

KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

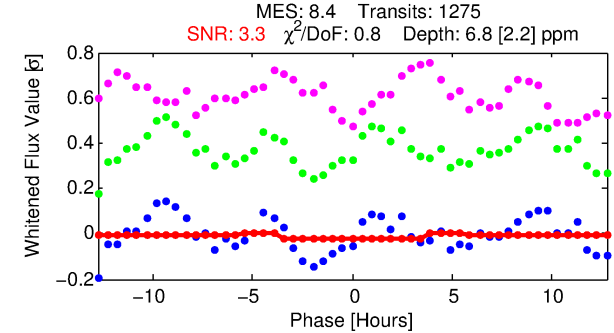
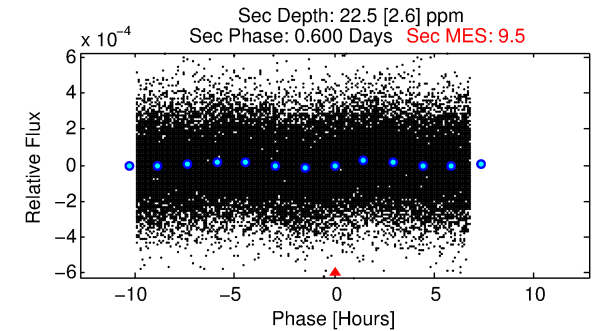
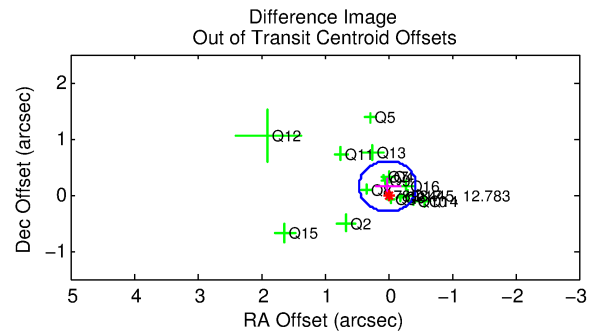
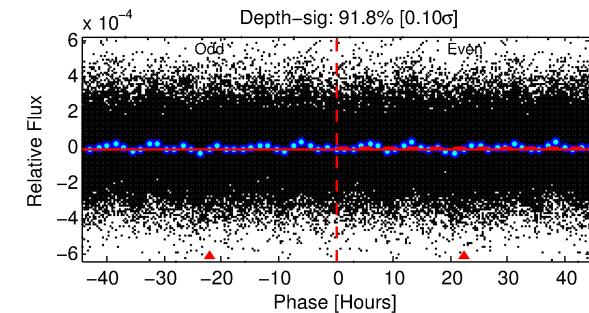
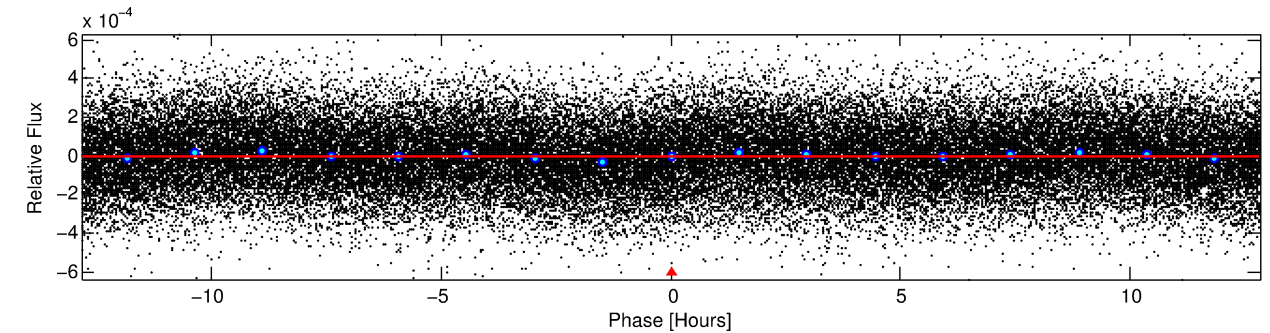
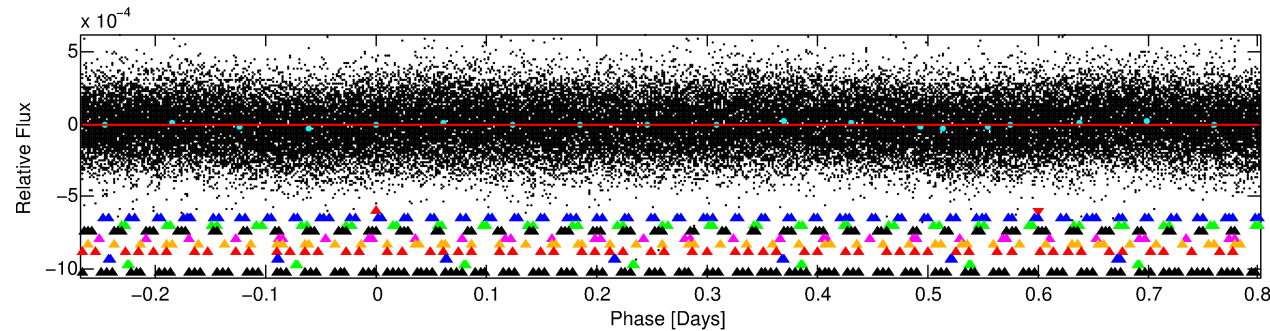
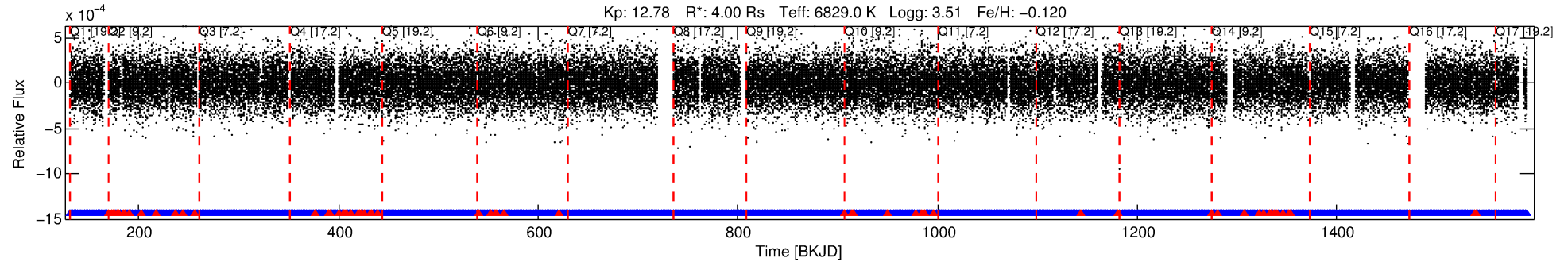
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-01

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 1 of 10 Period: 1.069 d



DV Fit Results:

Period = 1.06908 [0.00005] d
Epoch = 131.9065 [0.0134] BKJD
Rp/R* = 0.0025 [0.0021]
a/R* = 1.20 [1.81]
b = 0.53 [6.63]
Seff = 48808.23 [29206.41]
Teq = 3790 [567] K
Rp = 1.09 [1.01] Re
a = 0.0253 [0.0092] AU
Ag = 6.71 [12.10] [0.47 σ]
Teffp = 9430 [4038] K [1.38 σ]

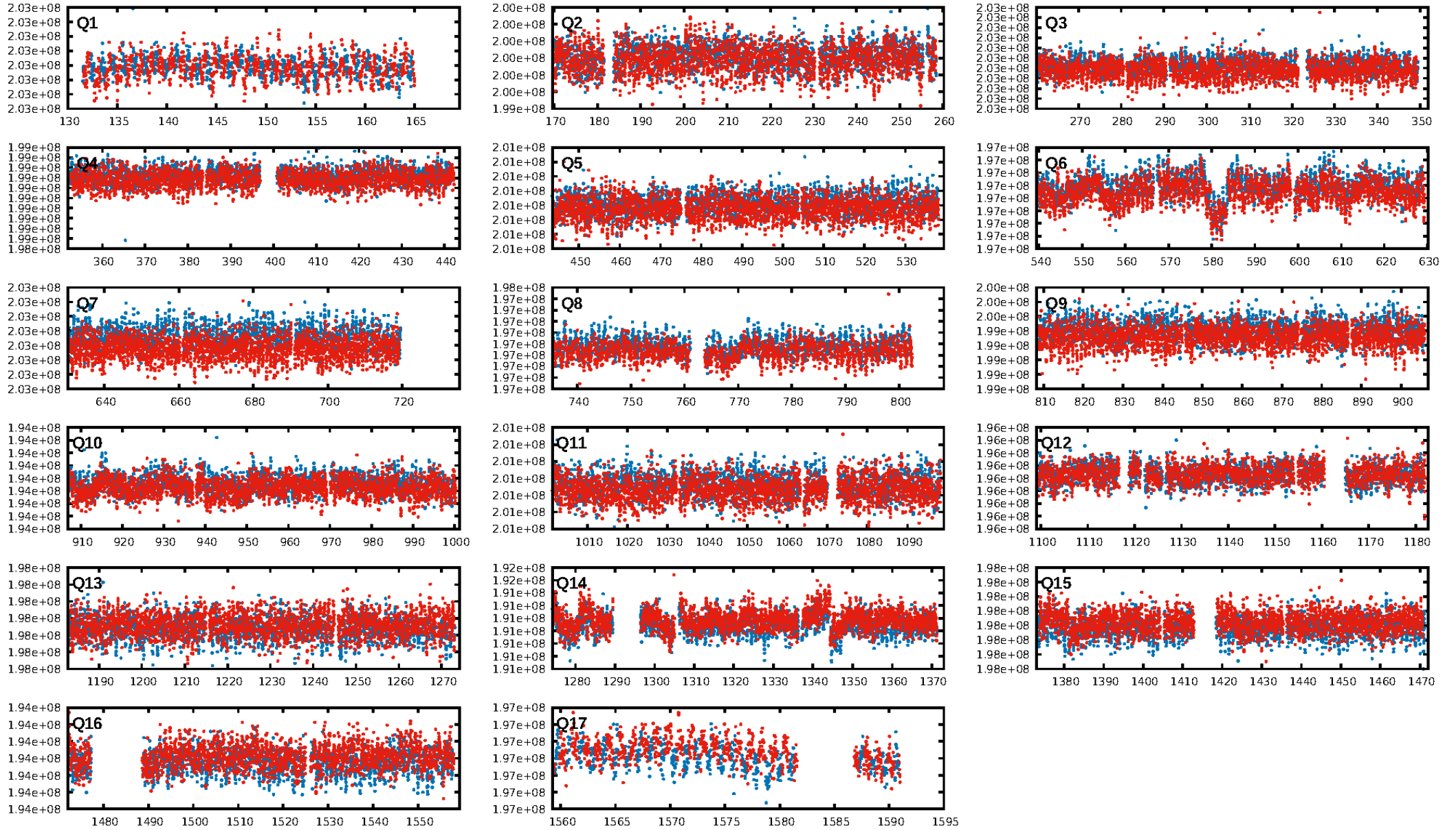
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [30.97 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [1153/1217]
GhostDiagnostic-chr: 2.31
Centroid-sig: 28.2%
Centroid-so: 1.300 arcsec [0.81 σ]
OotOffset-rm: 0.150 arcsec [1.00 σ]
KicOffset-rm: 0.106 arcsec [0.75 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 1.00 [17/17]

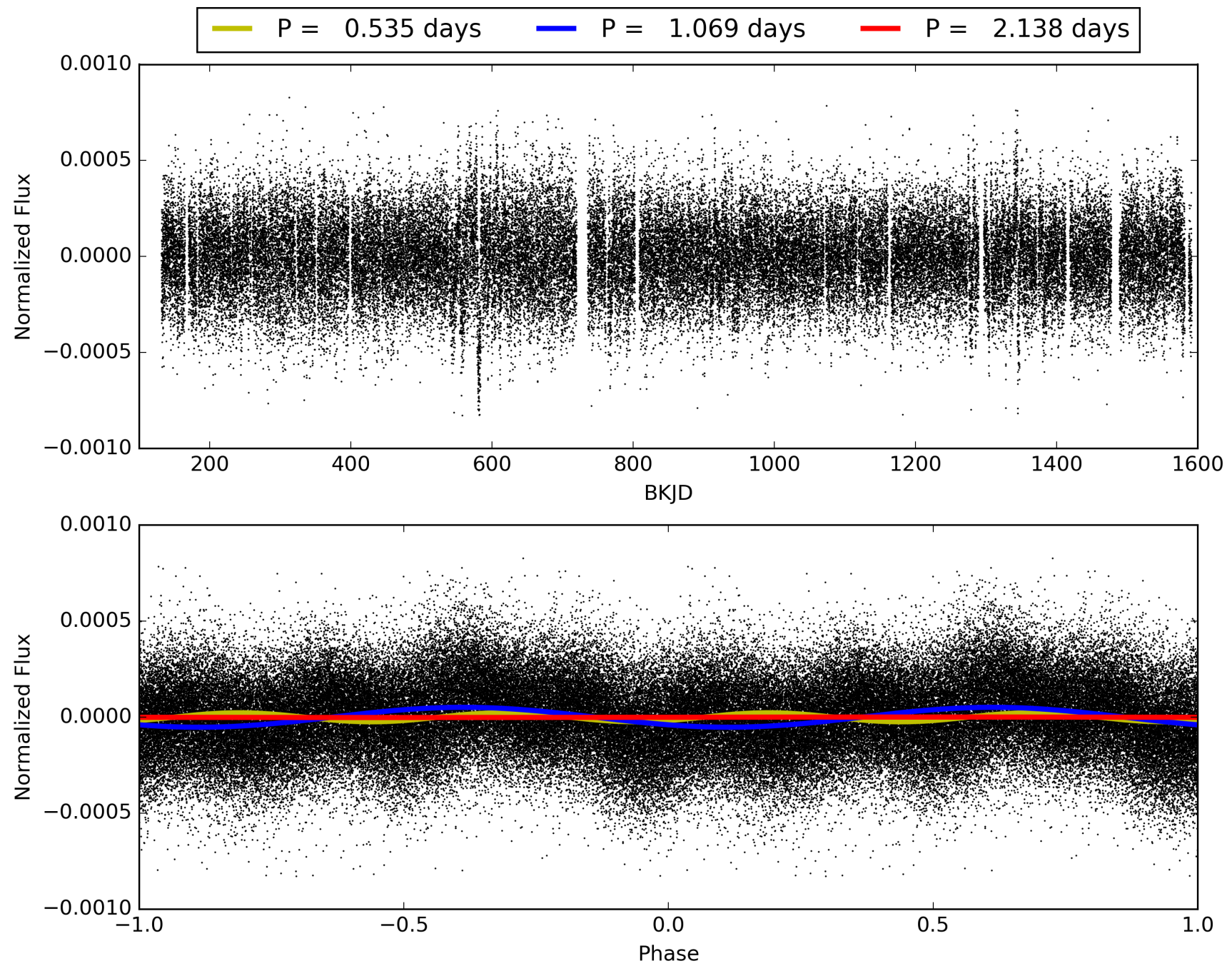
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:37:47 Z

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

TCE 007898445-01, PDC Light Curves

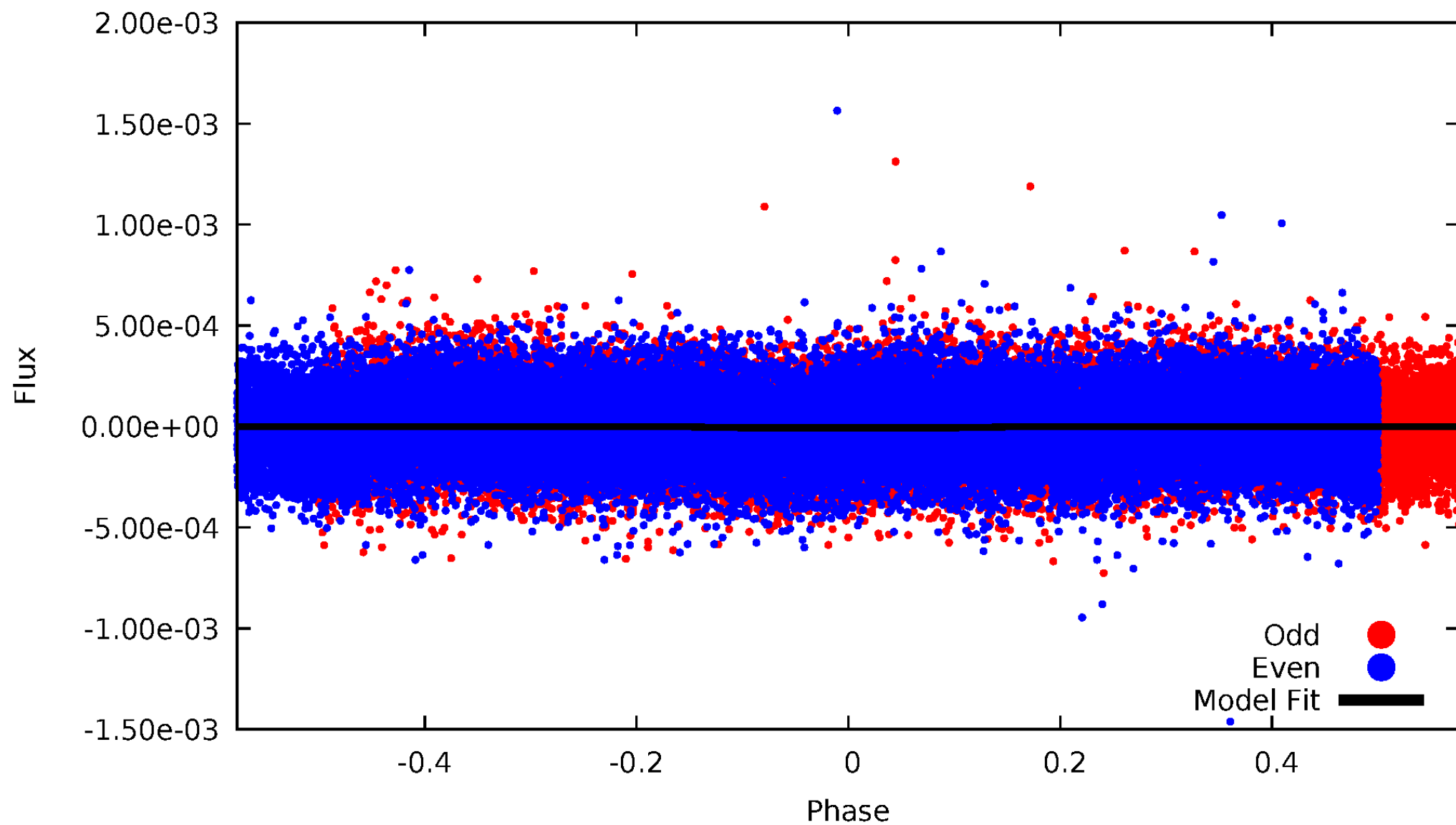


TCE 007898445-01



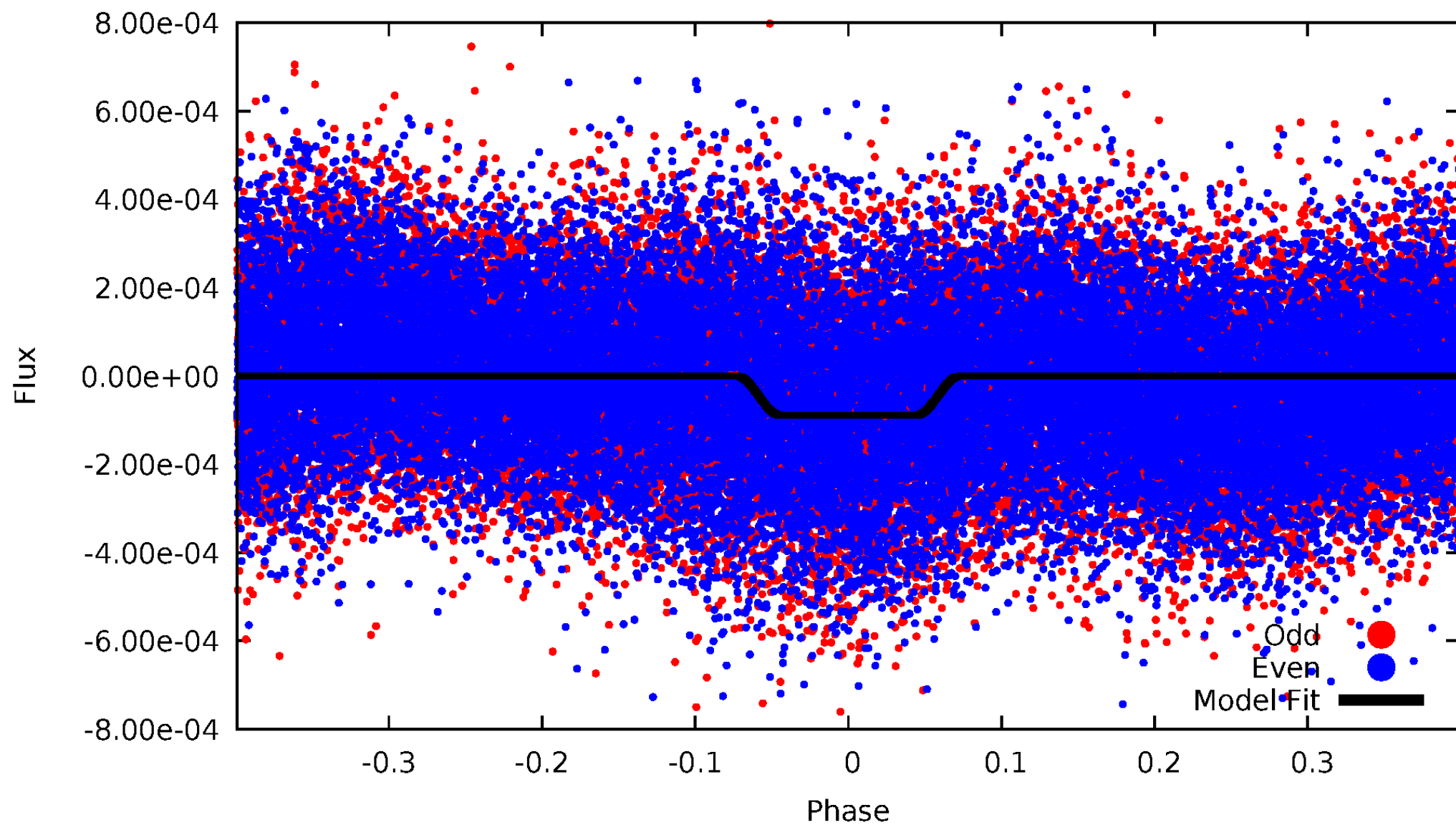
DV Odd/Even

TCE 007898445-01

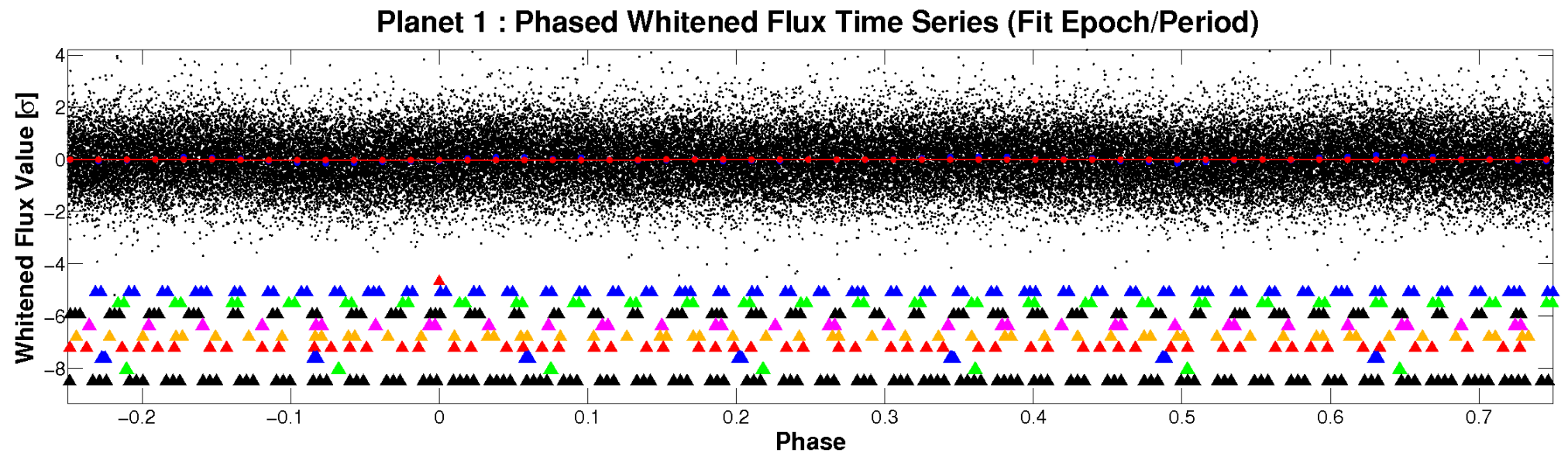
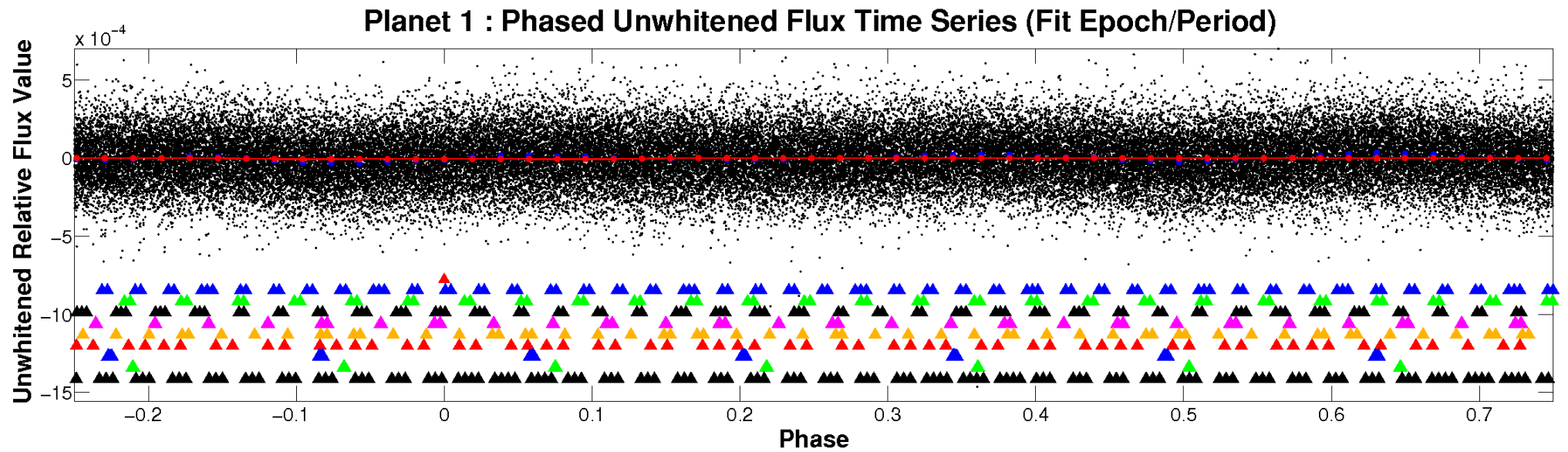


ALT Odd/Even

TCE 007898445-01

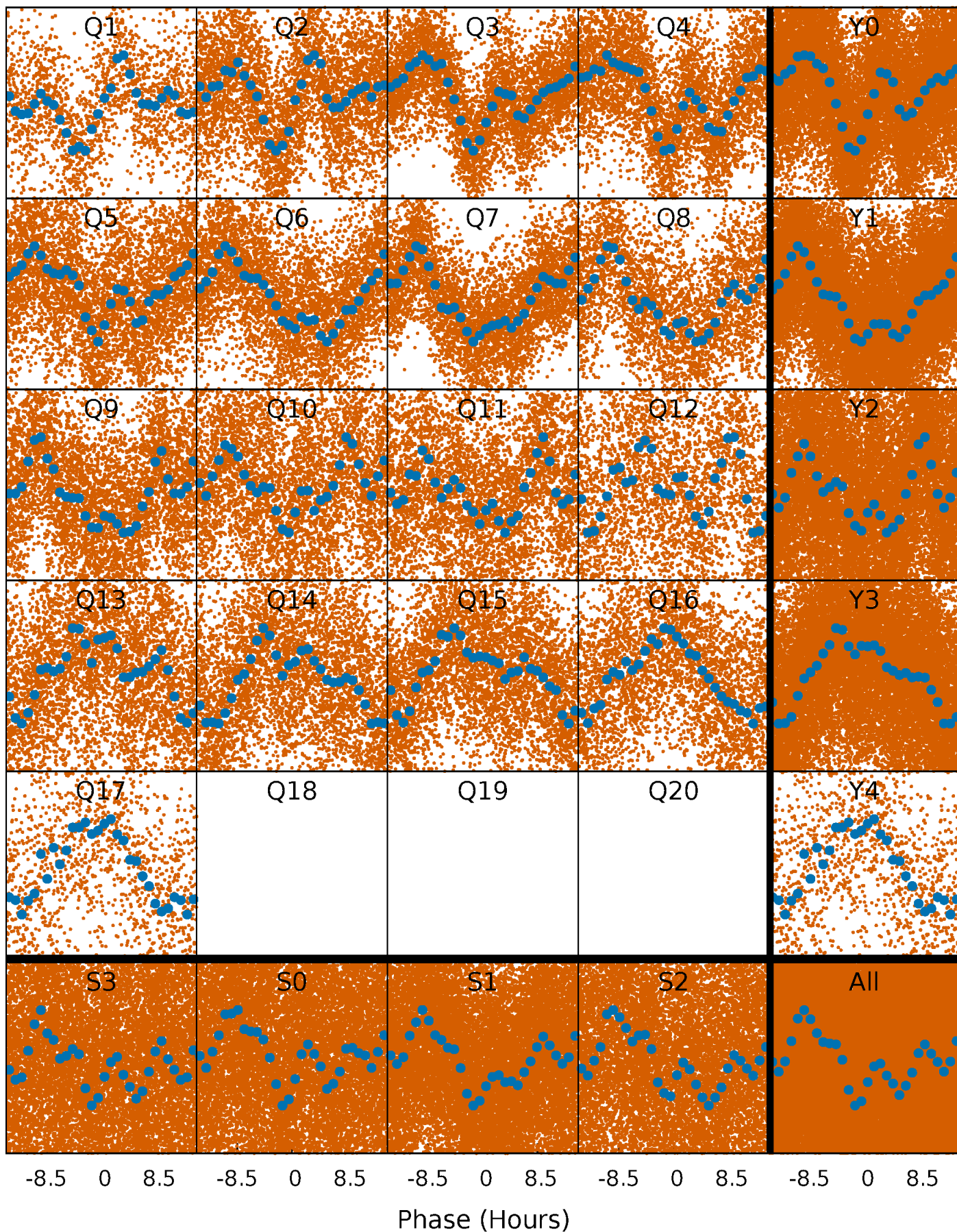


Non-Whitened Vs. Whitened Light Curve



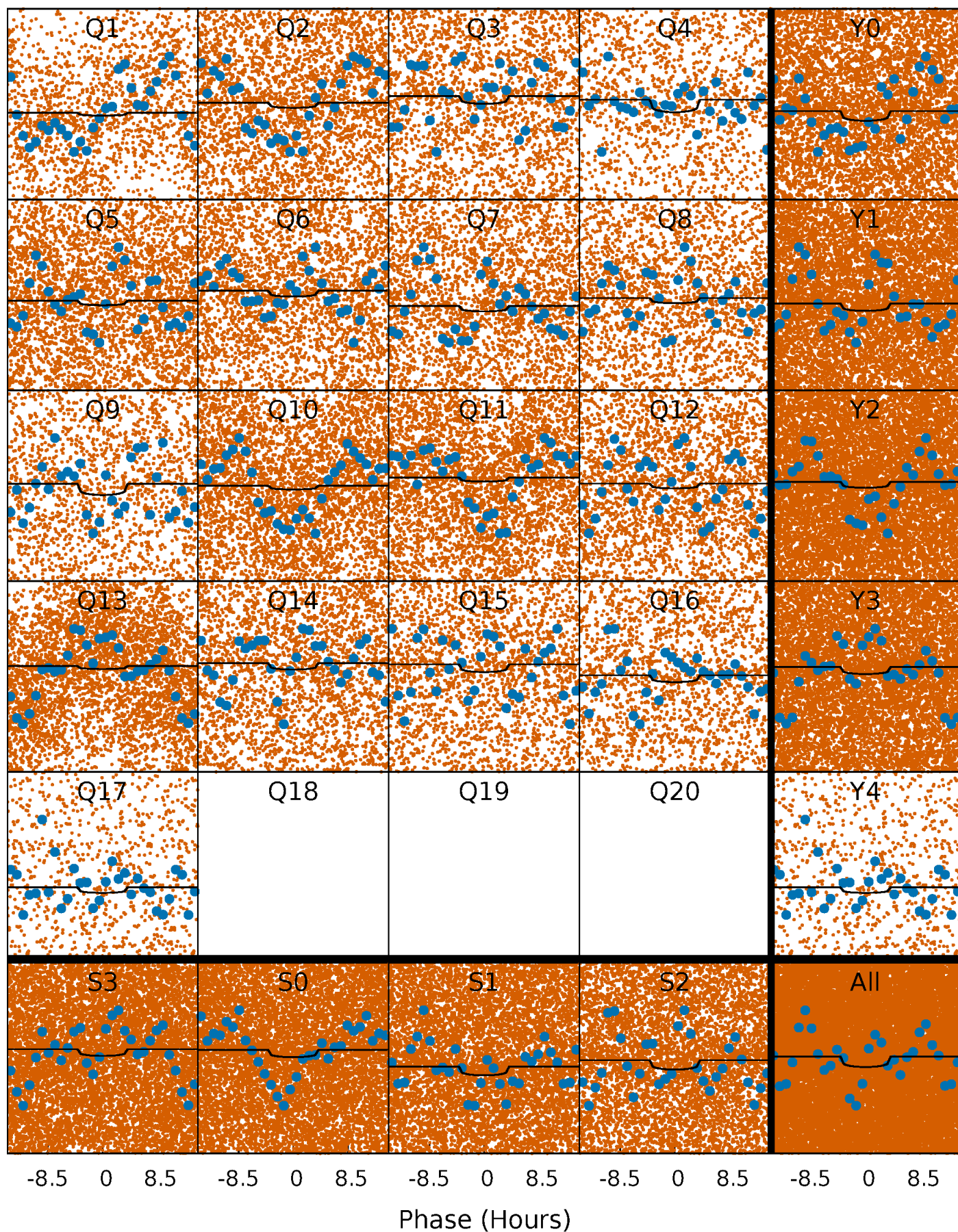
PDC Quarter-Phased Transit Curves

TCE 007898445-01 P= 1.069082 Days $T_0=131.906515$ (BKJD)



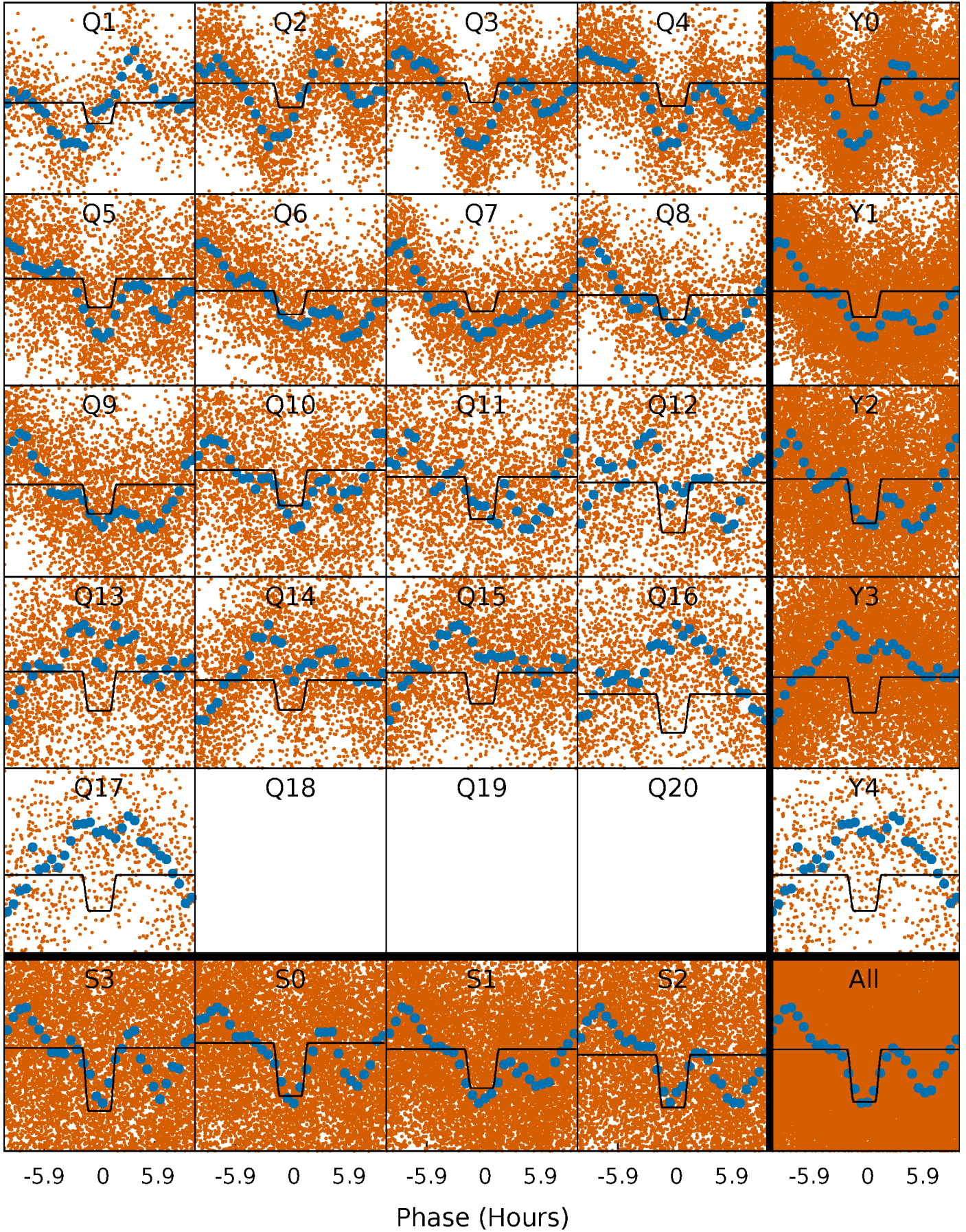
DV Quarter-Phased Transit Curves

TCE 007898445-01 P= 1.069082 Days $T_0=131.906515$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

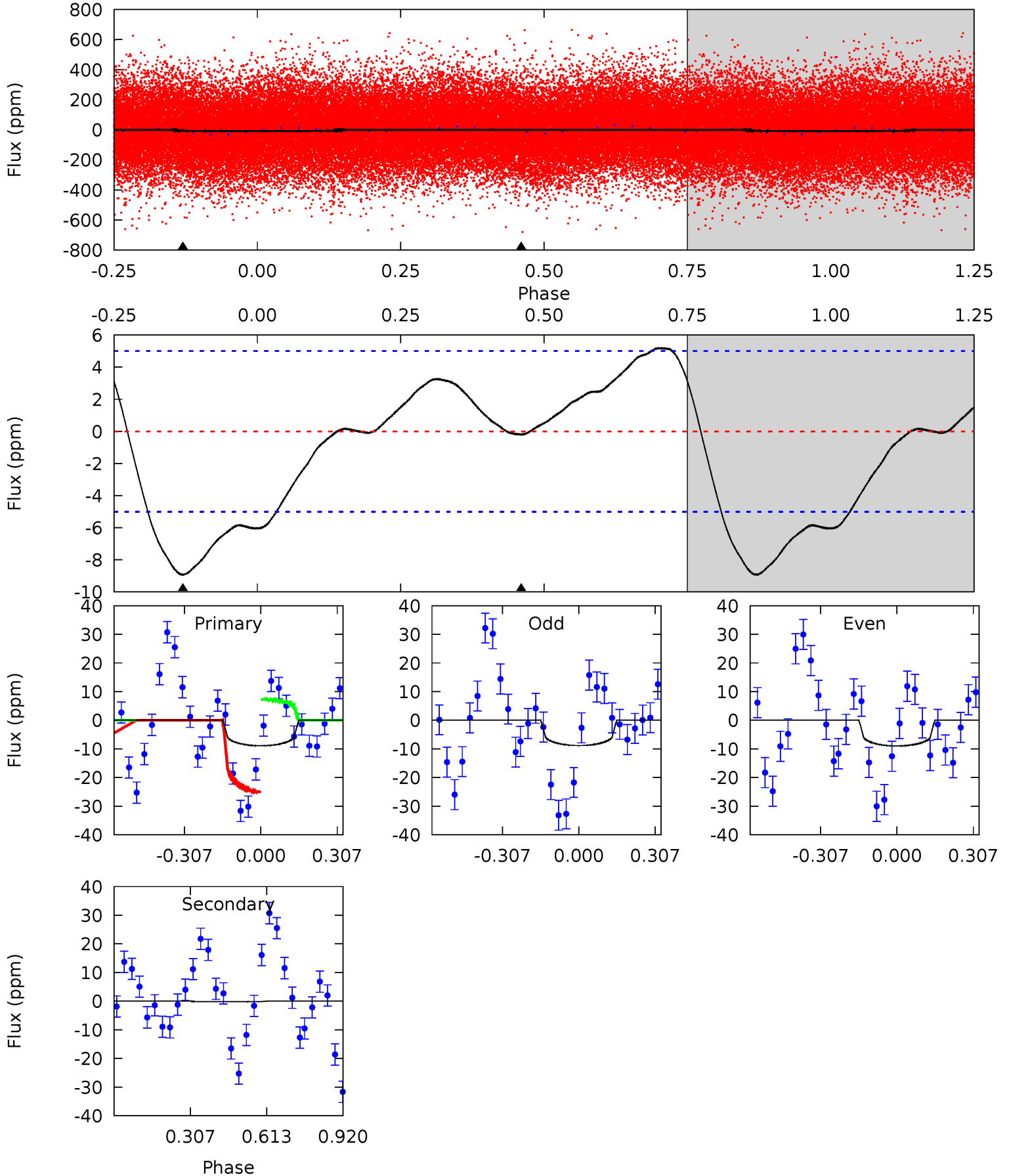
TCE 007898445-01 P= 1.069036 Days $T_0=131.883800$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-01, P = 1.069082 Days, E = 130.837433 Days

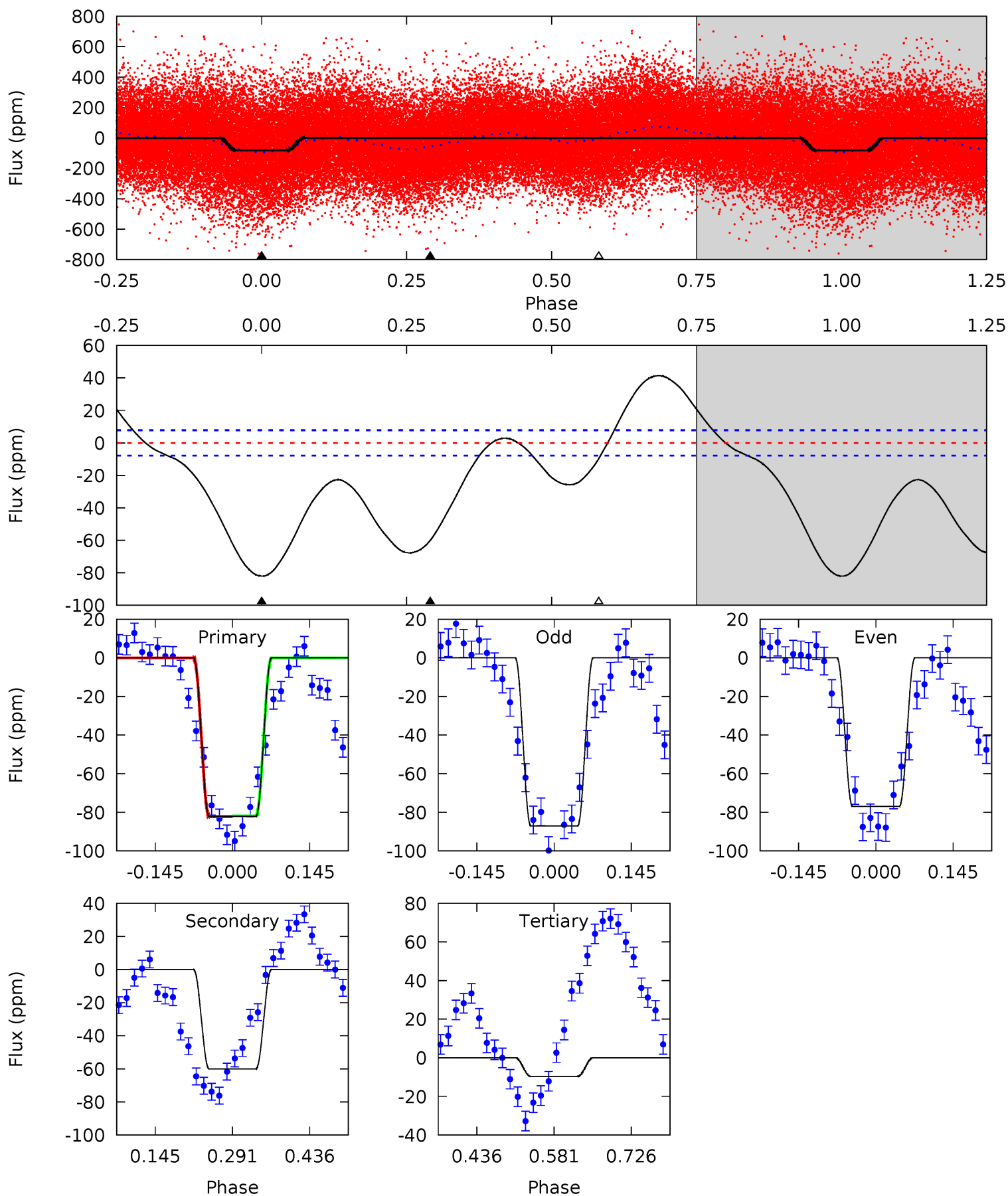
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.71	0.17	0	0	4.32	1.02	0.19	7.71	7.71	0.17	0.17	0.07	1.04	0.37	7.62



Alt Model-Shift Uniqueness Test

007898445-01, P = 1.069036 Days, E = 130.814764 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.0	34.4	5.51	0	4.49	1.46	12.5	41.5	47.0	28.9	34.4	2.89	0.98	0.34	0.11



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-0 ± 1	$1.14^{+0.83}_{-0.66}$	5223^{+248}_{-462}	-4338^{+8505}_{-818}	$0.028^{+0.514}_{-0.401}$
Alt.	-60 ± 2	$3.88^{+1.13}_{-1.06}$	5209^{+279}_{-478}	5819^{+1011}_{-749}	$1.413^{+1.277}_{-0.564}$

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

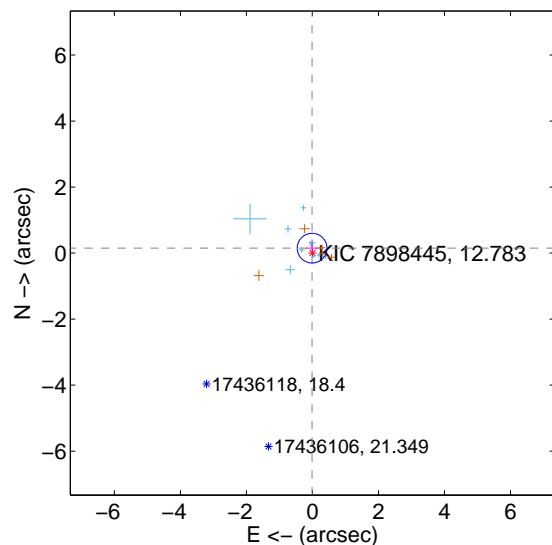
Supplemental centroid analysis for 007898445-01. Kepler magnitude: 12.78. Transit SNR 3.30

There are 11 quarters with good PRF difference image offsets

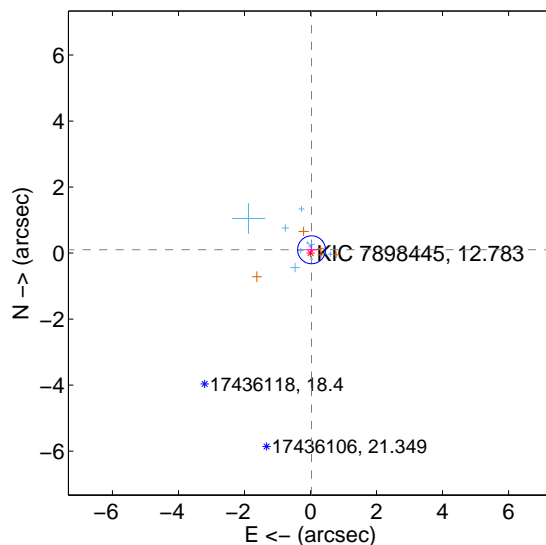
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 0.150	1.00	0.011 ± 0.189	0.150 ± 0.148
PRF-fit source offset from KIC position	0.106 ± 0.141	0.75	-0.030 ± 0.192	0.101 ± 0.143
photometric centroid source offset	1.30 ± 1.60	0.81	-0.50 ± 1.44	1.20 ± 1.63

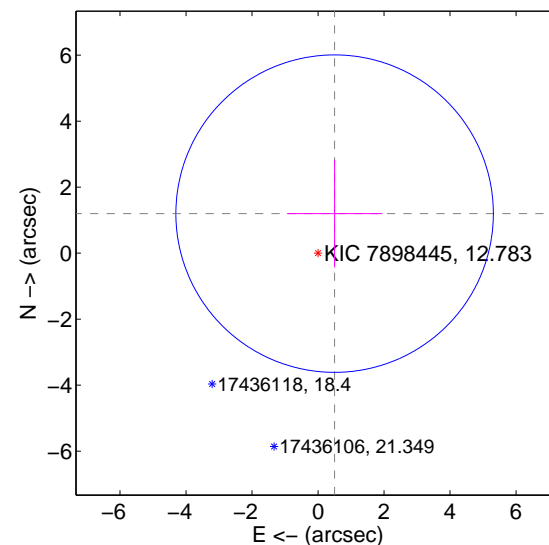
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

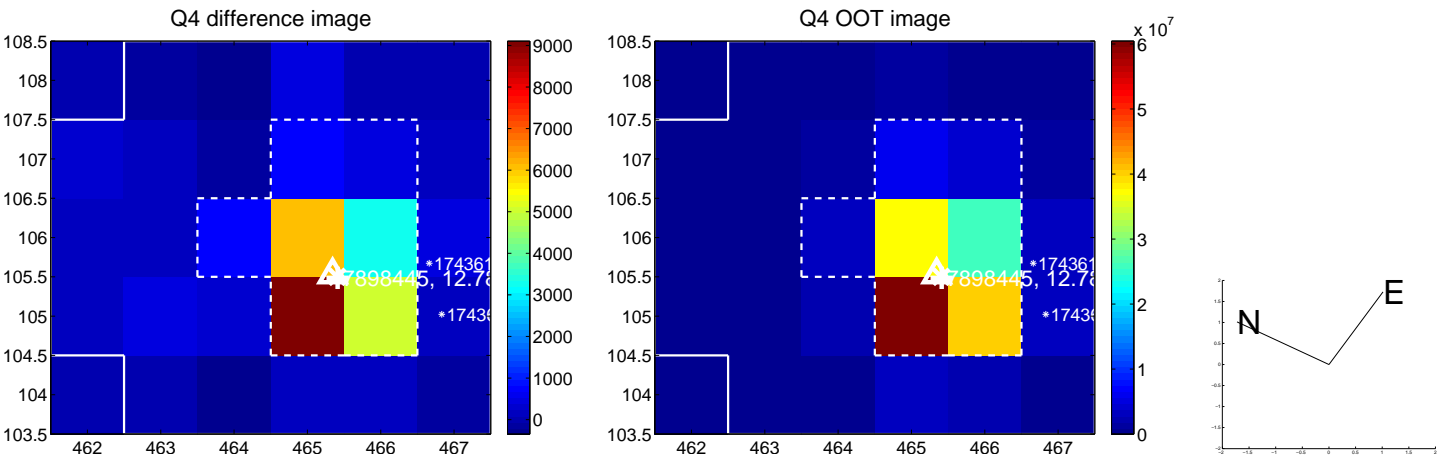
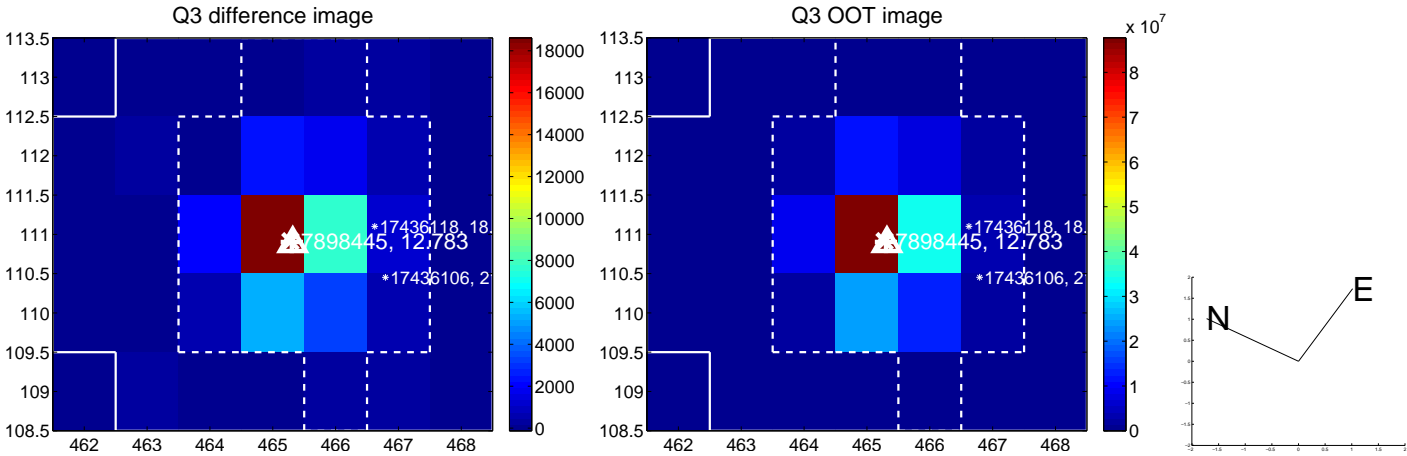
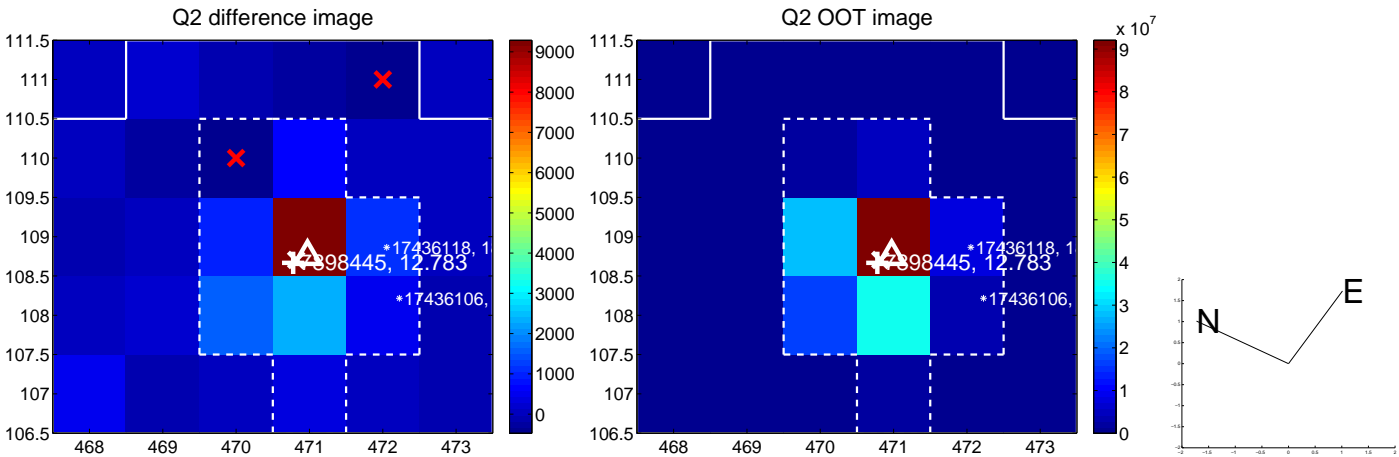
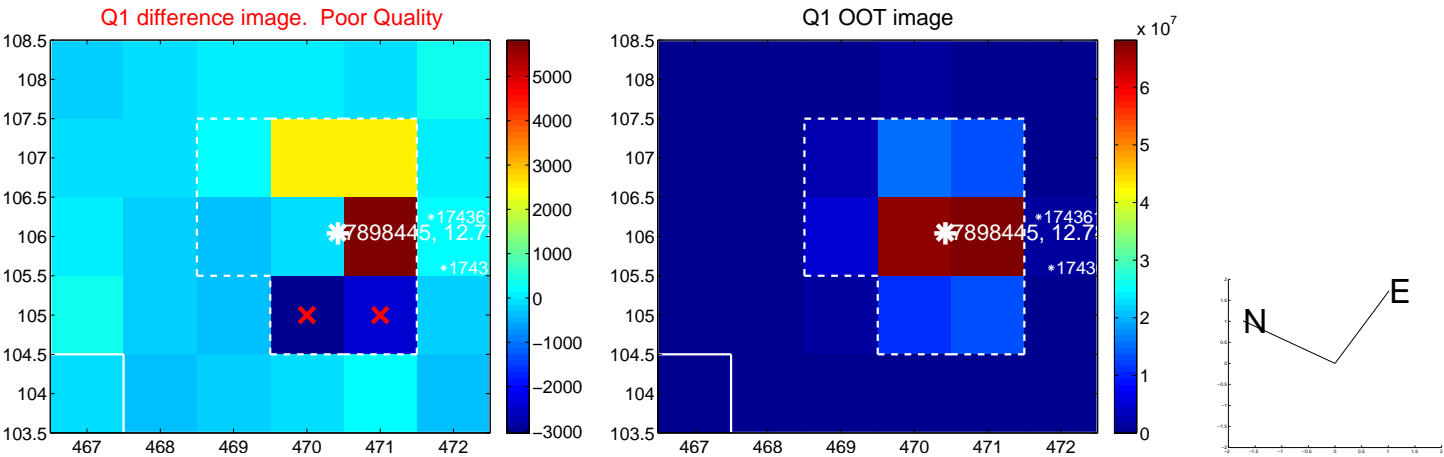


offset from photometric centroids

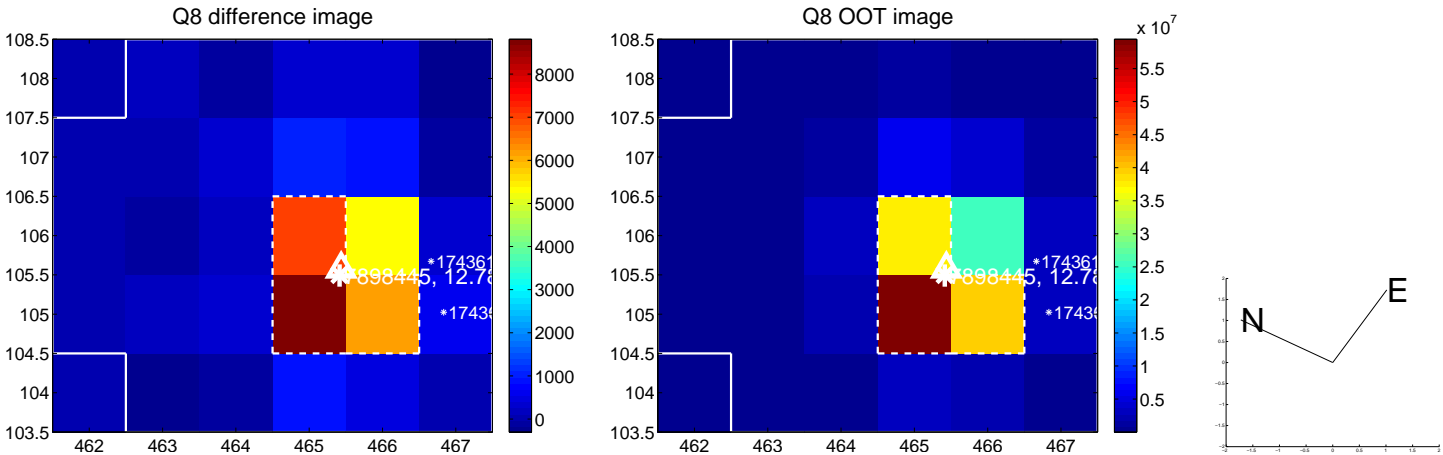
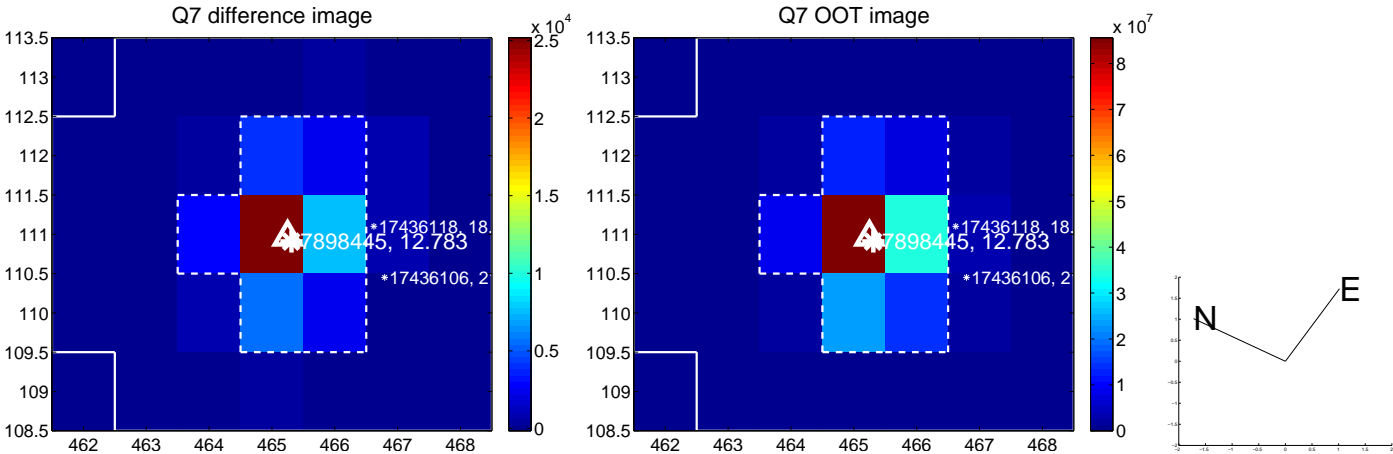
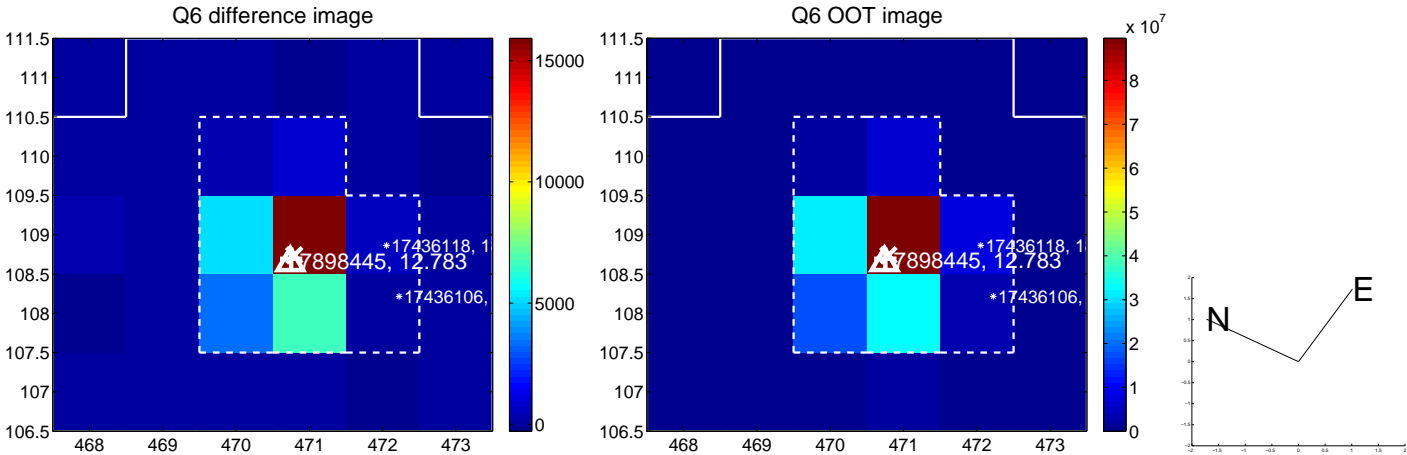
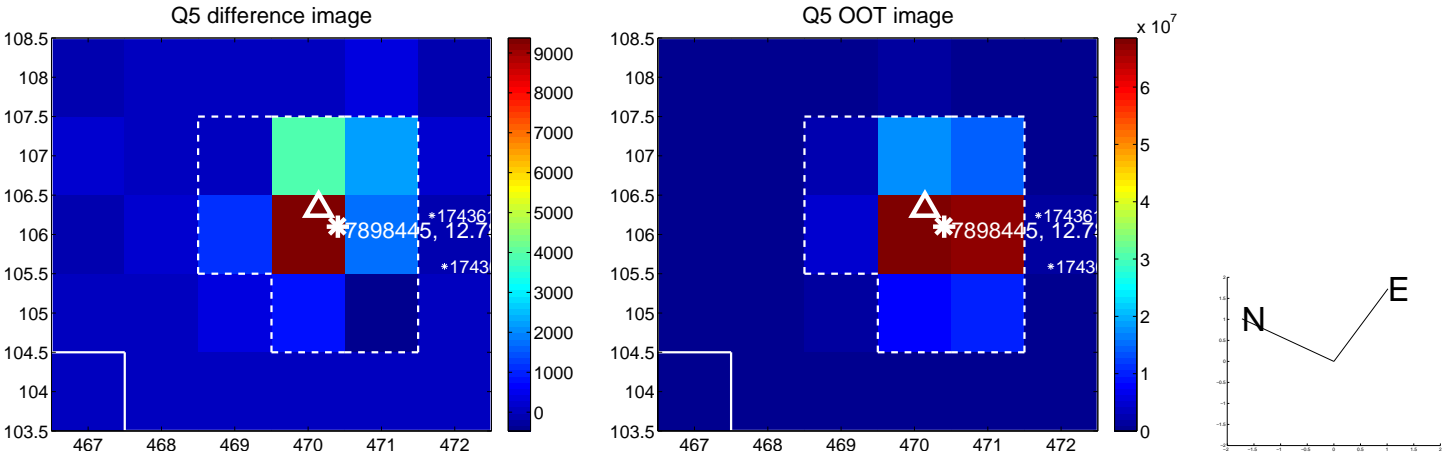


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

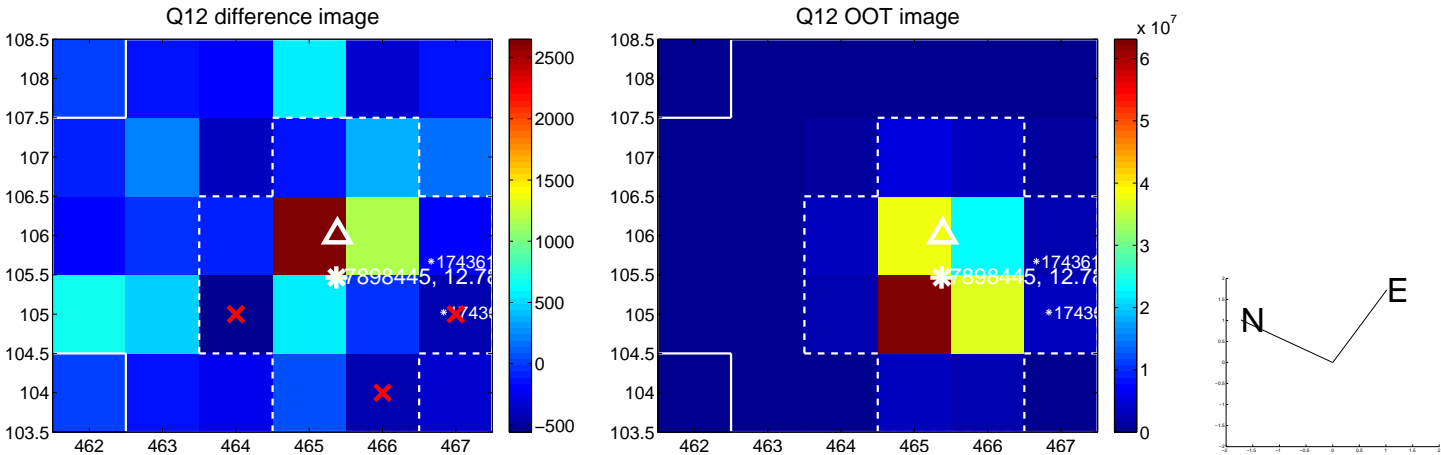
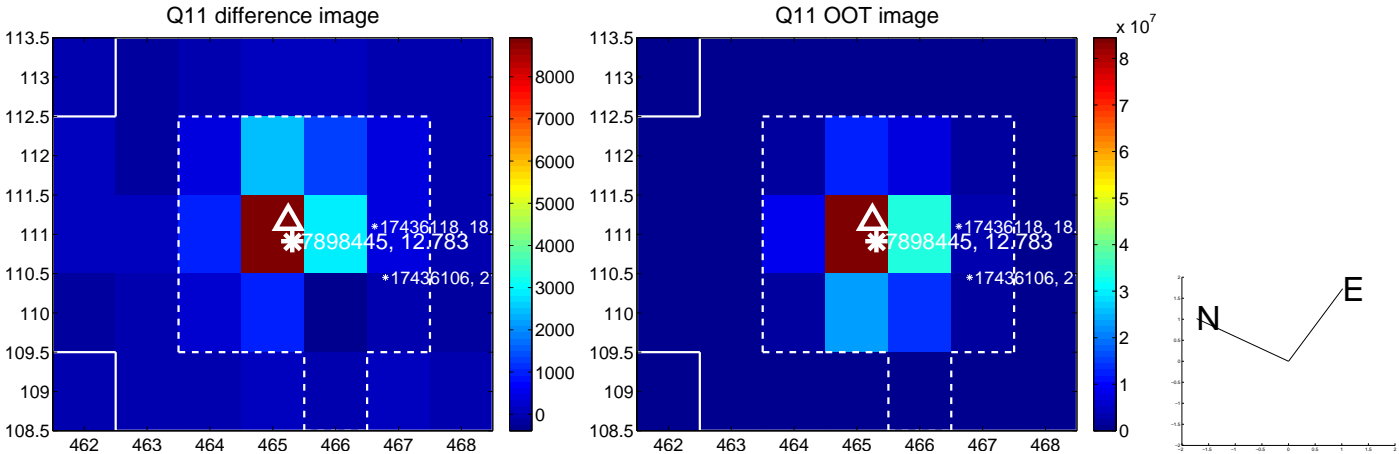
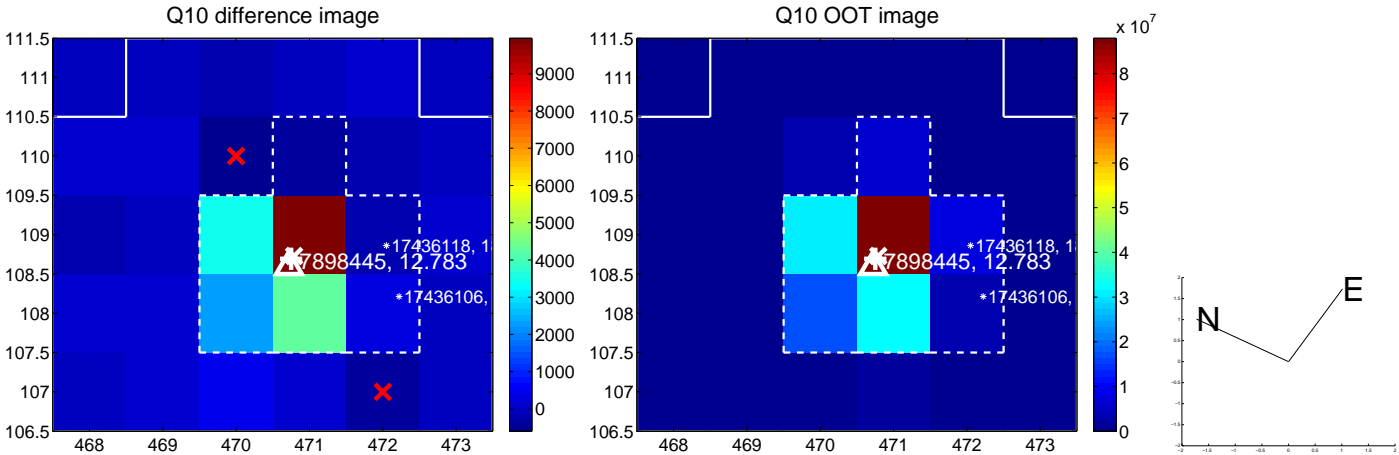
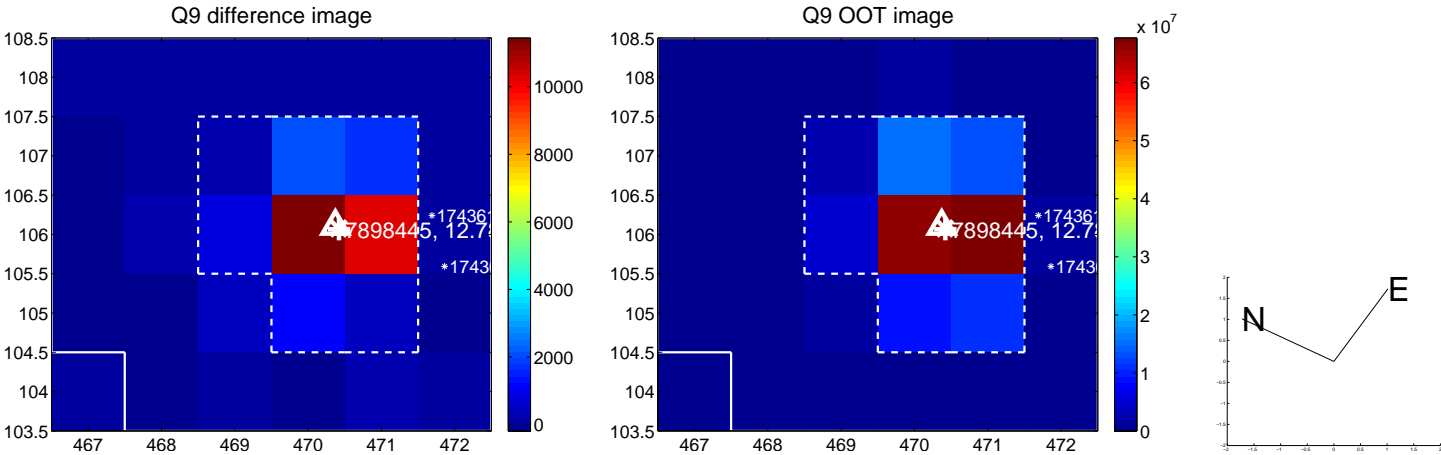
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



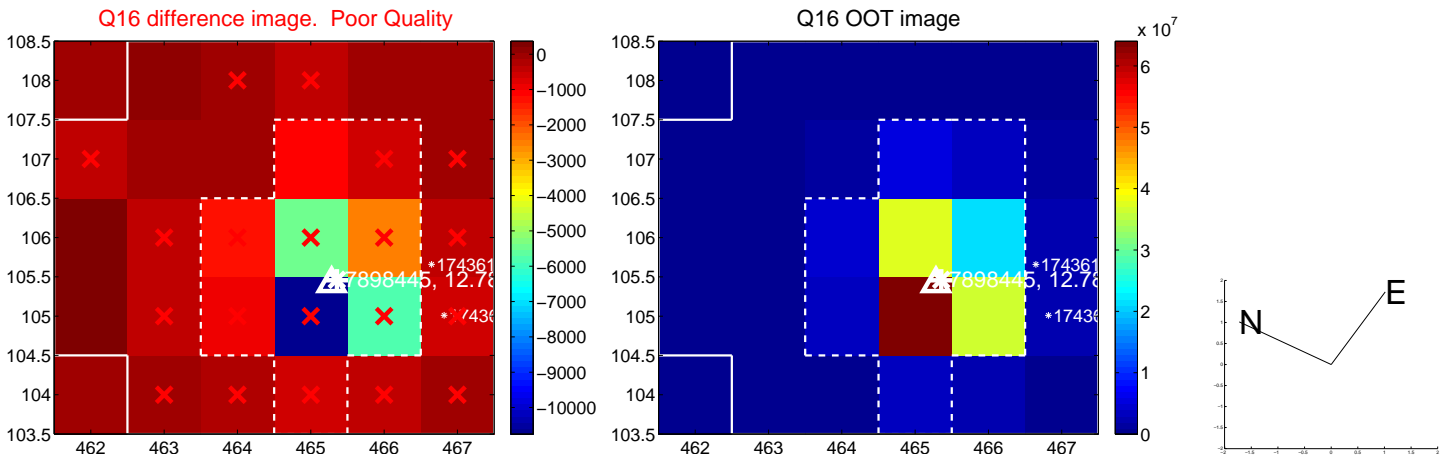
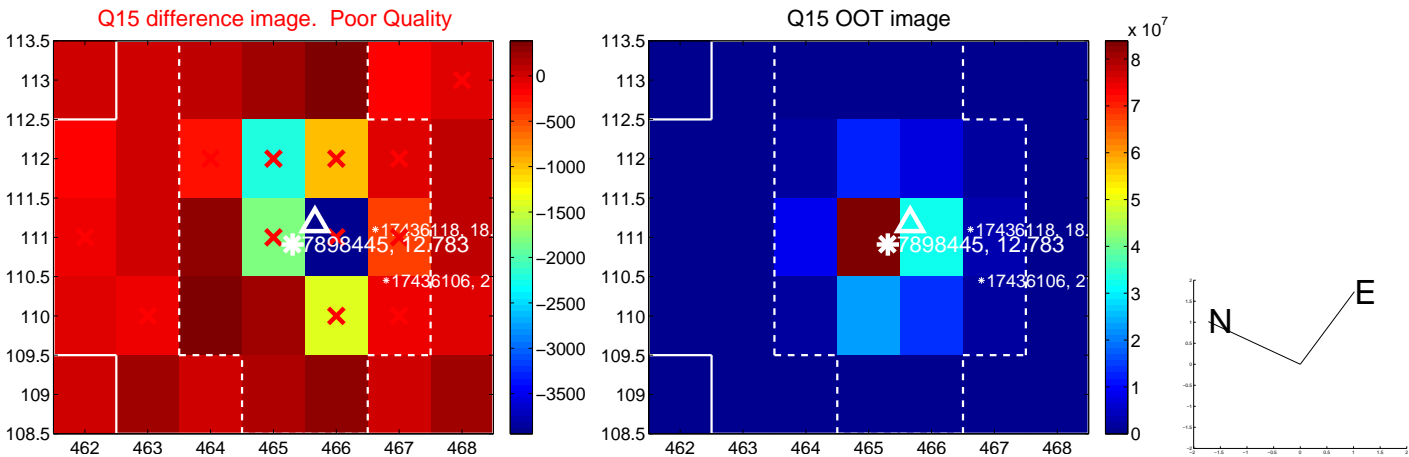
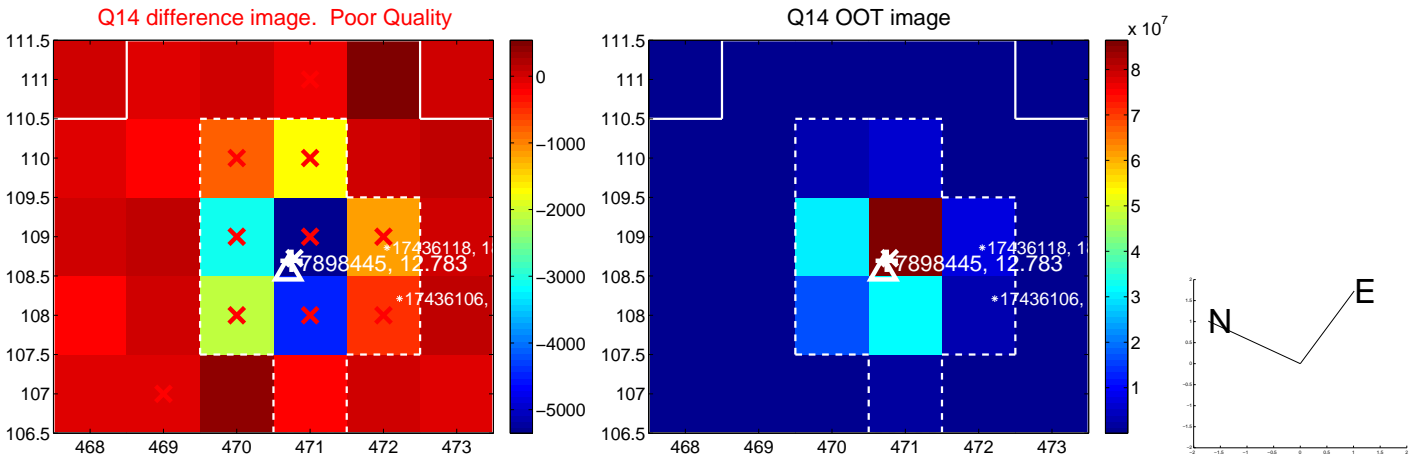
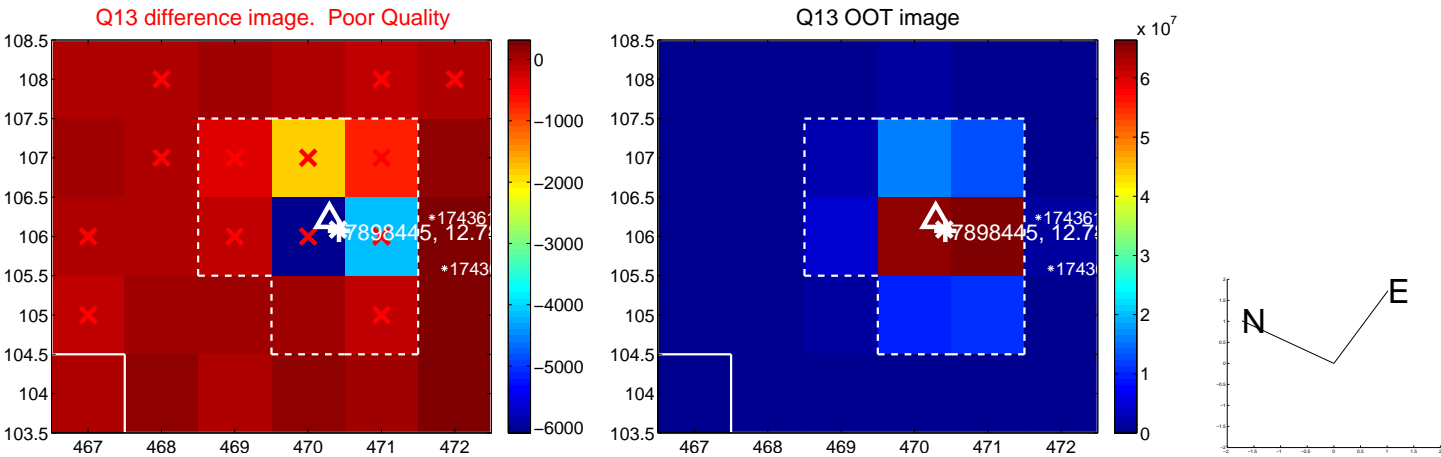
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



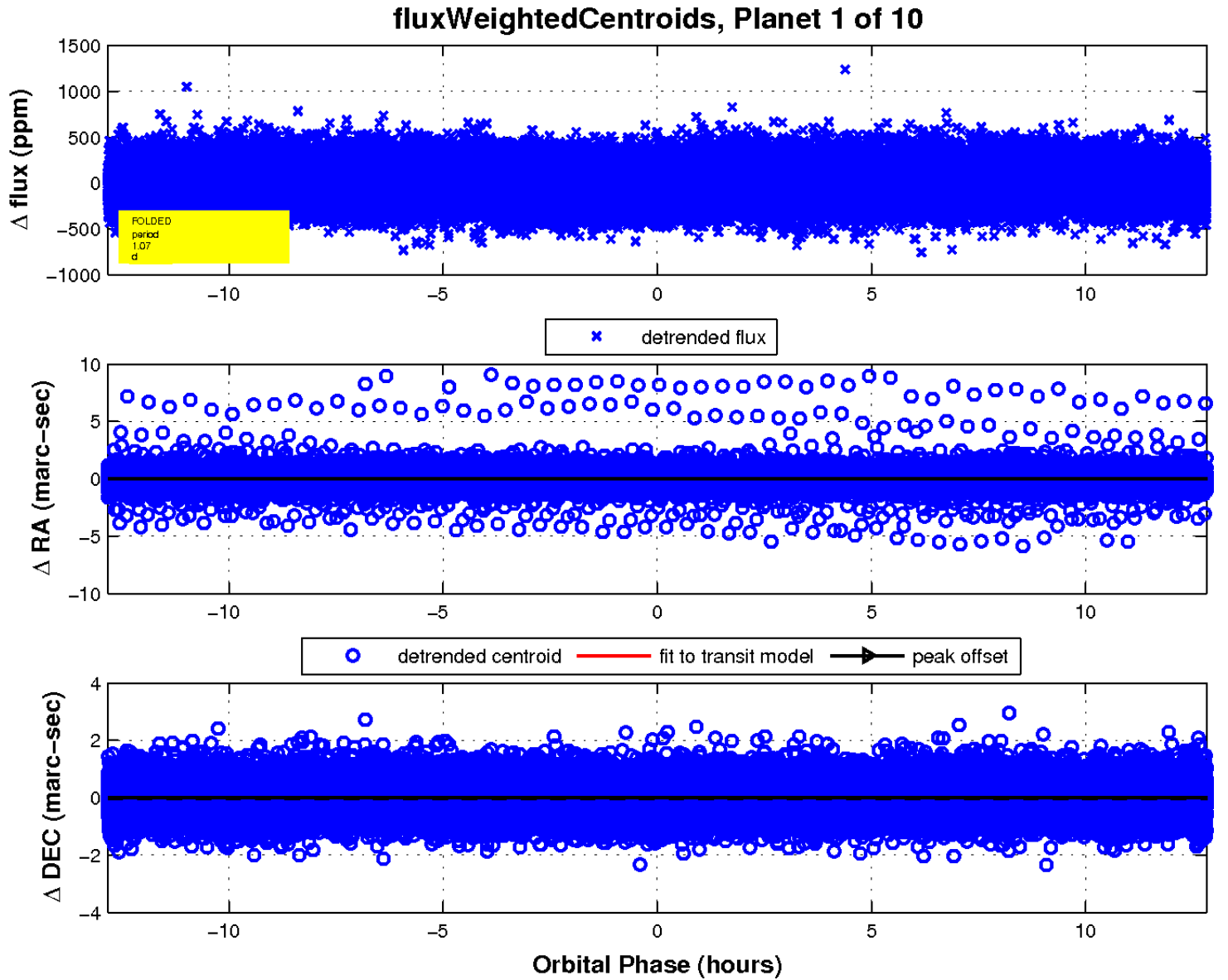
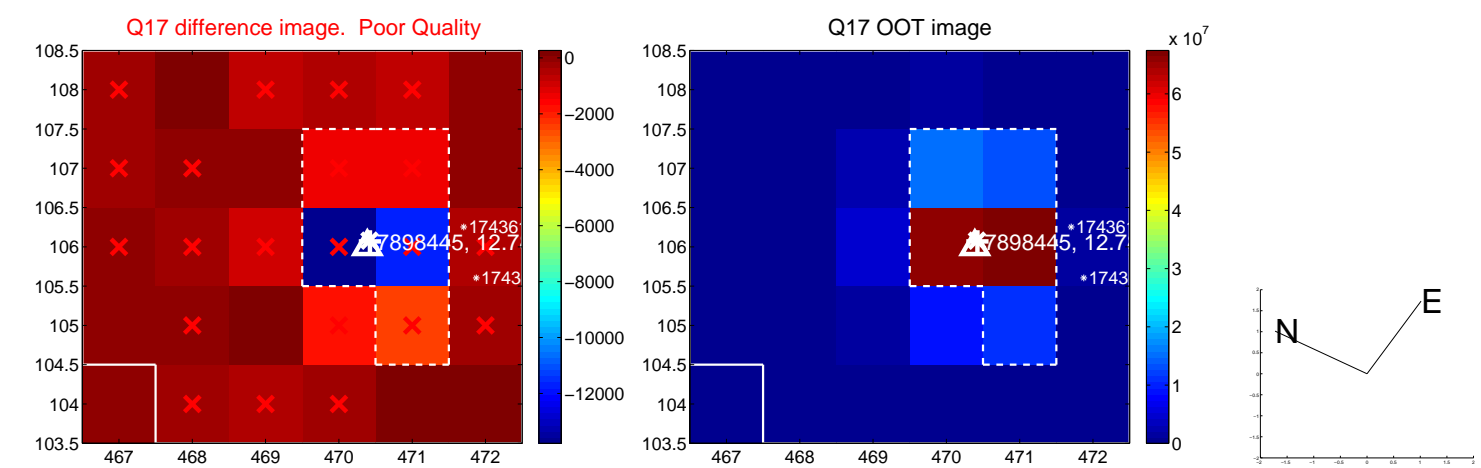
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

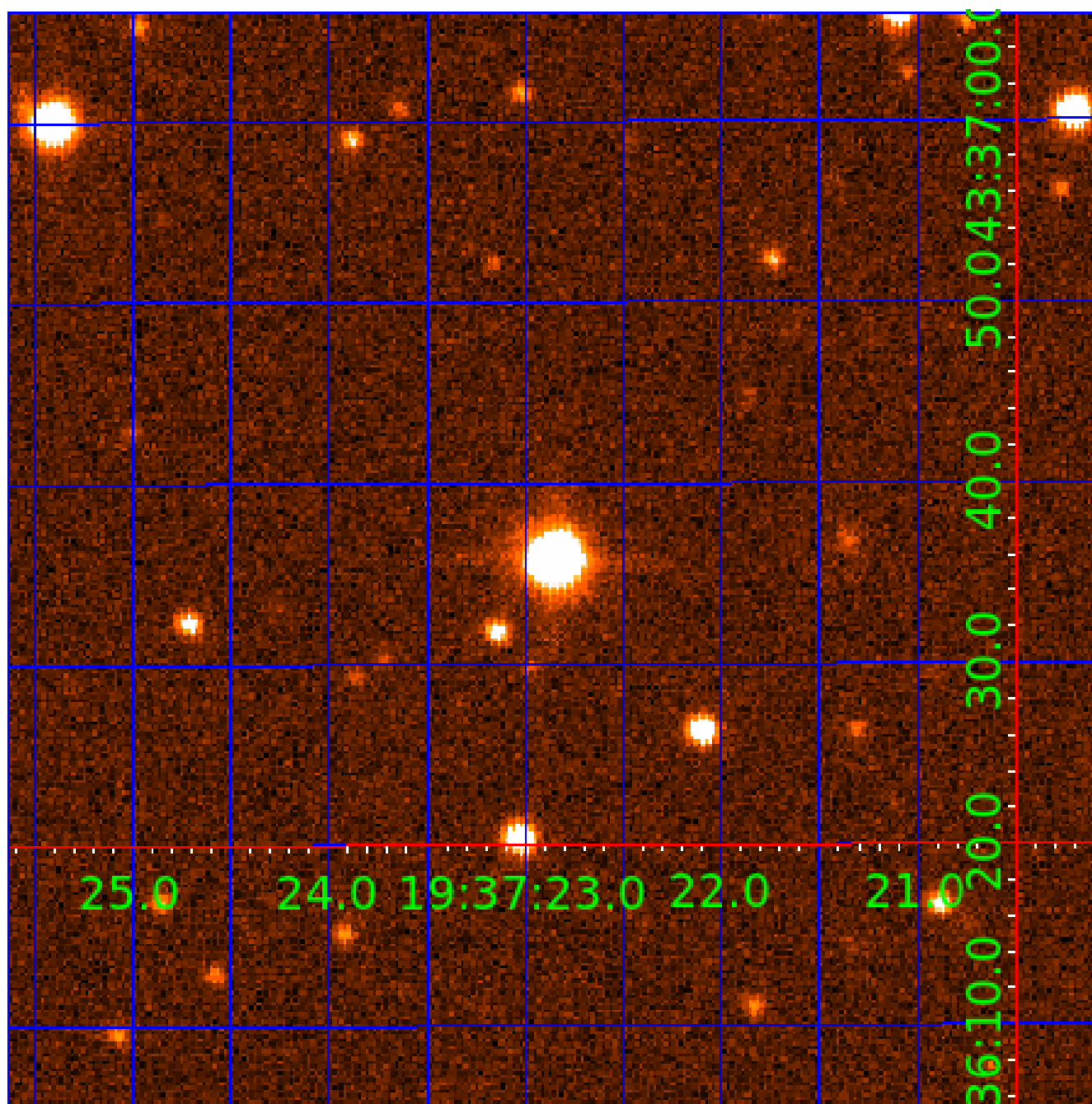


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

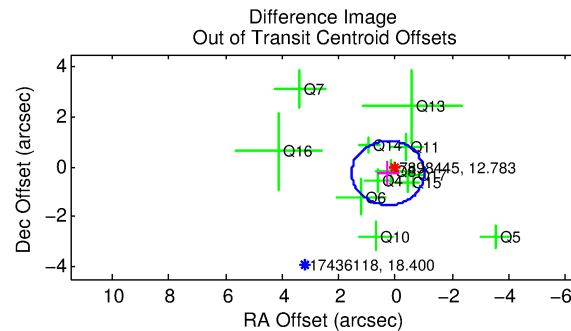
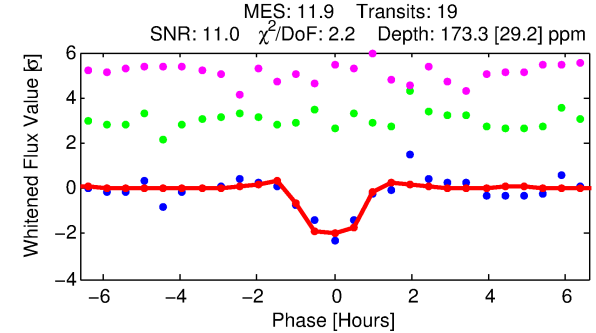
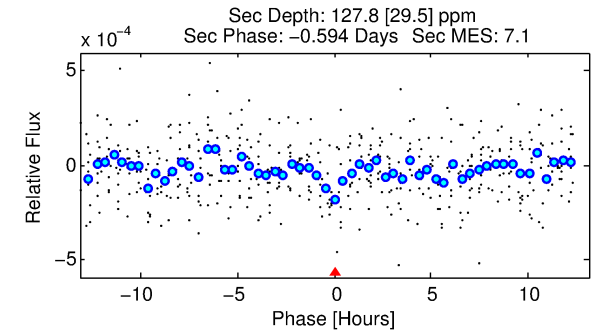
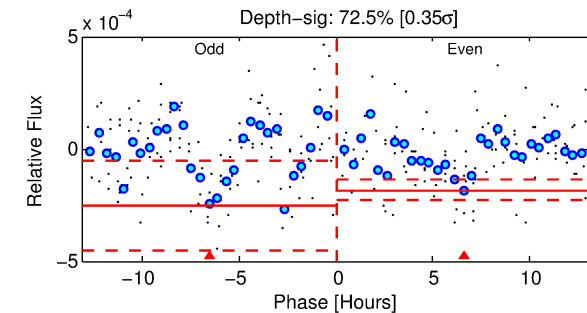
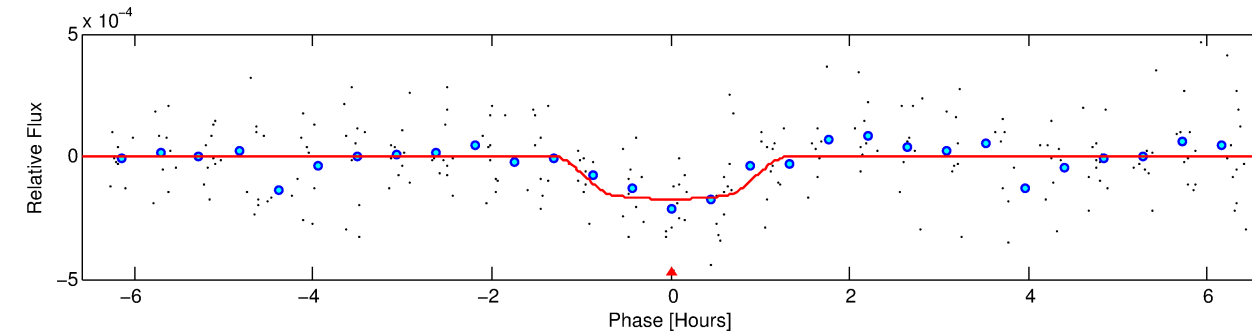
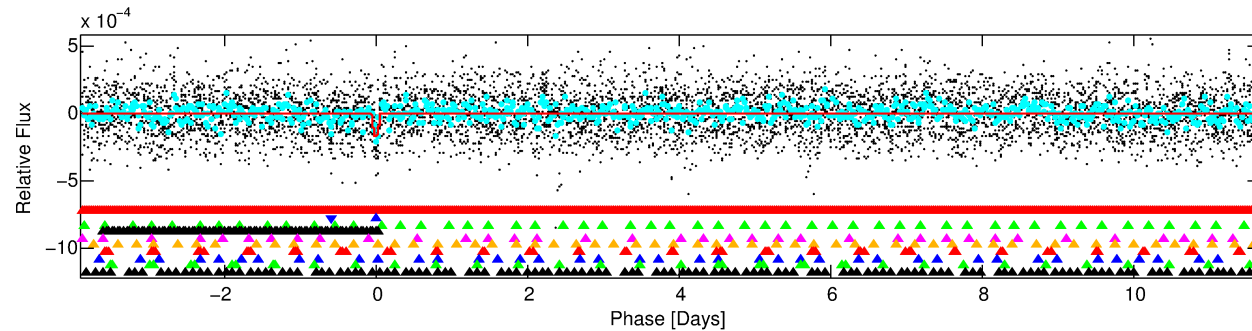
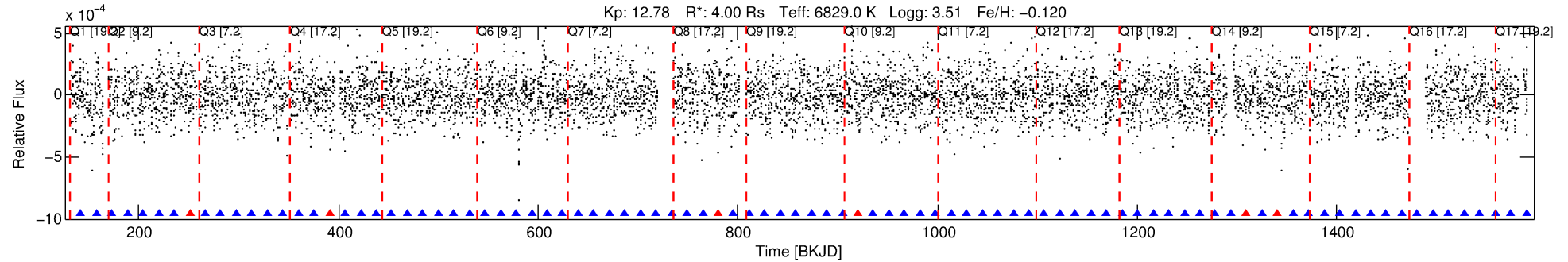
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-02

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 2 of 10 Period: 15.564 d



DV Fit Results:

Period = 15.56375 [0.00014] d
Epoch = 142.1818 [0.0080] BKJD
Rp/R* = 0.0145 [0.0099]
a/R* = 21.73 [90.43]
b = 0.93 [0.60]
Seff = 1373.06 [821.63]
Teq = 1552 [232] K
Rp = 6.32 [4.94] Re
a = 0.1508 [0.0547] AU
Ag = 40.02 [60.45] [0.65 σ]
Teffp = 6036 [2112] K [2.11 σ]

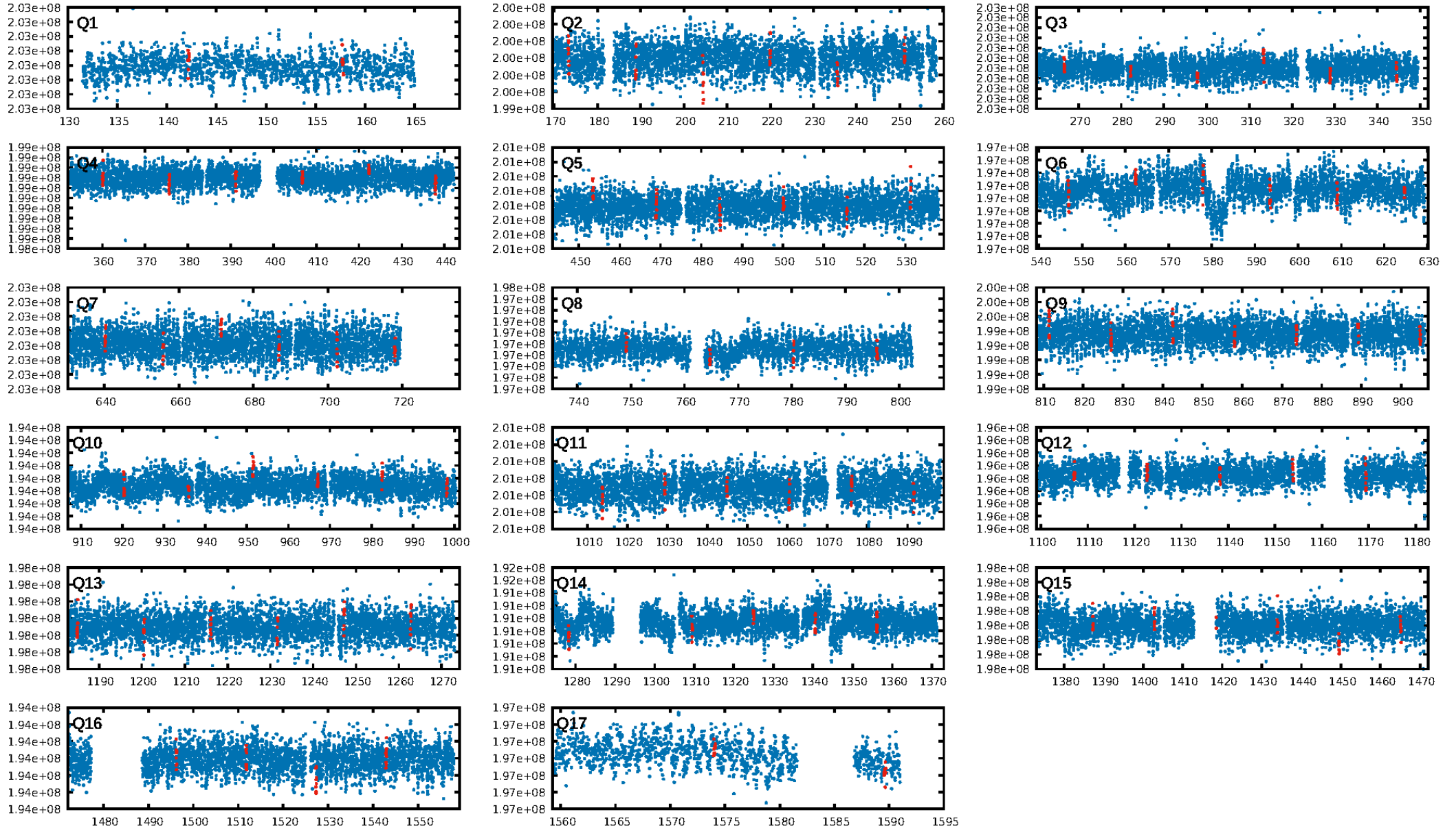
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.33 σ]
LongPeriod-sig: 24.0% [0.31 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 95.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.67 [12/18]
GhostDiagnostic-chr: 0.1874
Centroid-sig: 76.0%
Centroid-so: 0.078 arcsec [0.18 σ]
OotOffset-rm: 0.363 arcsec [0.85 σ]
KicOffset-rm: 0.338 arcsec [0.77 σ]
OotOffset-st: 3/3/3 [12]
KicOffset-st: 3/3/3 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.65 [11/17]

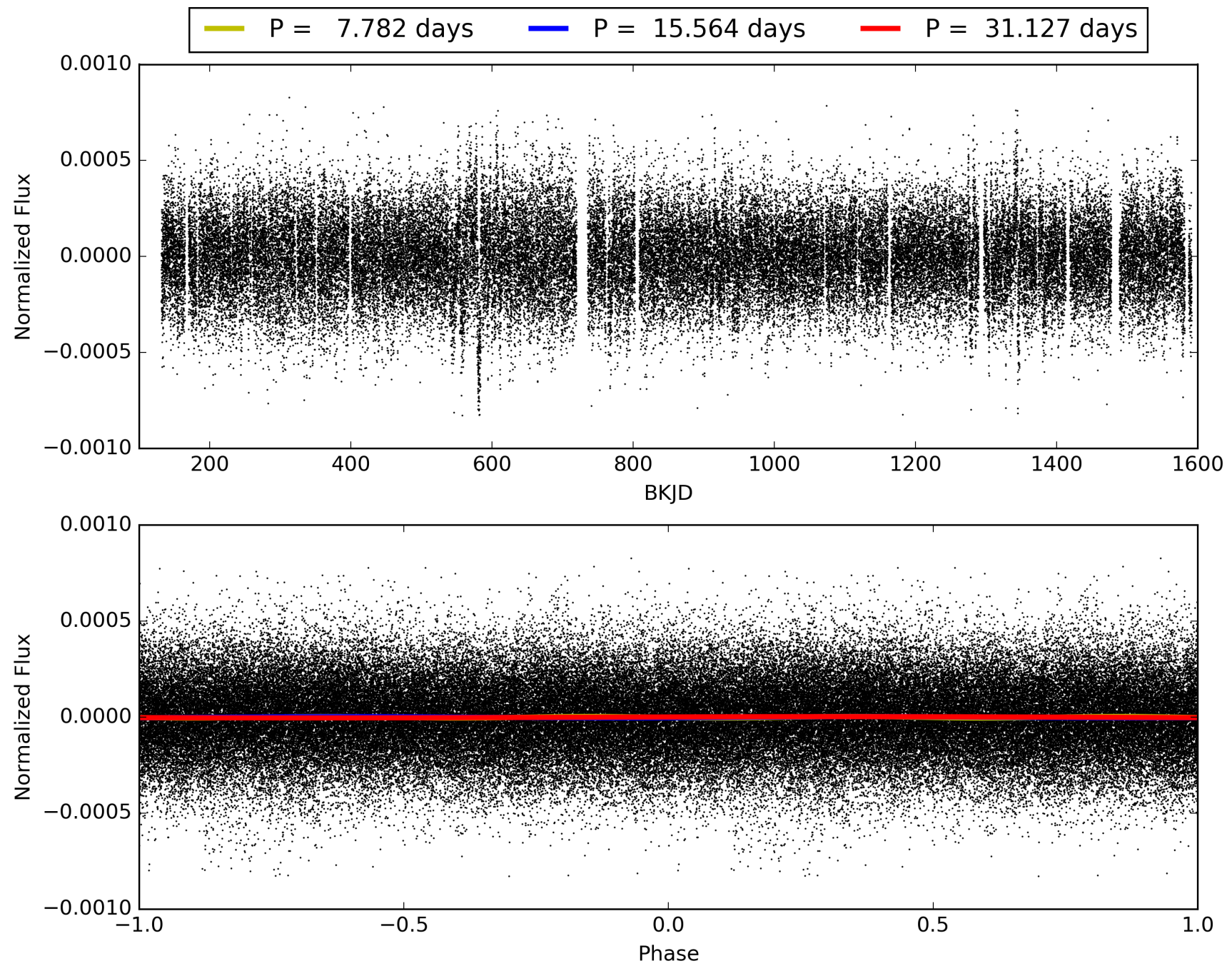
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:37:58 Z

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

TCE 007898445-02, PDC Light Curves

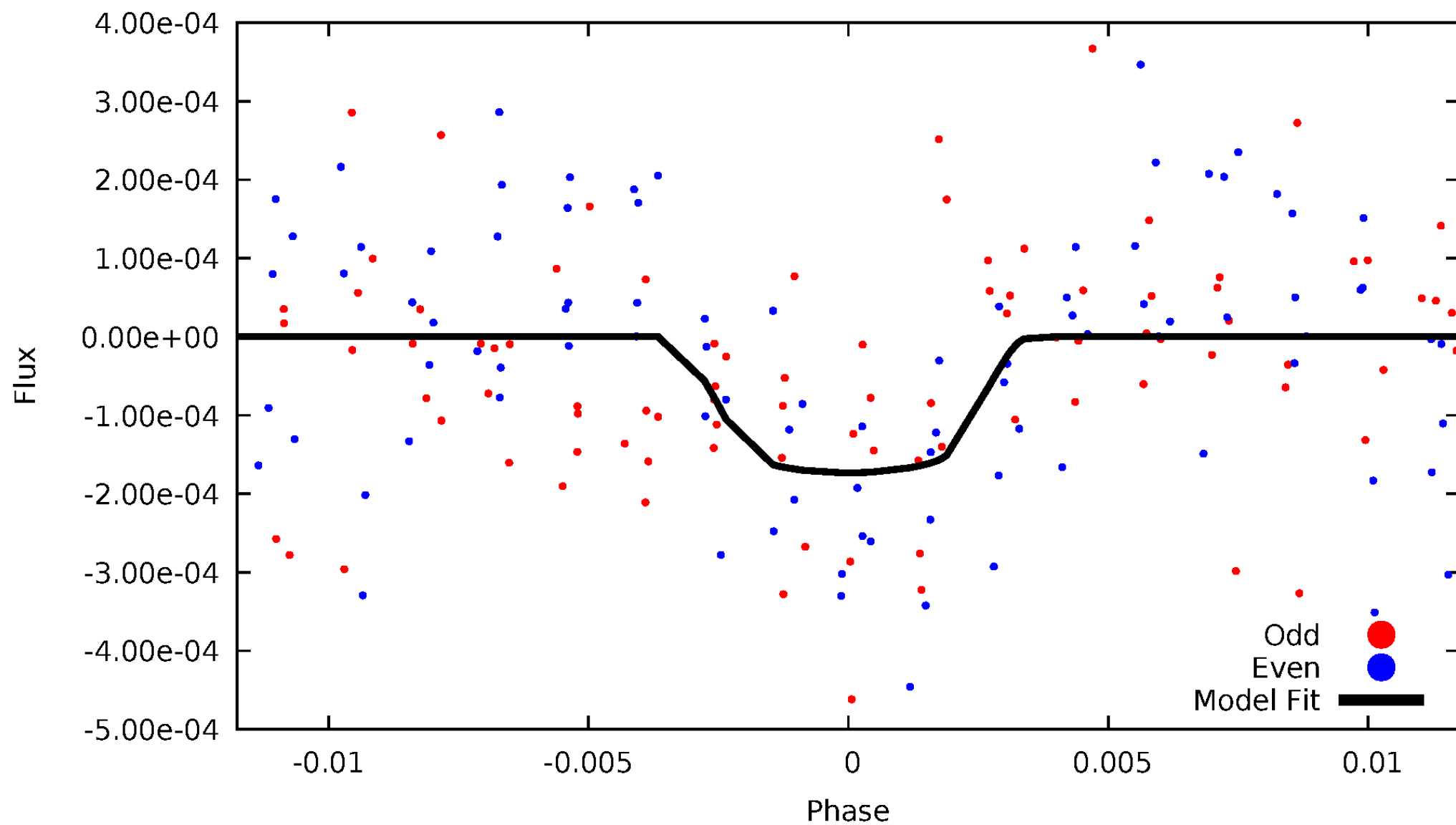


TCE 007898445-02



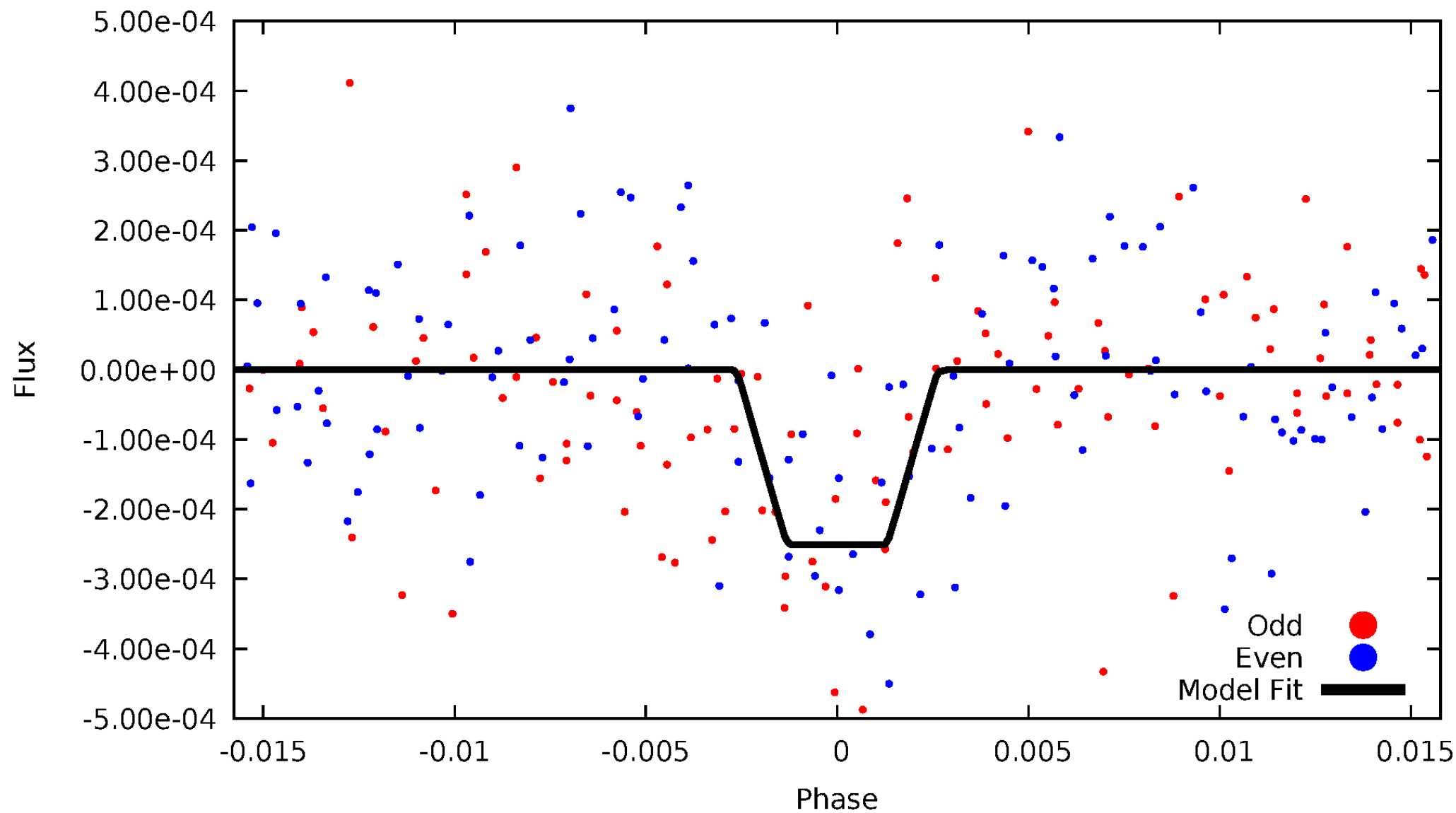
DV Odd/Even

TCE 007898445-02



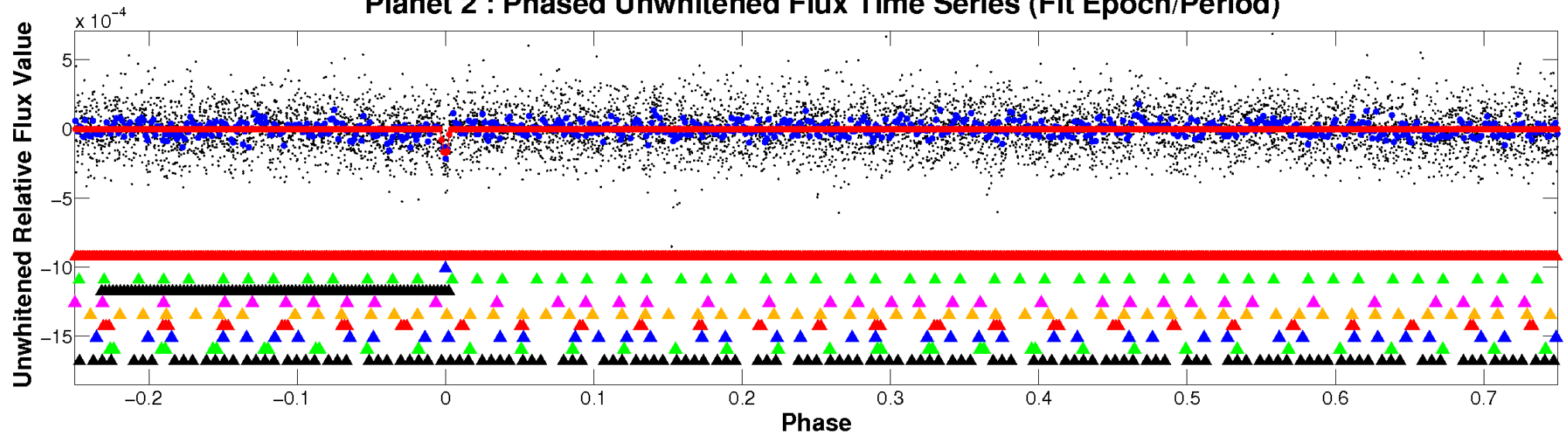
ALT Odd/Even

TCE 007898445-02

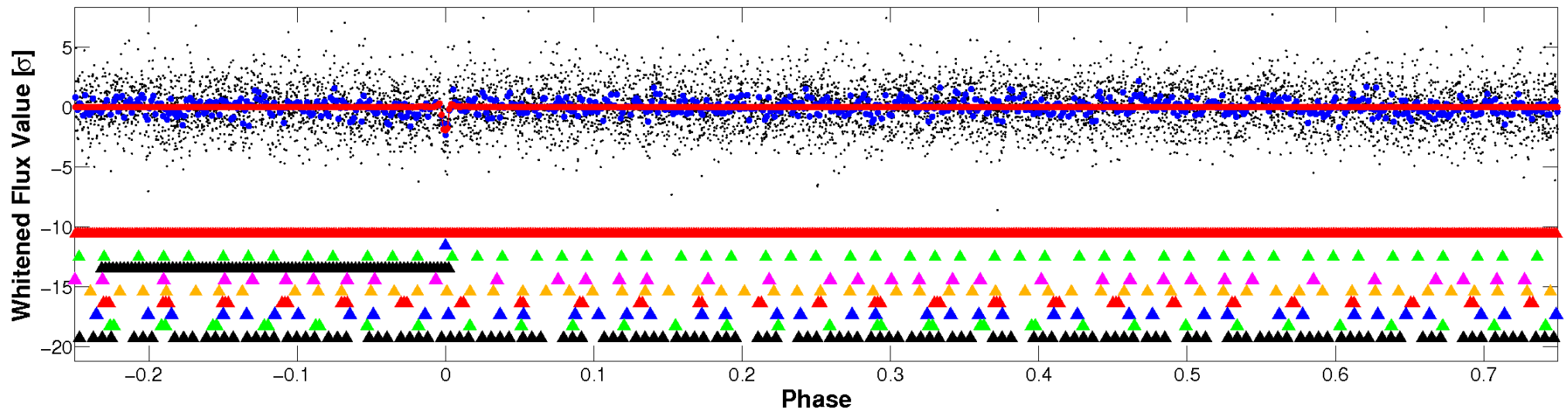


Non-Whitened Vs. Whitened Light Curve

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

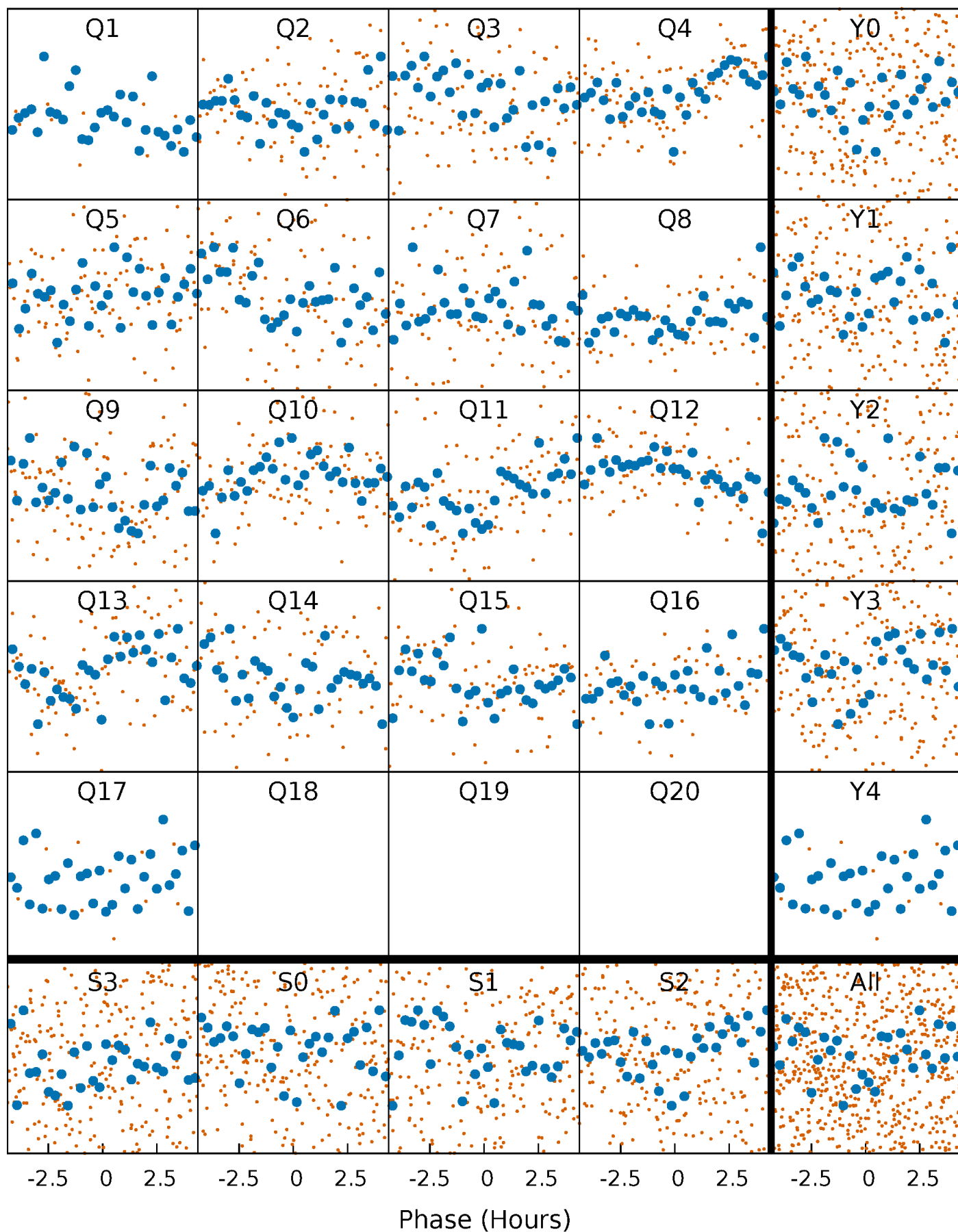


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



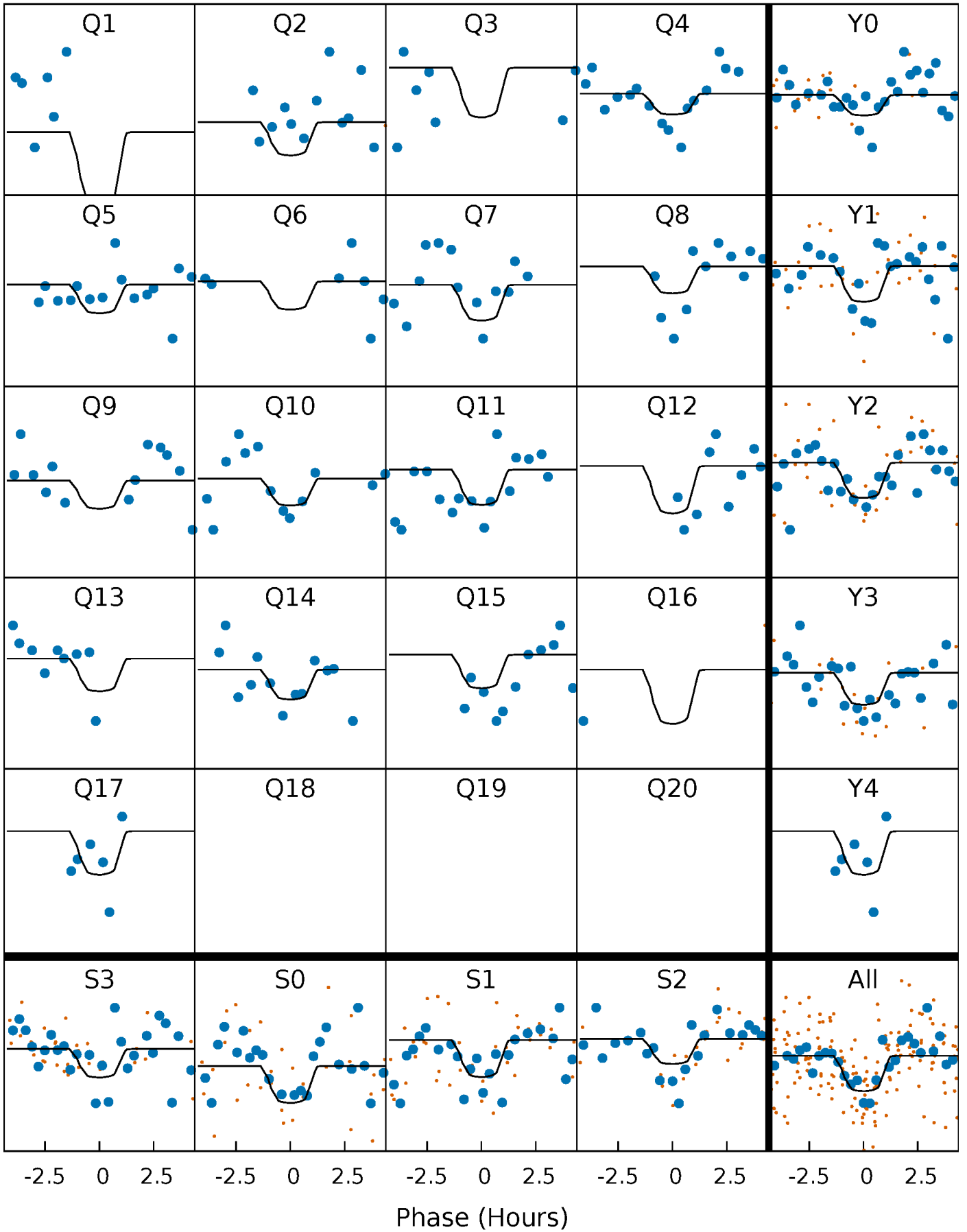
PDC Quarter-Phased Transit Curves

TCE 007898445-02 P= 15.563746 Days $T_0=142.181776$ (BKJD)



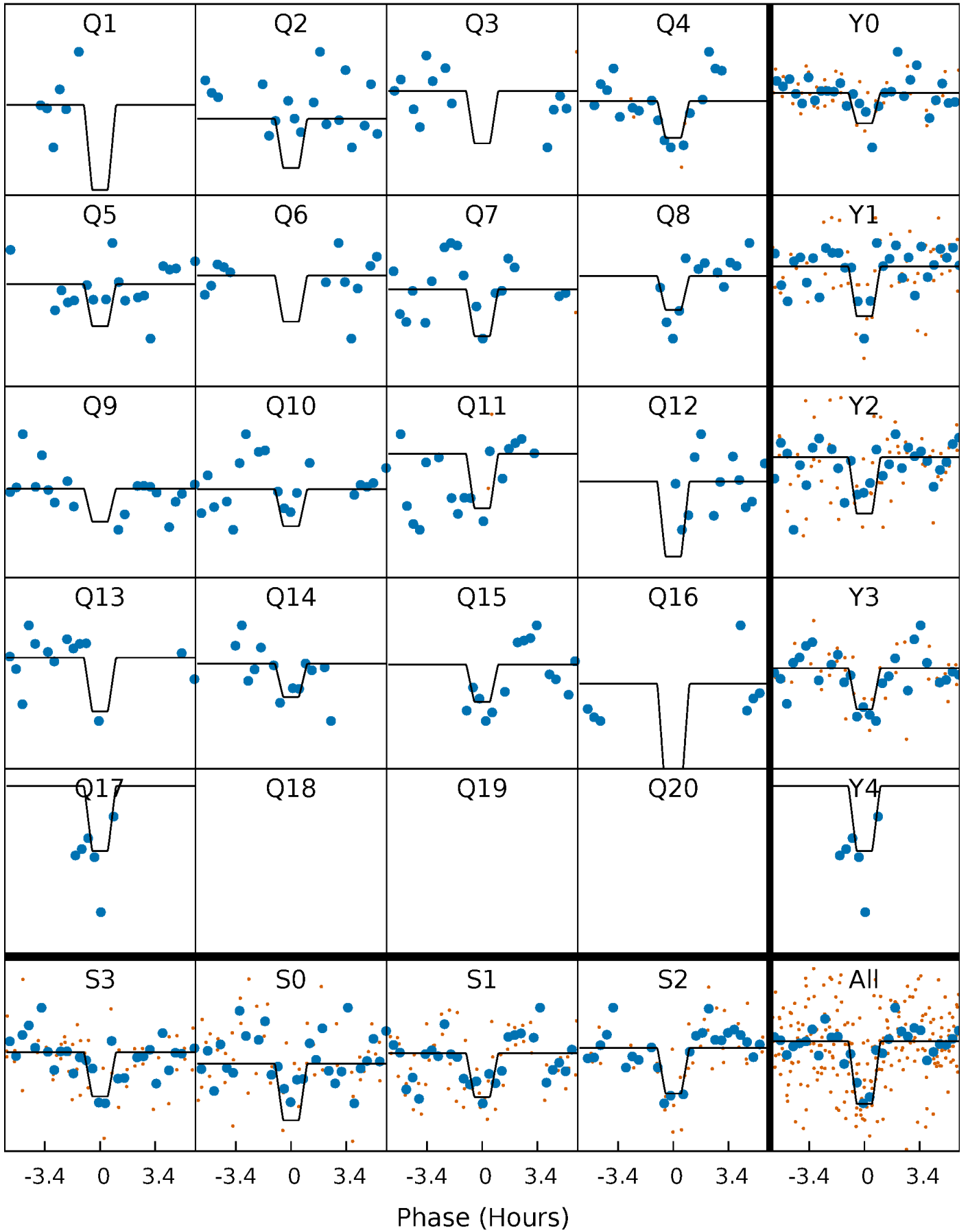
DV Quarter-Phased Transit Curves

TCE 007898445-02 P= 15.563746 Days $T_0=142.181776$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

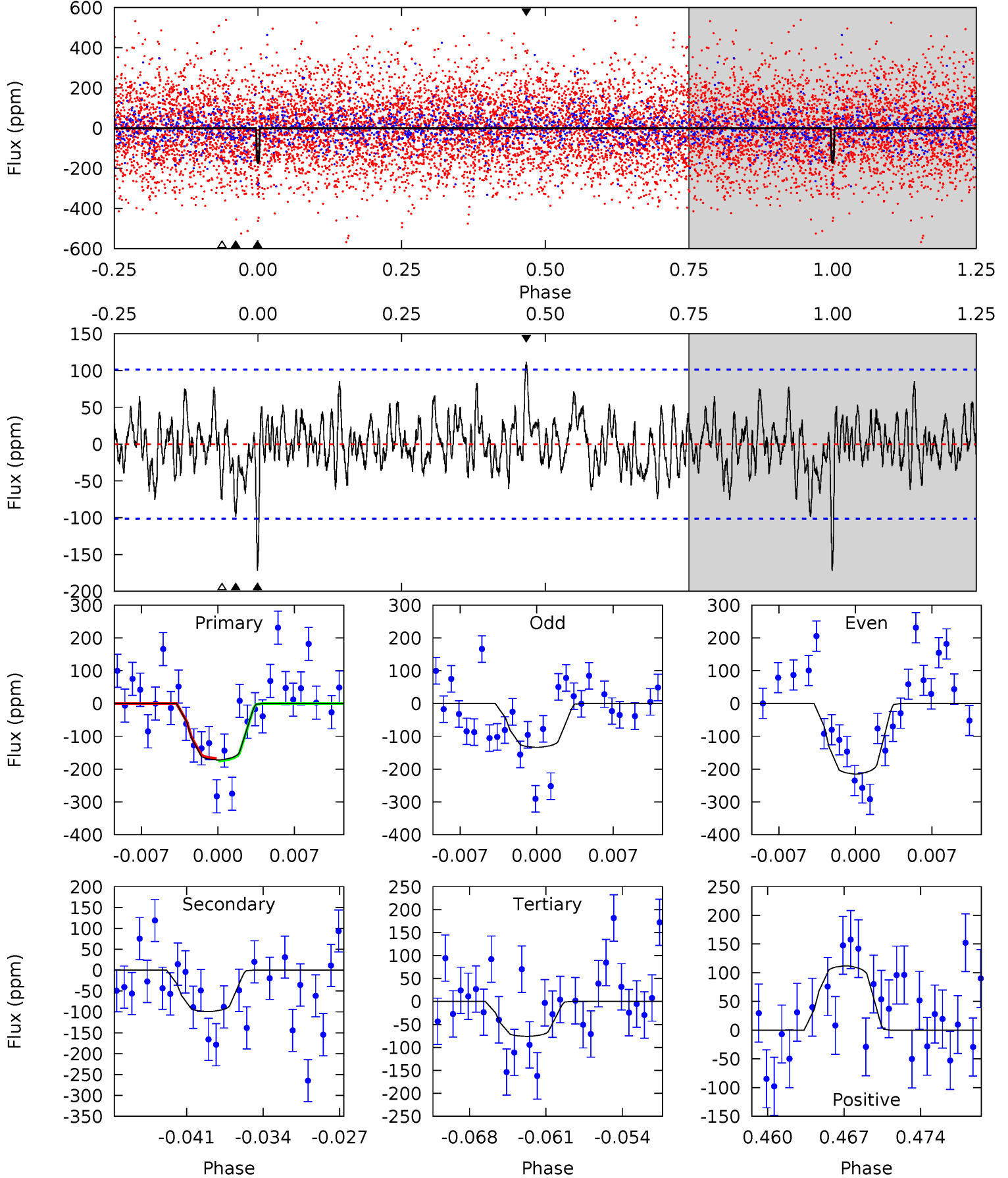
TCE 007898445-02 P= 15.563930 Days $T_0=142.176229$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-02, P = 15.563746 Days, E = 126.618030 Days

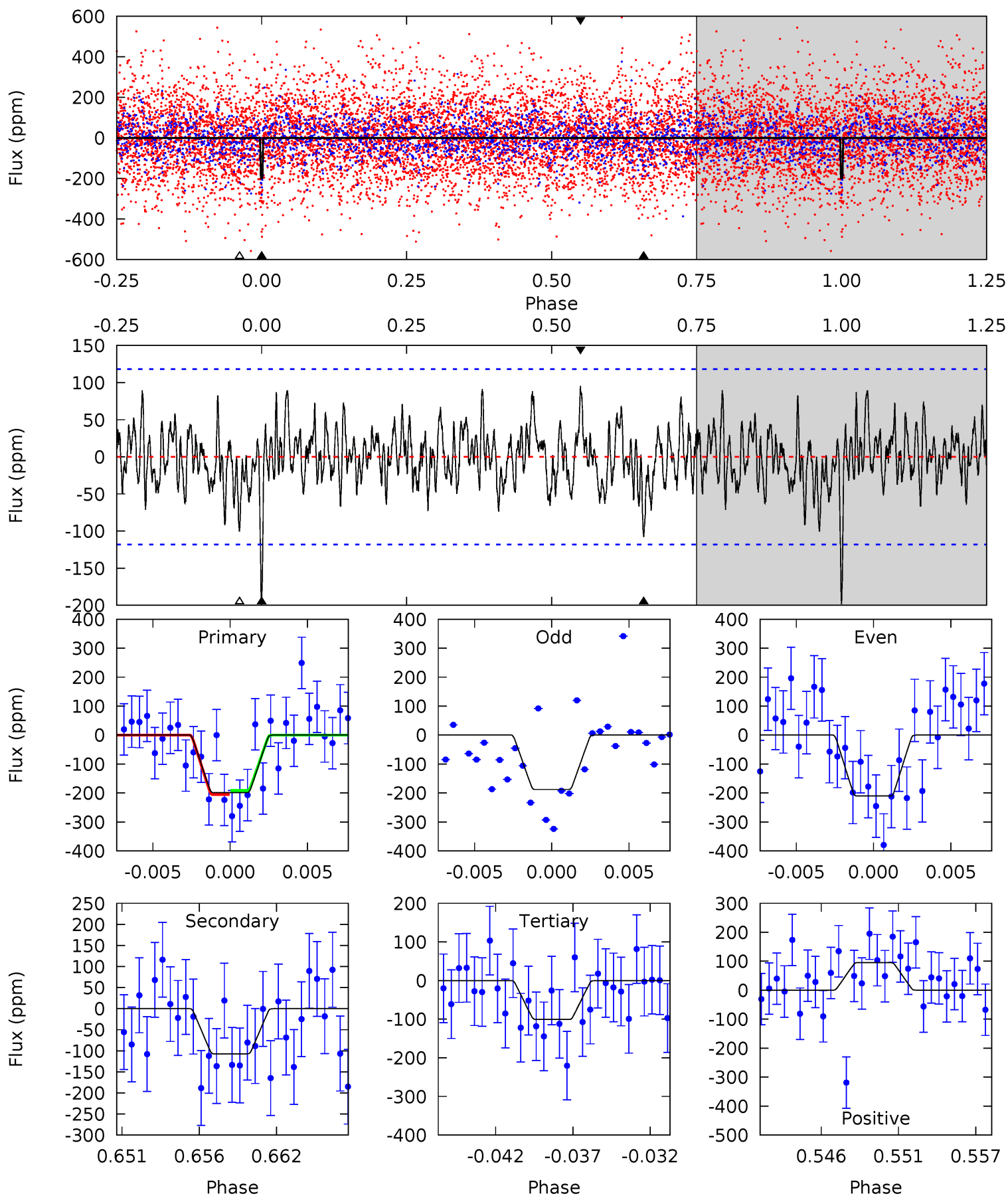
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.66	4.99	3.83	5.64	5.10	2.71	1.48	4.83	3.02	1.16	-0.65	2.06	0.88	0.39	0.18



Alt Model-Shift Uniqueness Test

007898445-02, P = 15.563930 Days, E = 126.612299 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.64	4.67	4.38	4.13	5.15	2.79	1.41	4.26	4.51	0.29	0.54	0.49	0.95	0.32	0.31



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-99 ± 20	$6.20^{+4.23}_{-3.59}$	2133^{+108}_{-196}	5398^{+3046}_{-1015}	31^{+146}_{-21}
Alt.	-107 ± 23	$6.68^{+4.33}_{-3.37}$	2134^{+110}_{-183}	5330^{+2486}_{-918}	29^{+91}_{-19}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

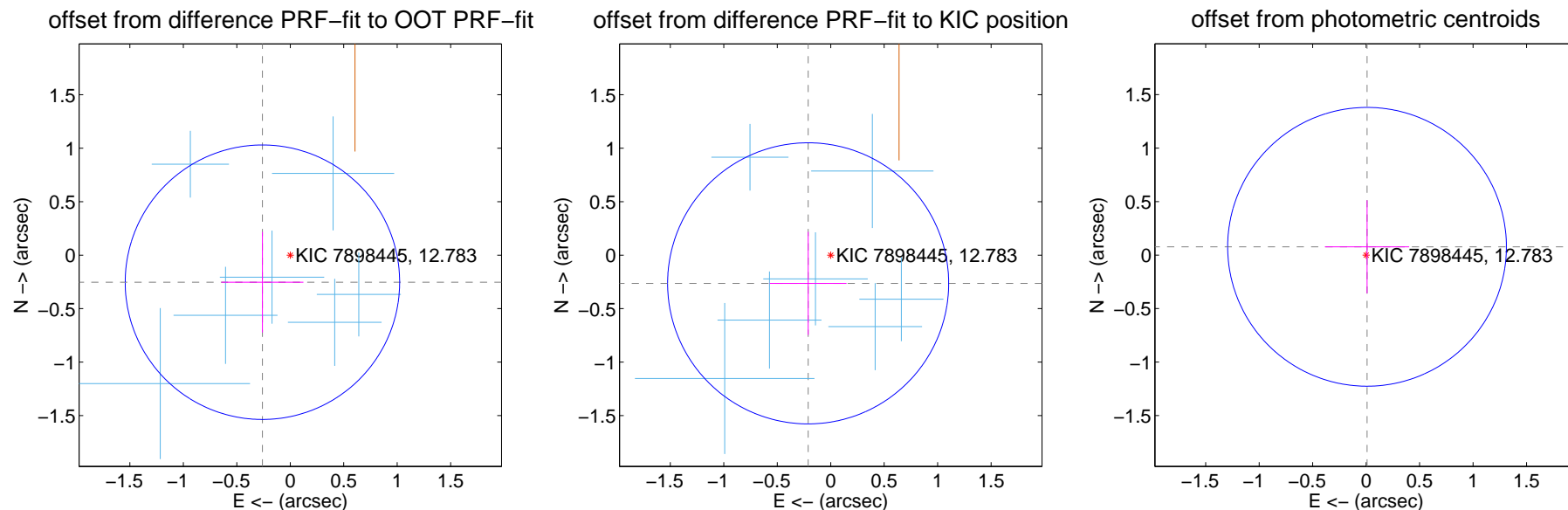
DV Centroid Data

Supplemental centroid analysis for 007898445-02. Kepler magnitude: 12.78. Transit SNR 10.96

There are 7 quarters with good PRF difference image offsets

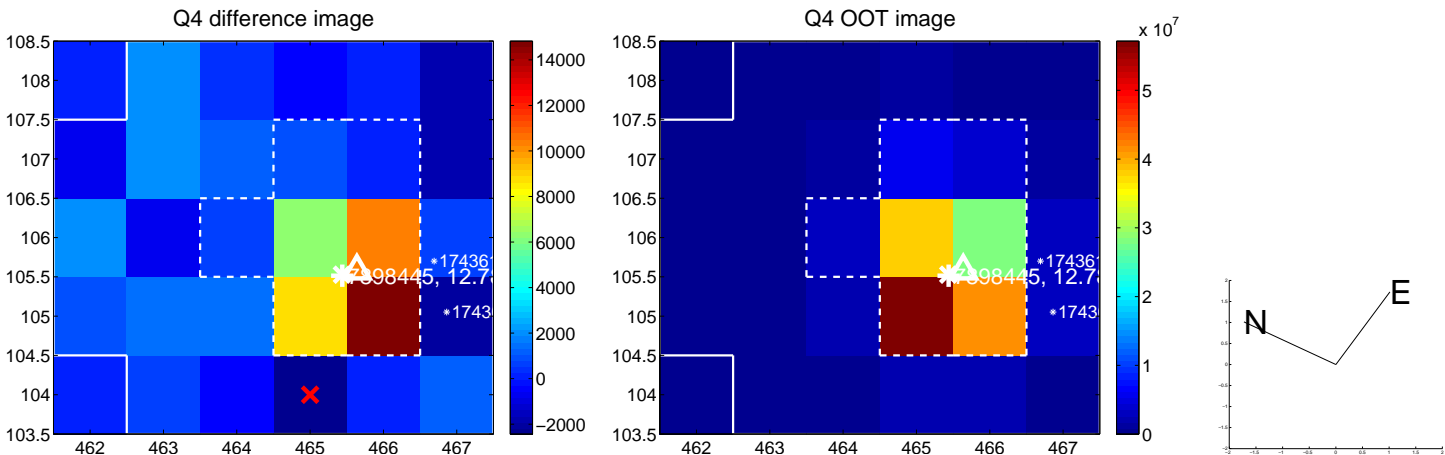
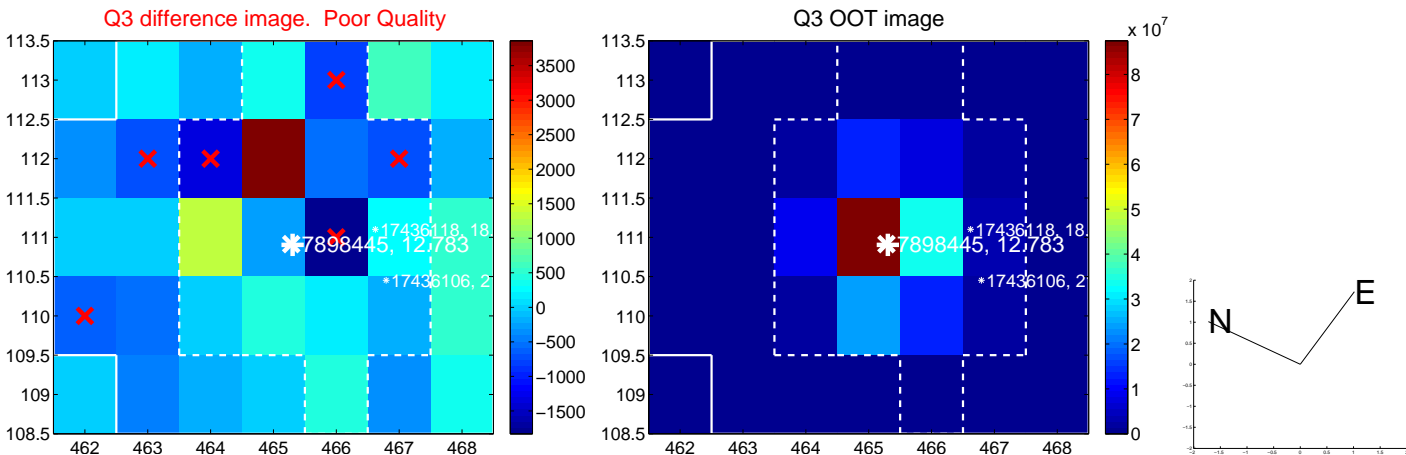
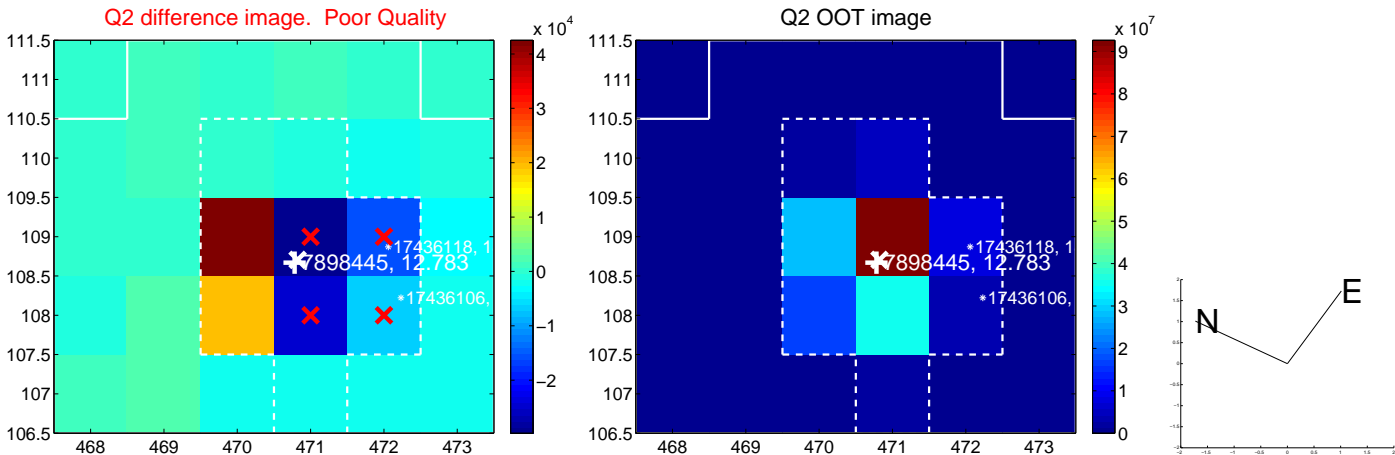
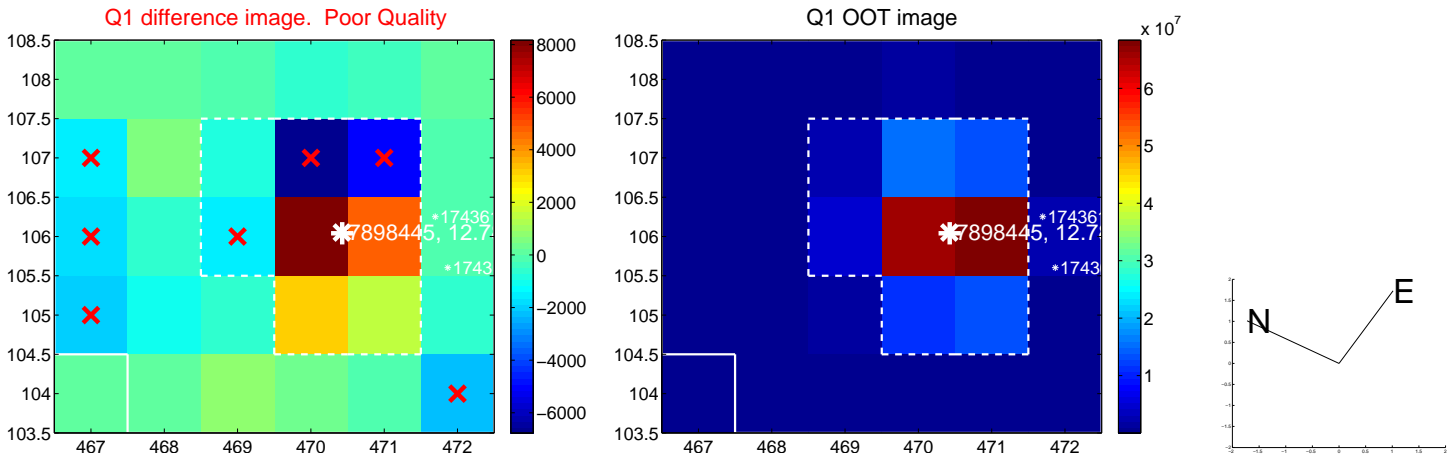
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.363 ± 0.428	0.85	0.260 ± 0.383	-0.253 ± 0.471
PRF-fit source offset from KIC position	0.338 ± 0.438	0.77	0.211 ± 0.360	-0.264 ± 0.482
photometric centroid source offset	0.08 ± 0.43	0.18	-0.01 ± 0.39	0.08 ± 0.43

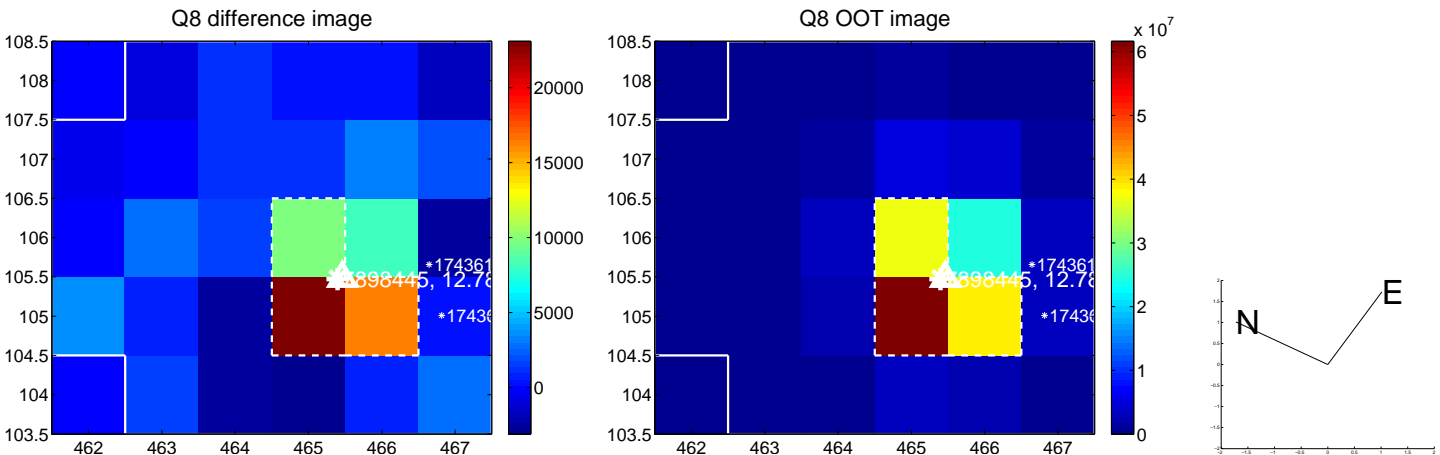
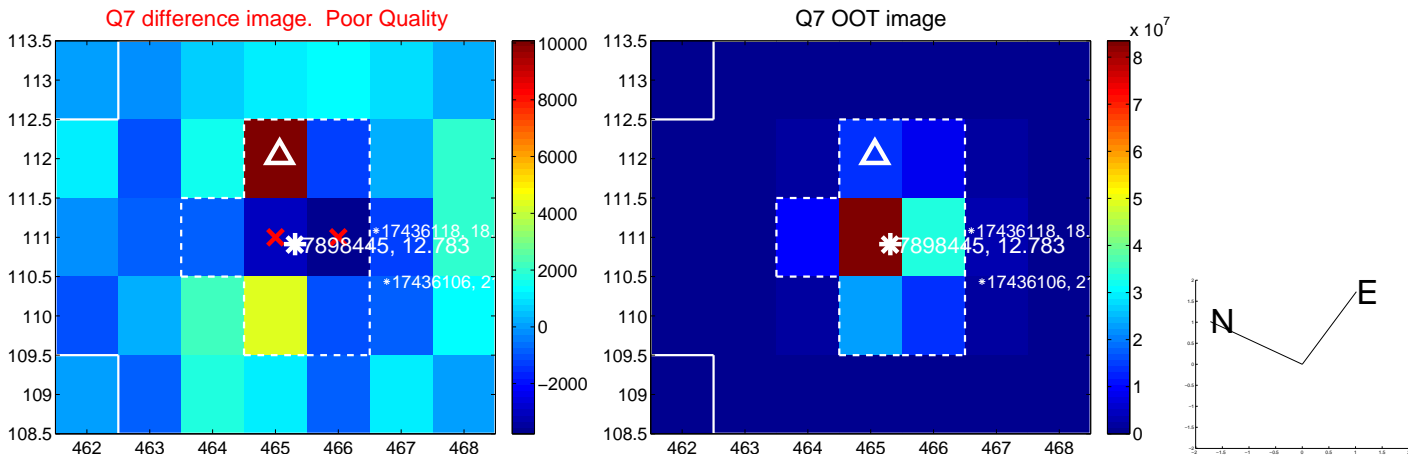
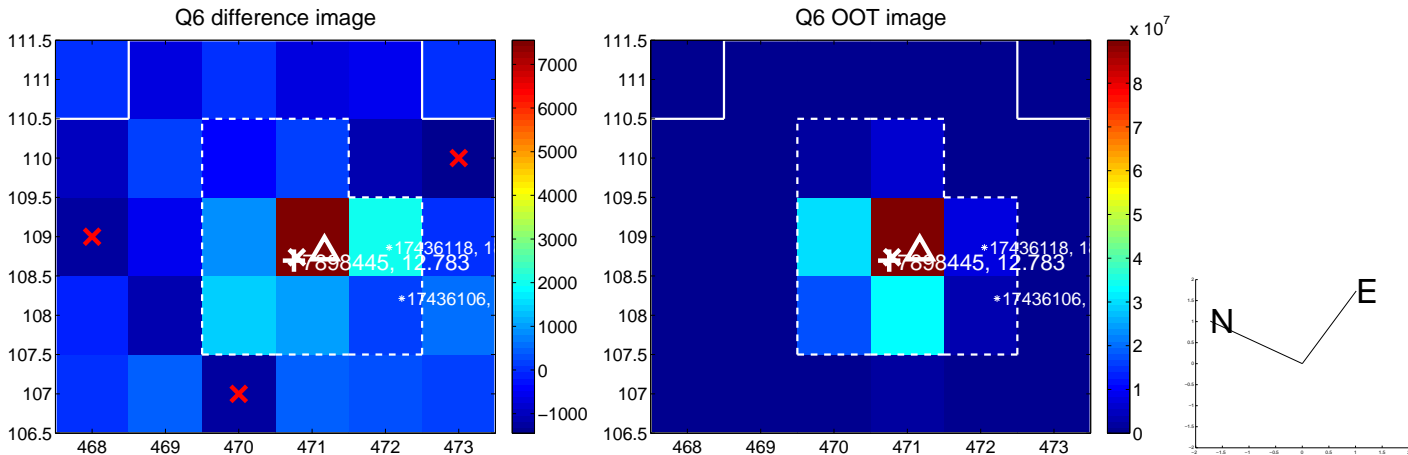
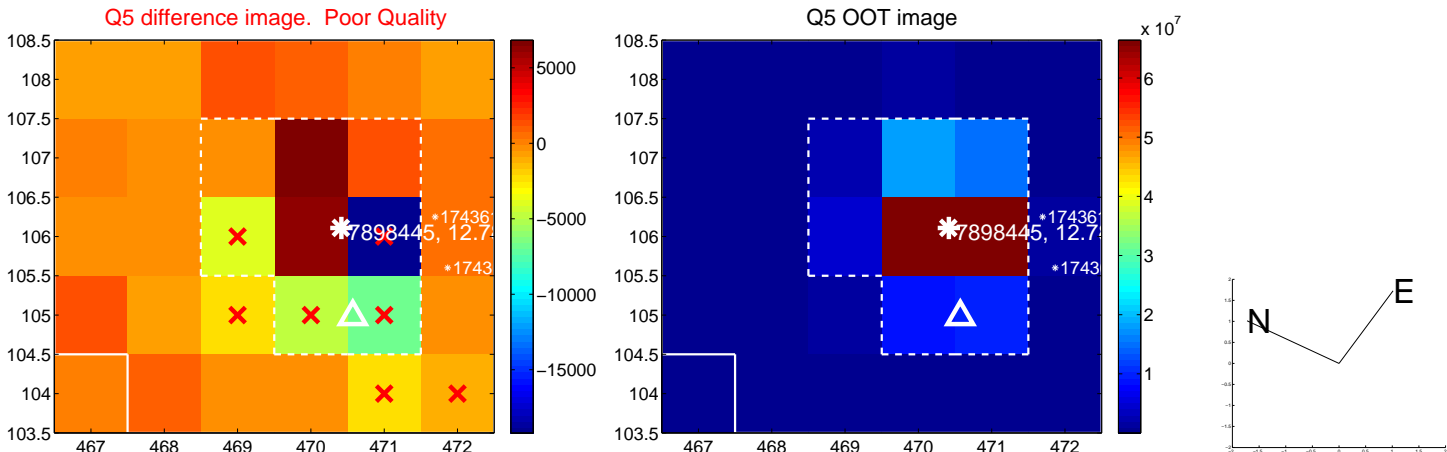


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

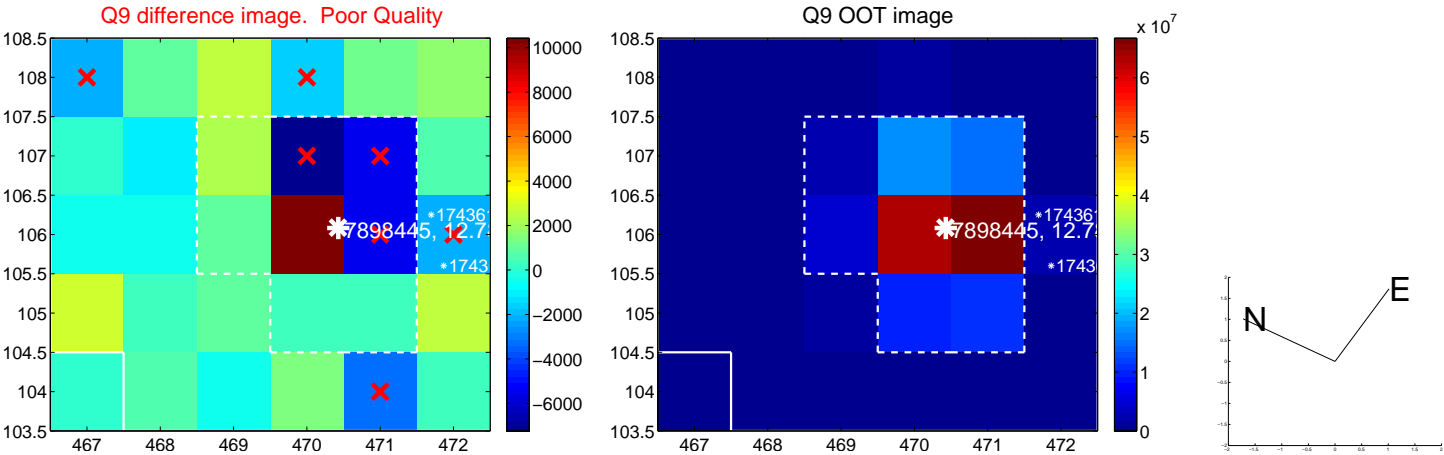
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



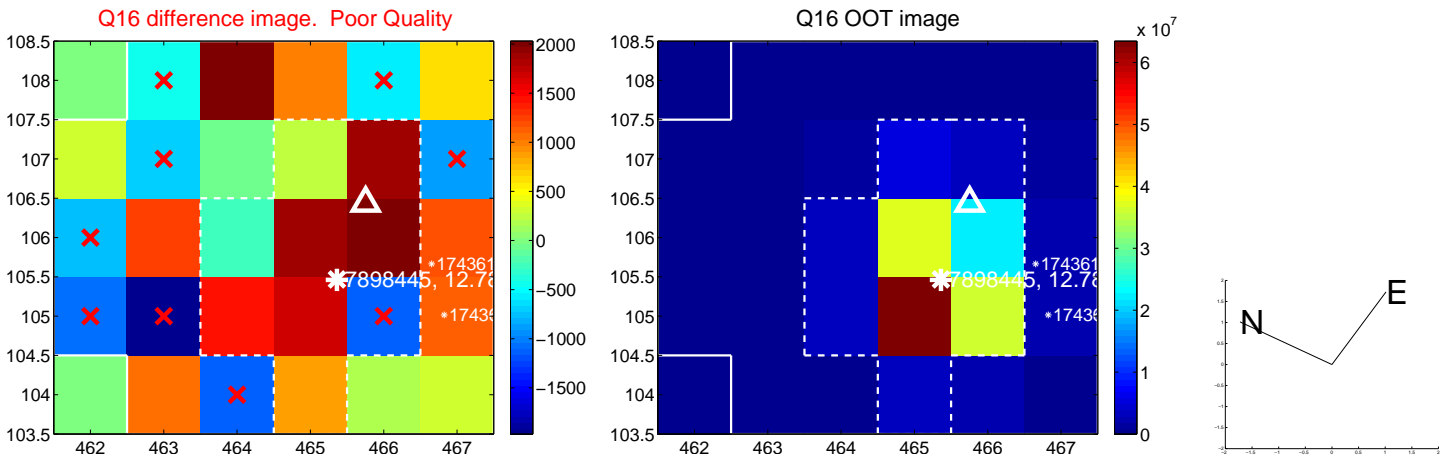
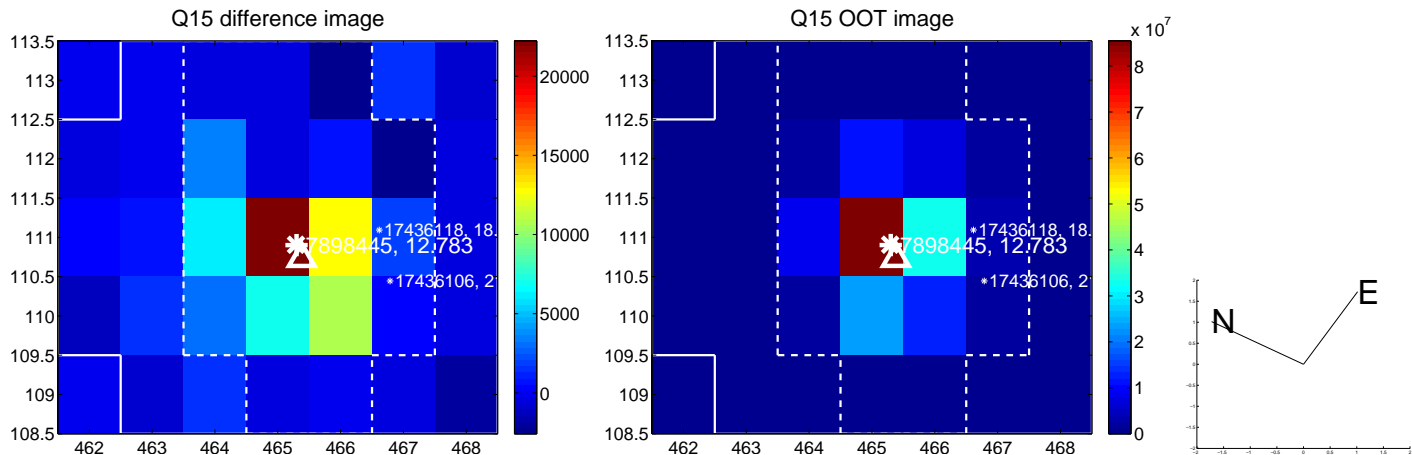
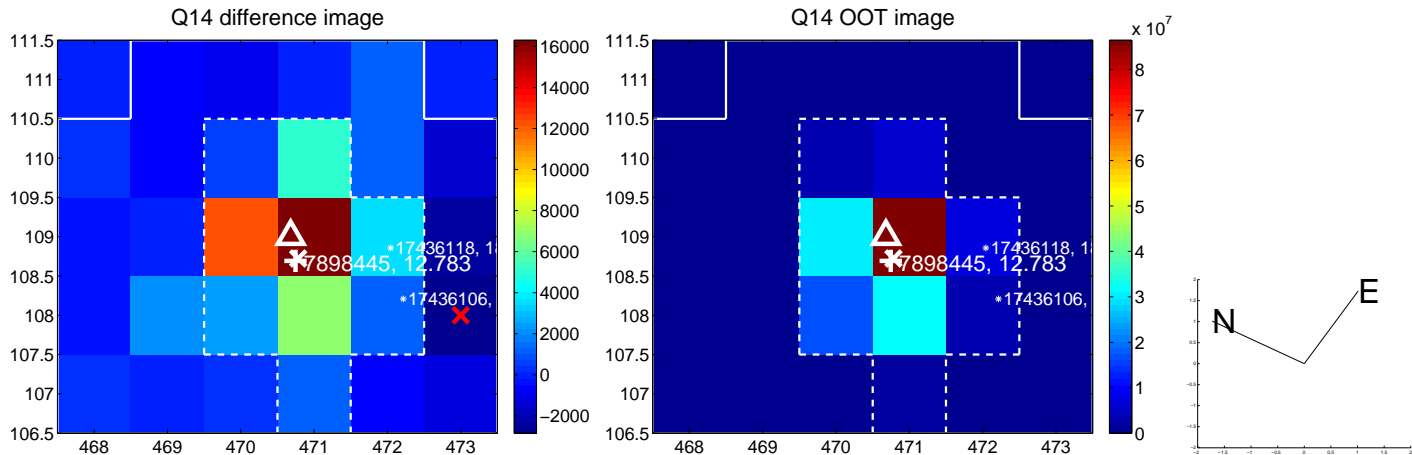
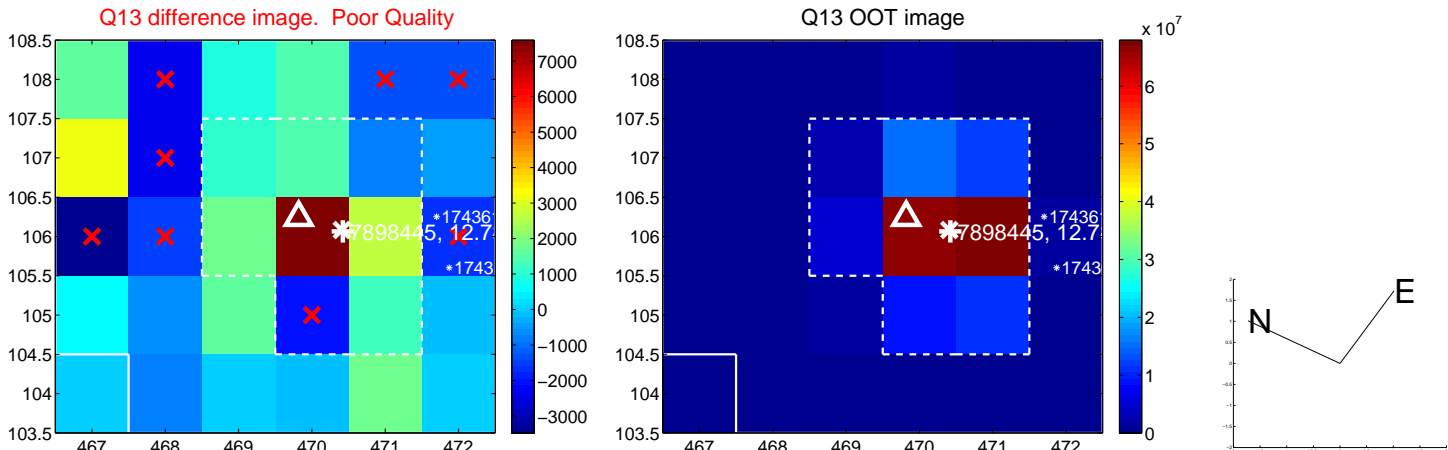
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



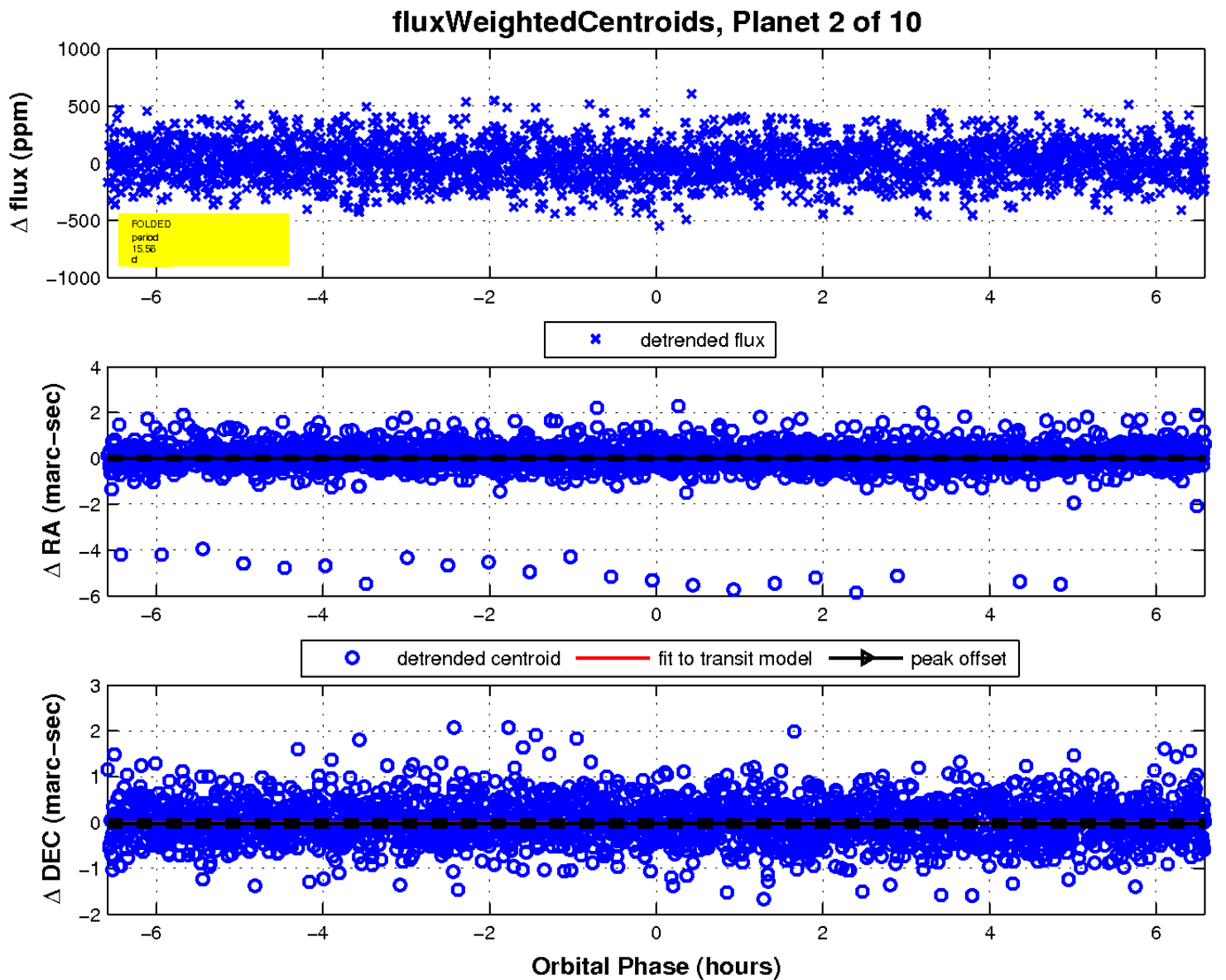
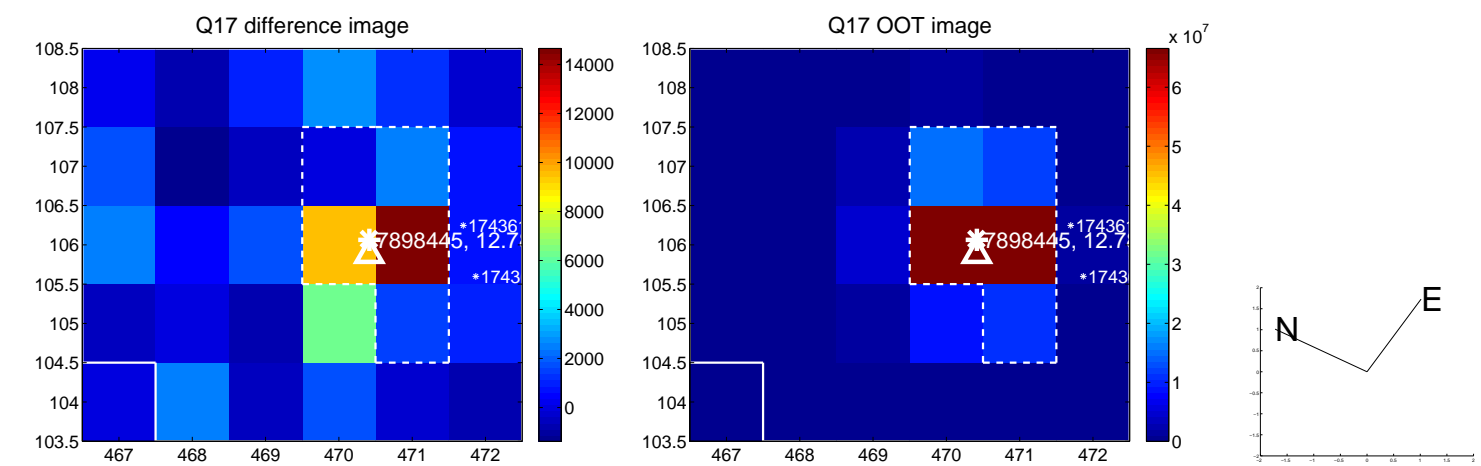
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

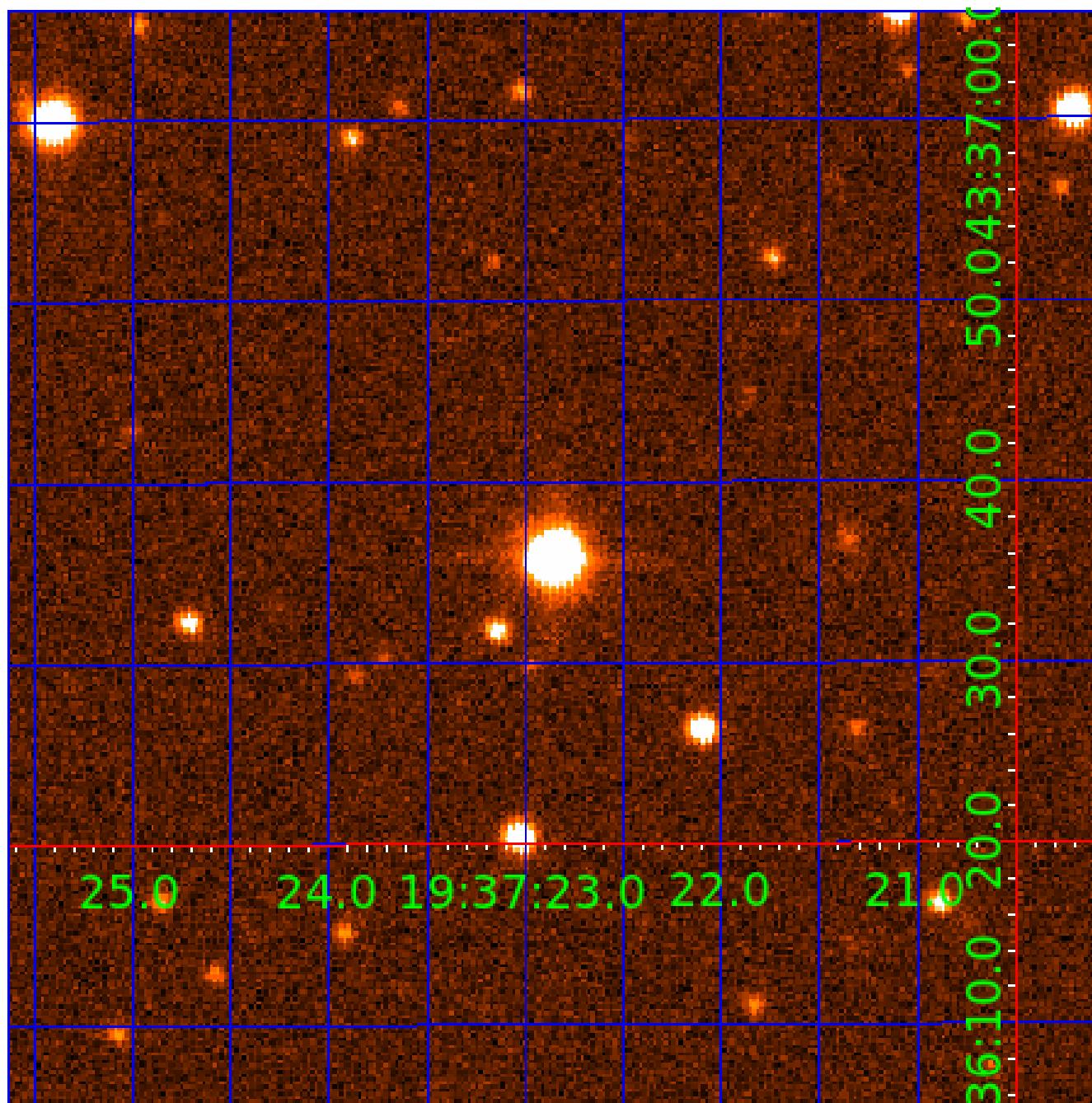


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

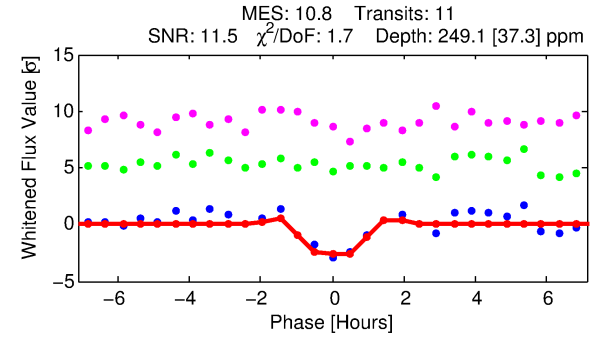
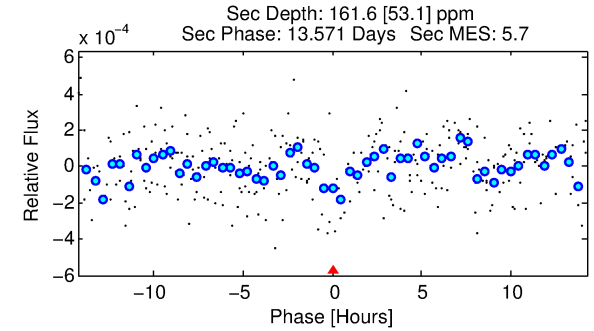
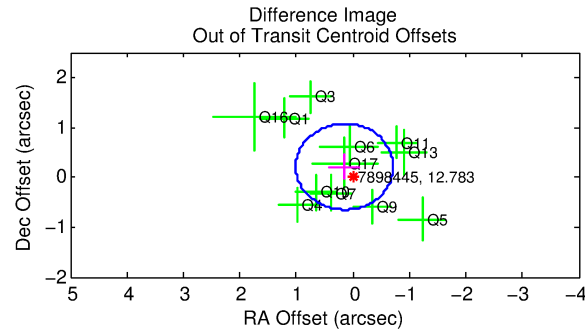
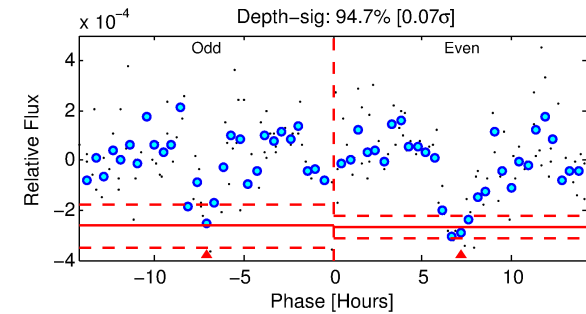
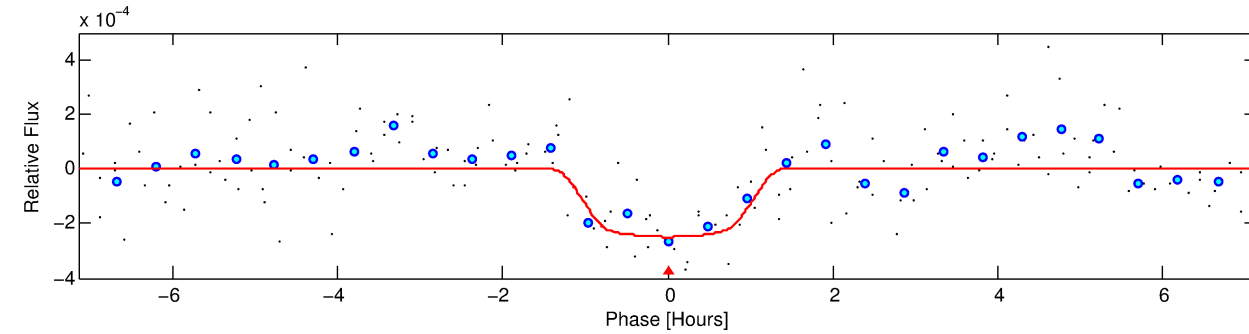
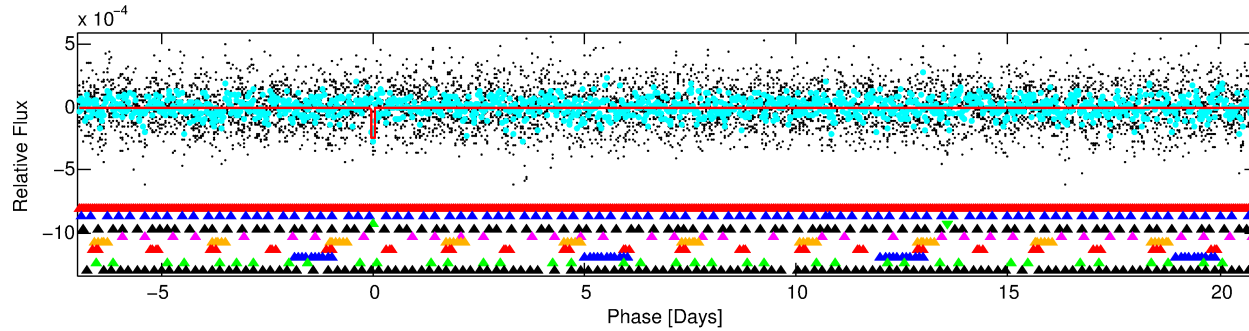
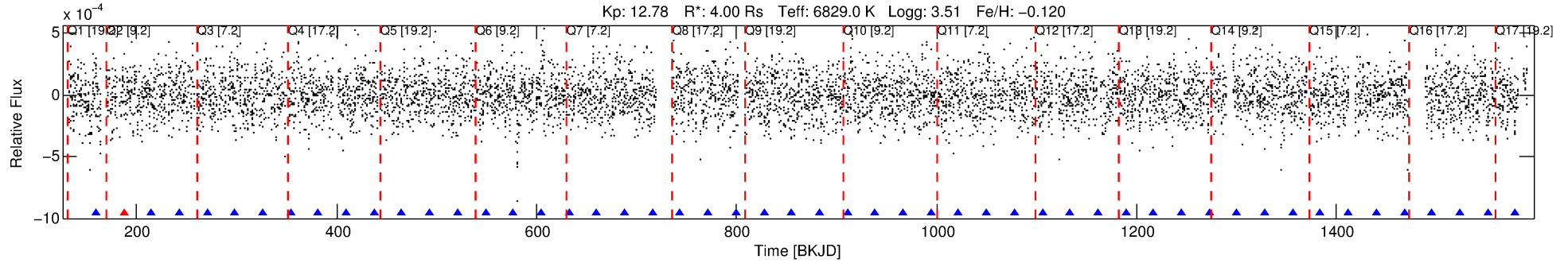
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-03

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 3 of 10 Period: 27.837 d



DV Fit Results:

Period = 27.83708 [0.00023] d
Epoch = 159.2300 [0.0097] BKJD
Rp/R* = 0.0173 [0.0059]
a/R* = 37.35 [72.61]
b = 0.93 [0.30]
Seff = 632.43 [378.44]
Teq = 1279 [191] K
Rp = 7.54 [3.80] Re
a = 0.2221 [0.0806] AU
Ag = 77.25 [73.73] [1.03σ]
Teffp = 5861 [1123] K [4.02σ]

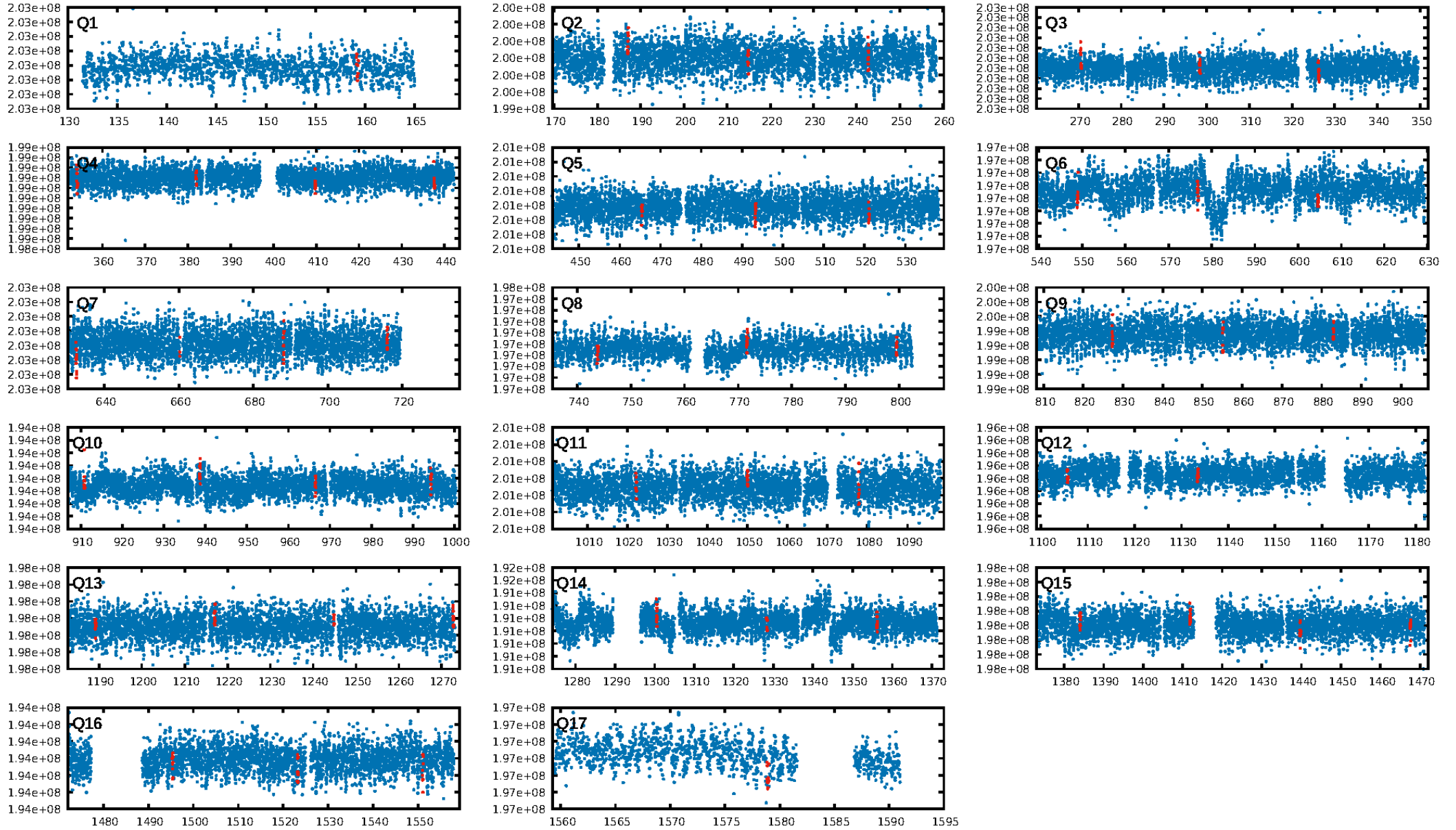
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.67σ]
LongPeriod-sig: 100.0% [43.90σ]
ModelChiSquare2-sig: 28.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.89 [8/9]
GhostDiagnostic-chr: 0.9201
Centroid-sig: 12.4%
Centroid-so: 0.563 arcsec [1.57σ]
OotOffset-rm: 0.257 arcsec [0.89σ]
KicOffset-rm: 0.232 arcsec [0.74σ]
OotOffset-st: 2/3/2/5 [12]
KicOffset-st: 2/3/2/5 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.29 [5/17]

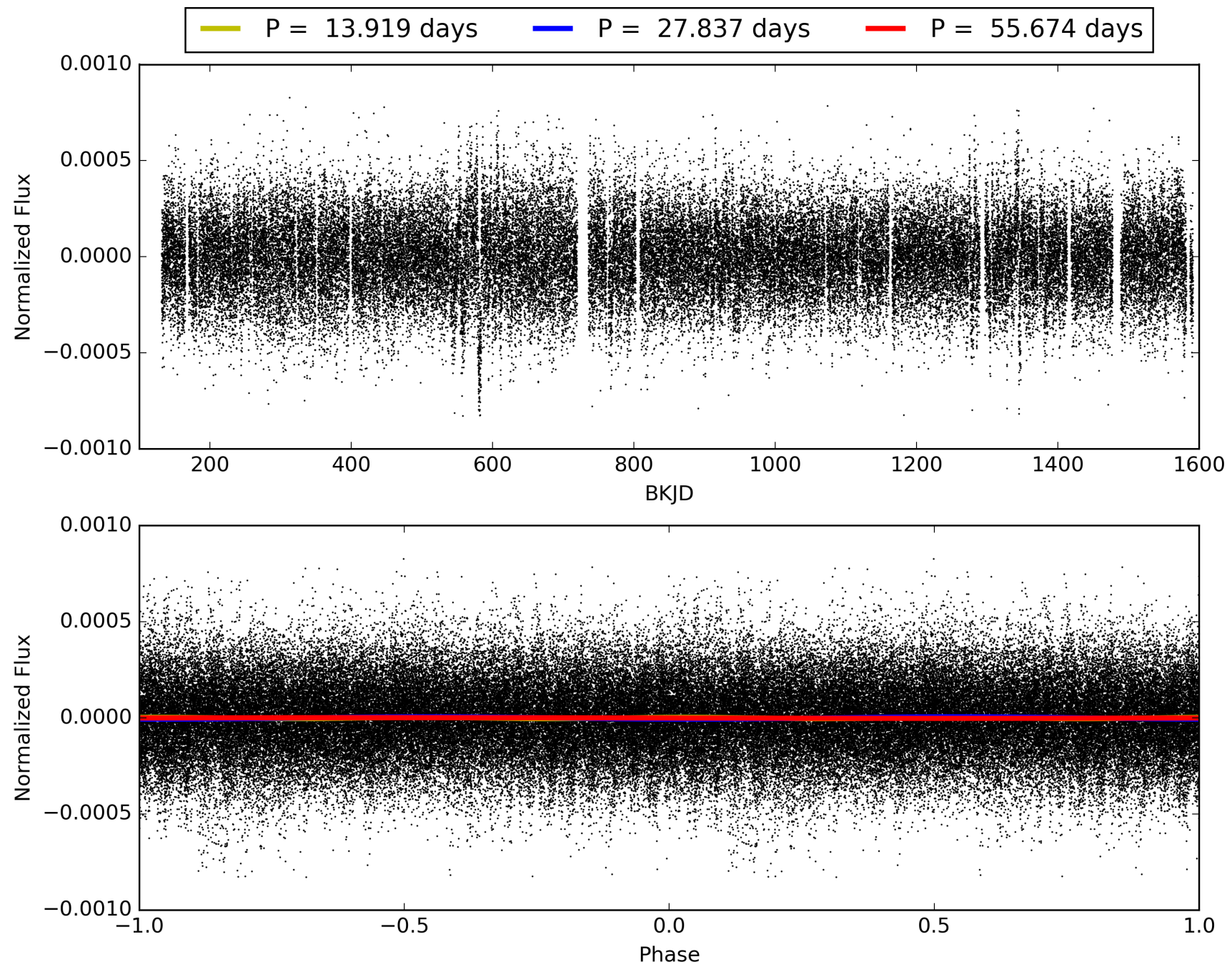
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:02 Z

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

TCE 007898445-03, PDC Light Curves

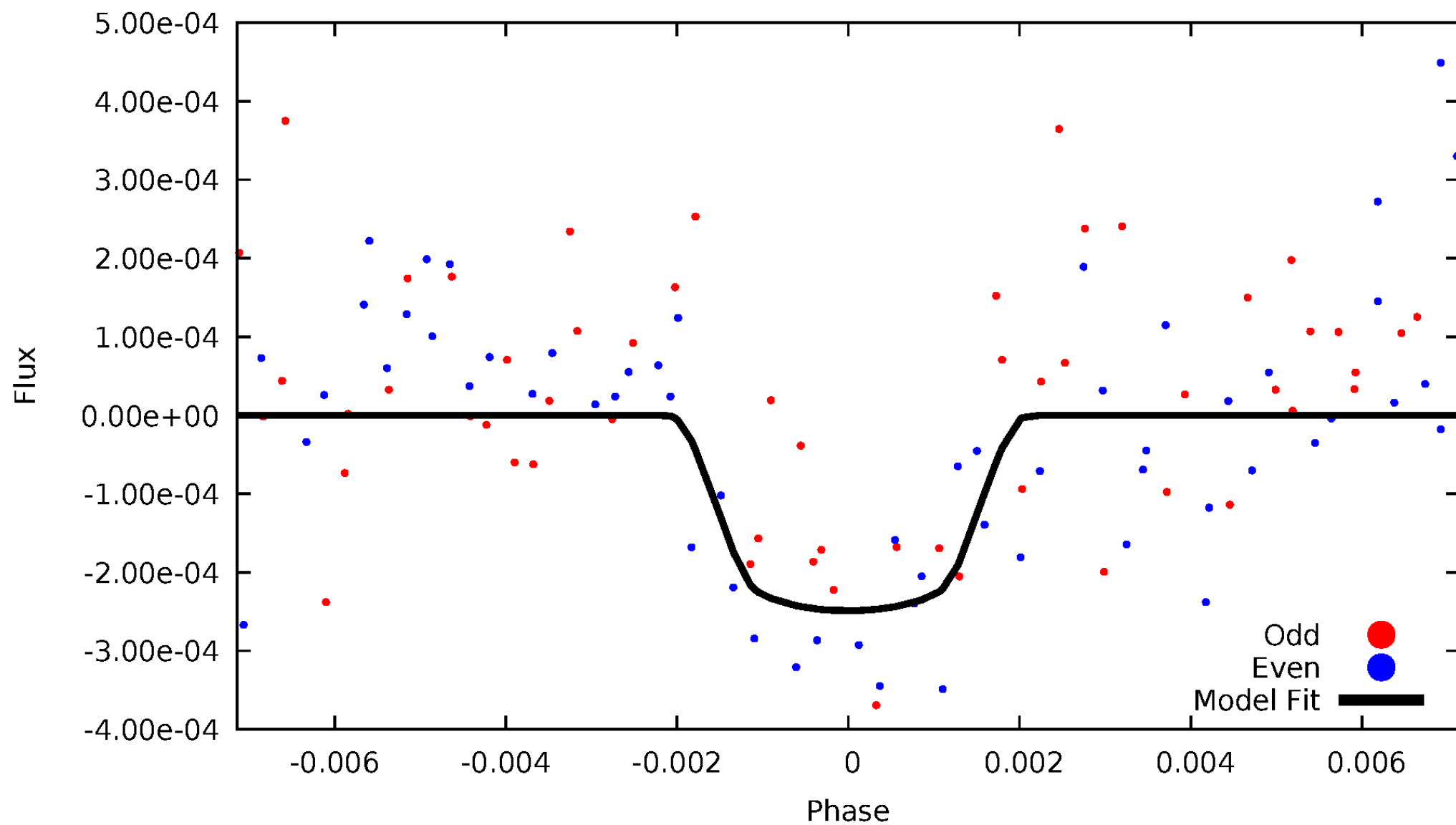


TCE 007898445-03



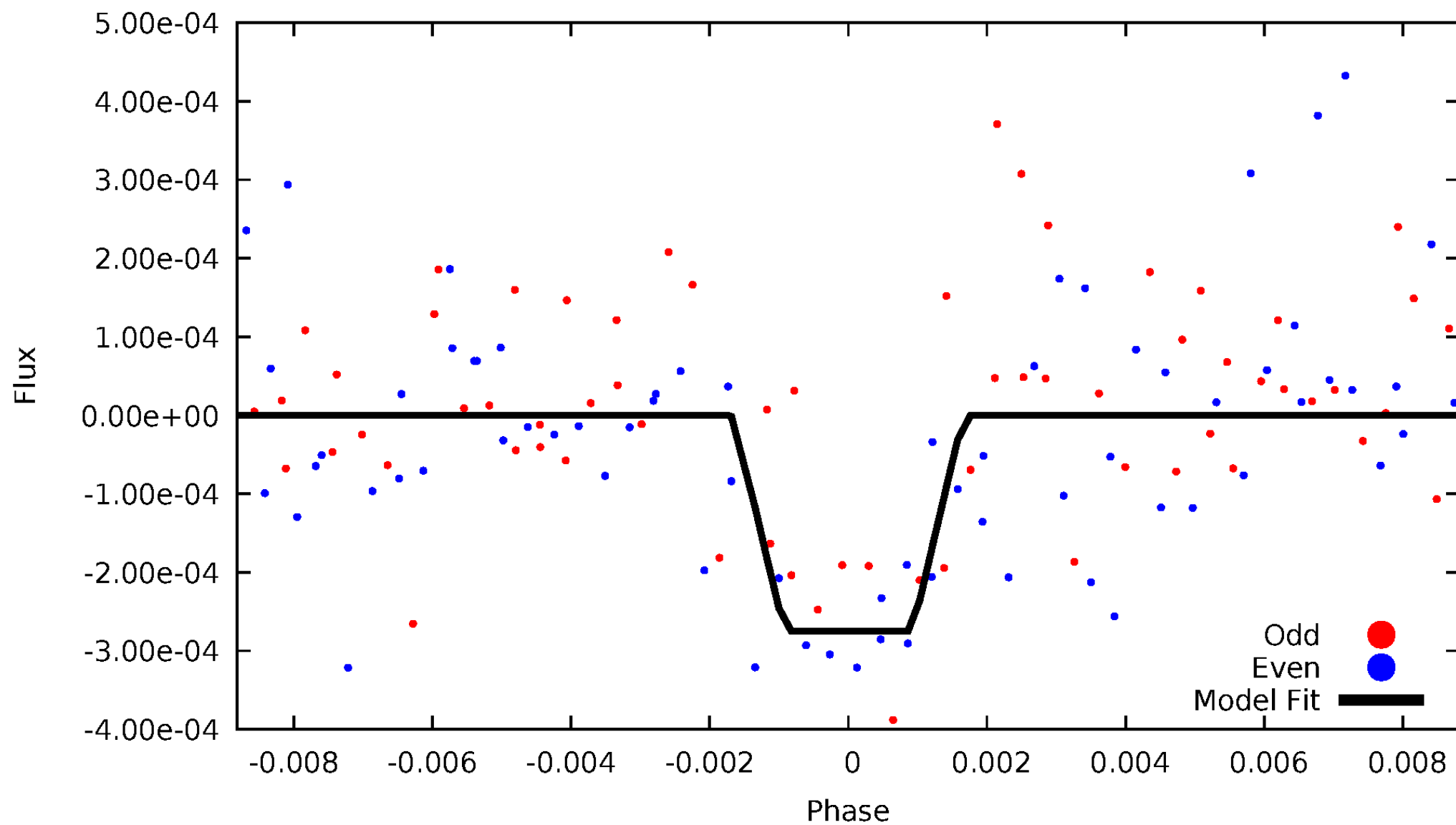
DV Odd/Even

TCE 007898445-03

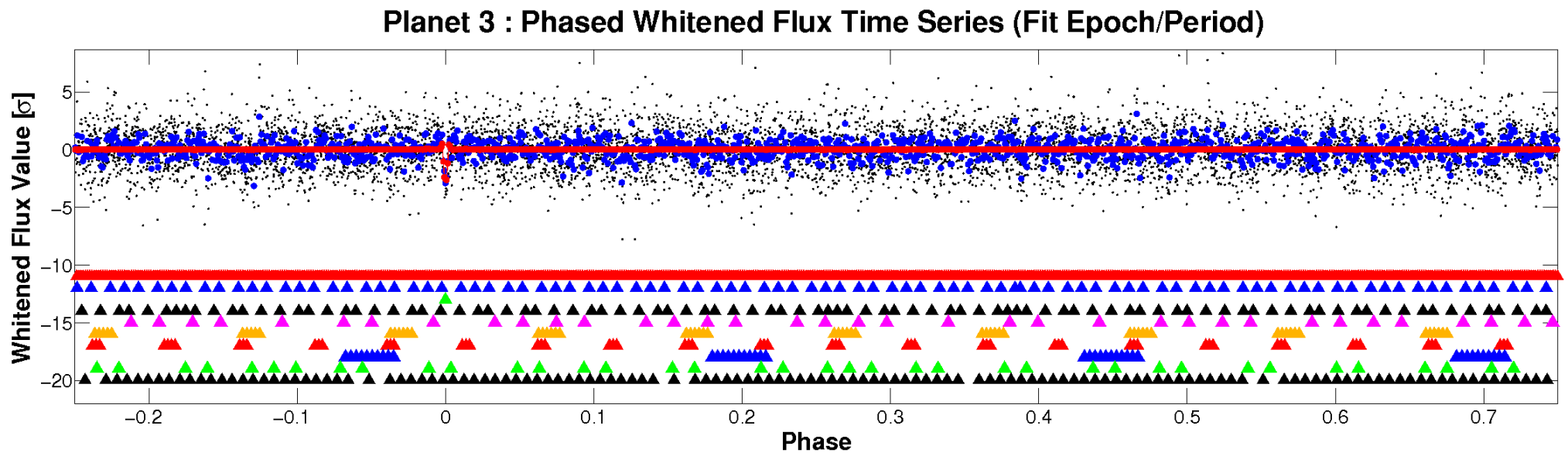
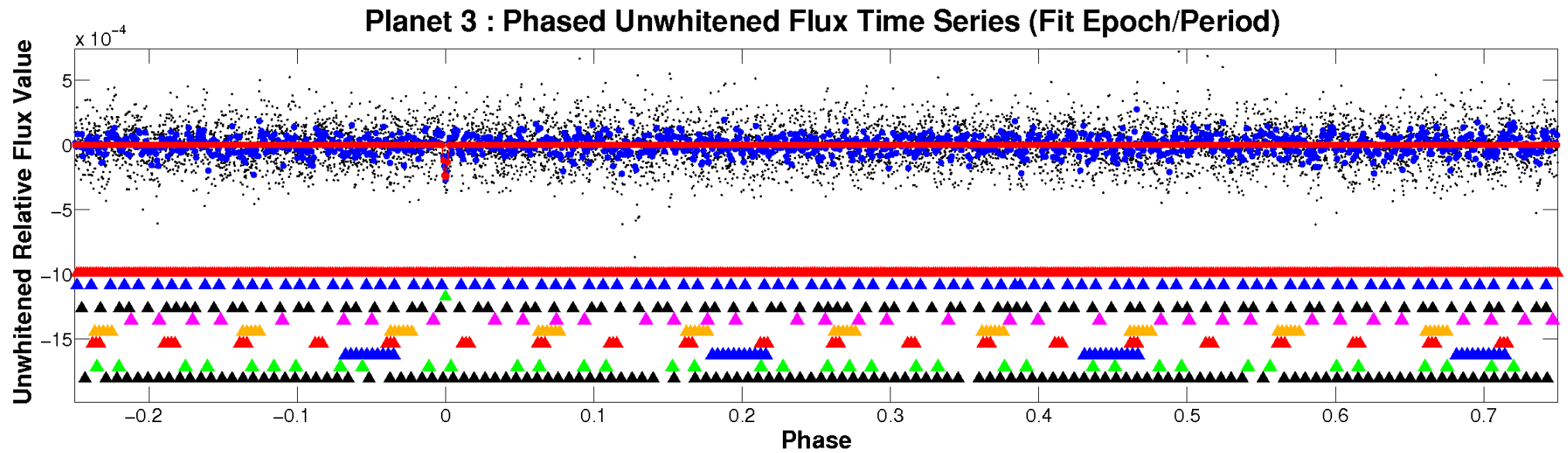


ALT Odd/Even

TCE 007898445-03

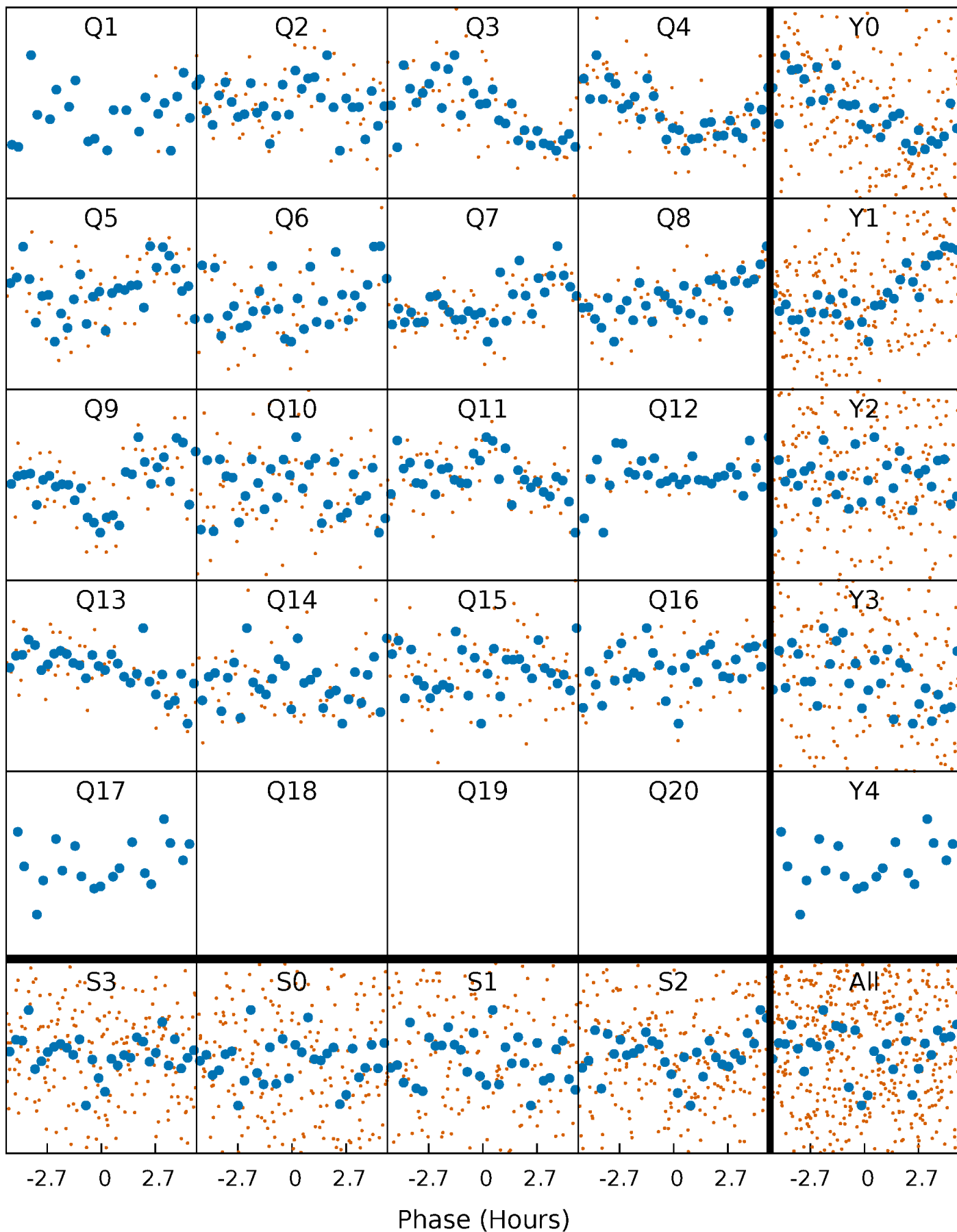


Non-Whitened Vs. Whitened Light Curve



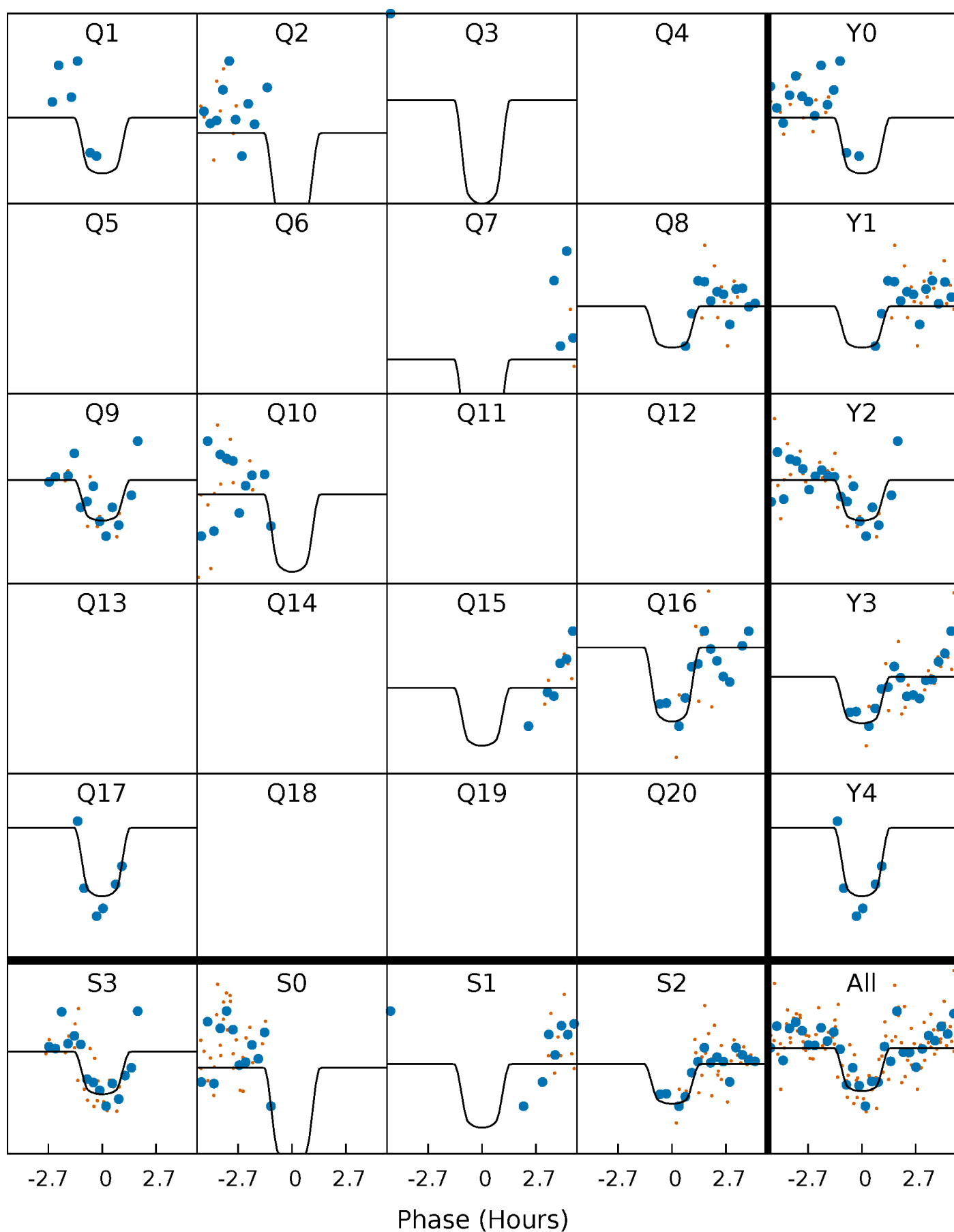
PDC Quarter-Phased Transit Curves

TCE 007898445-03 P= 27.837078 Days $T_0=159.230007$ (BKJD)



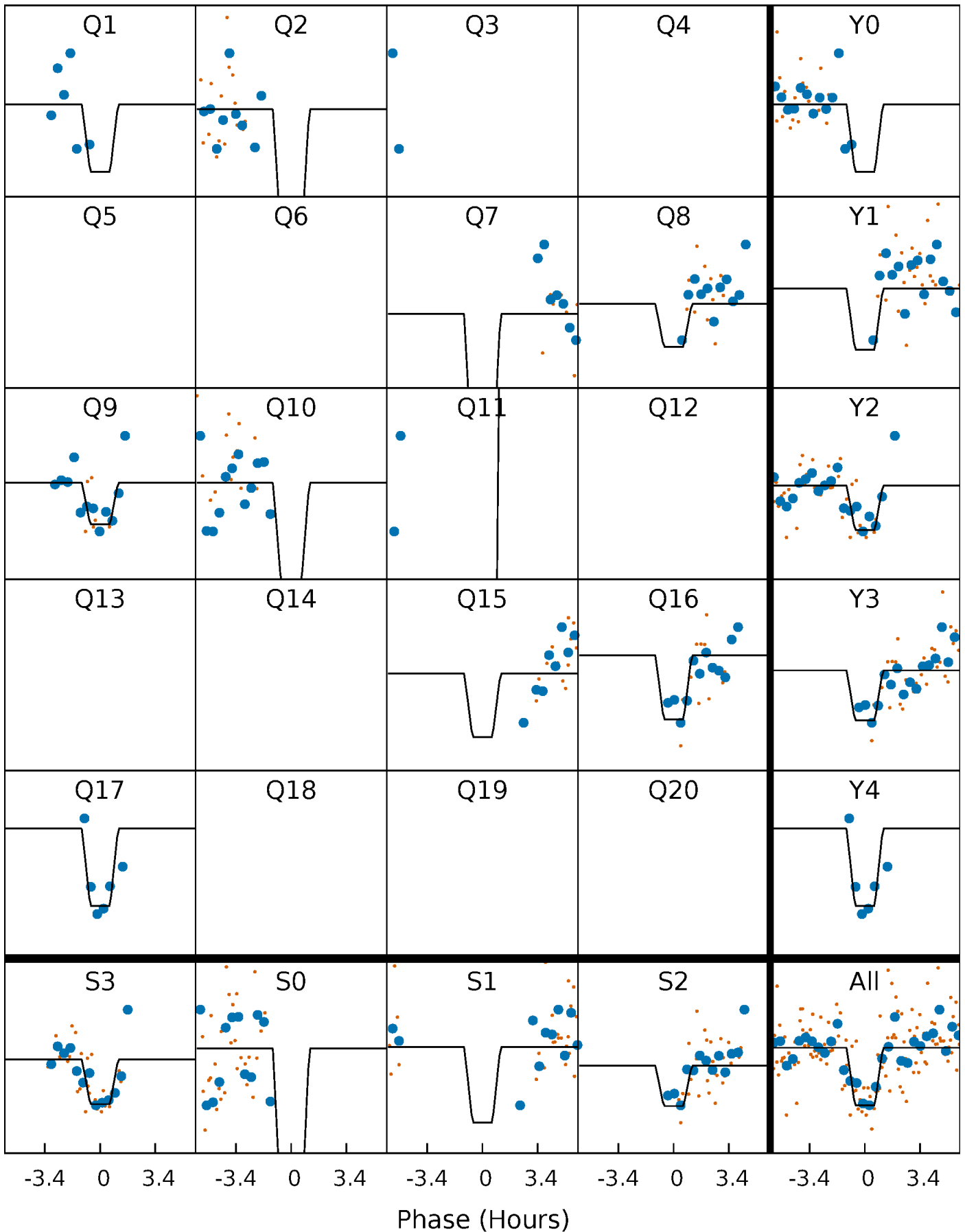
DV Quarter-Phased Transit Curves

TCE 007898445-03 P= 27.837078 Days $T_0=159.230007$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

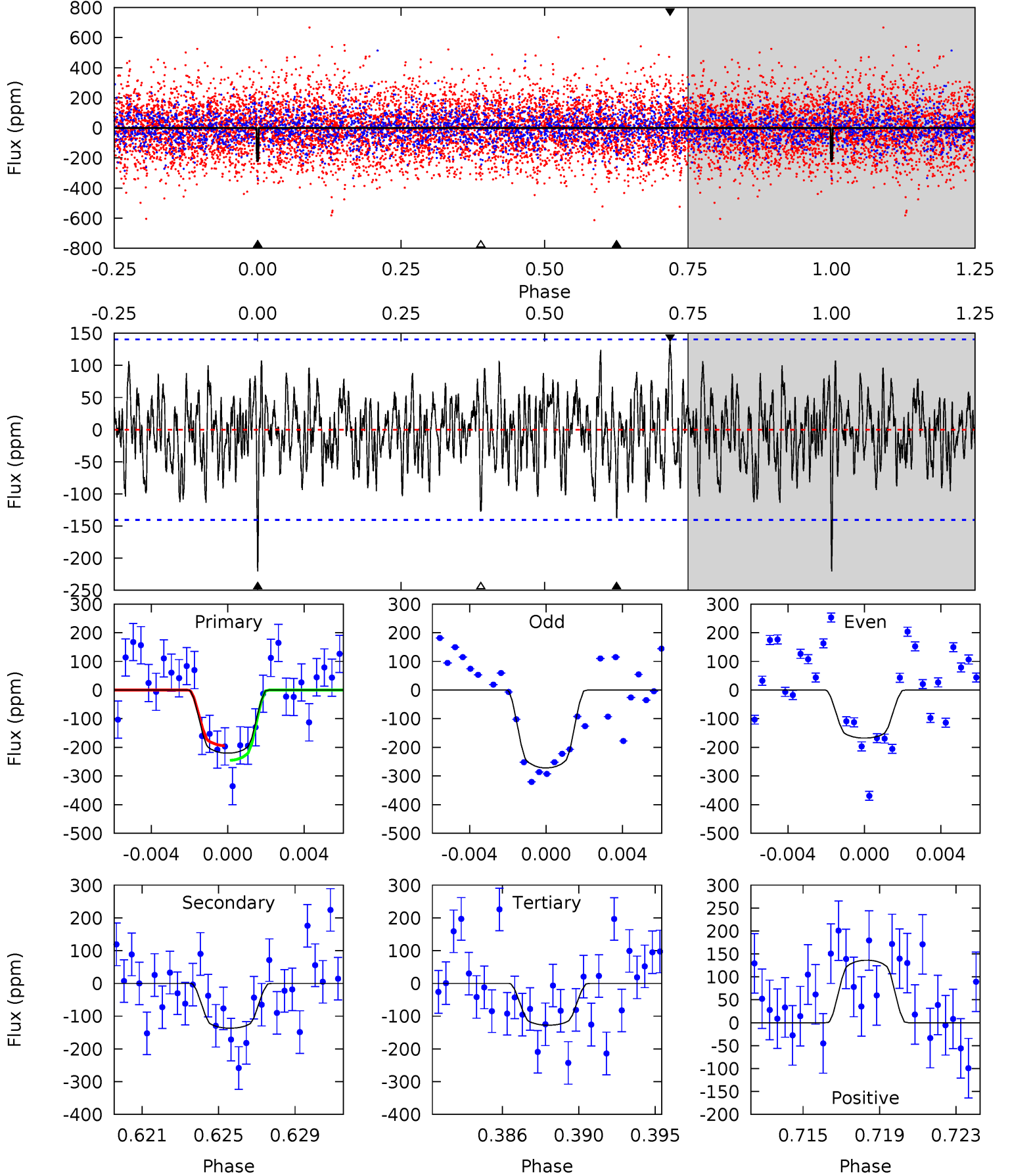
TCE 007898445-03 P= 27.836449 Days $T_0=159.252557$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-03, P = 27.837078 Days, E = 131.392929 Days

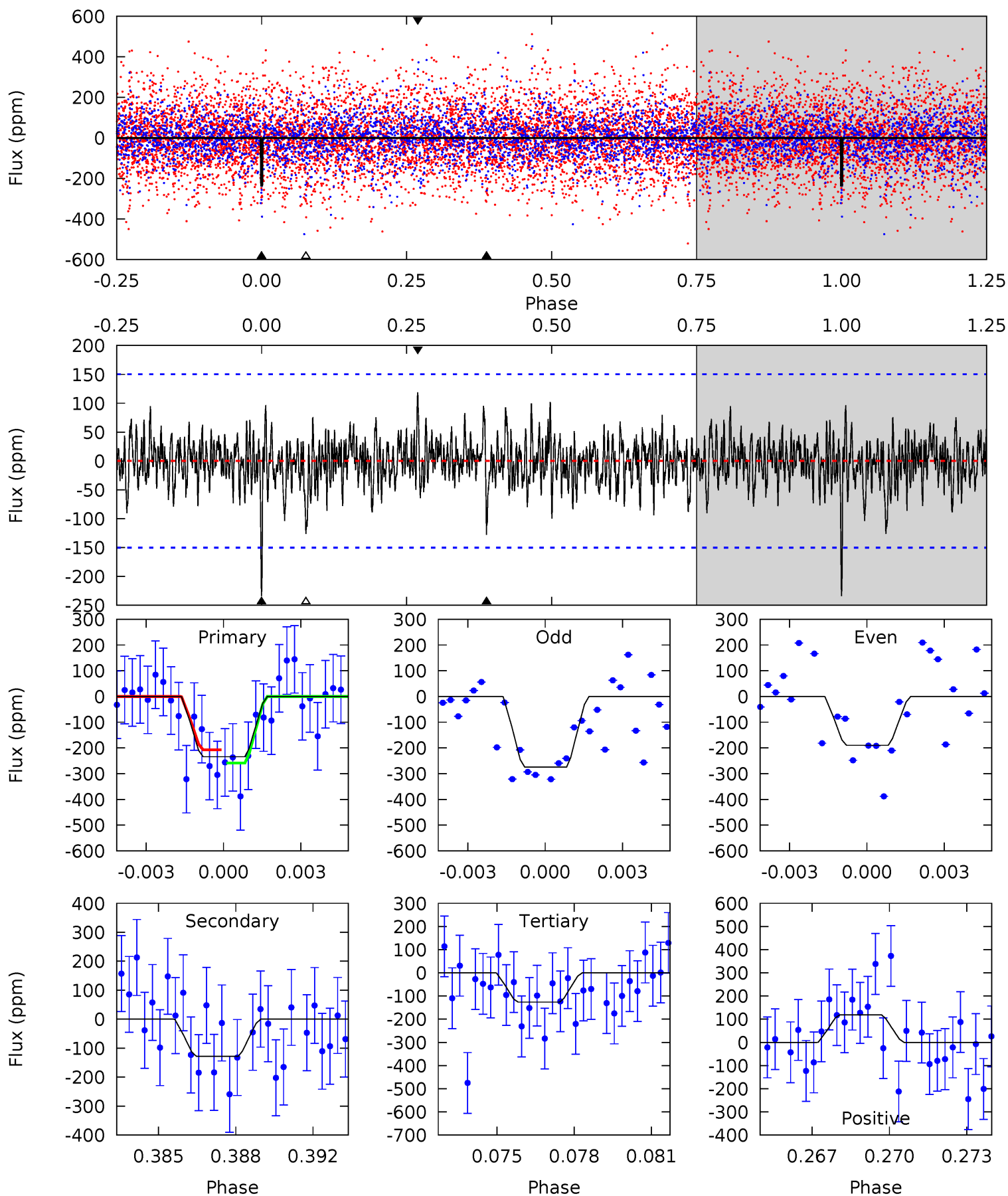
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.15	5.06	4.72	5.04	5.19	2.87	1.64	3.43	3.11	0.34	0.02	1.93	1.05	0.38	0.95



Alt Model-Shift Uniqueness Test

007898445-03, P = 27.836449 Days, E = 131.416108 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	4.47	4.40	4.14	5.25	2.96	1.16	3.77	4.03	0.07	0.33	1.49	1.03	0.34	0.89



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-137 ± 27	$7.21^{+2.83}_{-2.64}$	1760^{+84}_{-159}	5567^{+1312}_{-728}	71^{+111}_{-36}
Alt.	-128 ± 29	$6.64^{+2.82}_{-2.33}$	1757^{+89}_{-161}	5564^{+1465}_{-726}	77^{+117}_{-40}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

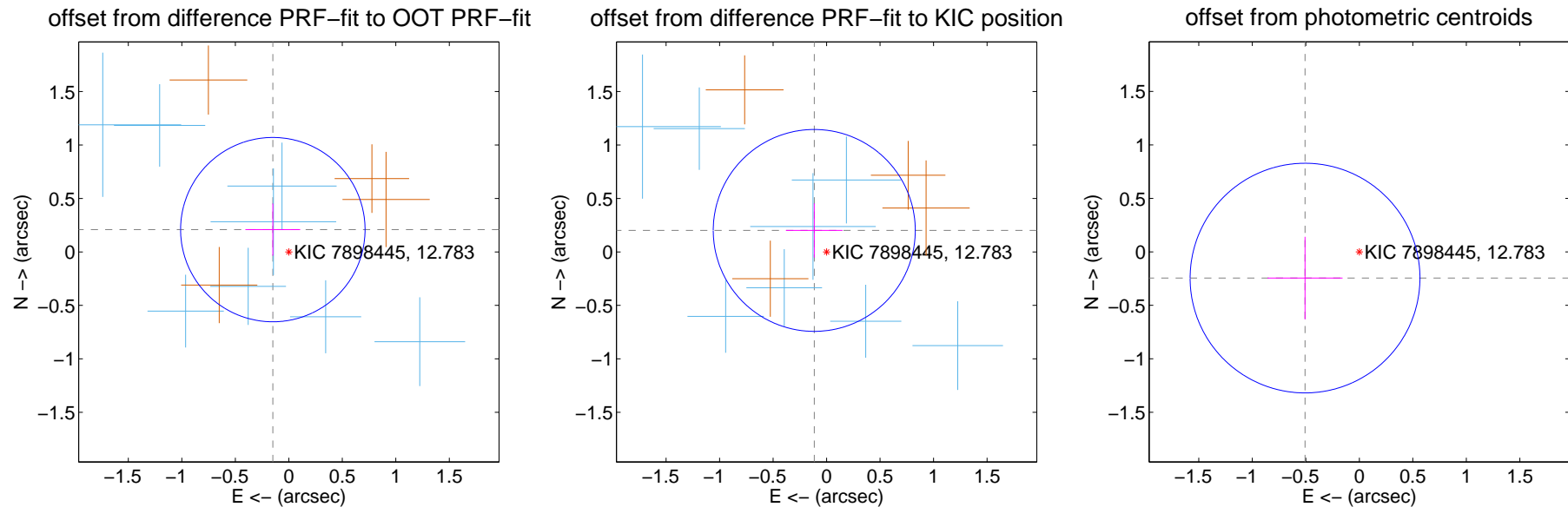
DV Centroid Data

Supplemental centroid analysis for 007898445-03. Kepler magnitude: 12.78. Transit SNR 11.52

There are 8 quarters with good PRF difference image offsets

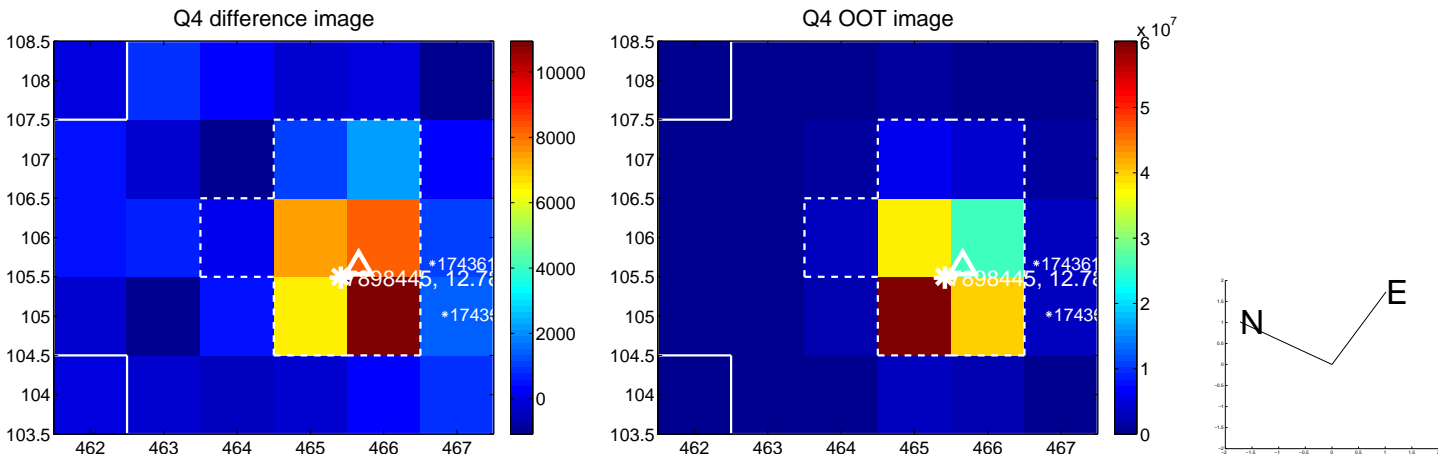
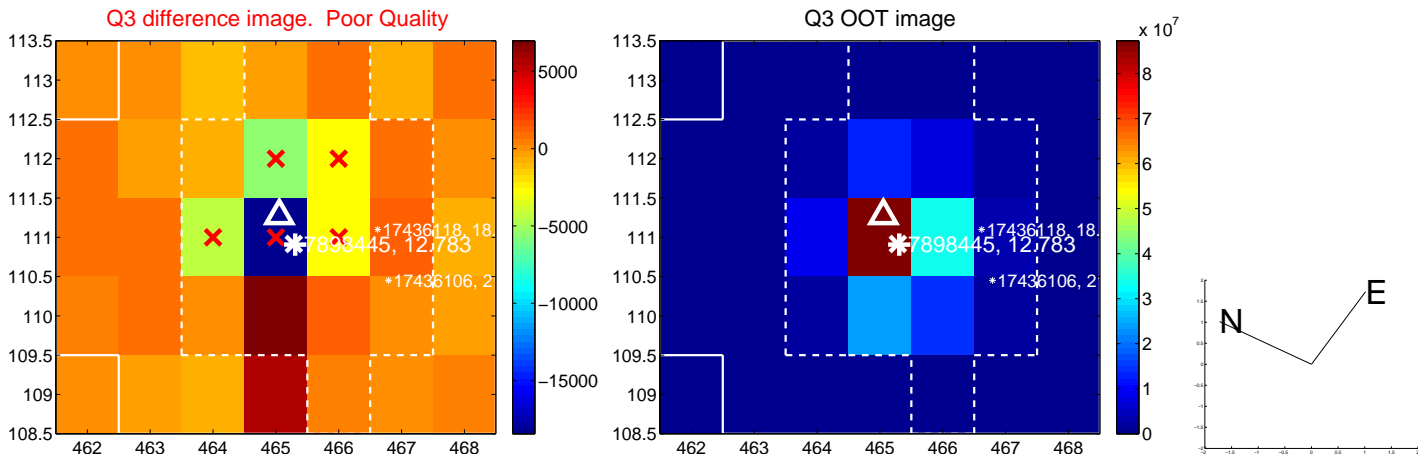
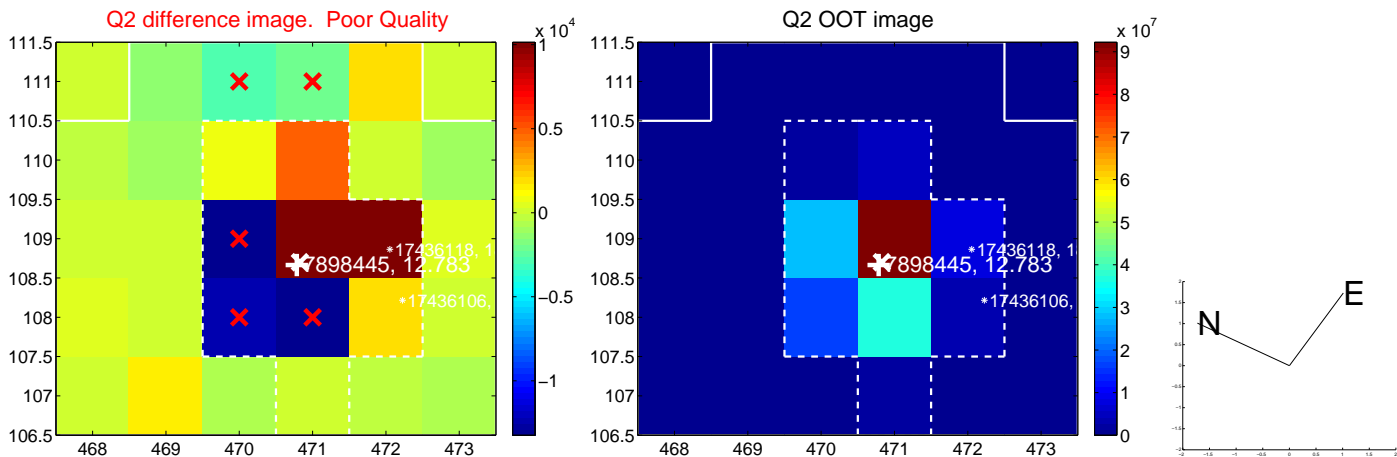
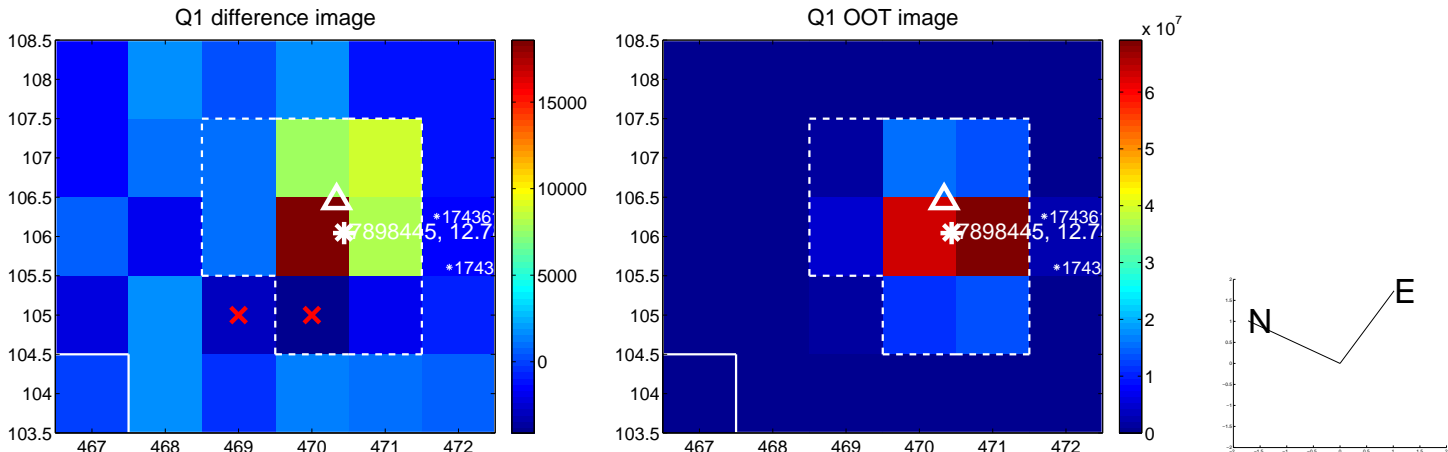
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.257 ± 0.287	0.89	0.149 ± 0.256	0.209 ± 0.244
PRF-fit source offset from KIC position	0.232 ± 0.315	0.74	0.115 ± 0.265	0.201 ± 0.254
photometric centroid source offset	0.56 ± 0.36	1.57	0.51 ± 0.35	-0.25 ± 0.39

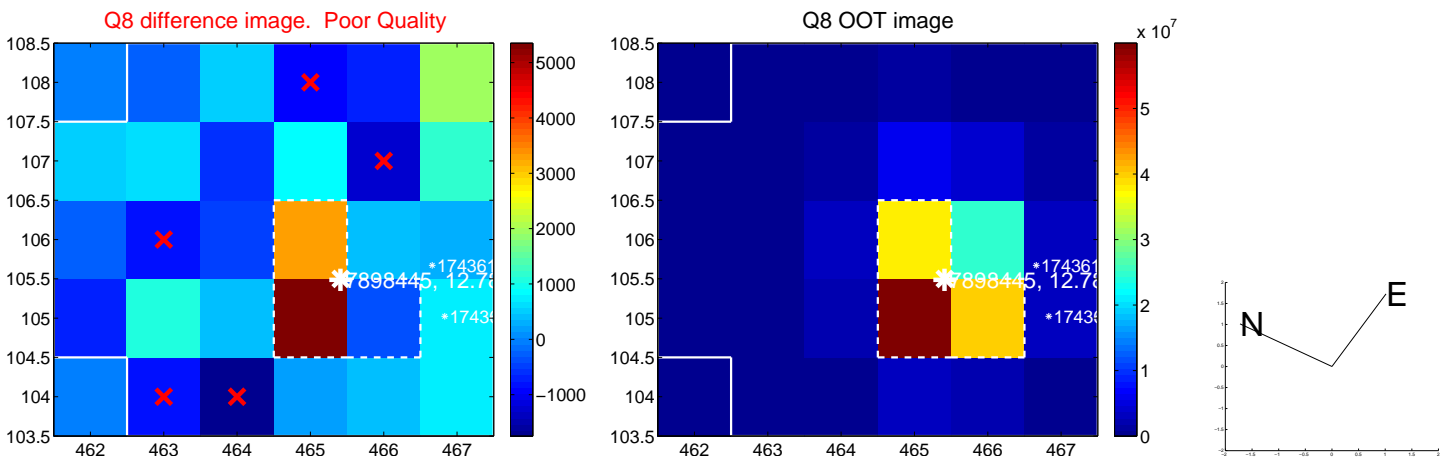
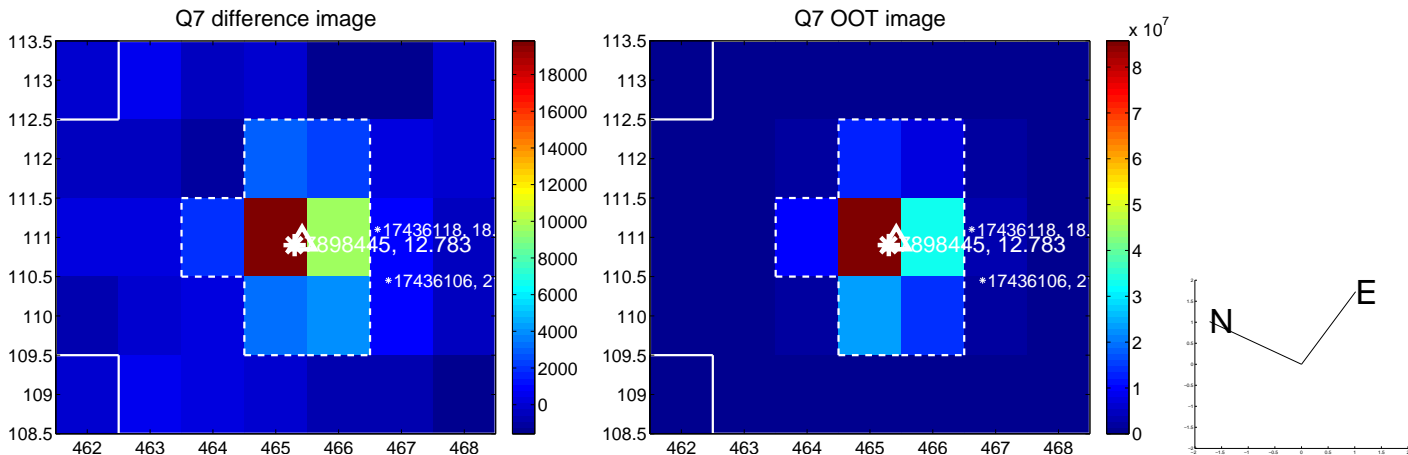
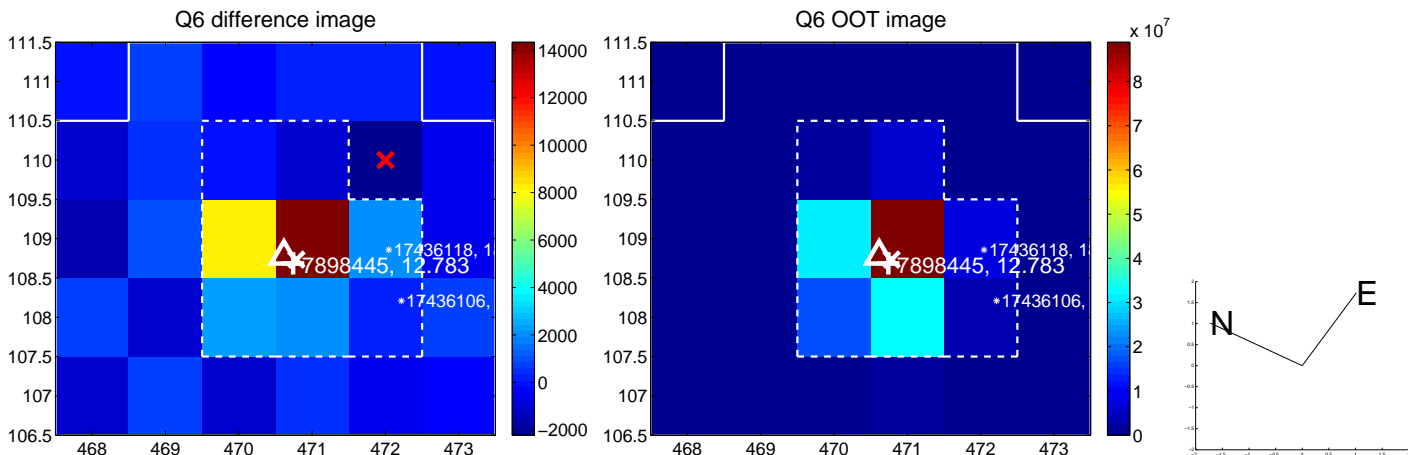
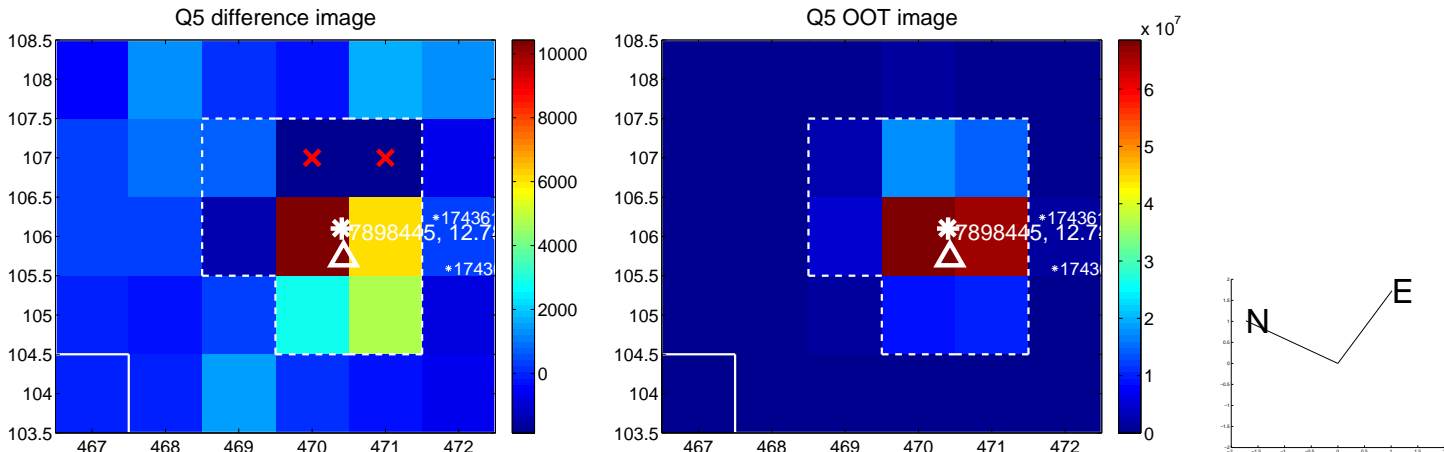


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

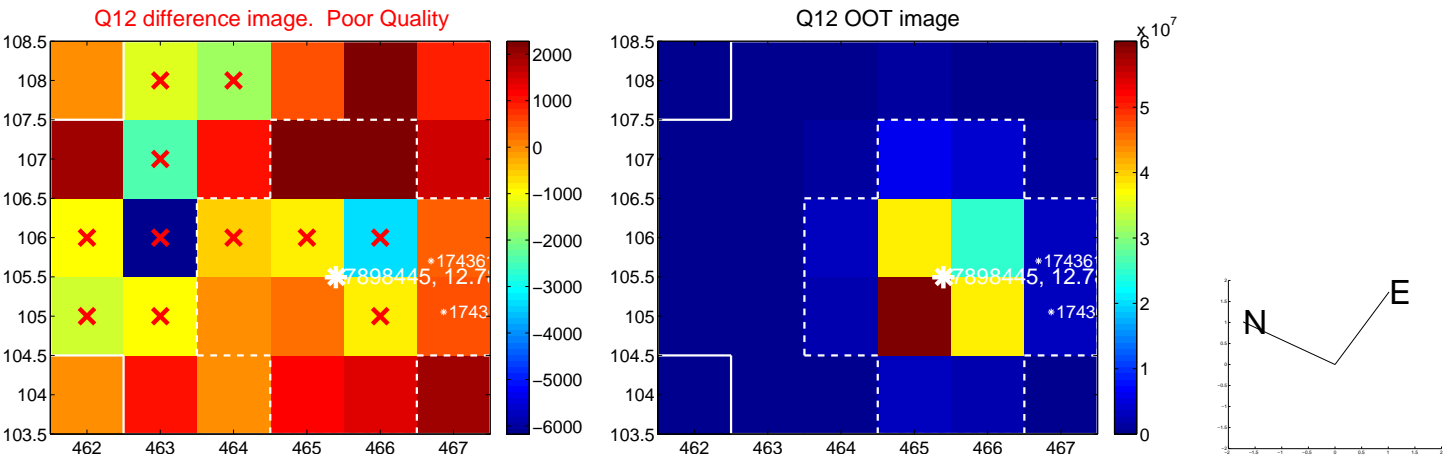
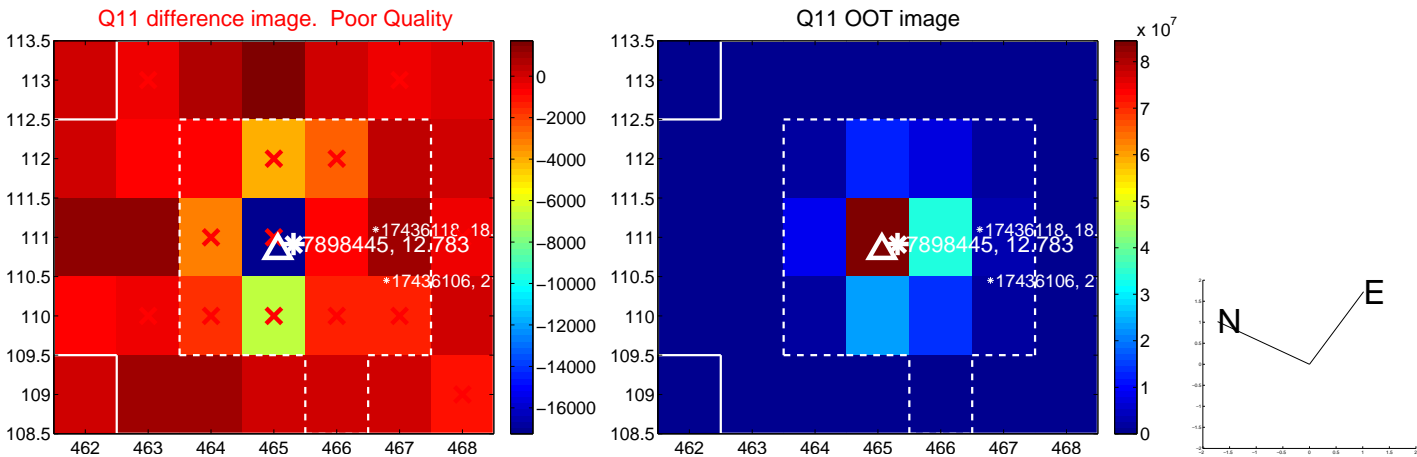
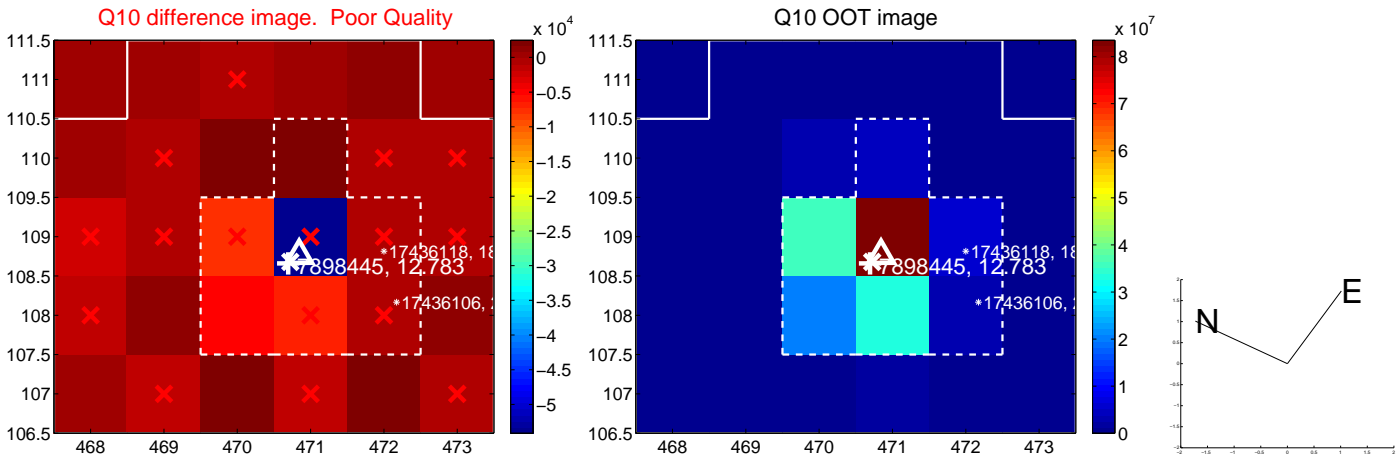
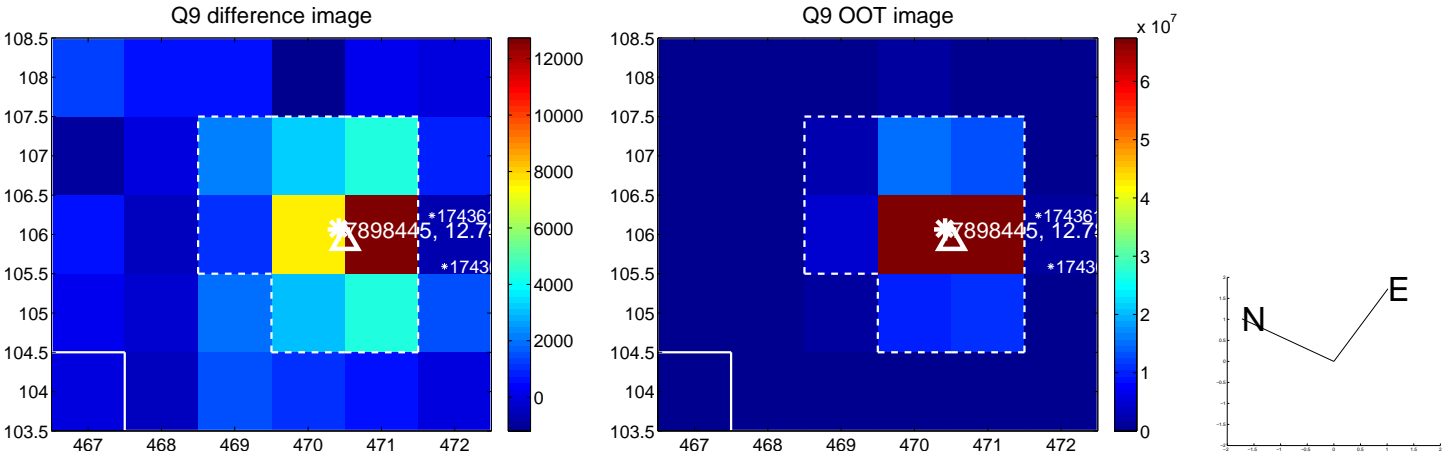
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



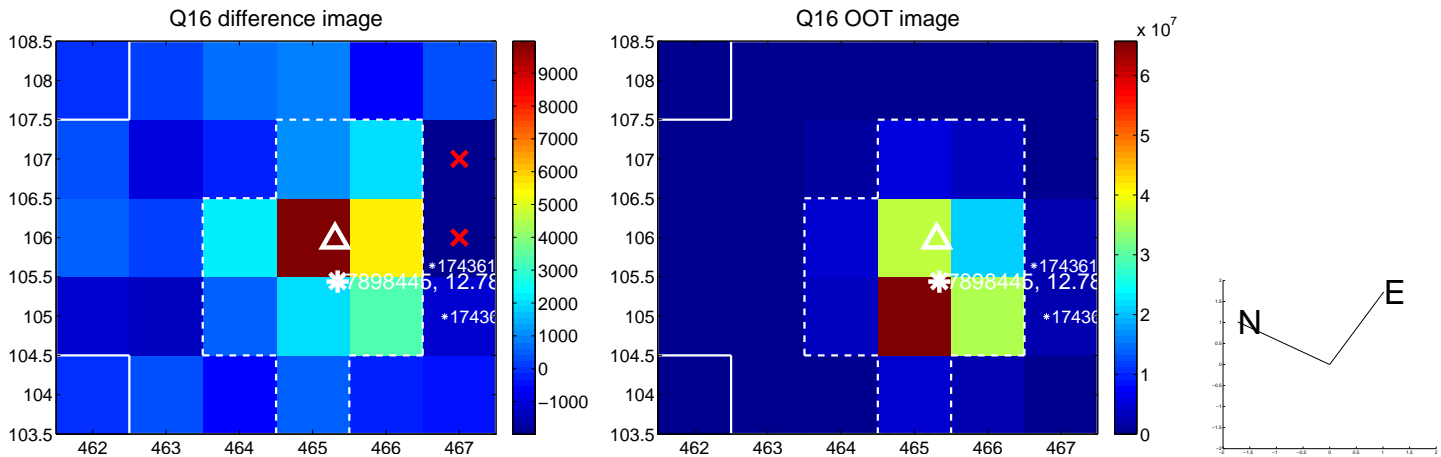
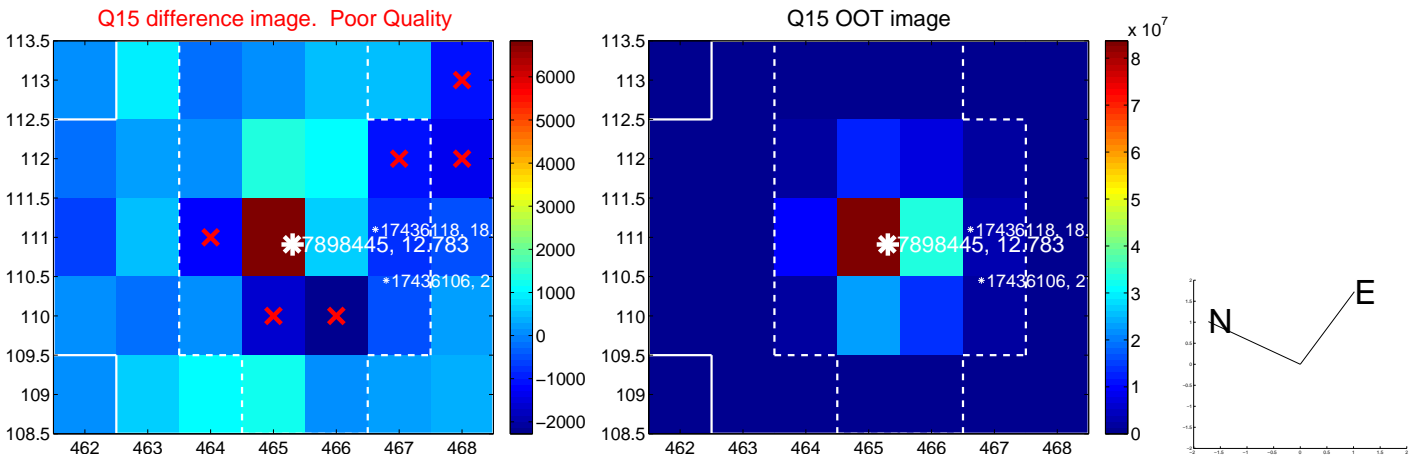
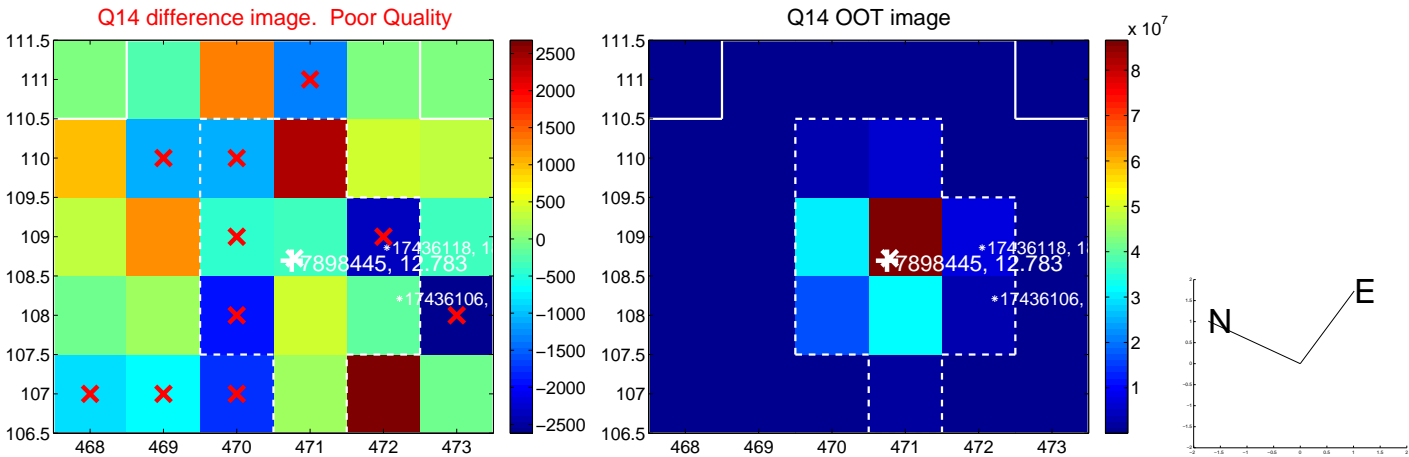
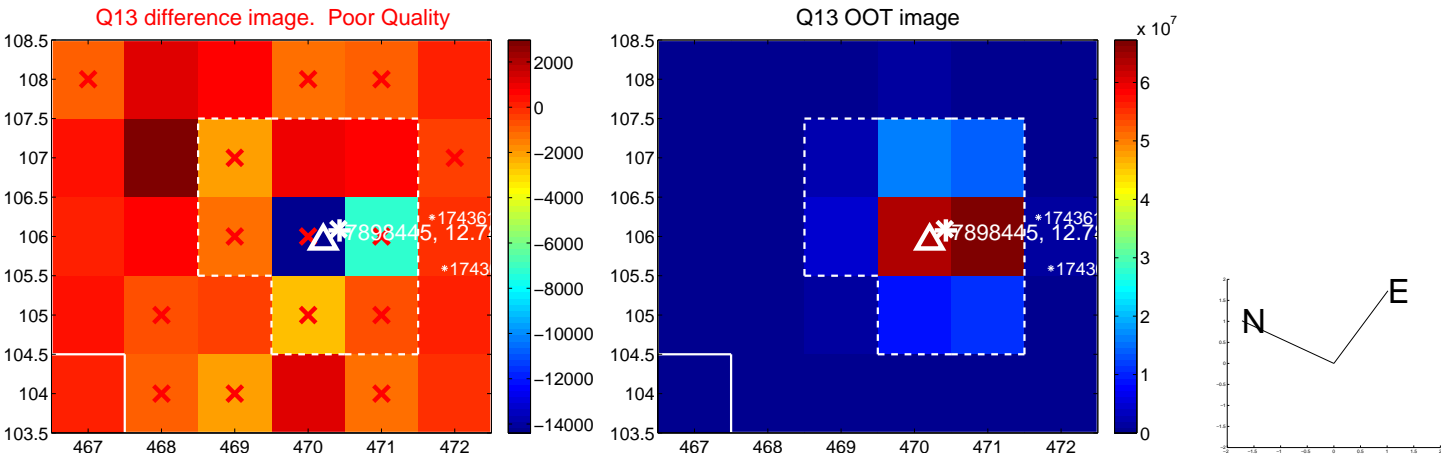
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



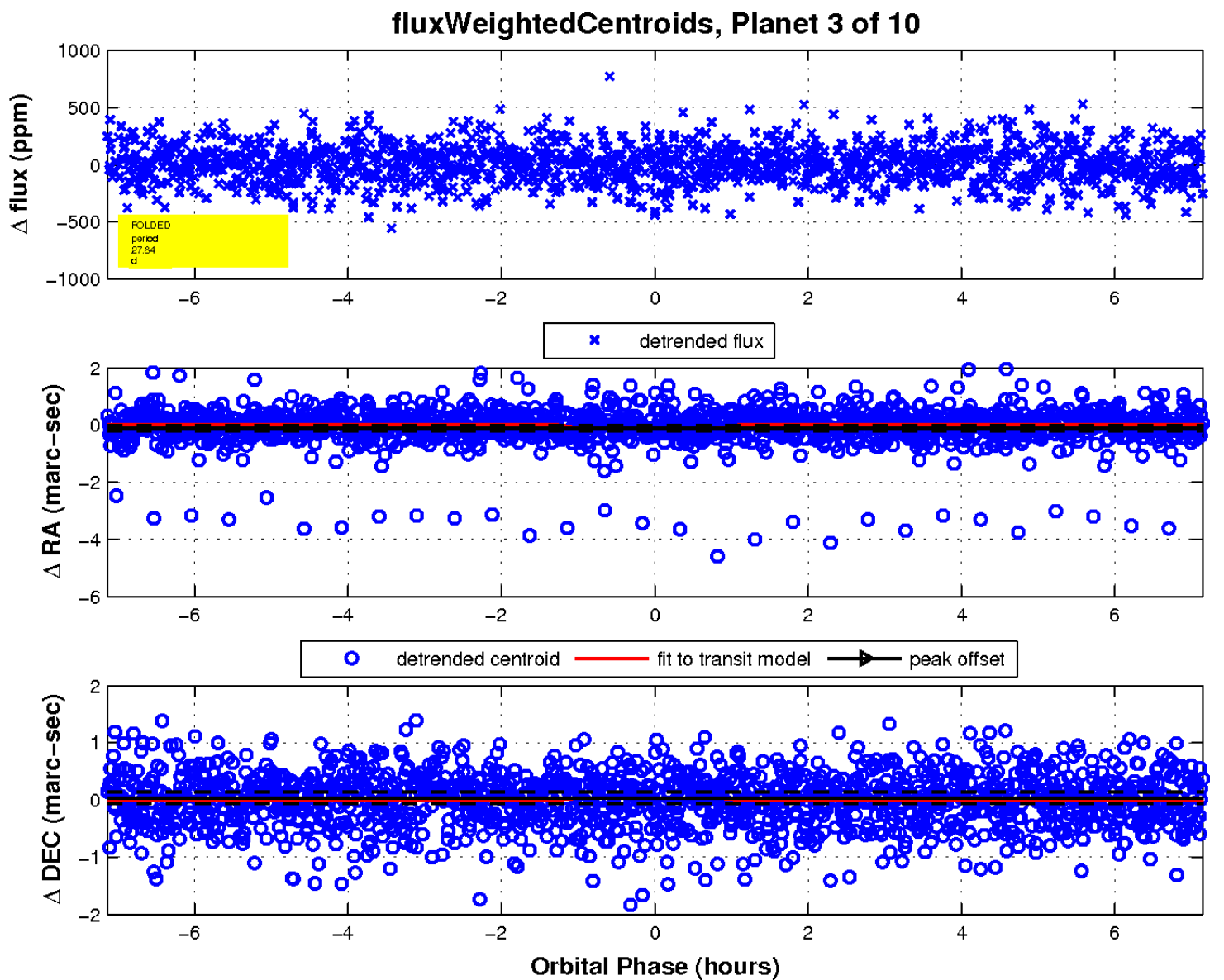
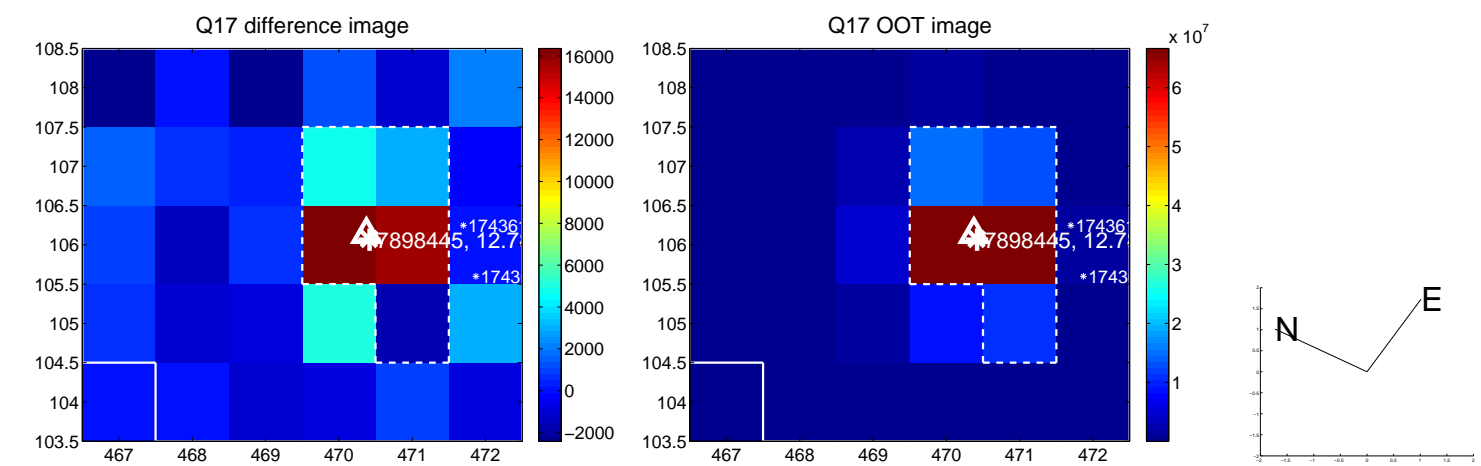
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

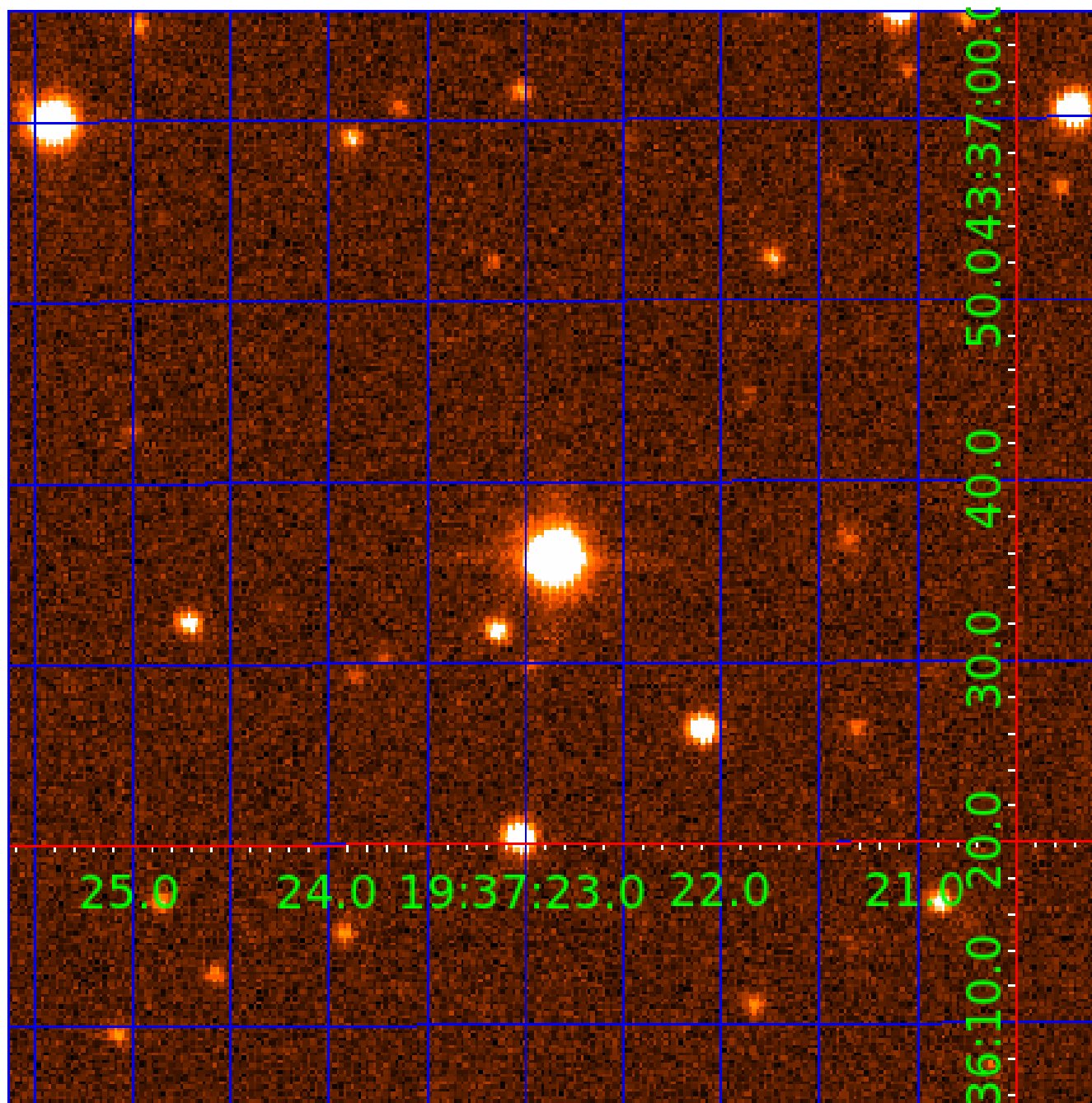


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

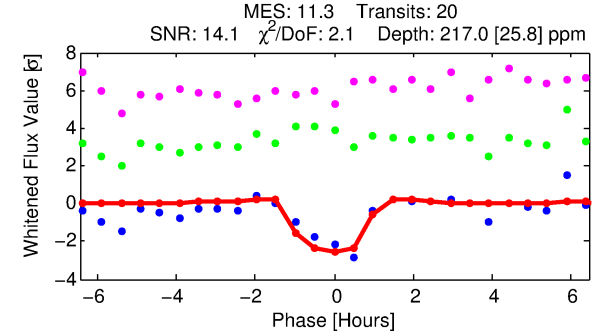
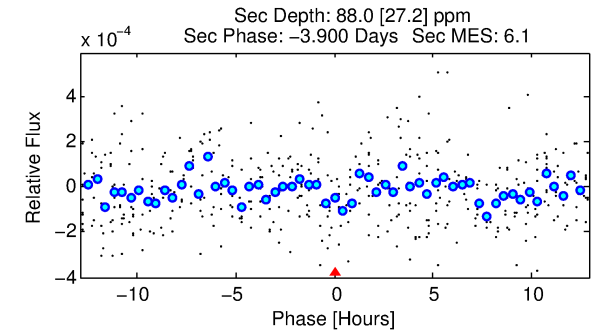
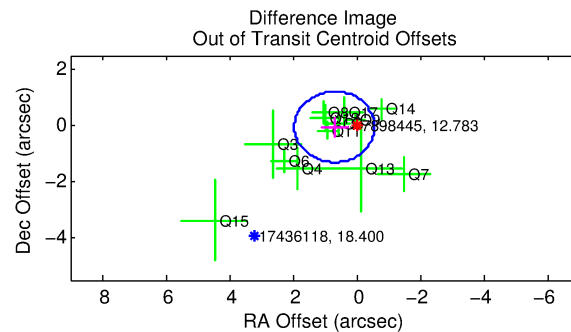
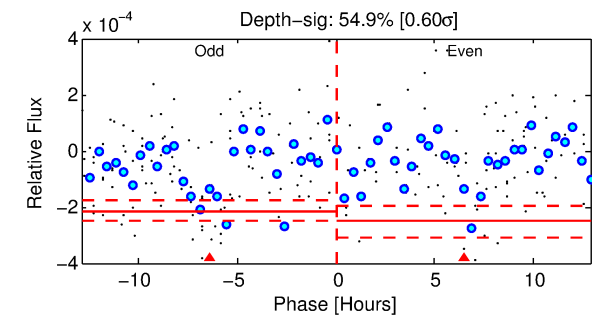
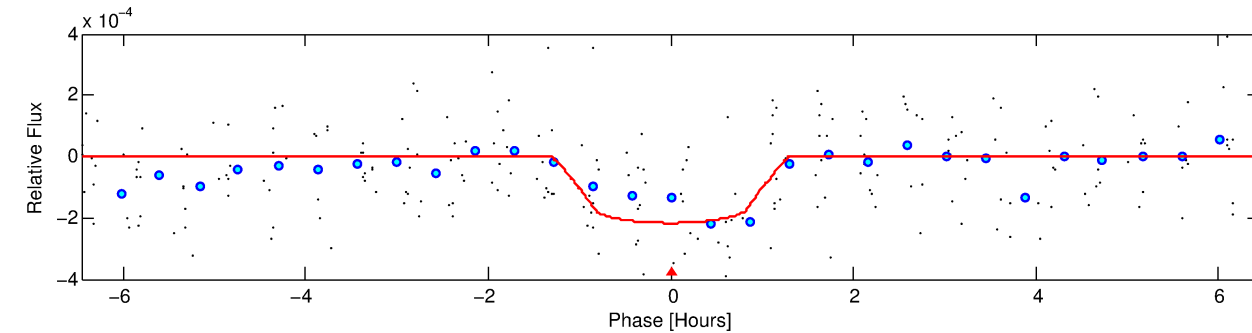
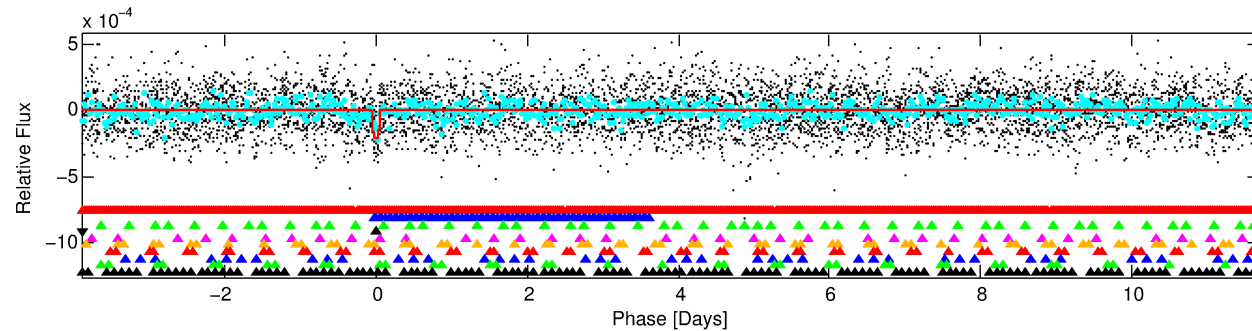
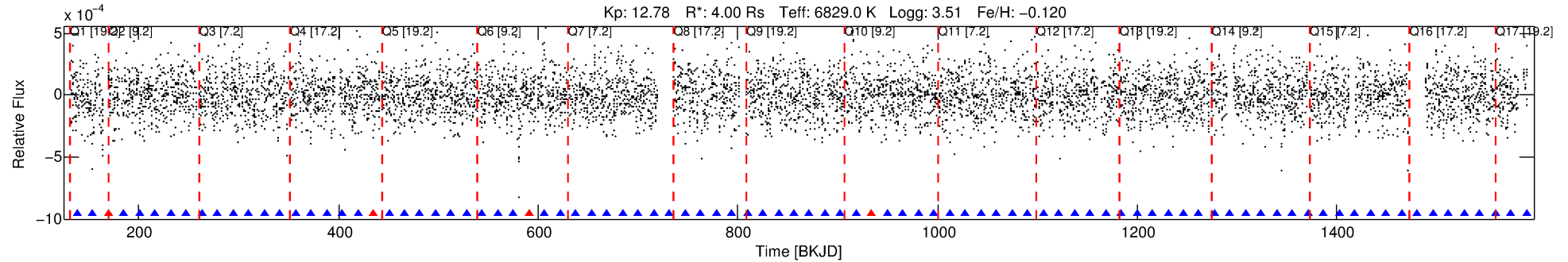
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-04

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 4 of 10 Period: 15.603 d



DV Fit Results:

Period = 15.60291 [0.00012] d
Epoch = 138.5741 [0.0055] BKJD
Rp/R* = 0.0138 [0.0120]
a/R* = 53.20 [252.71]
b = 0.33 [13.19]
Seff = 1368.46 [818.88]
Teq = 1551 [232] K
Rp = 6.02 [5.68] Re
a = 0.1510 [0.0548] AU
Ag = 30.50 [56.65] [0.52 σ]
Teffp = 5635 [2491] K [1.63 σ]

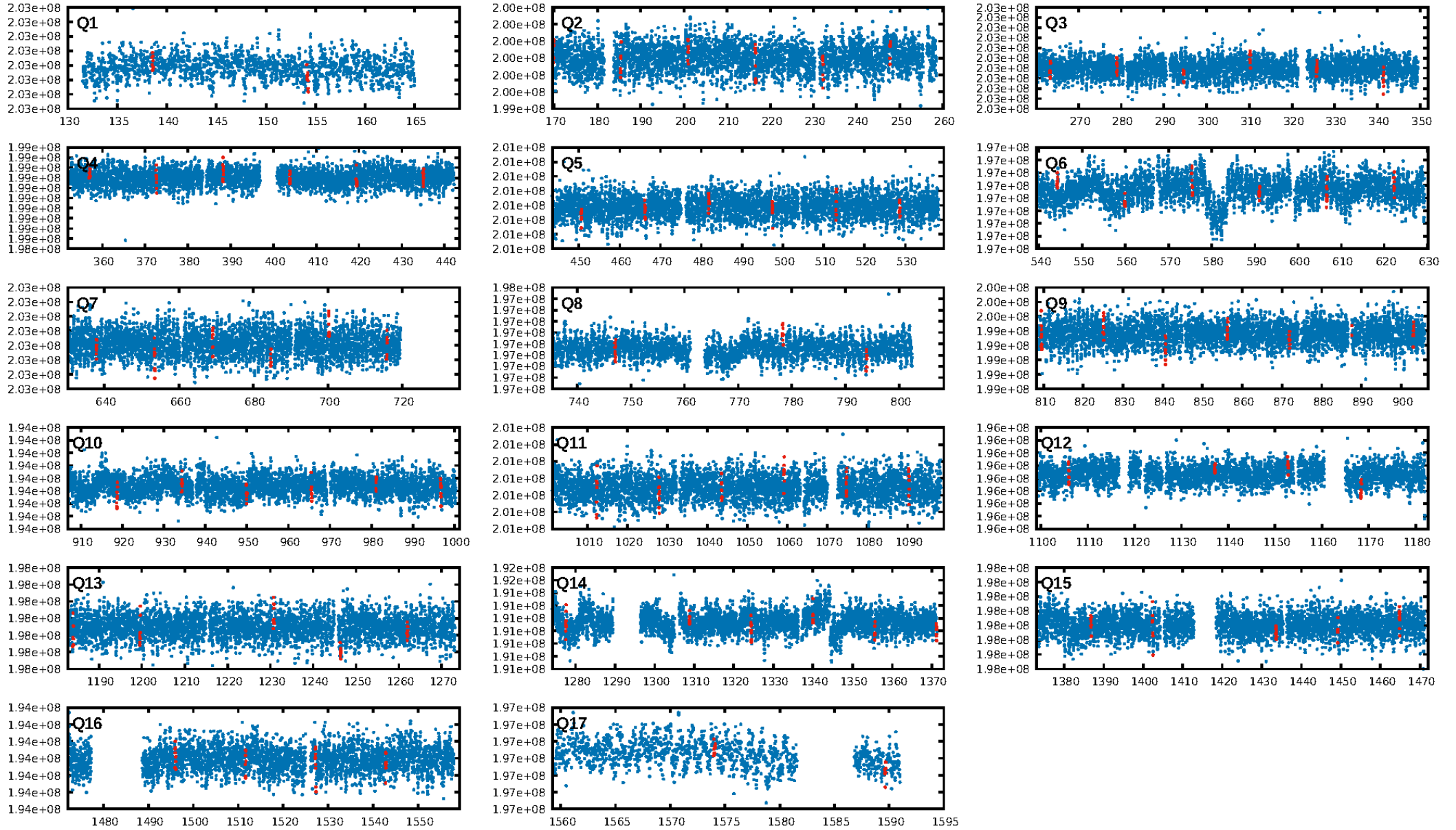
DV Diagnostic Results:

ShortPeriod-sig: 24.0% [0.31 σ]
LongPeriod-sig: 100.0% [70.73 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 82.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.80 [16/20]
GhostDiagnostic-chr: 0.8727
Centroid-sig: 7.5%
Centroid-so: 0.458 arcsec [1.45 σ]
OotOffset-rm: 0.695 arcsec [1.65 σ]
KicOffset-rm: 0.671 arcsec [1.52 σ]
OotOffset-st: 2/4/3/4 [13]
KicOffset-st: 2/4/3/4 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 0.76 [13/17]

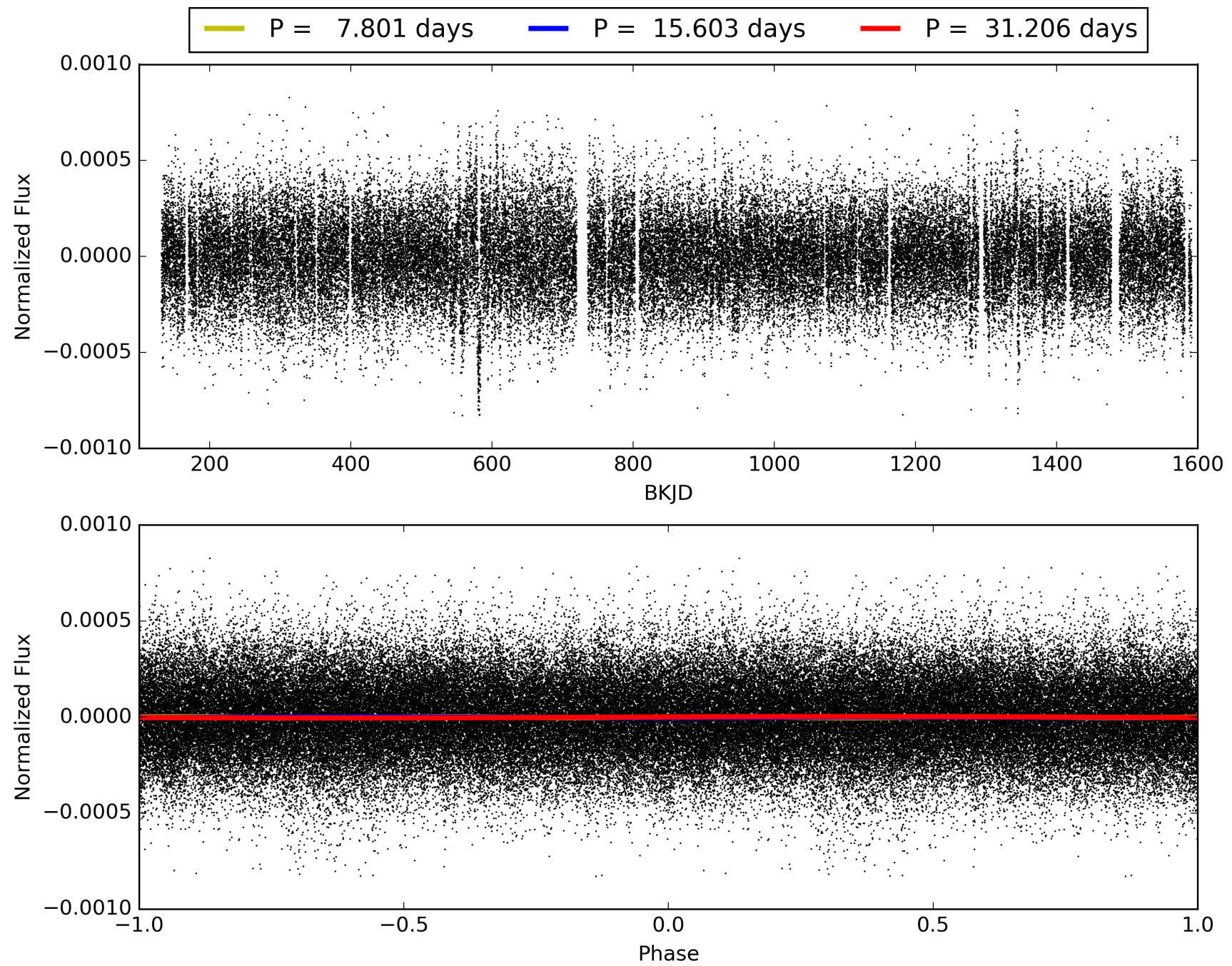
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:05 Z

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

TCE 007898445-04, PDC Light Curves

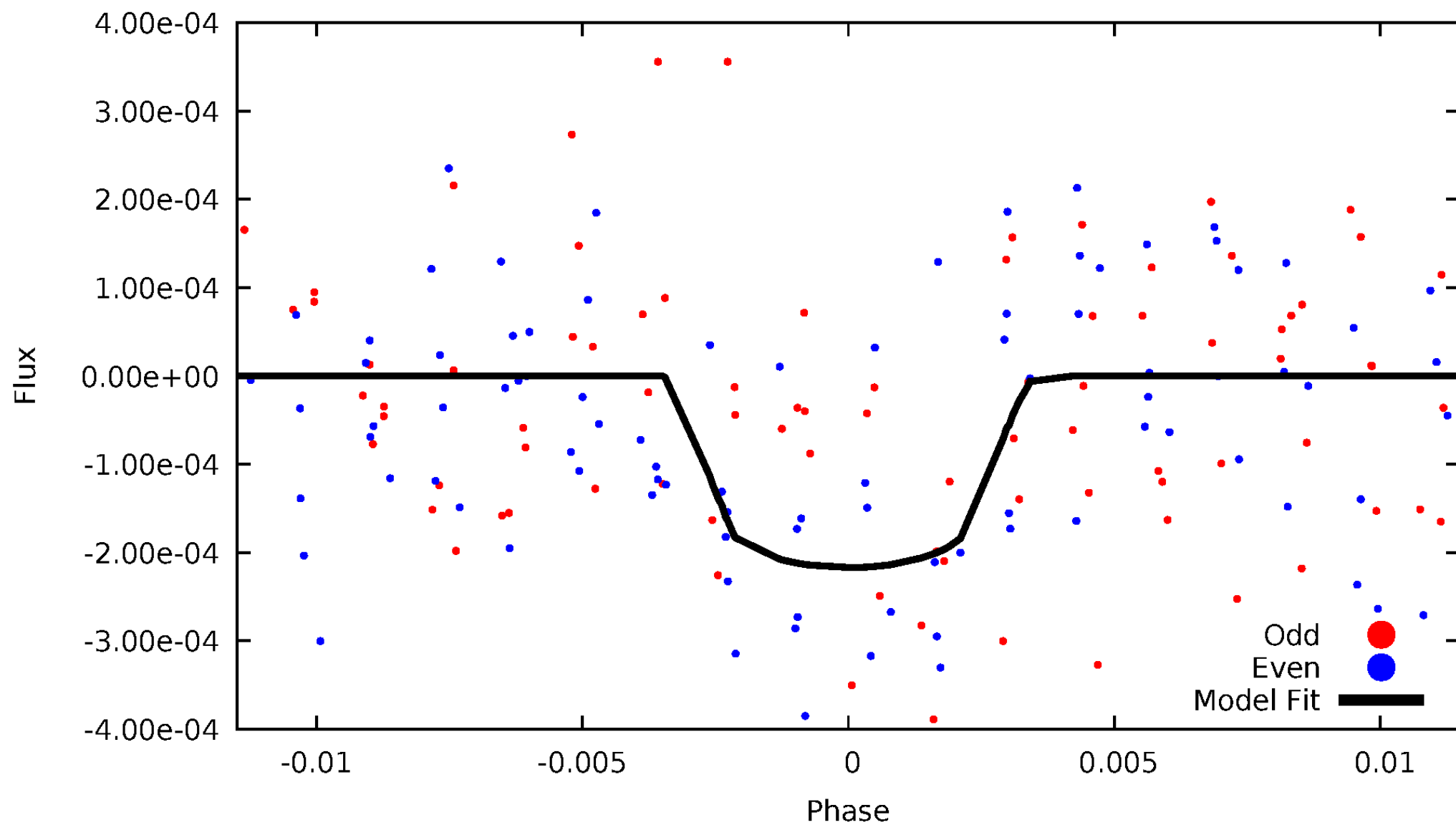


TCE 007898445-04



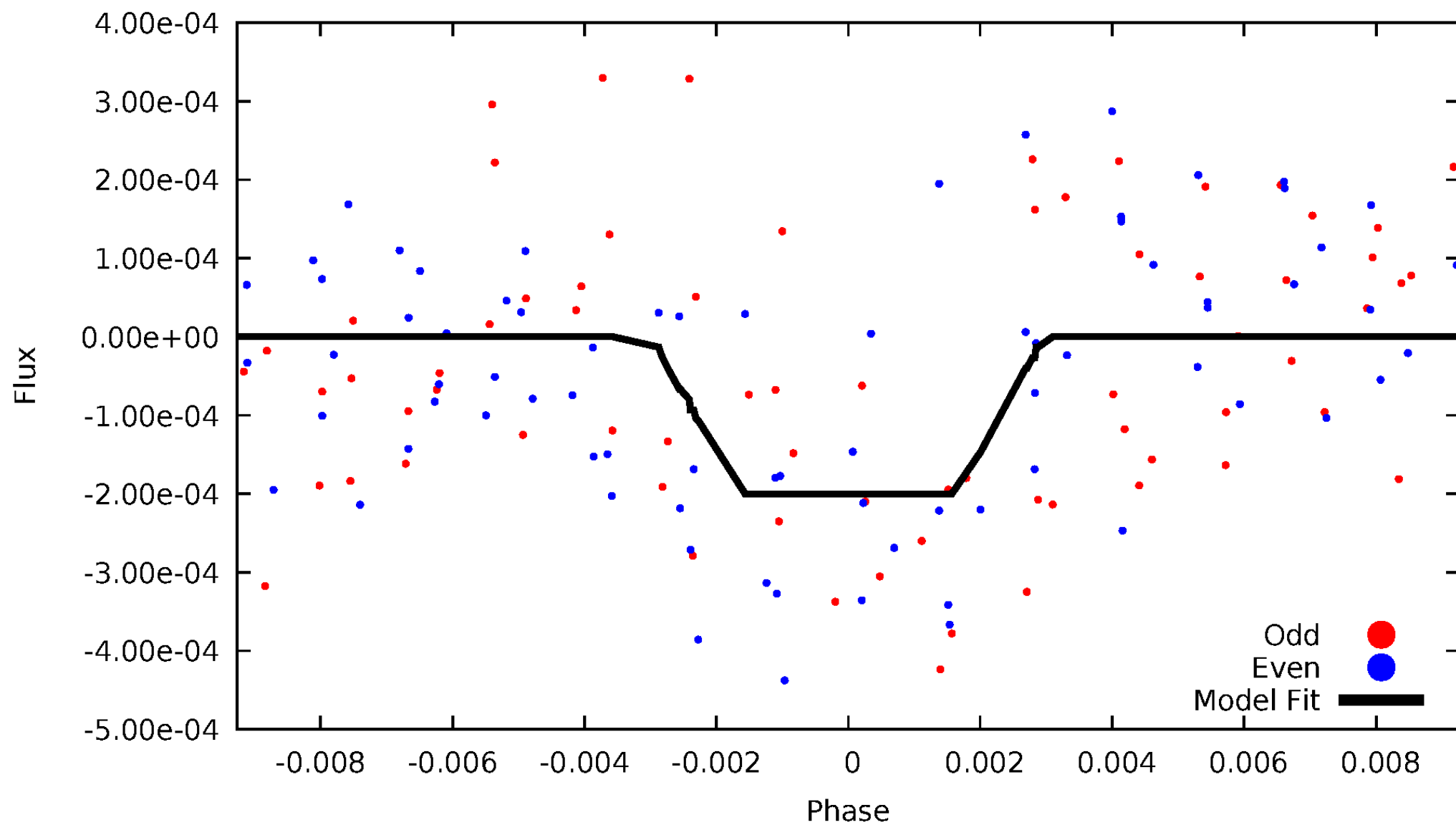
DV Odd/Even

TCE 007898445-04



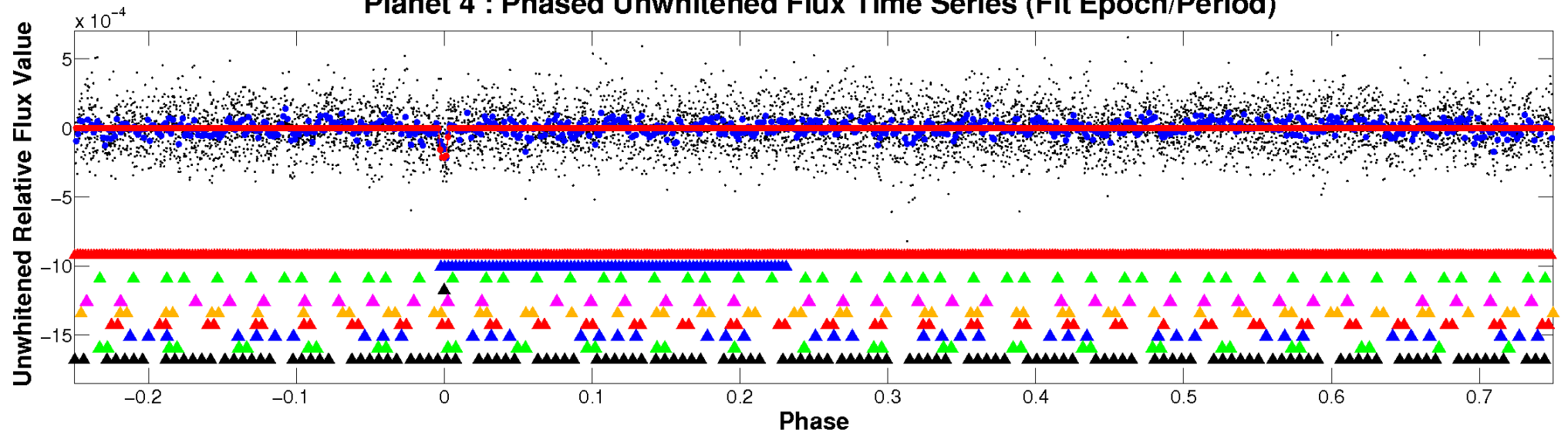
ALT Odd/Even

TCE 007898445-04

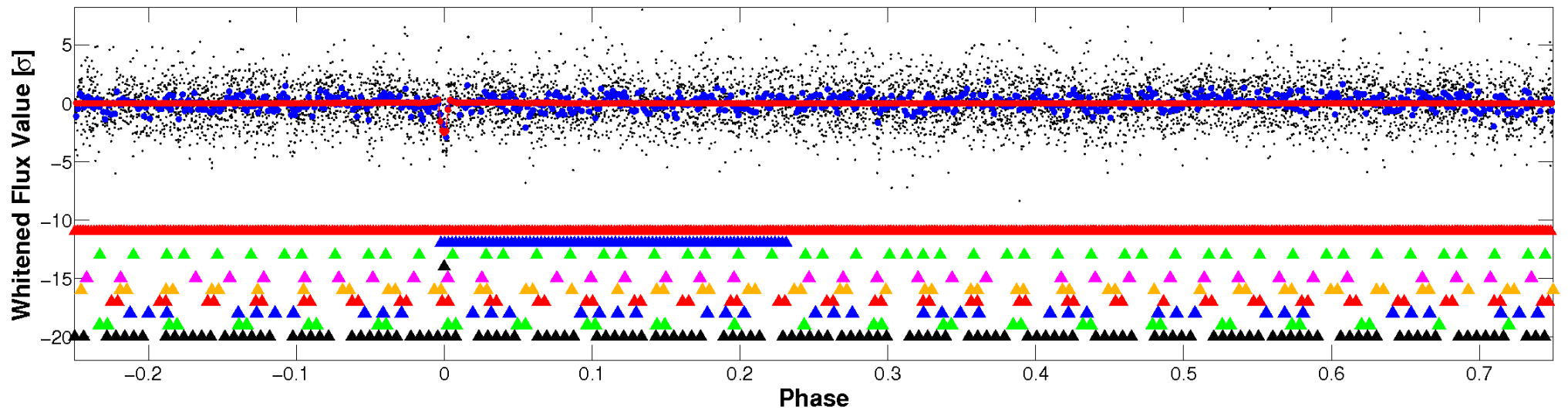


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

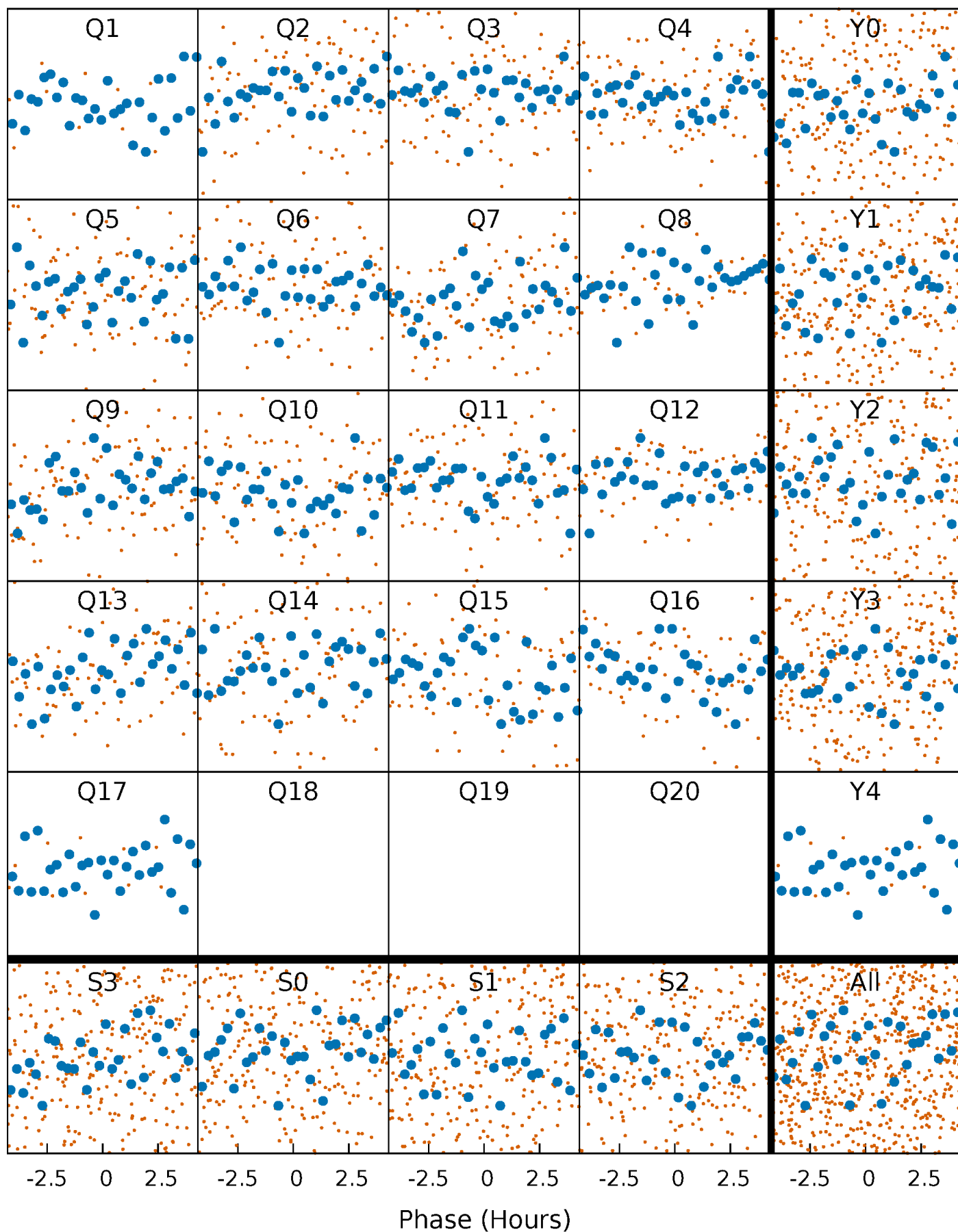


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



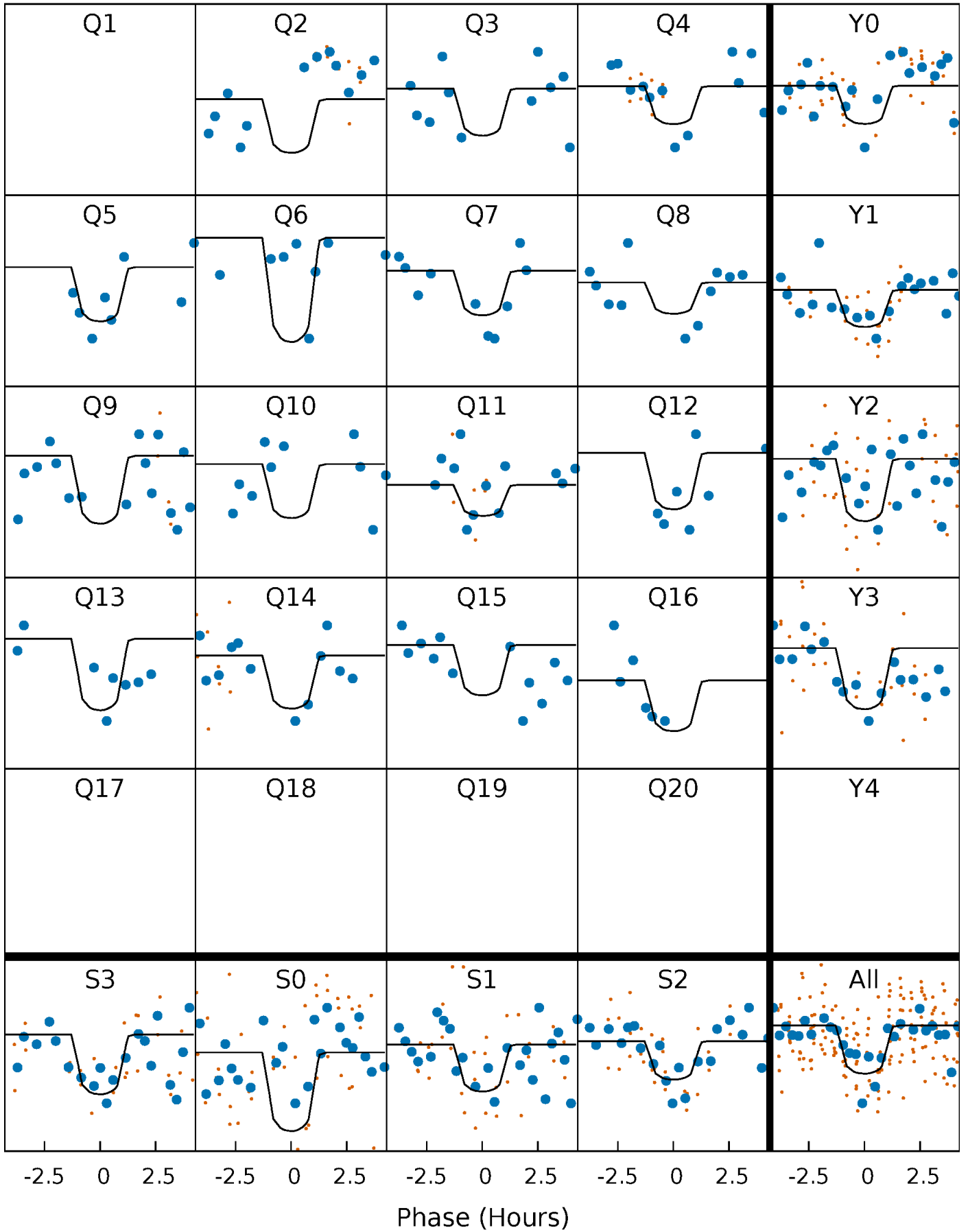
PDC Quarter-Phased Transit Curves

TCE 007898445-04 P= 15.602907 Days $T_0=138.574082$ (BKJD)



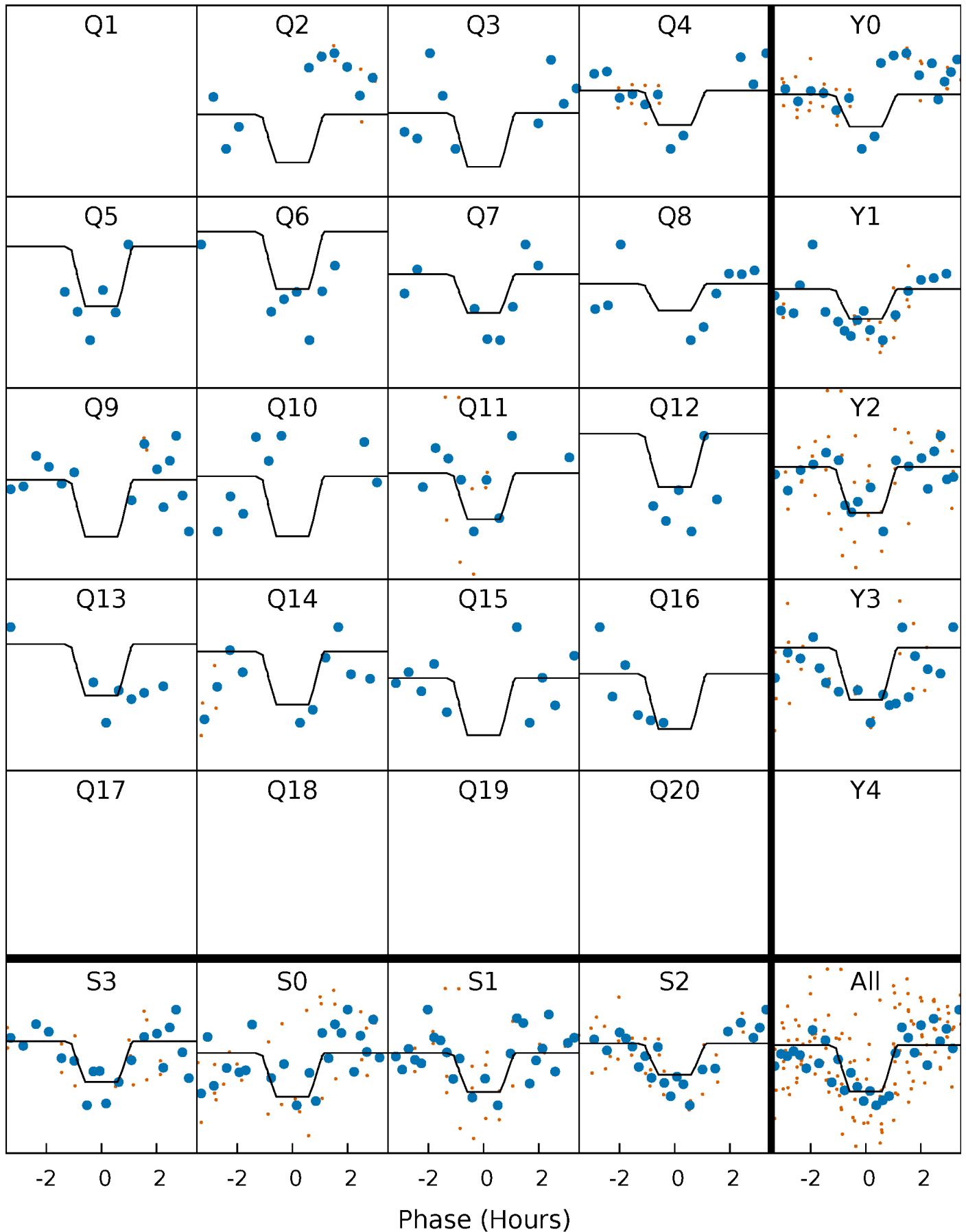
DV Quarter-Phased Transit Curves

TCE 007898445-04 P= 15.602907 Days $T_0=138.574082$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

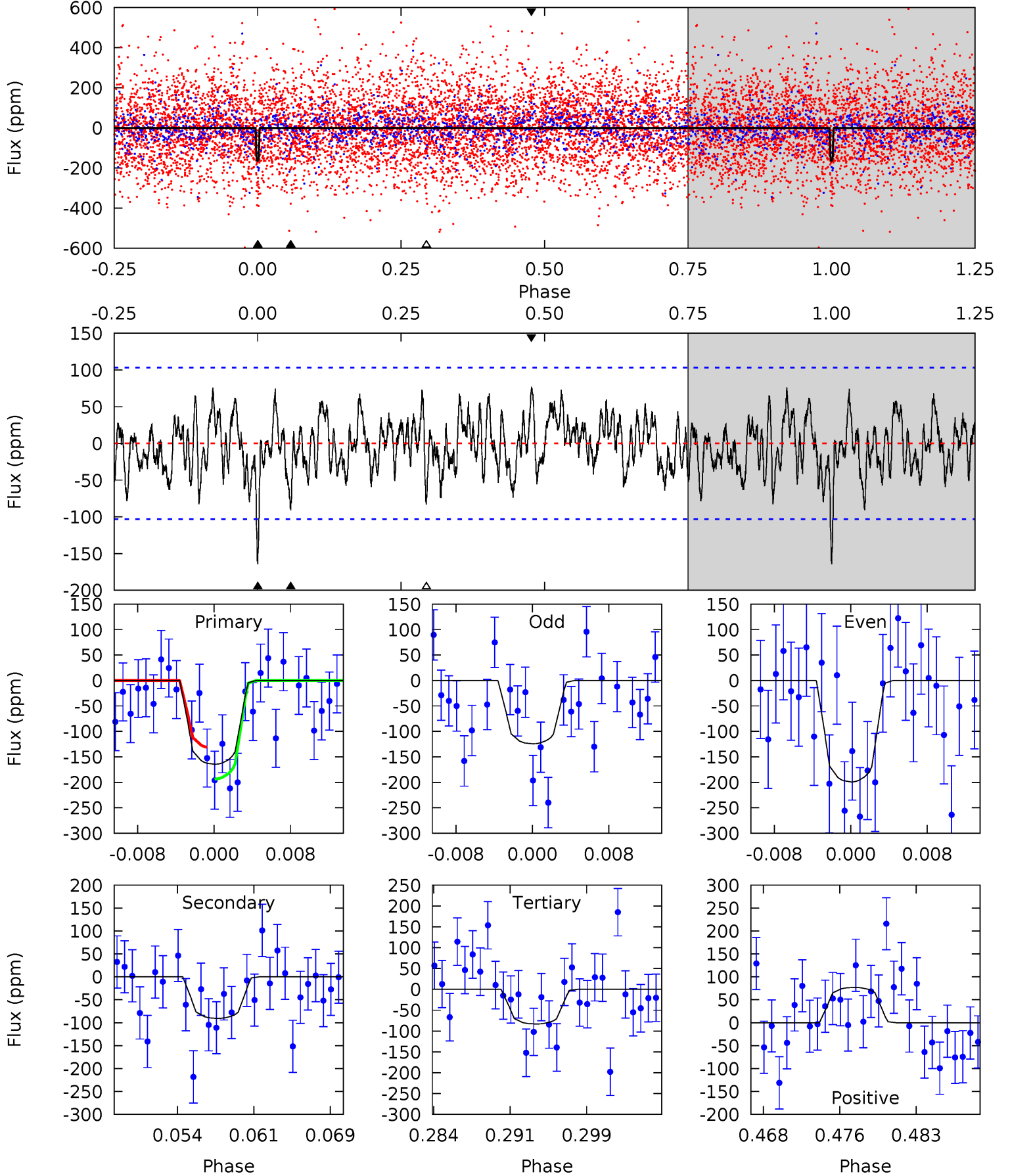
TCE 007898445-04 P= 15.602863 Days $T_0=138.578960$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-04, P = 15.602907 Days, E = 122.971175 Days

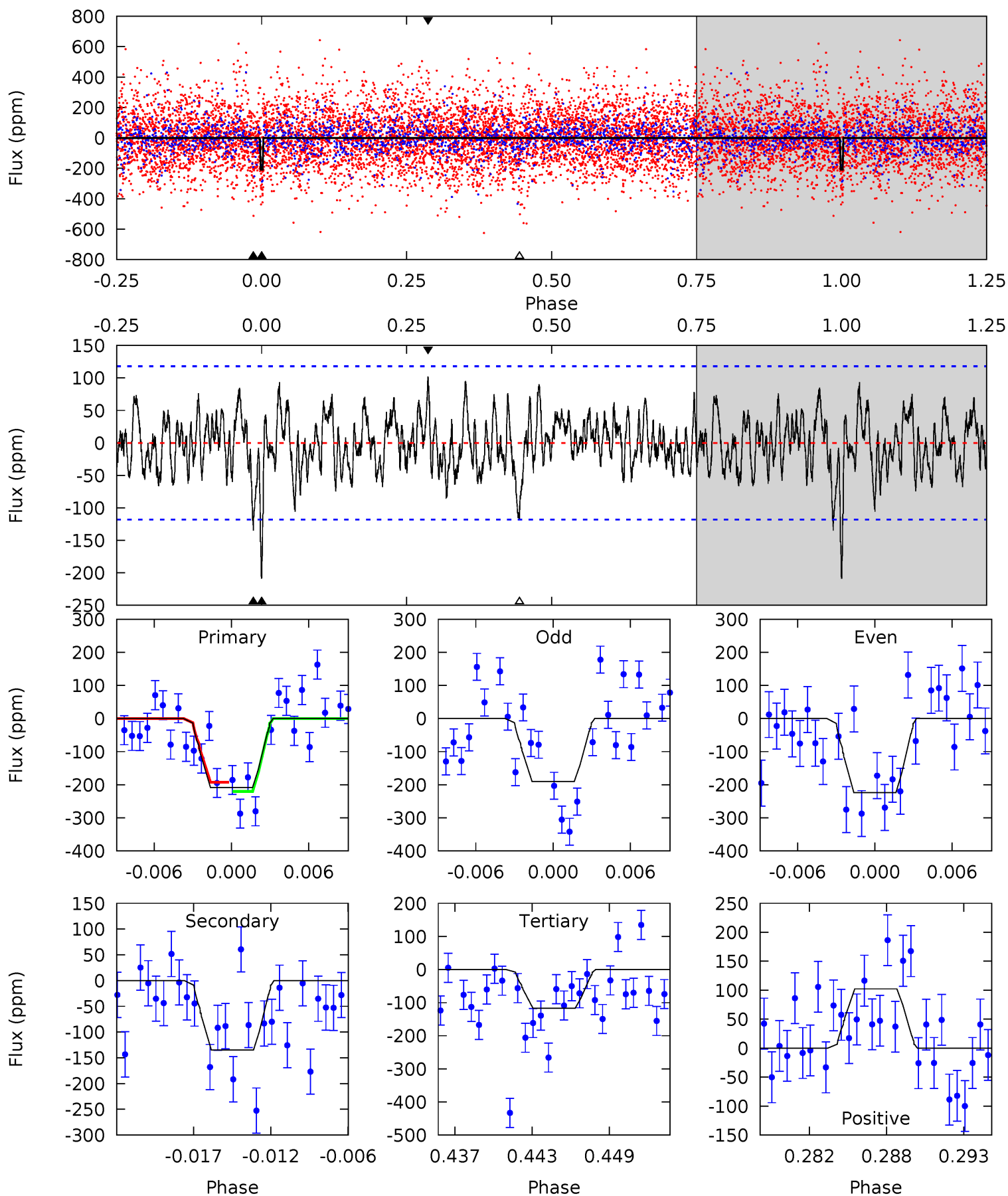
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	4.46	4.09	3.79	5.08	2.67	1.53	4.00	4.31	0.37	0.68	1.85	0.77	0.32	1.51



Alt Model-Shift Uniqueness Test

007898445-04, P = 15.602863 Days, E = 122.976097 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.05	5.87	5.10	4.44	5.13	2.76	1.54	3.95	4.61	0.77	1.42	0.72	0.76	0.33	0.60



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-91 ± 20	$6.61^{+5.09}_{-3.96}$	2134^{+107}_{-202}	5188^{+3051}_{-1049}	26^{+134}_{-18}
Alt.	-135 ± 23	$6.34^{+4.96}_{-3.98}$	2135^{+102}_{-188}	5792^{+5179}_{-1212}	41^{+264}_{-28}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

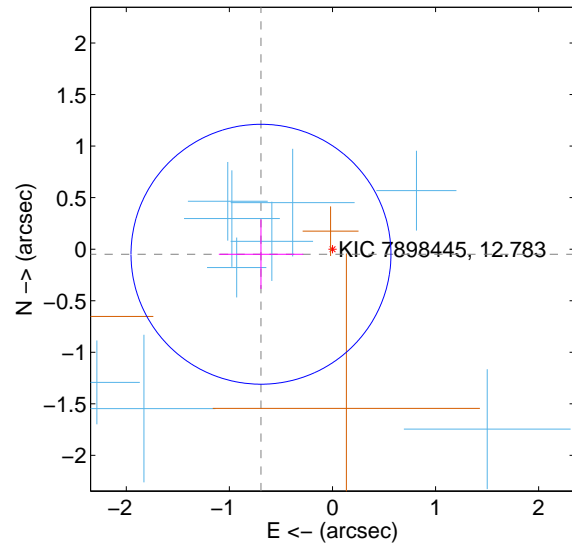
Supplemental centroid analysis for 007898445-04. Kepler magnitude: 12.78. Transit SNR 14.06

There are 9 quarters with good PRF difference image offsets

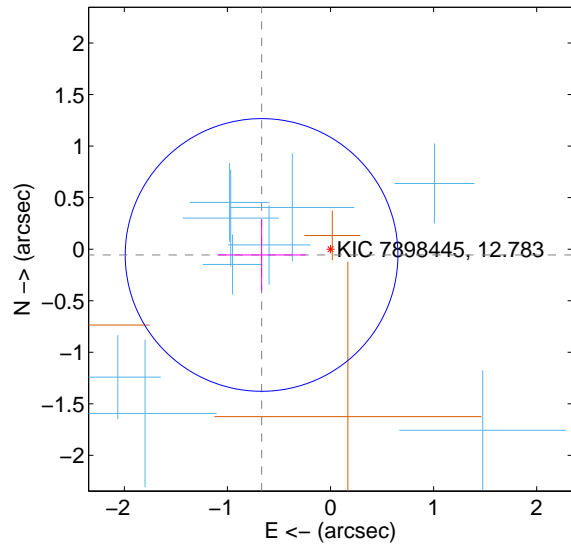
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.695 ± 0.420	1.65	0.693 ± 0.409	-0.049 ± 0.337
PRF-fit source offset from KIC position	0.671 ± 0.441	1.52	0.669 ± 0.427	-0.056 ± 0.346
photometric centroid source offset	0.46 ± 0.32	1.45	0.44 ± 0.31	0.14 ± 0.35

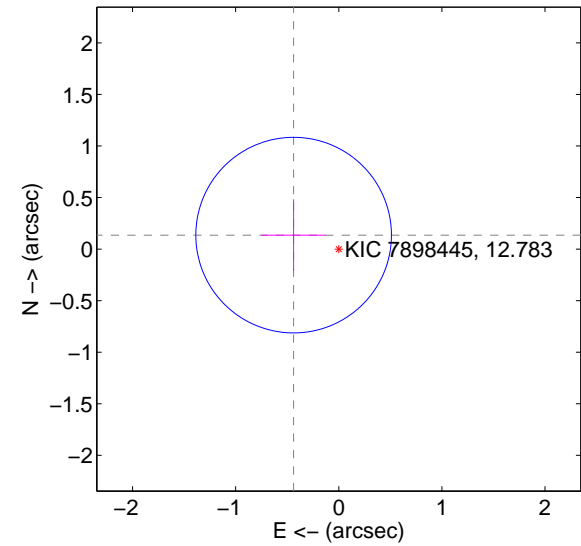
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

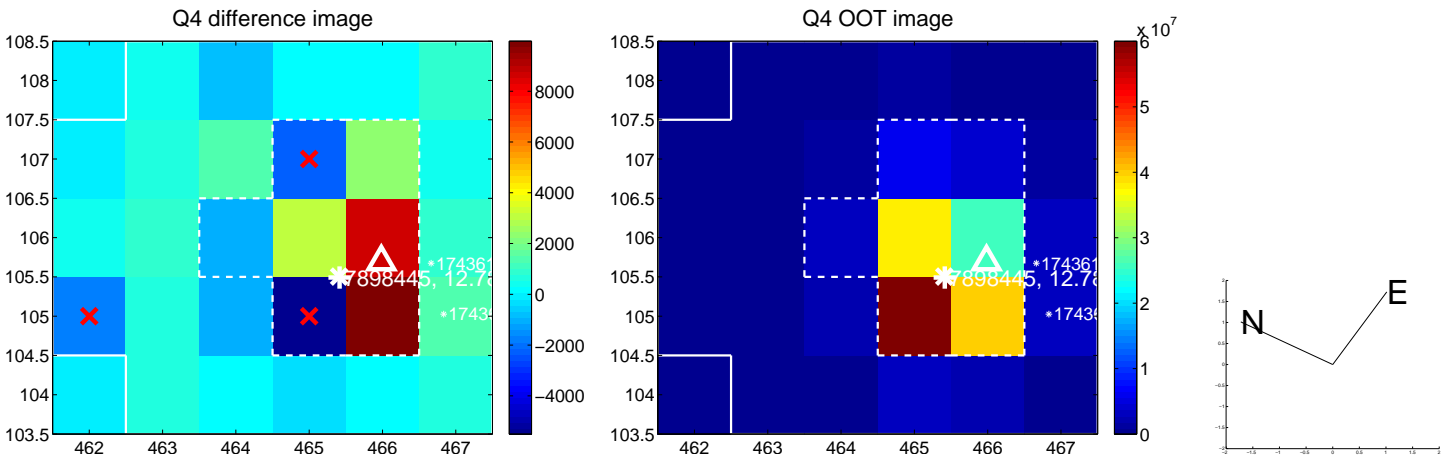
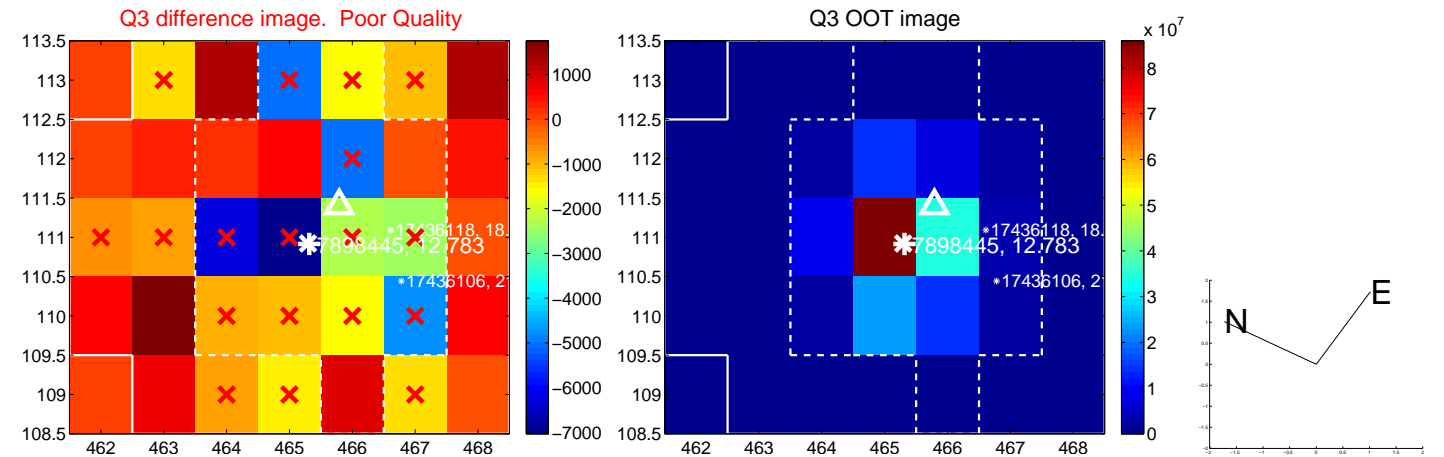
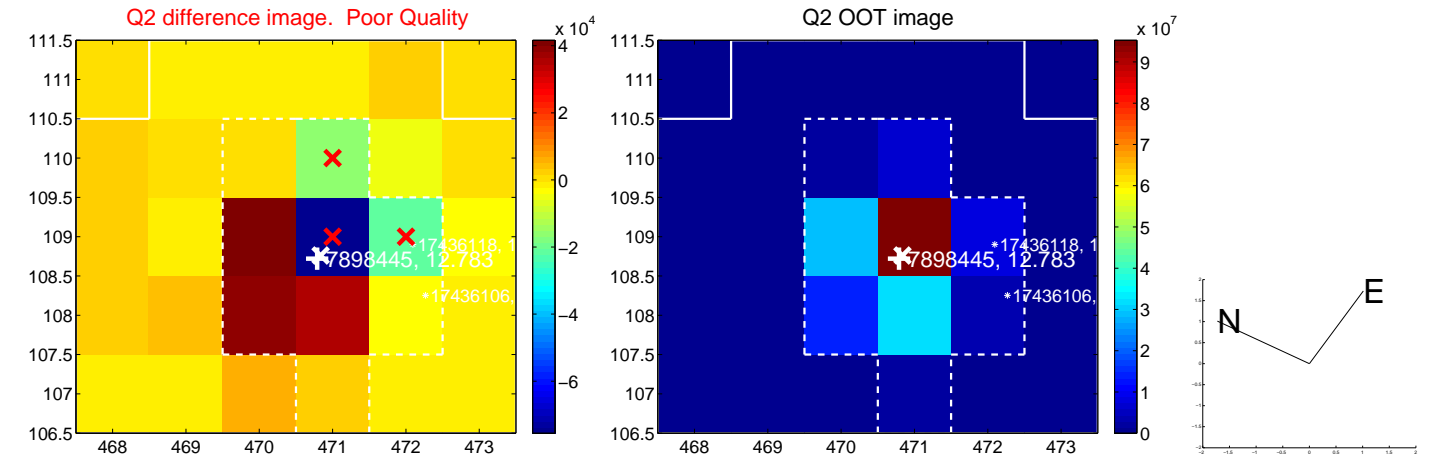
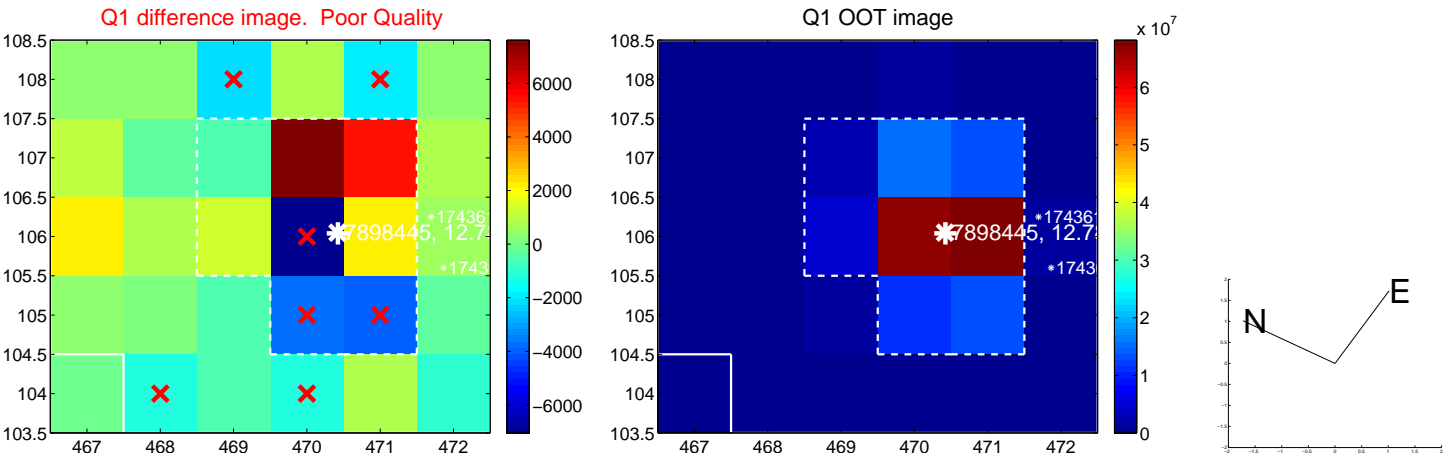


offset from photometric centroids

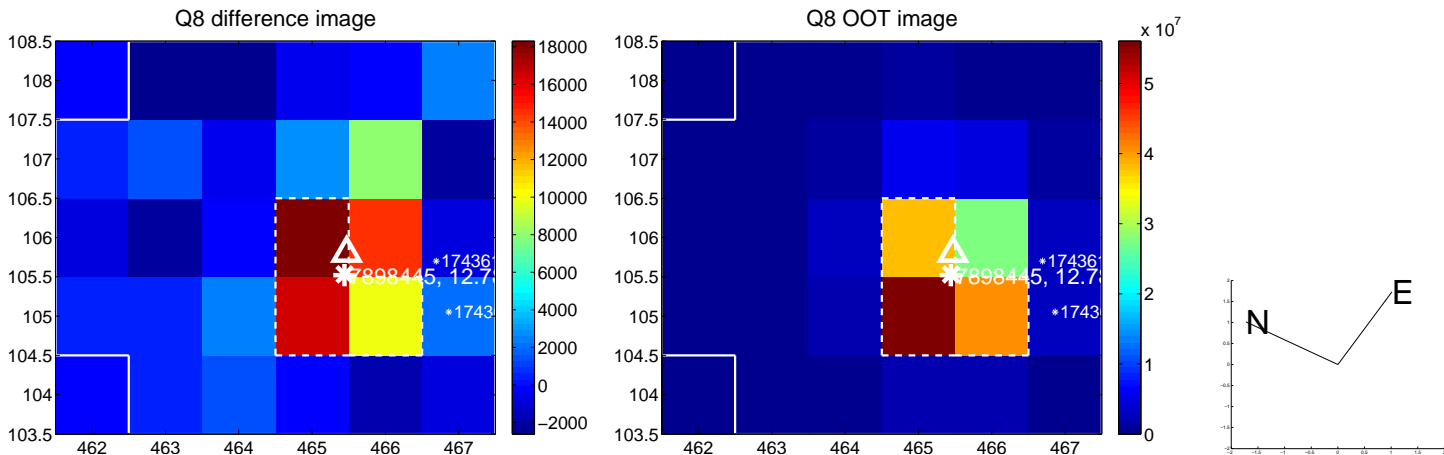
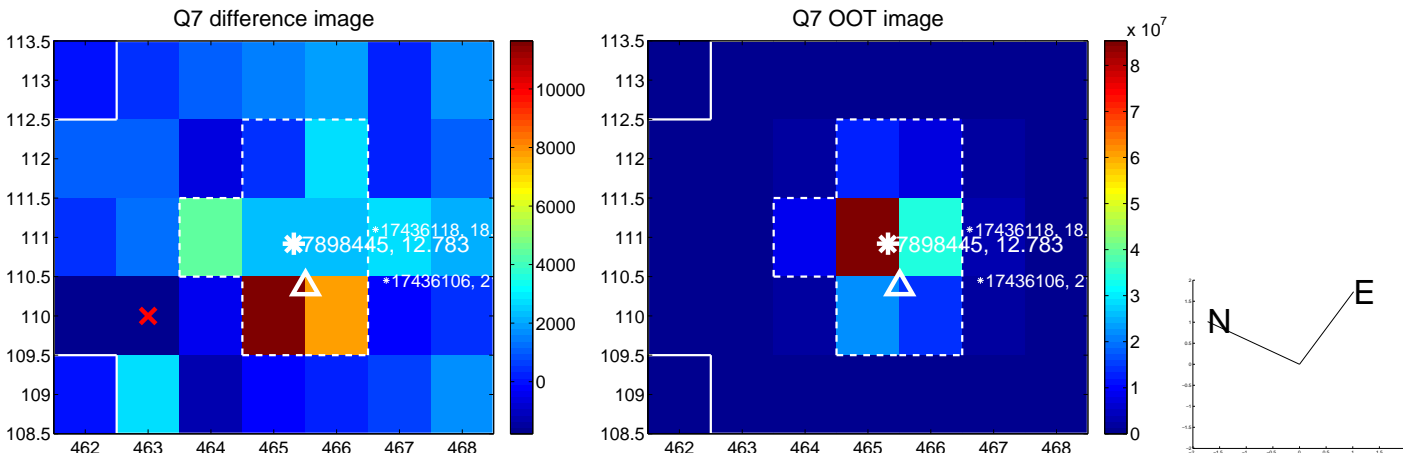
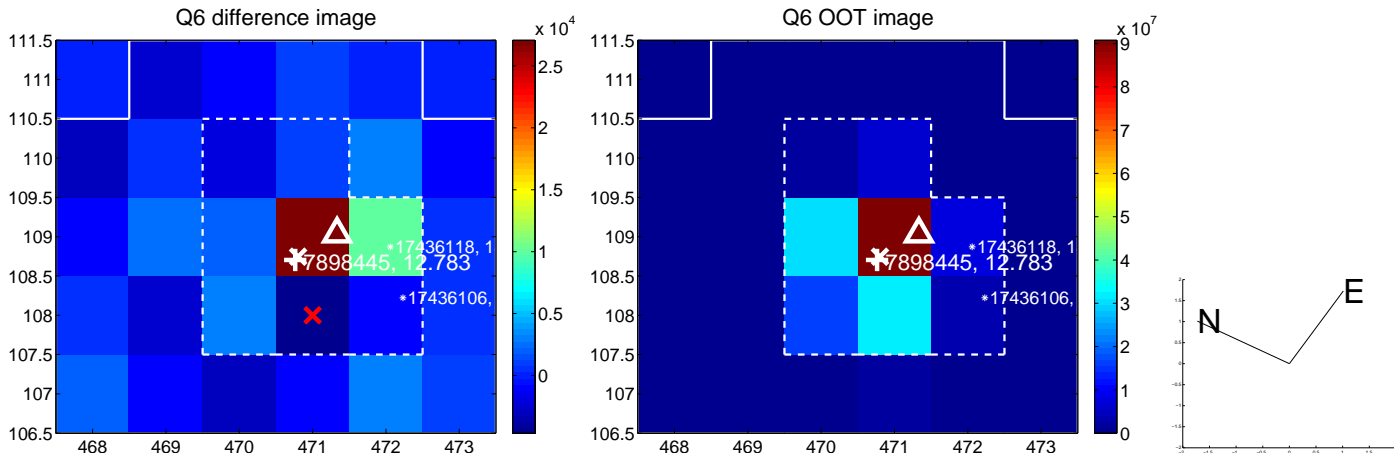
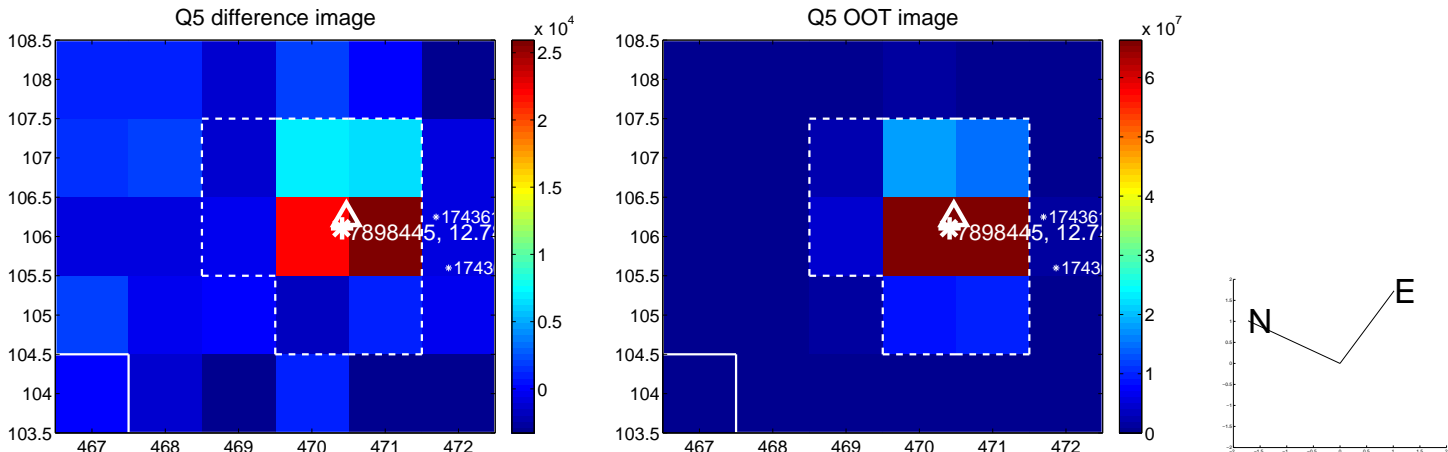


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

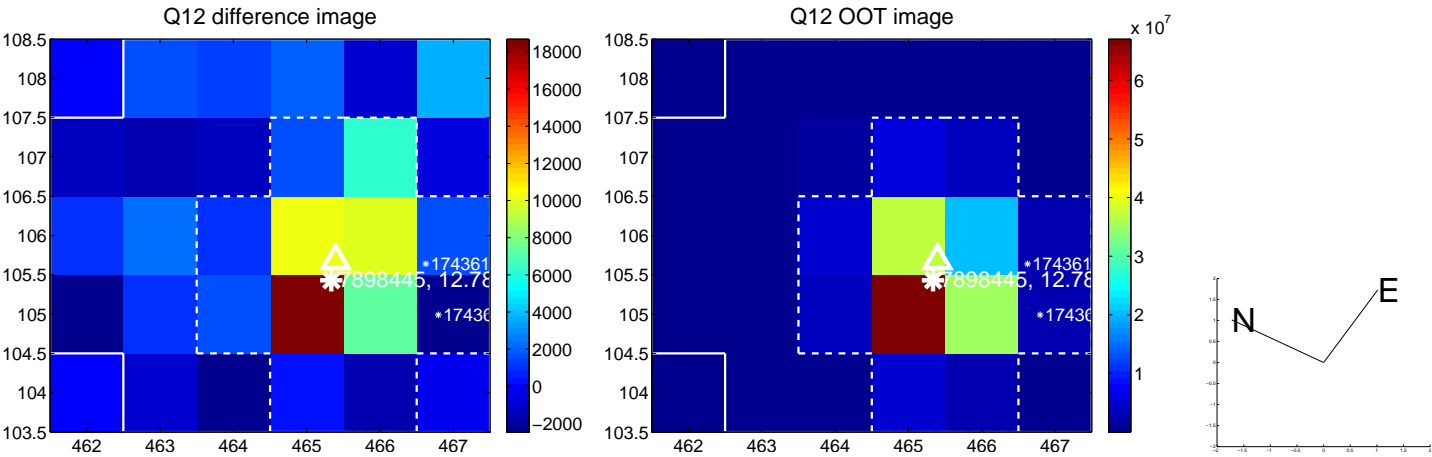
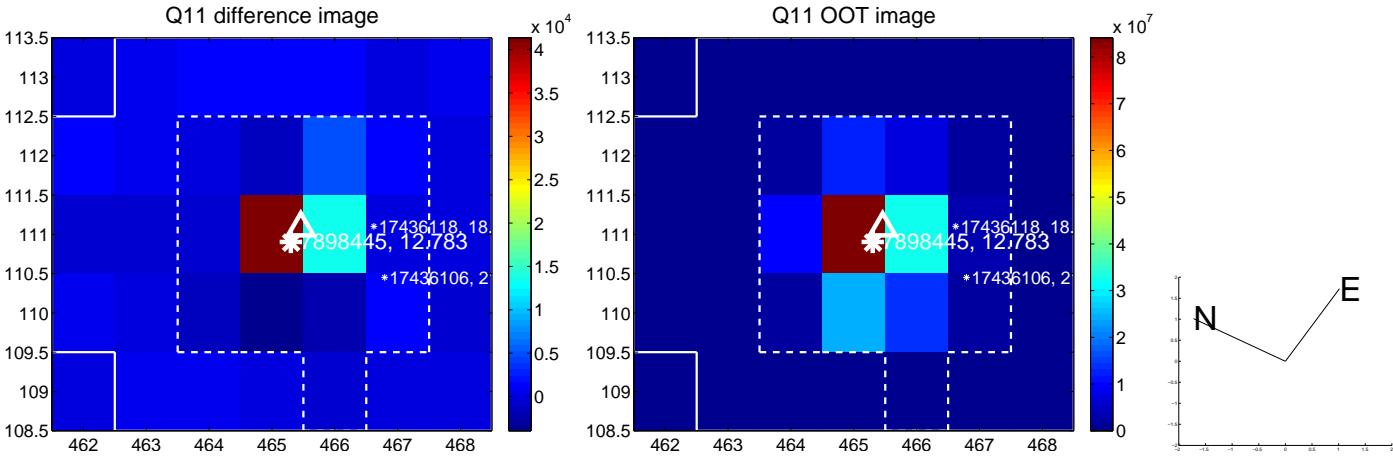
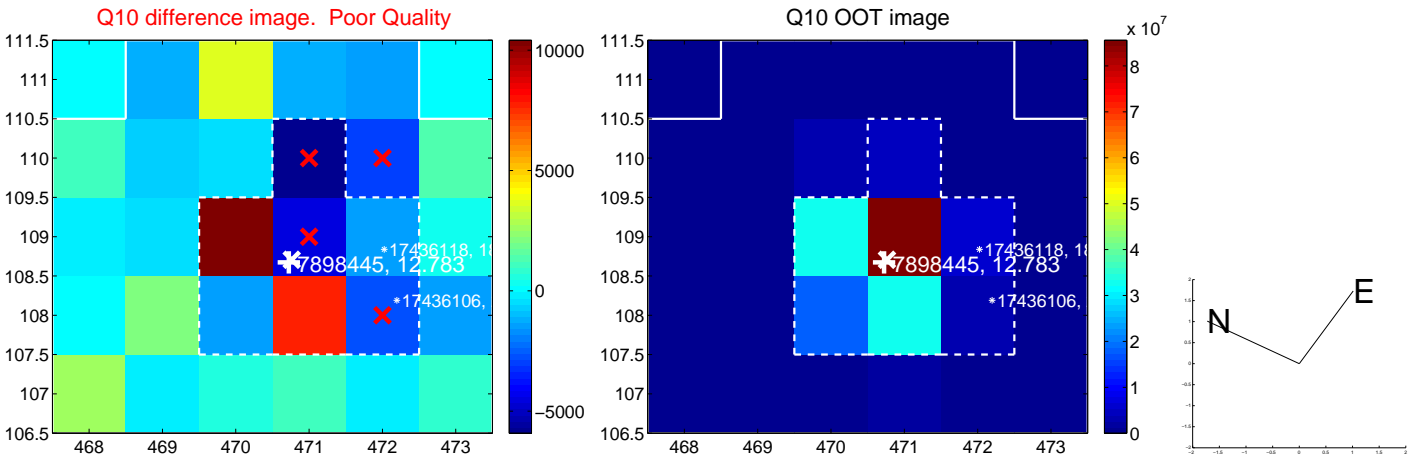
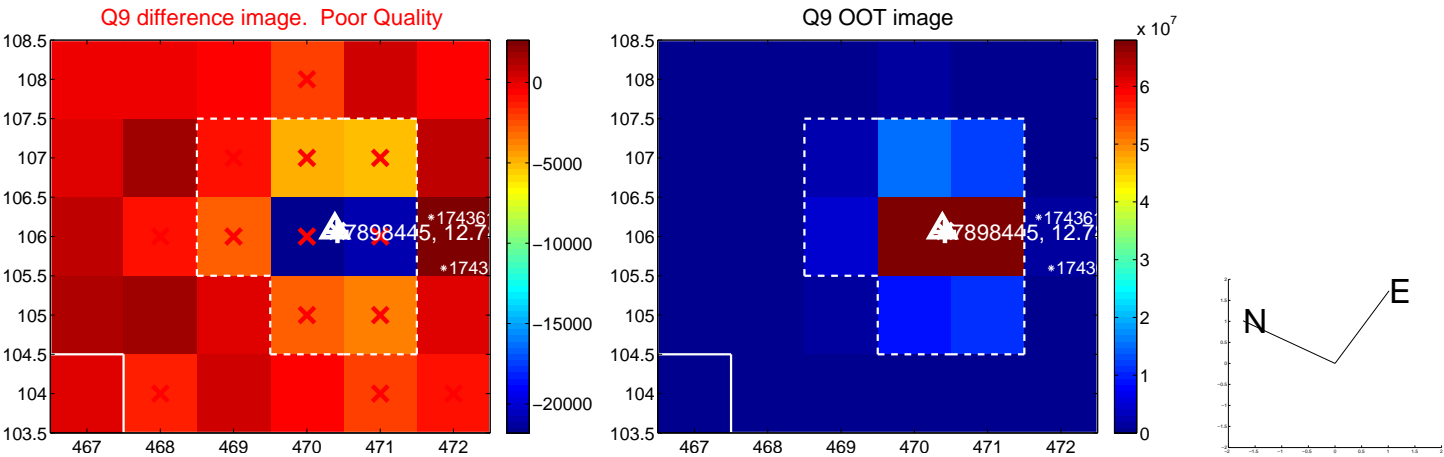
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



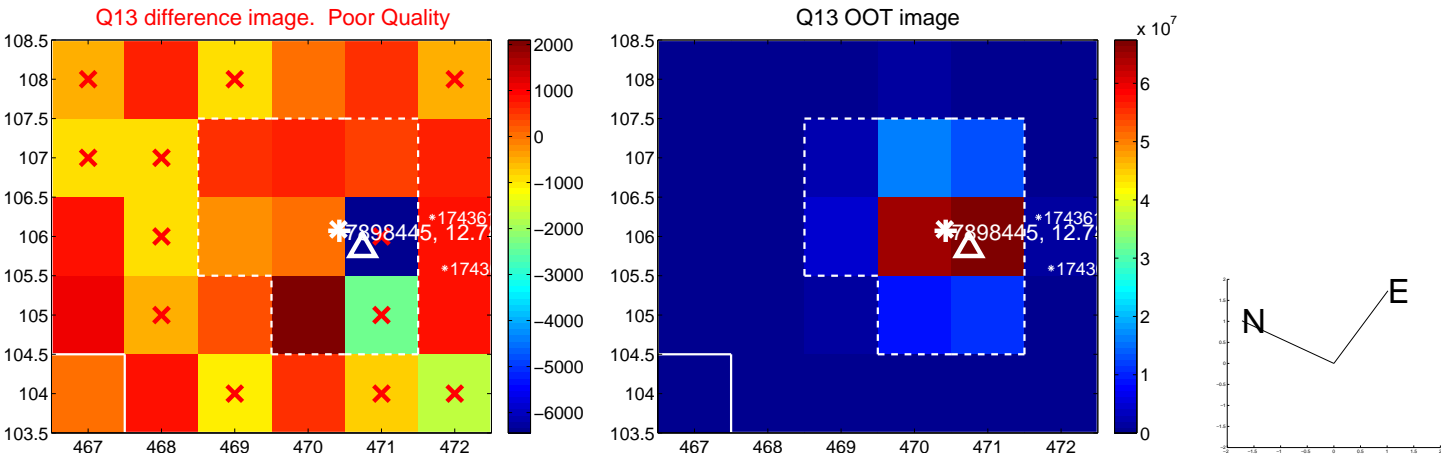
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



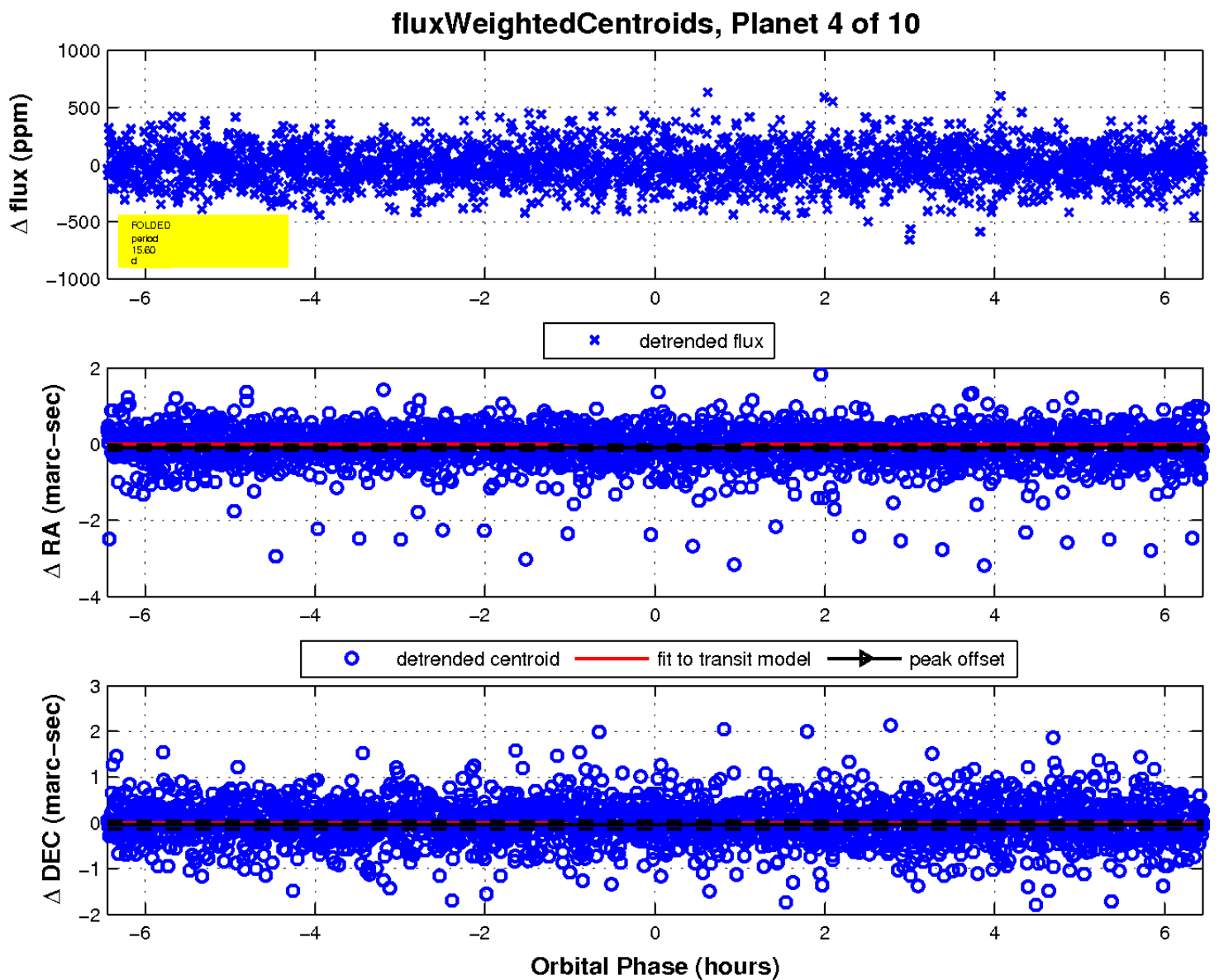
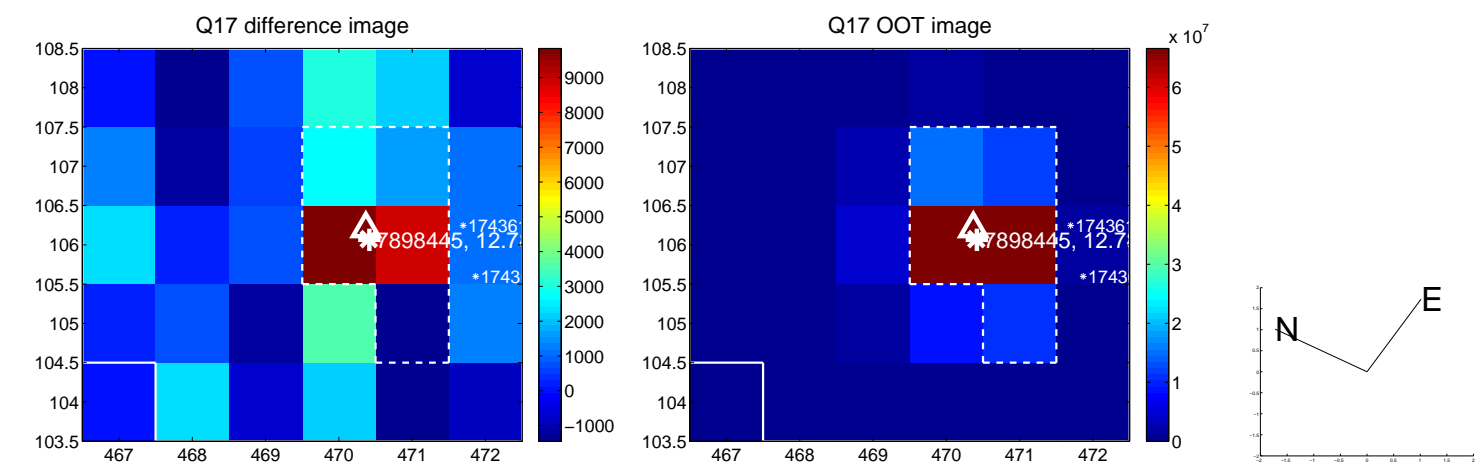
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

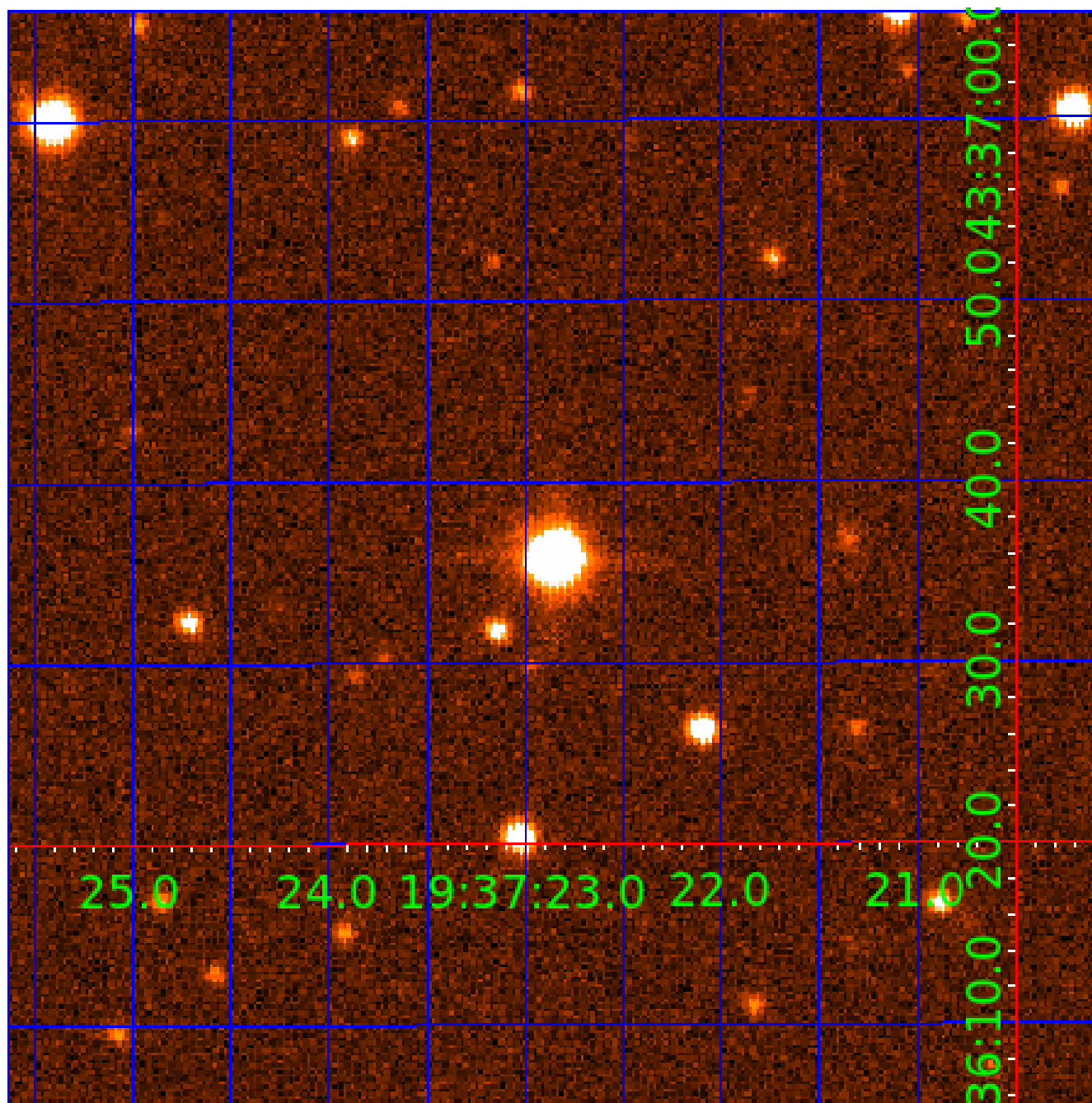


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

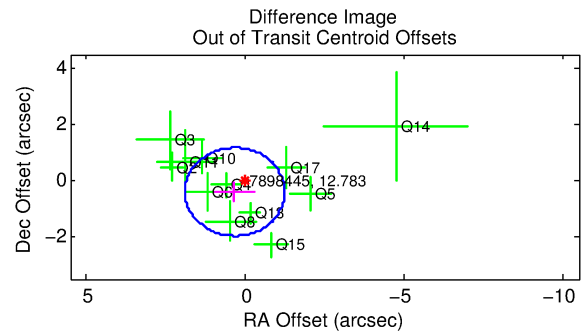
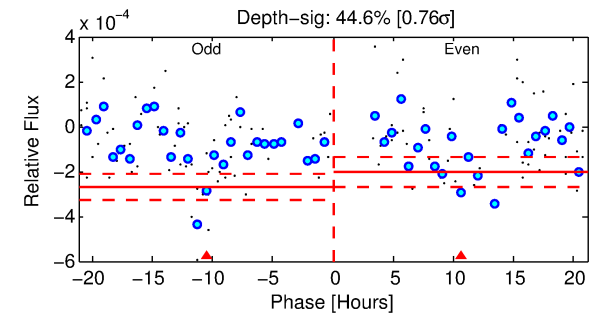
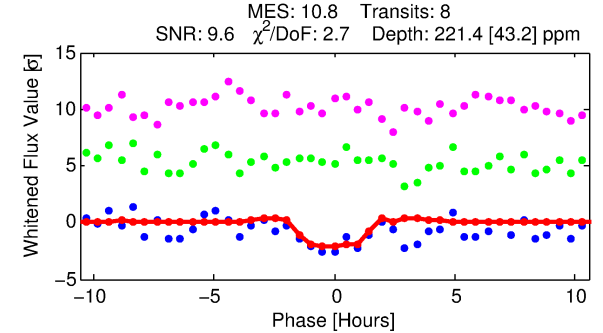
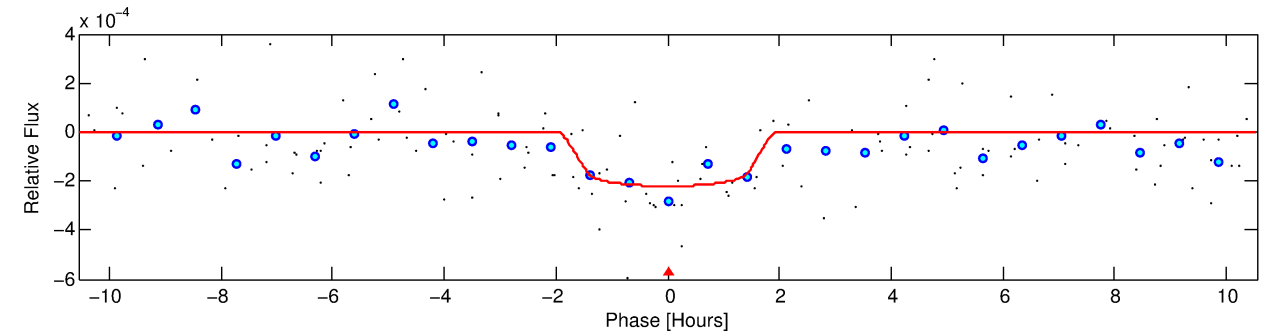
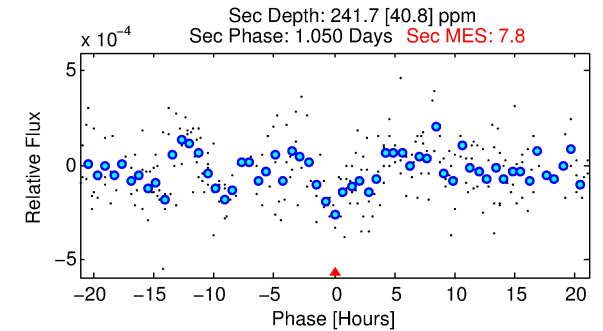
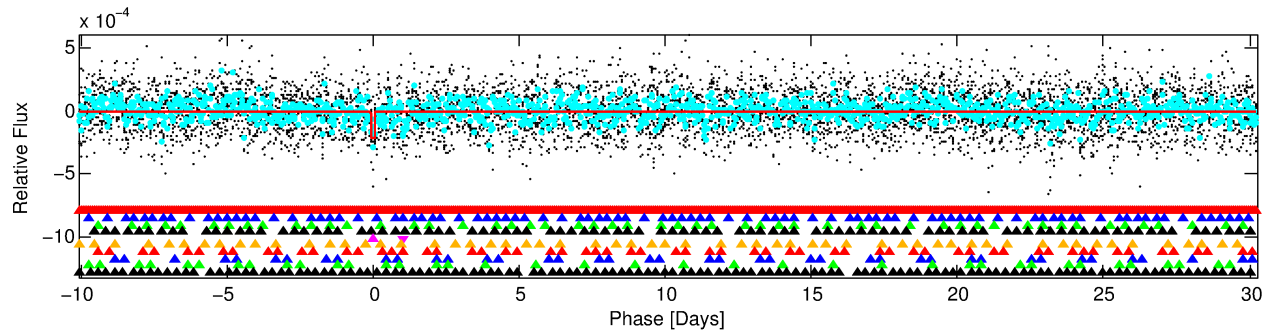
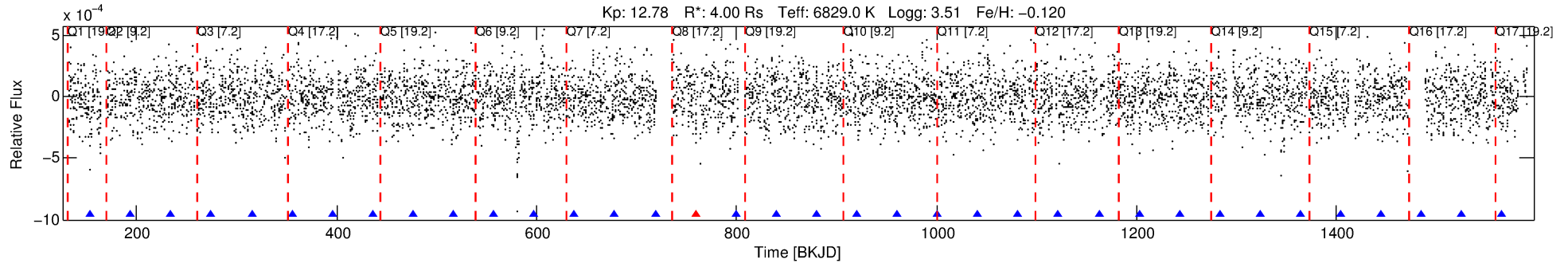
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-05

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 5 of 10 Period: 40.337 d



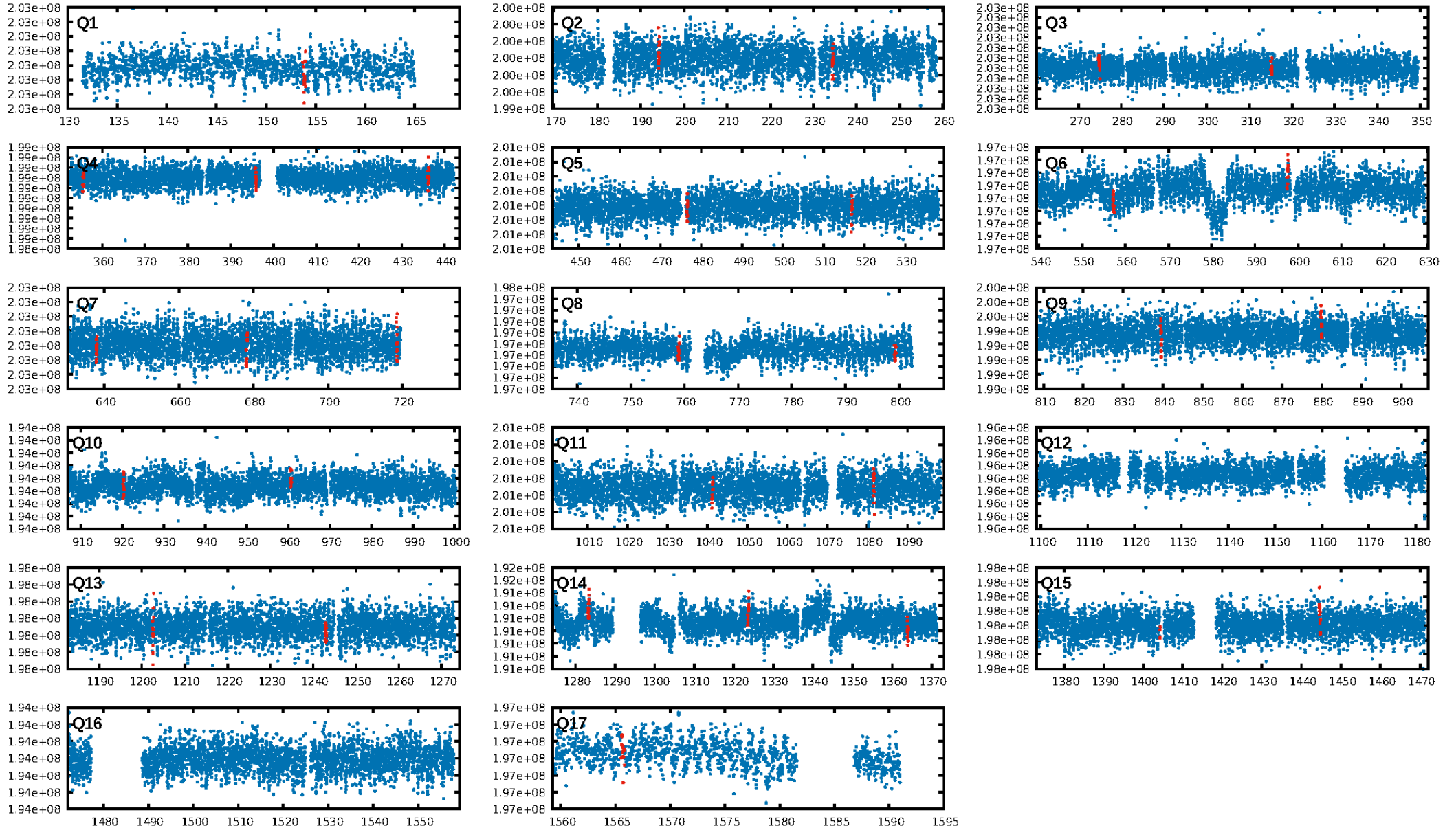
DV Fit Results:

Period = 40.33743 [0.00063] d
Epoch = 153.8565 [0.0117] BKJD
Rp/R* = 0.0154 [0.0173]
a/R* = 48.67 [323.63]
b = 0.85 [2.20]
Seff = 385.68 [230.79]
Teq = 1130 [169] K
Rp = 6.72 [7.97] Re
a = 0.2845 [0.1032] AU
Ag = 238.39 [556.28] [0.43σ]
Teffp = 6865 [3884] K [1.48σ]

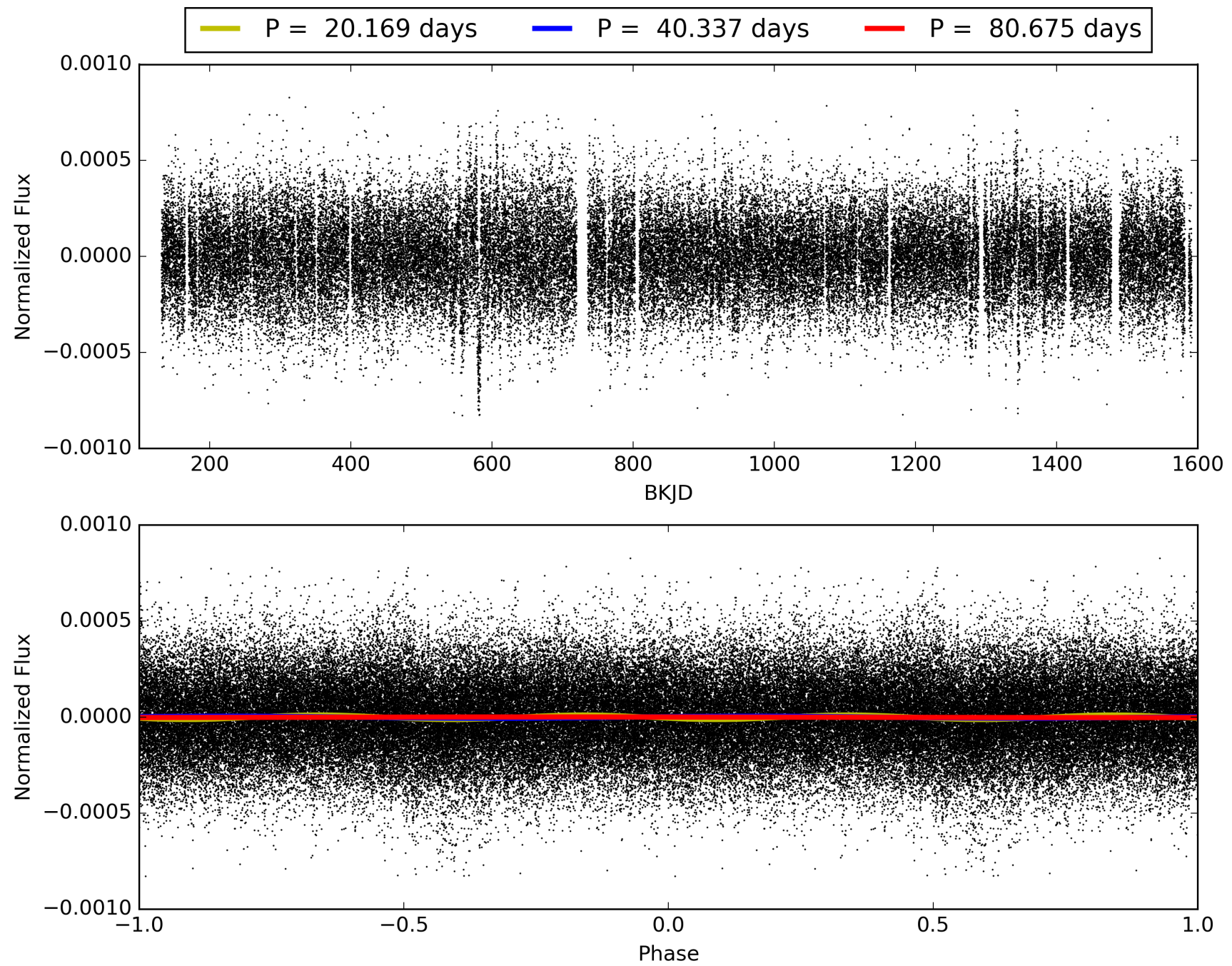
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.64σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.7%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.86 [6/7]
GhostDiagnostic-chr: -0.3188
Centroid-sig: 47.8%
Centroid-so: 0.404 arcsec [0.96σ]
OotOffset-rm: 0.517 arcsec [0.99σ]
OotOffset-st: 4/3/2/3 [12]
KicOffset-rm: 0.502 arcsec [1.12σ]
KicOffset-st: 4/3/2/3 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.07 [1/15]

TCE 007898445-05, PDC Light Curves

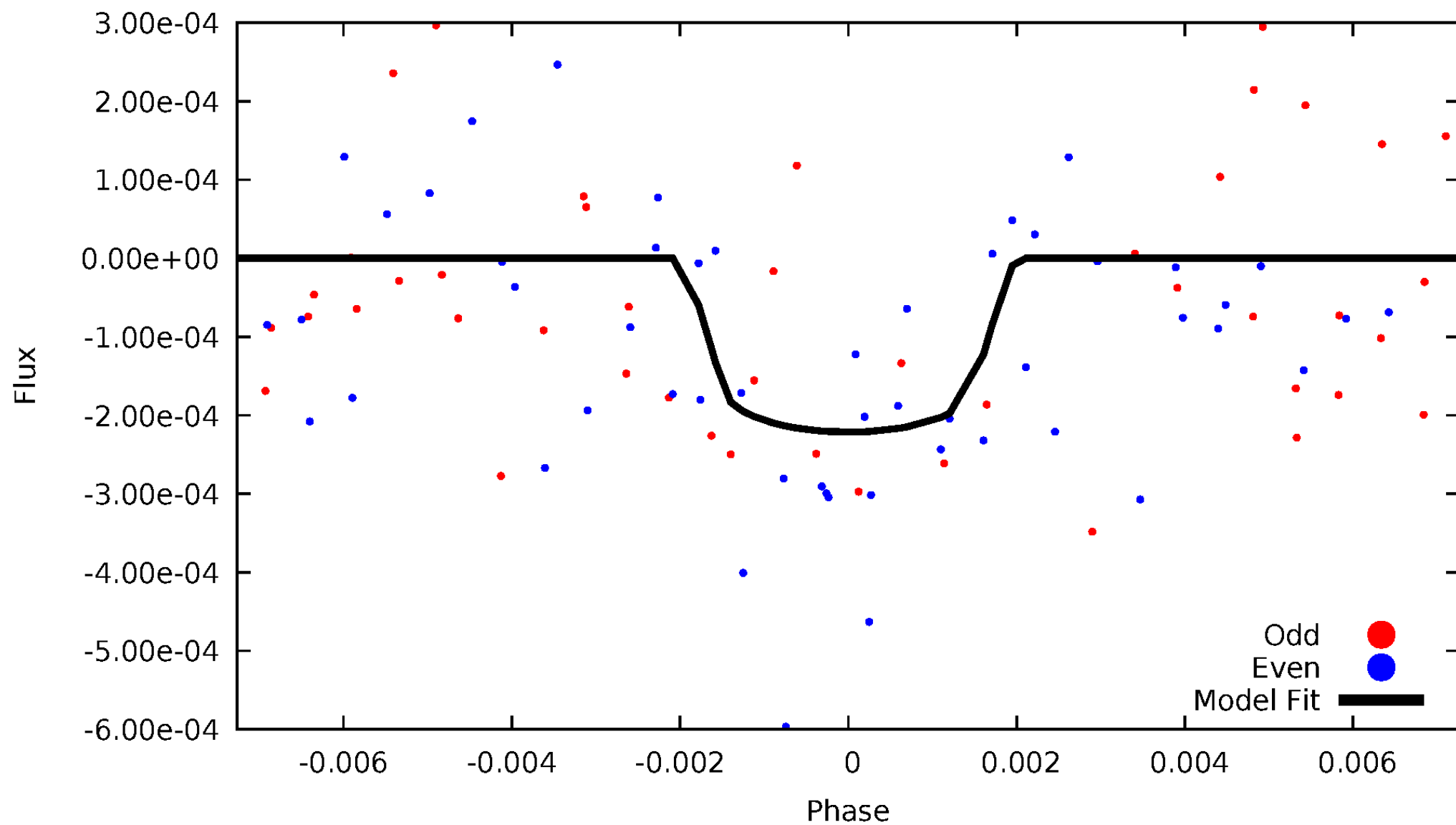


TCE 007898445-05



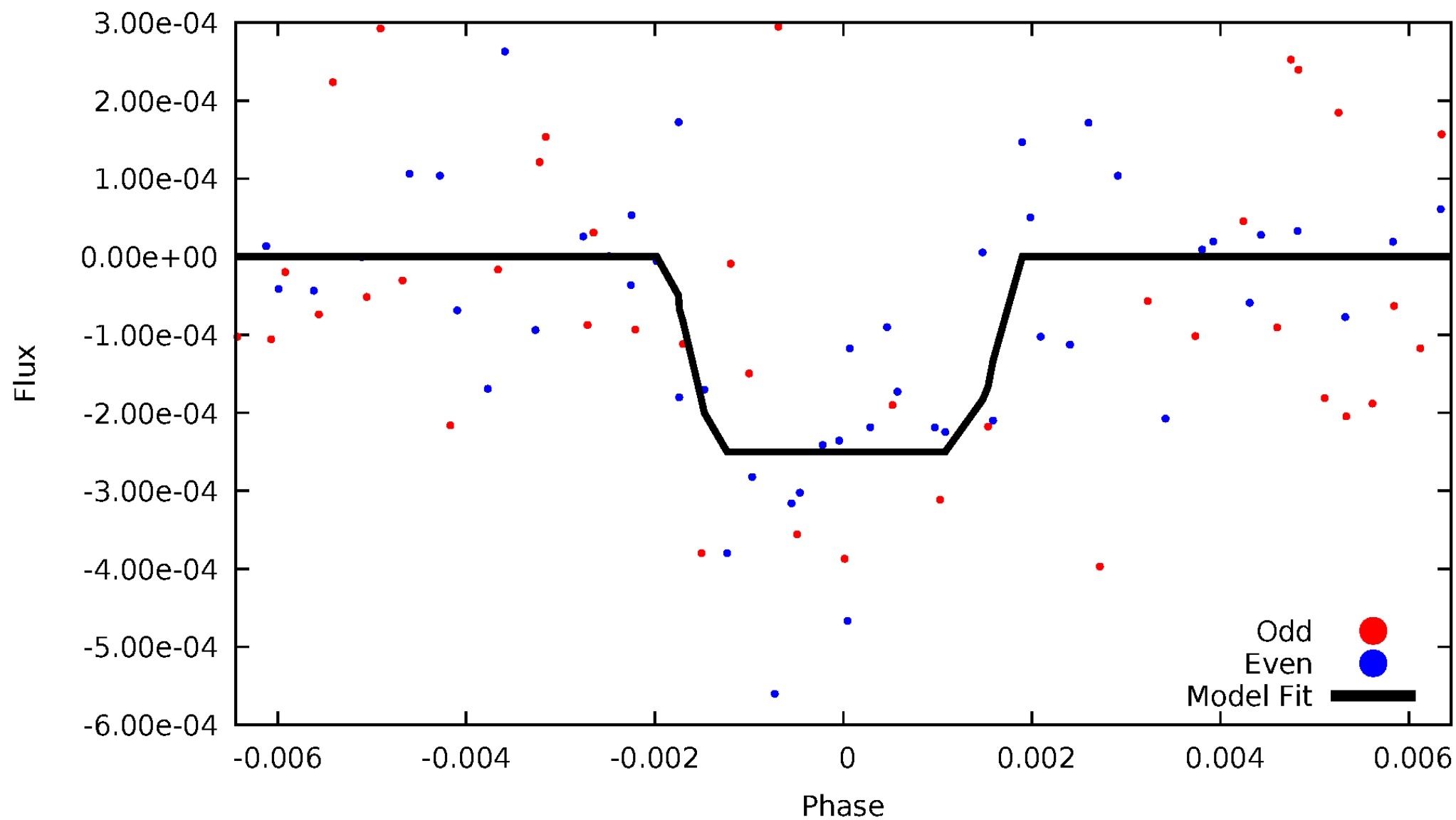
DV Odd/Even

TCE 007898445-05



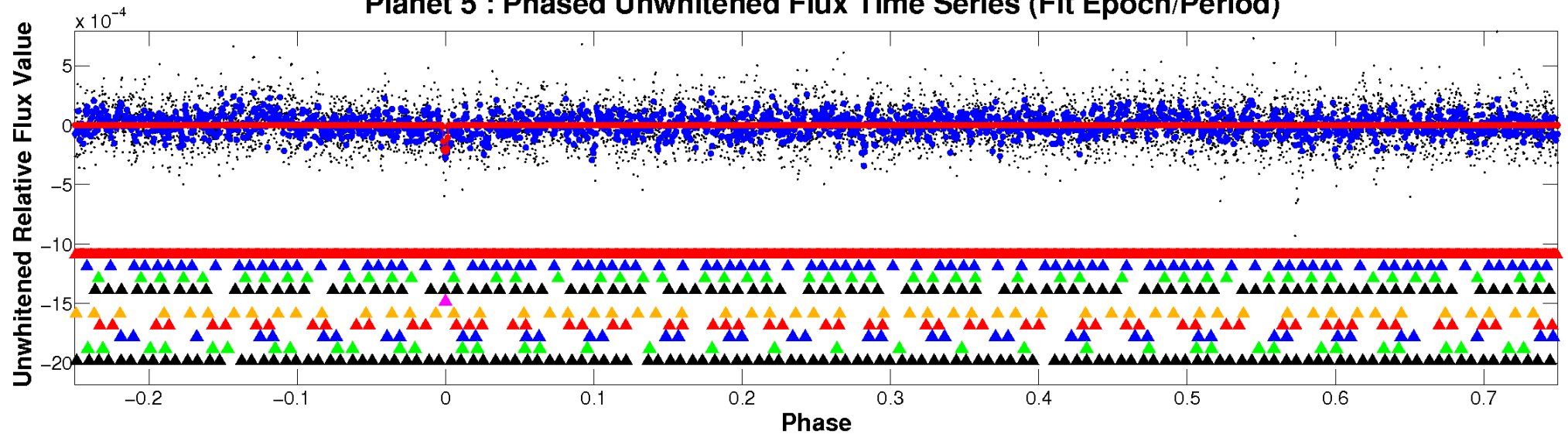
ALT Odd/Even

TCE 007898445-05

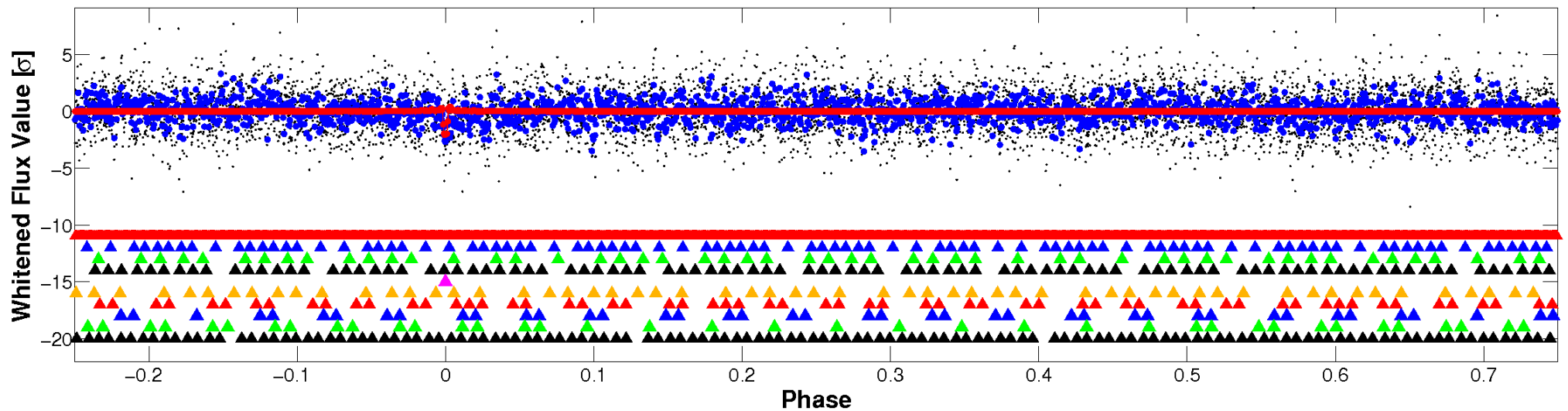


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

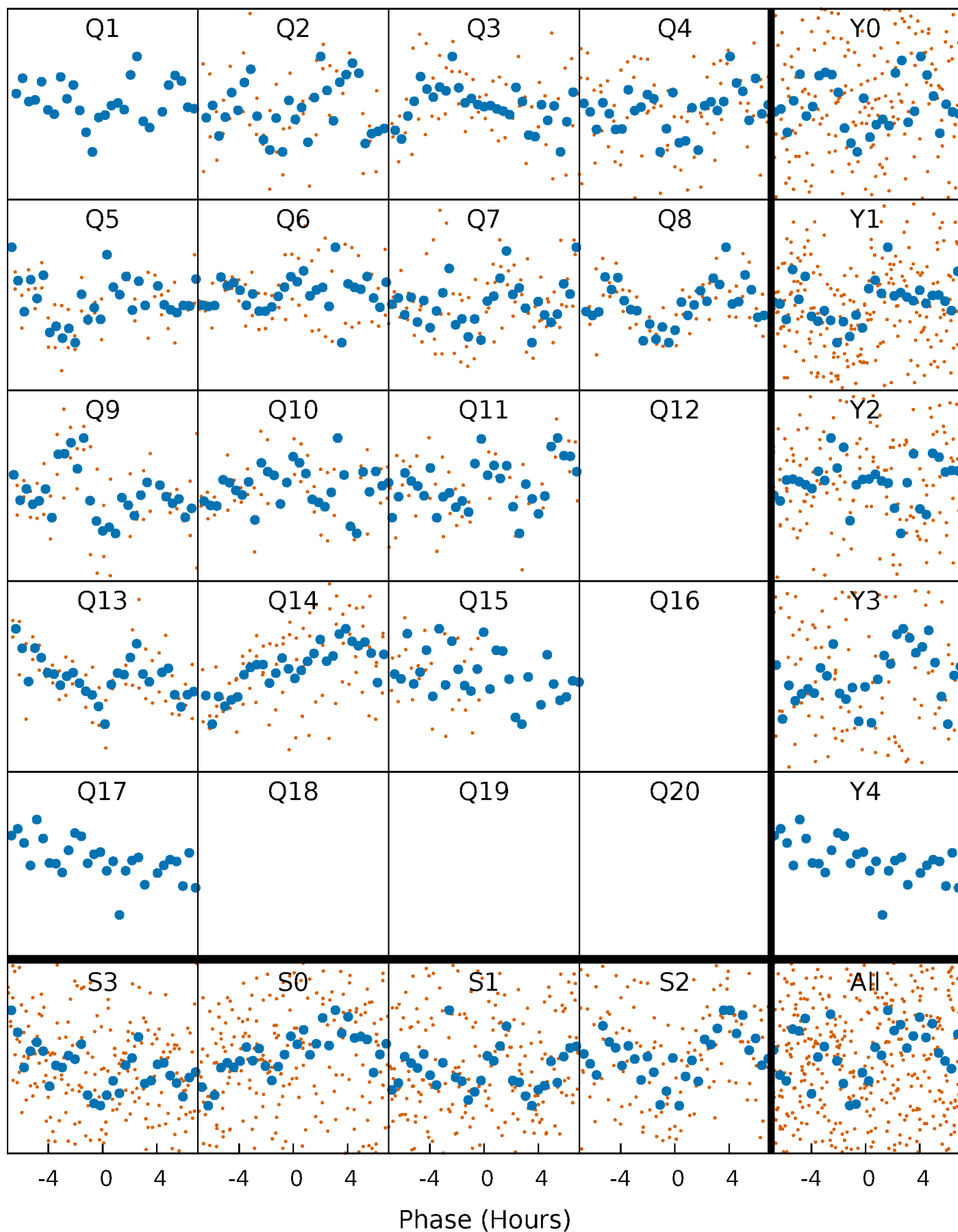


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



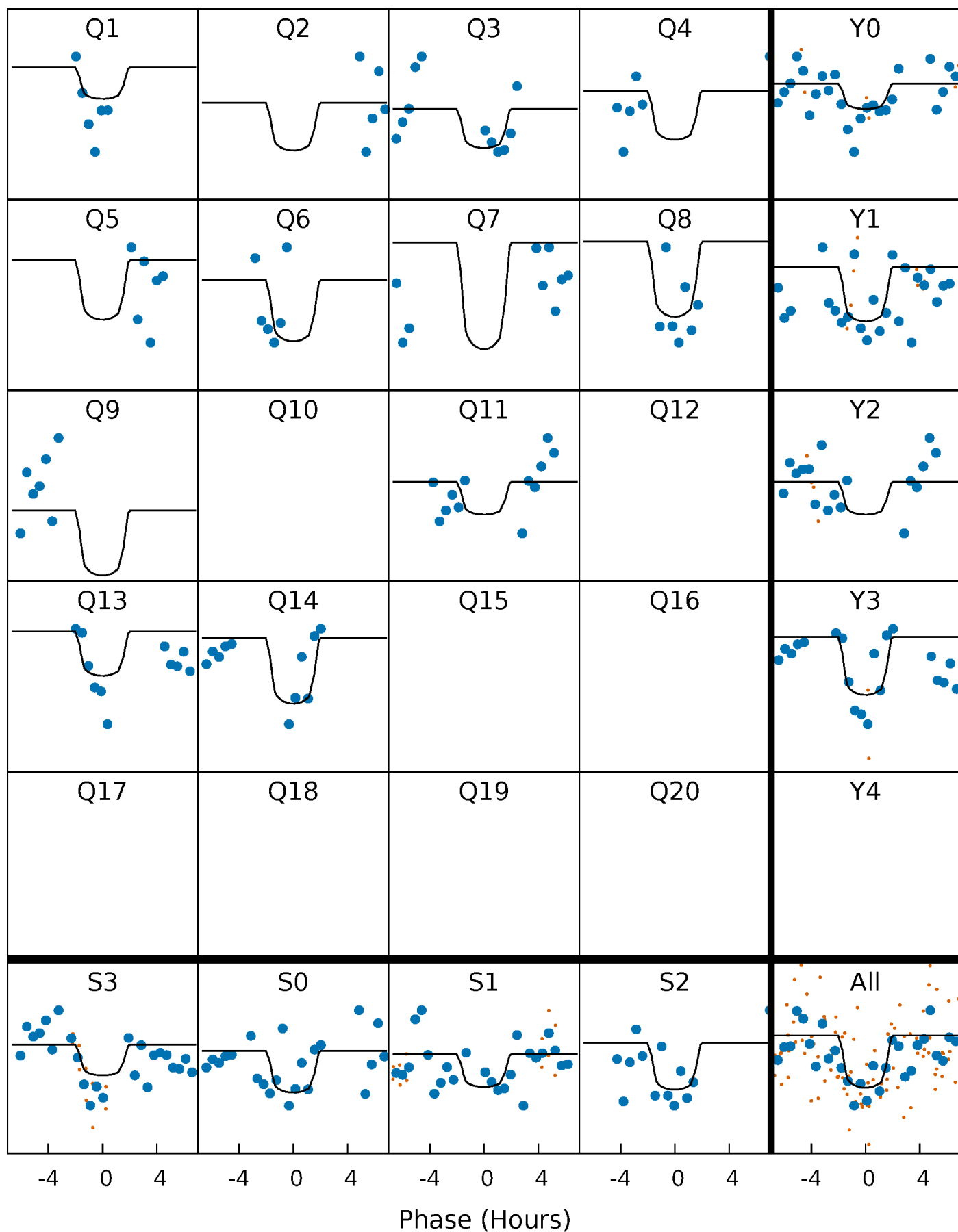
PDC Quarter-Phased Transit Curves

TCE 007898445-05 $P = 40.337428$ Days $T_0 = 153.856479$ (BKJD)



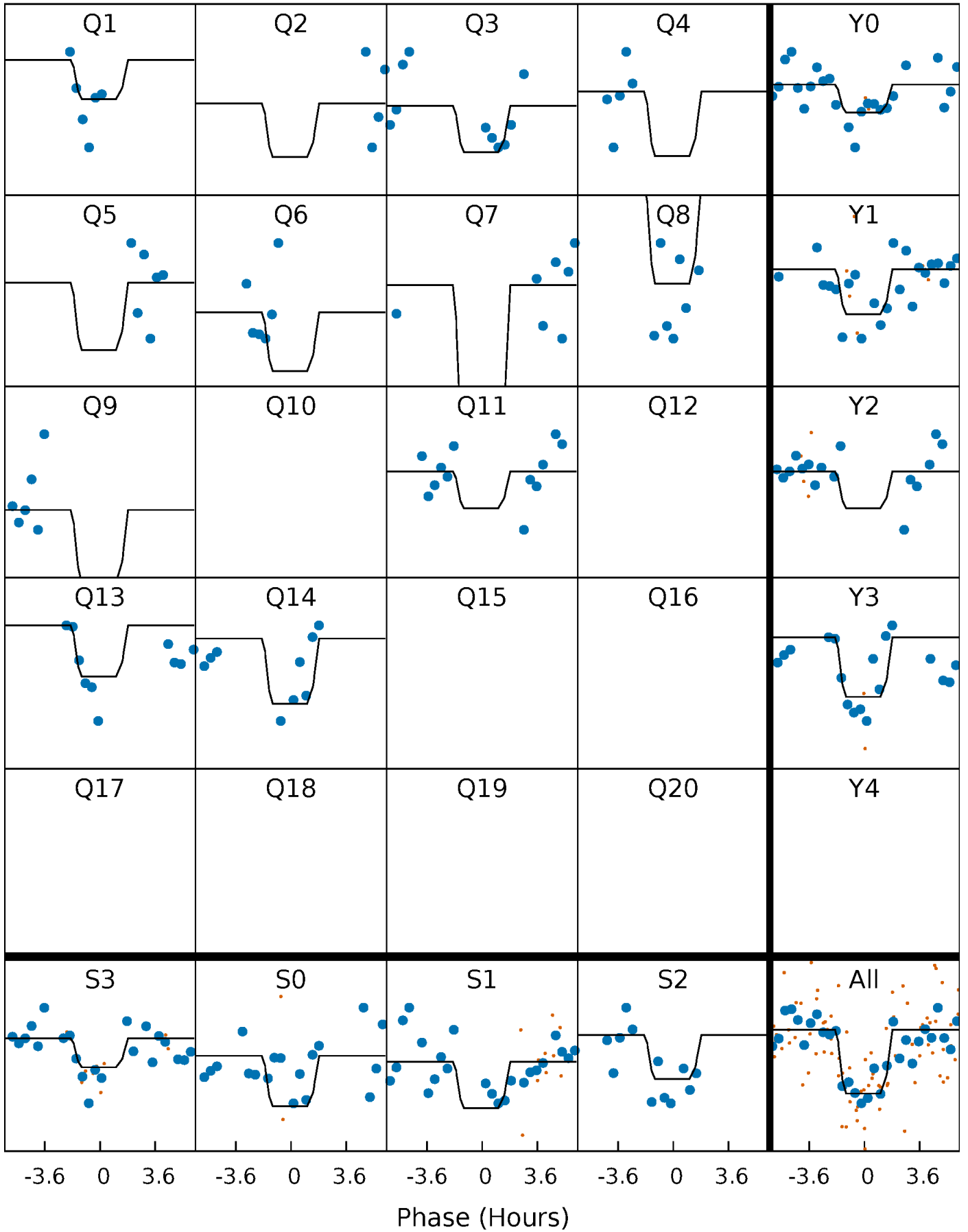
DV Quarter-Phased Transit Curves

TCE 007898445-05 $P = 40.337428$ Days $T_0 = 153.856479$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

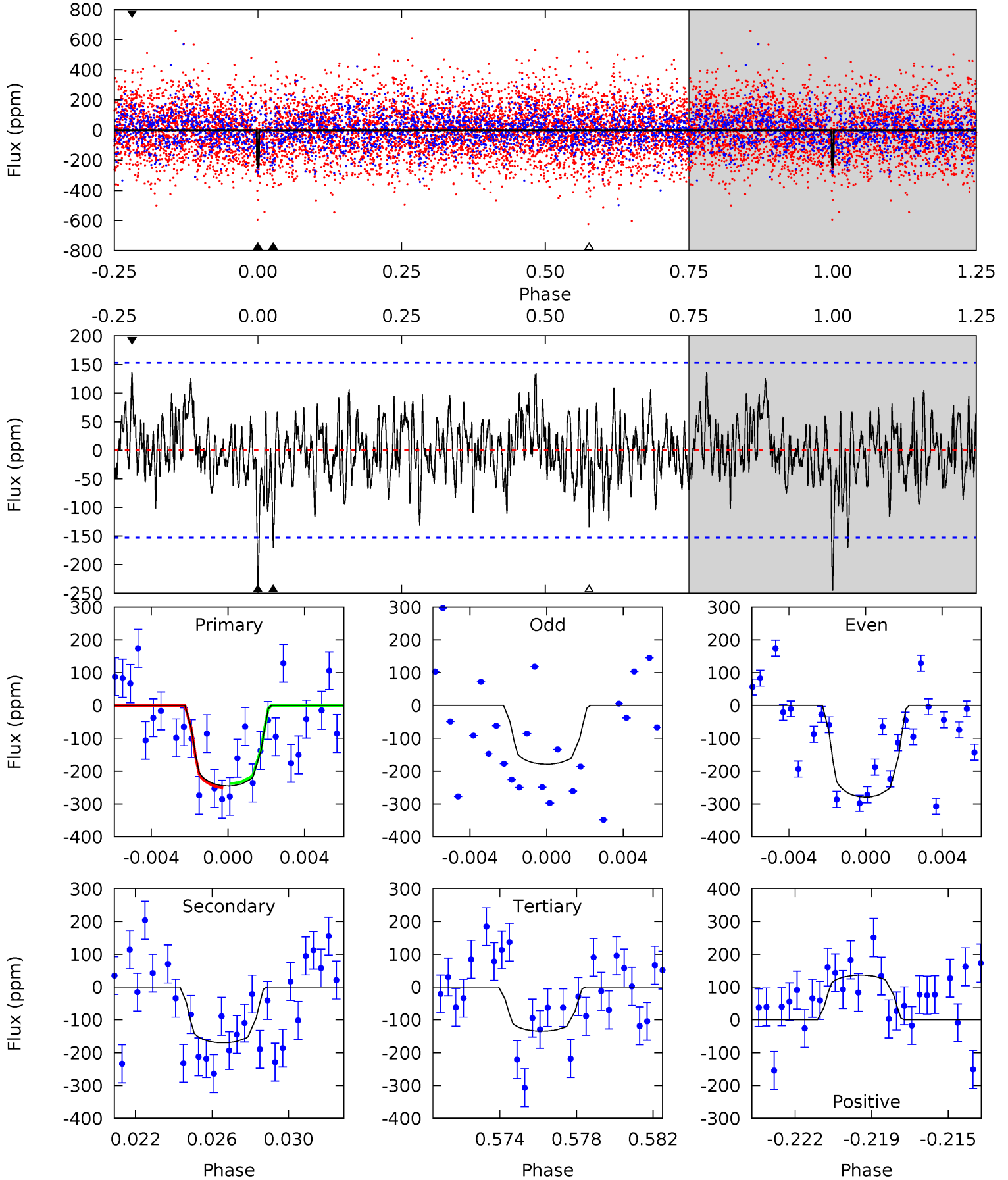
TCE 007898445-05 P= 40.337765 Days $T_0=153.855846$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-05, P = 40.337428 Days, E = 113.519051 Days

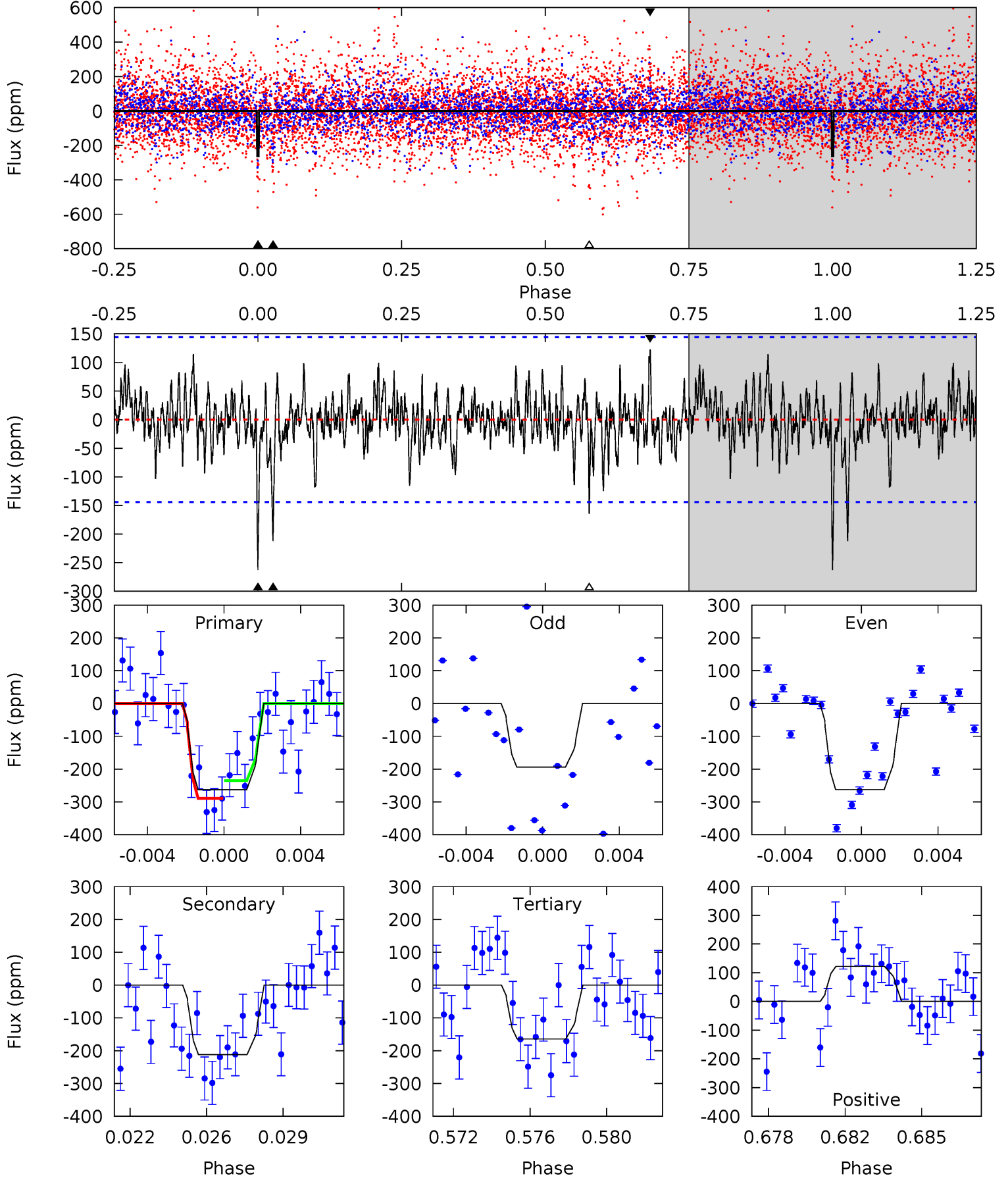
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.37	5.79	4.58	4.65	5.21	2.90	1.51	3.78	3.72	1.21	1.14	1.64	1.10	0.36	0.22



Alt Model-Shift Uniqueness Test

007898445-05, P = 40.337765 Days, E = 113.518081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	7.68	5.95	4.42	5.22	2.91	1.33	3.56	5.08	1.73	3.25	1.19	0.84	0.32	0.98



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-170 ± 29	$7.93^{+6.50}_{-4.77}$	1553^{+76}_{-138}	5504^{+3815}_{-1158}	117^{+639}_{-82}
Alt.	-212 ± 28	$8.14^{+6.48}_{-5.39}$	1551^{+79}_{-128}	5816^{+5191}_{-1285}	146^{+1066}_{-103}

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 $A_{obs} \gg 1.0$

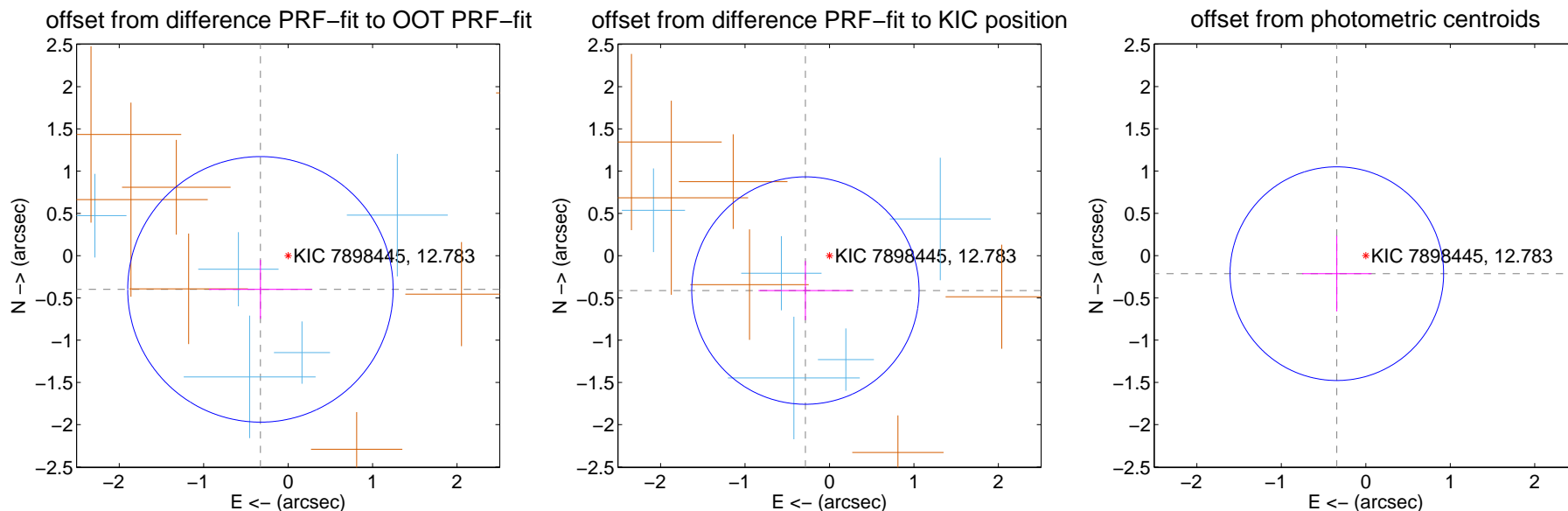
DV Centroid Data

Supplemental centroid analysis for 007898445-05. Kepler magnitude: 12.78. Transit SNR 9.61

There are 5 quarters with good PRF difference image offsets

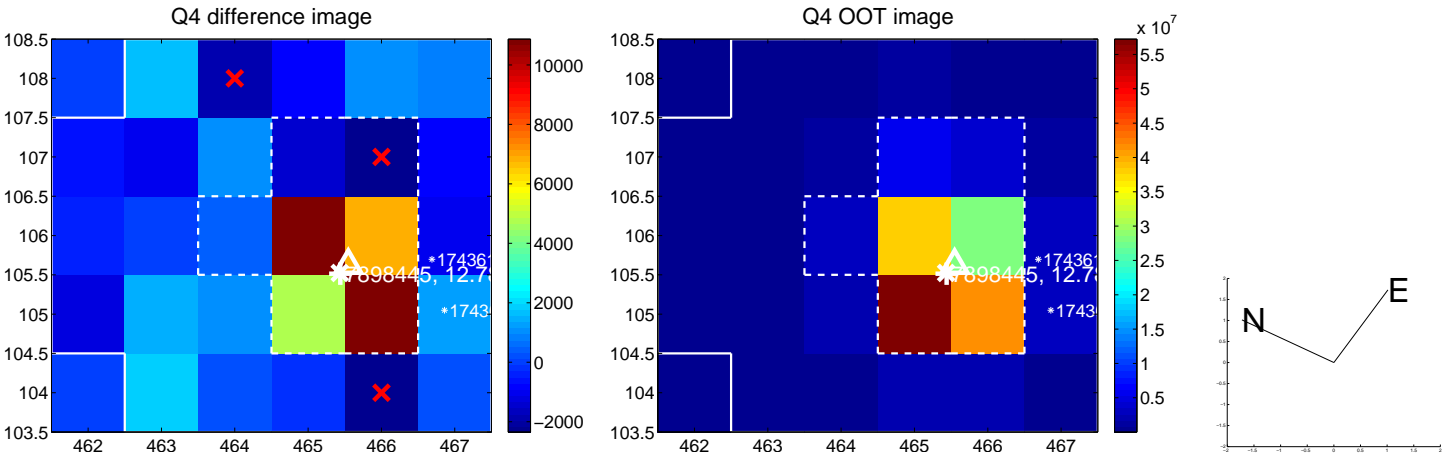
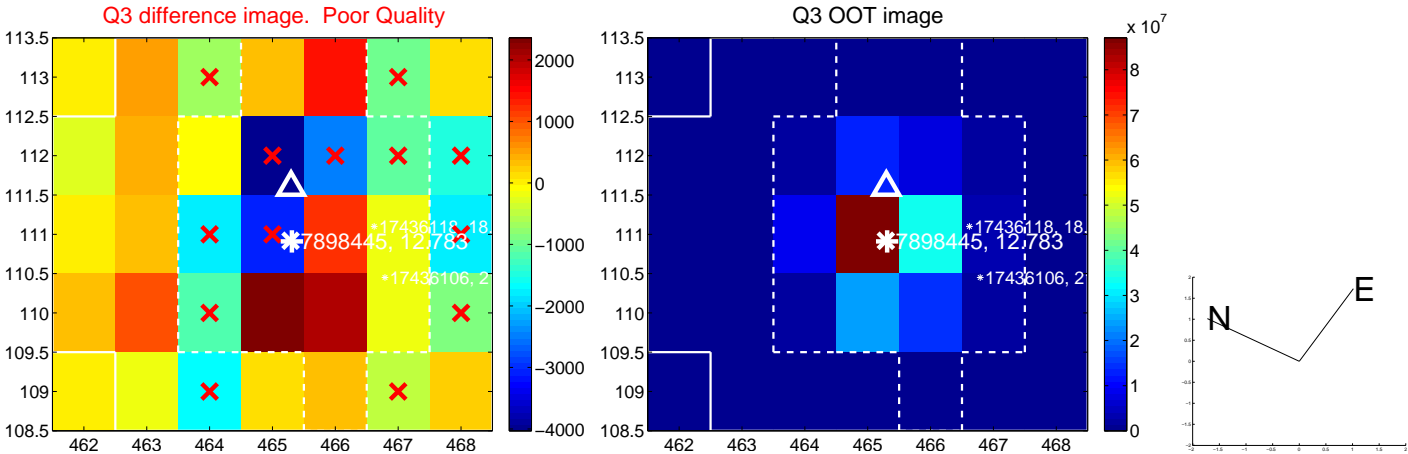
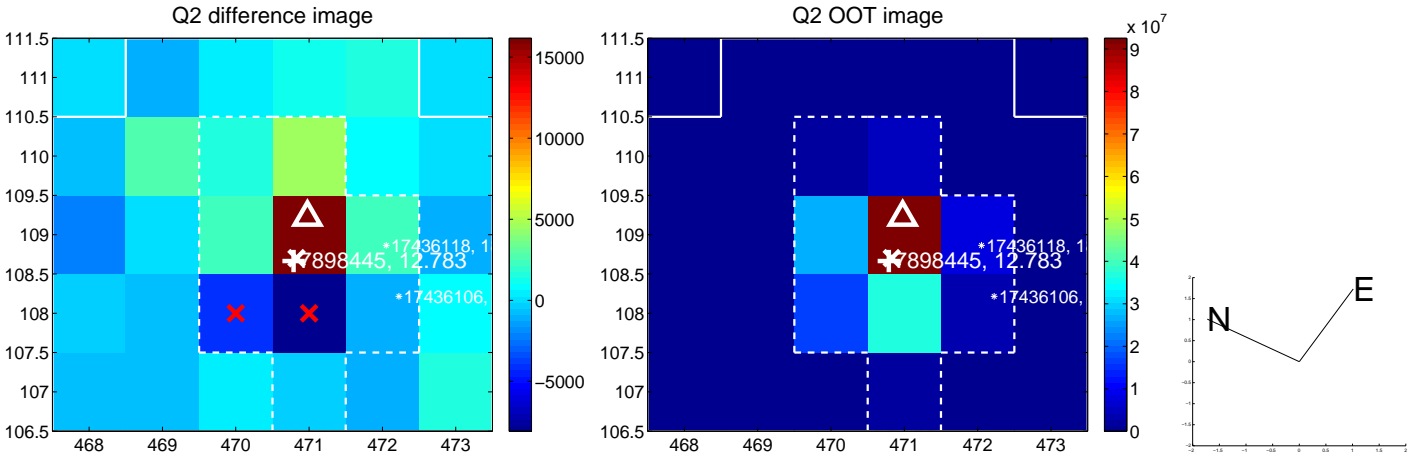
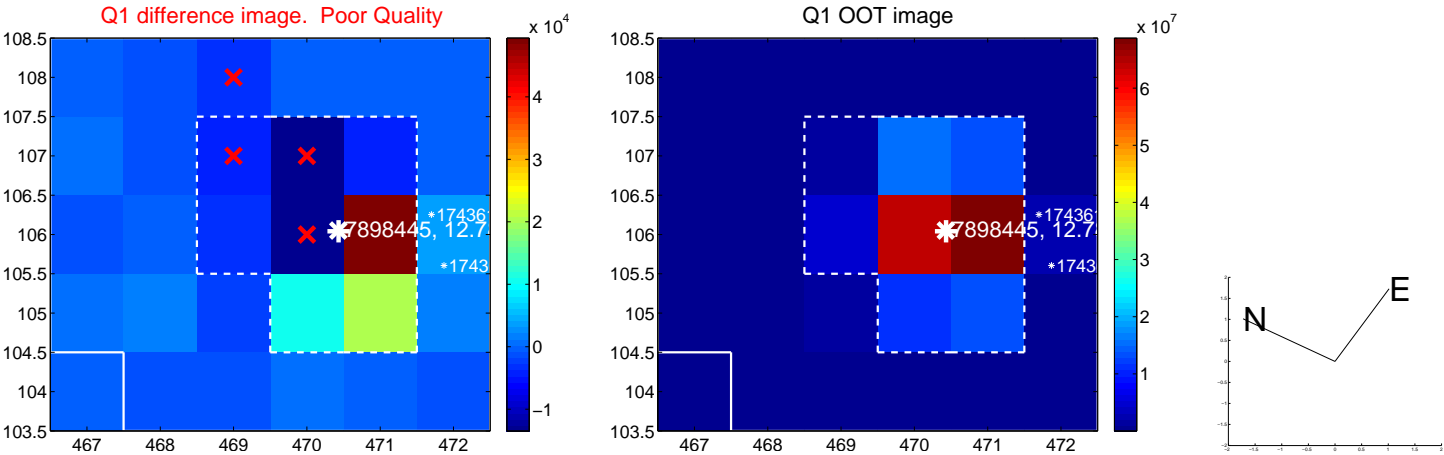
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.517 ± 0.524	0.99	0.328 ± 0.609	-0.399 ± 0.348
PRF-fit source offset from KIC position	0.502 ± 0.449	1.12	0.285 ± 0.555	-0.413 ± 0.350
photometric centroid source offset	0.40 ± 0.42	0.96	0.34 ± 0.41	-0.21 ± 0.45

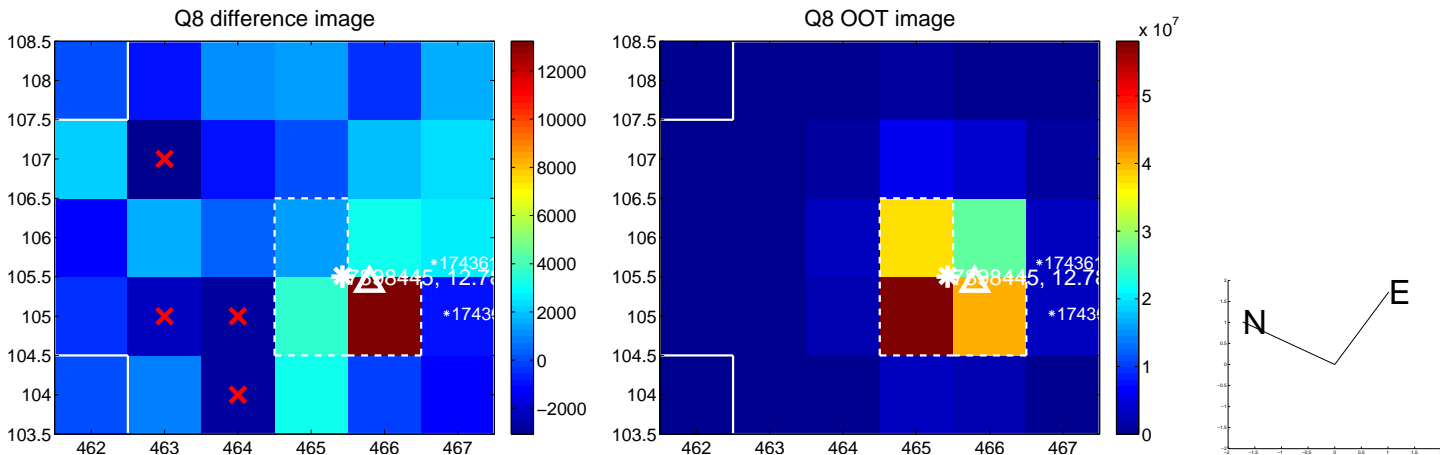
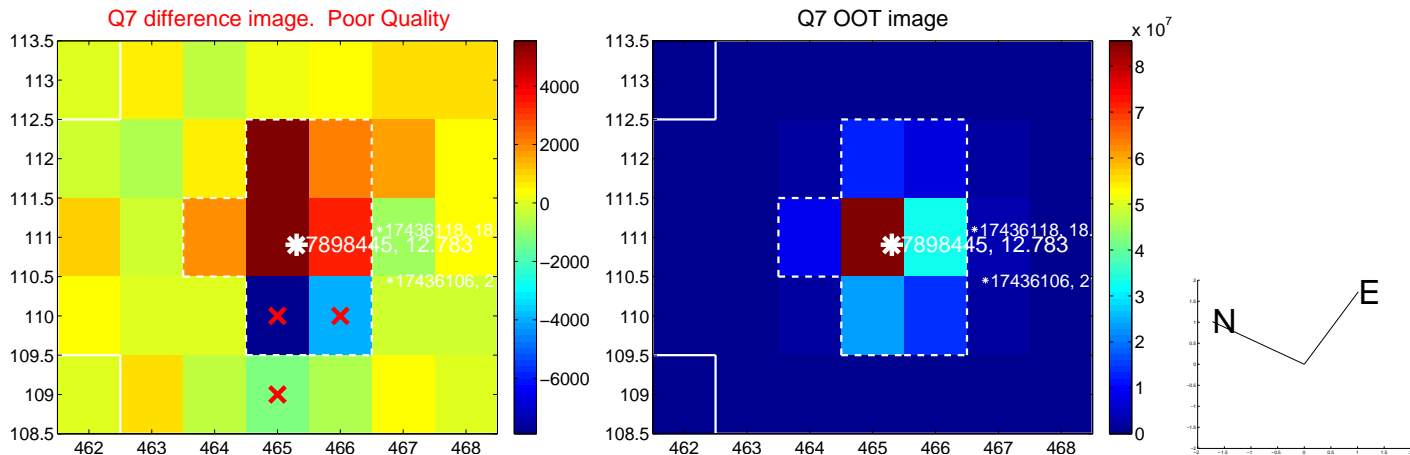
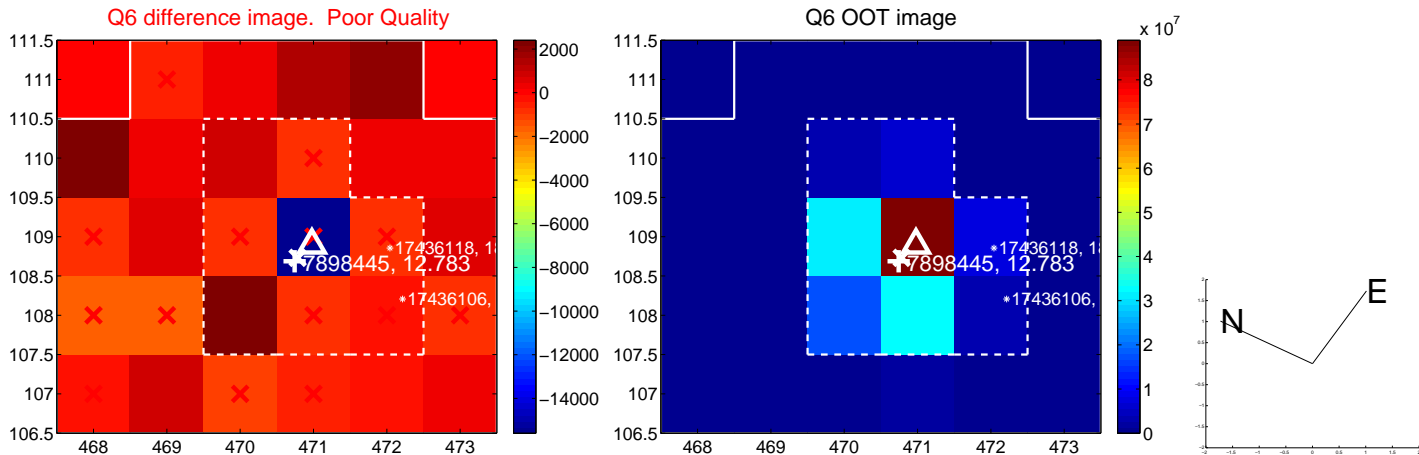
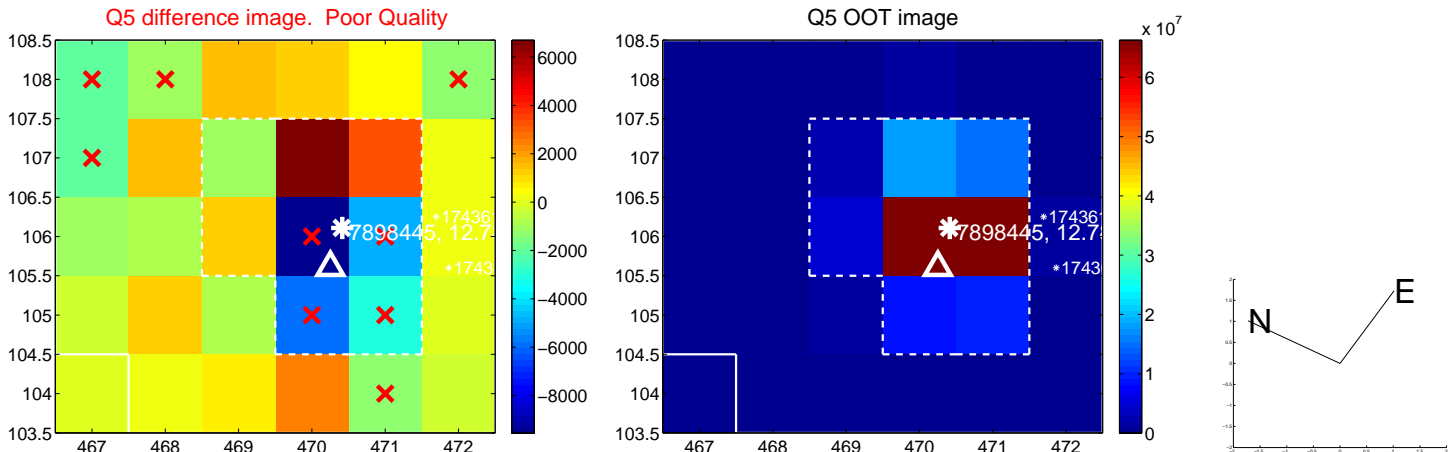


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

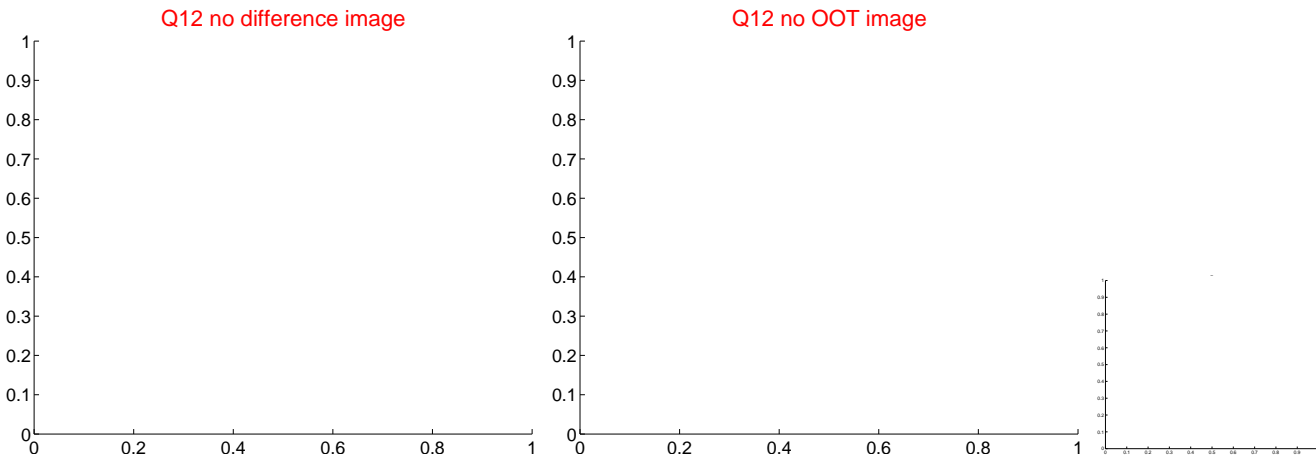
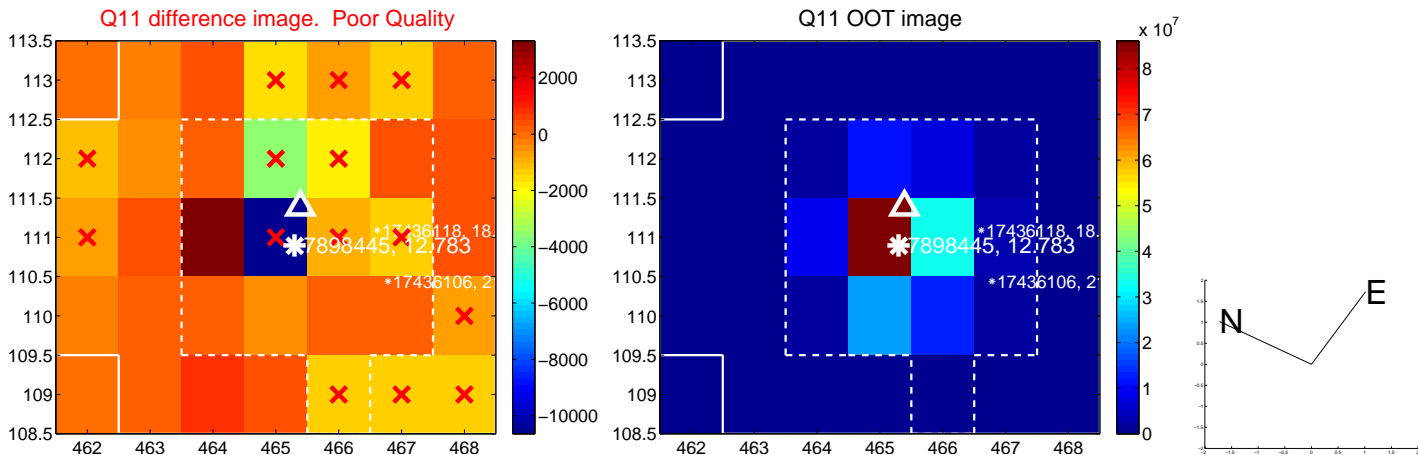
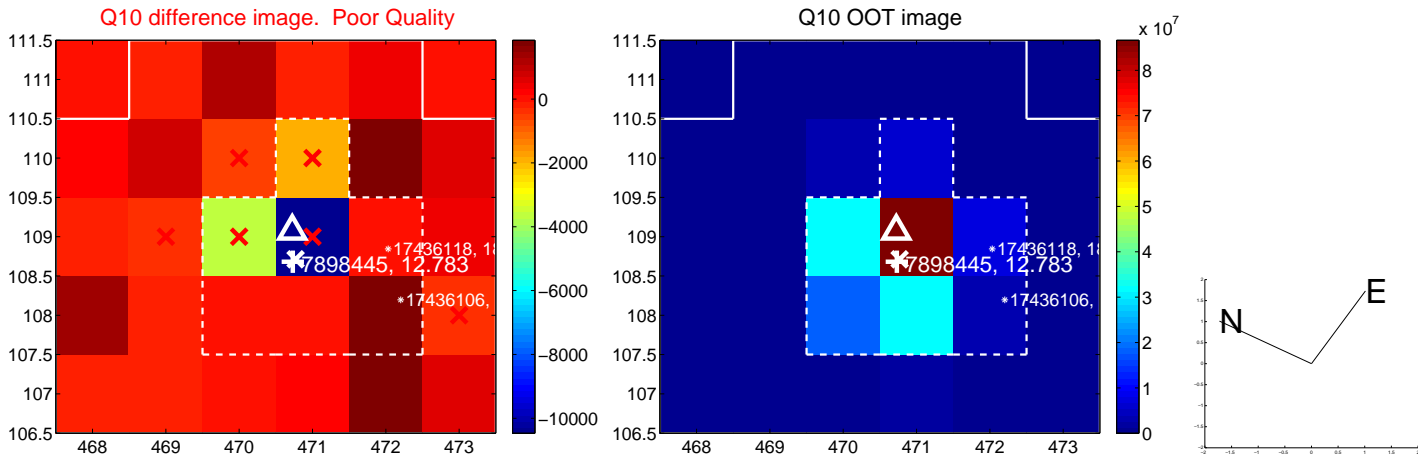
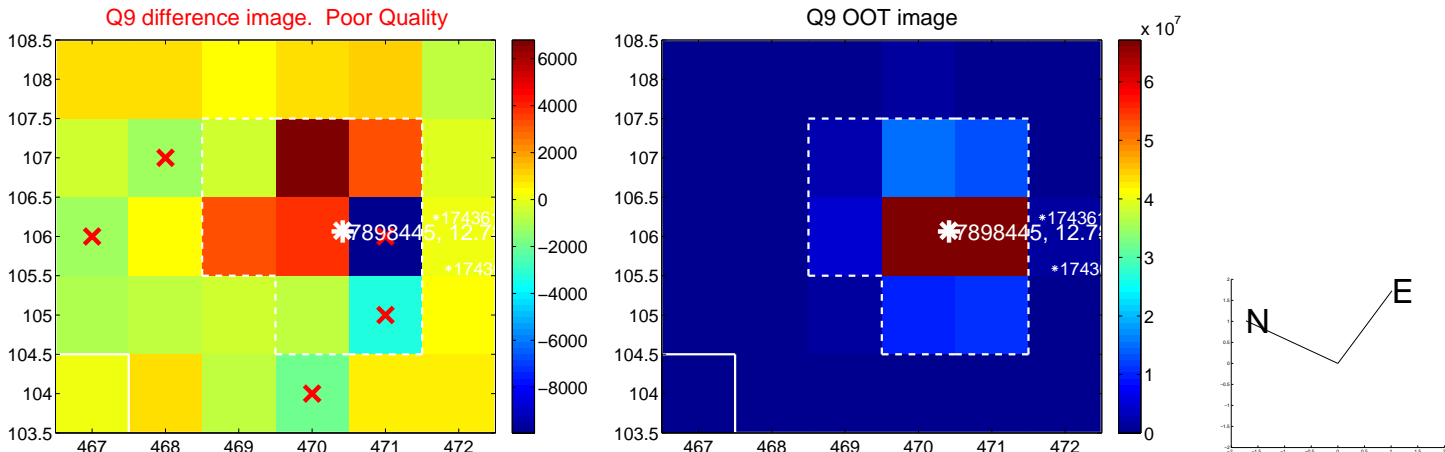
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



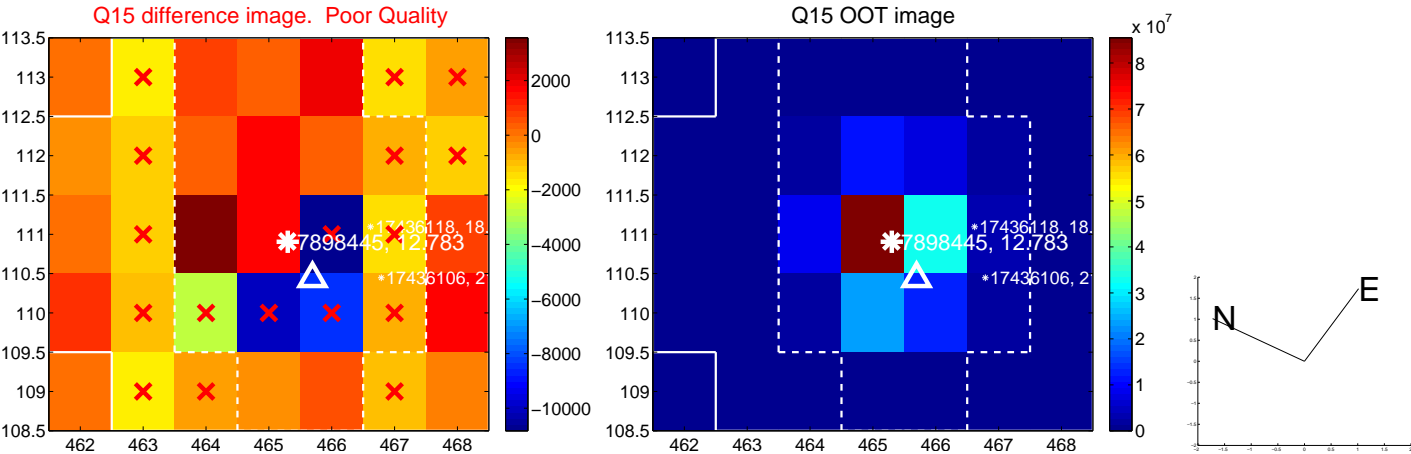
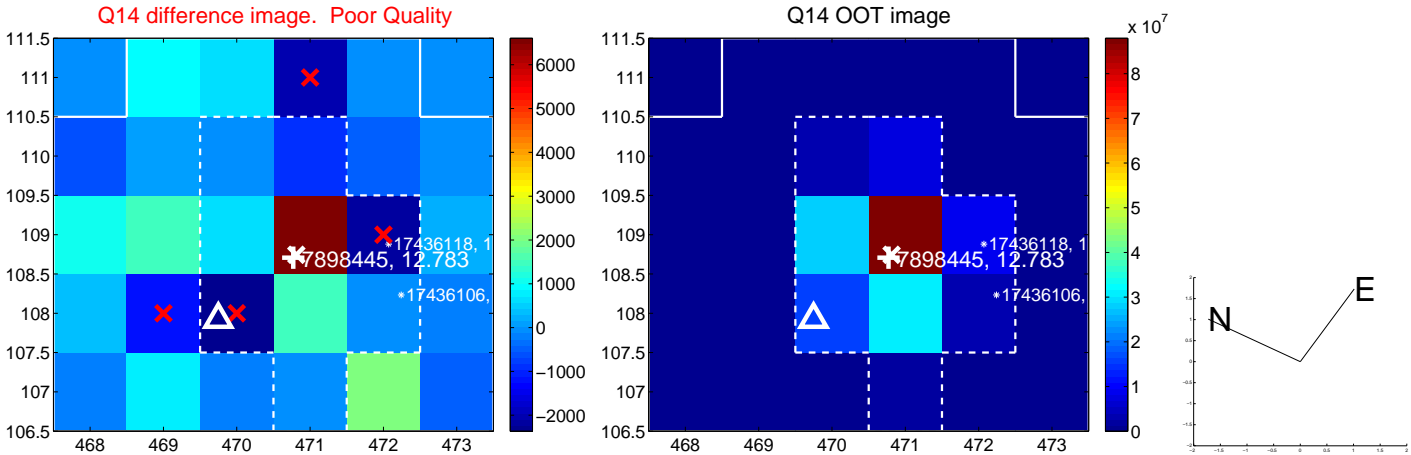
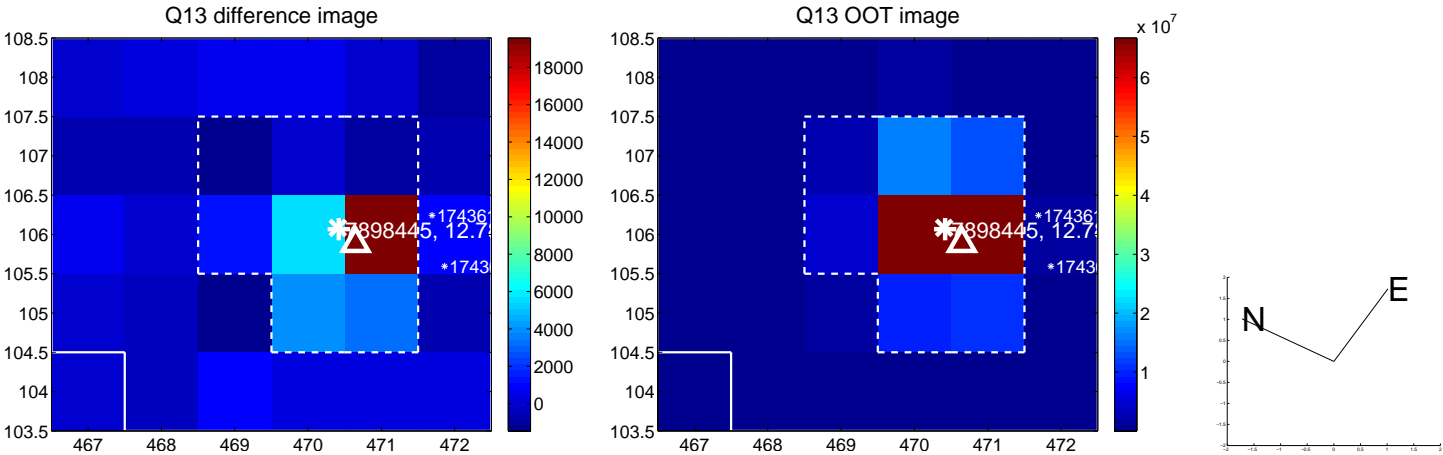
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



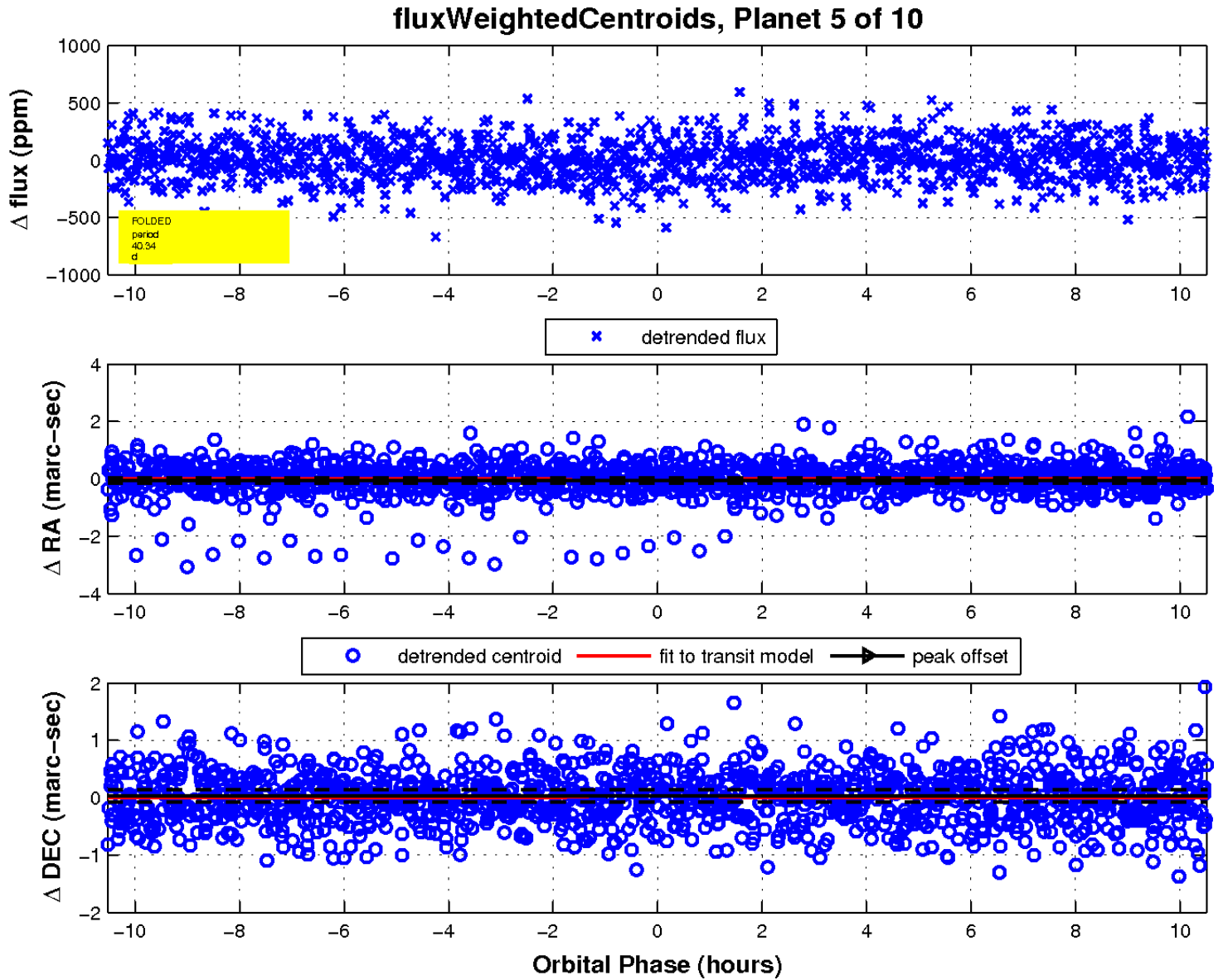
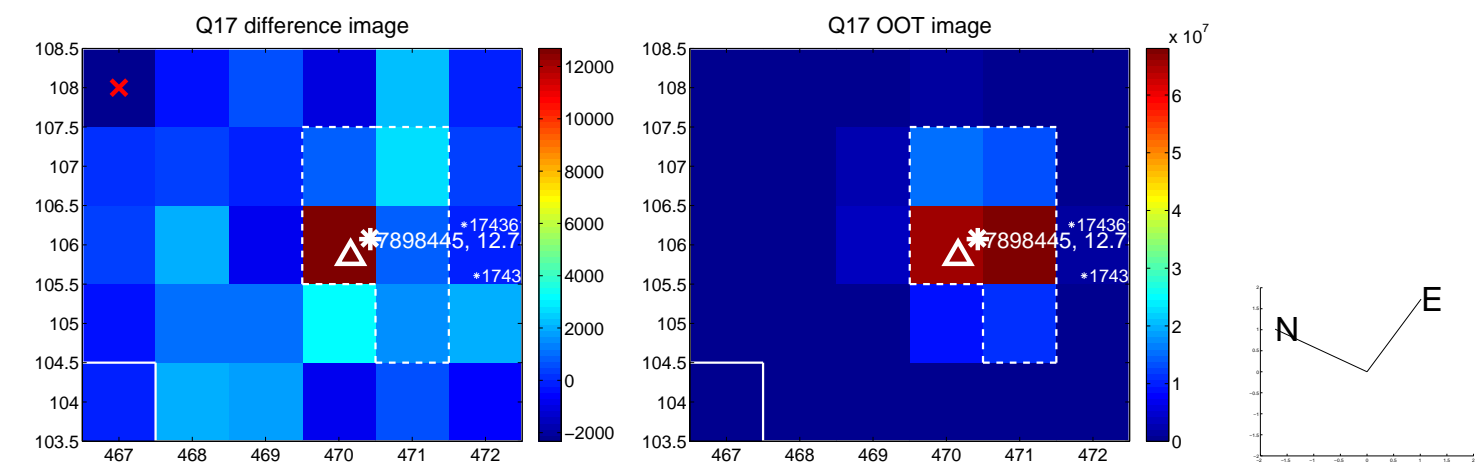
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

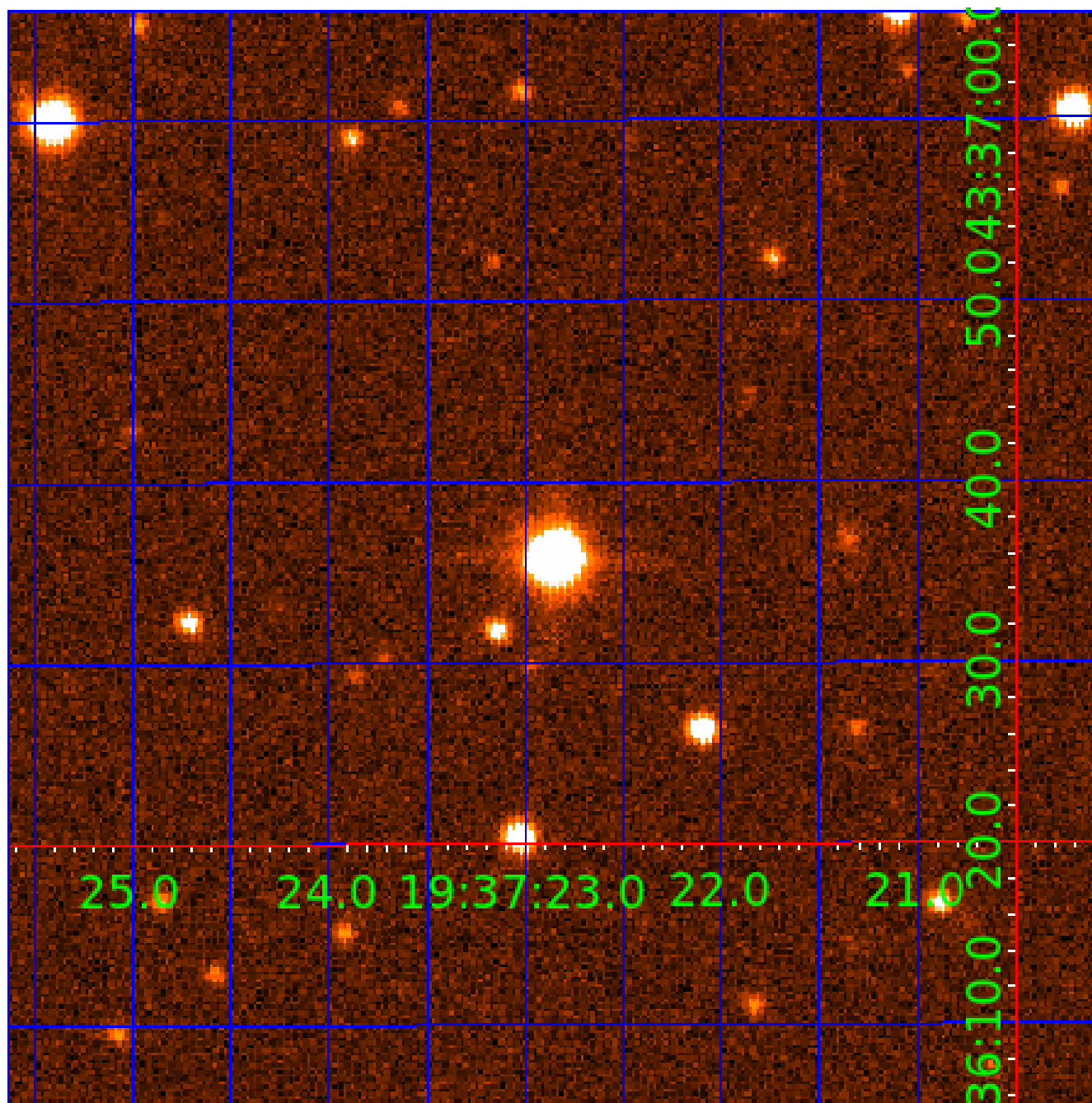


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

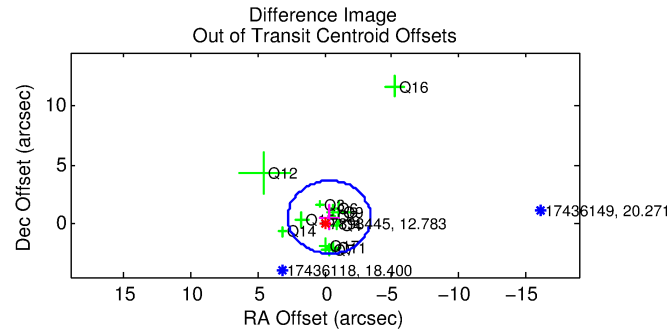
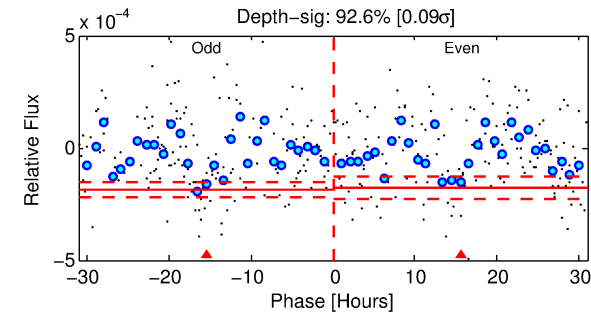
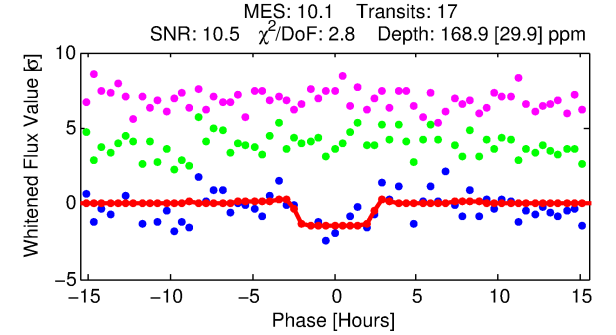
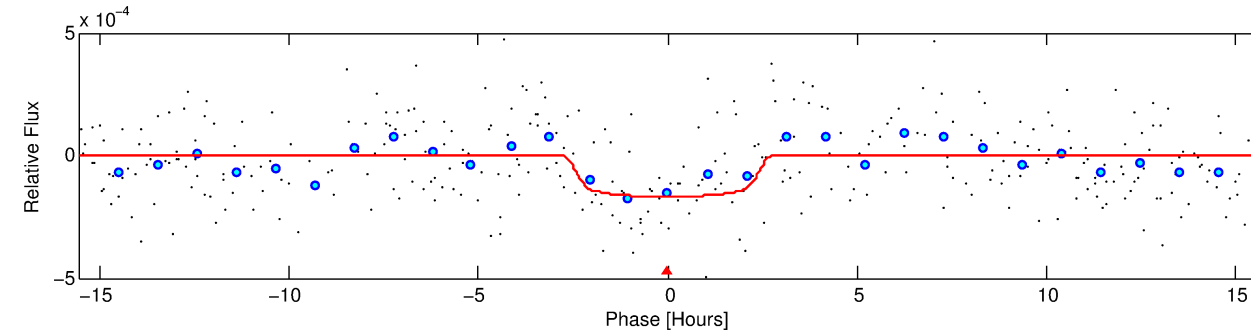
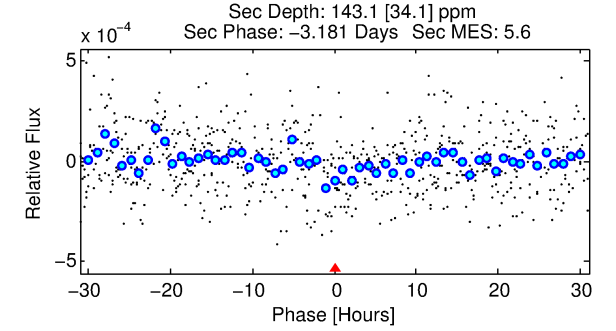
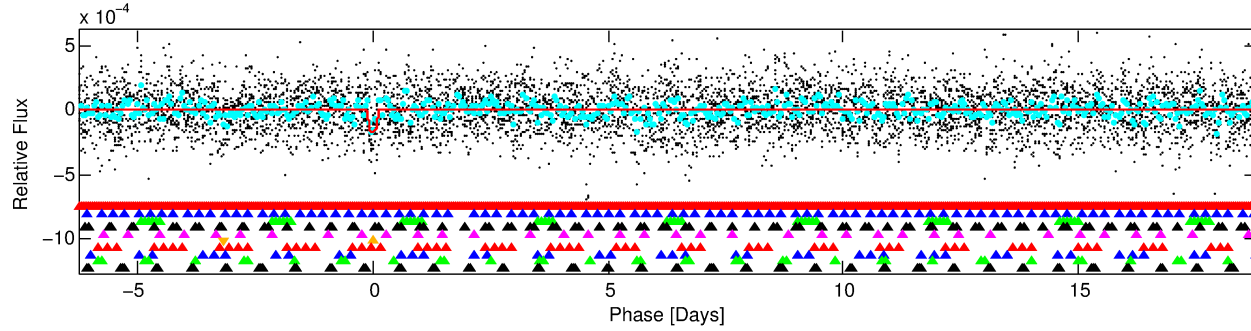
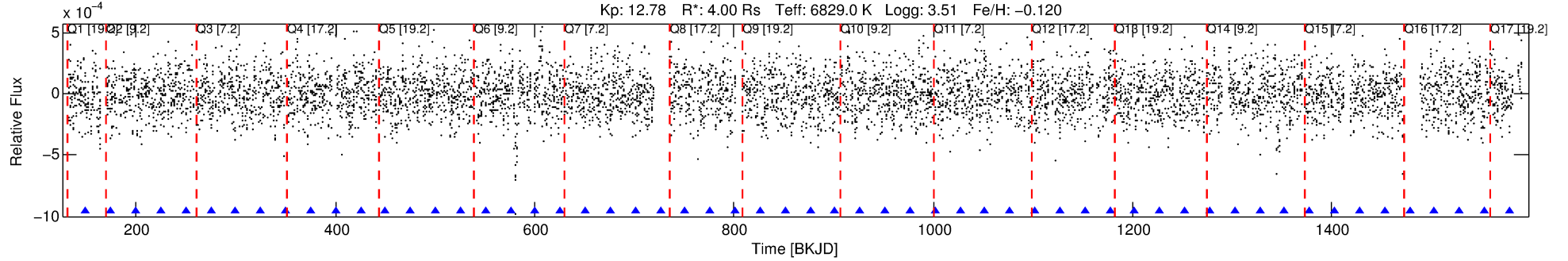
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-06

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 6 of 10 Period: 25.061 d



DV Fit Results:

Period = 25.06137 [0.00049] d
Epoch = 149.7913 [0.0161] BKJD
Rp/R* = 0.0137 [0.0064]
a/R* = 17.96 [49.46]
b = 0.89 [0.65]
Seff = 727.50 [435.33]
Teq = 1324 [198] K
Rp = 6.00 [3.59] Re
a = 0.2071 [0.0751] AU
Ag = 93.65 [105.61] [0.88σ]
Teffp = 6369 [1551] K [3.23σ]

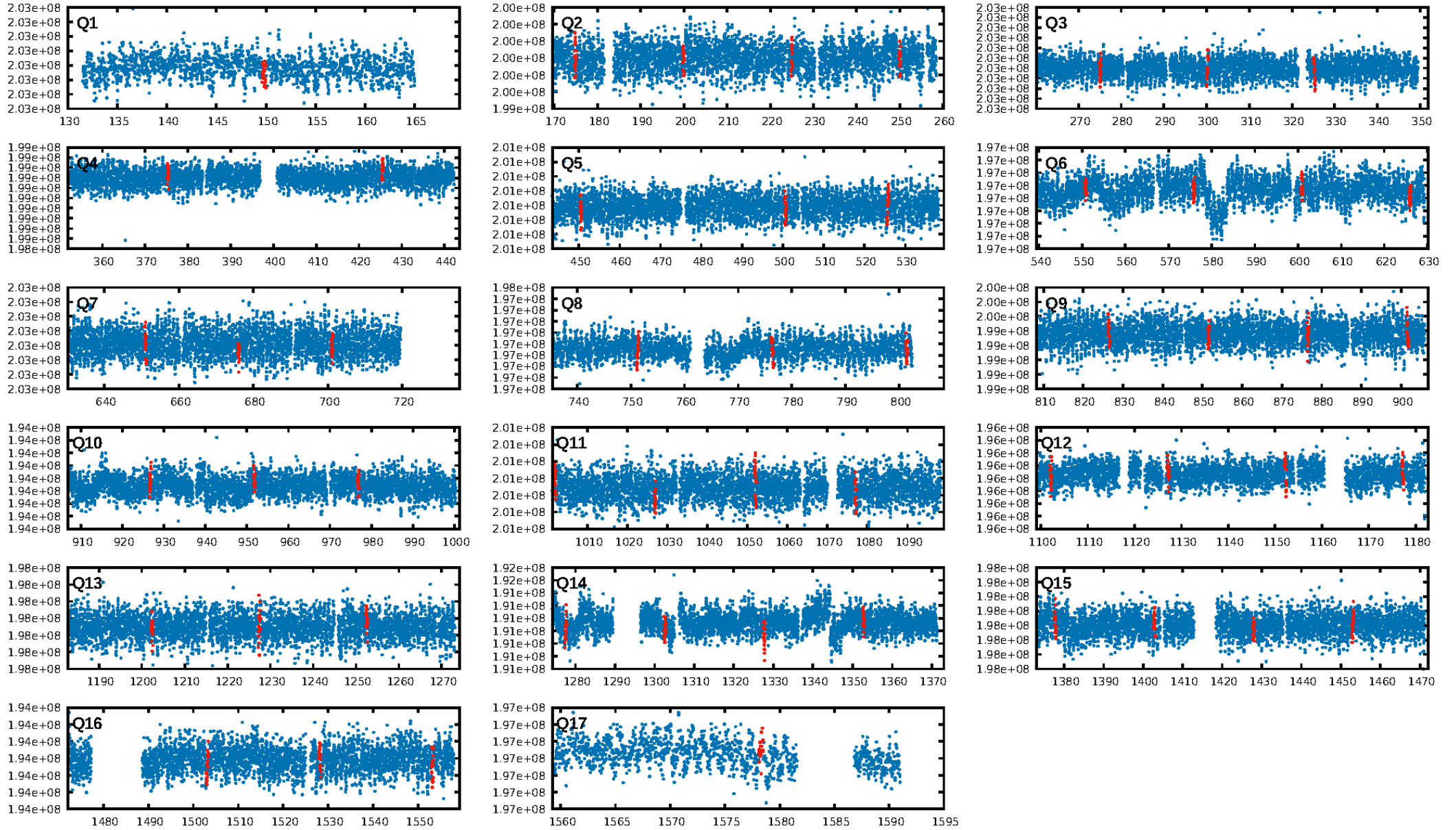
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.17σ]
LongPeriod-sig: 100.0% [11.67σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: -2.528
Centroid-sig: 0.1%
Centroid-so: 0.873 arcsec [2.23σ]
OotOffset-rm: 0.648 arcsec [0.63σ]
KicOffset-rm: 0.714 arcsec [0.64σ]
OotOffset-st: 3/4/3/2 [12]
KicOffset-st: 3/4/3/2 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 0.00 [0/17]

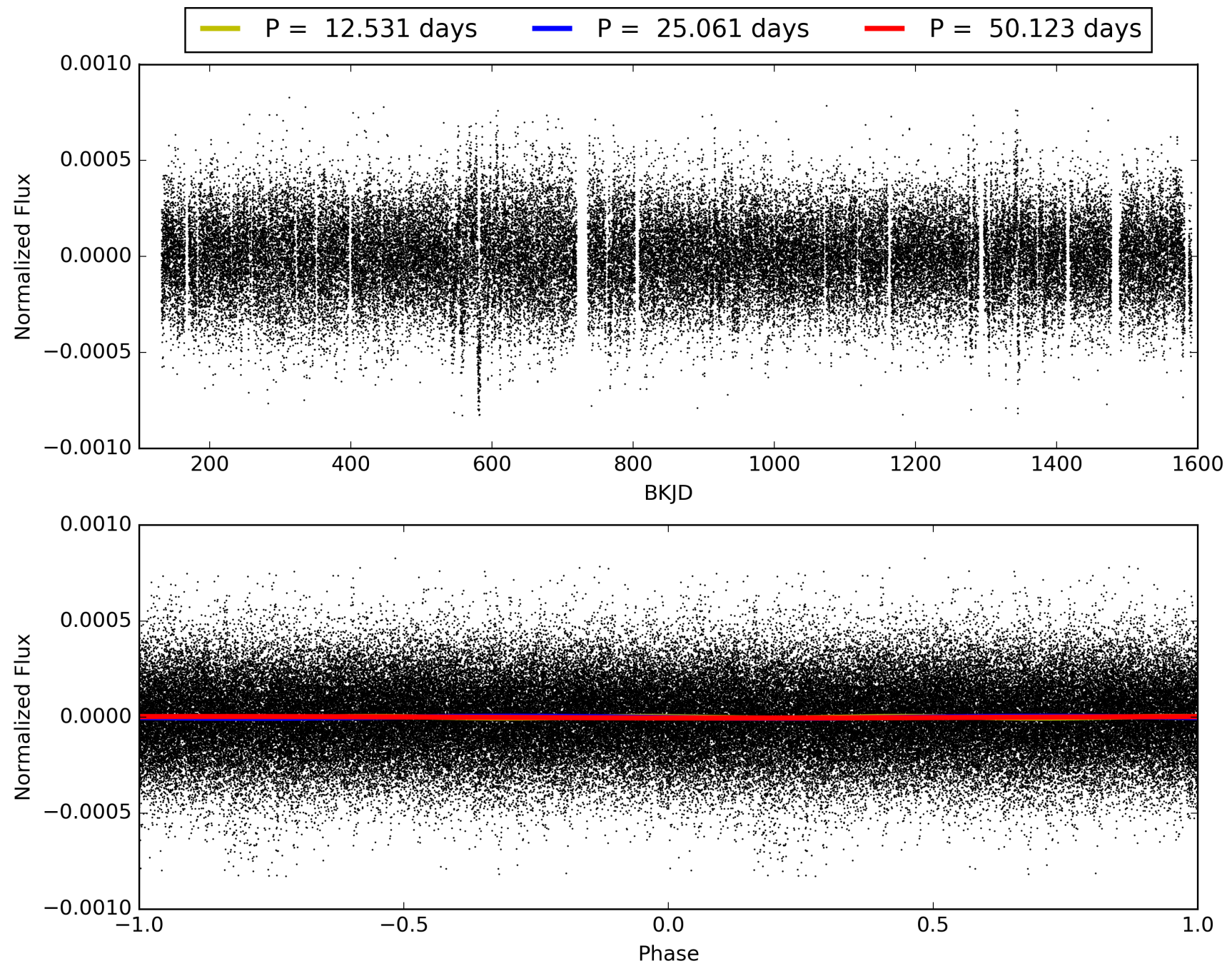
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:12 Z

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

TCE 007898445-06, PDC Light Curves

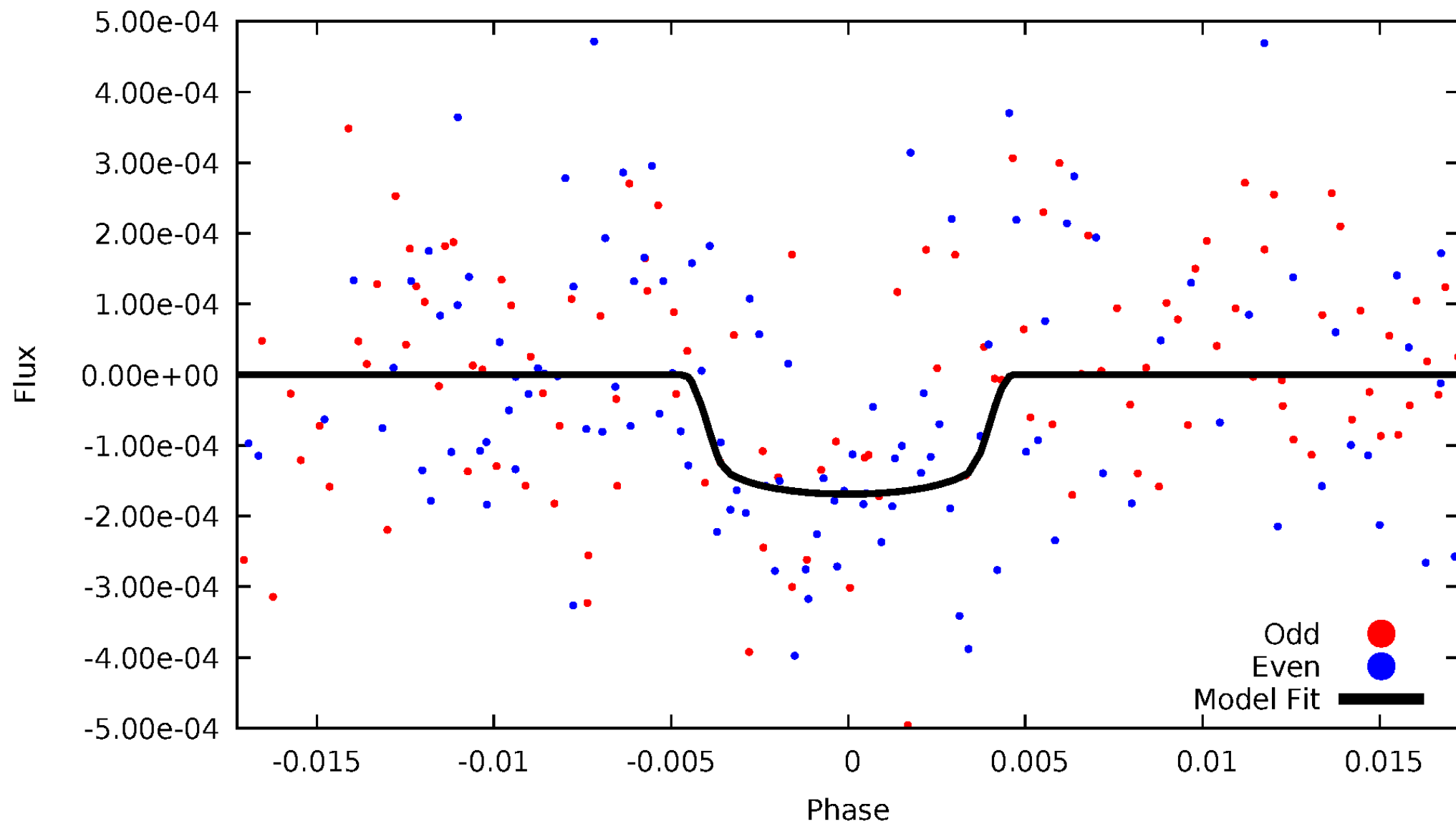


TCE 007898445-06



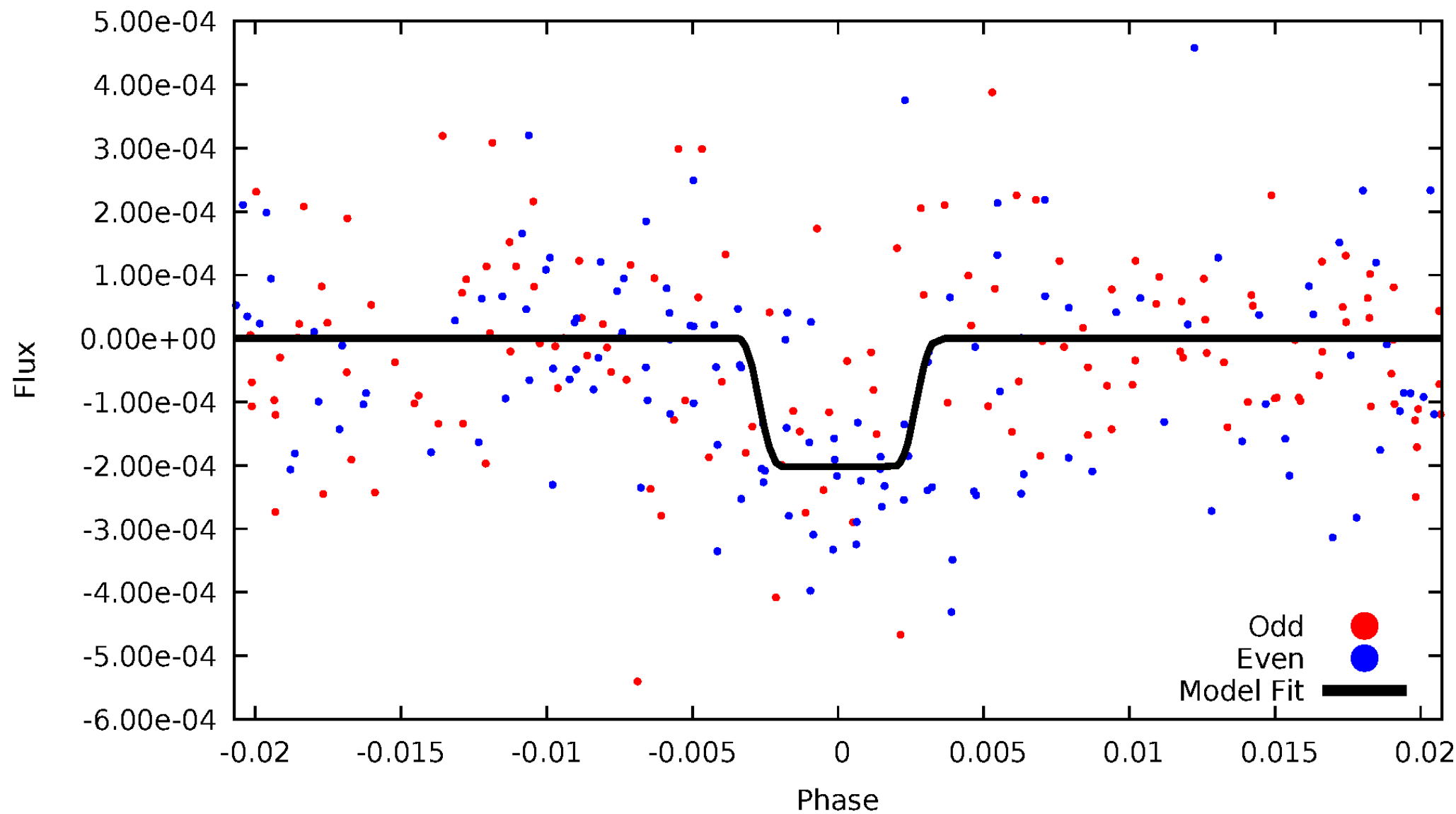
DV Odd/Even

TCE 007898445-06



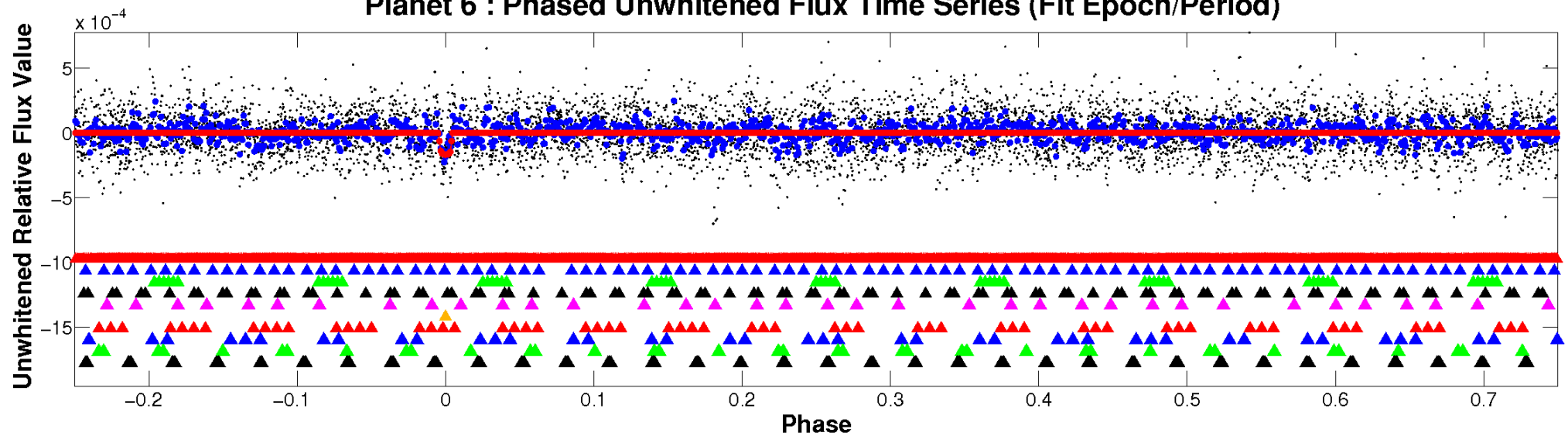
ALT Odd/Even

TCE 007898445-06

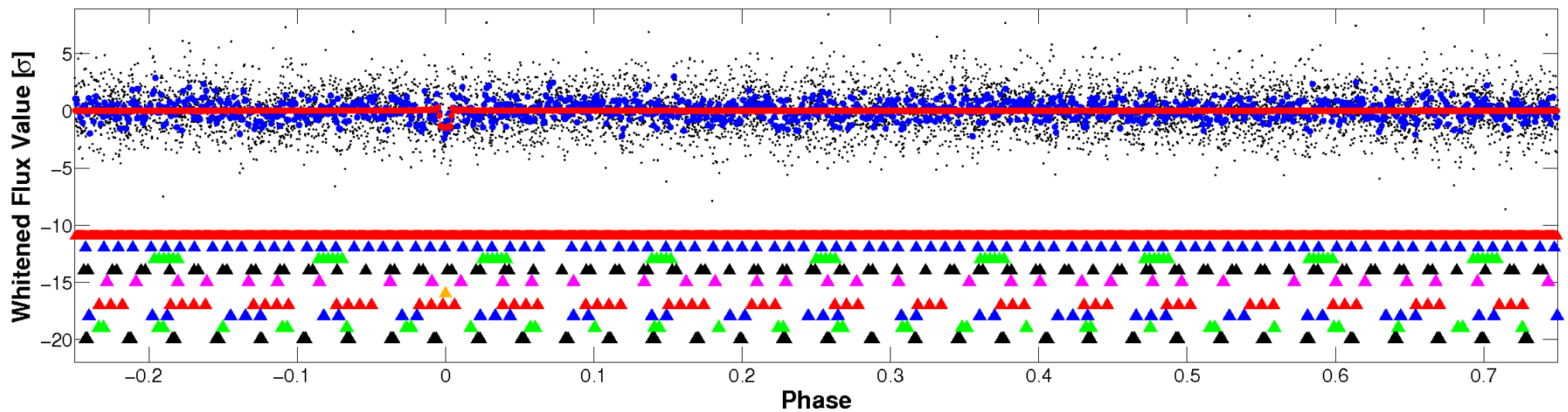


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

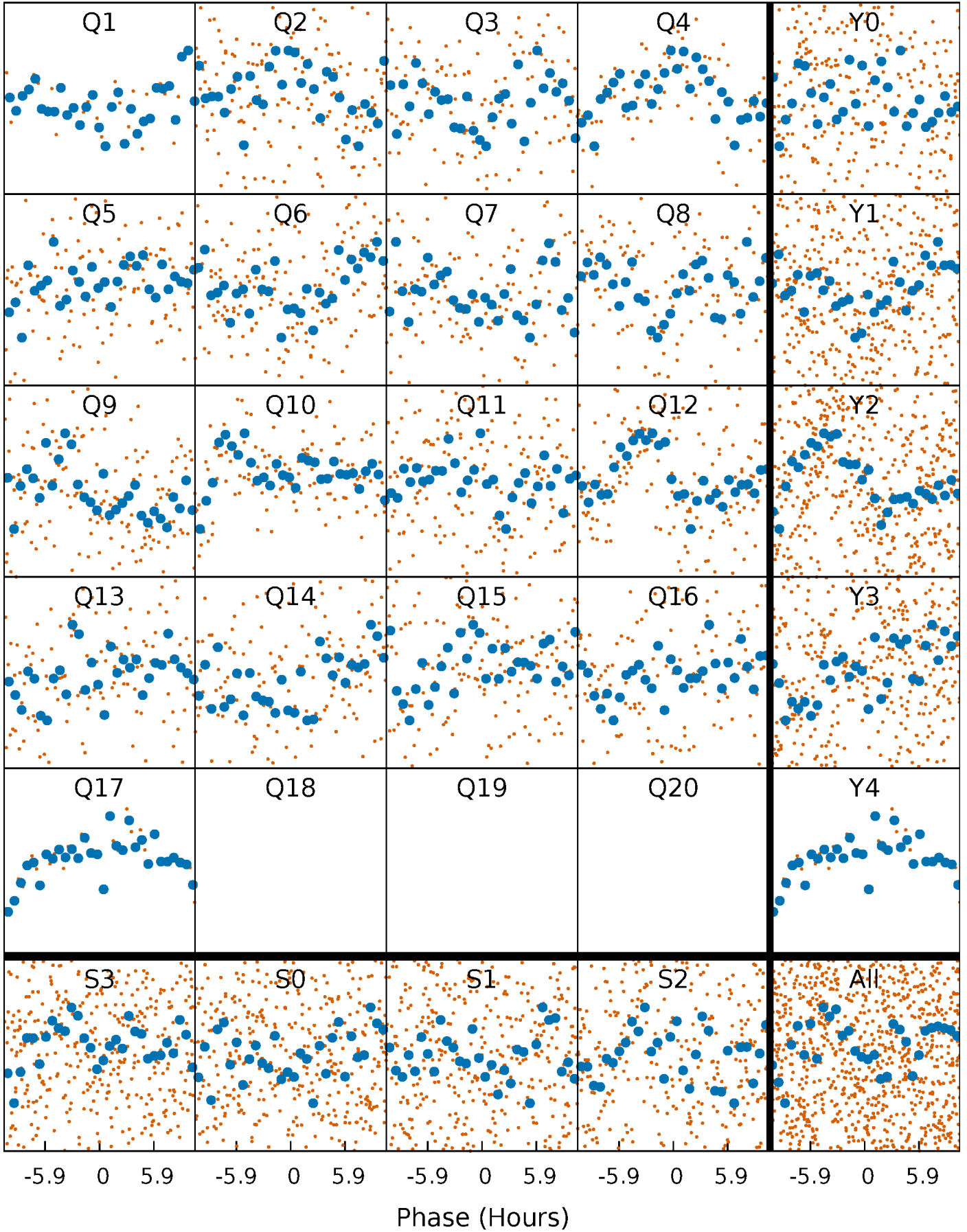


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



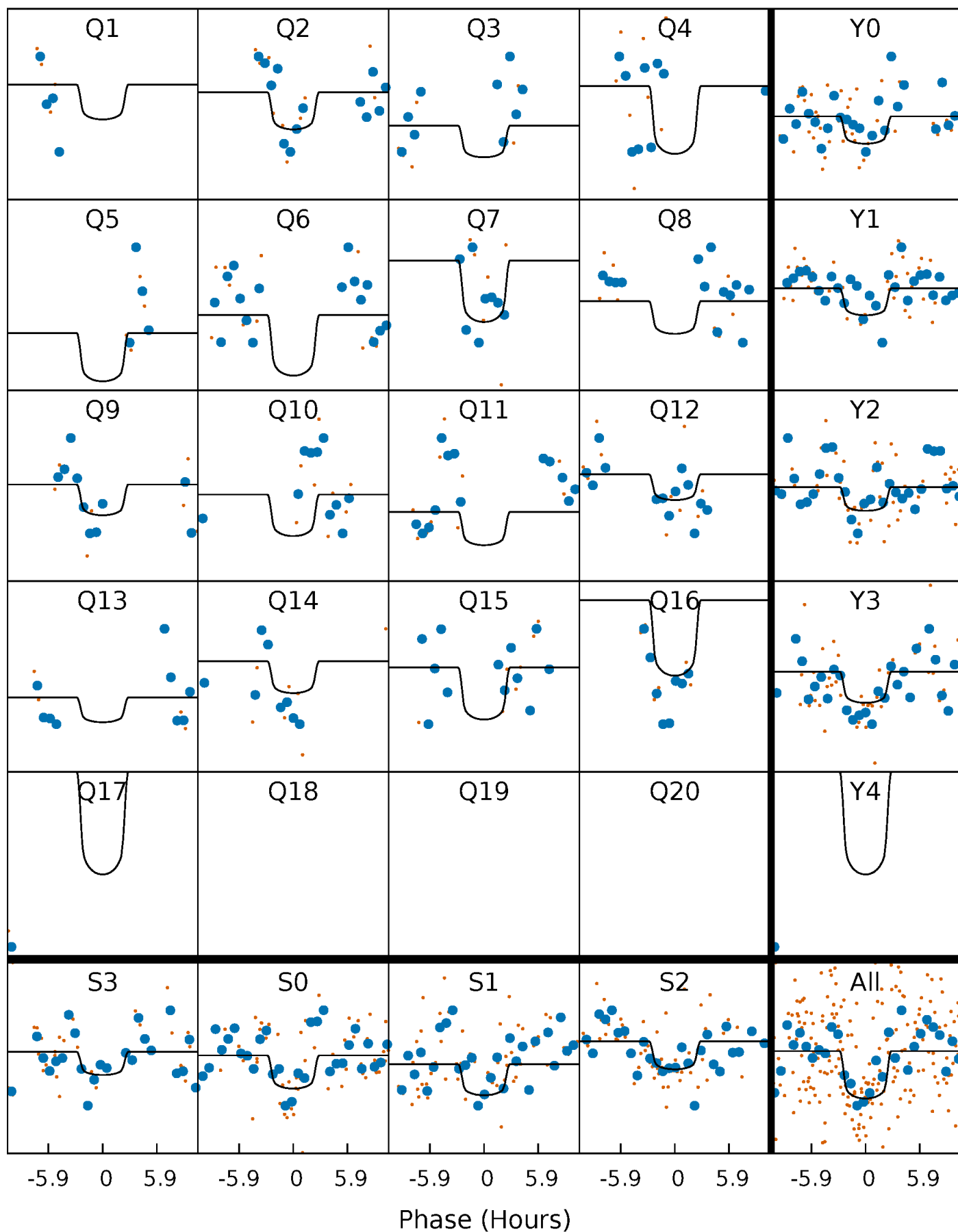
PDC Quarter-Phased Transit Curves

TCE 007898445-06 P= 25.061369 Days $T_0=149.791280$ (BKJD)



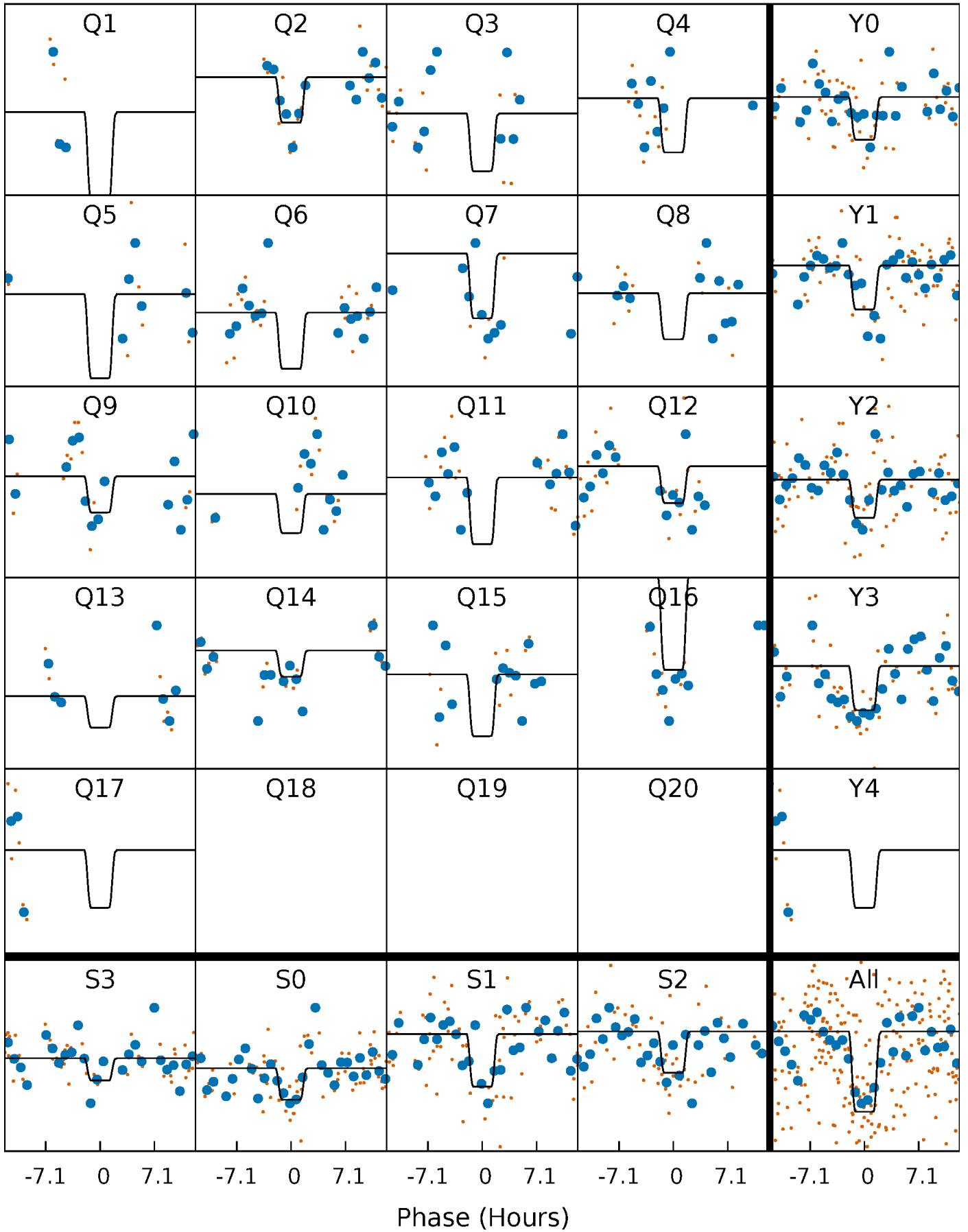
DV Quarter-Phased Transit Curves

TCE 007898445-06 P= 25.061369 Days $T_0=149.791280$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

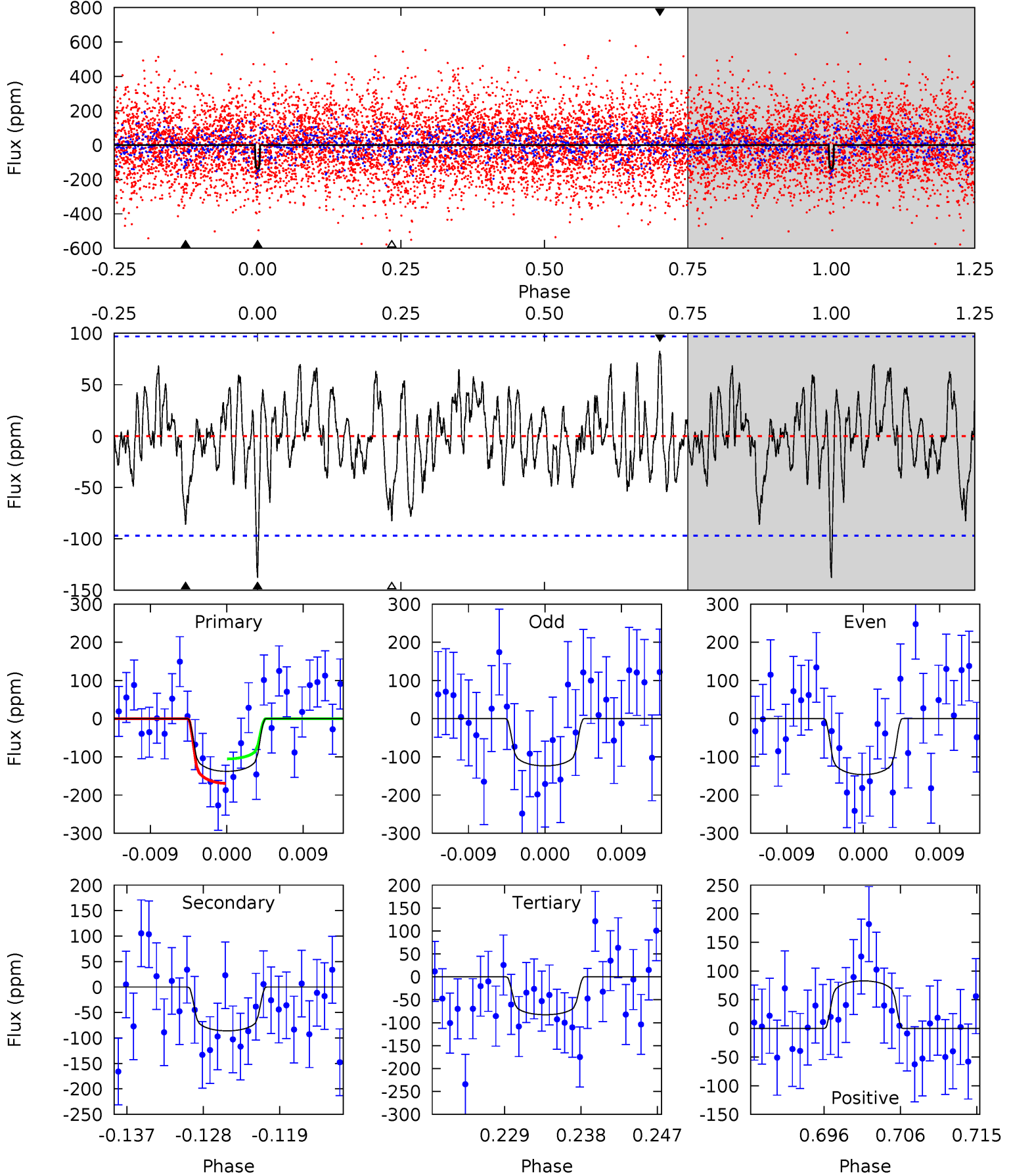
TCE 007898445-06 P= 25.061657 Days $T_0=149.766163$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-06, P = 25.061369 Days, E = 124.729911 Days

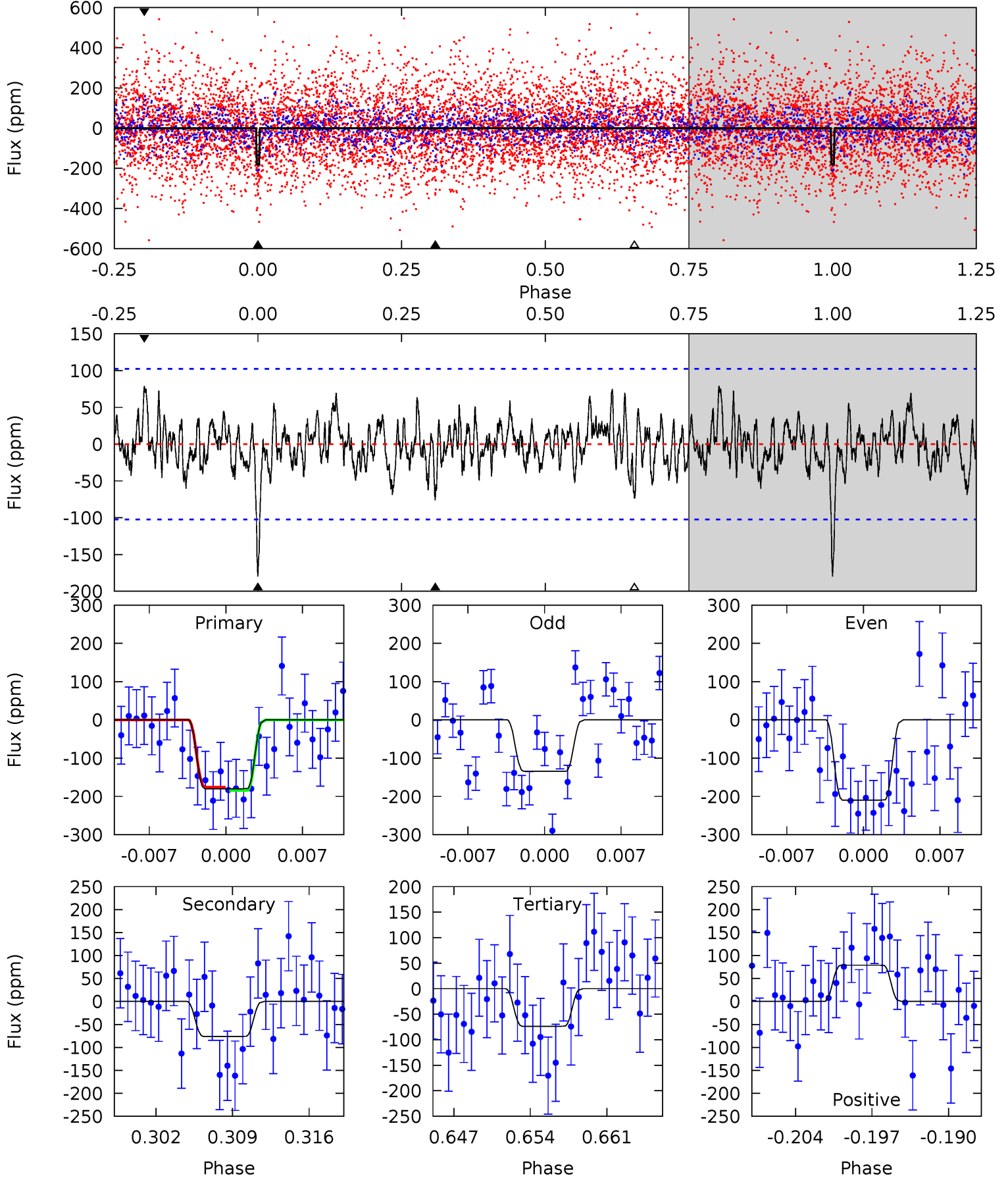
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	4.48	4.30	4.32	5.04	2.61	1.52	2.88	2.87	0.18	0.17	0.57	0.88	0.38	1.67



Alt Model-Shift Uniqueness Test

007898445-06, P = 25.061657 Days, E = 124.704506 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.95	3.79	3.67	3.94	5.09	2.70	1.28	5.29	5.02	0.13	-0.14	1.82	0.57	0.31	0.21



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-86 ± 19	$5.86^{+3.02}_{-2.89}$	1821^{+95}_{-160}	5471^{+2215}_{-830}	59^{+162}_{-34}
Alt.	-76 ± 20	$5.89^{+2.78}_{-2.74}$	1825^{+89}_{-153}	5322^{+1751}_{-798}	50^{+129}_{-27}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

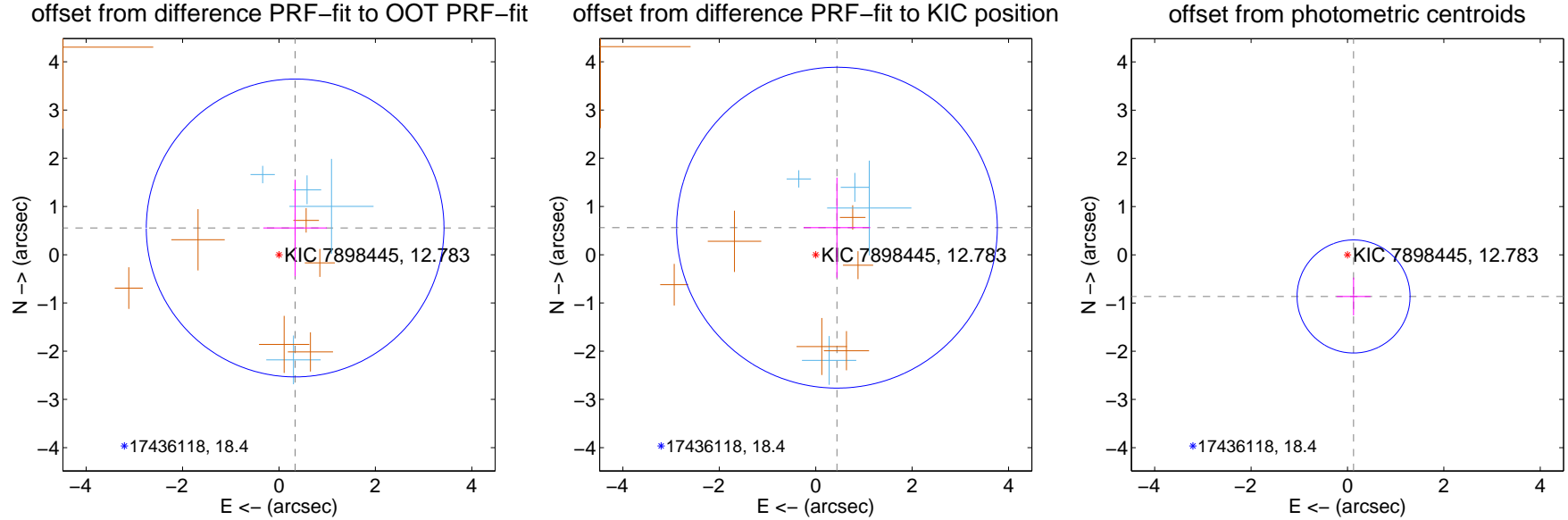
DV Centroid Data

Supplemental centroid analysis for 007898445-06. Kepler magnitude: 12.78. Transit SNR 10.54

There are 4 quarters with good PRF difference image offsets

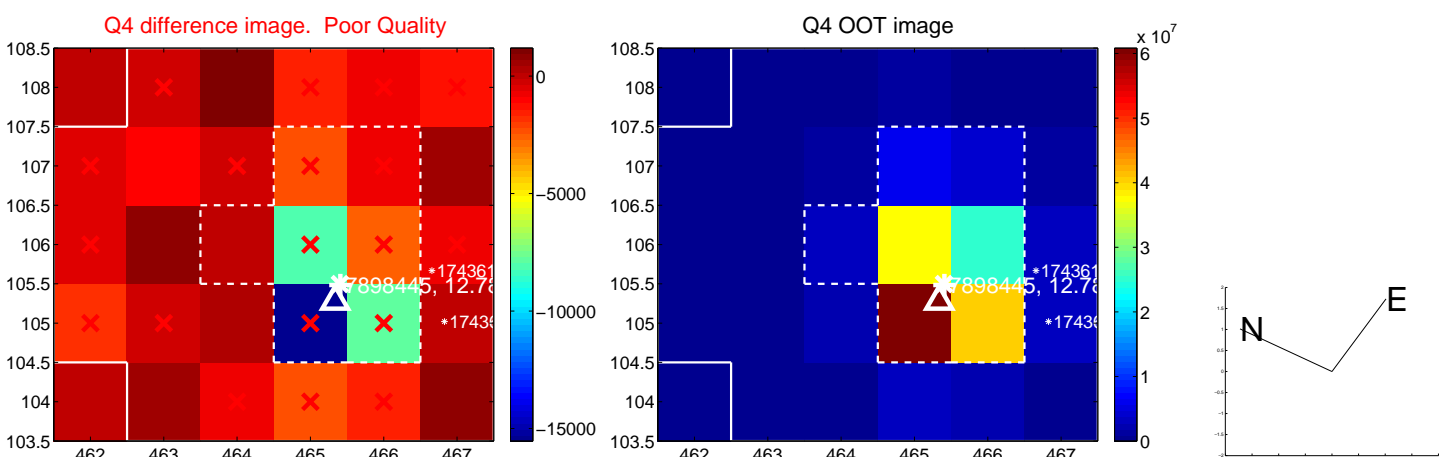
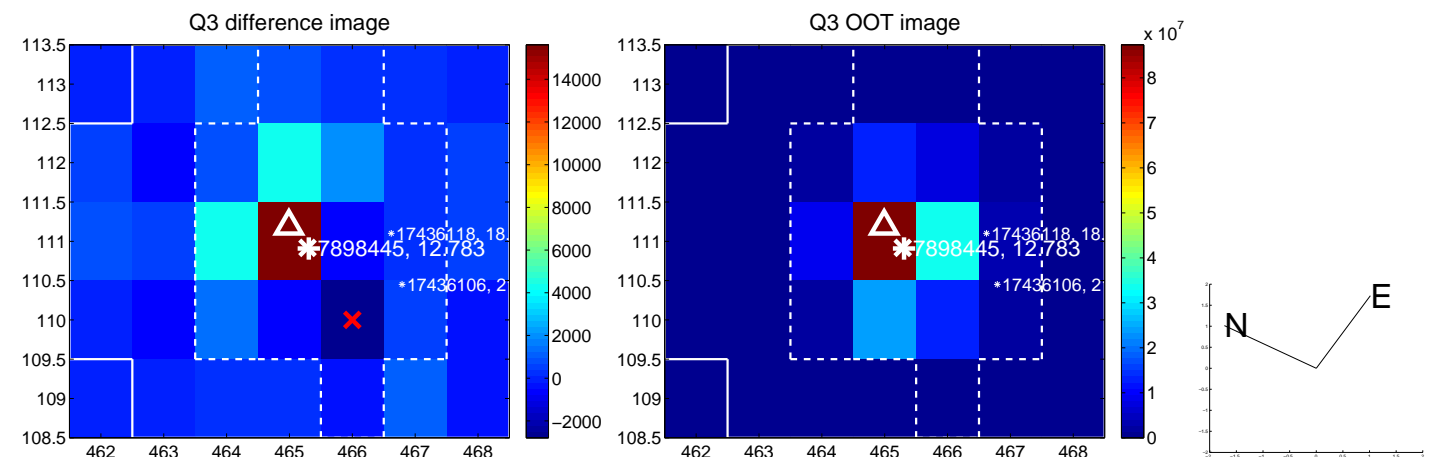
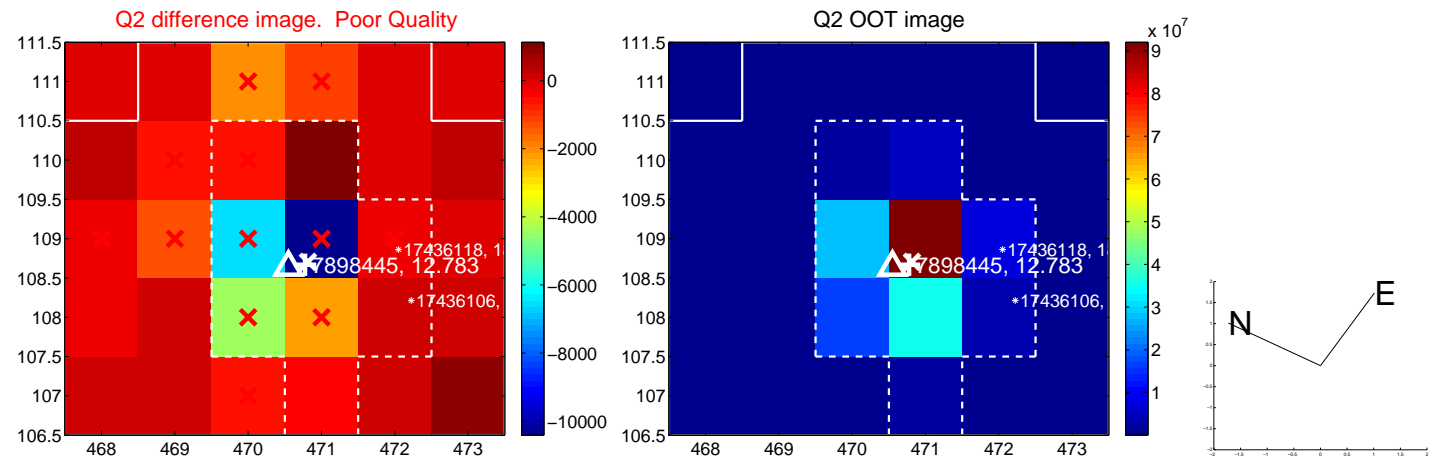
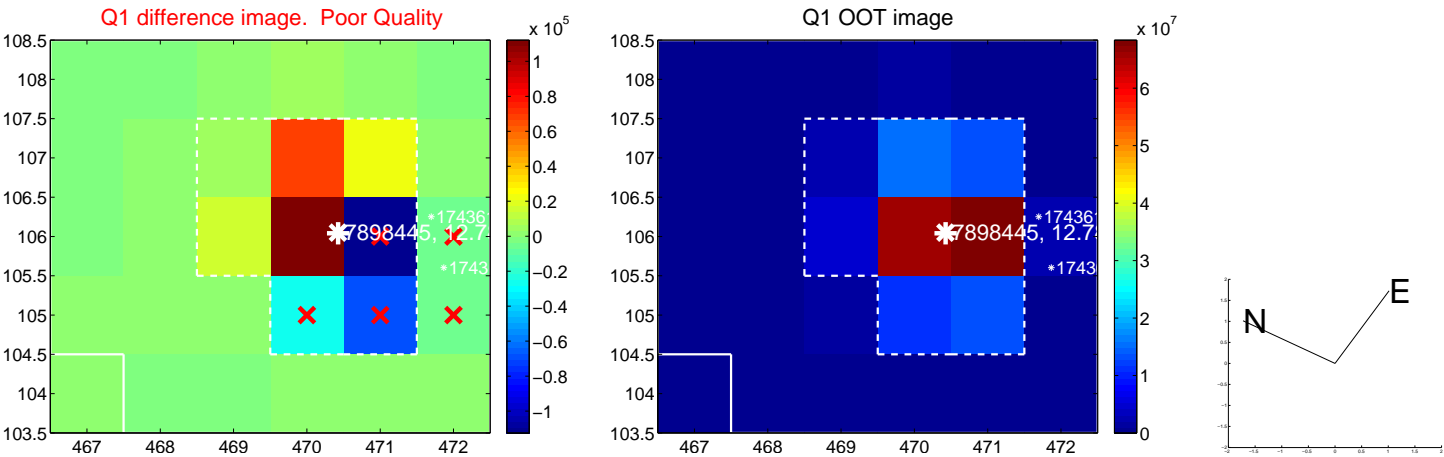
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.648 ± 1.029	0.63	-0.335 ± 0.660	0.555 ± 0.999
PRF-fit source offset from KIC position	0.714 ± 1.109	0.64	-0.441 ± 0.692	0.561 ± 1.037
photometric centroid source offset	0.87 ± 0.39	2.23	-0.13 ± 0.35	-0.86 ± 0.39

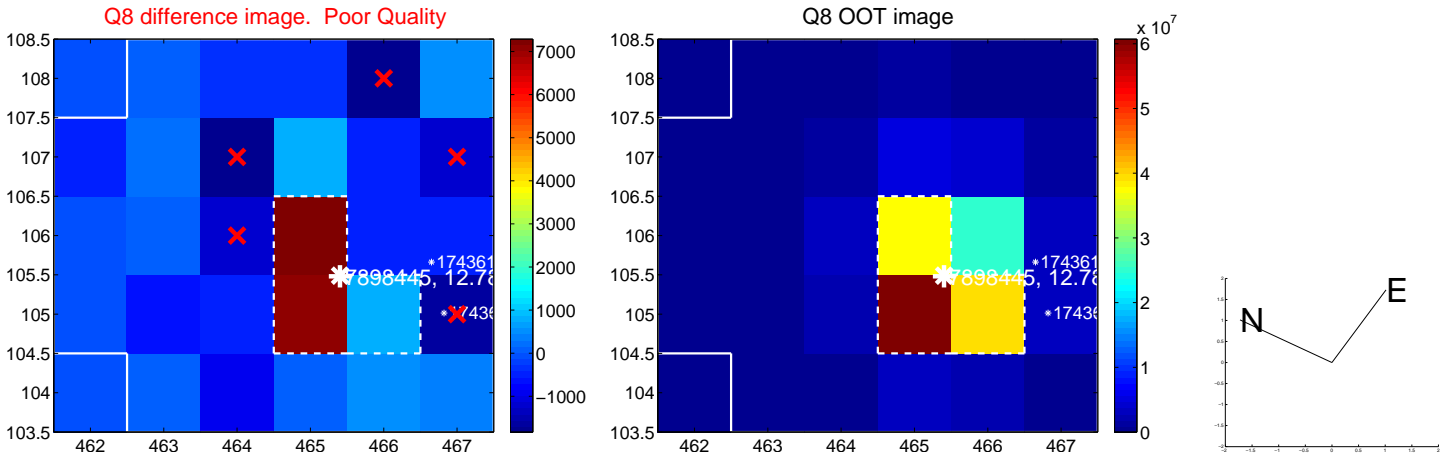
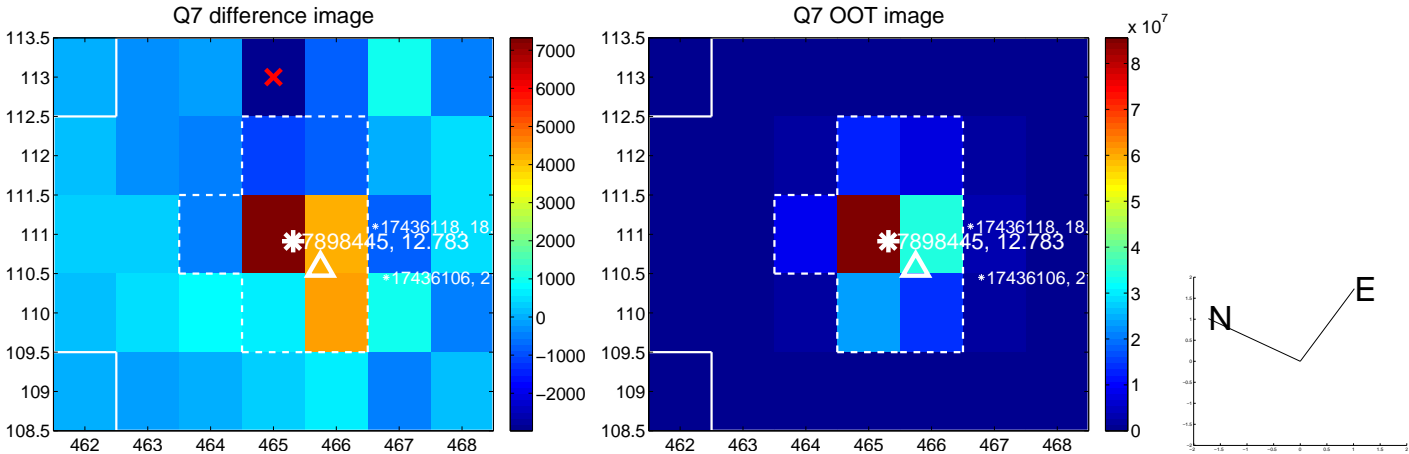
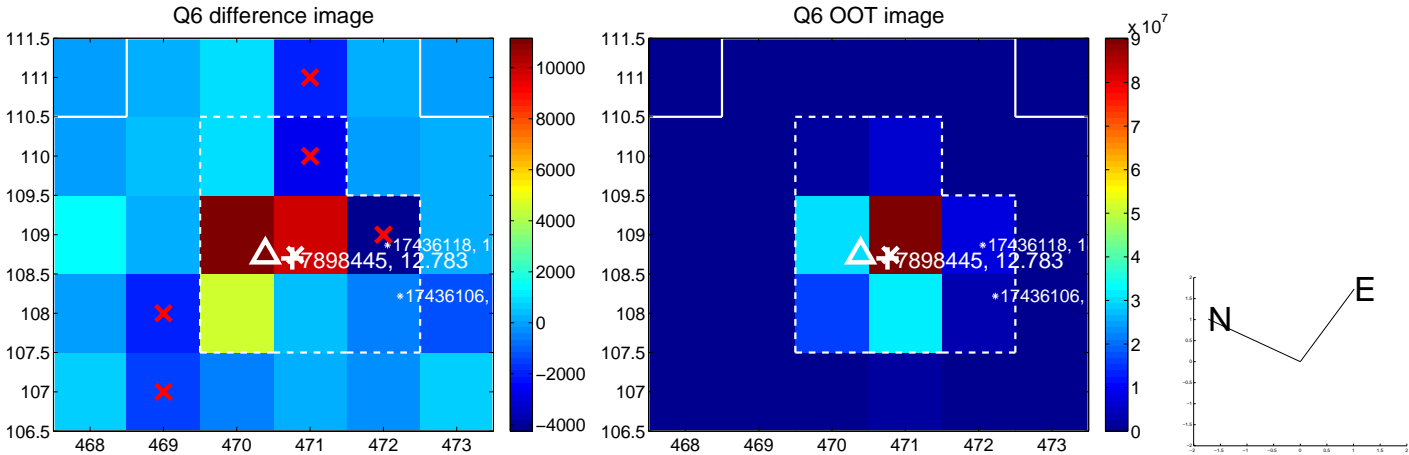
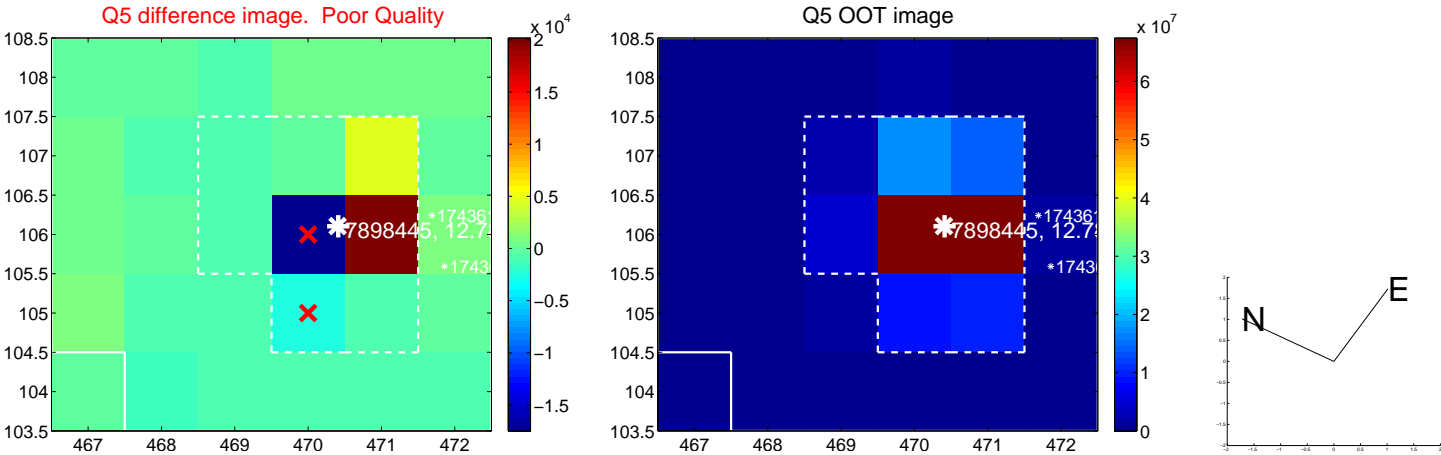


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

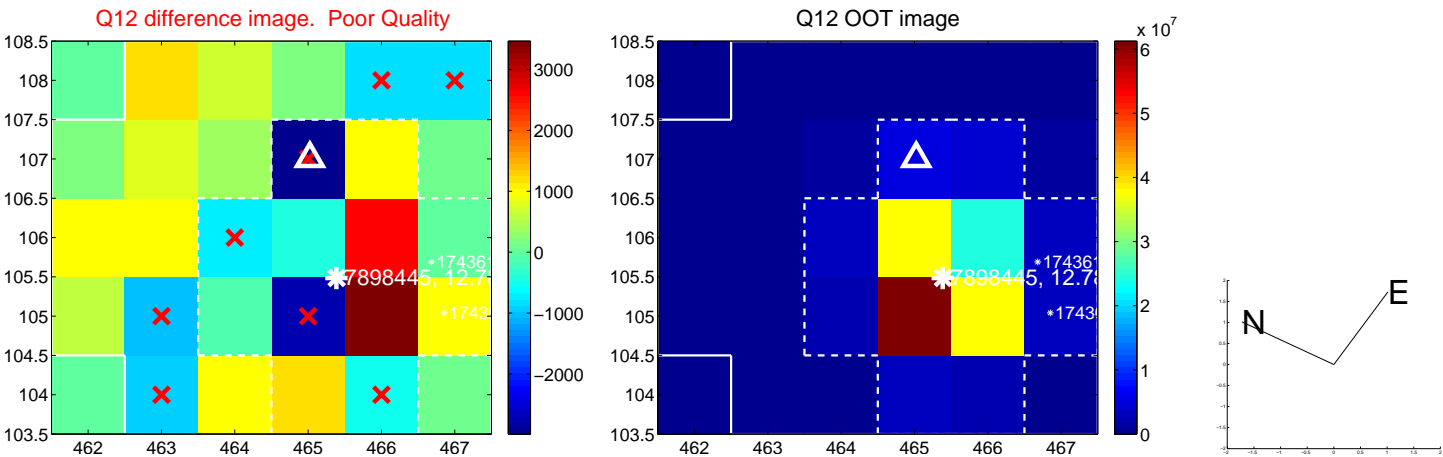
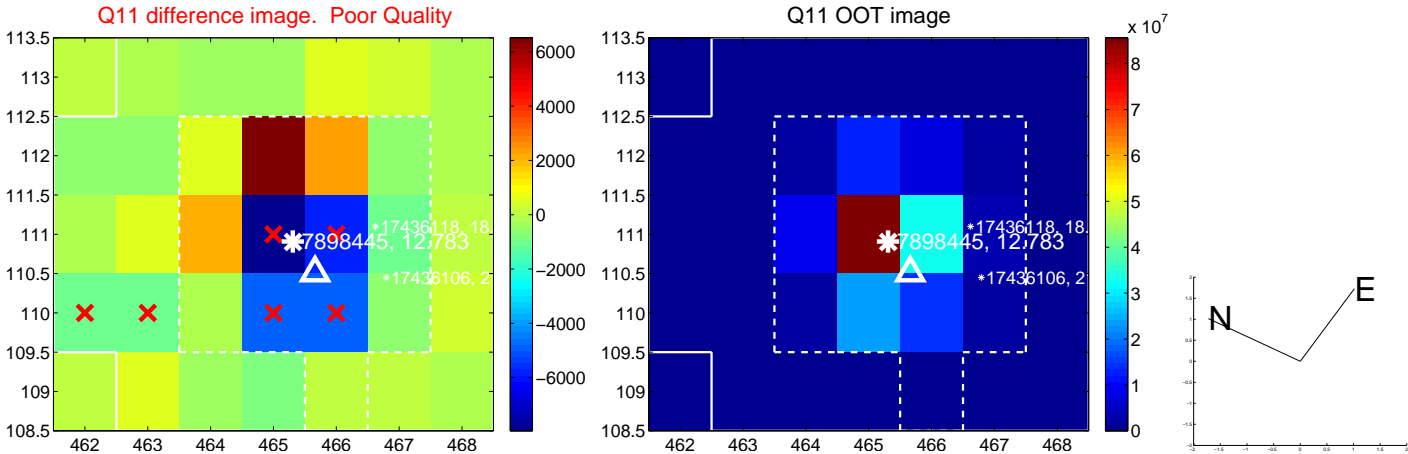
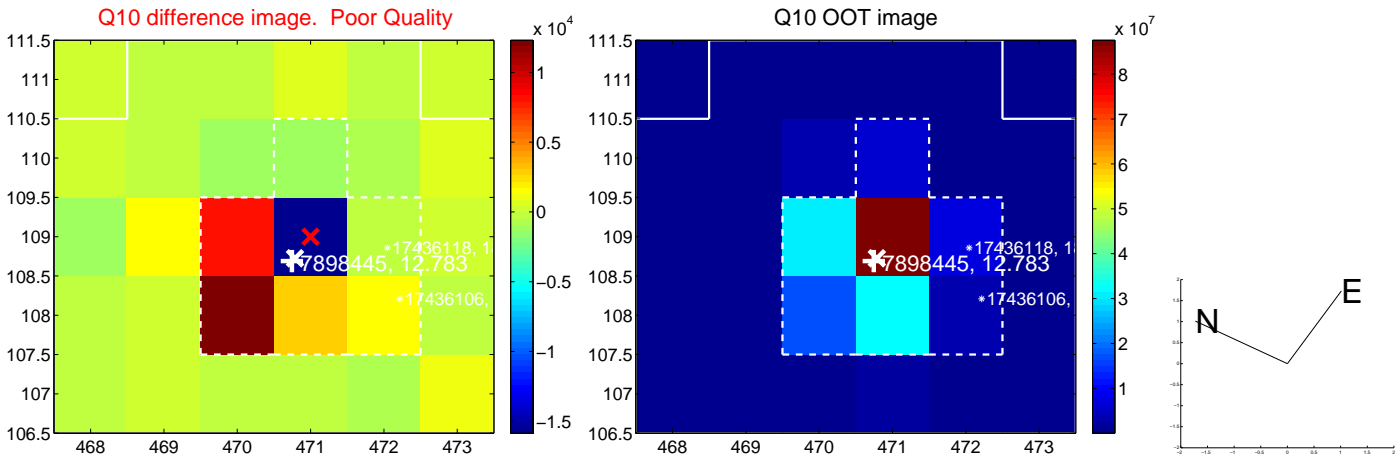
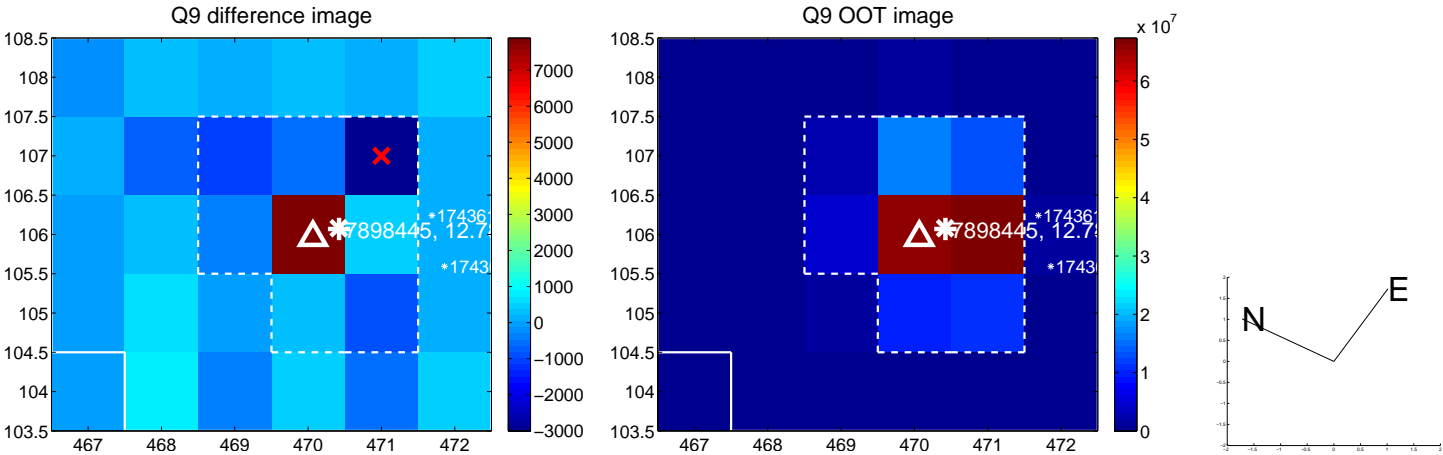
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



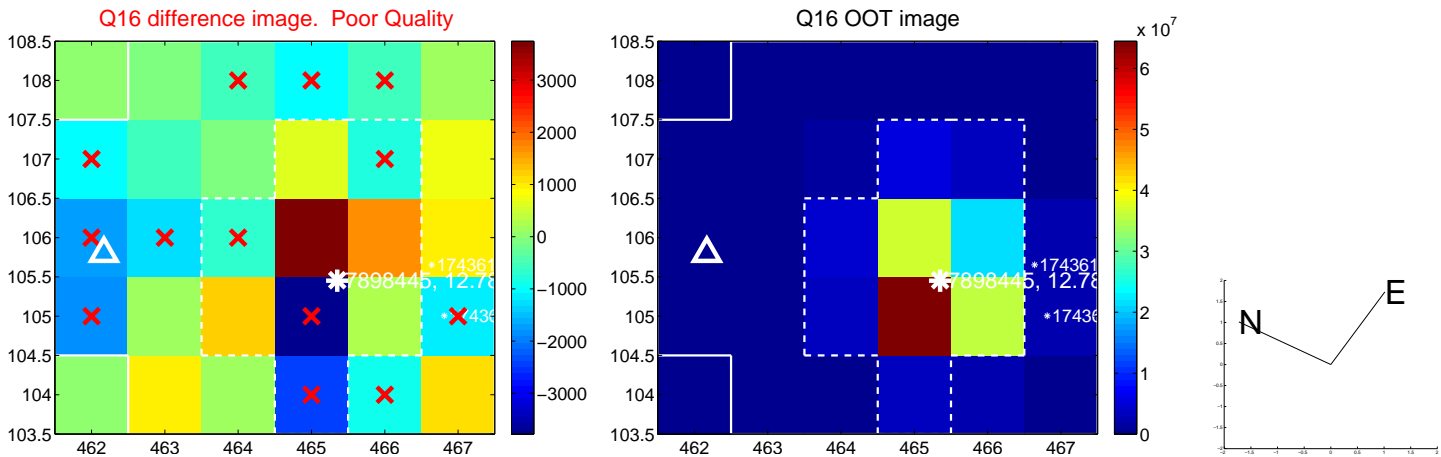
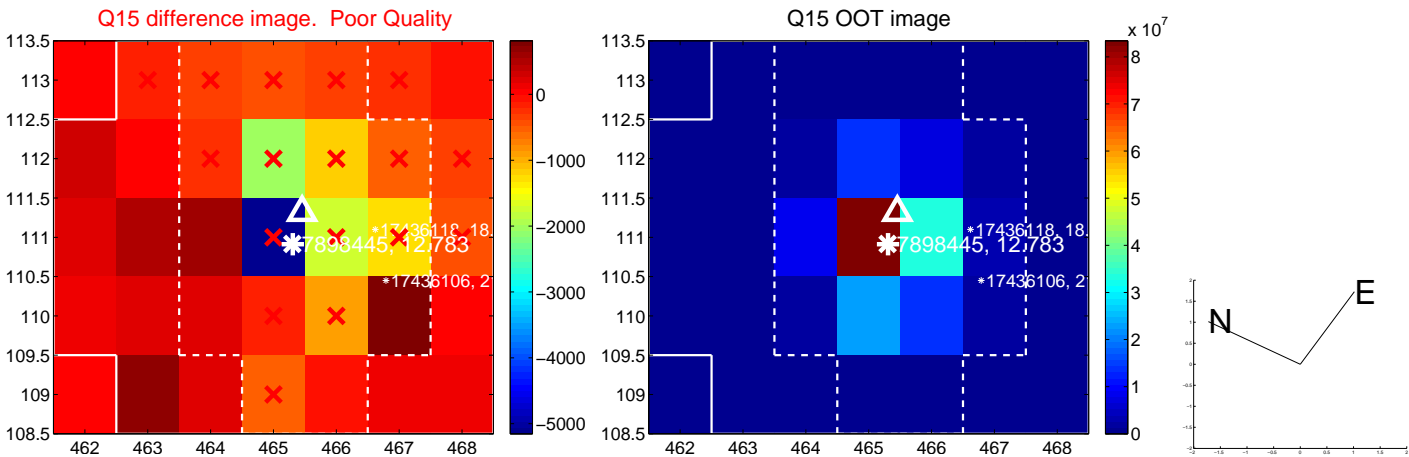
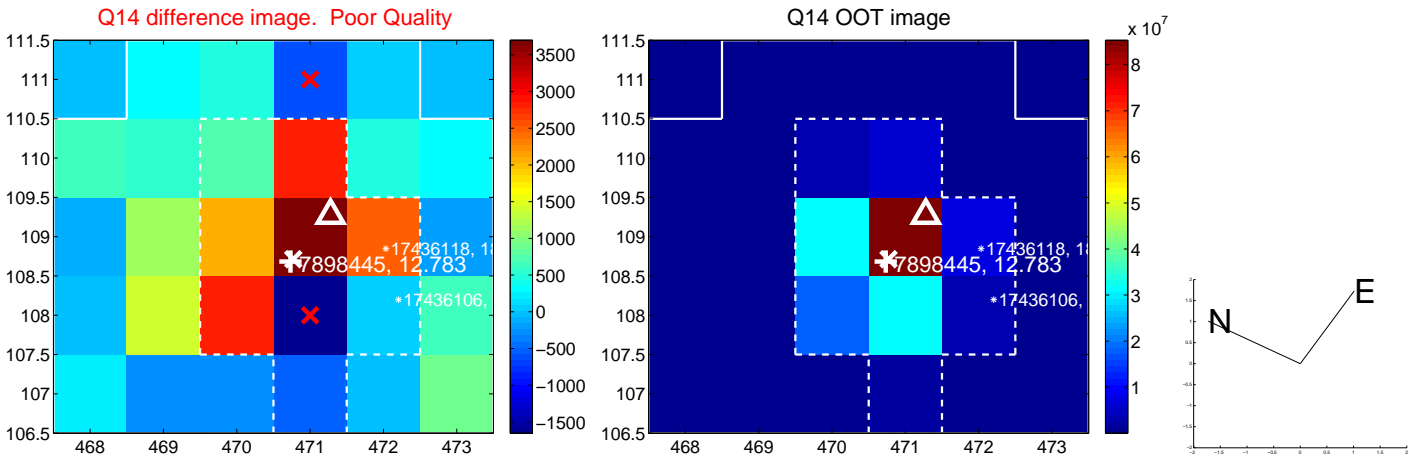
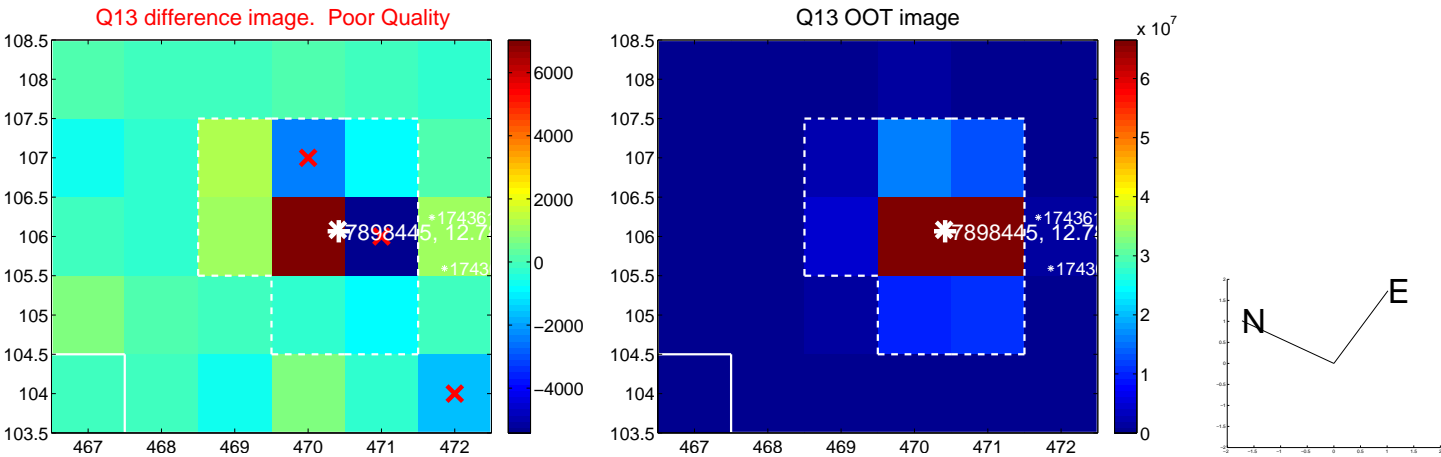
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



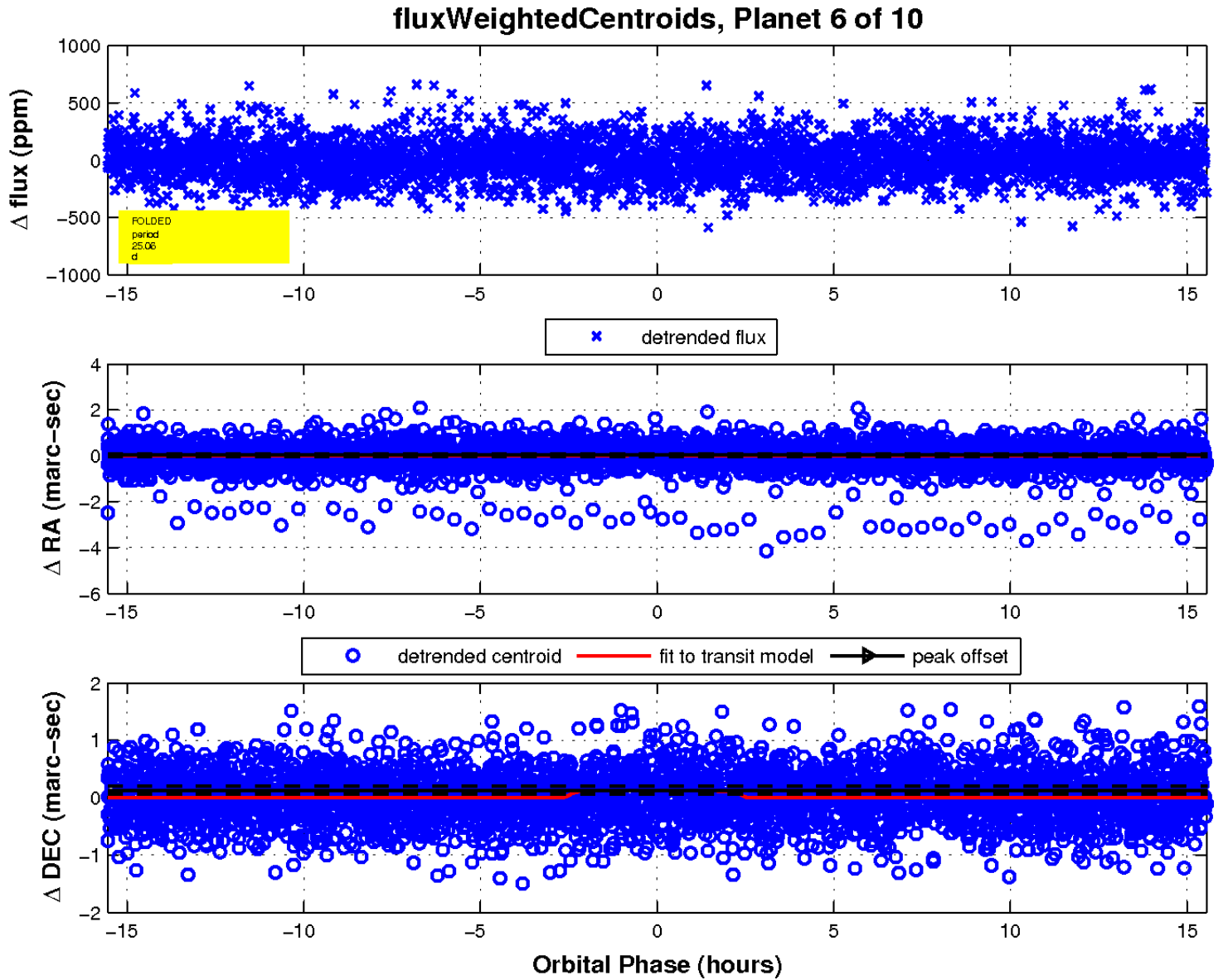
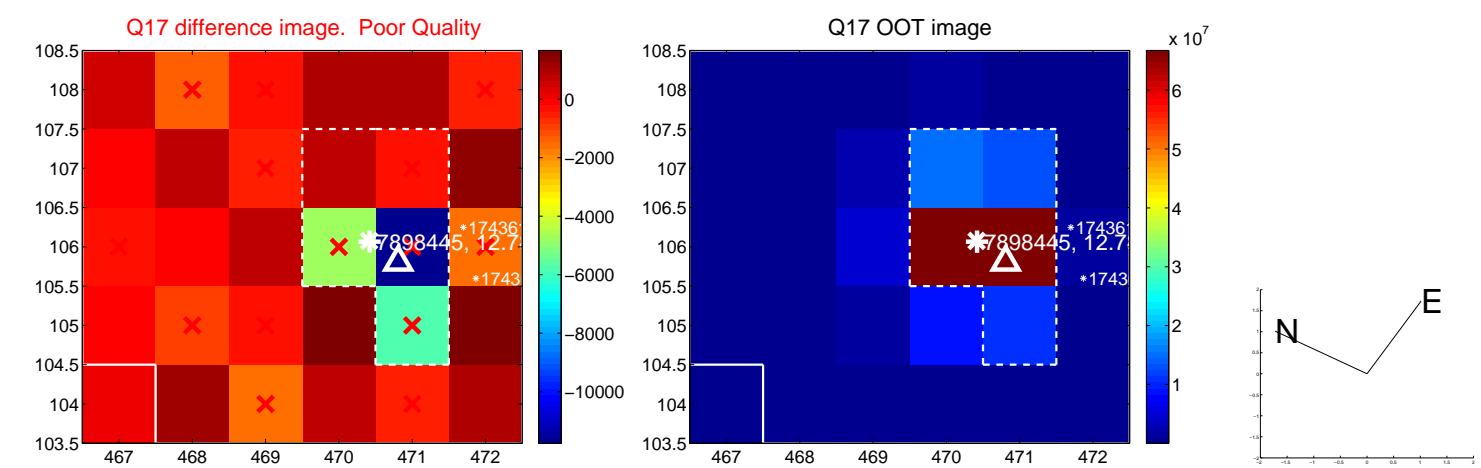
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

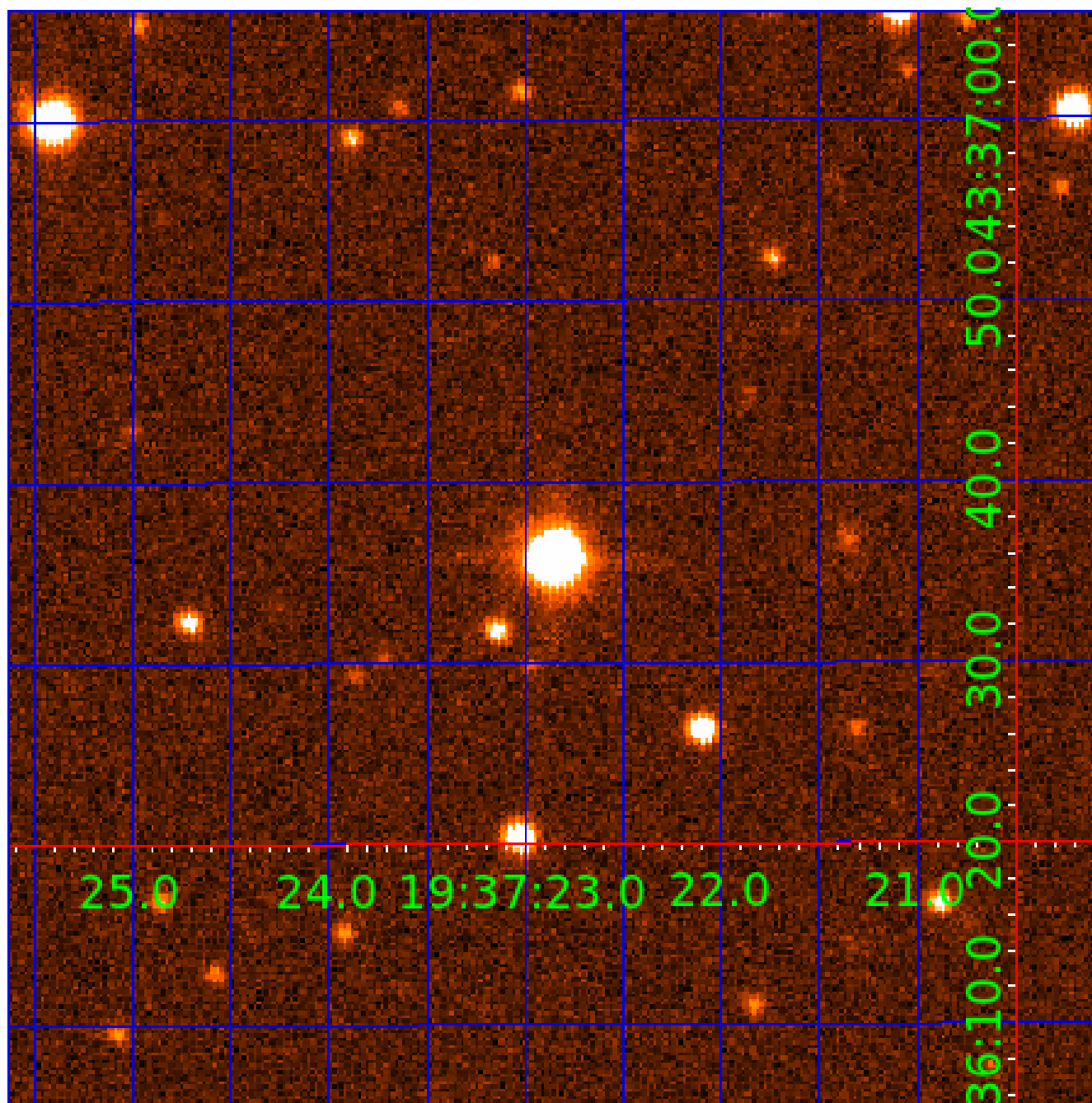


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

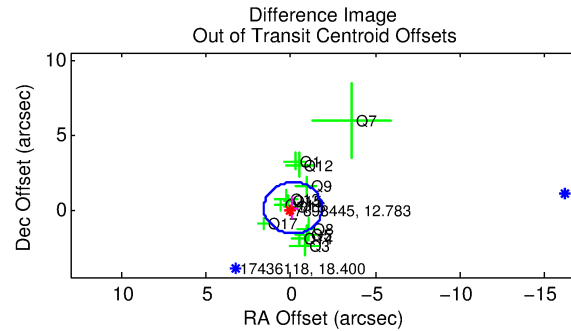
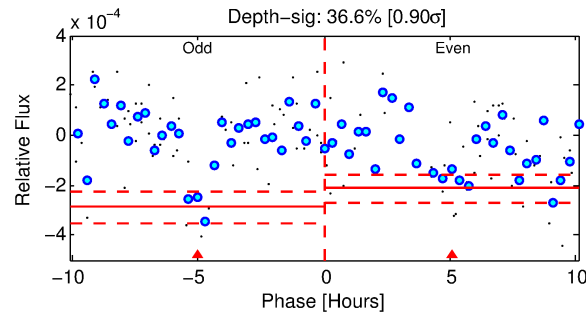
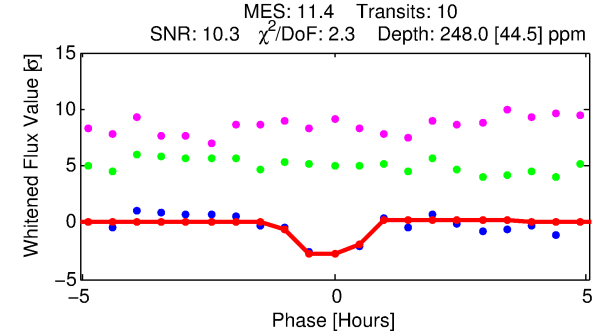
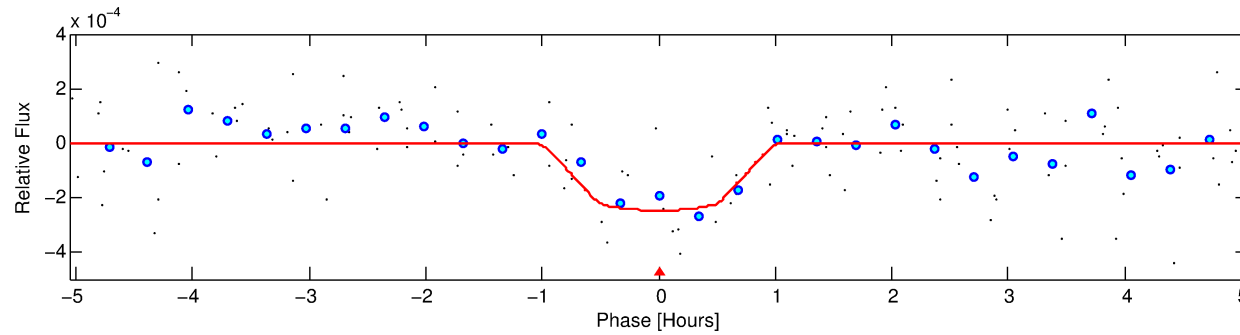
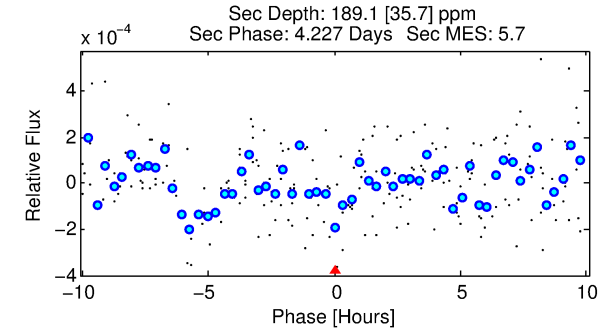
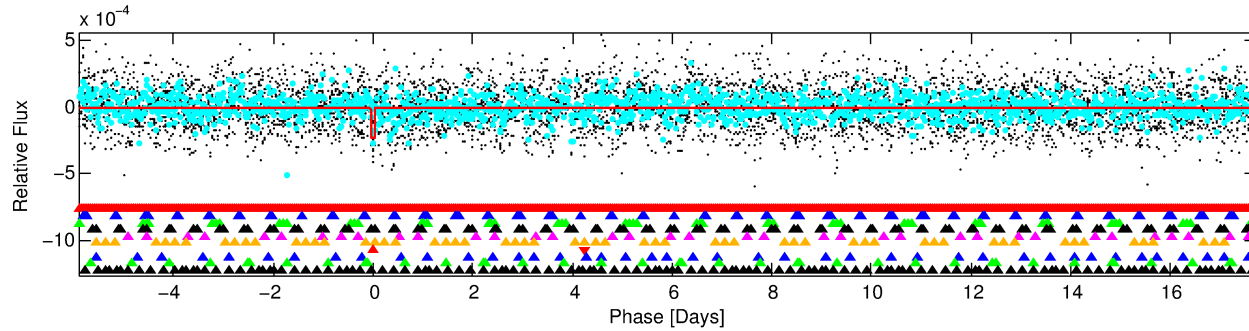
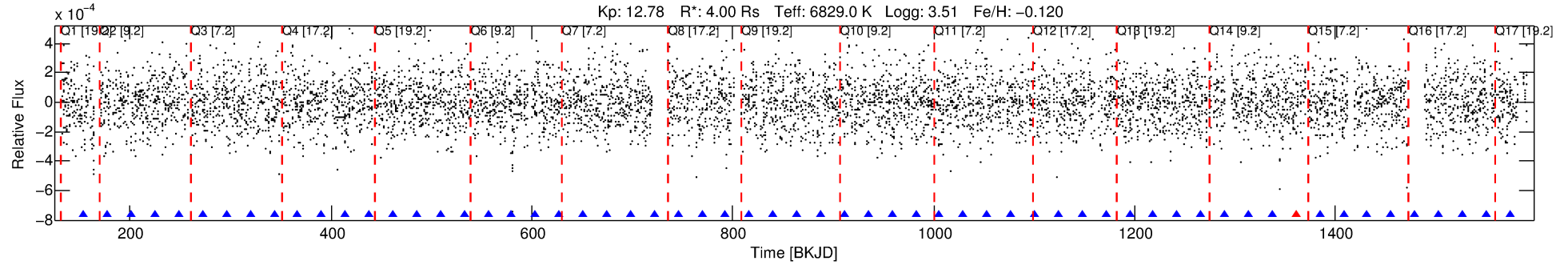
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-07

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 7 of 10 Period: 23.658 d



DV Fit Results:

Period = 23.65813 [0.00021] d
Epoch = 154.1546 [0.0081] BKJD
Rp/R* = 0.0168 [0.0130]
a/R* = 50.72 [233.96]
b = 0.90 [0.98]
Self = 785.60 [470.09]
Teff = 1350 [202] K
Rp = 7.35 [6.30] Re
a = 0.1993 [0.0723] AU
Ag = 76.52 [127.04] [0.59 σ]
Teffp = 6173 [2407] K [2.00 σ]

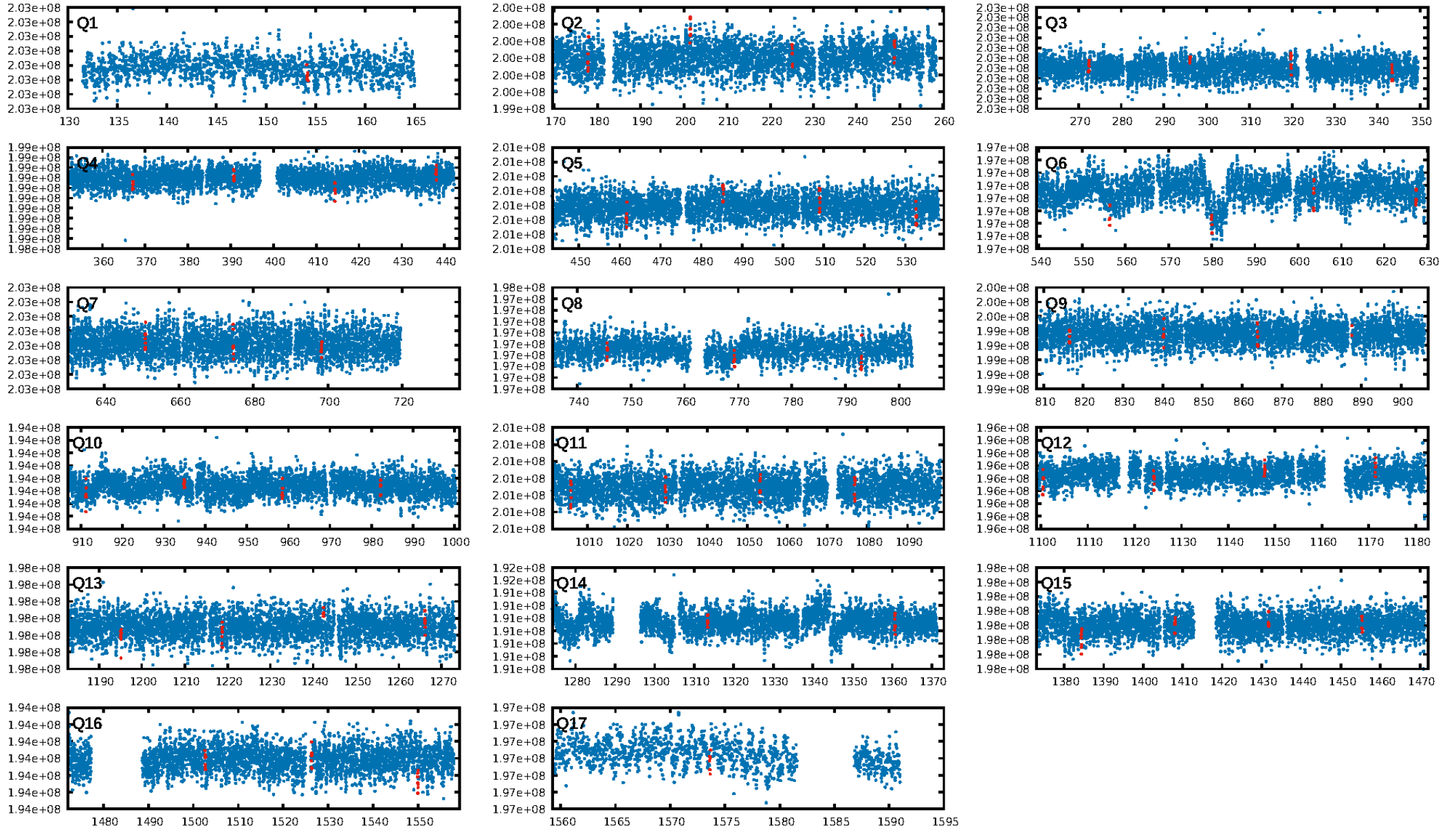
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [70.73 σ]
LongPeriod-sig: 100.0% [6.17 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 72.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.89 [8/9]
GhostDiagnostic-chr: -2.144
Centroid-sig: 3.2%
Centroid-so: 0.749 arcsec [1.83 σ]
OotOffset-rm: 0.156 arcsec [0.27 σ]
KicOffset-rm: 0.084 arcsec [0.13 σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.59 [10/17]

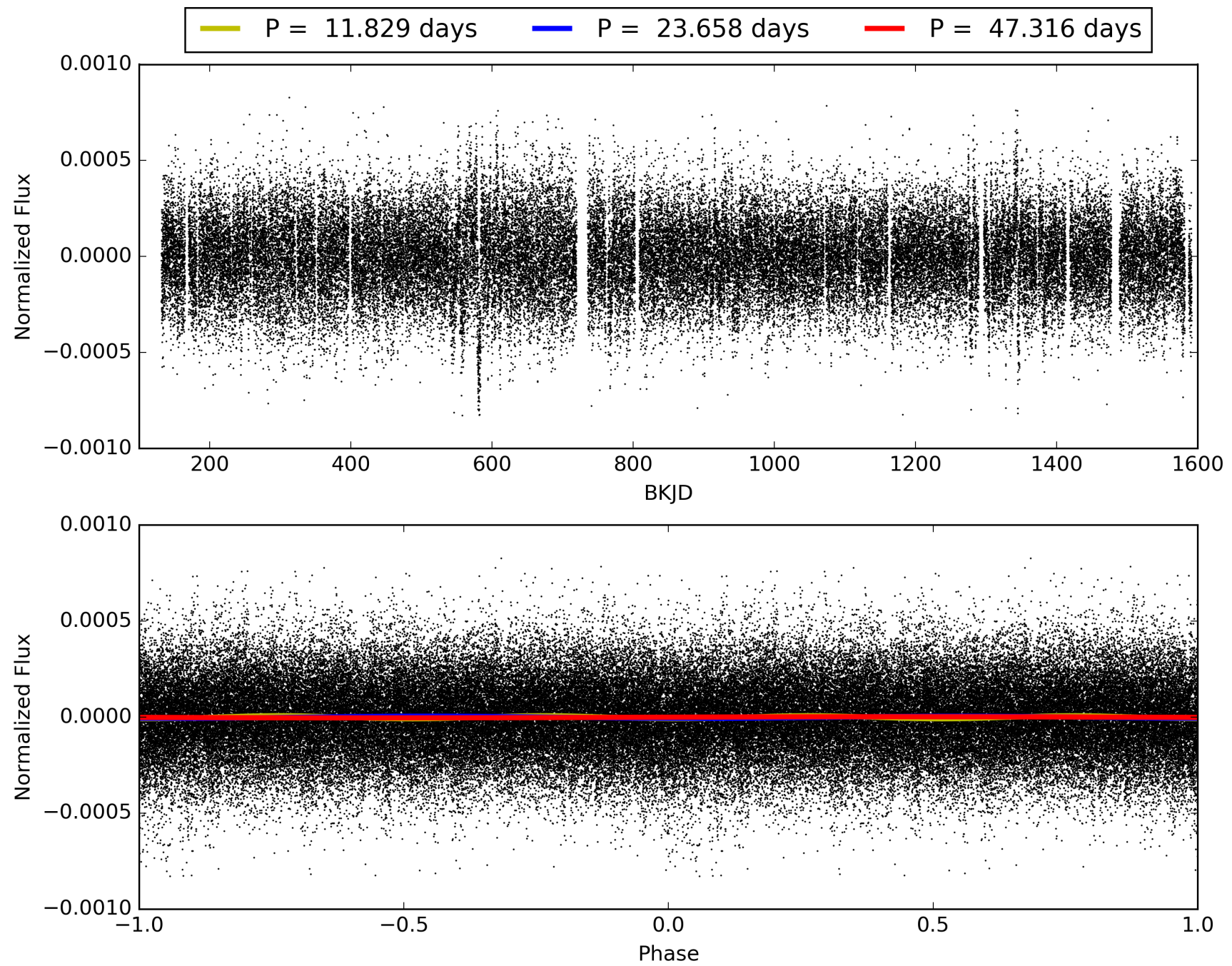
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:15 Z

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

TCE 007898445-07, PDC Light Curves

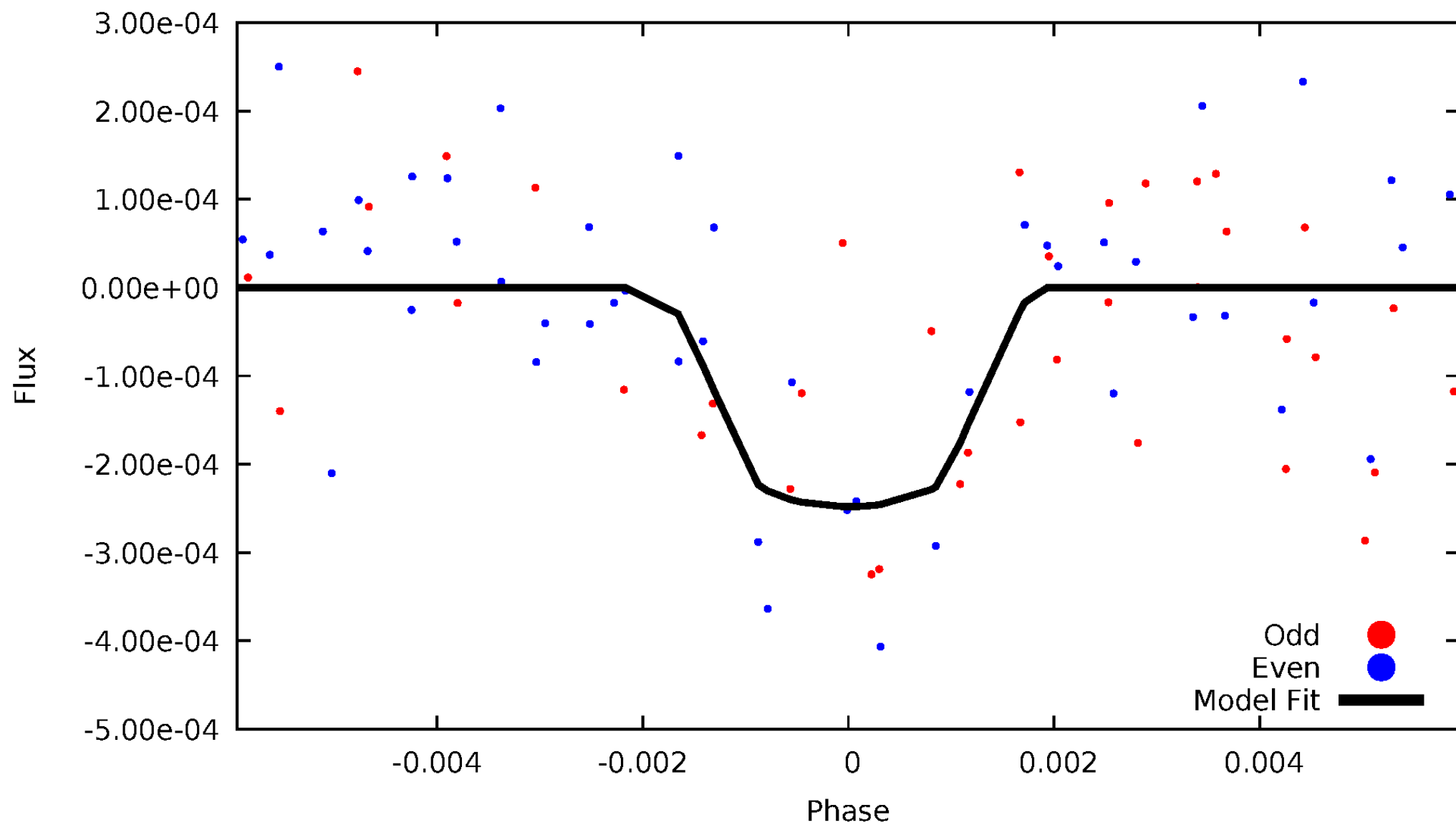


TCE 007898445-07



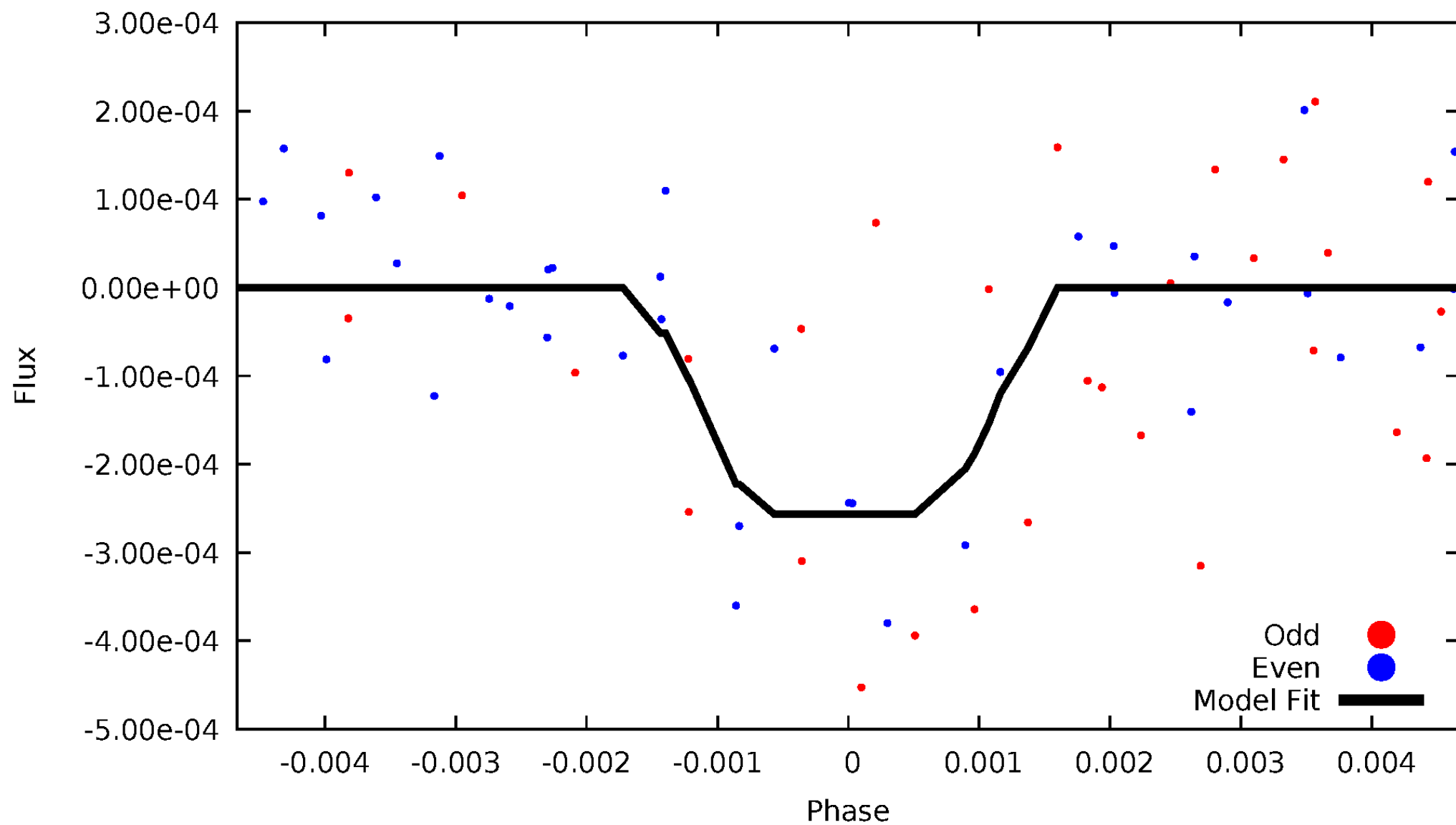
DV Odd/Even

TCE 007898445-07



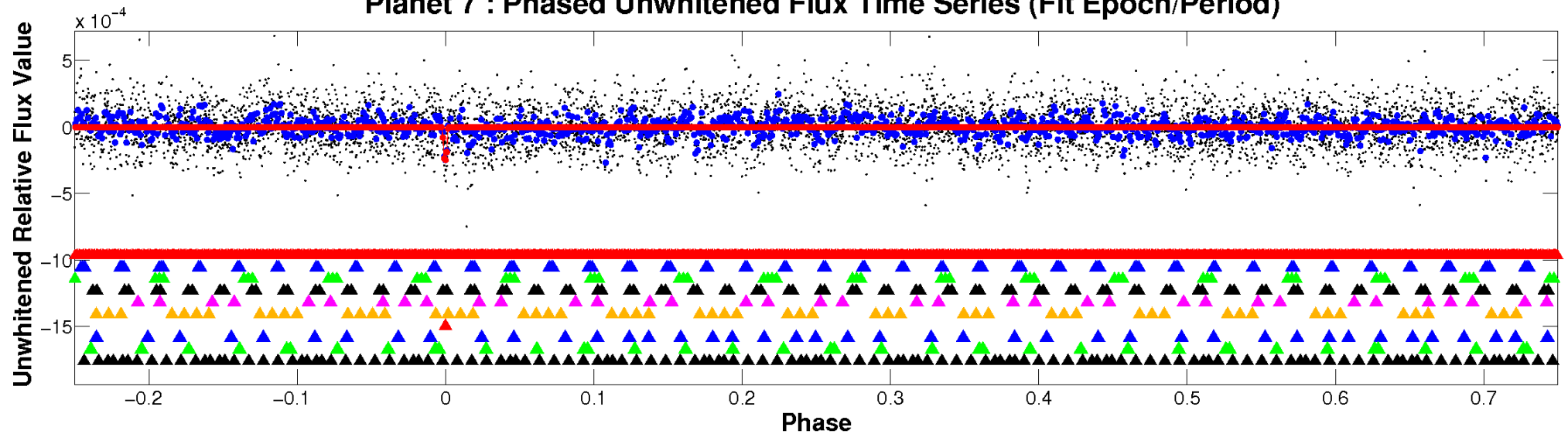
ALT Odd/Even

TCE 007898445-07

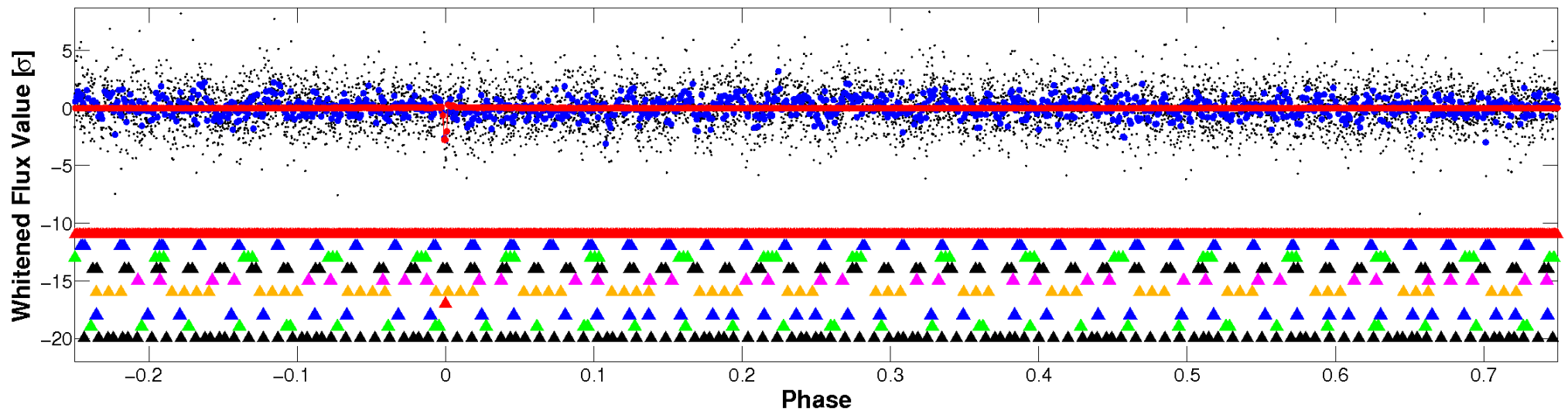


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

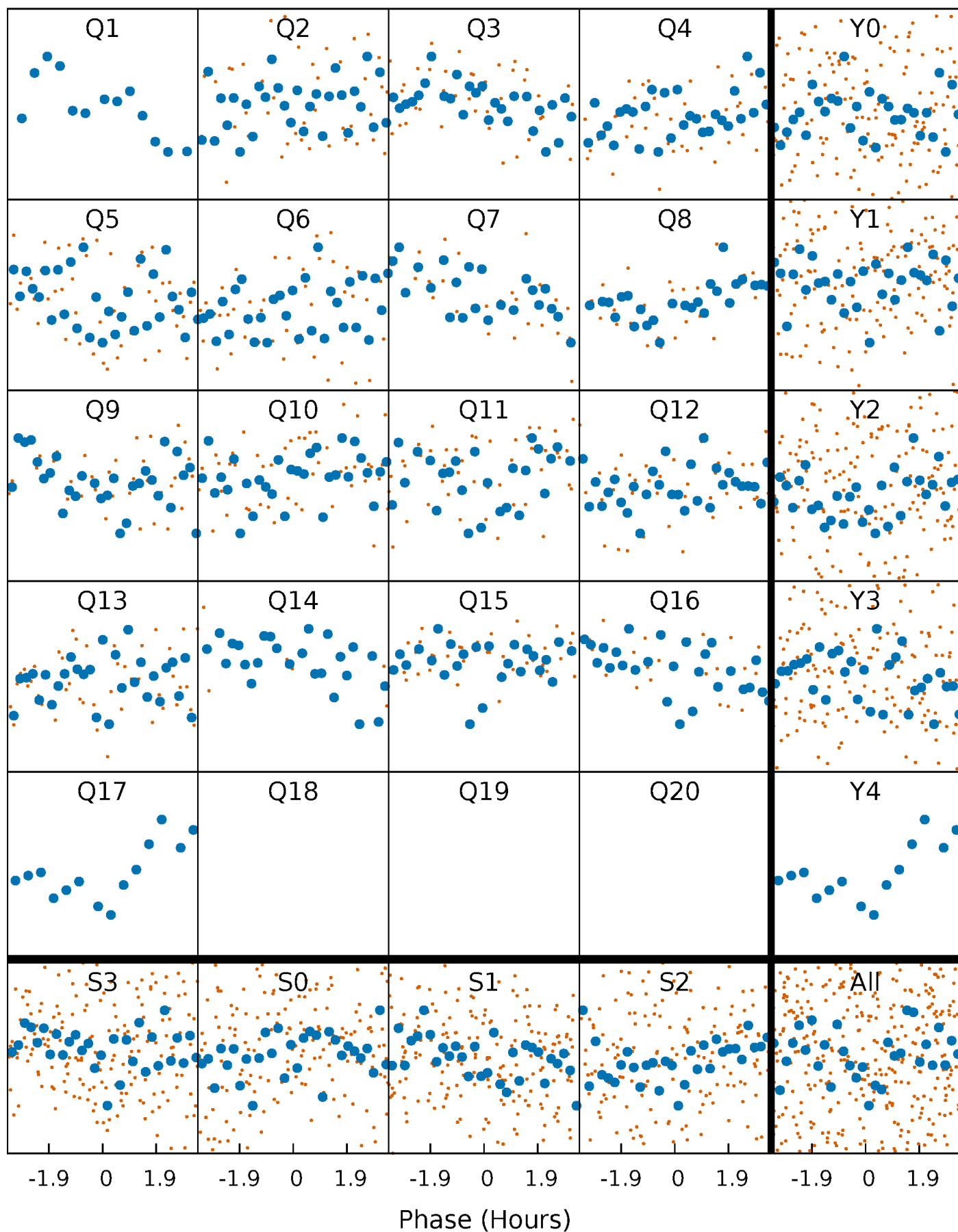


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



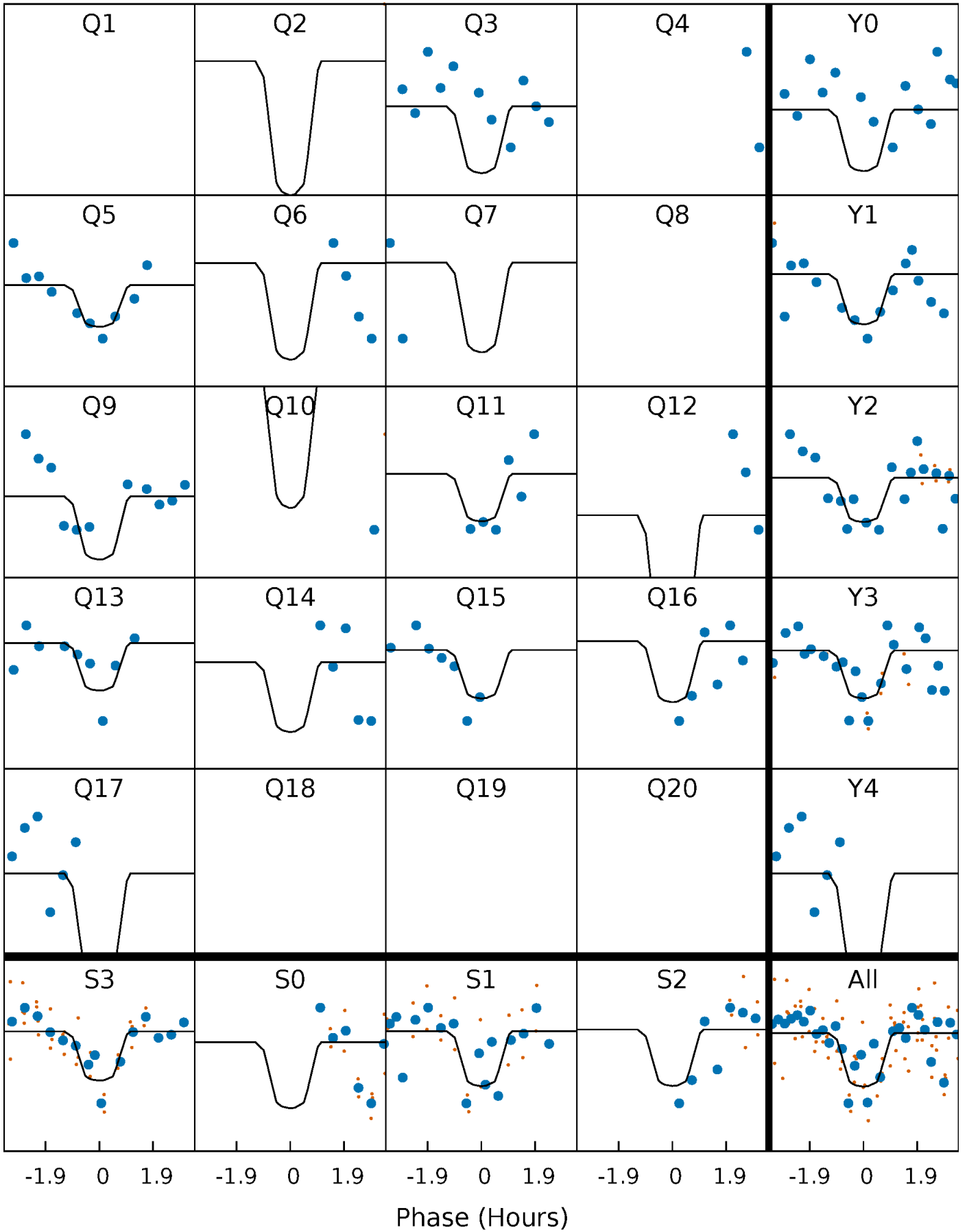
PDC Quarter-Phased Transit Curves

TCE 007898445-07 $P = 23.658130$ Days $T_0 = 154.154607$ (BKJD)



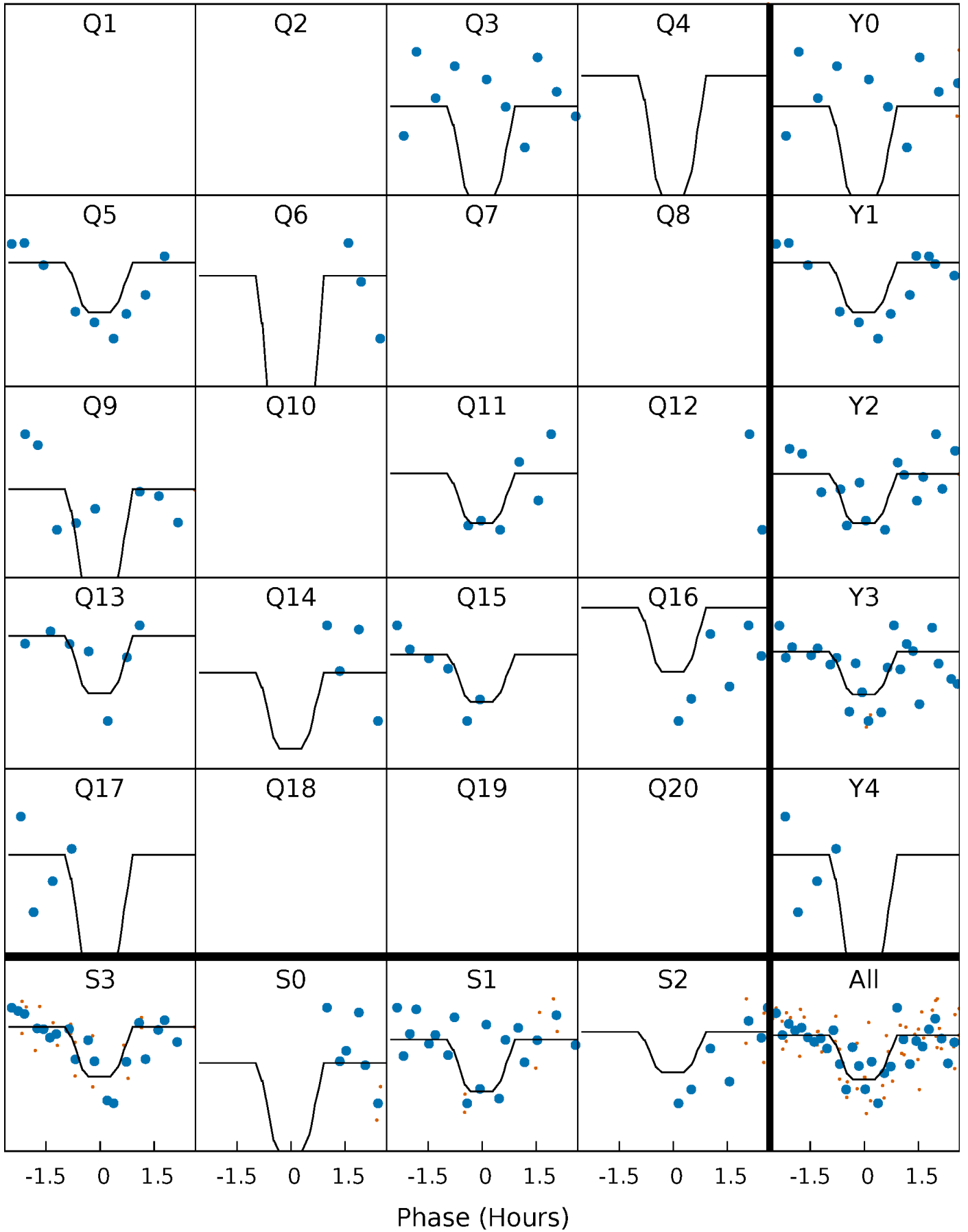
DV Quarter-Phased Transit Curves

TCE 007898445-07 P= 23.658130 Days $T_0=154.154607$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

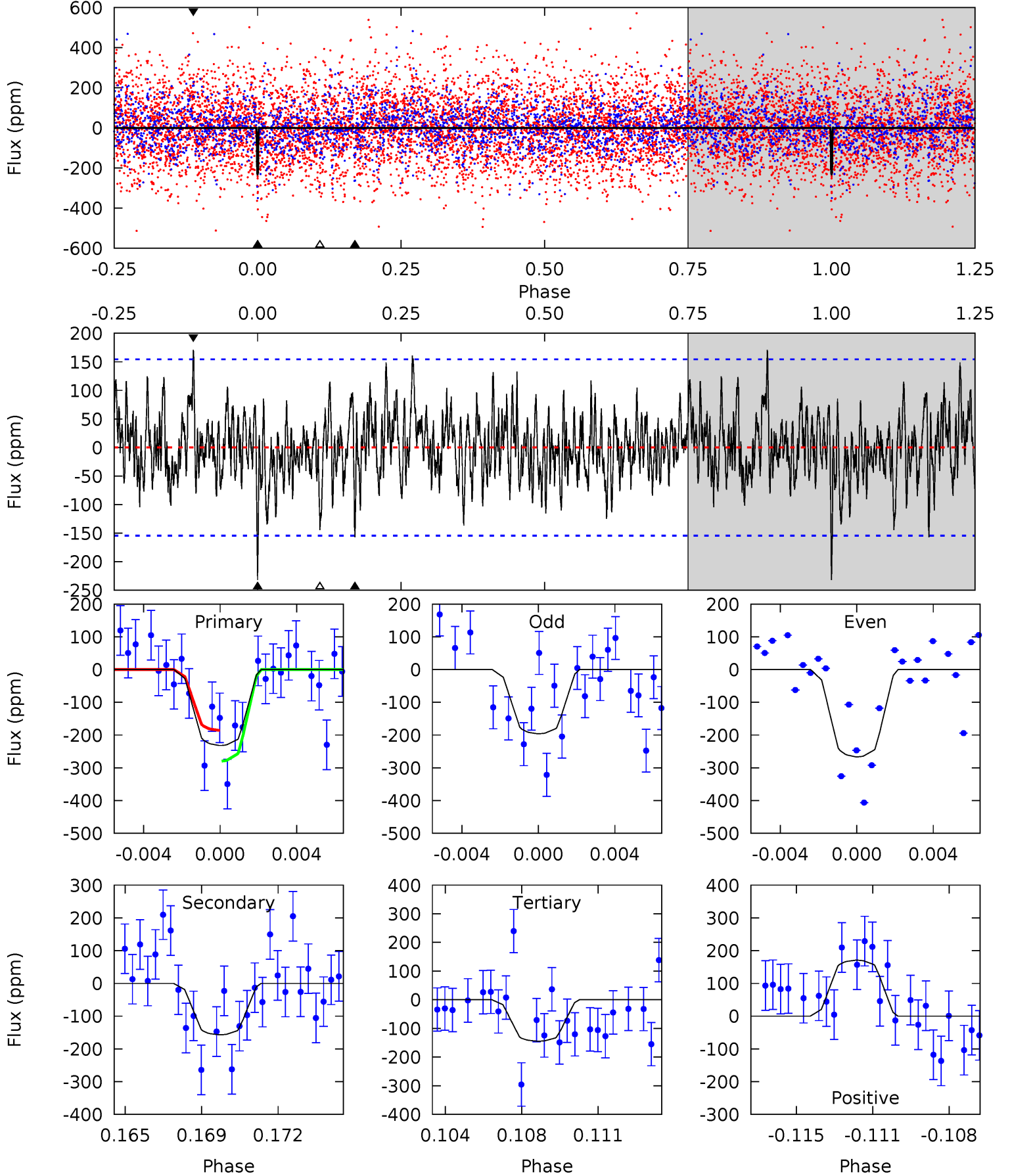
TCE 007898445-07 P= 23.658300 Days $T_0=154.147459$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-07, $P = 23.658130$ Days, $E = 130.496477$ Days

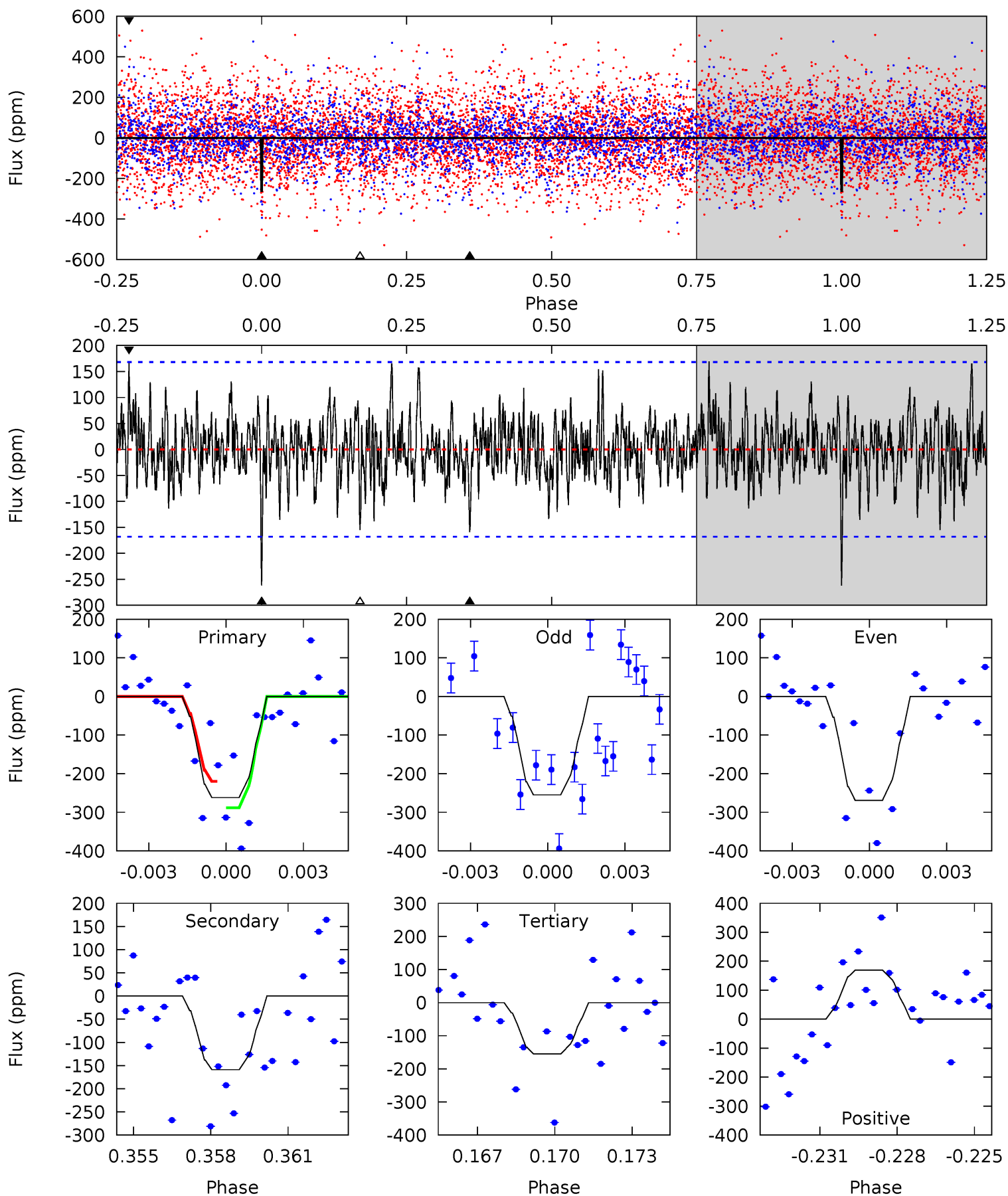
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.84	5.30	4.89	5.77	5.22	2.91	1.65	2.95	2.06	0.42	-0.47	1.20	0.79	0.42	1.59



Alt Model-Shift Uniqueness Test

007898445-07, $P = 23.658300$ Days, $E = 130.489159$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.19	4.97	4.85	5.30	5.25	2.96	1.48	3.34	2.89	0.12	-0.33	0.22	0.82	0.39	1.07



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-157 ± 30	$7.26^{+5.61}_{-4.29}$	1854^{+94}_{-154}	5675^{+3543}_{-1186}	66^{+314}_{-46}
Alt.	-159 ± 32	$7.01^{+5.80}_{-4.22}$	1859^{+92}_{-159}	5860^{+4140}_{-1384}	71^{+365}_{-50}

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 $A_{obs} \gg 1.0$

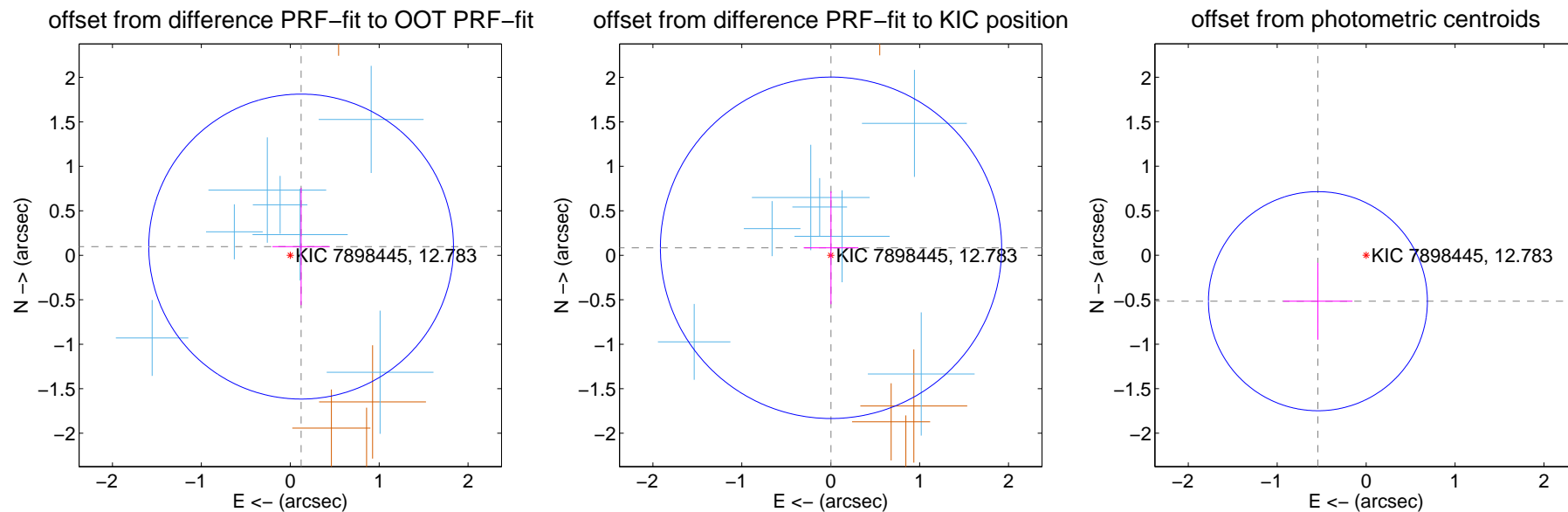
DV Centroid Data

Supplemental centroid analysis for 007898445-07. Kepler magnitude: 12.78. Transit SNR 10.27

There are 7 quarters with good PRF difference image offsets

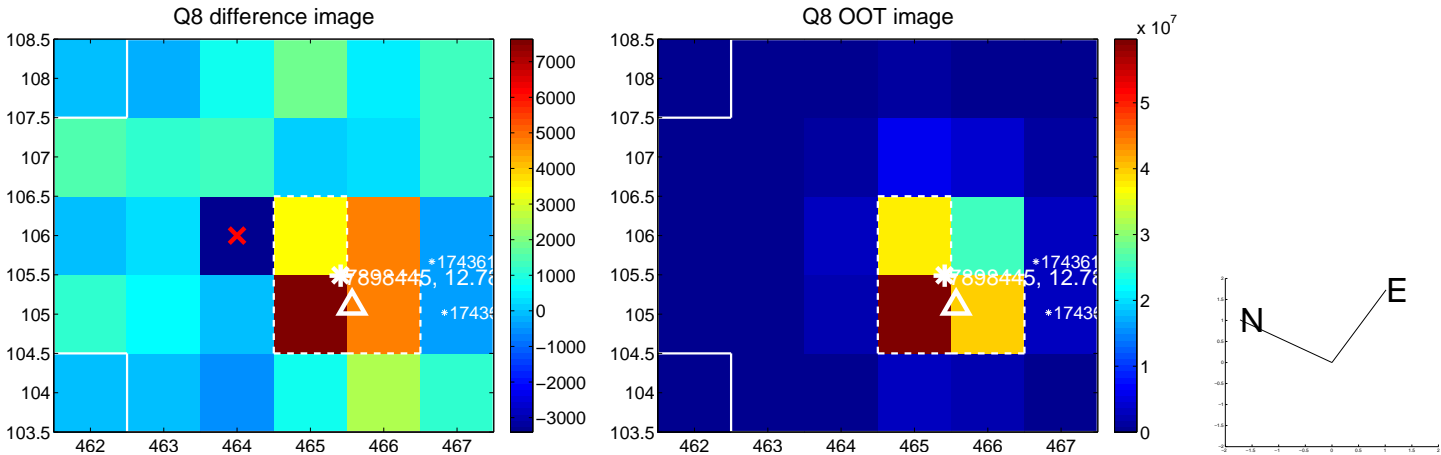
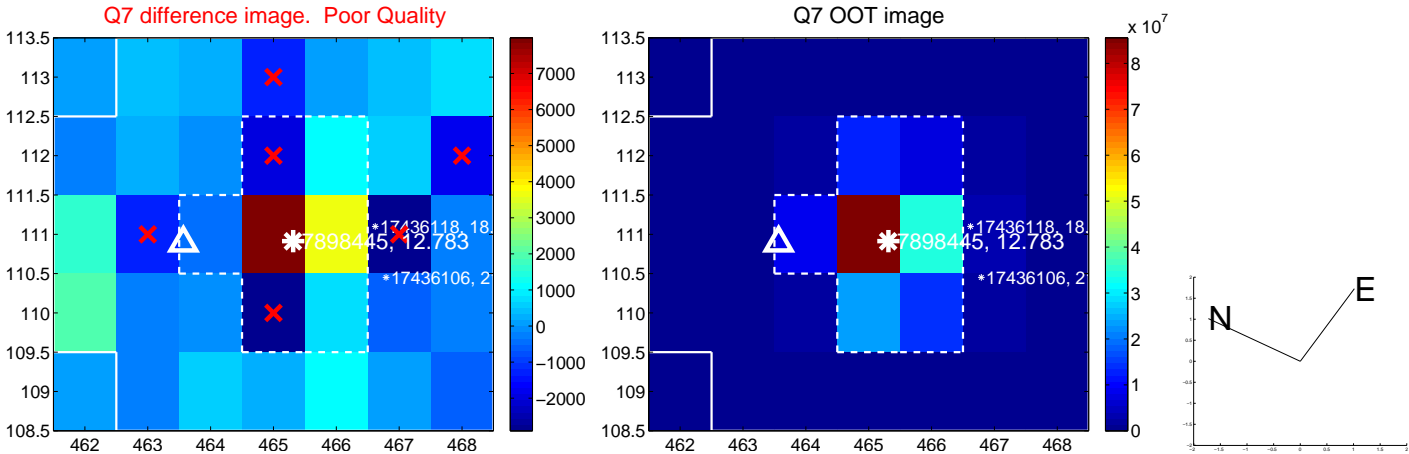
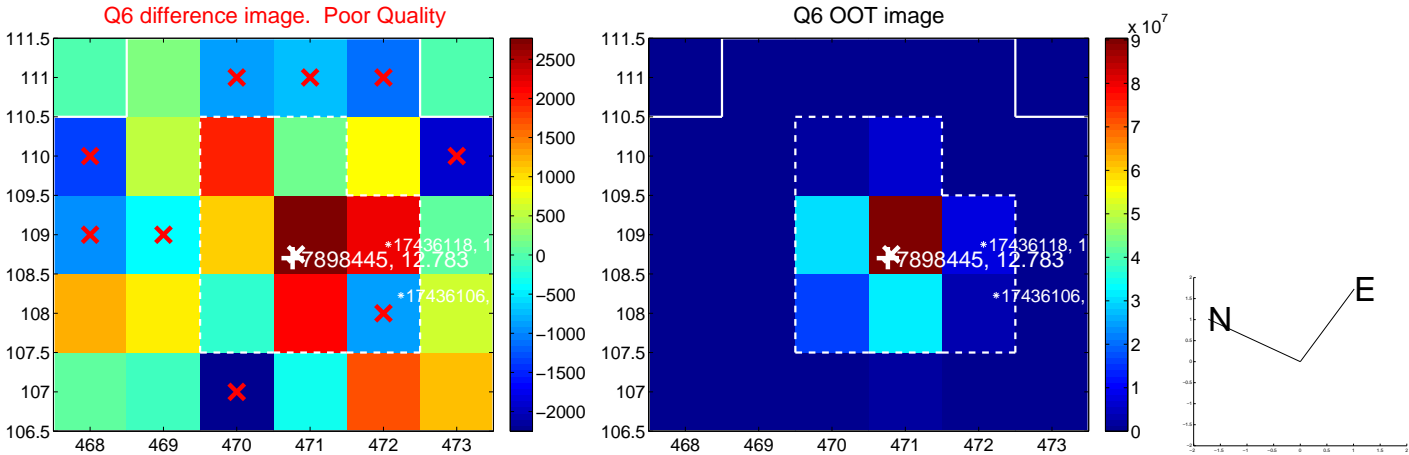
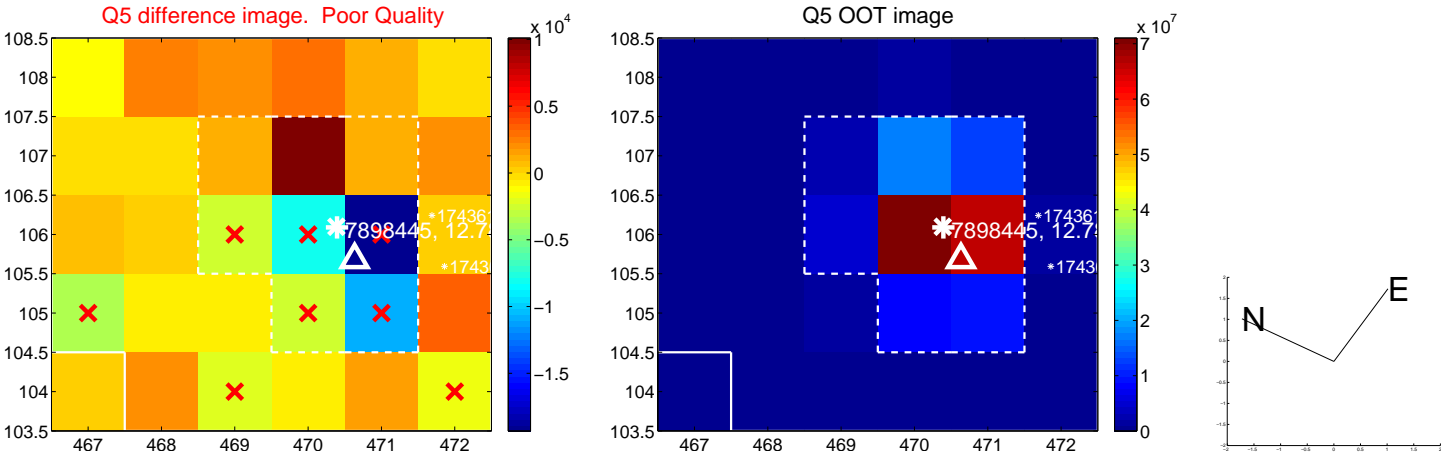
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.571	0.27	-0.122 ± 0.323	0.098 ± 0.658
PRF-fit source offset from KIC position	0.084 ± 0.640	0.13	-0.003 ± 0.308	0.084 ± 0.635
photometric centroid source offset	0.75 ± 0.41	1.83	0.54 ± 0.39	-0.52 ± 0.43

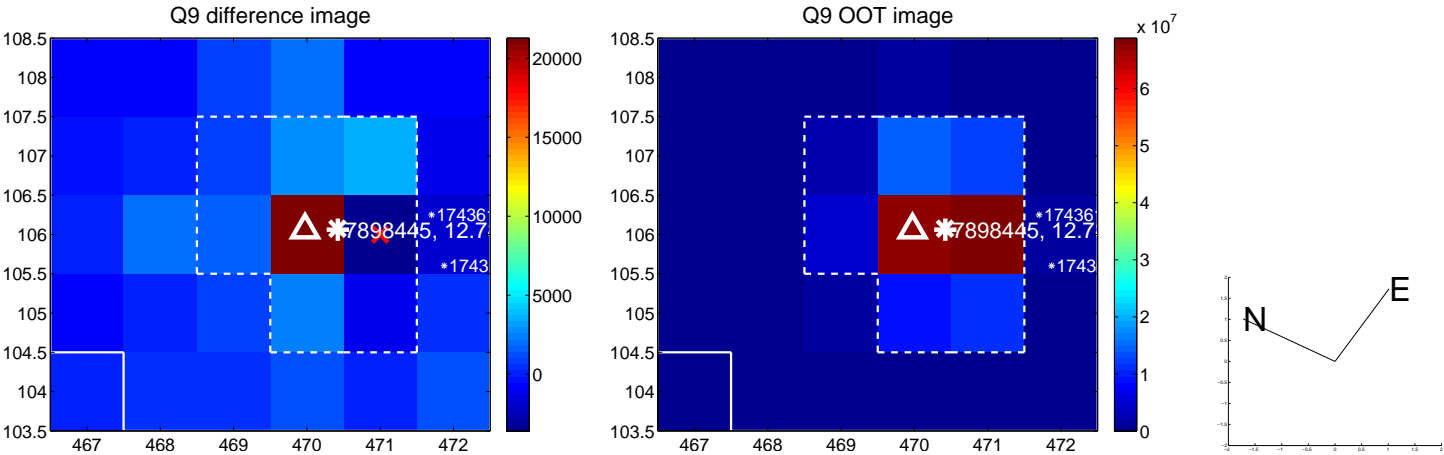


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

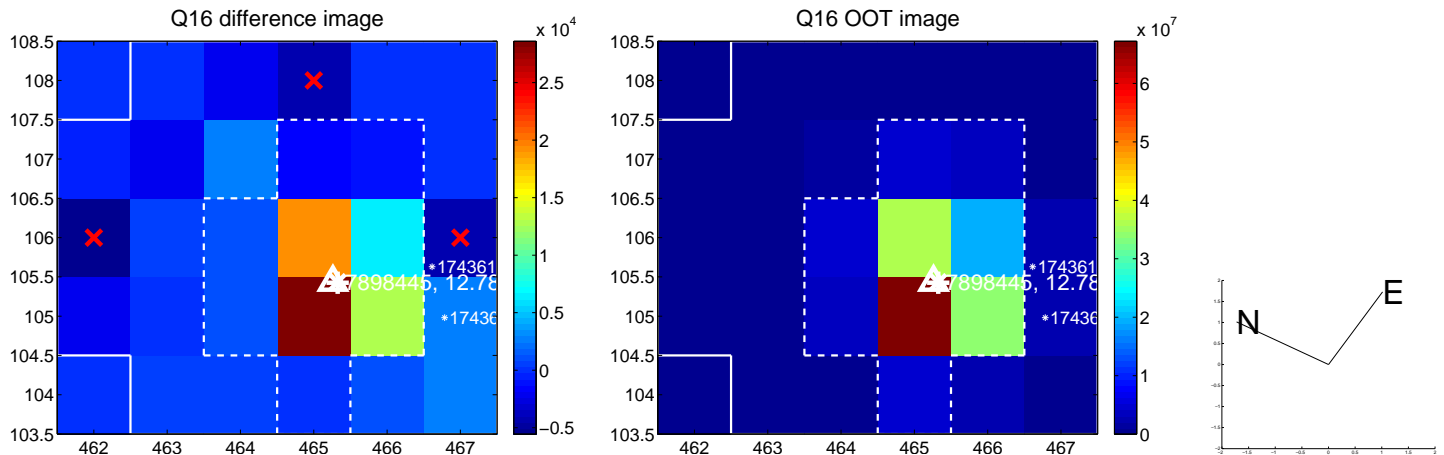
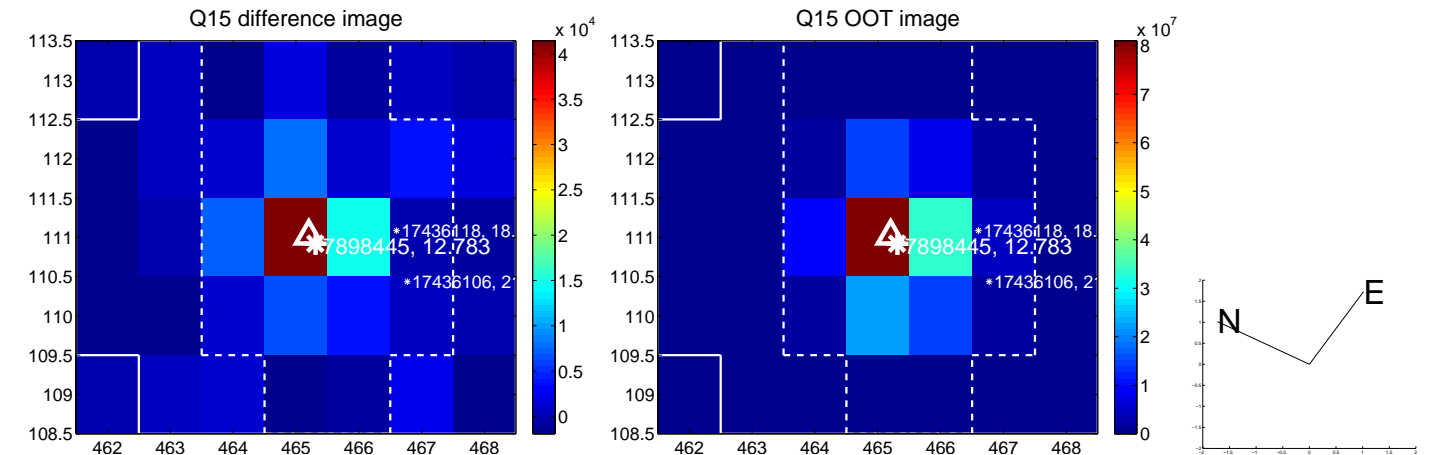
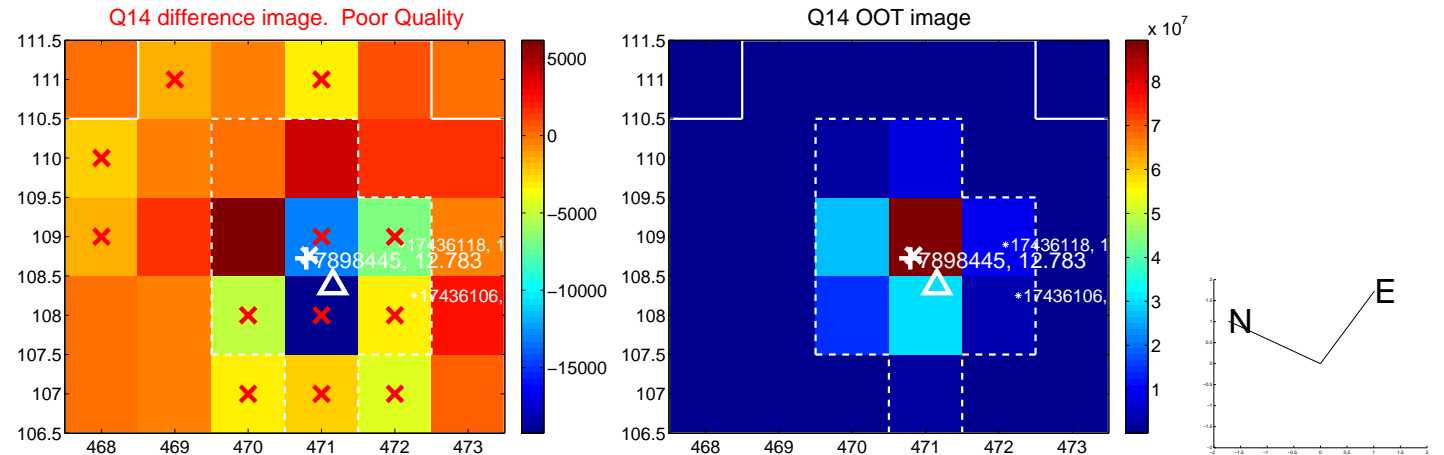
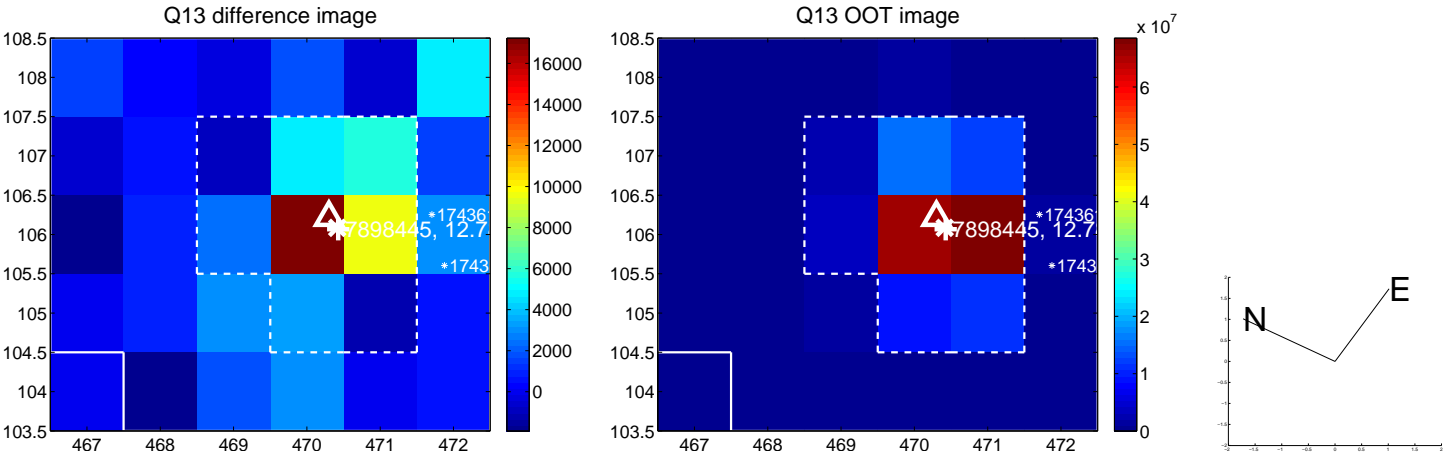
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



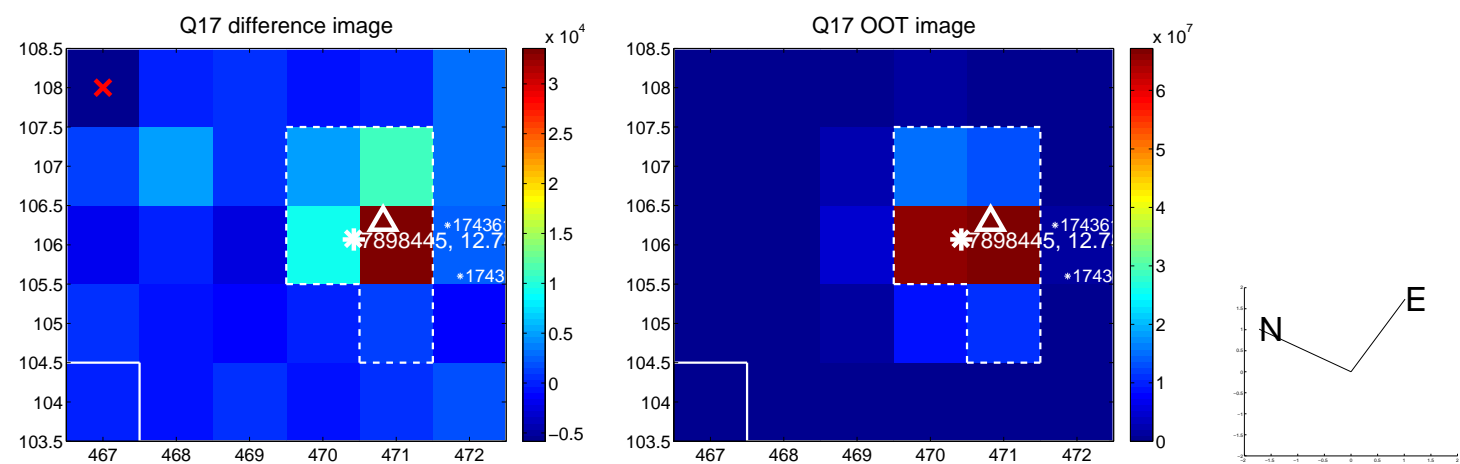
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



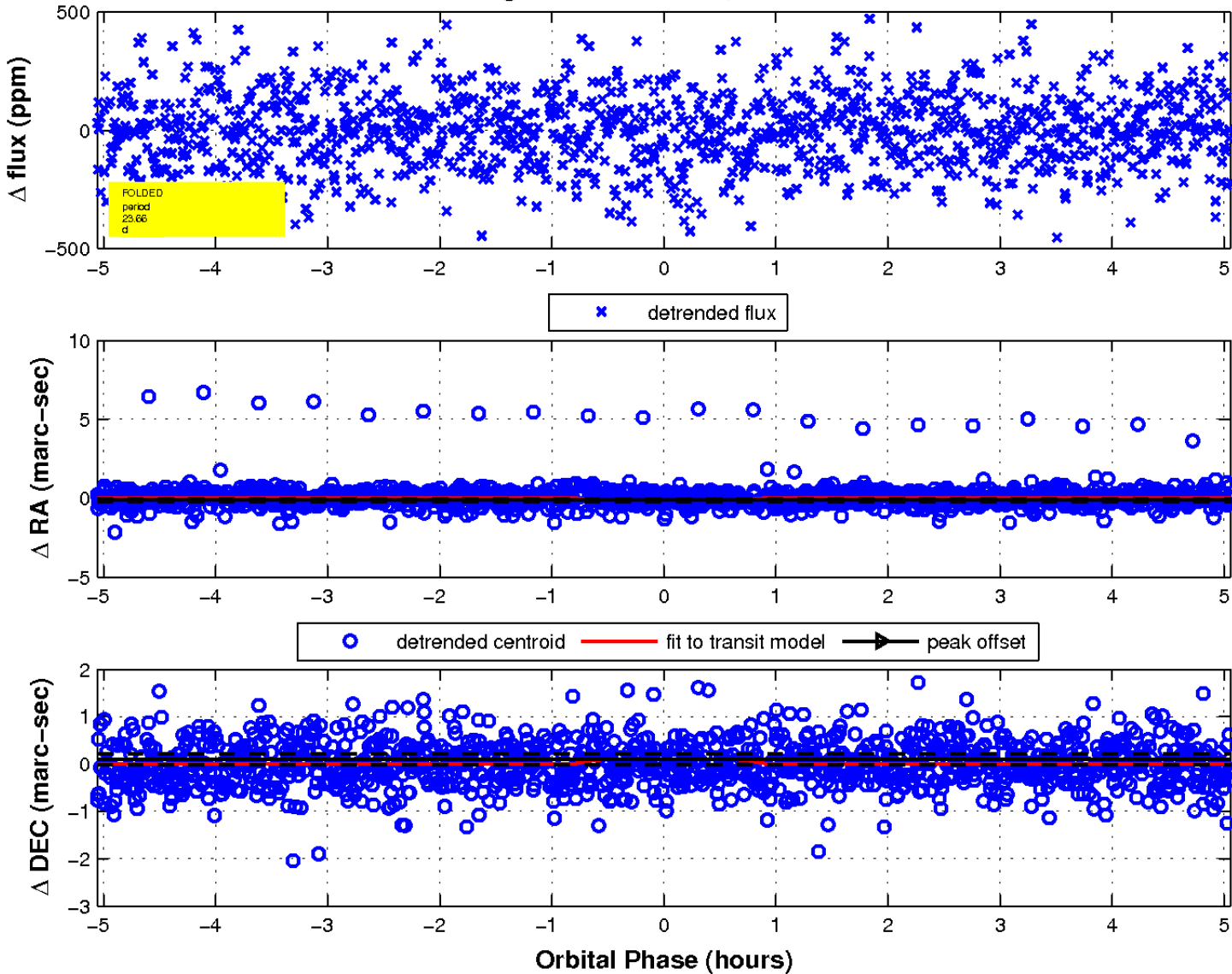
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

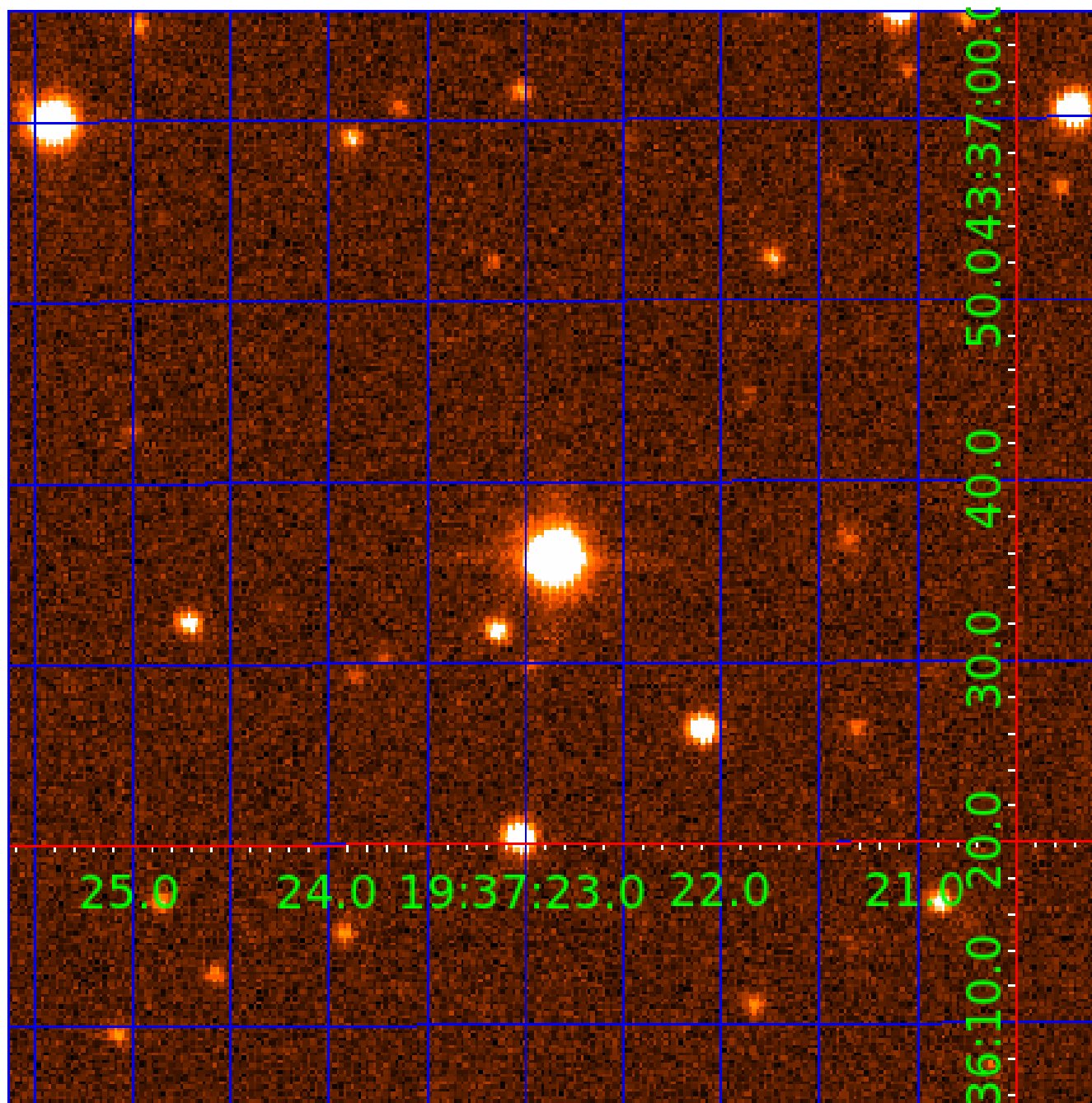


fluxWeightedCentroids, Planet 7 of 10



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

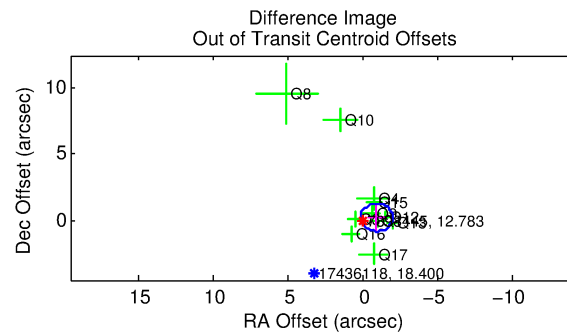
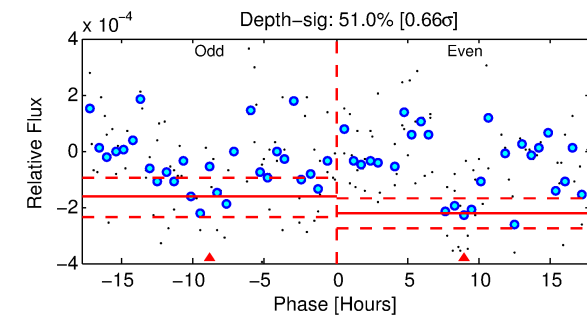
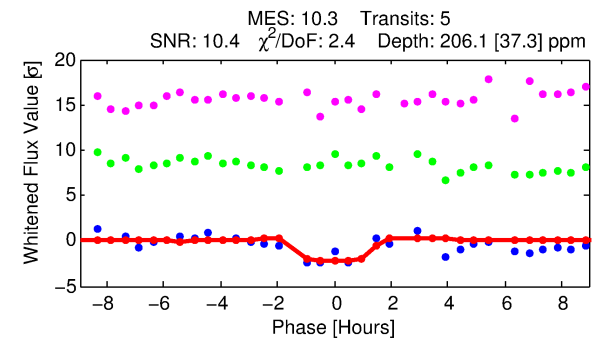
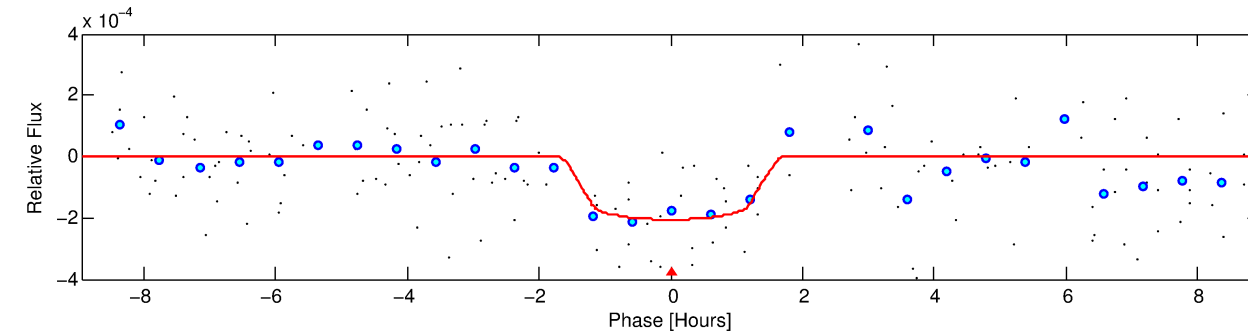
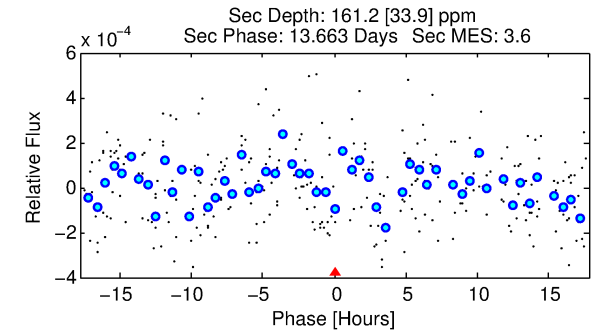
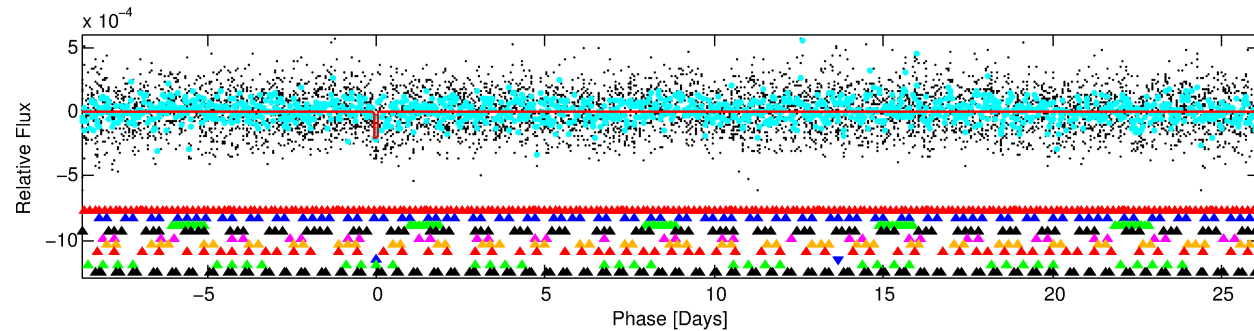
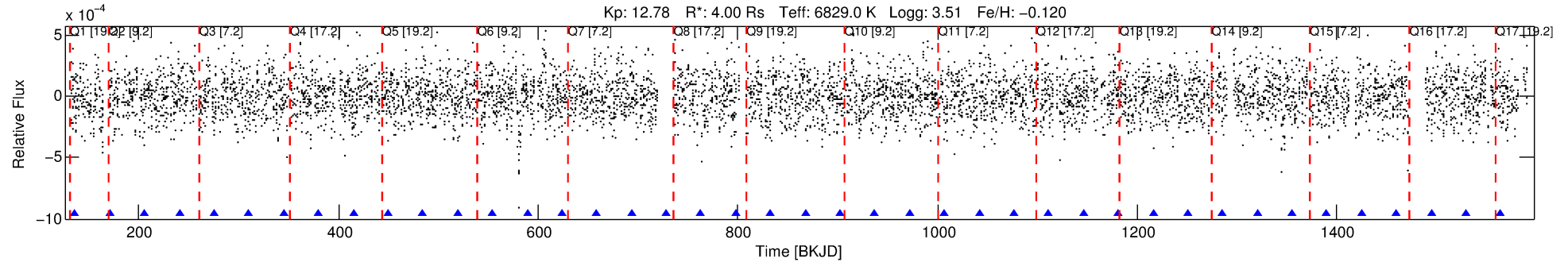
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-08

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 8 of 10 Period: 34.821 d



DV Fit Results:

Period = 34.82143 [0.00058] d
Epoch = 136.4009 [0.0213] BKJD
Rp/R* = 0.0149 [0.0139]
a/R* = 49.08 [276.60]
b = 0.85 [1.79]
Seff = 469.22 [280.78]
Teq = 1187 [178] K
Rp = 6.49 [6.55] Re
a = 0.2579 [0.0935] AU
Ag = 139.90 [276.22] [0.50σ]
Teffp = 6311 [2983] K [1.71σ]

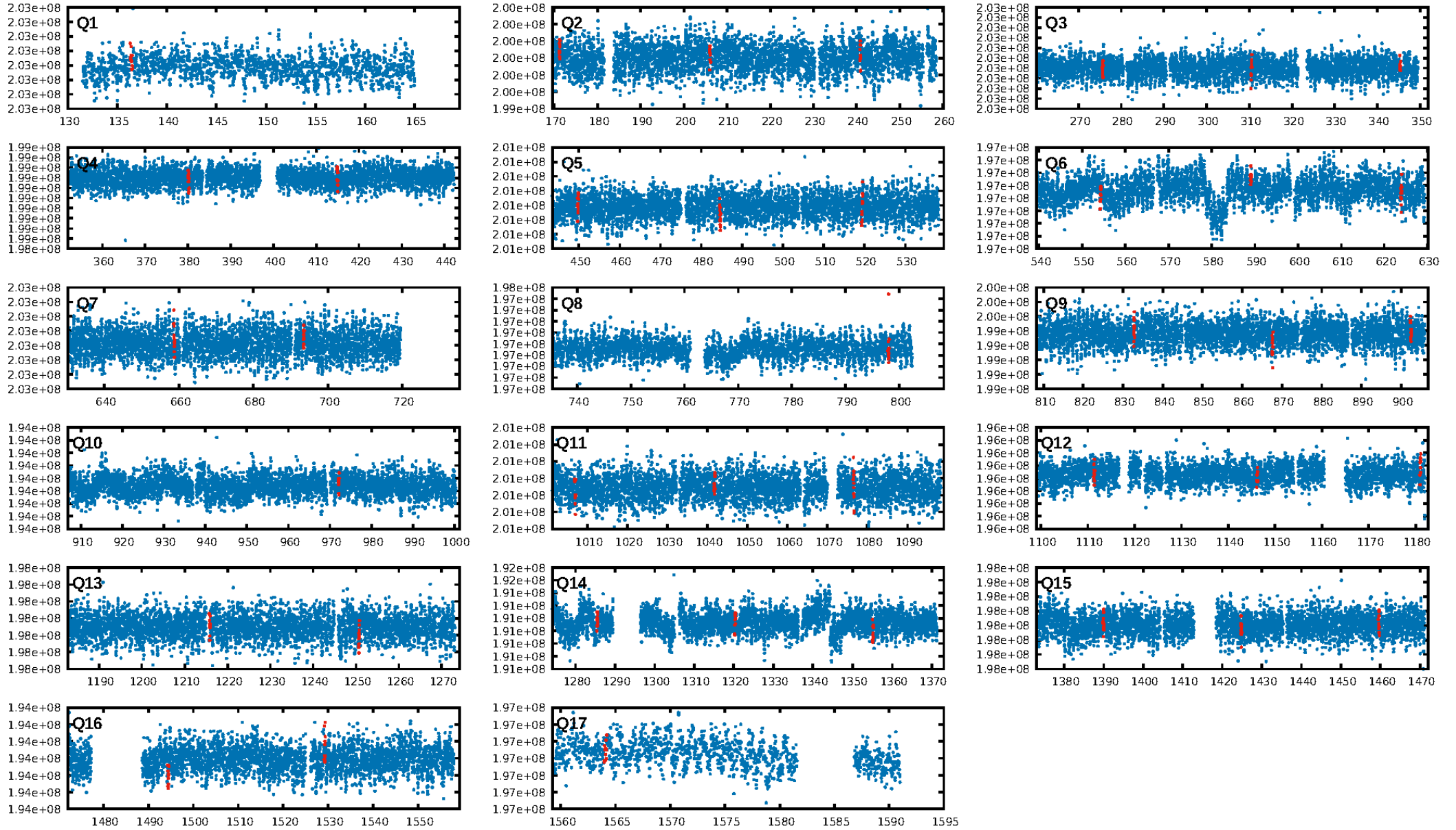
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [43.90σ]
LongPeriod-sig: 100.0% [24.14σ]
ModelChiSquare2-sig: 39.2%
ModelChiSquareGof-sig: 28.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.012
Centroid-sig: 89.8%
Centroid-so: 0.195 arcsec [0.44σ]
OotOffset-rm: 0.999 arcsec [2.82σ]
OotOffset-st: 1/3/4/3 [11]
KicOffset-rm: 1.001 arcsec [2.68σ]
KicOffset-st: 1/3/4/3 [11]
DiffImageQuality-fgm: 0.36 [4/11]
DiffImageOverlap-fno: 0.29 [5/17]

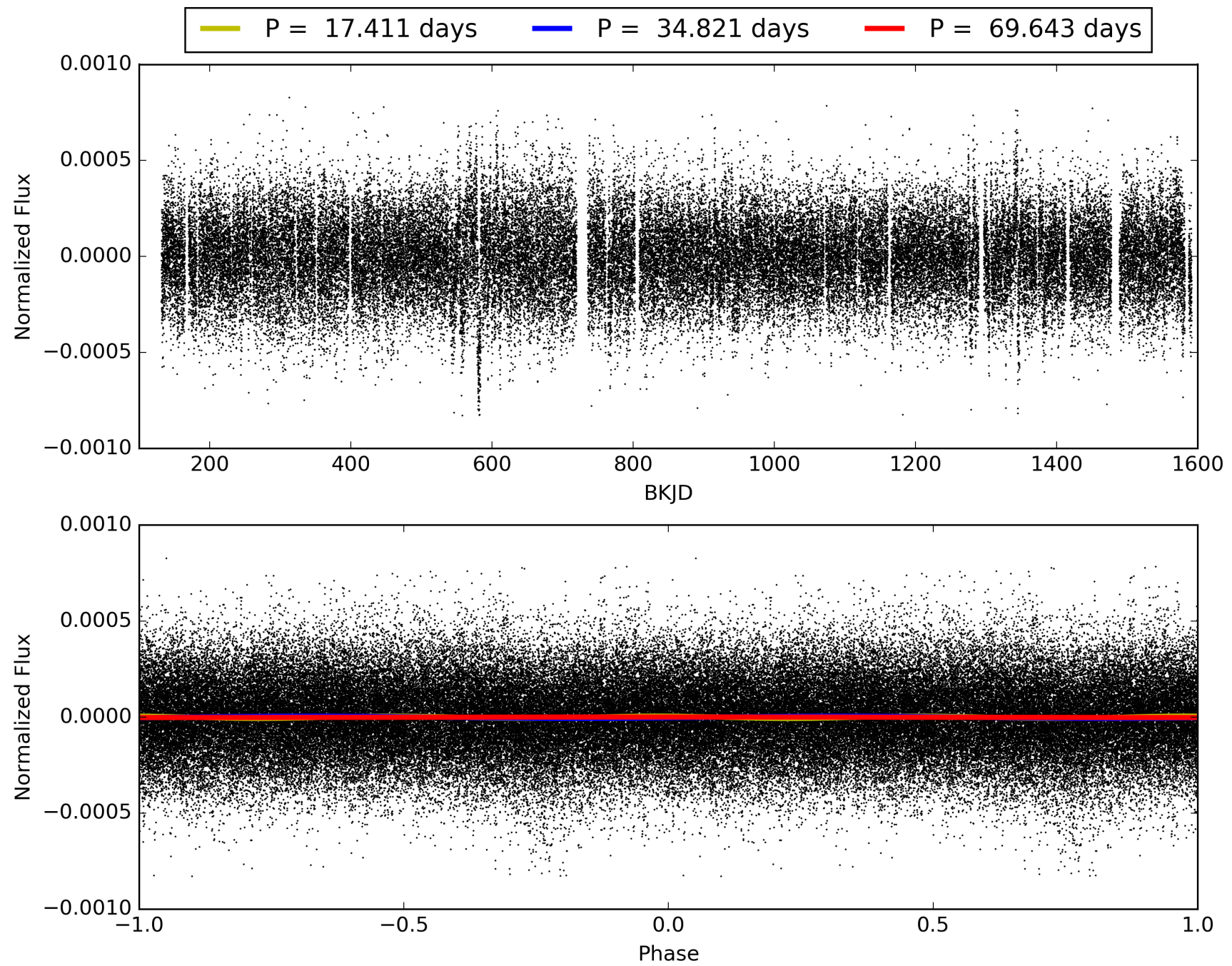
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:18 Z

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

TCE 007898445-08, PDC Light Curves

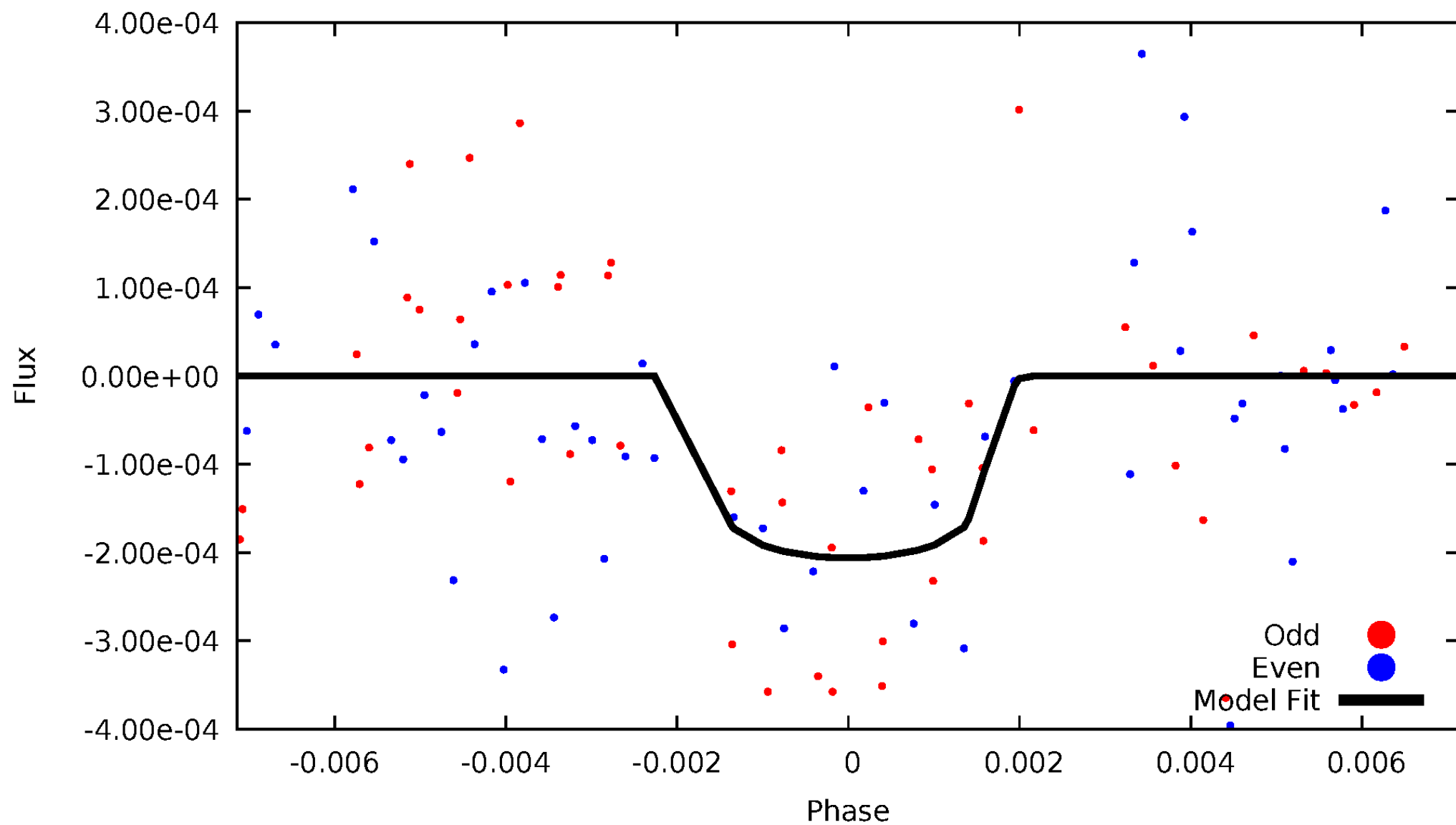


TCE 007898445-08



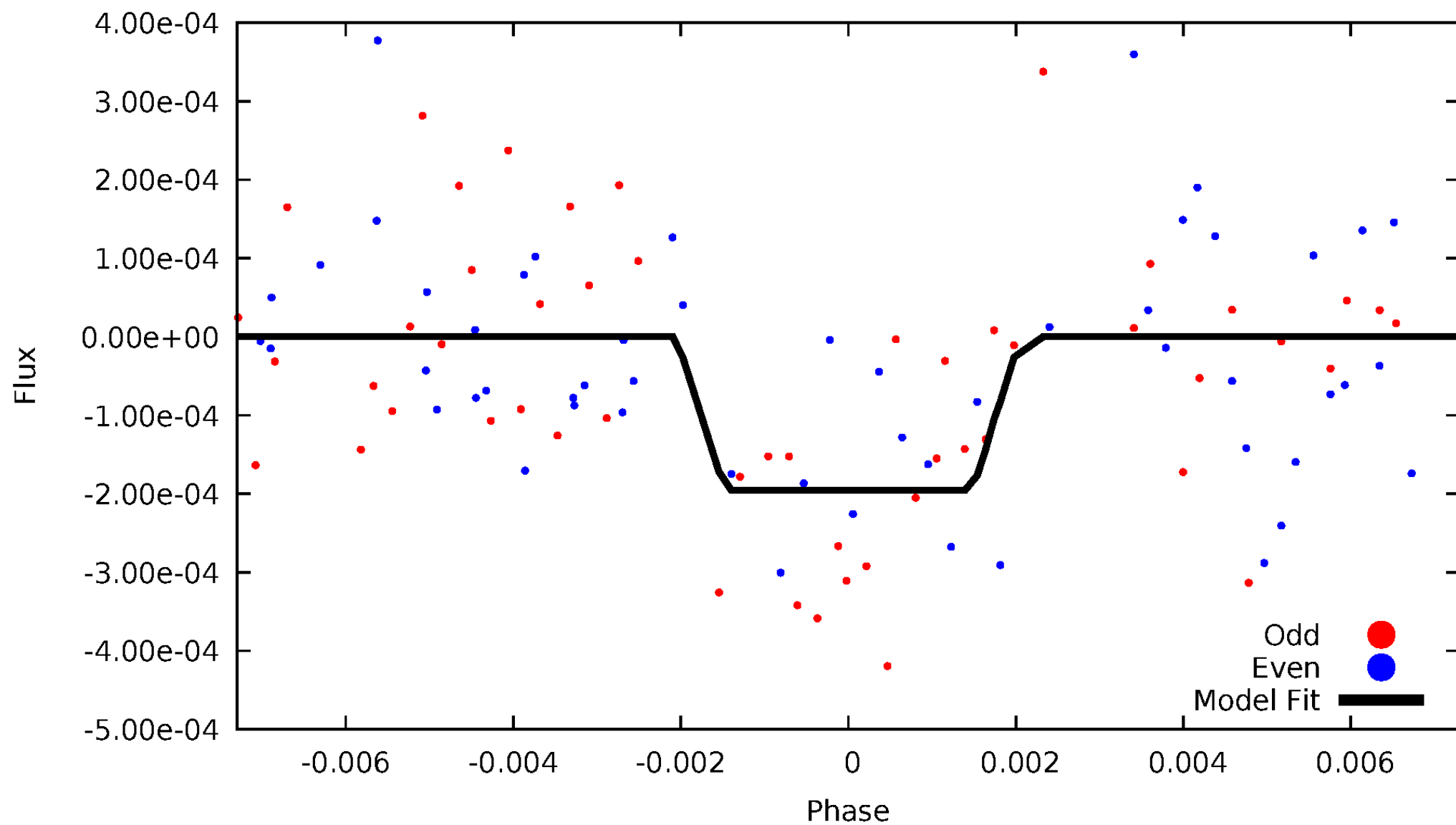
DV Odd/Even

TCE 007898445-08



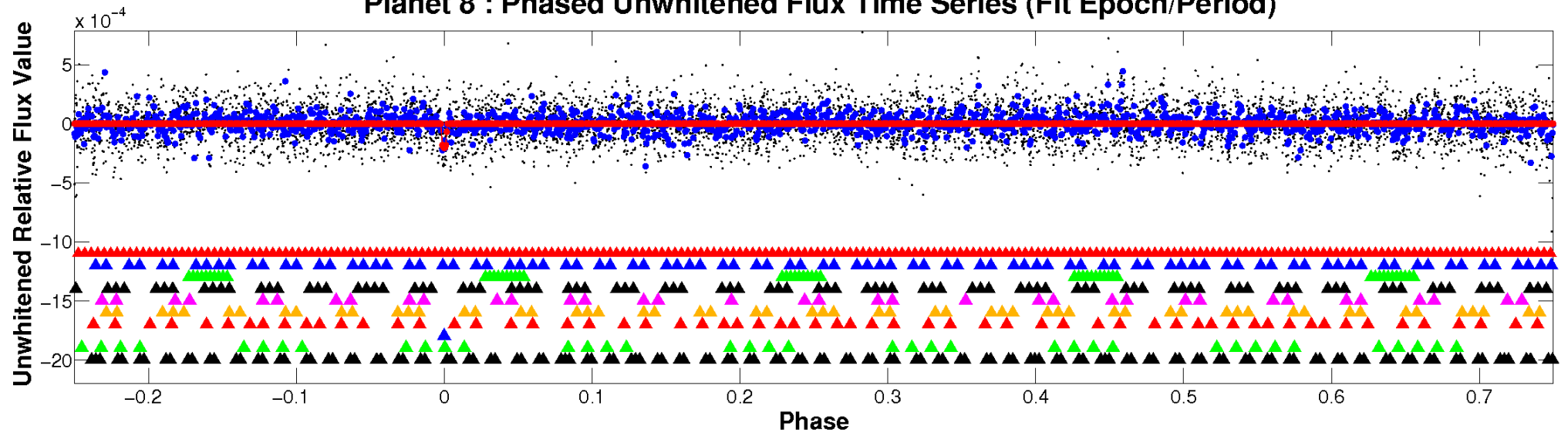
ALT Odd/Even

TCE 007898445-08

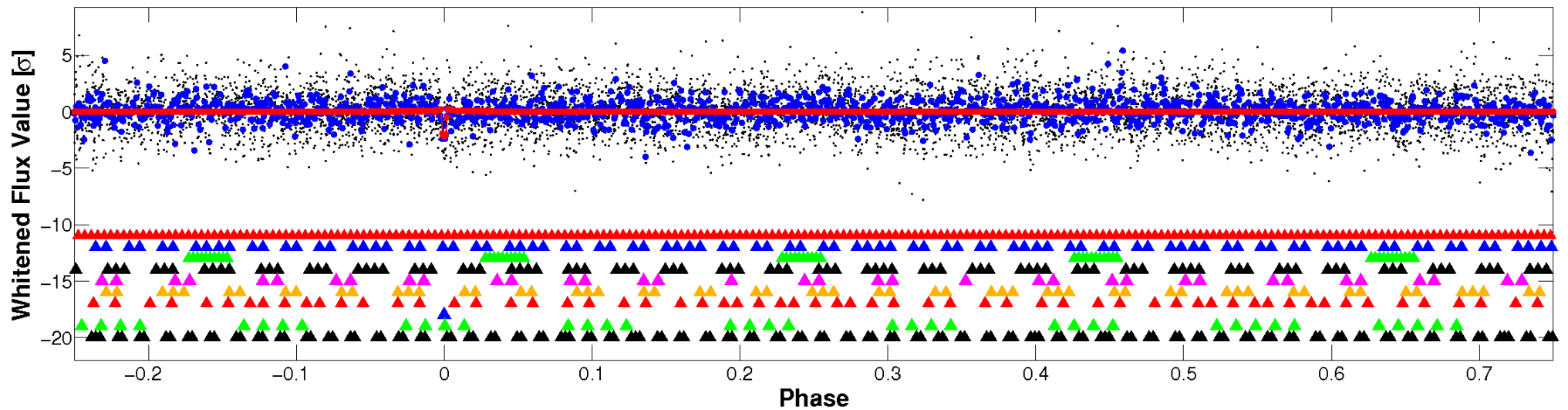


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

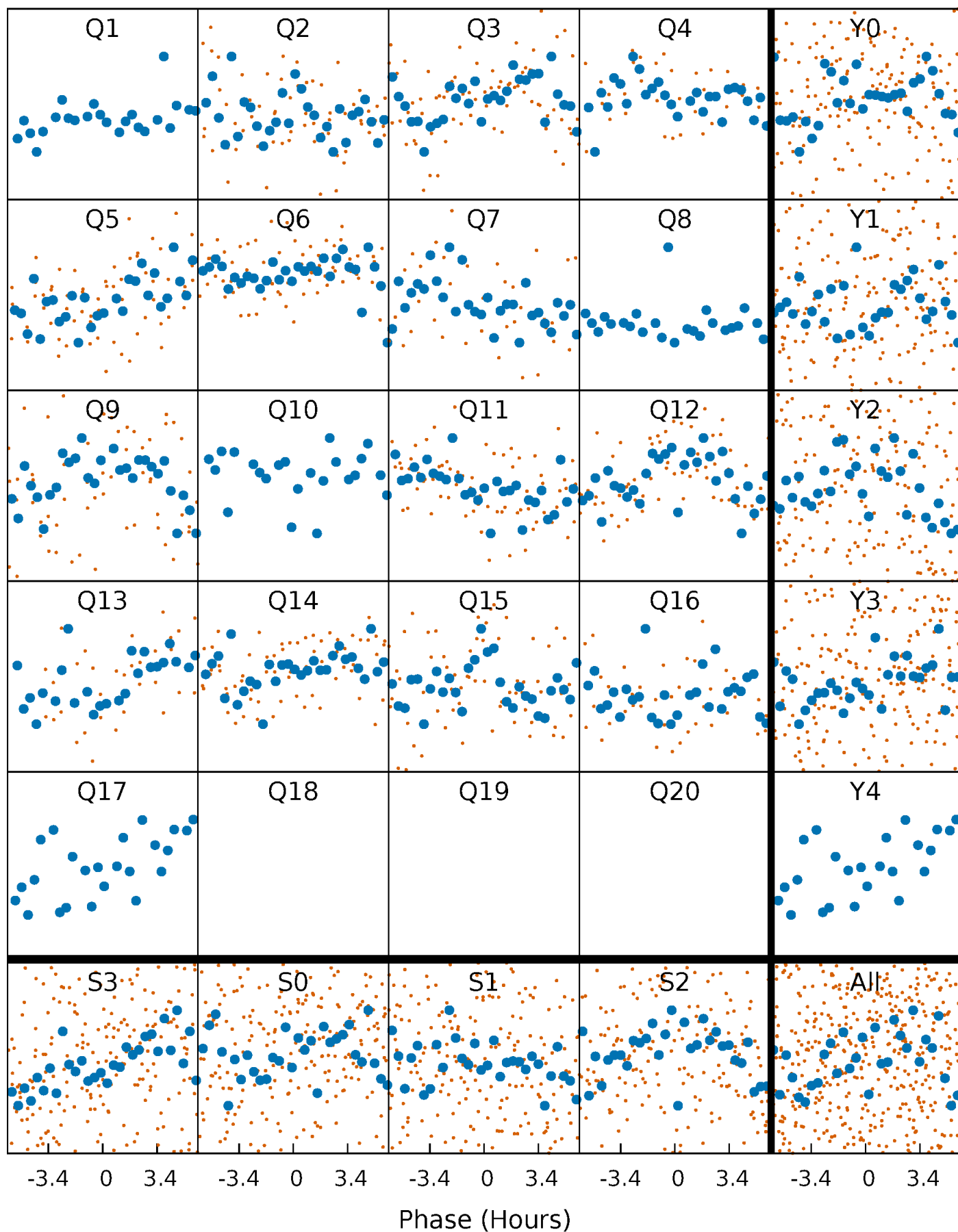


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



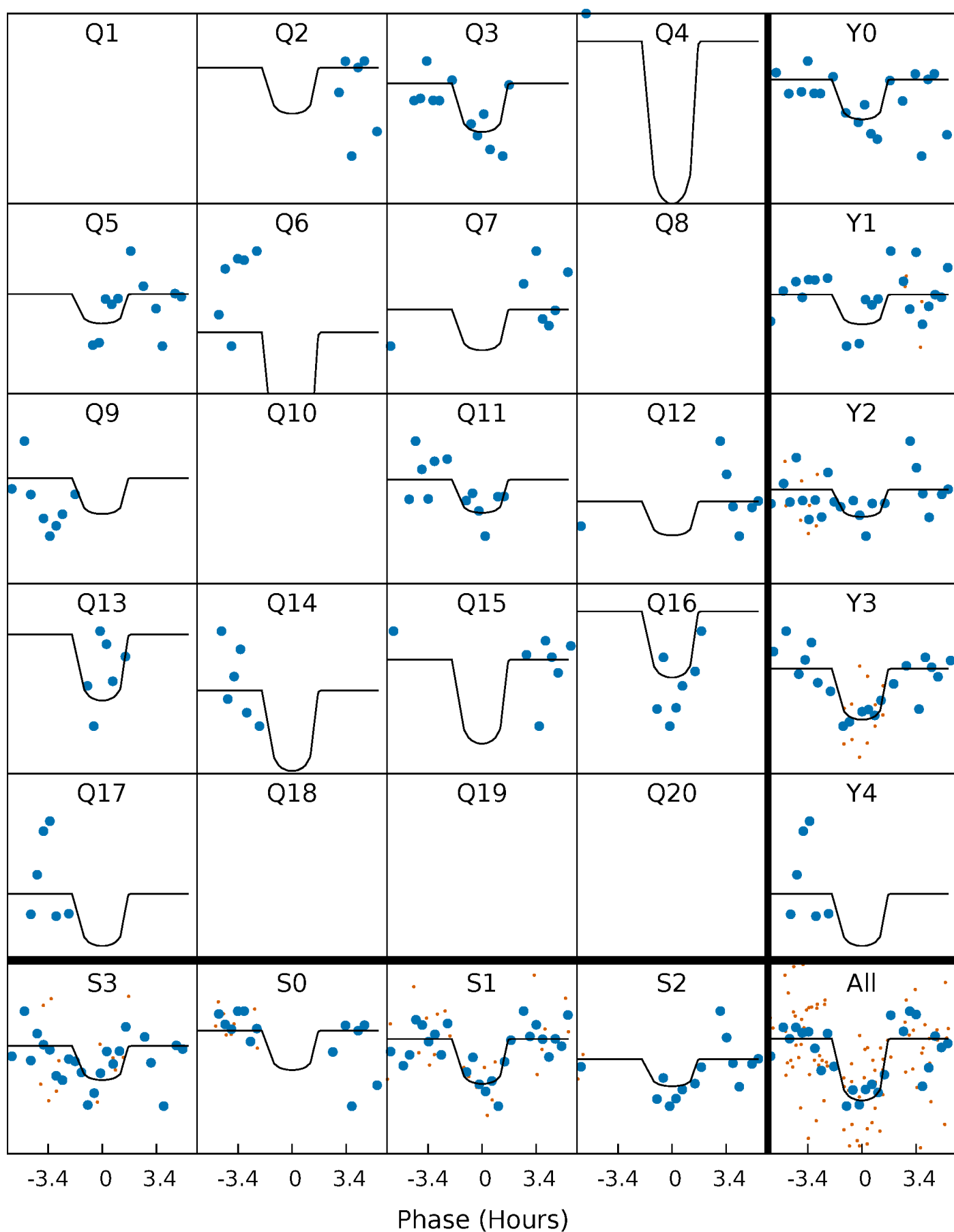
PDC Quarter-Phased Transit Curves

TCE 007898445-08 P= 34.821433 Days $T_0=136.400865$ (BKJD)



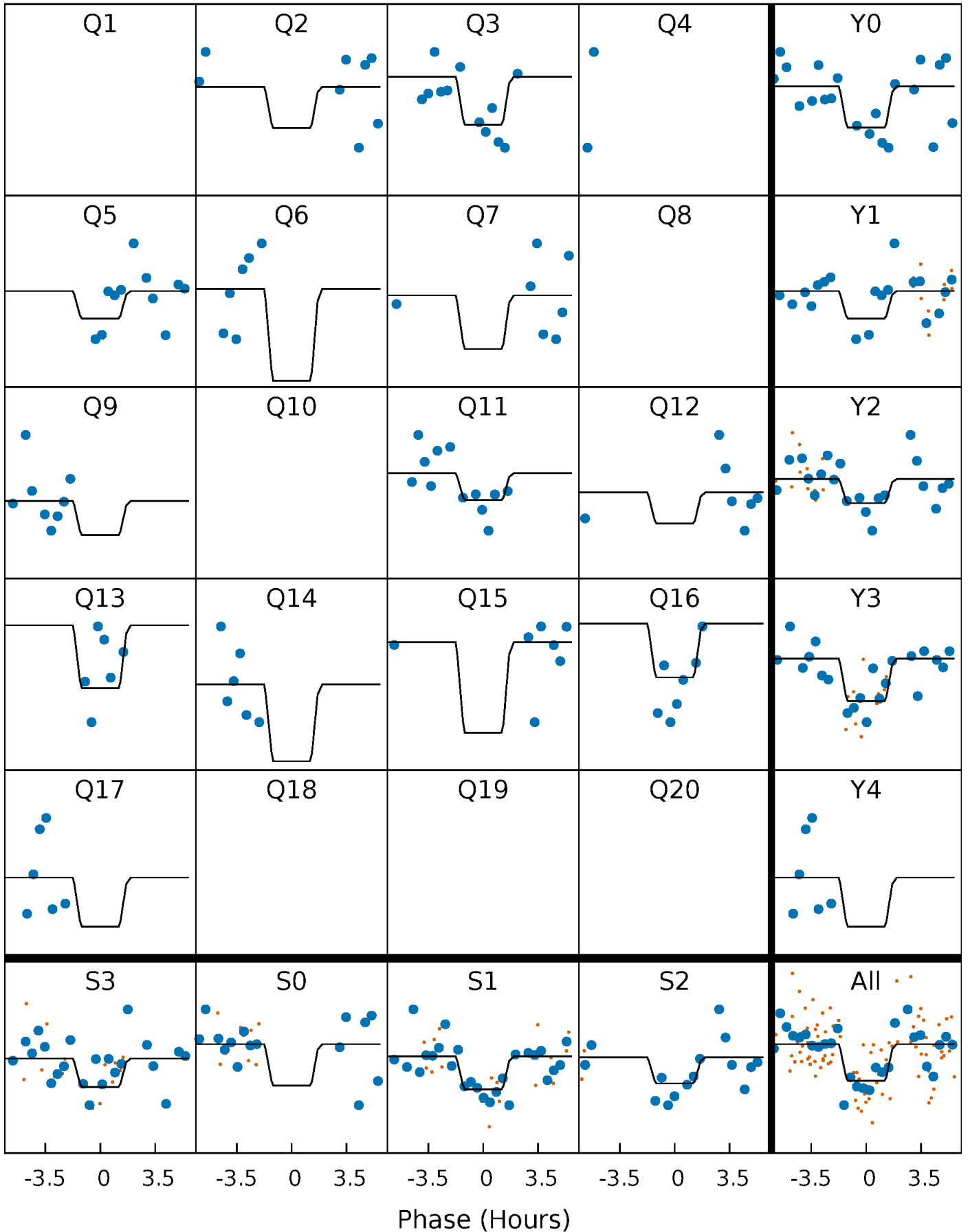
DV Quarter-Phased Transit Curves

TCE 007898445-08 P= 34.821433 Days $T_0=136.400865$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

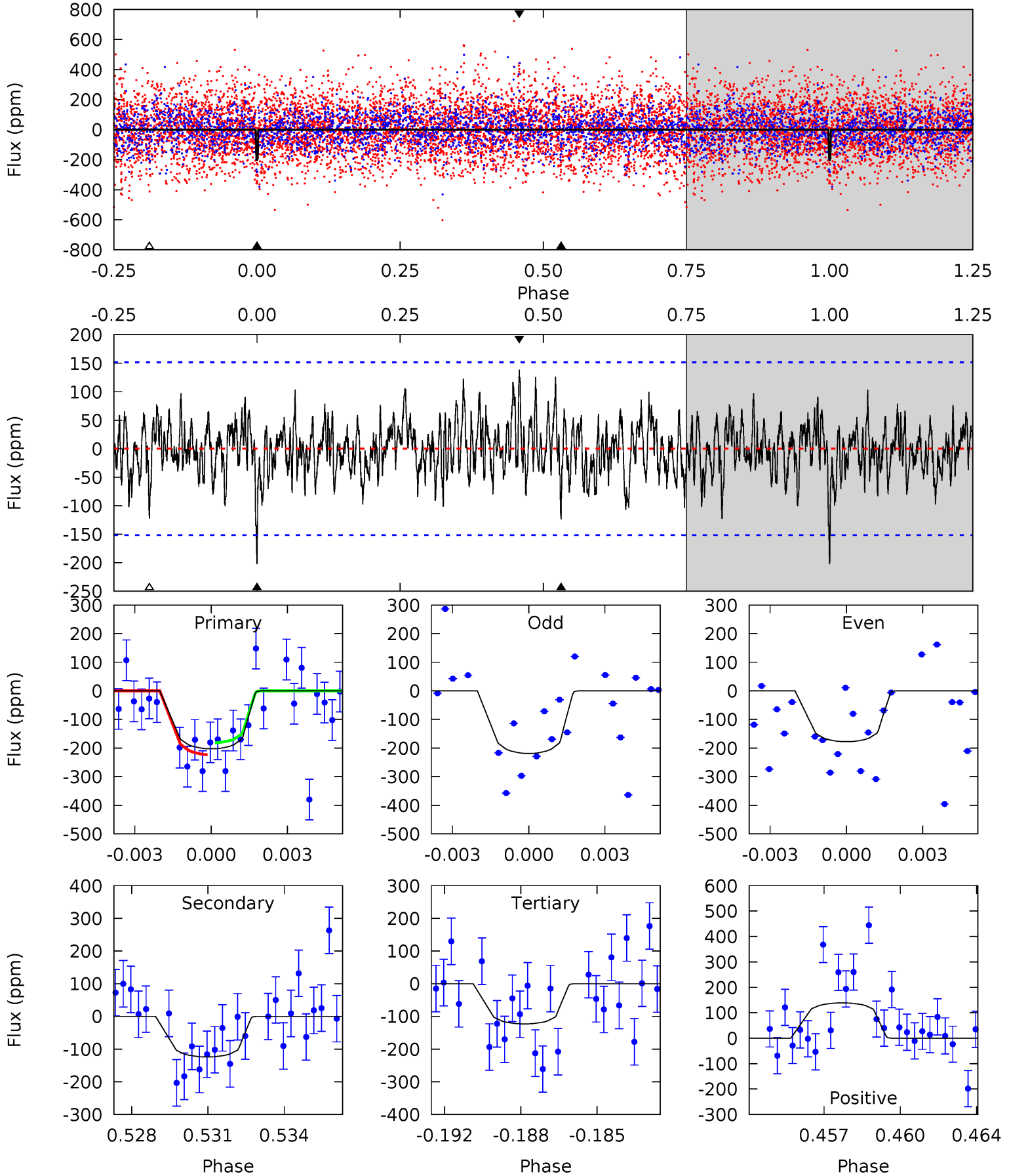
TCE 007898445-08 P= 34.822081 Days $T_0=136.382076$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-08, P = 34.821433 Days, E = 101.579432 Days

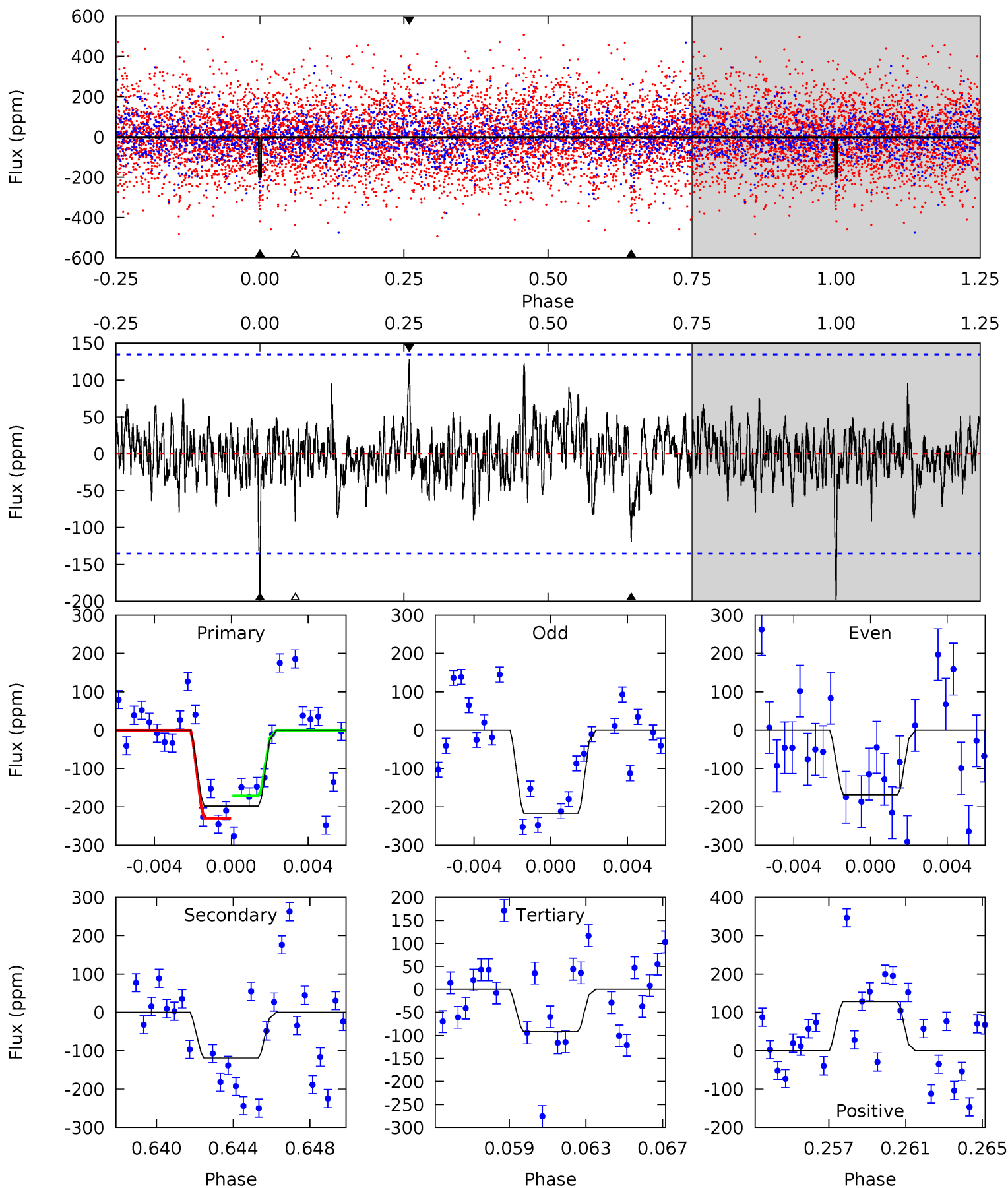
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.98	4.27	4.24	4.78	5.23	2.93	1.40	2.75	2.20	0.04	-0.51	0.70	1.09	0.41	0.71



Alt Model-Shift Uniqueness Test

007898445-08, P = 34.822081 Days, E = 101.559995 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.63	4.58	3.53	4.95	5.20	2.88	1.15	4.11	2.68	1.06	-0.37	0.94	0.89	0.39	1.12



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-124 ± 29	$6.70^{+5.58}_{-4.24}$	1635^{+73}_{-154}	5472^{+4634}_{-1150}	97^{+639}_{-68}
Alt.	-119 ± 26	$7.09^{+5.18}_{-4.39}$	1636^{+79}_{-125}	5464^{+3819}_{-1165}	89^{+504}_{-62}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

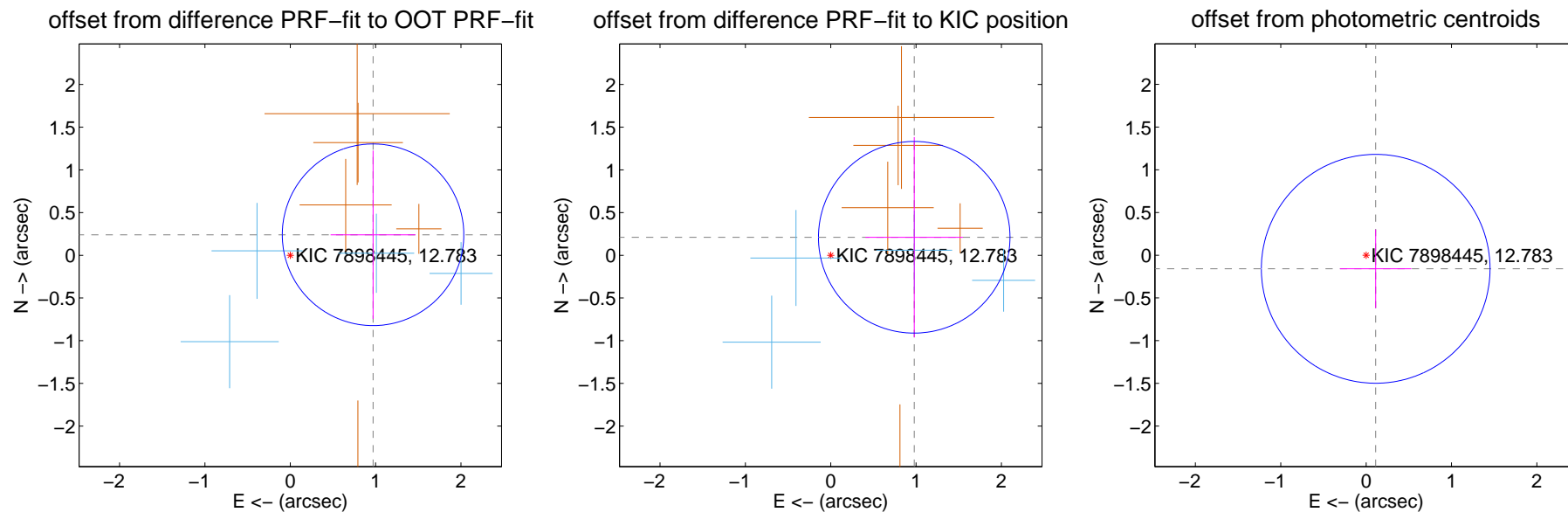
DV Centroid Data

Supplemental centroid analysis for 007898445-08. Kepler magnitude: 12.78. Transit SNR 10.39

There are 4 quarters with good PRF difference image offsets

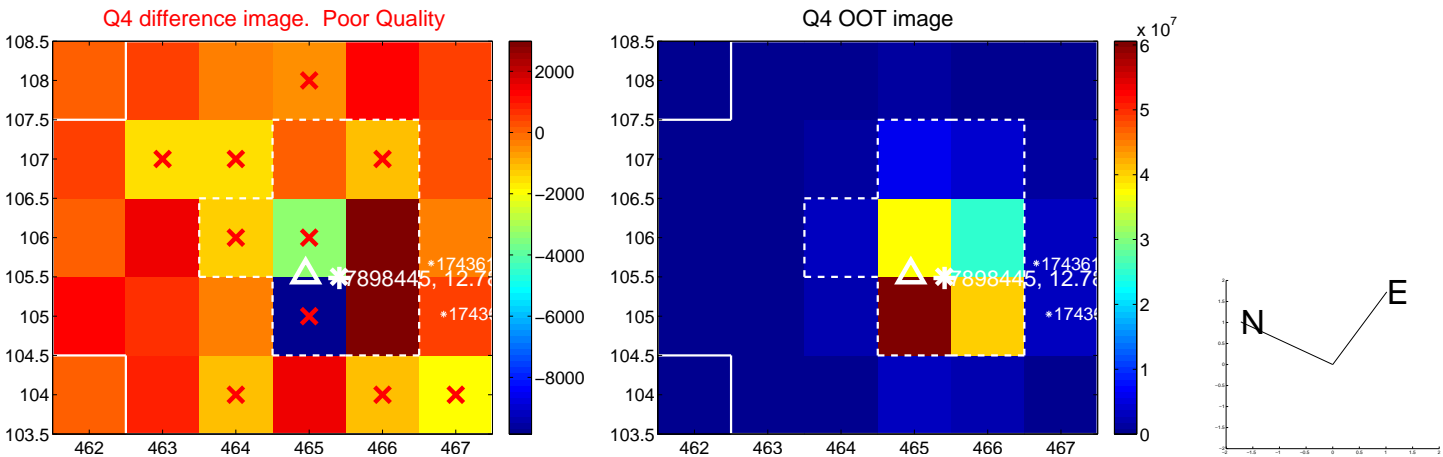
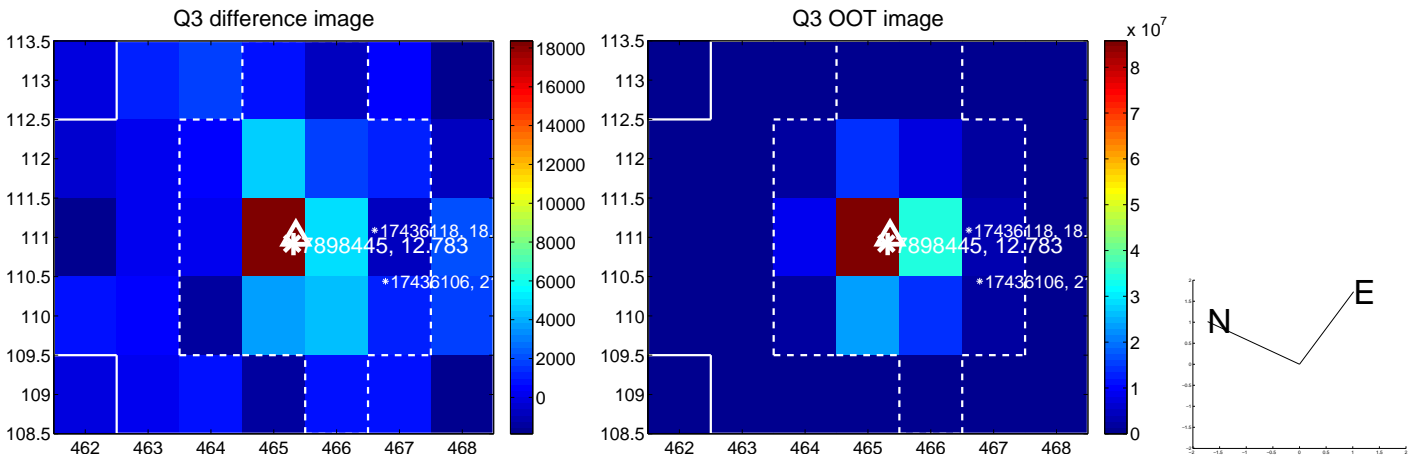
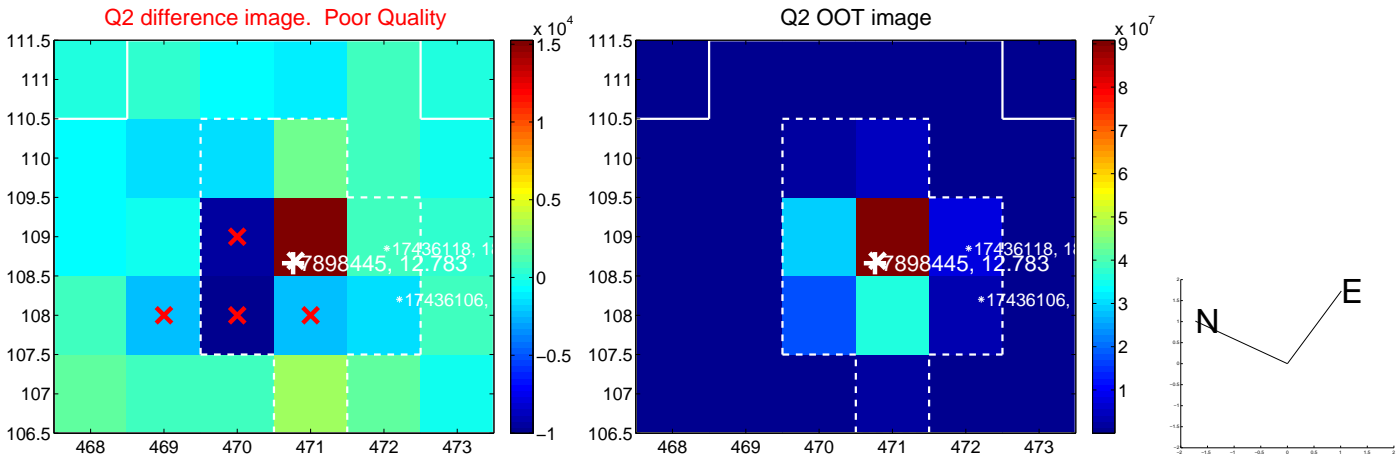
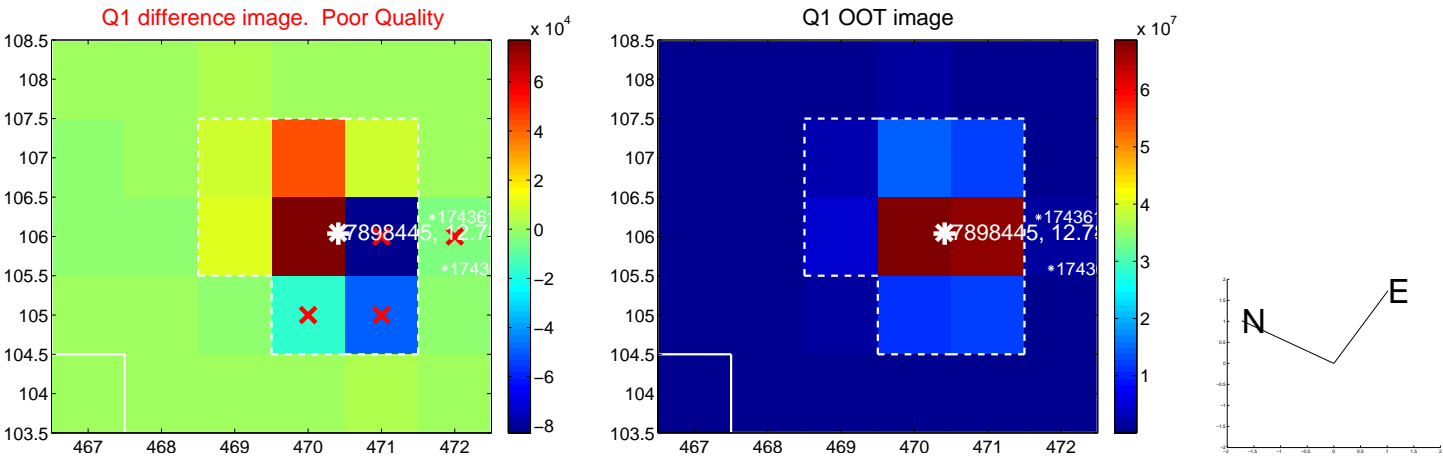
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.999 ± 0.354	2.82	-0.970 ± 0.497	0.240 ± 0.985
PRF-fit source offset from KIC position	1.001 ± 0.374	2.68	-0.978 ± 0.571	0.211 ± 1.173
photometric centroid source offset	0.19 ± 0.45	0.44	-0.11 ± 0.42	-0.16 ± 0.46

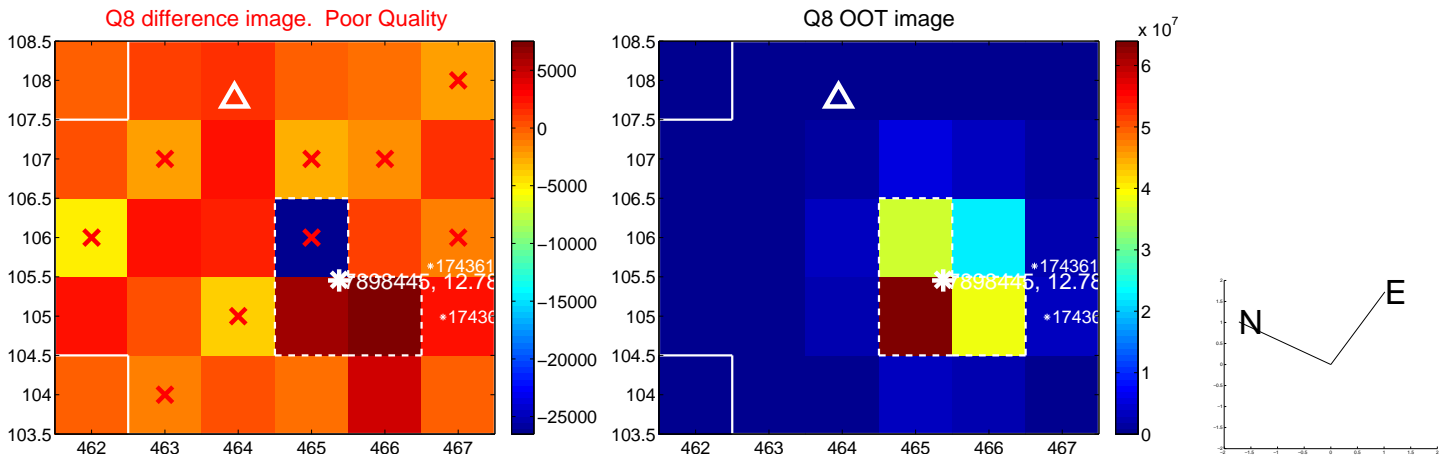
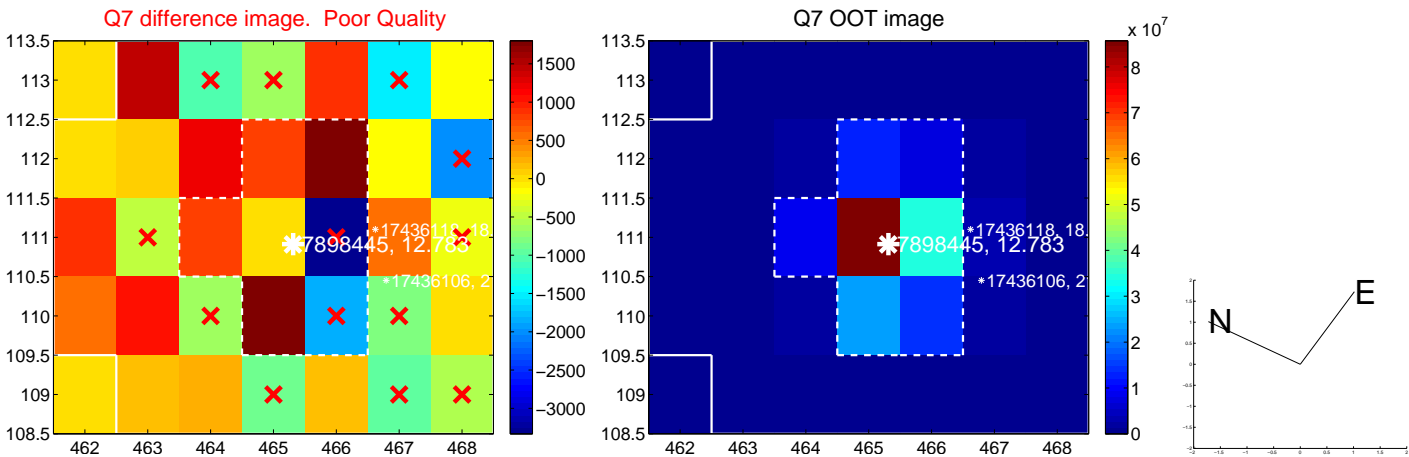
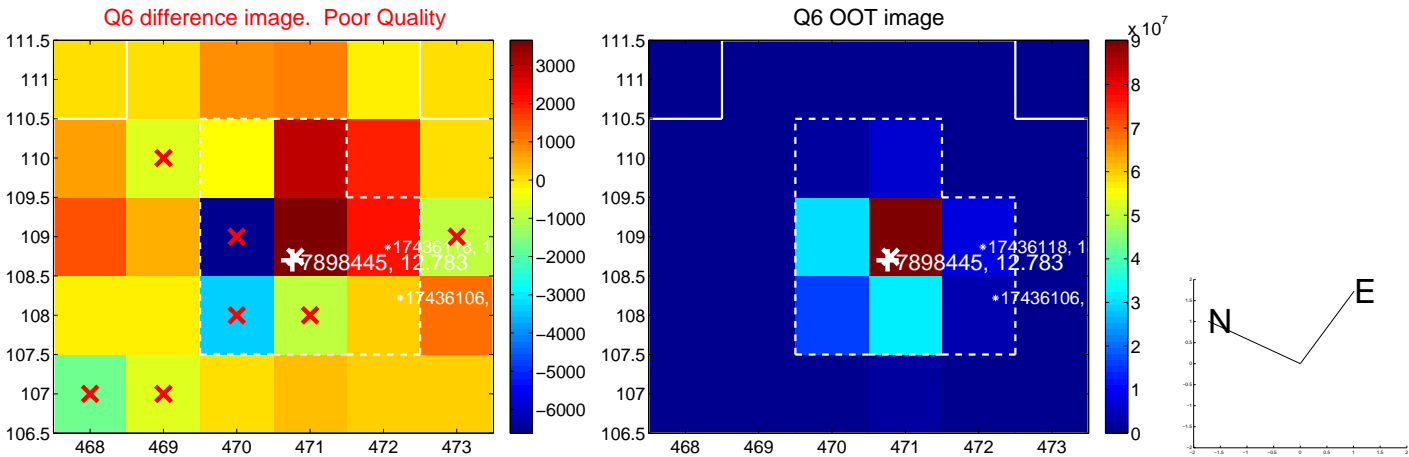
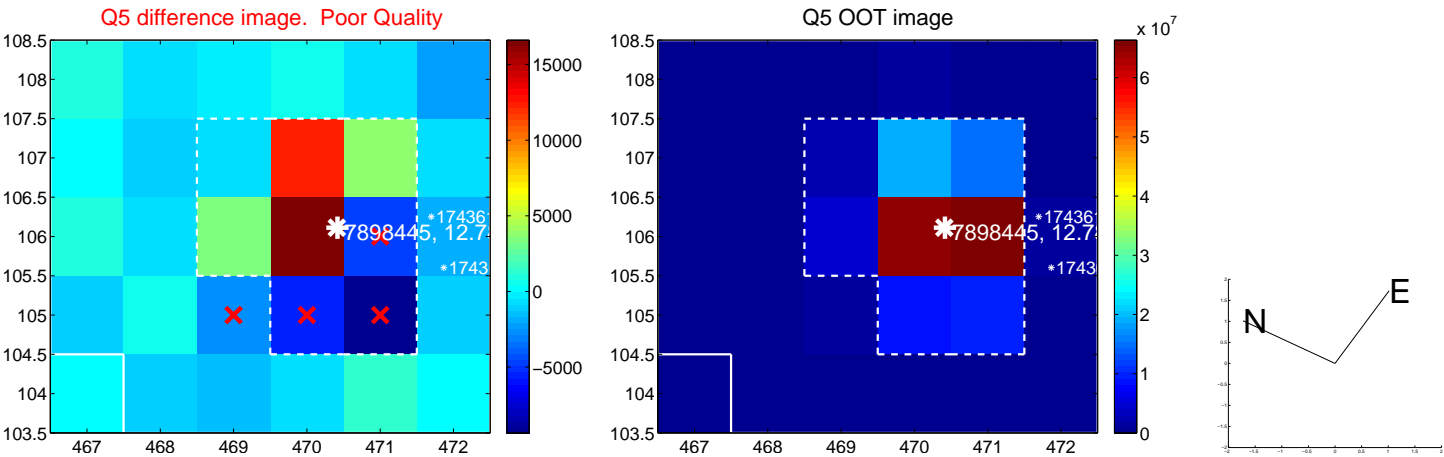


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

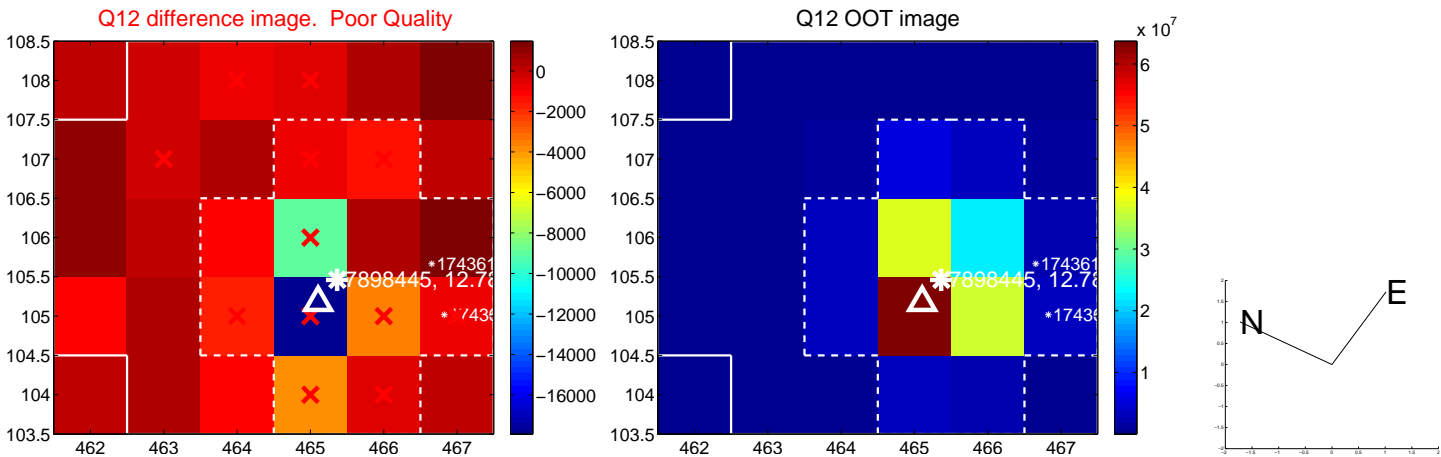
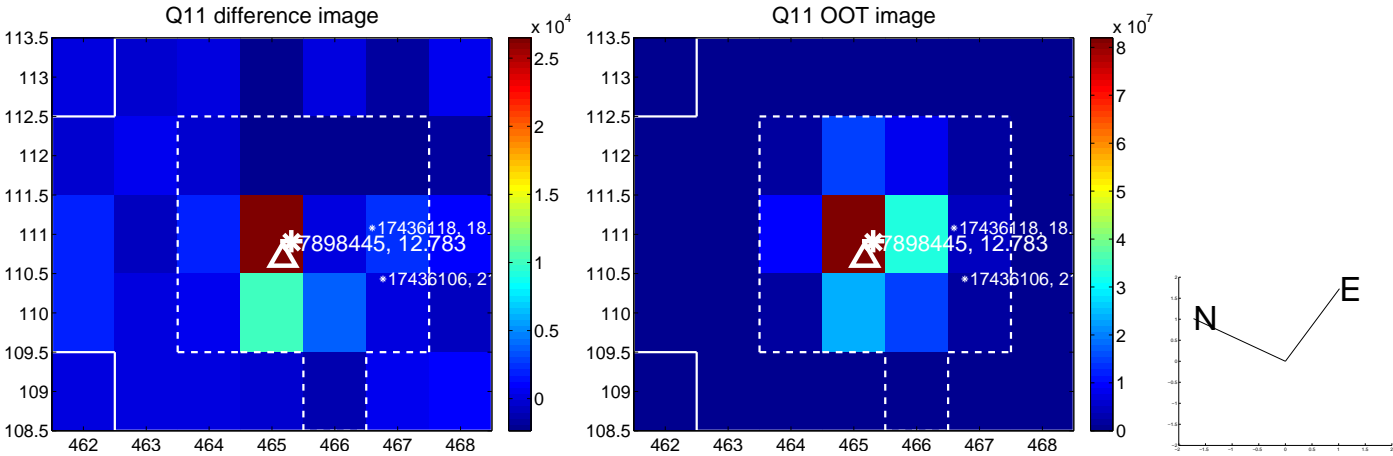
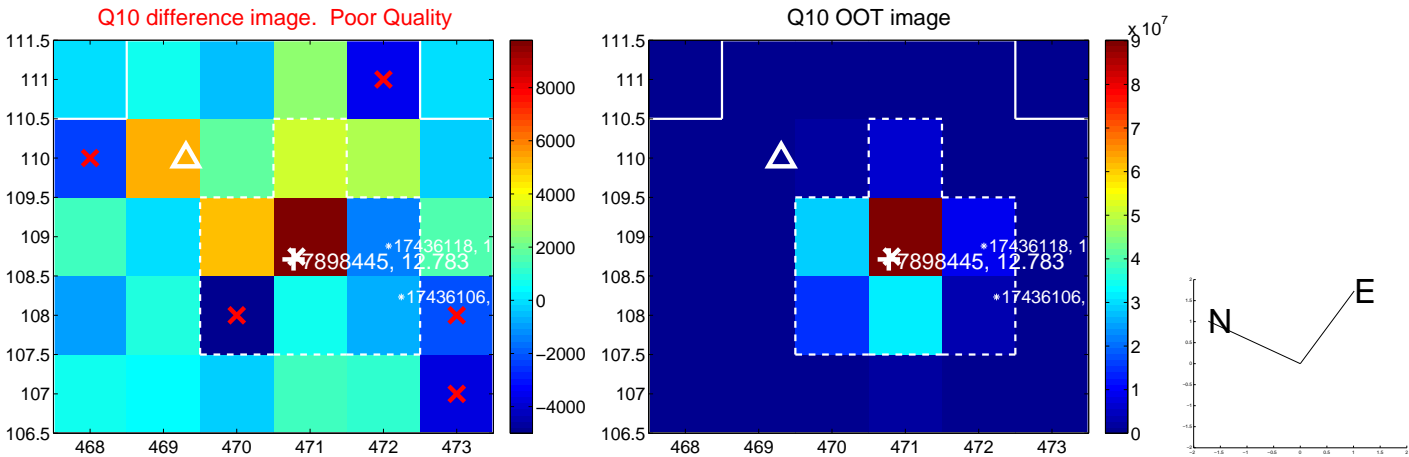
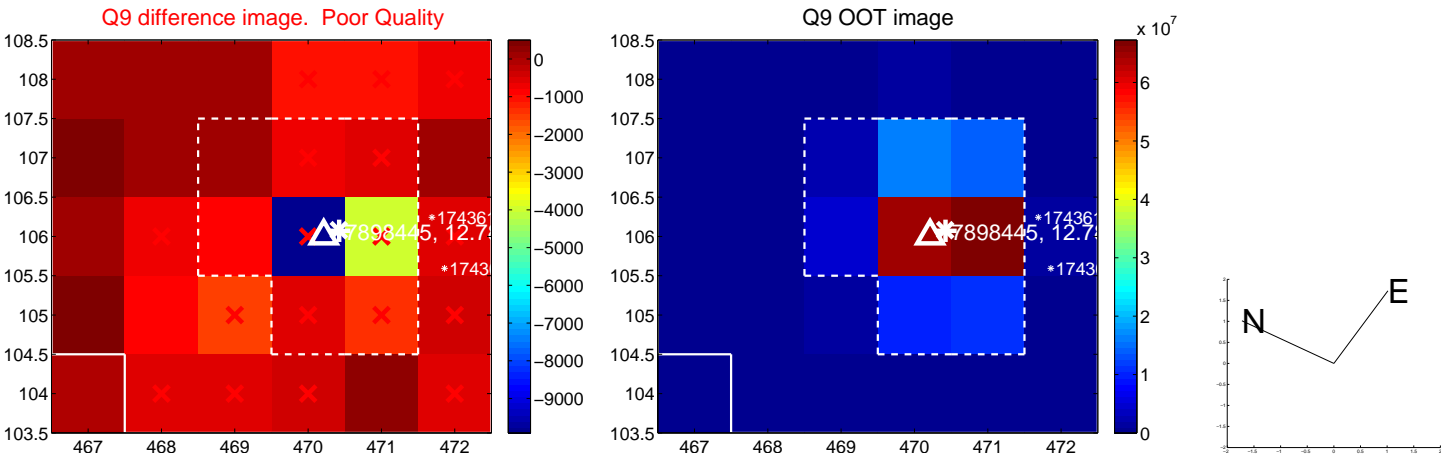
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



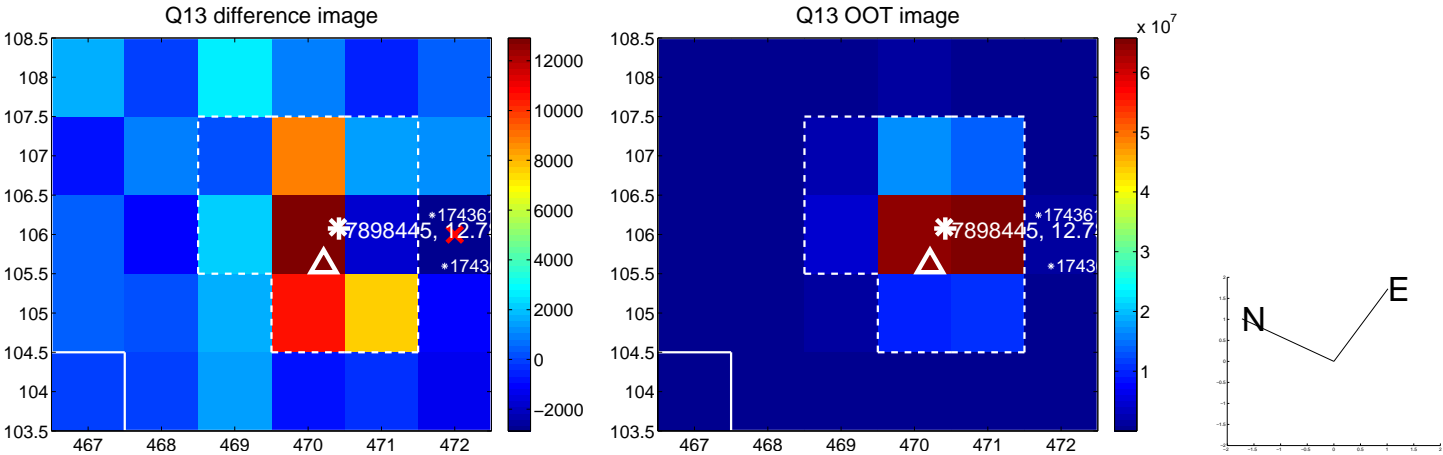
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



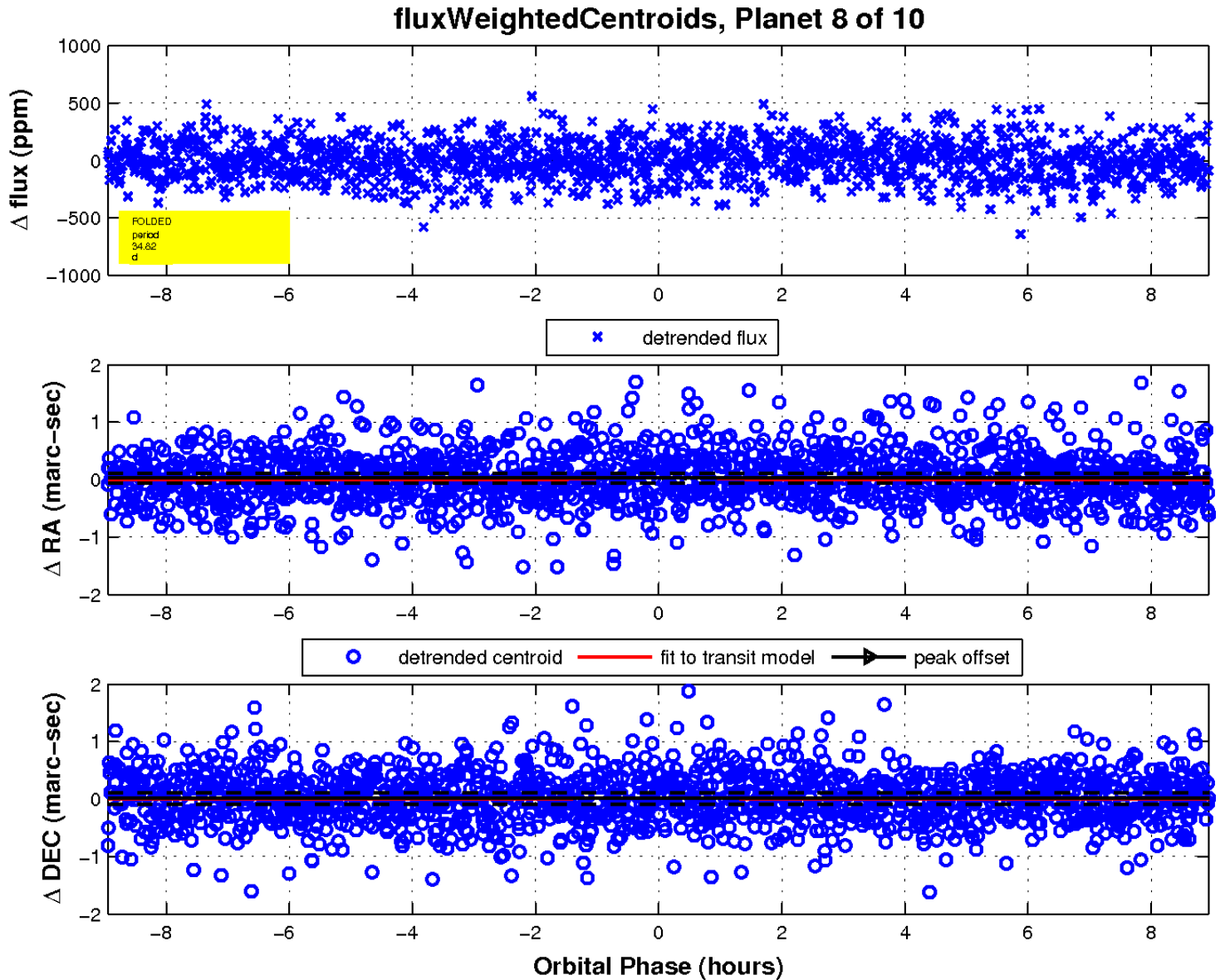
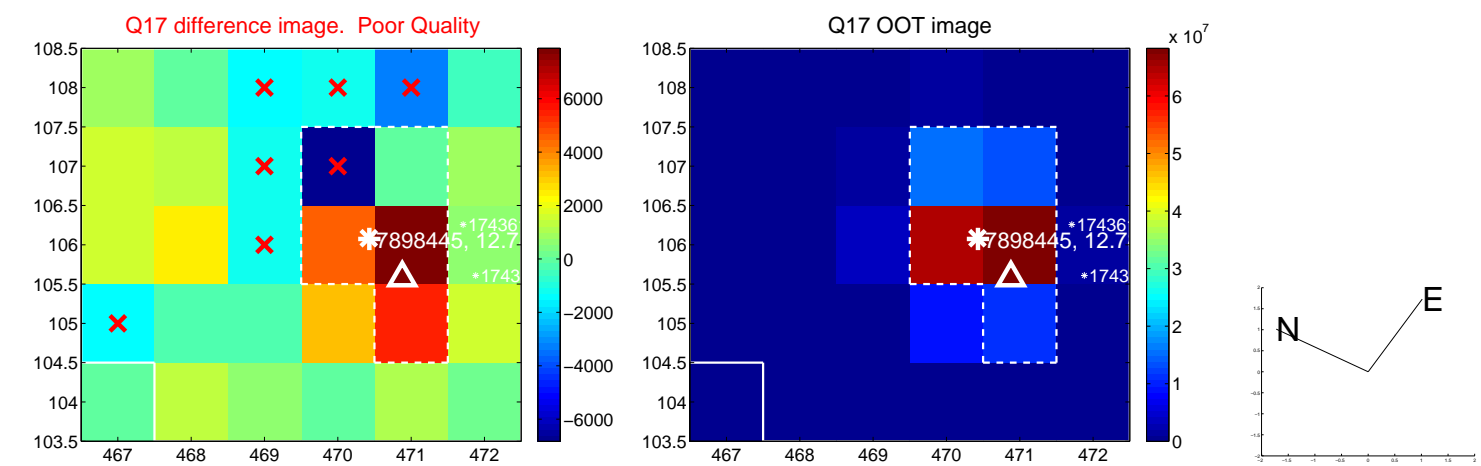
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

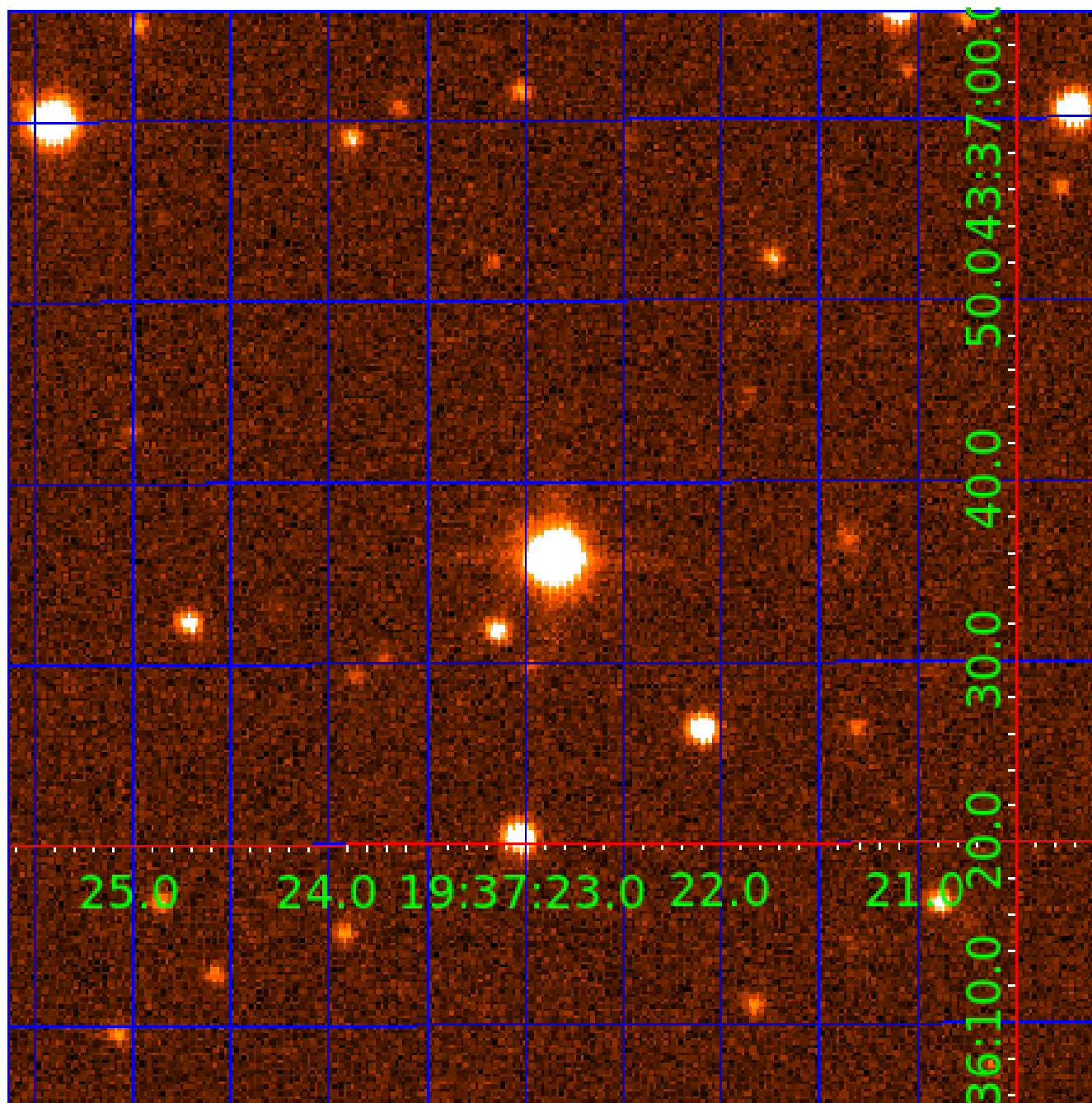


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

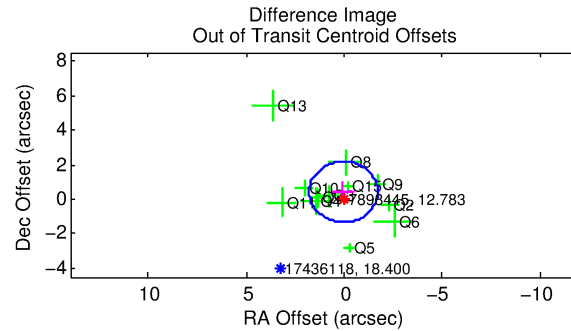
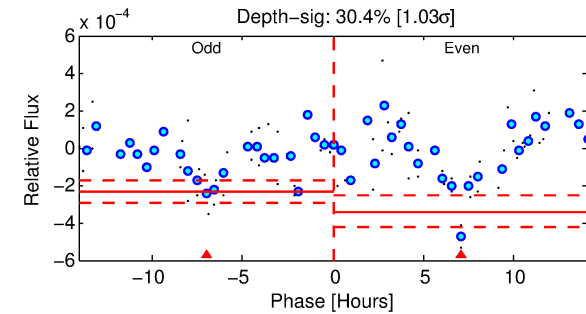
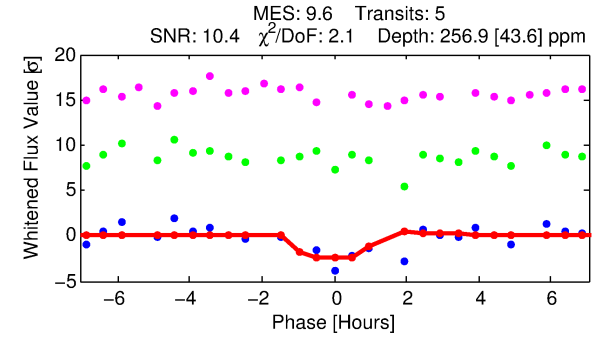
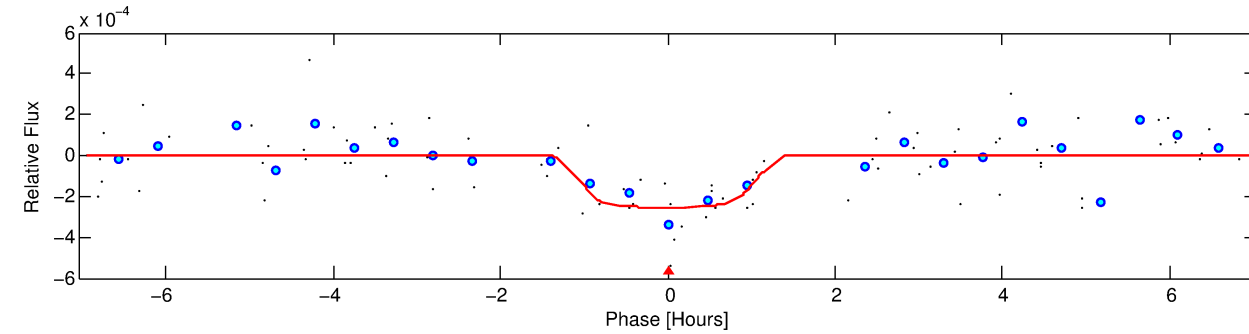
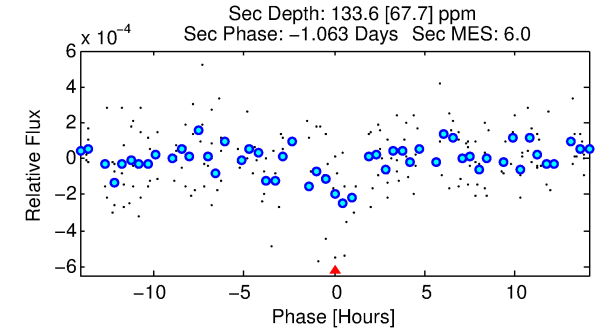
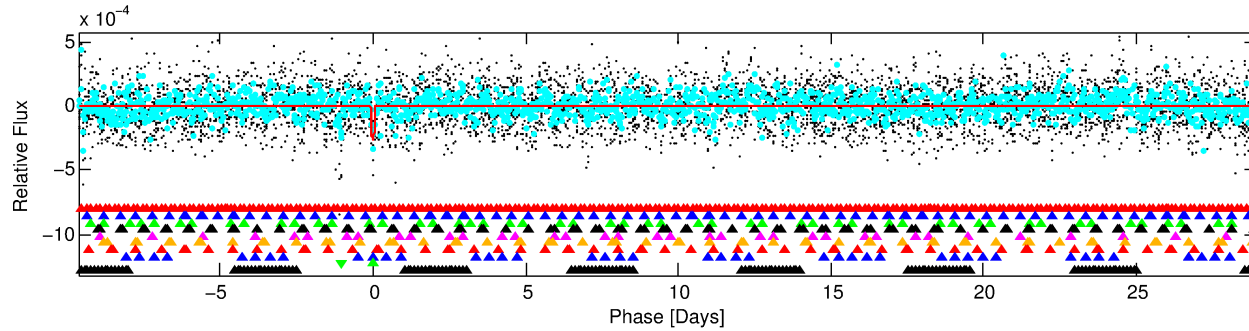
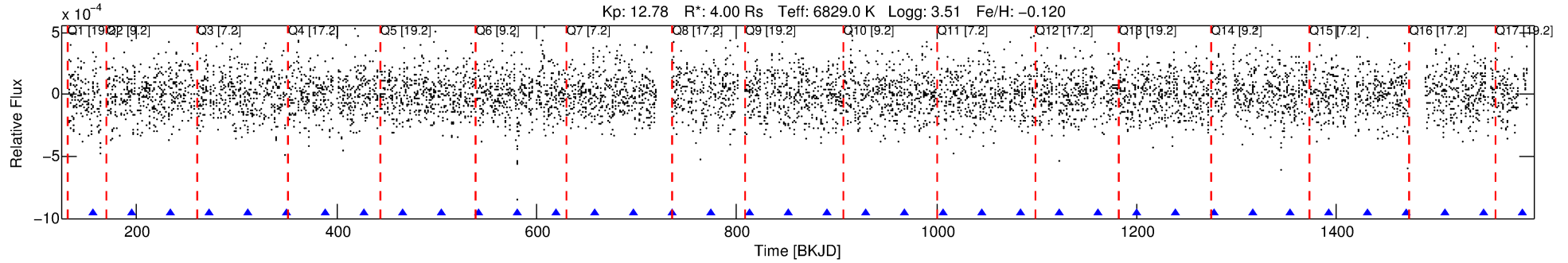
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-09

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 9 of 10 Period: 38.640 d



DV Fit Results:

Period = 38.63969 [0.00044] d
Epoch = 156.4226 [0.0096] BKJD
Rp/R* = 0.0167 [0.0136]
a/R* = 68.42 [327.65]
b = 0.86 [1.49]
Seff = 408.44 [244.41]
Teq = 1146 [171] K
Rp = 7.27 [6.55] Re
a = 0.2764 [0.1003] AU
Ag = 106.11 [192.27] [0.55σ]
Teffp = 5688 [2447] K [1.85σ]

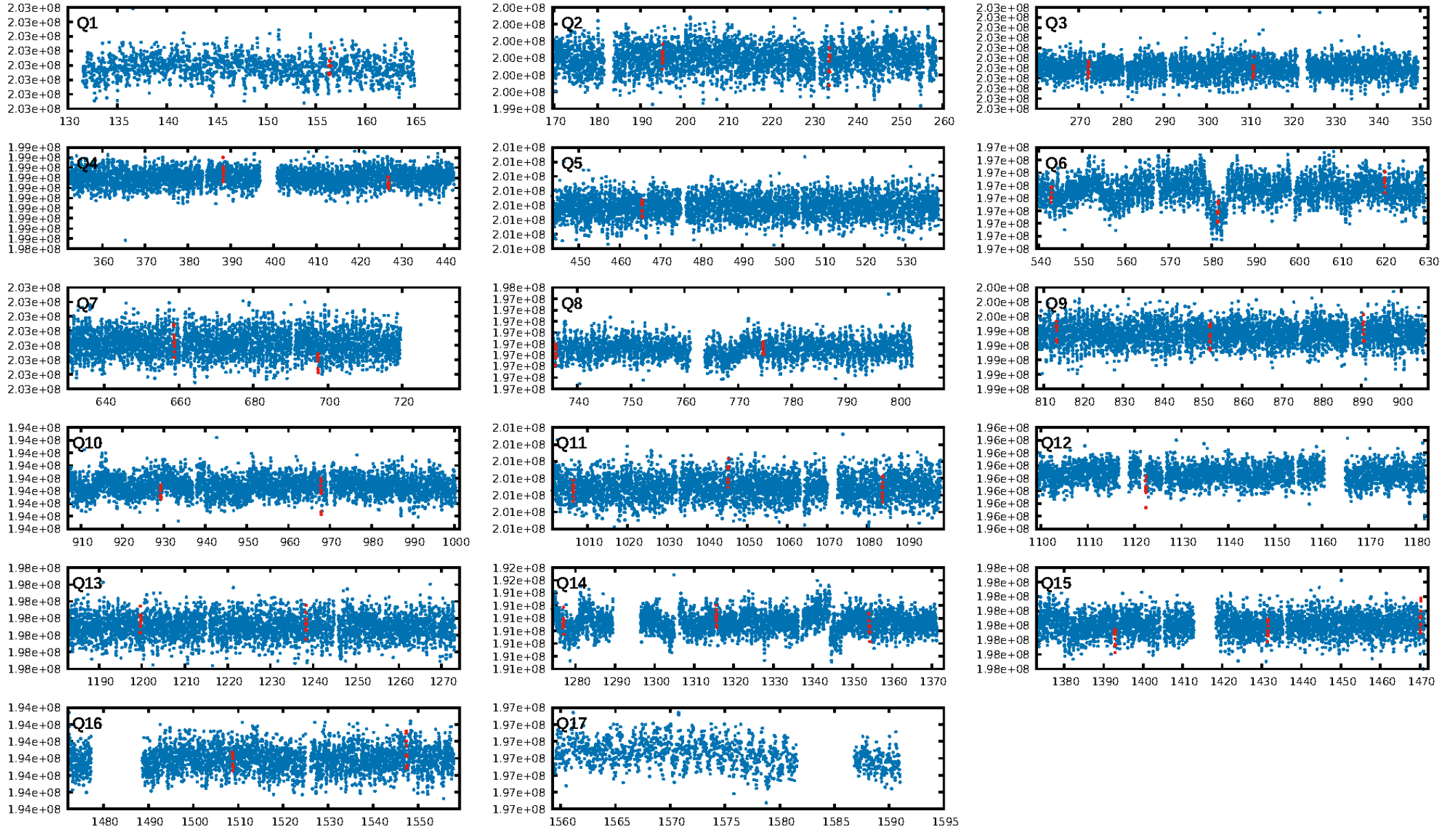
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.14σ]
LongPeriod-sig: 100.0% [9.64σ]
ModelChiSquare2-sig: 37.6%
ModelChiSquareGof-sig: 28.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -6.206
Centroid-sig: 8.0%
Centroid-so: 0.440 arcsec [0.97σ]
OotOffset-rm: 0.428 arcsec [0.73σ]
KicOffset-rm: 0.415 arcsec [0.67σ]
OotOffset-st: 3/4/2/3 [12]
KicOffset-st: 3/4/2/3 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.27 [4/15]

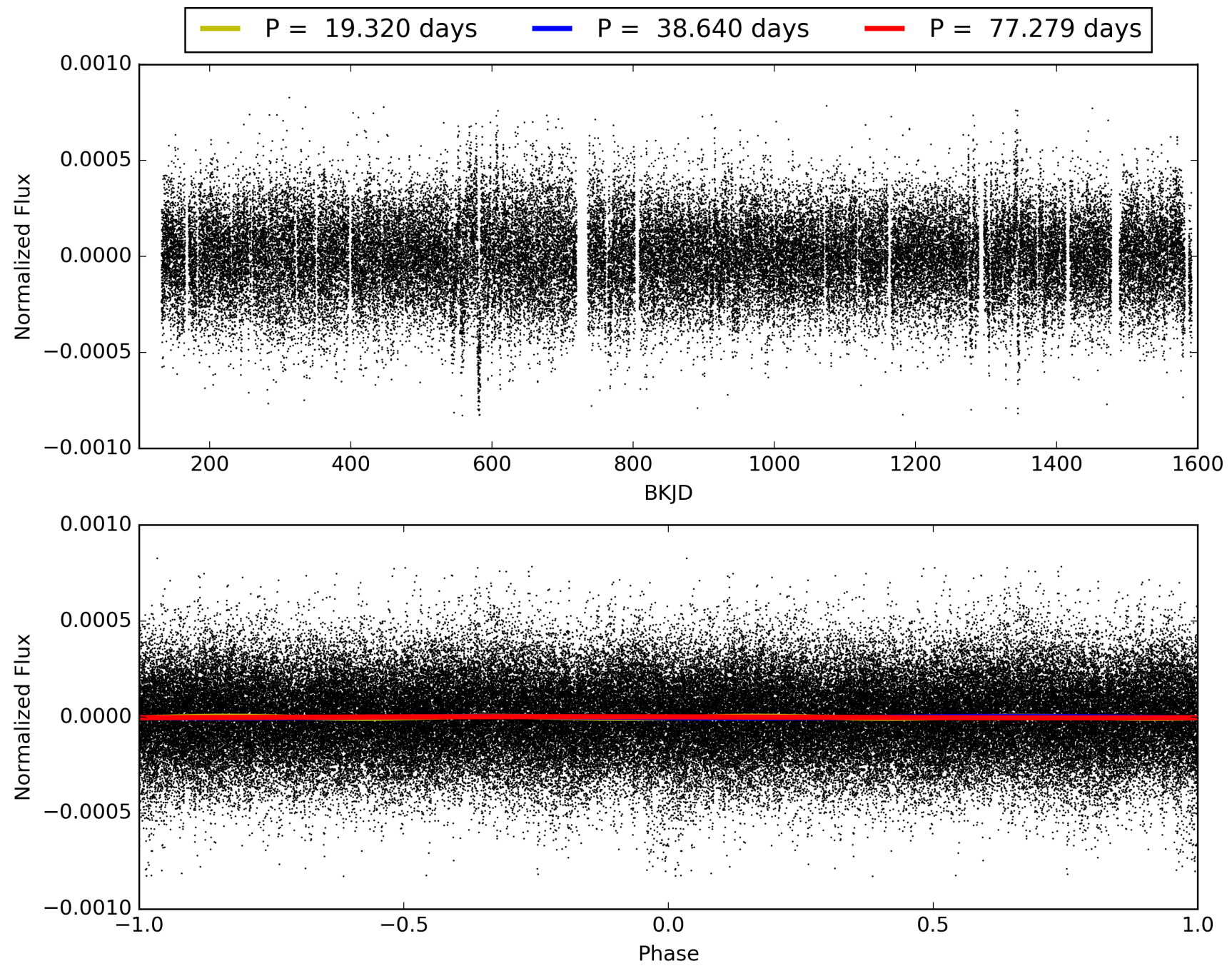
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:22 Z

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

TCE 007898445-09, PDC Light Curves

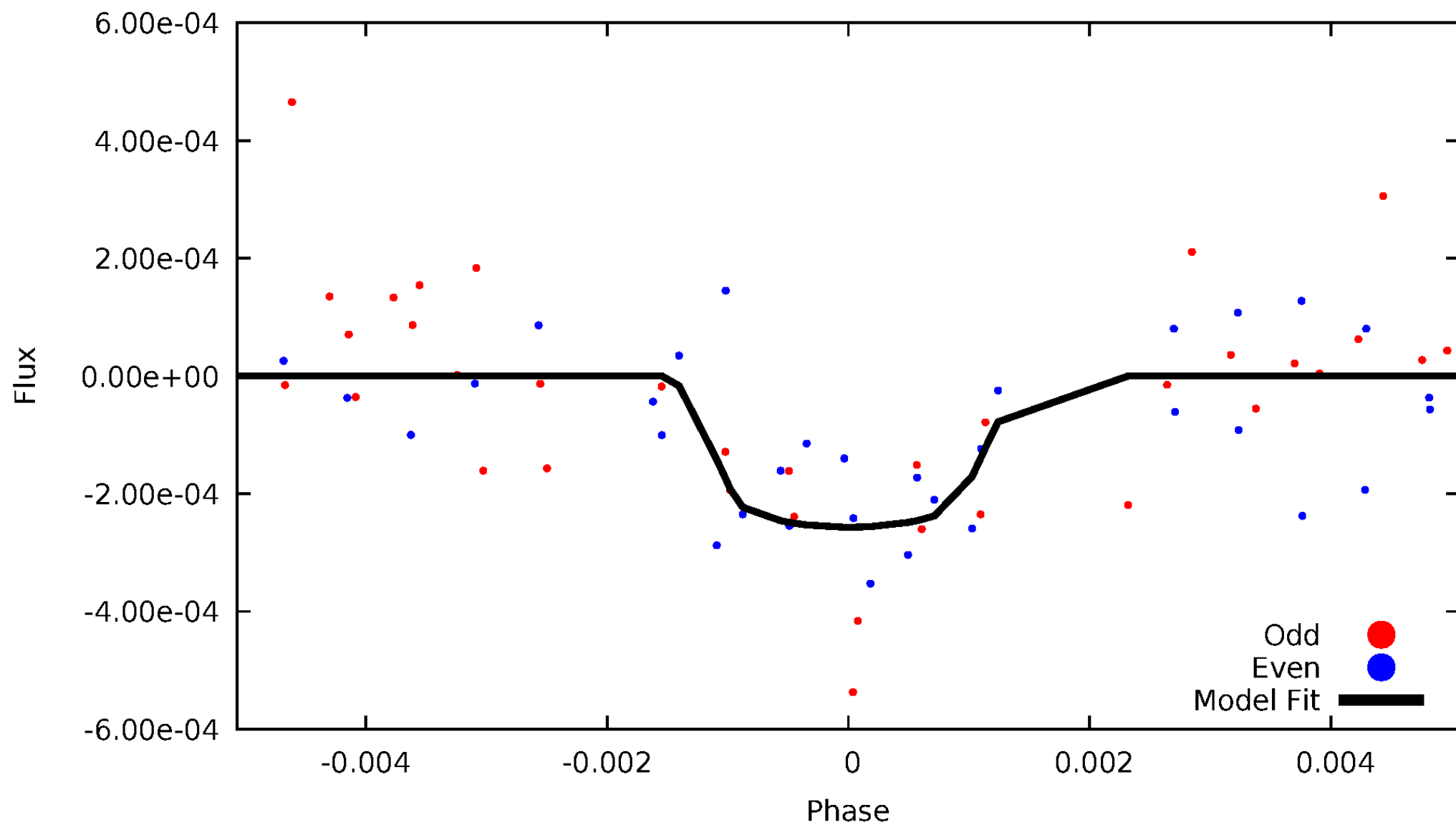


TCE 007898445-09



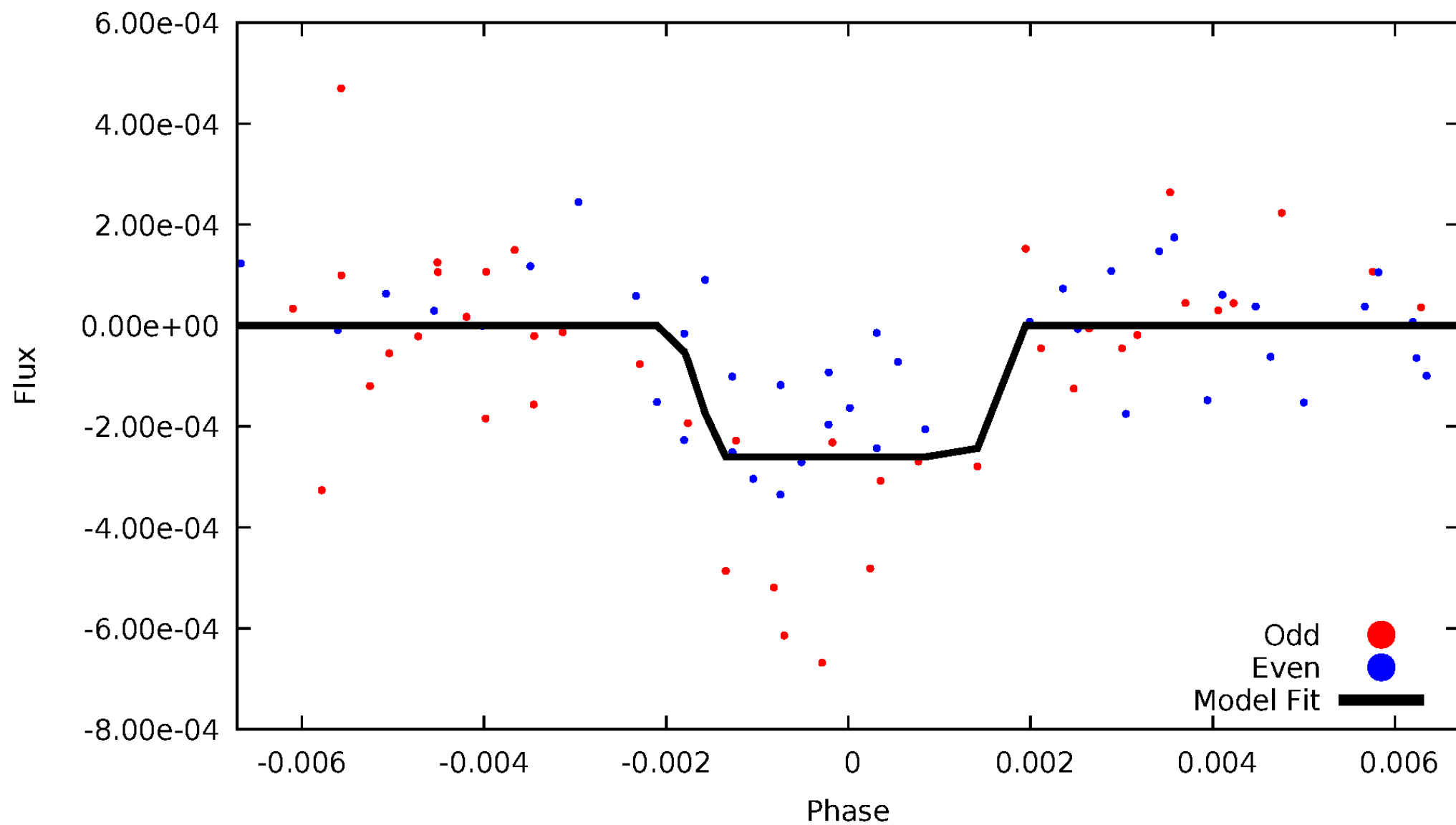
DV Odd/Even

TCE 007898445-09



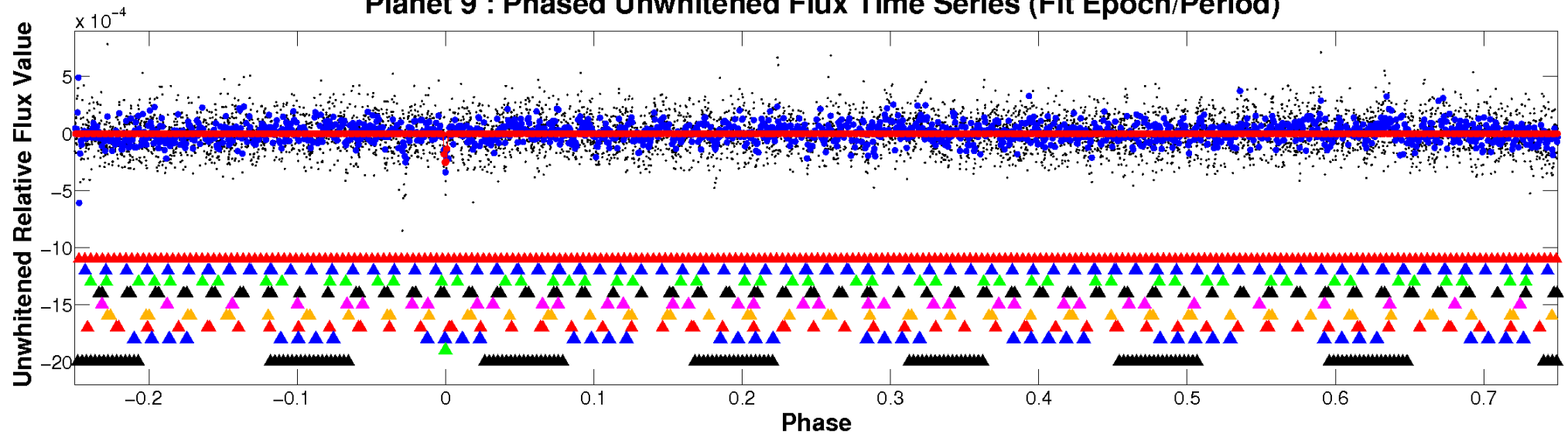
ALT Odd/Even

TCE 007898445-09

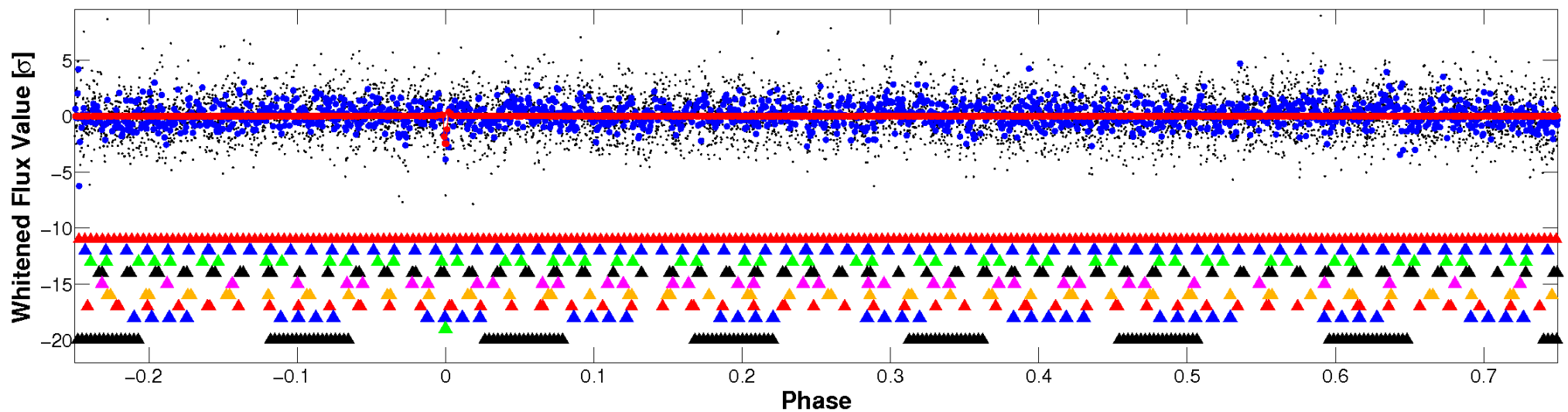


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

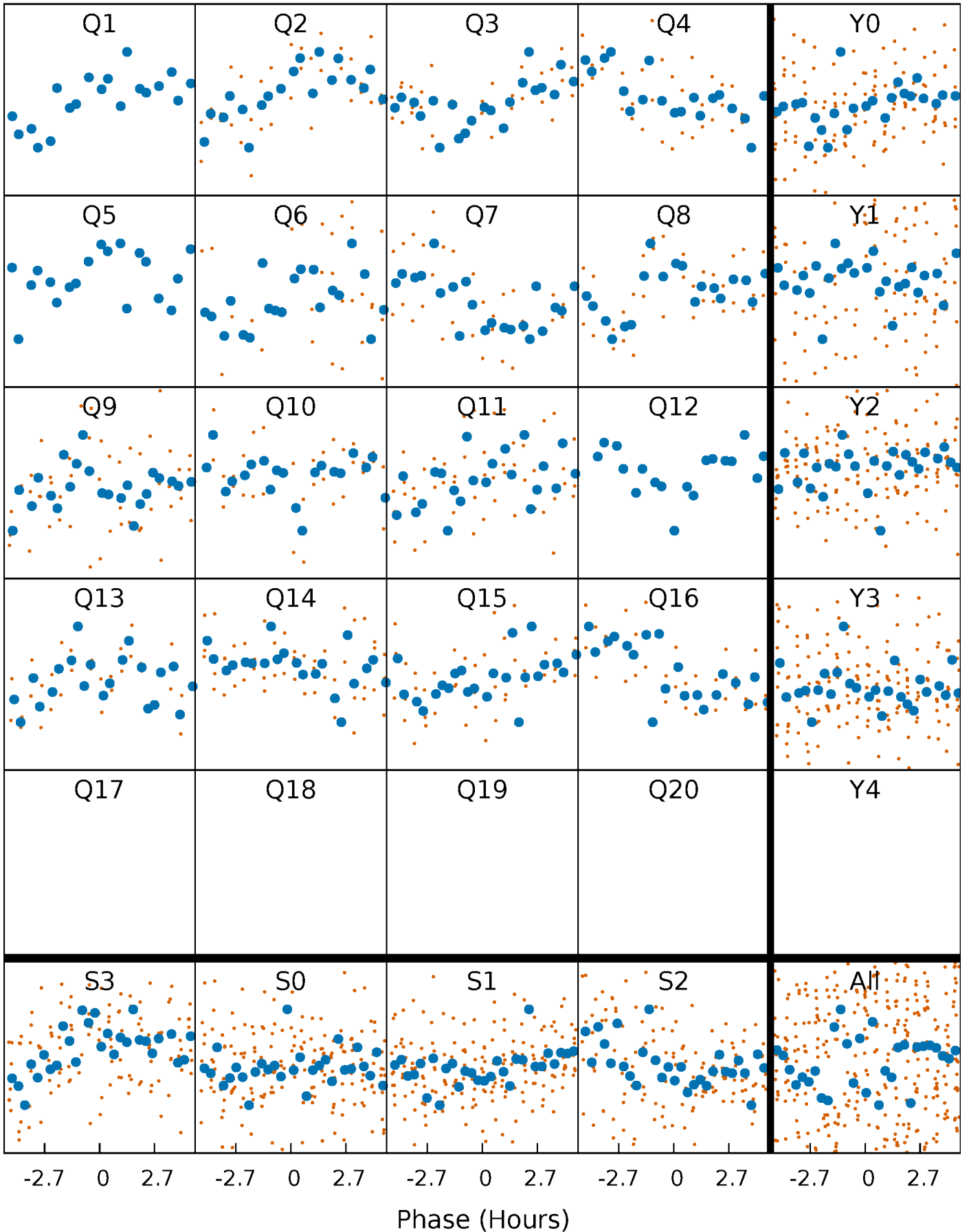


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



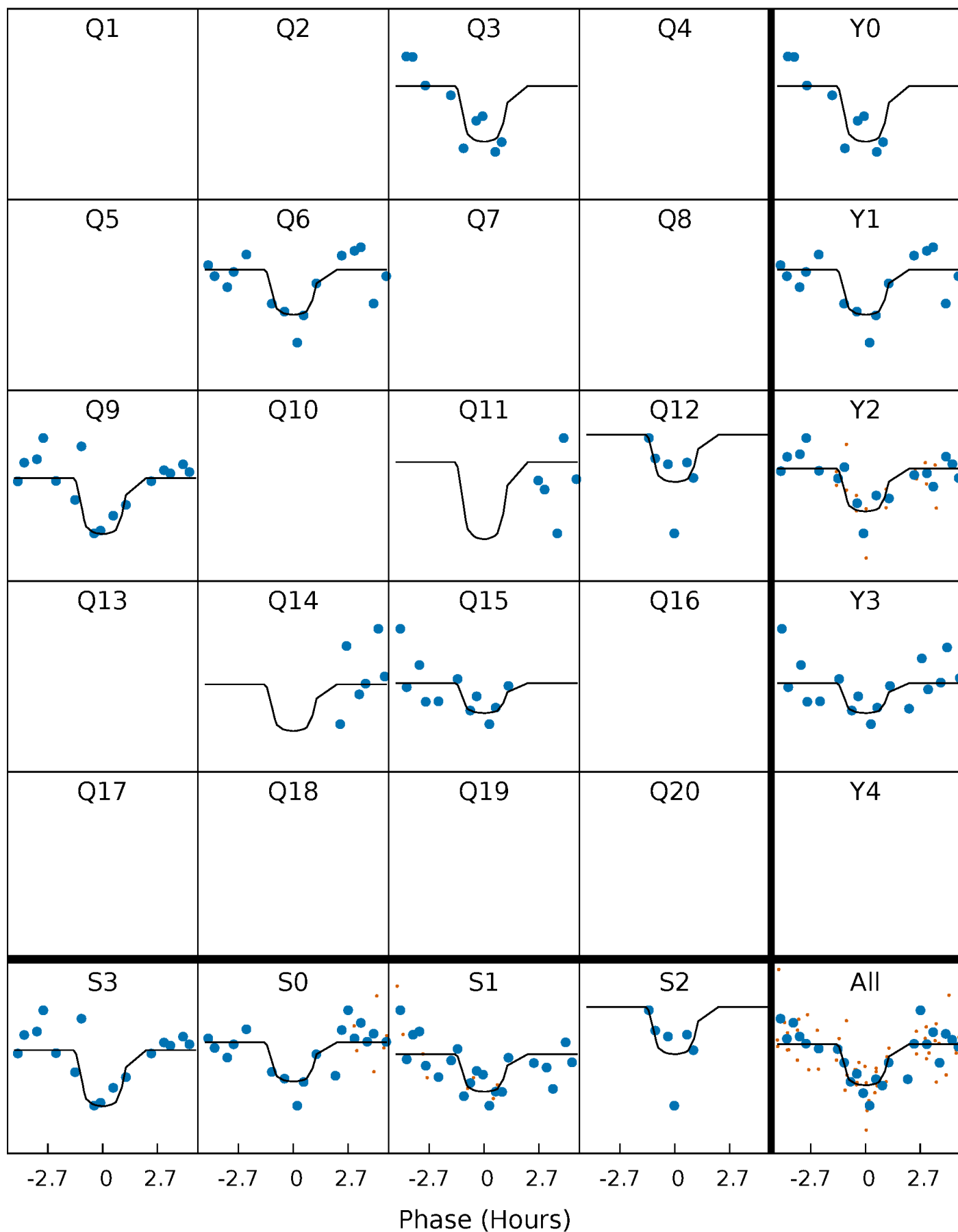
PDC Quarter-Phased Transit Curves

TCE 007898445-09 P= 38.639688 Days $T_0=156.422613$ (BKJD)



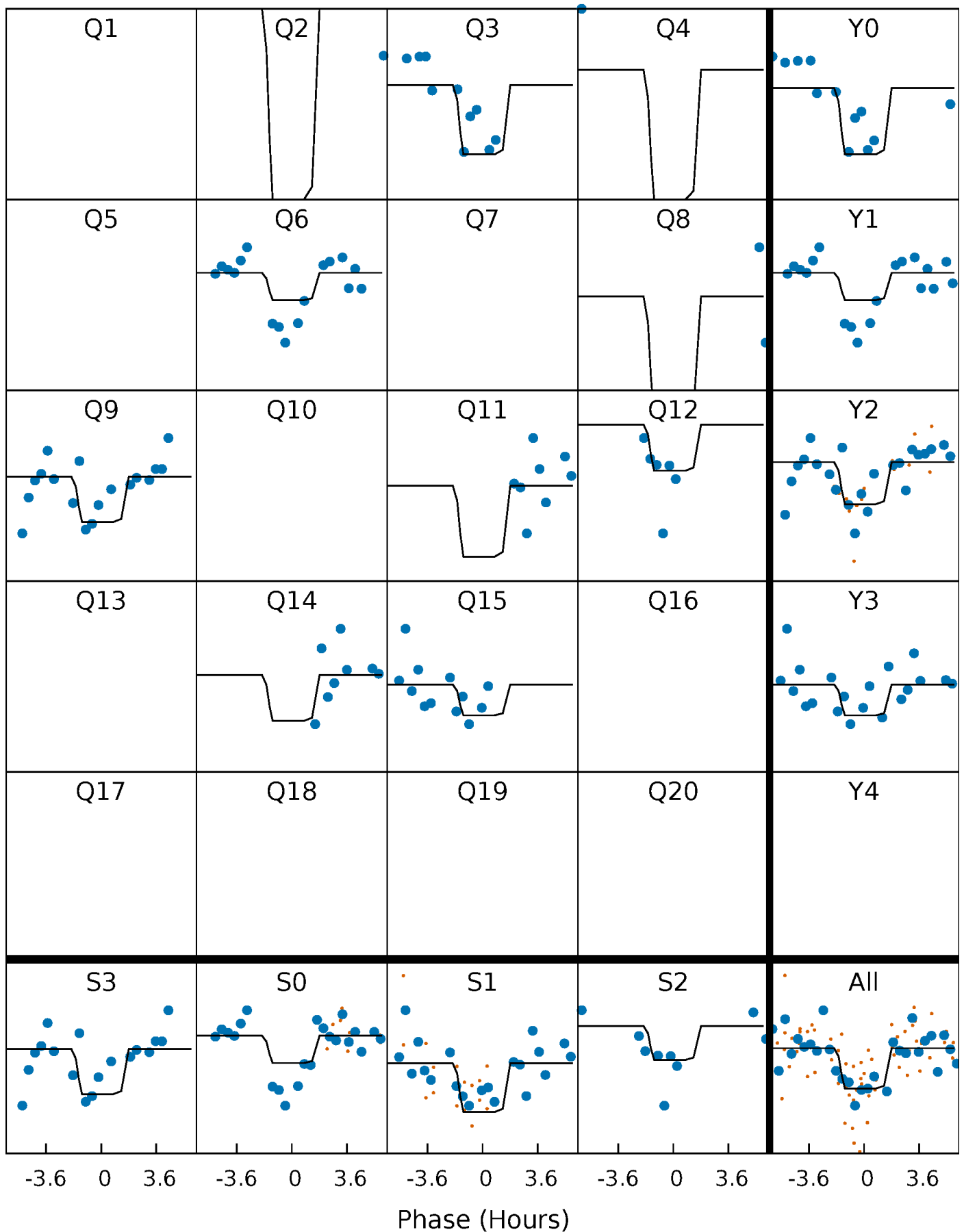
DV Quarter-Phased Transit Curves

TCE 007898445-09 P= 38.639688 Days $T_0=156.422613$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

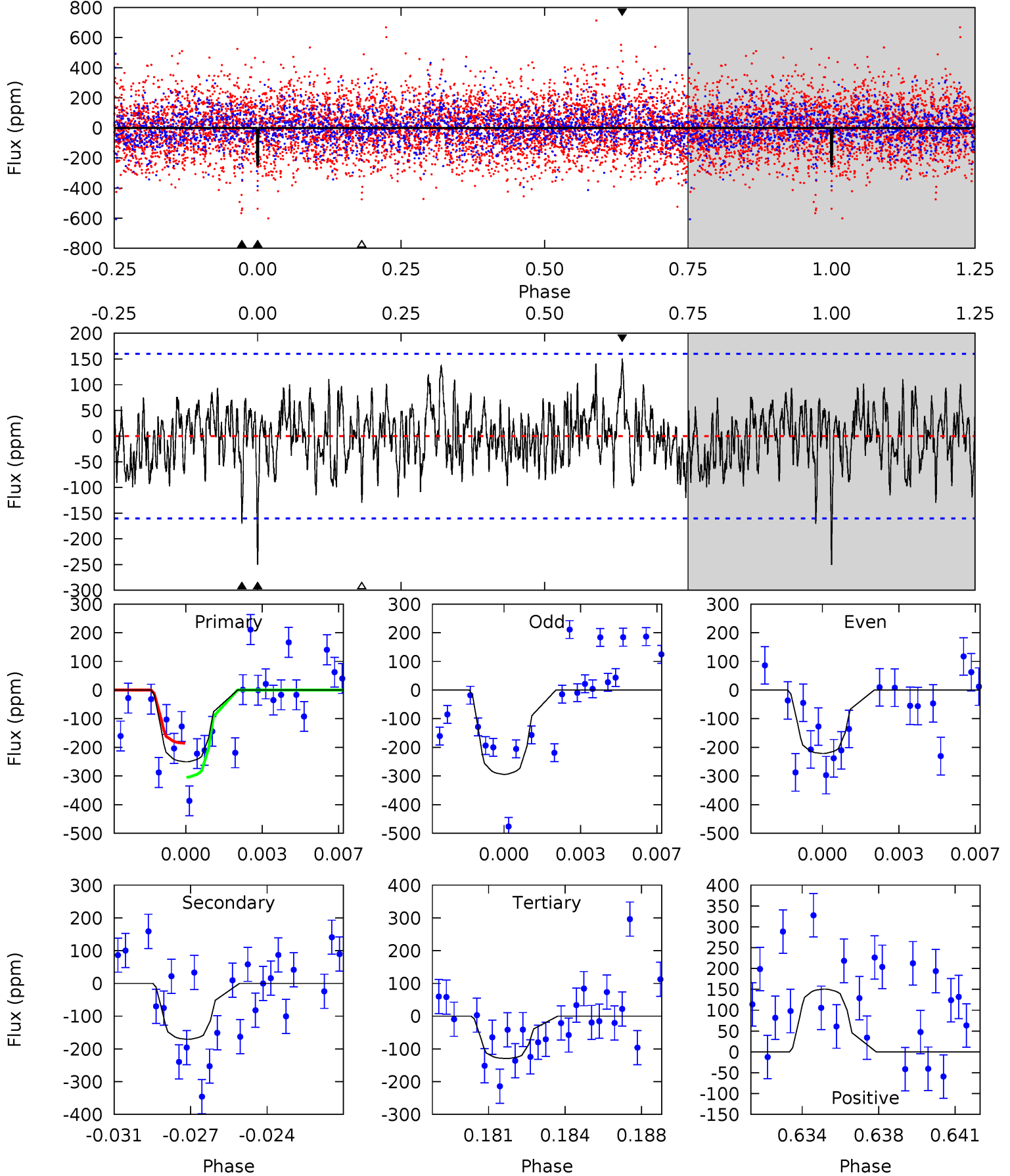
TCE 007898445-09 P= 38.640720 Days $T_0=156.425484$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-09, $P = 38.639688$ Days, $E = 117.782925$ Days

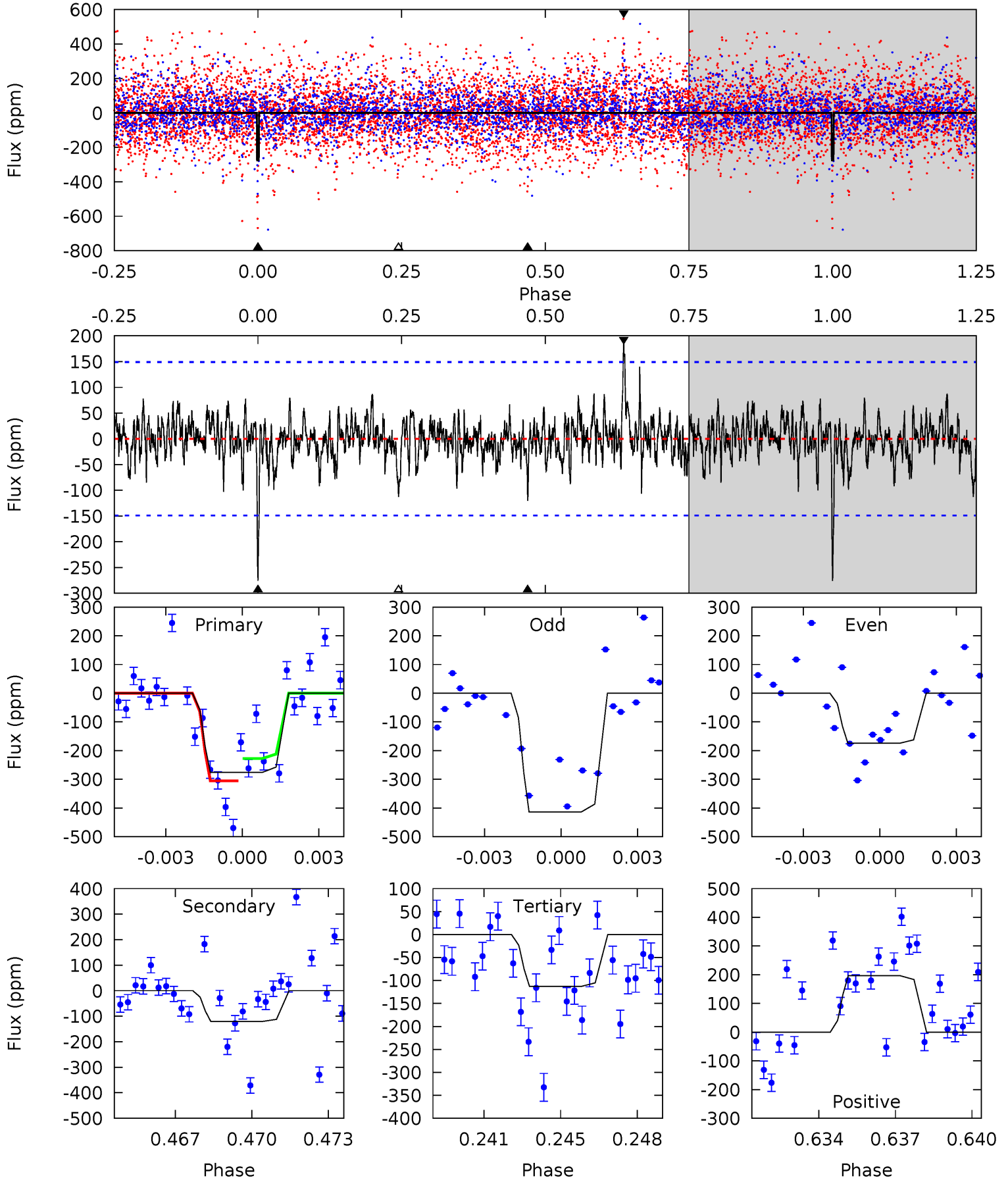
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	5.57	4.23	4.92	5.23	2.93	1.50	3.95	3.26	1.34	0.65	1.18	0.98	0.38	1.91



Alt Model-Shift Uniqueness Test

007898445-09, P = 38.640720 Days, E = 117.784764 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.70	4.22	3.96	6.90	5.24	2.95	1.15	5.73	2.79	0.26	-2.68	4.16	1.50	0.42	1.30



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-171 ± 31	$7.42^{+5.87}_{-4.25}$	1577^{+81}_{-142}	5681^{+3552}_{-1134}	129^{+590}_{-88}
Alt.	-120 ± 28	$6.95^{+5.93}_{-3.97}$	1574^{+83}_{-149}	5376^{+3328}_{-1148}	100^{+504}_{-71}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

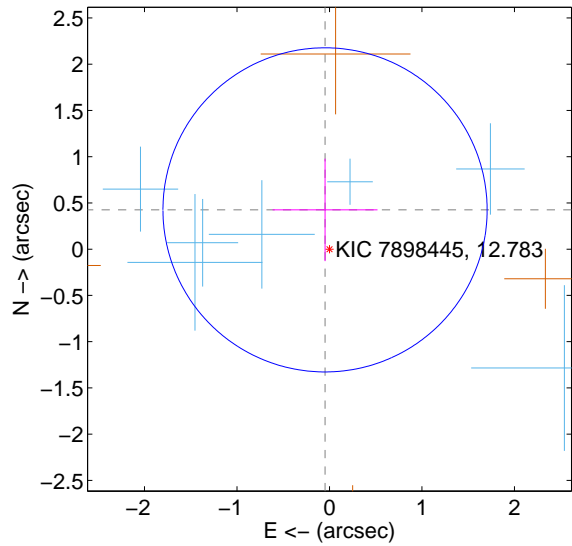
Supplemental centroid analysis for 007898445-09. Kepler magnitude: 12.78. Transit SNR 10.41

There are 7 quarters with good PRF difference image offsets

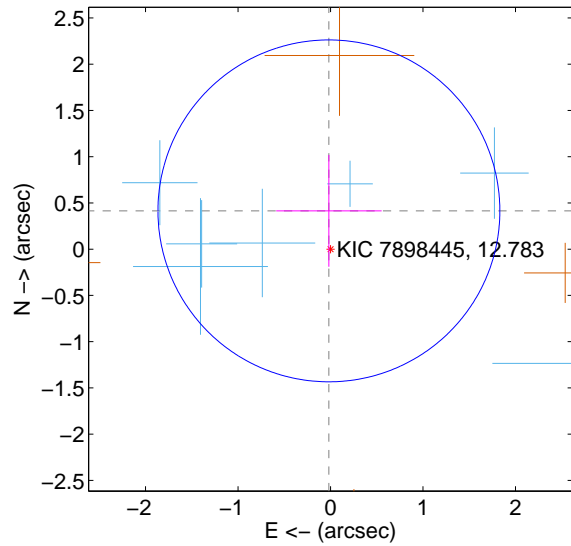
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.428 ± 0.584	0.73	0.048 ± 0.567	0.425 ± 0.554
PRF-fit source offset from KIC position	0.415 ± 0.616	0.67	0.017 ± 0.571	0.414 ± 0.604
photometric centroid source offset	0.44 ± 0.45	0.97	-0.12 ± 0.40	0.42 ± 0.46

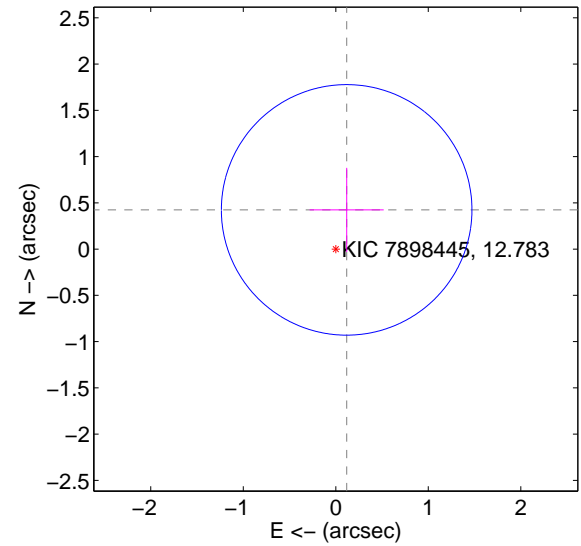
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

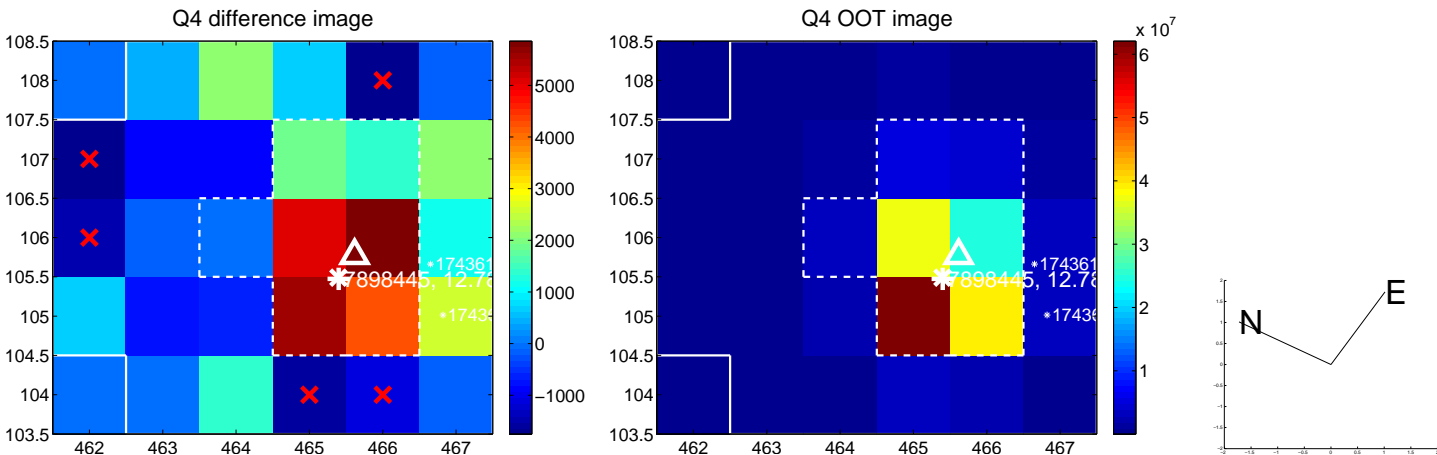
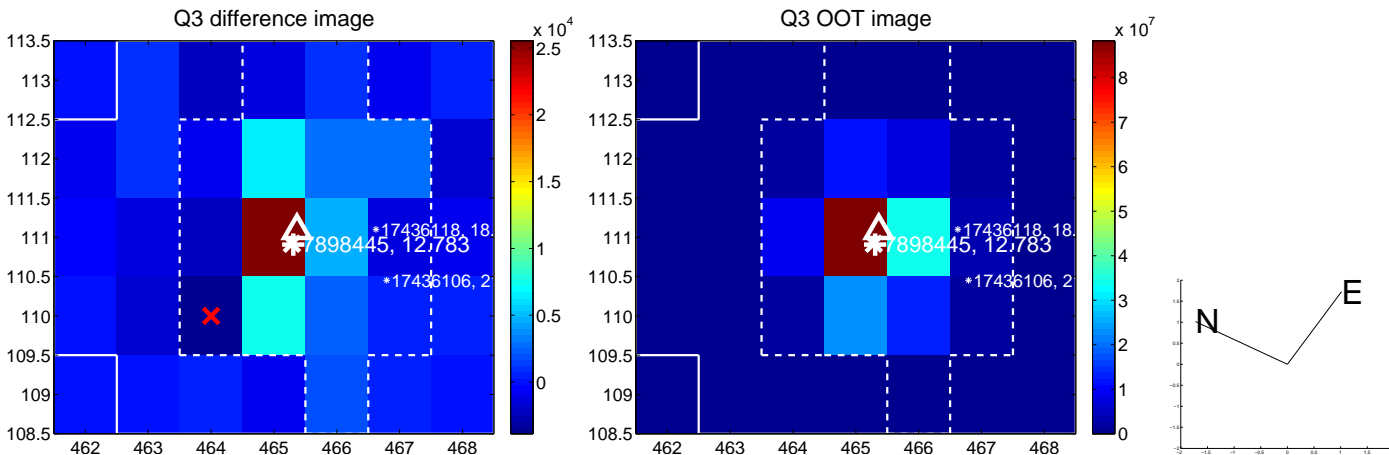
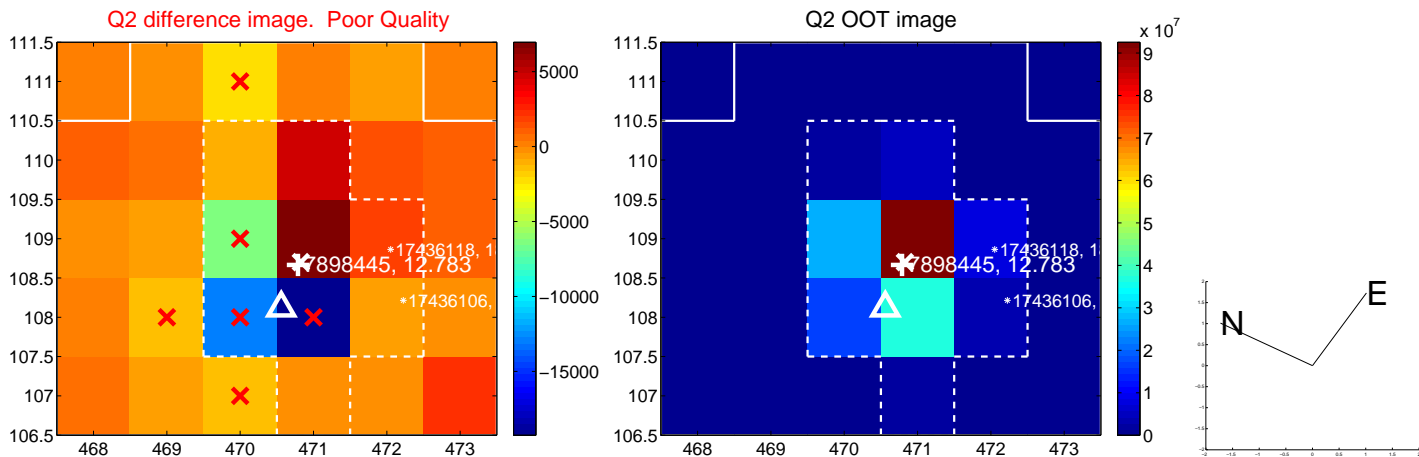
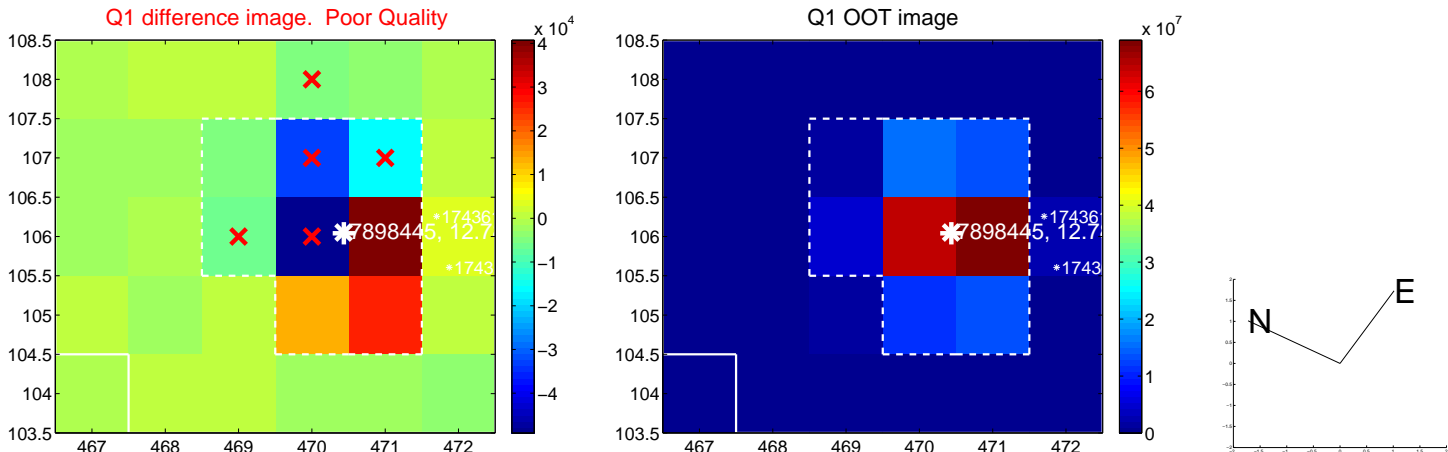


offset from photometric centroids

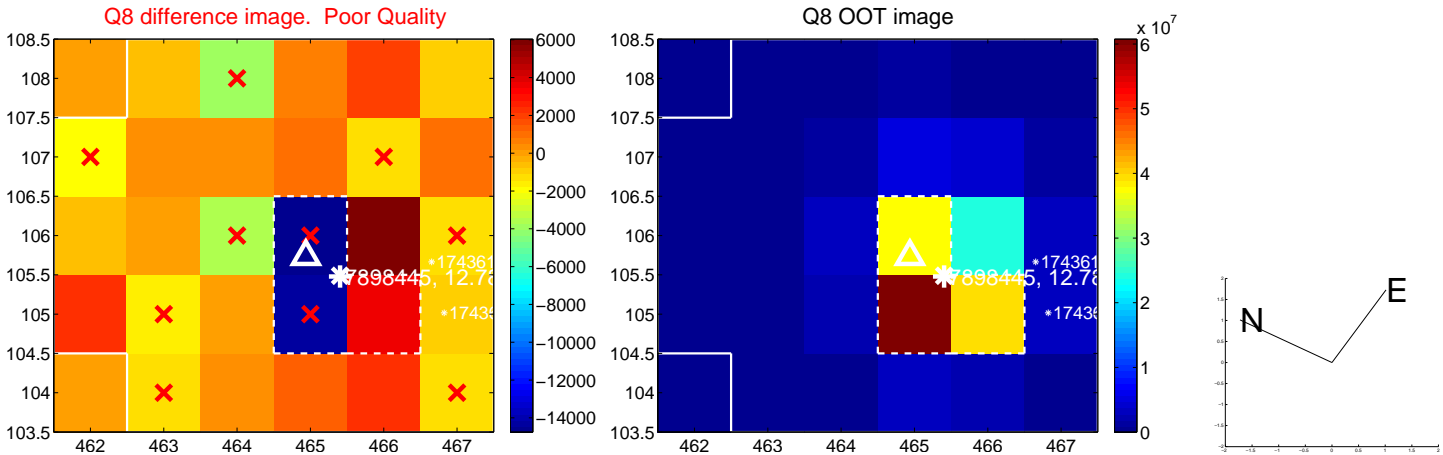
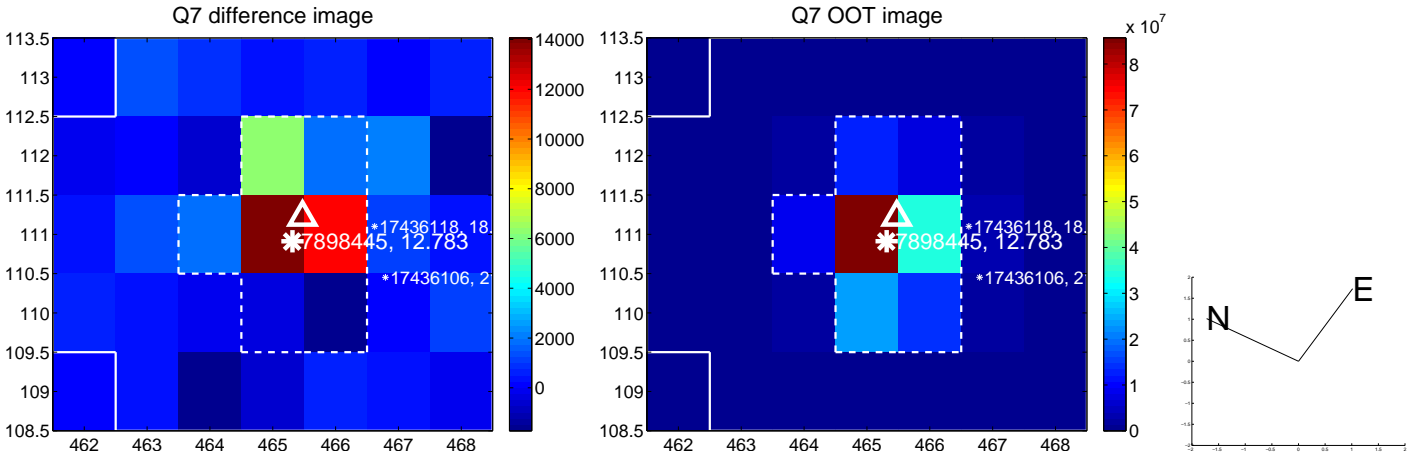
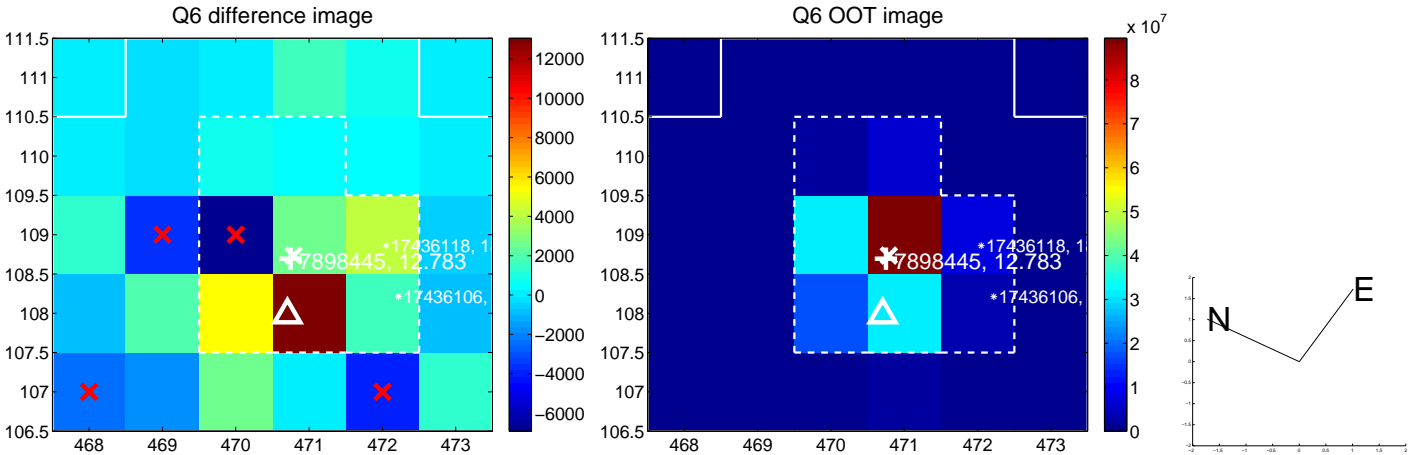
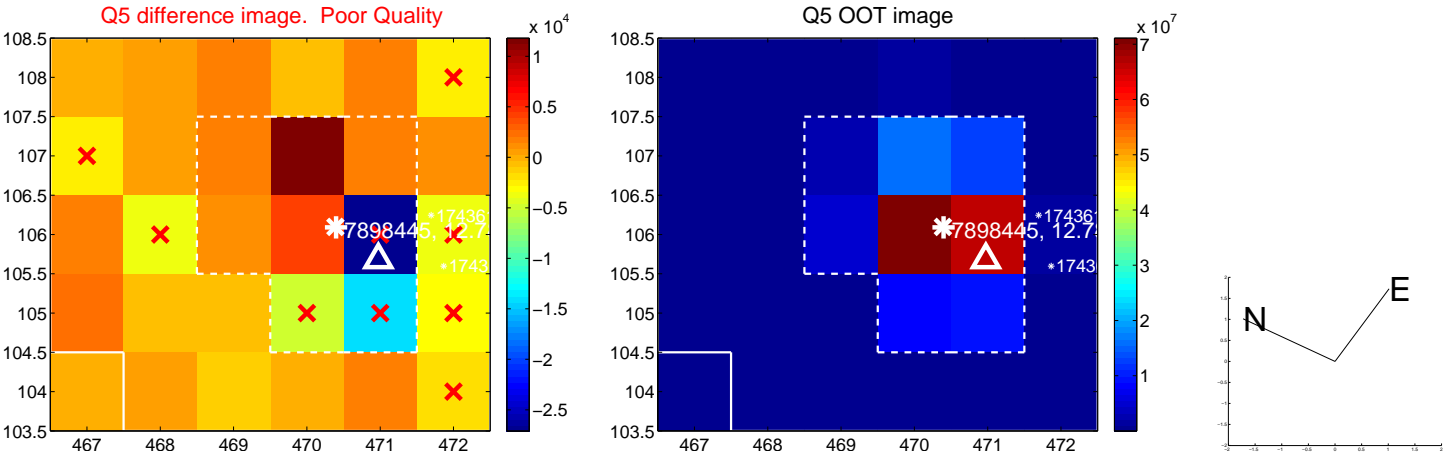


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

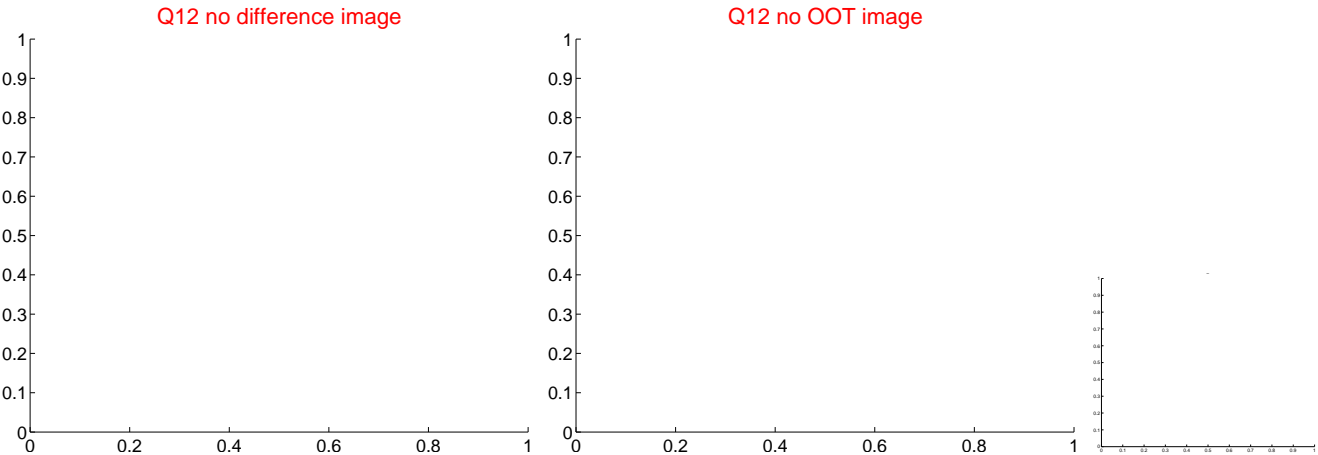
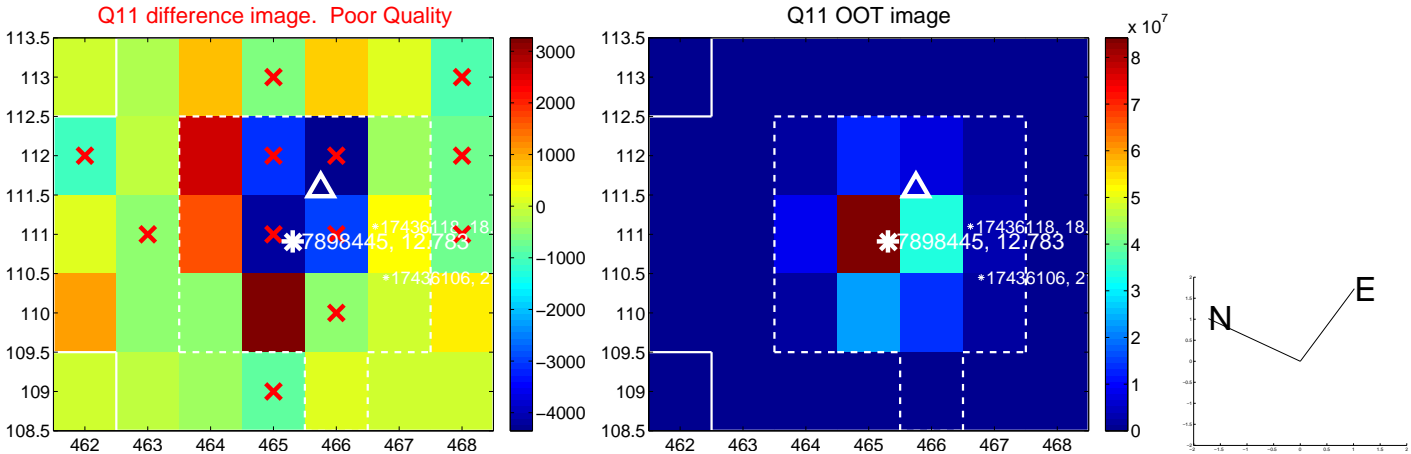
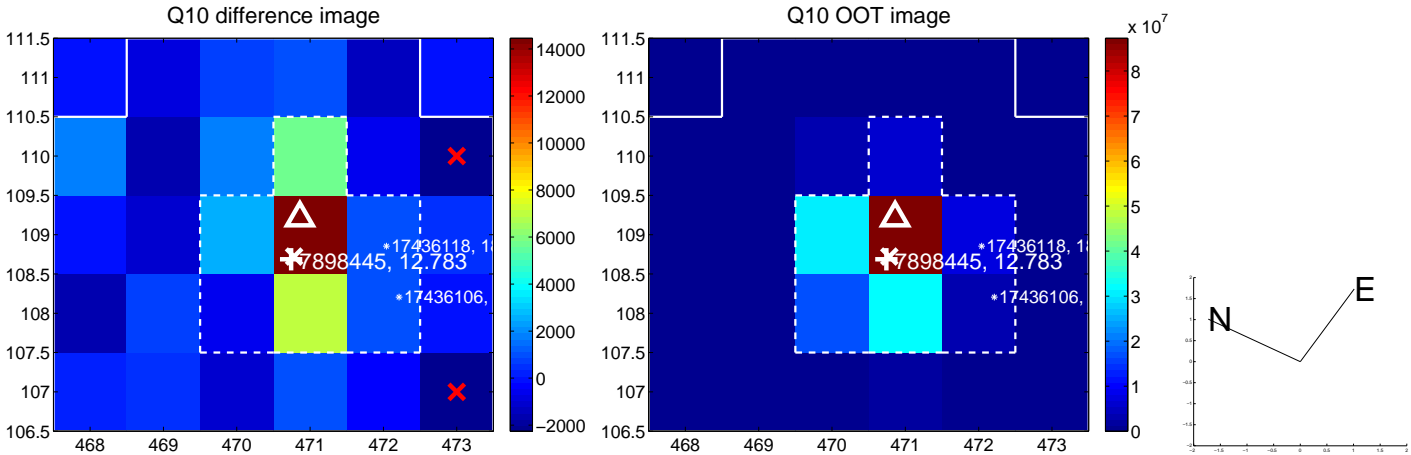
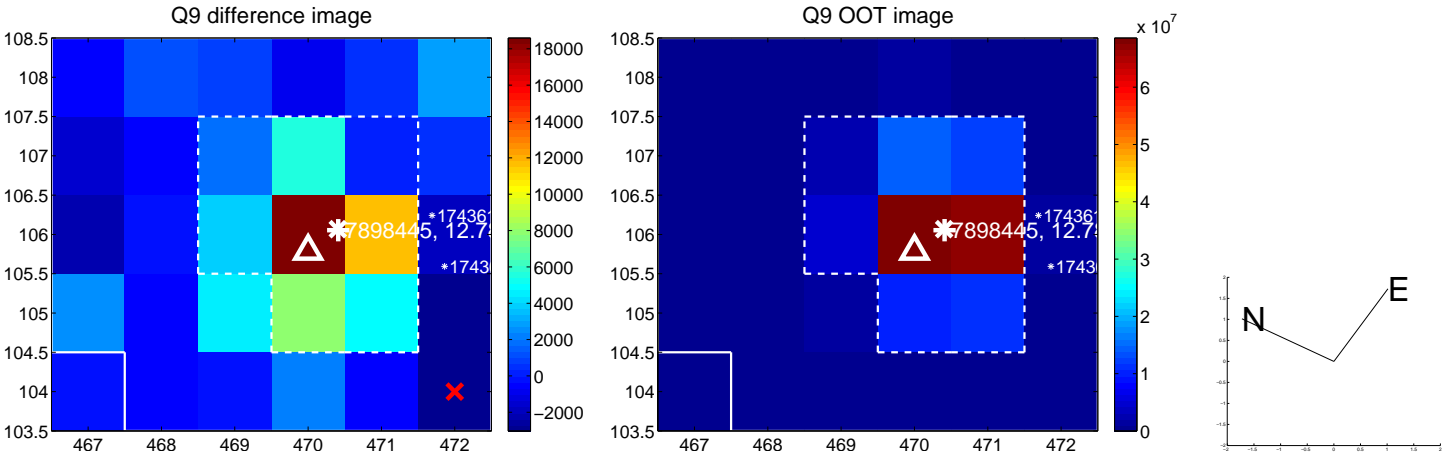
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



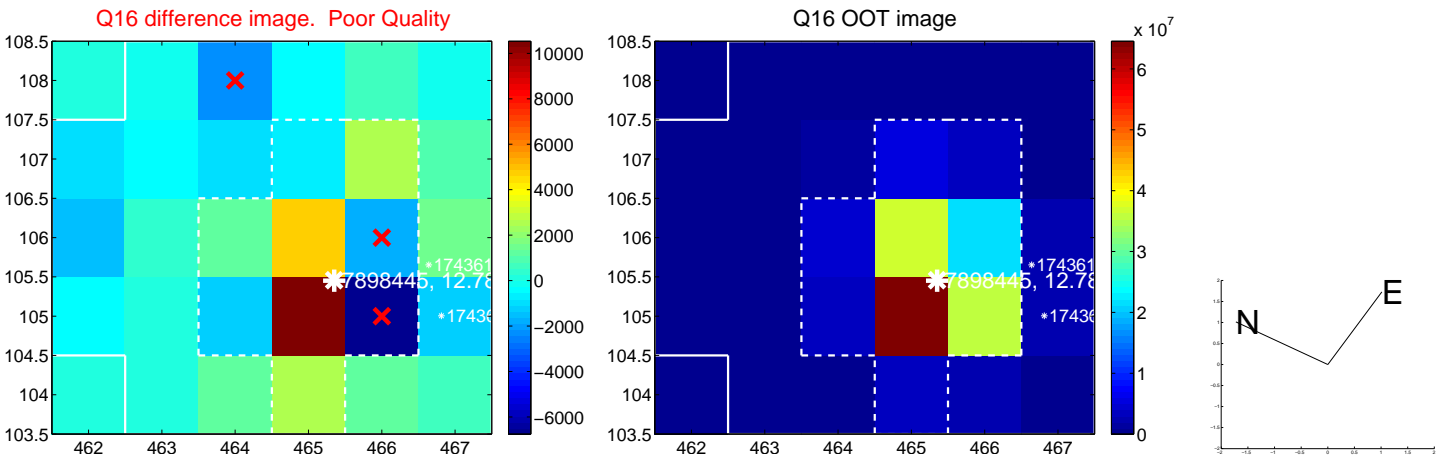
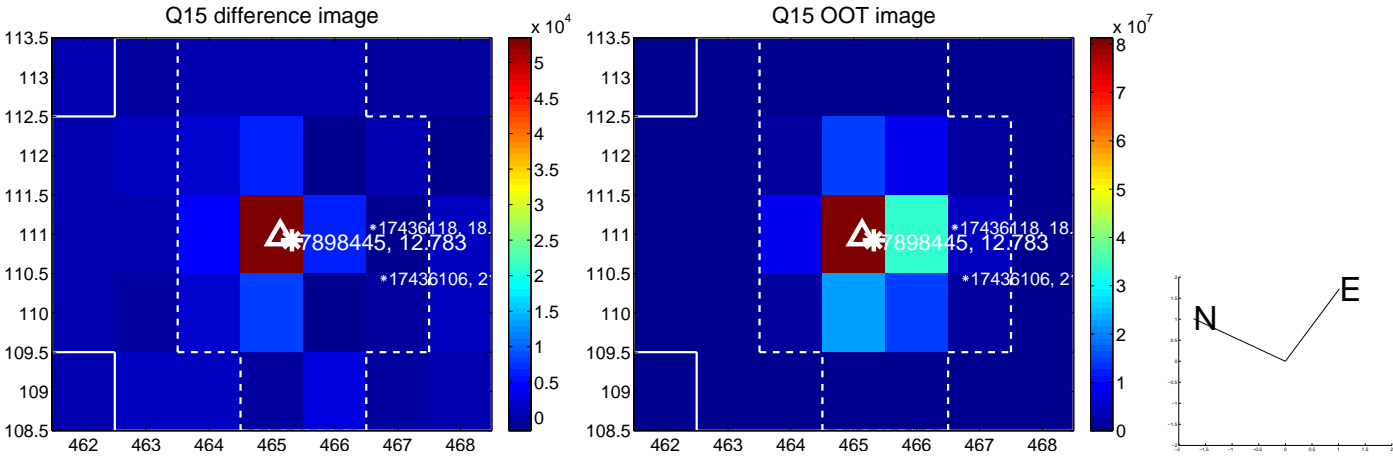
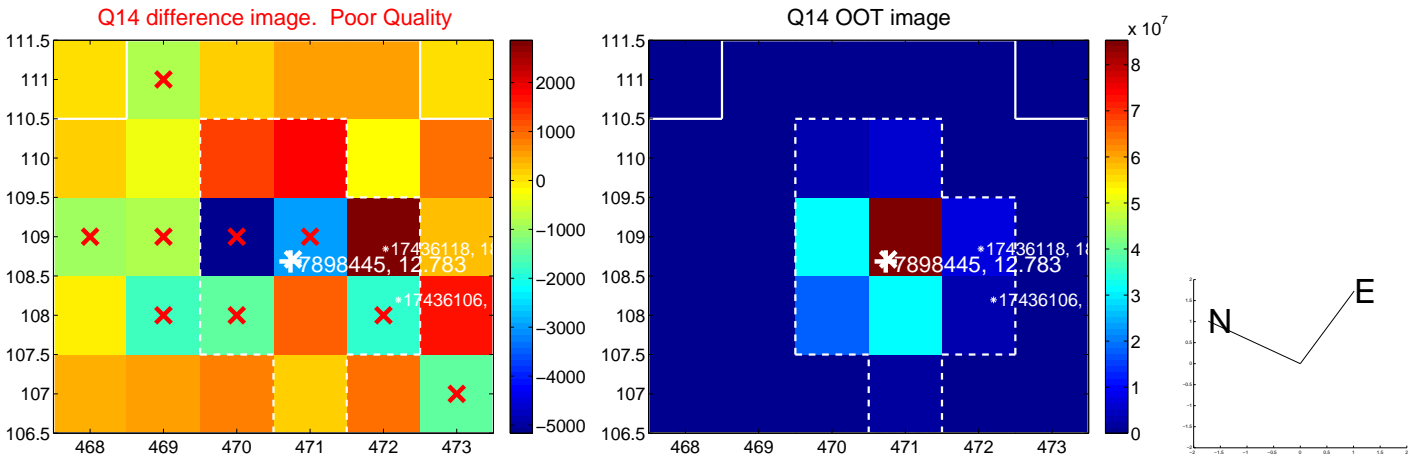
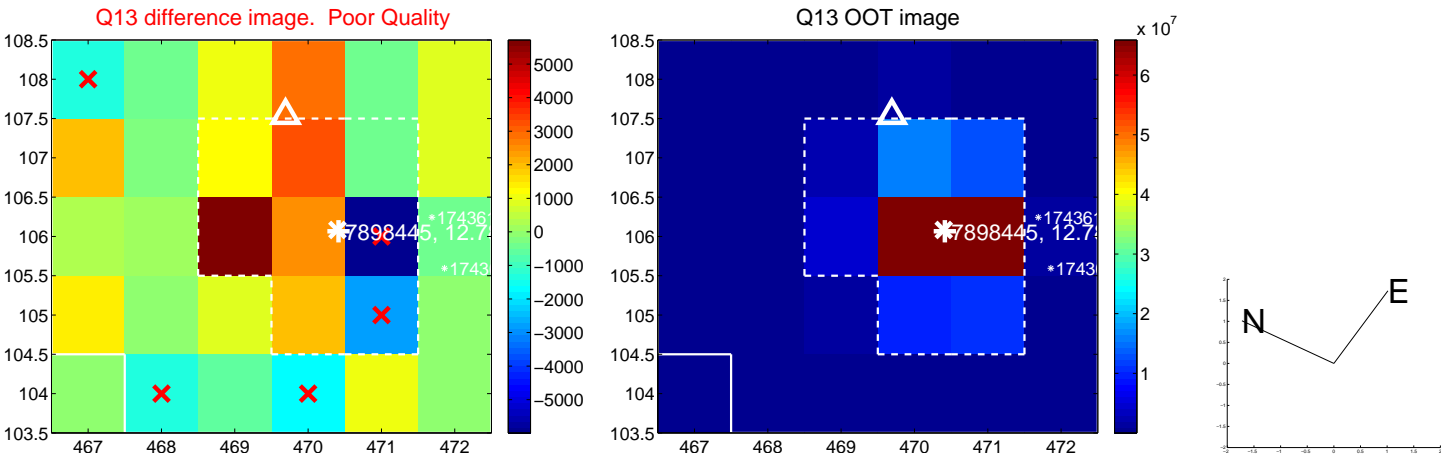
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



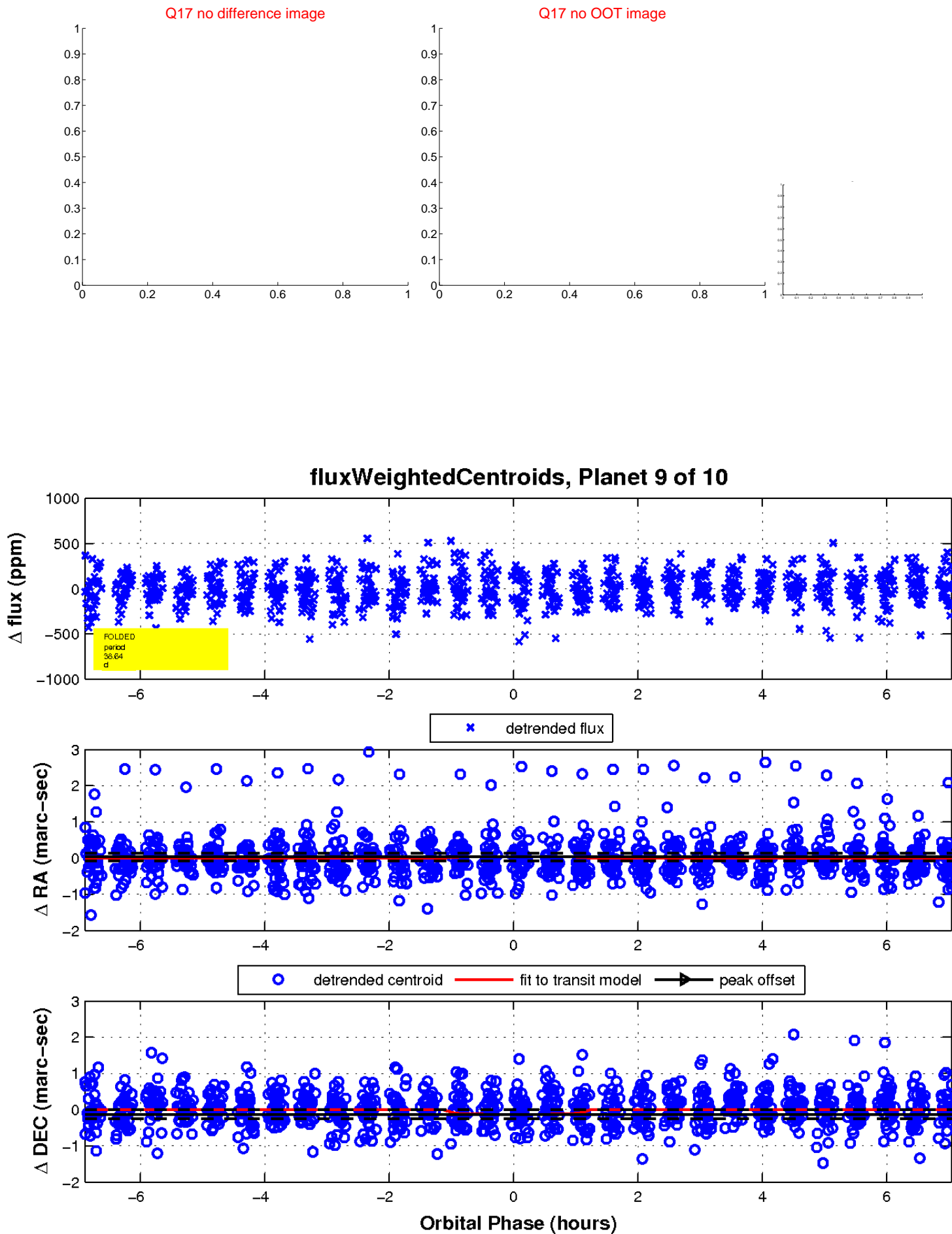
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

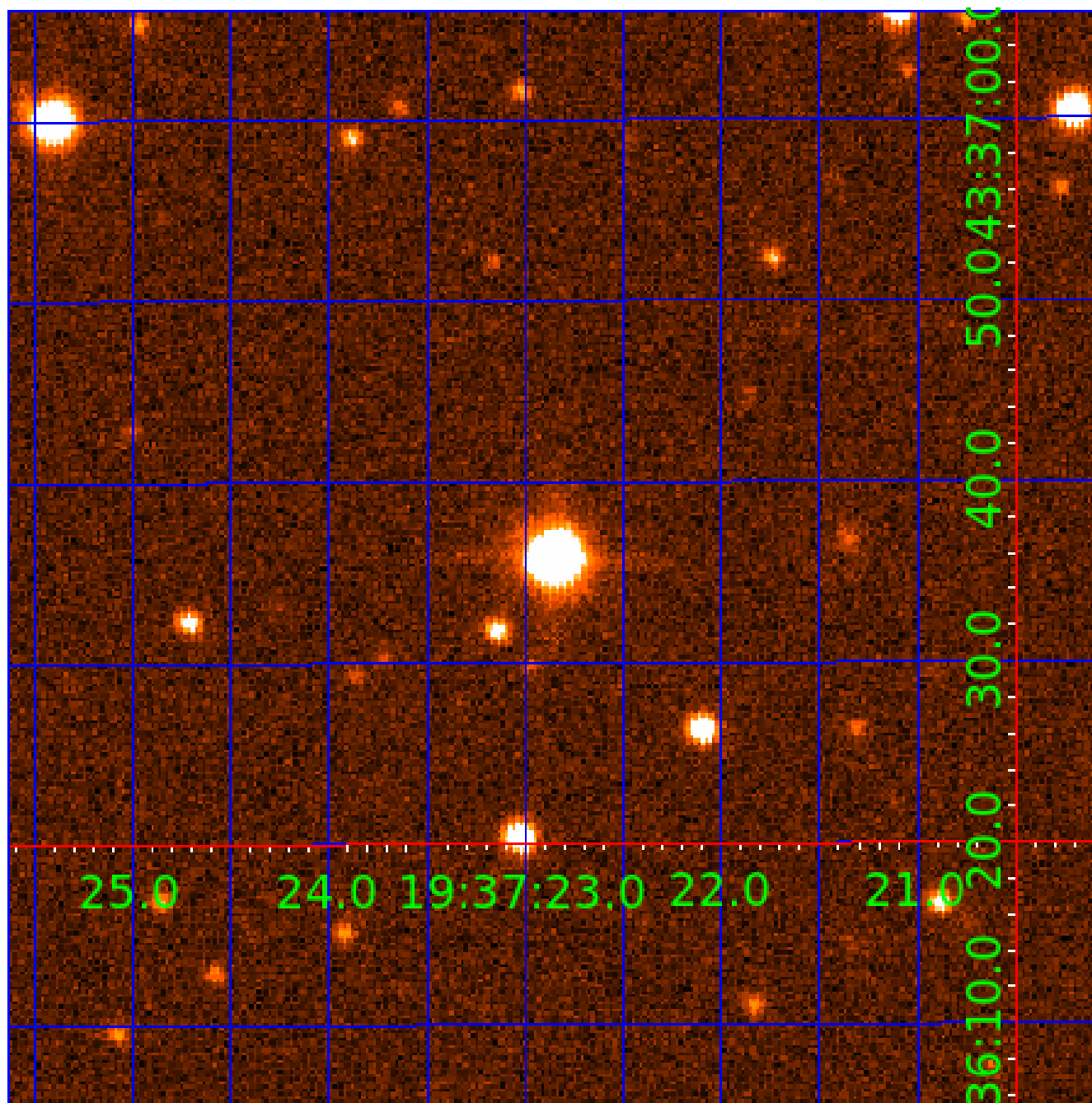


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007898445

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})
007898445-01	OBS	No	1.069082	131.906515	6.8	7.401	8.4	3.3	4.00	6829	1.09	48808.23
007898445-02	OBS	No	15.563746	142.181776	173.3	2.196	11.9	11.0	4.00	6829	6.32	1373.06
007898445-03	OBS	No	27.837078	159.230007	249.1	2.384	10.8	11.5	4.00	6829	7.54	632.42
007898445-04	OBS	No	15.602907	138.574082	217.0	2.151	11.3	14.1	4.00	6829	6.02	1368.46
007898445-05	OBS	No	40.337428	153.856479	221.4	3.515	10.8	9.6	4.00	6829	6.72	385.68
007898445-06	OBS	No	25.061369	149.791280	168.9	5.188	10.1	10.5	4.00	6829	6.00	727.50
007898445-07	OBS	No	23.658130	154.154607	248.0	1.687	11.4	10.3	4.00	6829	7.35	785.60
007898445-08	OBS	No	34.821433	136.400865	206.1	2.982	10.3	10.4	4.00	6829	6.49	469.22
007898445-09	OBS	No	38.639688	156.422613	256.9	2.349	9.6	10.4	4.00	6829	7.27	408.44
007898445-10	OBS	No	11.055987	140.808106	166.8	2.261	11.2	11.3	4.00	6829	5.95	2166.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007898445-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007898445-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
007898445-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007898445-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN

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

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

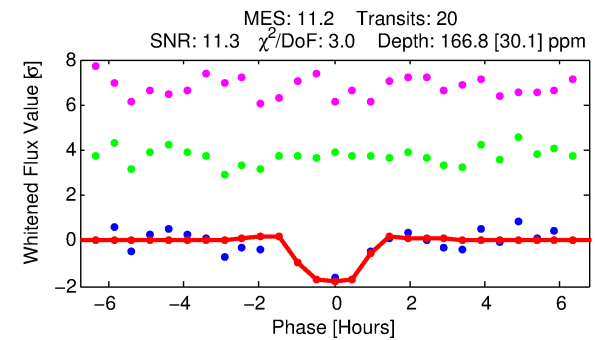
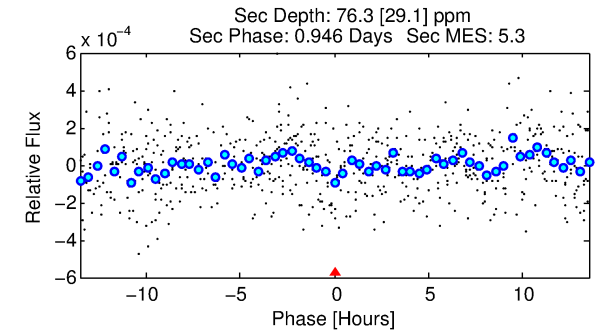
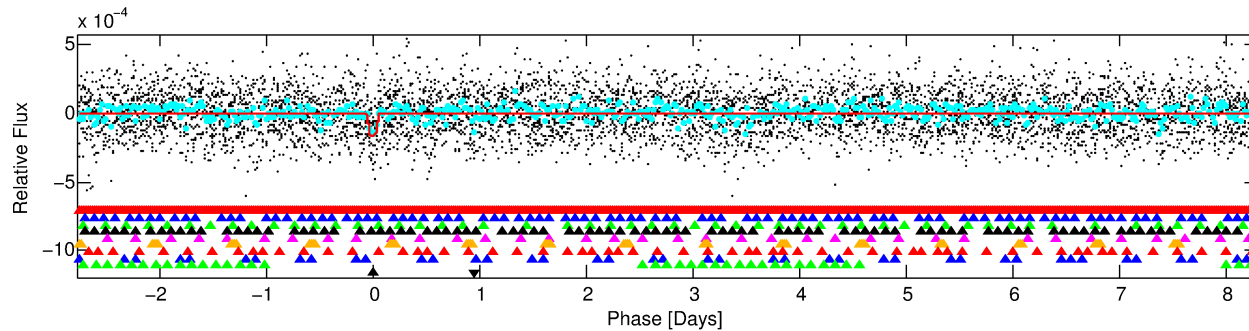
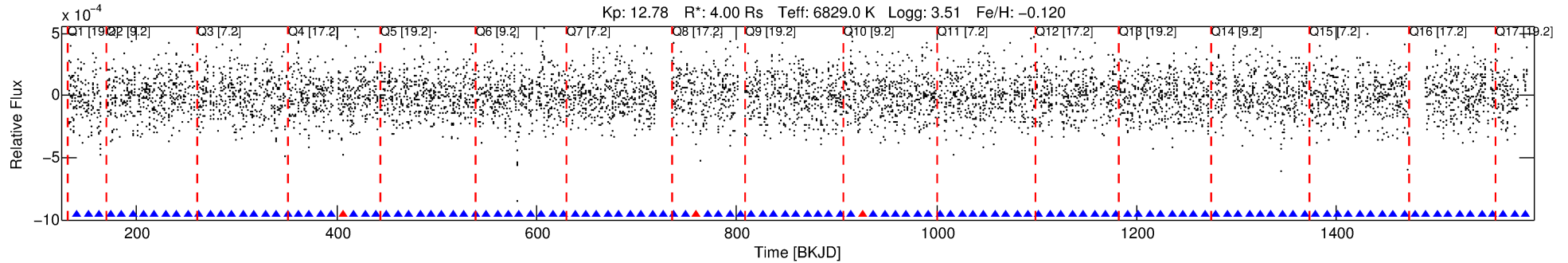
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007898445-10

No Significant Match Found

DV One-Page Summary

KIC: 7898445 Candidate: 10 of 10 Period: 11.056 d

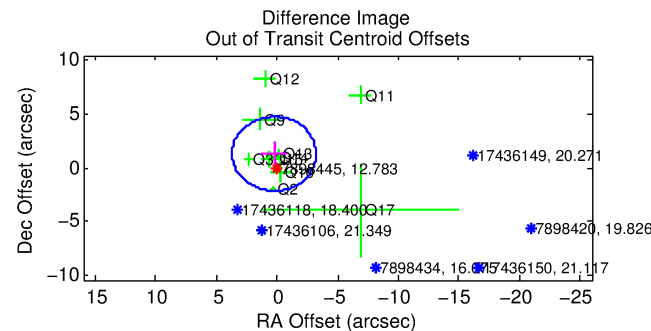
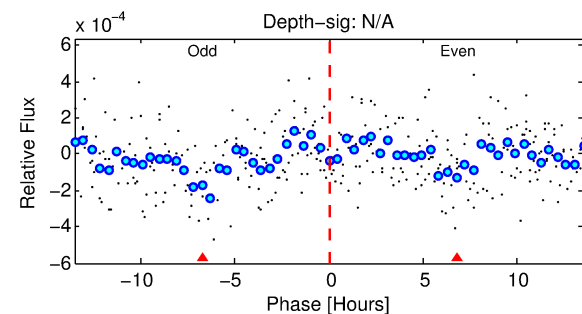
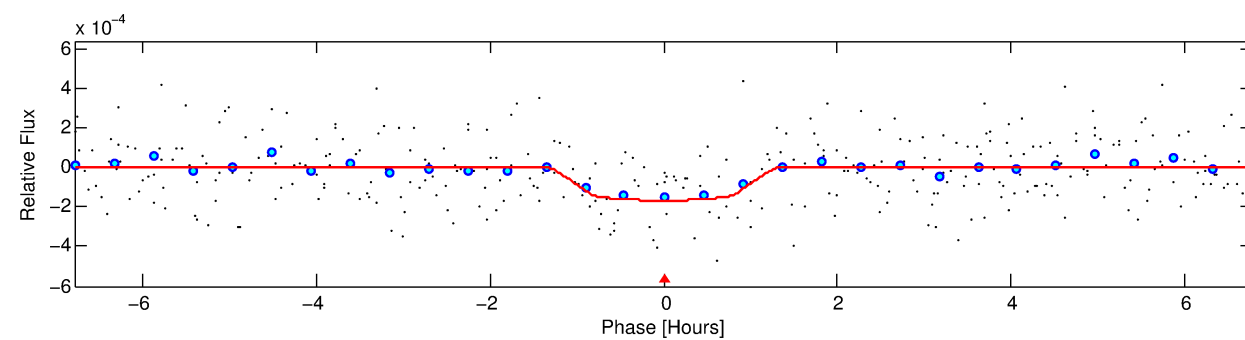


DV Fit Results:

Period = 11.05599 [0.00013] d
Epoch = 140.8081 [0.0092] BKJD
Rp/R* = 0.0136 [0.0137]
a/R* = 18.63 [112.35]
b = 0.88 [1.54]
Seff = 2166.26 [1296.27]
Teq = 1740 [260] K
Rp = 5.95 [6.40] Re
a = 0.1200 [0.0435] AU
Ag = 17.11 [36.53] [0.44σ]
Teffp = 5470 [2815] K [1.32σ]

DV Diagnostic Results:

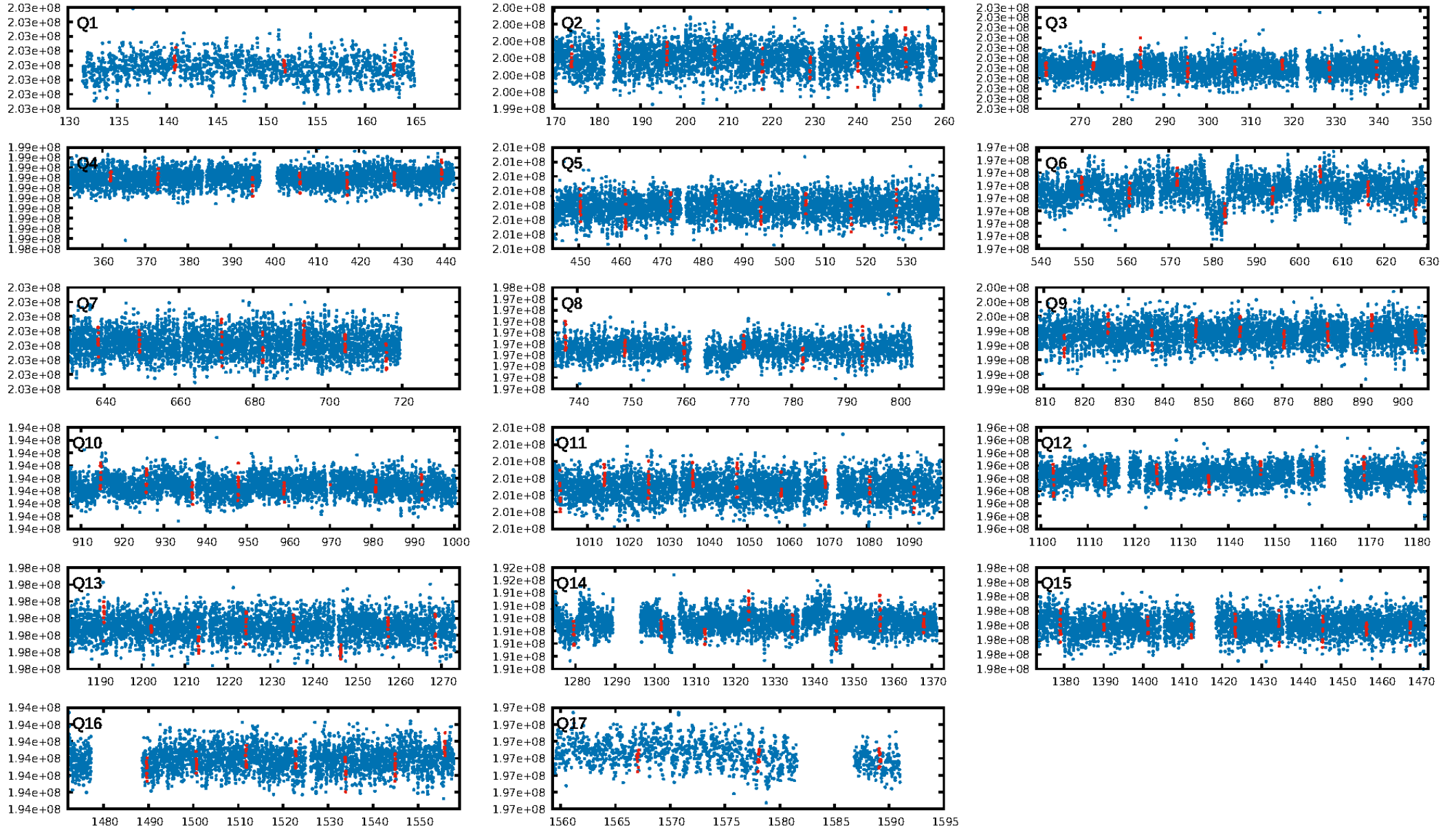
ShortPeriod-sig: 100.0% [30.97σ]
LongPeriod-sig: 100.0% [34.33σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 37.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.85 [17/20]
GhostDiagnostic-chr: 4.291
Centroid-sig: 35.5%
Centroid-so: 0.371 arcsec [1.01σ]
OotOffset-rm: 1.312 arcsec [1.14σ]
OotOffset-st: 3/3/1/3 [10]
KicOffset-rm: 1.213 arcsec [1.04σ]
KicOffset-st: 3/3/1/3 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.65 [11/17]



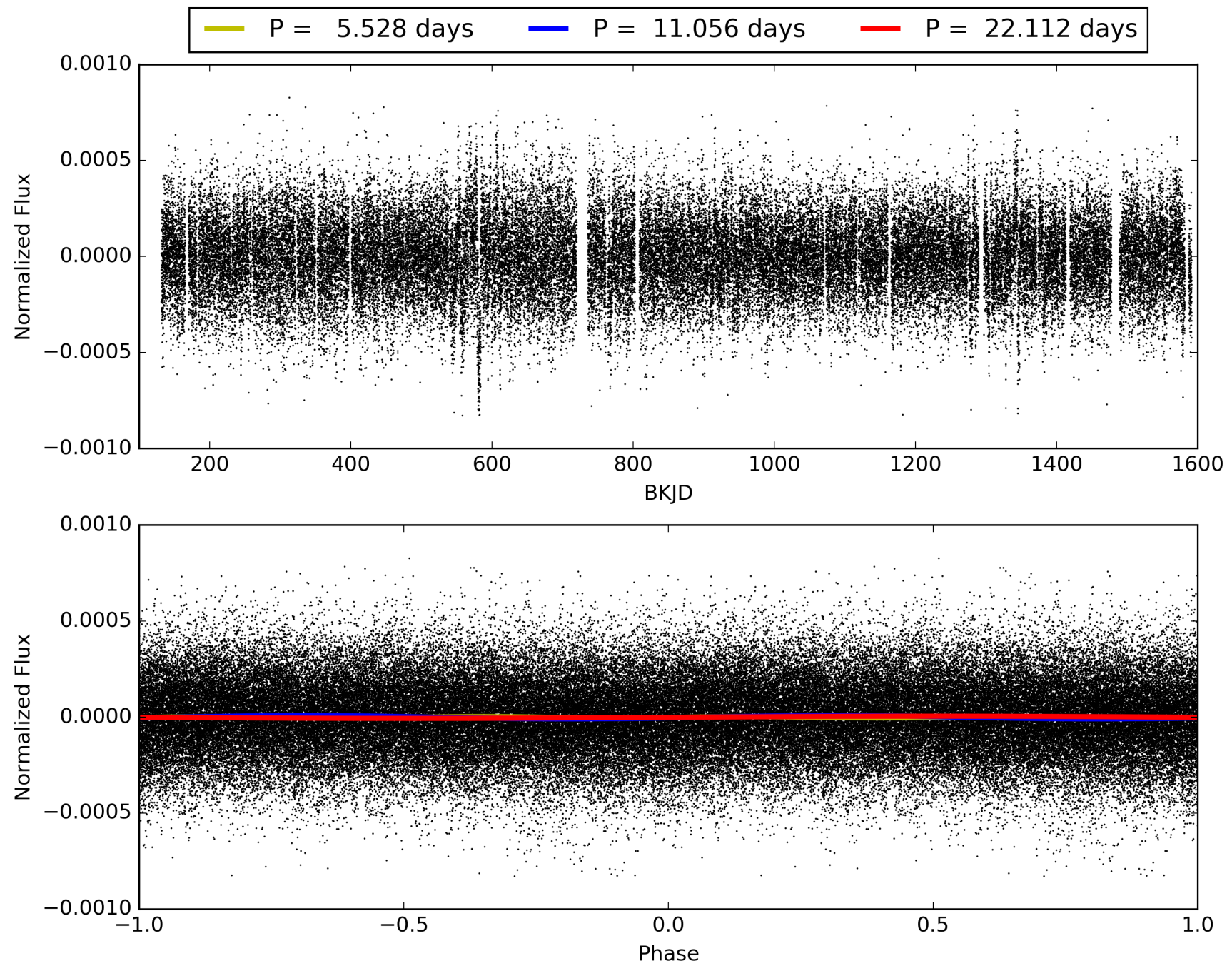
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:38:25 Z

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

TCE 007898445-10, PDC Light Curves

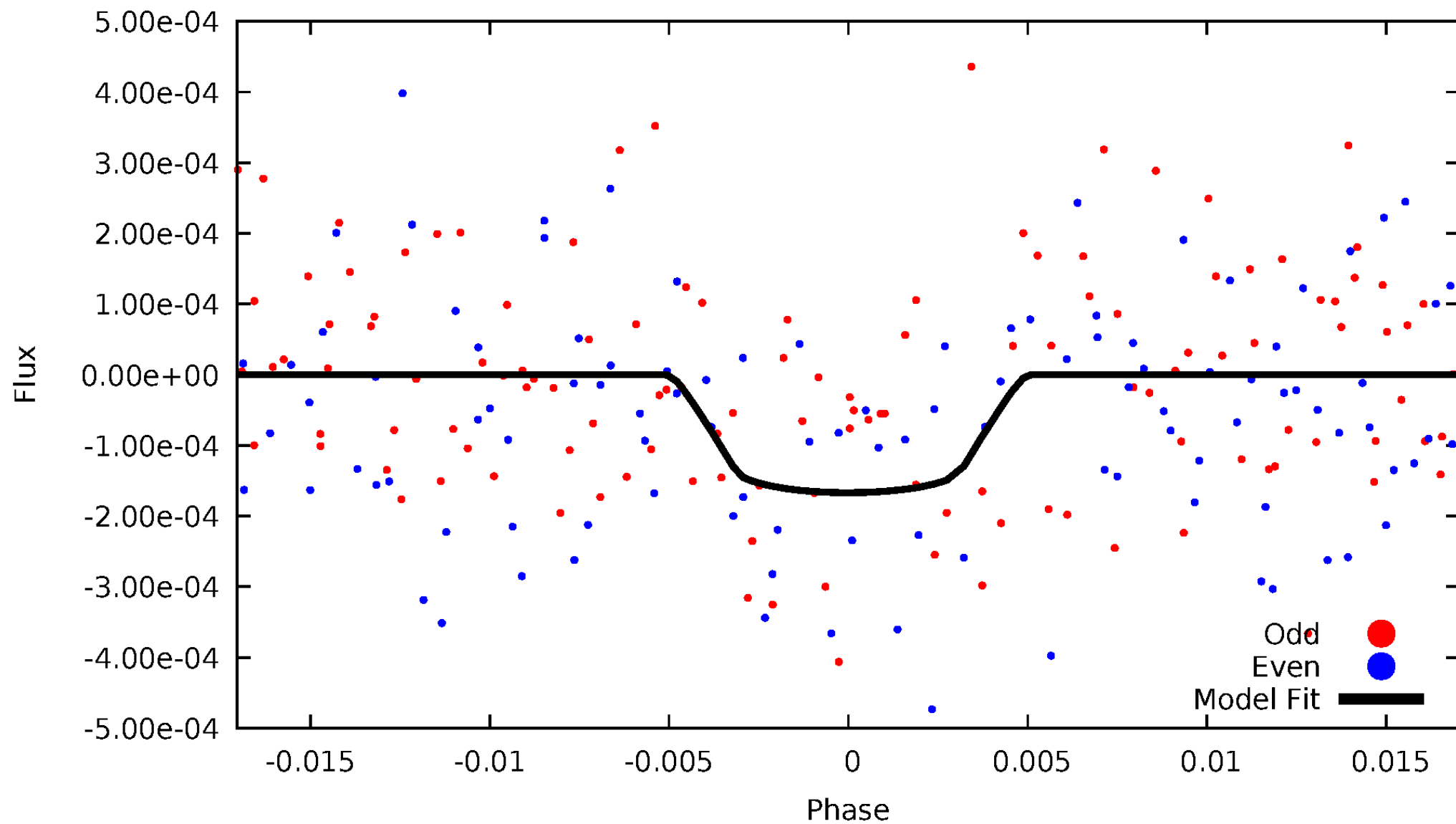


TCE 007898445-10



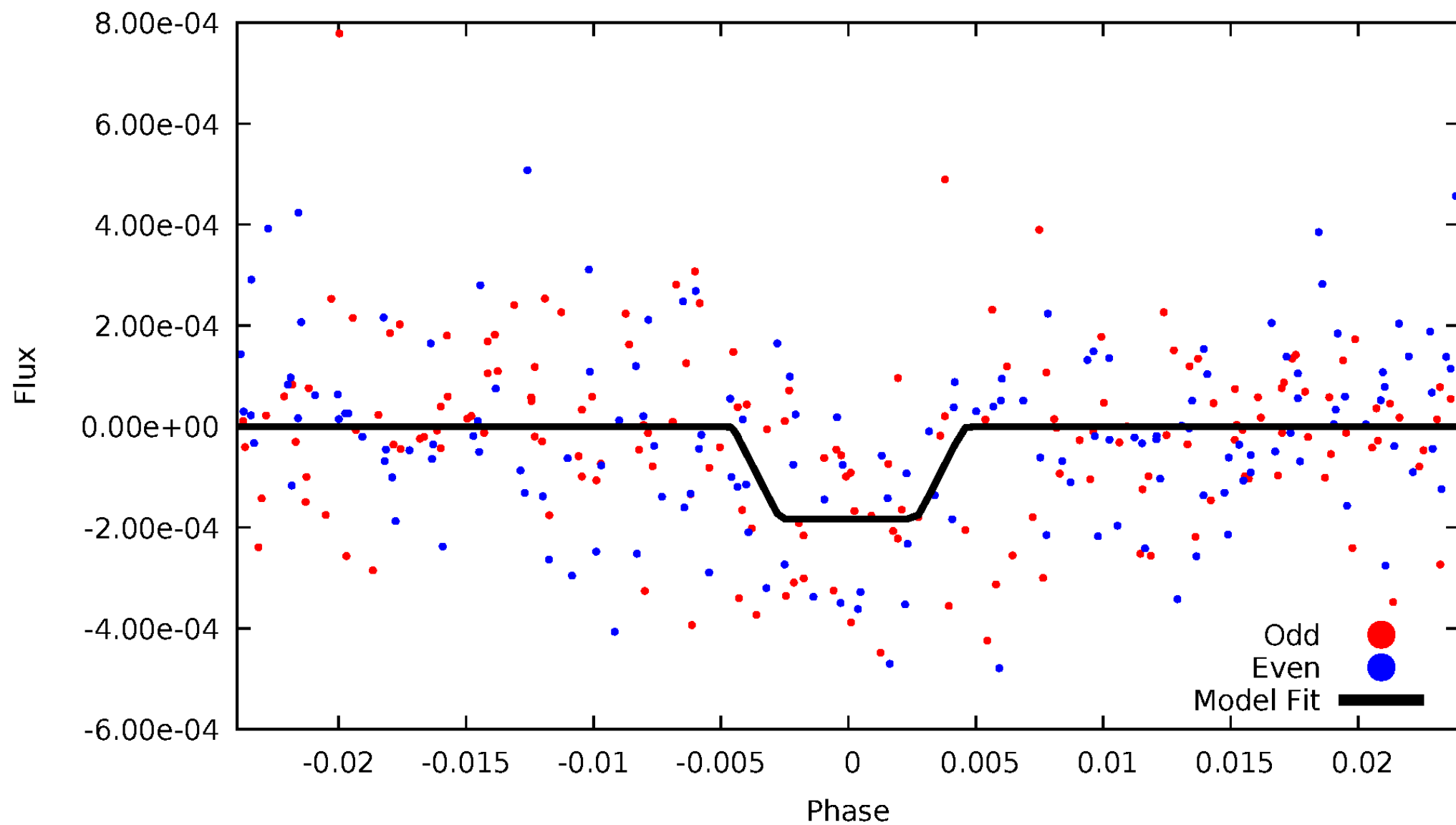
DV Odd/Even

TCE 007898445-10



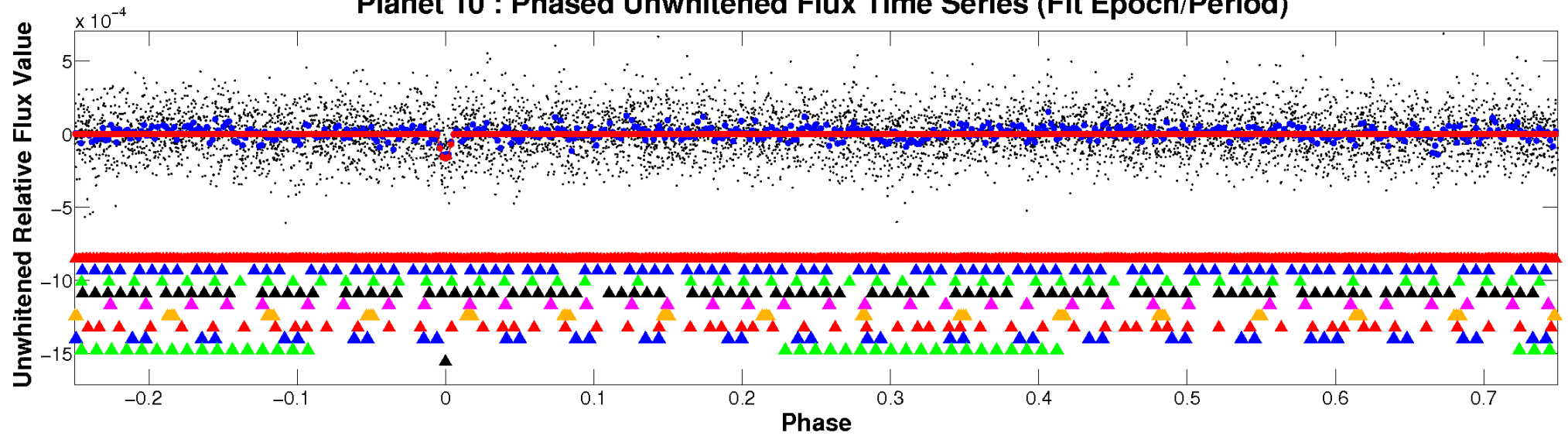
ALT Odd/Even

TCE 007898445-10

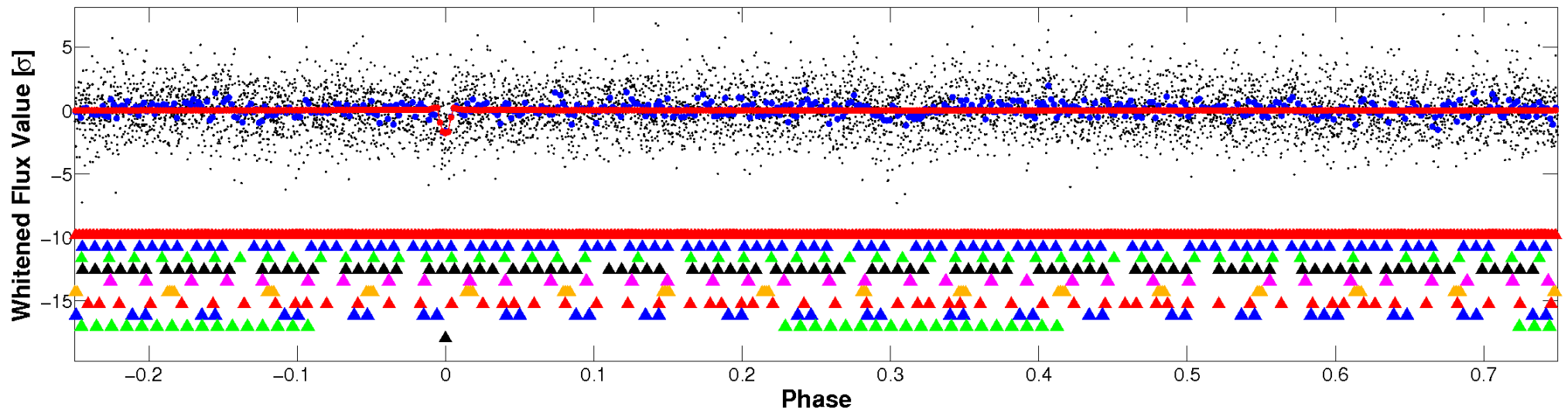


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

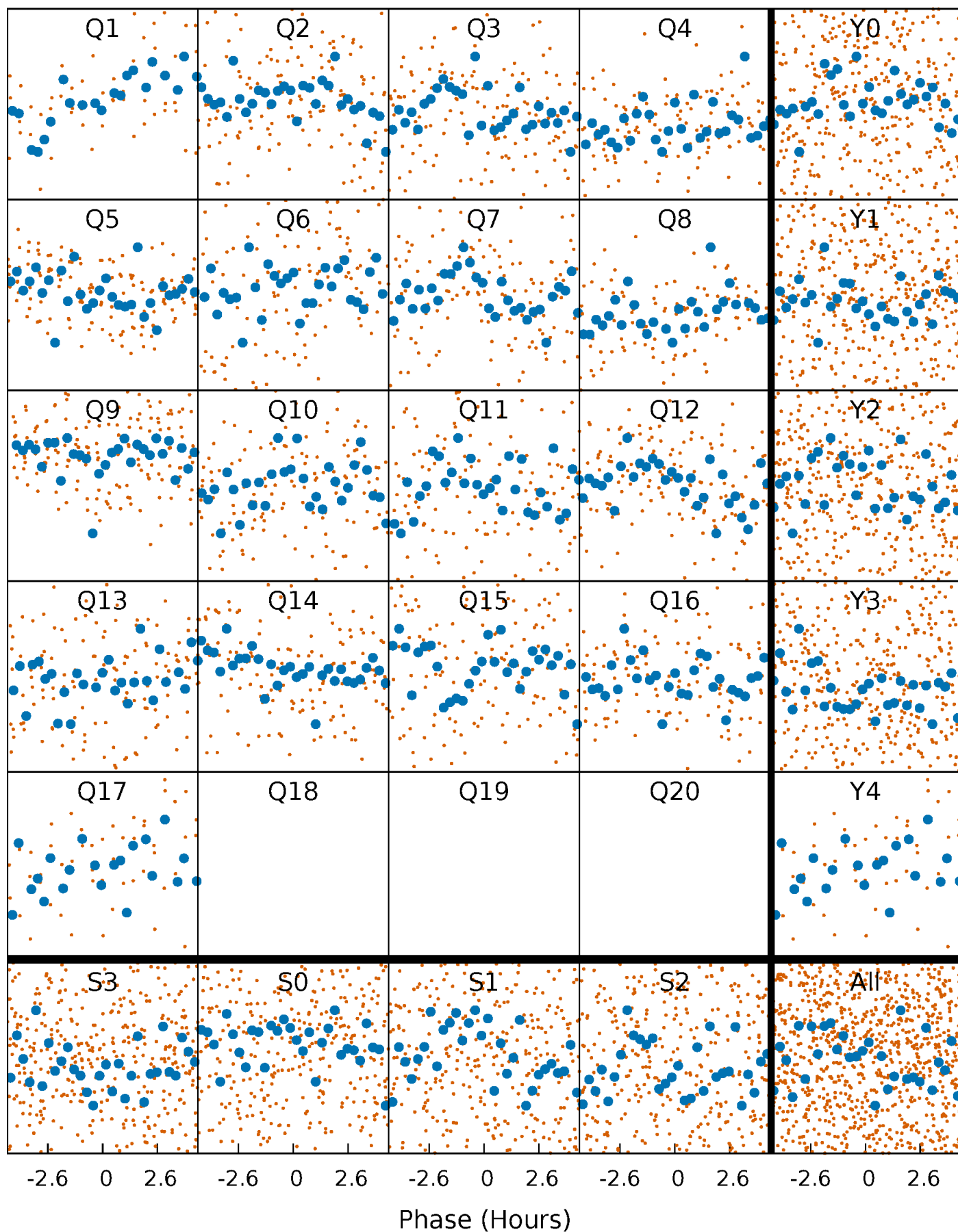


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



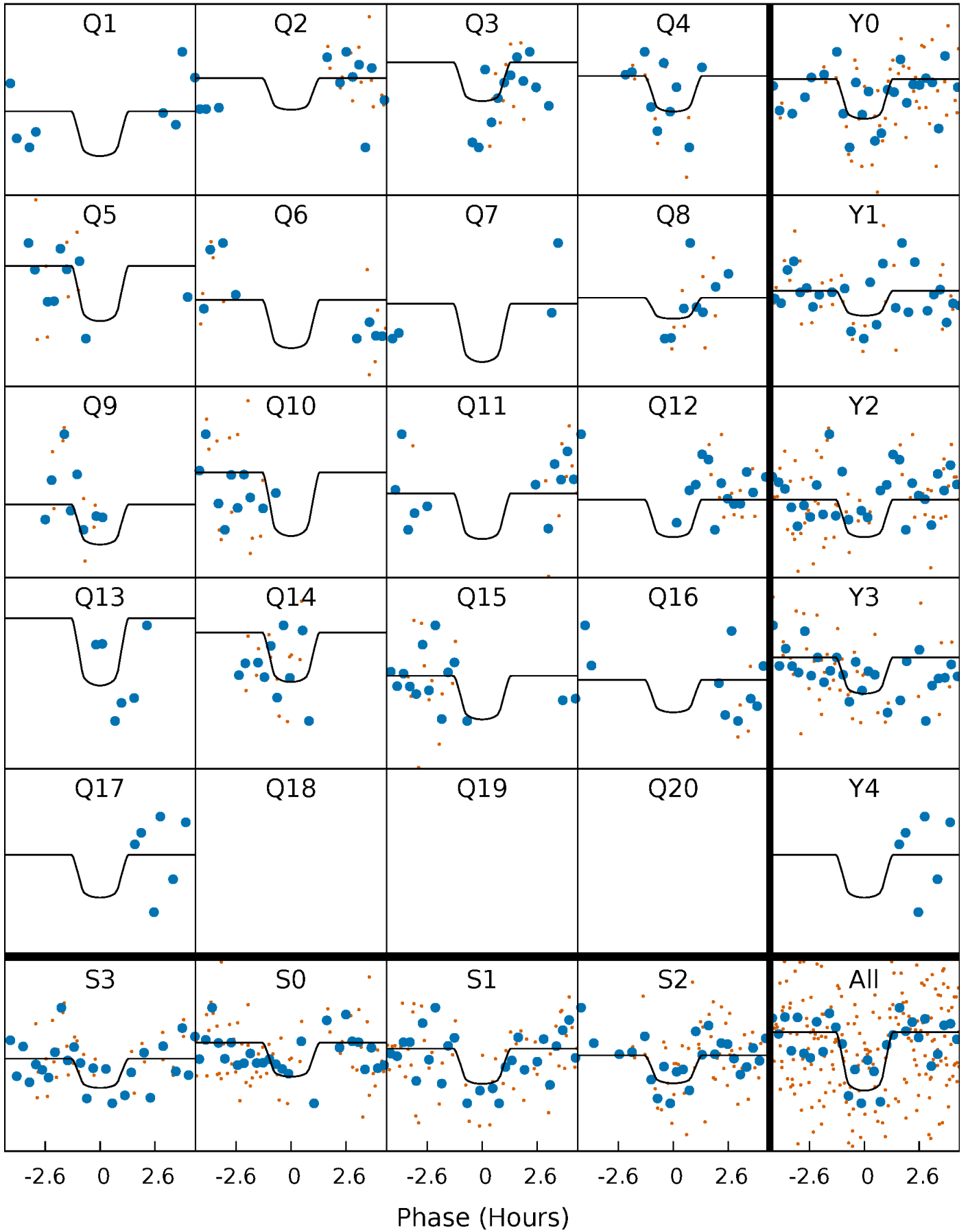
PDC Quarter-Phased Transit Curves

TCE 007898445-10 P= 11.055987 Days $T_0=140.808106$ (BKJD)



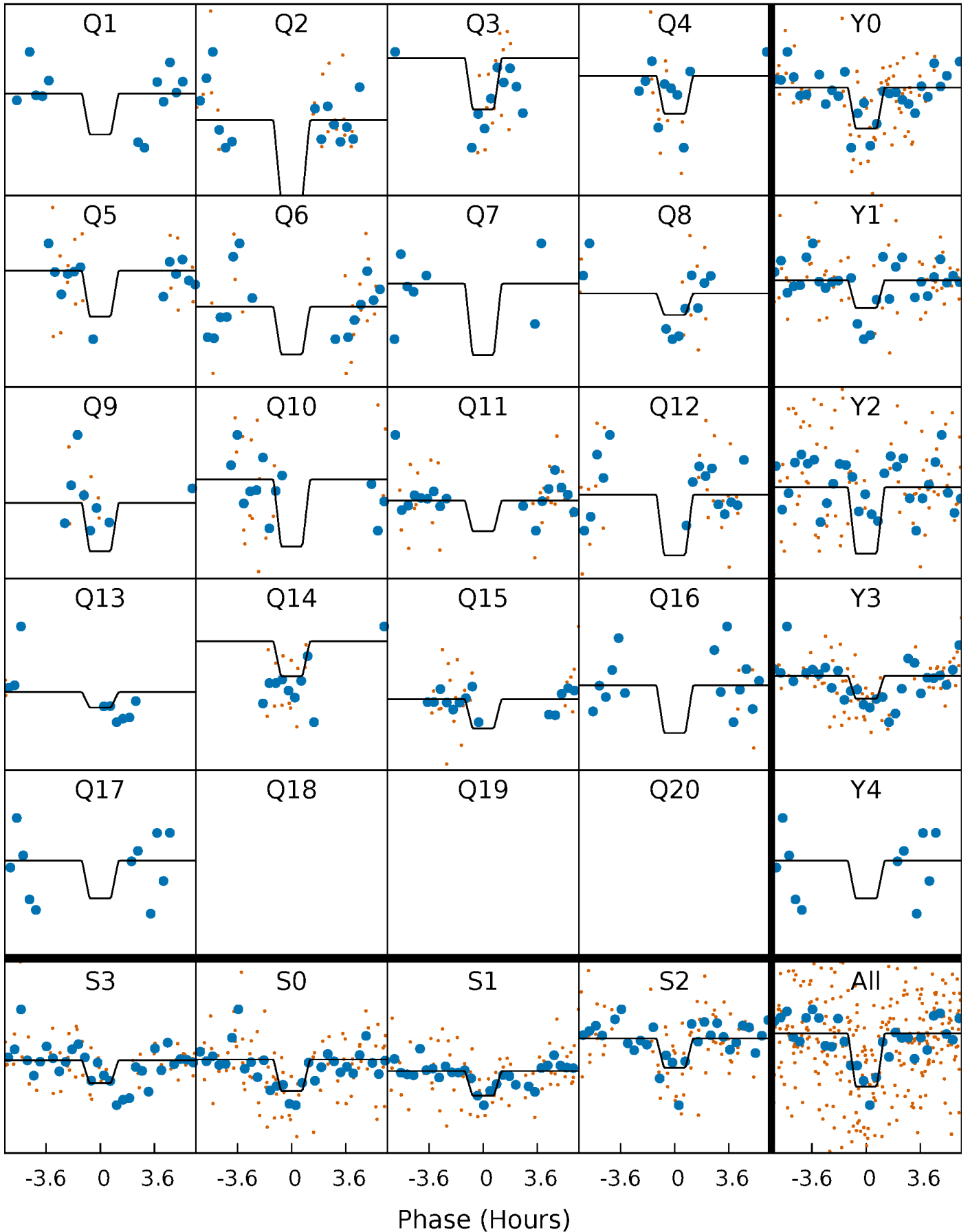
DV Quarter-Phased Transit Curves

TCE 007898445-10 P= 11.055987 Days $T_0=140.808106$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

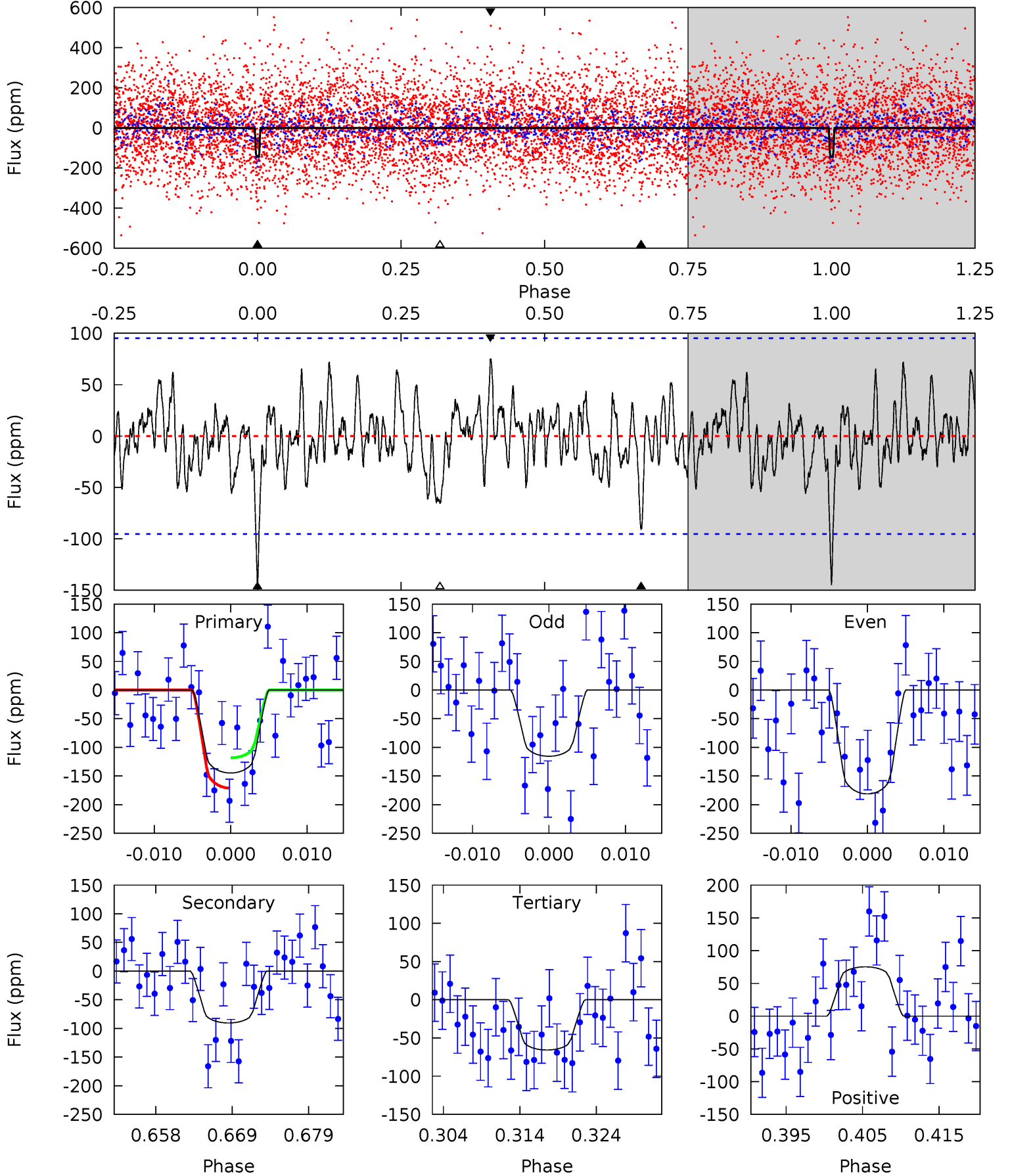
TCE 007898445-10 P= 11.055647 Days $T_0=140.824131$ (BKJD)



DV Model-Shift Uniqueness Test

007898445-10, P = 11.055987 Days, E = 129.752119 Days

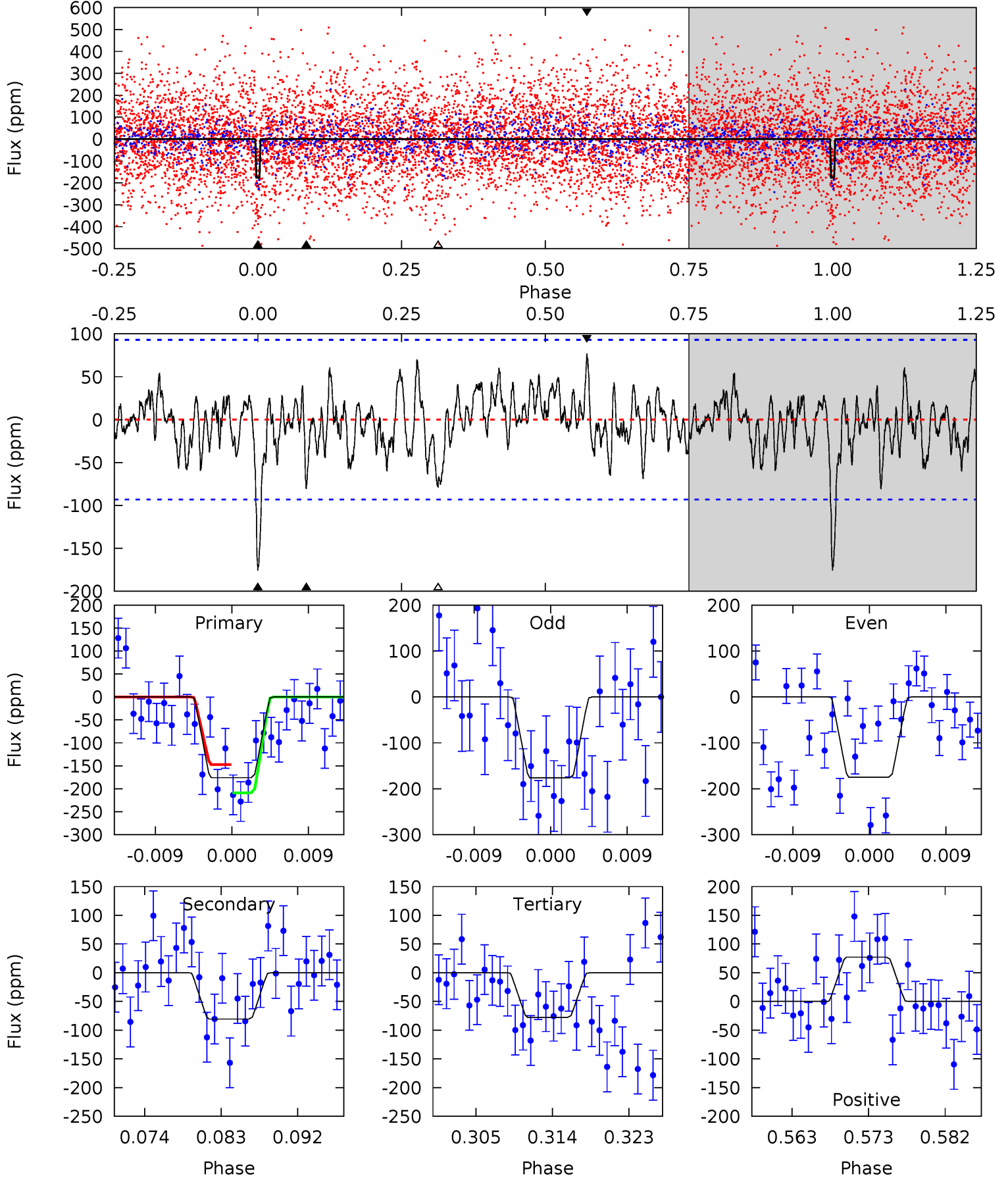
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.64	4.77	3.47	3.97	5.02	2.57	1.35	4.17	3.67	1.30	0.80	1.74	1.03	0.34	1.40



Alt Model-Shift Uniqueness Test

007898445-10, P = 11.055647 Days, E = 129.768484 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.52	4.37	4.22	4.18	5.04	2.60	1.43	5.30	5.34	0.16	0.19	0.04	0.98	0.31	1.65



Stellar Parameters For KIC 007898445

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6829^{+184}_{-225}	$3.509^{+0.344}_{-0.086}$	$-0.120^{+0.300}_{-0.250}$	$4.002^{+0.263}_{-1.493}$	$1.886^{+0.198}_{-0.367}$	$0.041^{+0.104}_{-0.011}$
	+3%/-3%	+10%/-2%	+250%/-208%	+7%/-37%	+10%/-19%	+251%/-27%
Source	PHO1	FLK73	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 007898445-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-90 ± 19	$7.02^{+5.30}_{-4.39}$	2404^{+108}_{-216}	5136^{+3239}_{-1097}	15^{+85}_{-10}
Alt.	-81 ± 18	$6.35^{+5.79}_{-3.95}$	2381^{+127}_{-207}	5040^{+3612}_{-1034}	15^{+100}_{-11}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

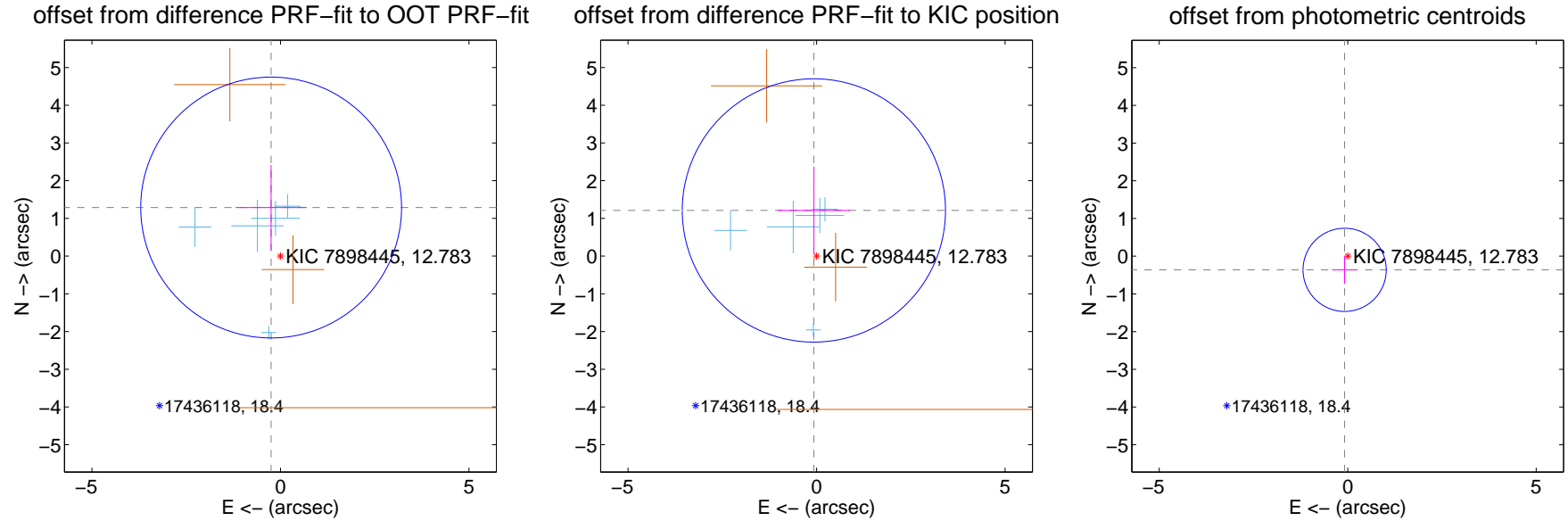
DV Centroid Data

Supplemental centroid analysis for 007898445-10. Kepler magnitude: 12.78. Transit SNR 11.35

There are 5 quarters with good PRF difference image offsets

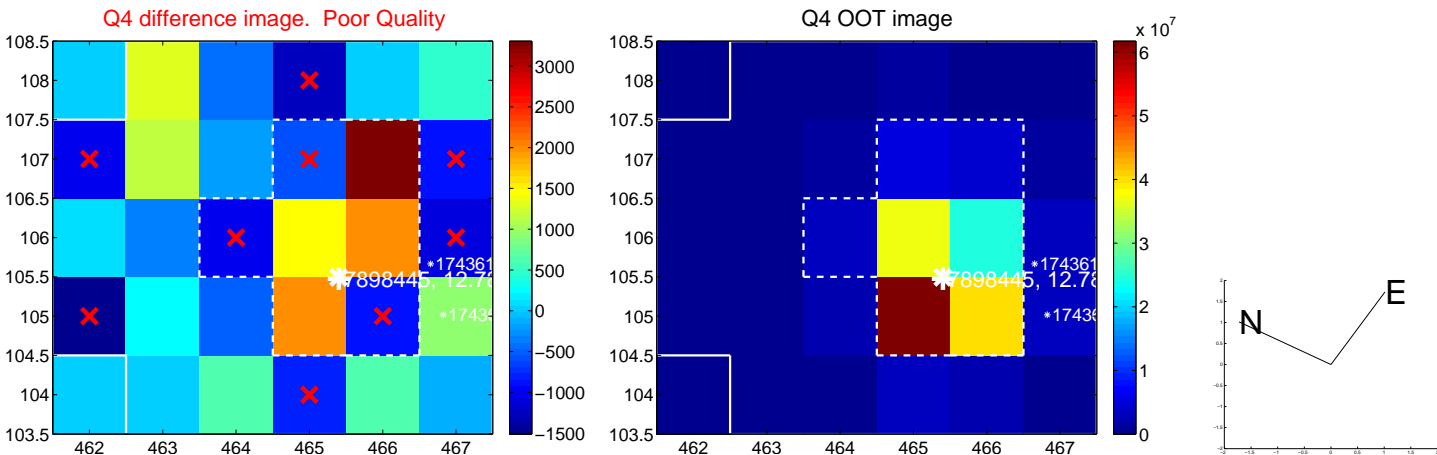
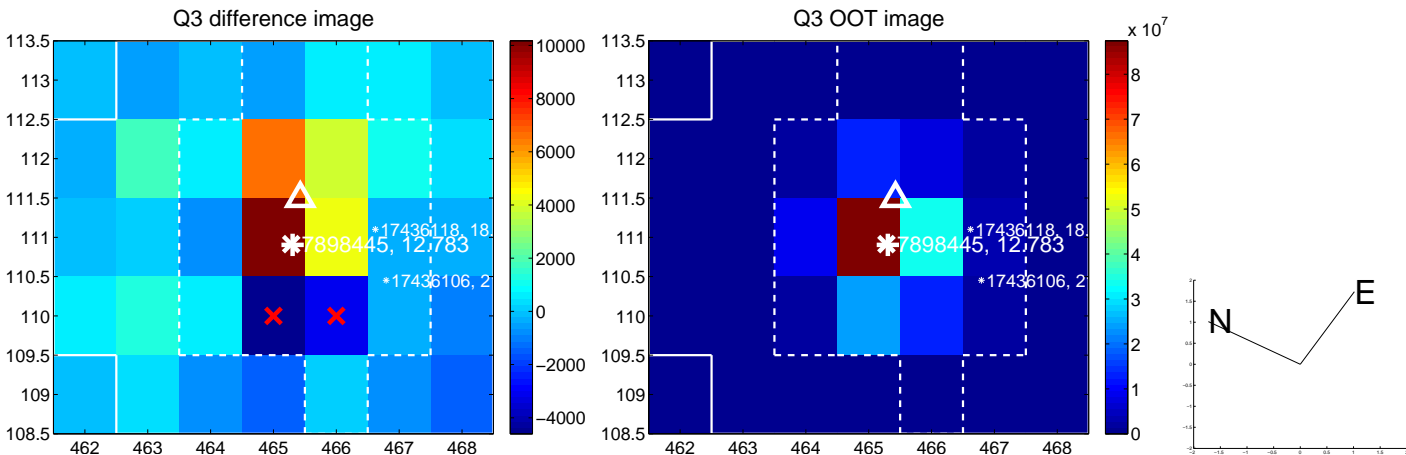
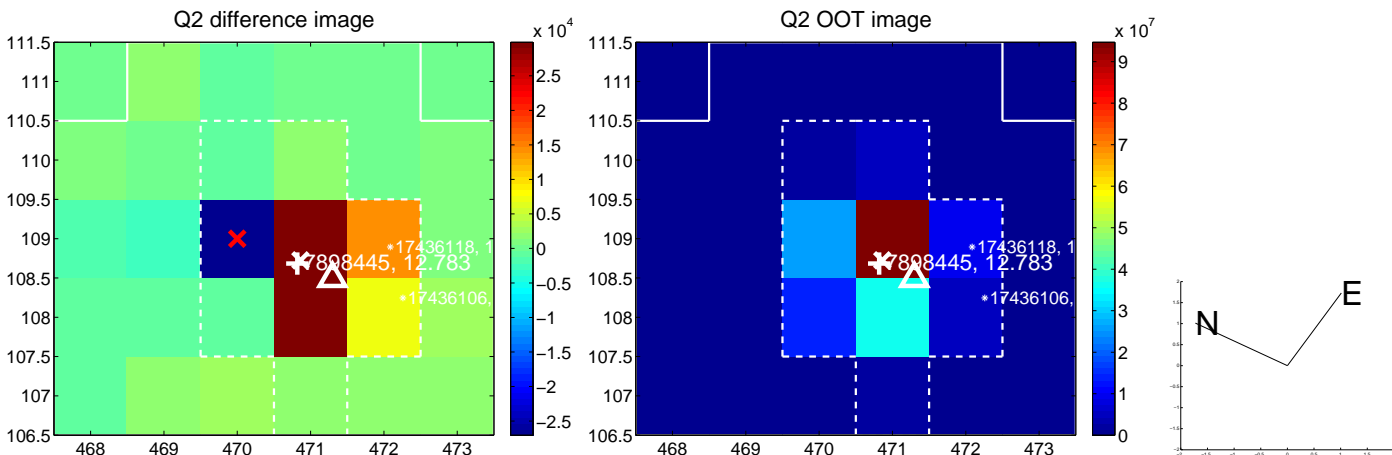
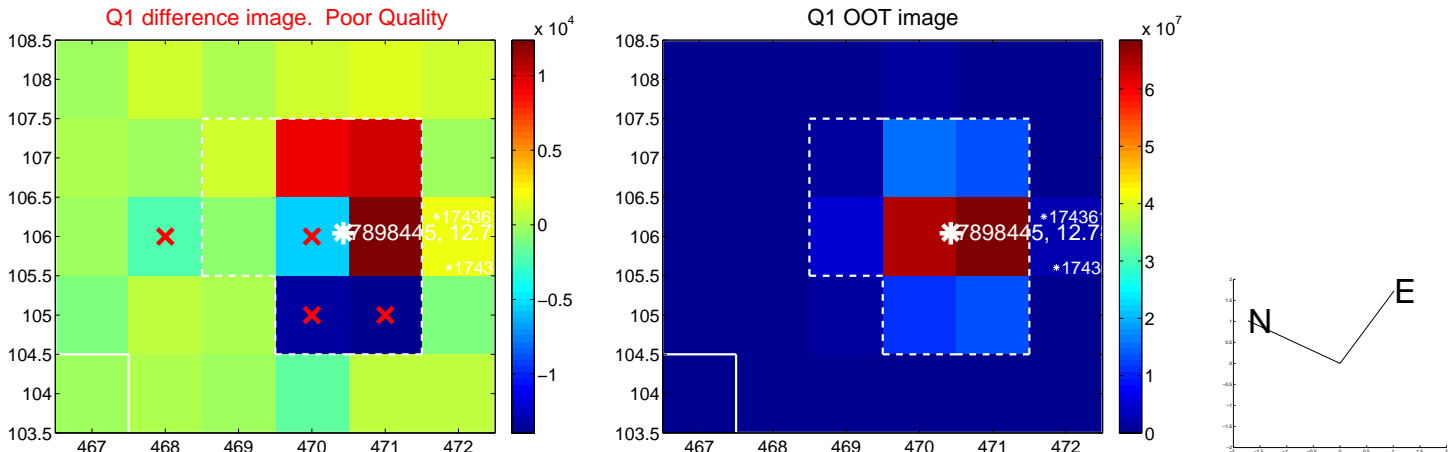
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.312 ± 1.153	1.14	0.247 ± 0.944	1.289 ± 1.130
PRF-fit source offset from KIC position	1.213 ± 1.163	1.04	0.071 ± 0.962	1.211 ± 1.162
photometric centroid source offset	0.37 ± 0.37	1.01	0.08 ± 0.33	-0.36 ± 0.37

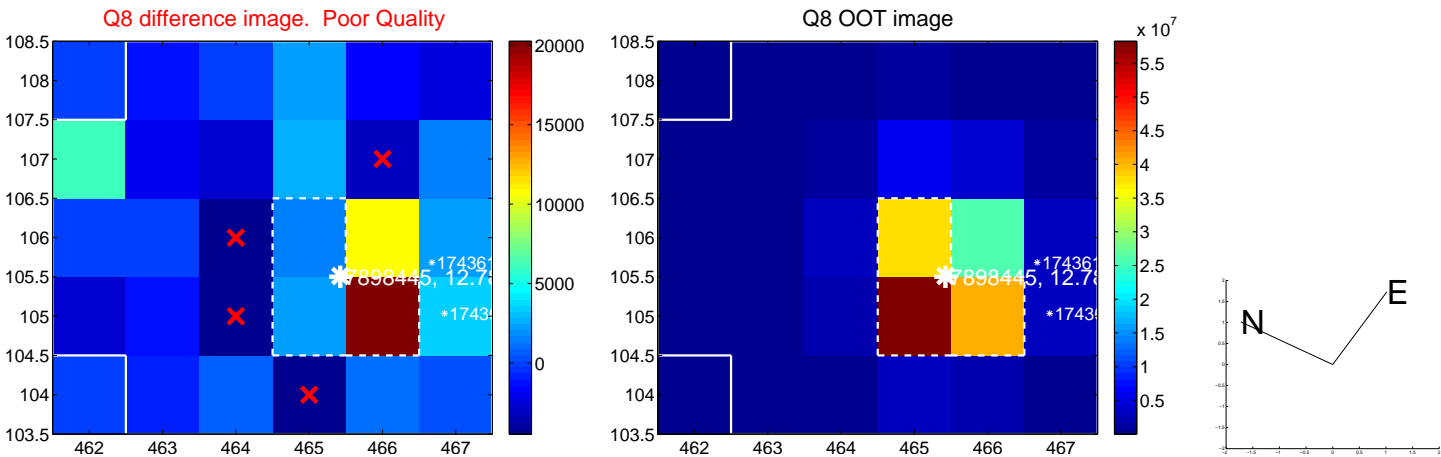
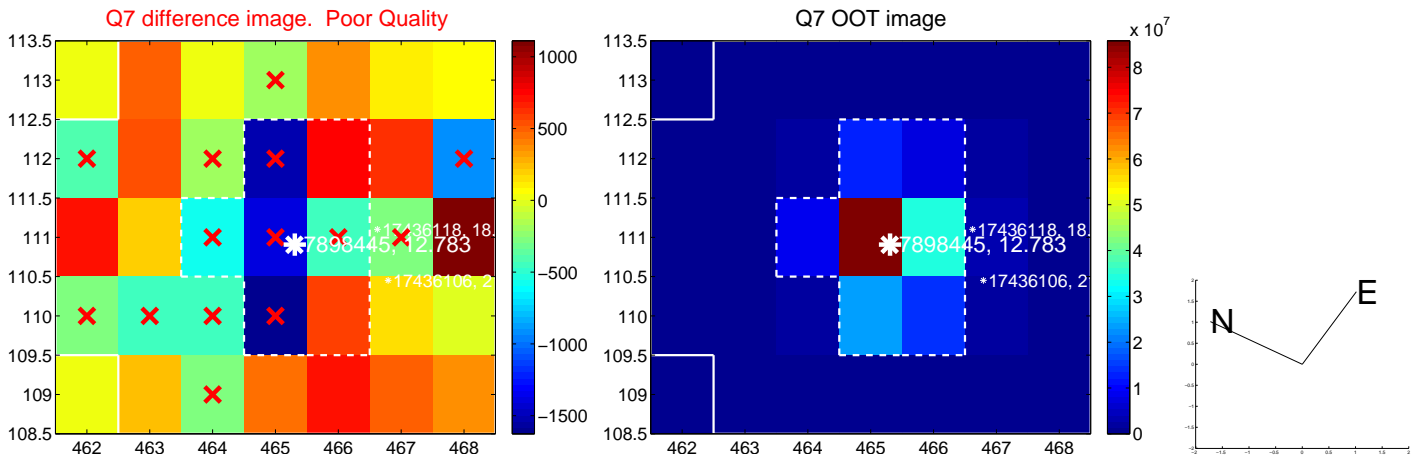
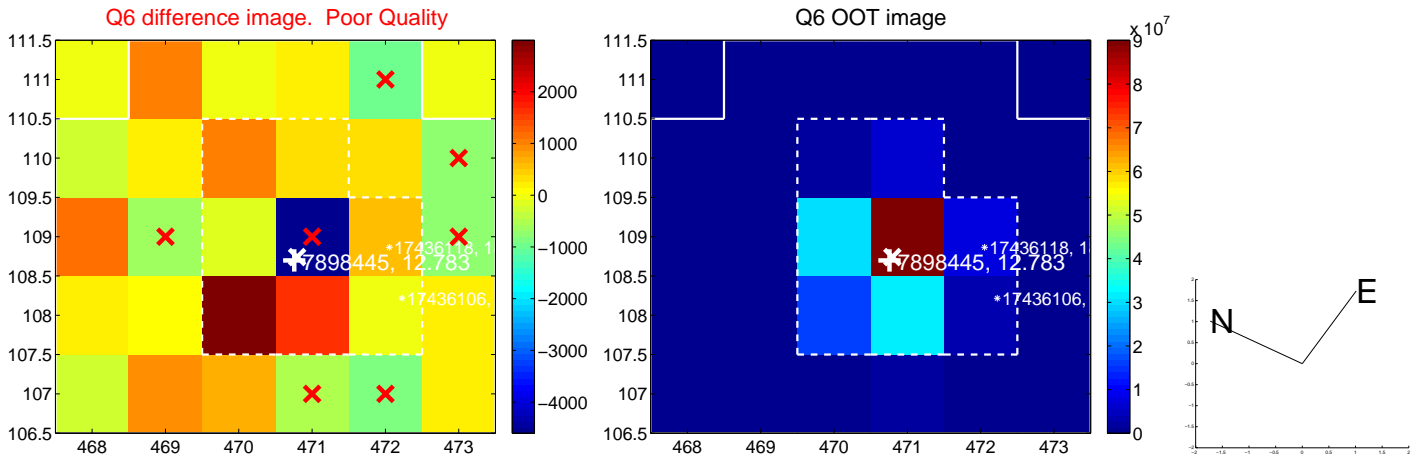
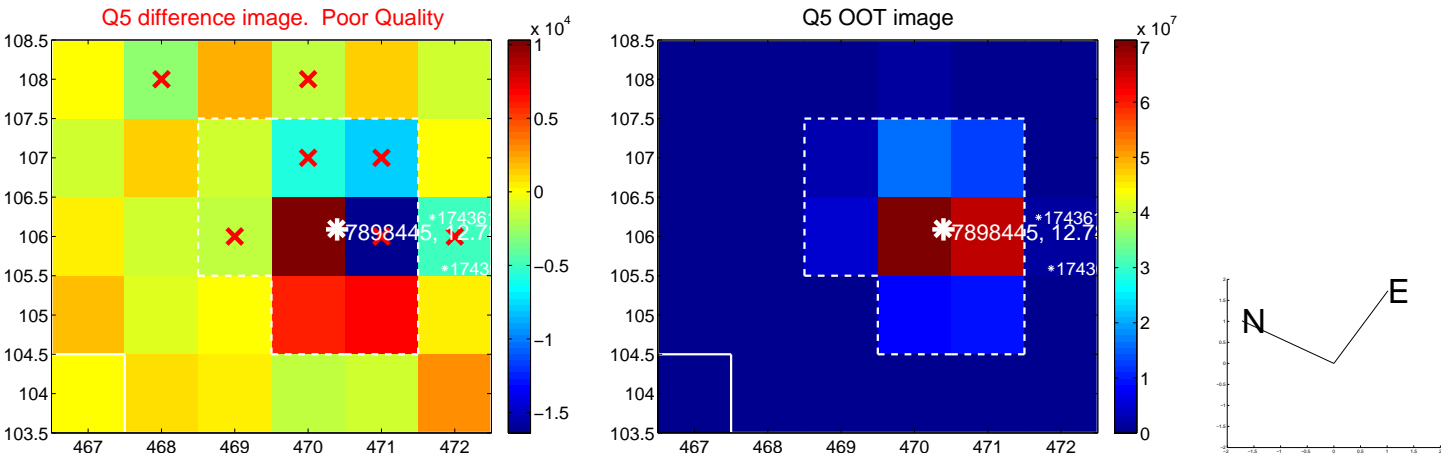


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

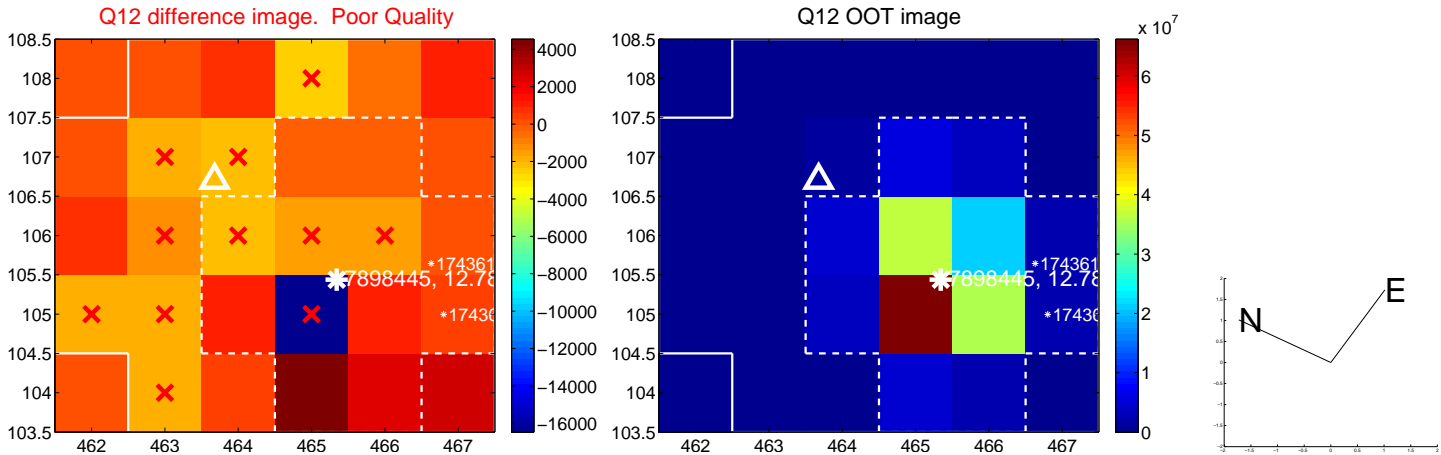
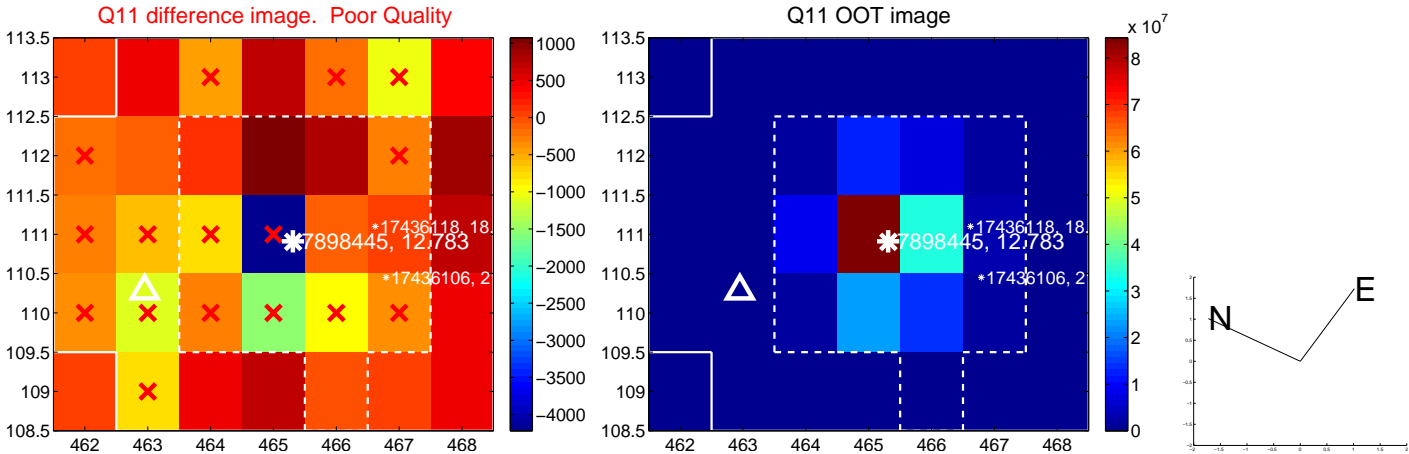
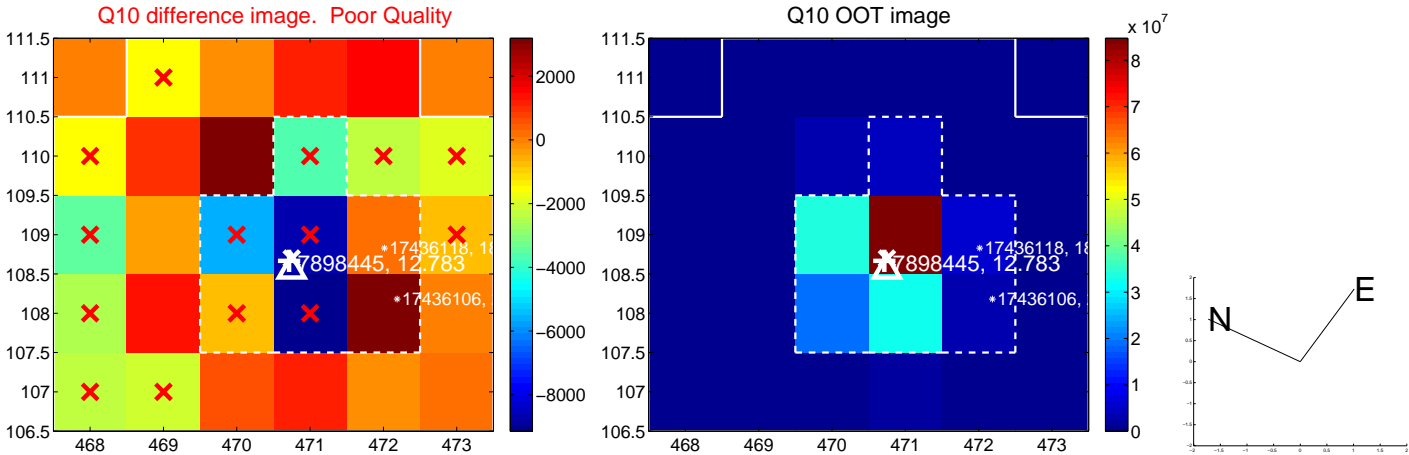
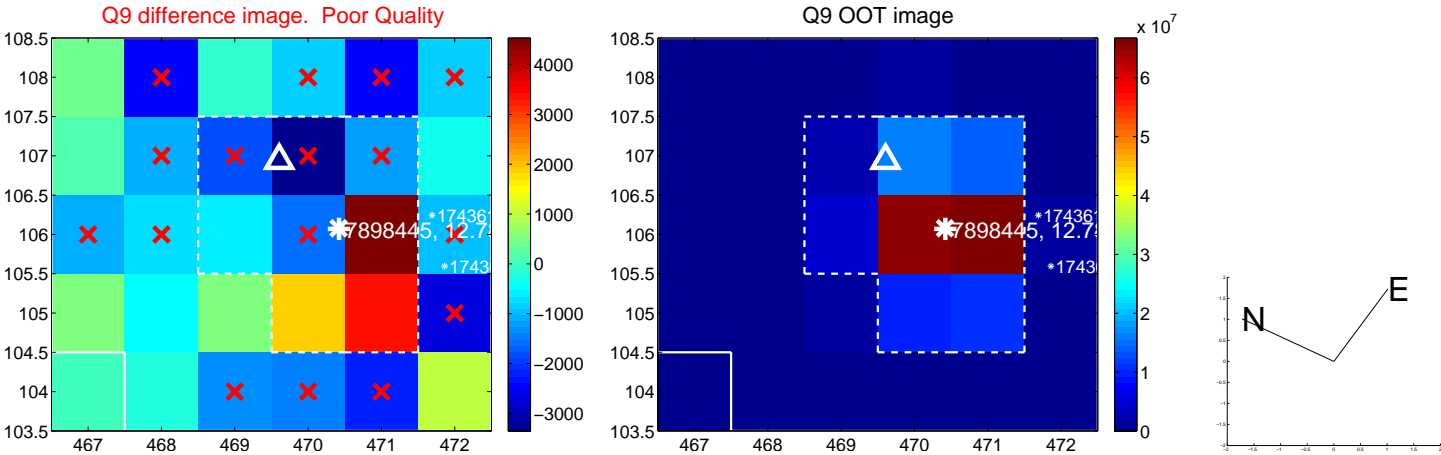
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



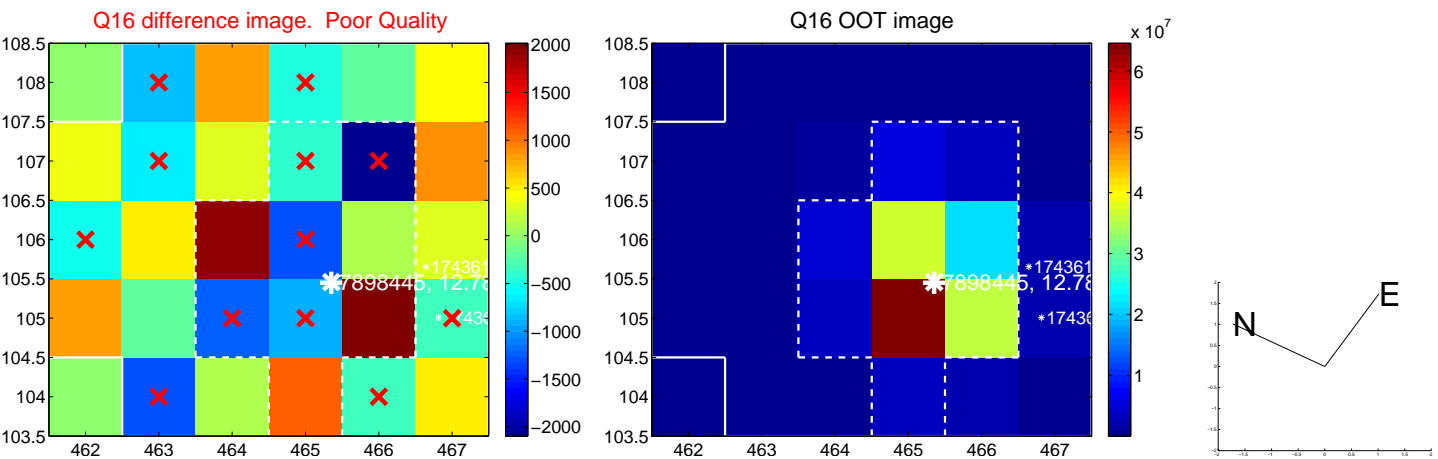
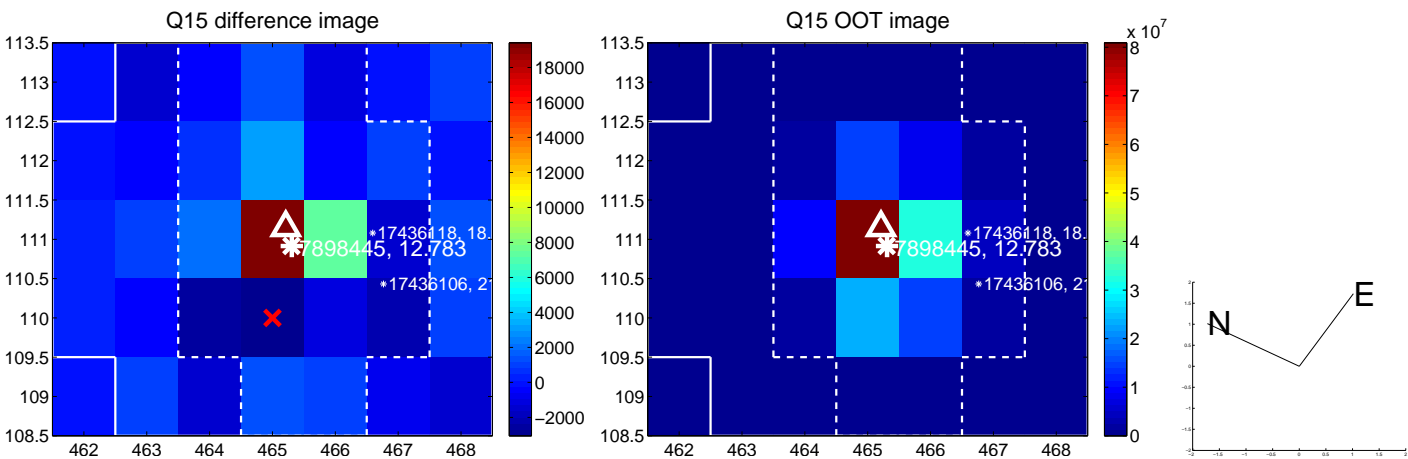
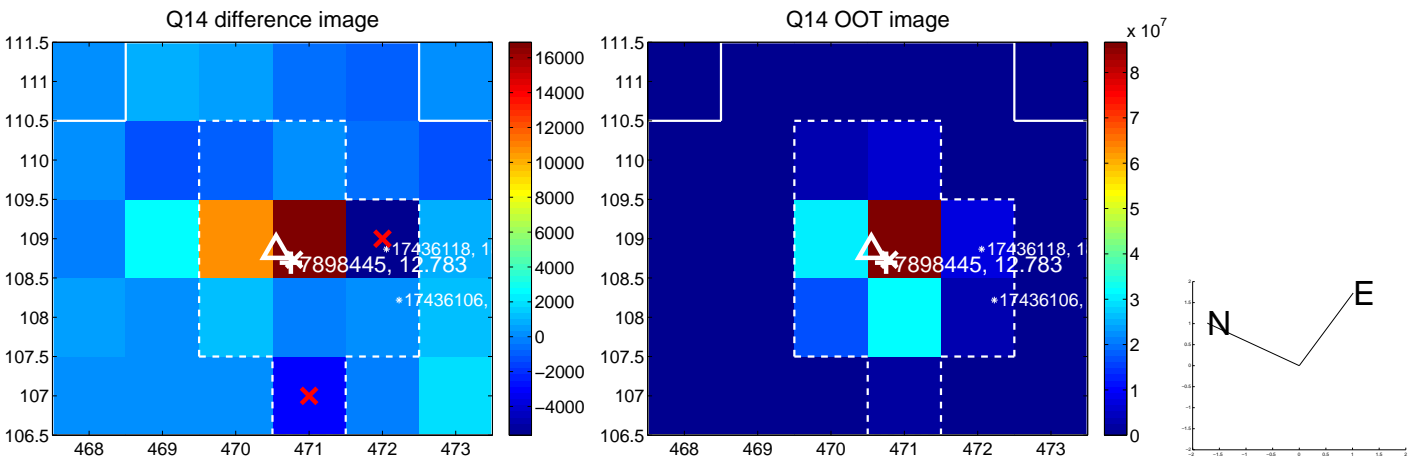
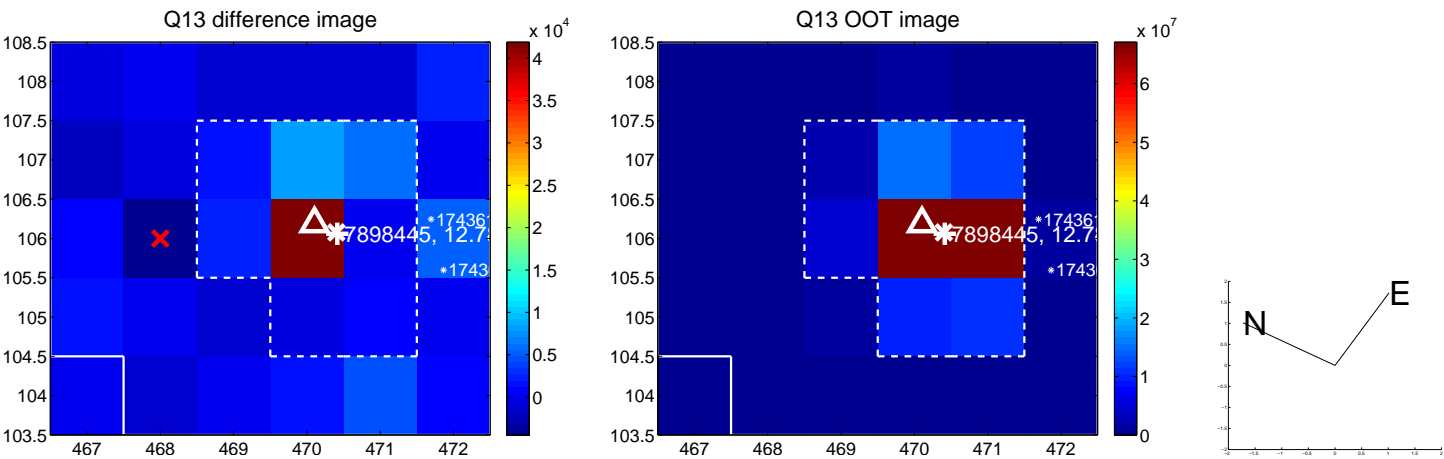
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



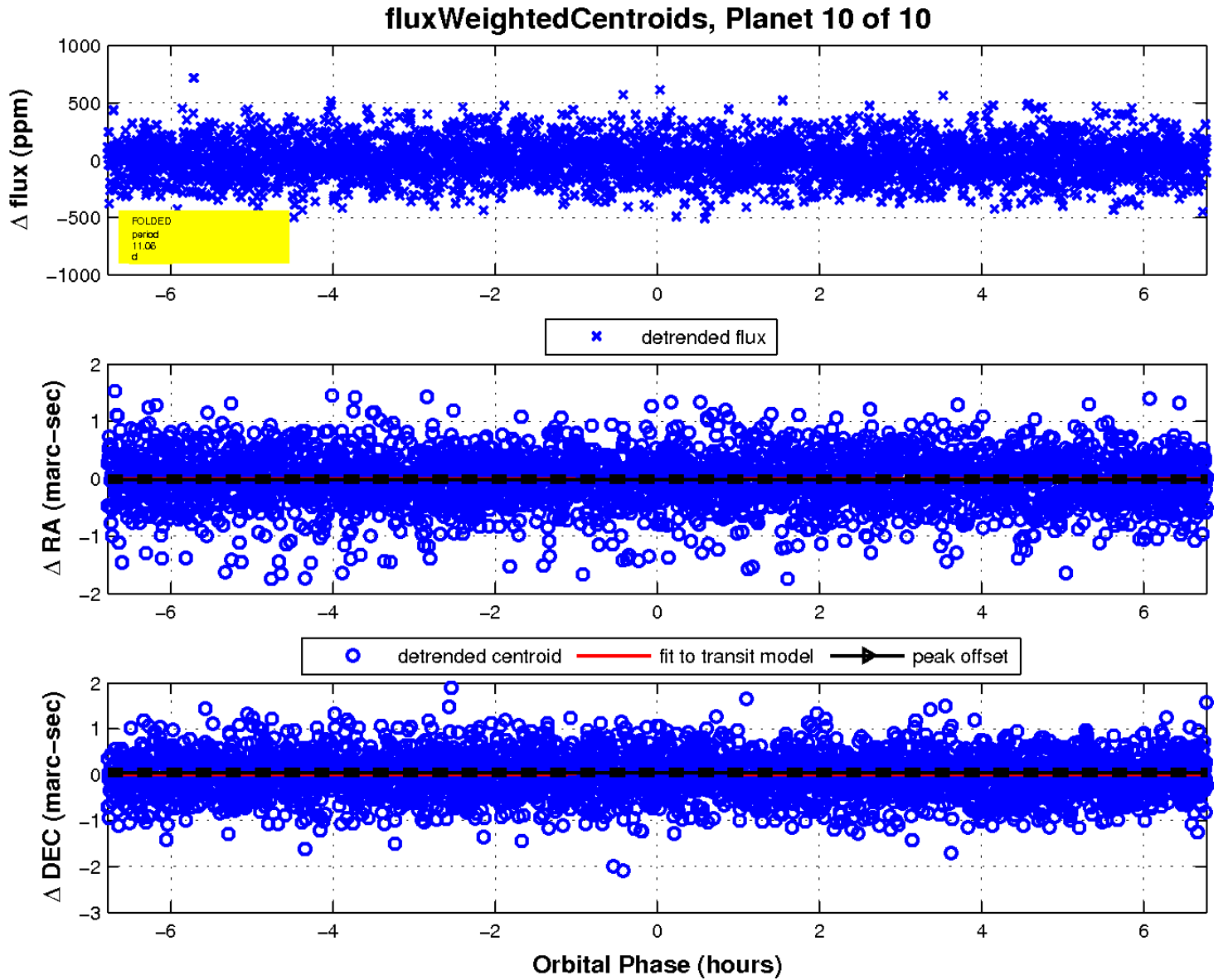
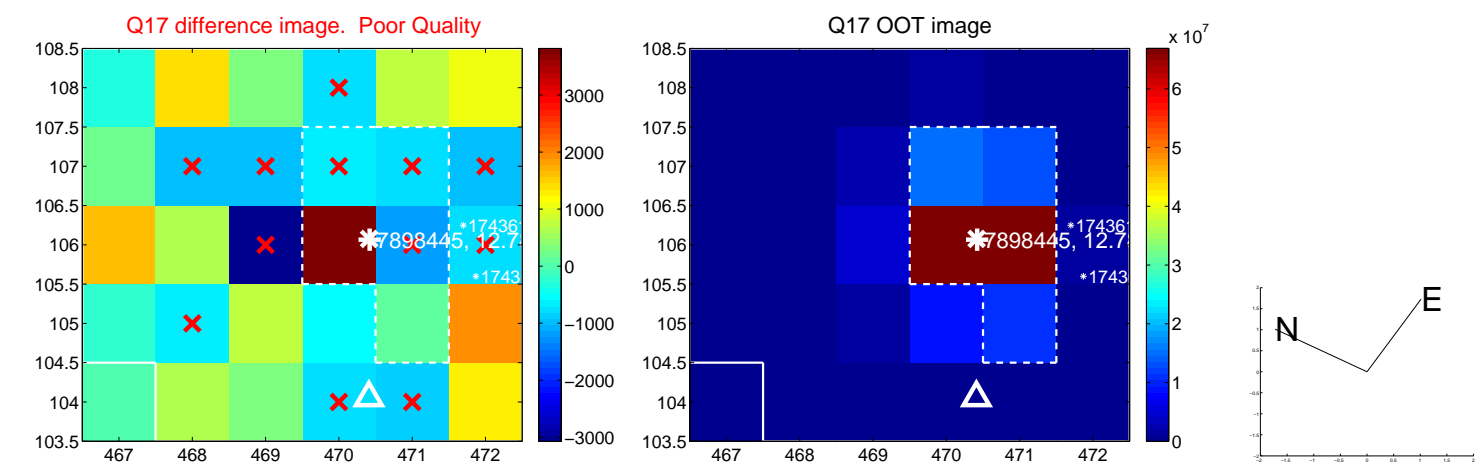
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

