

KIC 012885212

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})
012885212-01	OBS	2184.01	2.057474	133.321946	290.1	2.752	19.9	21.6	0.74	4620	1.54	273.49
012885212-02	OBS	2184.02	95.908446	226.906300	920.1	3.701	8.9	9.9	0.74	4620	2.24	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012885212-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
012885212-02	OBS	PC	0.64	0	0	0	0	NO_COMMENT

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 012885212-01

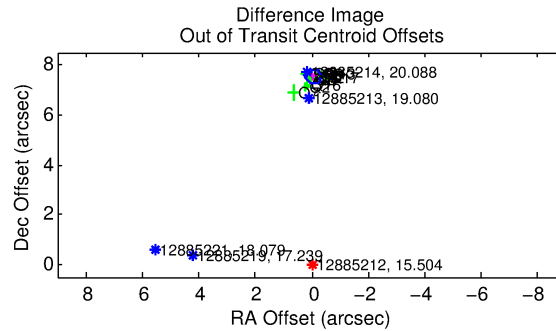
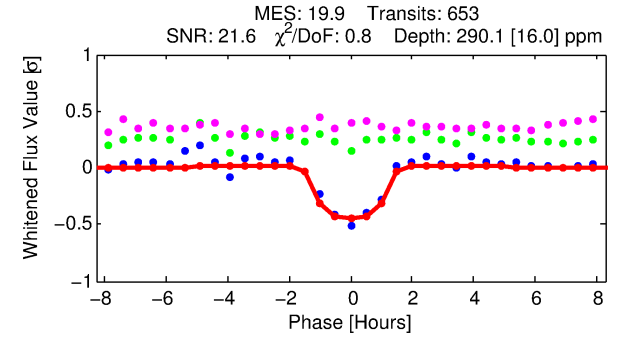
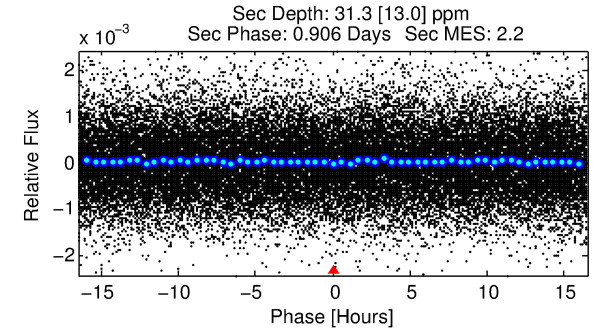
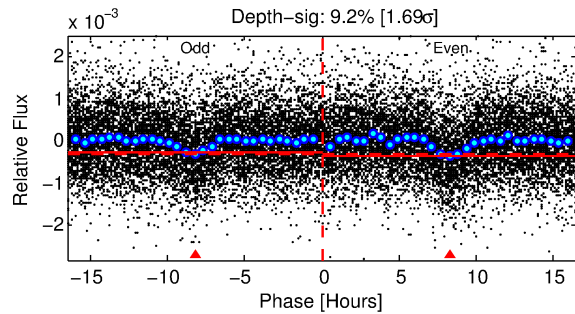
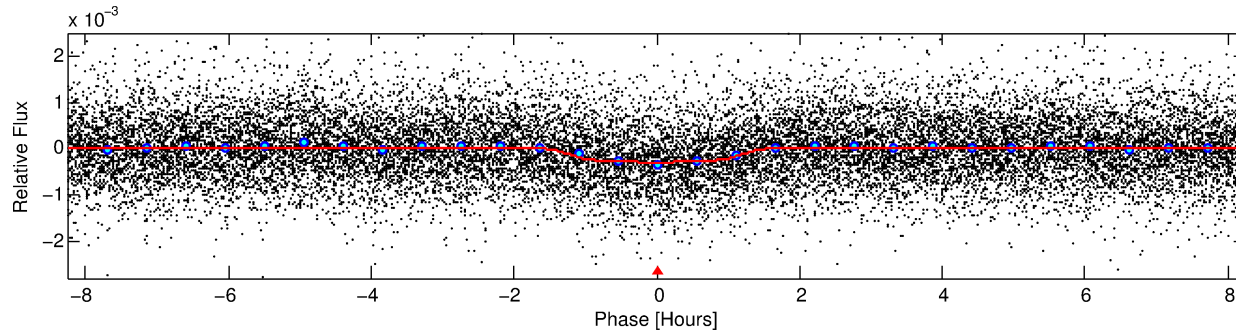
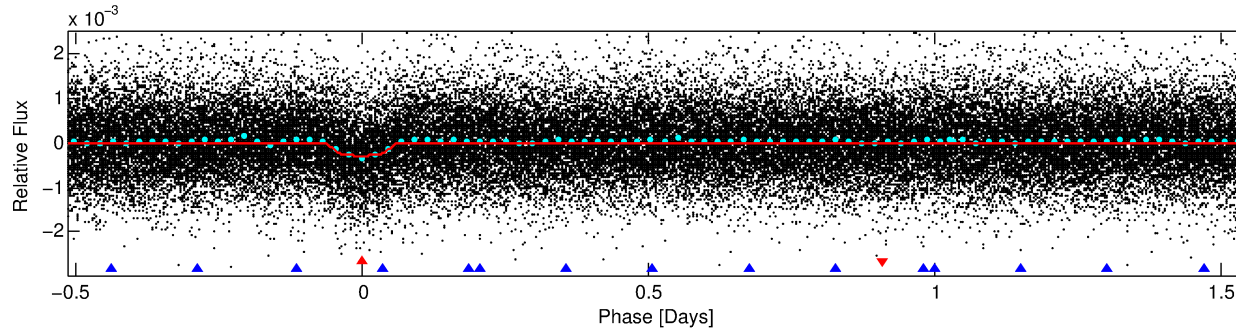
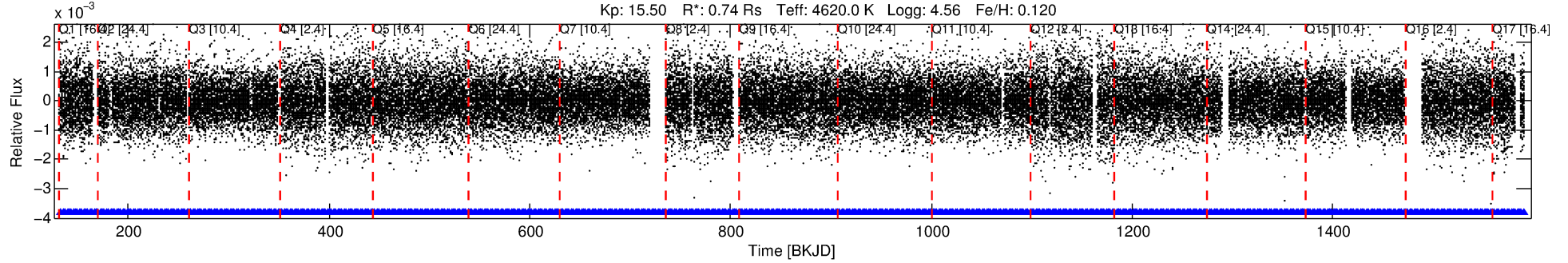
No Significant Match Found

DV One-Page Summary

KIC: 12885212 Candidate: 1 of 2 Period: 2.057 d

KOI: K02184.01 Corr: 0.942

Kp: 15.50 R*: 0.74 Rs Teff: 4620.0 K Logg: 4.56 Fe/H: 0.120



DV Fit Results:

Period = 2.05747 [0.00001] d
Epoch = 133.3219 [0.0020] BKJD
Rp/R* = 0.0192 [0.0067]
a/R* = 2.93 [3.33]
b = 0.90 [0.29]
Seff = 273.49 [31.10]
Teq = 1037 [29] K
Rp = 1.54 [0.55] Re
a = 0.0284 [0.0016] AU
Ag = 5.88 [4.81] [1.02σ]
Teff = 2497 [509] K [2.86σ]

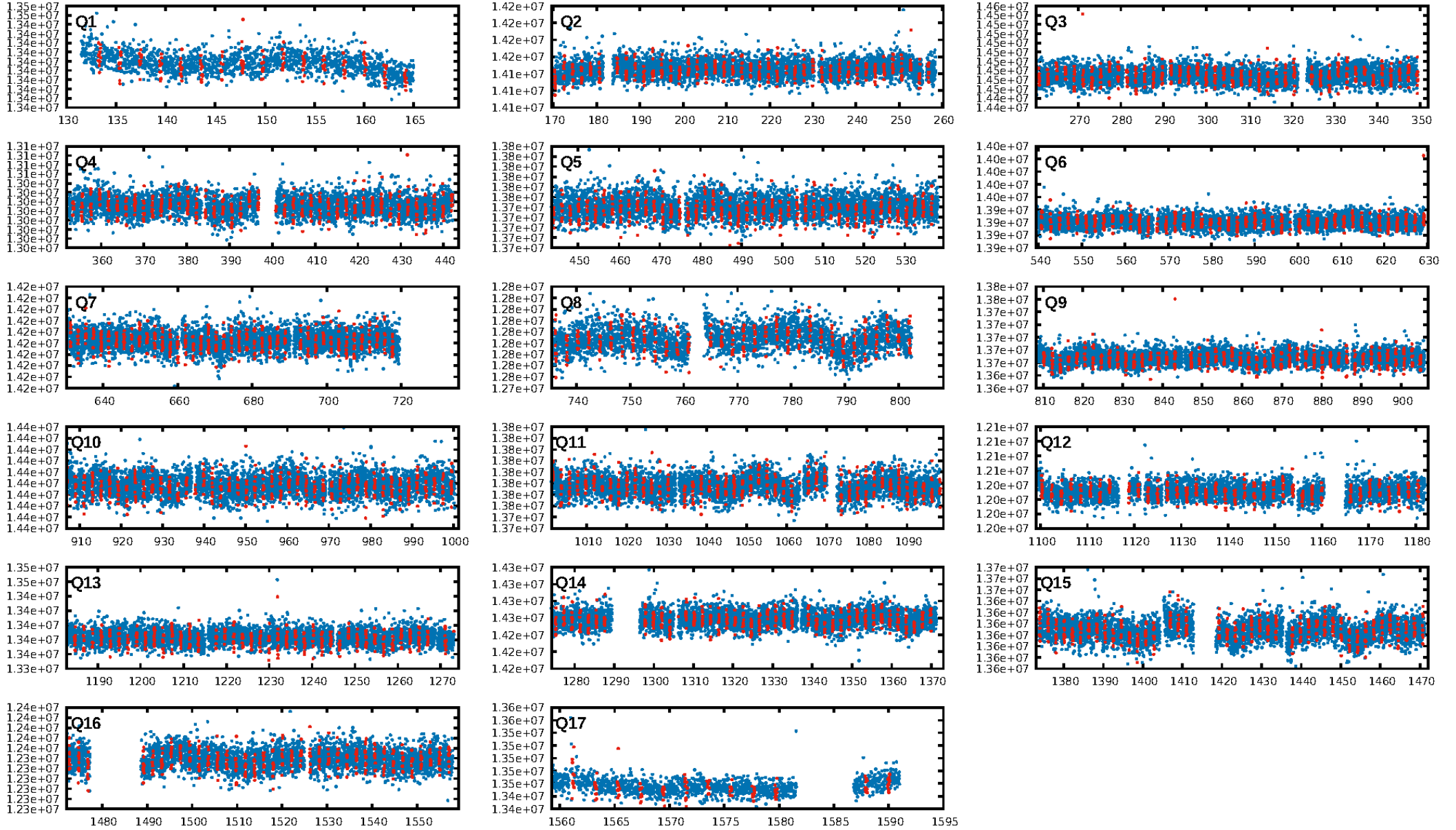
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [488.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.85e-83
RollingBand-fgt: 1.00 [625/625]
GhostDiagnostic-chr: -0.5934
Centroid-sig: 0.0%
Centroid-so: 16.092 arcsec [25.37σ]
OotOffset-rm: 7.529 arcsec [81.69σ]
KicOffset-rm: 7.768 arcsec [83.34σ]
OotOffset-st: 1/3/4/5 [13]
KicOffset-st: 1/3/4/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

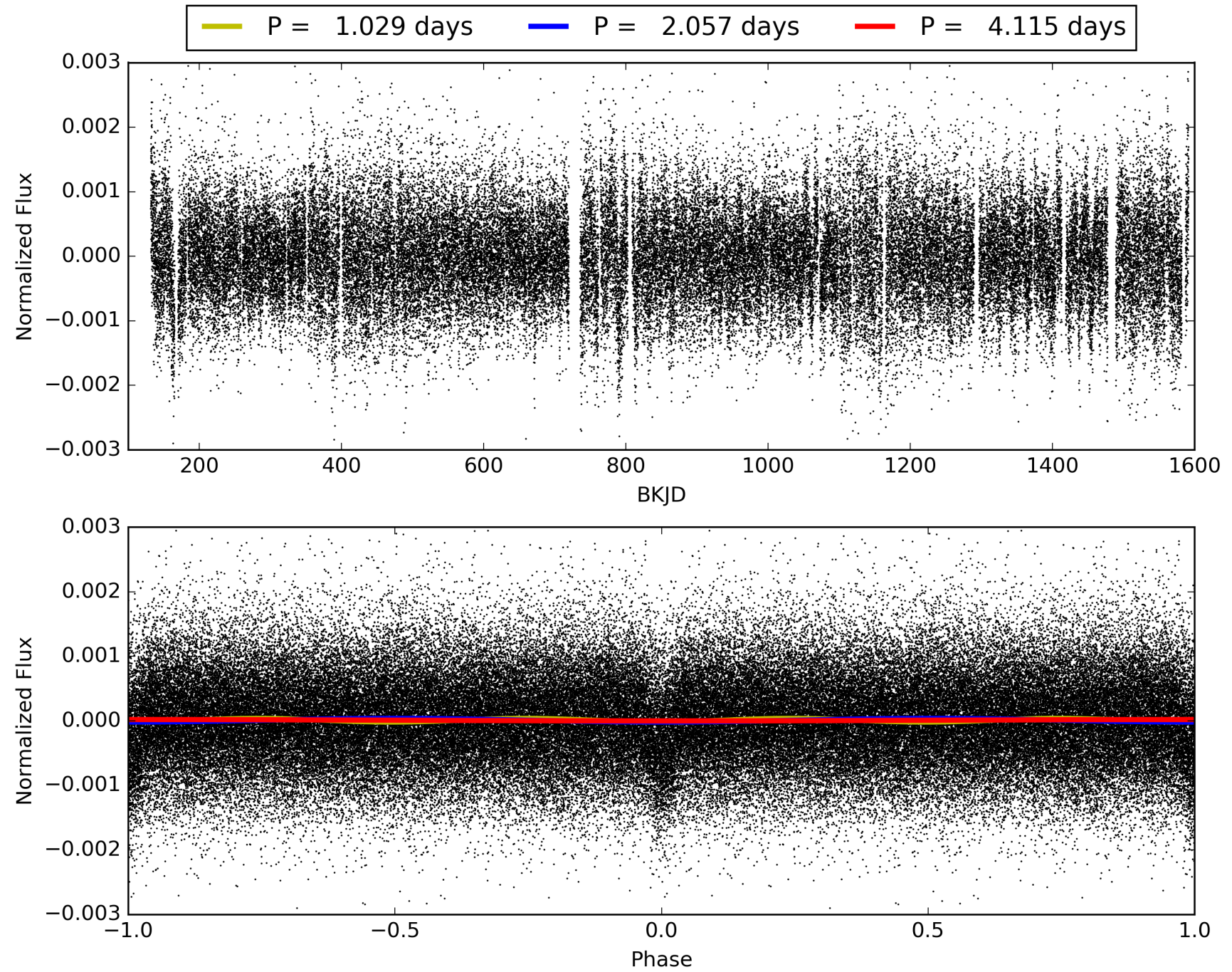
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:50:48 Z

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

TCE 01285212-01, PDC Light Curves

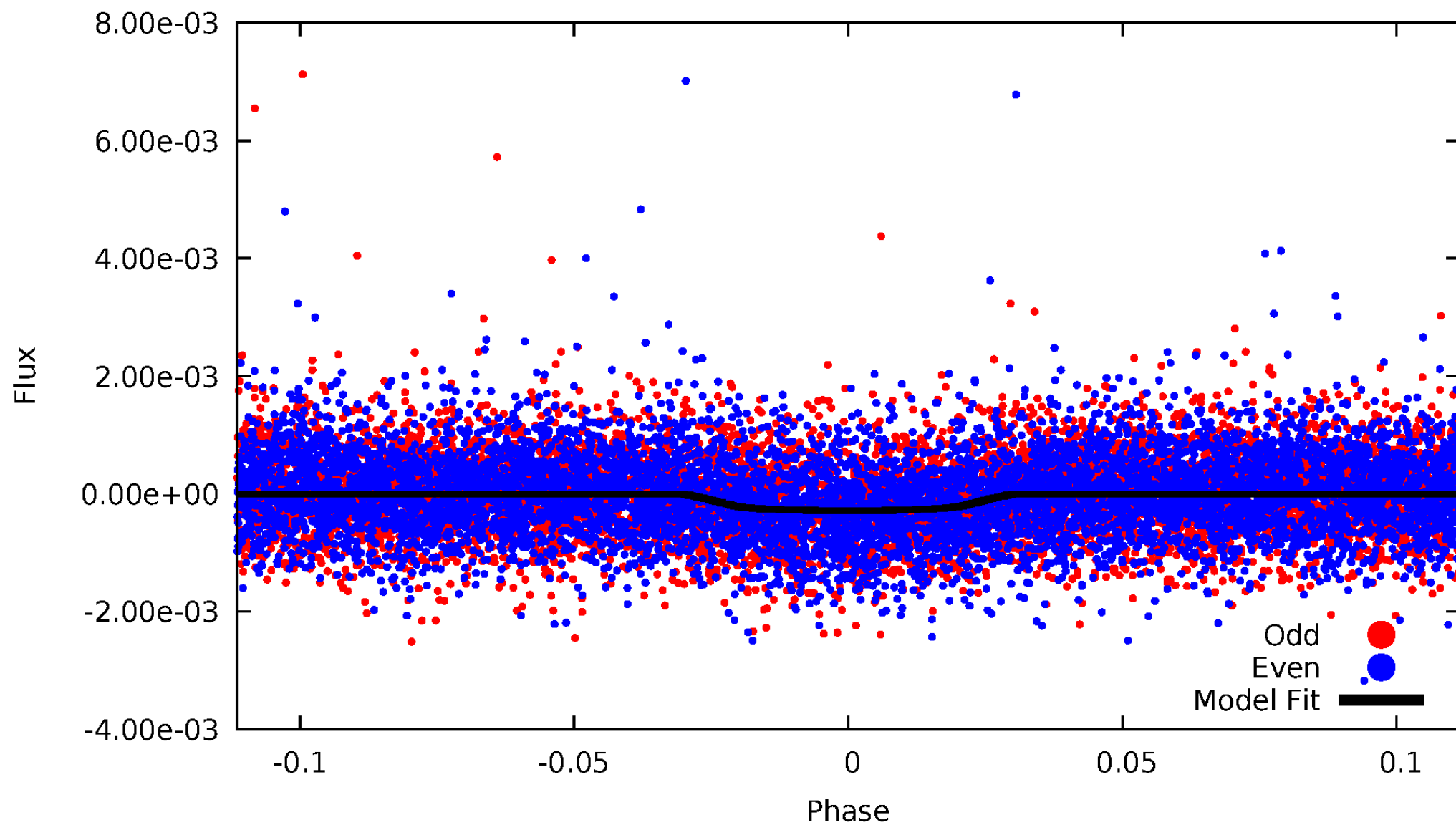


TCE 012885212-01



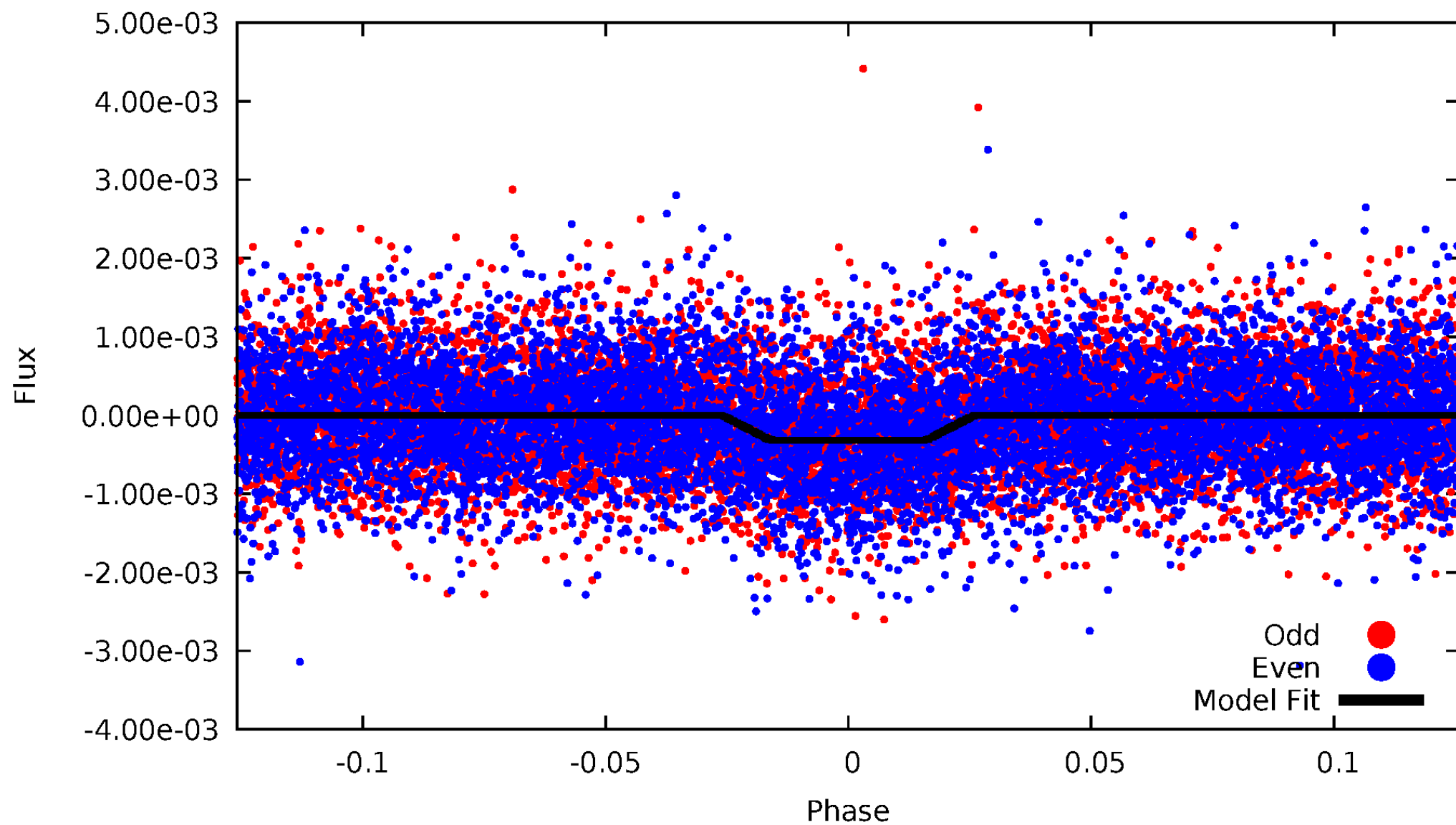
DV Odd/Even

TCE 012885212-01

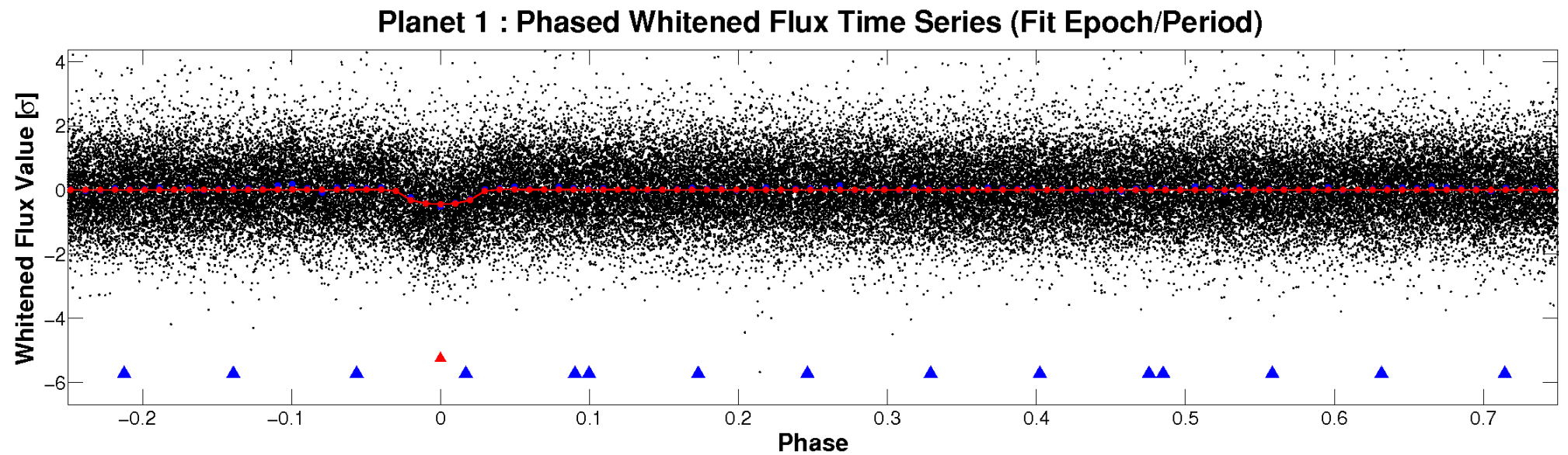
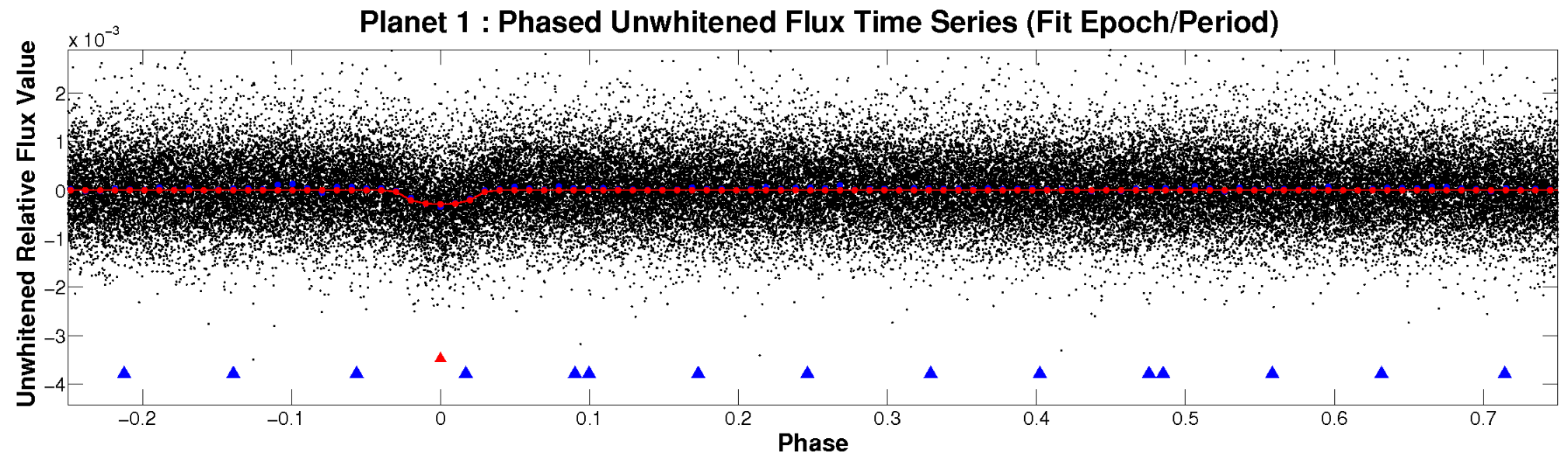


ALT Odd/Even

TCE 012885212-01

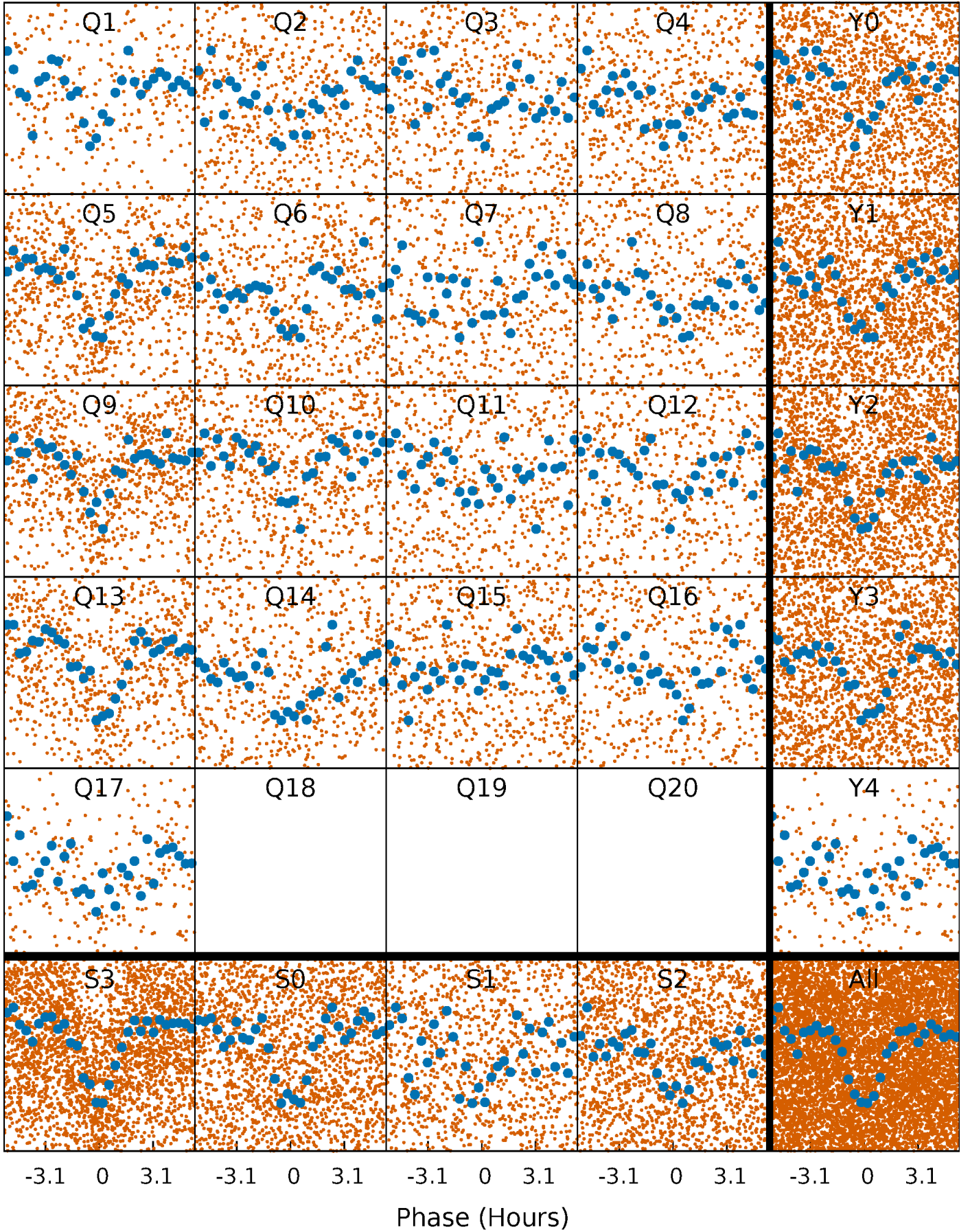


Non-Whitened Vs. Whitened Light Curve



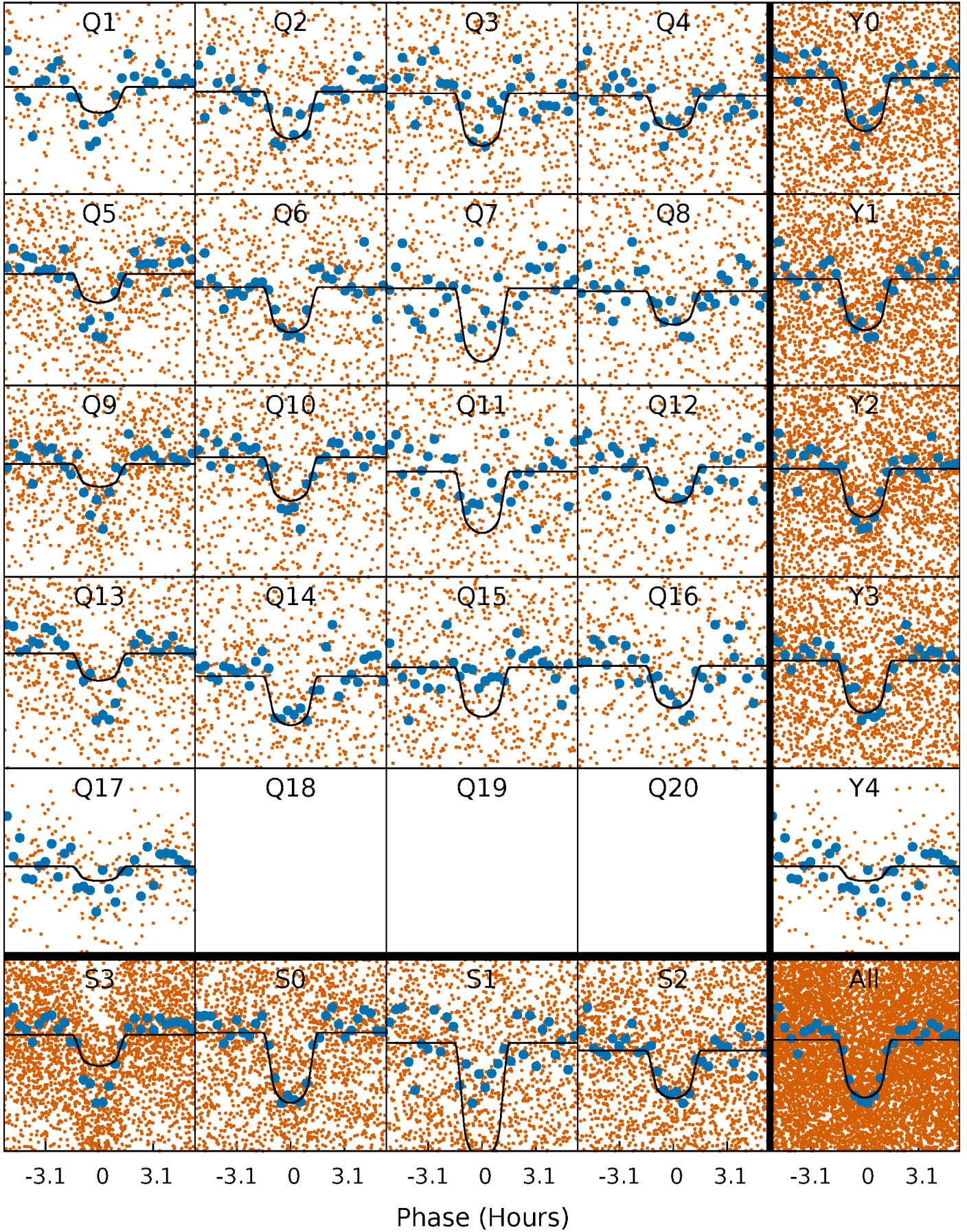
PDC Quarter-Phased Transit Curves

TCE 012885212-01 P= 2.057474 Days $T_0=133.321946$ (BKJD)



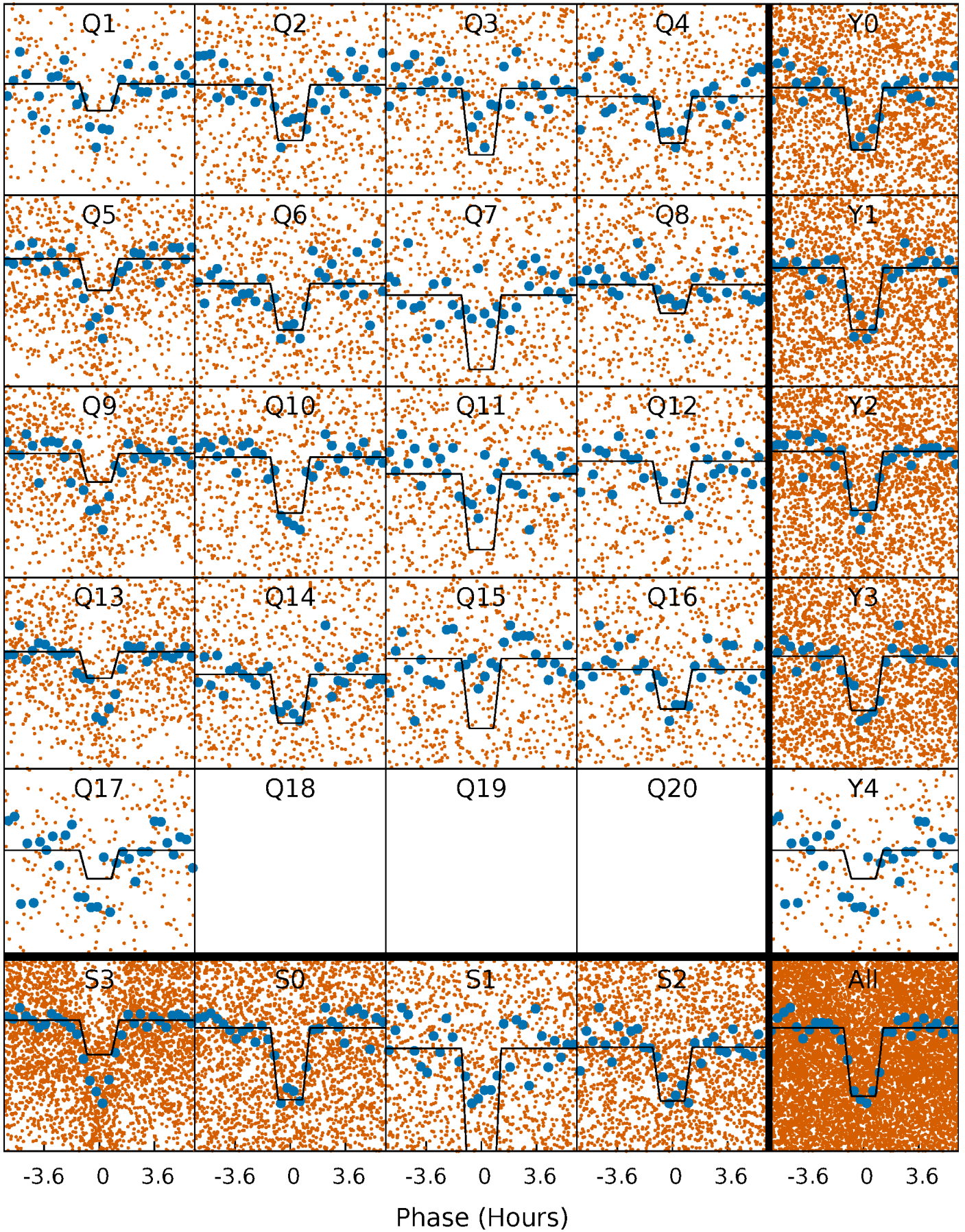
DV Quarter-Phased Transit Curves

TCE 012885212-01 P= 2.057474 Days $T_0=133.321946$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

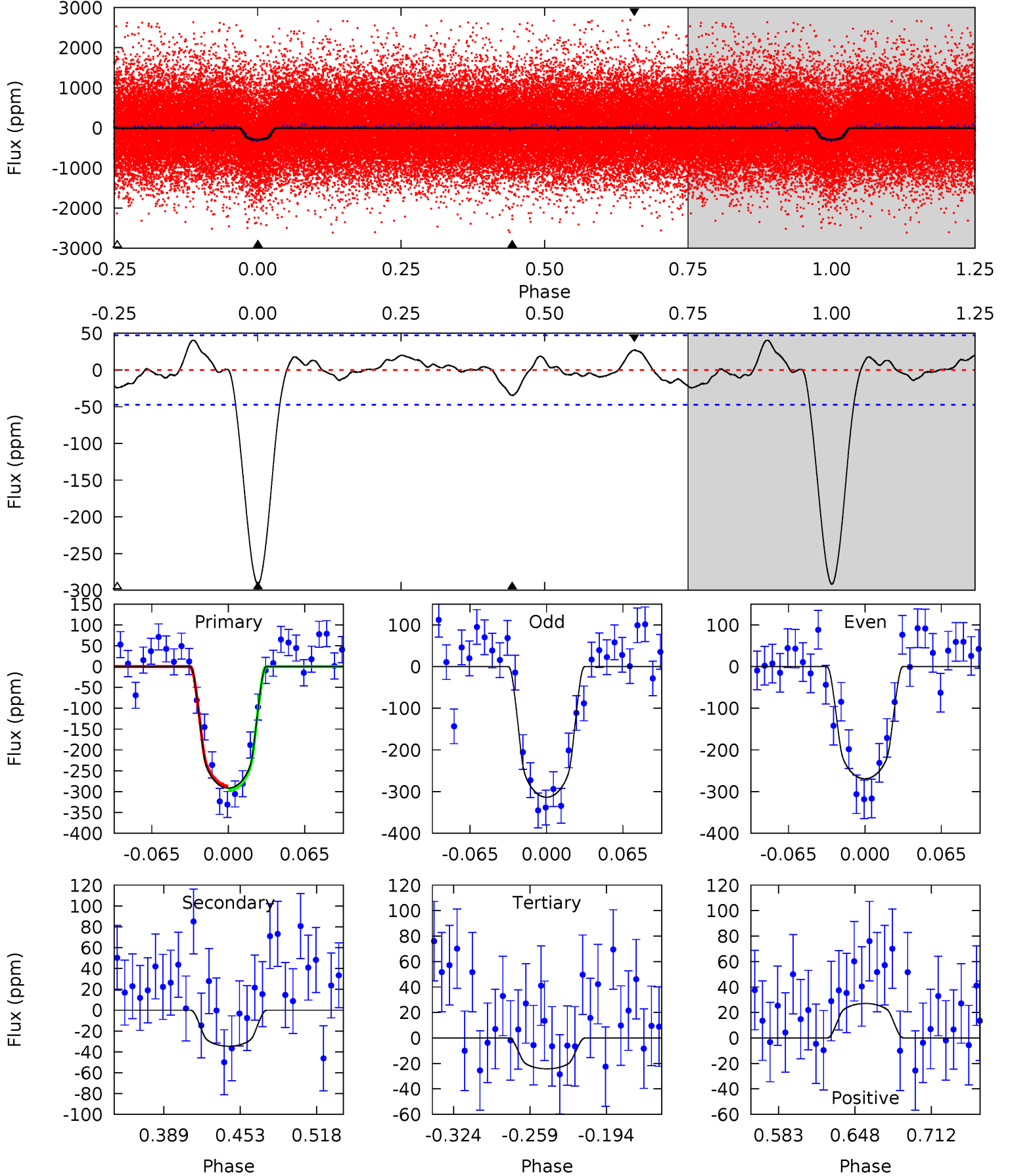
TCE 012885212-01 P= 2.057491 Days $T_0=133.315956$ (BKJD)



DV Model-Shift Uniqueness Test

012885212-01, P = 2.057474 Days, E = 131.264472 Days

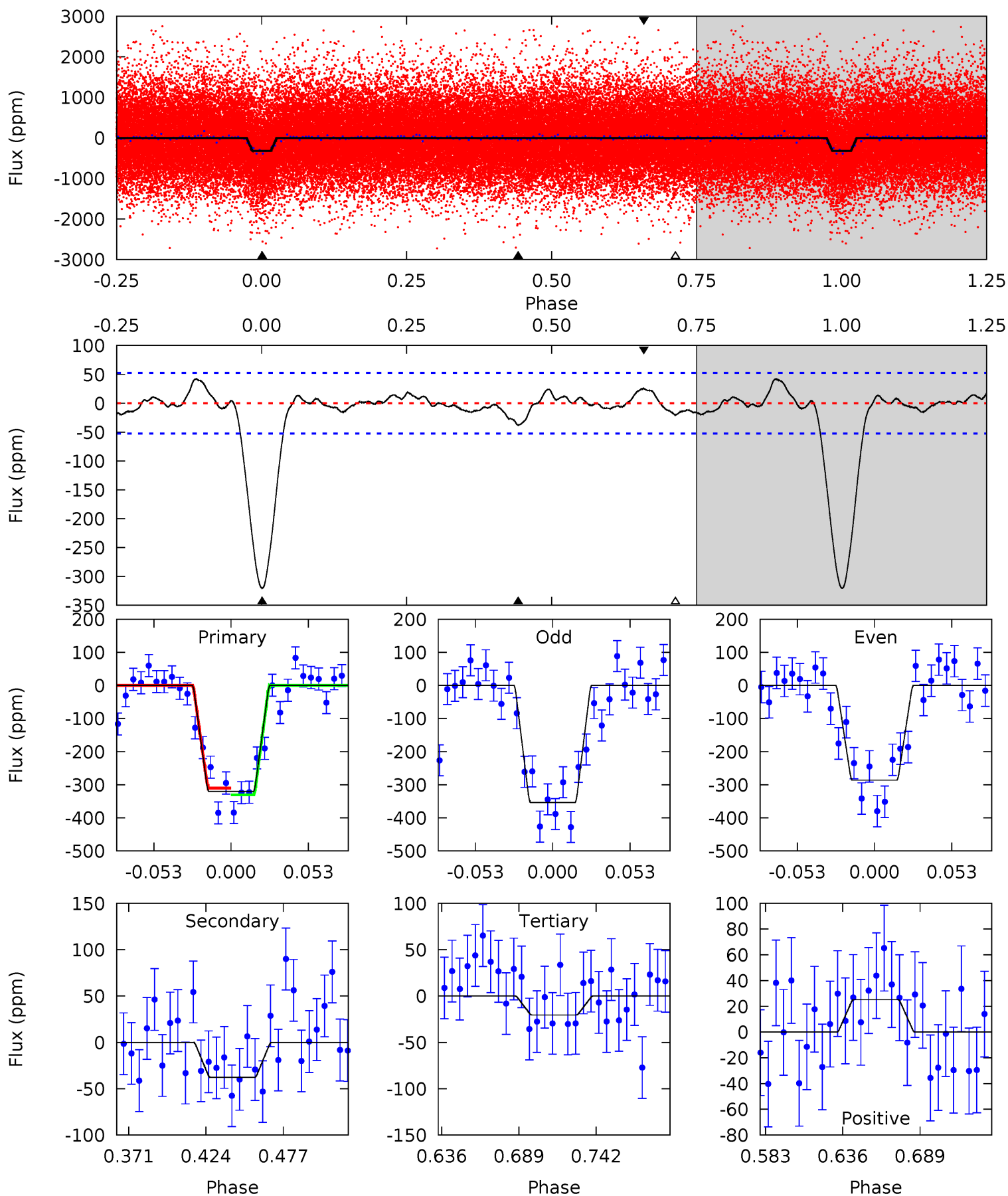
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	3.40	2.38	2.66	4.66	1.85	1.27	26.3	26.0	1.02	0.74	2.19	1.07	0.12	0.49



Alt Model-Shift Uniqueness Test

012885212-01, P = 2.057491 Days, E = 131.258465 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	3.37	1.83	2.25	4.70	1.93	1.09	26.8	26.4	1.55	1.12	3.00	1.06	0.12	0.91



Stellar Parameters For KIC 012885212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4620^{+73}_{-82}	$4.564^{+0.052}_{-0.014}$	$0.120^{+0.150}_{-0.150}$	$0.736^{+0.021}_{-0.043}$	$0.723^{+0.043}_{-0.027}$	$2.559^{+0.495}_{-0.157}$
	+2%/-2%	+1%/-0%	+125%/-125%	+3%/-6%	+6%/-4%	+19%/-6%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 012885212-01 / KOI 2184.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-35 ± 10	$1.49^{+0.57}_{-0.54}$	1438^{+27}_{-31}	3090^{+476}_{-325}	$6.833^{+10.348}_{-3.613}$
Alt.	-38 ± 11	$1.48^{+0.48}_{-0.57}$	1437^{+29}_{-31}	3157^{+528}_{-307}	$7.880^{+12.196}_{-3.884}$

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

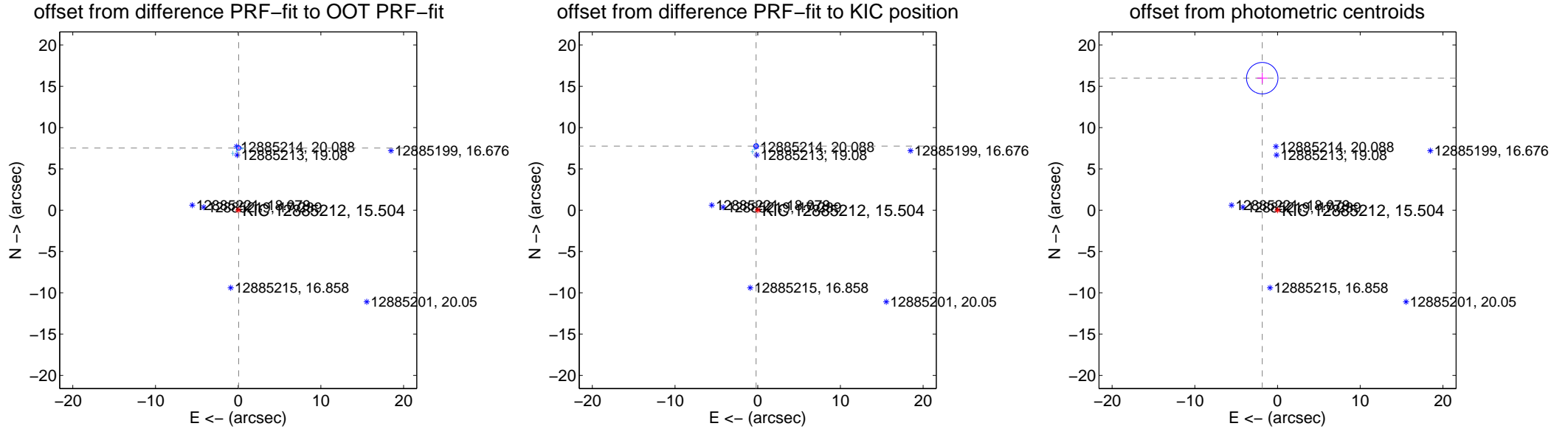
DV Centroid Data

Supplemental centroid analysis for 012885212-01. Kepler magnitude: 15.50. Transit SNR 21.55

There are 13 quarters with good PRF difference image offsets

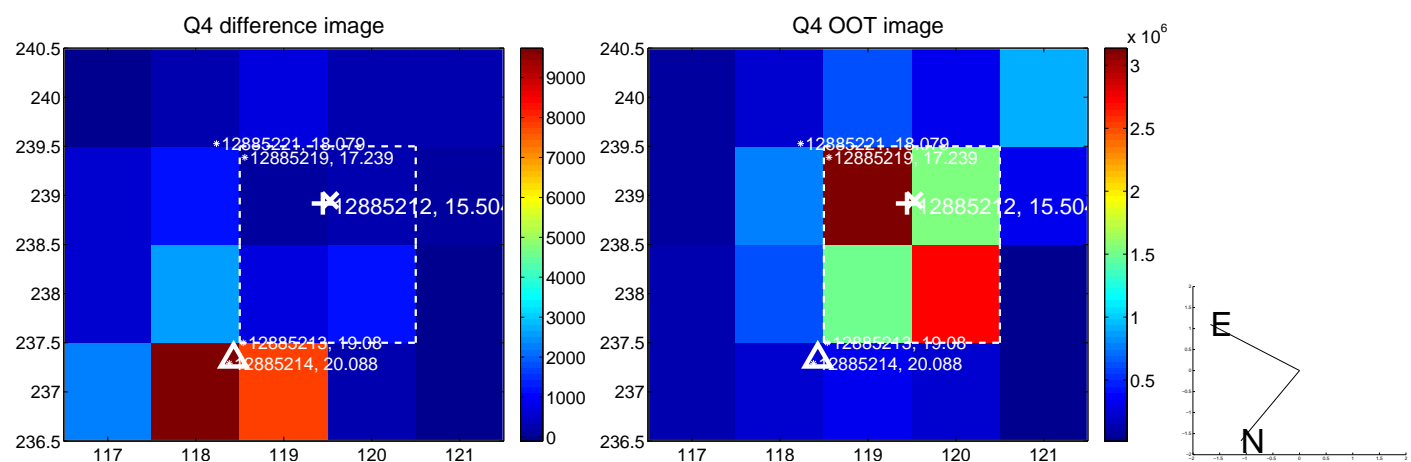
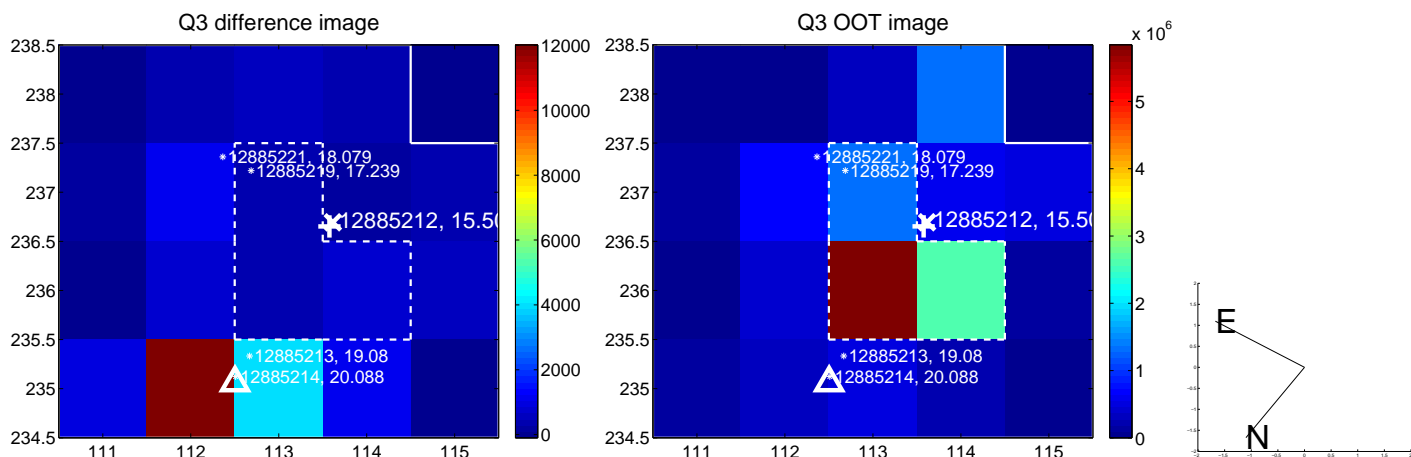
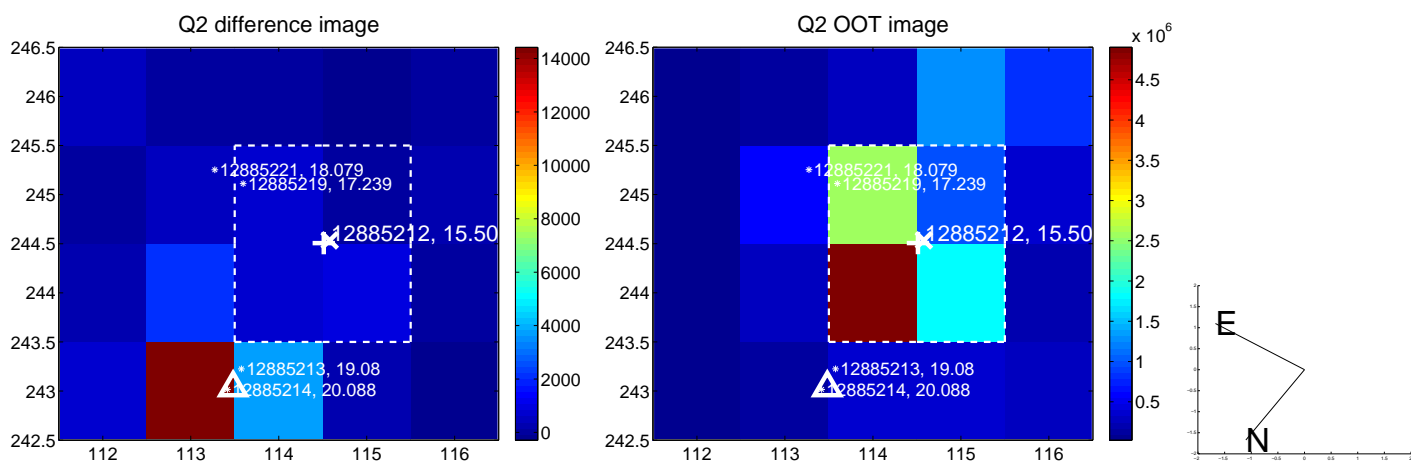
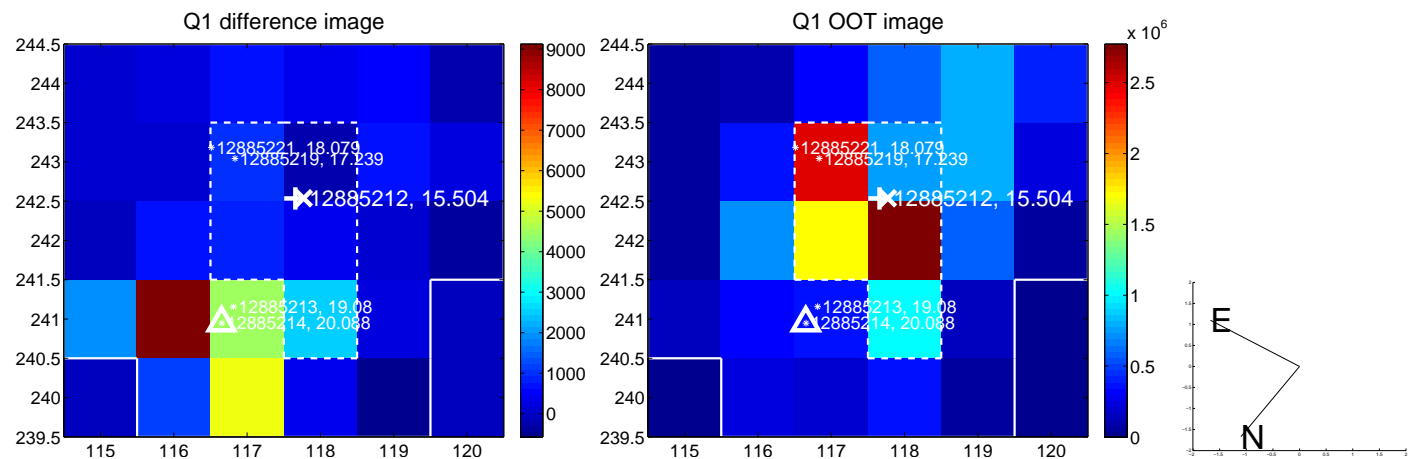
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.529 ± 0.092	81.69	-0.060 ± 0.110	7.528 ± 0.092
PRF-fit source offset from KIC position	7.768 ± 0.093	83.34	0.199 ± 0.079	7.765 ± 0.094
photometric centroid source offset	16.09 ± 0.63	25.37	1.85 ± 0.62	15.99 ± 0.63

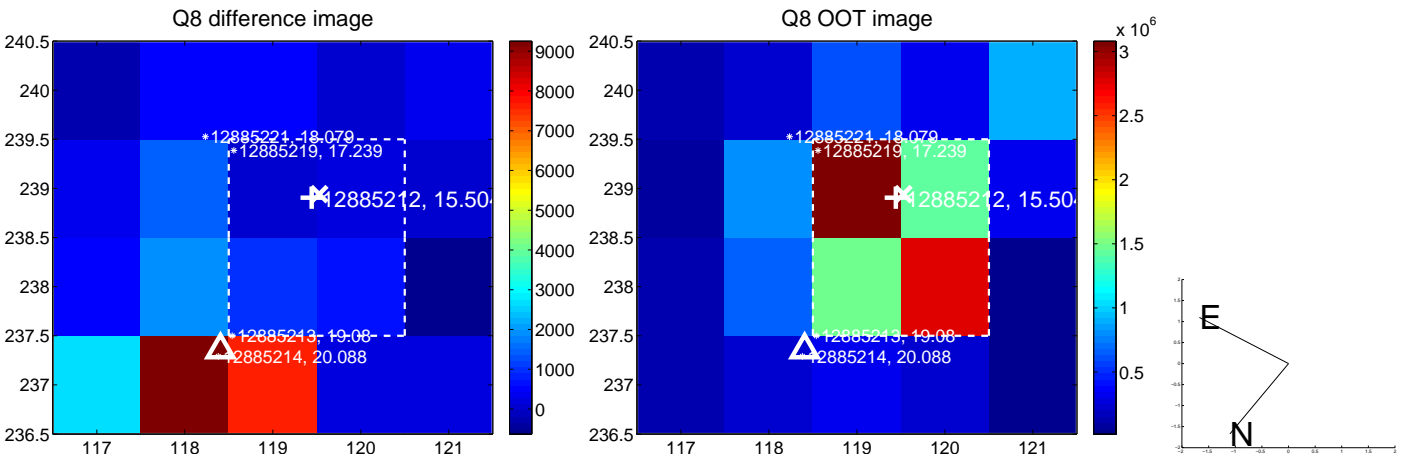
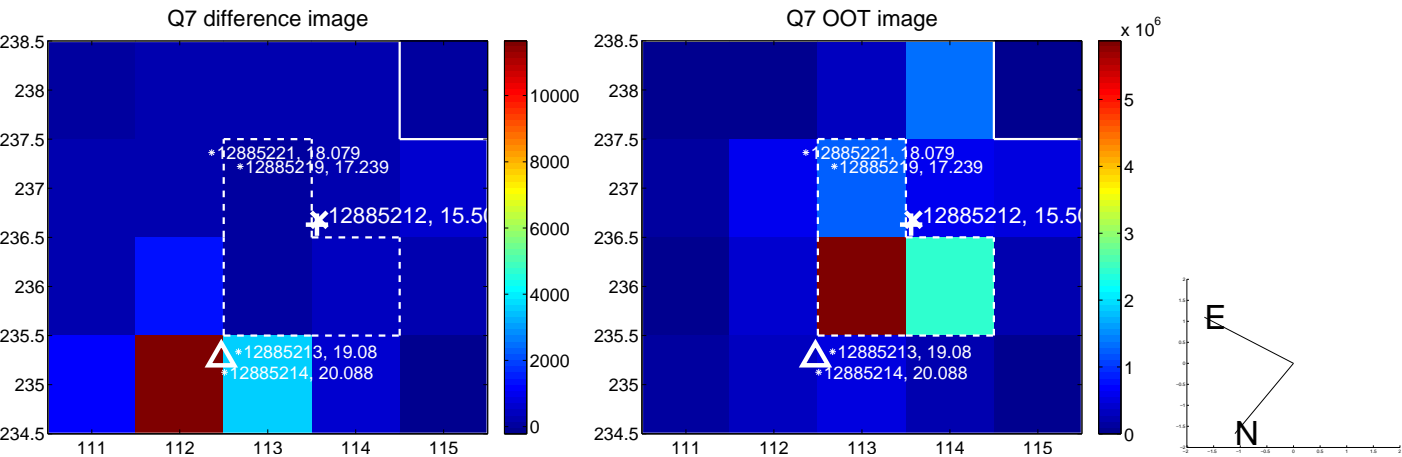
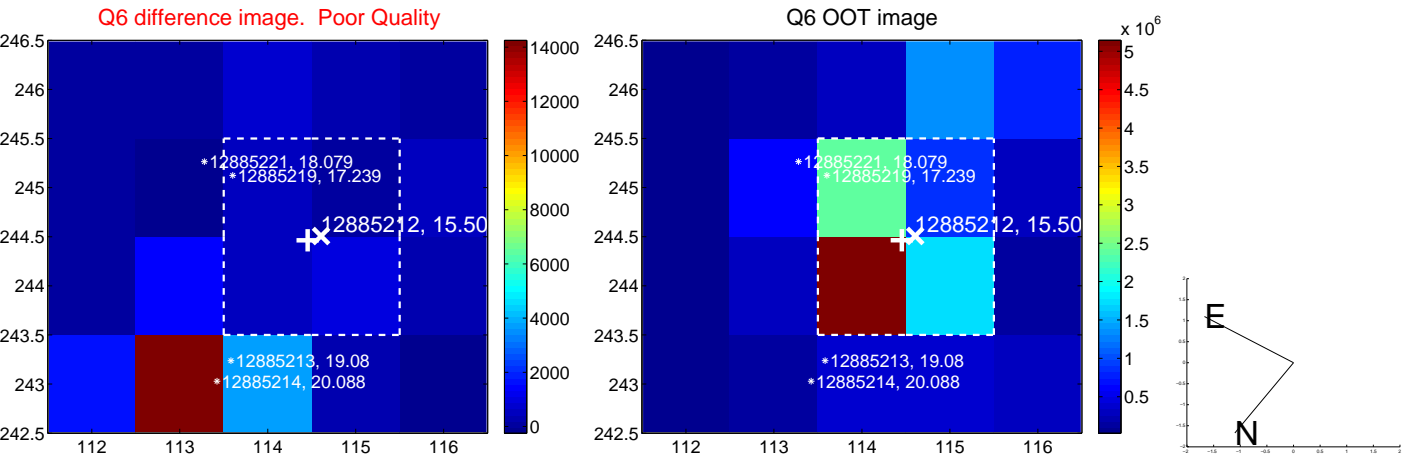
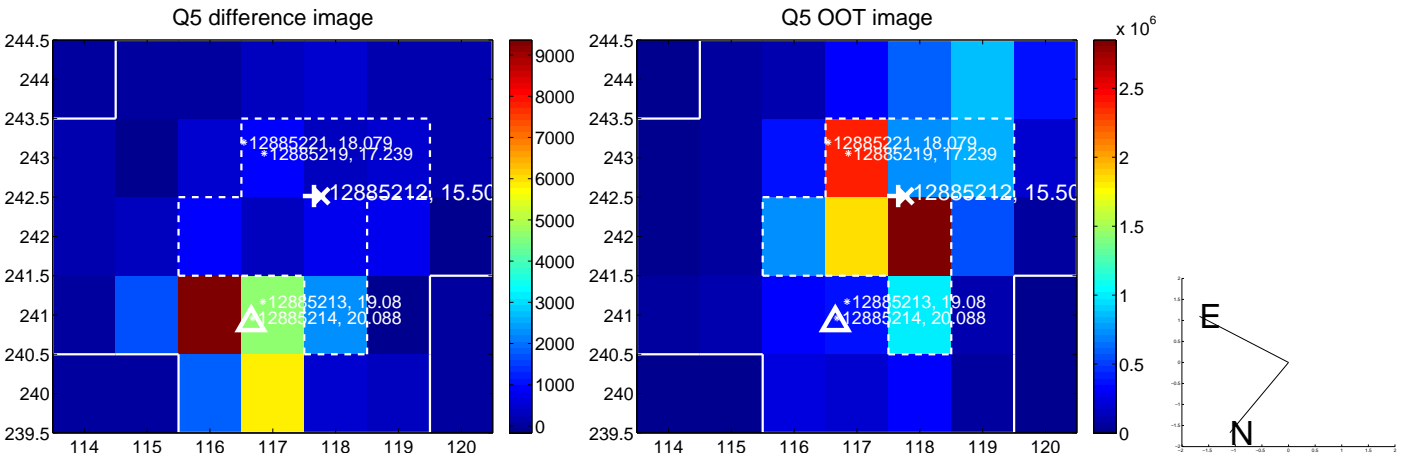


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

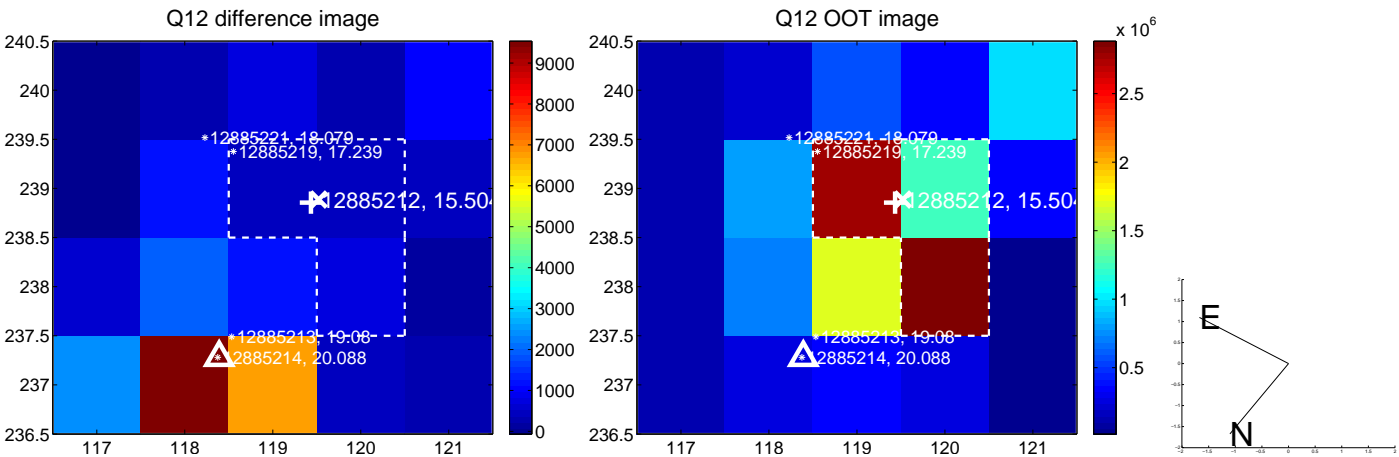
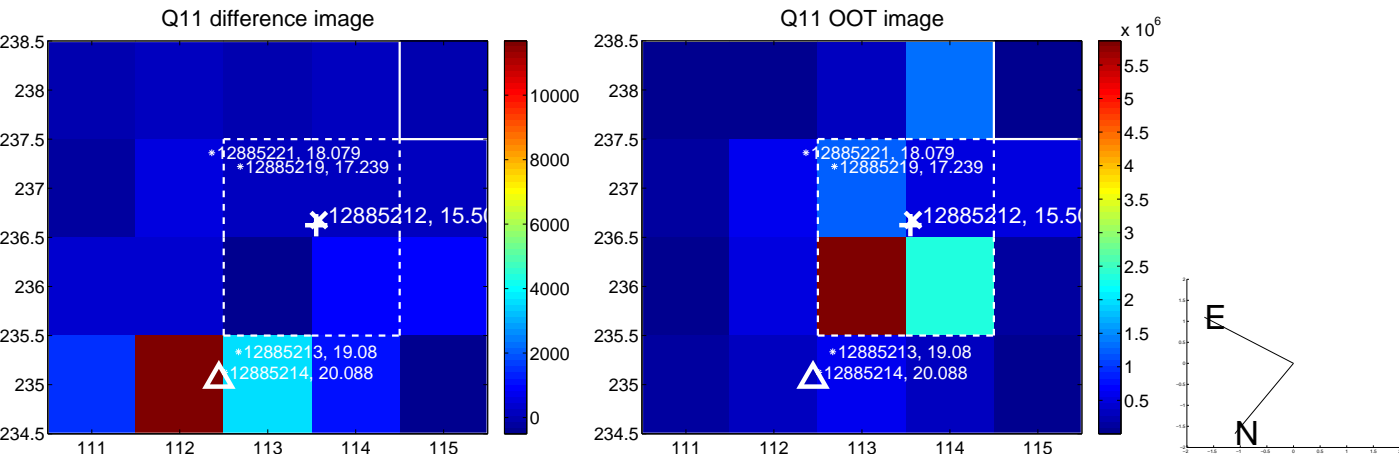
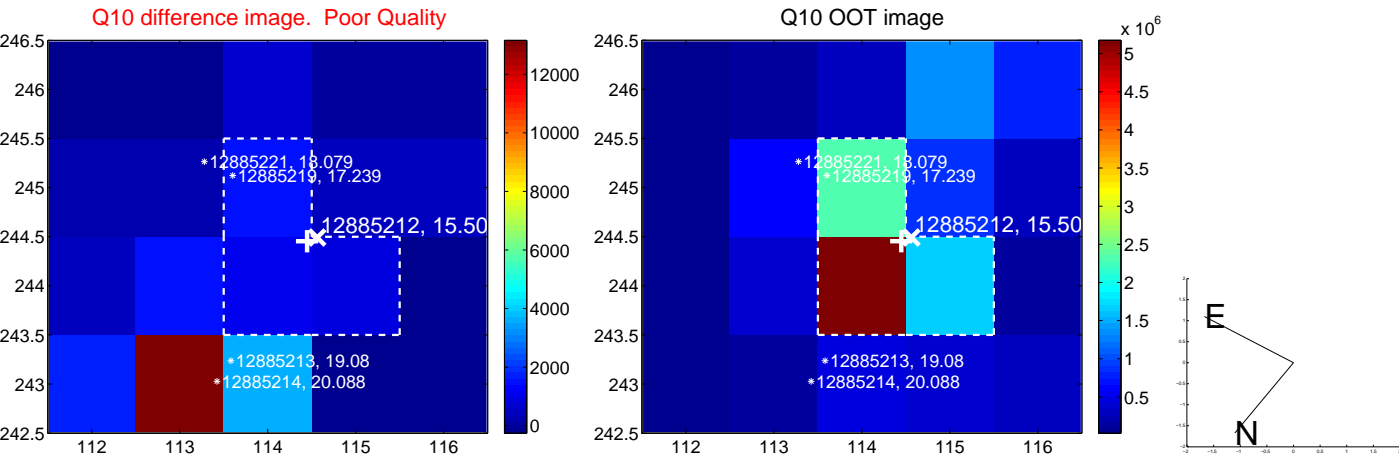
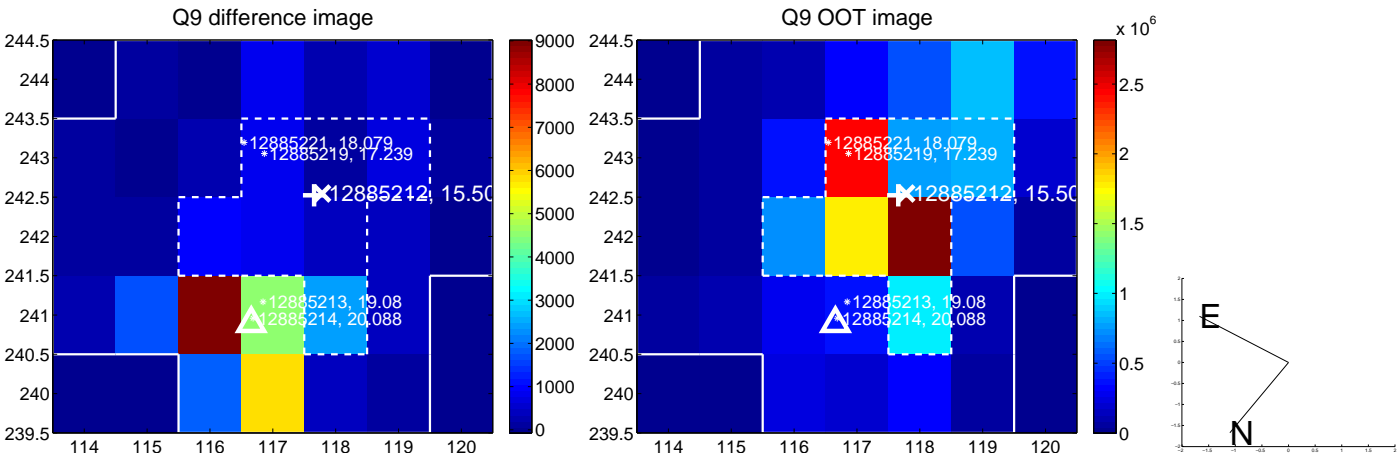
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



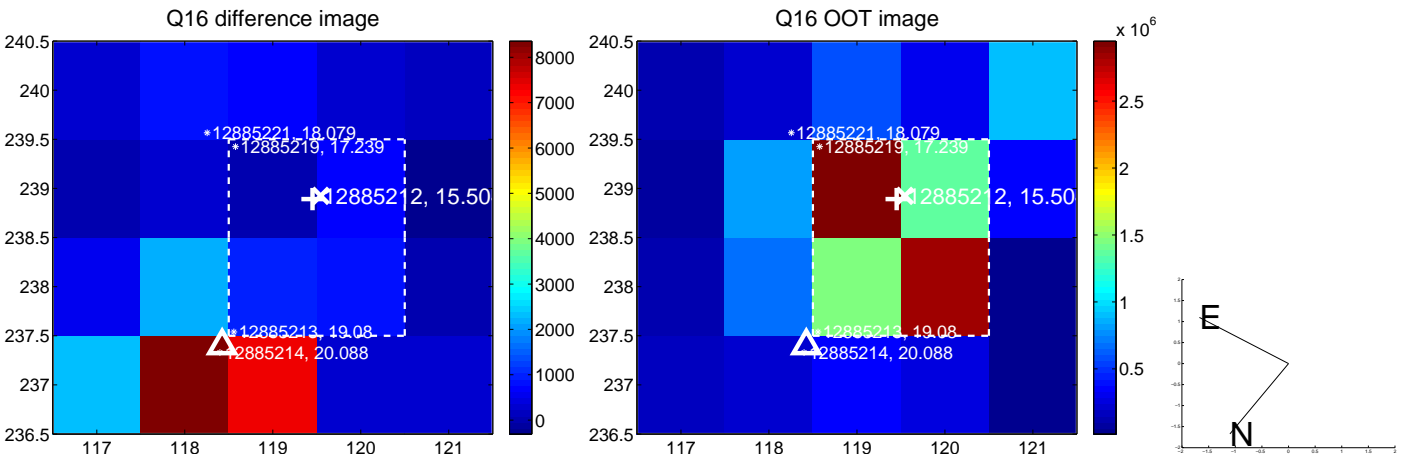
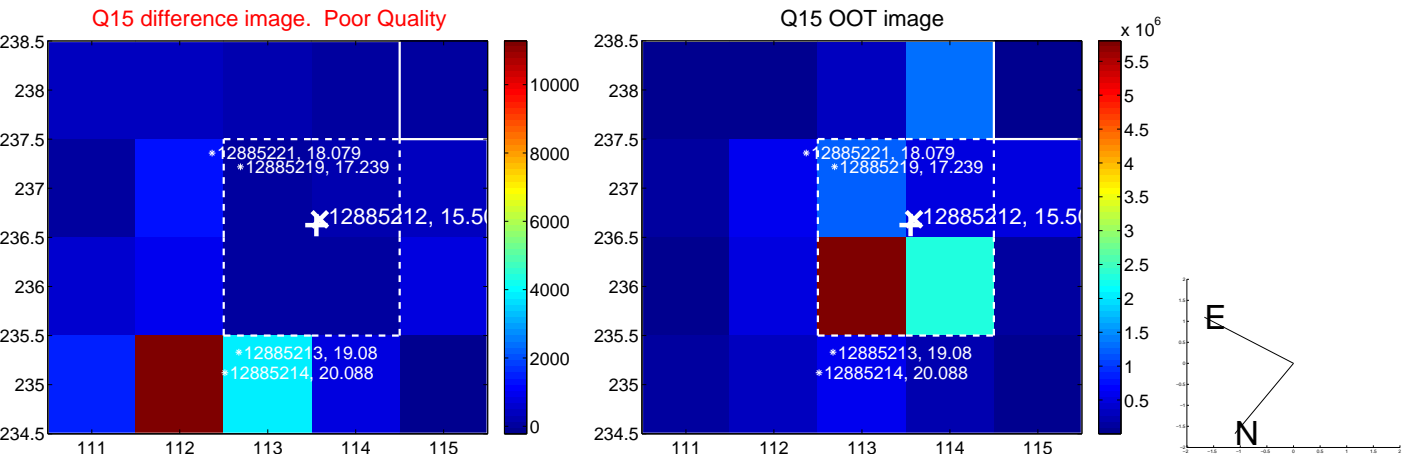
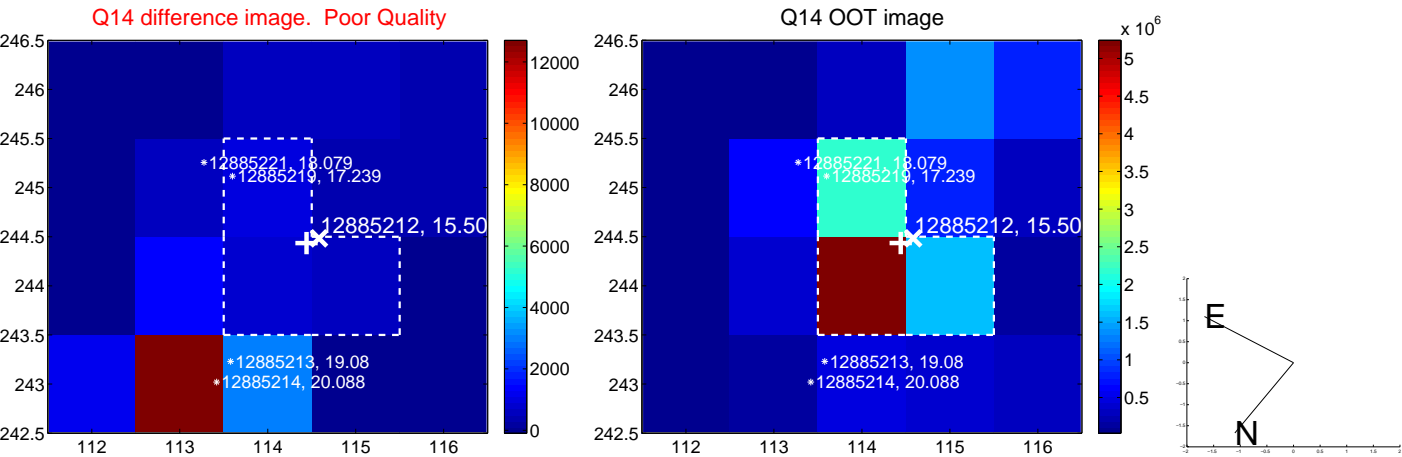
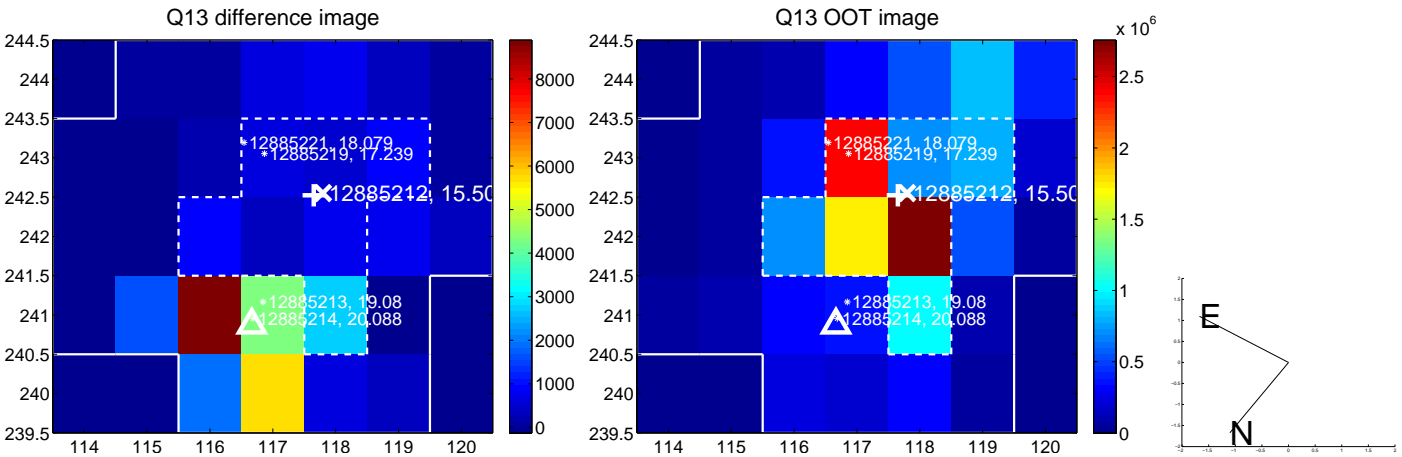
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



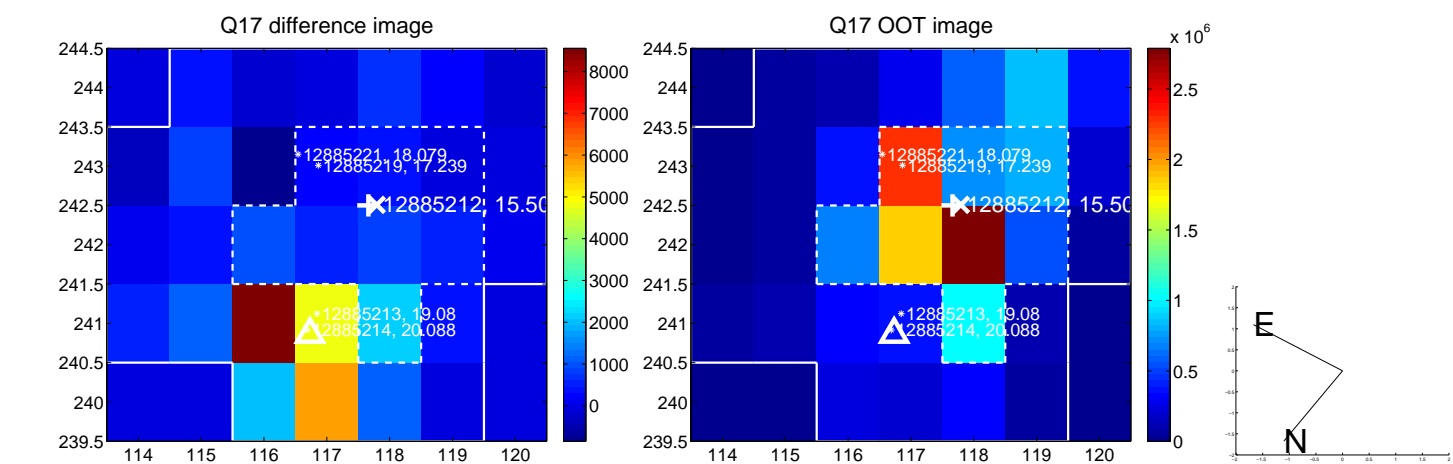
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



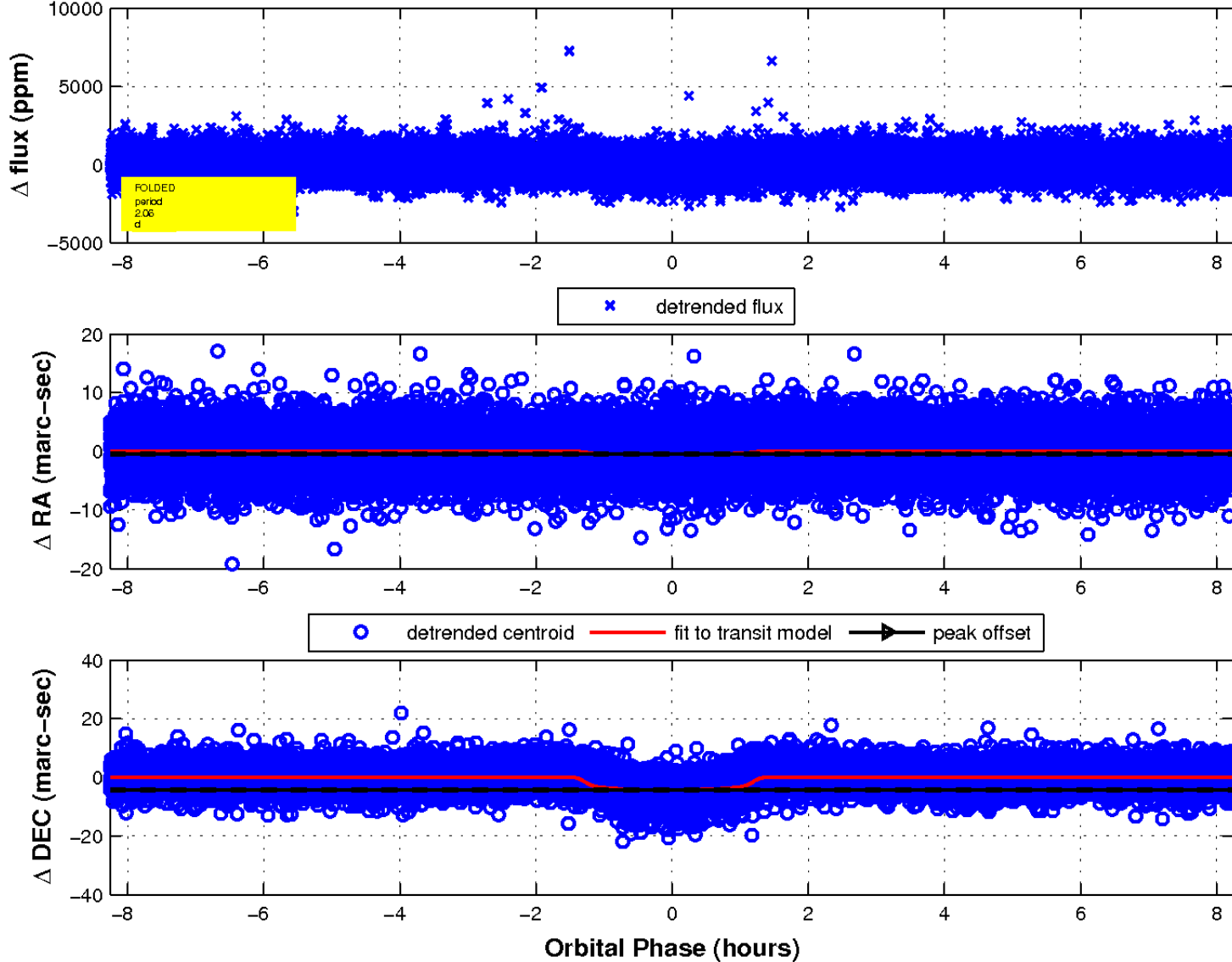
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

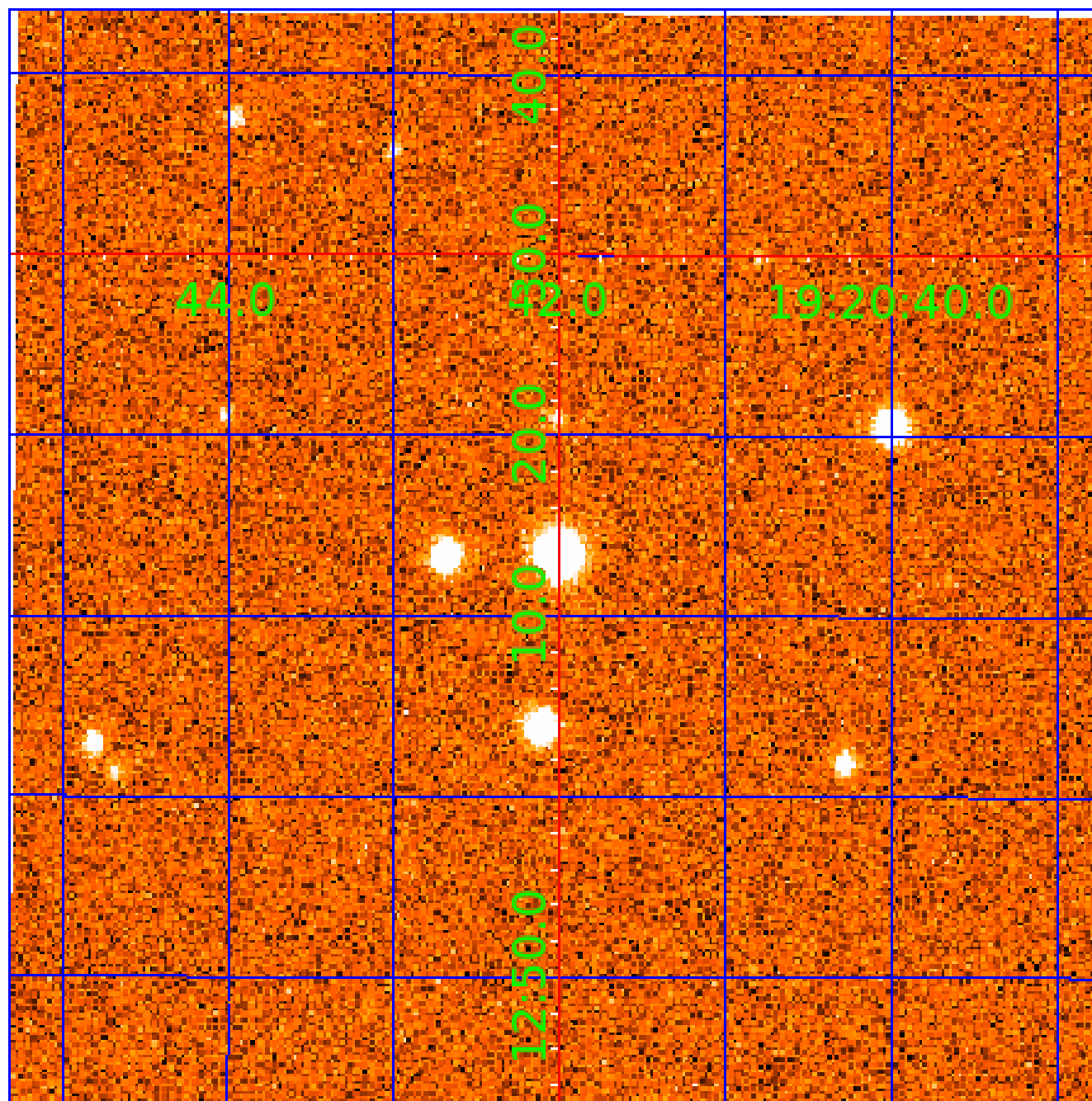


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 012885212

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})
012885212-01	OBS	2184.01	2.057474	133.321946	290.1	2.752	19.9	21.6	0.74	4620	1.54	273.49
012885212-02	OBS	2184.02	95.908446	226.906300	920.1	3.701	8.9	9.9	0.74	4620	2.24	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012885212-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
012885212-02	OBS	PC	0.64	0	0	0	0	NO_COMMENT

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.

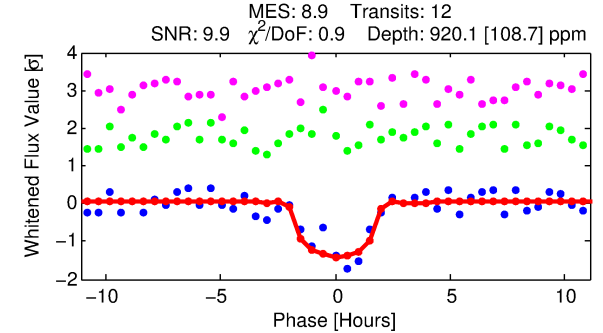
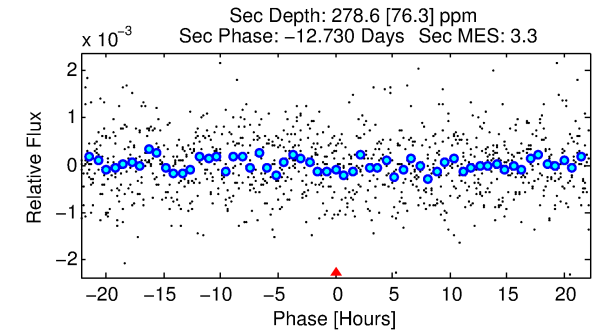
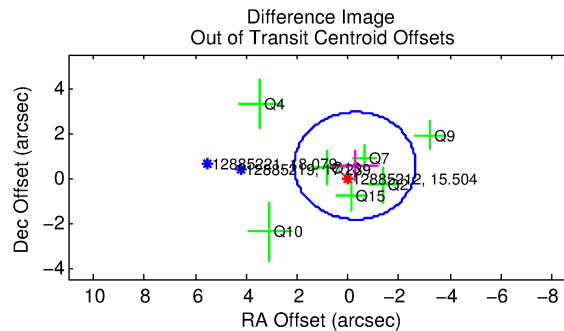
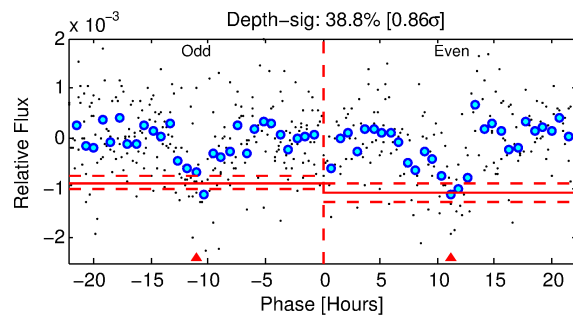
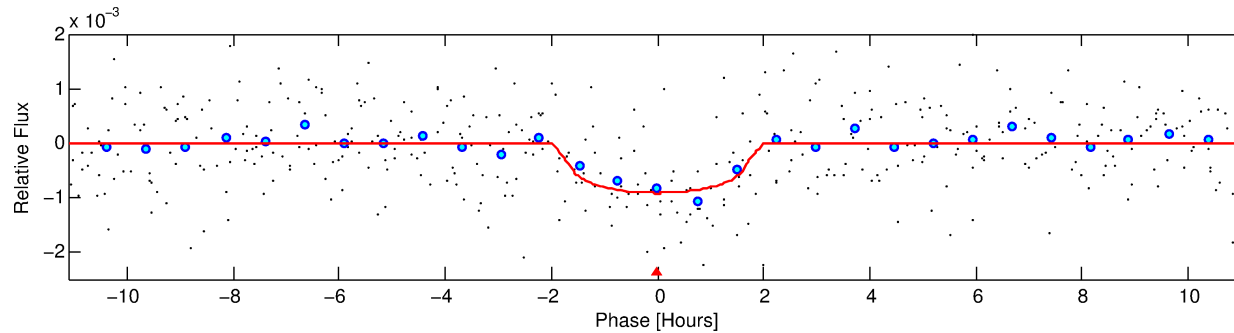
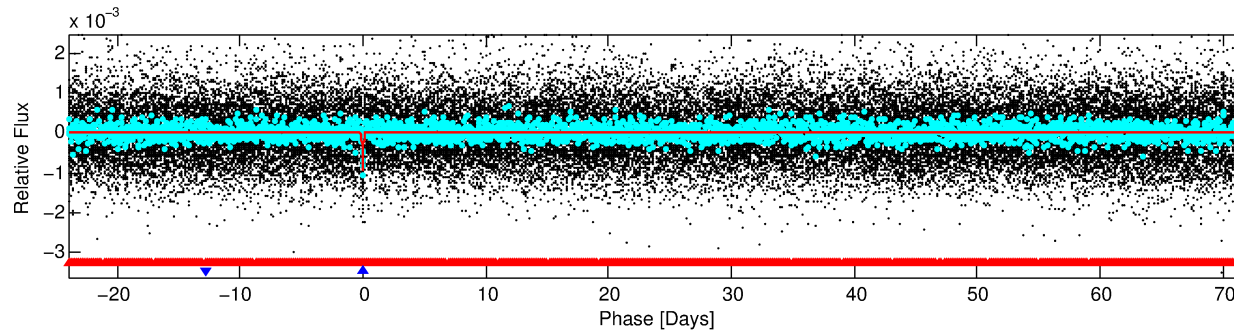
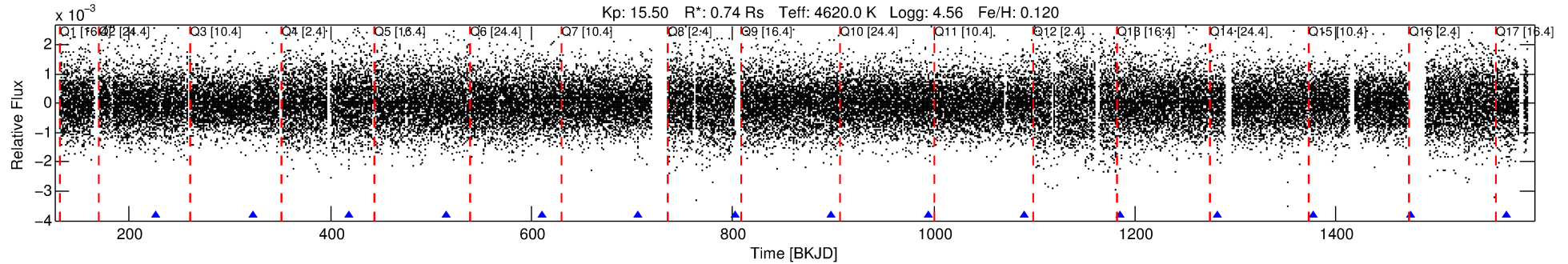
Ephemeris Match Information For 012885212-02

No Significant Match Found

DV One-Page Summary

KIC: 12885212 Candidate: 2 of 2 Period: 95.908 d

KOI: K02184.02 Corr: 0.952



DV Fit Results:

Period = 95.90845 [0.00117] d
Epoch = 226.9063 [0.0101] BKJD
Rp/R* = 0.0279 [0.0439]
a/R* = 176.77 [828.35]
b = 0.51 [7.01]
Seff = 1.63 [0.19]
Teq = 288 [8] K
Rp = 2.24 [3.53] Re
a = 0.3683 [0.0205] AU
Ag = 4132.84 [13059.28] [0.32 σ]
Teffp = 3572 [2821] K [1.16 σ]

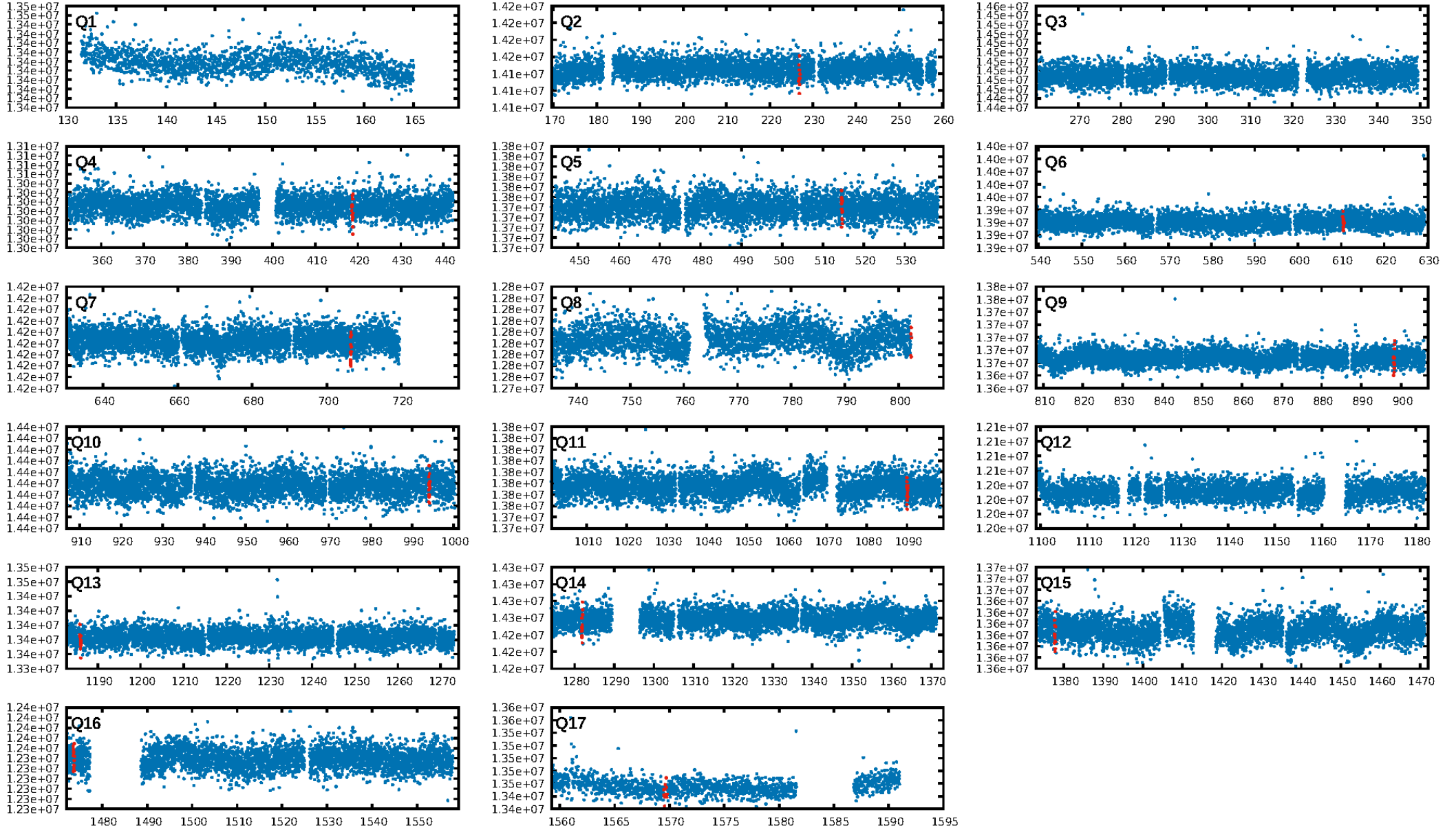
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [488.41 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 79.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.73e-16
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 3.598
Centroid-sig: 4.8%
Centroid-so: 2.151 arcsec [1.72 σ]
OotOffset-rm: 0.607 arcsec [0.76 σ]
KicOffset-rm: 0.826 arcsec [1.32 σ]
OotOffset-st: 2/2/1/2 [7]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.67 [8/12]

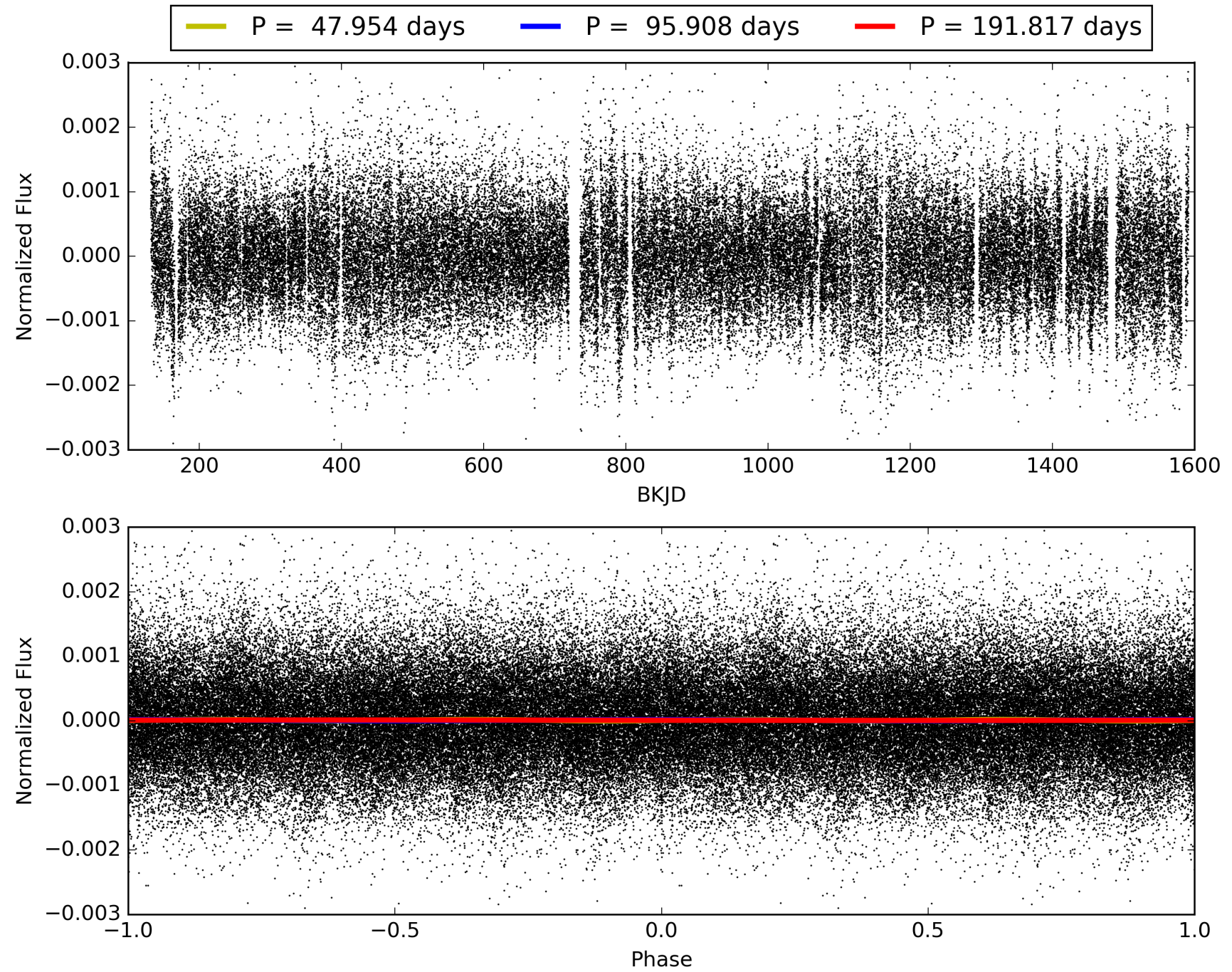
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:50:58 Z

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

TCE 012885212-02, PDC Light Curves

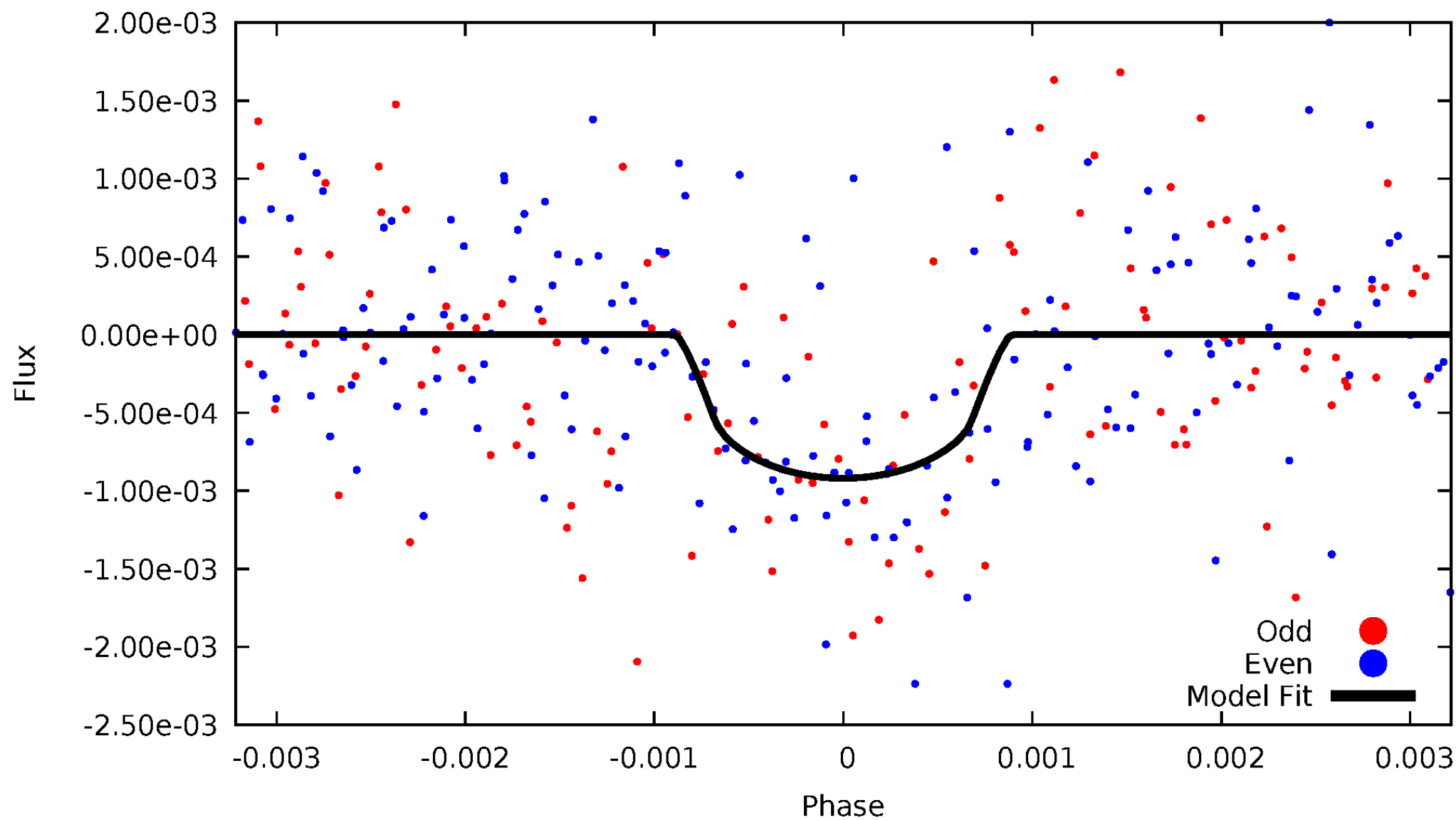


TCE 012885212-02



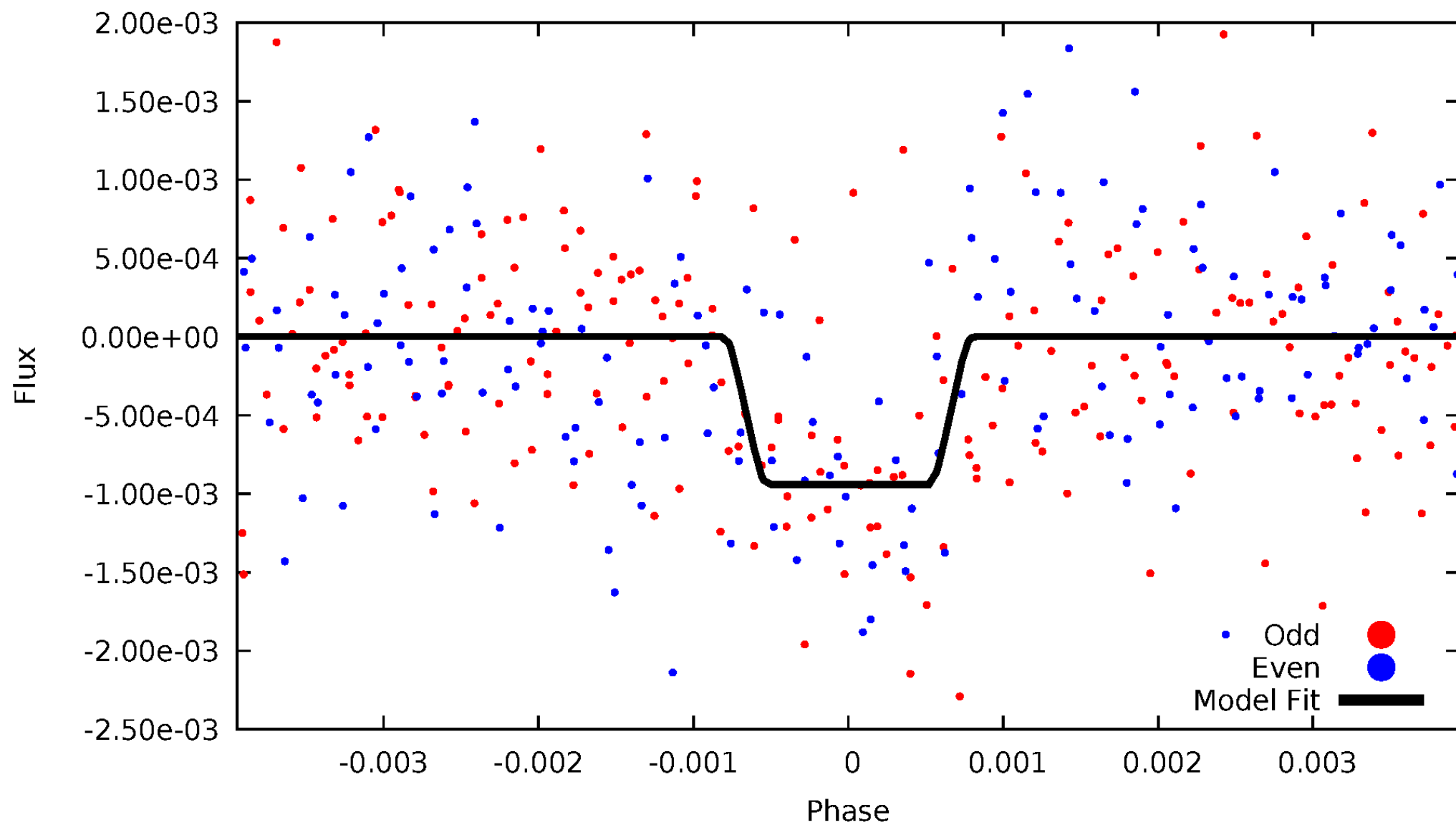
DV Odd/Even

TCE 012885212-02



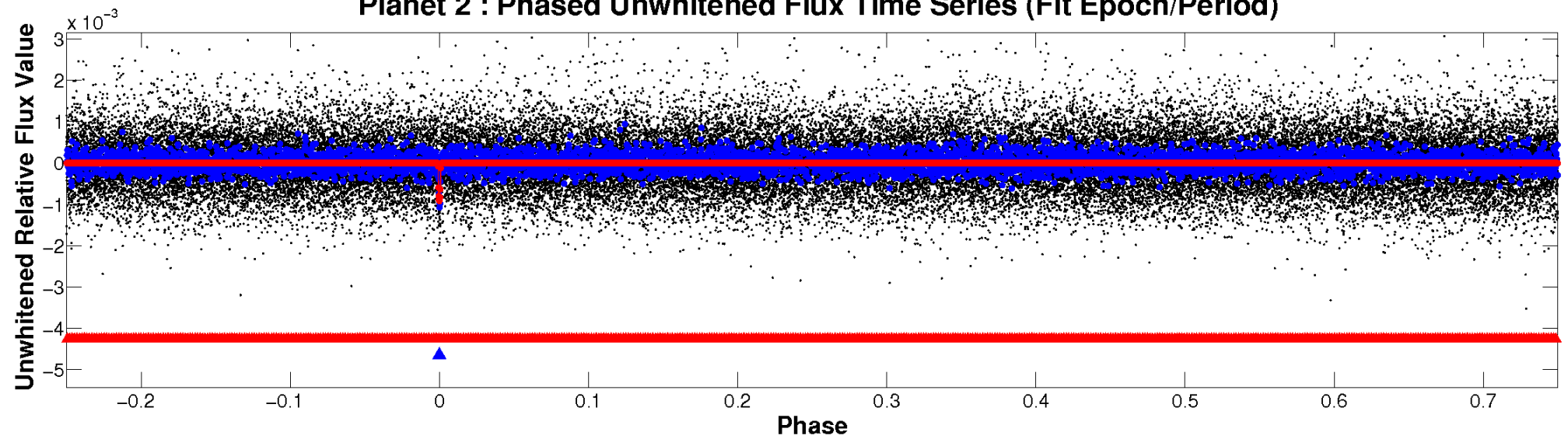
ALT Odd/Even

TCE 012885212-02

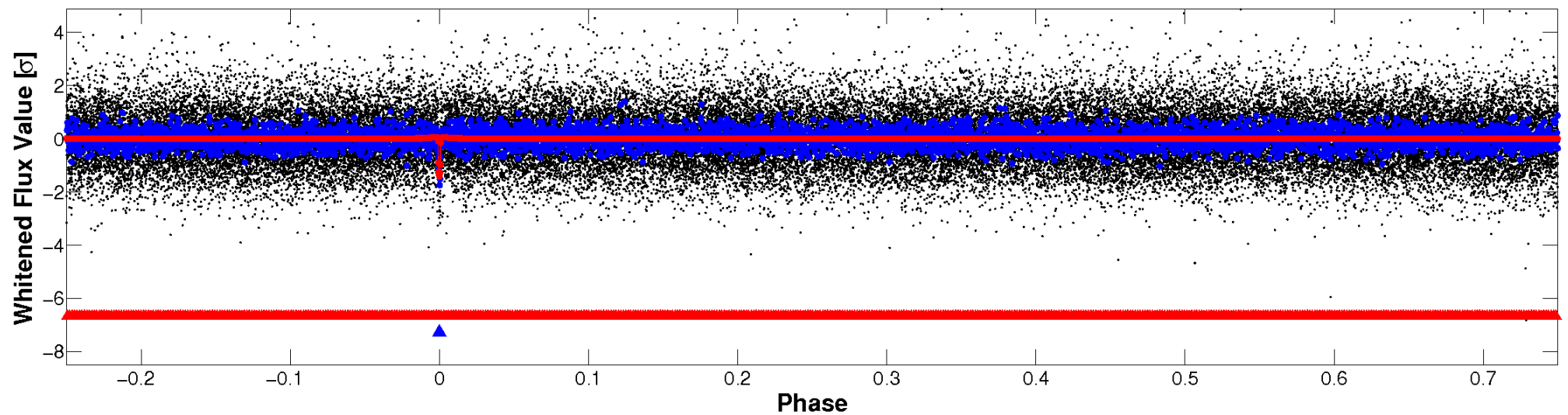


Non-Whitened Vs. Whitened Light Curve

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

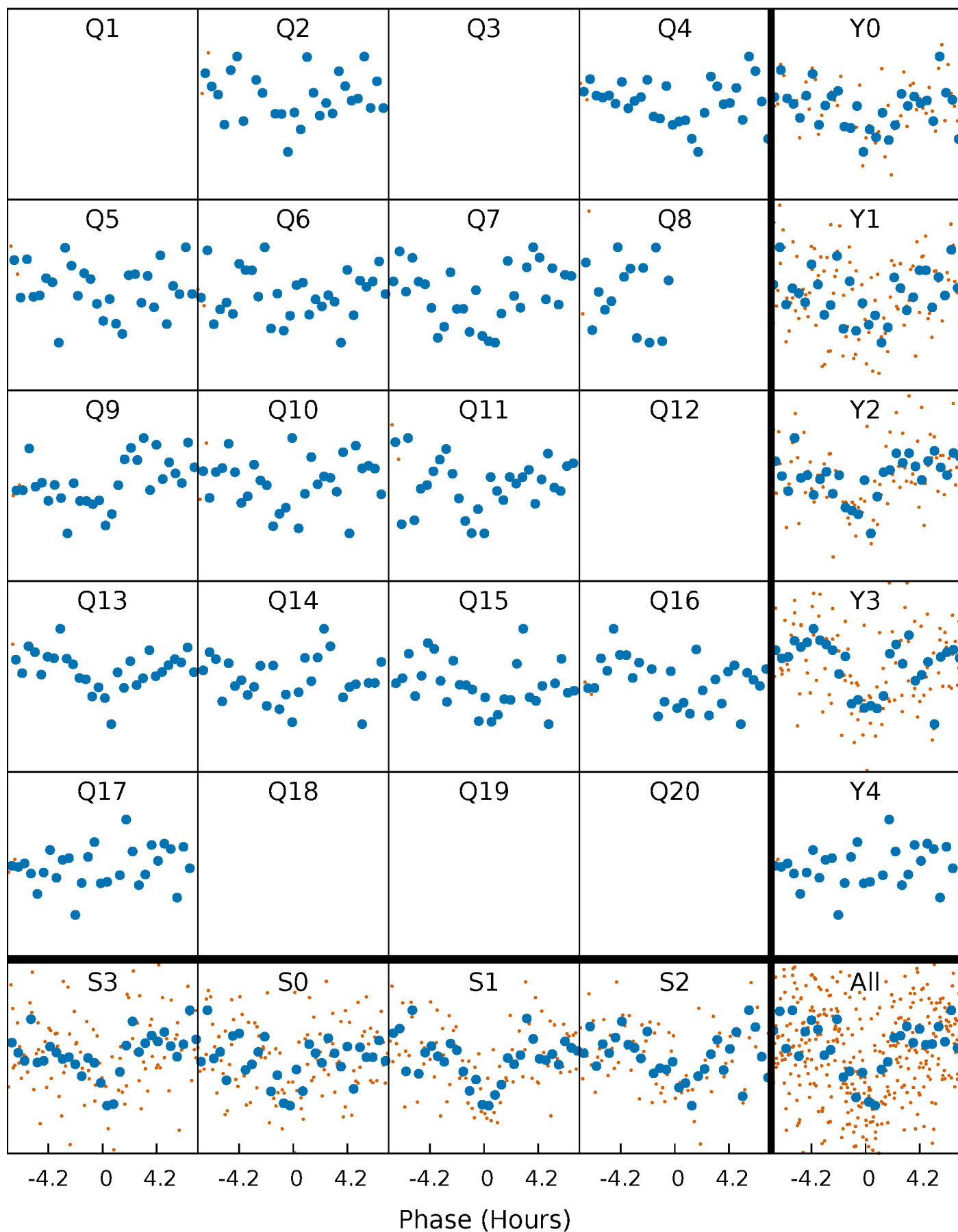


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



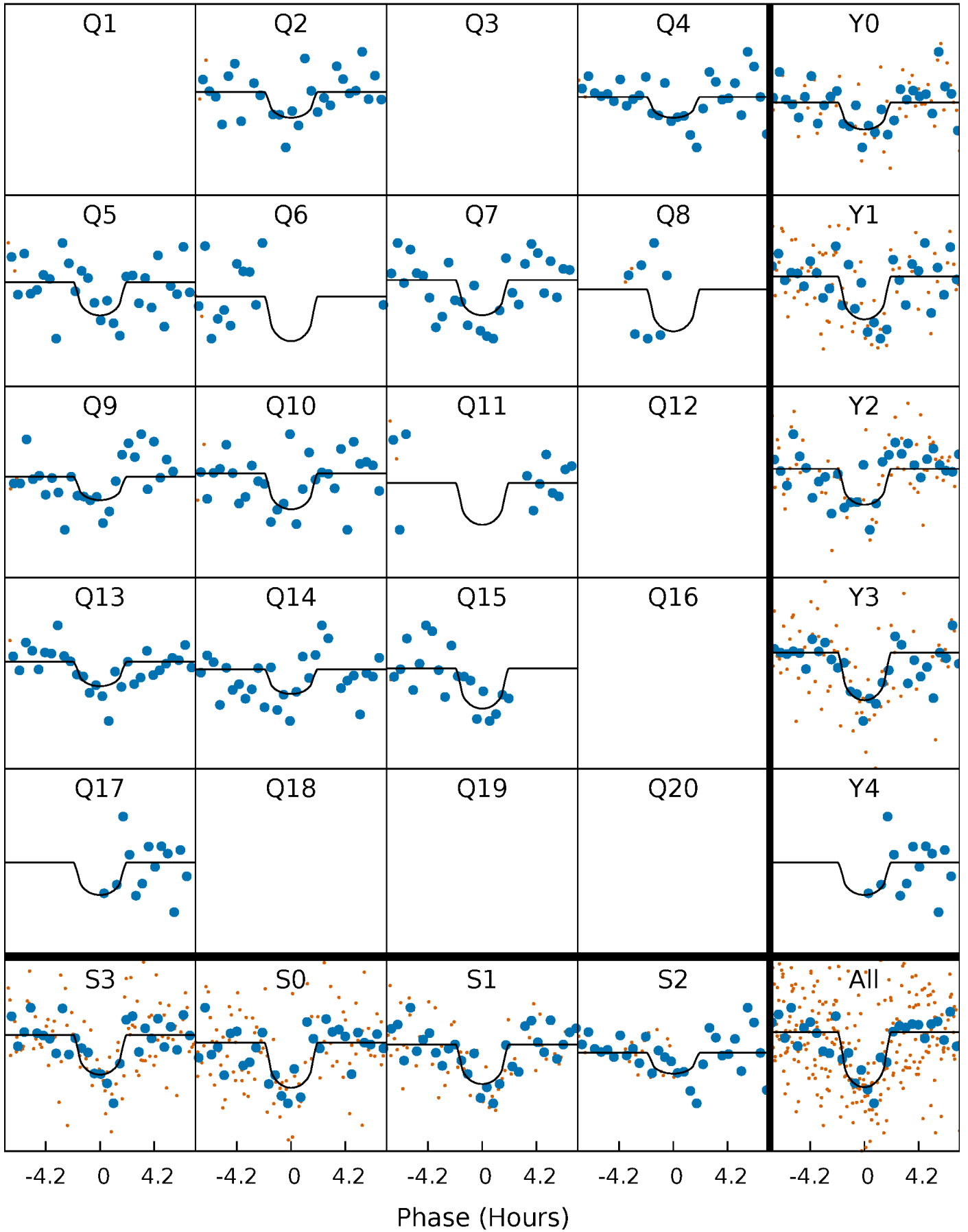
PDC Quarter-Phased Transit Curves

TCE 012885212-02 P= 95.908446 Days $T_0=226.906300$ (BKJD)



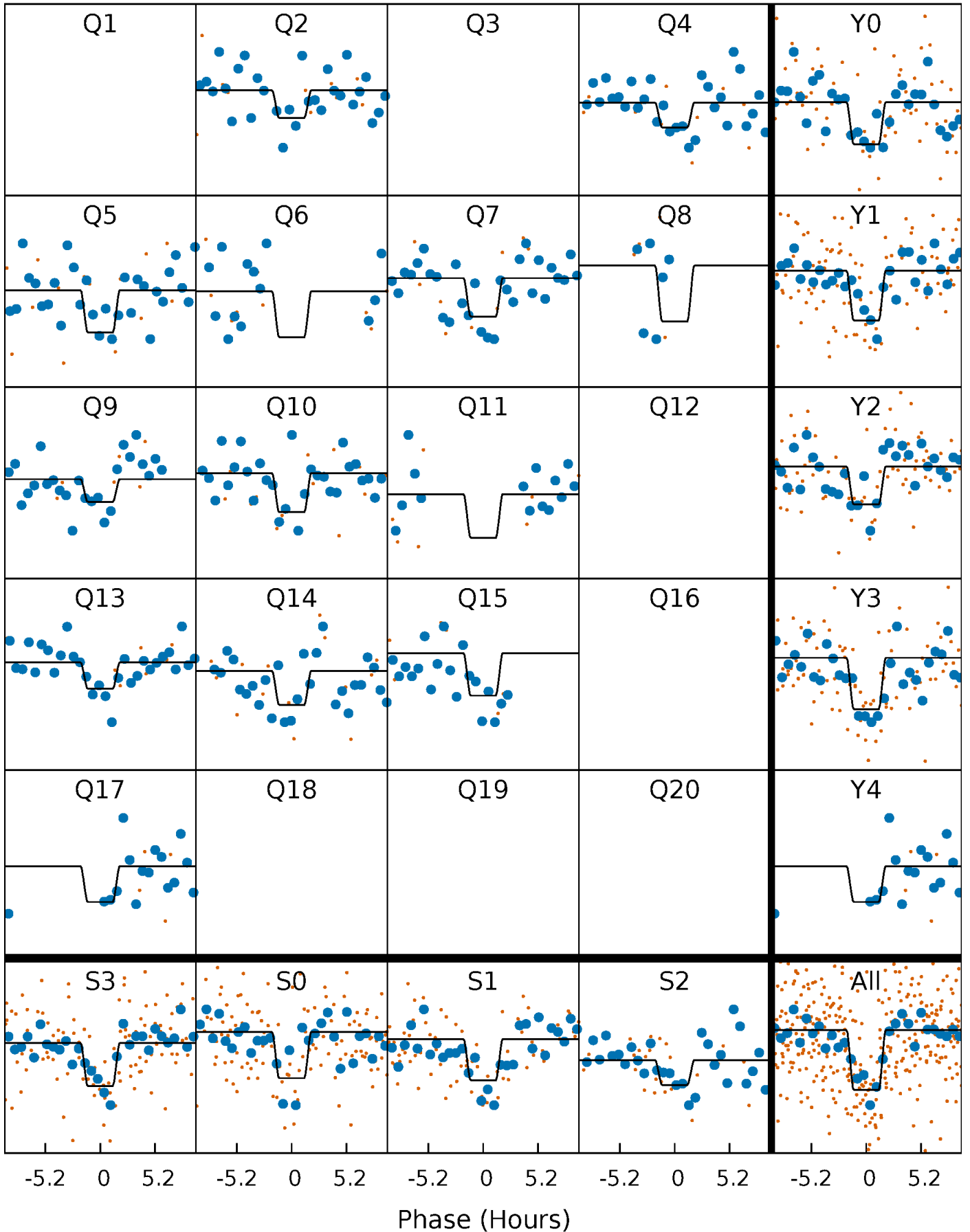
DV Quarter-Phased Transit Curves

TCE 012885212-02 P= 95.908446 Days $T_0=226.906300$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

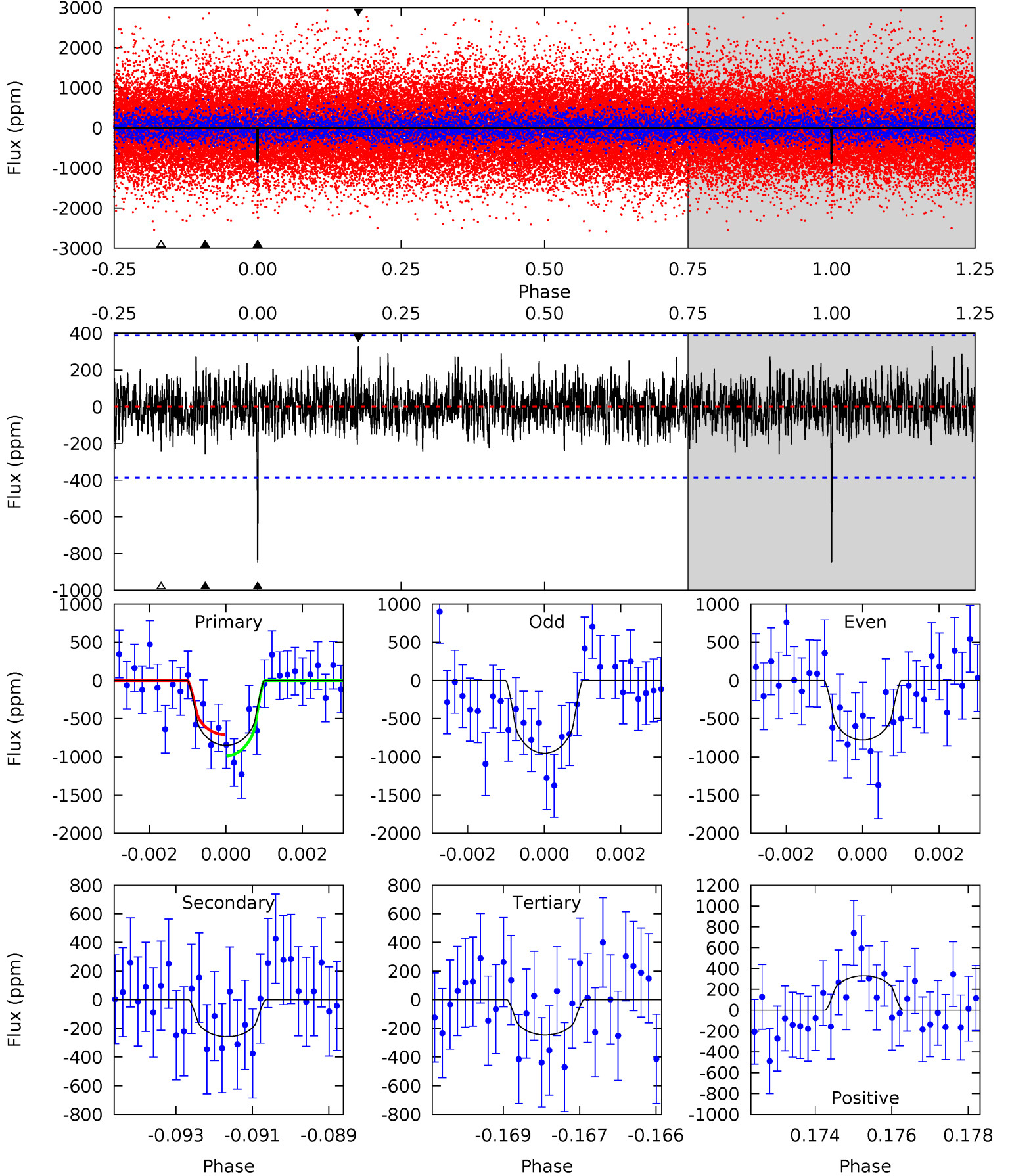
TCE 012885212-02 P= 95.906402 Days $T_0=226.924677$ (BKJD)



DV Model-Shift Uniqueness Test

012885212-02, P = 95.908446 Days, E = 130.997854 Days

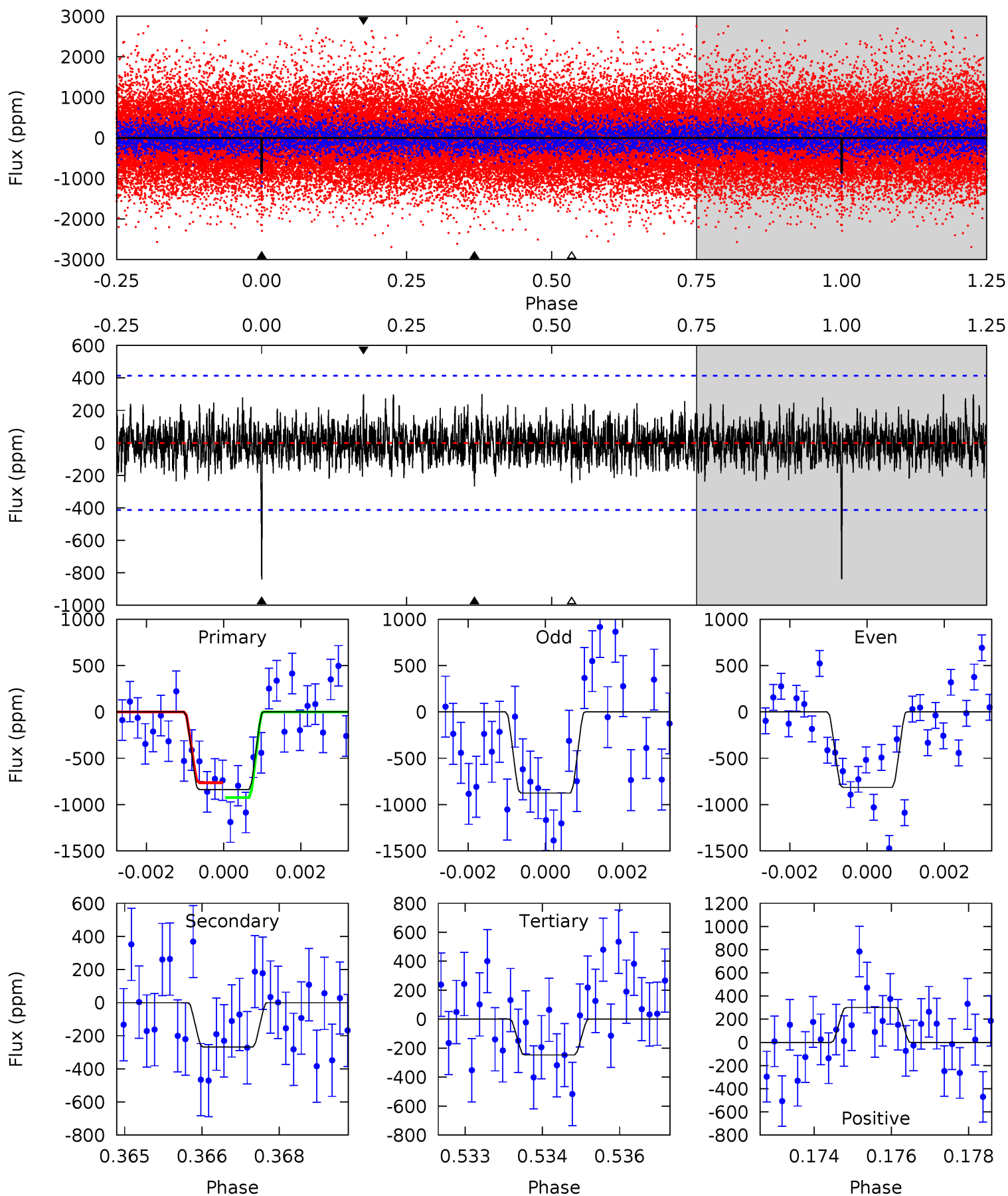
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	3.56	3.39	4.56	5.35	3.12	1.18	8.34	7.16	0.17	-1.00	1.18	0.99	0.28	1.91



Alt Model-Shift Uniqueness Test

012885212-02, P = 95.906402 Days, E = 131.018275 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	3.48	3.21	3.91	5.37	3.16	1.08	7.69	6.99	0.26	-0.43	0.40	0.90	0.26	1.04



Stellar Parameters For KIC 012885212

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4620^{+73}_{-82}	$4.564^{+0.052}_{-0.014}$	$0.120^{+0.150}_{-0.150}$	$0.736^{+0.021}_{-0.043}$	$0.723^{+0.043}_{-0.027}$	$2.559^{+0.495}_{-0.157}$
	+2%/-2%	+1%/-0%	+125%/-125%	+3%/-6%	+6%/-4%	+19%/-6%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 012885212-02 / KOI 2184.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-258 ± 72	$3.39^{+3.04}_{-2.28}$	400^{+7}_{-9}	3290^{+1537}_{-567}	1666^{+13888}_{-1228}
Alt.	-268 ± 77	$3.64^{+3.12}_{-2.43}$	400^{+8}_{-9}	3240^{+1502}_{-546}	1474^{+12247}_{-1068}

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

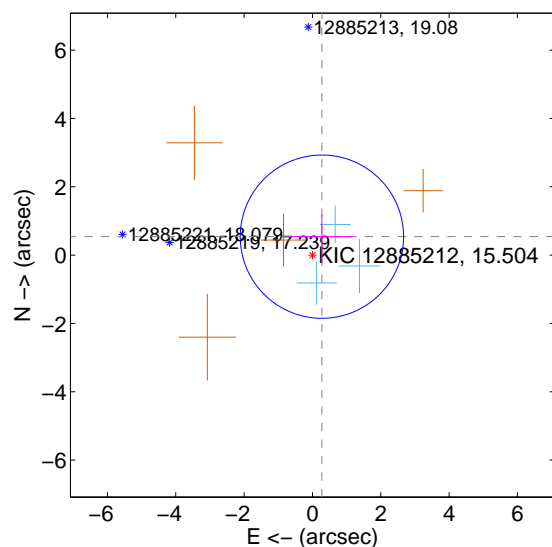
Supplemental centroid analysis for 012885212-02. Kepler magnitude: 15.50. Transit SNR 9.93

There are 3 quarters with good PRF difference image offsets

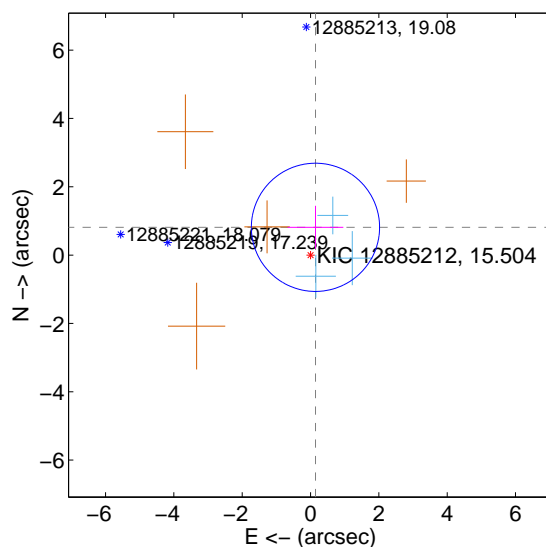
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.607 ± 0.797	0.76	-0.277 ± 0.922	0.540 ± 0.655
PRF-fit source offset from KIC position	0.826 ± 0.625	1.32	-0.145 ± 0.815	0.813 ± 0.630
photometric centroid source offset	2.15 ± 1.25	1.72	-2.15 ± 1.25	0.16 ± 1.30

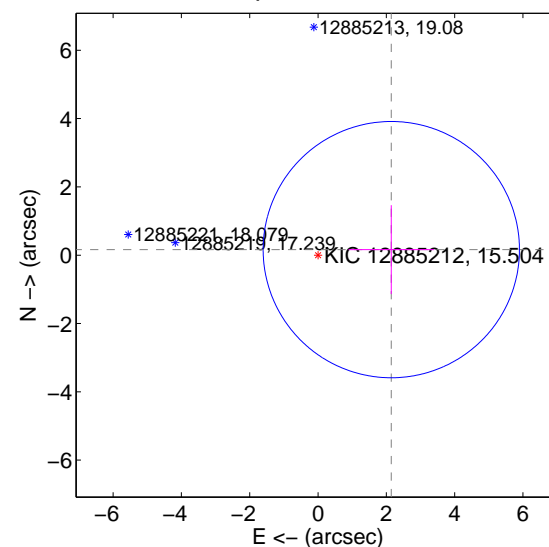
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

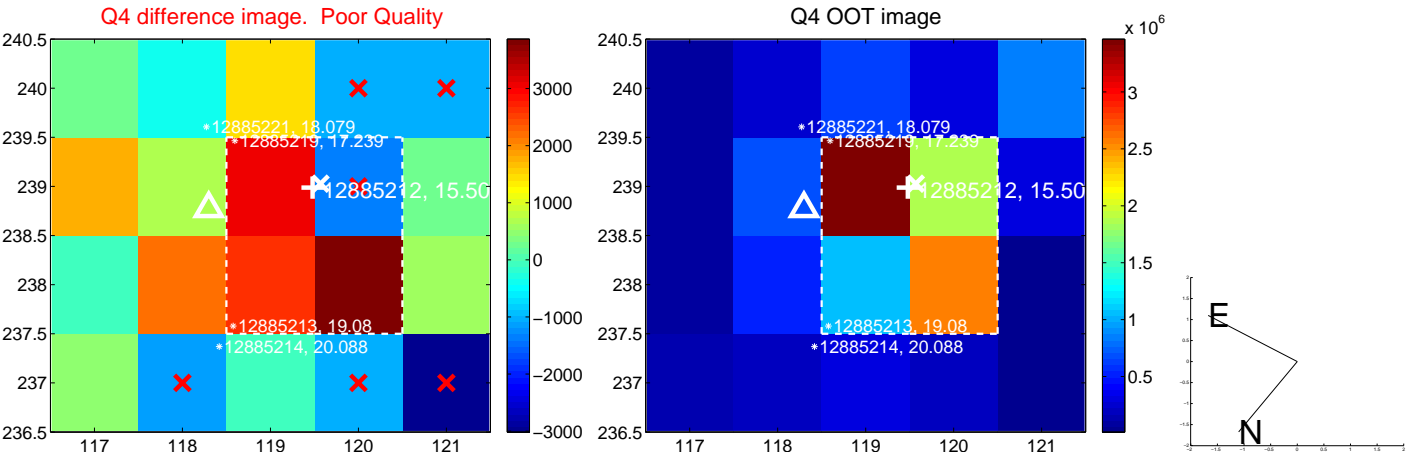
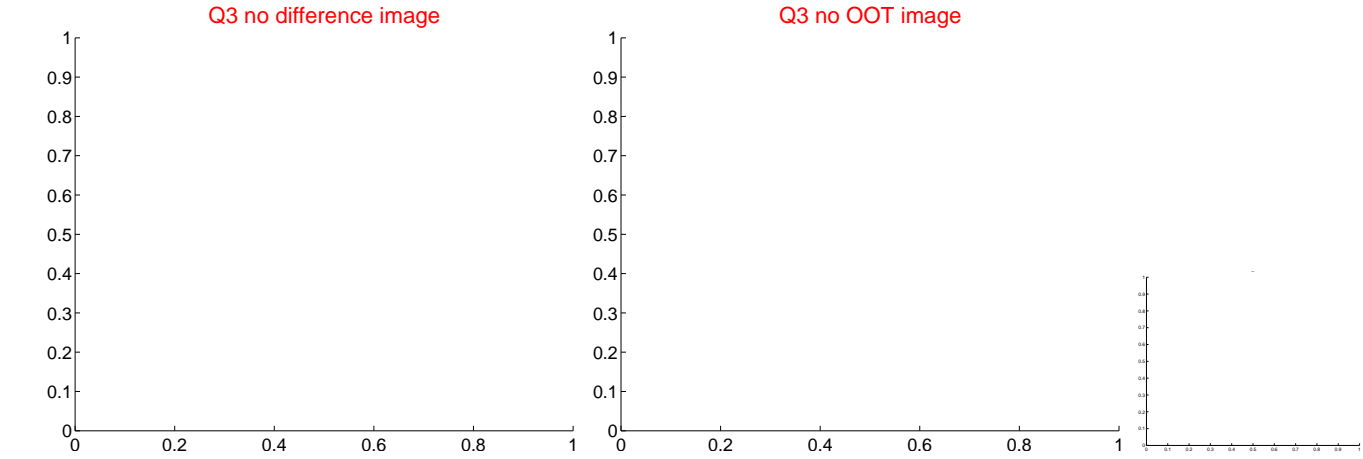
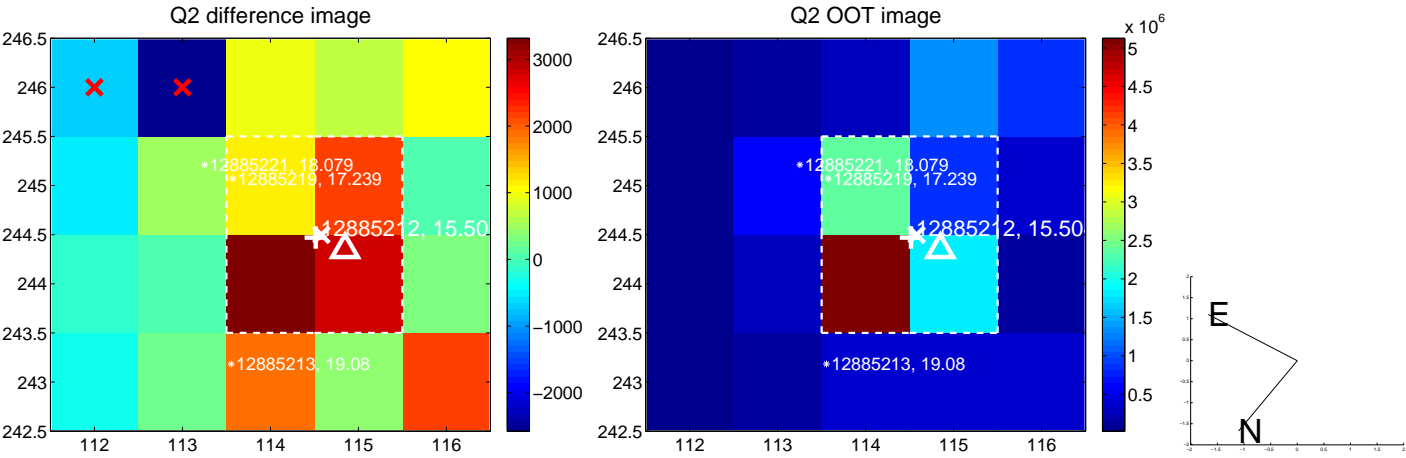
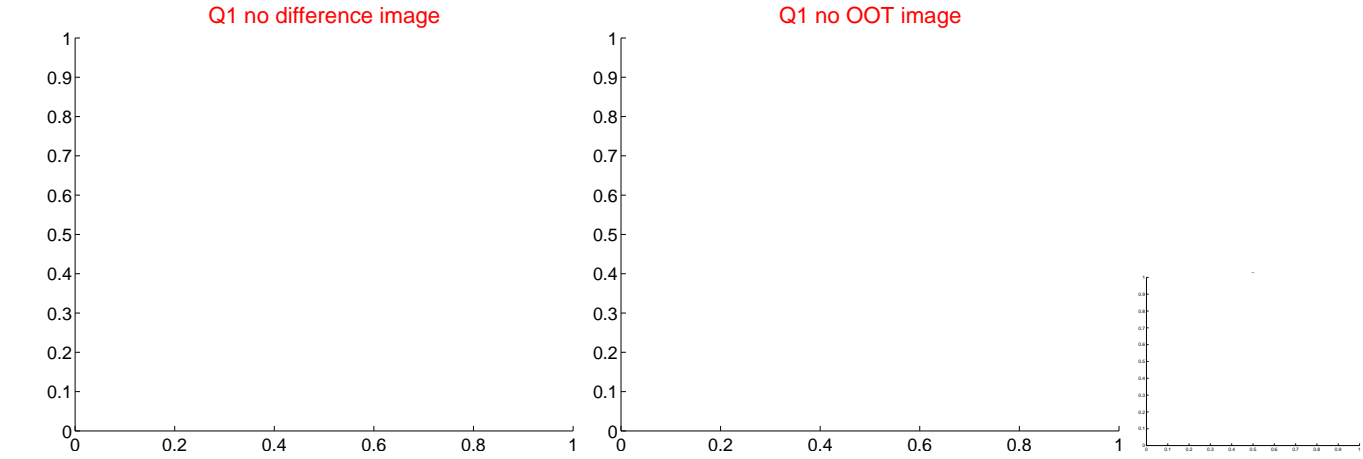


offset from photometric centroids

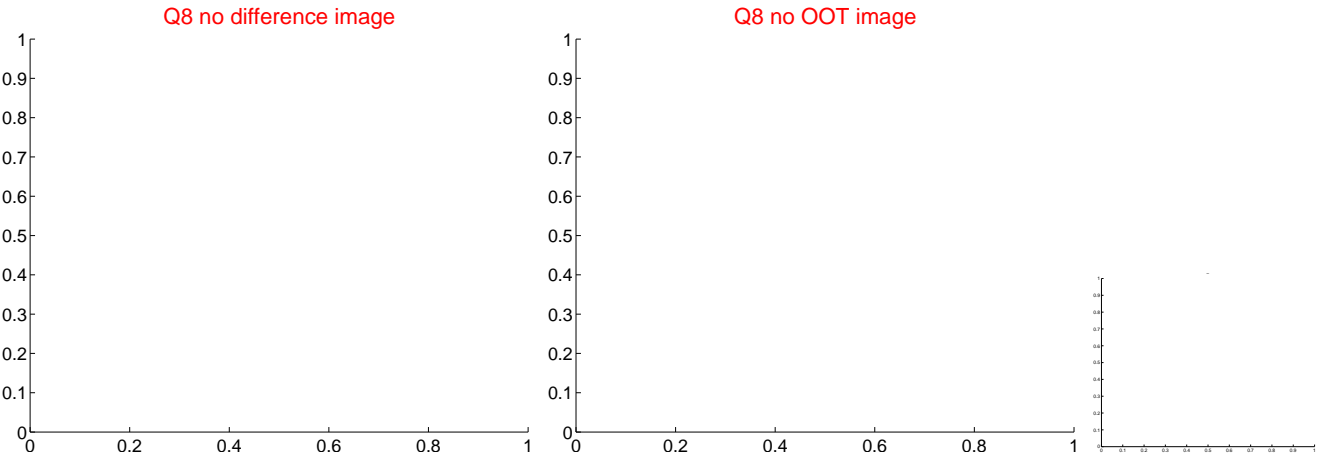
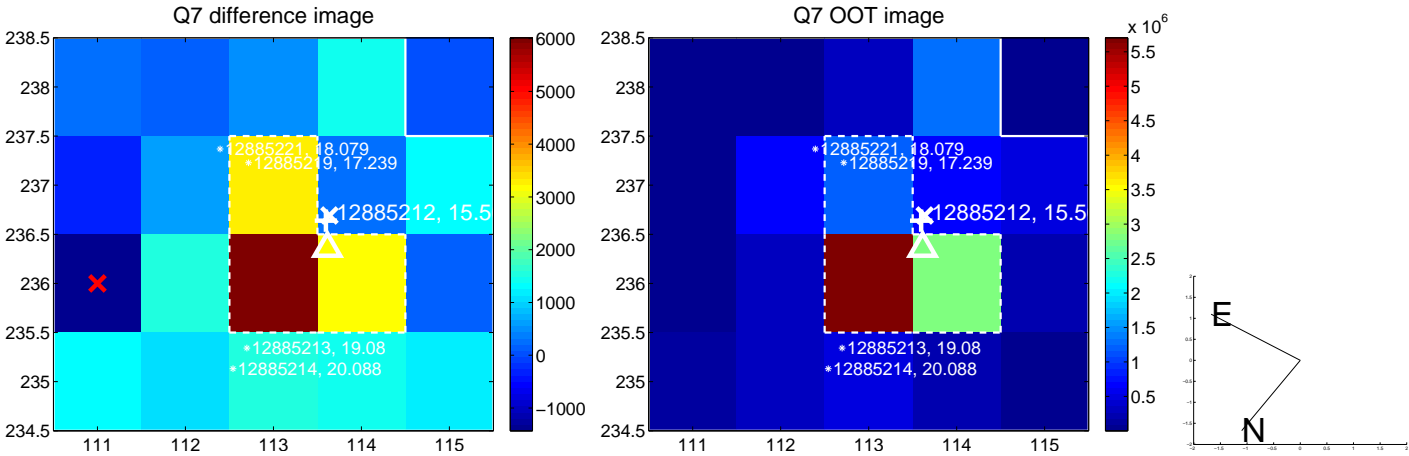
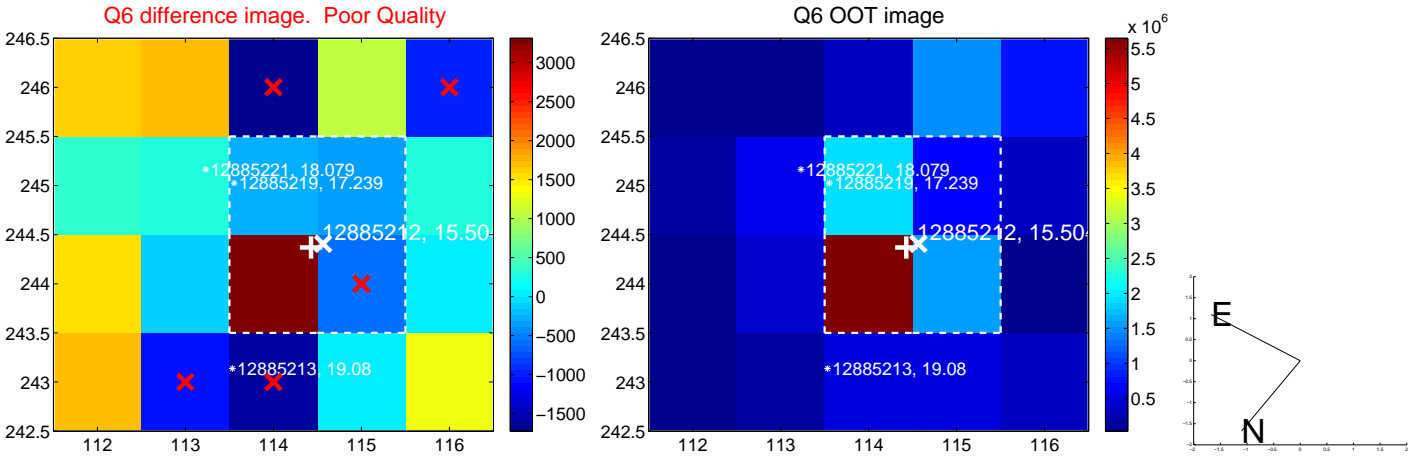
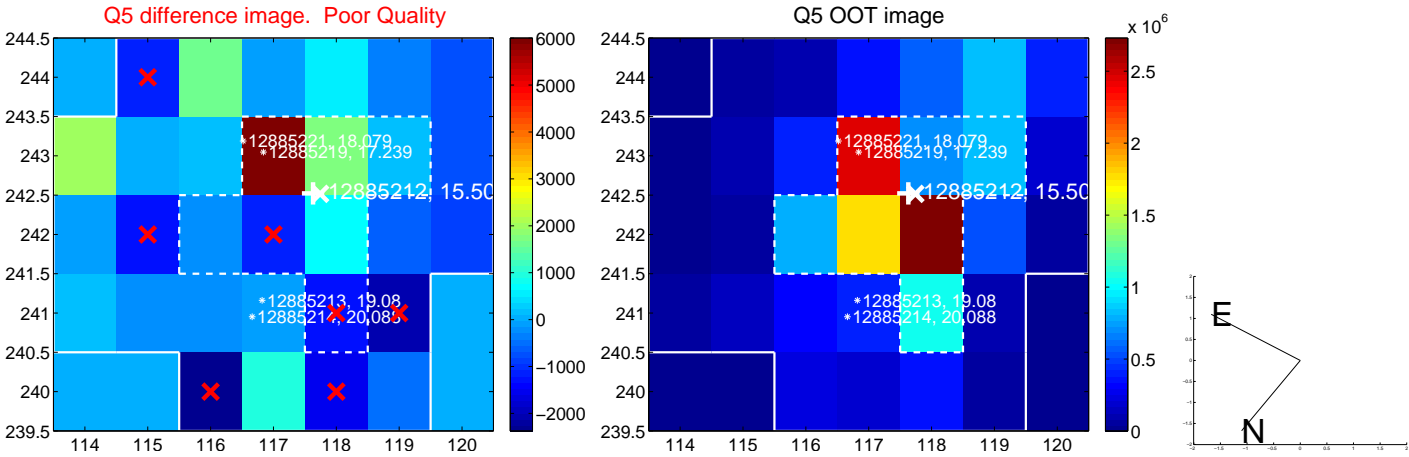


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

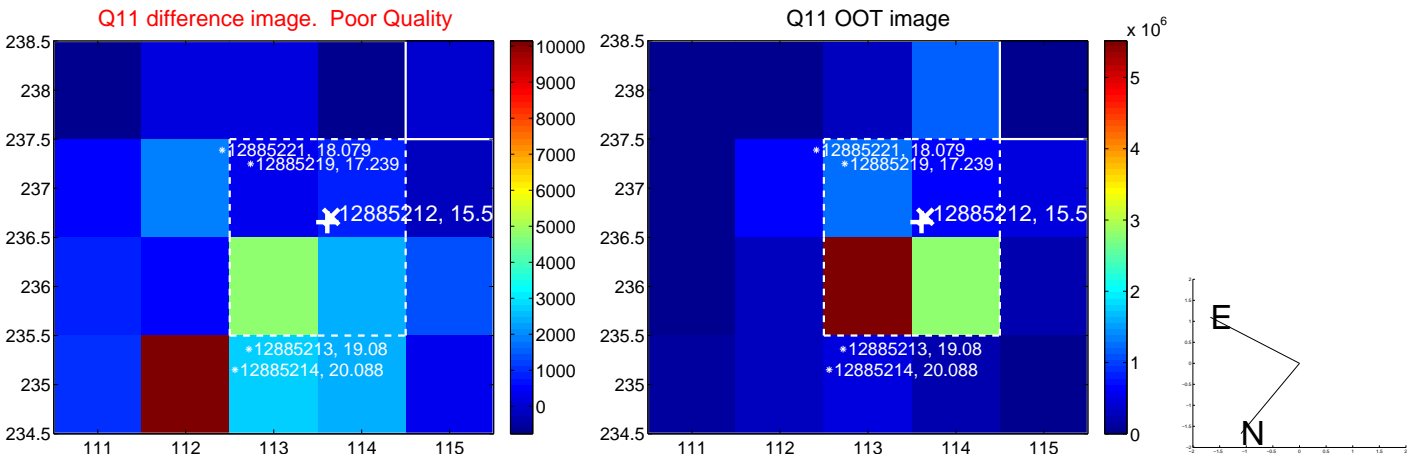
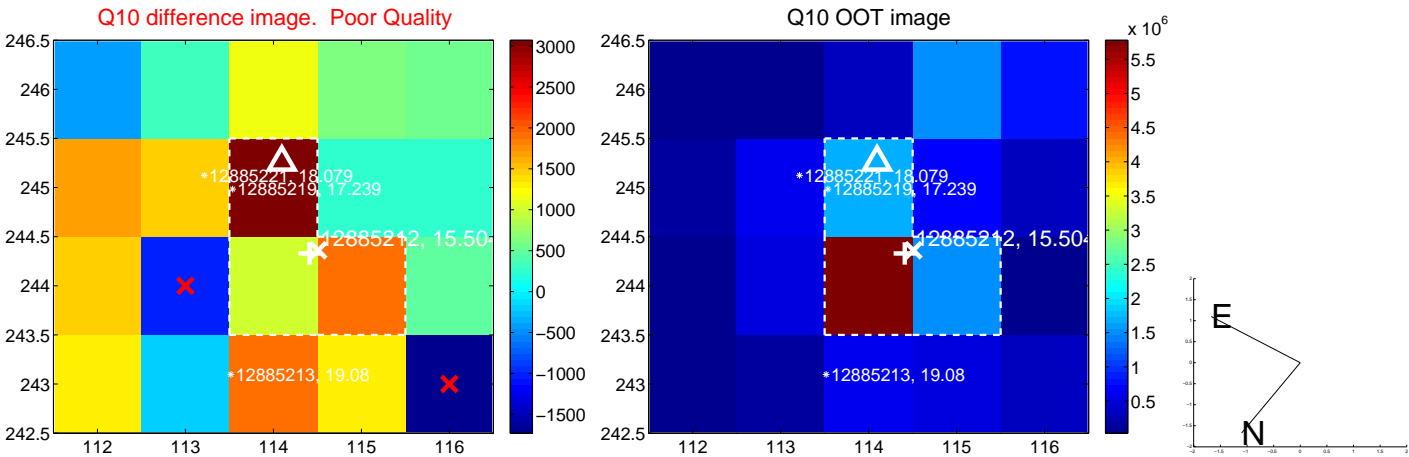
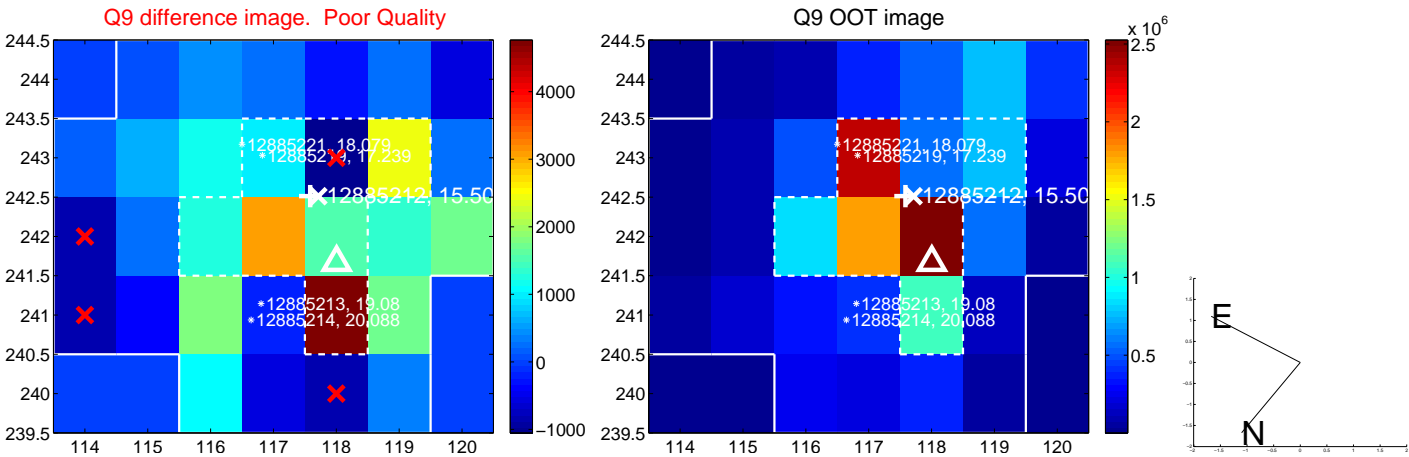
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



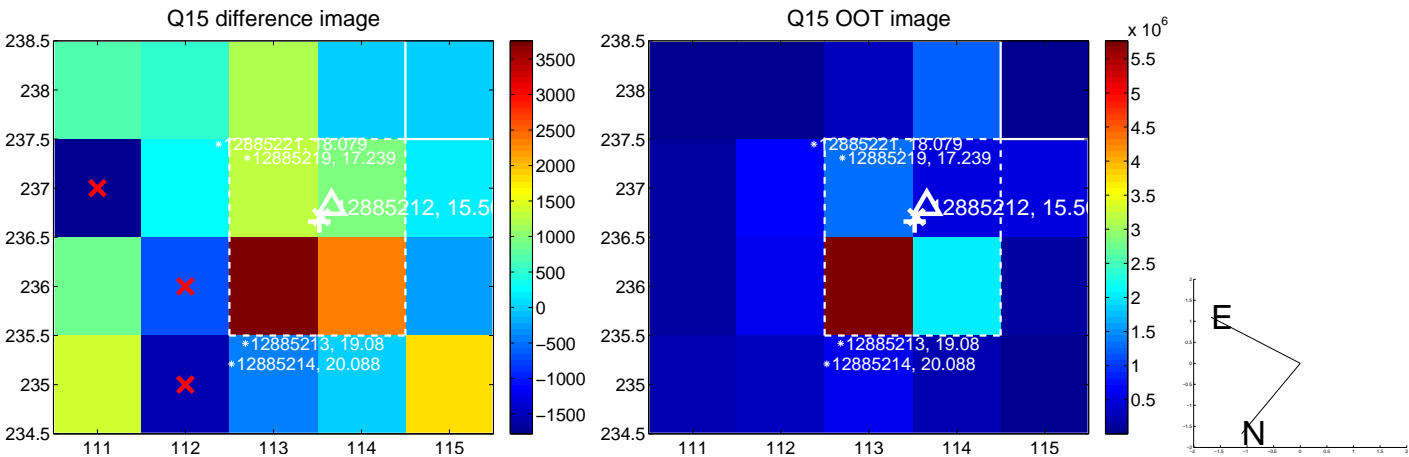
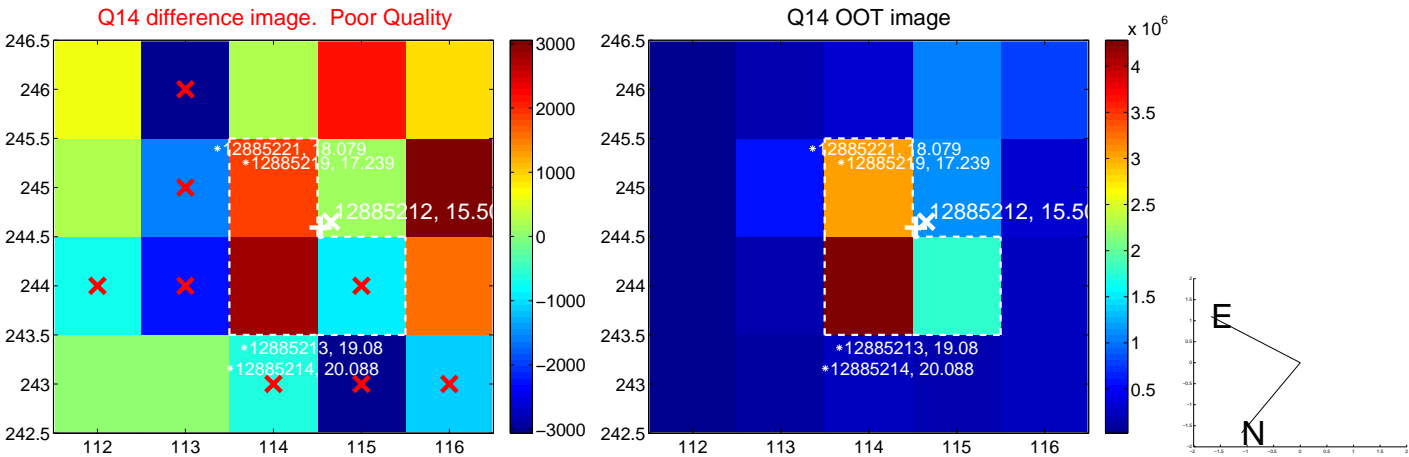
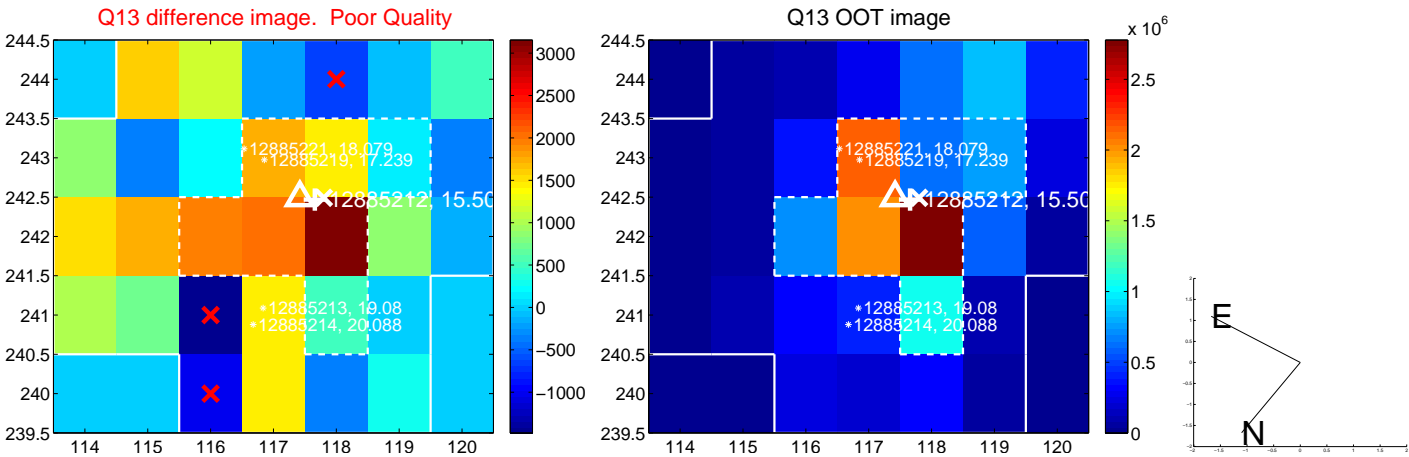
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



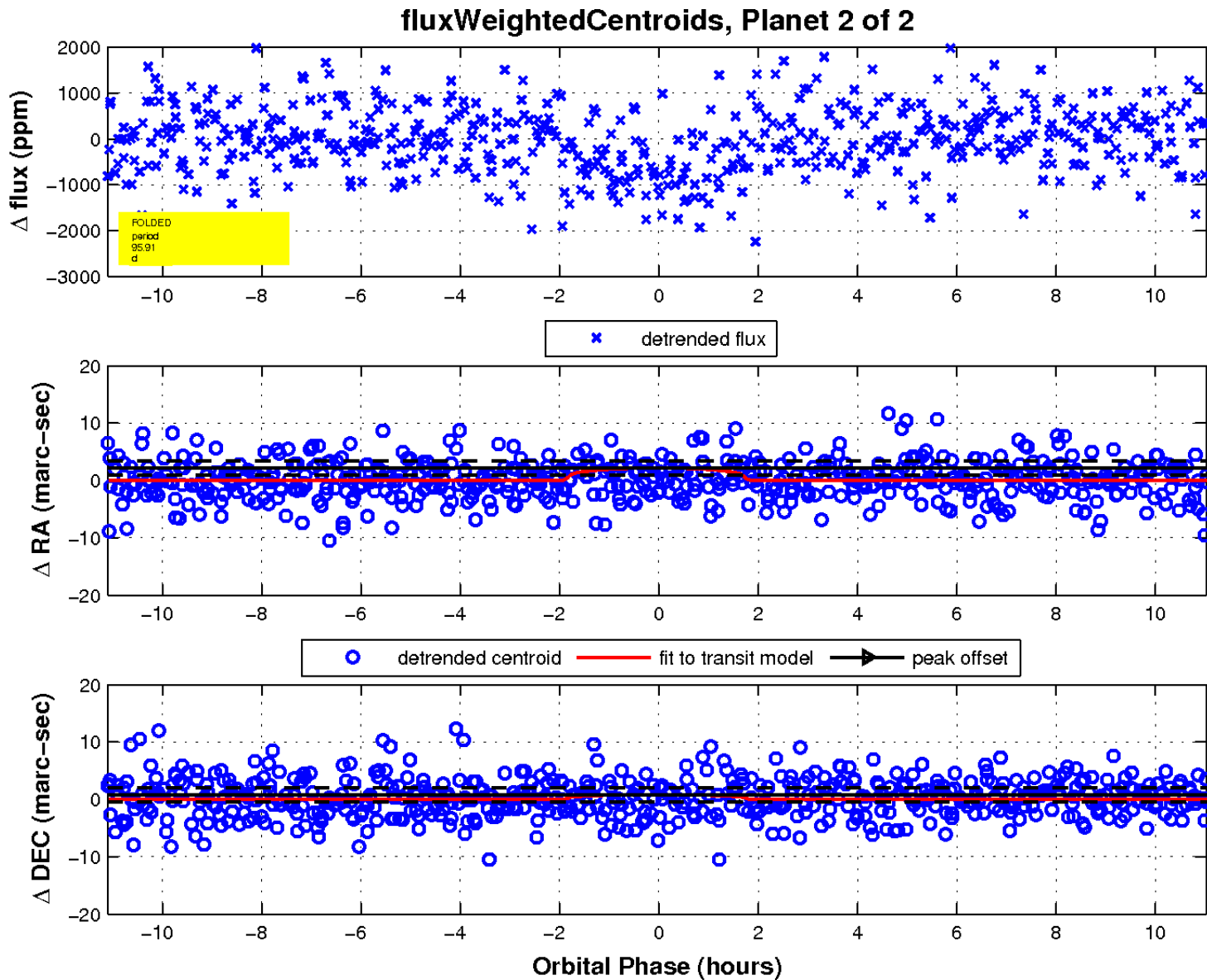
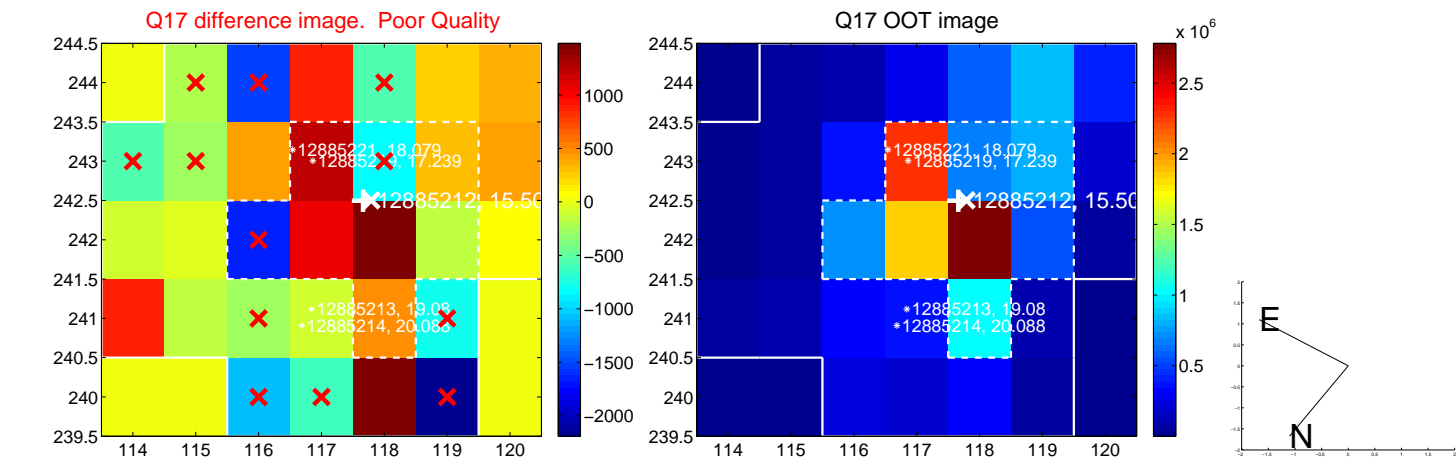
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

