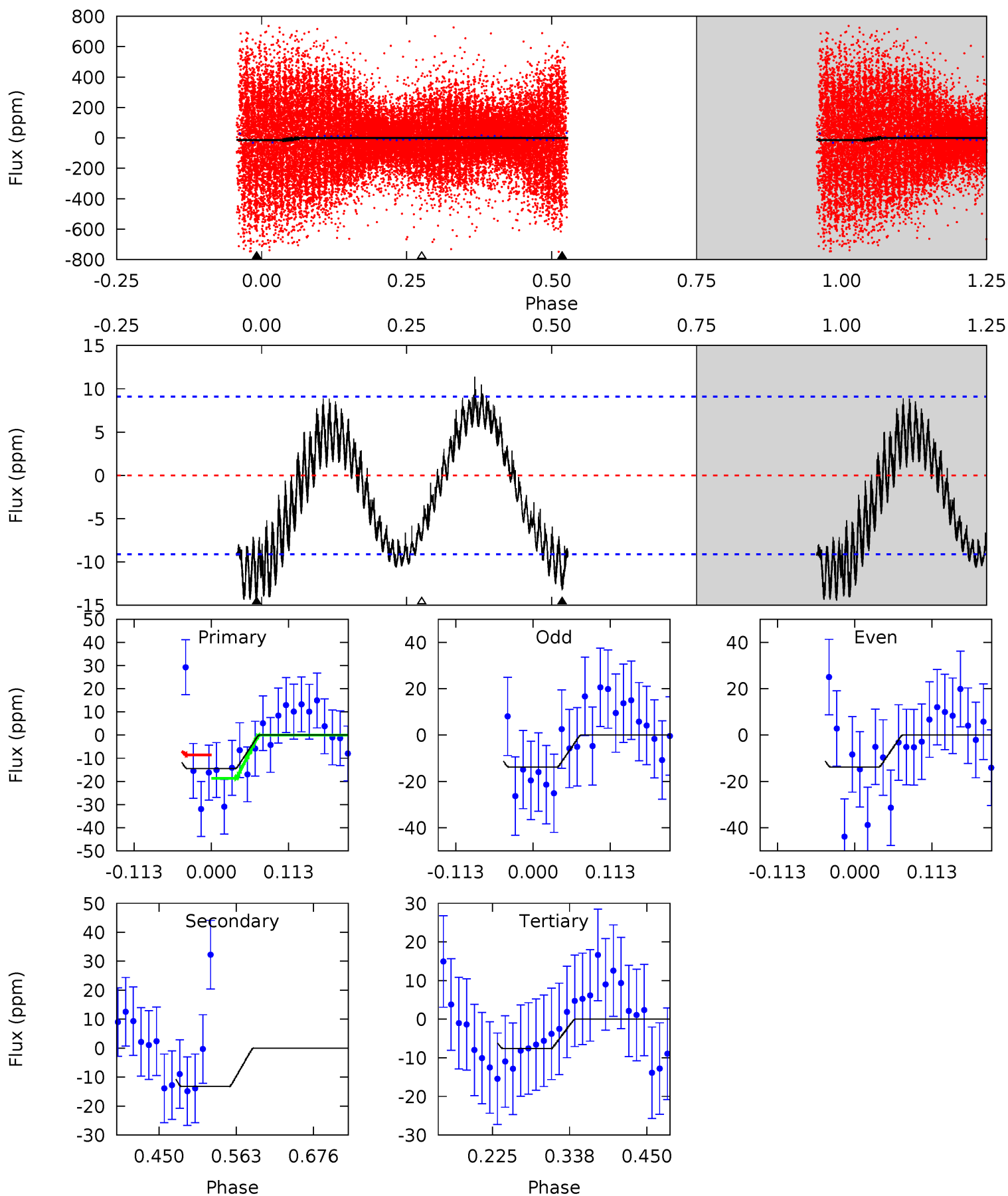
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.58	6.43	-0.42	0	4.52	1.53	3.43	7.00	6.58	6.85	6.43	0.33	0.94	0.45	0.49



Alt Model-Shift Uniqueness Test

010677193-02, P = 0.635842 Days, E = 131.218566 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.21	6.56	3.78	0	4.54	1.59	2.91	3.43	7.21	2.79	6.56	0.01	-24.5	0.44	1.32



Stellar Parameters For KIC 010677193

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7334^{+73}_{-87}	$4.010^{+0.150}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$2.076^{+0.346}_{-0.385}$	$1.605^{+0.145}_{-0.145}$	$0.253^{+0.179}_{-0.090}$
	+1%/-1%	+4%/-3%	+125%/-125%	+17%/-19%	+9%/-9%	+71%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010677193-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 2	$1.02^{+0.28}_{-0.30}$	4979^{+239}_{-249}	5862^{+1238}_{-744}	$1.645^{+1.645}_{-0.636}$
Alt.	-13 ± 2	$0.98^{+0.32}_{-0.26}$	4998^{+228}_{-239}	6310^{+1437}_{-917}	$2.138^{+1.967}_{-0.945}$

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 $A_{obs} \gg 1.0$

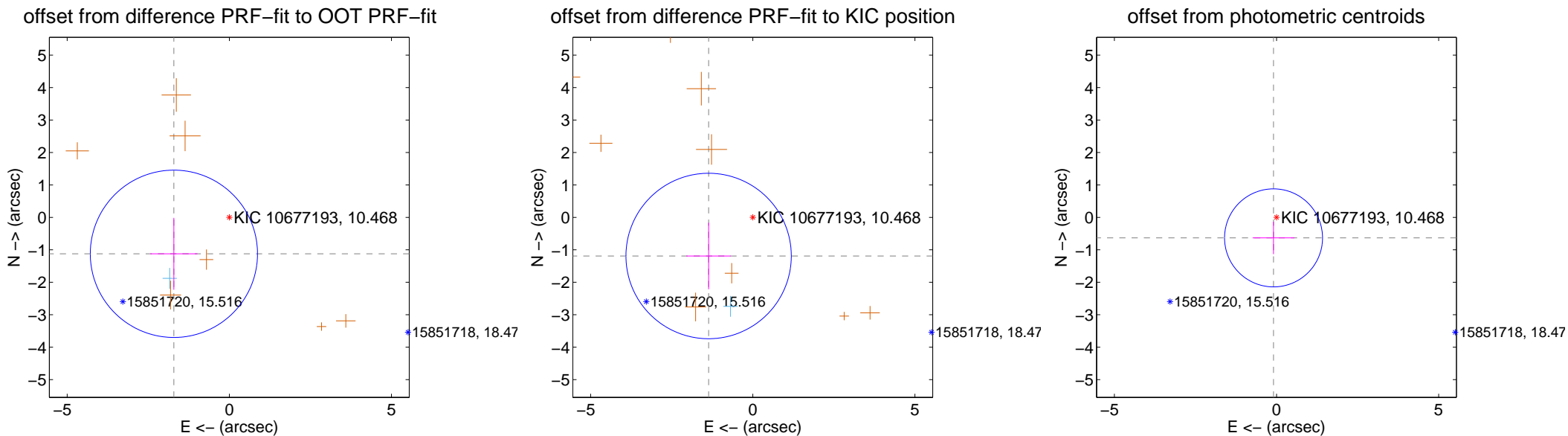
DV Centroid Data

Supplemental centroid analysis for 010677193-02. **Kepler magnitude: 10.47.** Transit SNR 8.95

There are 1 quarters with good PRF difference image offsets

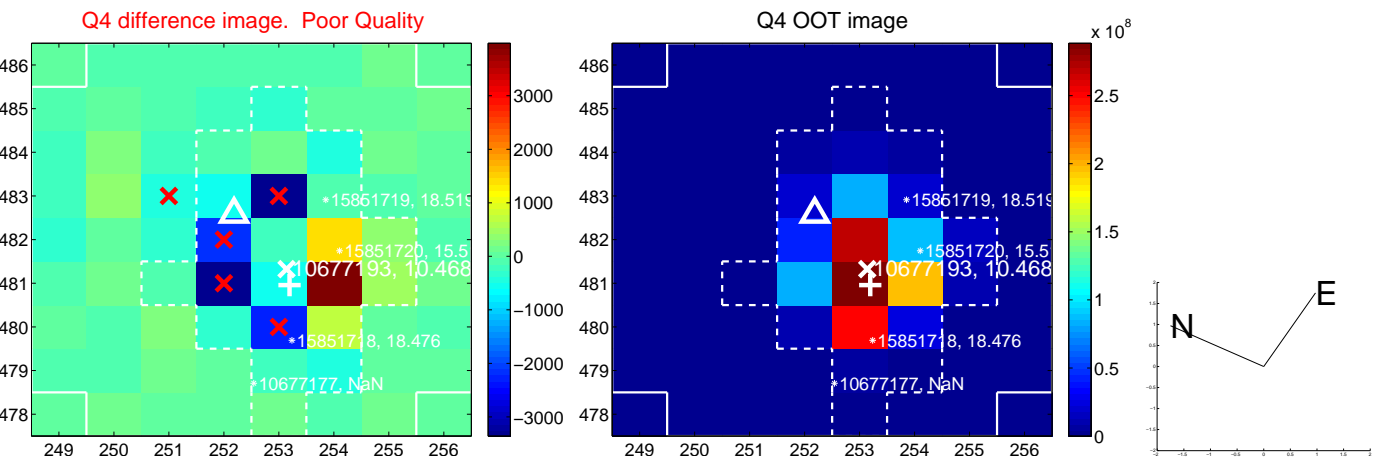
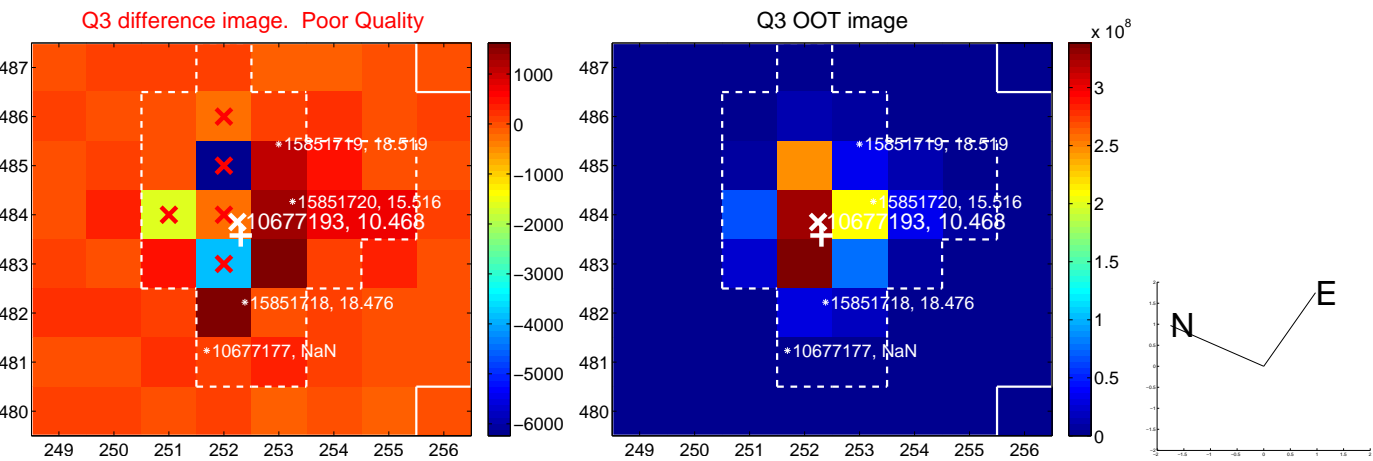
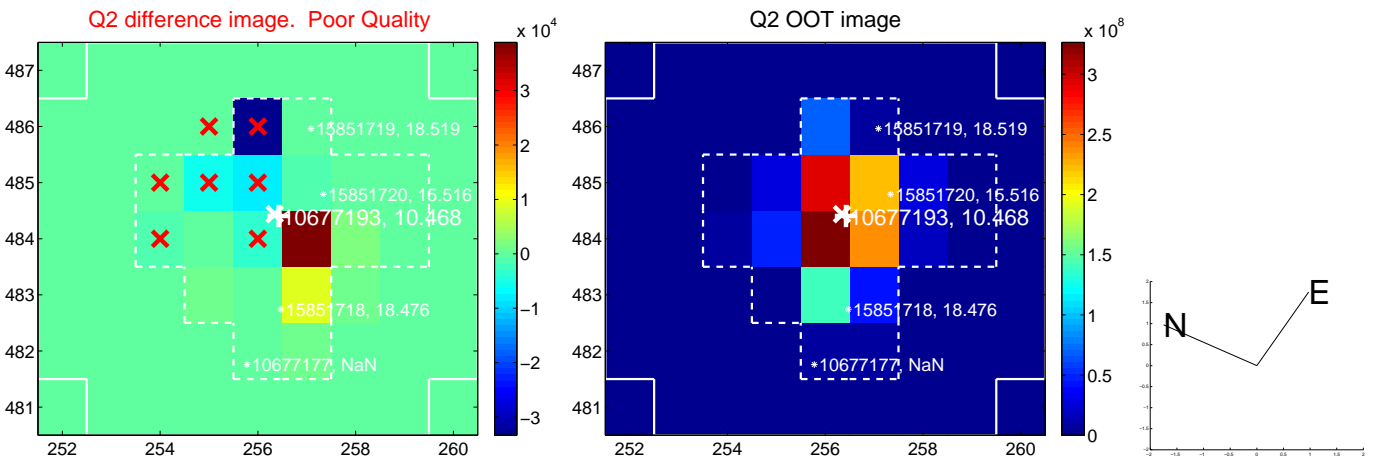
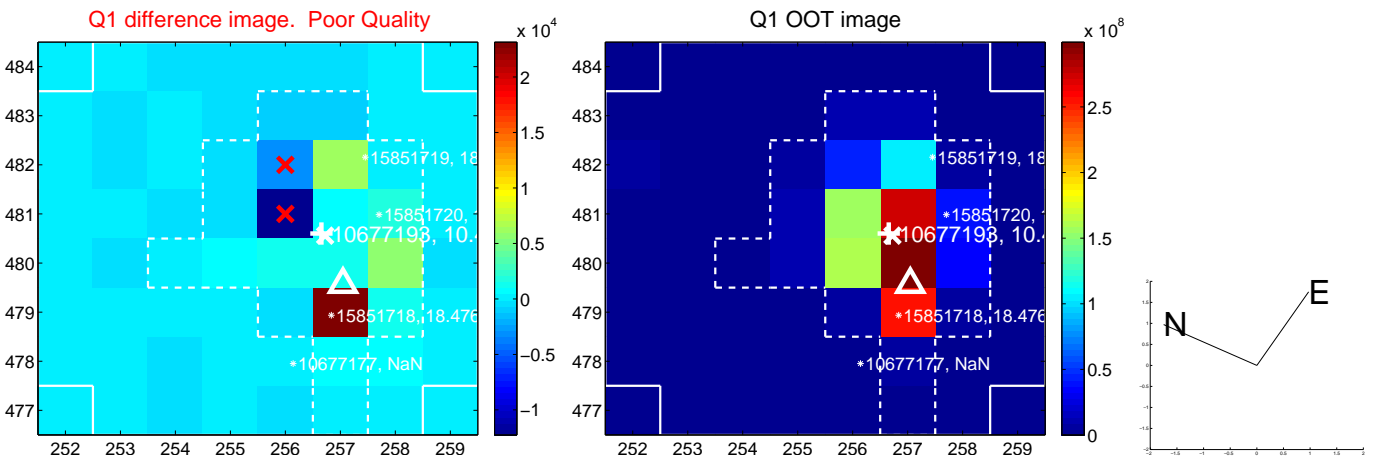
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.045 ± 0.859	2.38	1.709 ± 0.725	-1.122 ± 1.109
PRF-fit source offset from KIC position	1.808 ± 0.850	2.13	1.362 ± 0.686	-1.190 ± 1.025
photometric centroid source offset	0.64 ± 0.50	1.27	0.09 ± 0.64	-0.63 ± 0.50

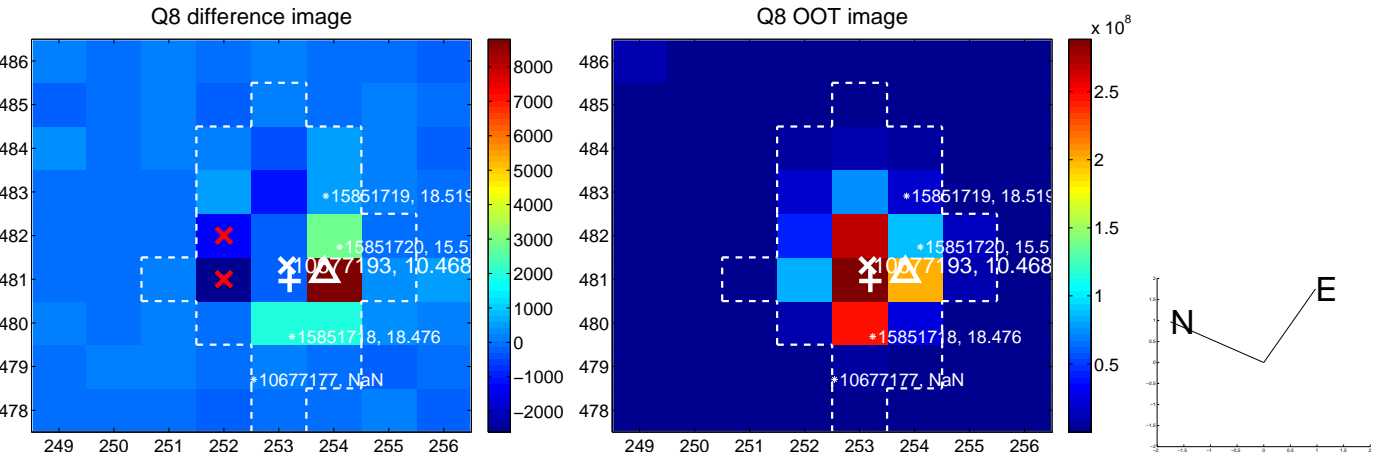
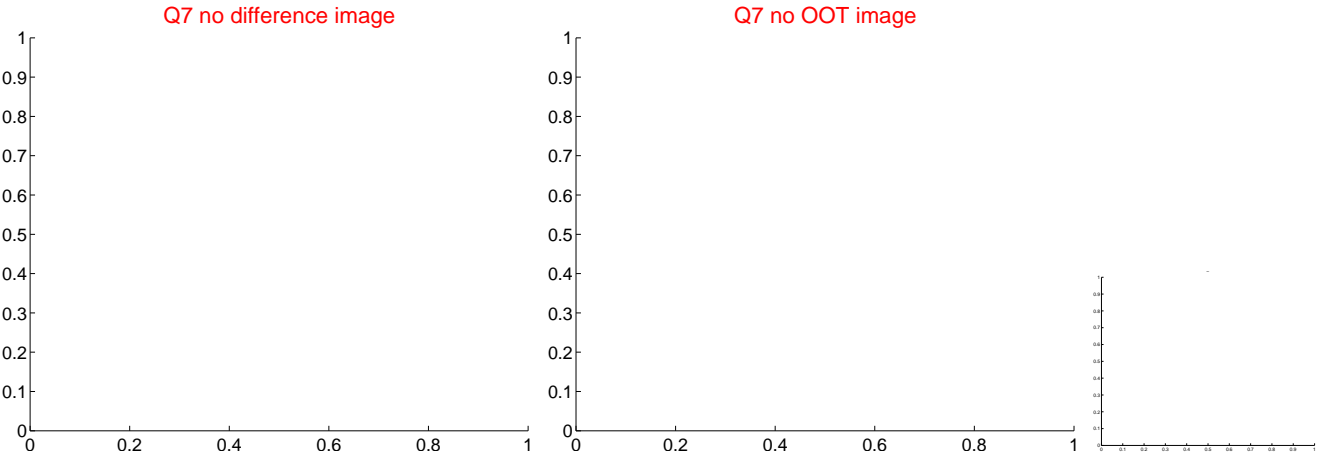
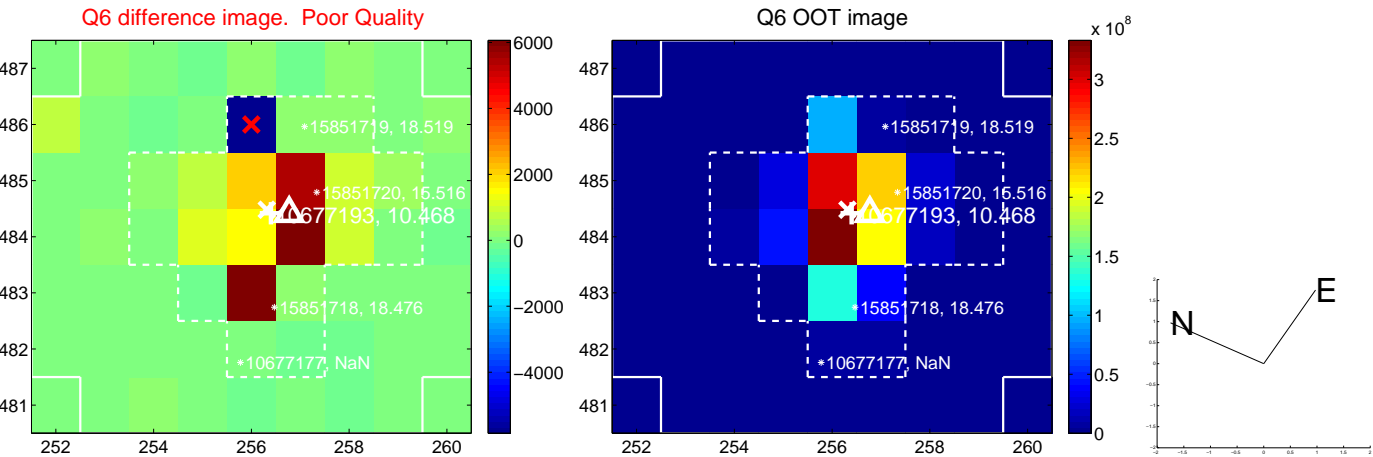
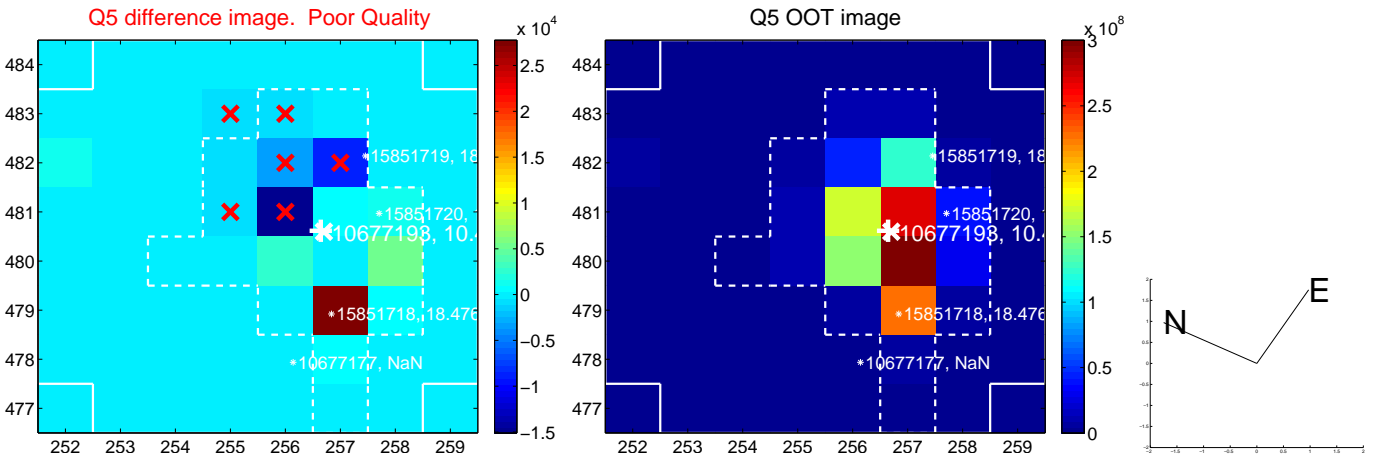


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

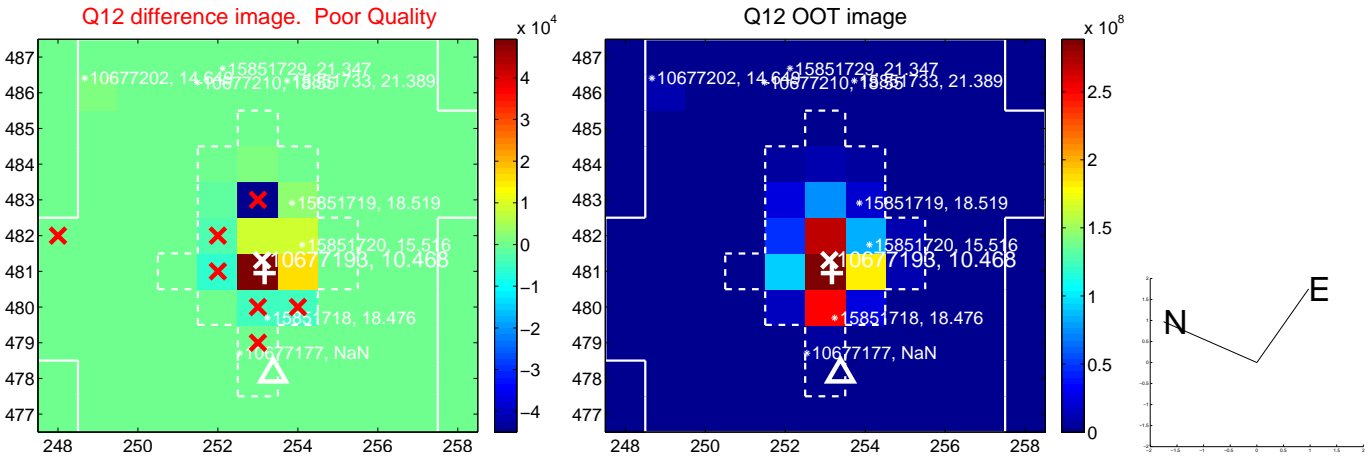
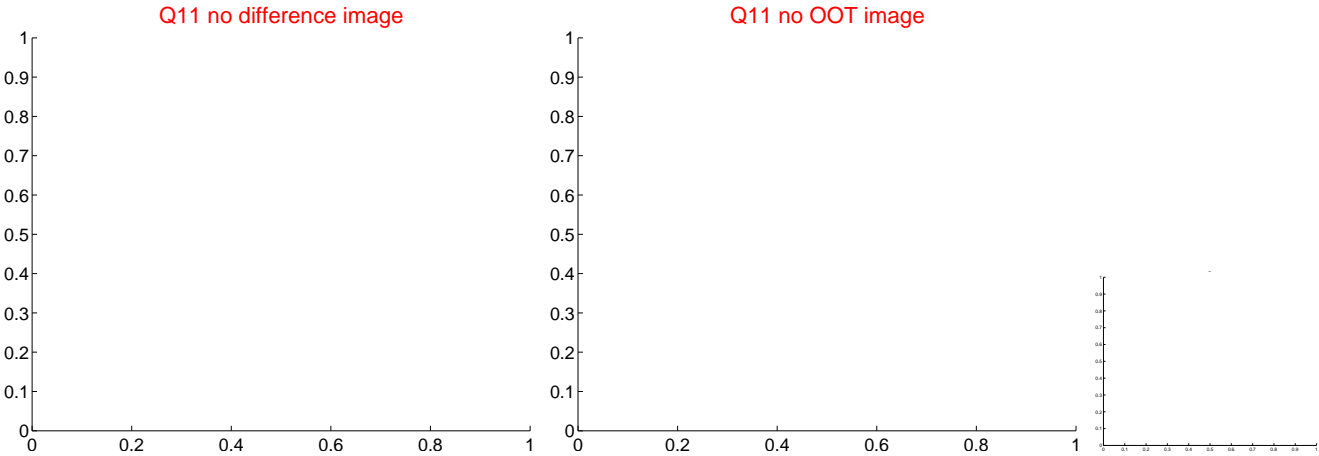
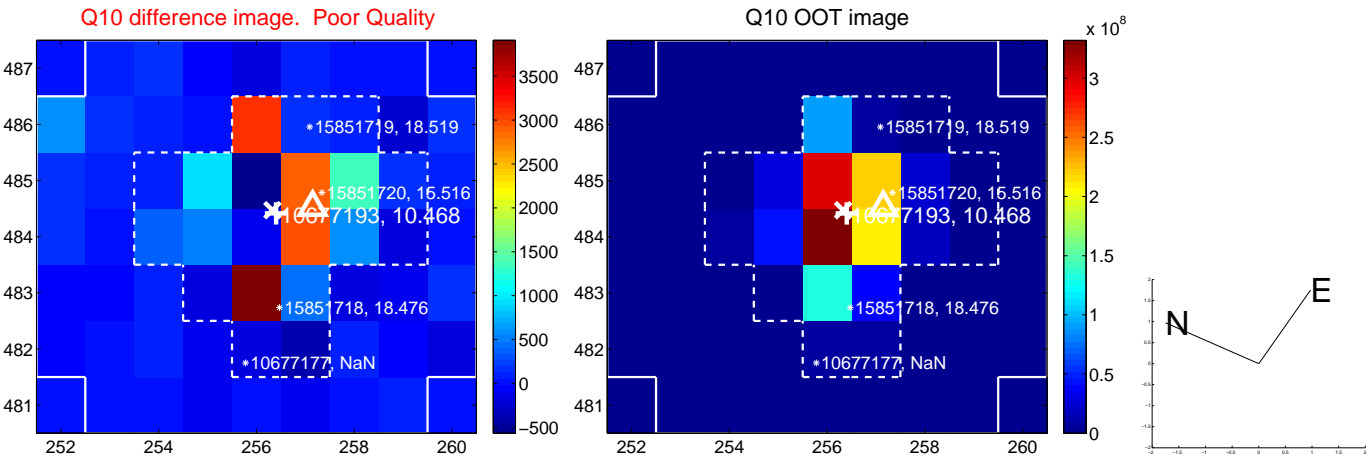
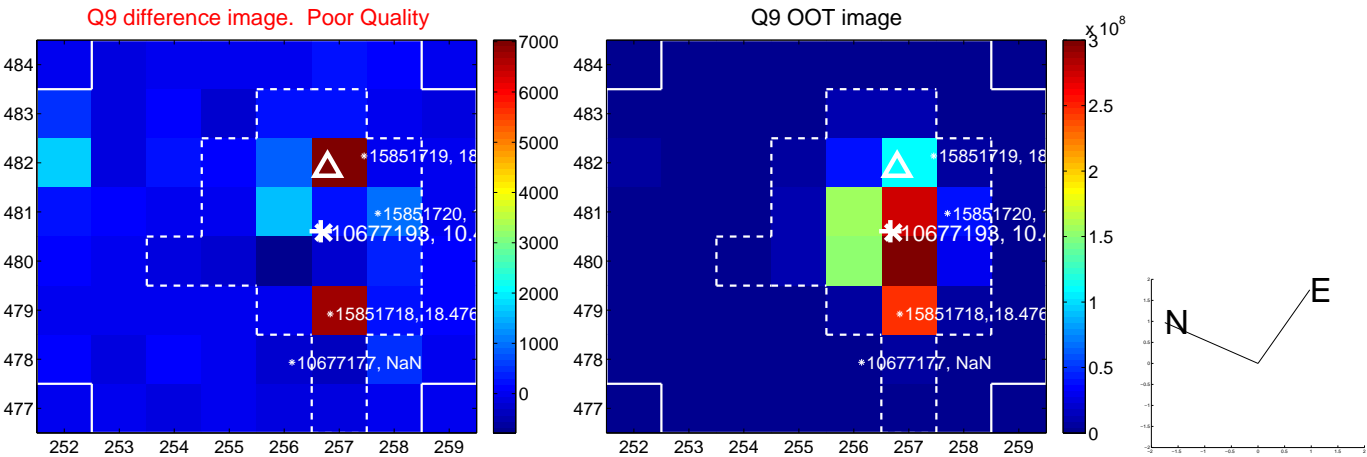
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



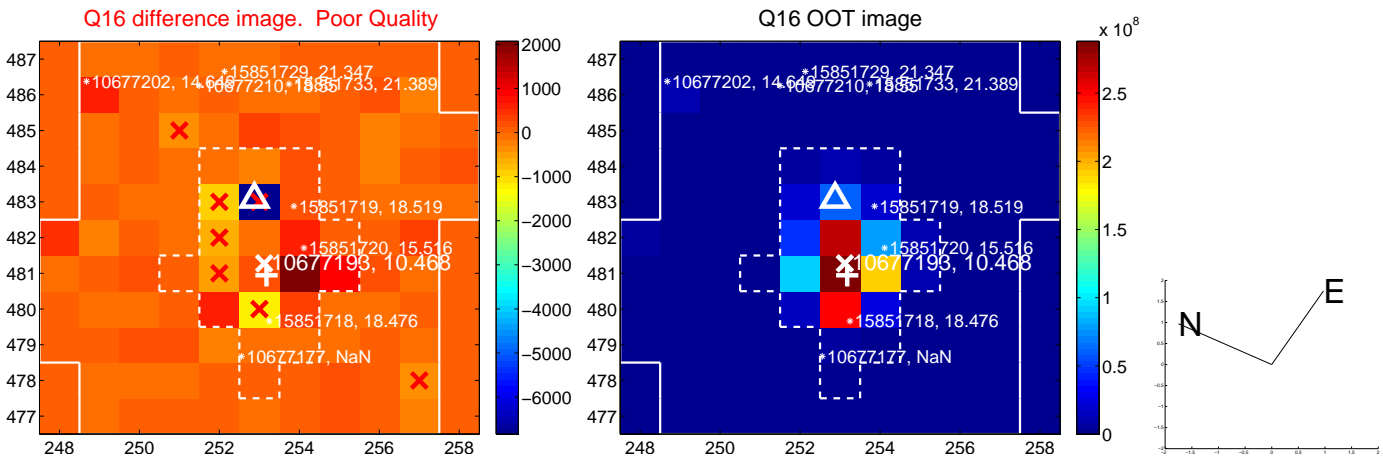
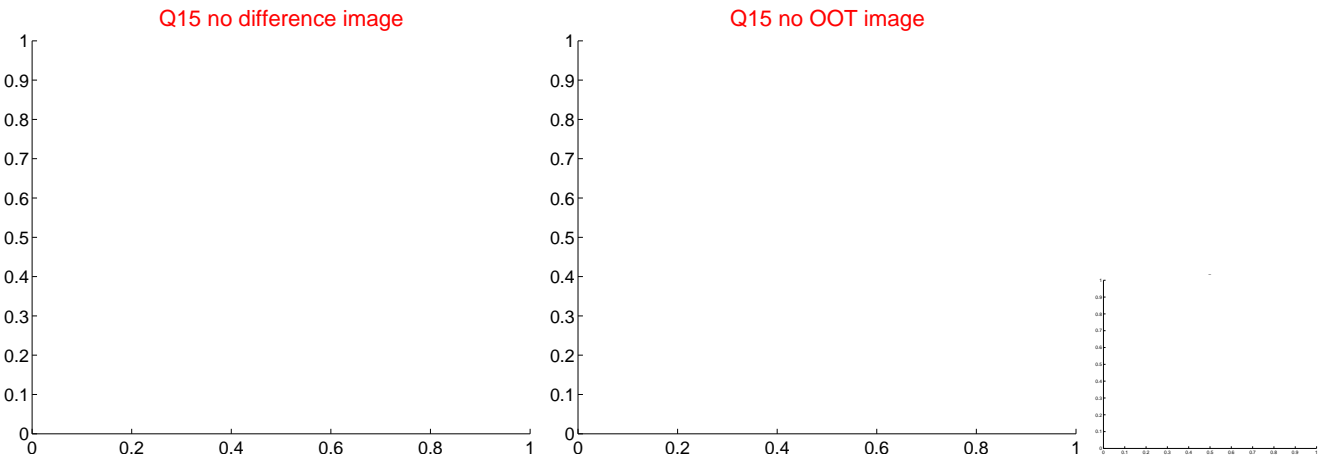
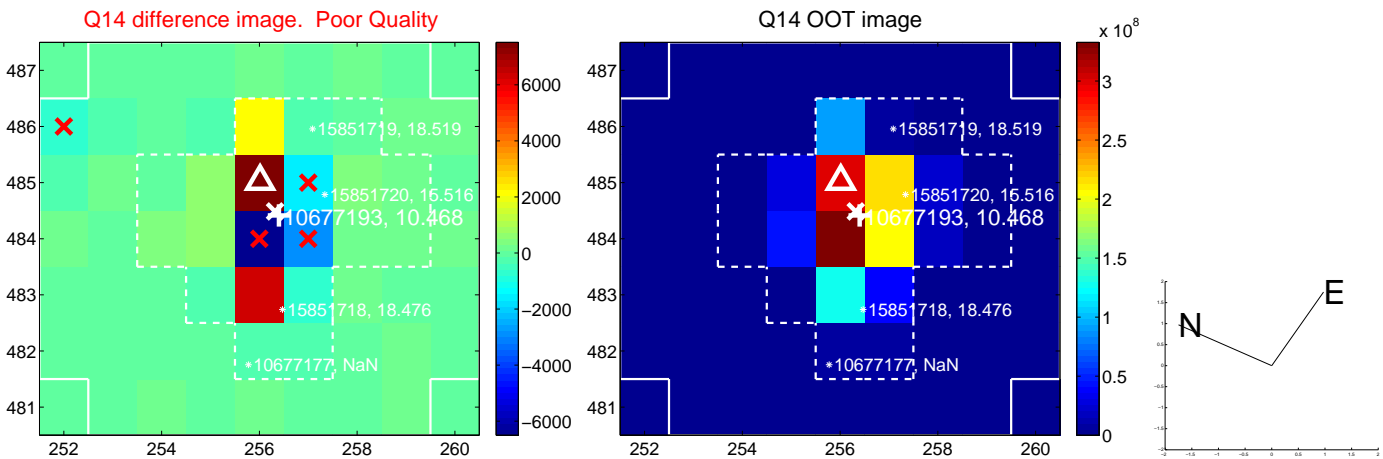
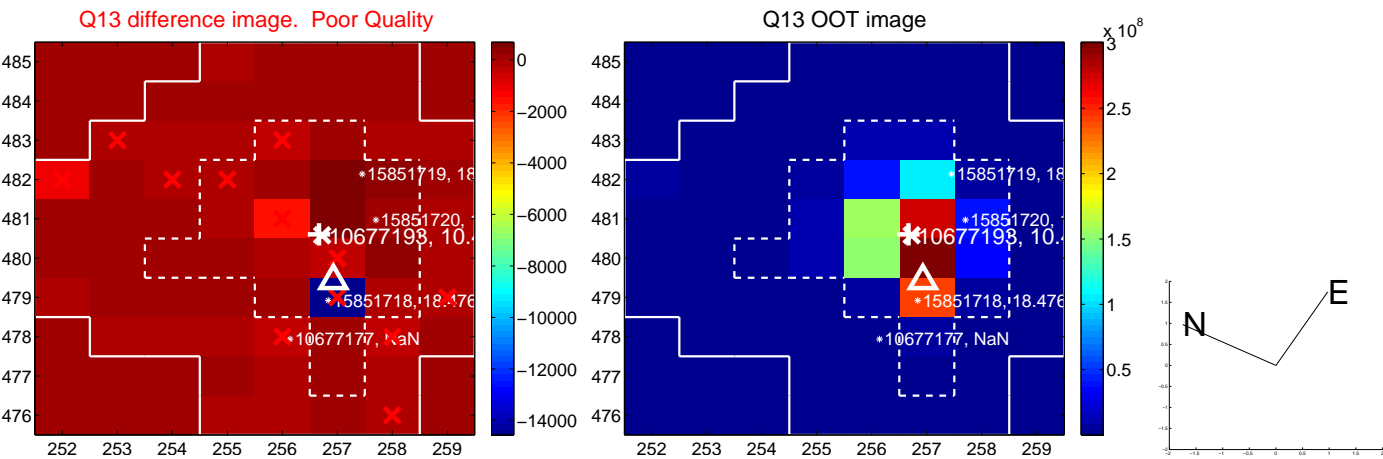
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



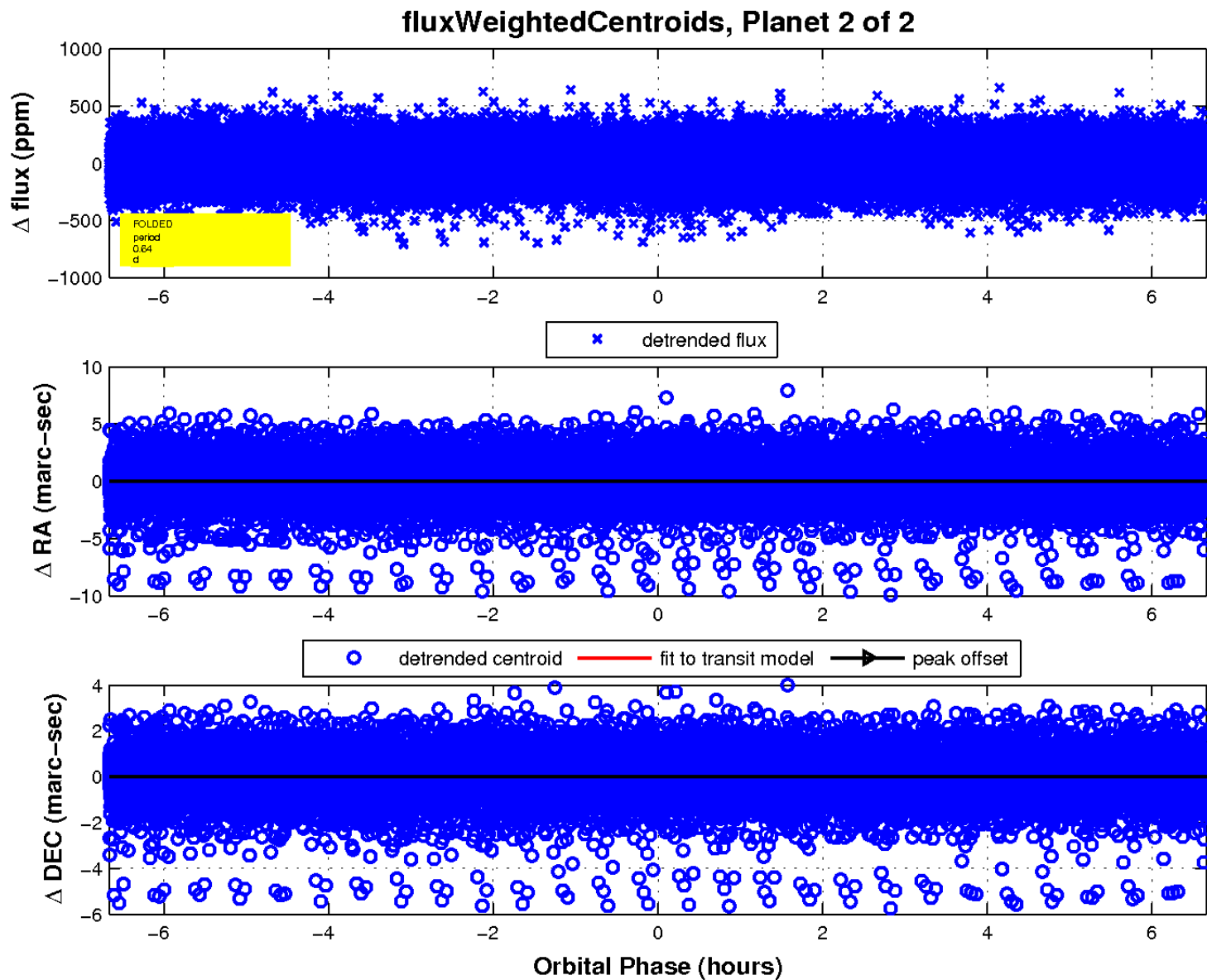
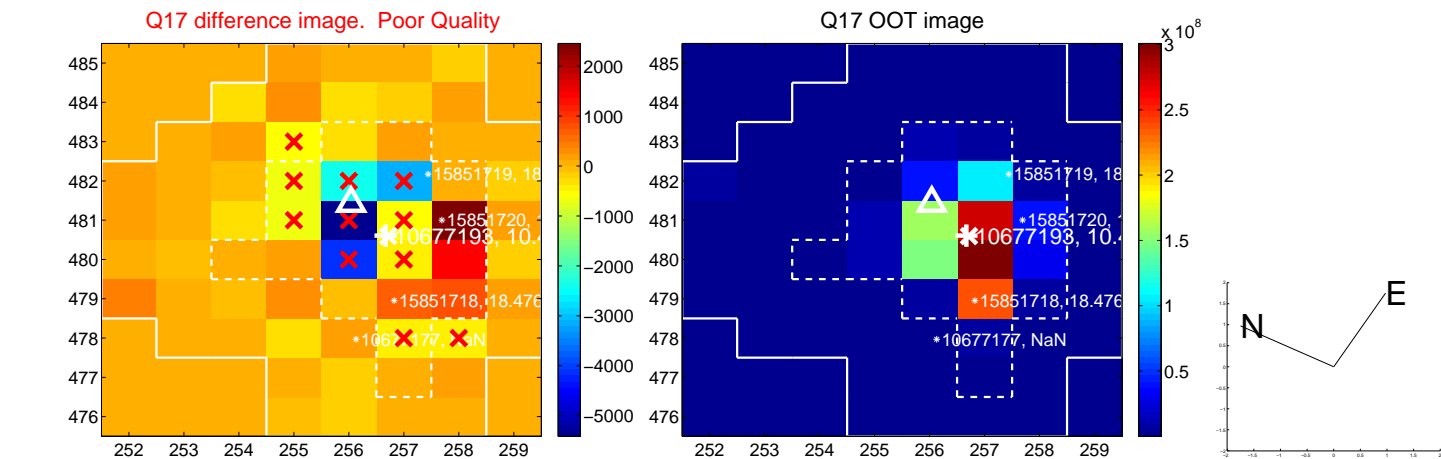
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

