

KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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.

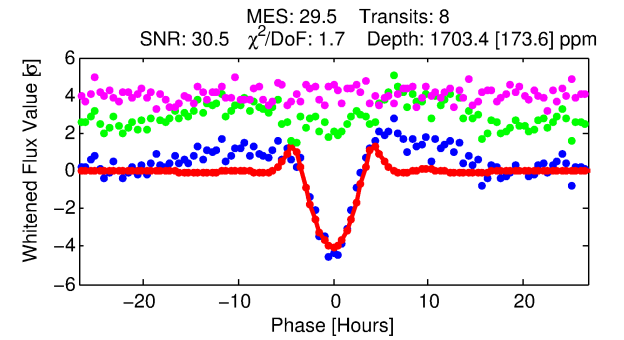
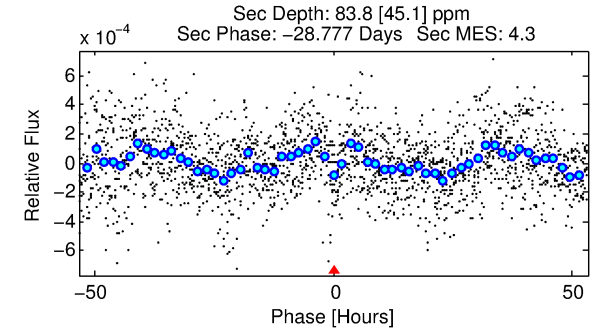
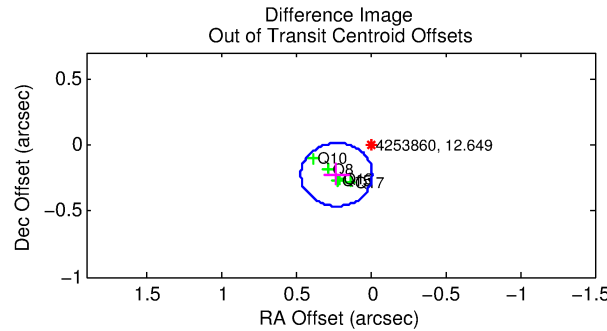
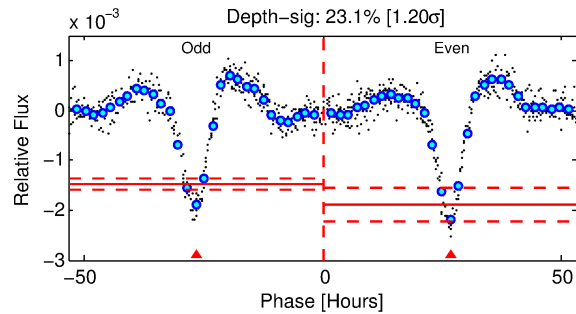
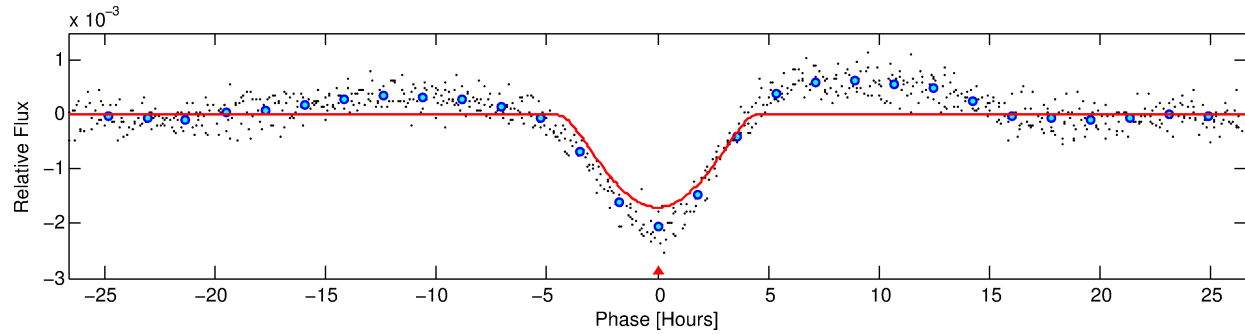
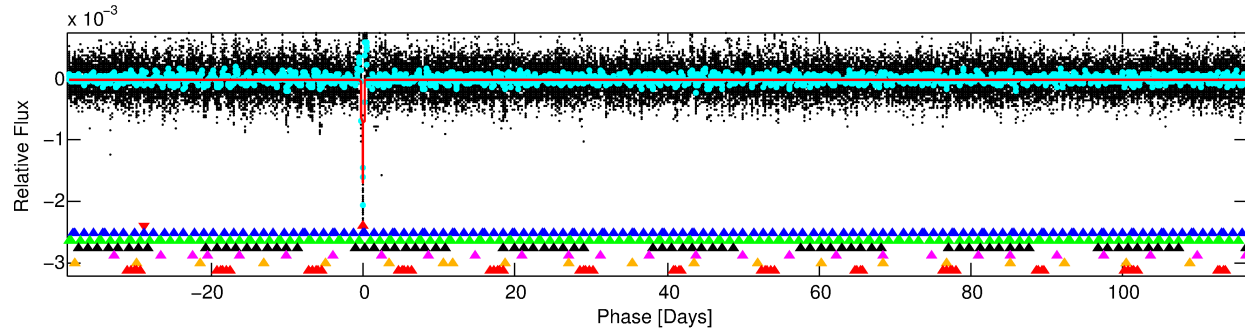
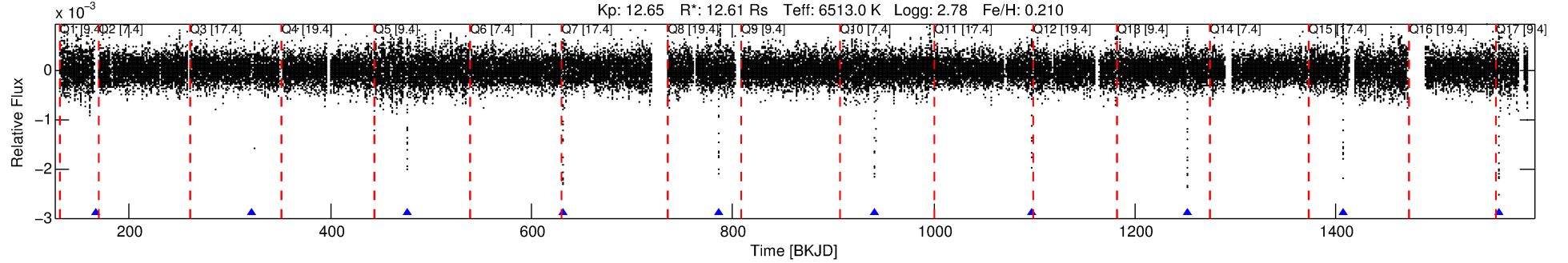
Ephemeris Match Information For 004253860-01

No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 1 of 7 Period: 155.047 d

KOI: K05052.01 Corr: 0.907



DV Fit Results:

Period = 155.04682 [0.00148] d
Epoch = 166.6139 [0.0087] BKJD
Rp/R* = 0.0702 [0.0532]
a/R* = 50.79 [8.75]
b = 1.00 [0.08]
Seff = 347.76 [394.93]
Teq = 1101 [313] K
Rp = 96.57 [81.11] Re
a = 0.8588 [0.2468] AU
Ag = 3.65 [6.05] [0.44 σ]
Teffp = 2353 [1135] K [1.06 σ]

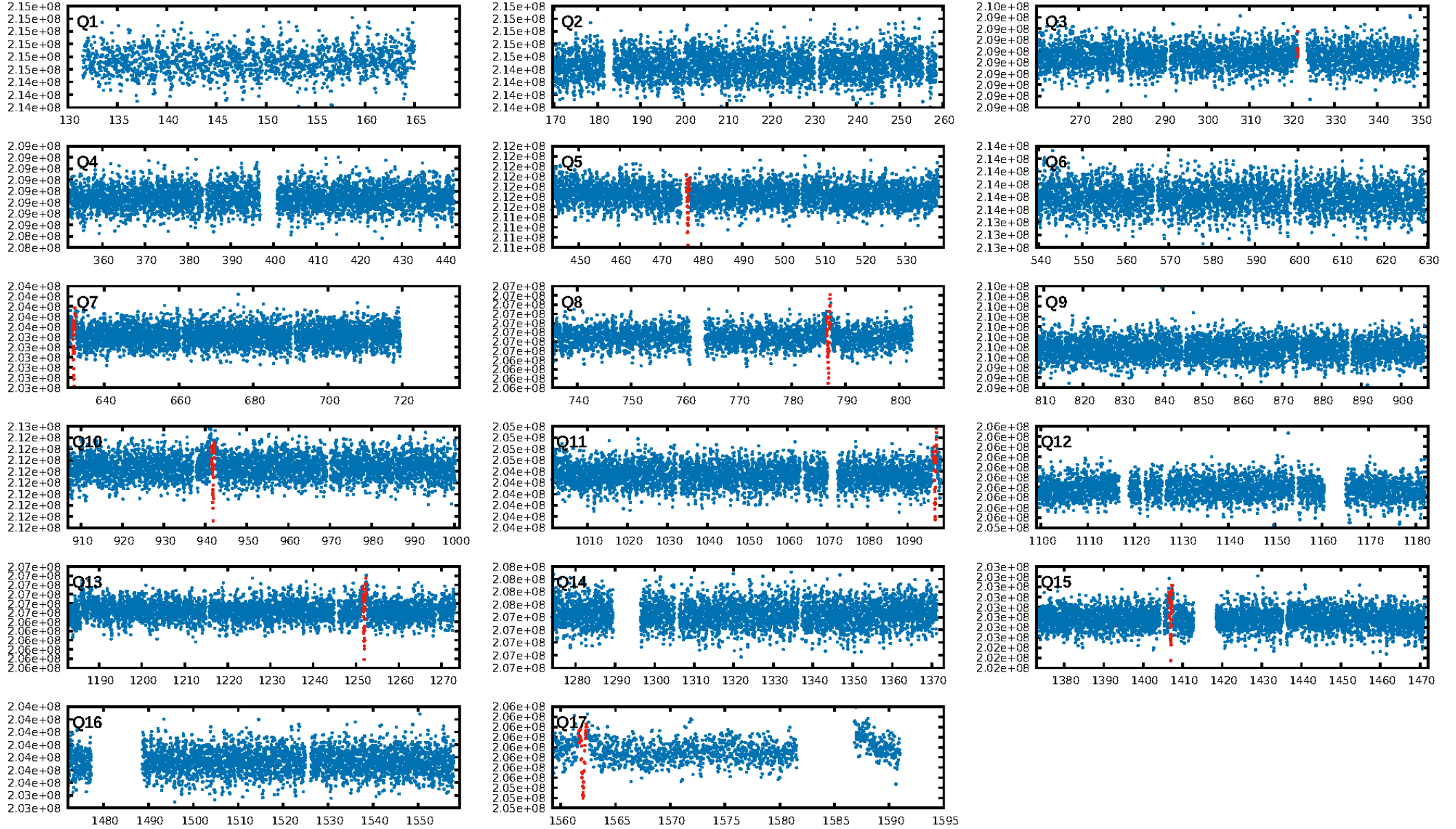
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [136.54 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 16.9%
ModelChiSquareGof-sig: 90.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 1.674
Centroid-sig: 22.1%
Centroid-so: 0.152 arcsec [1.55 σ]
OotOffset-rm: 0.319 arcsec [4.01 σ]
KicOffset-rm: 0.385 arcsec [3.88 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 0.00 [0/5]

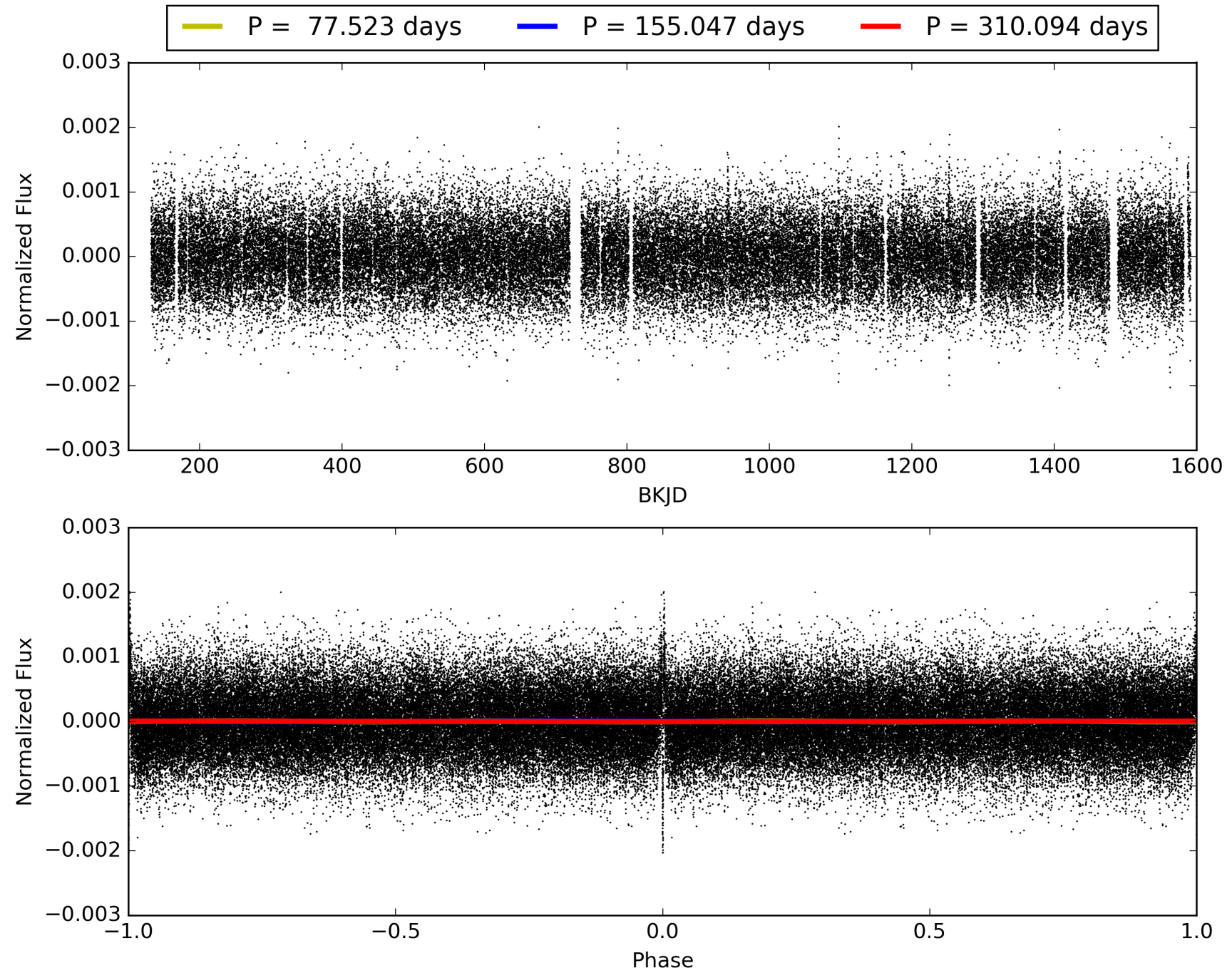
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:34:16 Z

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

TCE 004253860-01, PDC Light Curves

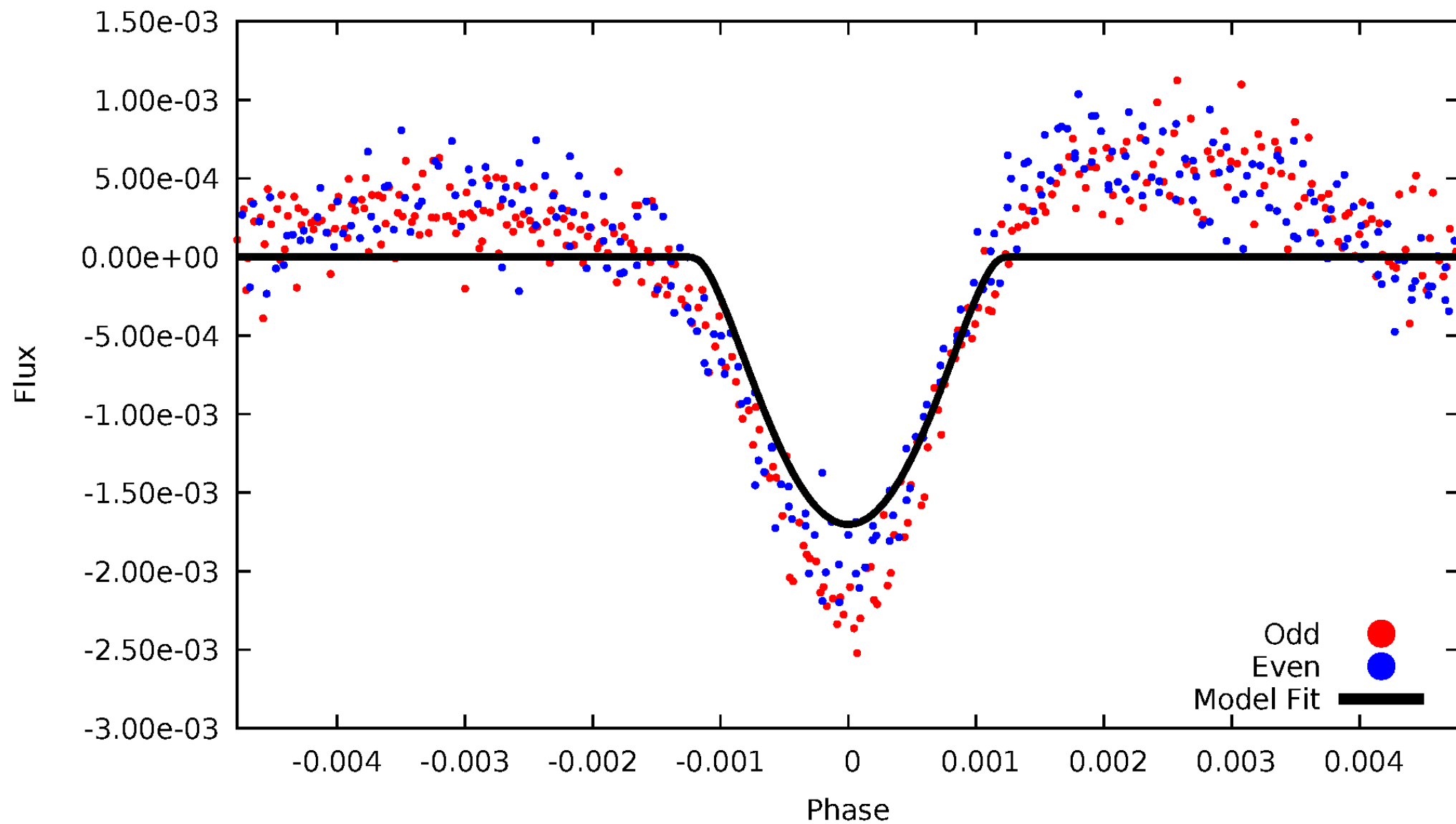


TCE 004253860-01



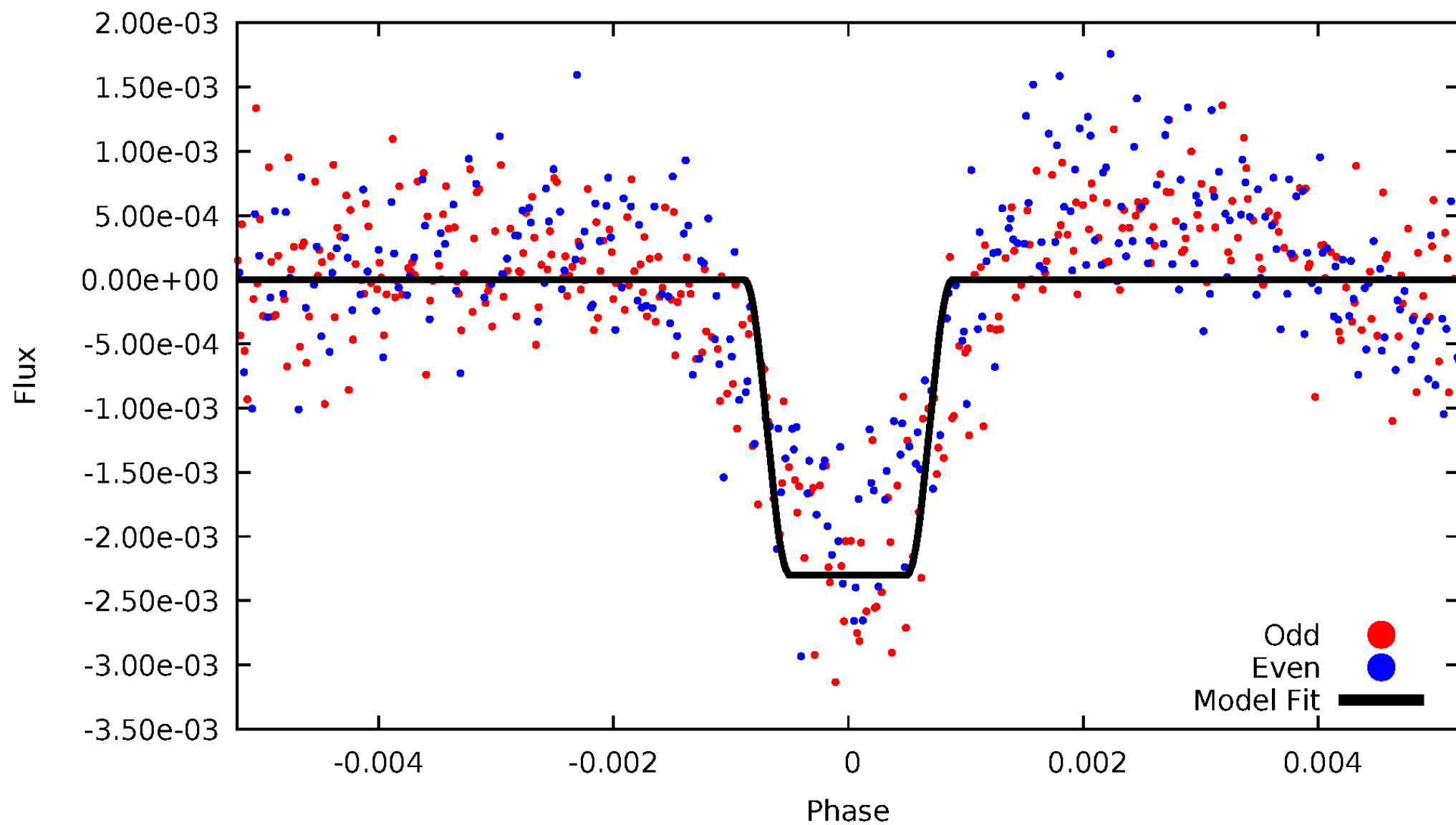
DV Odd/Even

TCE 004253860-01



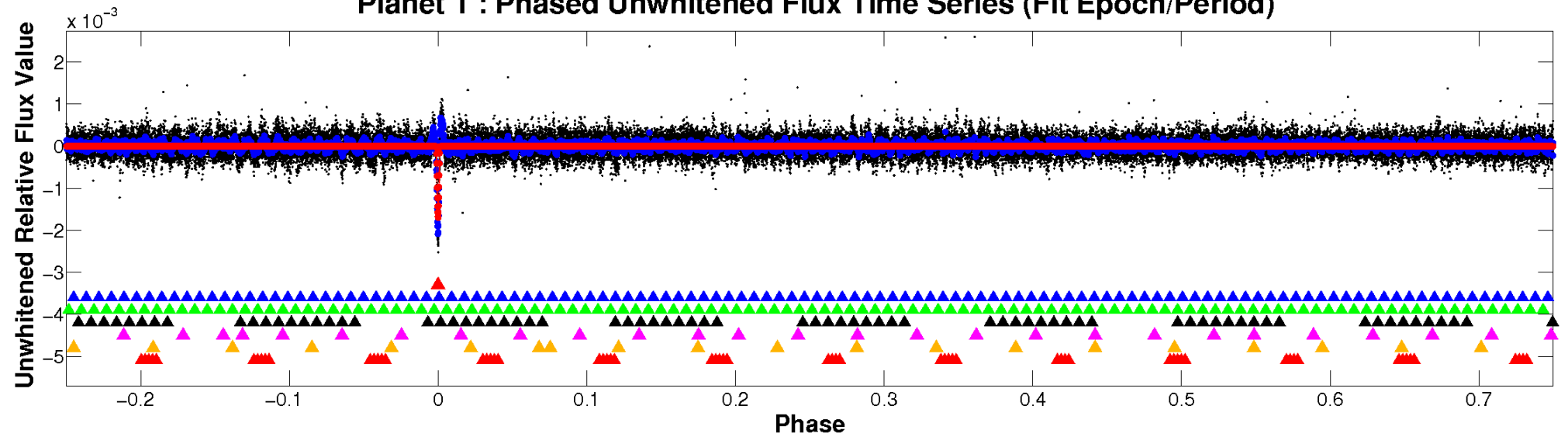
ALT Odd/Even

TCE 004253860-01

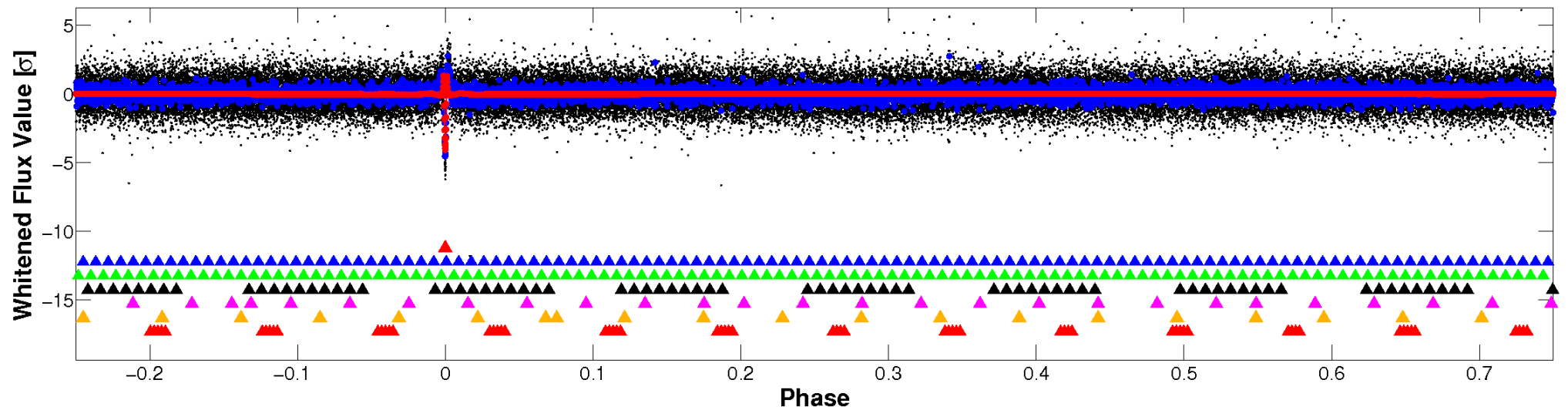


Non-Whitened Vs. Whitened Light Curve

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

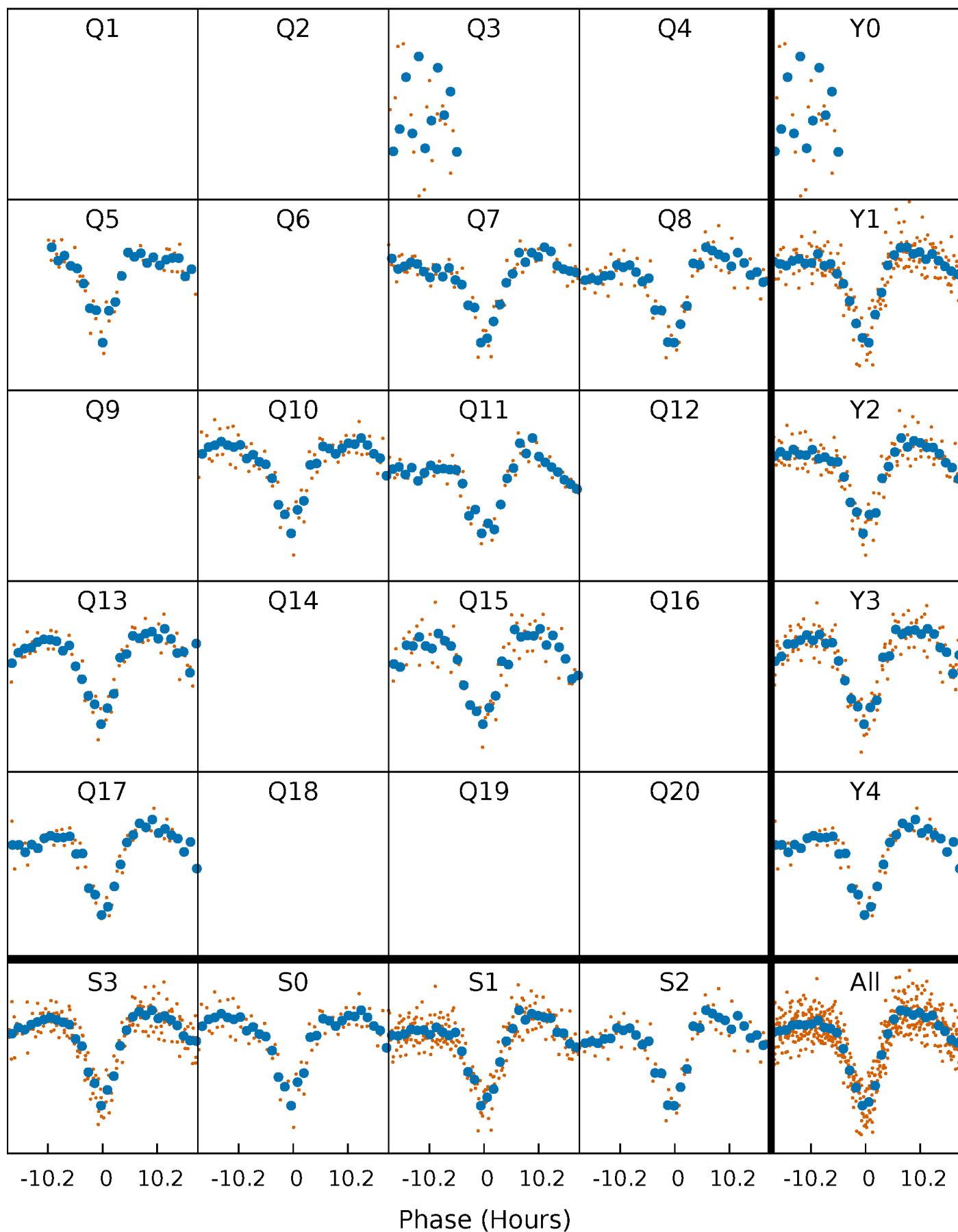


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



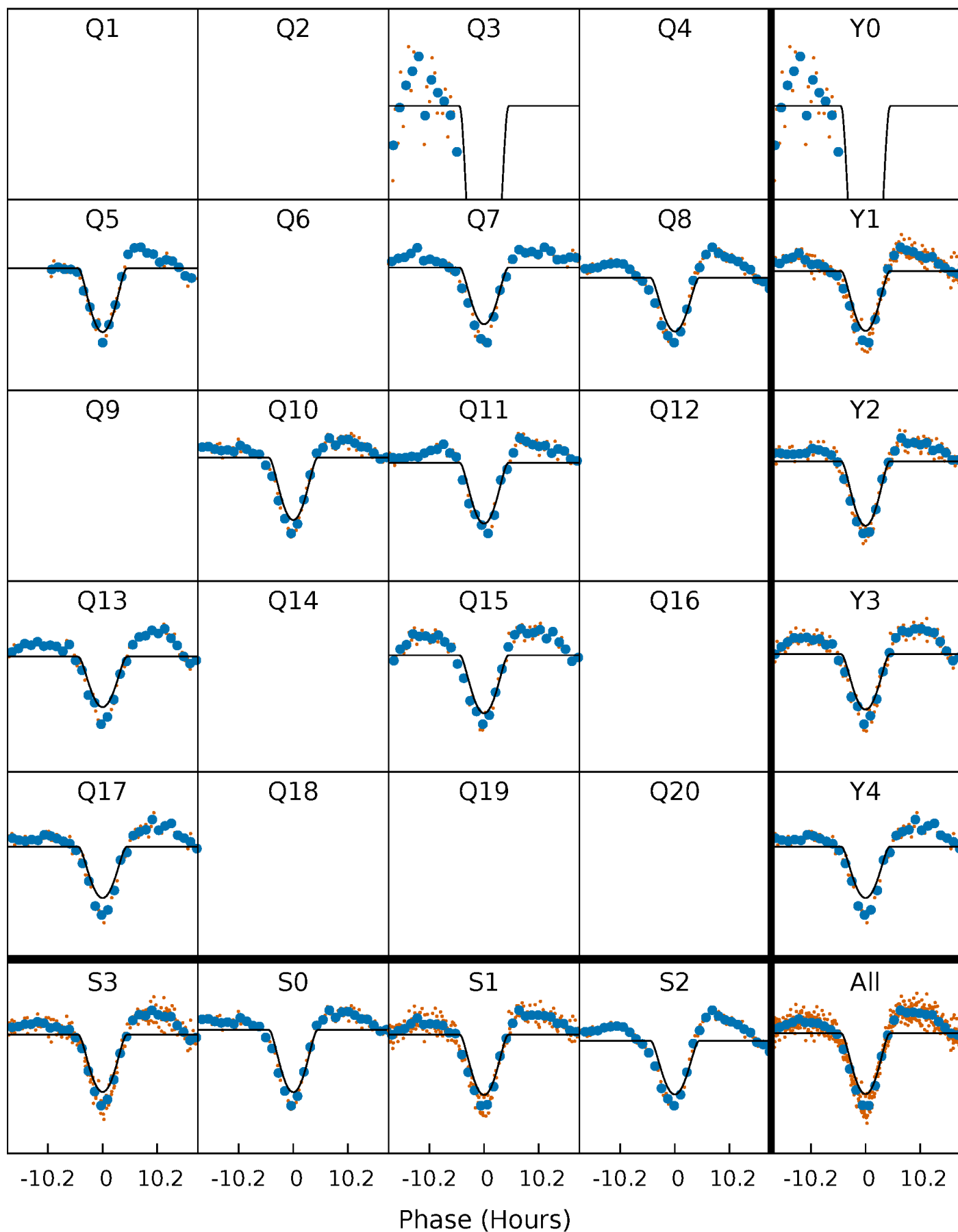
PDC Quarter-Phased Transit Curves

TCE 004253860-01 P=155.046815 Days $T_0=166.613896$ (BKJD)



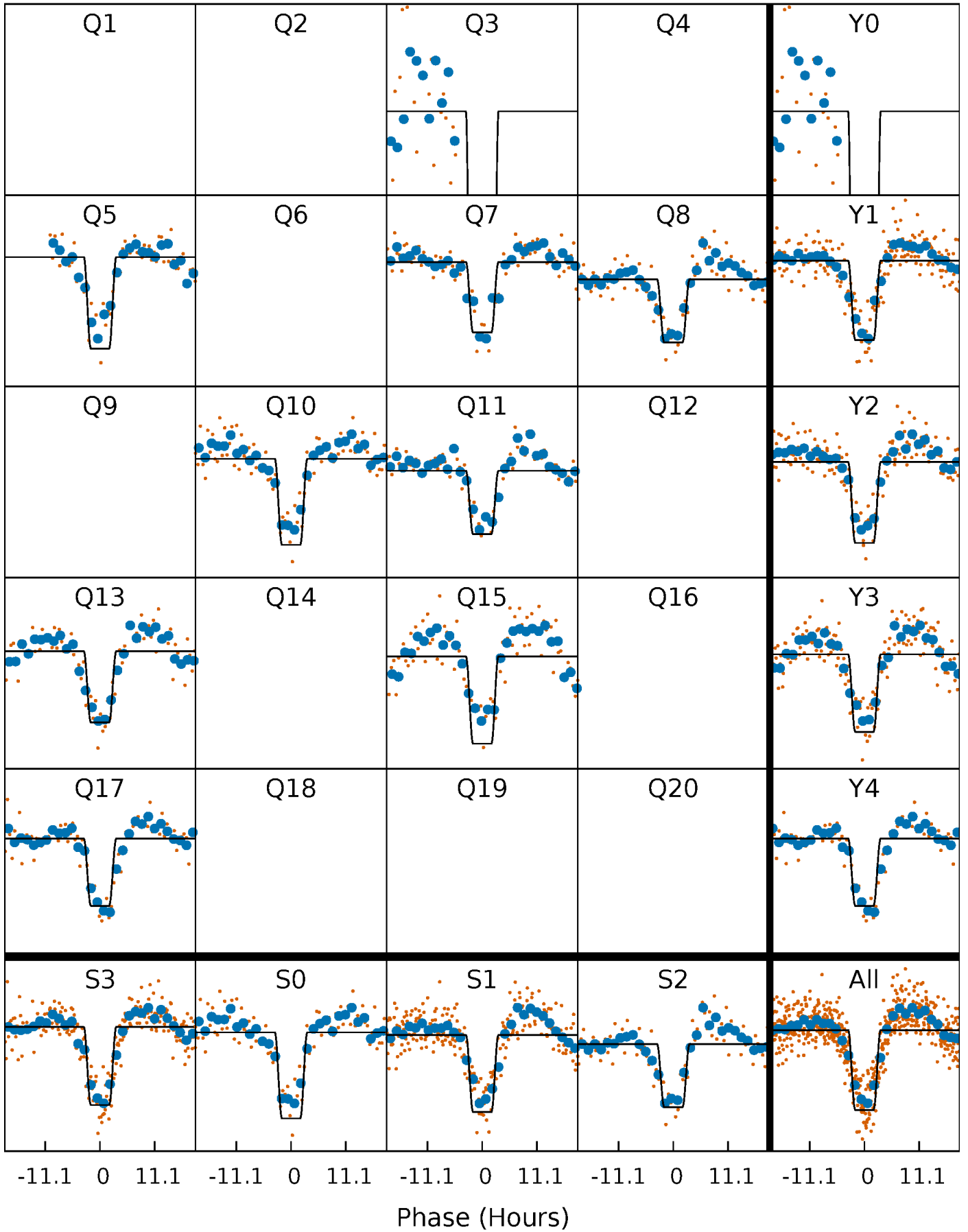
DV Quarter-Phased Transit Curves

TCE 004253860-01 P=155.046815 Days $T_0=166.613896$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

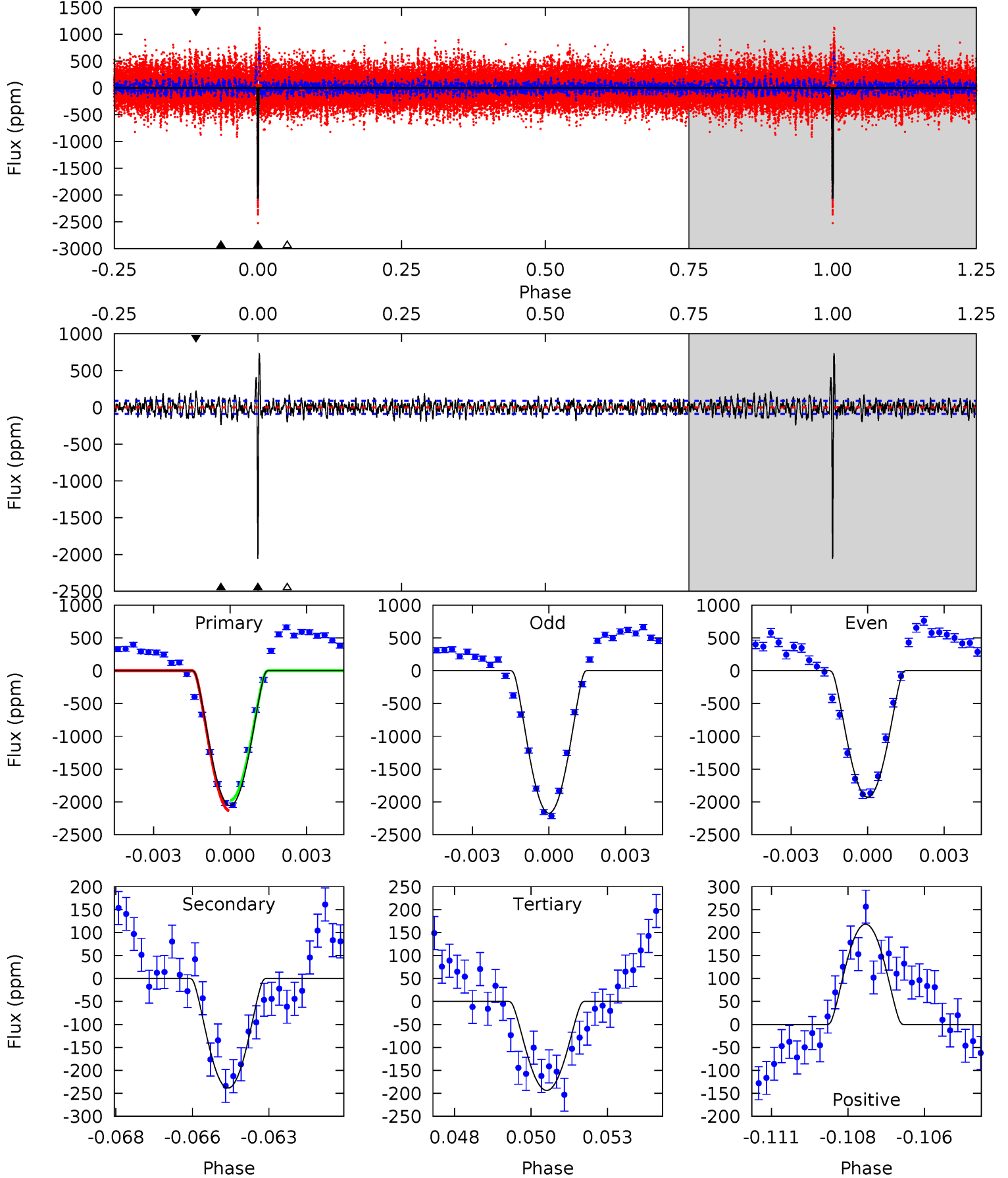
TCE 004253860-01 P=155.043088 Days $T_0=166.623046$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-01, P = 155.046815 Days, E = 11.567081 Days

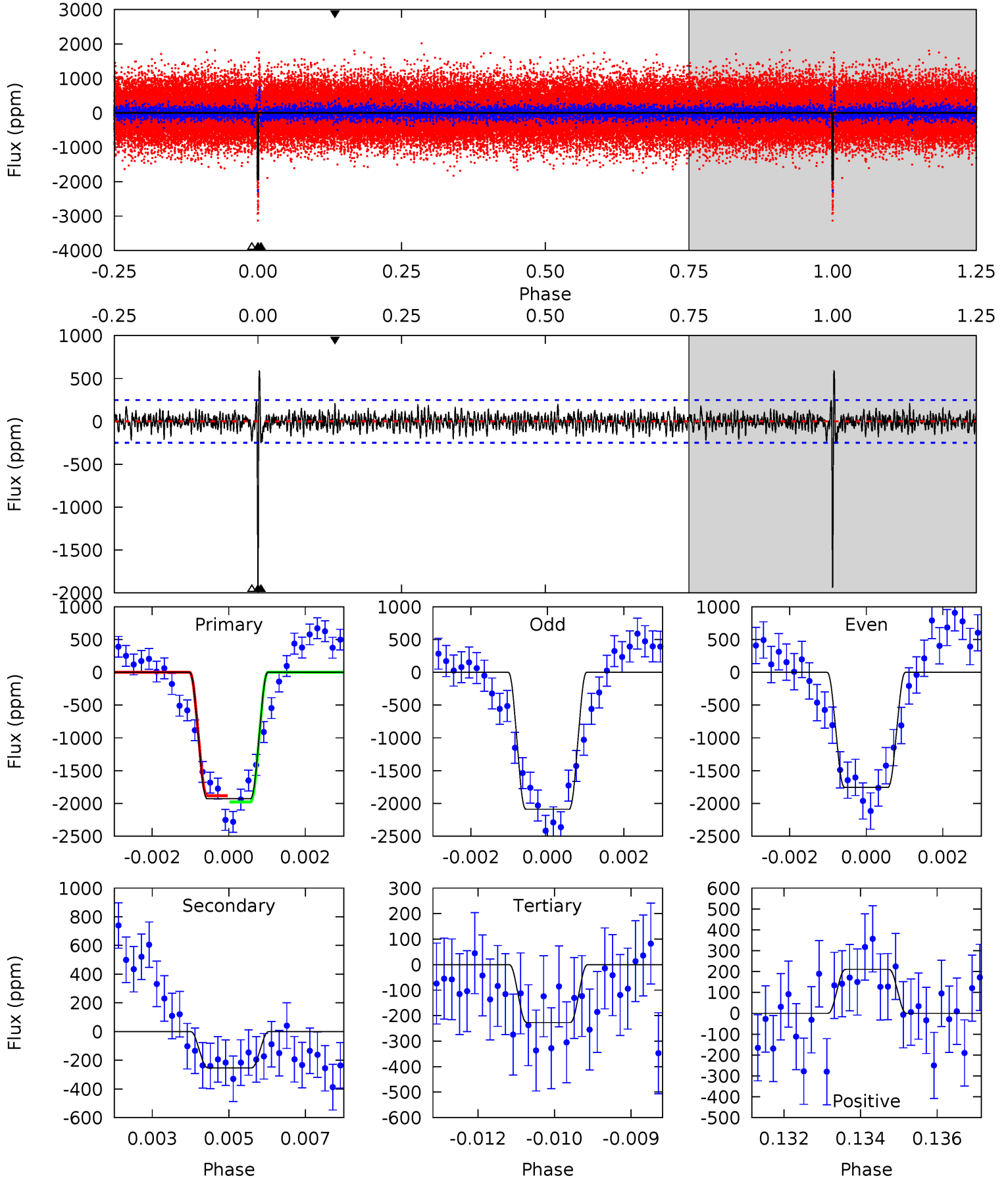
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
123.3	14.3	11.6	13.1	5.28	3.02	4.20	111.7	110.2	2.70	1.22	7.32	1.02	0.26	4.75



Alt Model-Shift Uniqueness Test

004253860-01, $P = 155.043088$ Days, $E = 11.579958$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.5	5.45	4.89	4.53	5.35	3.13	1.50	36.6	37.0	0.56	0.91	3.58	1.01	0.23	1.02



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-01 / KOI 5052.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-239 ± 17	$102.26^{+74.62}_{-58.89}$	1478^{+214}_{-384}	3219^{+1140}_{-574}	$8.318^{+39.315}_{-5.369}$
Alt.	-253 ± 46	$82.82^{+67.78}_{-57.07}$	1507^{+198}_{-399}	3553^{+1621}_{-734}	14^{+126}_{-10}

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 $A_{obs} \gg 1.0$

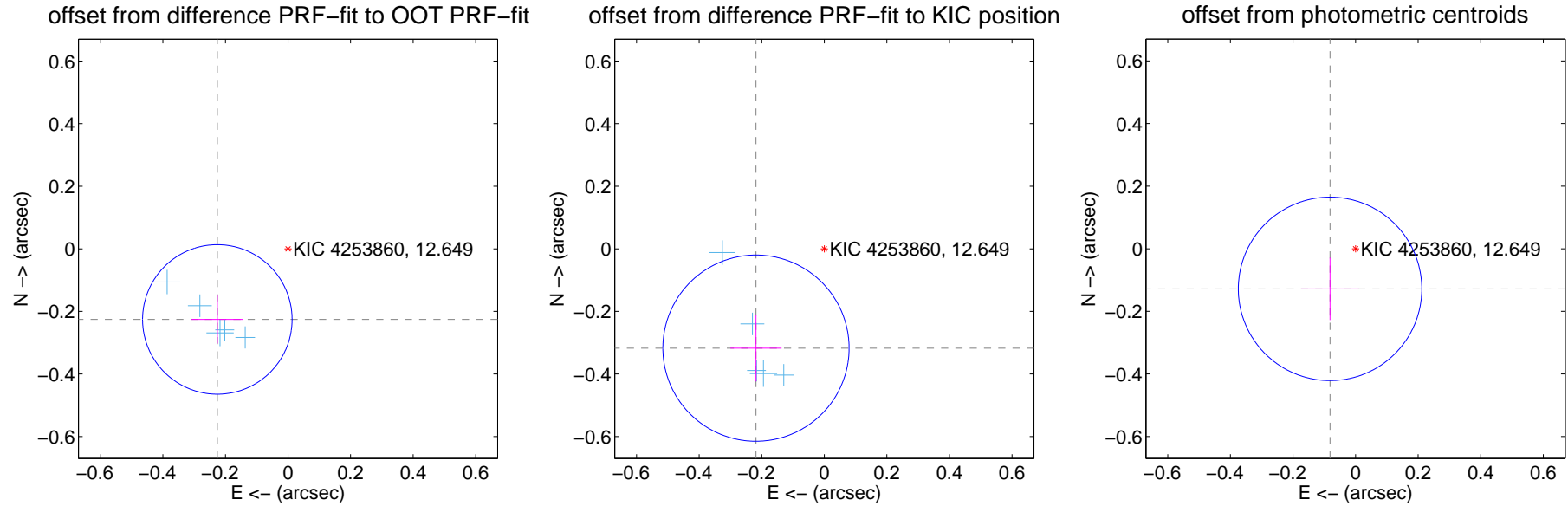
DV Centroid Data

Supplemental centroid analysis for 004253860-01. Kepler magnitude: 12.65. Transit SNR 30.50

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.319 \pm 0.080	4.01	0.226 \pm 0.082	-0.226 \pm 0.077
PRF-fit source offset from KIC position	0.385 \pm 0.099	3.88	0.218 \pm 0.082	-0.317 \pm 0.106
photometric centroid source offset	0.15 \pm 0.10	1.55	0.08 \pm 0.09	-0.13 \pm 0.10

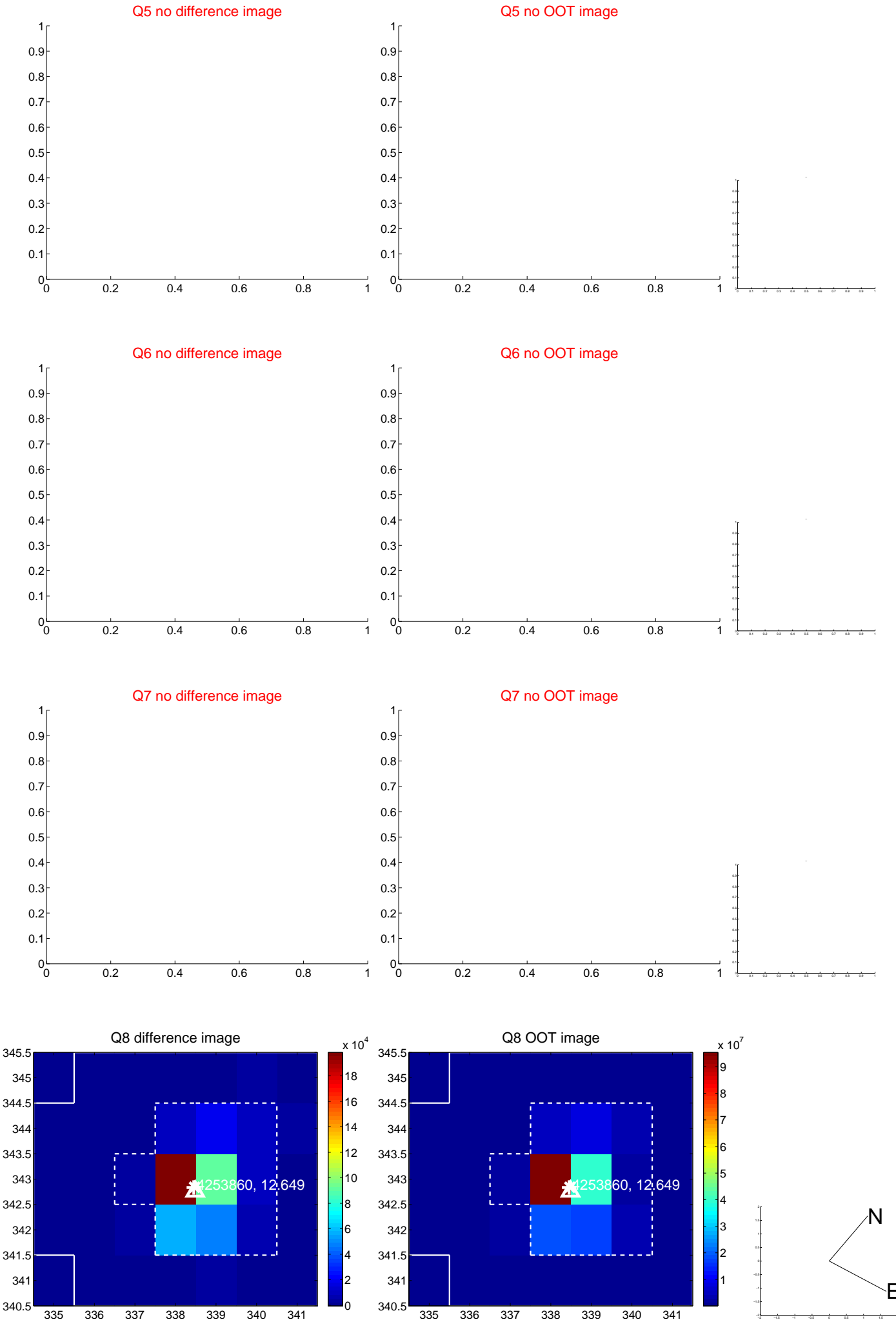


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

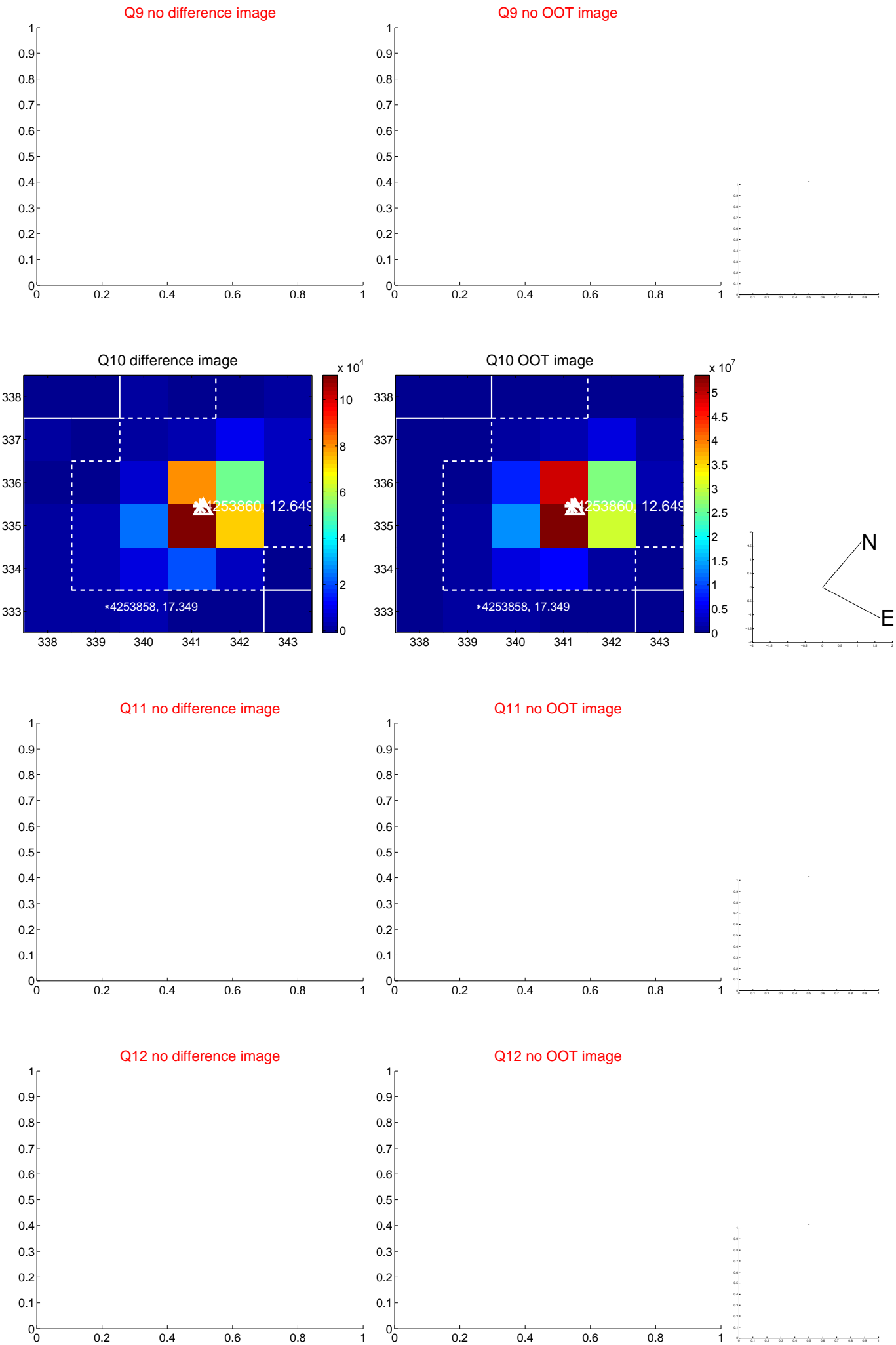
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



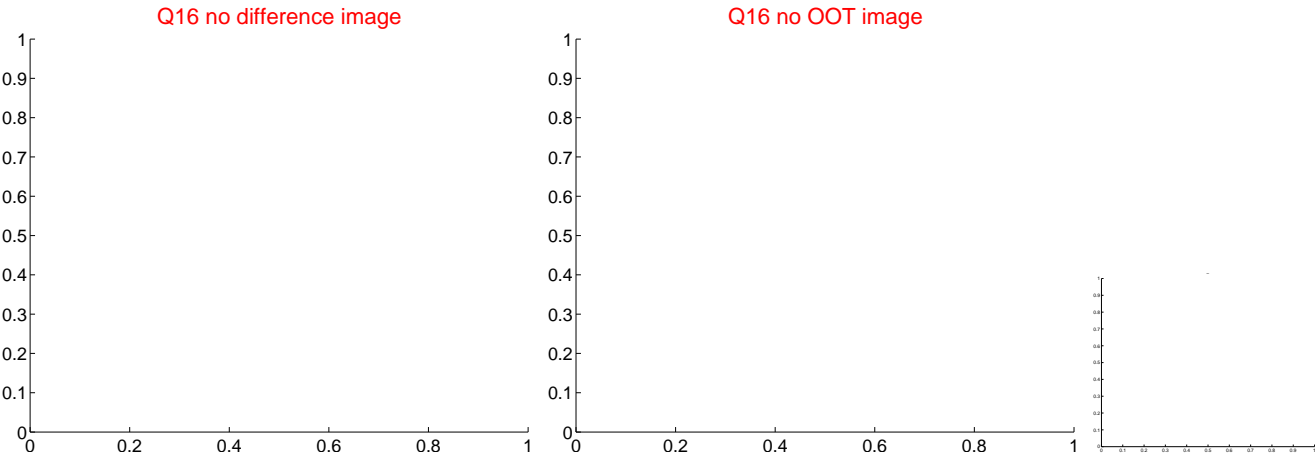
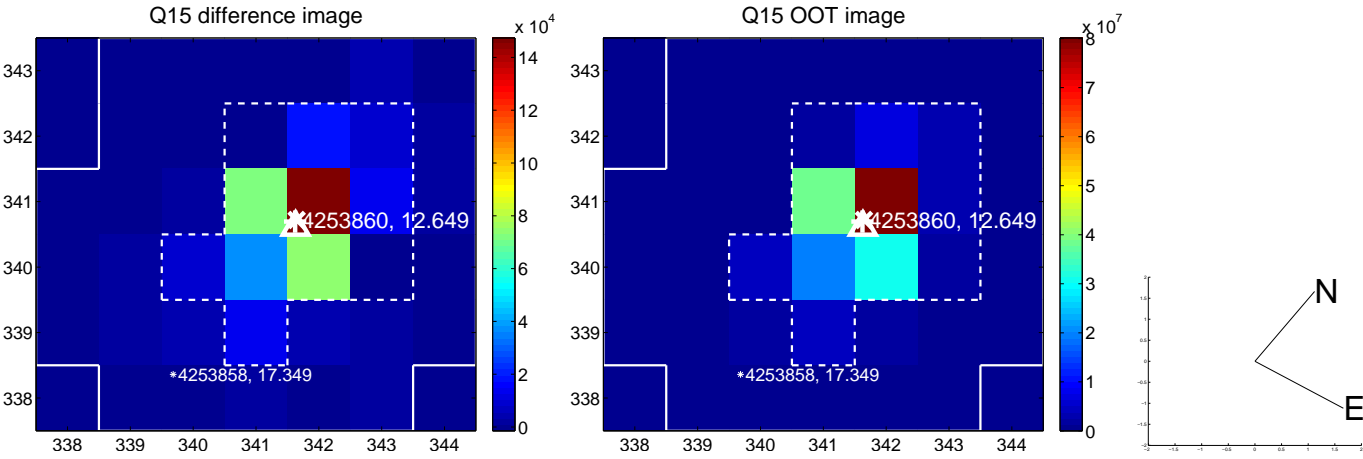
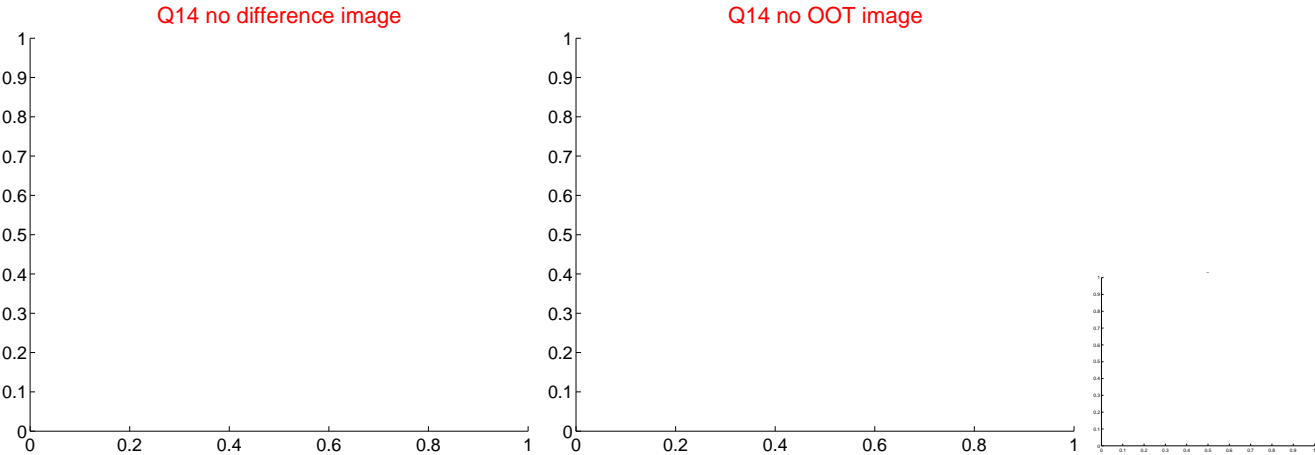
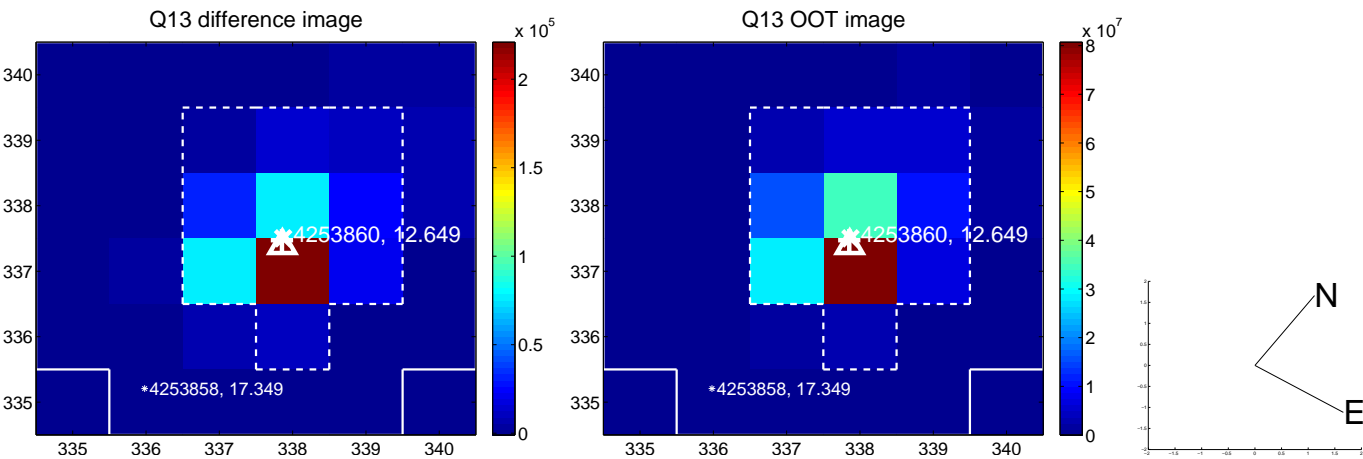
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



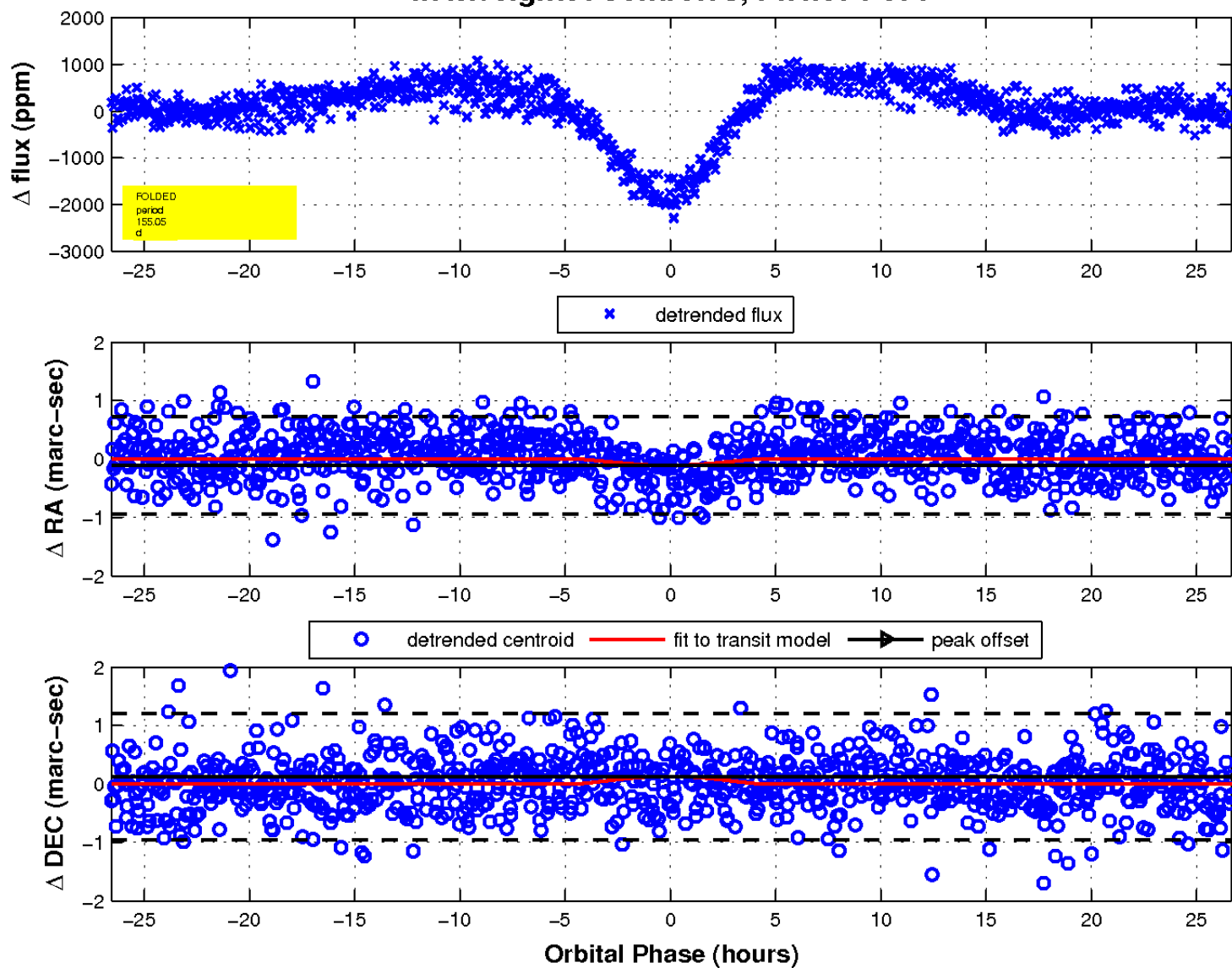
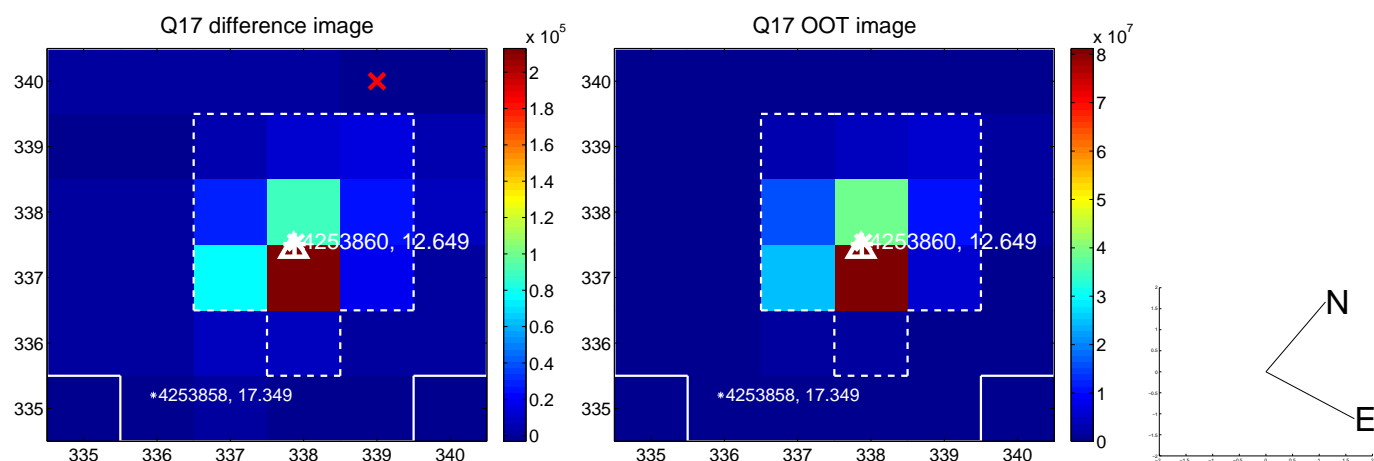
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

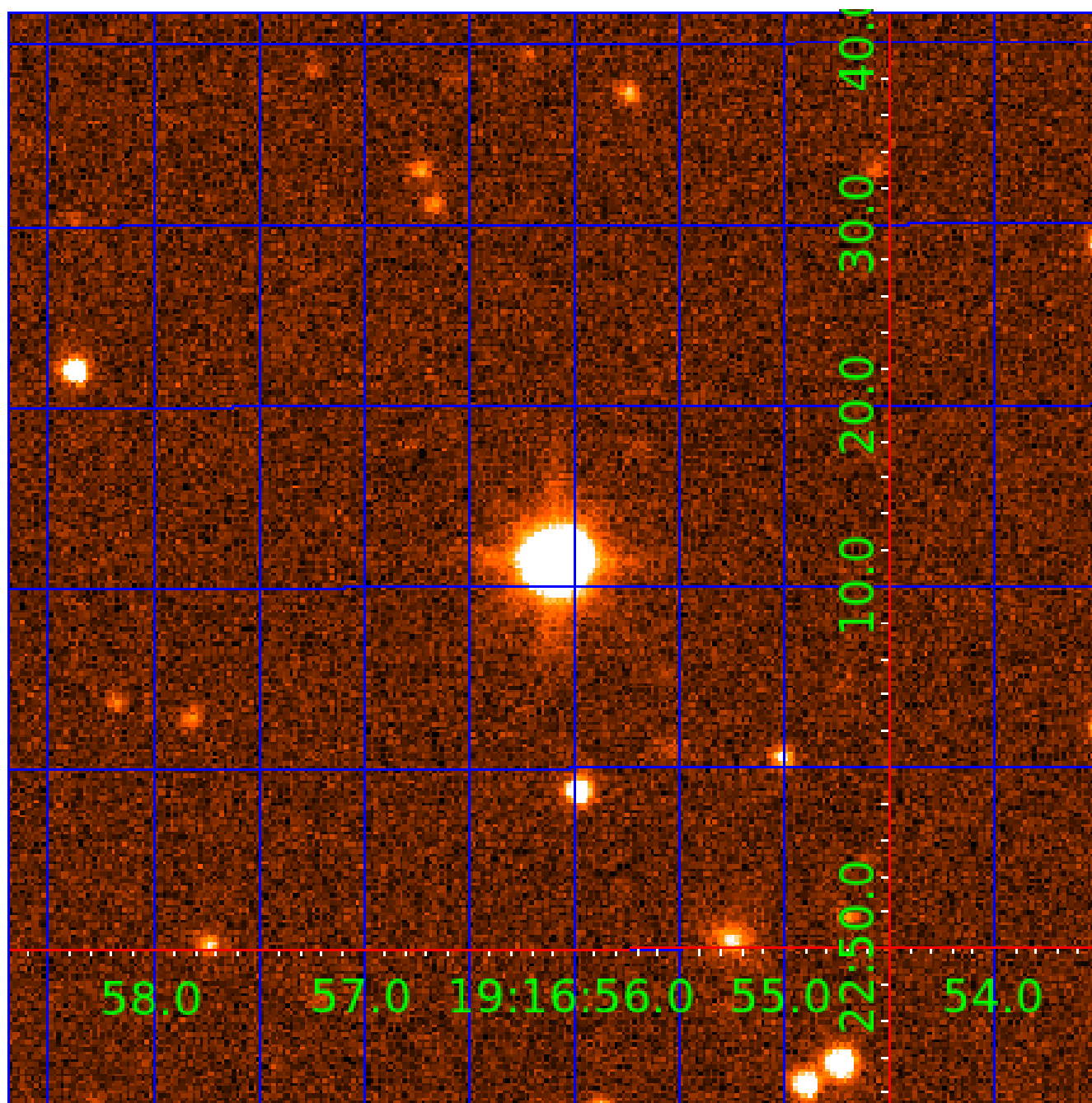


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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 004253860-02

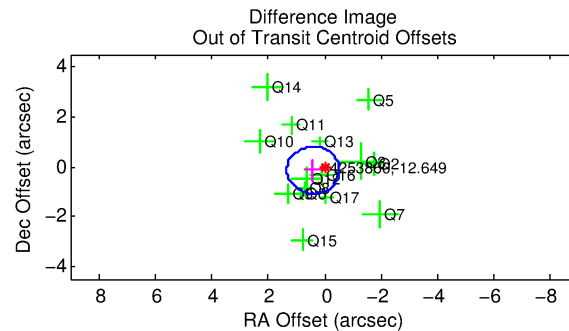
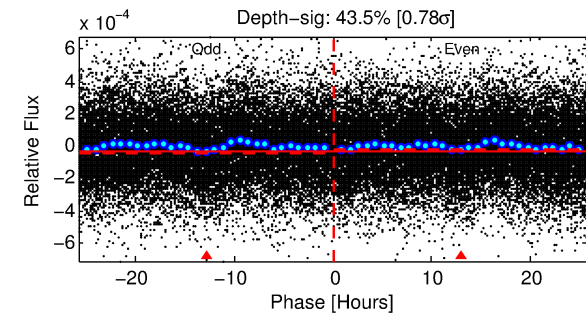
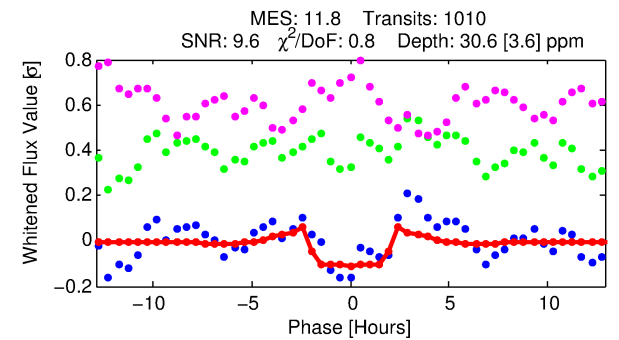
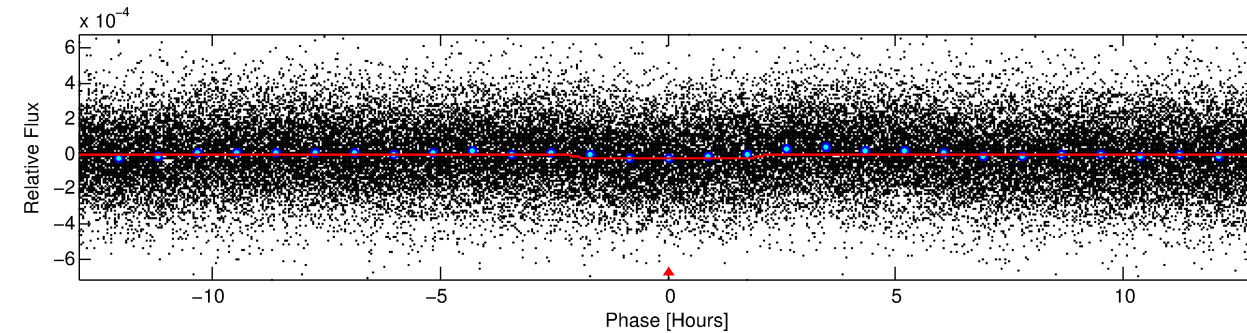
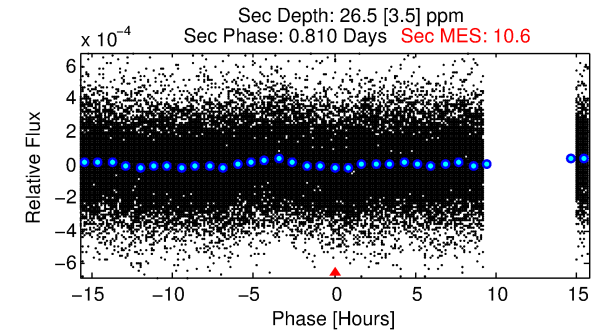
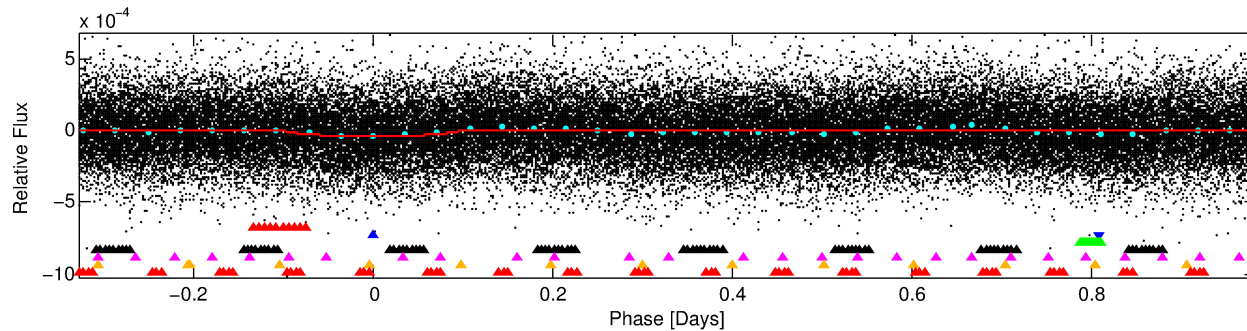
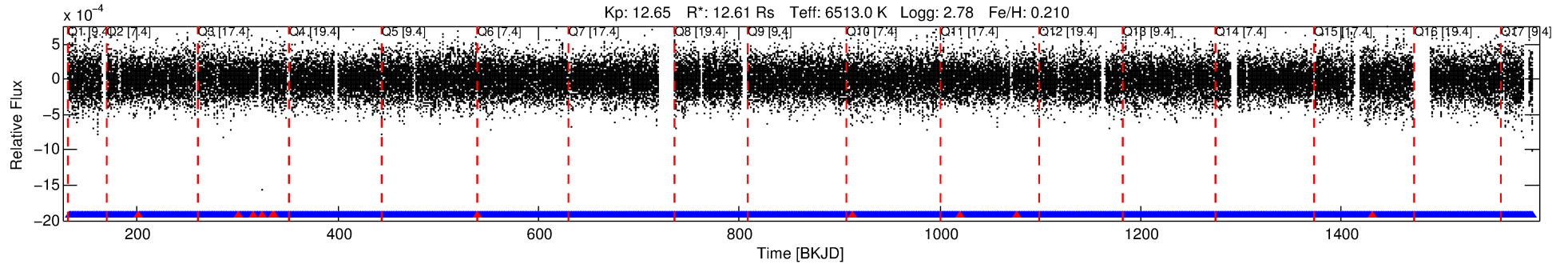
No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 2 of 7 Period: 1.314 d

KOI: K05052 Corr: No Ephemeris Match

Kp: 12.65 R*: 12.61 Rs Teff: 6513.0 K Logg: 2.78 Fe/H: 0.210



DV Fit Results:

Period = 1.31401 [0.00001] d
Epoch = 132.5246 [0.0030] BKJD
Rp/R* = 0.0059 [0.0015]
a/R* = 1.42 [1.01]
b = 0.90 [0.31]
Seff = N/A
Teq = N/A
Rp = 8.11 [3.55] Re
a = N/A
Ag = N/A
Teffp = N/A

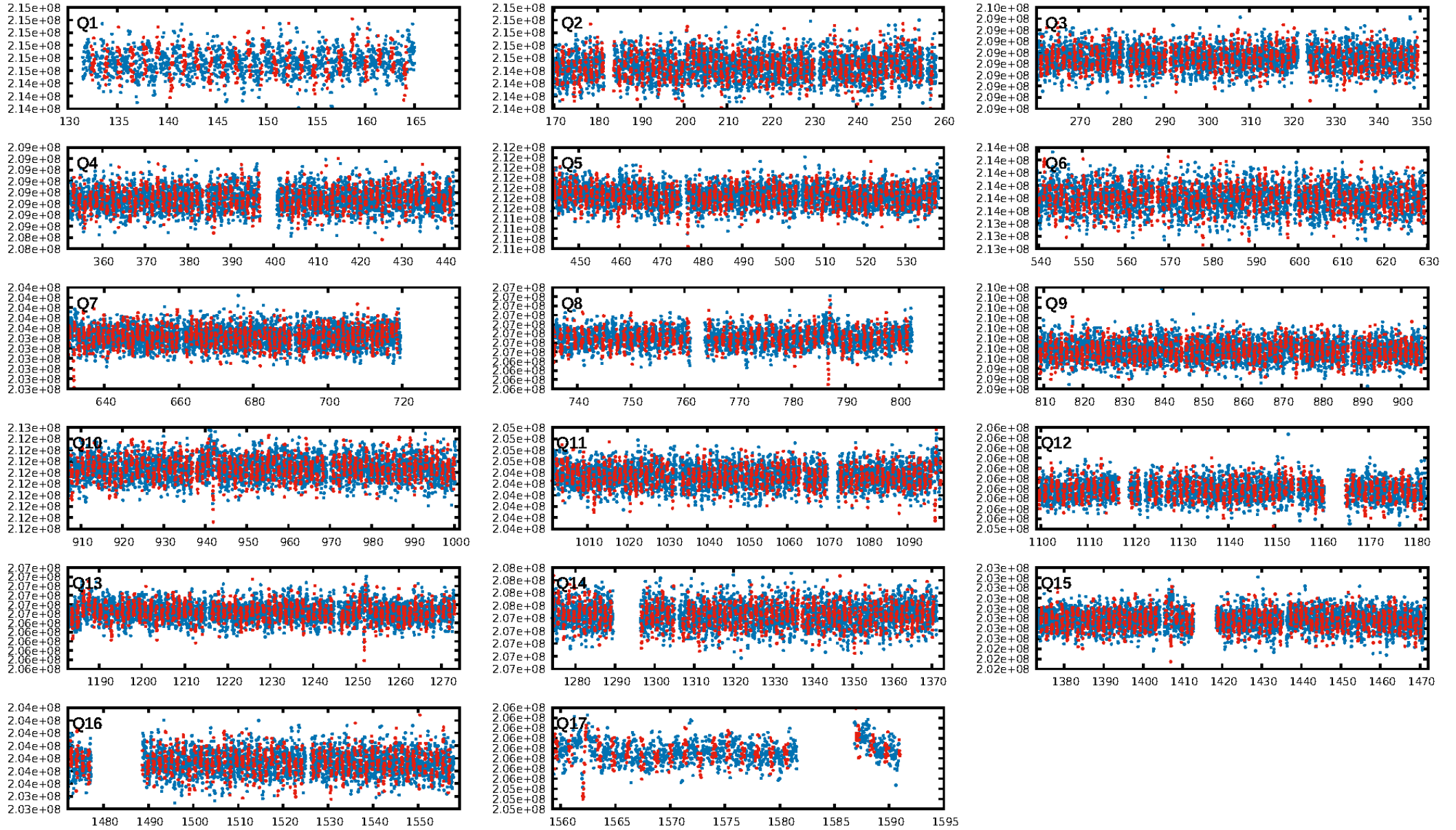
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [954/965]
GhostDiagnostic-chr: 14.25
Centroid-sig: 17.8%
Centroid-so: 0.448 arcsec [0.91σ]
OotOffset-rm: 0.430 arcsec [1.38σ]
KicOffset-rm: 0.420 arcsec [1.37σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.67 [10/15]
DiffImageOverlap-fno: 1.00 [17/17]

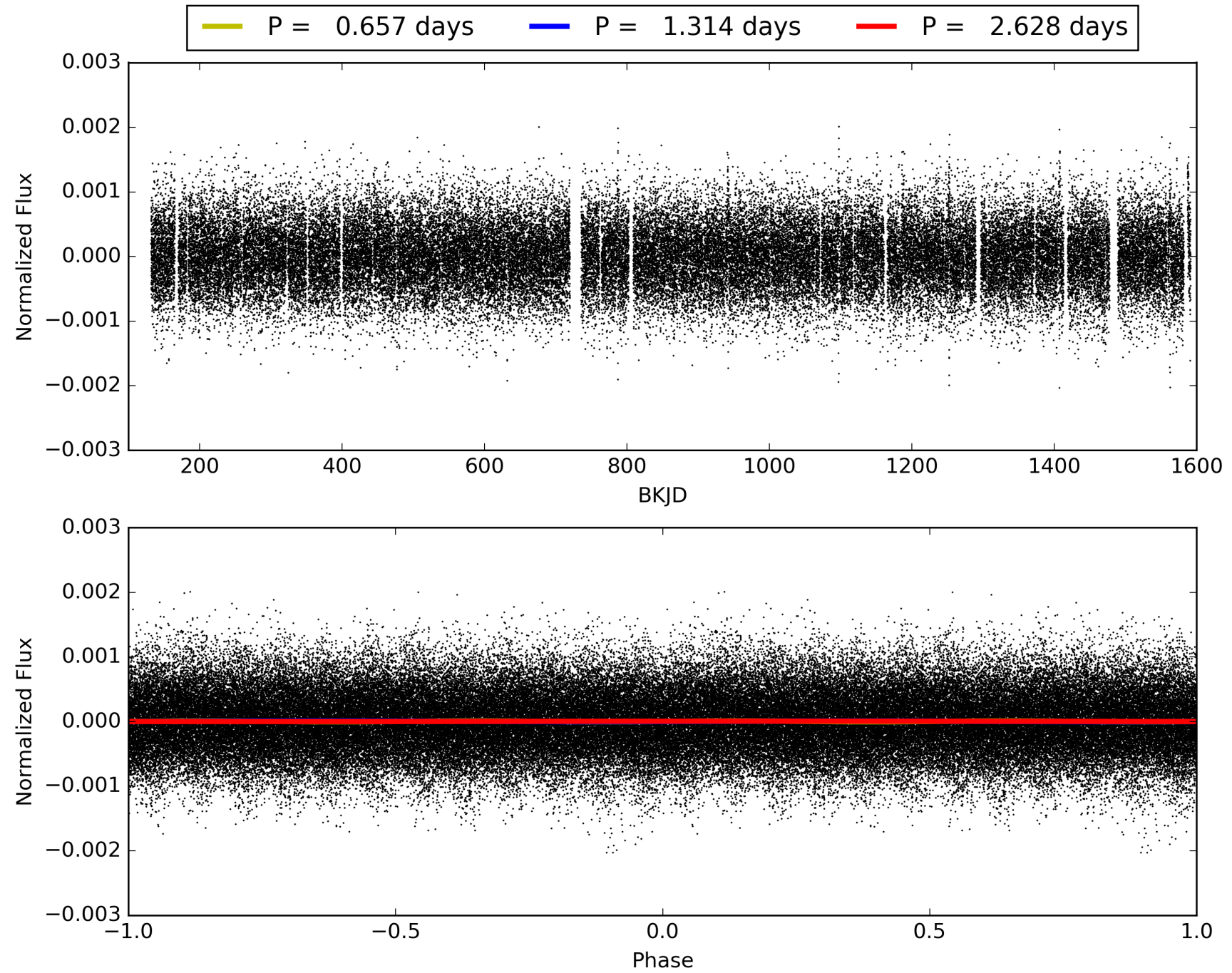
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:34:24 Z

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

TCE 004253860-02, PDC Light Curves

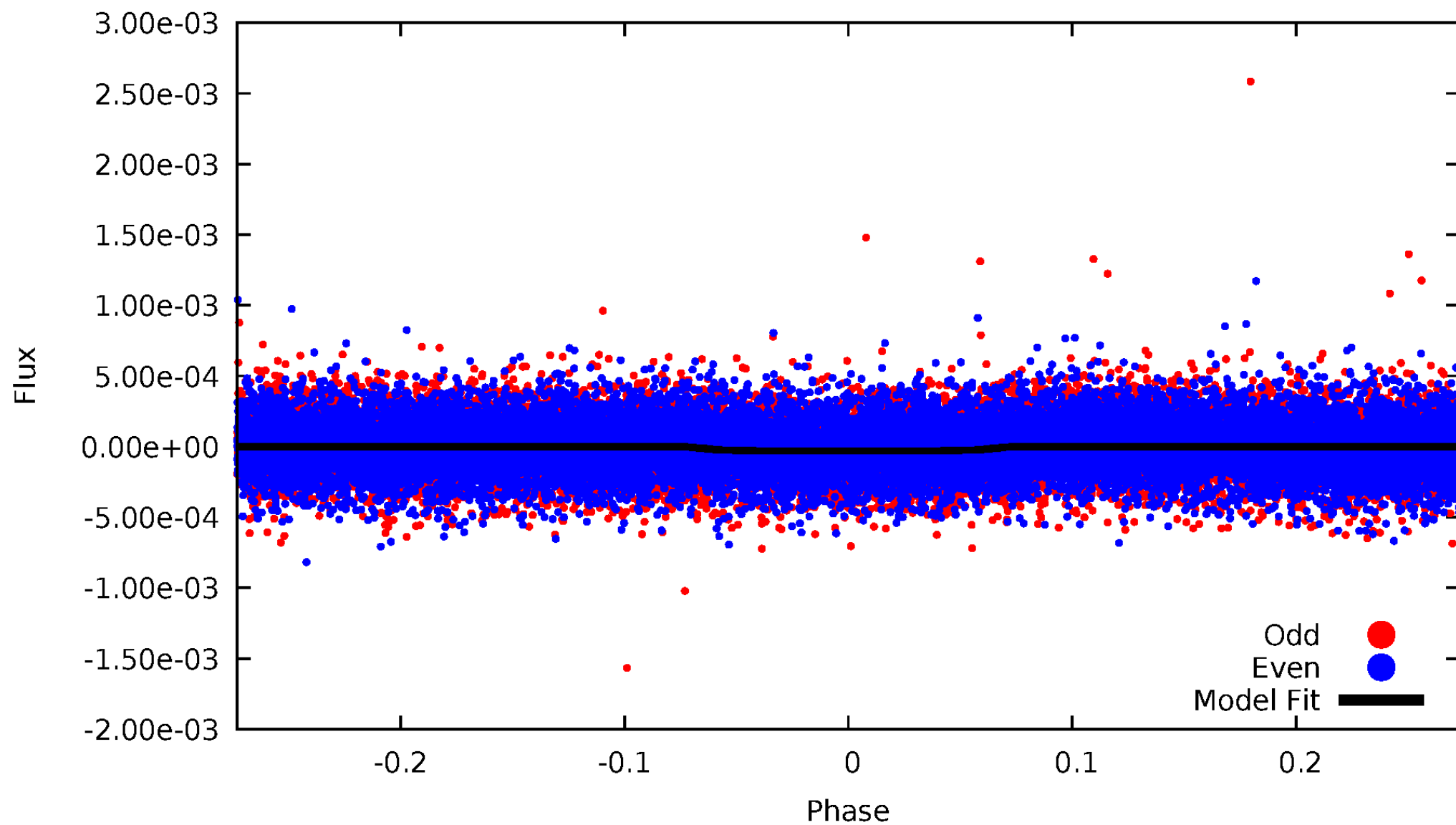


TCE 004253860-02



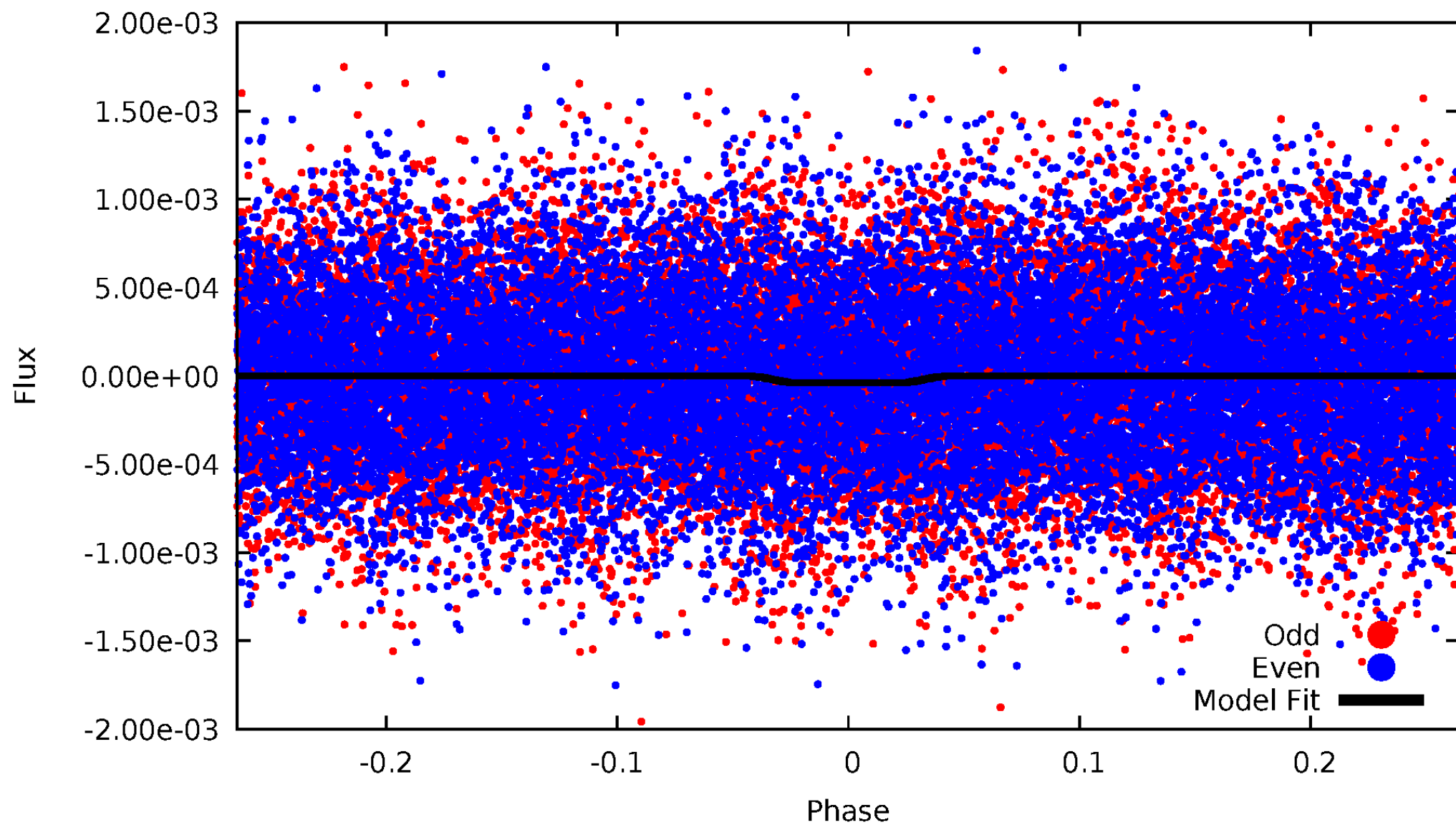
DV Odd/Even

TCE 004253860-02



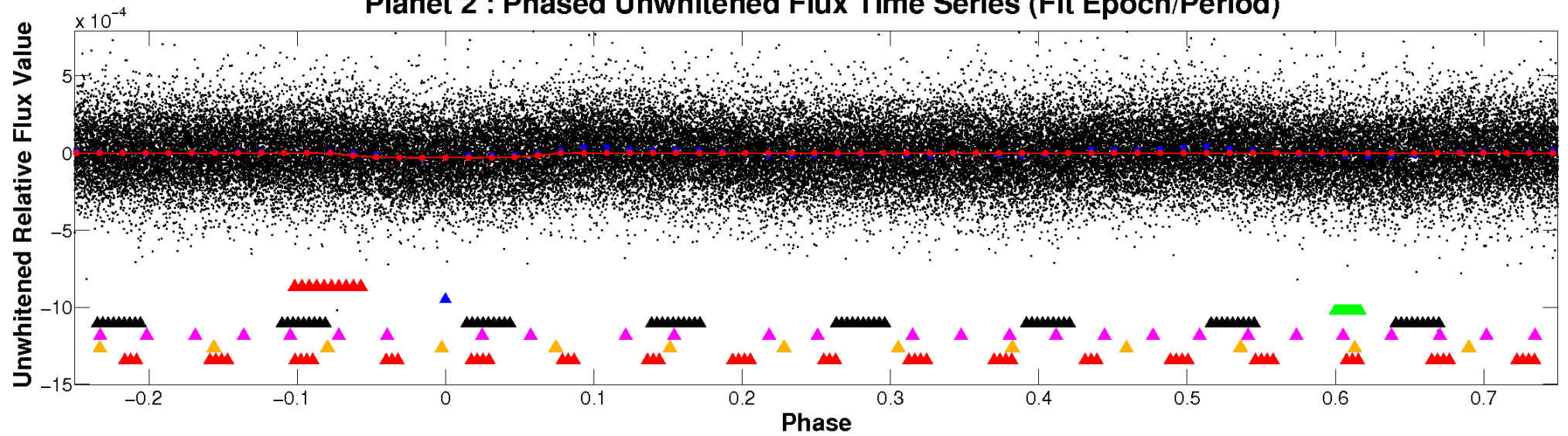
ALT Odd/Even

TCE 004253860-02

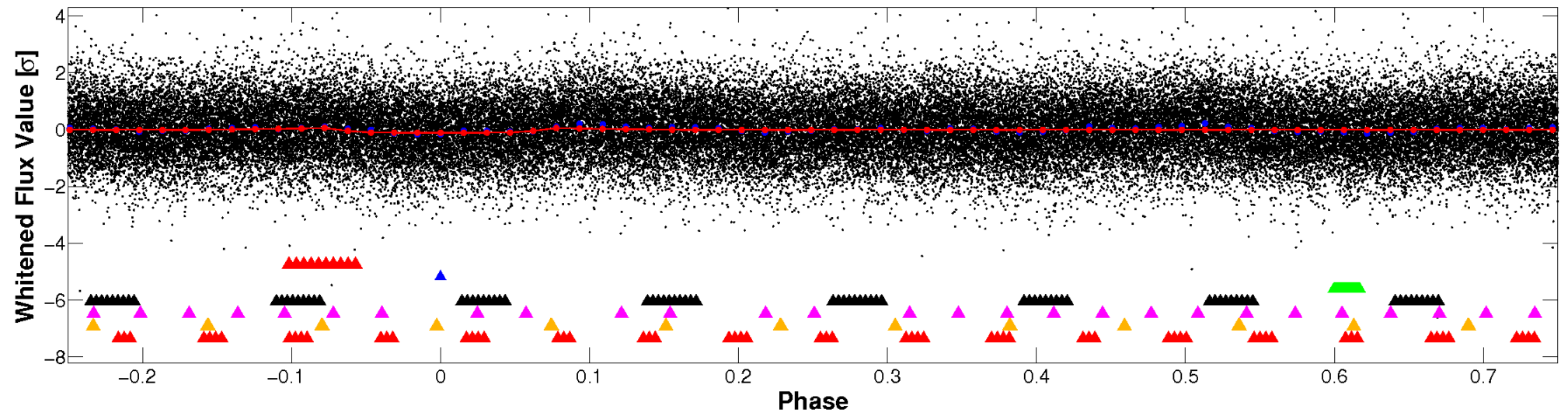


Non-Whitened Vs. Whitened Light Curve

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

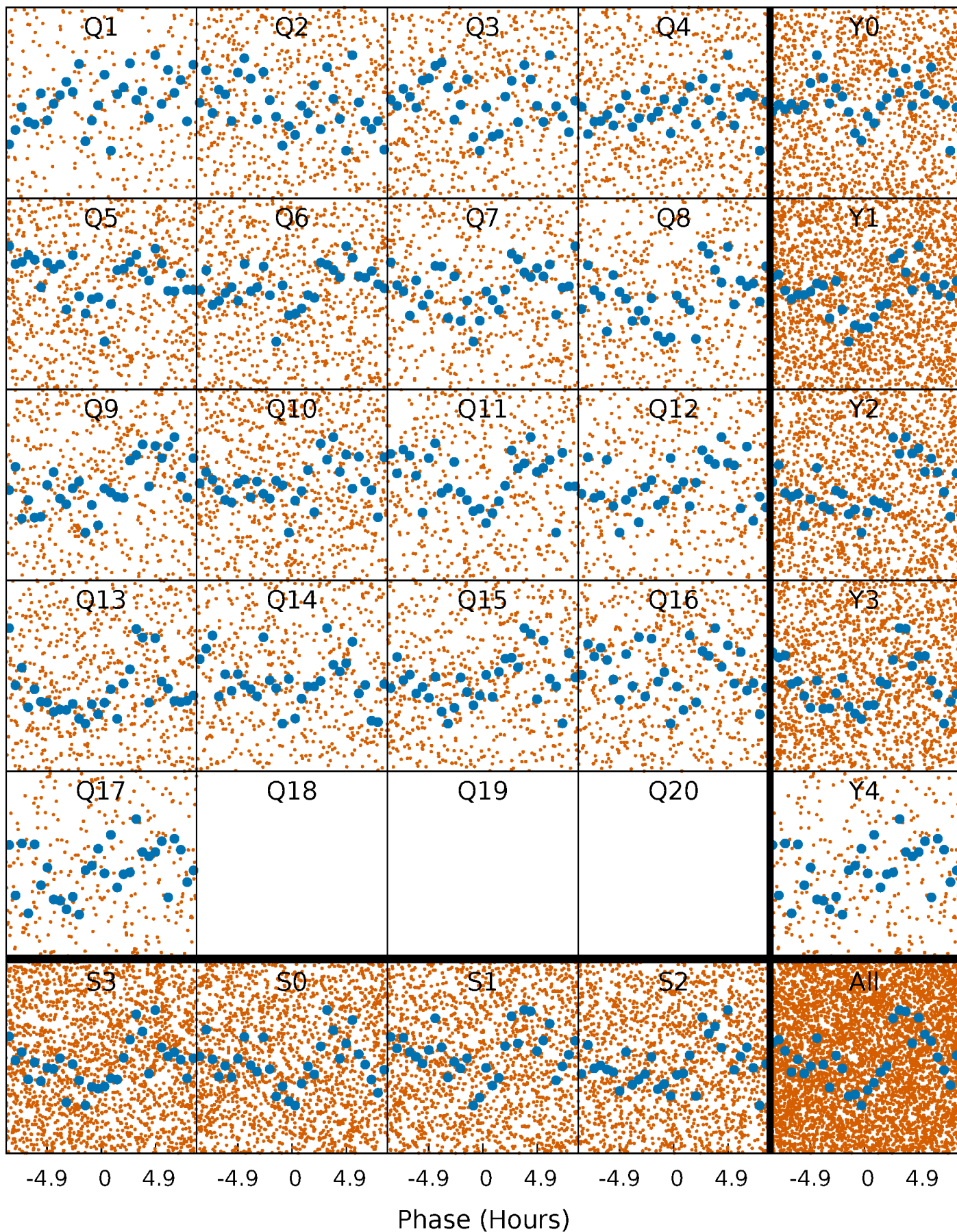


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



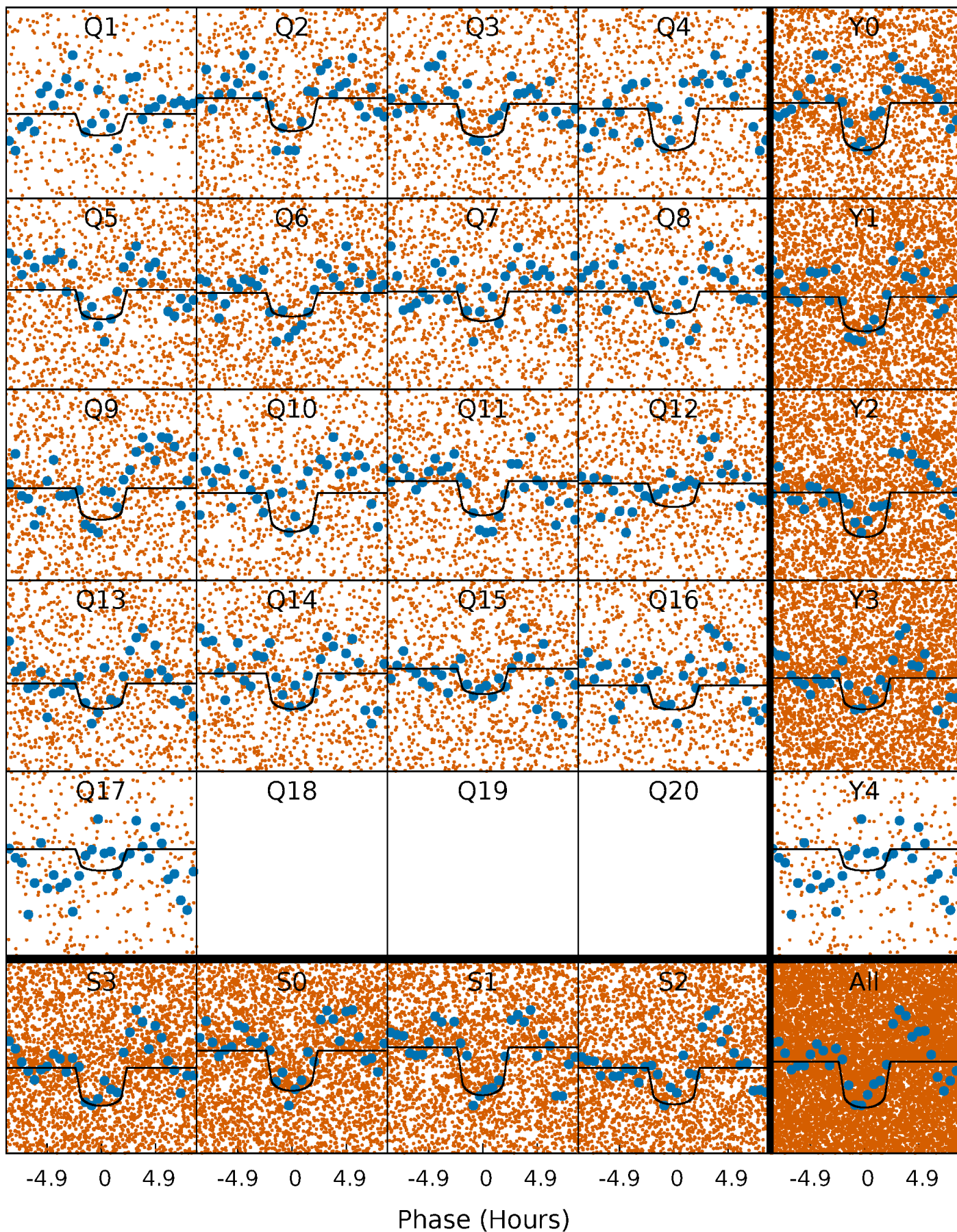
PDC Quarter-Phased Transit Curves

TCE 004253860-02 P= 1.314011 Days $T_0=132.524554$ (BKJD)



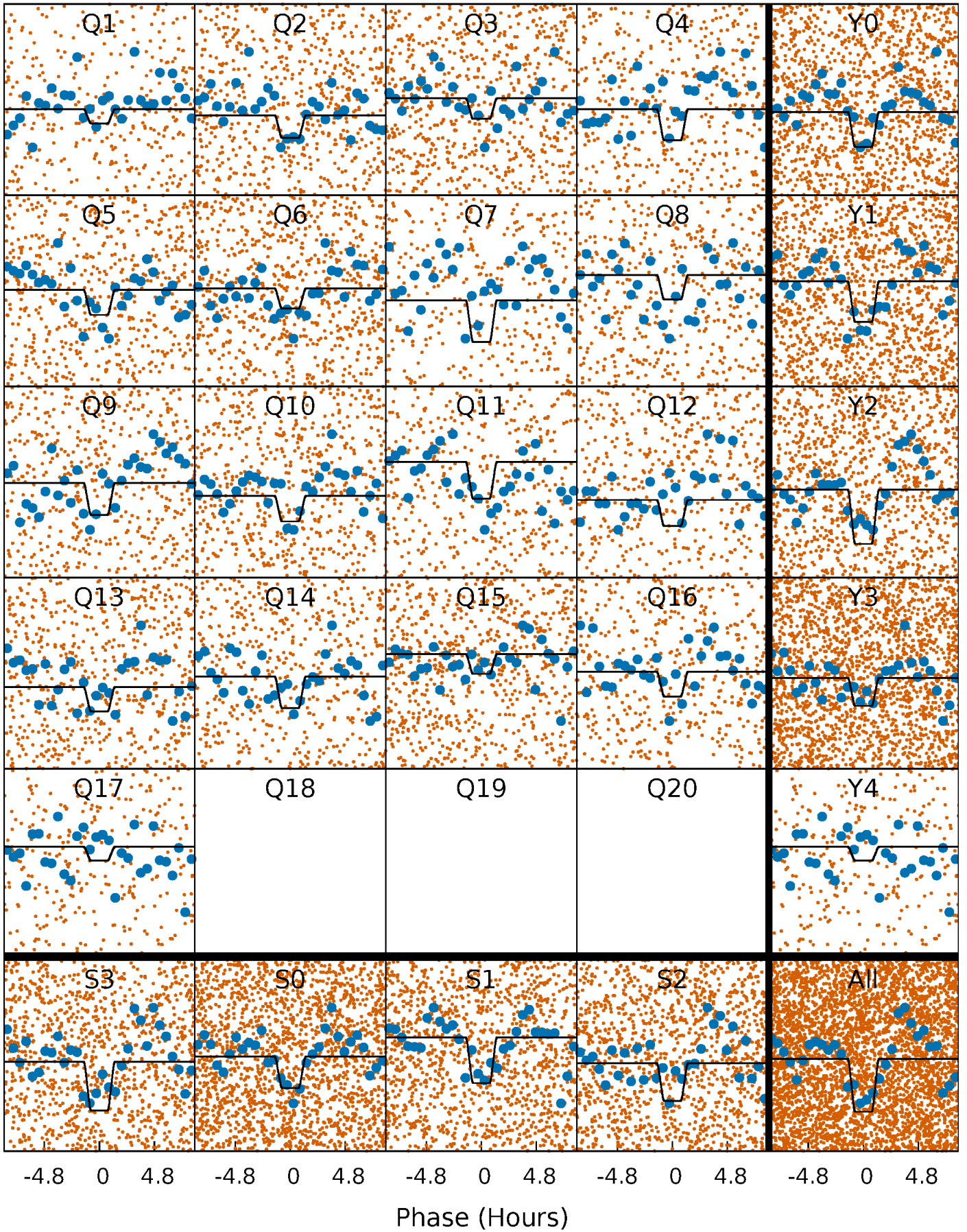
DV Quarter-Phased Transit Curves

TCE 004253860-02 P= 1.314011 Days $T_0=132.524554$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

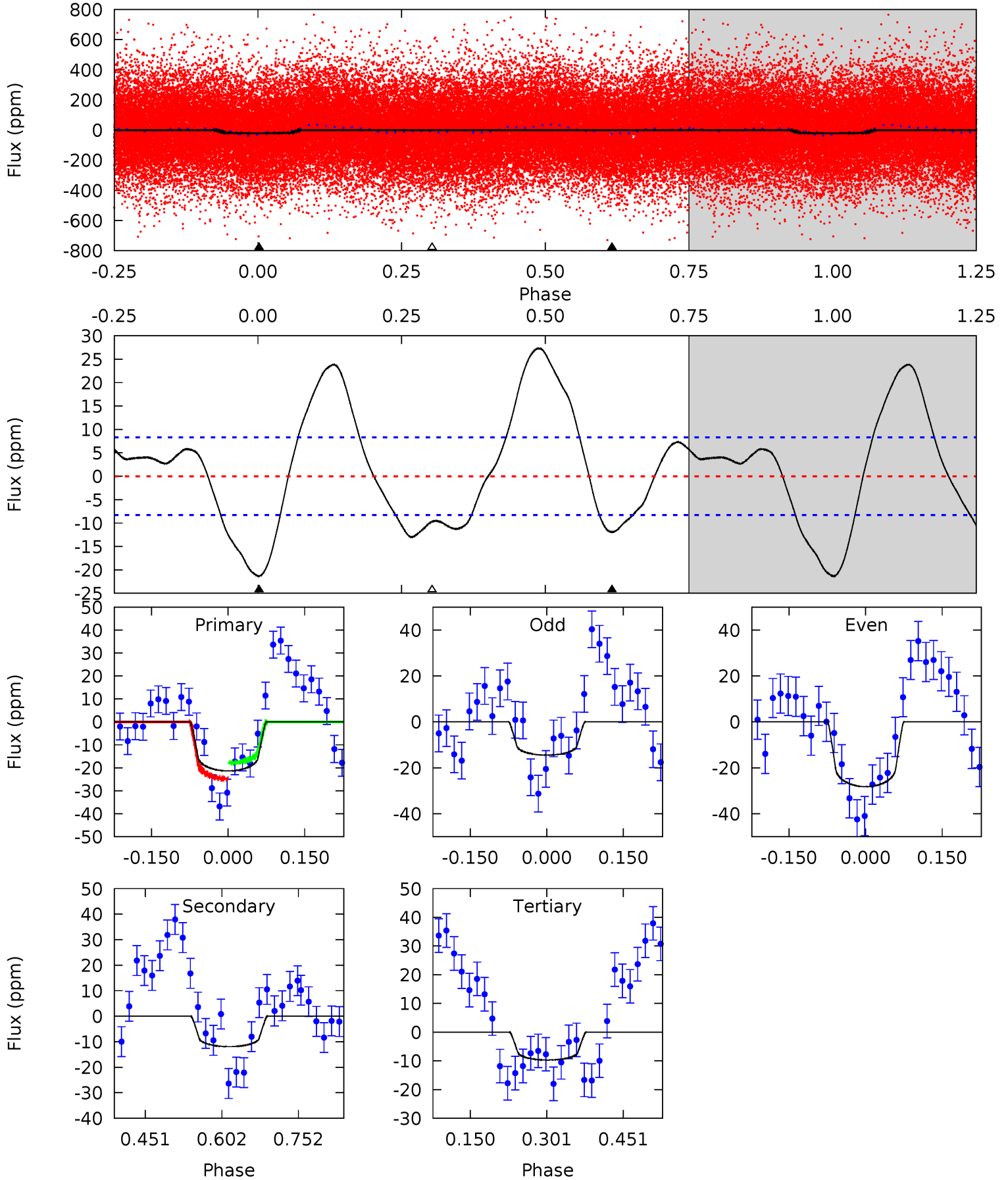
TCE 004253860-02 P= 1.314028 Days $T_0=132.509915$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-02, P = 1.314011 Days, E = 131.210543 Days

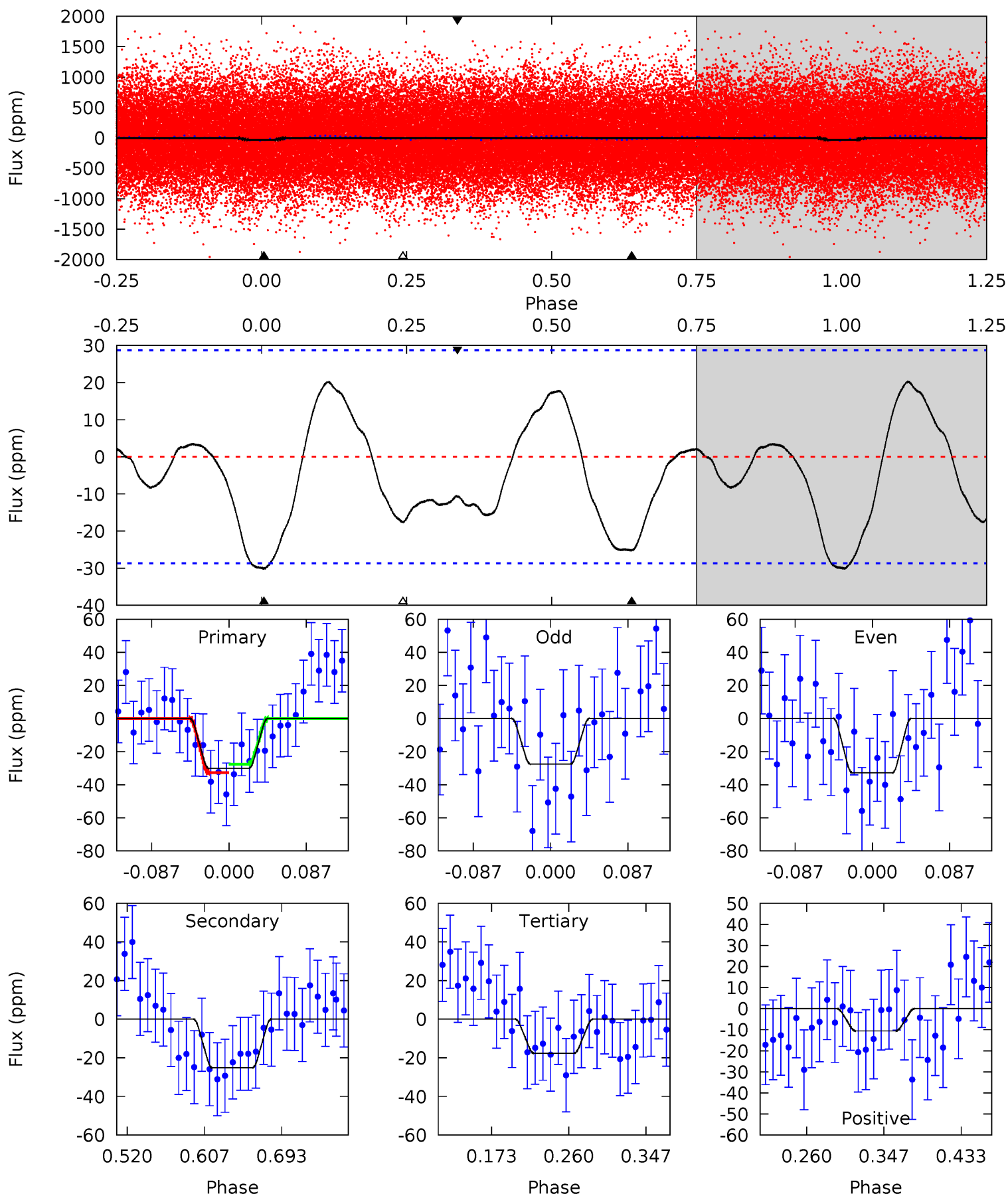
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	6.43	5.25	0	4.48	1.44	4.92	6.28	11.5	1.19	6.43	3.76	1.06	0.56	1.89



Alt Model-Shift Uniqueness Test

004253860-02, P = 1.314028 Days, E = 131.195887 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.83	4.04	2.82	-1.69	4.59	1.71	1.77	2.01	6.52	1.21	5.73	0.42	1.33	0.40	0.40



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 2	$7.96^{+2.44}_{-2.28}$	7334^{+968}_{-1914}	-5018^{+1650}_{-1019}	$0.126^{+0.107}_{-0.053}$
Alt.	-25 ± 6	$8.29^{+2.47}_{-2.41}$	7354^{+979}_{-1733}	-3813^{+8657}_{-1646}	$0.238^{+0.210}_{-0.100}$

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

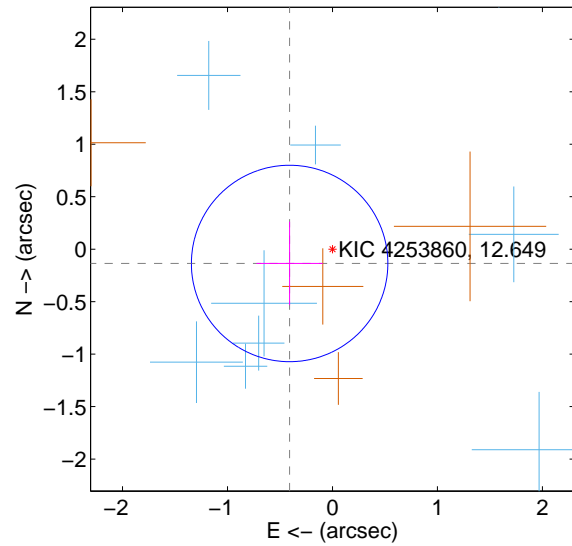
Supplemental centroid analysis for 004253860-02. Kepler magnitude: 12.65. Transit SNR 9.65

There are 10 quarters with good PRF difference image offsets

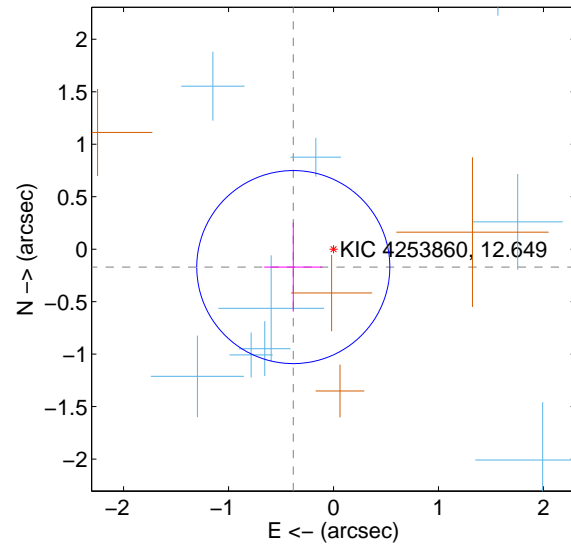
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.430 ± 0.312	1.38	0.408 ± 0.316	-0.136 ± 0.397
PRF-fit source offset from KIC position	0.420 ± 0.307	1.37	0.383 ± 0.277	-0.171 ± 0.425
photometric centroid source offset	0.45 ± 0.49	0.91	-0.19 ± 0.47	0.41 ± 0.50

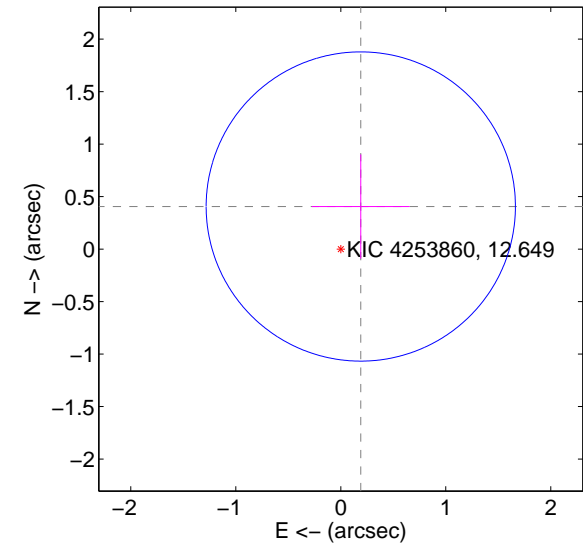
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

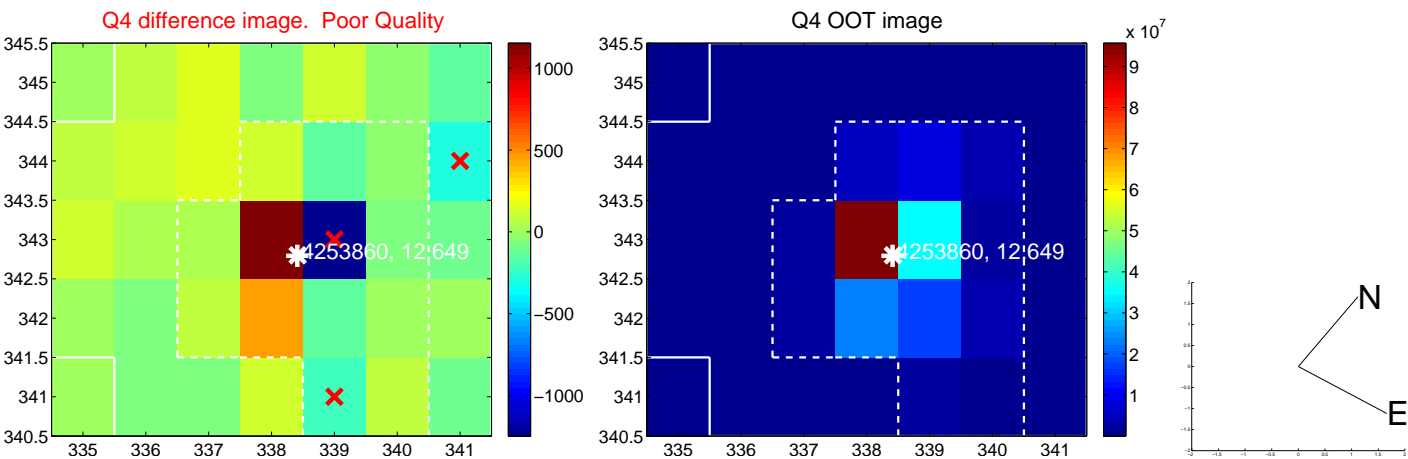
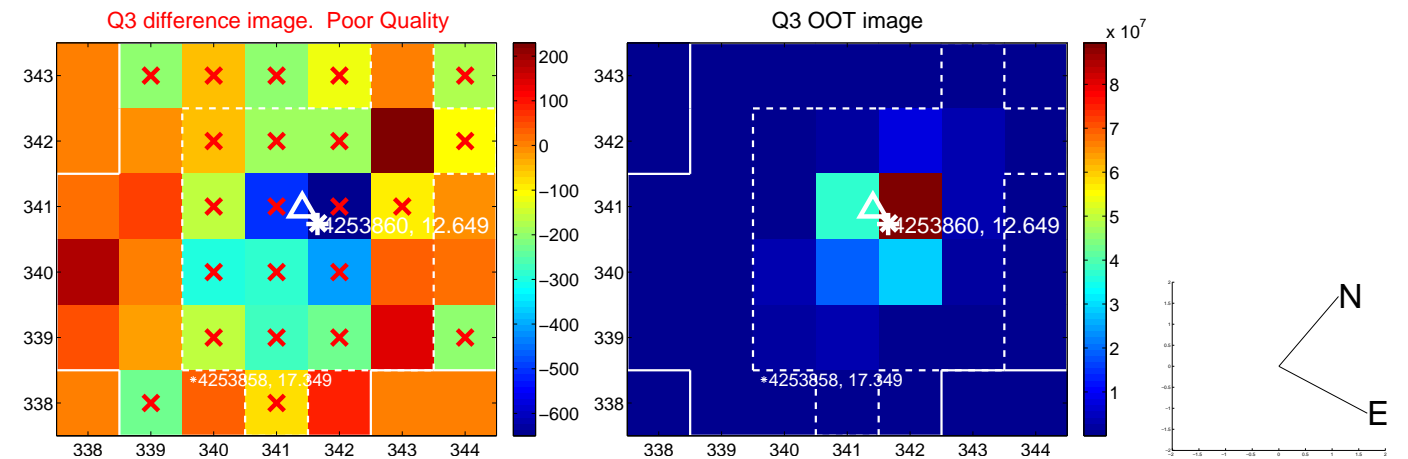
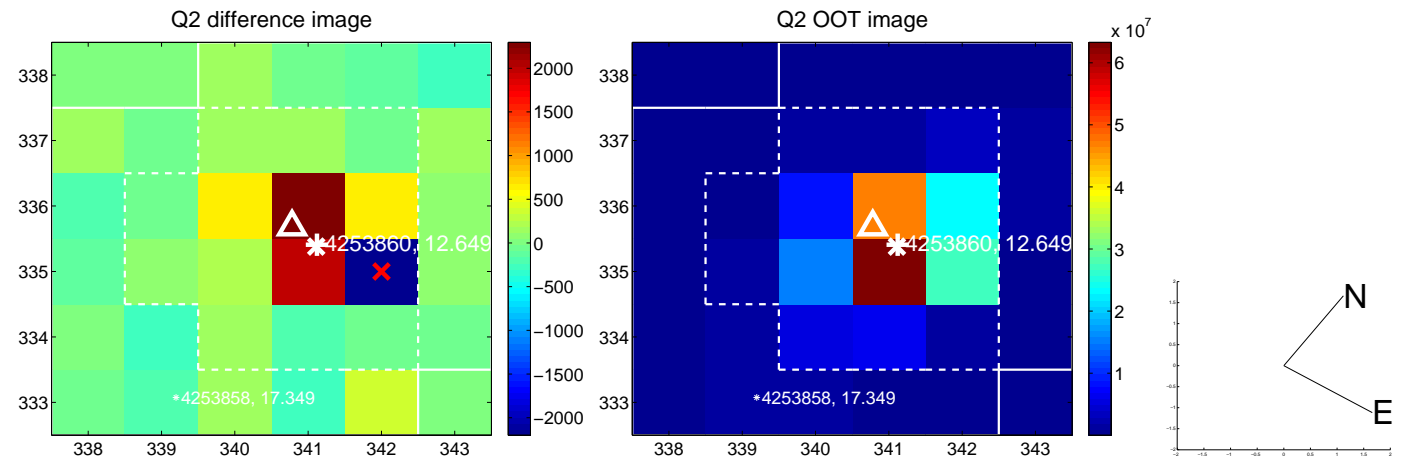
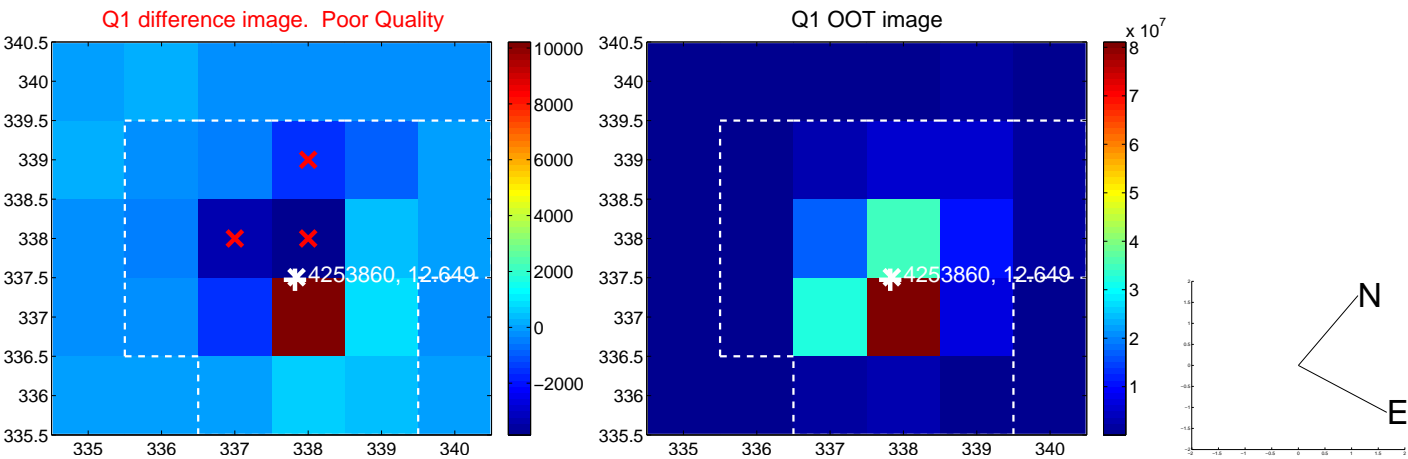


offset from photometric centroids

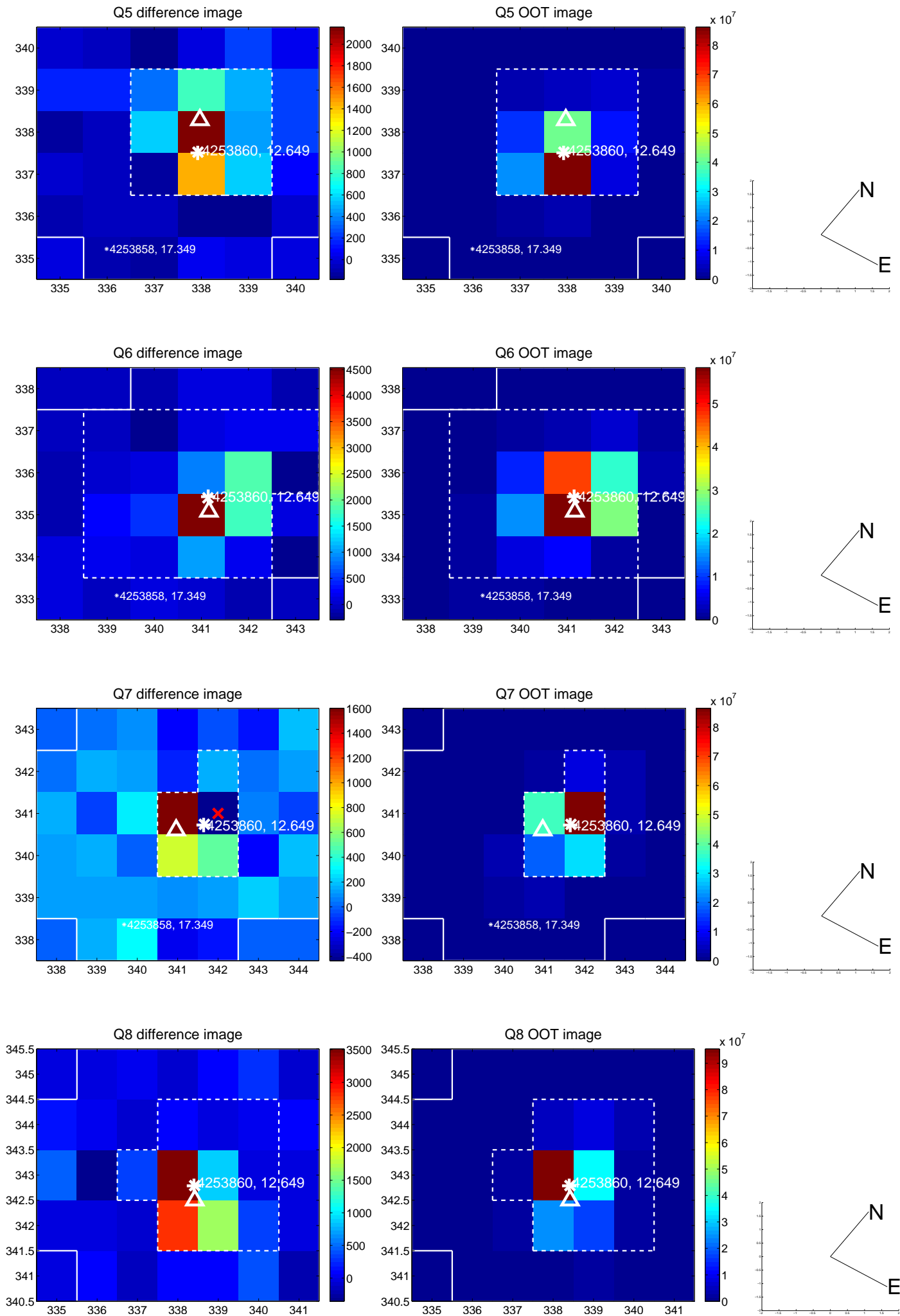


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

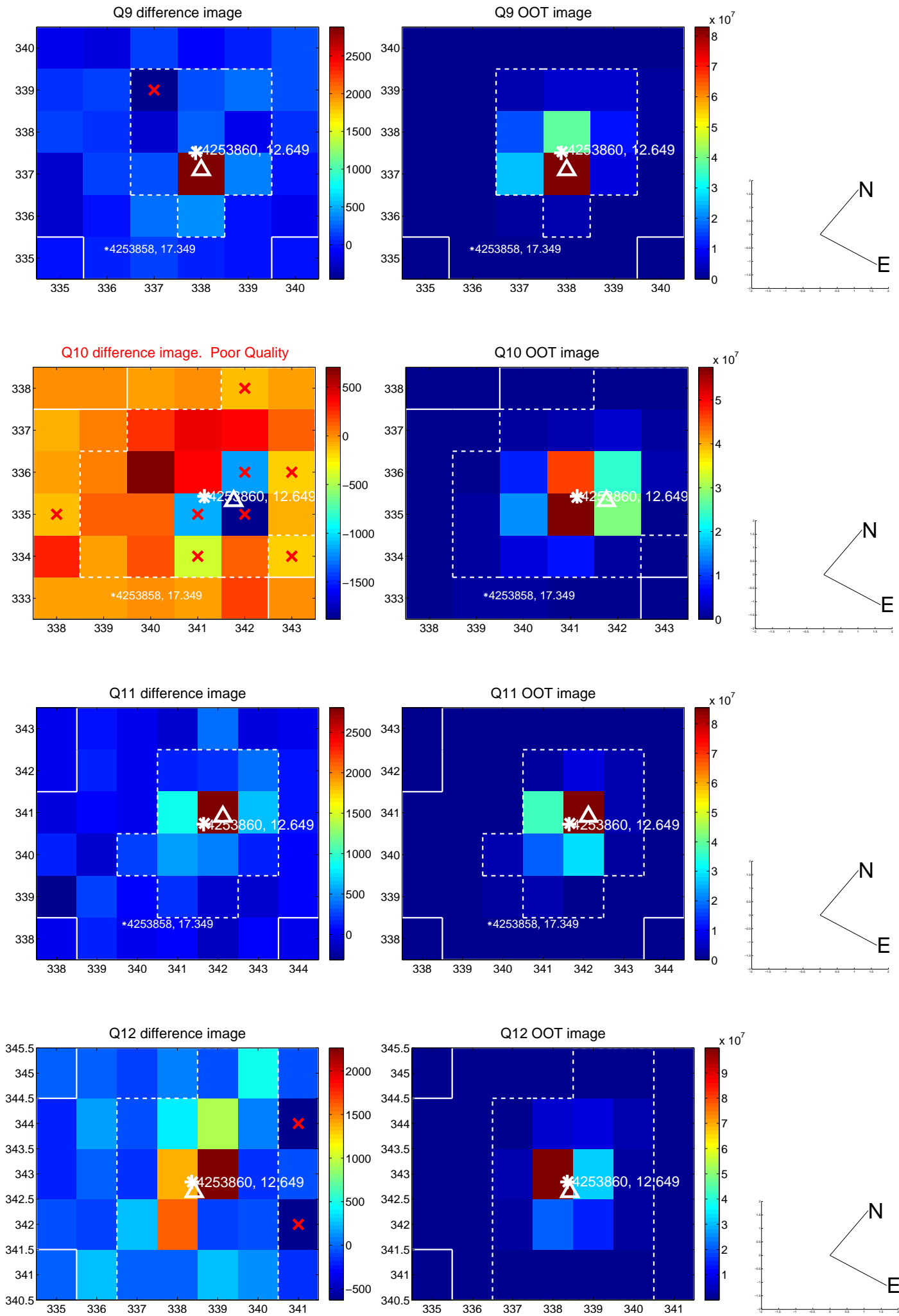
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



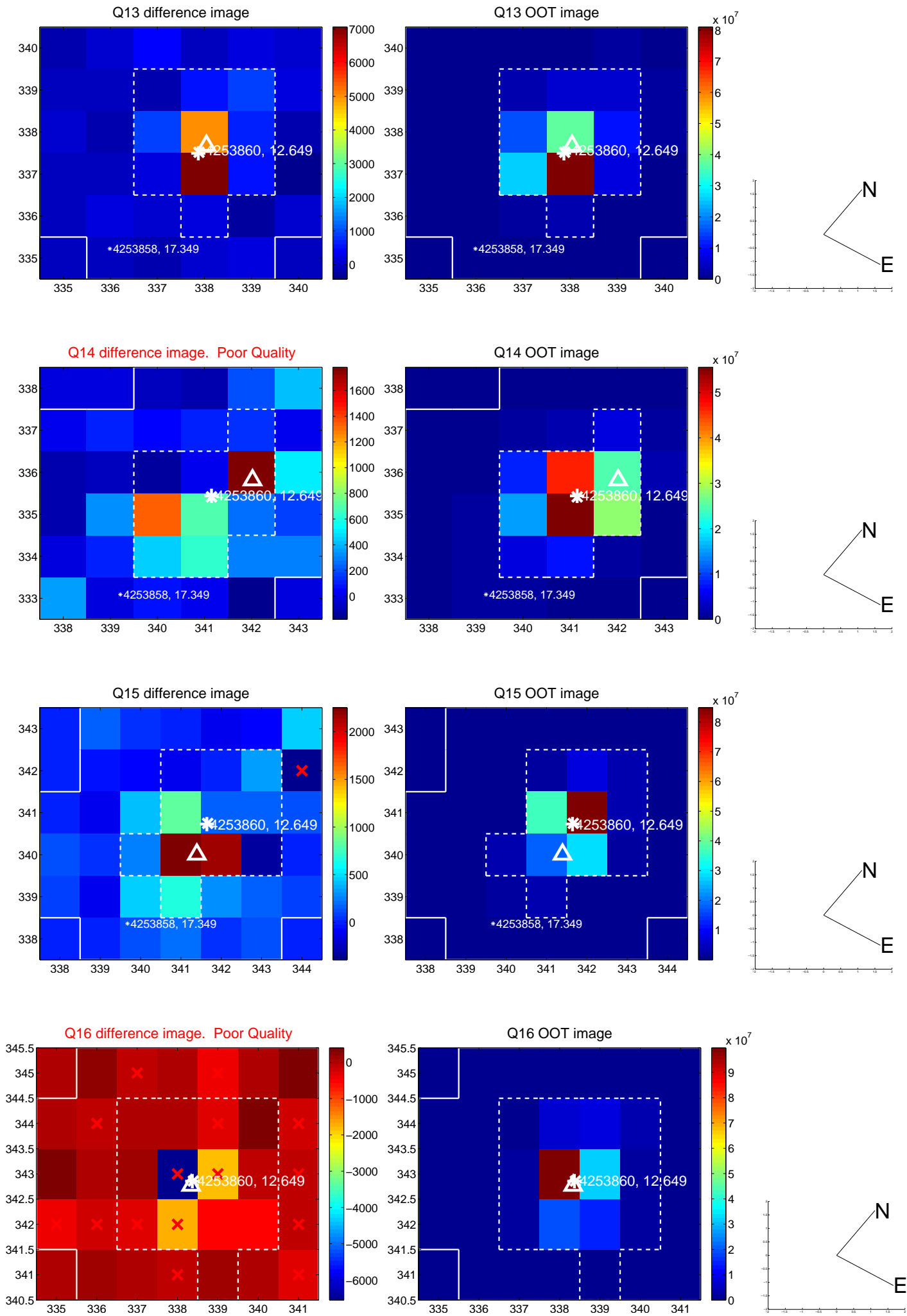
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



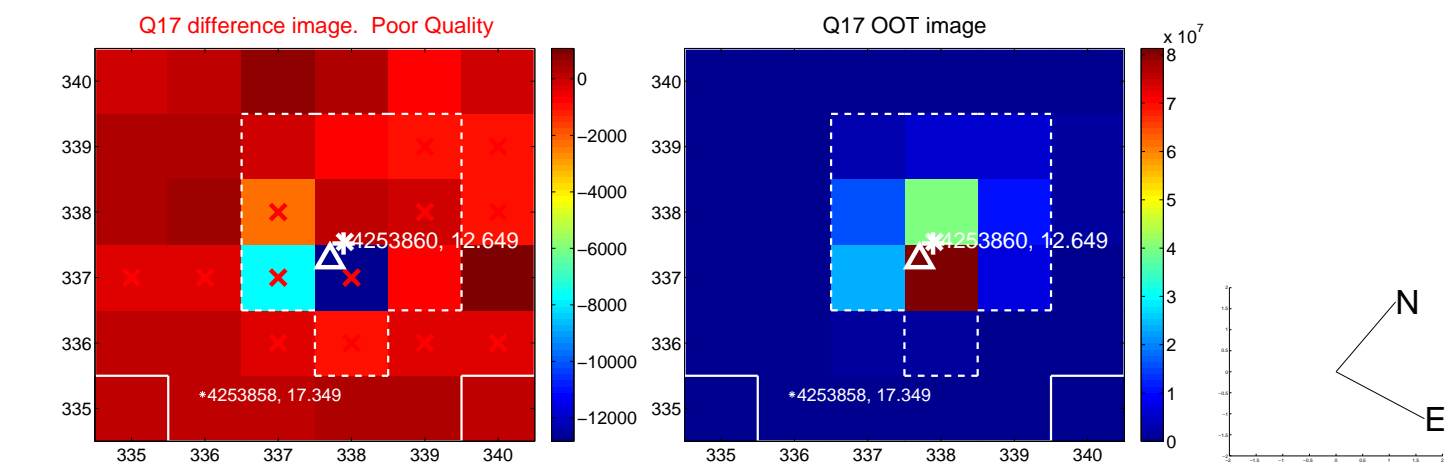
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



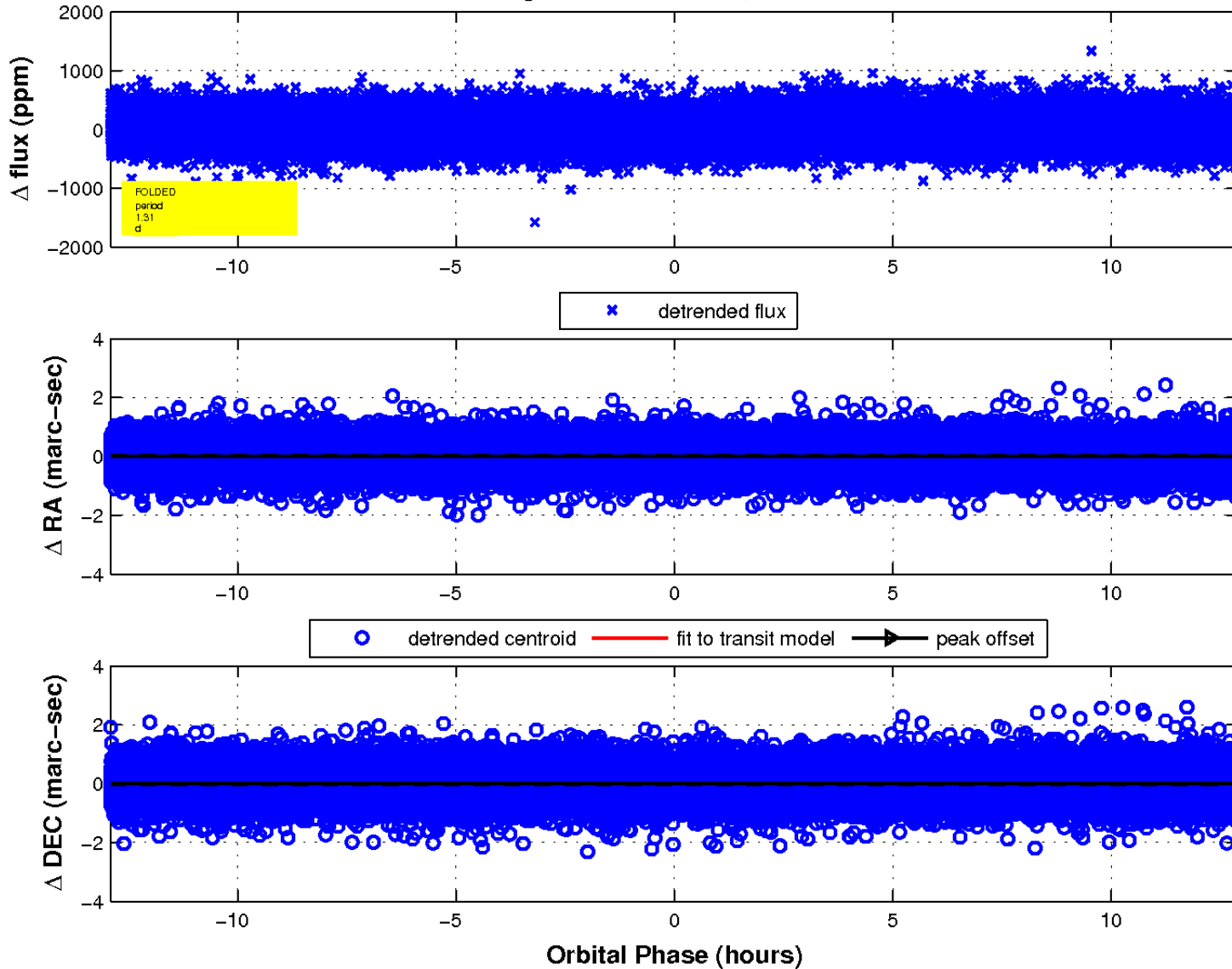
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

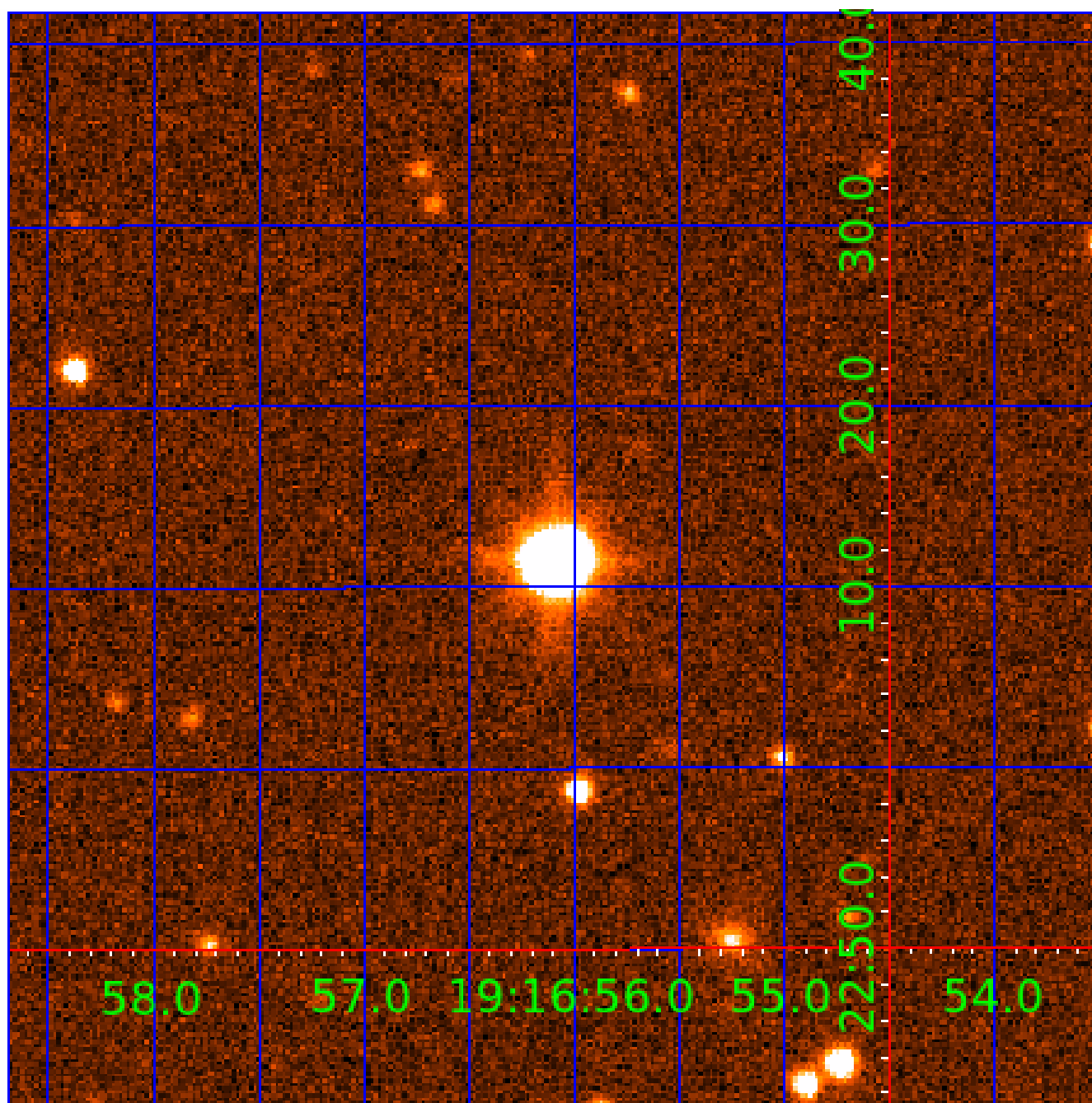


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination



KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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.

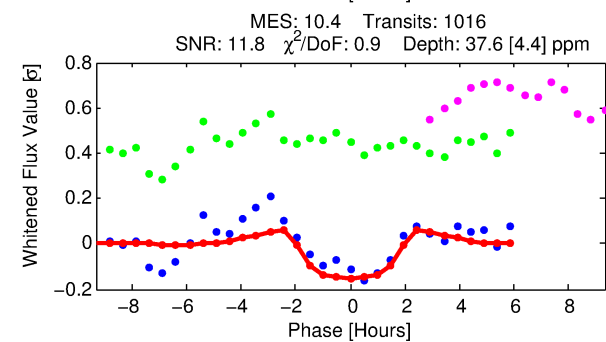
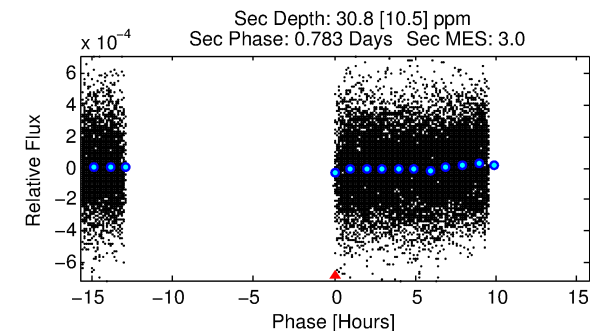
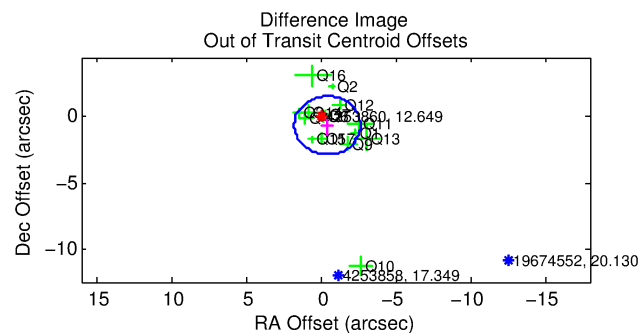
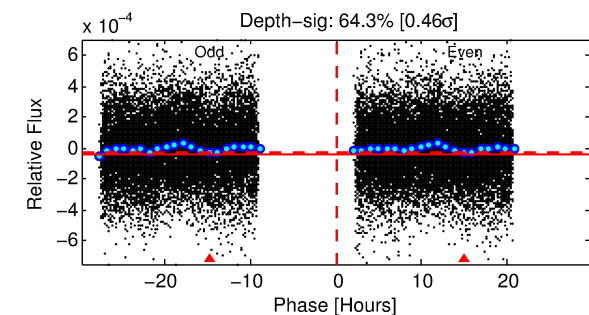
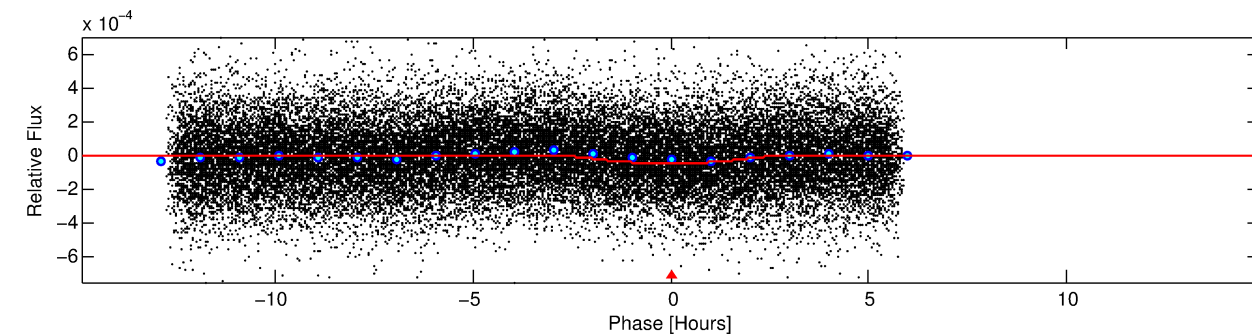
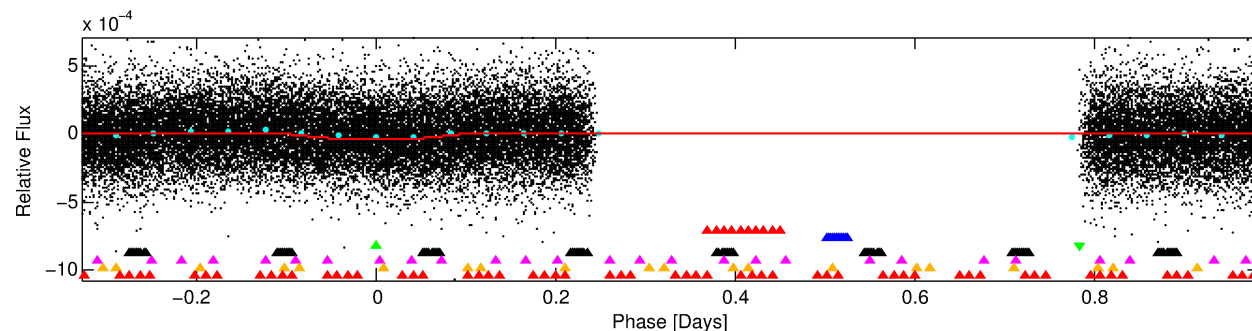
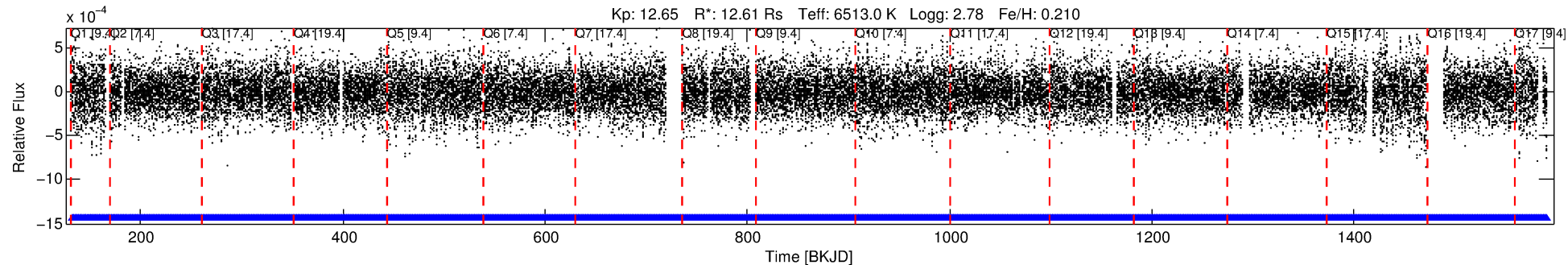
Ephemeris Match Information For 004253860-03

No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 3 of 7 Period: 1.314 d
KOI: K05052 Corr: No Ephemeris Match

Kp: 12.65 R*: 12.61 Rs Teff: 6513.0 K Logg: 2.78 Fe/H: 0.210



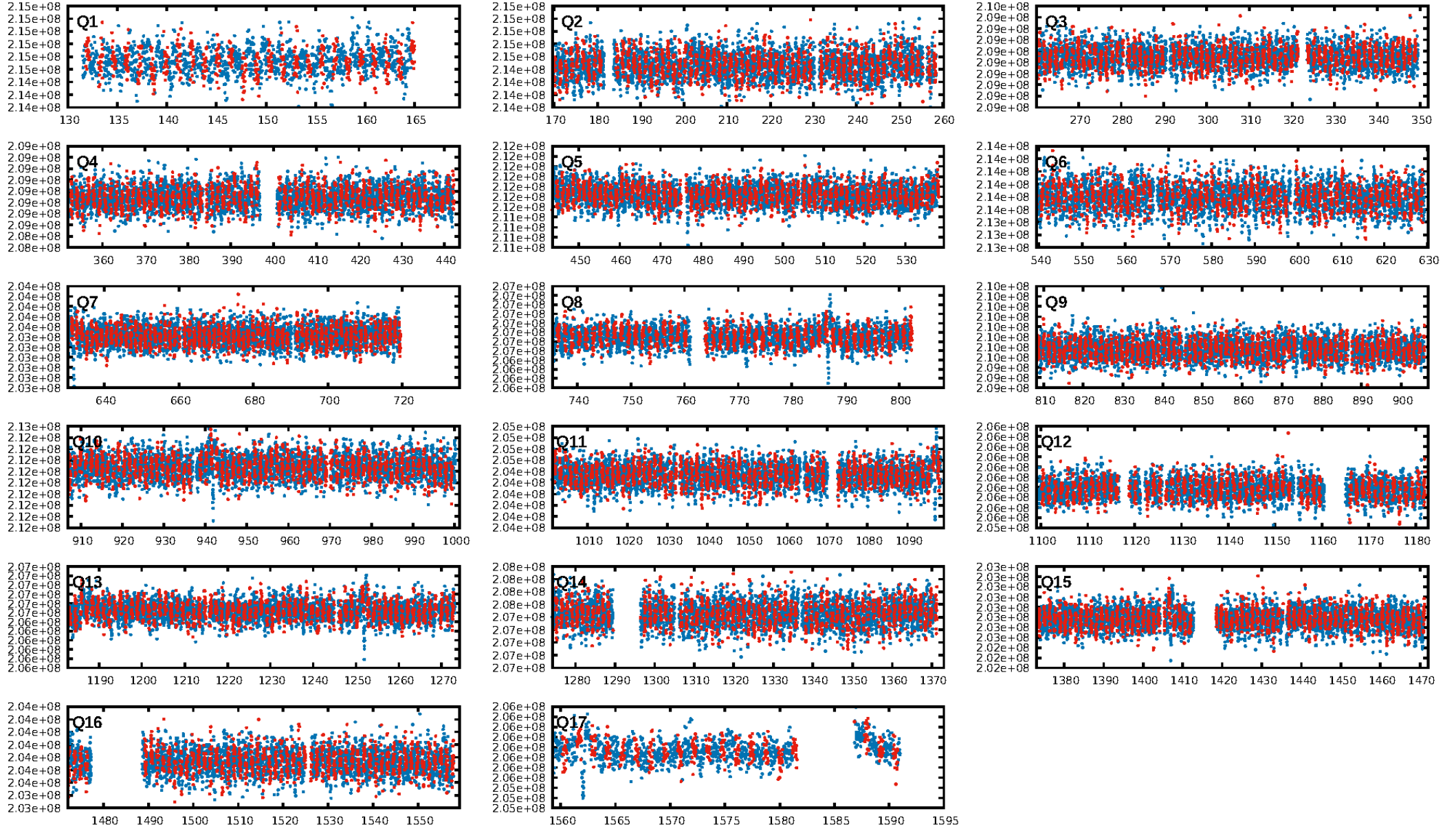
DV Fit Results:

Period = 1.31403 [0.00001] d
Epoch = 131.9984 [0.0043] BKJD
Rp/R* = 0.0078 [0.0005]
a/R* = 1.07 [0.02]
b = 0.99 [0.00]
Seff = N/A
Teq = N/A
Rp = 10.68 [3.92] Re
a = N/A
Ag = N/A
Teffp = N/A

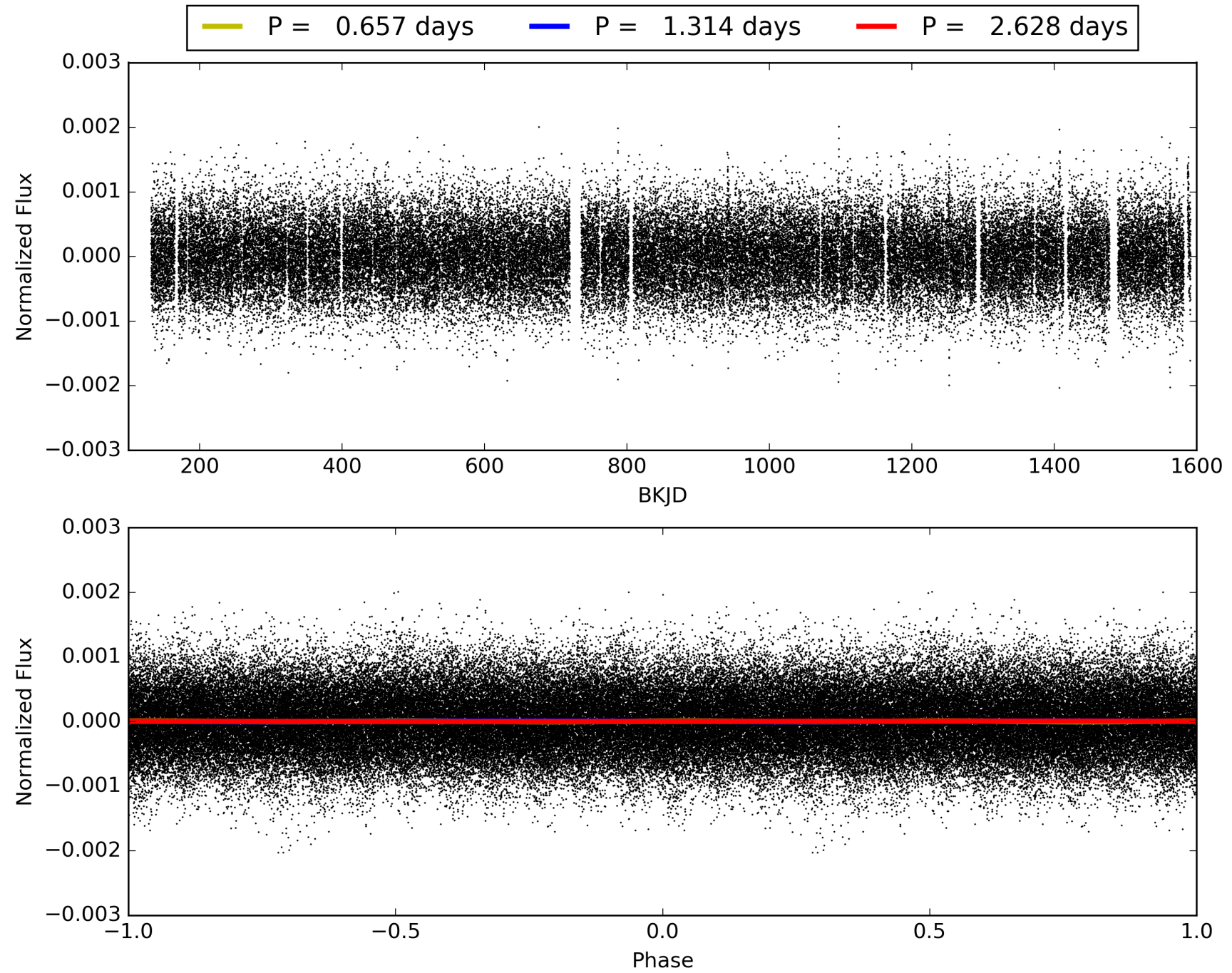
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [33.33σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [971/971]
GhostDiagnostic-chr: -43.77
Centroid-sig: 10.7%
Centroid-so: 0.491 arcsec [1.17σ]
OotOffset-rm: 0.787 arcsec [1.07σ]
KicOffset-rm: 0.885 arcsec [1.17σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.67 [10/15]
DiffImageOverlap-fno: 0.18 [3/17]

TCE 004253860-03, PDC Light Curves

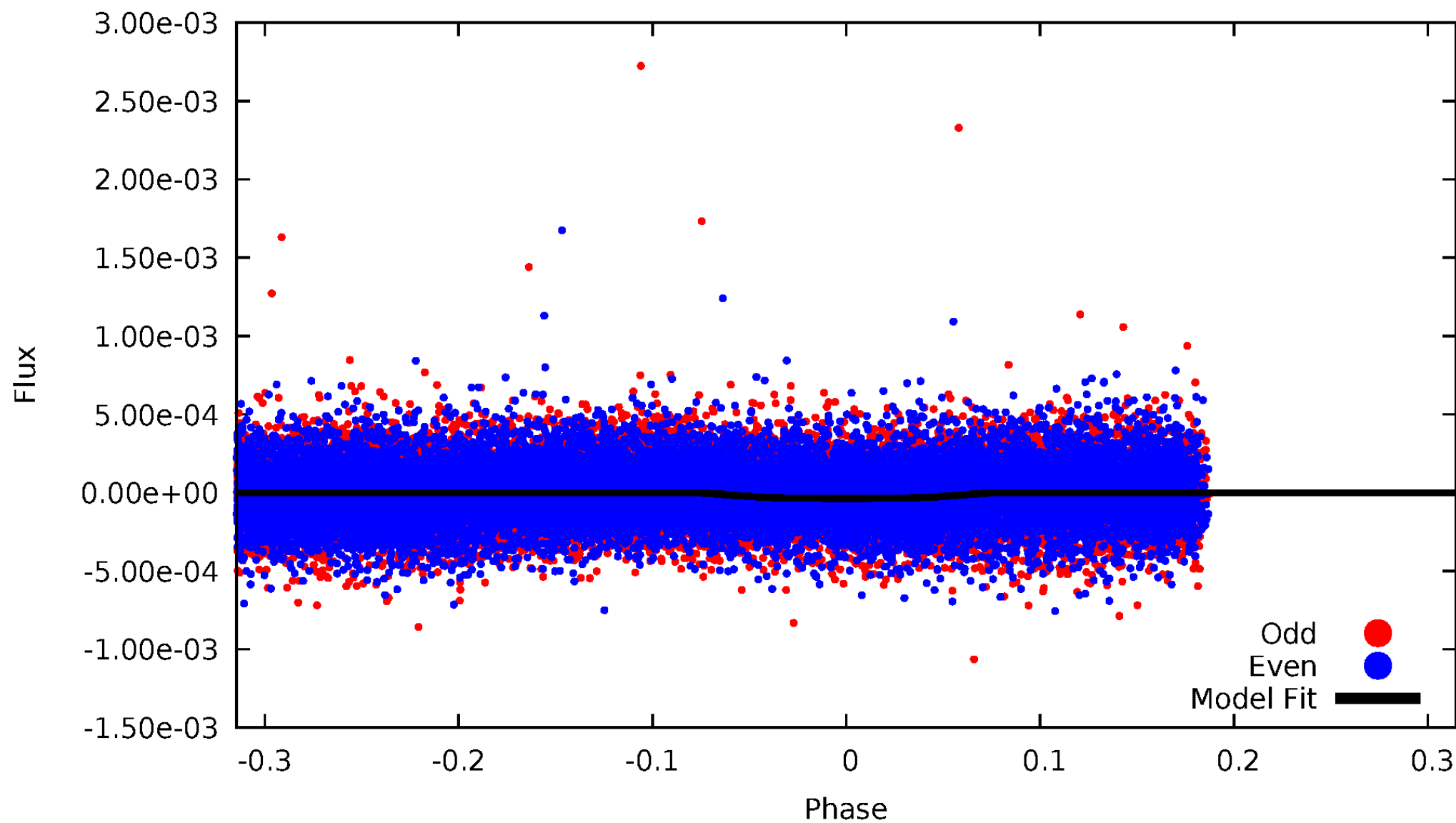


TCE 004253860-03



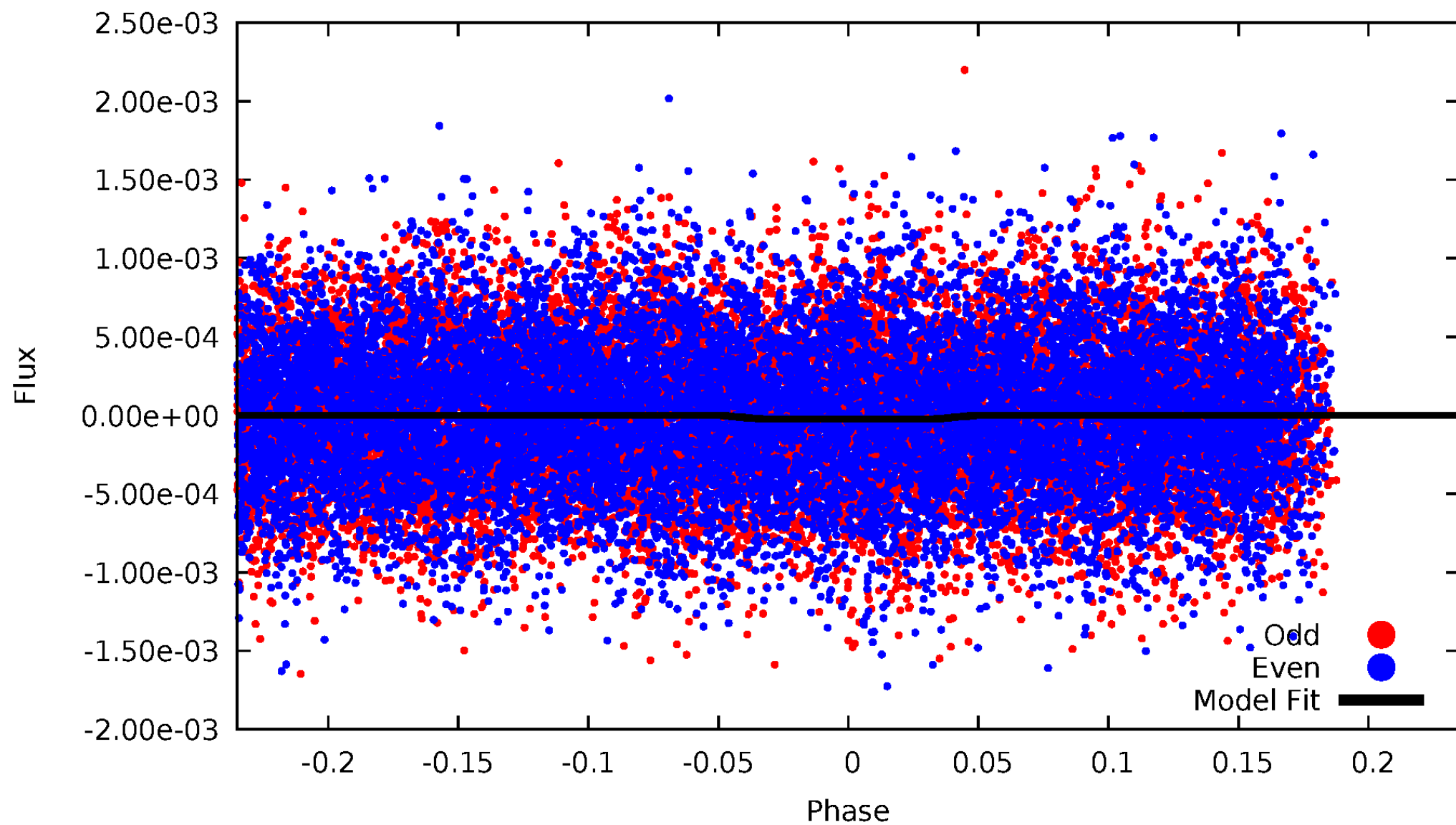
DV Odd/Even

TCE 004253860-03



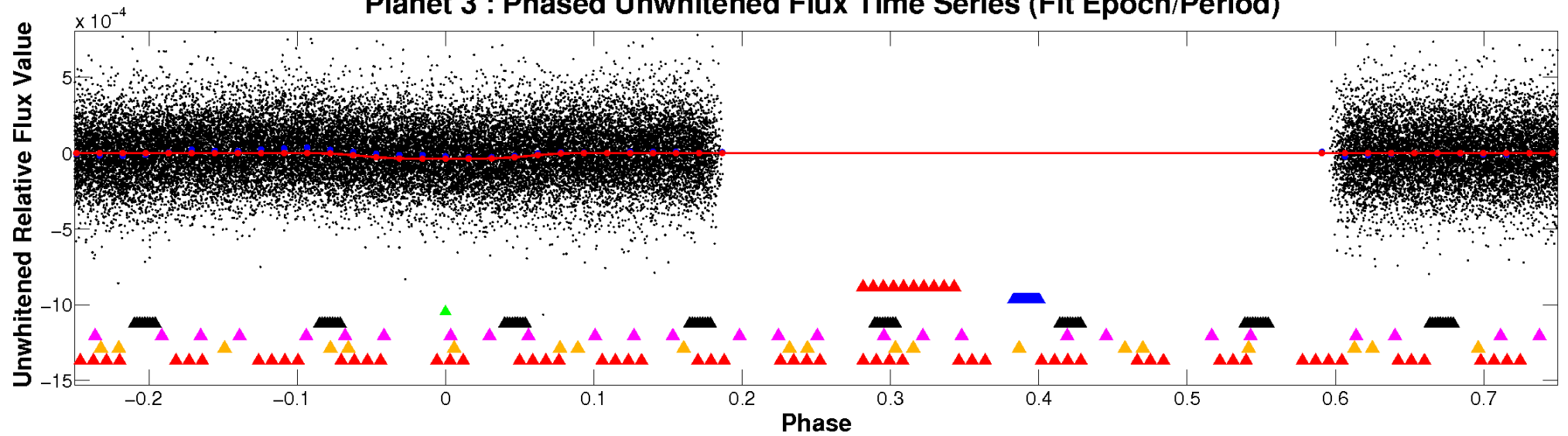
ALT Odd/Even

TCE 004253860-03

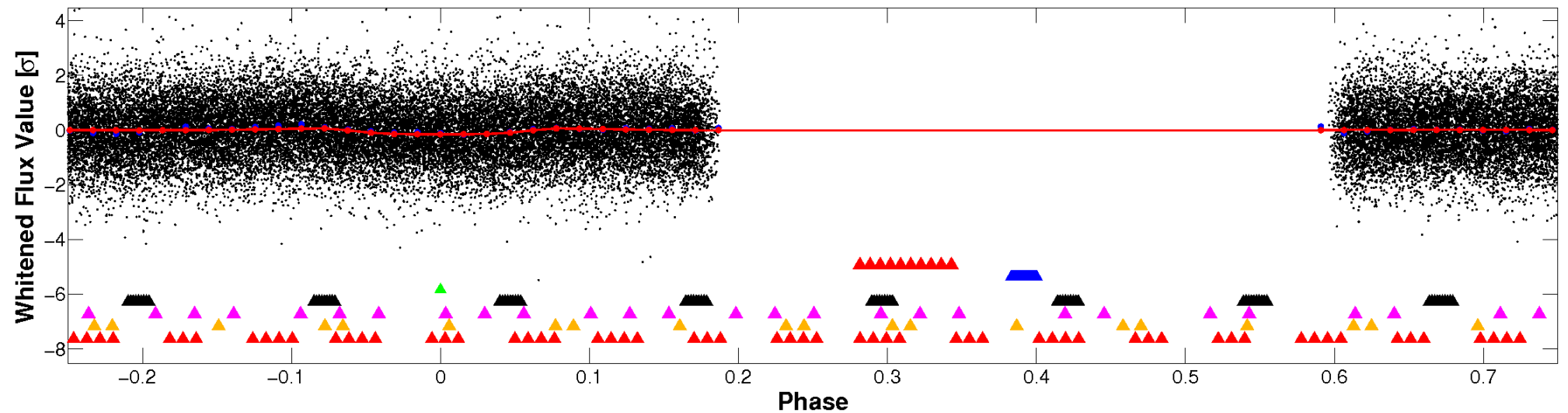


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

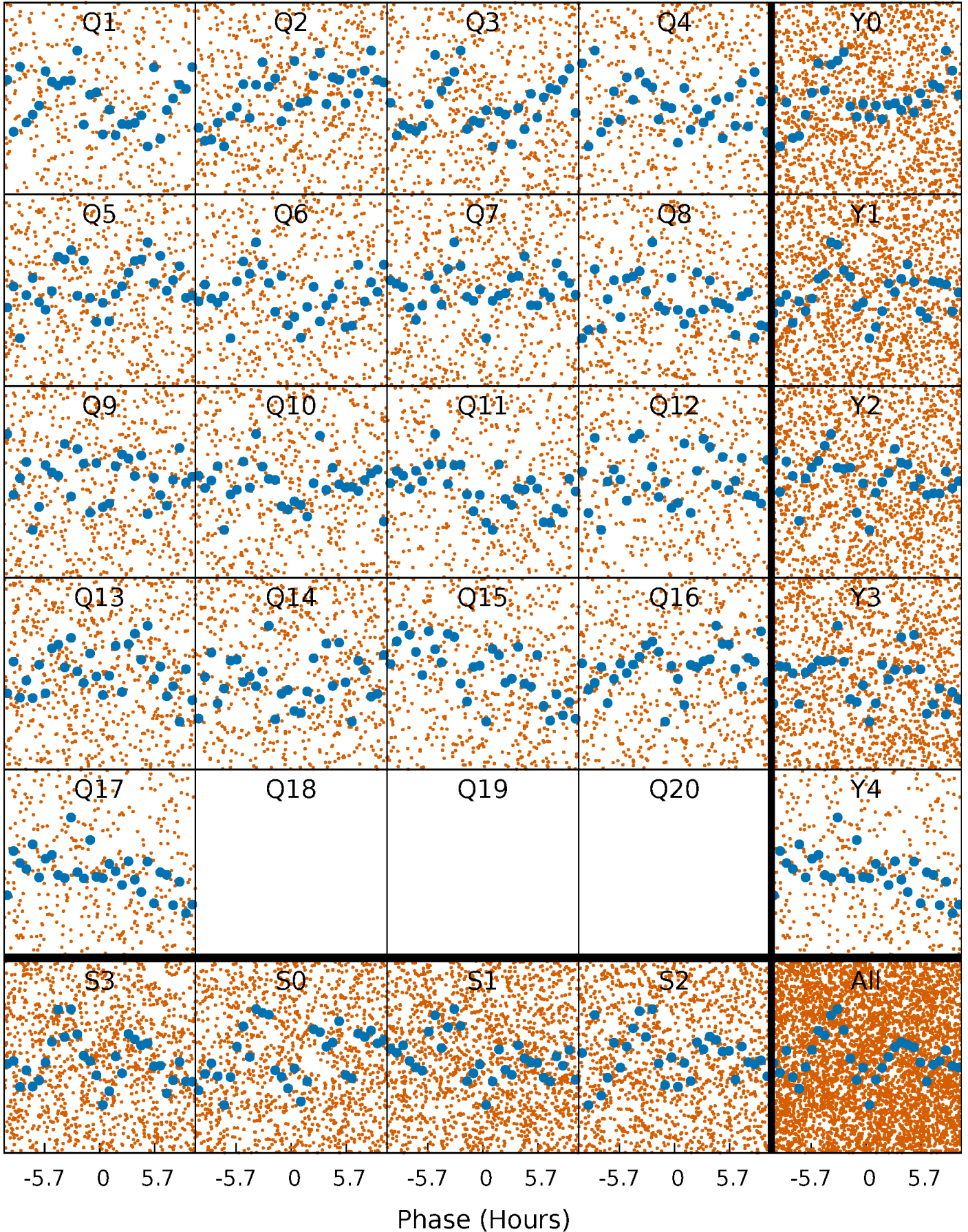


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



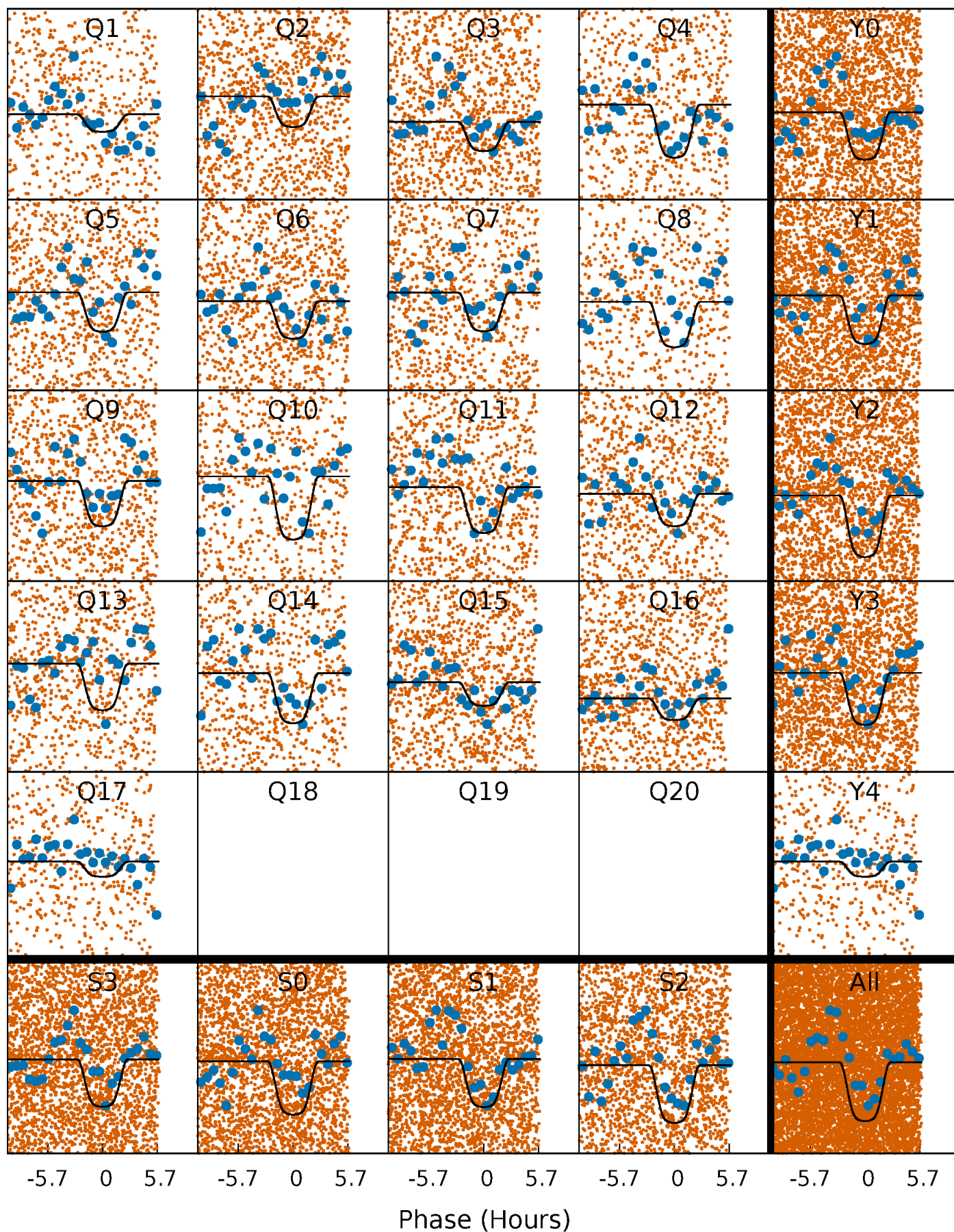
PDC Quarter-Phased Transit Curves

TCE 004253860-03 P= 1.314032 Days $T_0=131.998390$ (BKJD)



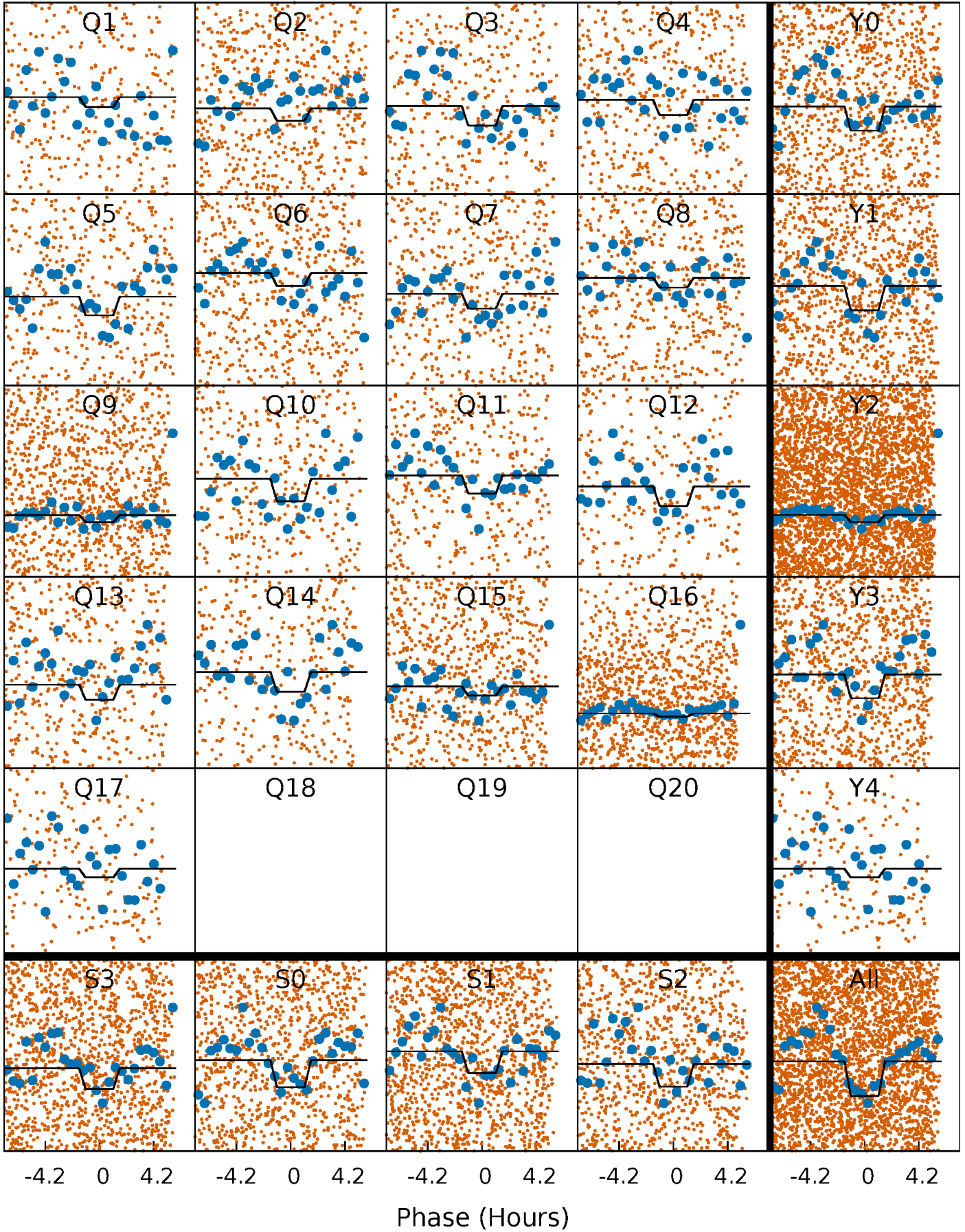
DV Quarter-Phased Transit Curves

TCE 004253860-03 P= 1.314032 Days $T_0=131.998390$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

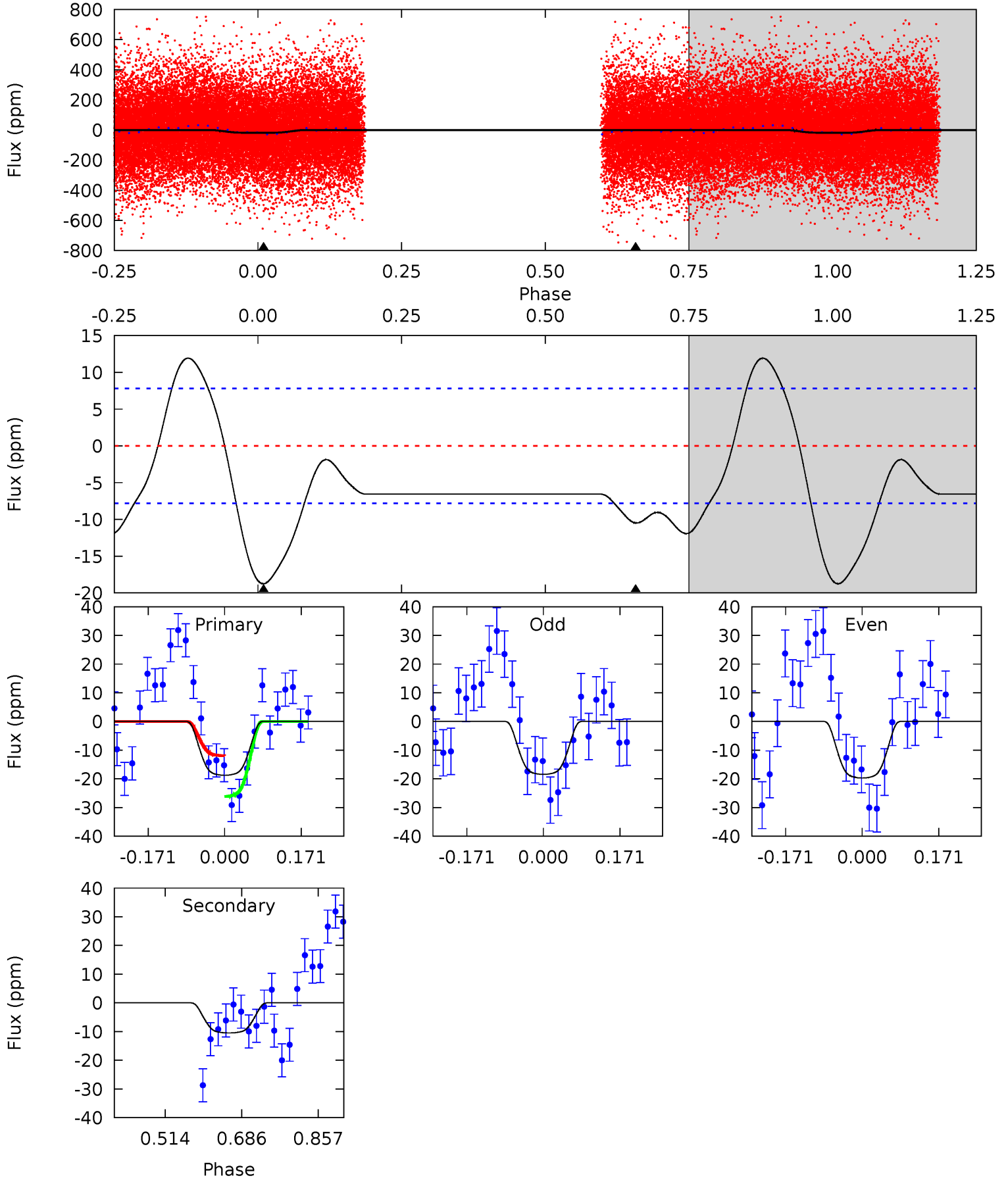
TCE 004253860-03 P= 1.314050 Days $T_0=131.997716$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-03, P = 1.314032 Days, E = 130.684358 Days

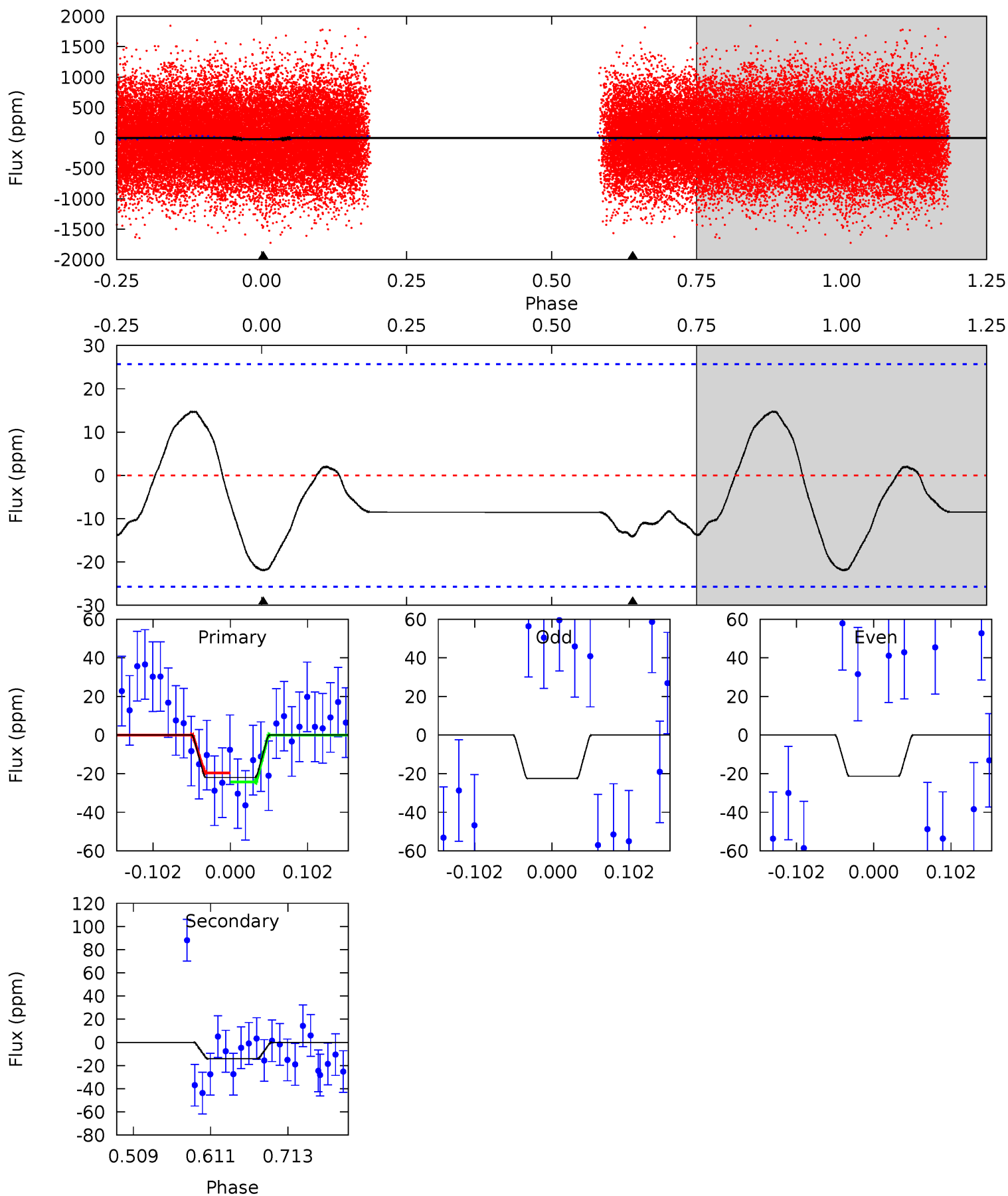
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	5.98	0	0	4.45	1.37	2.87	10.7	10.7	5.98	5.98	0.37	1.22	0.39	4.07



Alt Model-Shift Uniqueness Test

004253860-03, P = 1.314050 Days, E = 130.683666 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.89	2.51	0	0	4.56	1.64	1.65	3.89	3.89	2.51	2.51	0.11	1.17	0.40	0.42



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 2	$10.76^{+1.76}_{-2.00}$	7407^{+910}_{-1778}	-5679^{+1284}_{-793}	$0.060^{+0.027}_{-0.018}$
Alt.	-14 ± 6	$6.63^{+1.27}_{-1.27}$	7307^{+1017}_{-1904}	-4160^{+7989}_{-1497}	$0.210^{+0.146}_{-0.098}$

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 $A_{obs} \gg 1.0$

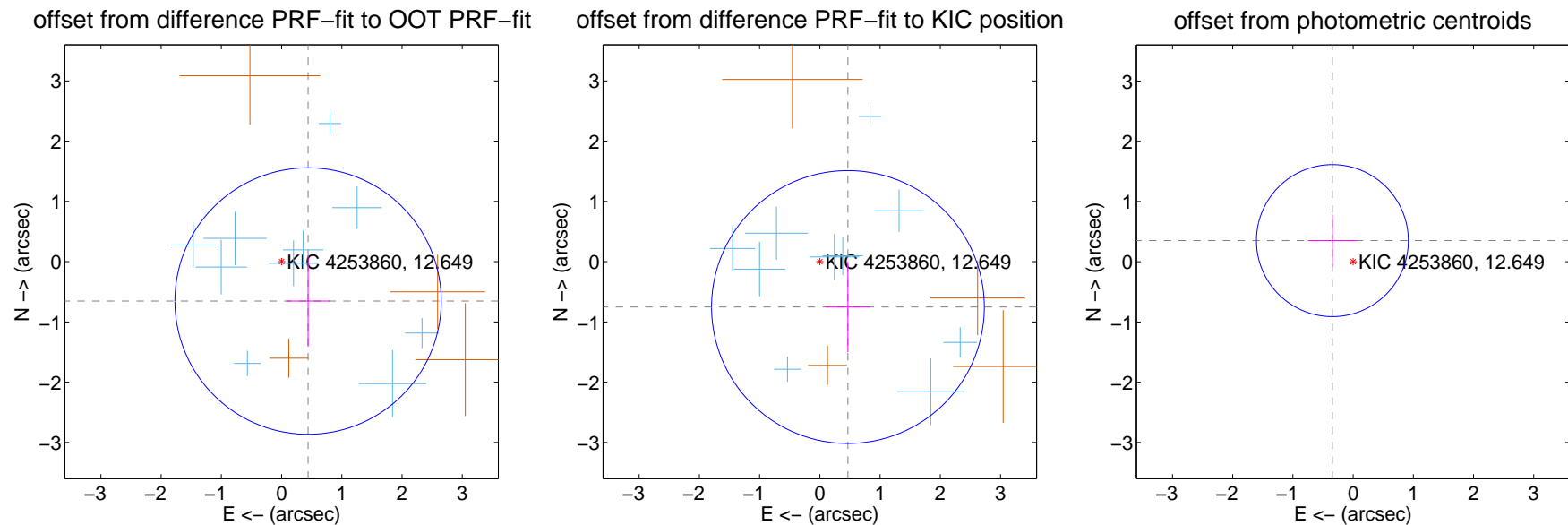
DV Centroid Data

Supplemental centroid analysis for 004253860-03. Kepler magnitude: 12.65. Transit SNR 11.75

There are 10 quarters with good PRF difference image offsets

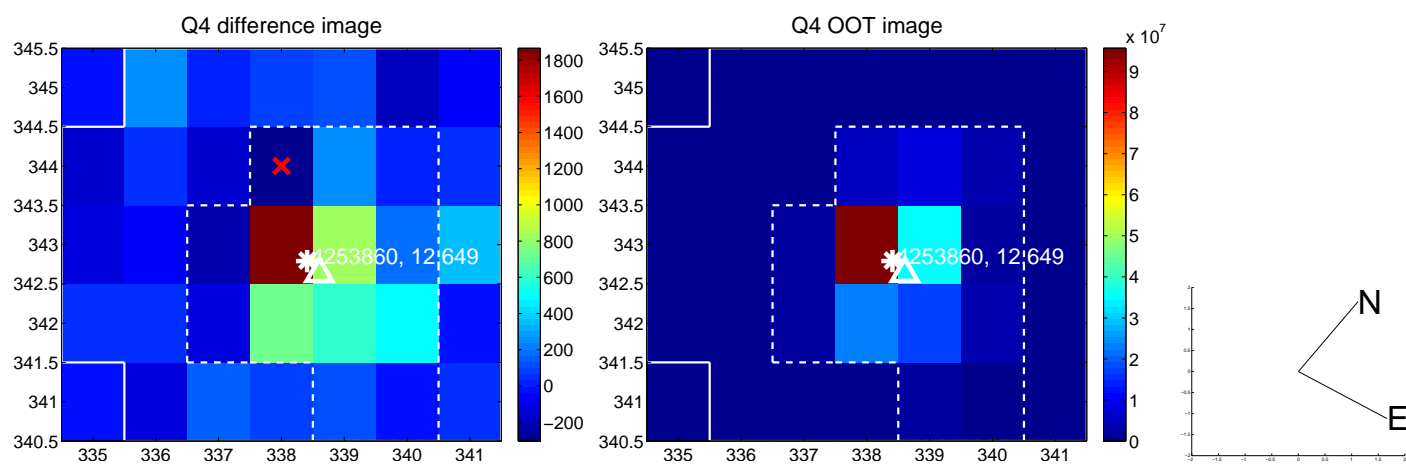
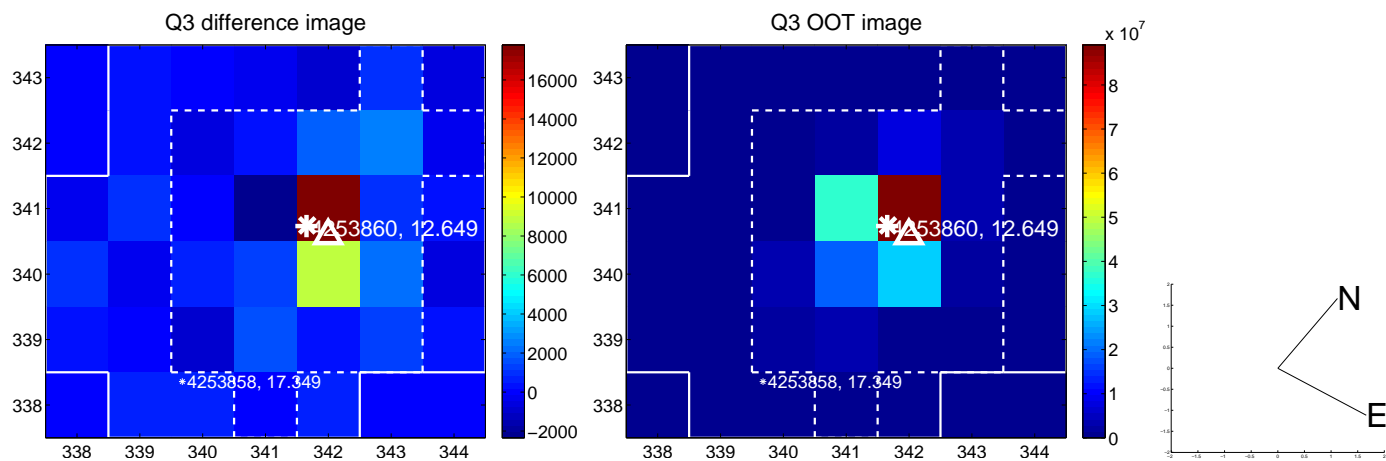
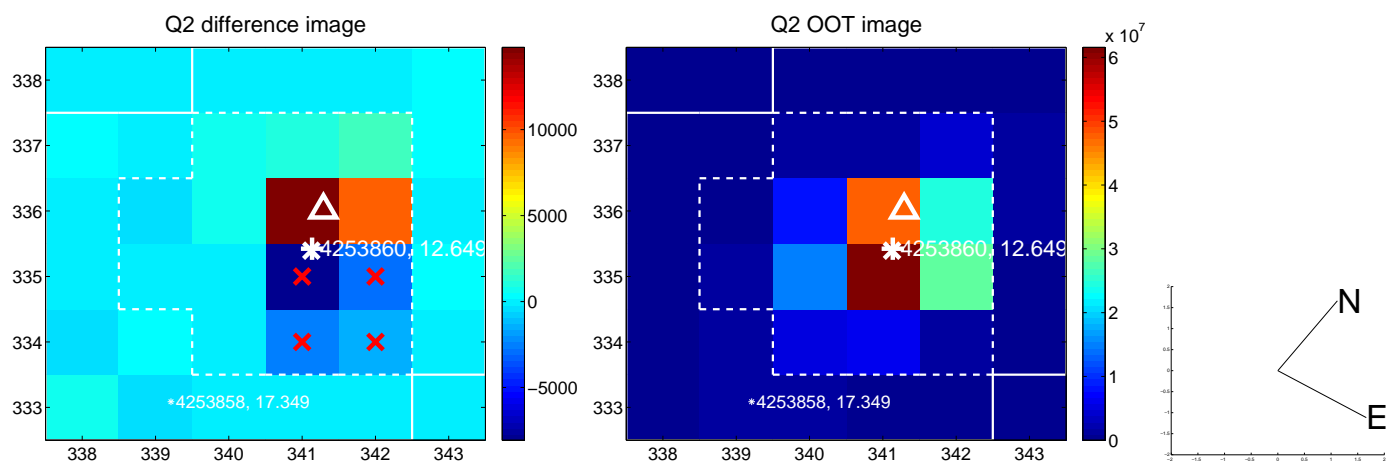
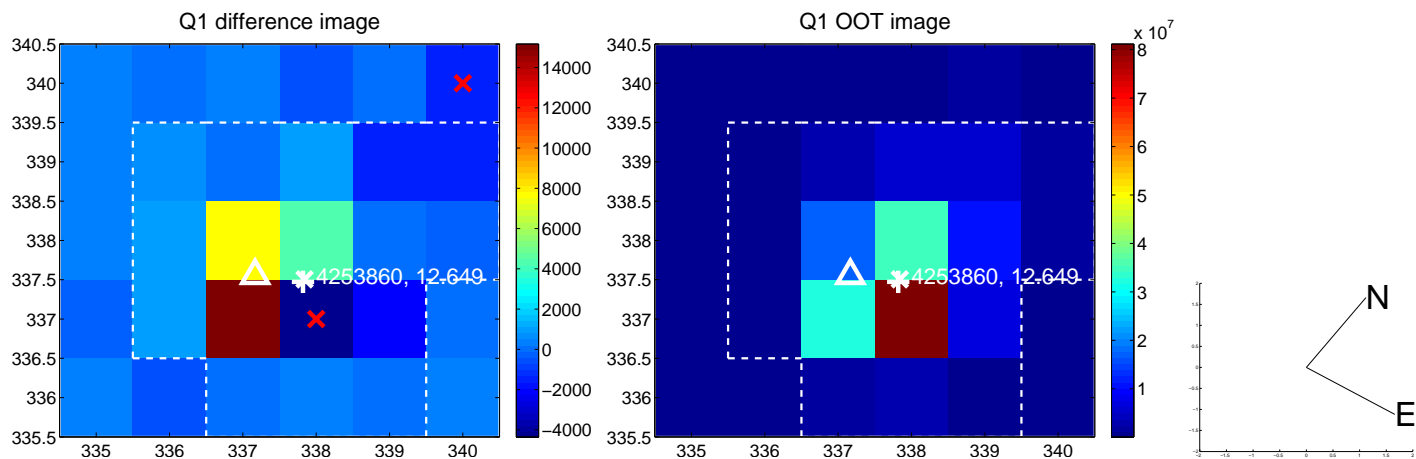
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.787 ± 0.737	1.07	-0.440 ± 0.362	-0.653 ± 0.755
PRF-fit source offset from KIC position	0.885 ± 0.755	1.17	-0.466 ± 0.369	-0.752 ± 0.749
photometric centroid source offset	0.49 ± 0.42	1.17	0.34 ± 0.41	0.35 ± 0.43

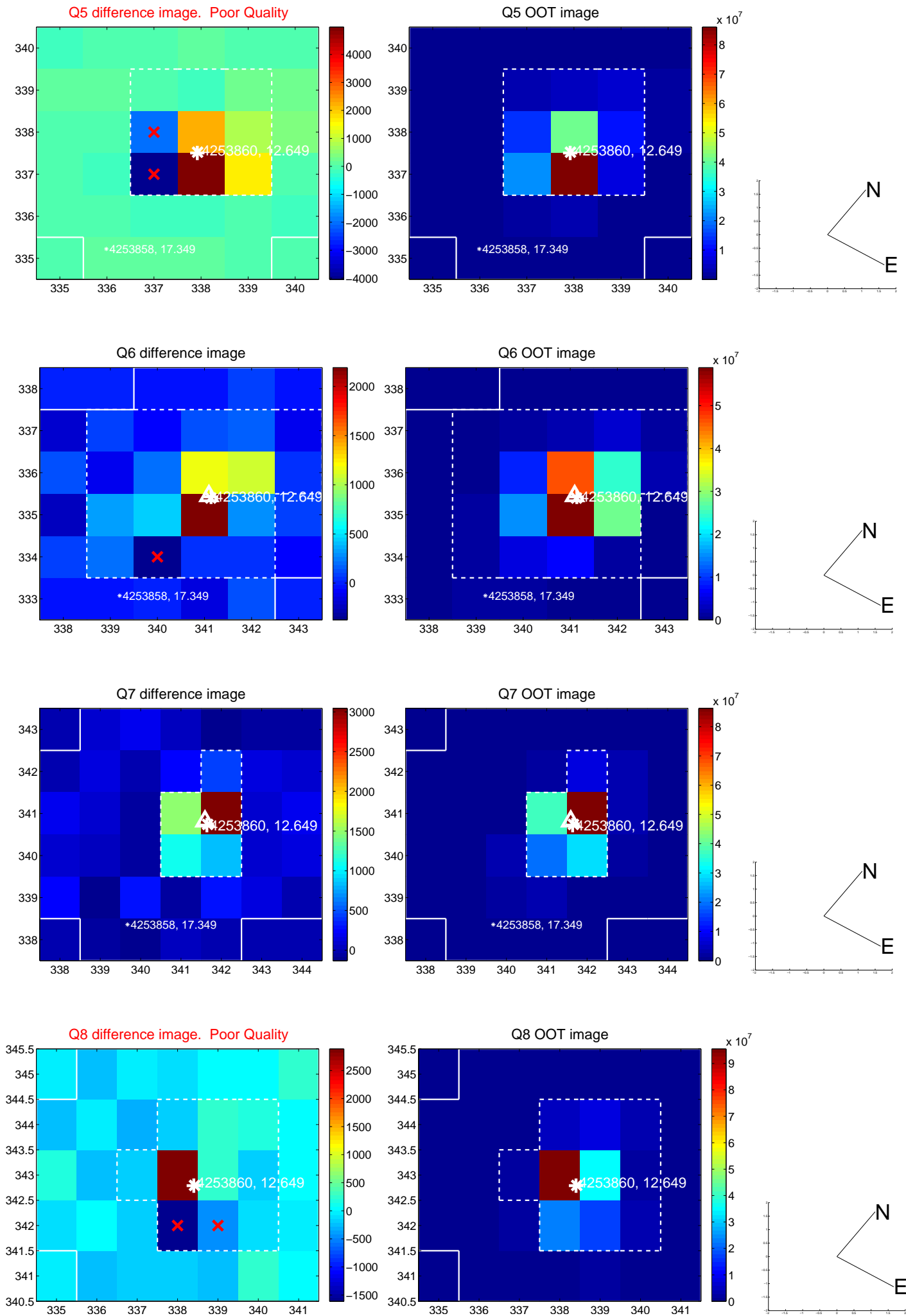


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

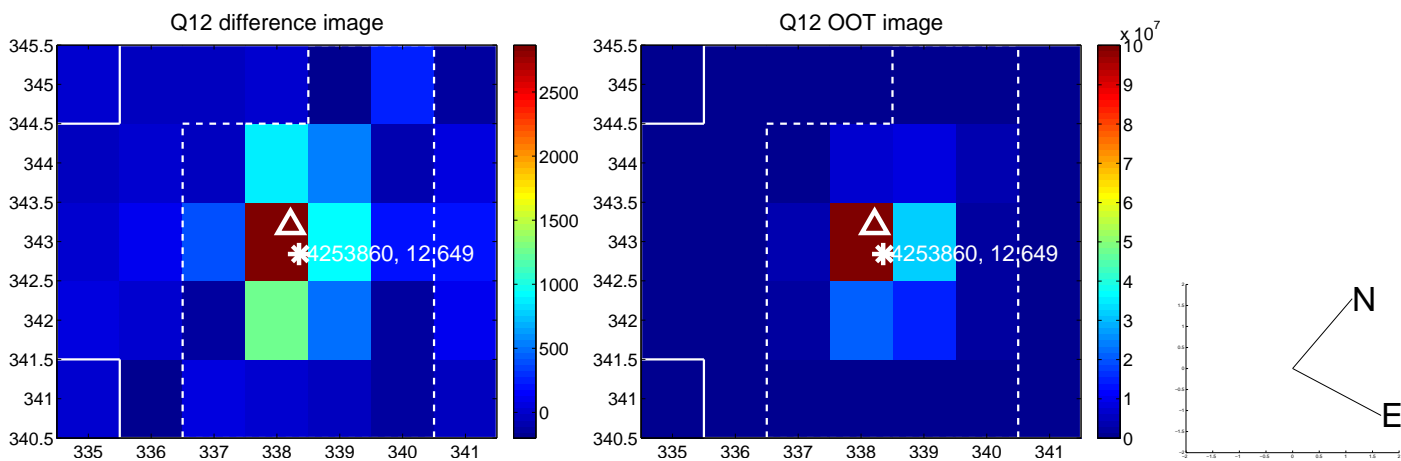
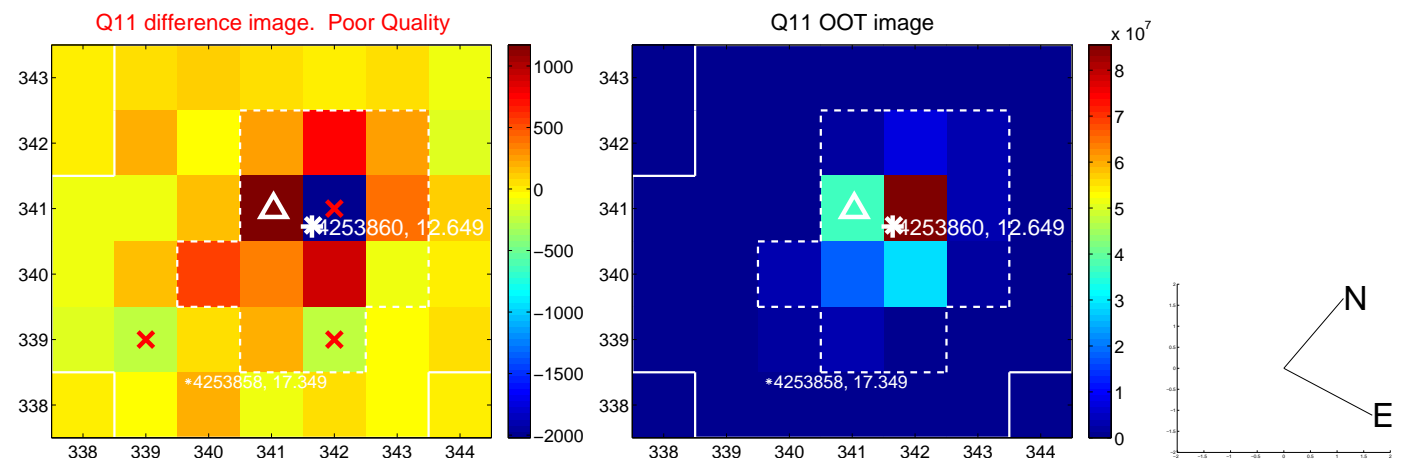
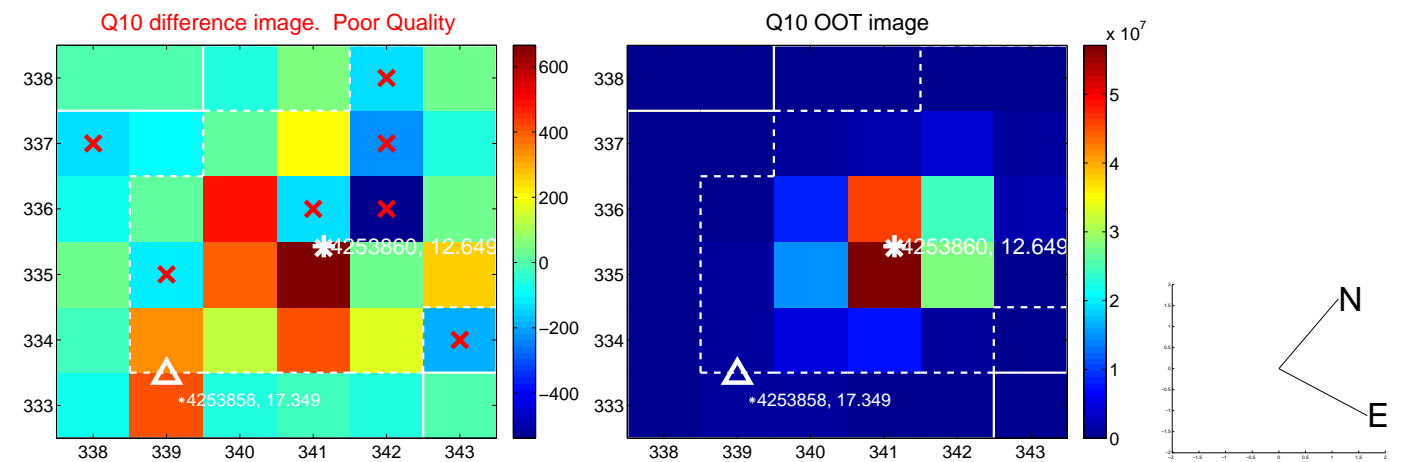
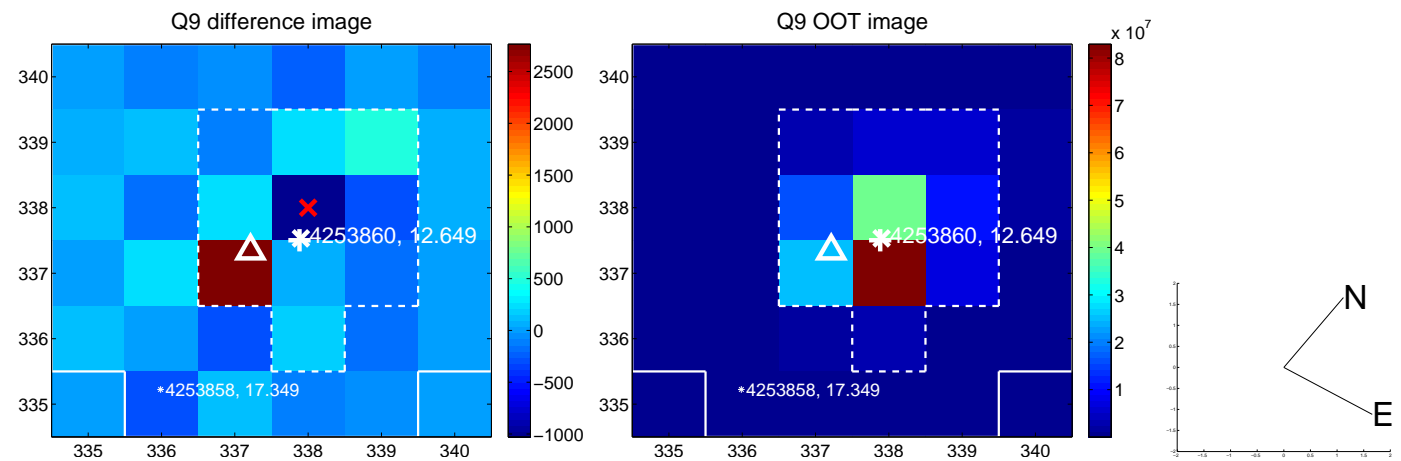
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



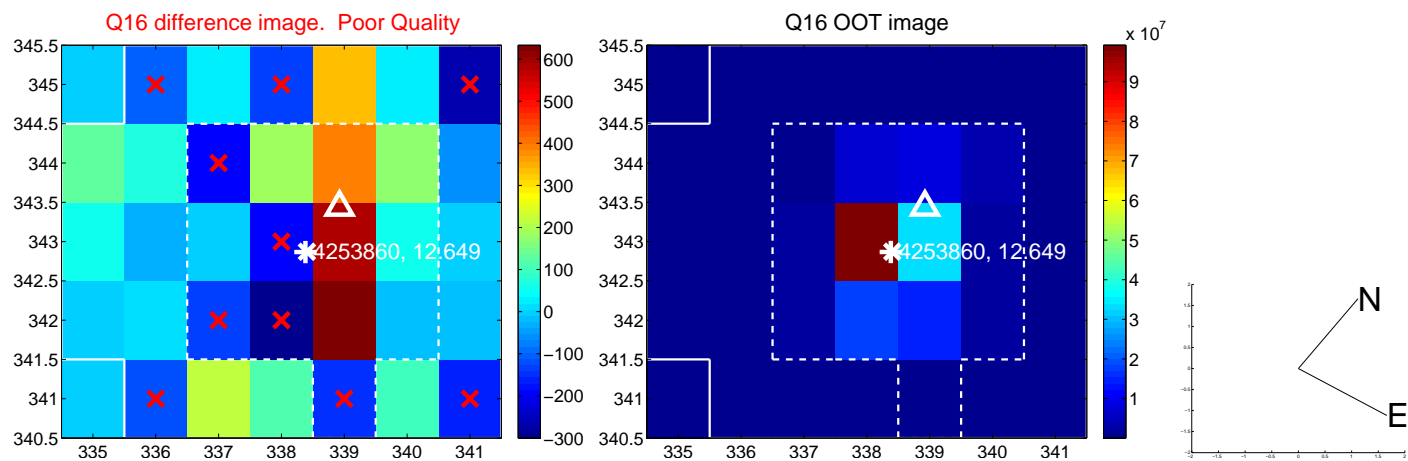
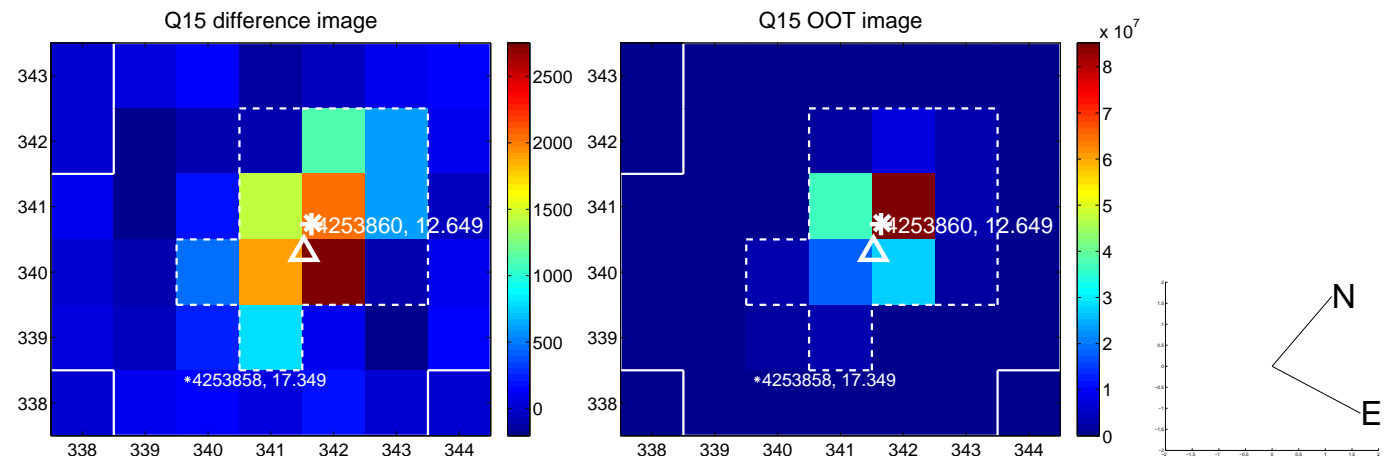
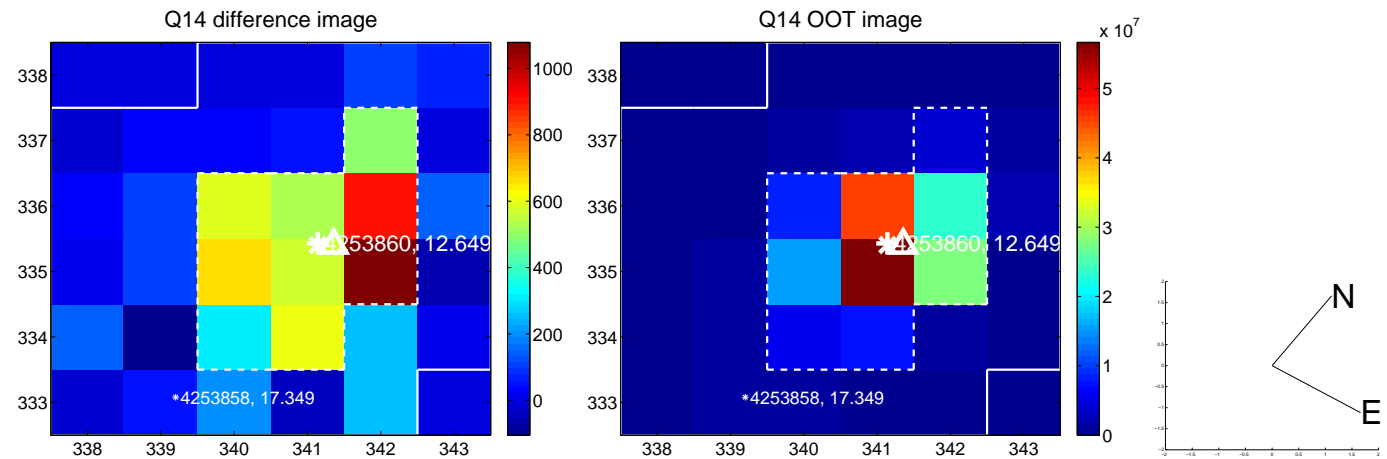
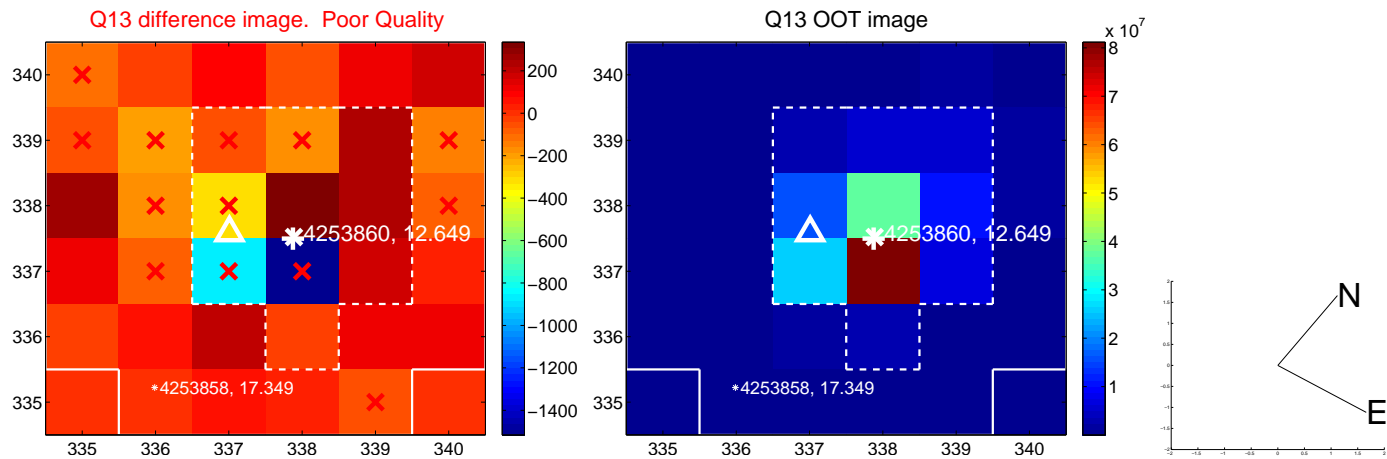
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



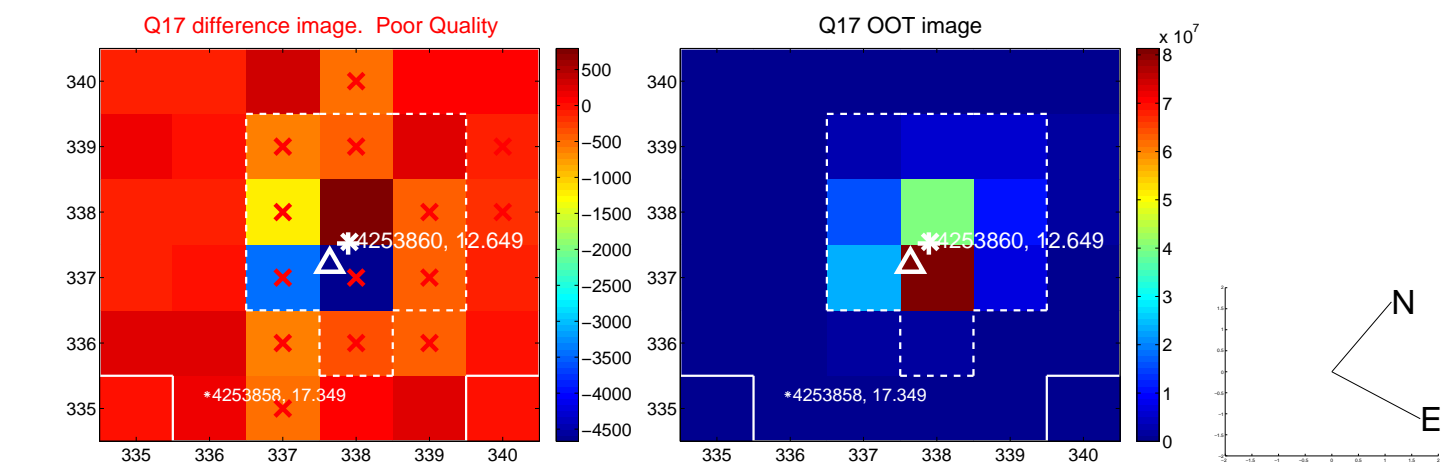
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



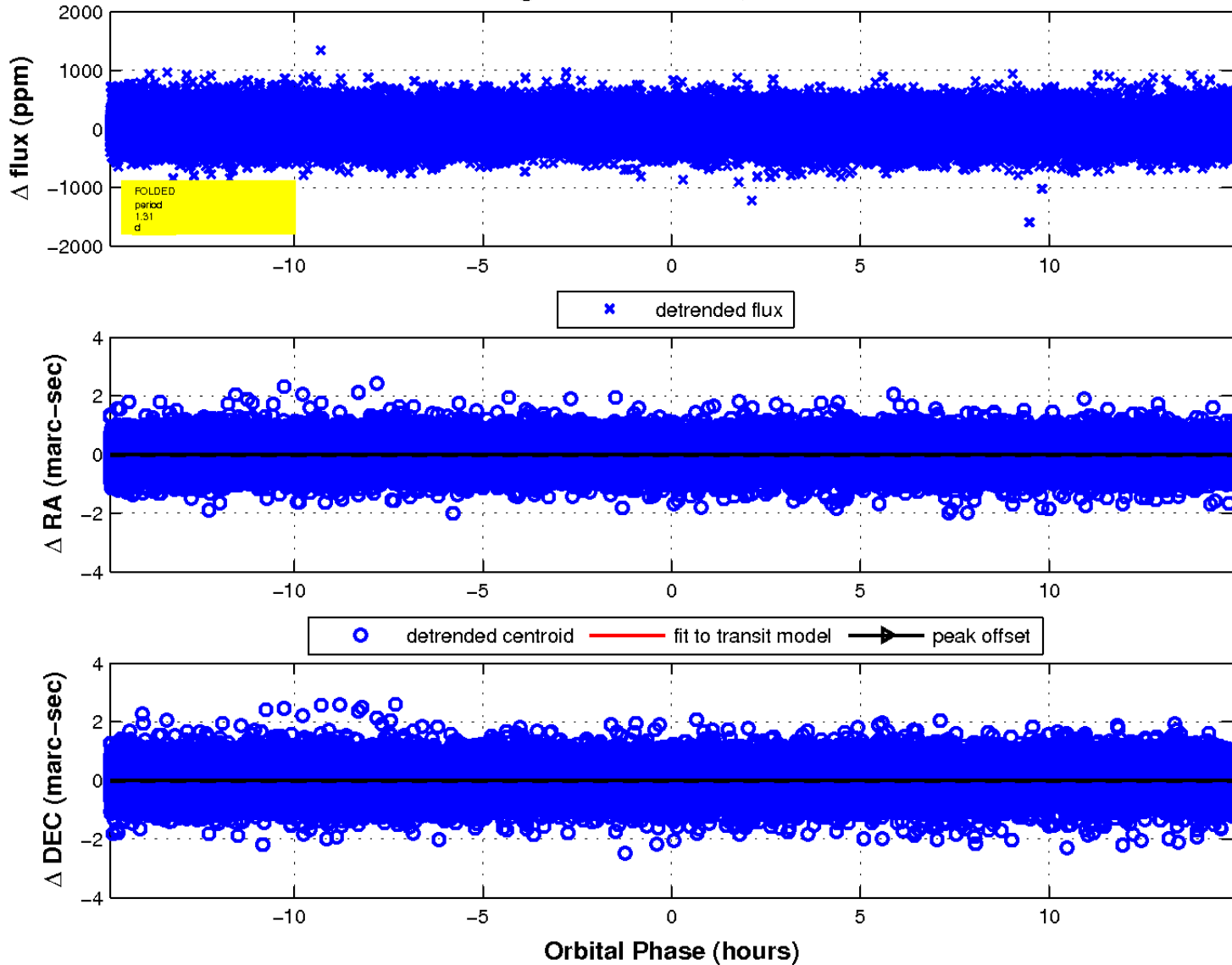
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

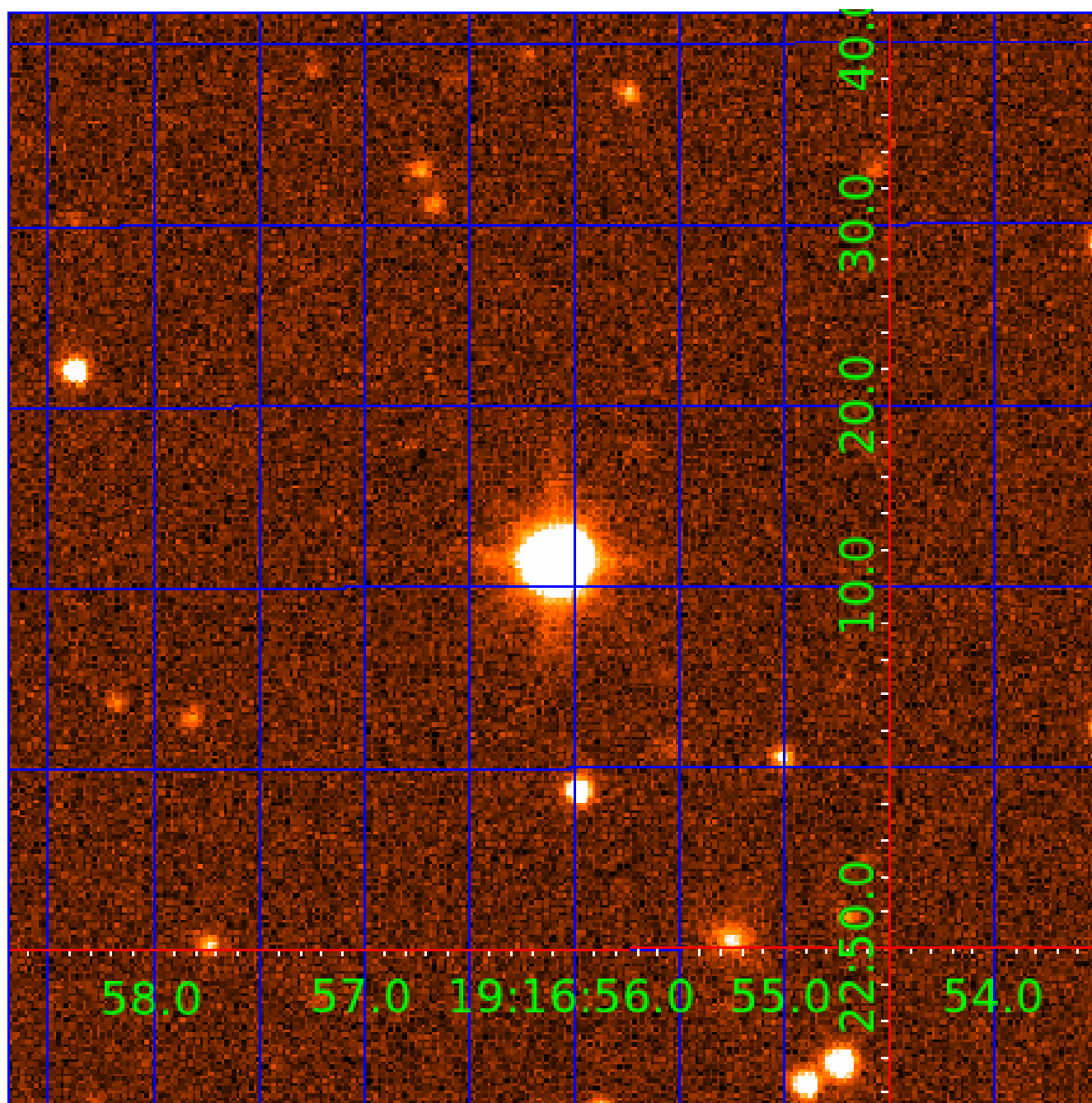


fluxWeightedCentroids, Planet 3 of 7



UKIRT Image

Declination



KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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 004253860-04

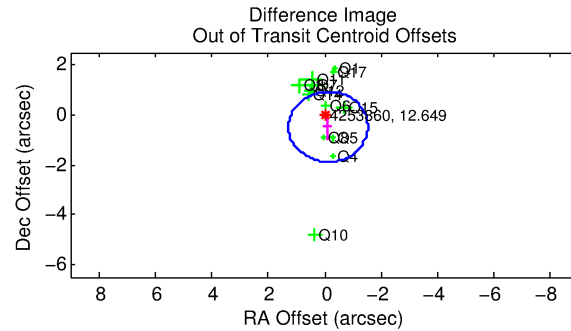
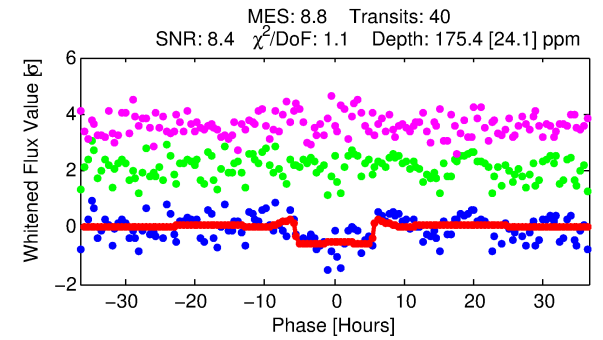
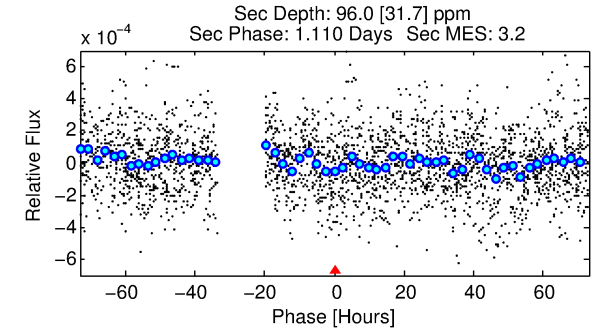
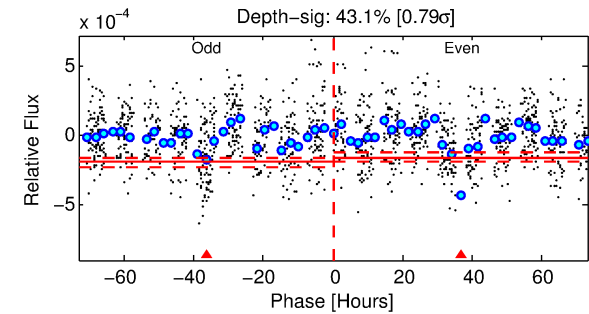
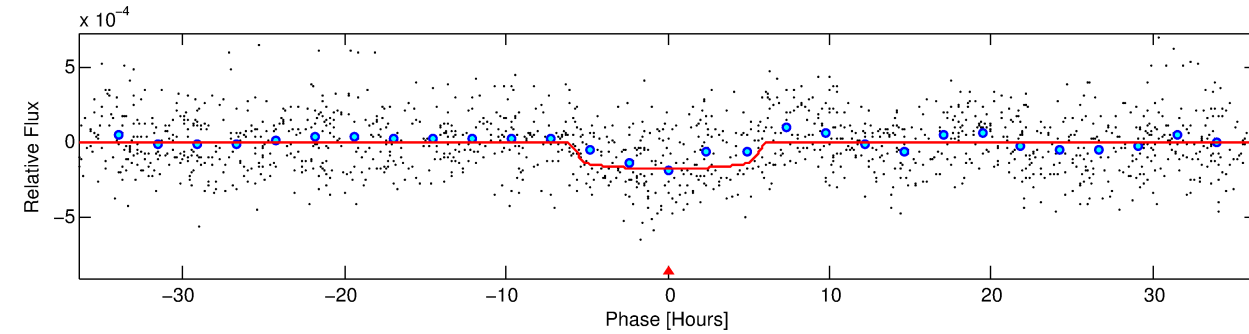
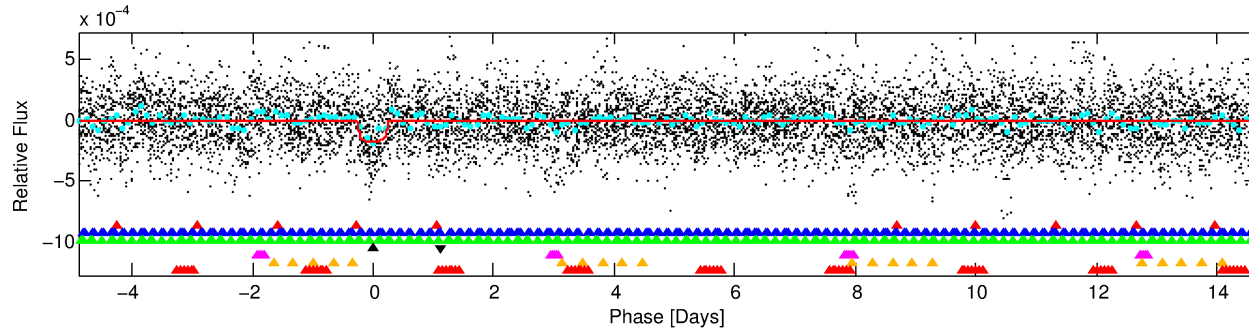
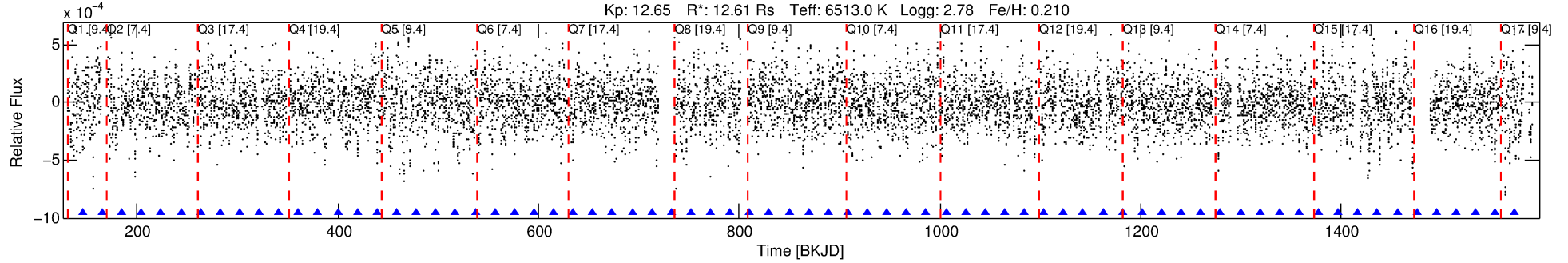
No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 4 of 7 Period: 19.547 d

KOI: K05052 Corr: No Ephemeris Match

Kp: 12.65 R*: 12.61 Rs Teff: 6513.0 K Logg: 2.78 Fe/H: 0.210



DV Fit Results:

Period = 19.54651 [0.00039] d
Epoch = 146.0109 [0.0181] BKJD
Rp/R* = 0.0142 [0.0016]
a/R* = 5.83 [2.71]
b = 0.90 [0.10]
Seff = 5501.38 [6247.63]
Teq = 2196 [623] K
Rp = 19.49 [7.38] Re
a = 0.2159 [0.0621] AU
Ag = 6.48 [3.66] [1.50σ]
Teffp = 5417 [1541] K [1.94σ]

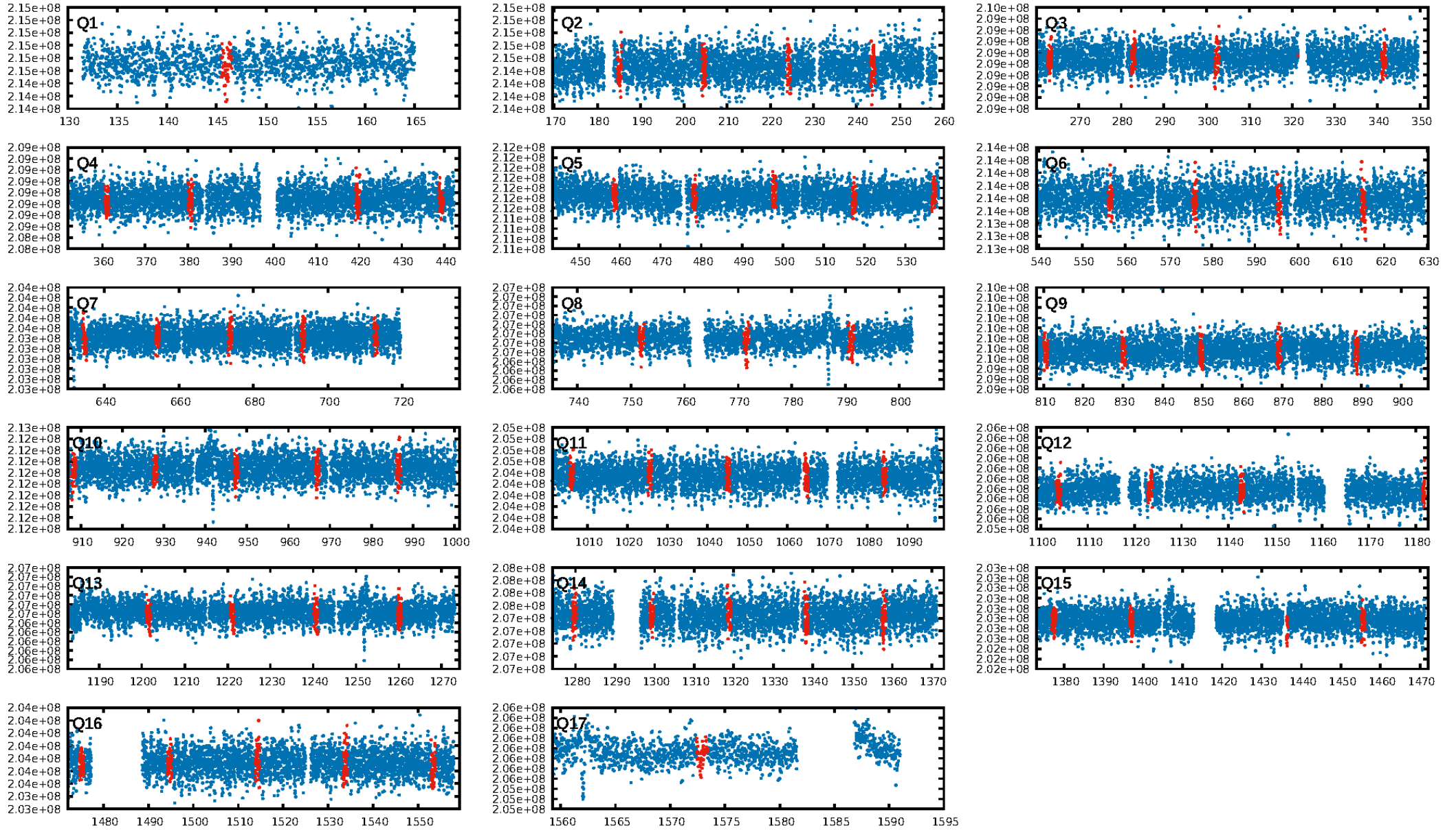
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.33σ]
LongPeriod-sig: 100.0% [7.92σ]
ModelChiSquare2-sig: 13.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 1.567
Centroid-sig: 19.8%
Centroid-so: 0.258 arcsec [1.11σ]
OotOffset-rm: 0.502 arcsec [1.07σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-rm: 0.448 arcsec [0.92σ]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.00 [0/17]

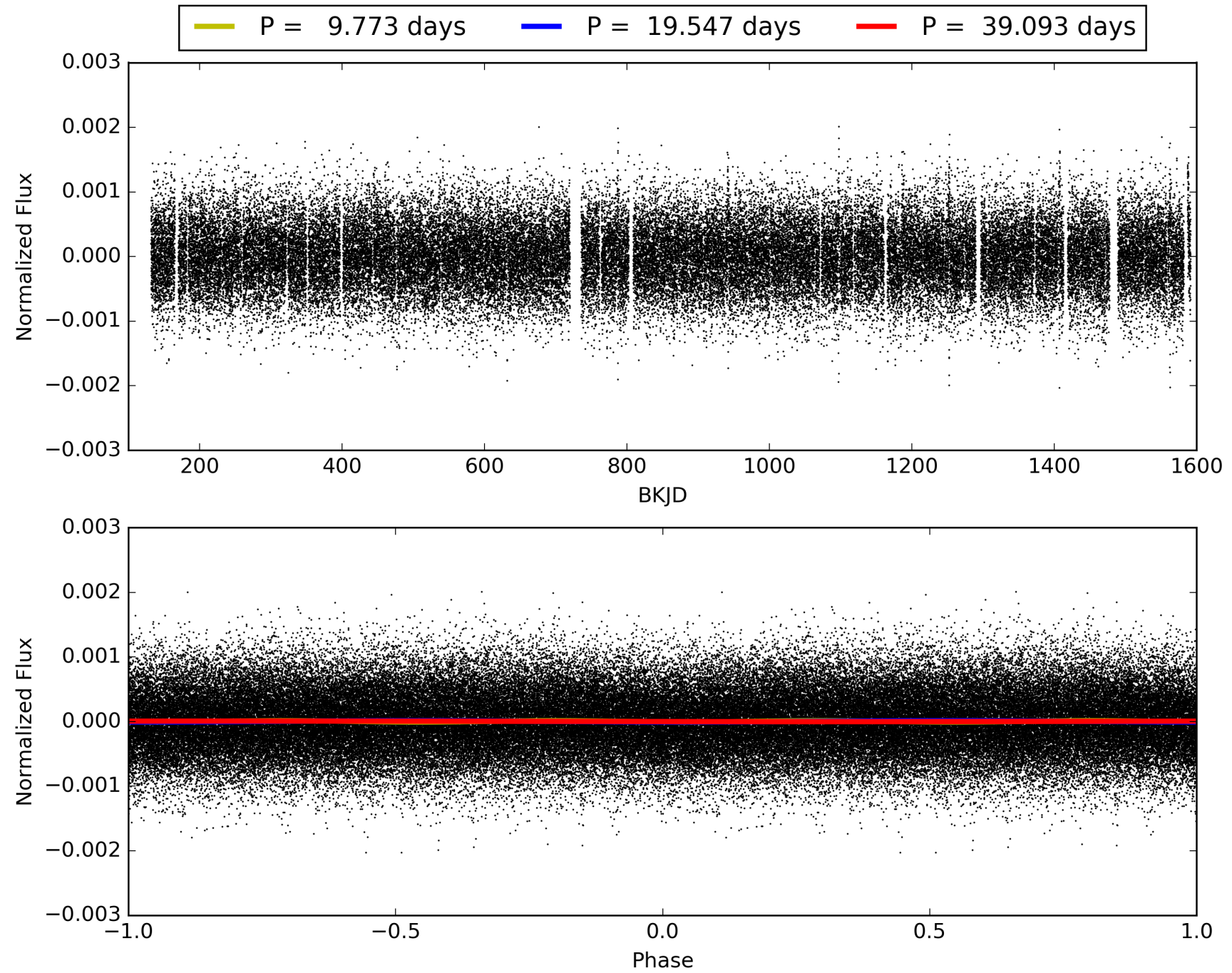
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:34:45 Z

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

TCE 004253860-04, PDC Light Curves

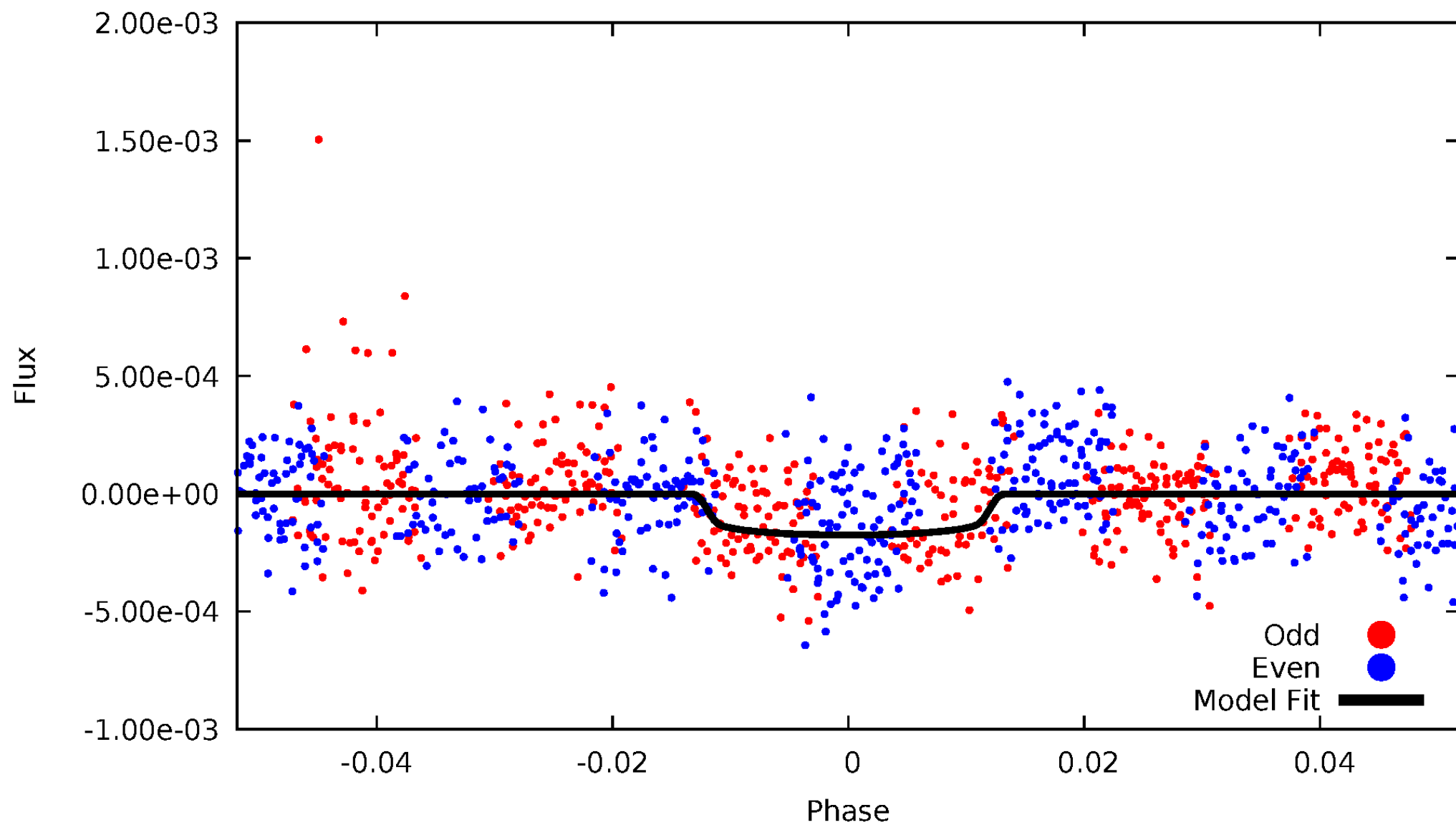


TCE 004253860-04



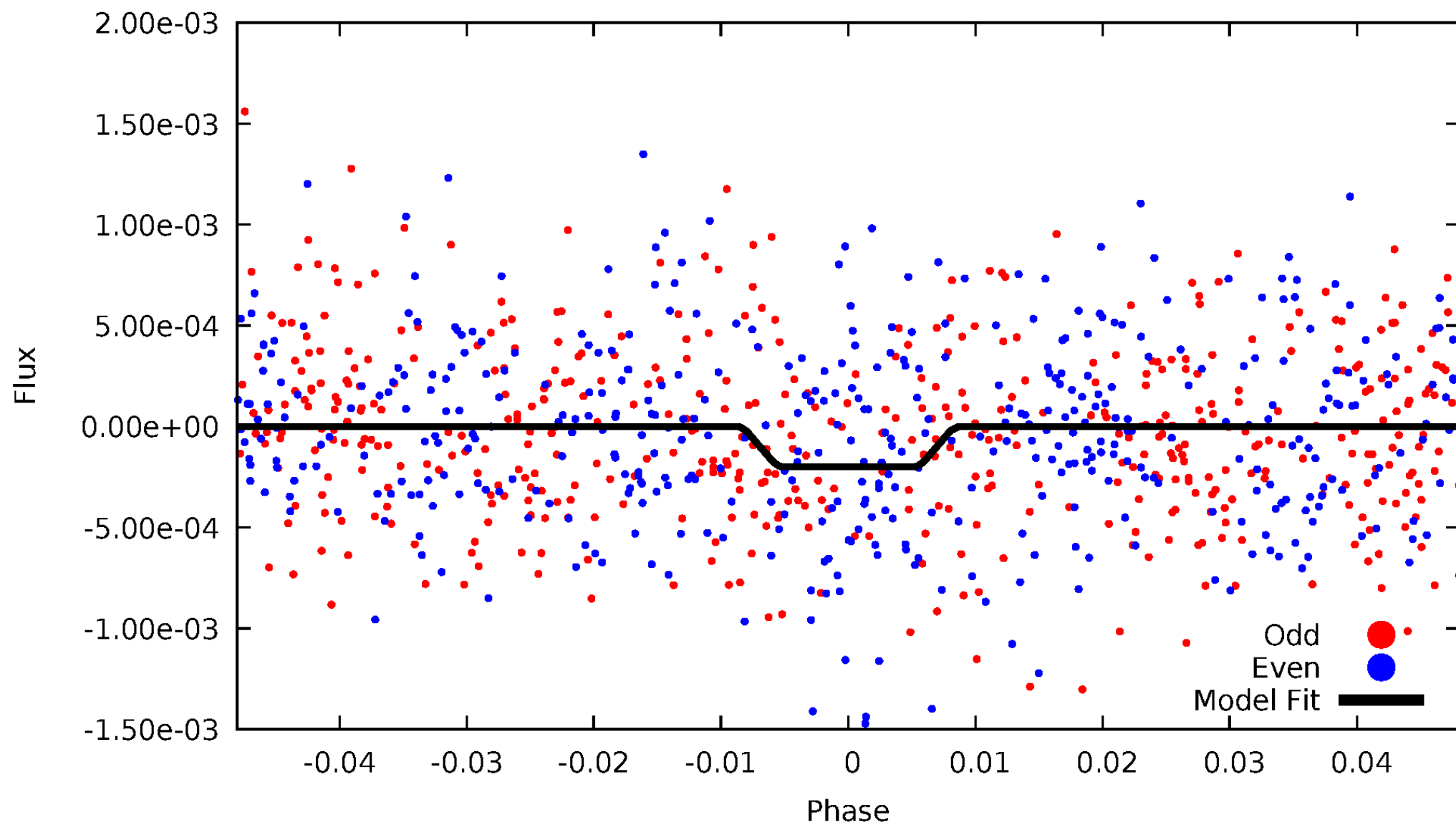
DV Odd/Even

TCE 004253860-04



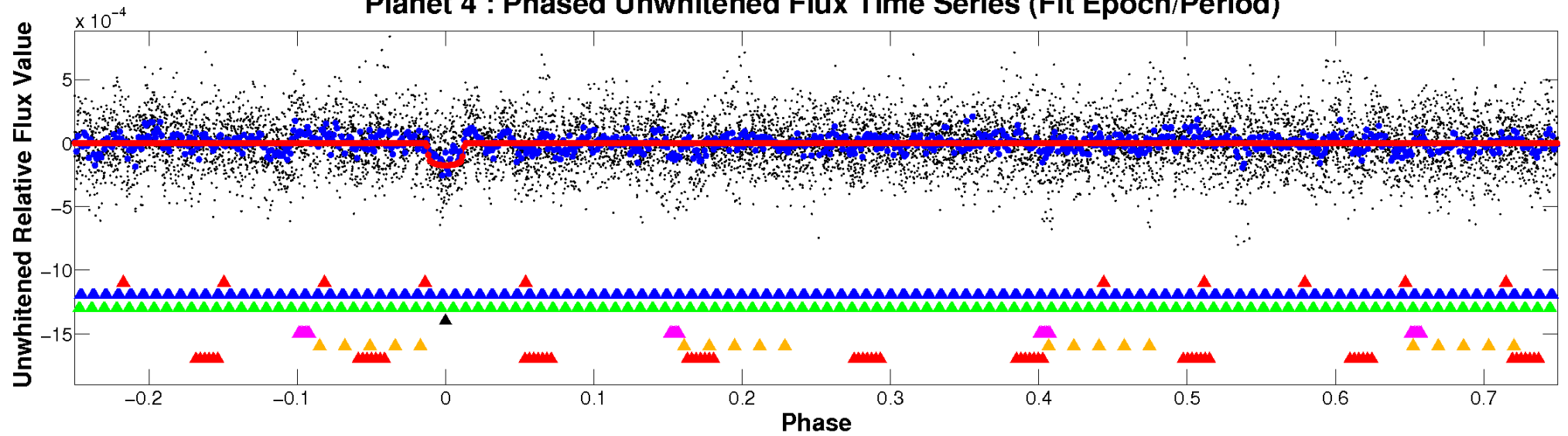
ALT Odd/Even

TCE 004253860-04

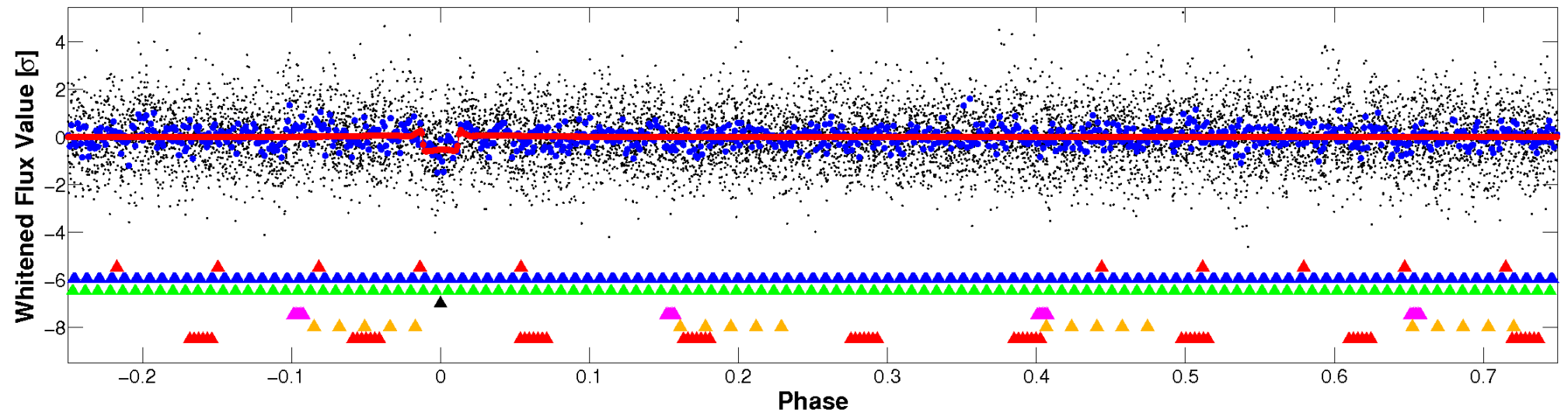


Non-Whitened Vs. Whitened Light Curve

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

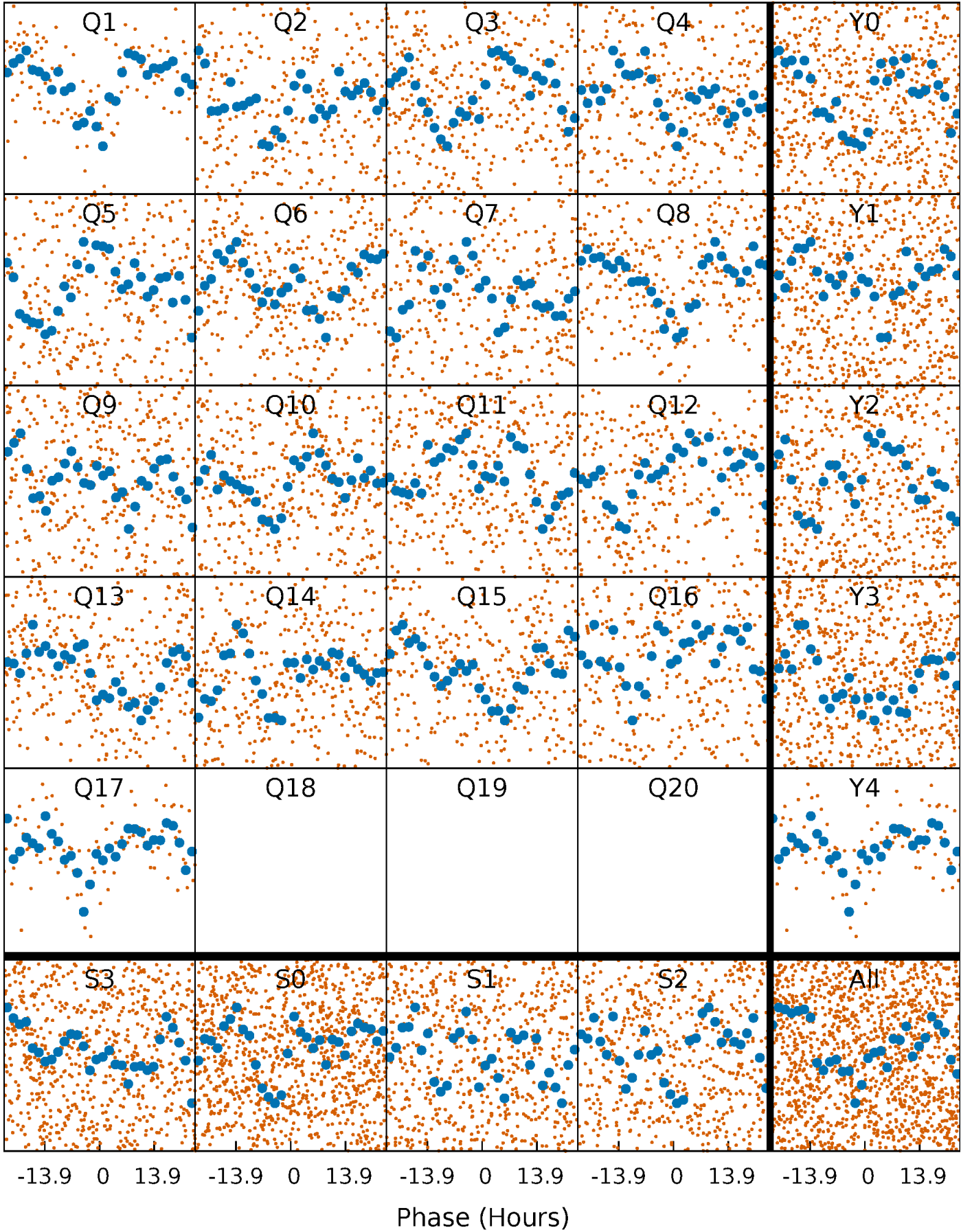


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



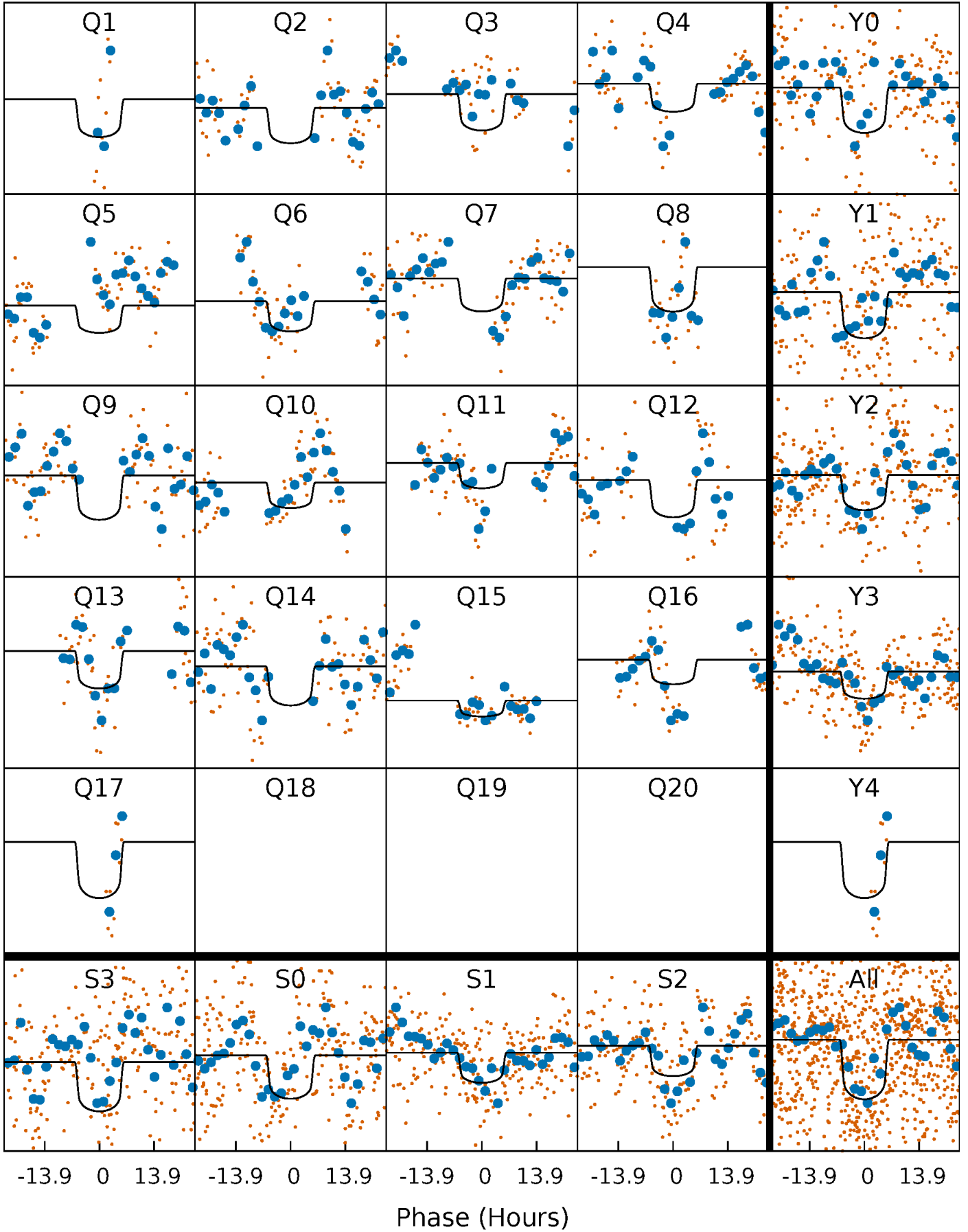
PDC Quarter-Phased Transit Curves

TCE 004253860-04 $P = 19.546513$ Days $T_0 = 146.010946$ (BKJD)



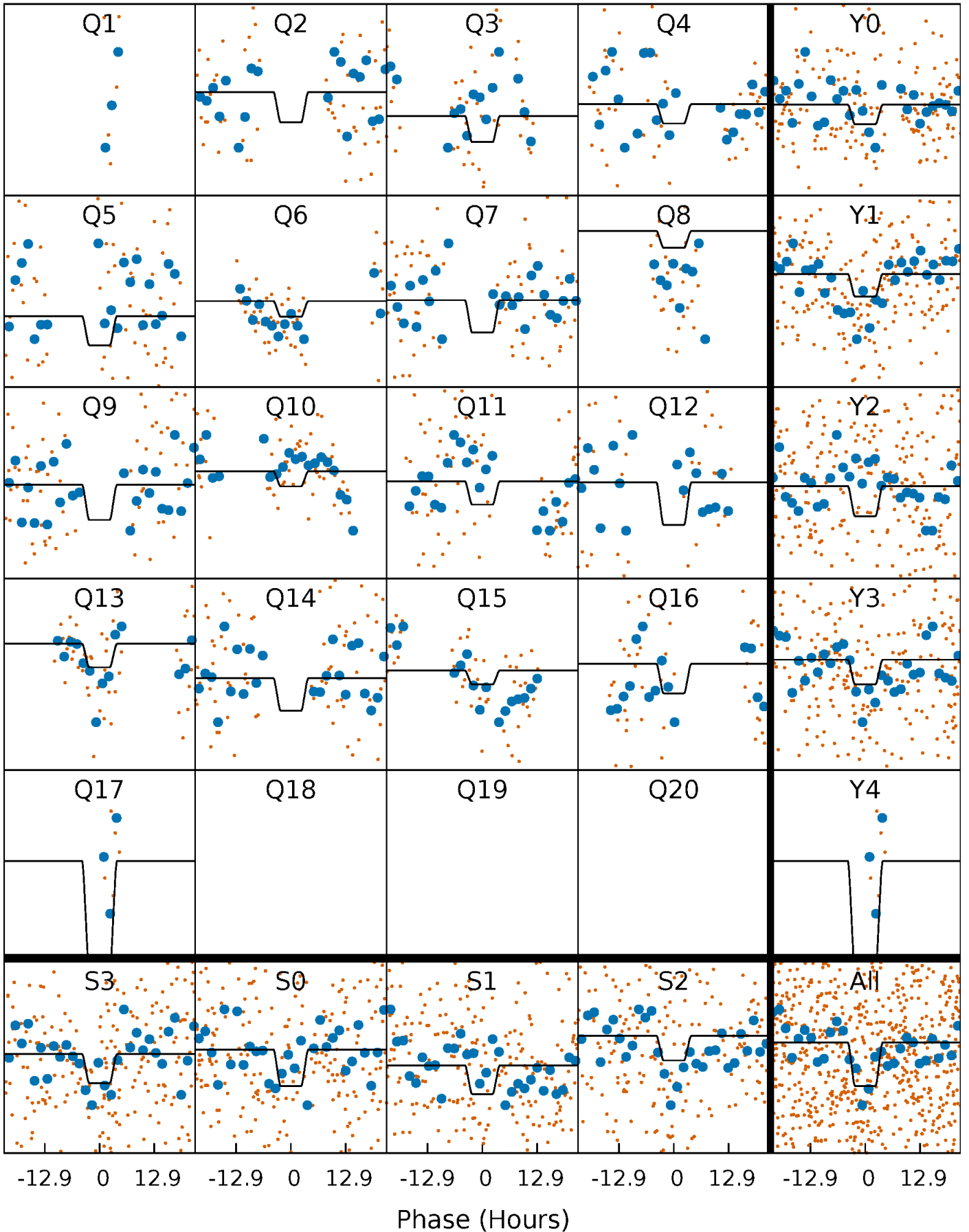
DV Quarter-Phased Transit Curves

TCE 004253860-04 P= 19.546513 Days $T_0=146.010946$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

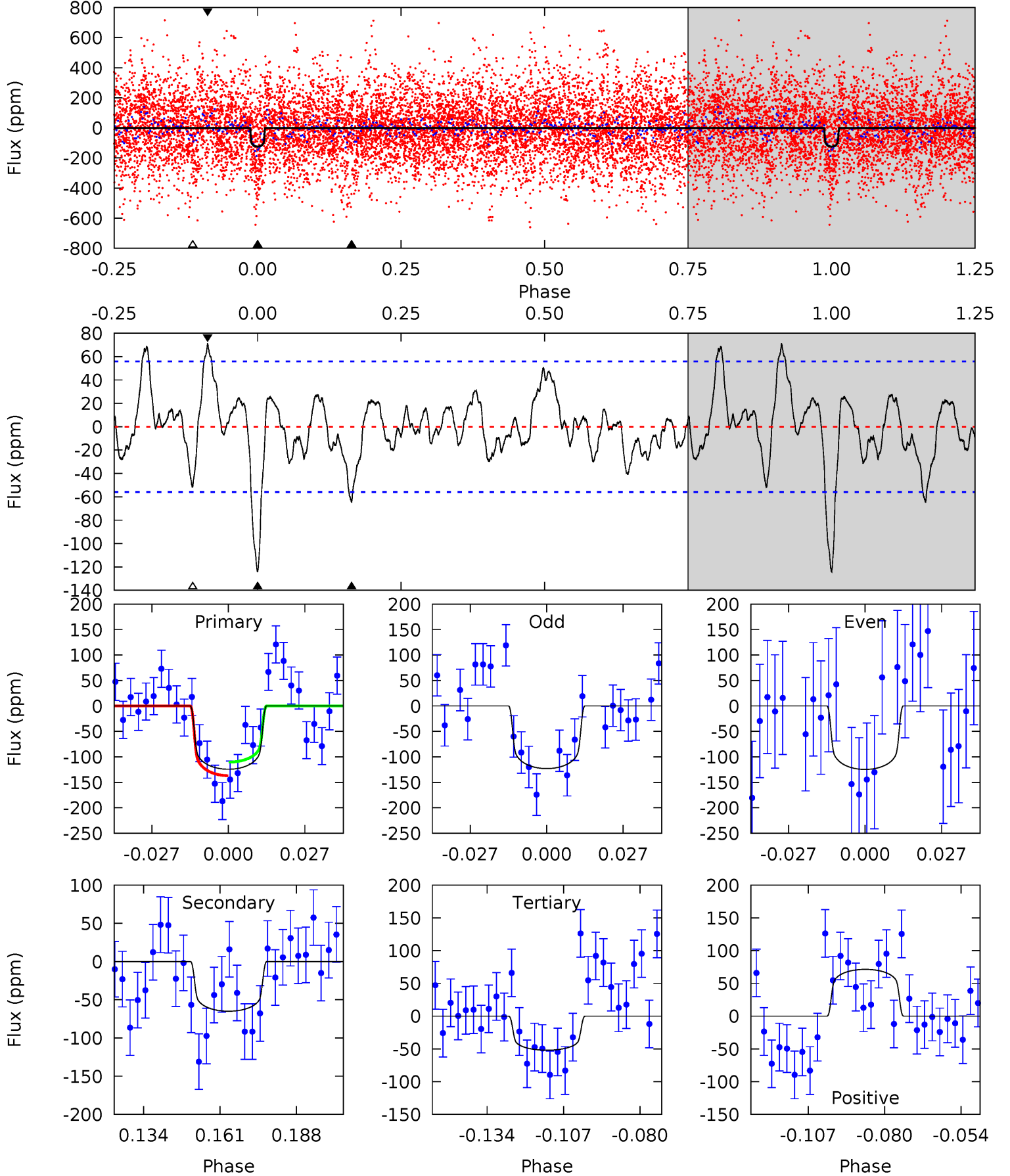
TCE 004253860-04 P= 19.548402 Days $T_0=145.933616$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-04, P = 19.546513 Days, E = 126.464433 Days

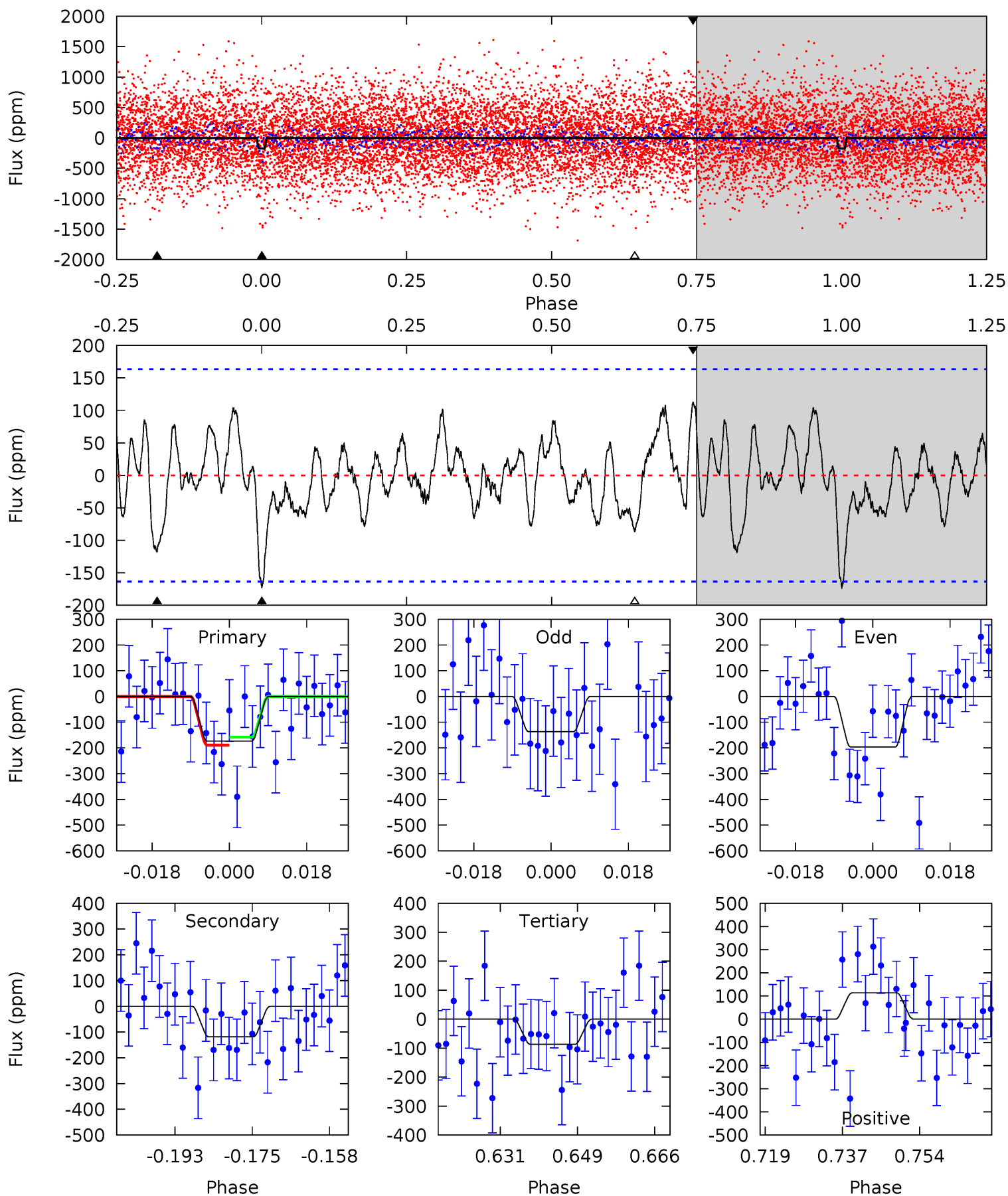
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	5.62	4.50	6.17	4.83	2.21	1.80	6.25	4.57	1.12	-0.56	0.07	0.70	0.36	1.15



Alt Model-Shift Uniqueness Test

004253860-04, P = 19.548402 Days, E = 126.385214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.22	3.57	2.61	3.42	4.92	2.38	1.30	2.60	1.80	0.96	0.16	0.89	1.64	0.40	0.46



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-65 ± 12	$19.36^{+3.81}_{-3.78}$	2993^{+410}_{-748}	4731^{+607}_{-861}	$4.192^{+2.360}_{-1.361}$
Alt.	-119 ± 33	$19.41^{+3.96}_{-4.01}$	2964^{+424}_{-750}	5359^{+814}_{-1240}	$7.635^{+4.603}_{-3.003}$

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 $A_{\text{obs}} \gg 1.0$

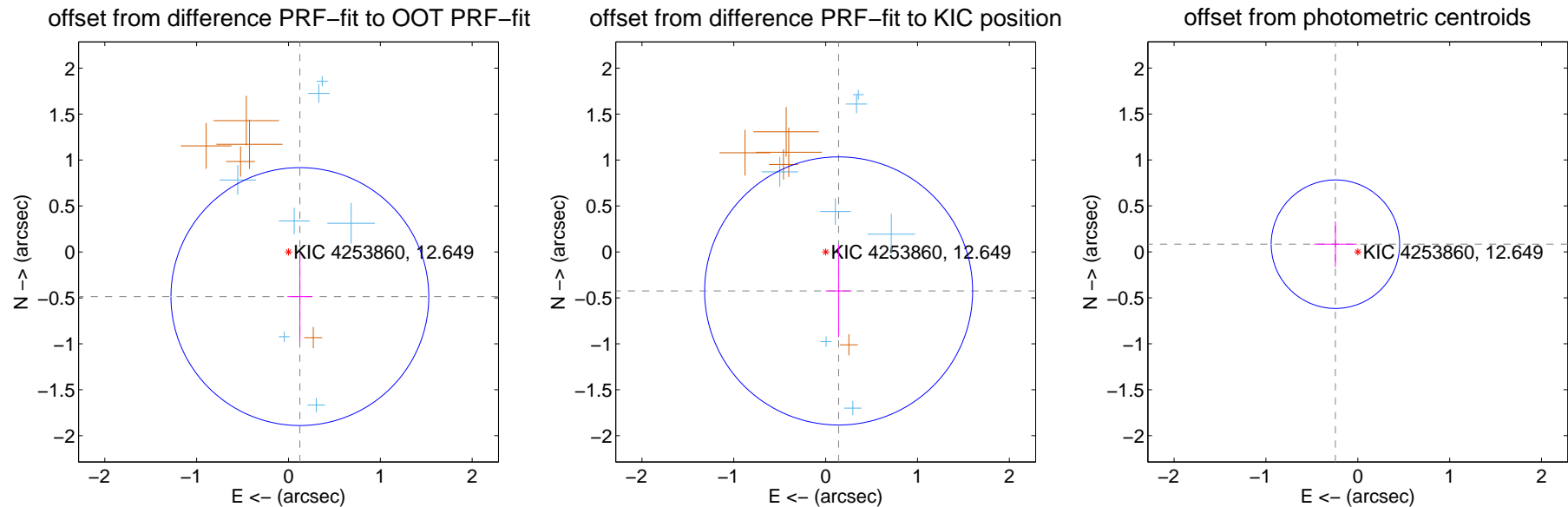
DV Centroid Data

Supplemental centroid analysis for 004253860-04. Kepler magnitude: 12.65. Transit SNR 8.39

There are 7 quarters with good PRF difference image offsets

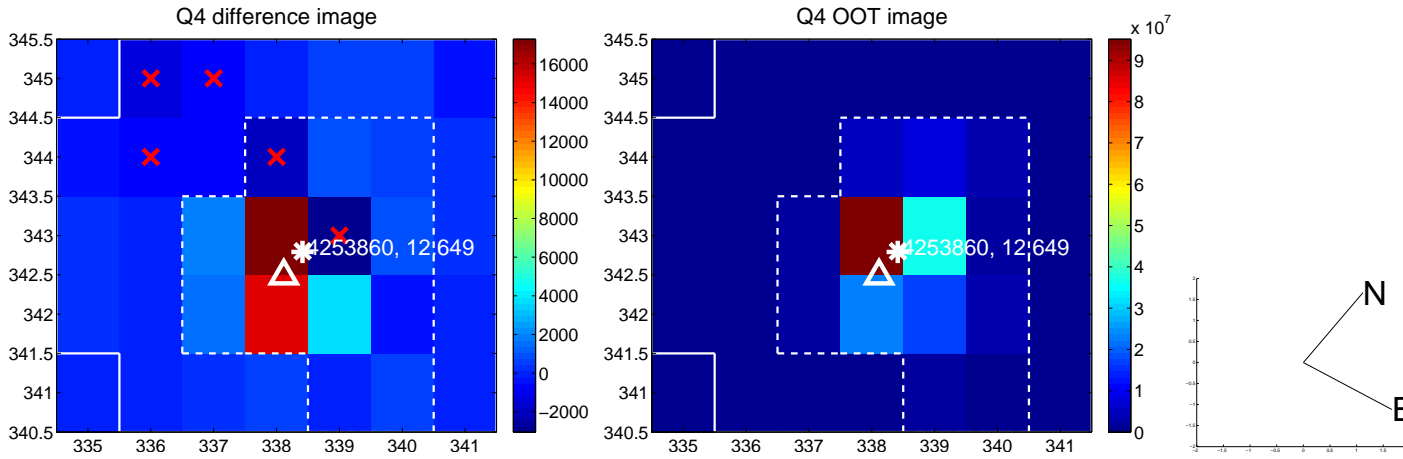
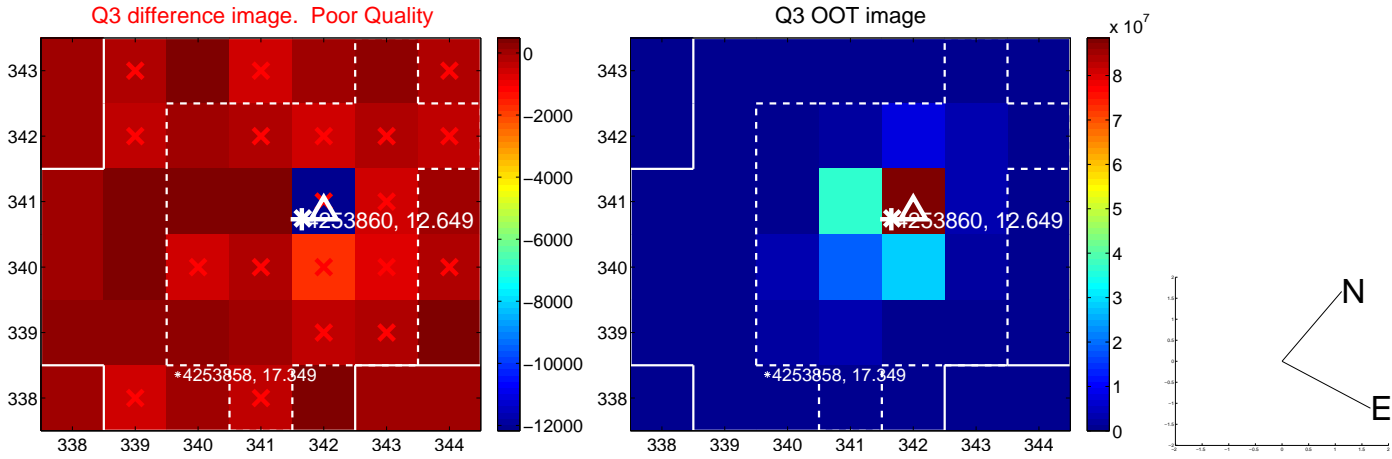
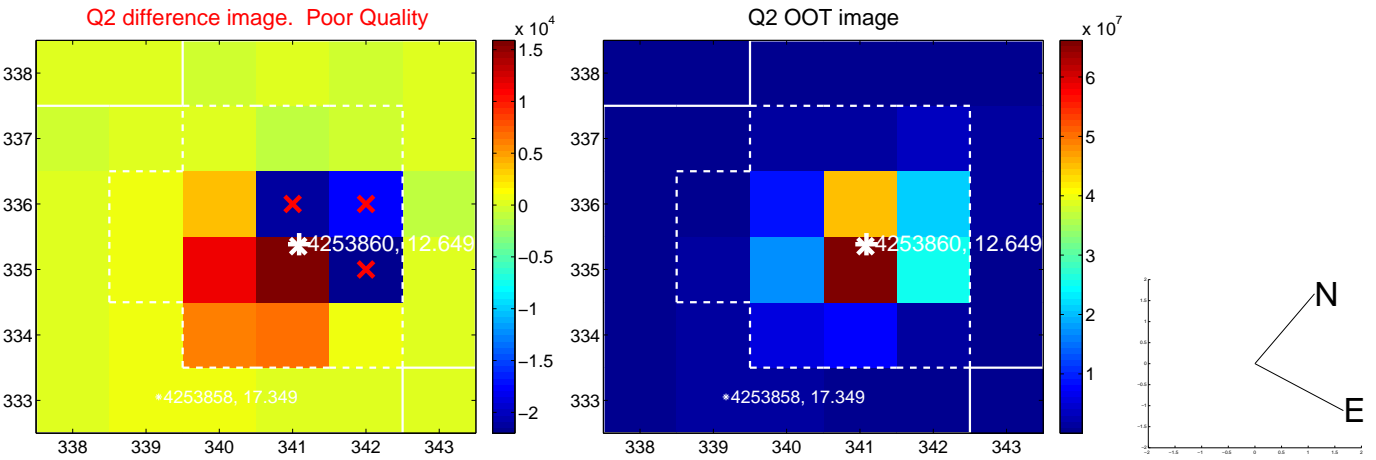
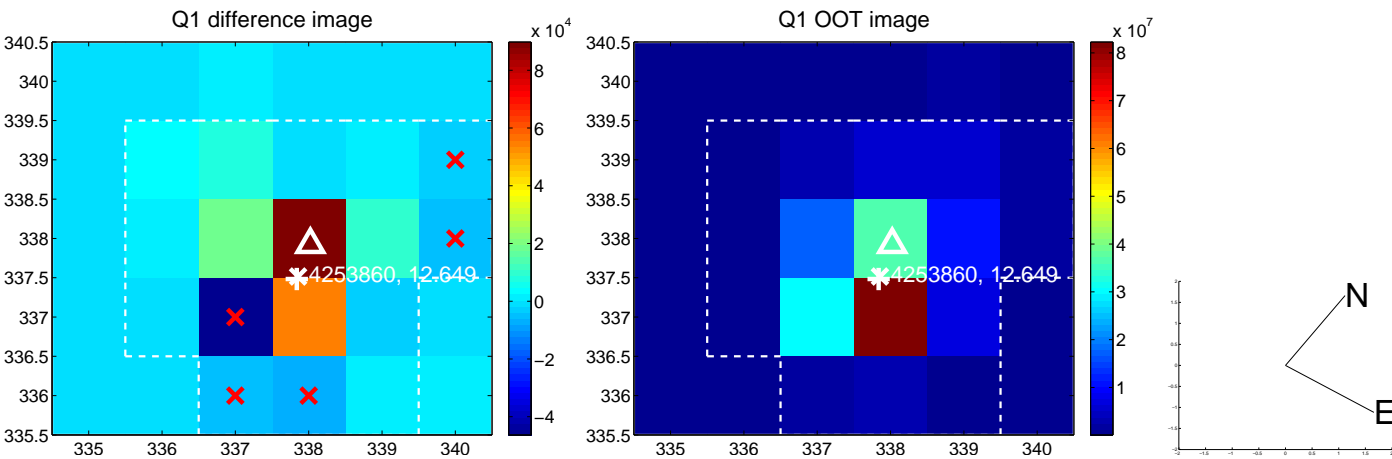
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.502 ± 0.468	1.07	-0.124 ± 0.135	-0.486 ± 0.479
PRF-fit source offset from KIC position	0.448 ± 0.486	0.92	-0.141 ± 0.142	-0.425 ± 0.503
photometric centroid source offset	0.26 ± 0.23	1.11	0.24 ± 0.23	0.08 ± 0.25

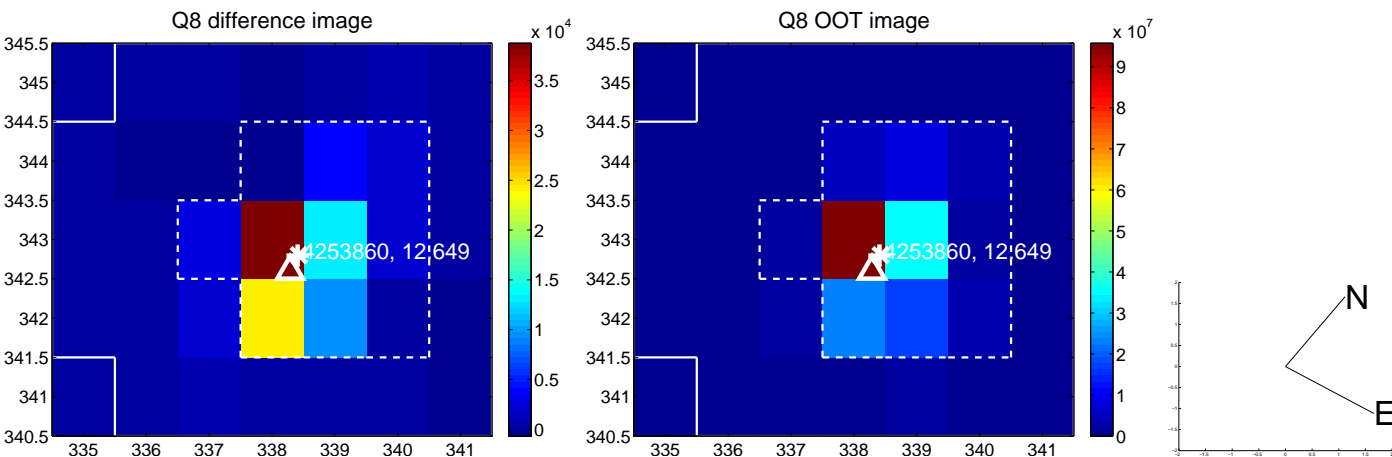
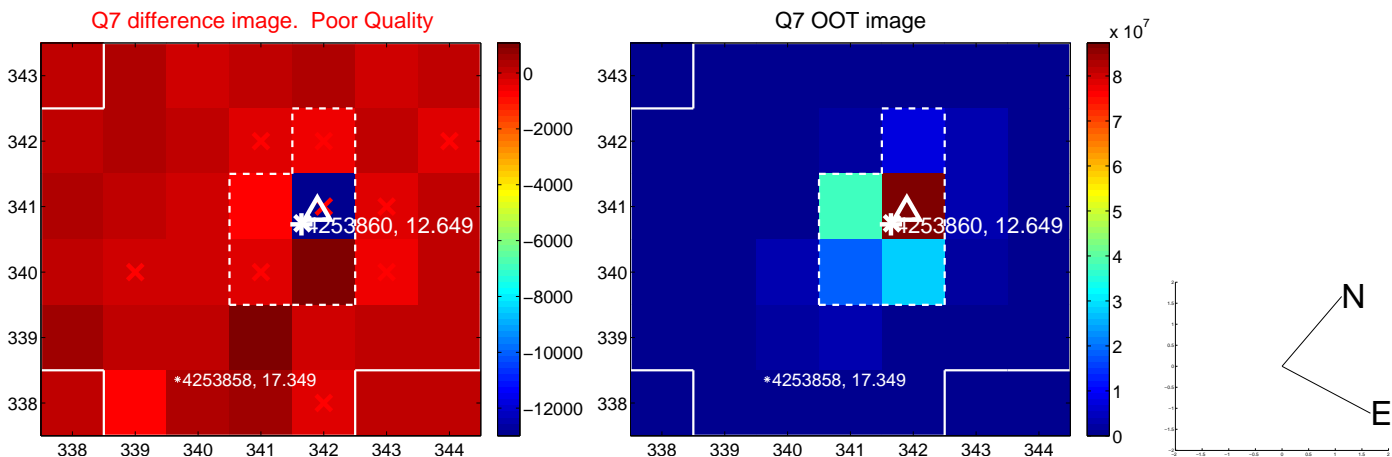
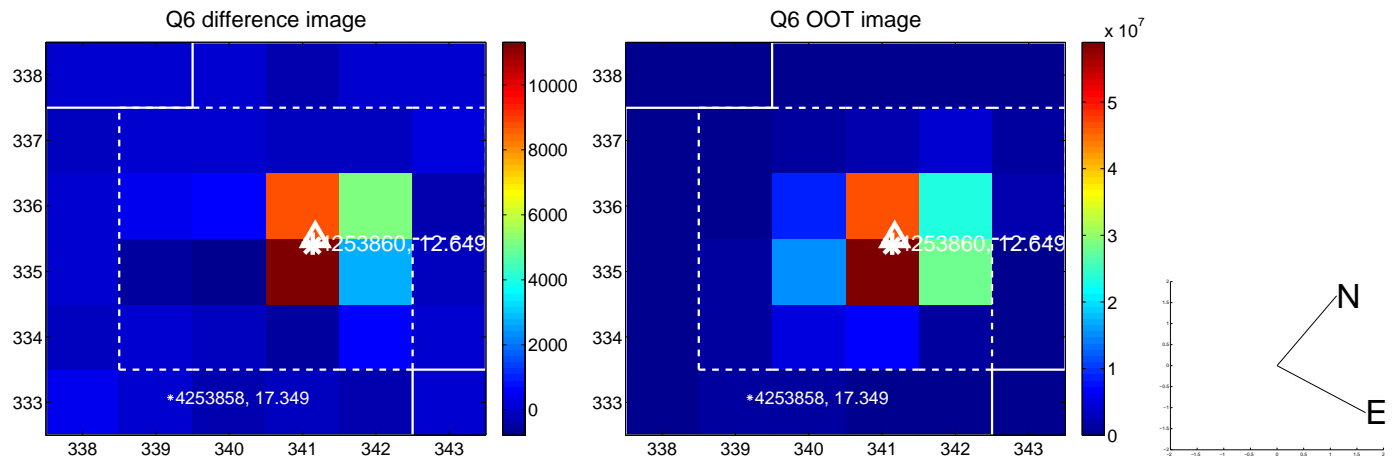
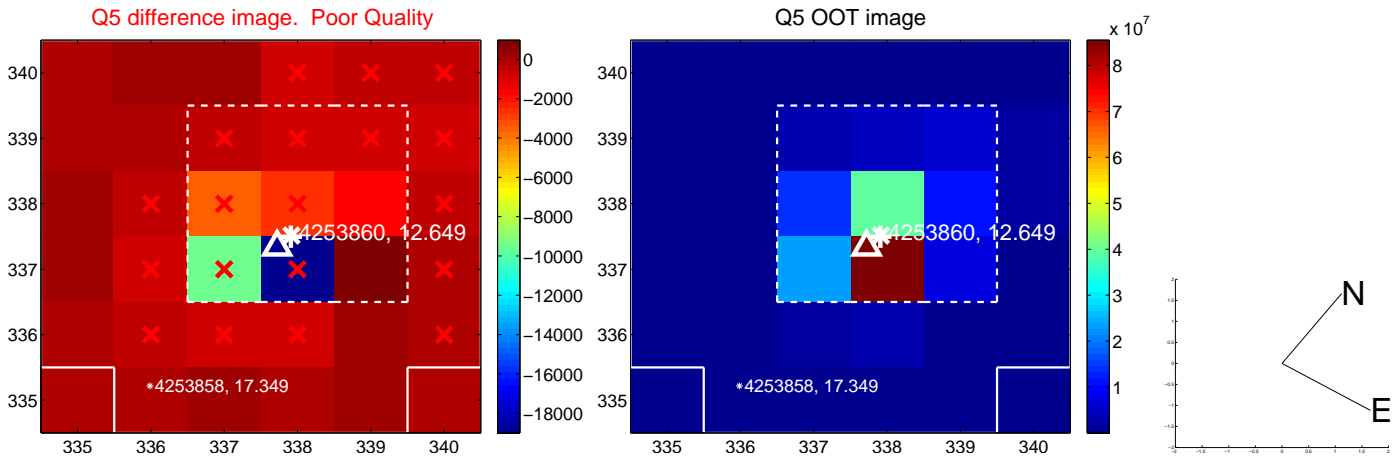


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

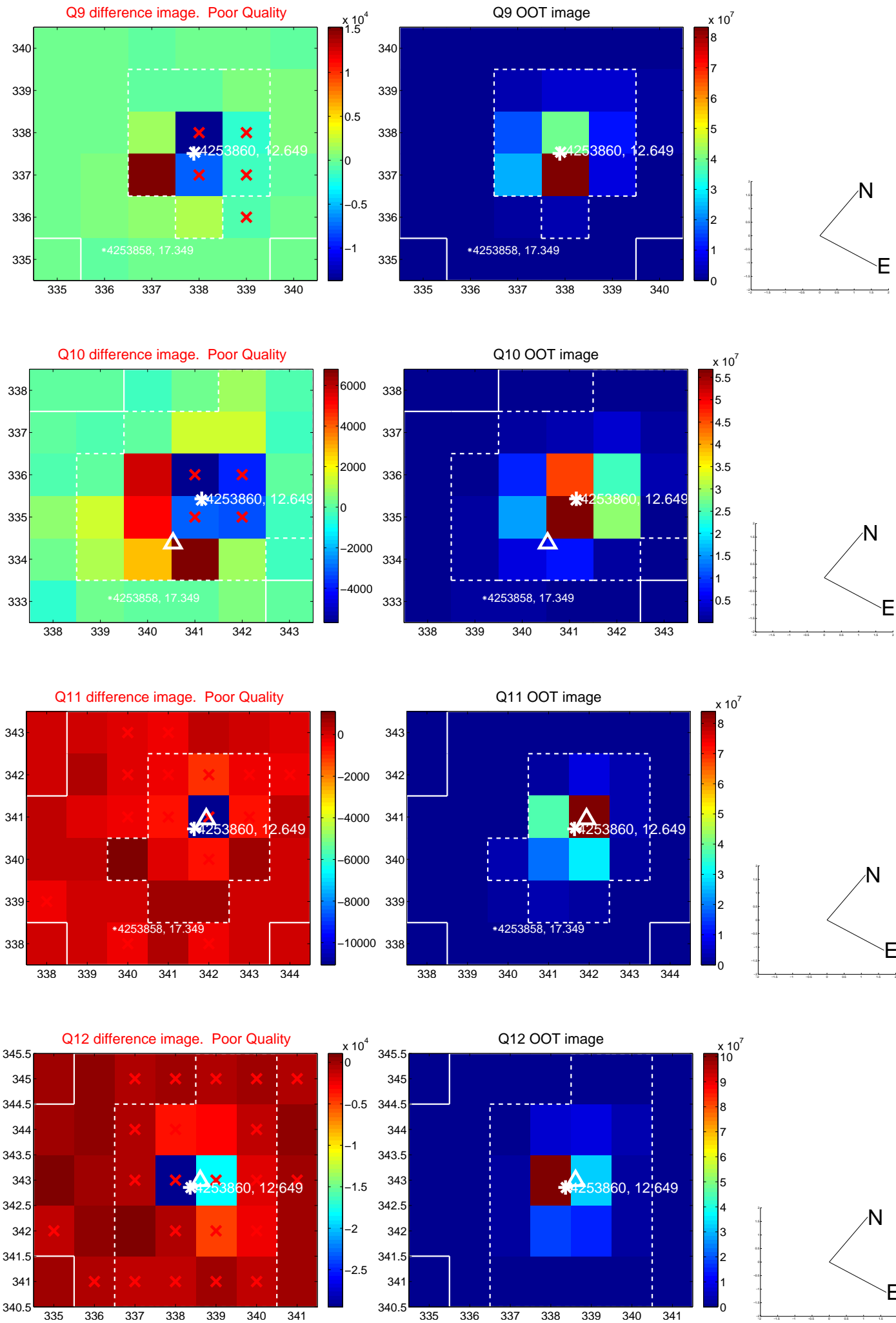
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



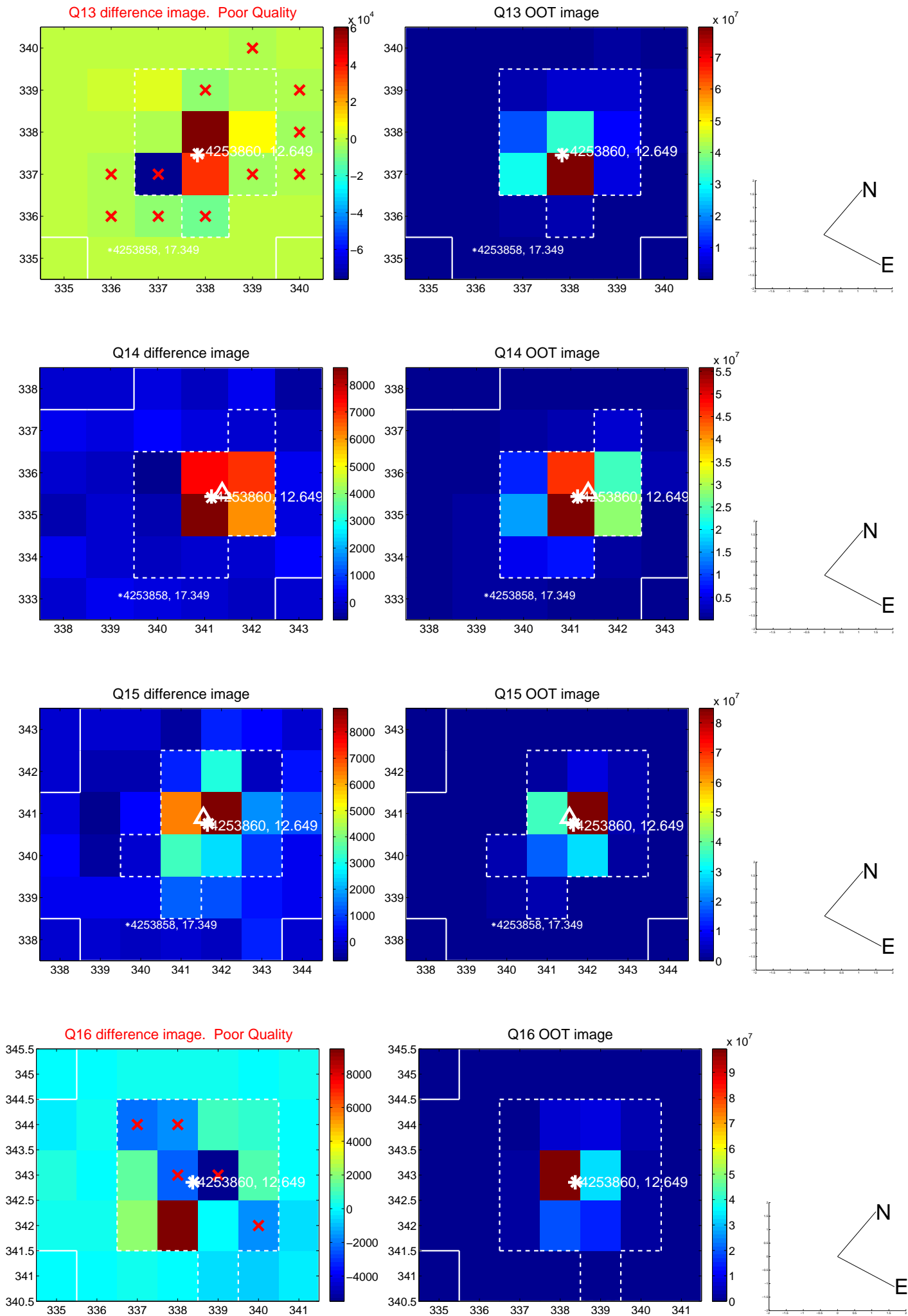
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



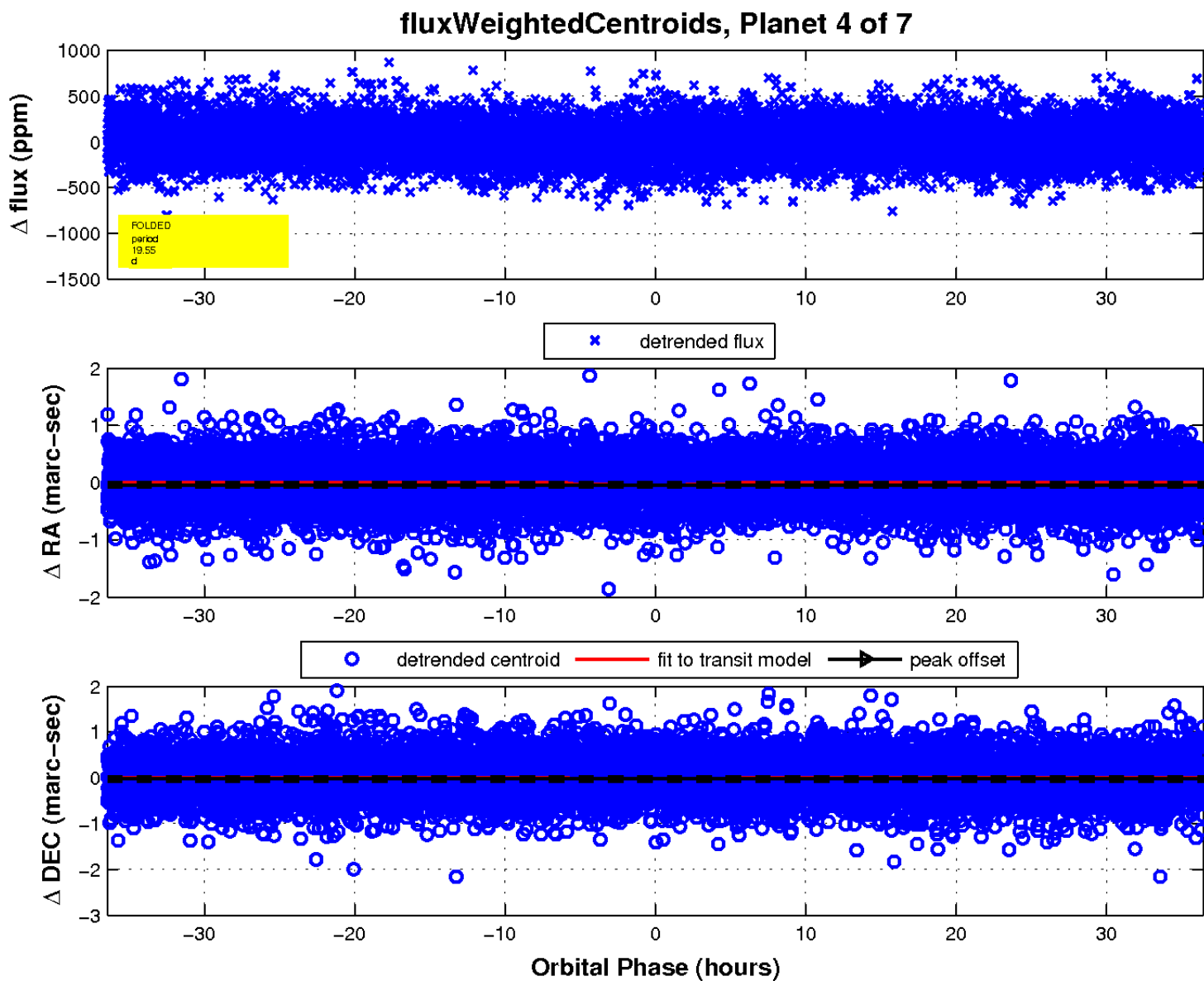
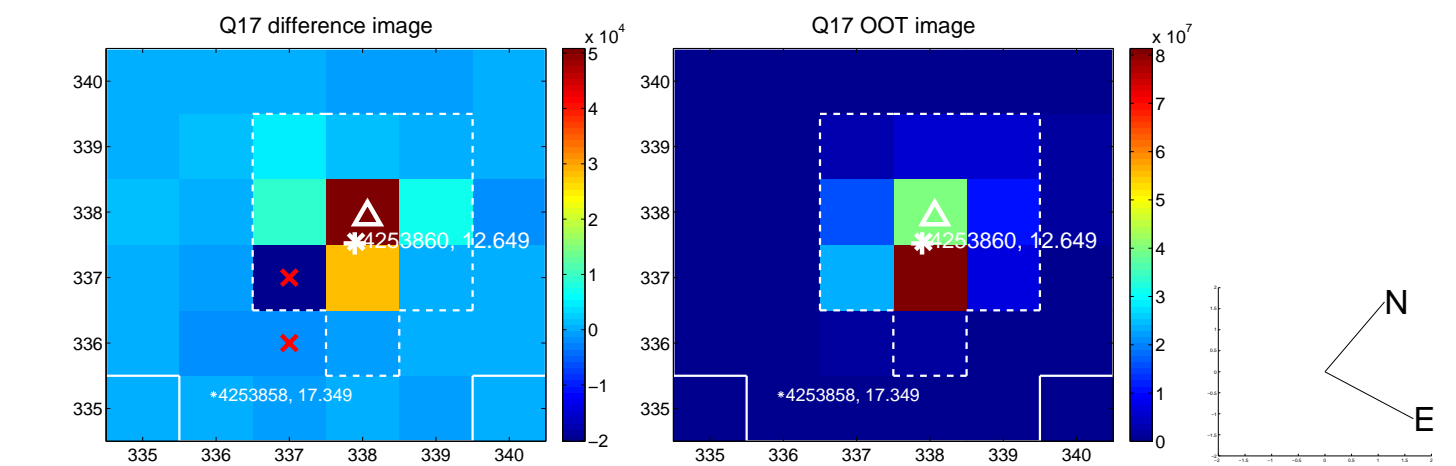
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

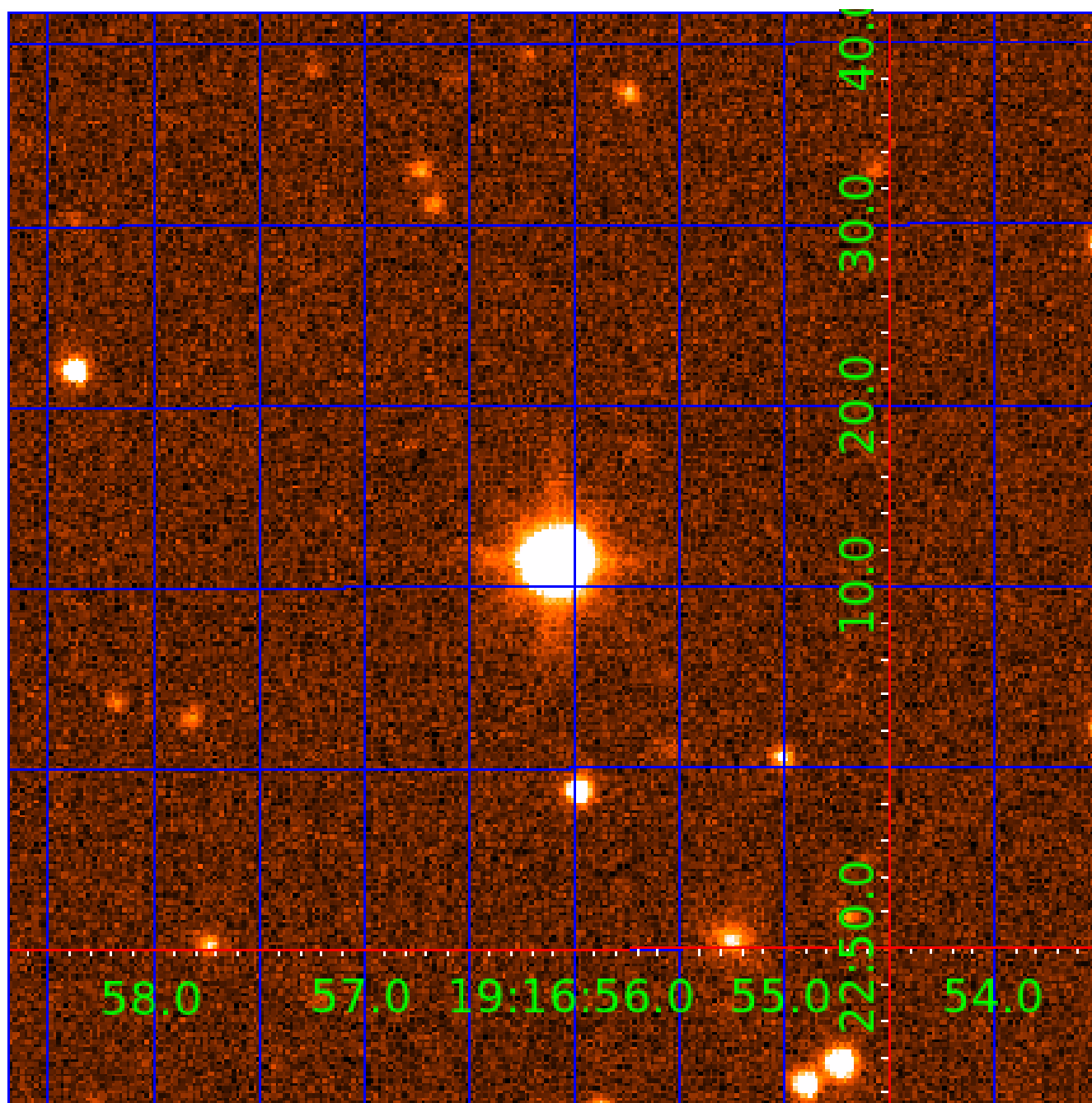


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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 004253860-05

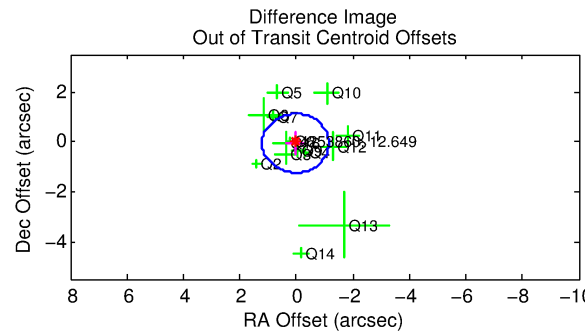
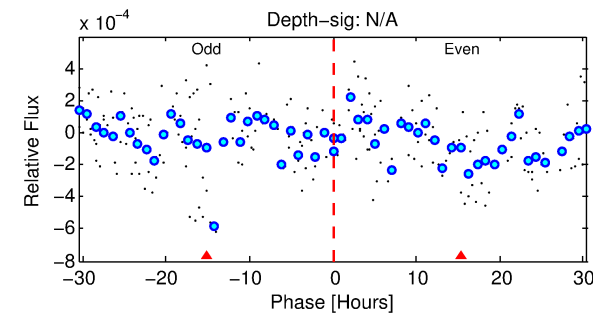
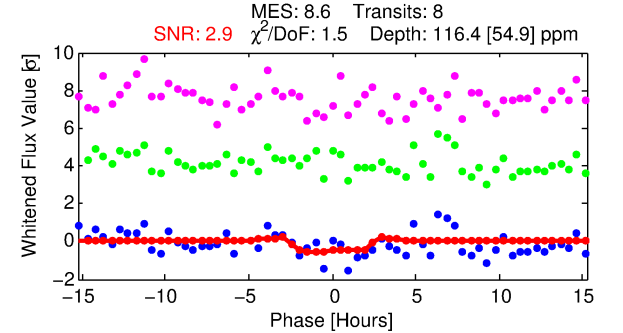
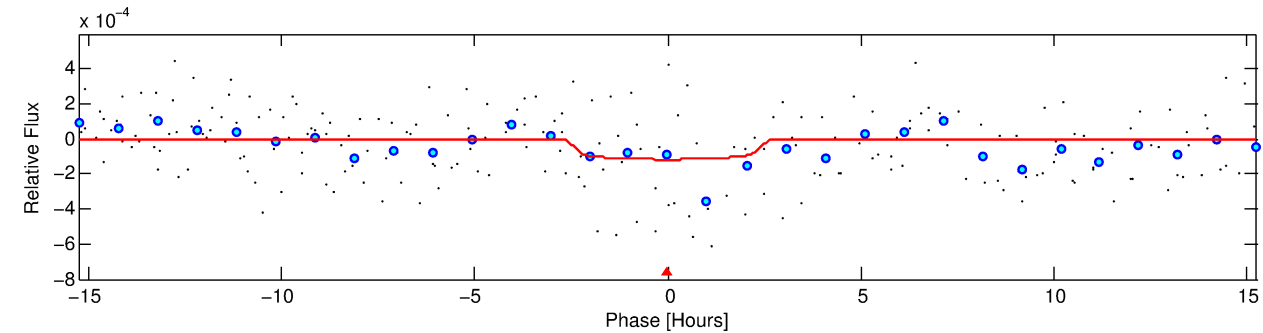
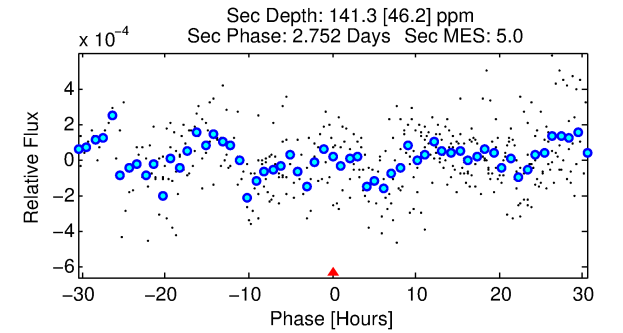
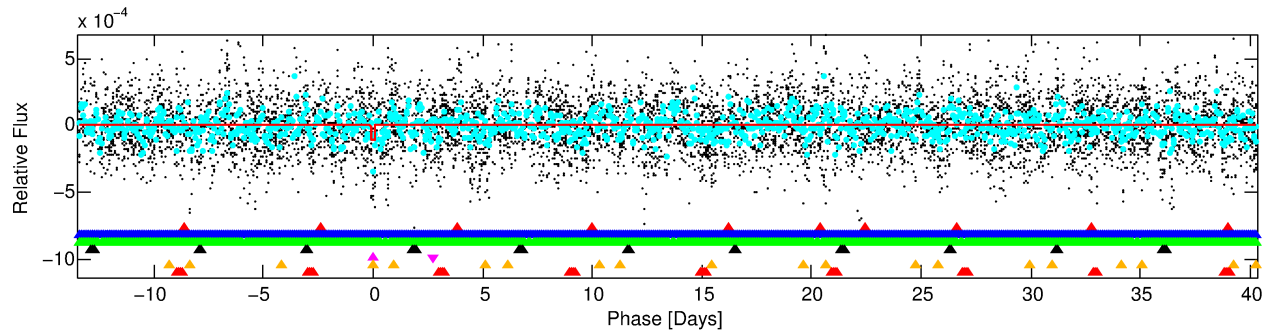
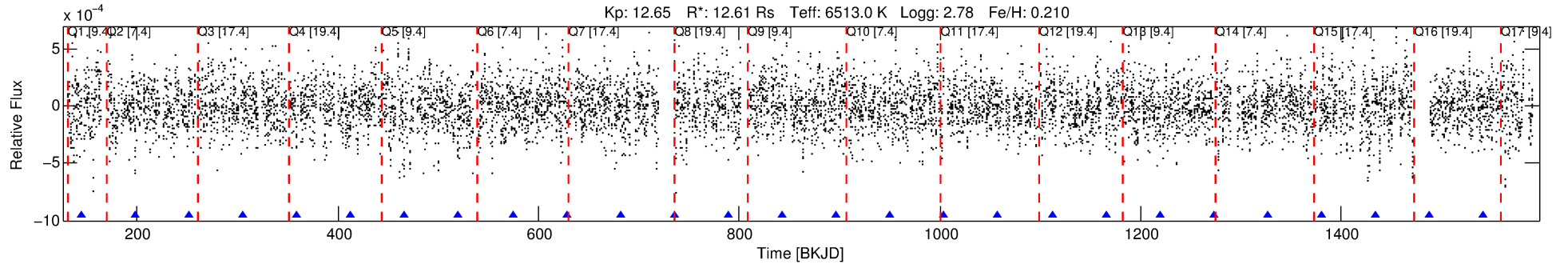
No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 5 of 7 Period: 53.747 d

KOI: K05052 Corr: No Ephemeris Match

Kp: 12.65 R*: 12.61 Rs Teff: 6513.0 K Logg: 2.78 Fe/H: 0.210



DV Fit Results:

Period = 53.74736 [0.00223] d
Epoch = 144.2132 [0.0364] BKJD
Rp/R* = 0.0112 [0.0156]
a/R* = 43.96 [342.64]
b = 0.85 [2.53]
Seff = 1428.09 [1621.80]
Teq = 1568 [445] K
Rp = 15.39 [22.22] Re
a = 0.4238 [0.1218] AU
Ag = 58.93 [167.47] [0.35σ]
Teffp = 6715 [5051] K [1.02σ]

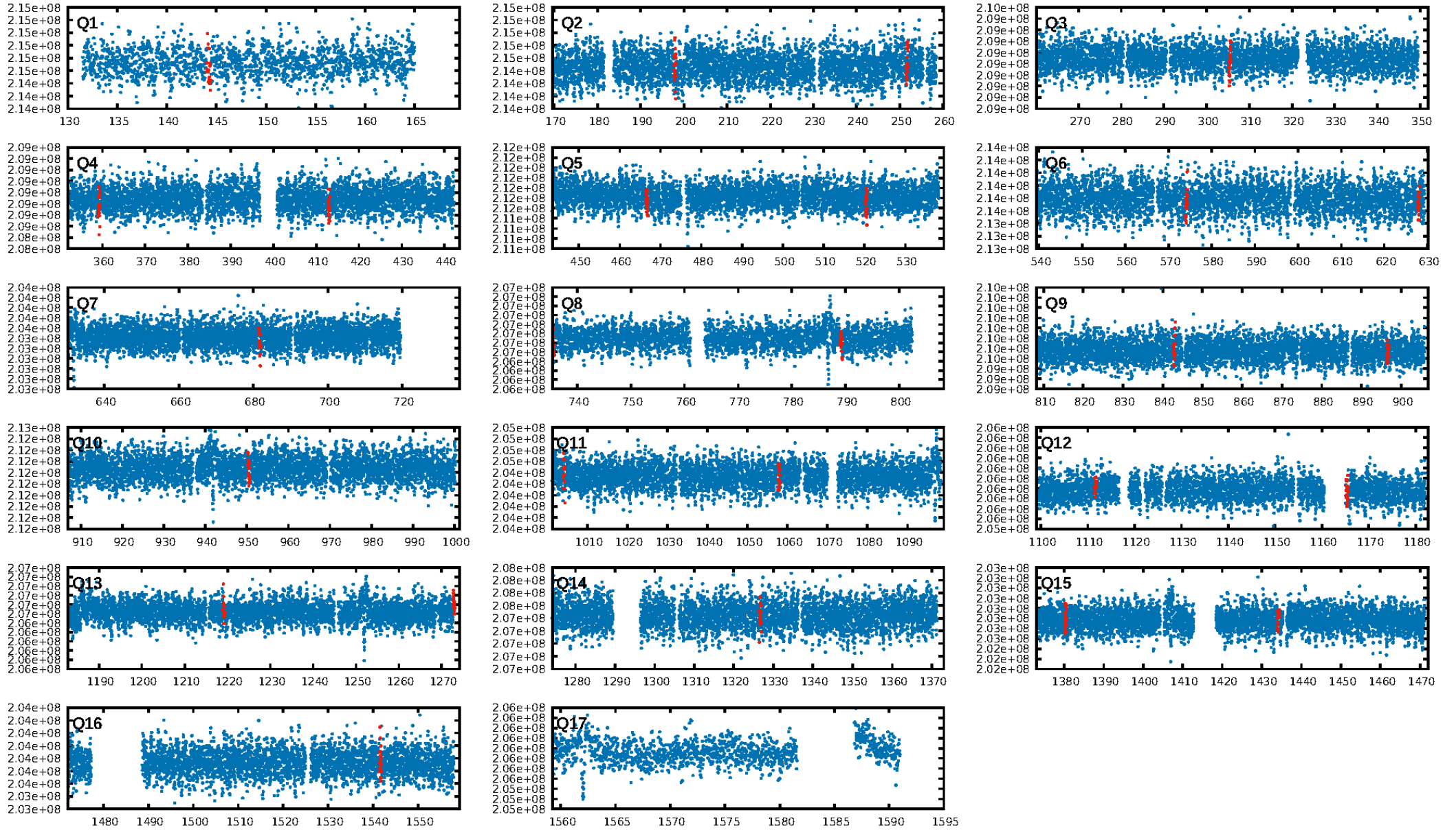
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [100.42σ]
LongPeriod-sig: 100.0% [38.12σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -4.703
Centroid-sig: 31.3%
Centroid-so: 0.611 arcsec [0.78σ]
OotOffset-rm: 0.073 arcsec [0.19σ]
KicOffset-rm: 0.021 arcsec [0.08σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 0.00 [0/16]

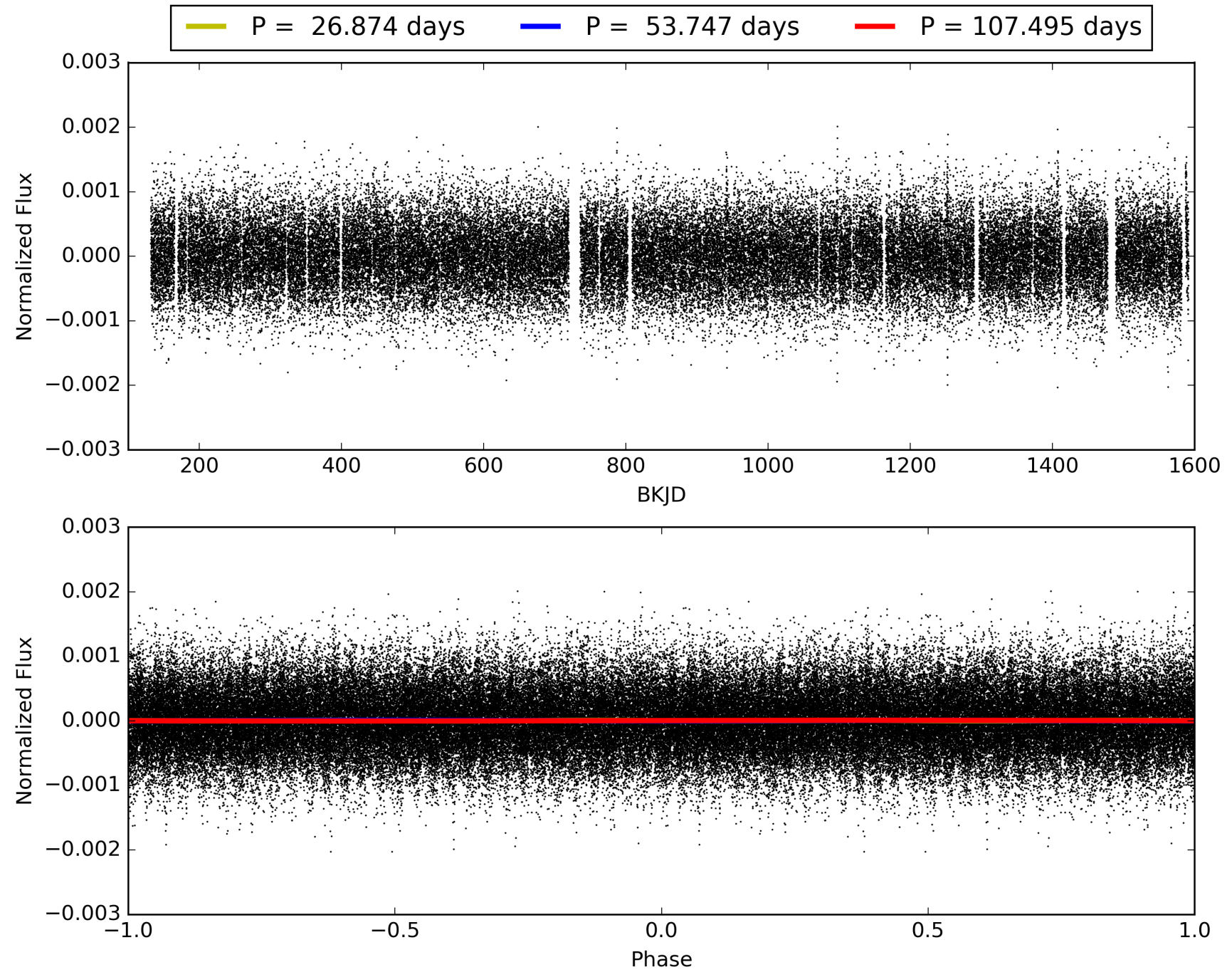
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:34:48 Z

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

TCE 004253860-05, PDC Light Curves

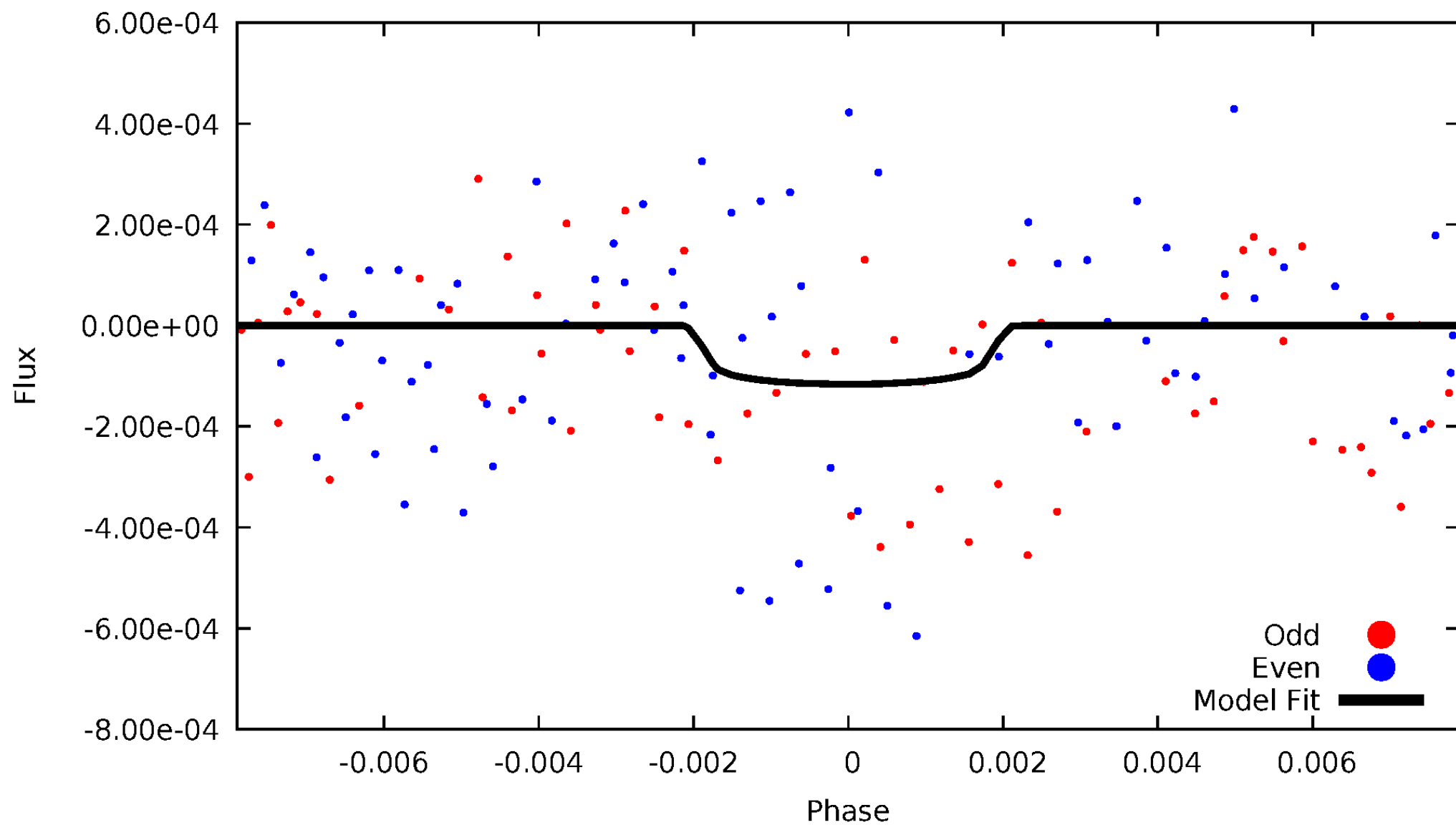


TCE 004253860-05



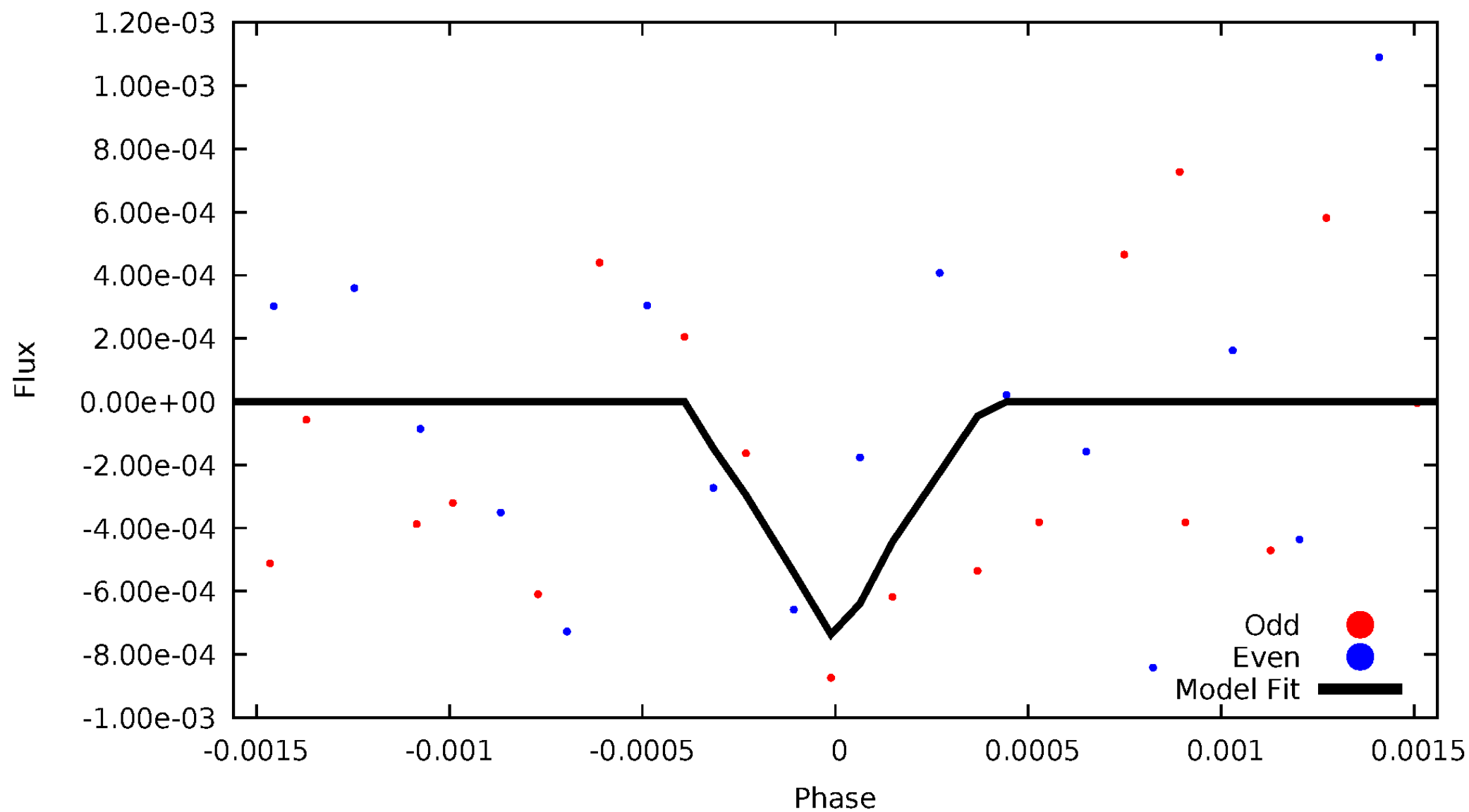
DV Odd/Even

TCE 004253860-05

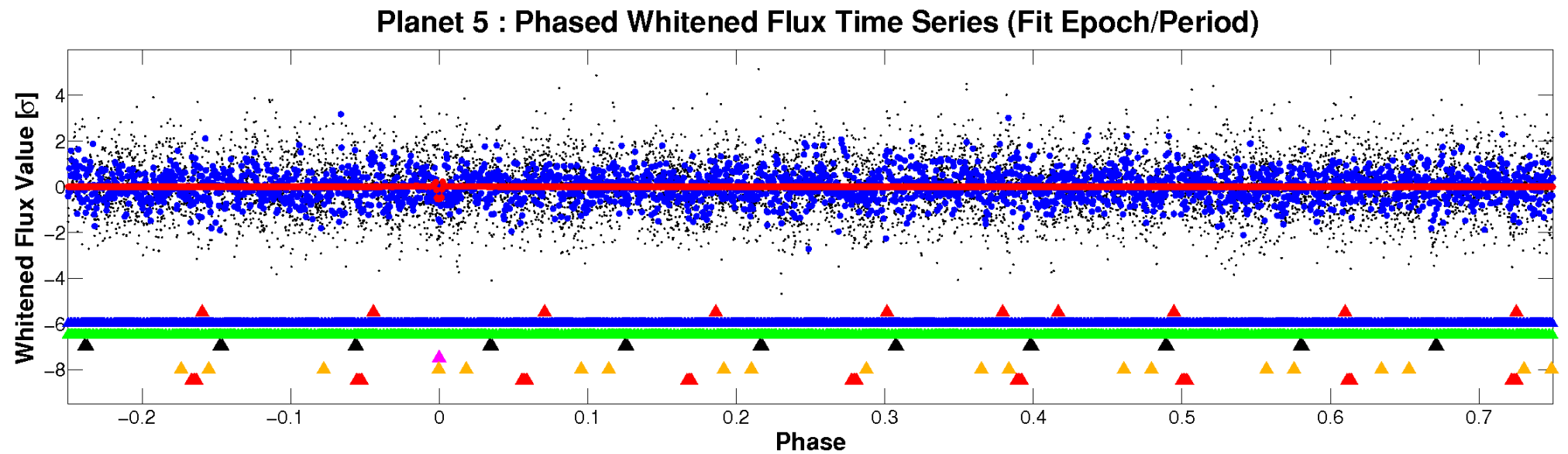
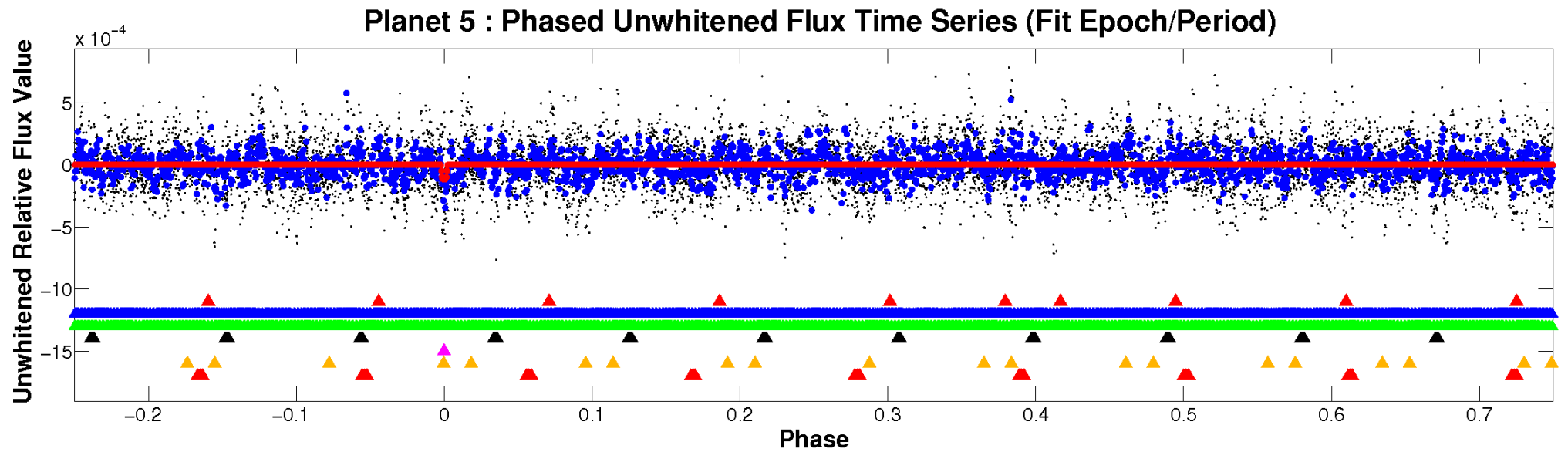


ALT Odd/Even

TCE 004253860-05

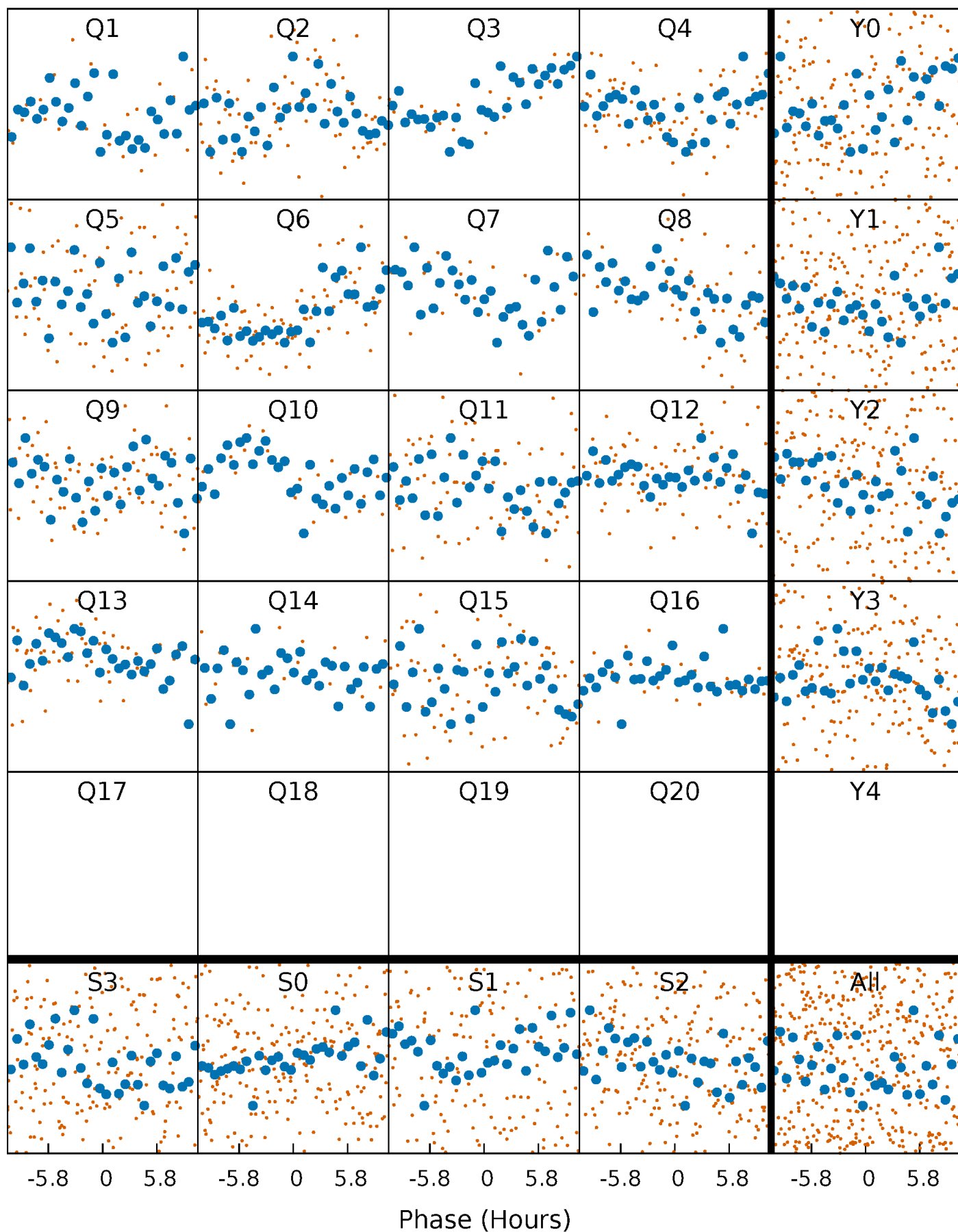


Non-Whitened Vs. Whitened Light Curve



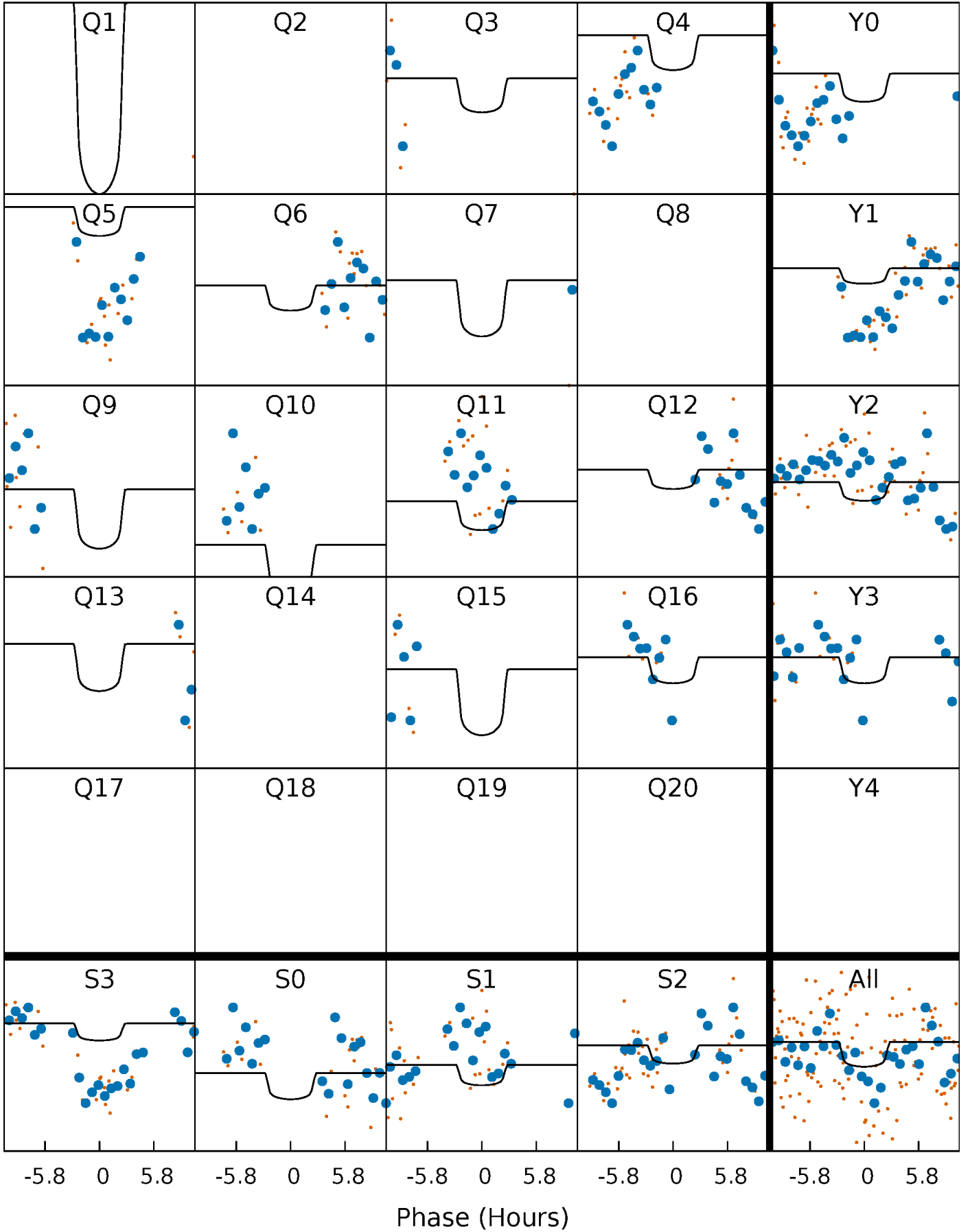
PDC Quarter-Phased Transit Curves

TCE 004253860-05 P= 53.747355 Days $T_0=144.213160$ (BKJD)



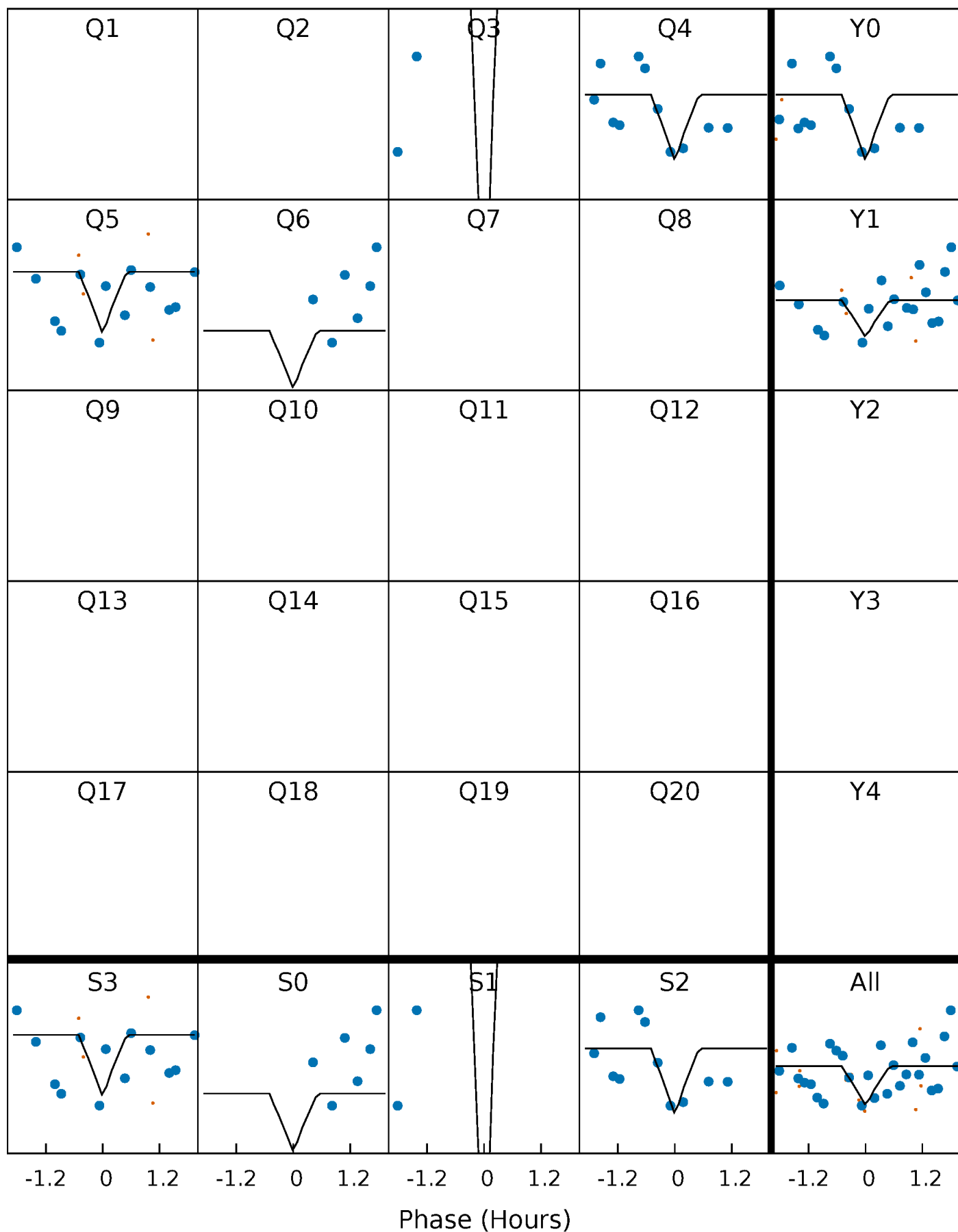
DV Quarter-Phased Transit Curves

TCE 004253860-05 $P = 53.747355$ Days $T_0 = 144.213160$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

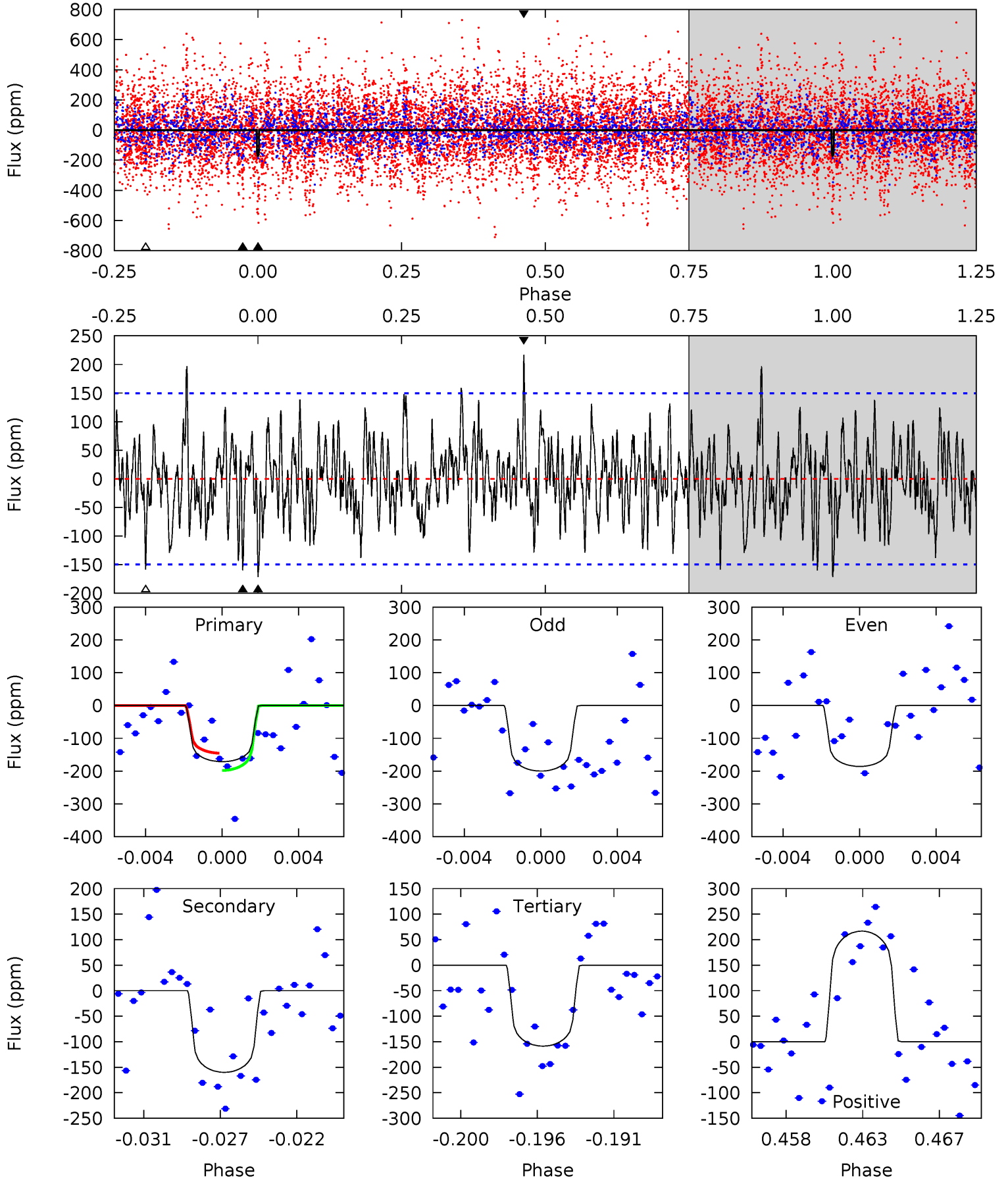
TCE 004253860-05 $P = 53.828569$ Days $T_0 = 143.688096$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-05, P = 53.747355 Days, E = 90.465805 Days

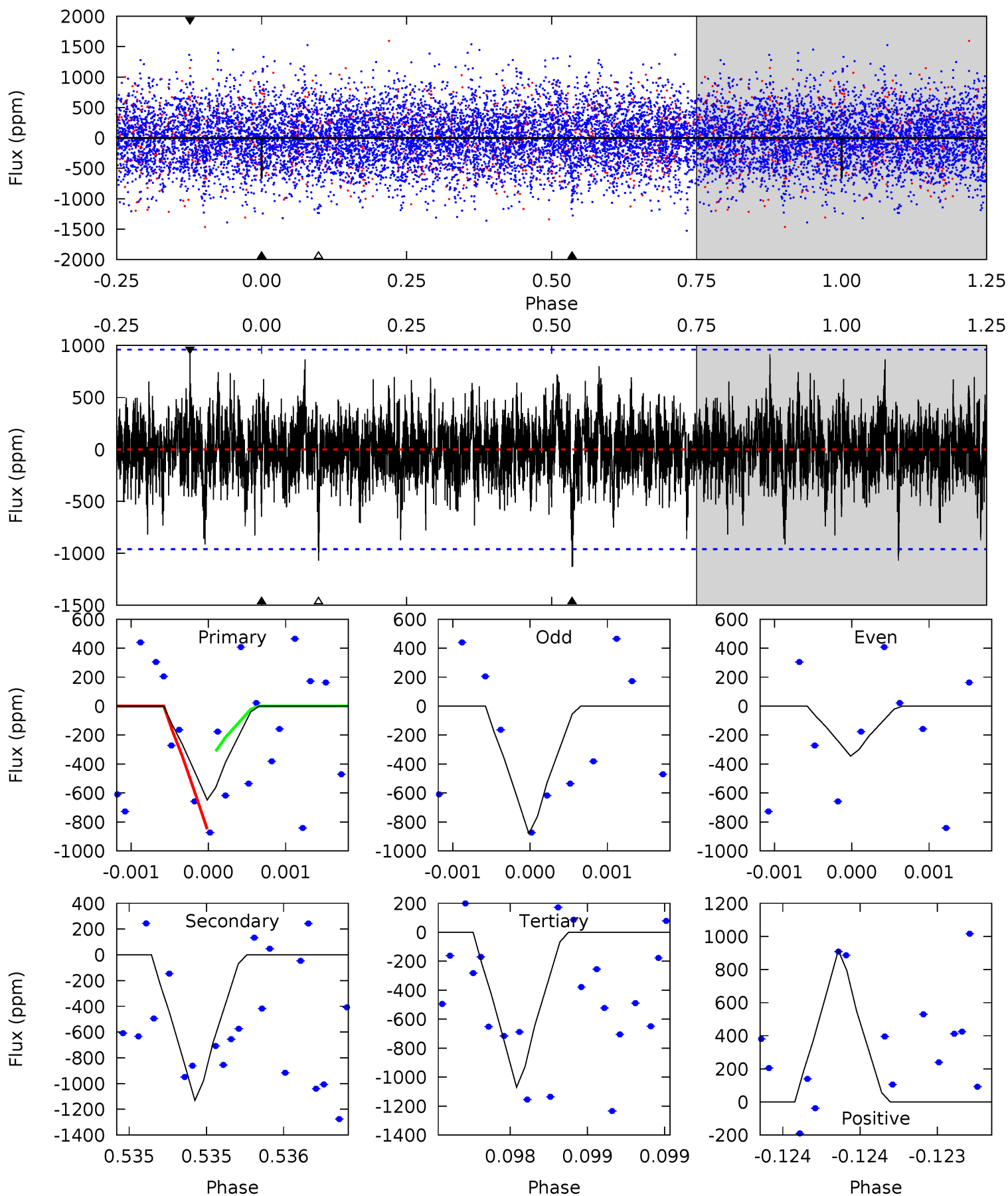
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.93	5.54	5.49	7.50	5.18	2.84	1.93	0.44	-1.57	0.05	-1.97	0.24	1.85	0.56	0.91



Alt Model-Shift Uniqueness Test

004253860-05, P = 53.828569 Days, E = 89.859527 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.73	6.51	6.15	5.27	5.52	3.40	1.42	-2.43	-1.54	0.35	1.24	1.54	0.80	0.45	1.46



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-160 ± 29	$21.71^{+18.55}_{-13.59}$	2099^{+325}_{-496}	5324^{+4628}_{-1428}	31^{+180}_{-21}
Alt.	-1131 ± 174	$38.24^{+23.06}_{-20.26}$	2117^{+306}_{-517}	6623^{+3800}_{-1854}	69^{+245}_{-41}

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 $A_{obs} \gg 1.0$

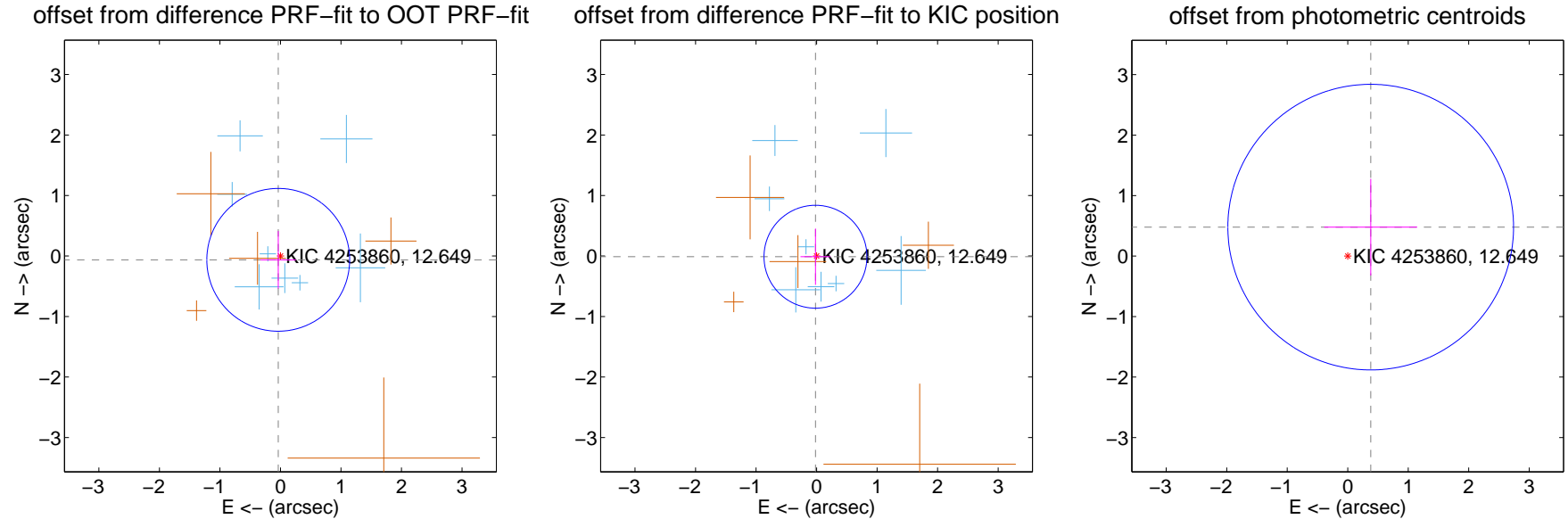
DV Centroid Data

Supplemental centroid analysis for 004253860-05. Kepler magnitude: 12.65. Transit SNR 2.86

There are 8 quarters with good PRF difference image offsets

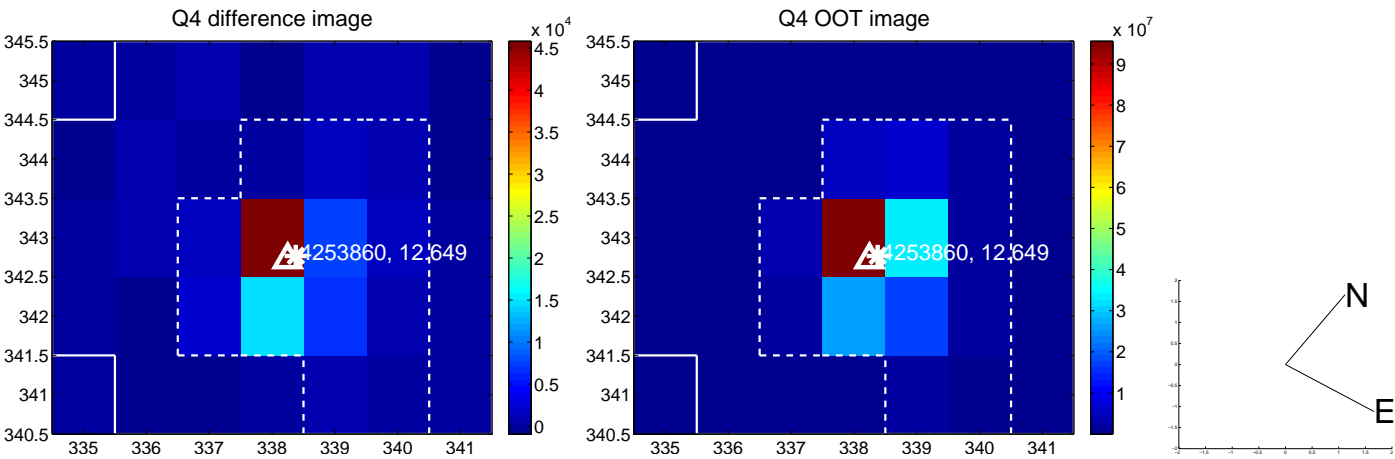
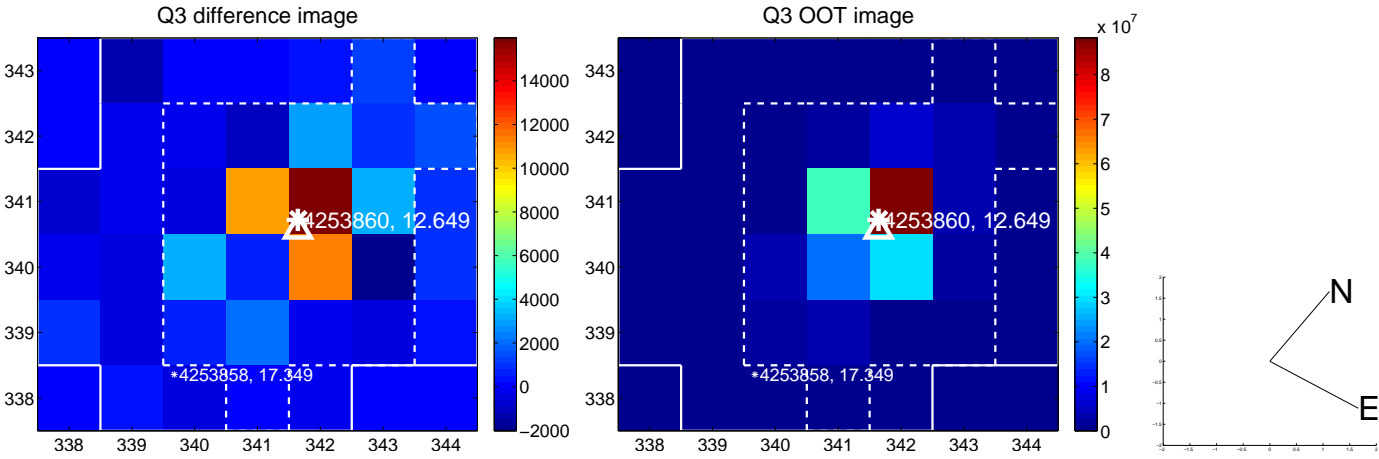
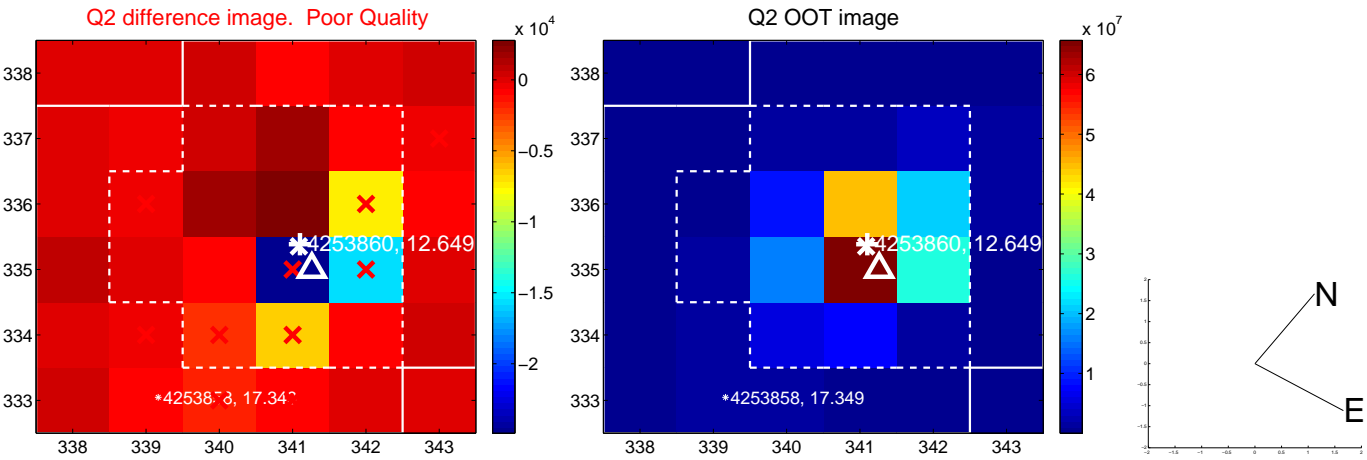
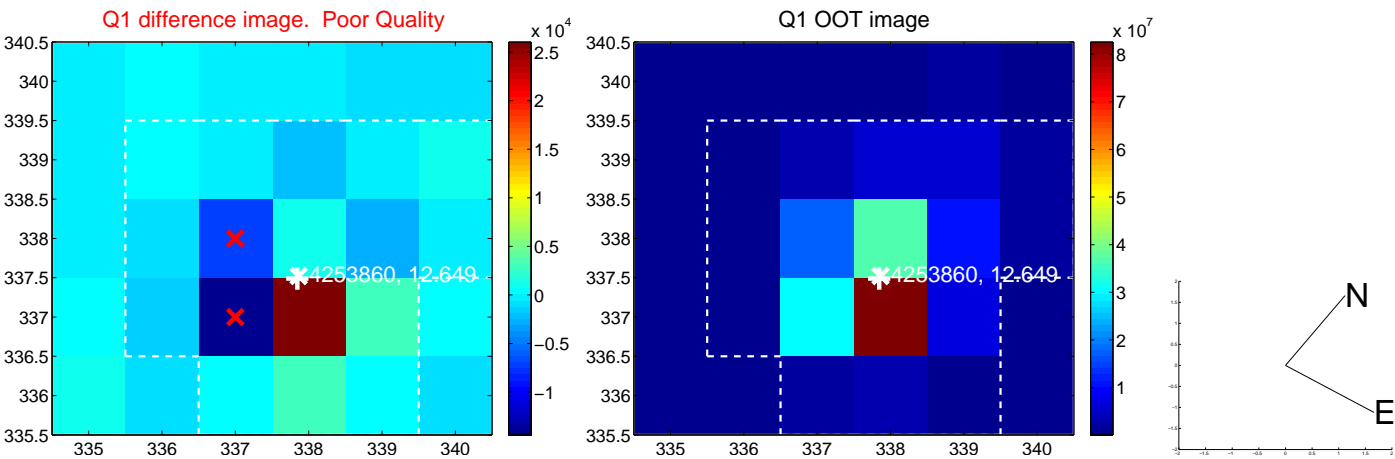
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.073 ± 0.393	0.19	0.037 ± 0.292	-0.063 ± 0.475
PRF-fit source offset from KIC position	0.021 ± 0.283	0.08	0.018 ± 0.248	-0.011 ± 0.465
photometric centroid source offset	0.61 ± 0.79	0.78	-0.38 ± 0.77	0.48 ± 0.80

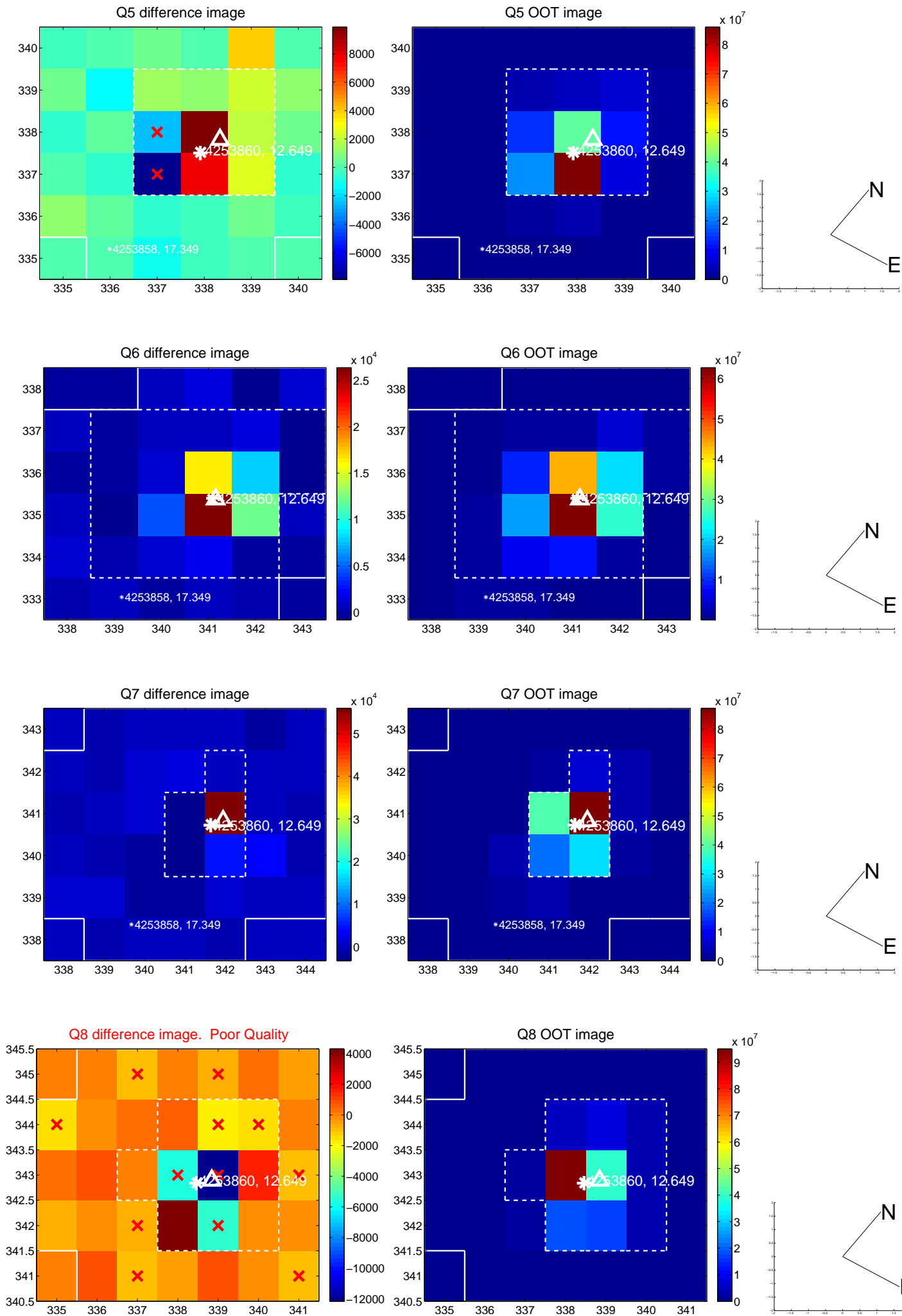


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

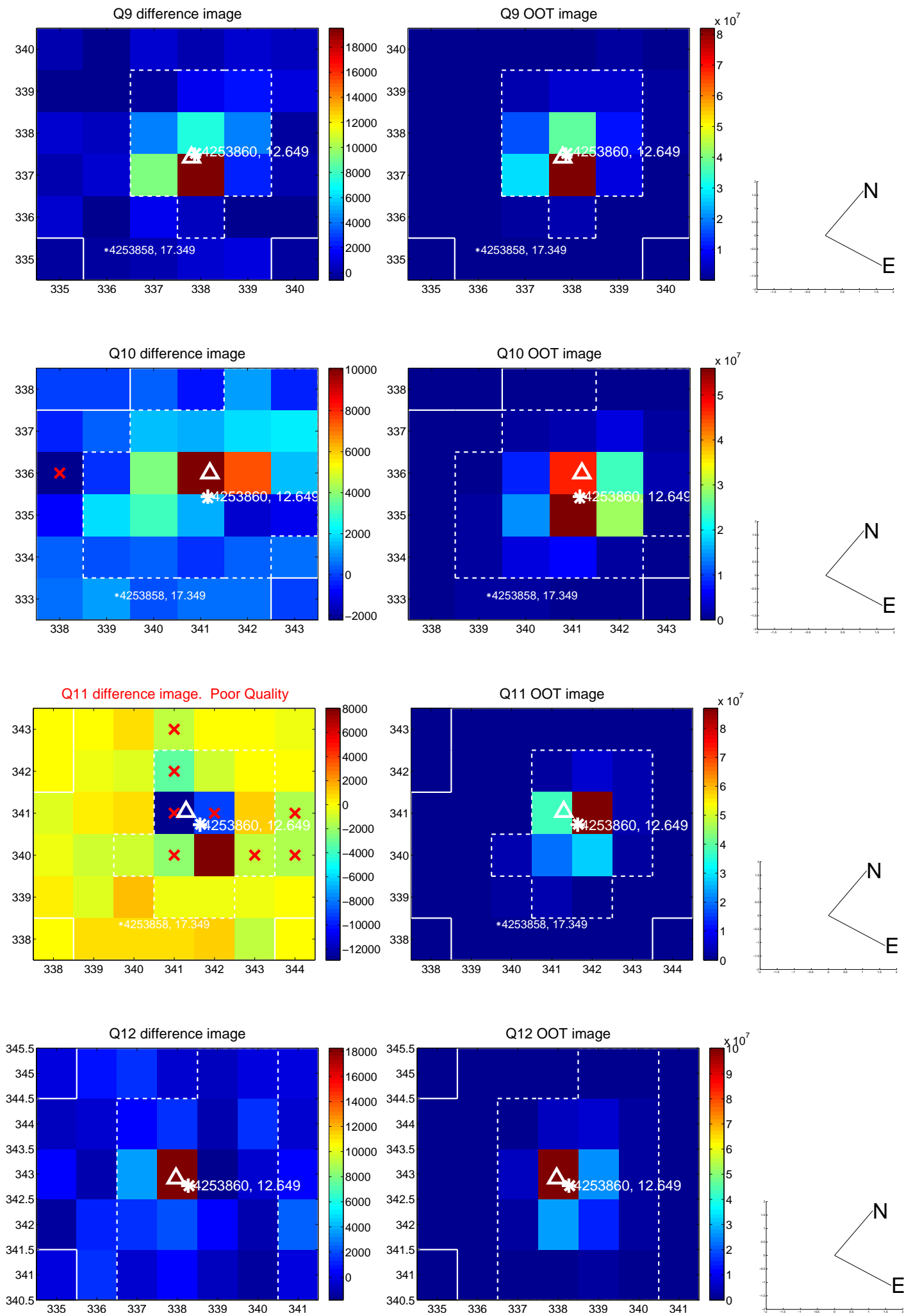
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



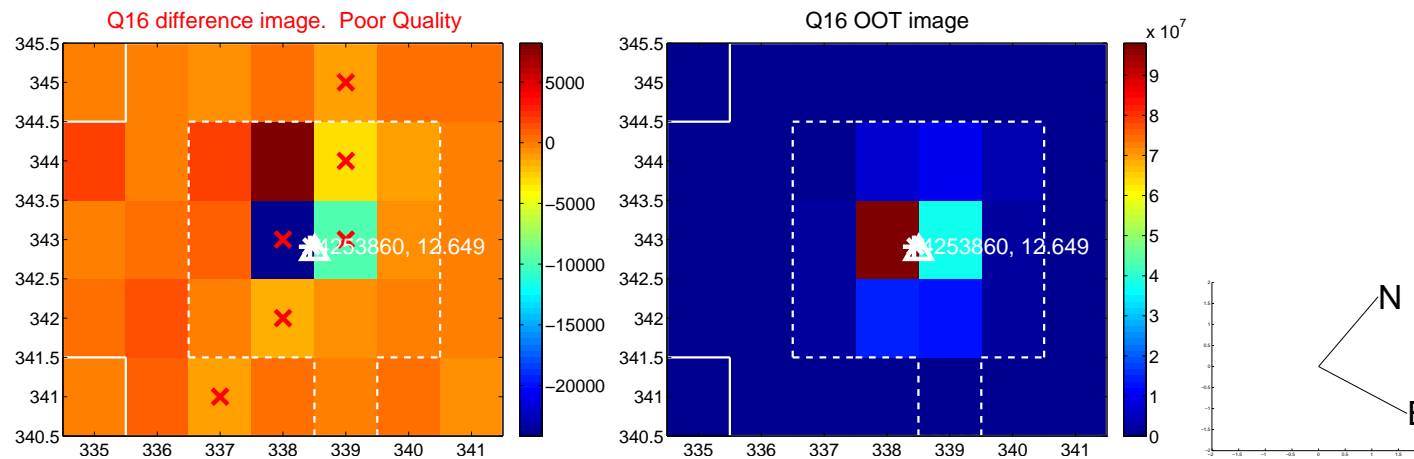
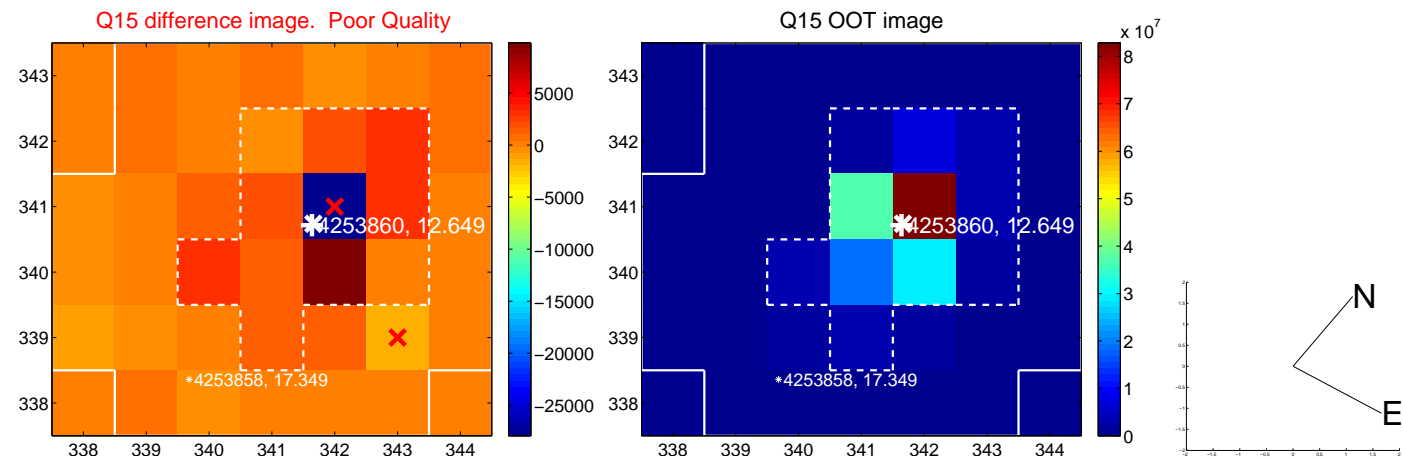
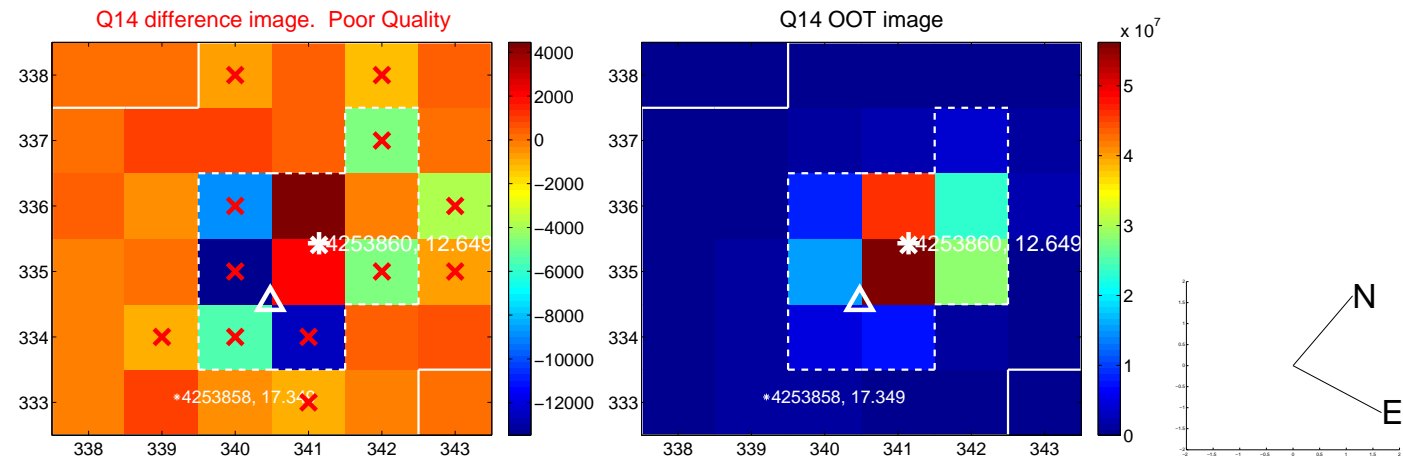
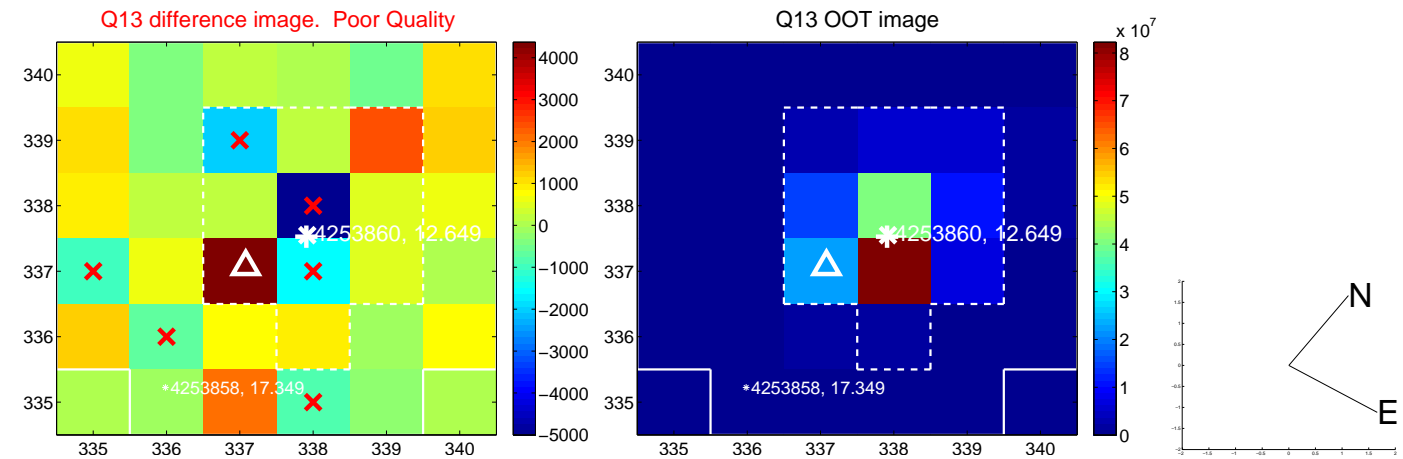
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



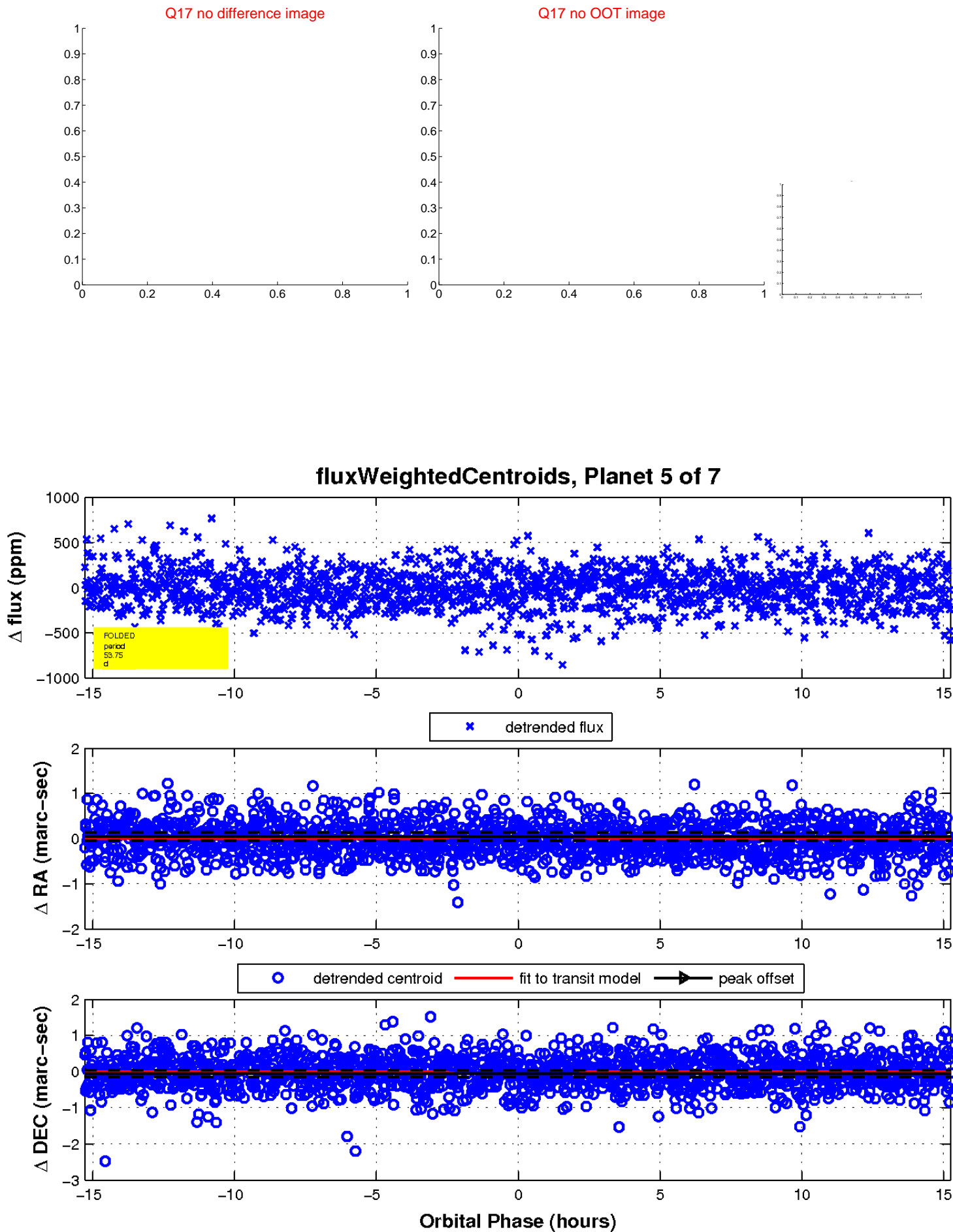
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

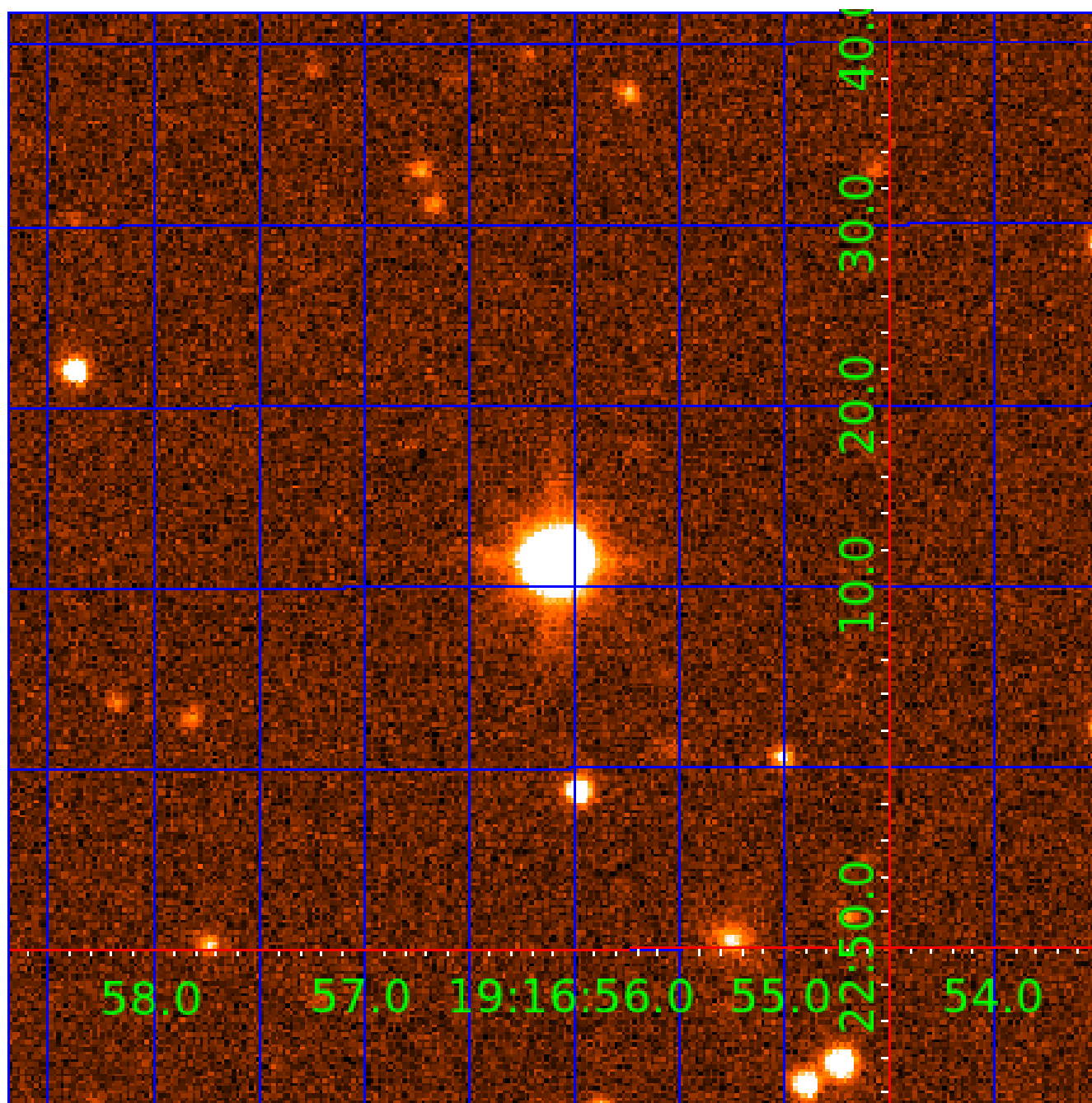


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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.

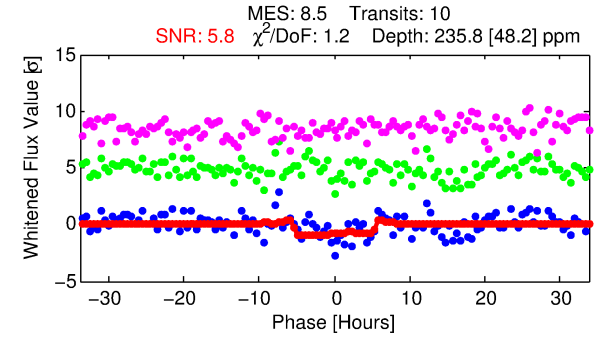
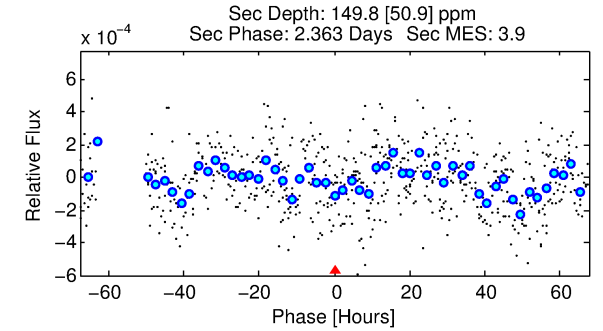
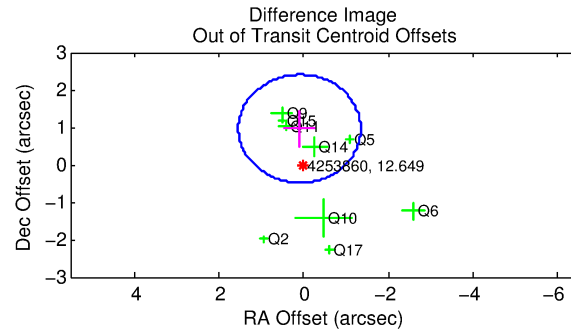
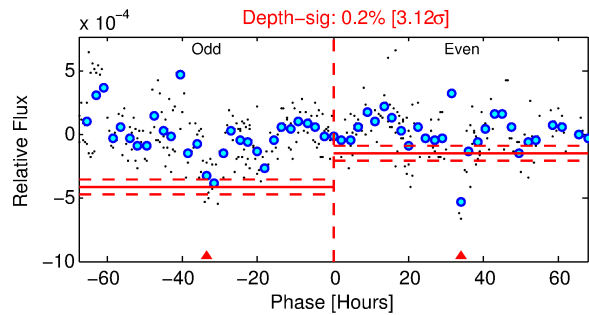
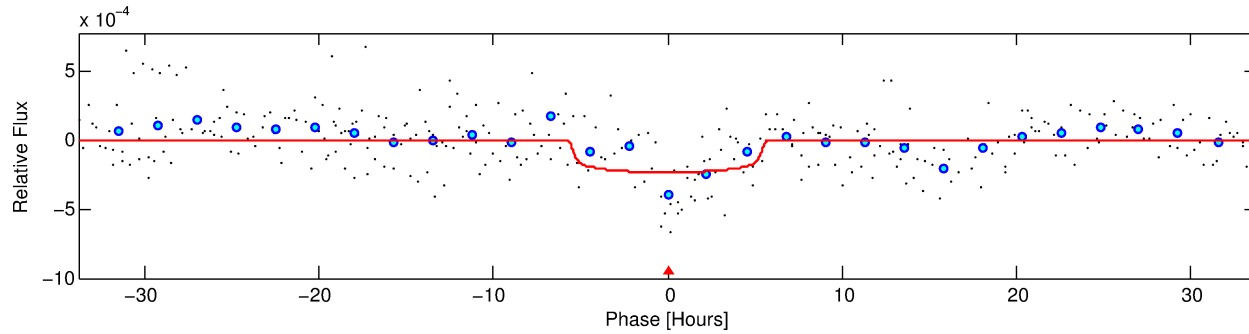
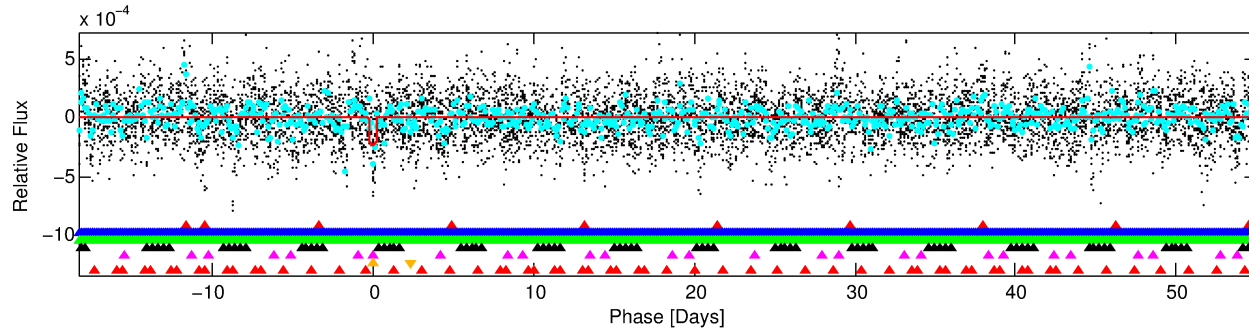
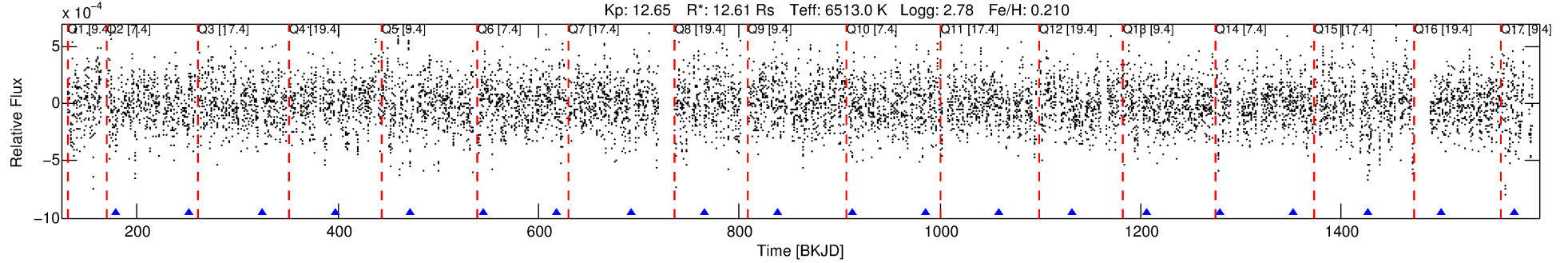
Ephemeris Match Information For 004253860-06

No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 6 of 7 Period: 73.382 d
KOI: K05052 Corr: No Ephemeris Match

Kp: 12.65 R*: 12.61 Rs Teff: 6513.0 K Logg: 2.78 Fe/H: 0.210



DV Fit Results:

Period = 73.38242 [0.00248] d
Epoch = 178.3102 [0.0342] BKJD
Rp/R* = 0.0153 [0.0063]
a/R* = 33.25 [73.44]
b = 0.76 [1.20]
Seff = 942.85 [1070.74]
Teq = 1413 [401] K
Rp = 21.13 [11.57] Re
a = 0.5216 [0.1499] AU
Ag = 50.23 [49.00] [1.00σ]
Teffp = 5816 [2019] K [2.14σ]

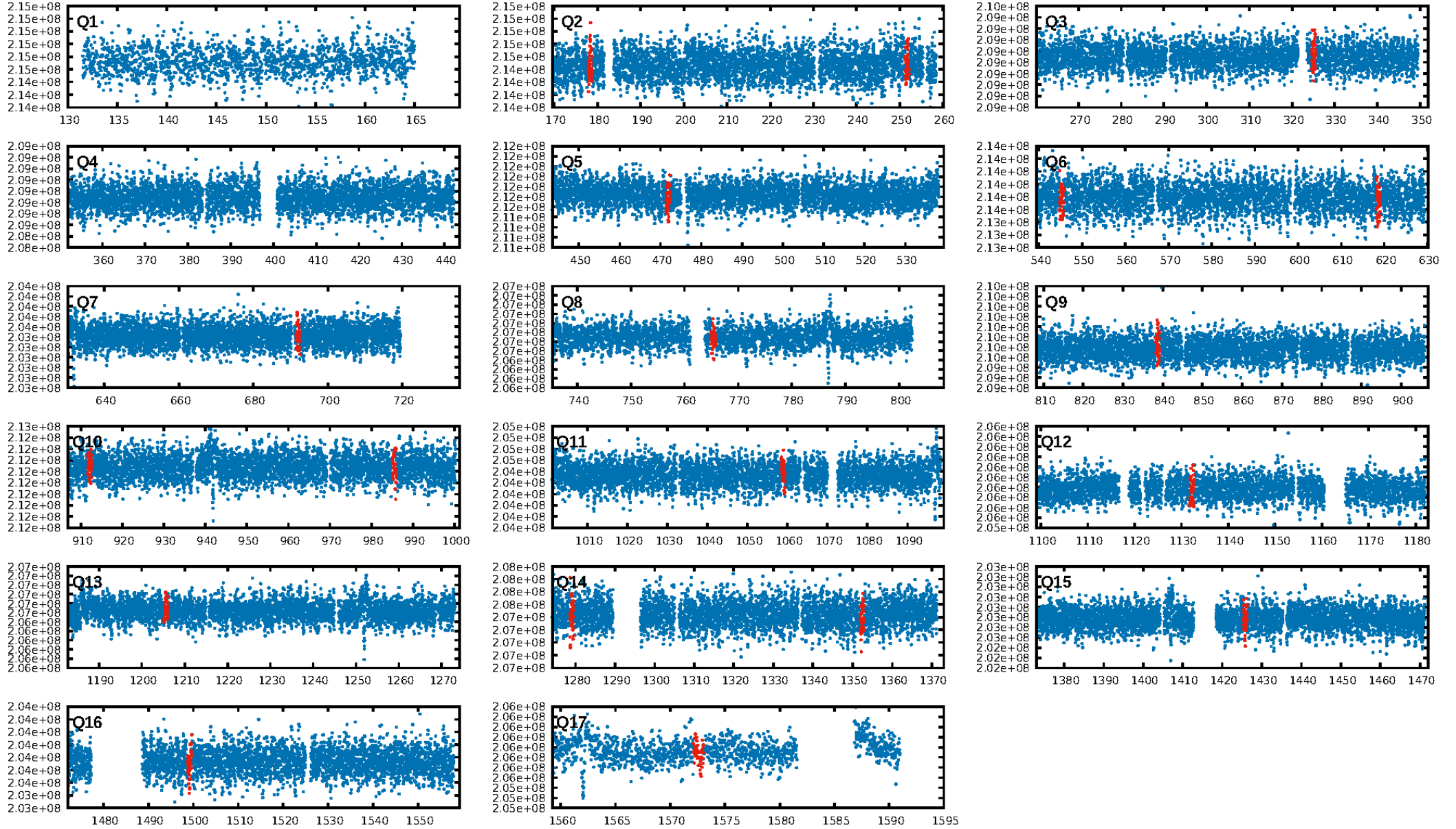
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.12σ]
LongPeriod-sig: 100.0% [136.54σ]
ModelChiSquare2-sig: 7.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 2.077
Centroid-sig: 79.0%
Centroid-so: 0.148 arcsec [0.46σ]
OotOffset-rm: 0.964 arcsec [2.00σ]
OotOffset-st: 4/2/0/3 [9]
KicOffset-rm: 0.902 arcsec [1.81σ]
KicOffset-st: 4/2/0/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/10]

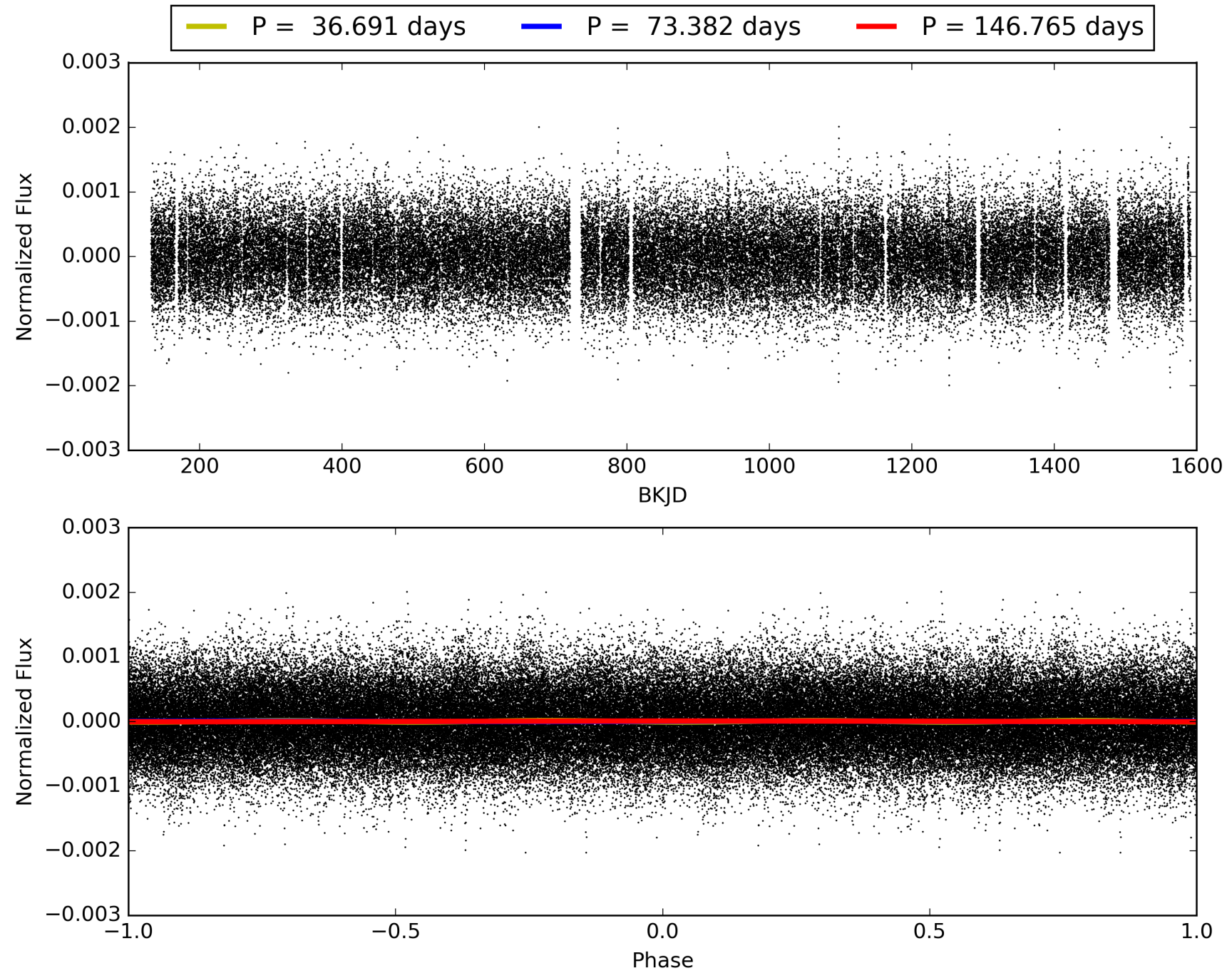
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:34:52 Z

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

TCE 004253860-06, PDC Light Curves

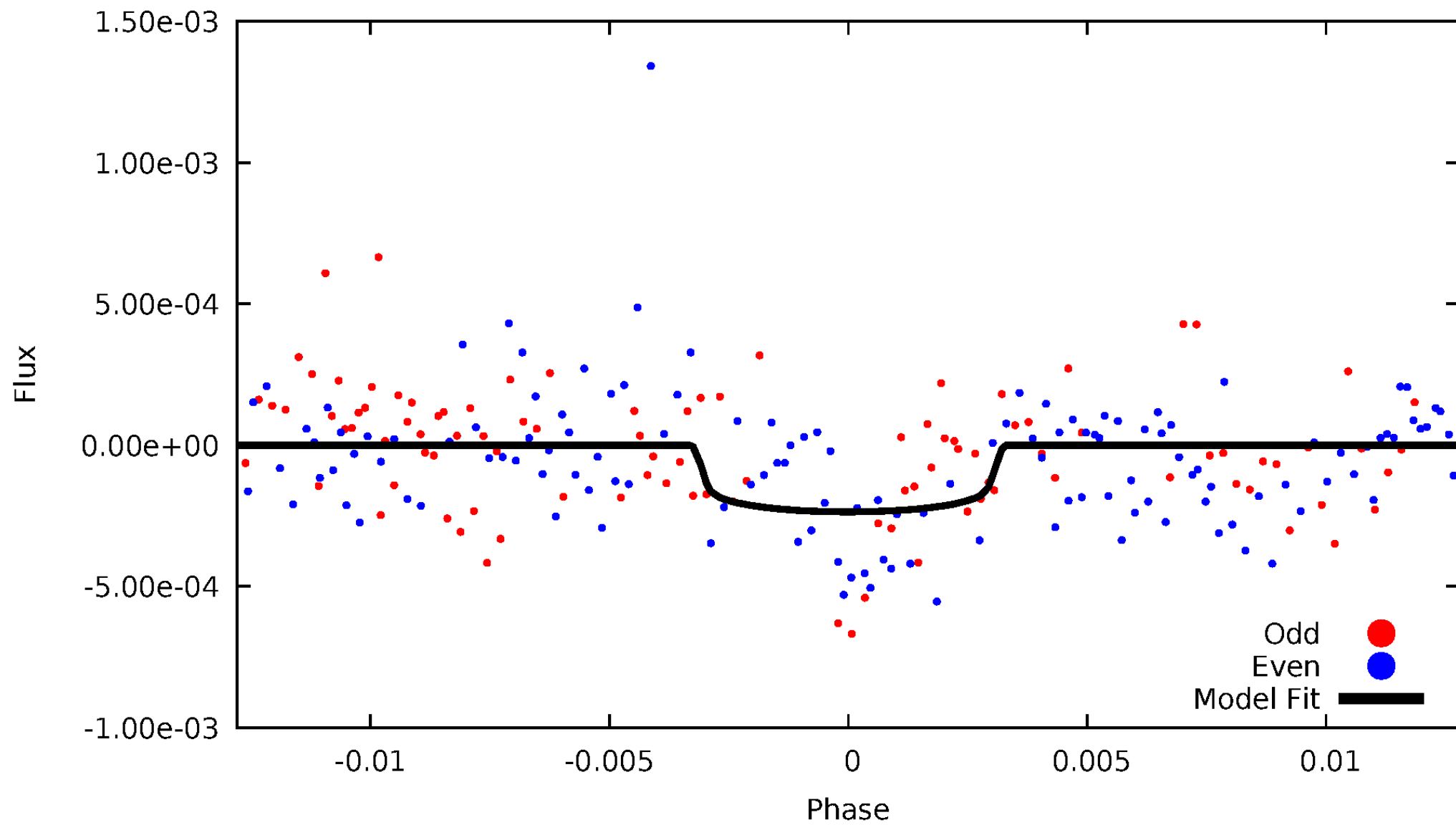


TCE 004253860-06



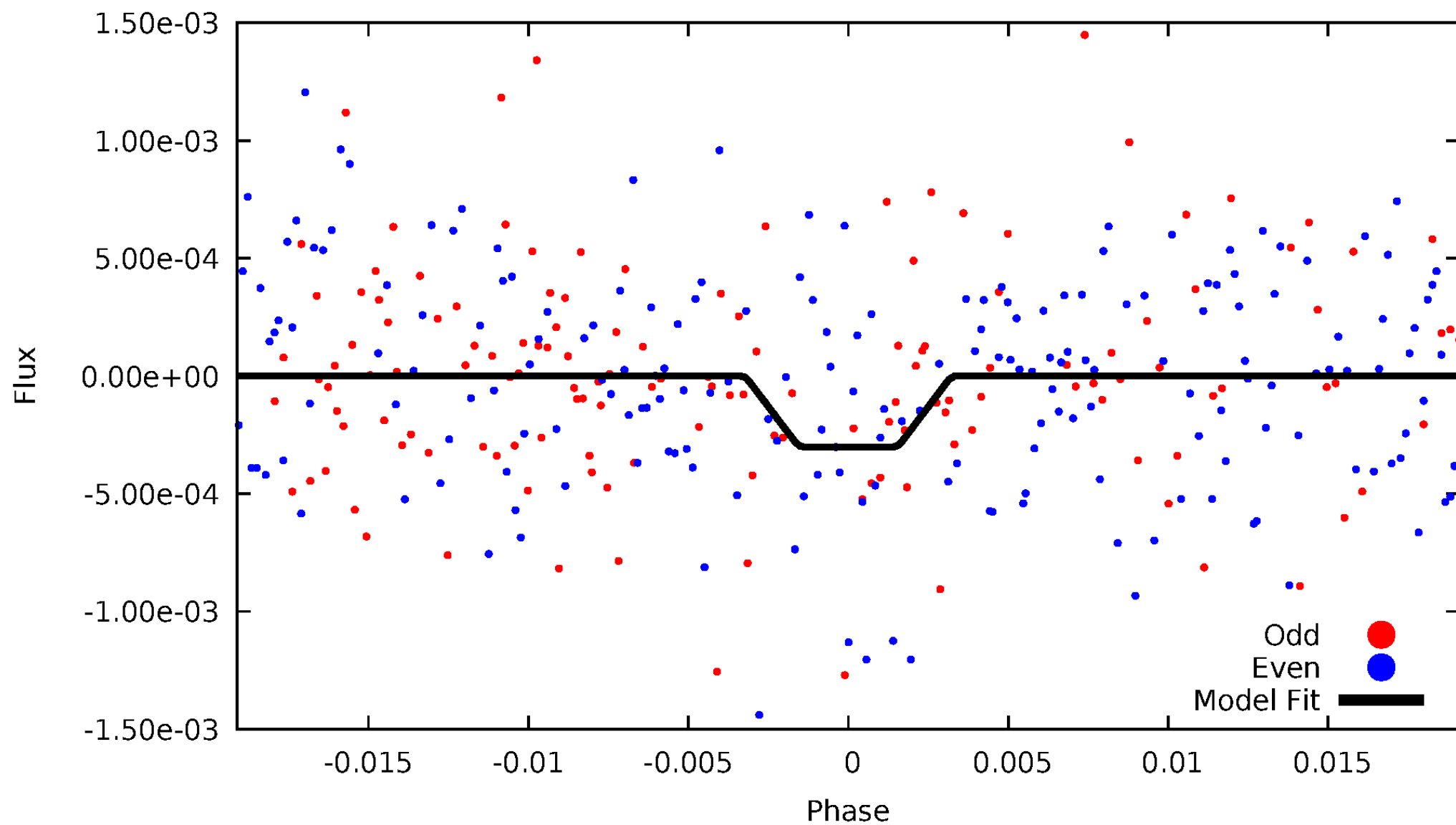
DV Odd/Even

TCE 004253860-06



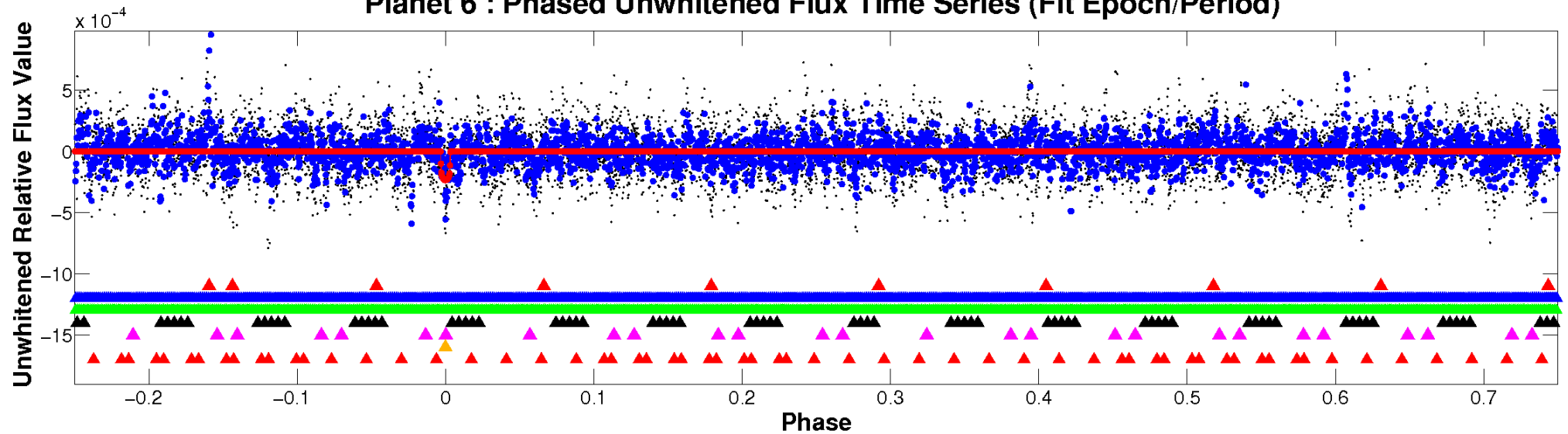
ALT Odd/Even

TCE 004253860-06

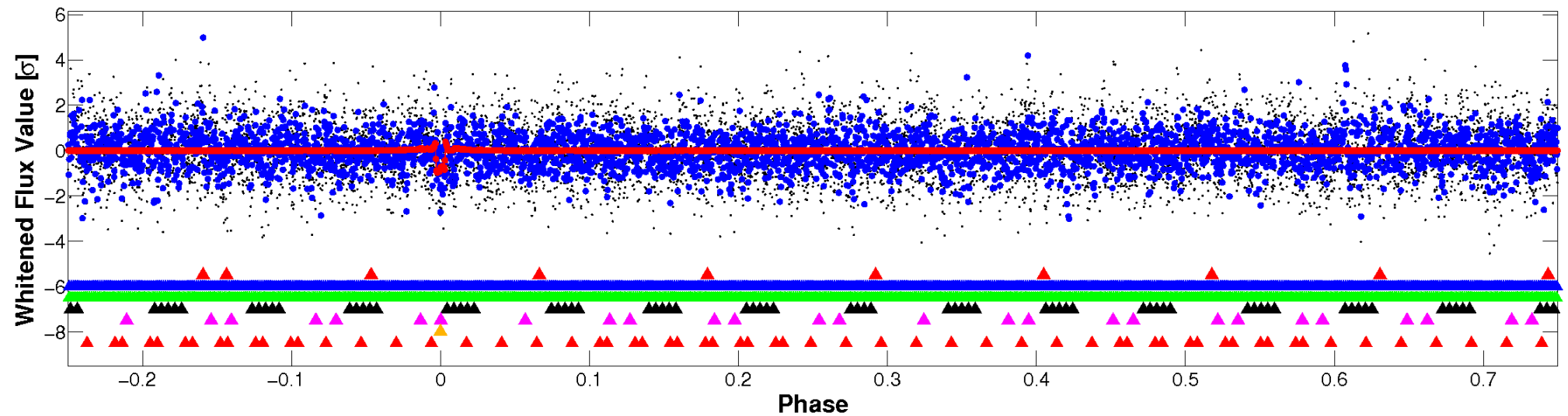


Non-Whitened Vs. Whitened Light Curve

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

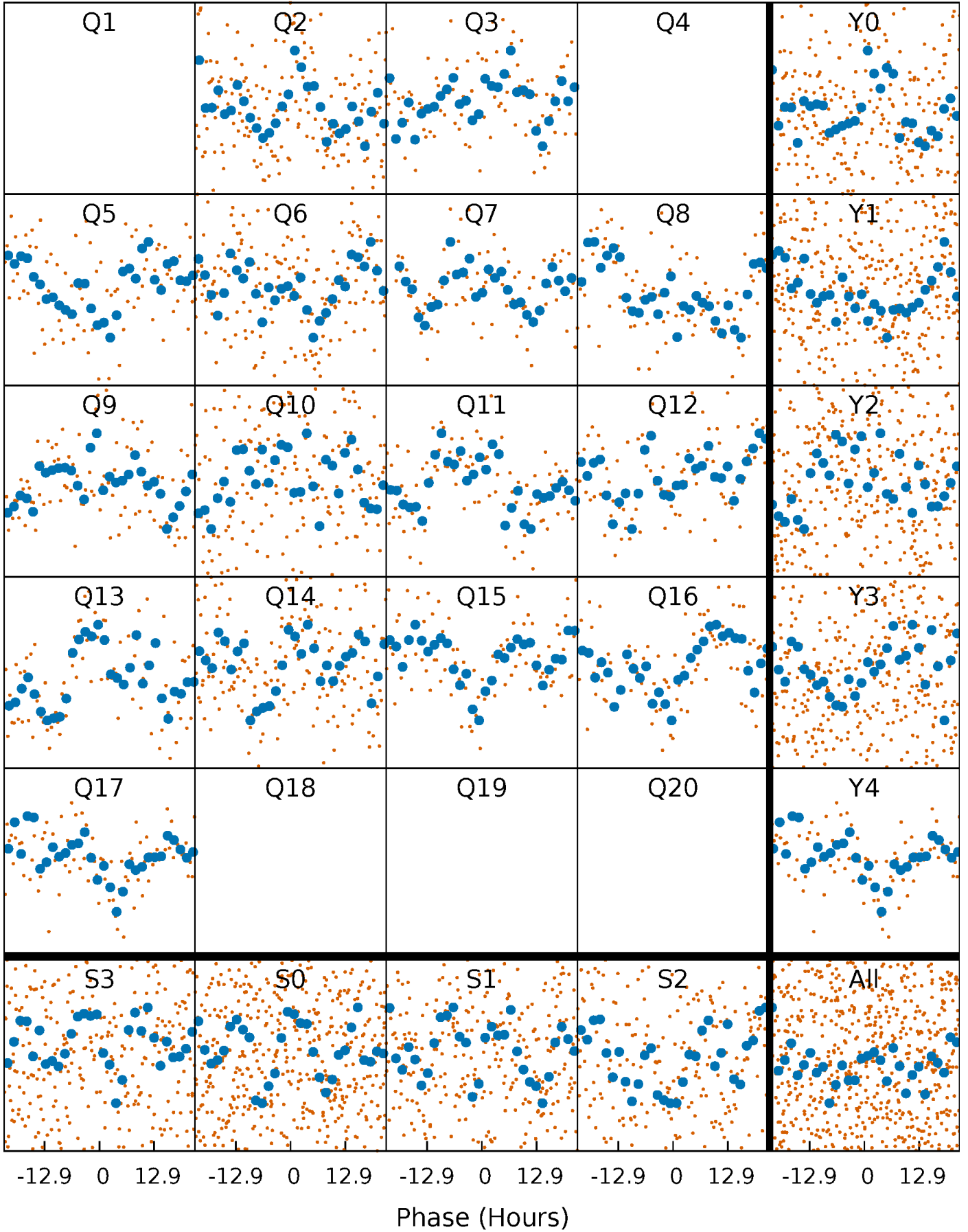


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



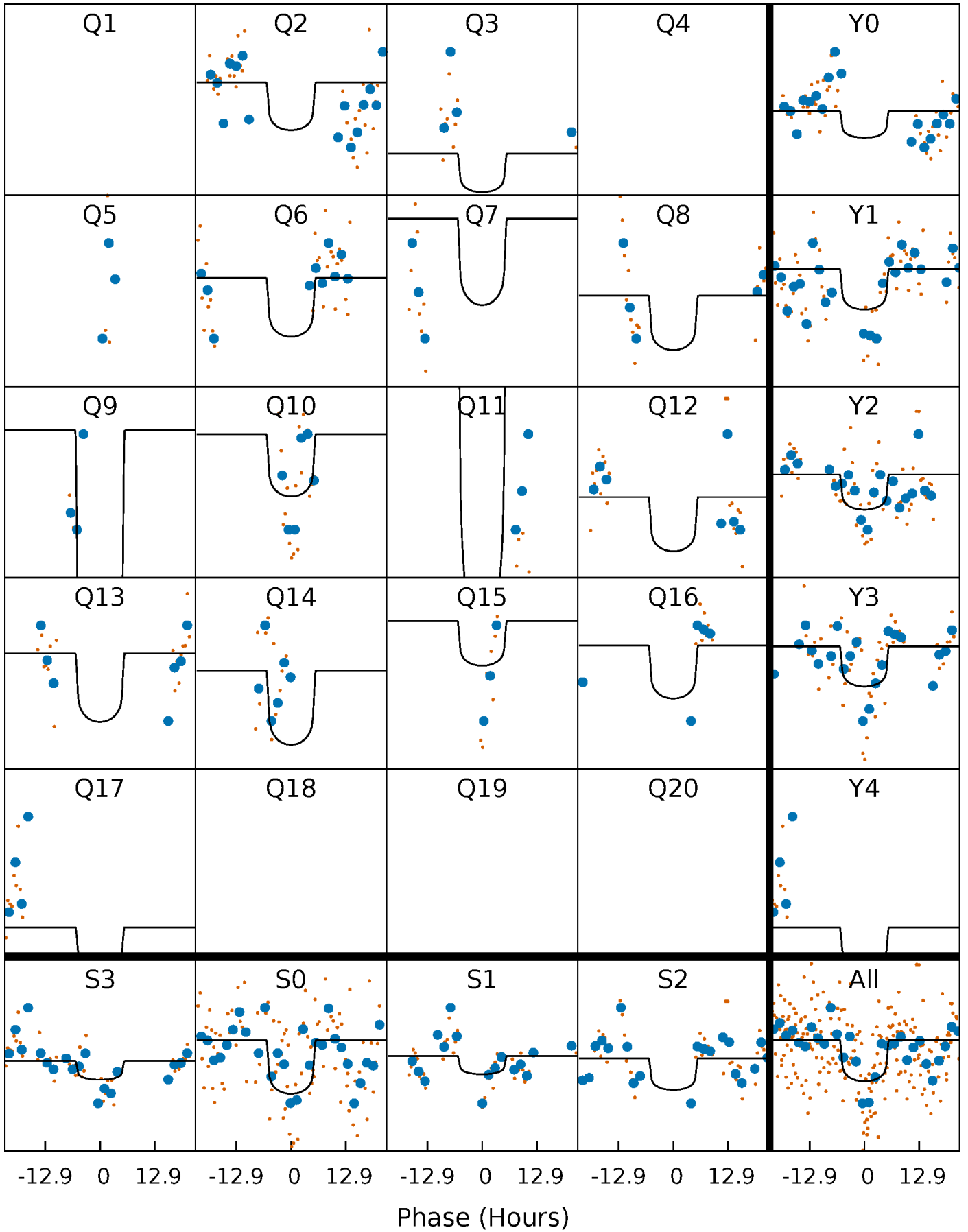
PDC Quarter-Phased Transit Curves

TCE 004253860-06 $P = 73.382418$ Days $T_0 = 178.310188$ (BKJD)



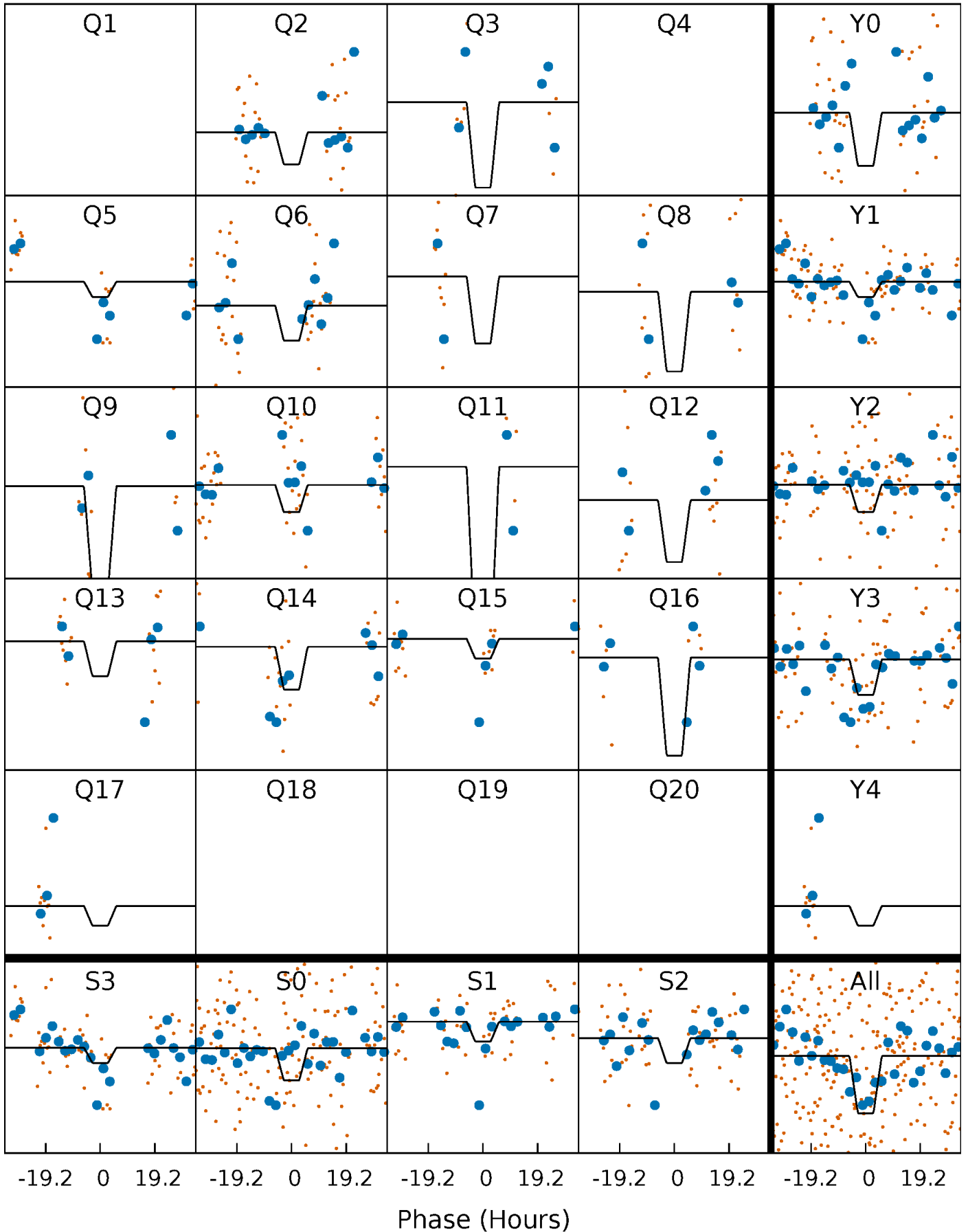
DV Quarter-Phased Transit Curves

TCE 004253860-06 P= 73.382418 Days $T_0=178.310188$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

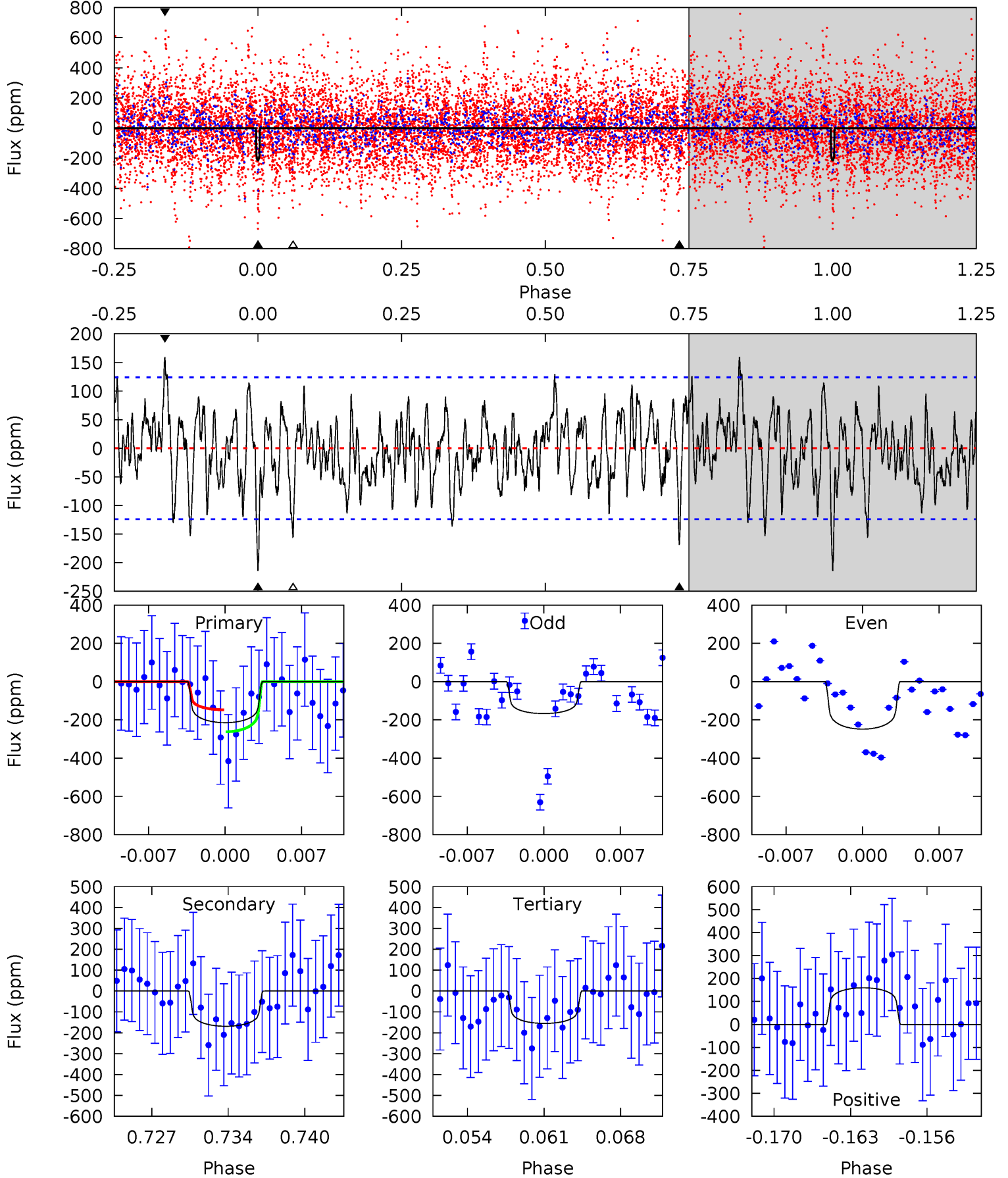
TCE 004253860-06 $P = 73.382458$ Days $T_0 = 178.302548$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-06, P = 73.382418 Days, E = 104.927770 Days

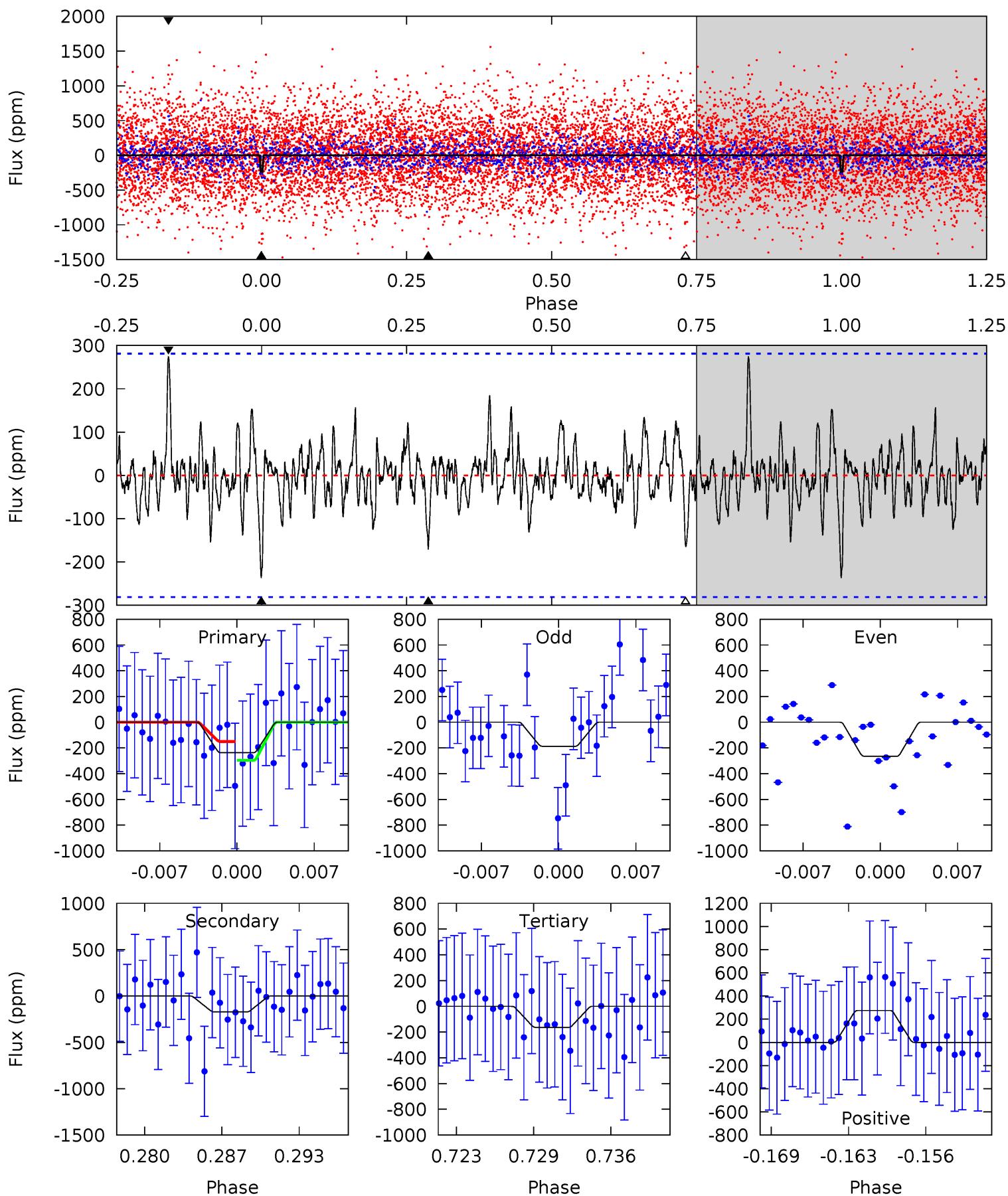
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.83	6.95	6.39	6.56	5.10	2.71	2.11	2.44	2.26	0.56	0.38	1.69	0.99	0.43	2.33



Alt Model-Shift Uniqueness Test

004253860-06, P = 73.382458 Days, E = 104.920090 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.30	3.10	2.98	4.99	5.11	2.72	1.00	1.32	-0.69	0.13	-1.89	0.70	1.89	0.54	1.30



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-169 ± 24	$20.39^{+10.00}_{-9.23}$	1905^{+265}_{-496}	5574^{+2301}_{-1288}	59^{+117}_{-33}
Alt.	-171 ± 55	$23.22^{+10.71}_{-8.87}$	1883^{+285}_{-484}	5142^{+1686}_{-1224}	42^{+70}_{-23}

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 $A_{\text{obs}} \gg 1.0$

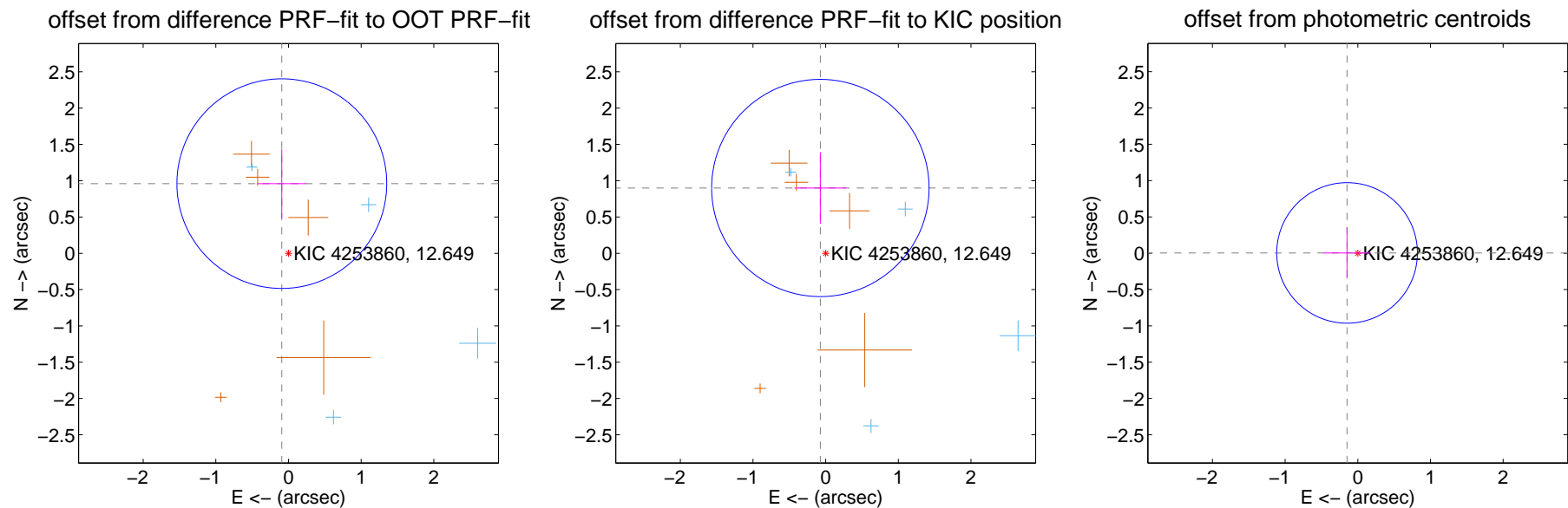
DV Centroid Data

Supplemental centroid analysis for 004253860-06. Kepler magnitude: 12.65. Transit SNR 5.83

There are 4 quarters with good PRF difference image offsets

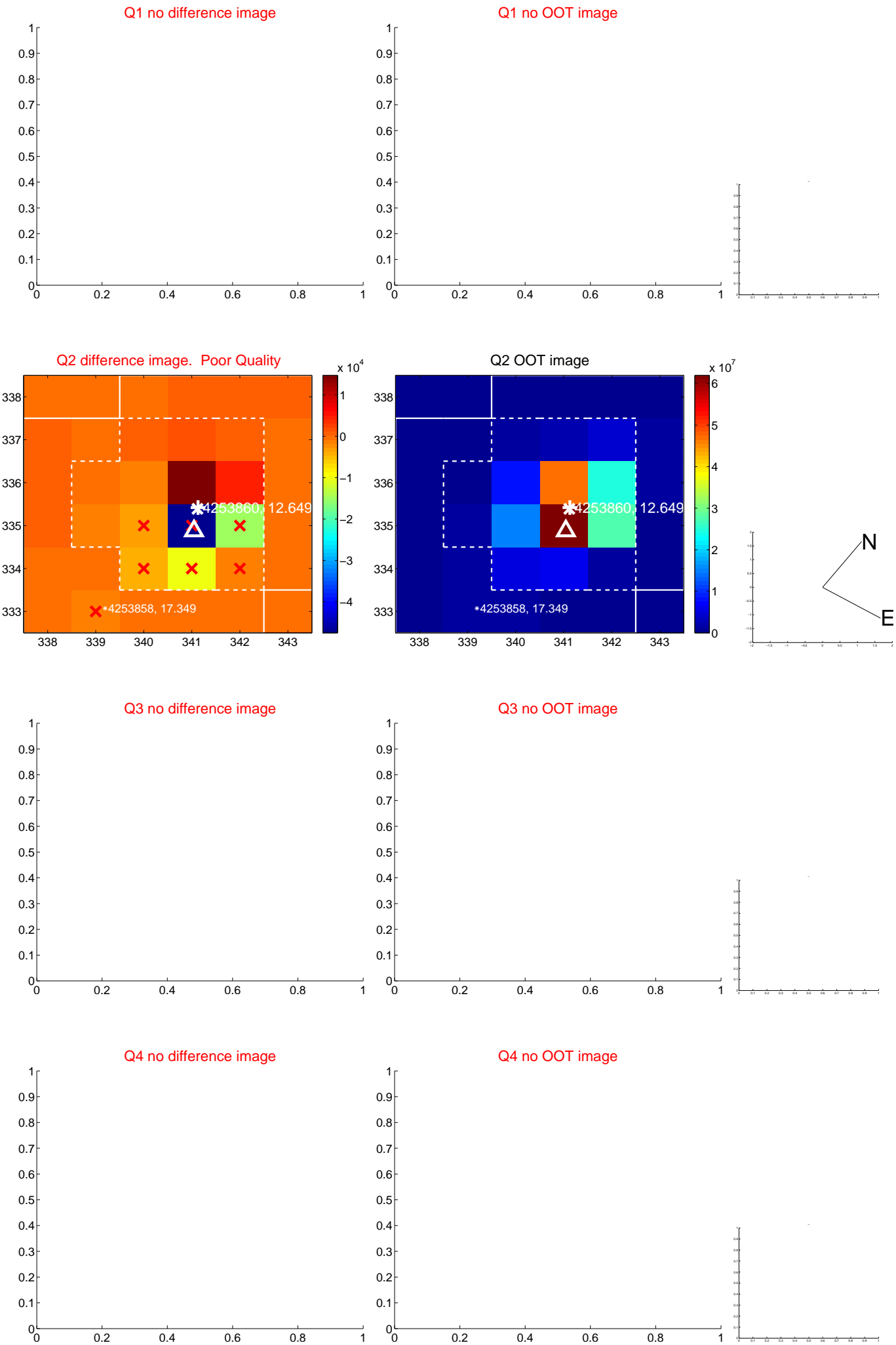
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.964 ± 0.481	2.00	0.092 ± 0.335	0.959 ± 0.475
PRF-fit source offset from KIC position	0.902 ± 0.499	1.81	0.073 ± 0.357	0.899 ± 0.492
photometric centroid source offset	0.15 ± 0.32	0.46	0.15 ± 0.32	0.00 ± 0.35

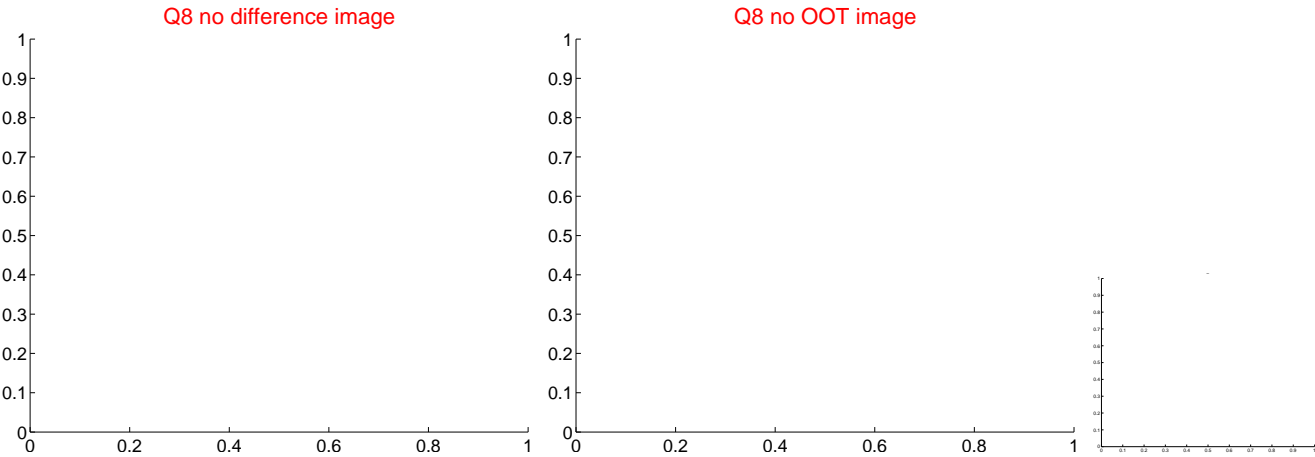
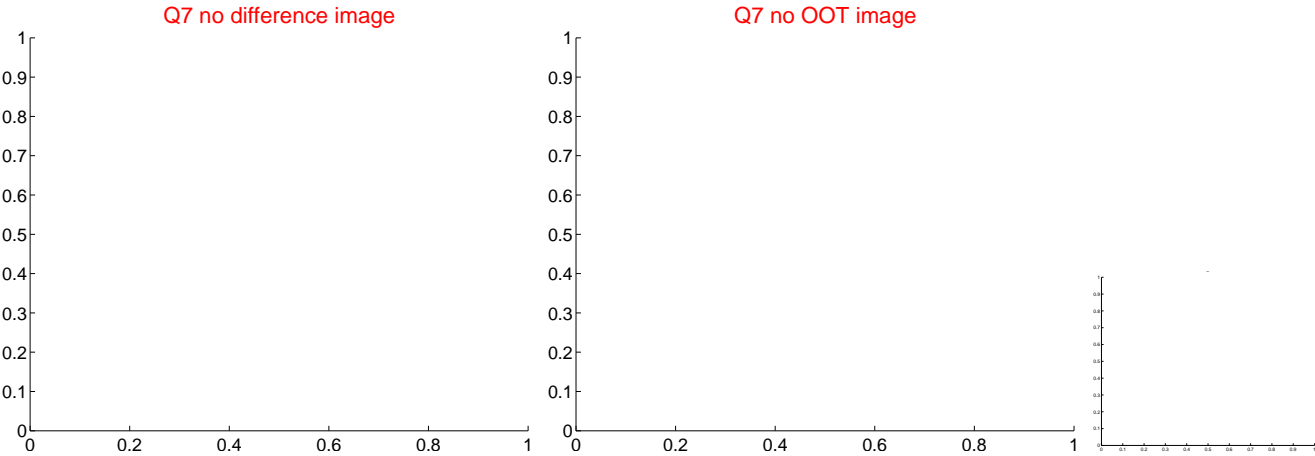
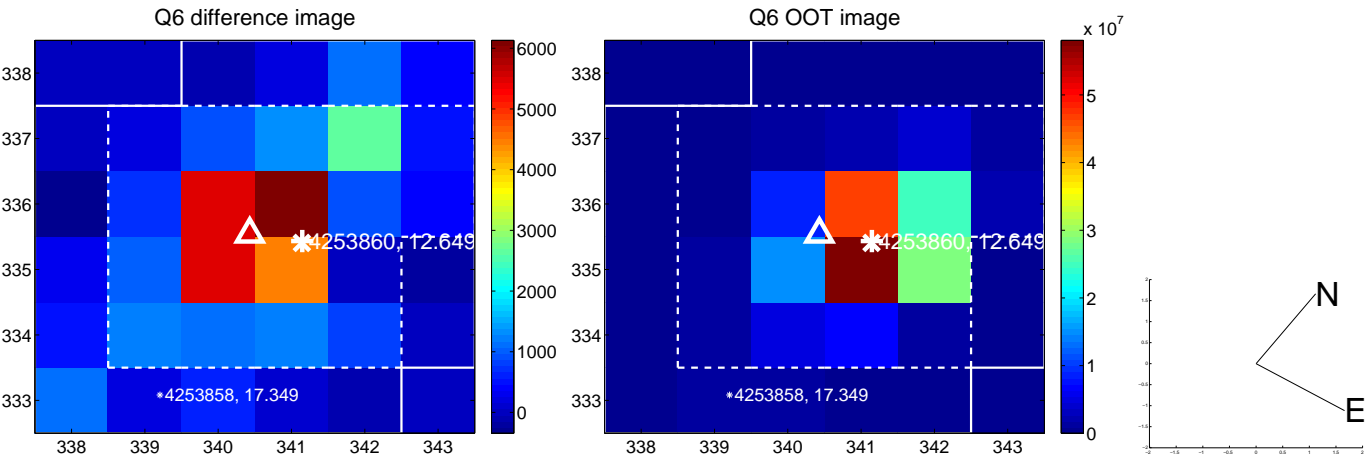
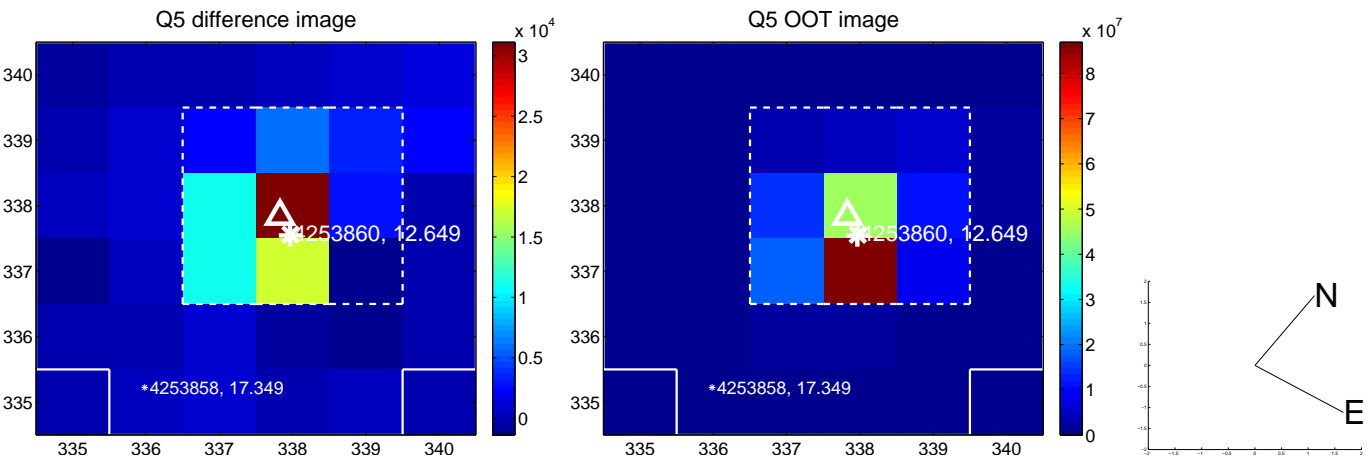


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

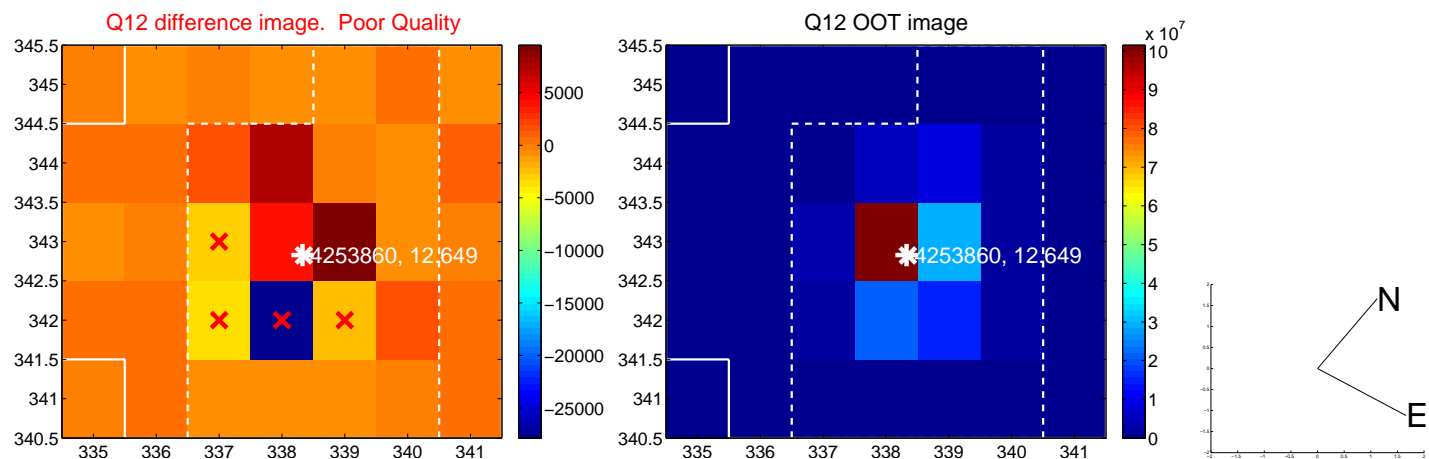
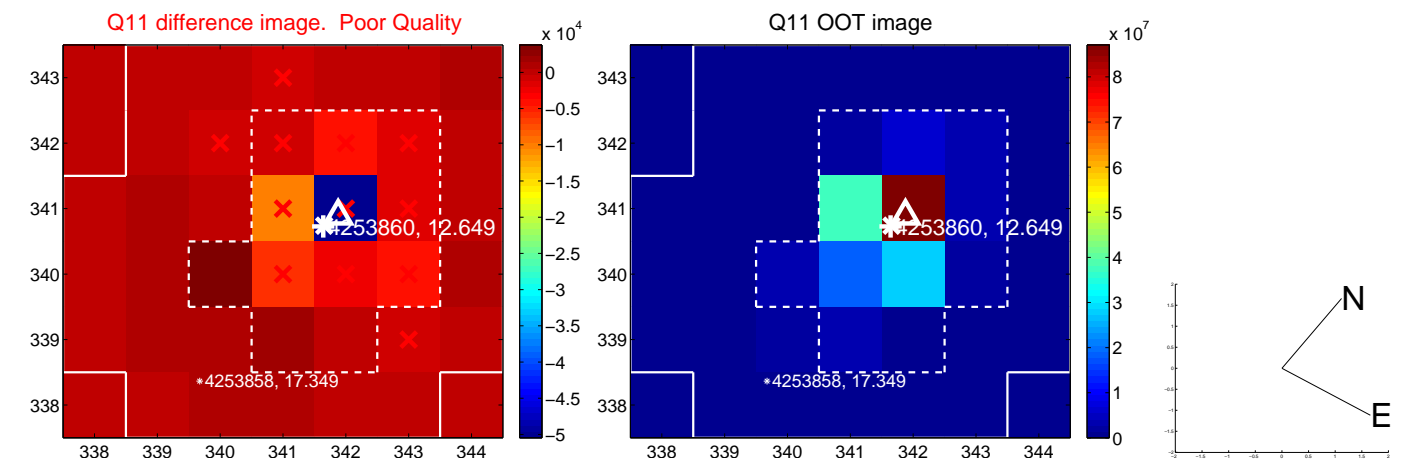
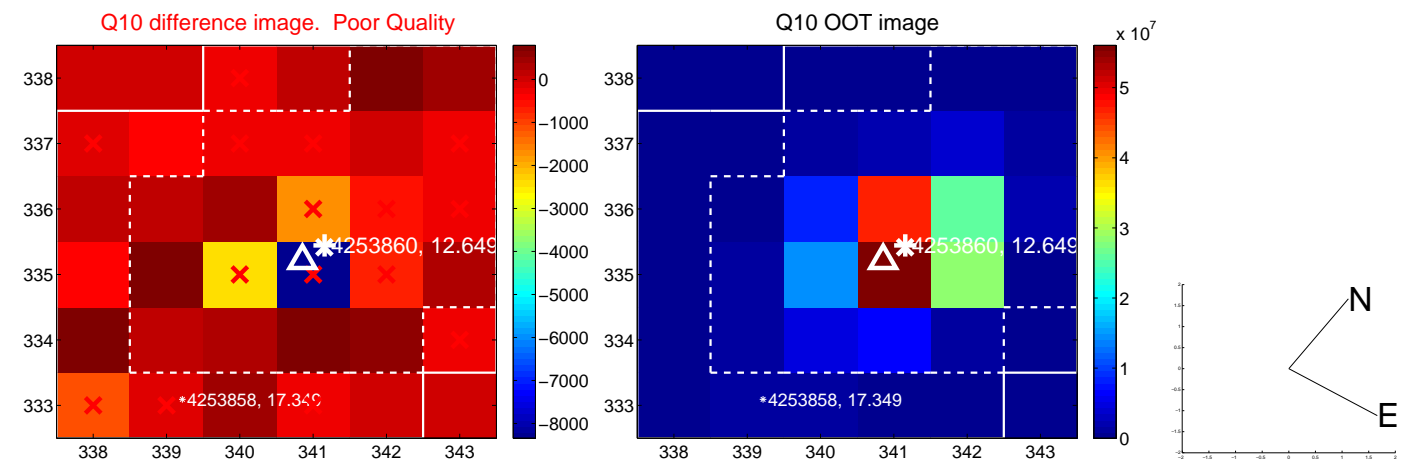
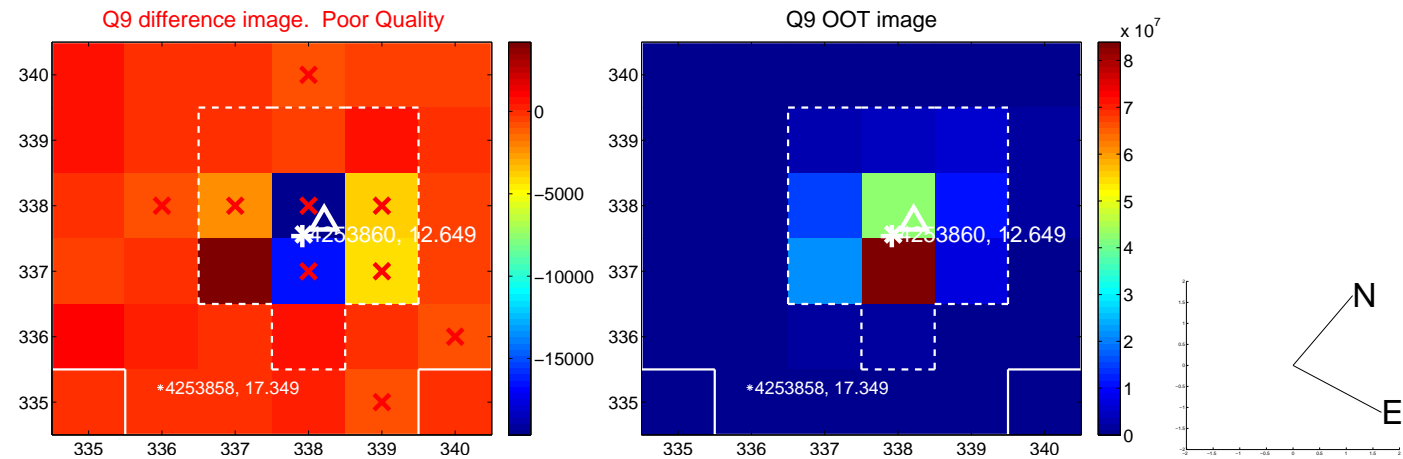
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

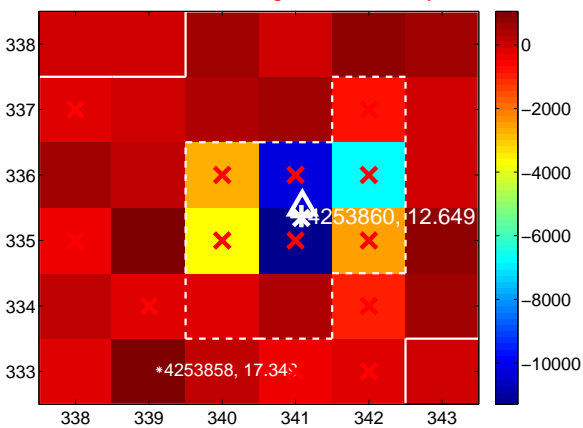
Q13 no difference image



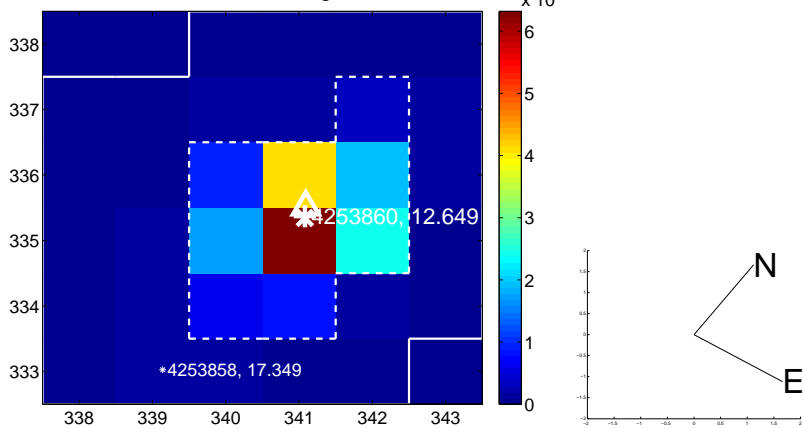
Q13 no OOT image



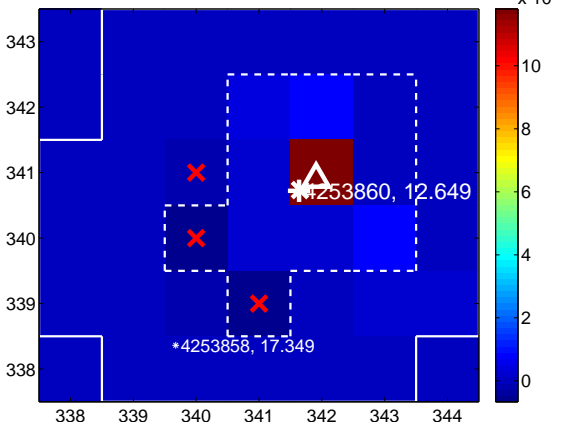
Q14 difference image. Poor Quality



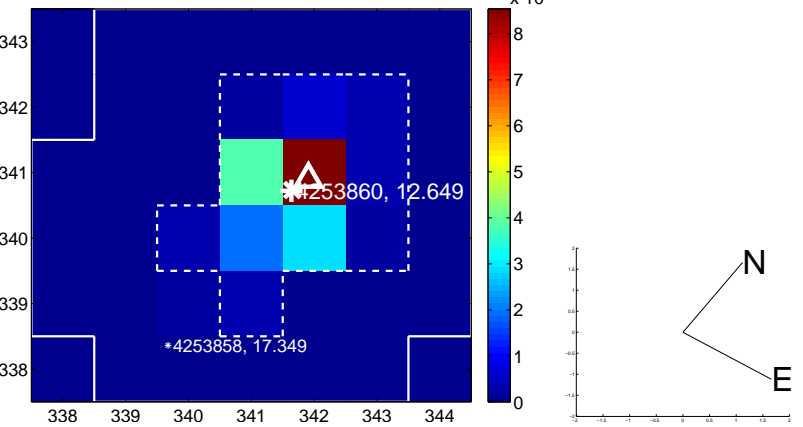
Q14 OOT image



Q15 difference image



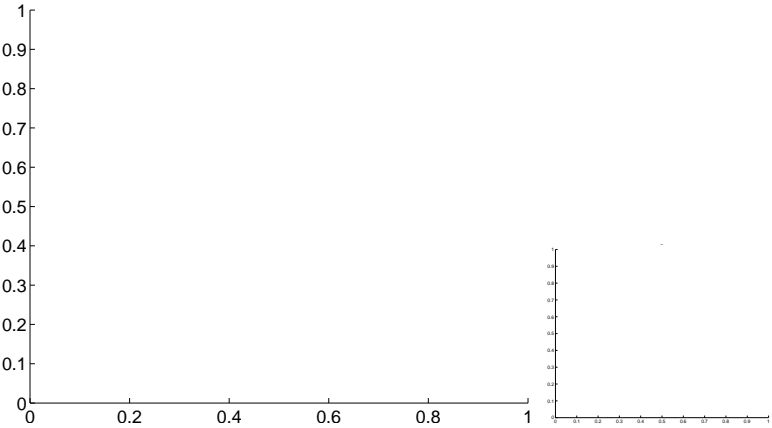
Q15 OOT image



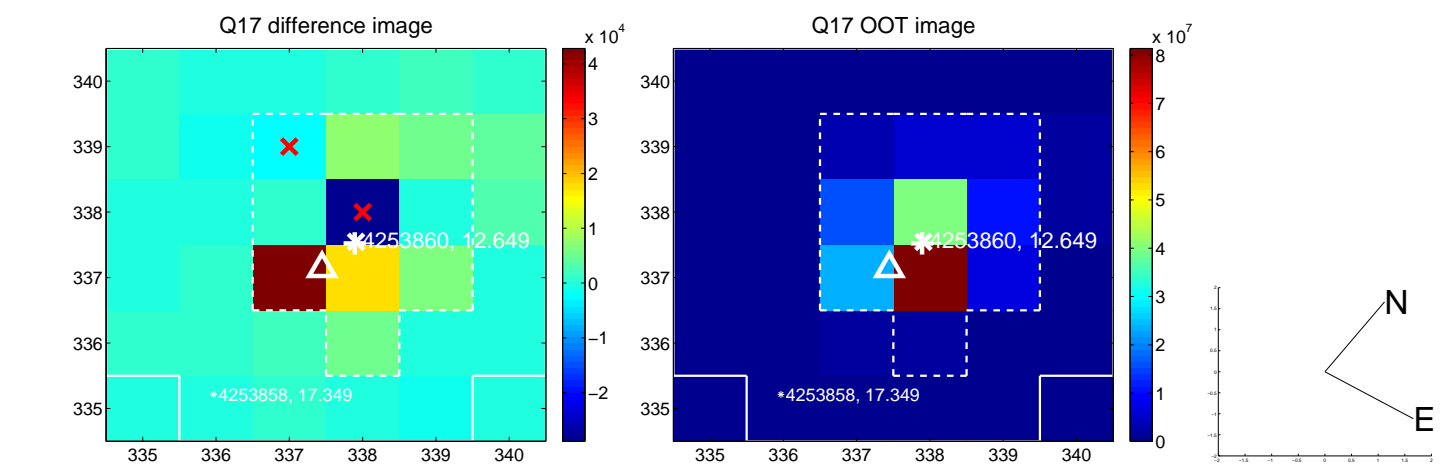
Q16 no difference image



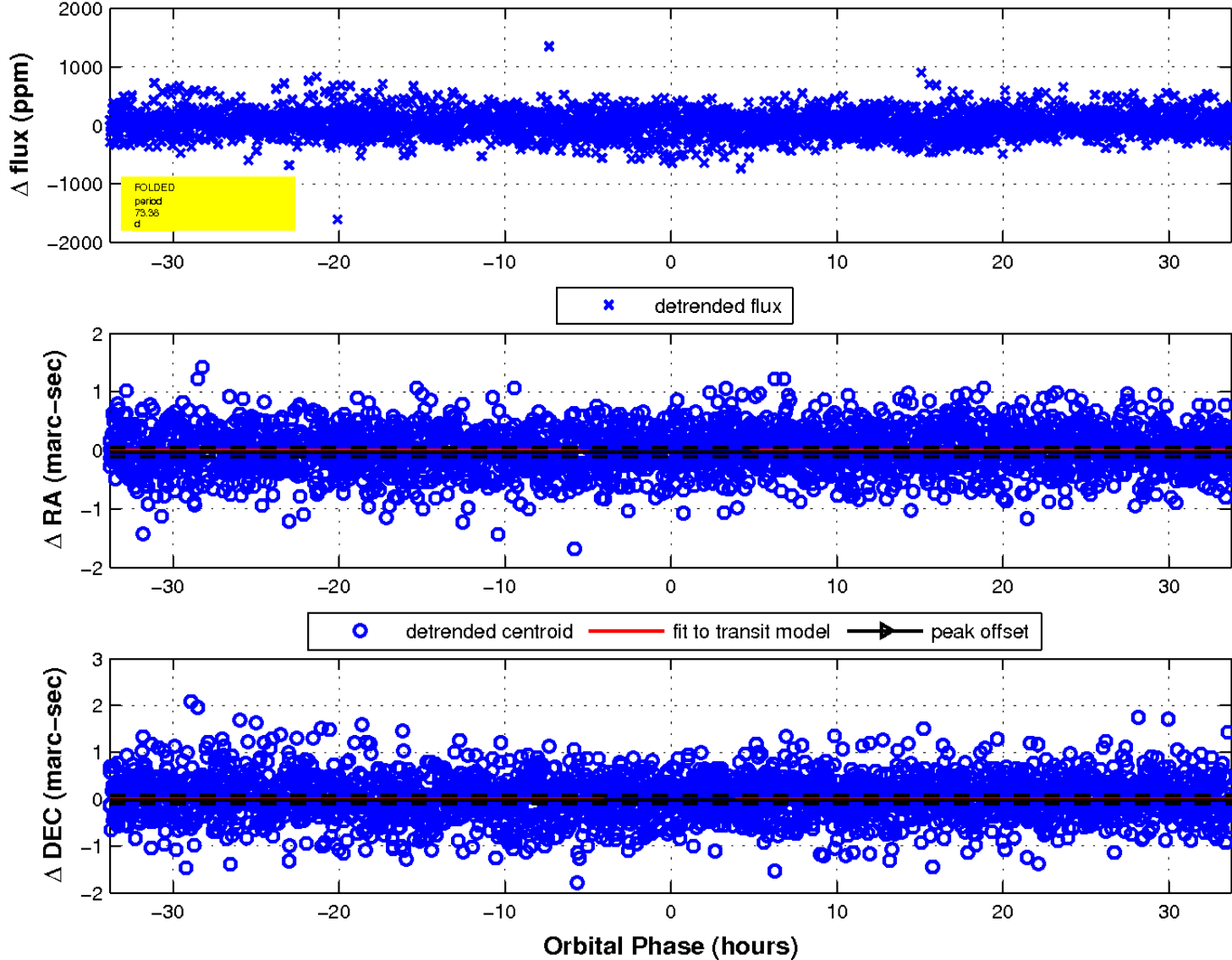
Q16 no OOT image



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

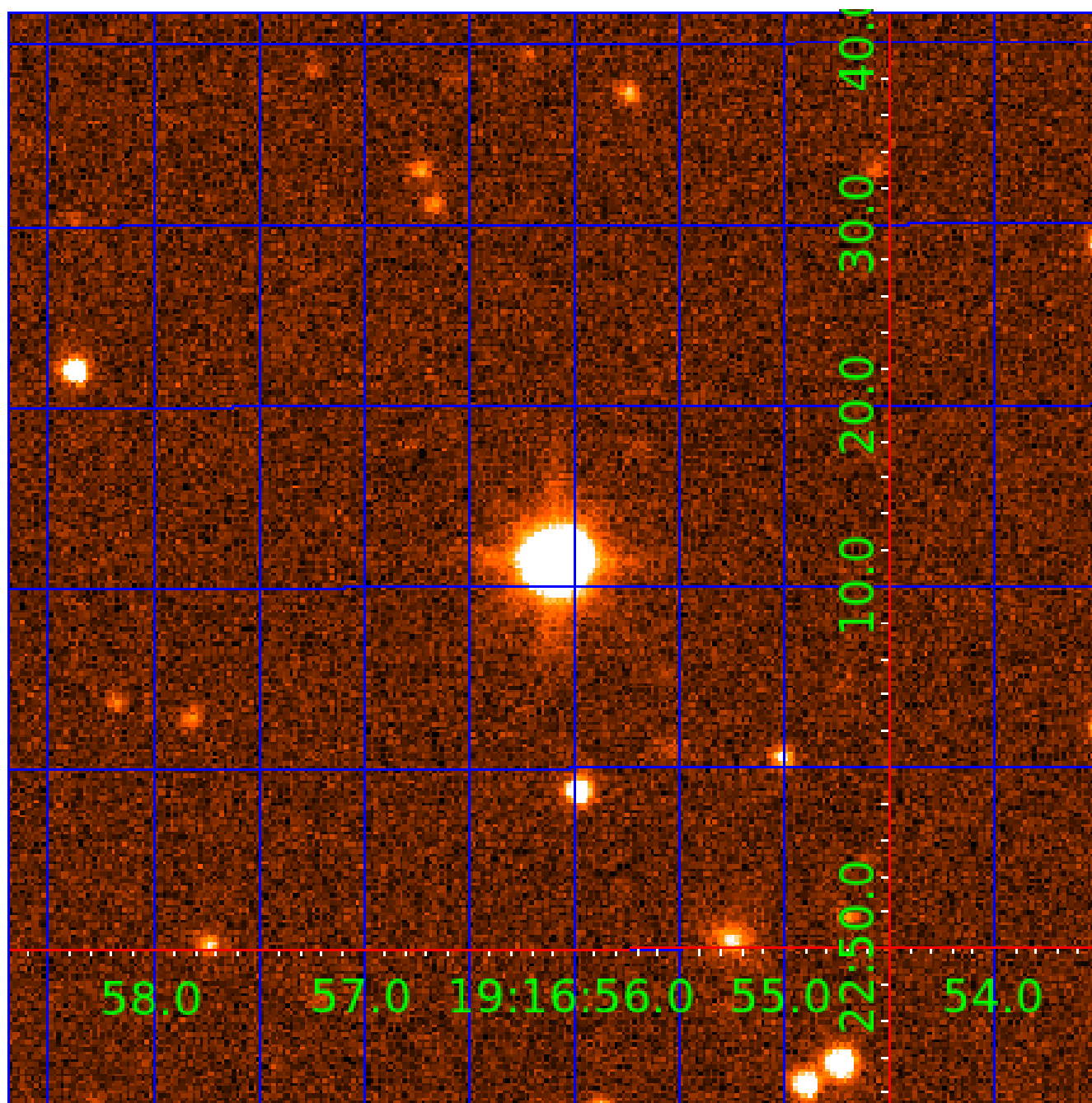


fluxWeightedCentroids, Planet 6 of 7



UKIRT Image

Declination



KIC 004253860

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})
004253860-01	OBS	5052.01	155.046815	166.613896	1703.4	8.898	29.5	30.5	12.61	6513	96.57	347.76
004253860-02	OBS	No	1.314011	132.524554	30.6	4.305	11.8	9.6	12.61	6513	8.11	0.00
004253860-03	OBS	No	1.314032	131.998390	37.6	4.960	10.4	11.8	12.61	6513	10.68	0.00
004253860-04	OBS	No	19.546513	146.010946	175.4	12.158	8.8	8.4	12.61	6513	19.49	5501.38
004253860-05	OBS	No	53.747355	144.213160	116.4	5.093	8.6	2.9	12.61	6513	15.39	1428.09
004253860-06	OBS	No	73.382418	178.310188	235.8	11.263	8.5	5.8	12.61	6513	21.12	942.85
004253860-07	OBS	No	23.883781	147.404898	139.9	5.000	7.8	-1.0	12.61	6513	15.00	4211.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004253860-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
004253860-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004253860-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004253860-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004253860-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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 004253860-07

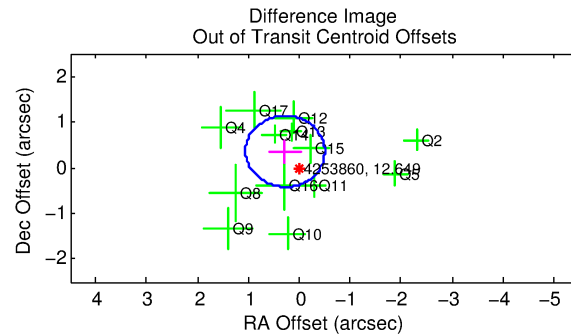
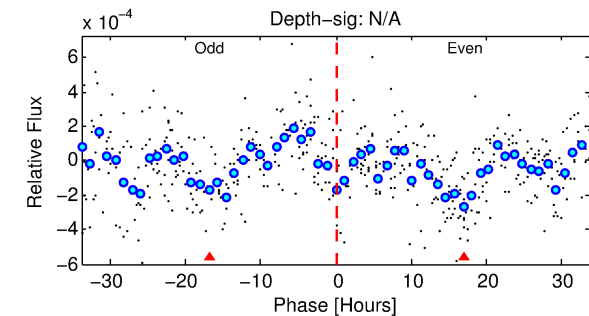
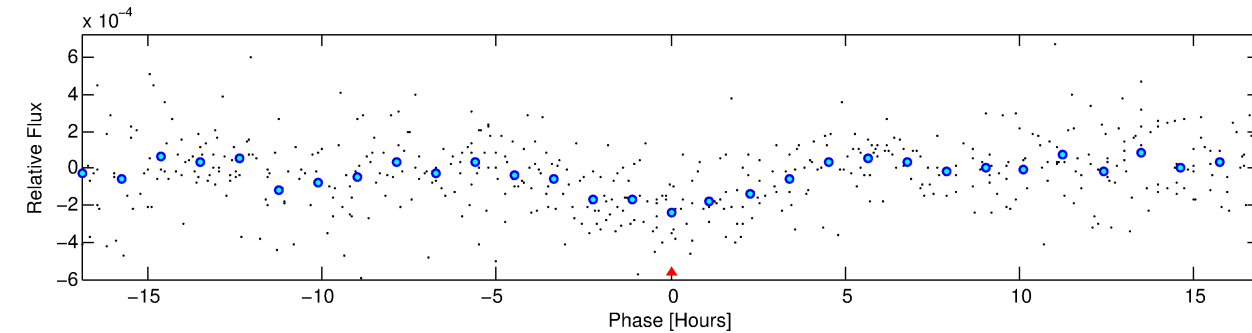
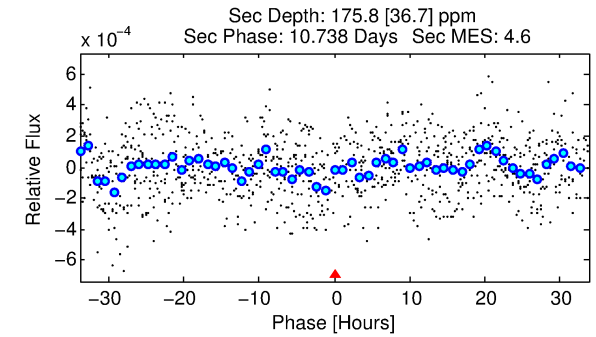
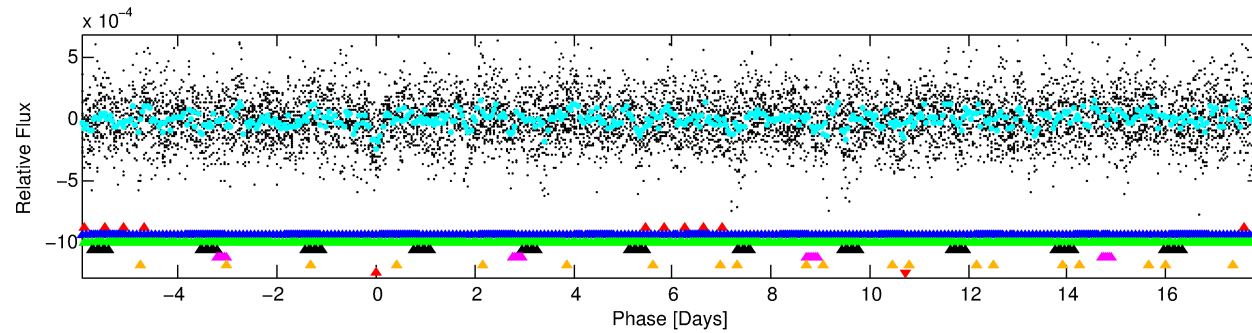
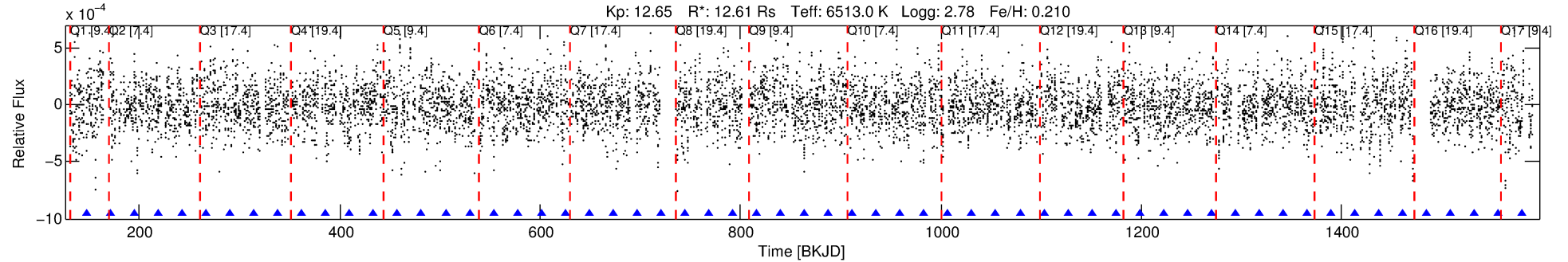
No Significant Match Found

DV One-Page Summary

KIC: 4253860 Candidate: 7 of 7 Period: 23.884 d

KOI: K05052 Corr: No Ephemeris Match

Kp: 12.65 R*: 12.61 Rs Teff: 6513.0 K Logg: 2.78 Fe/H: 0.210



TPS TCE Results:

Period = 23.88378 d
Epoch = 147.4049 BKJD

DV fit results are unavailable

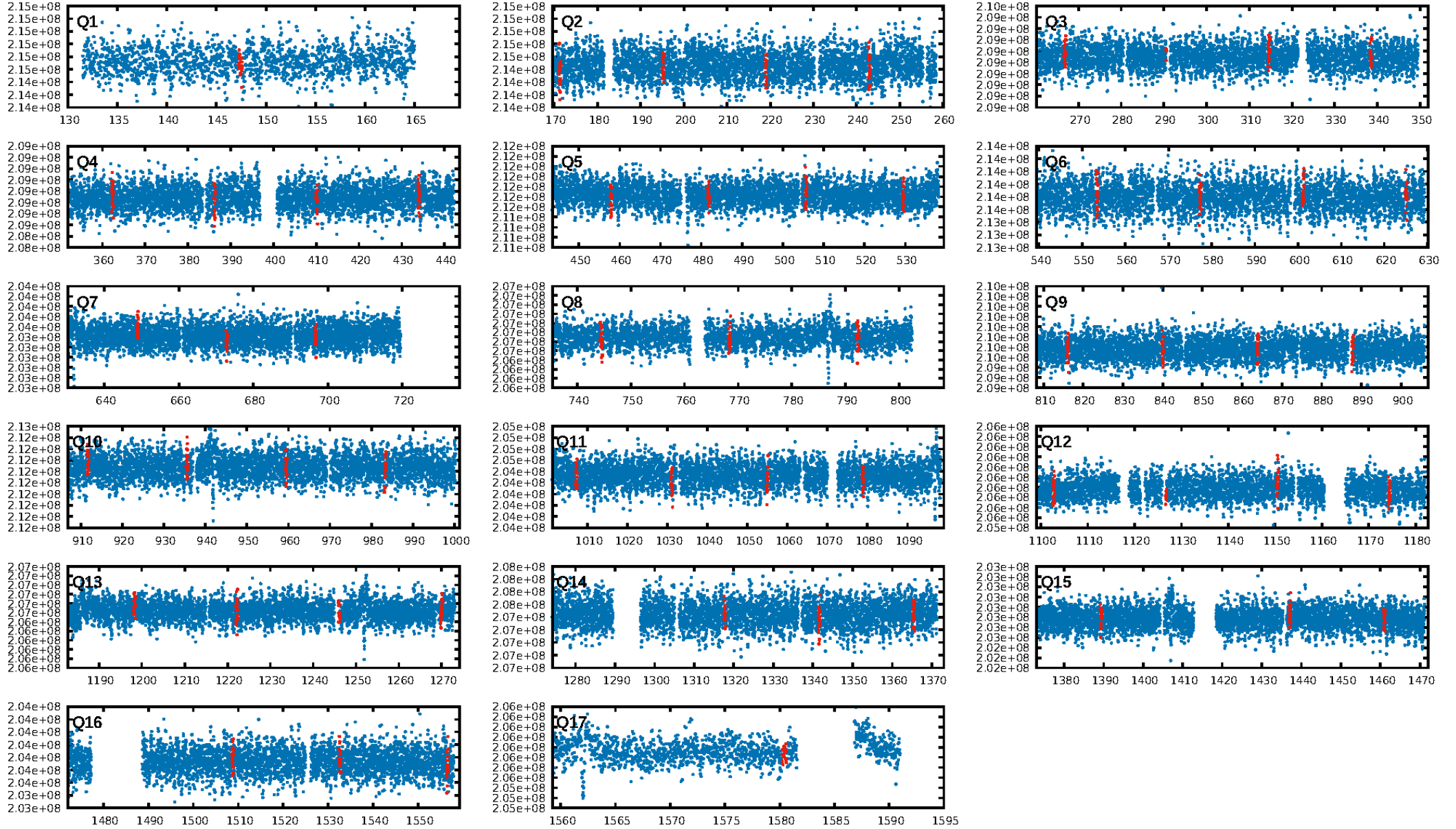
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.92σ]
LongPeriod-sig: 100.0% [100.42σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -11.82
Centroid-sig: 0.1%
Centroid-so: 0.632 arcsec [1.90σ]
OotOffset-rm: 0.454 arcsec [1.75σ]
KicOffset-rm: 0.416 arcsec [1.58σ]
OotOffset-st: 3/2/4/4 [13]
KicOffset-st: 3/2/4/4 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 0.00 [0/17]

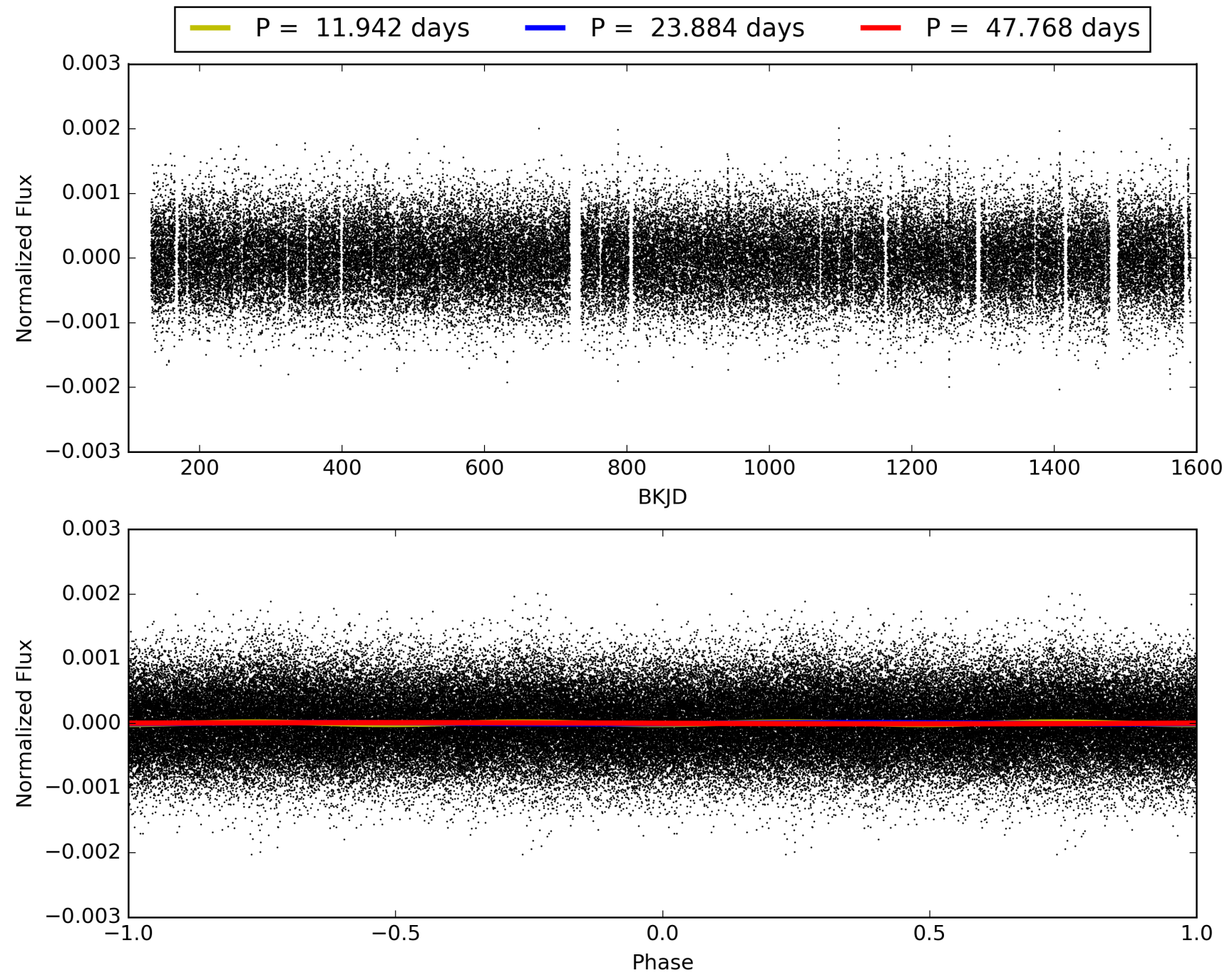
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:34:55 Z

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

TCE 004253860-07, PDC Light Curves

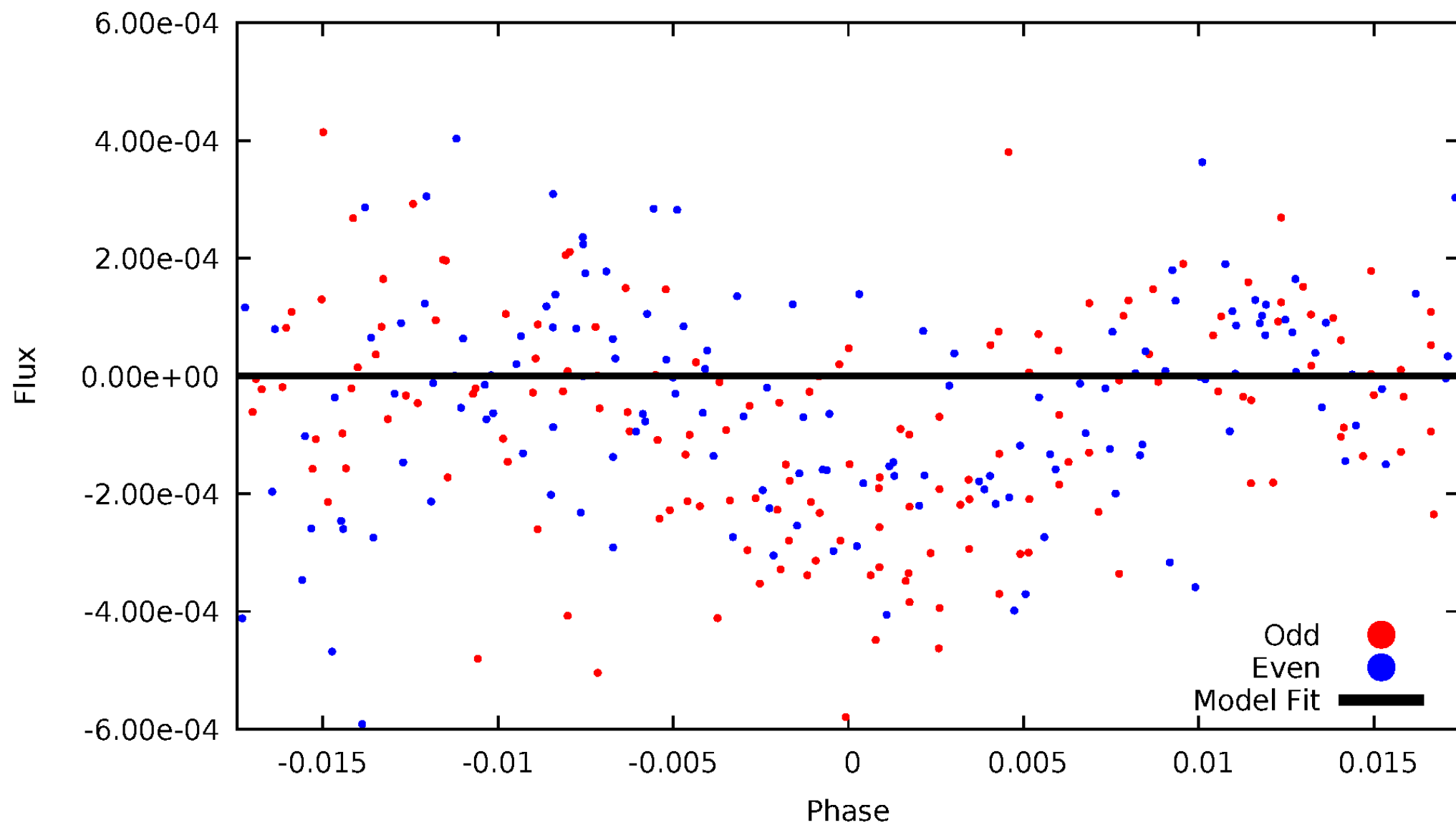


TCE 004253860-07



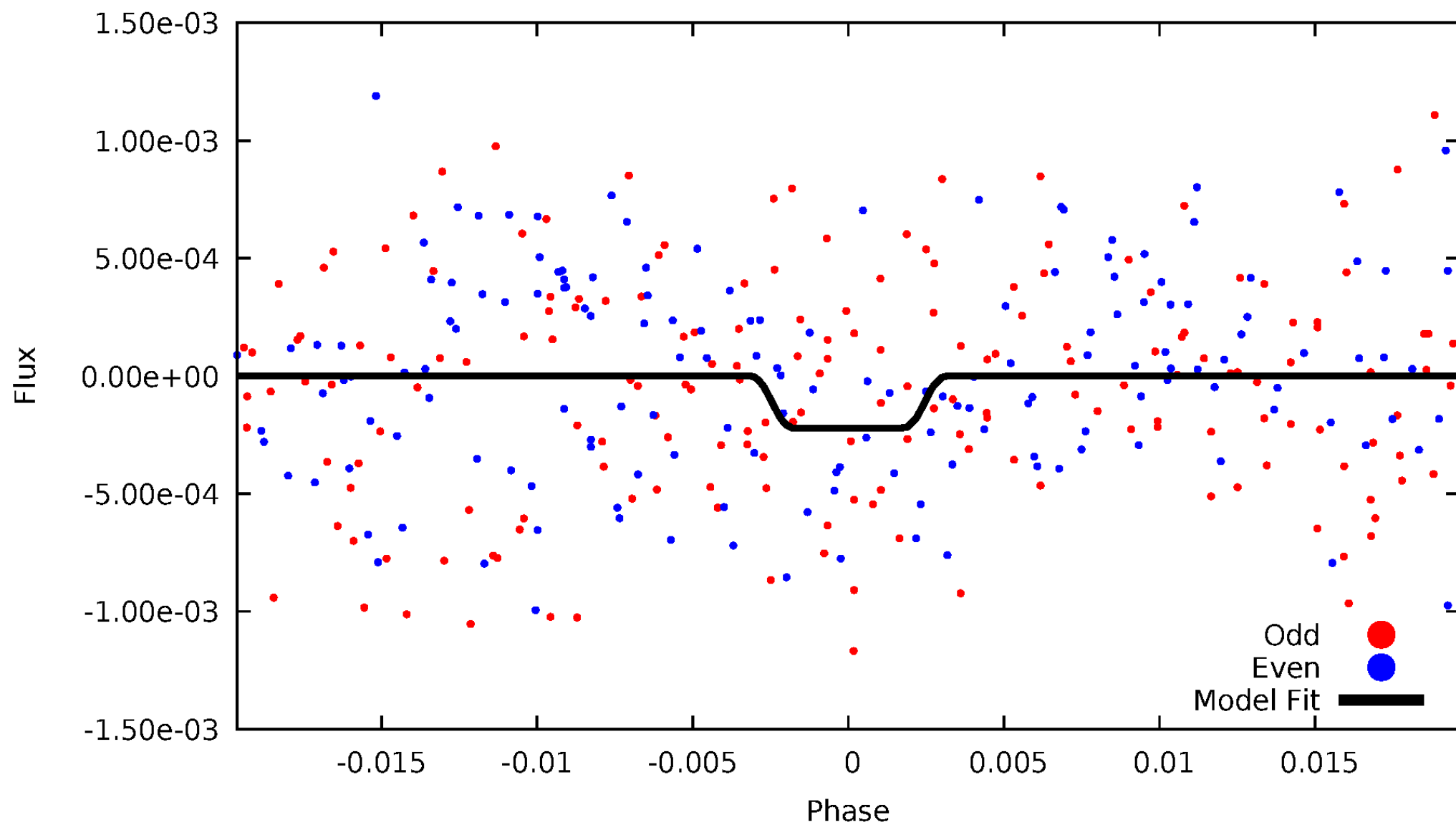
DV Odd/Even

TCE 004253860-07

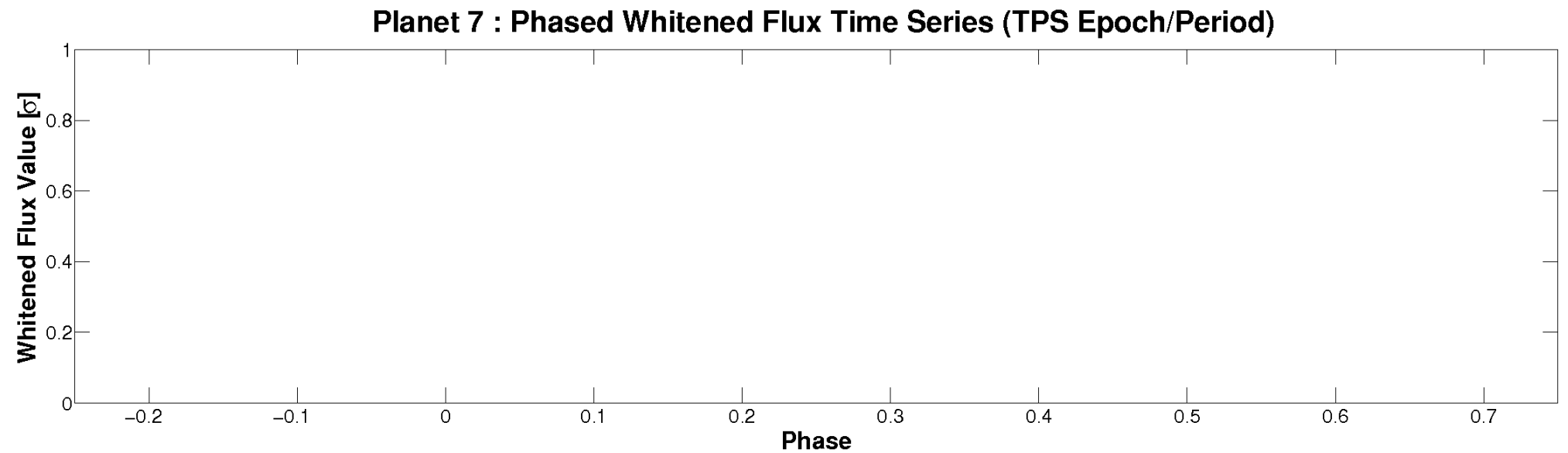
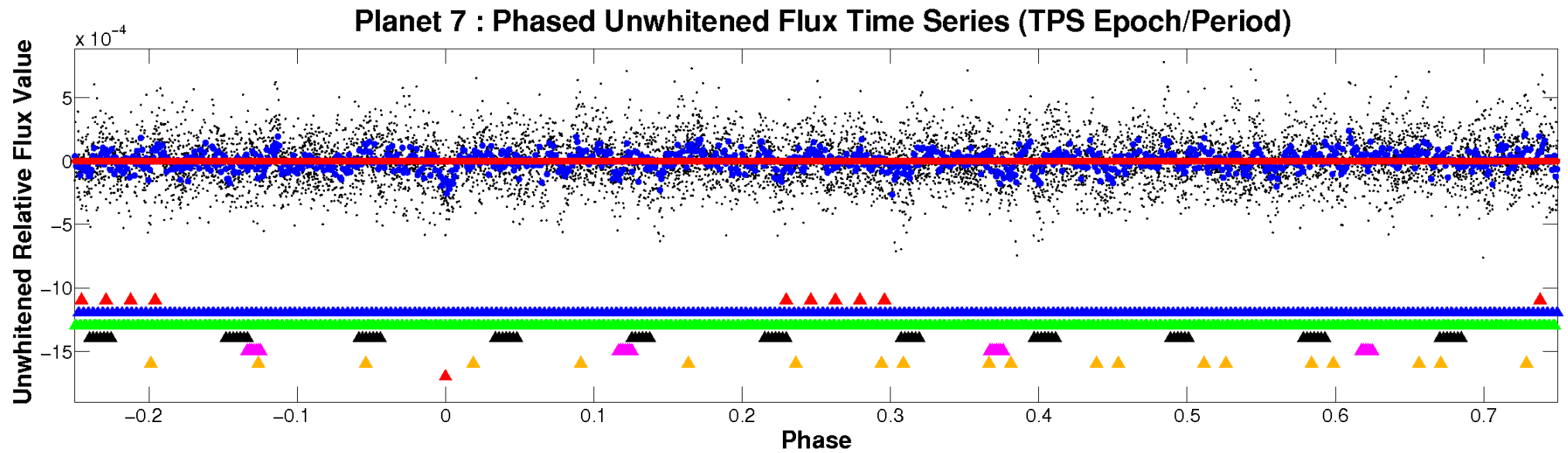


ALT Odd/Even

TCE 004253860-07

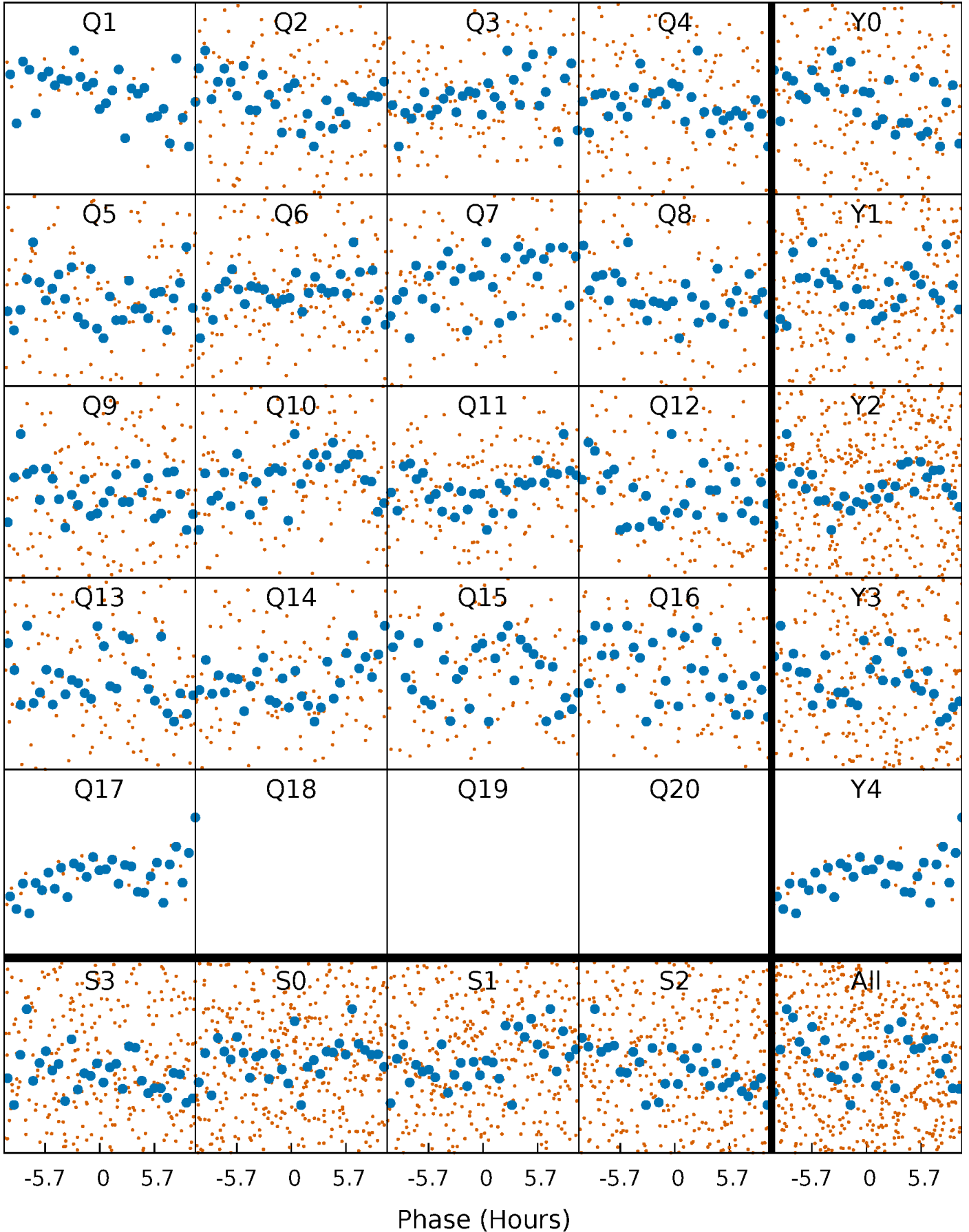


Non-Whitened Vs. Whitened Light Curve



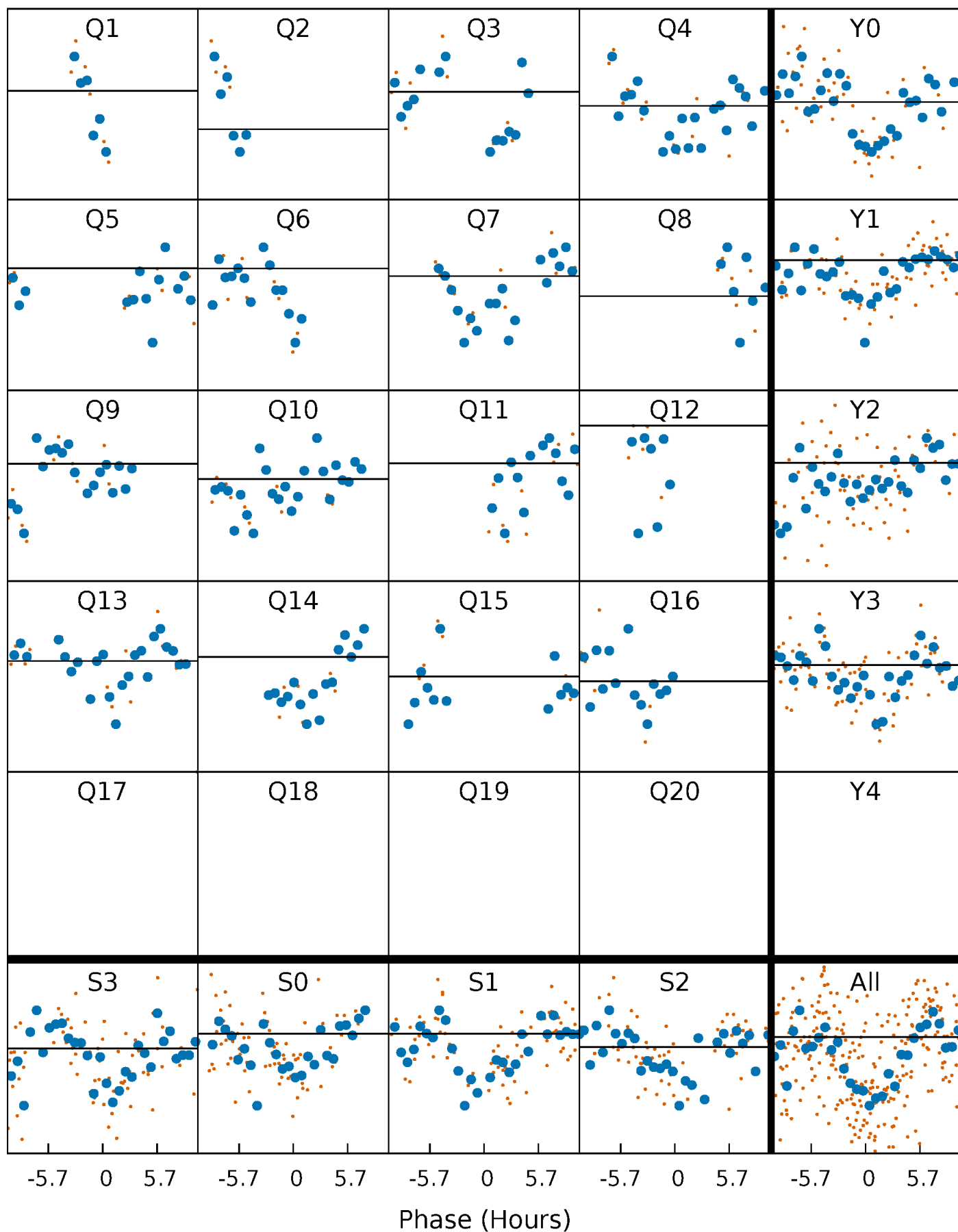
PDC Quarter-Phased Transit Curves

TCE 004253860-07 P= 23.883781 Days $T_0=147.404898$ (BKJD)



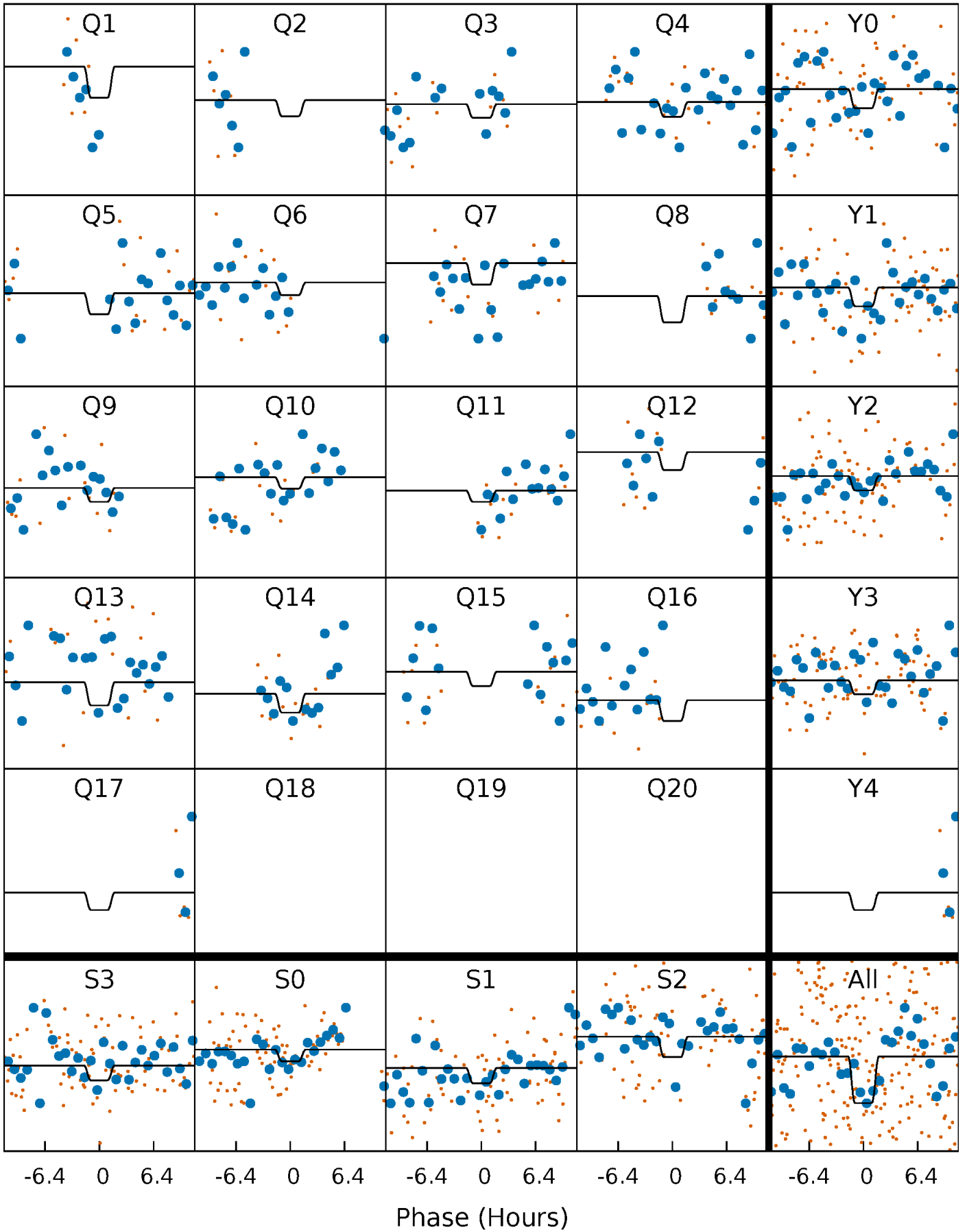
DV Quarter-Phased Transit Curves

TCE 004253860-07 P= 23.883781 Days $T_0=147.404898$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

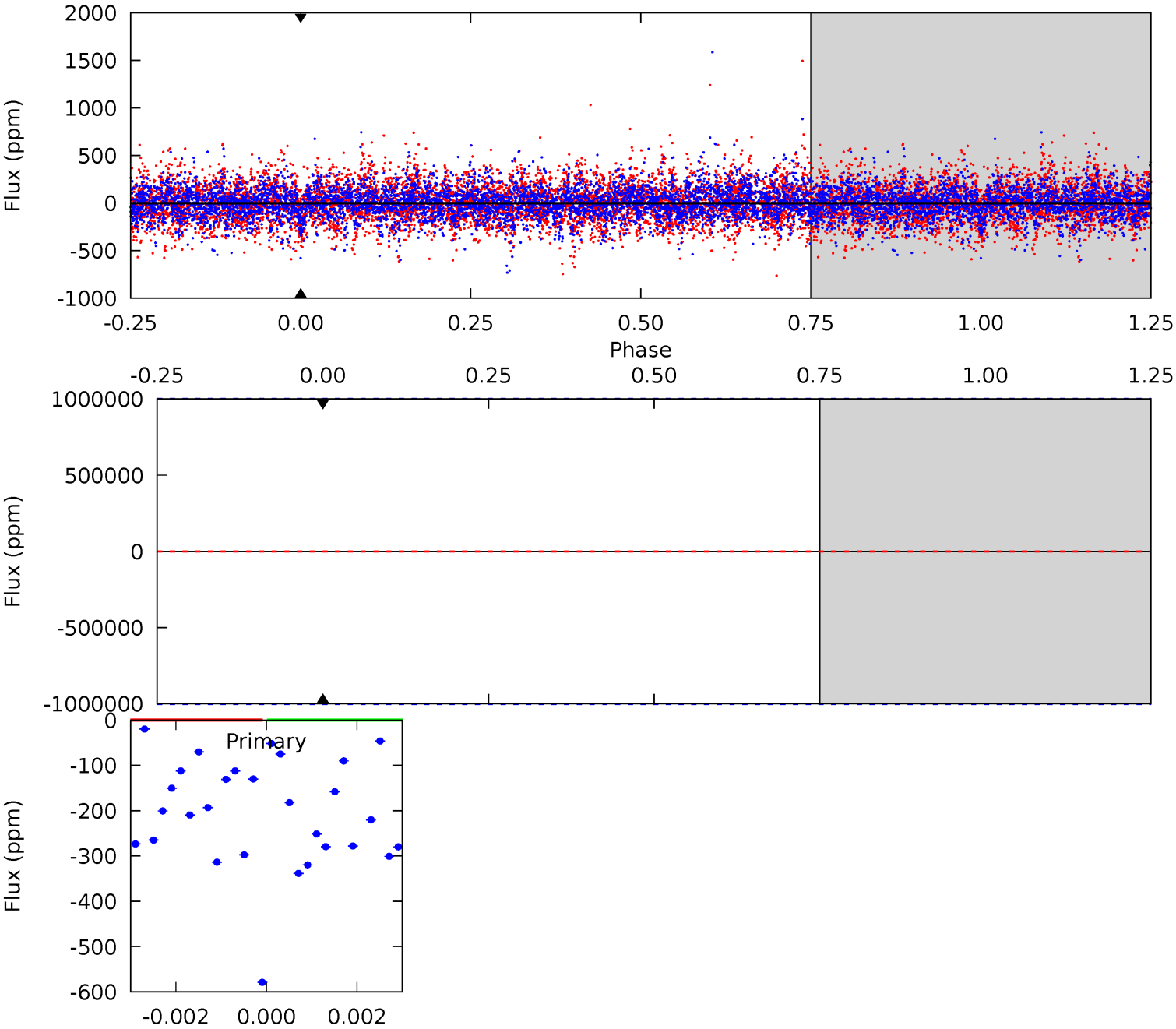
TCE 004253860-07 $P = 23.883781$ Days $T_0 = 147.442059$ (BKJD)



DV Model-Shift Uniqueness Test

004253860-07, P = 23.883781 Days, E = 123.521117 Days

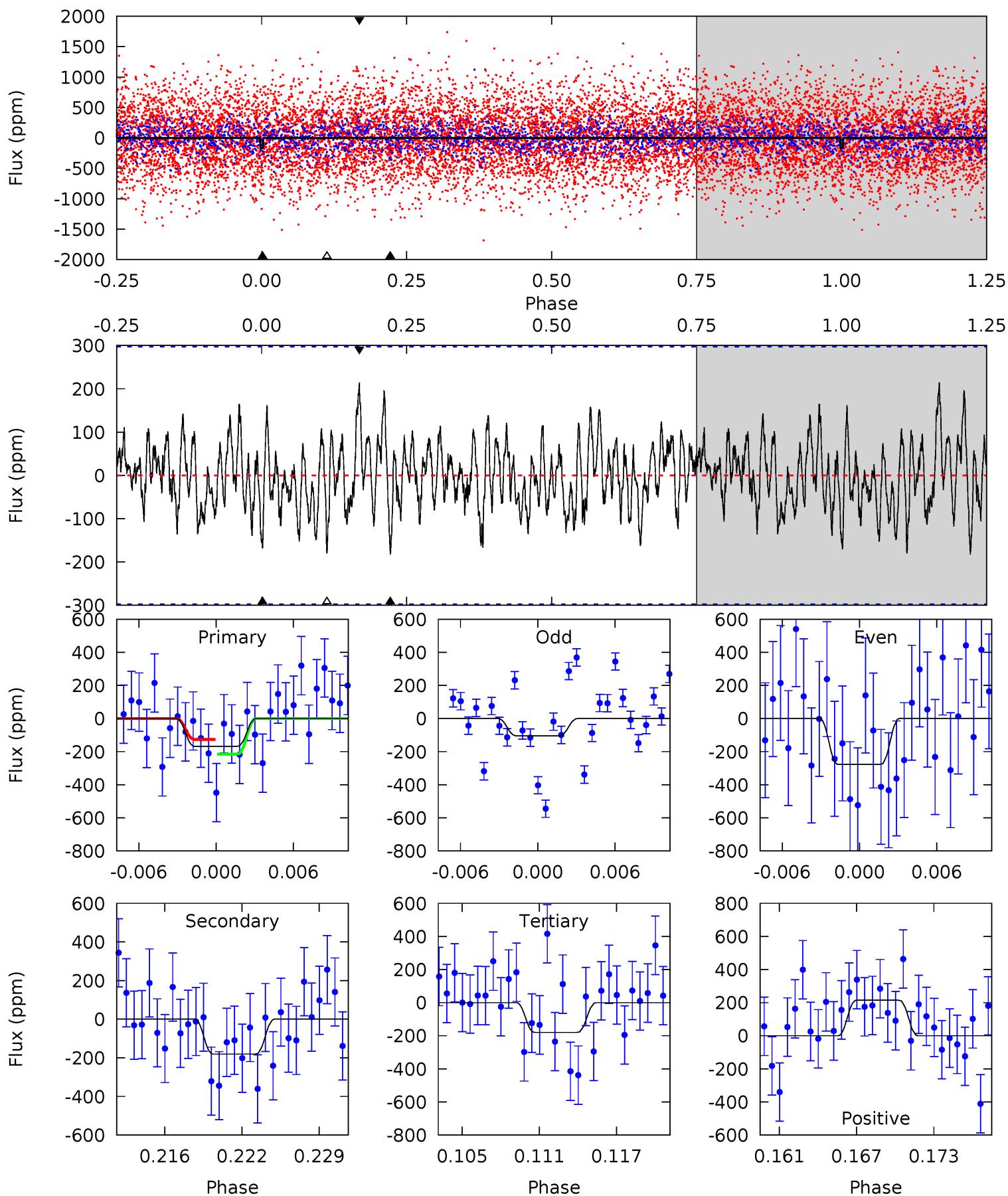
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004253860-07, P = 23.883781 Days, E = 123.558278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.90	3.11	3.10	3.69	5.12	2.74	1.15	-0.20	-0.79	0.01	-0.58	1.45	0.83	0.54	0.77



Stellar Parameters For KIC 004253860

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6513^{+433}_{-1733}	$2.782^{+0.205}_{-0.205}$	$0.210^{+0.150}_{-0.500}$	$12.613^{+2.655}_{-4.551}$	$3.511^{+0.101}_{-1.918}$	$0.002^{+0.003}_{-0.001}$
	+7%/-27%	+7%/-7%	+71%/-238%	+21%/-36%	+3%/-55%	+141%/-44%
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 004253860-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$97.22^{+105.97}_{-64.95}$	2800^{+390}_{-701}	1830^{+23662}_{-22885}	$1.616^{+689.968}_{-470.364}$
Alt.	-181 ± 58	$94.67^{+96.11}_{-68.12}$	2800^{+356}_{-676}	2800^{+2139}_{-5448}	$0.583^{+6.452}_{-0.443}$

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 $A_{obs} \gg 1.0$

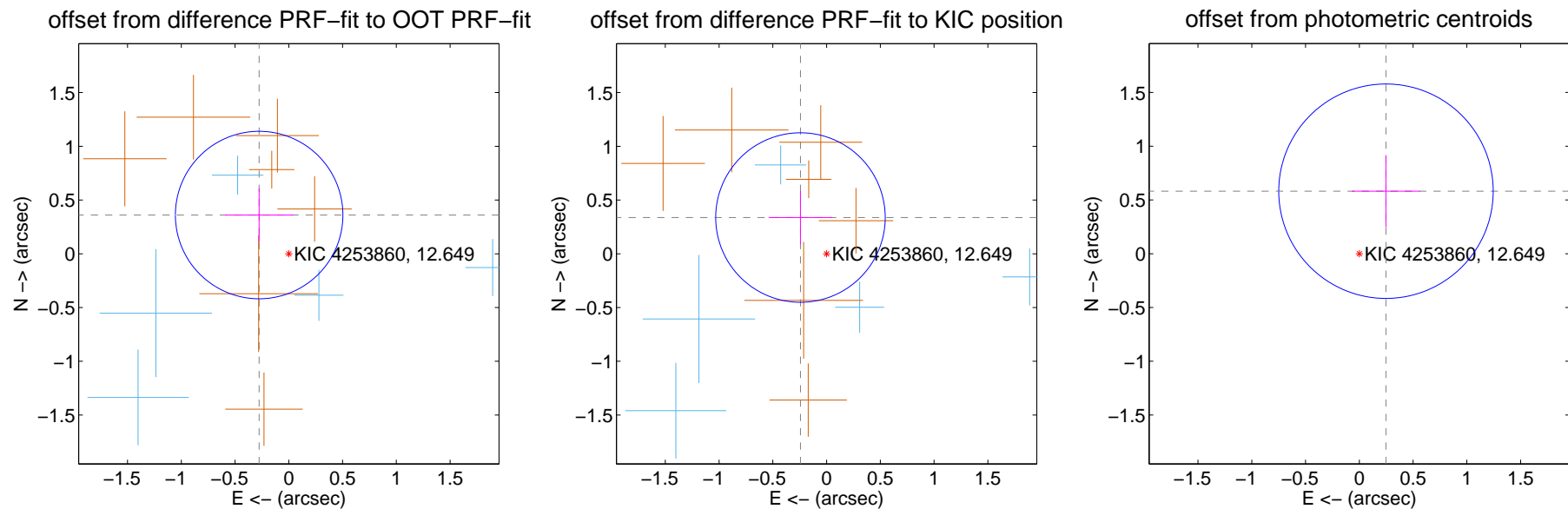
DV Centroid Data

Supplemental centroid analysis for 004253860-07. Kepler magnitude: 12.65. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

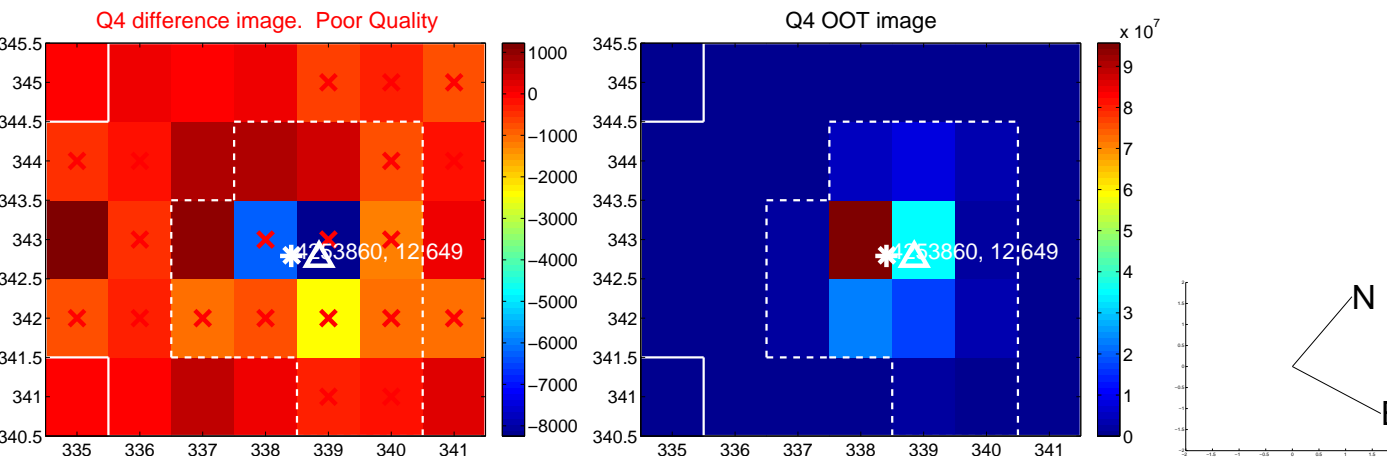
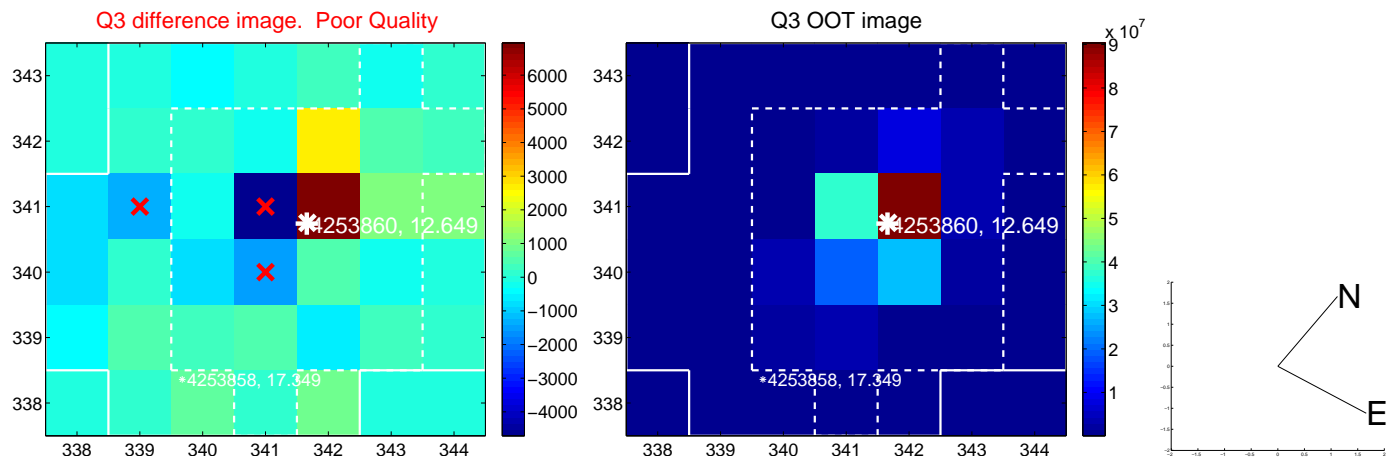
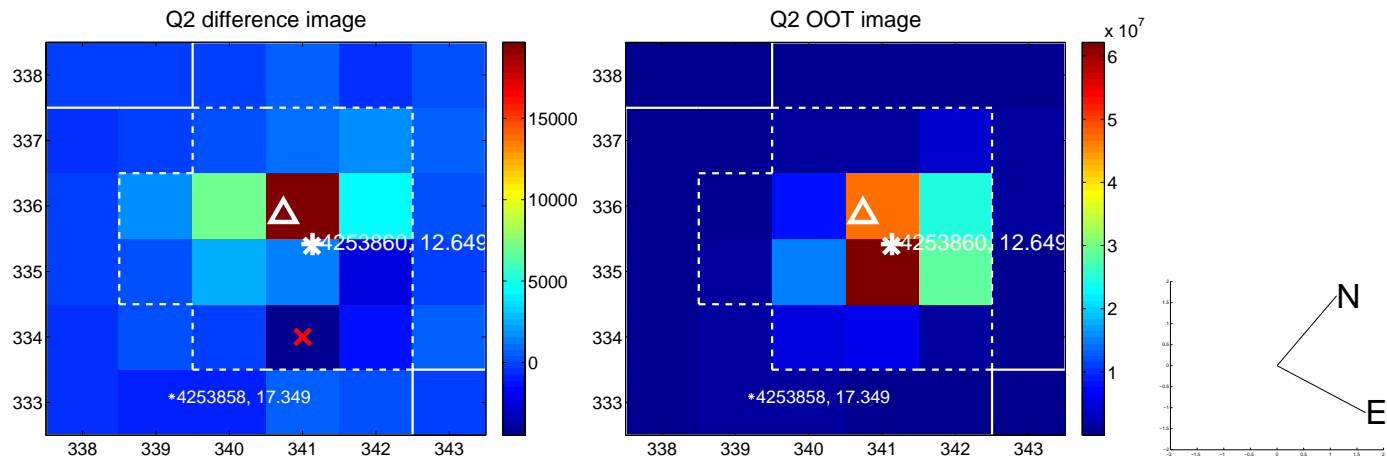
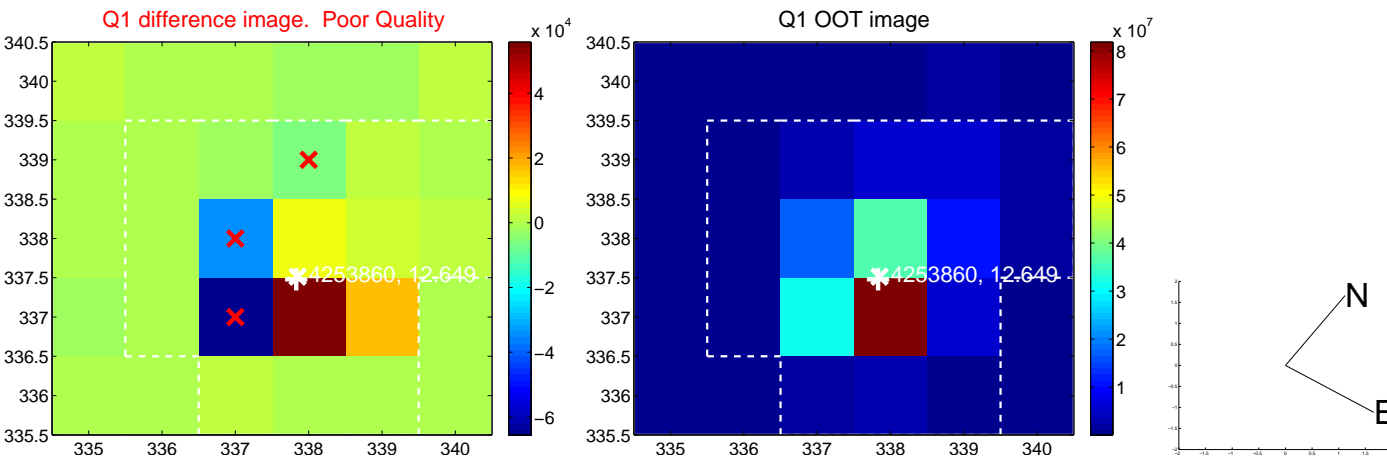
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.454 ± 0.260	1.75	0.276 ± 0.318	0.360 ± 0.248
PRF-fit source offset from KIC position	0.416 ± 0.263	1.58	0.243 ± 0.296	0.337 ± 0.247
photometric centroid source offset	0.63 ± 0.33	1.90	-0.25 ± 0.32	0.58 ± 0.33

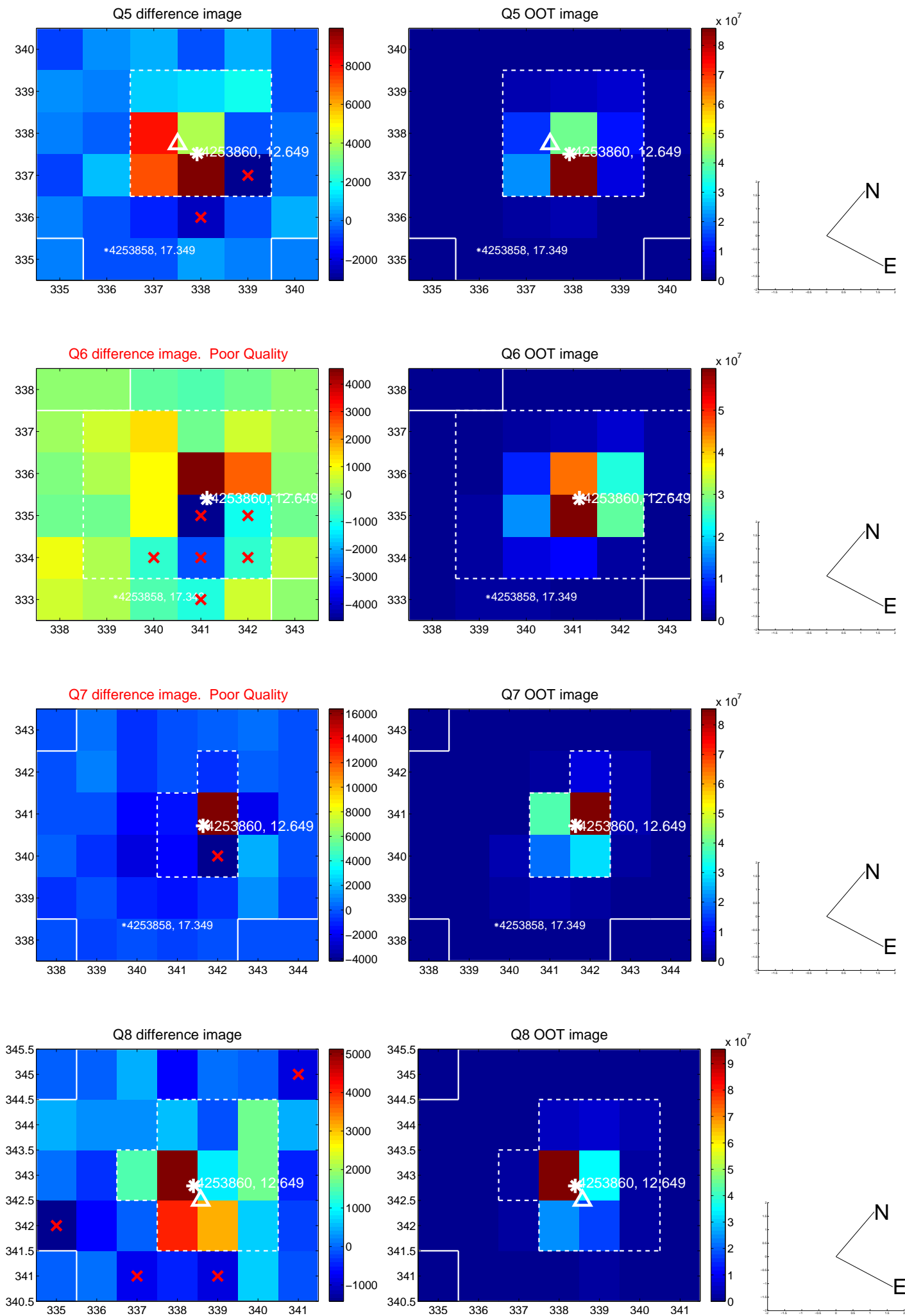


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

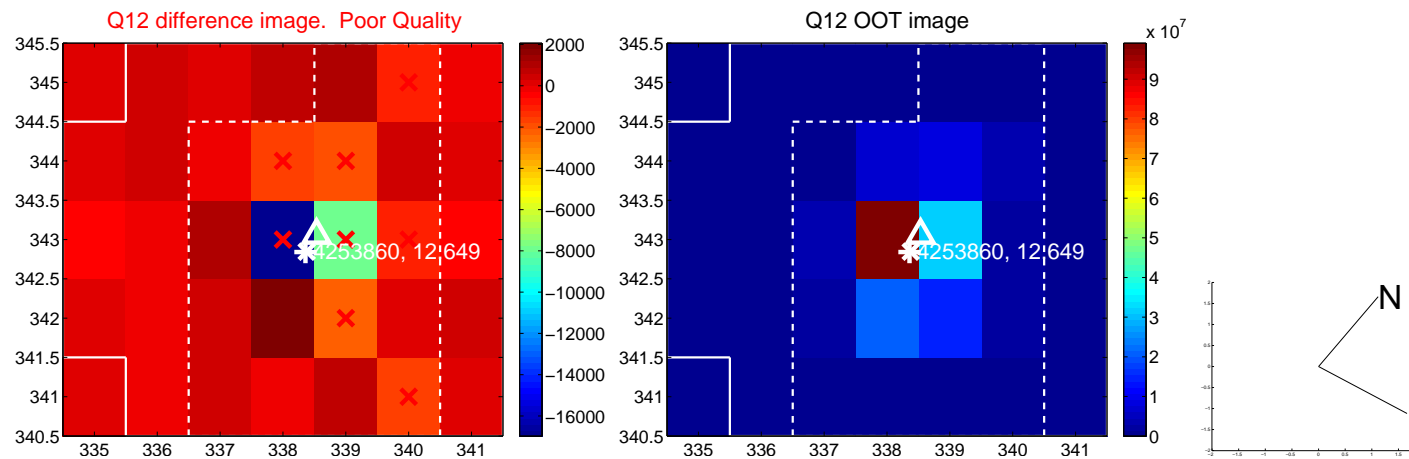
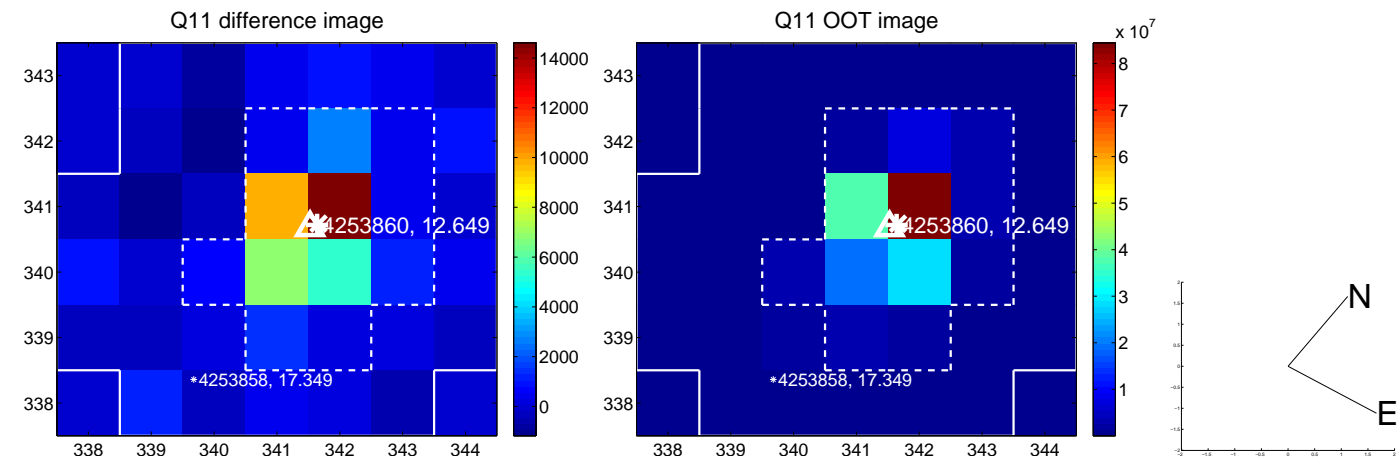
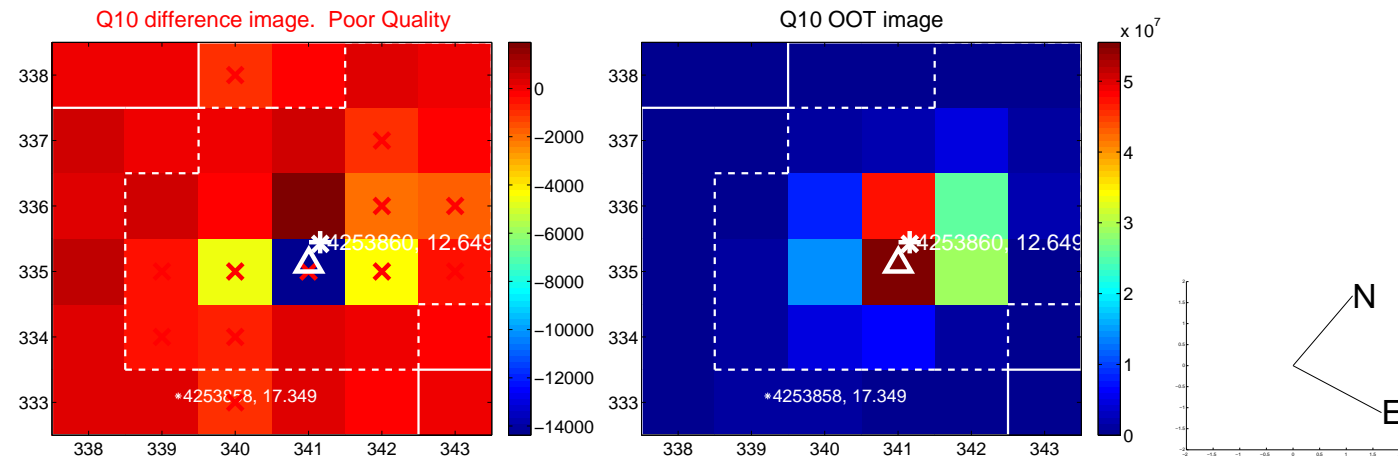
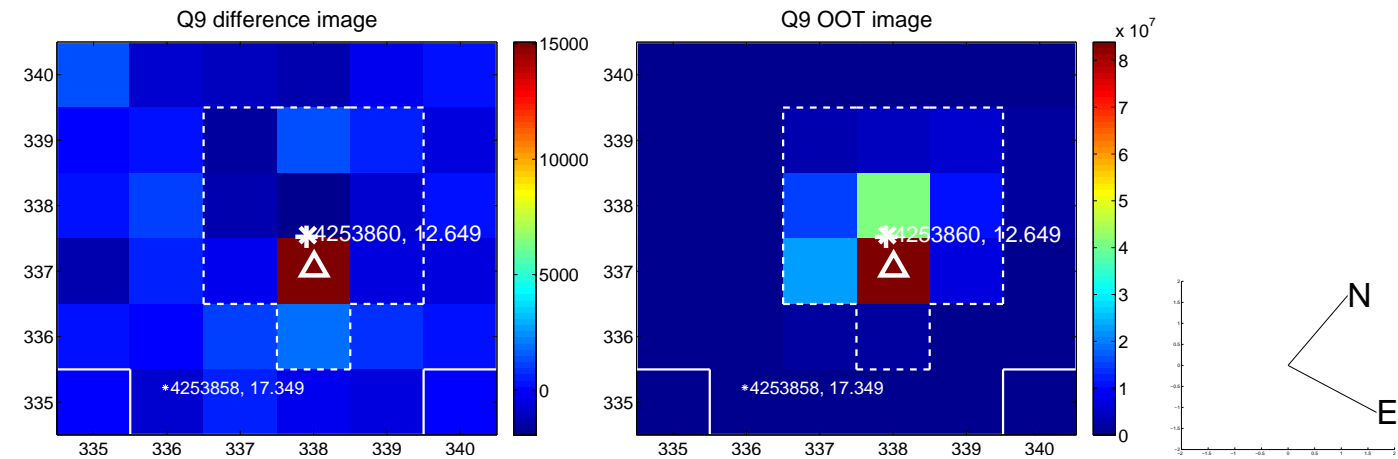
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



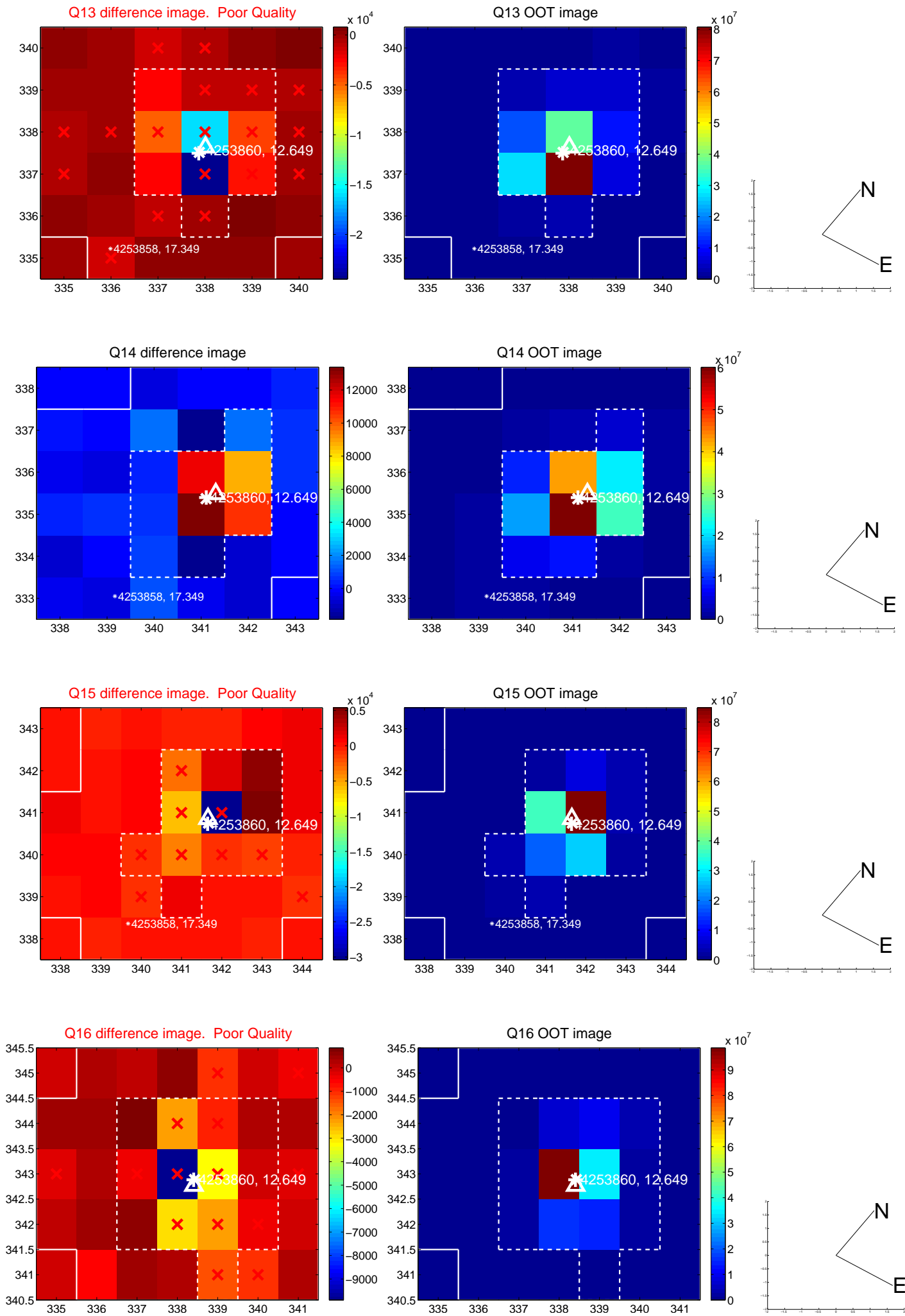
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



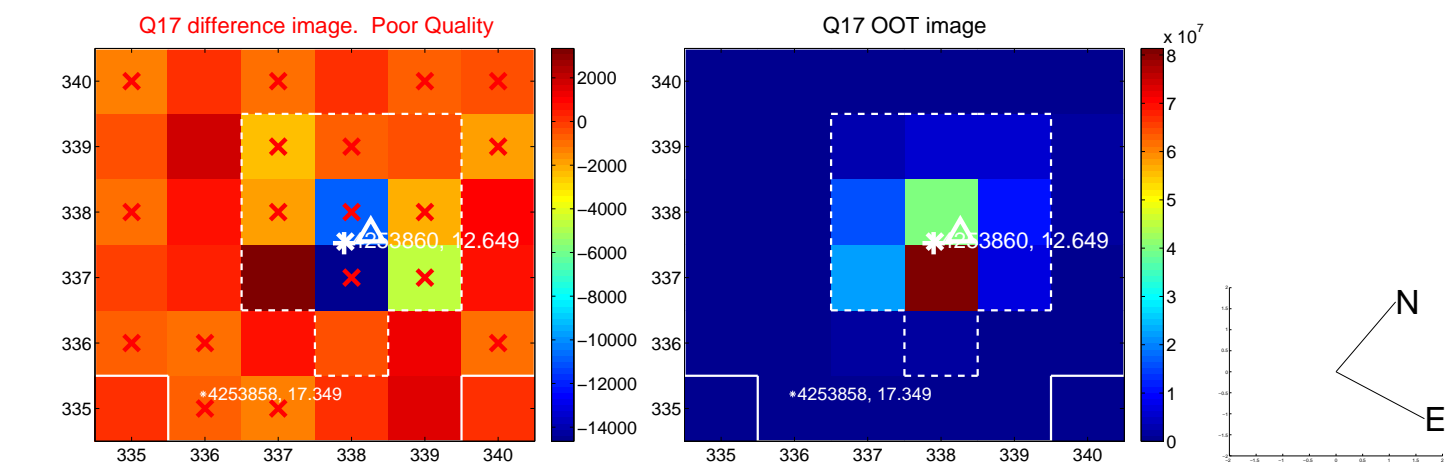
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



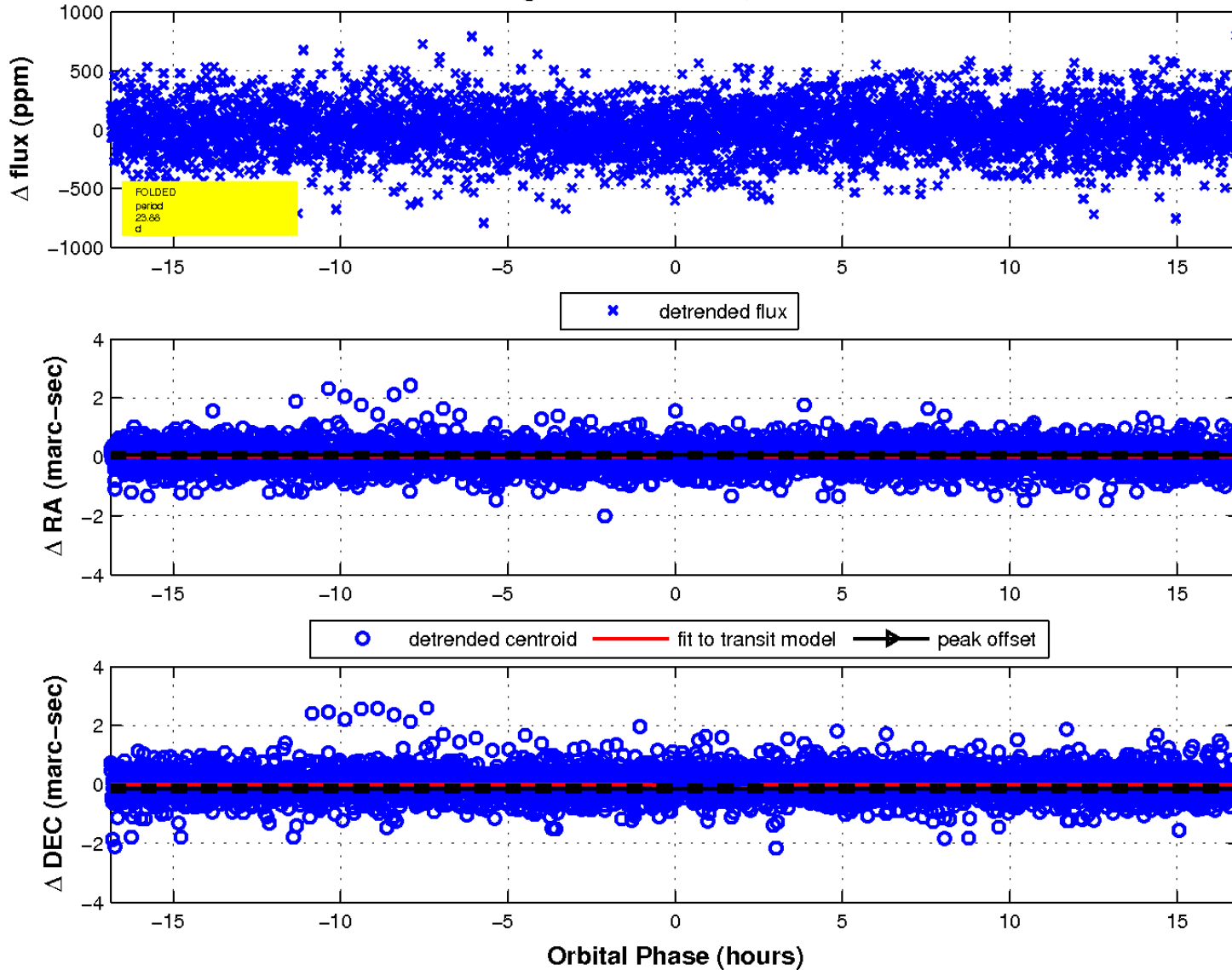
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 7 of 7



UKIRT Image

Declination

