

KIC 009285265

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})
009285265-01	OBS	3410.01	16.586104	133.277794	235.0	7.270	12.6	13.8	1.39	5626	2.46	107.44
009285265-02	OBS	3410.02	61.568584	182.032549	338.4	10.423	10.9	11.2	1.39	5626	3.13	18.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009285265-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
009285265-02	OBS	PC	0.98	0	0	0	0	CENT_FEW_MEAS

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

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

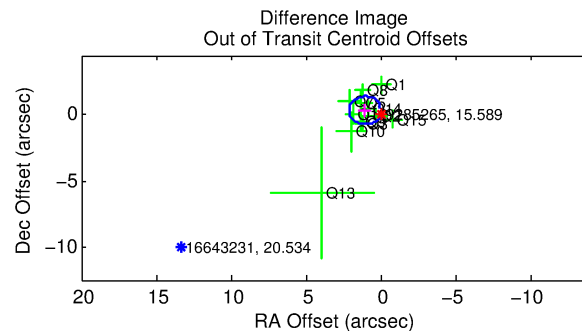
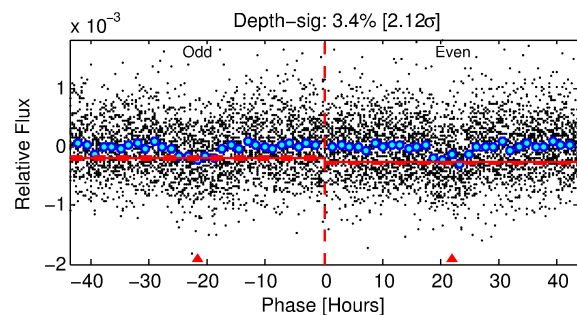
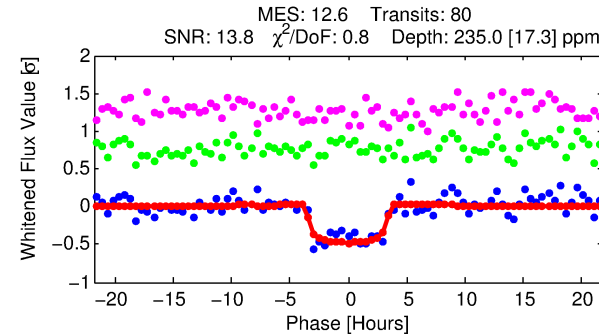
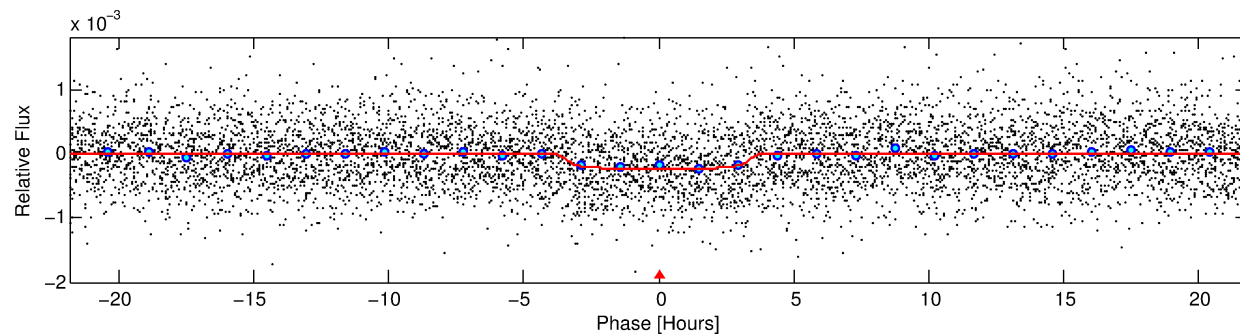
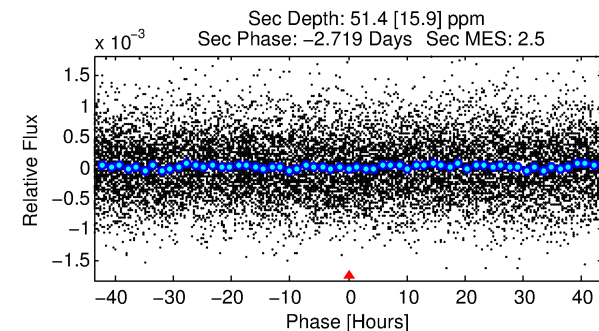
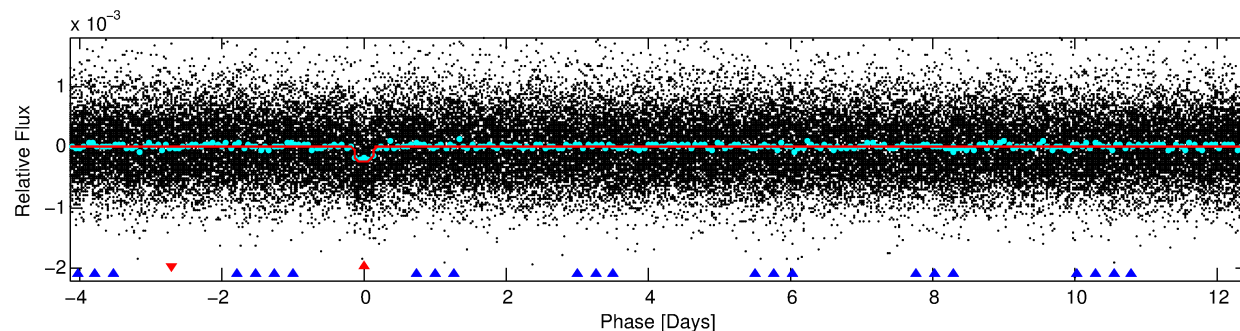
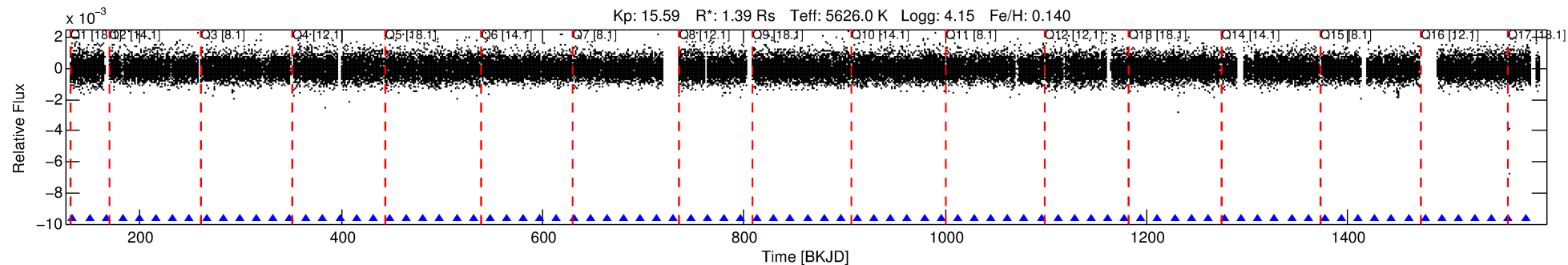
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009285265-01

No Significant Match Found

DV One-Page Summary

KIC: 9285265 Candidate: 1 of 2 Period: 16.586 d
KOI: K03410.01 Corr: 0.974



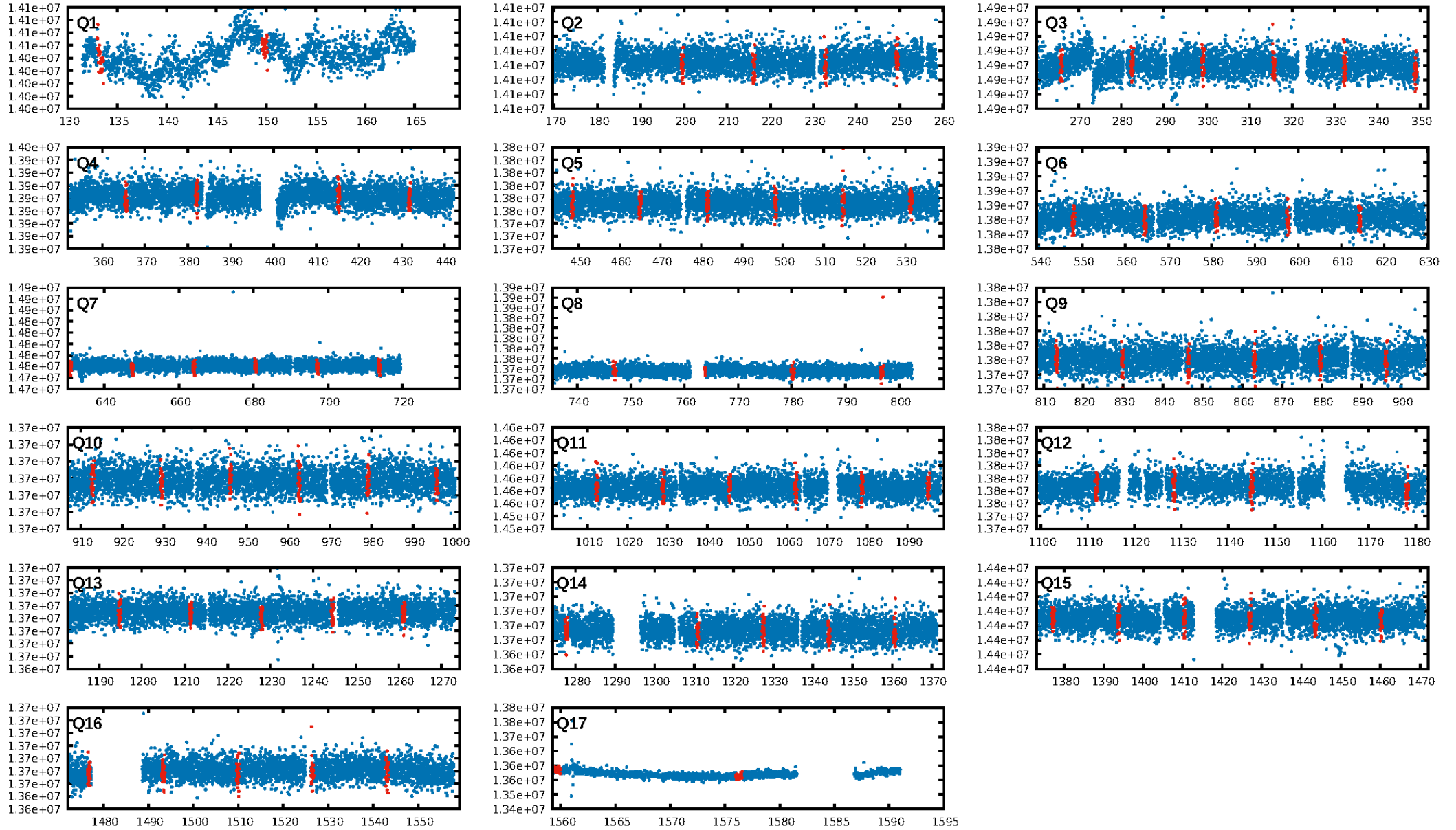
DV Fit Results:

Period = 16.58610 [0.00021] d
Epoch = 133.2778 [0.0103] BKJD
Rp/R* = 0.0162 [0.0042]
a/R* = 9.40 [10.56]
b = 0.86 [0.34]
Seff = 107.44 [35.10]
Teq = 821 [67] K
Rp = 2.46 [0.83] Re
a = 0.1270 [0.0258] AU
Ag = 75.07 [51.31] [1.44σ]
Teffp = 3736 [565] K [5.12σ]

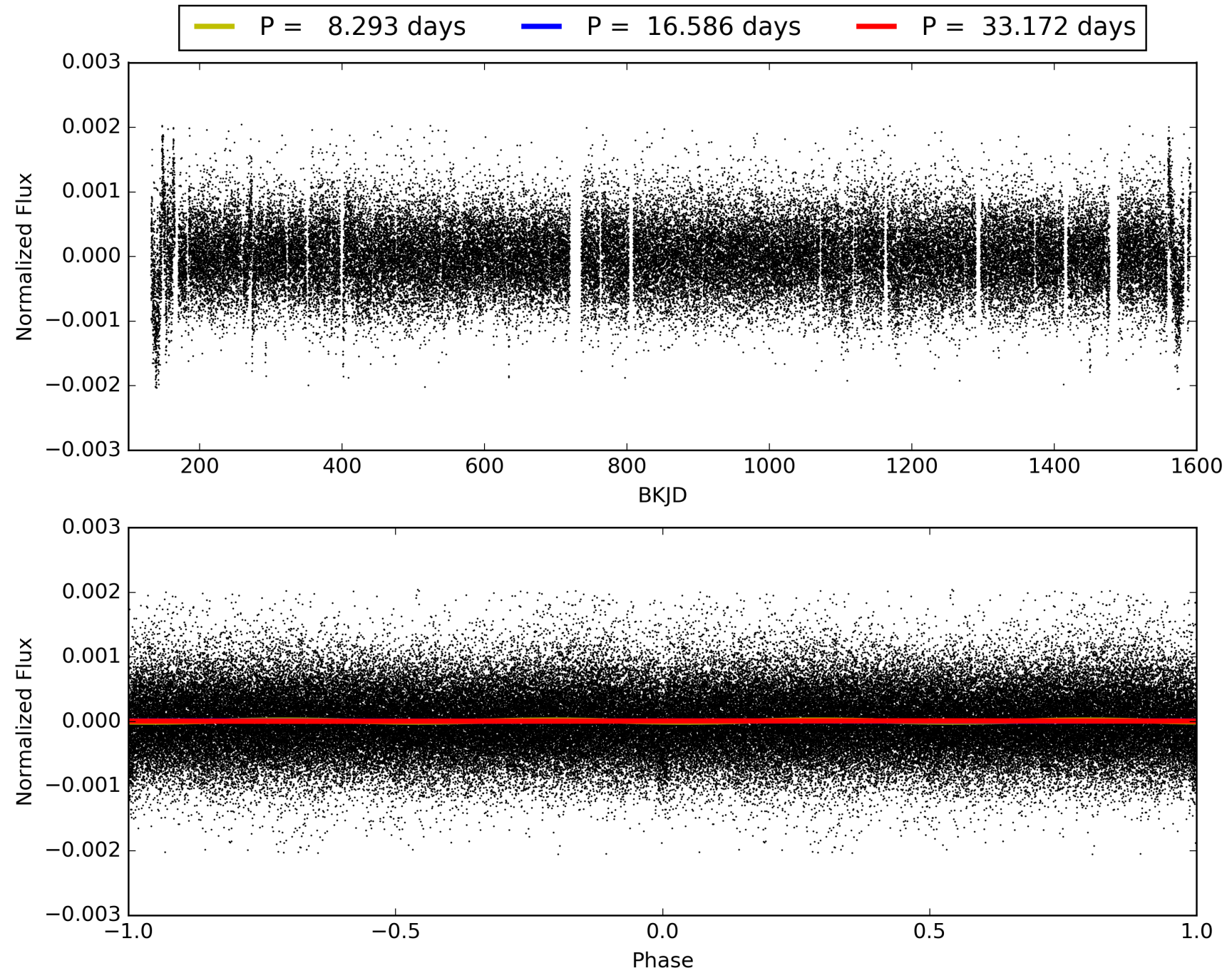
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [84.95σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.05e-37
RollingBand-fgt: 1.00 [76/76]
GhostDiagnostic-chr: 2.125
Centroid-sig: 16.7%
Centroid-so: 0.886 arcsec [1.01σ]
OotOffset-rm: 1.108 arcsec [3.12σ]
KicOffset-rm: 1.094 arcsec [3.12σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009285265-01, PDC Light Curves

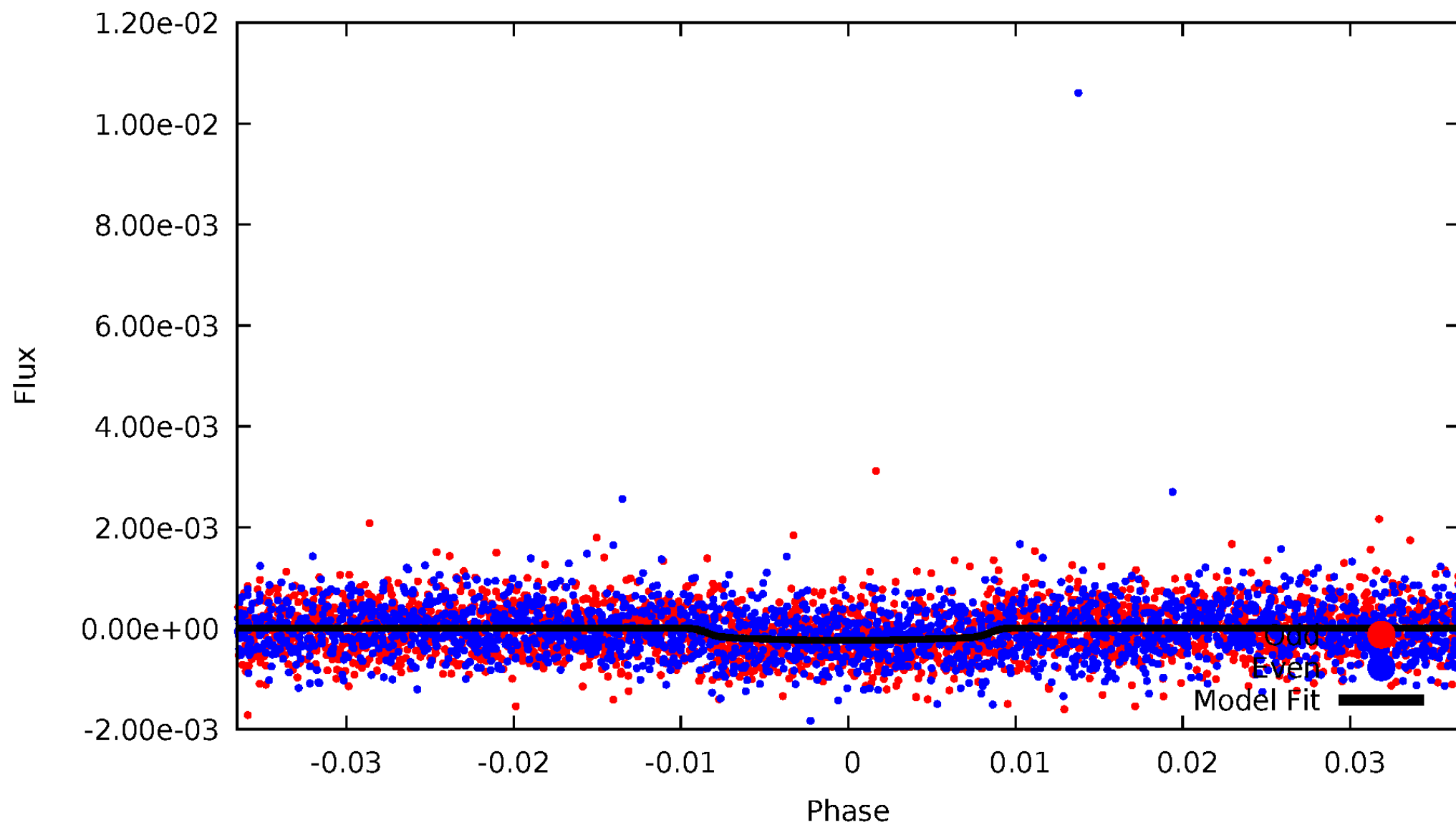


TCE 009285265-01



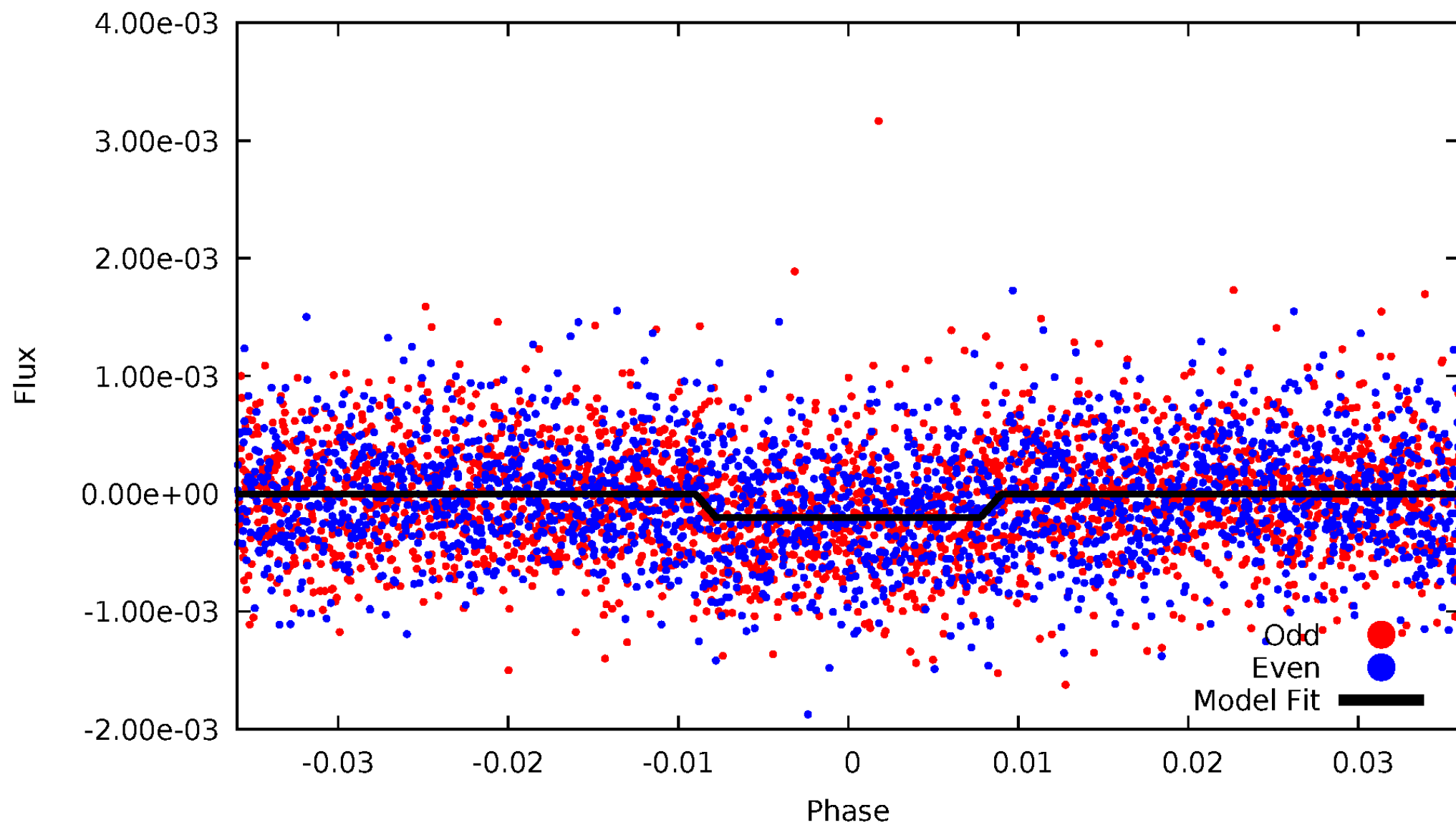
DV Odd/Even

TCE 009285265-01

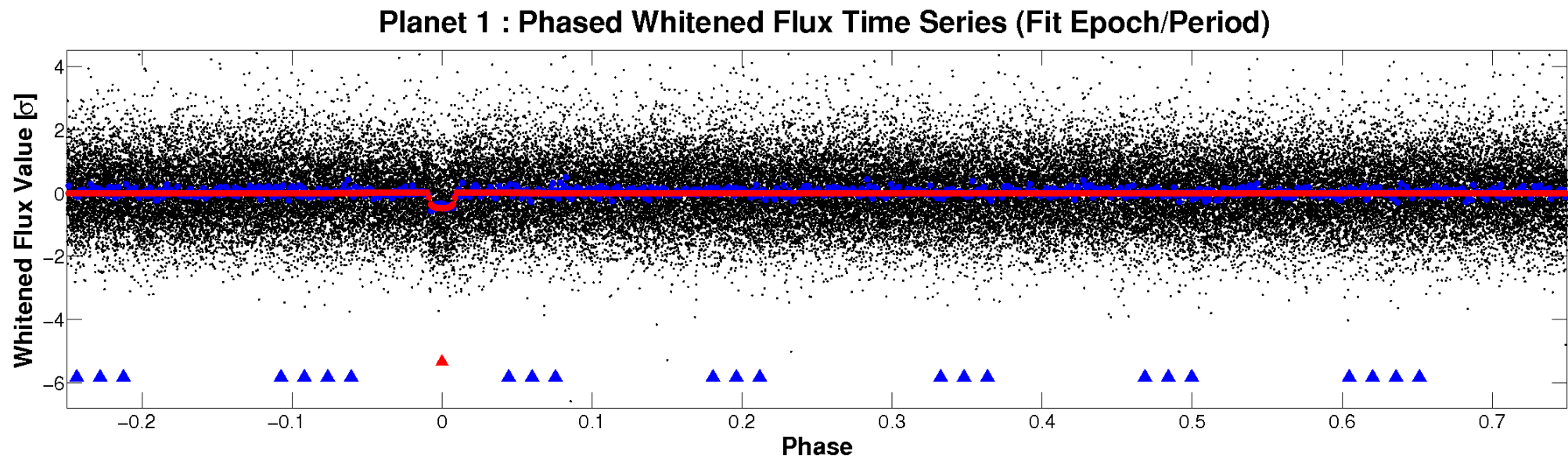
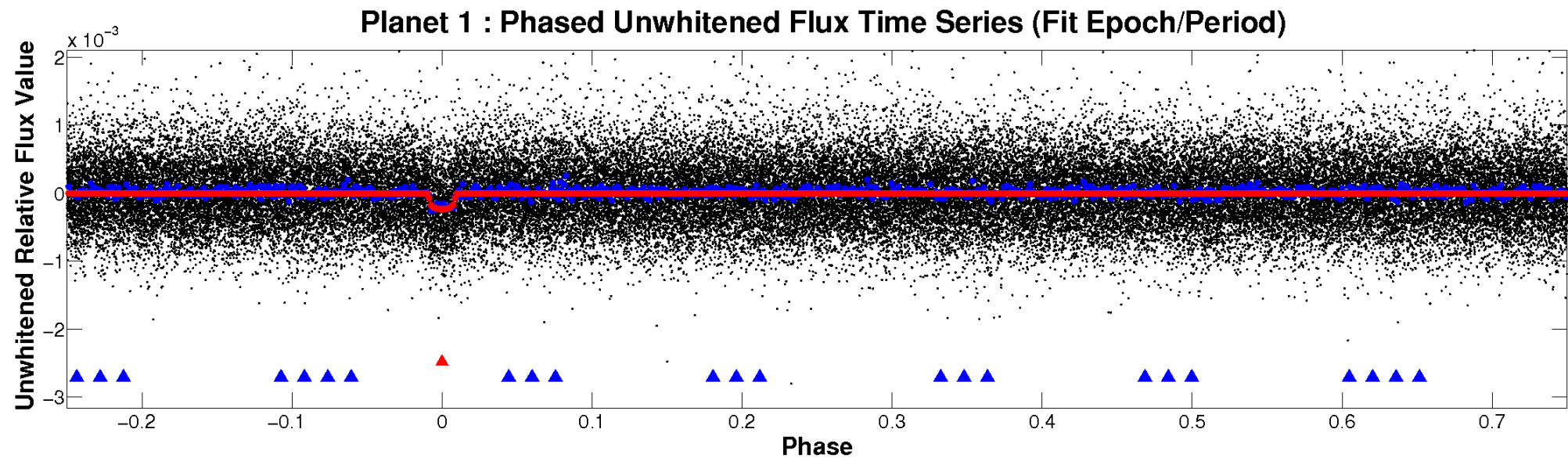


ALT Odd/Even

TCE 009285265-01

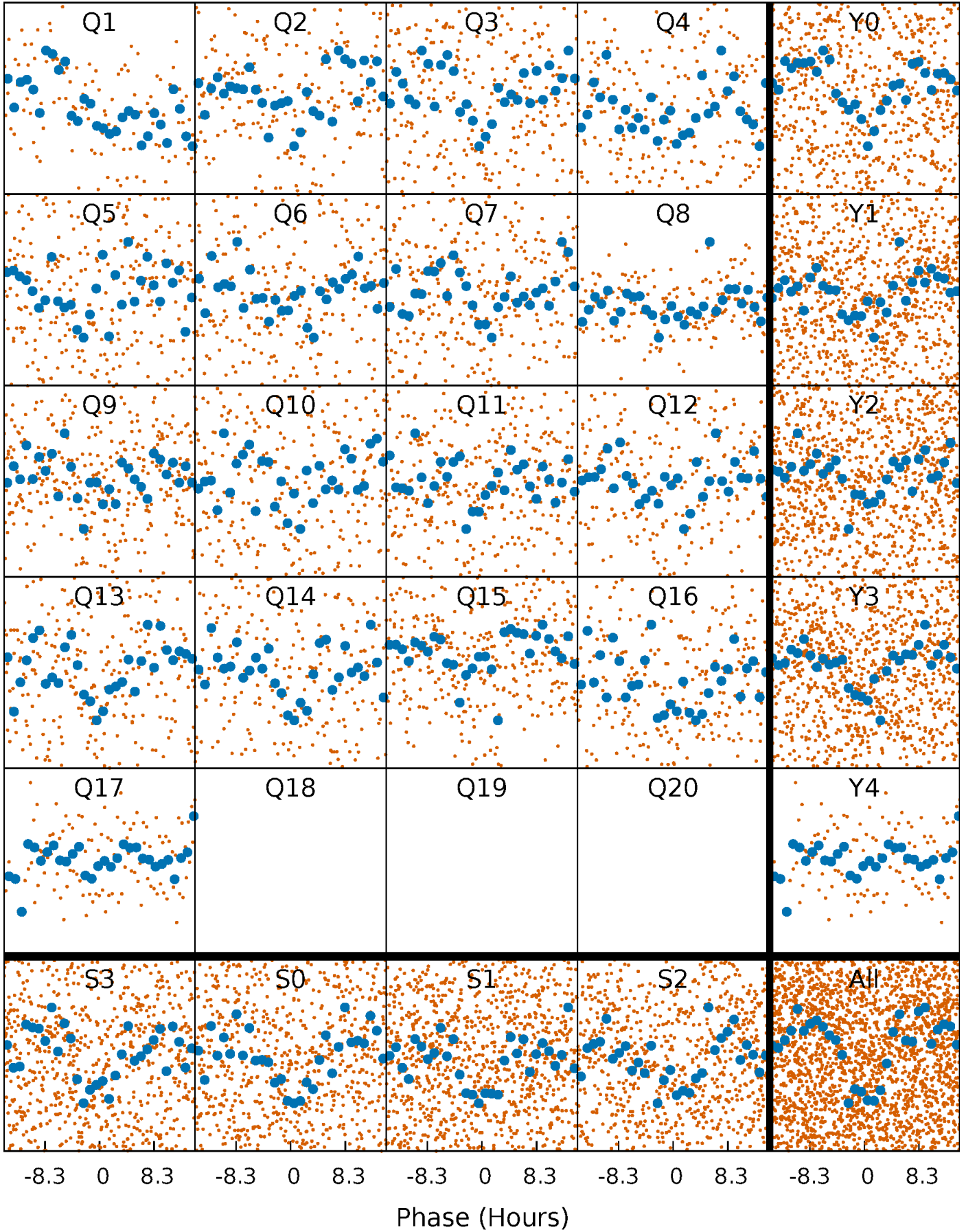


Non-Whitened Vs. Whitened Light Curve



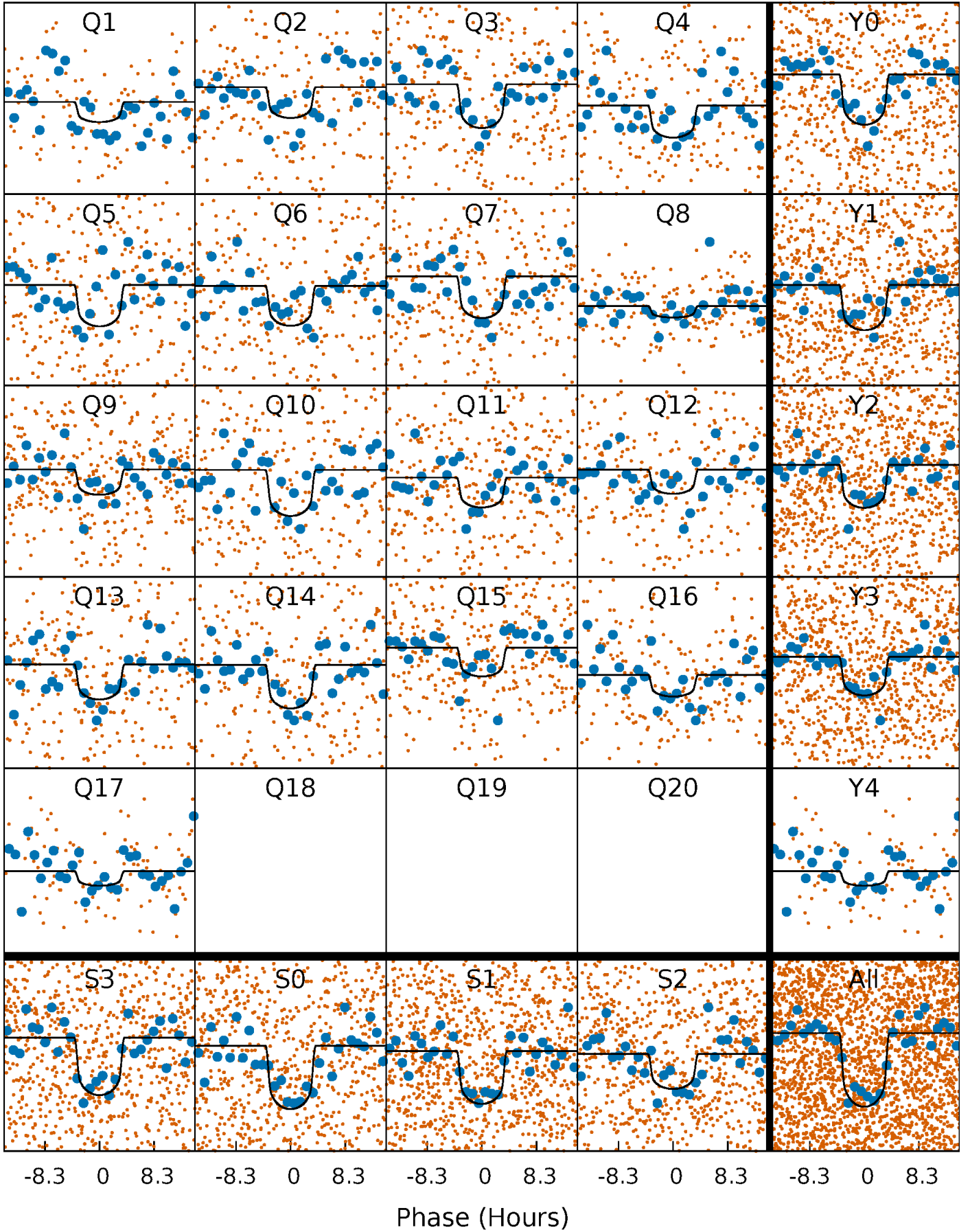
PDC Quarter-Phased Transit Curves

TCE 009285265-01 P= 16.586104 Days $T_0=133.277794$ (BKJD)



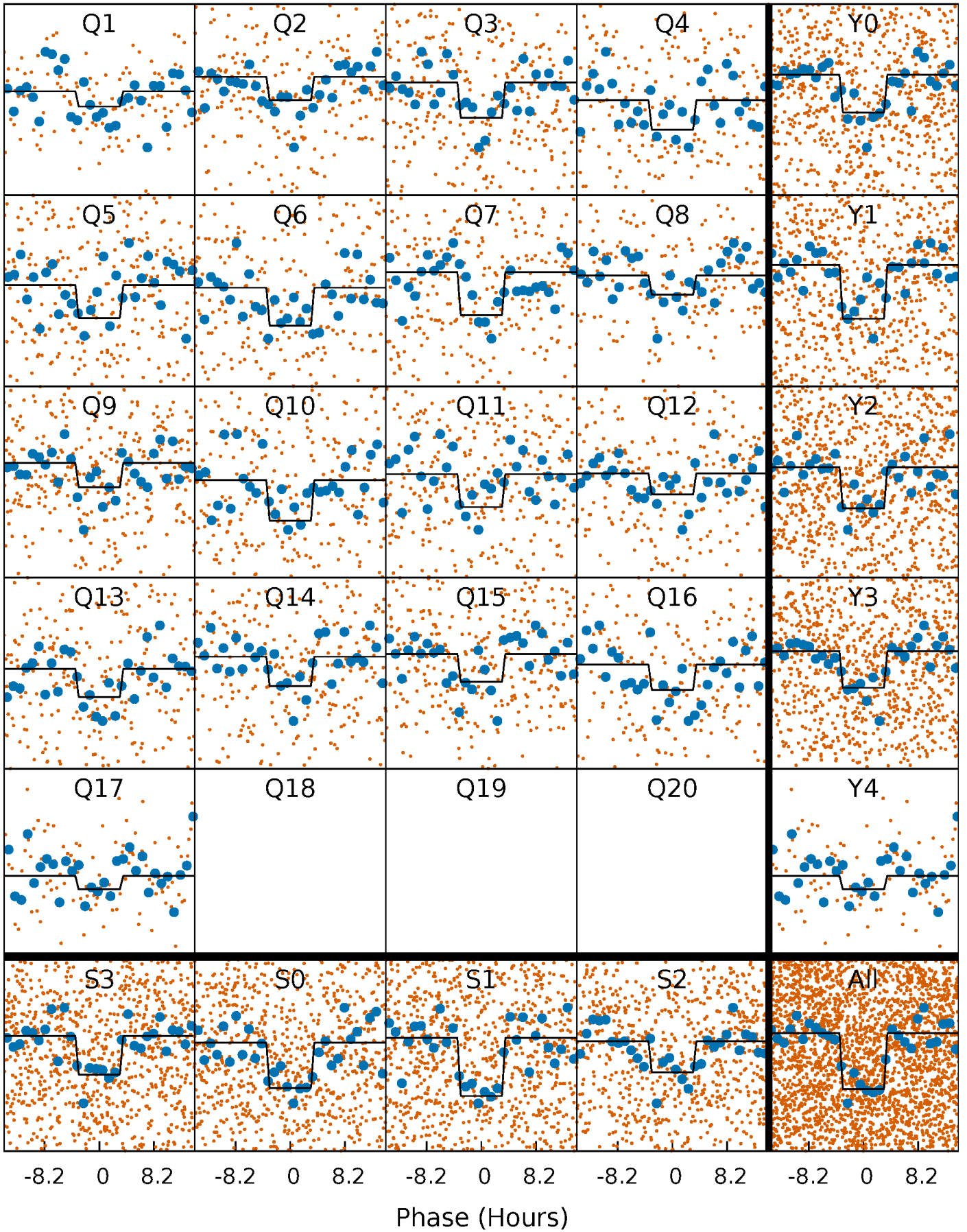
DV Quarter-Phased Transit Curves

TCE 009285265-01 P= 16.586104 Days $T_0=133.277794$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

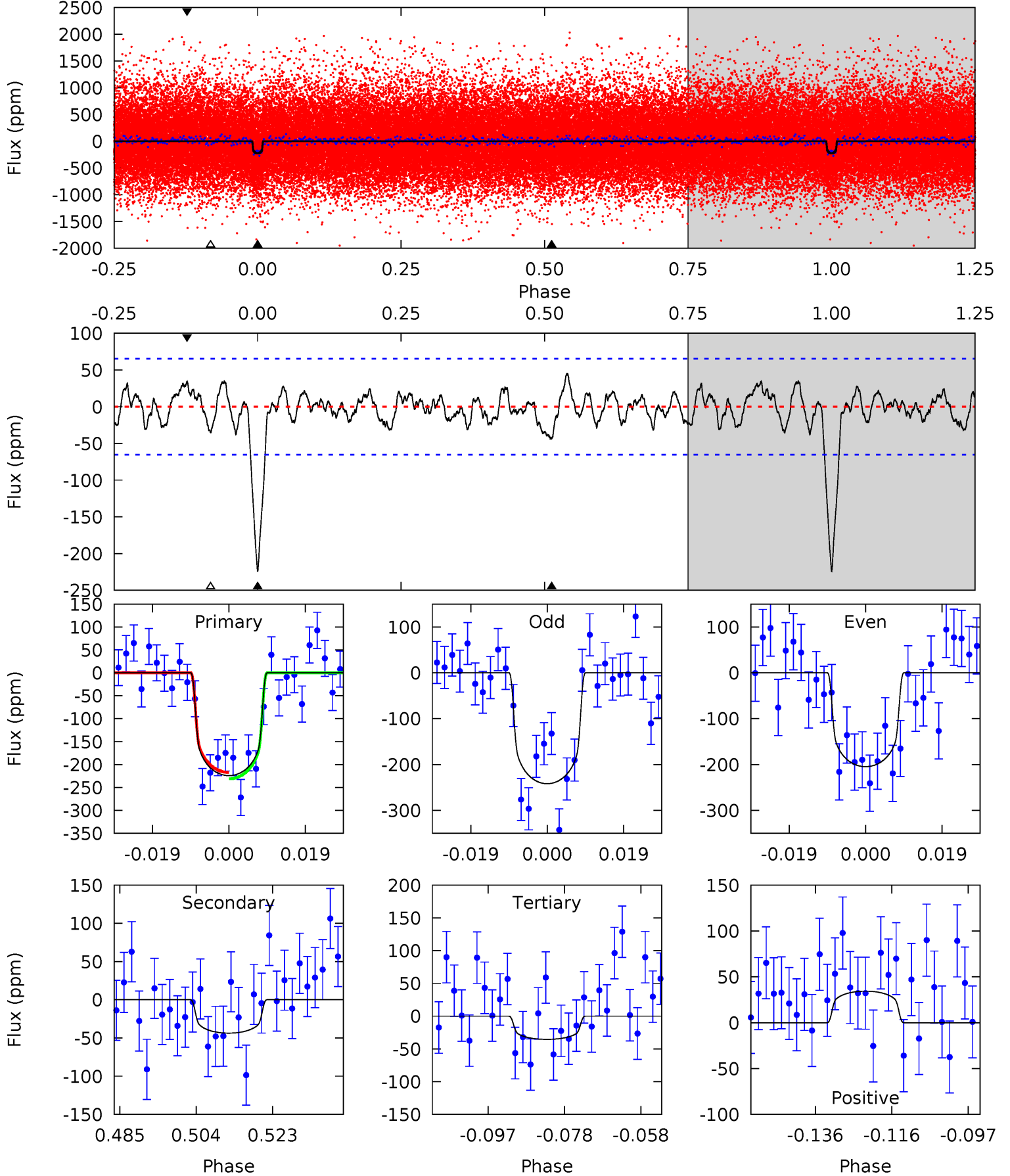
TCE 009285265-01 P= 16.586338 Days $T_0=133.270353$ (BKJD)



DV Model-Shift Uniqueness Test

009285265-01, P = 16.586104 Days, E = 116.691690 Days

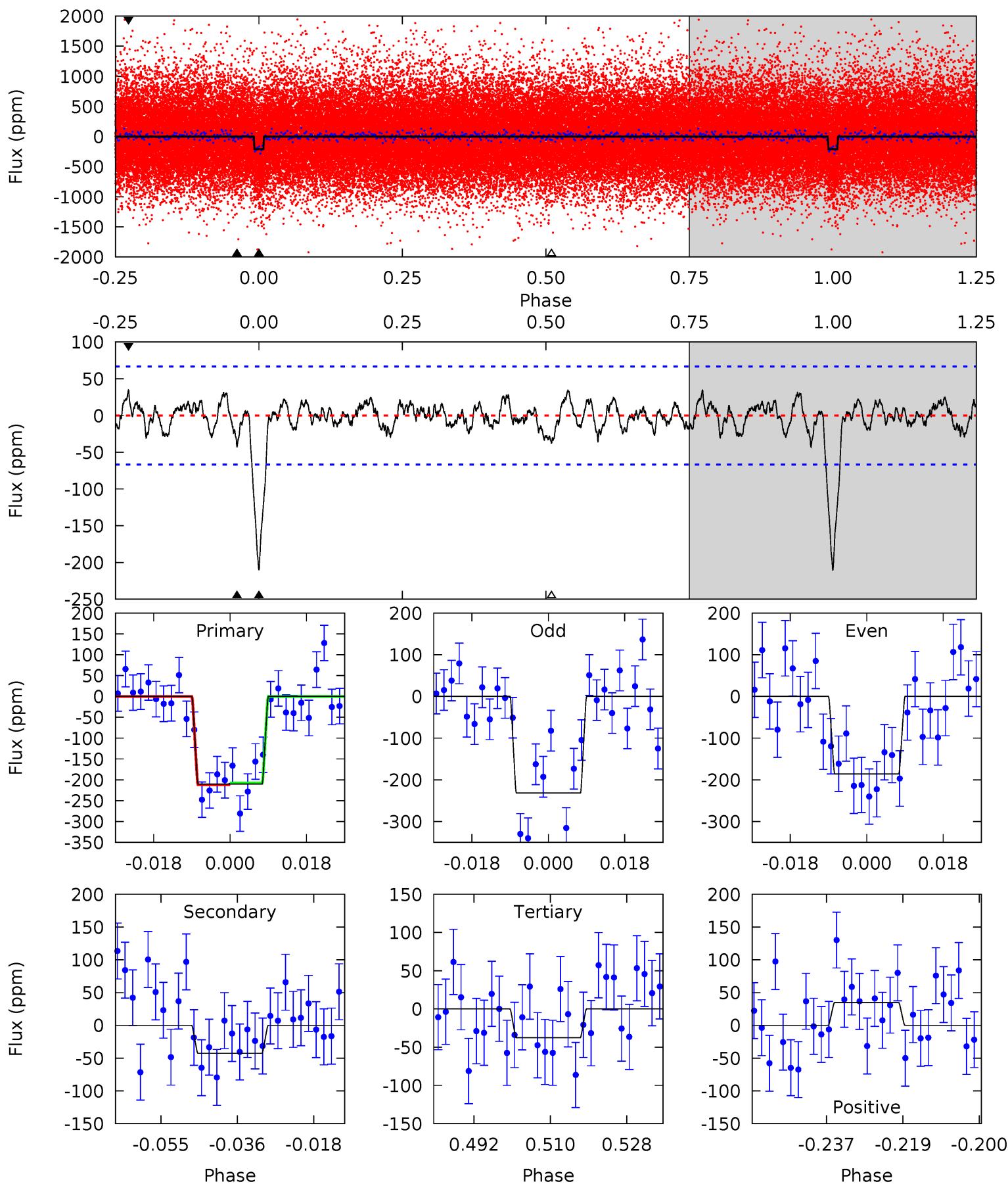
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	3.28	2.66	2.58	4.90	2.34	1.18	14.2	14.2	0.61	0.70	1.39	0.93	0.17	0.52



Alt Model-Shift Uniqueness Test

009285265-01, P = 16.586338 Days, E = 116.684015 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	3.13	2.77	2.56	4.91	2.36	1.02	12.7	12.9	0.36	0.57	1.69	0.94	0.14	0.15



Stellar Parameters For KIC 009285265

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5626^{+77}_{-77}	$4.149^{+0.188}_{-0.101}$	$0.140^{+0.150}_{-0.150}$	$1.389^{+0.223}_{-0.298}$	$0.991^{+0.079}_{-0.065}$	$0.521^{+0.508}_{-0.159}$
	+1%/-1%	+5%/-2%	+107%/-107%	+16%/-21%	+8%/-7%	+97%/-30%
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 009285265-01 / KOI 3410.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-44 ± 13	$2.38^{+0.70}_{-0.62}$	1138^{+54}_{-68}	3909^{+456}_{-354}	66^{+62}_{-29}
Alt.	-43 ± 14	$2.13^{+0.67}_{-0.63}$	1143^{+51}_{-72}	4050^{+633}_{-425}	82^{+90}_{-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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

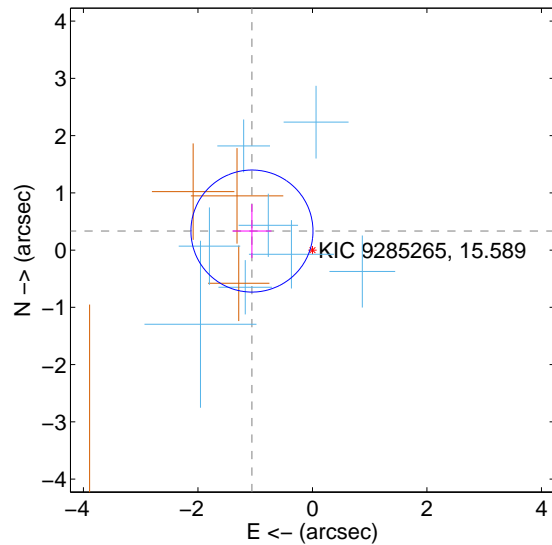
Supplemental centroid analysis for 009285265-01. Kepler magnitude: 15.59. Transit SNR 13.78

There are 8 quarters with good PRF difference image offsets

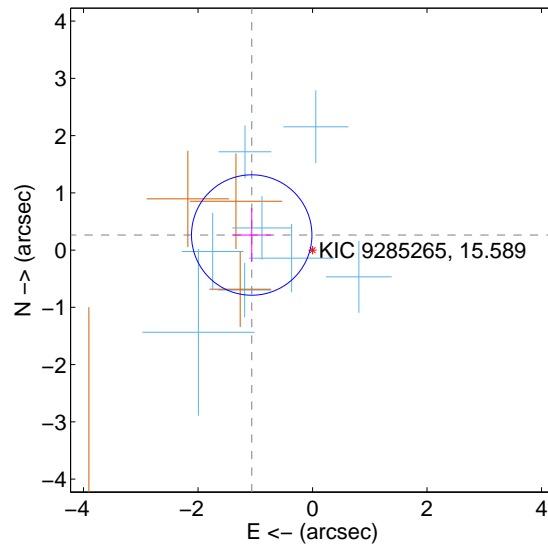
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.108 ± 0.355	3.12	1.057 ± 0.342	0.333 ± 0.470
PRF-fit source offset from KIC position	1.094 ± 0.351	3.12	1.062 ± 0.342	0.263 ± 0.470
photometric centroid source offset	0.89 ± 0.88	1.01	0.64 ± 0.81	0.61 ± 0.95

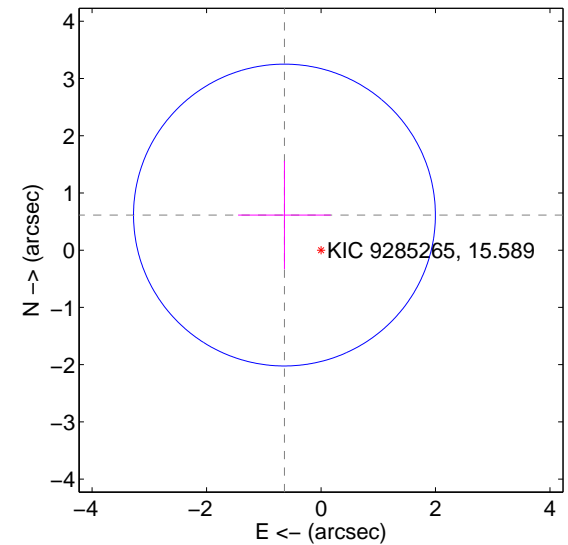
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

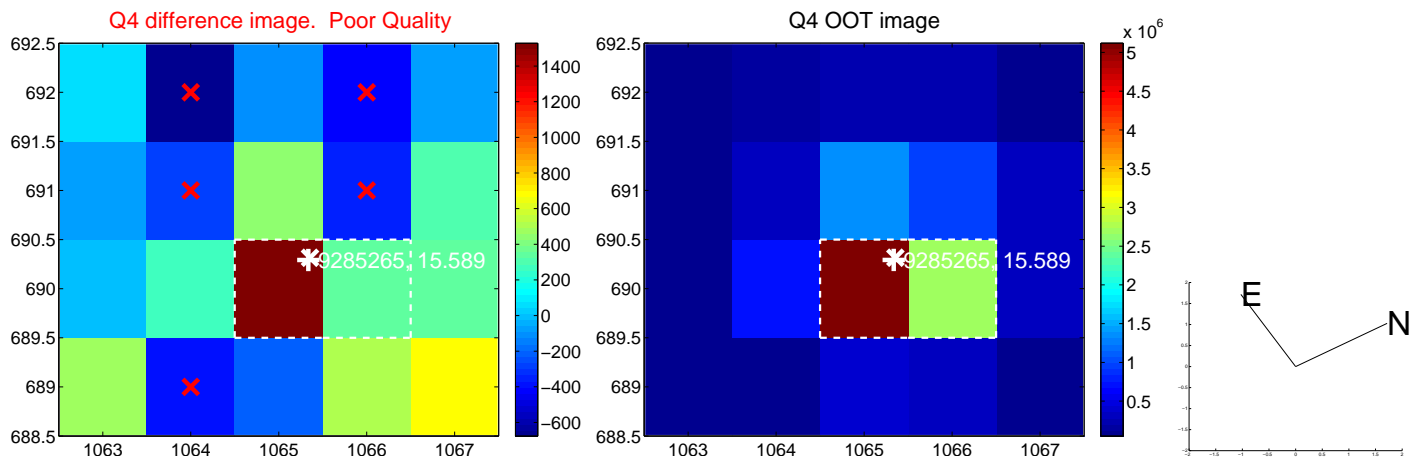
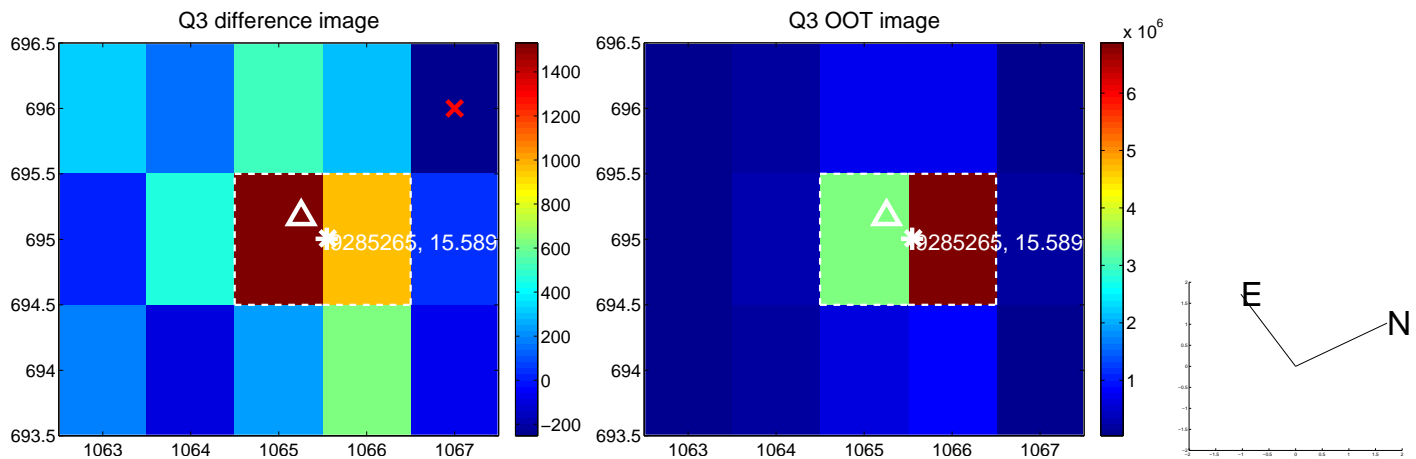
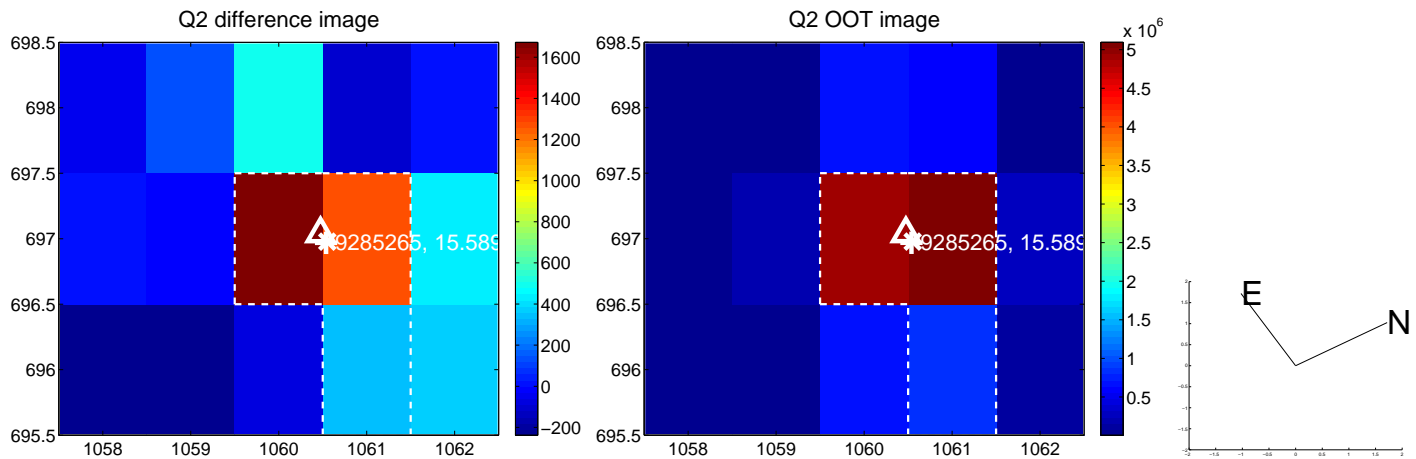
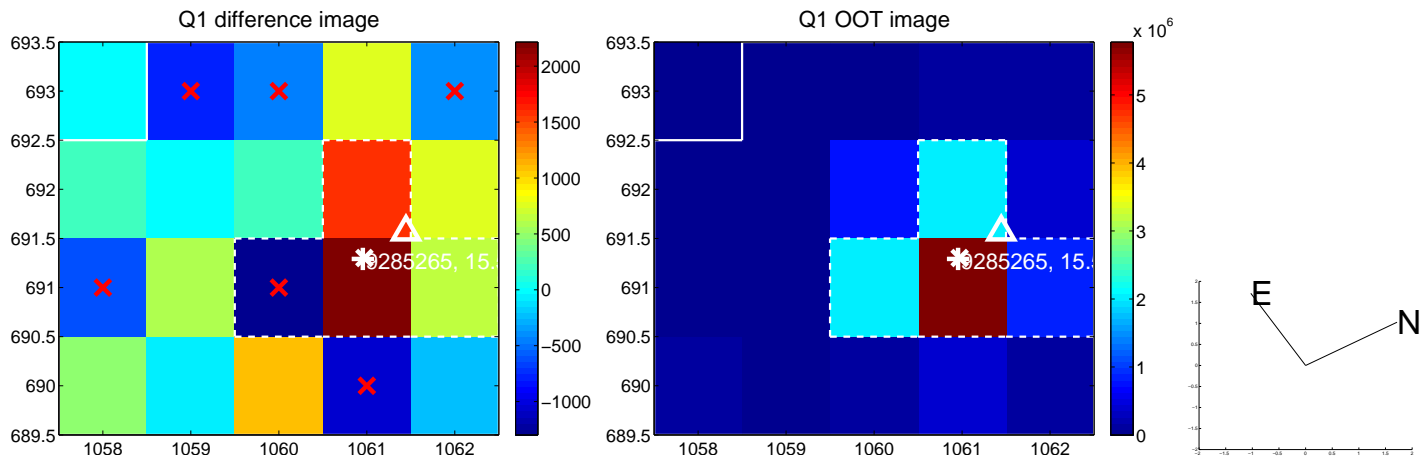


offset from photometric centroids

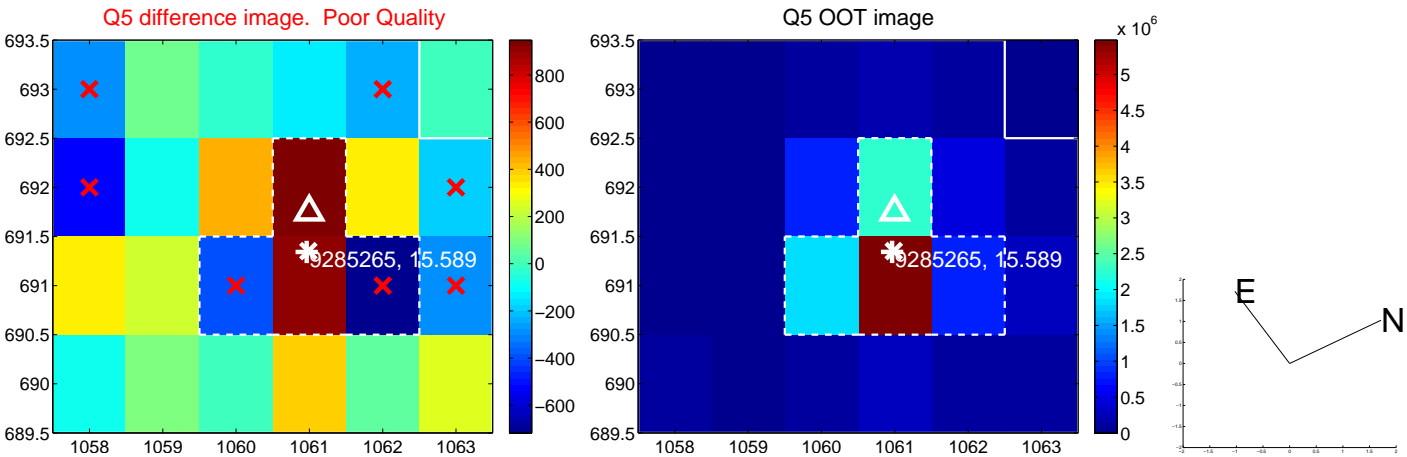


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

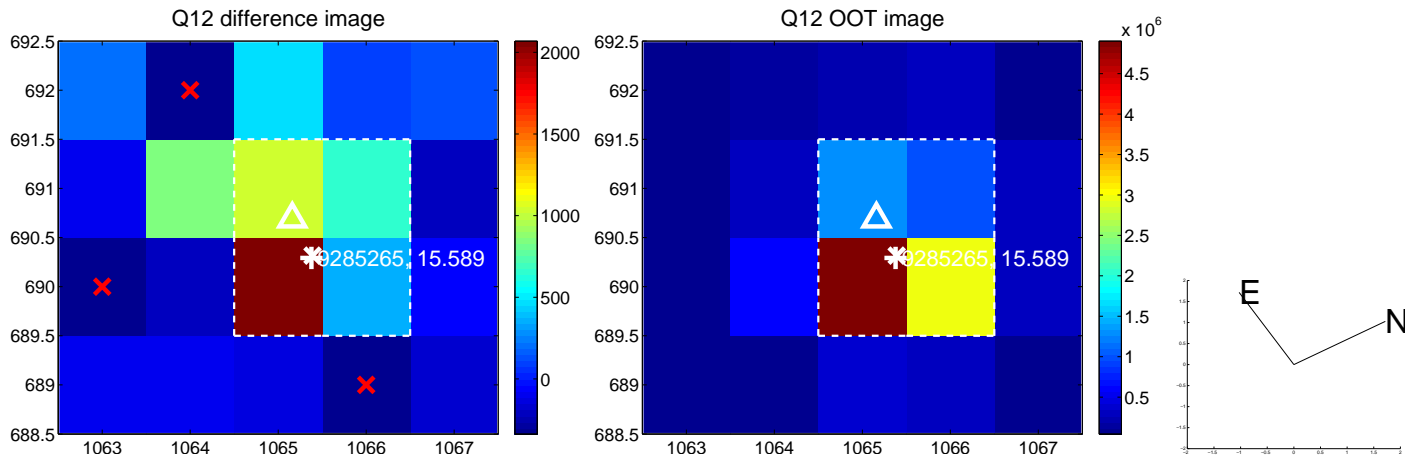
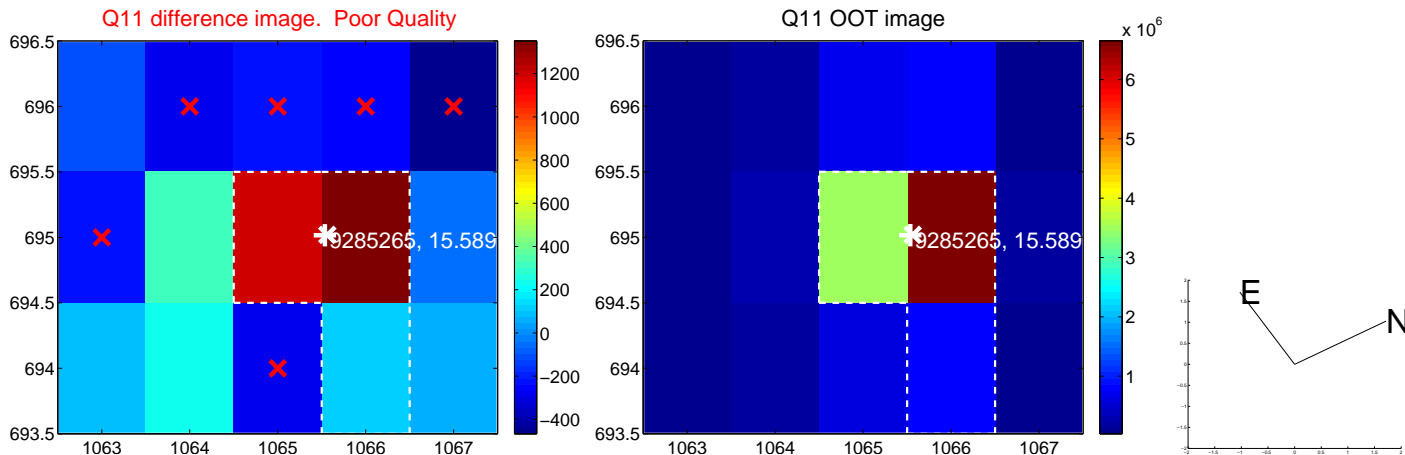
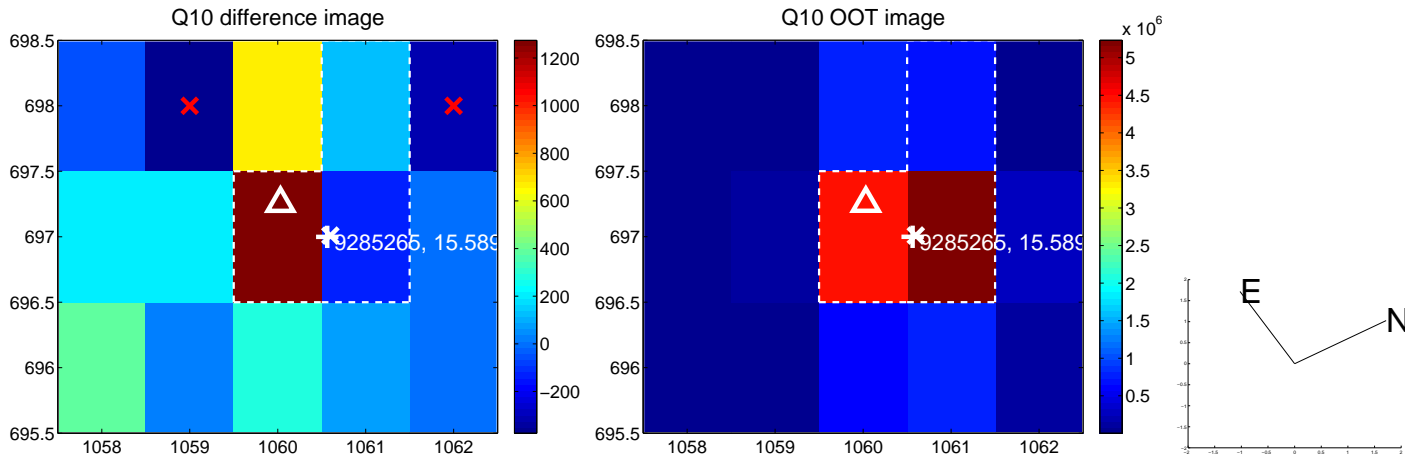
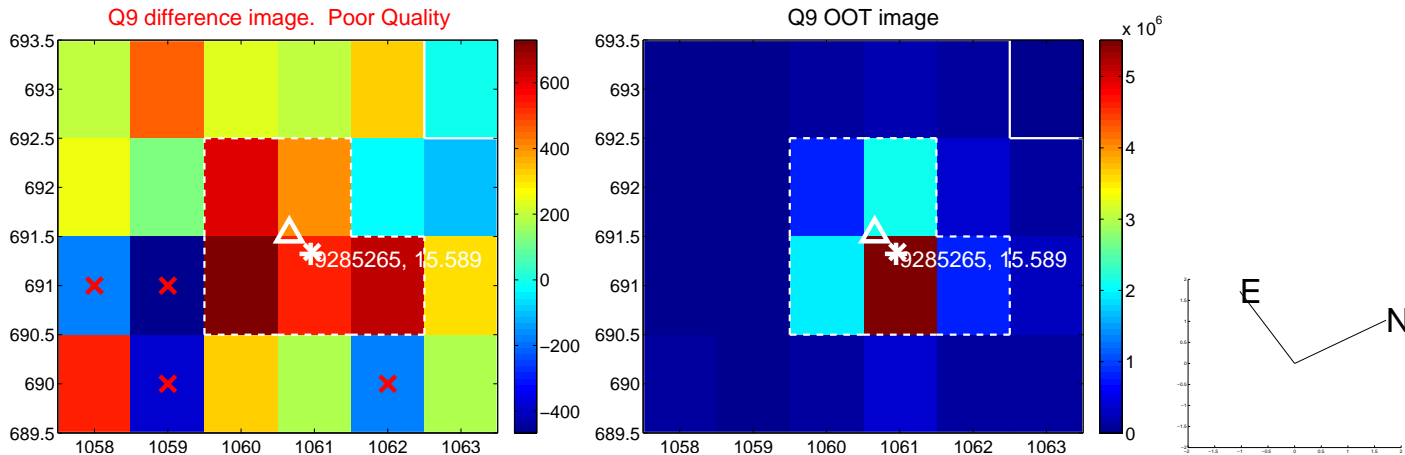
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



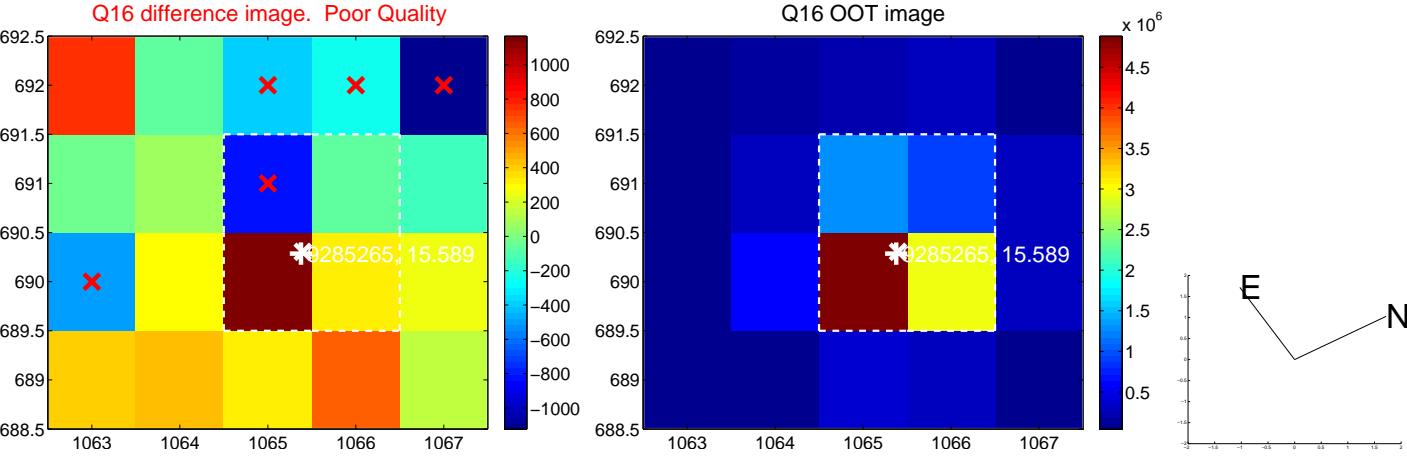
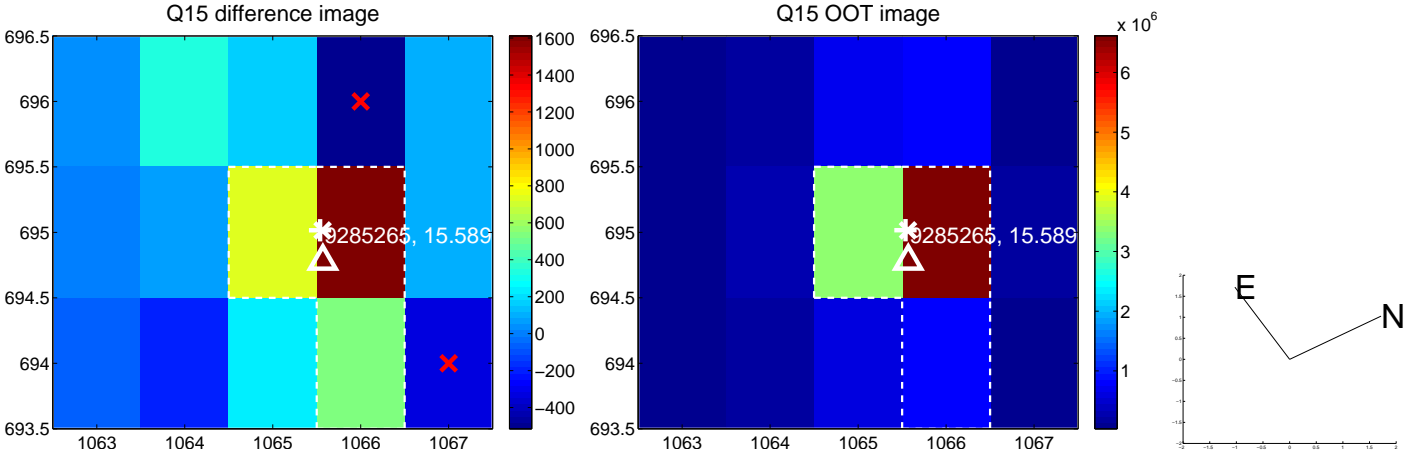
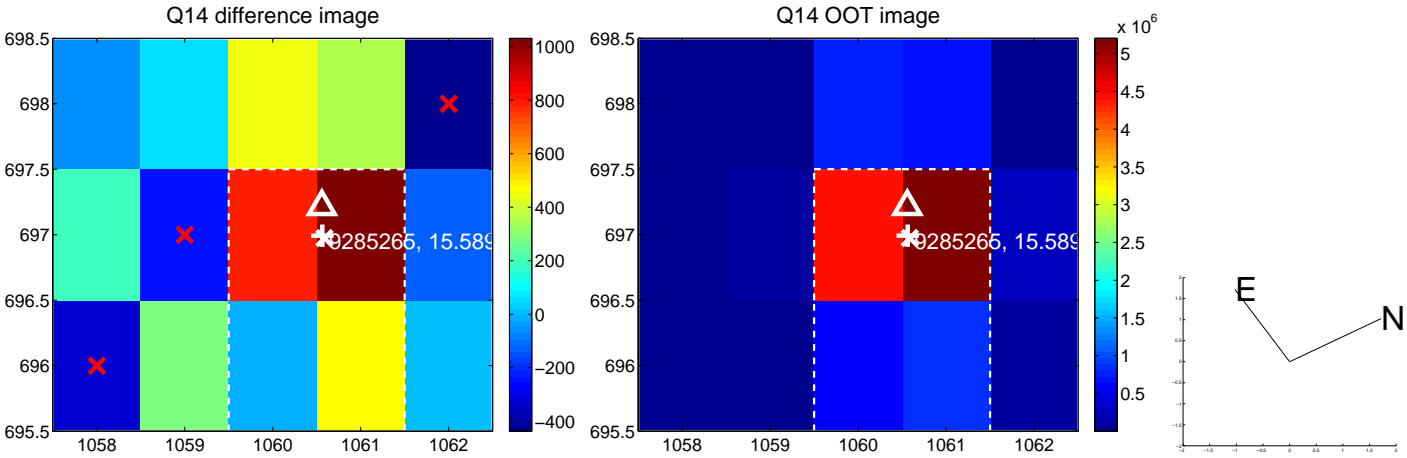
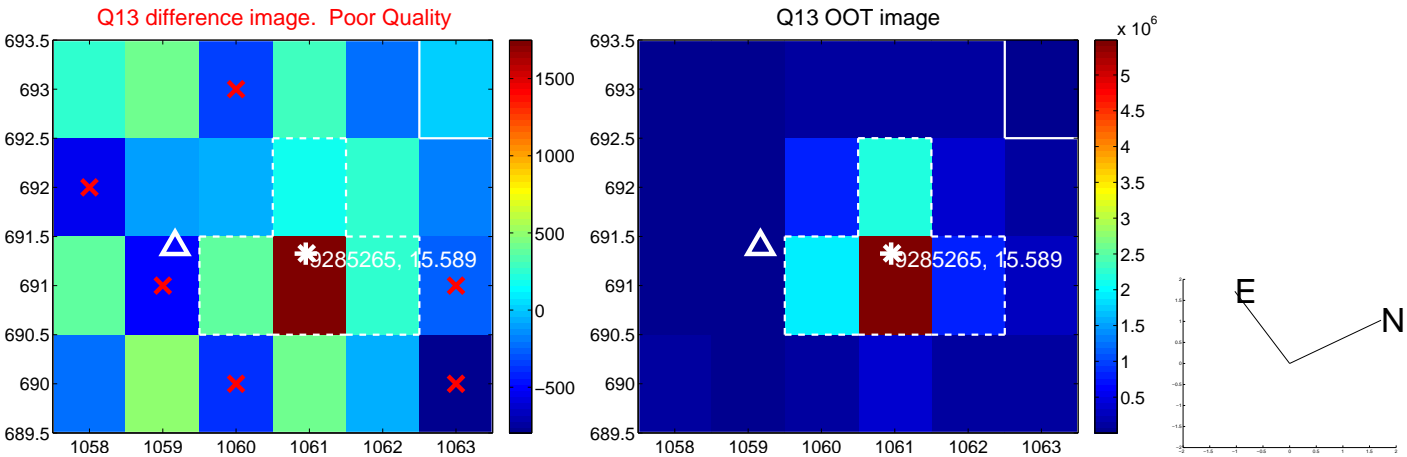
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



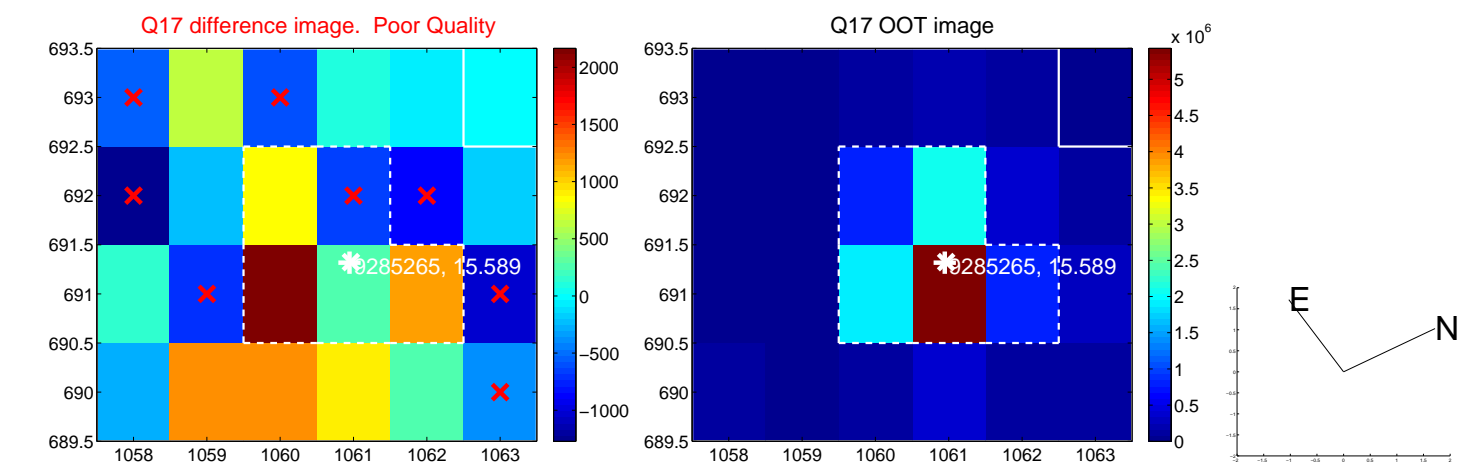
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



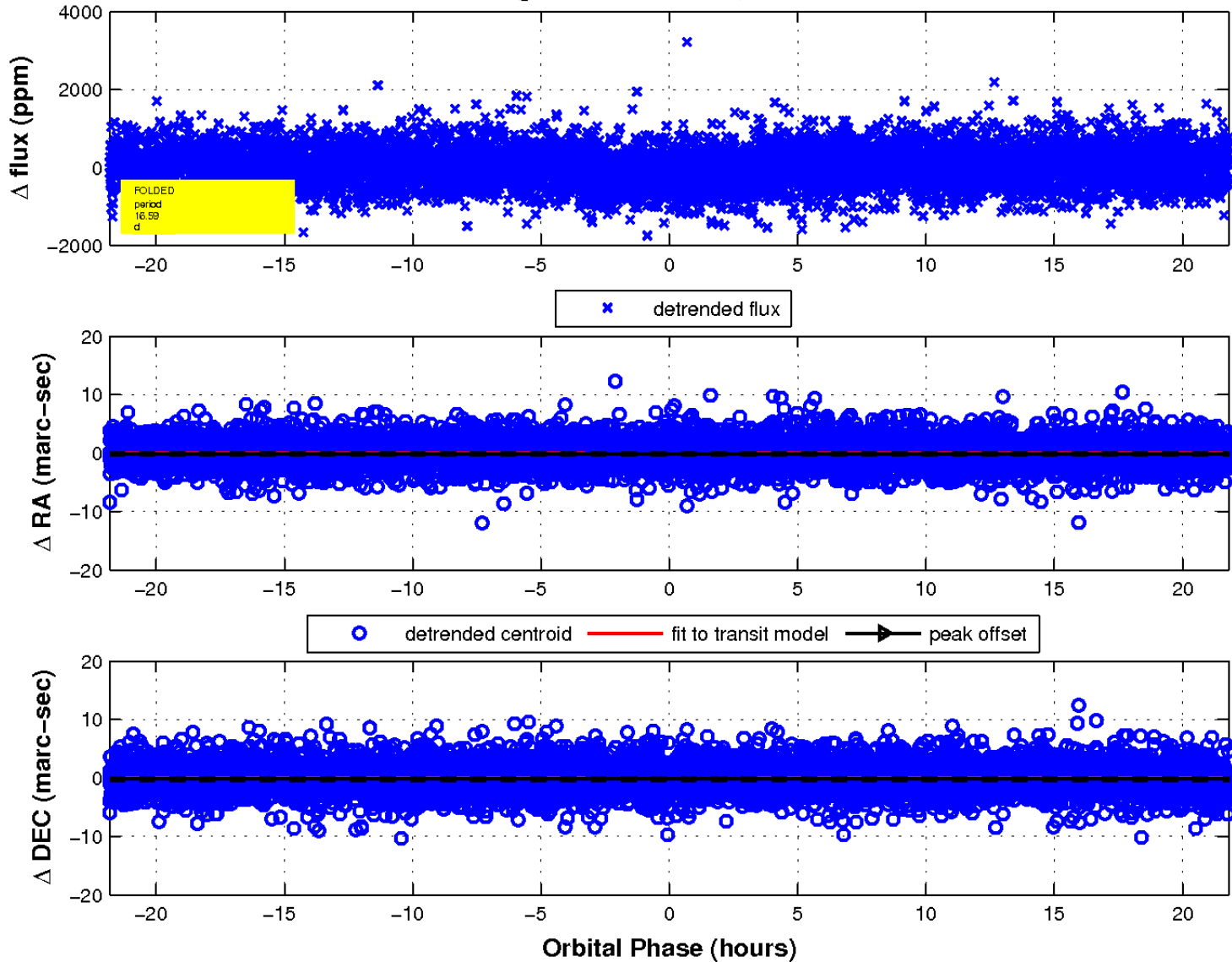
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

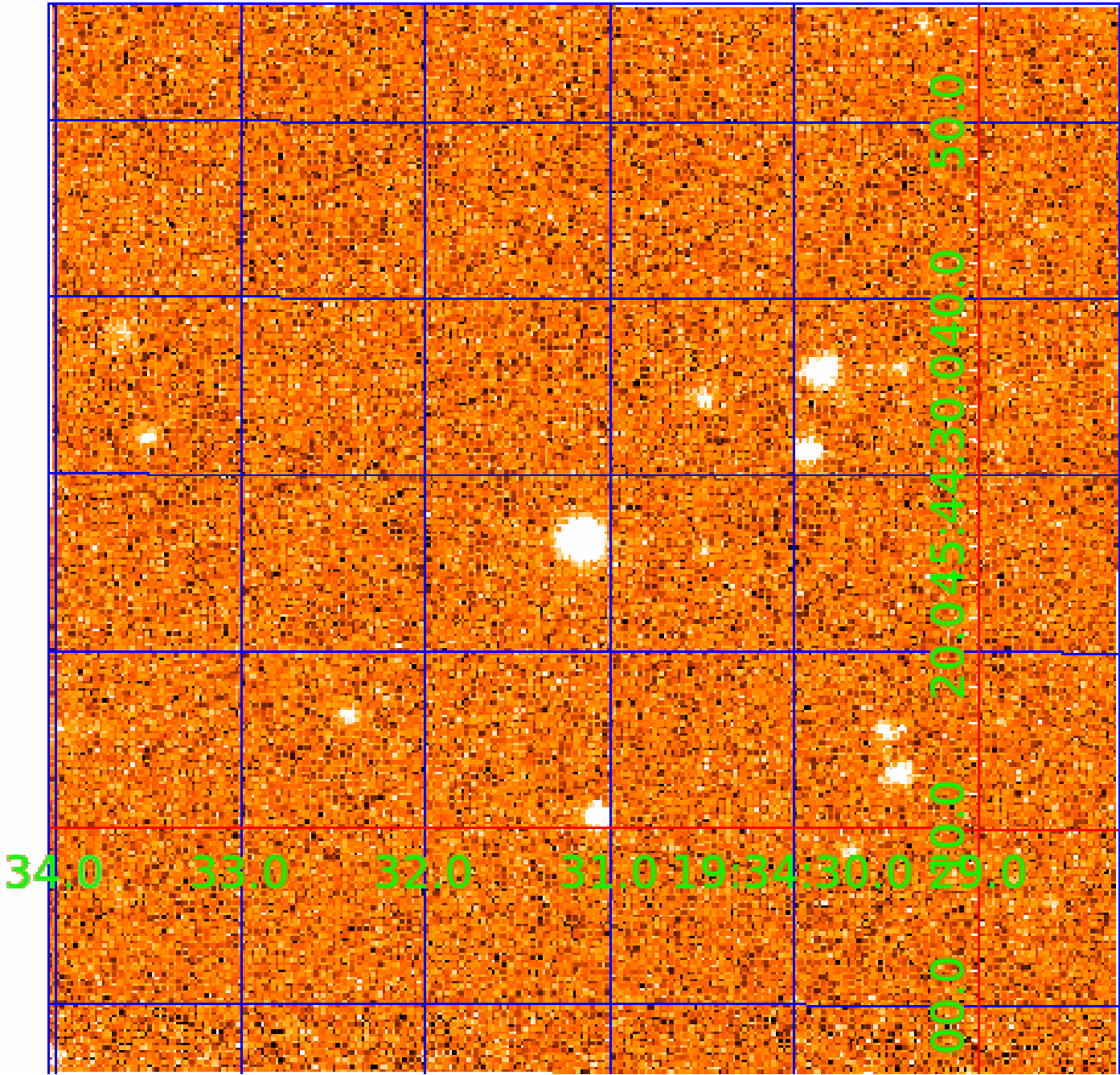


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 009285265

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})
009285265-01	OBS	3410.01	16.586104	133.277794	235.0	7.270	12.6	13.8	1.39	5626	2.46	107.44
009285265-02	OBS	3410.02	61.568584	182.032549	338.4	10.423	10.9	11.2	1.39	5626	3.13	18.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009285265-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
009285265-02	OBS	PC	0.98	0	0	0	0	CENT_FEW_MEAS

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

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

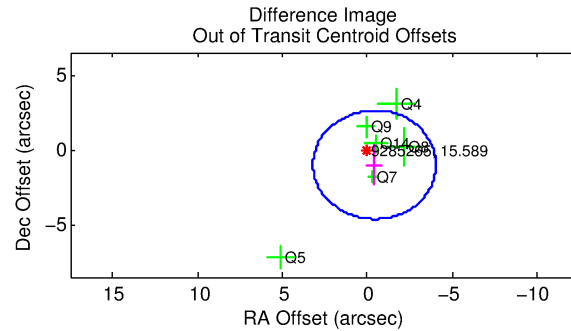
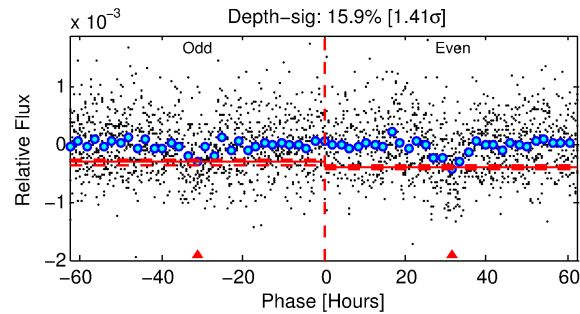
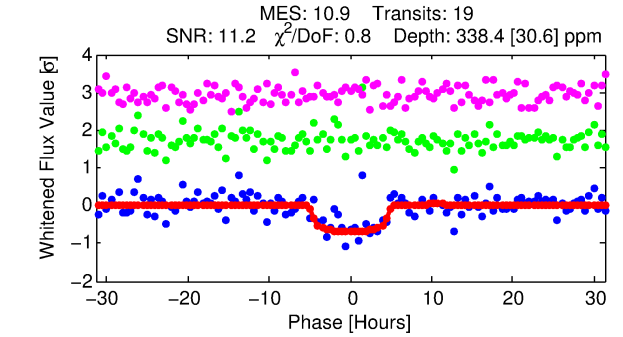
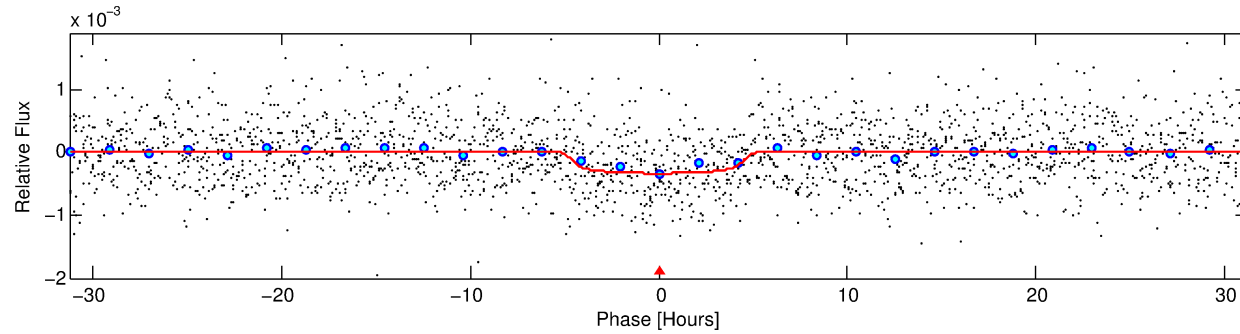
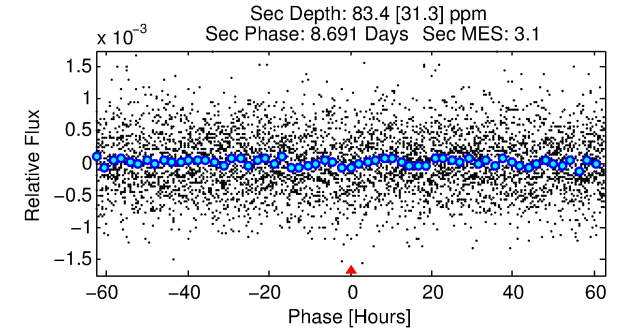
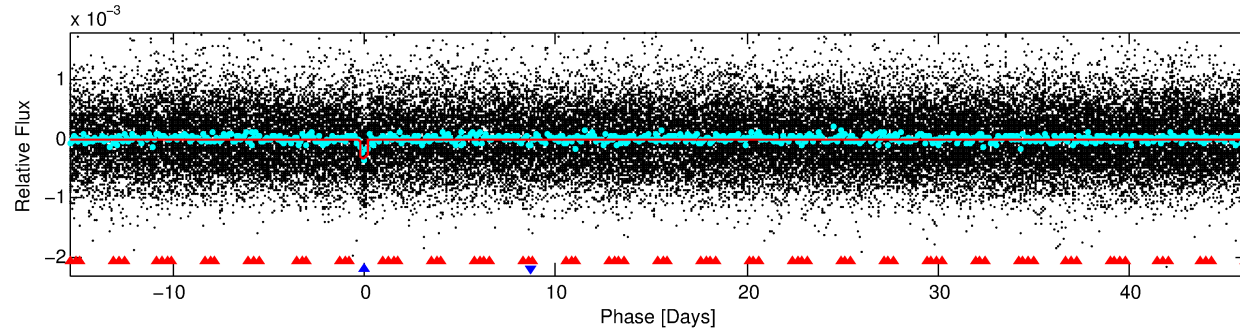
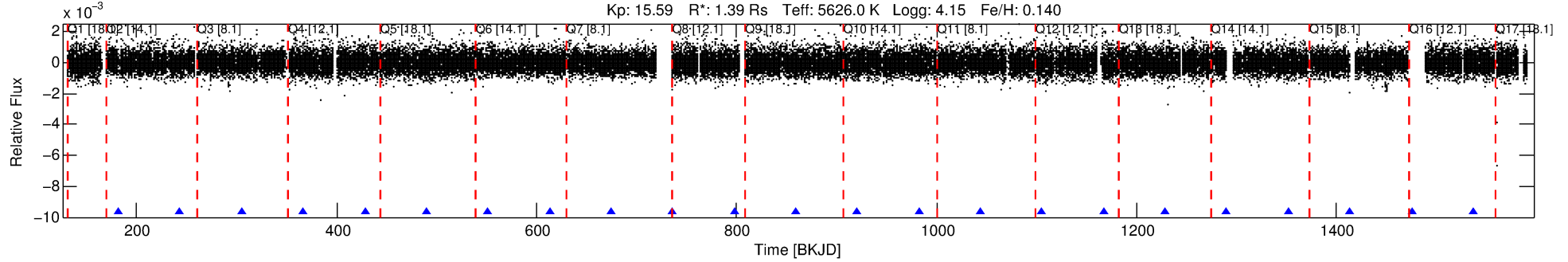
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009285265-02

No Significant Match Found

DV One-Page Summary

KIC: 9285265 Candidate: 2 of 2 Period: 61.569 d
KOI: K03410.02 Corr: 0.914



DV Fit Results:

Period = 61.56858 [0.00166] d
Epoch = 182.0325 [0.0192] BKJD
Rp/R* = 0.0206 [0.0025]
a/R* = 19.94 [10.12]
b = 0.92 [0.09]
Seff = 18.69 [6.11]
Teq = 530 [43] K
Rp = 3.13 [0.77] Re
a = 0.3044 [0.0618] AU
Ag = 434.93 [240.10] [1.81σ]
Teffp = 3744 [423] K [7.56σ]

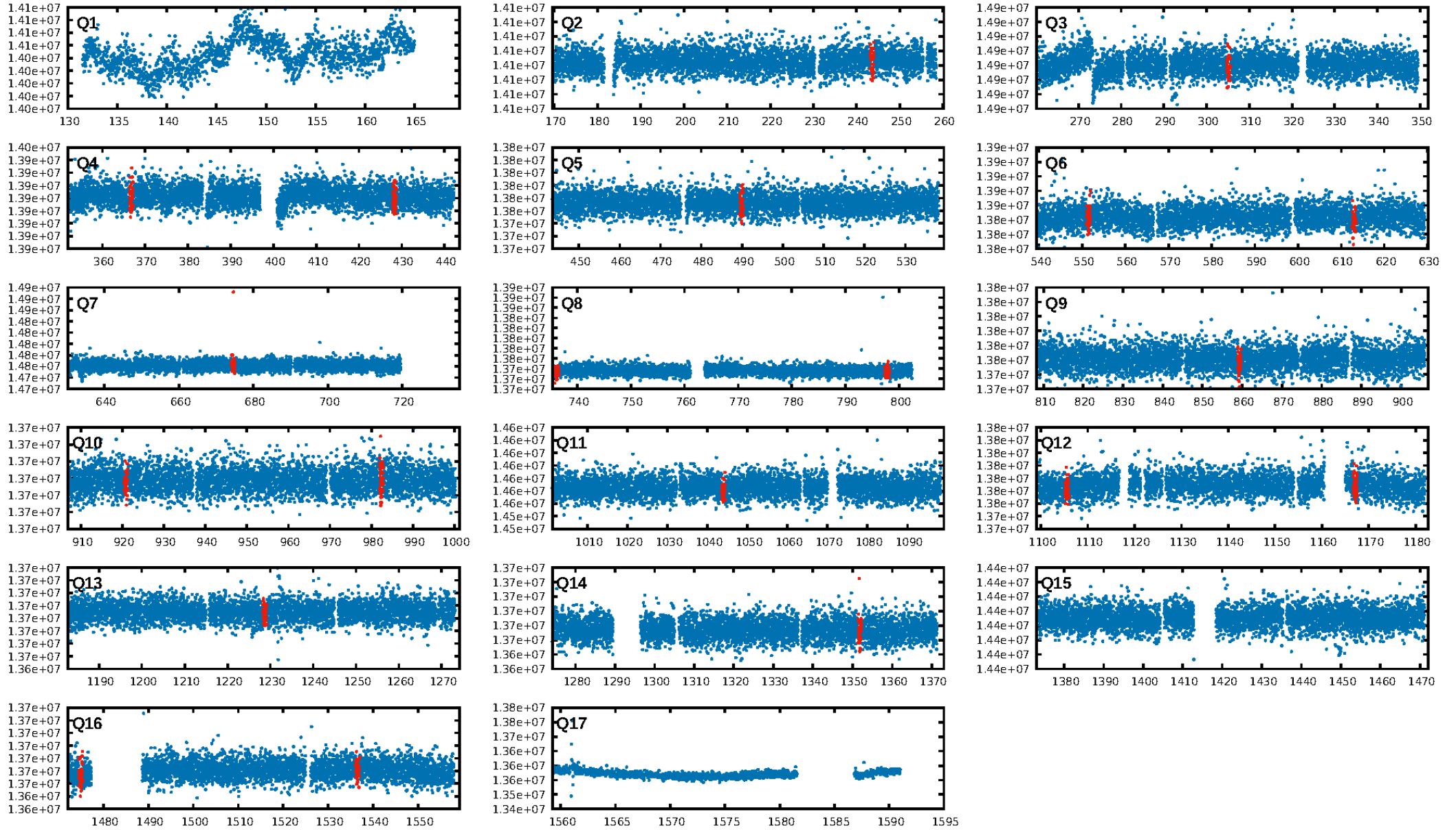
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [84.95σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.04e-28
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: -7.872
Centroid-sig: 32.5%
Centroid-so: 0.780 arcsec [0.69σ]
OotOffset-rm: 1.097 arcsec [0.91σ]
KicOffset-rm: 1.170 arcsec [0.94σ]
OotOffset-st: 1/1/2/2 [6]
KicOffset-st: 1/1/2/2 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 1.00 [13/13]

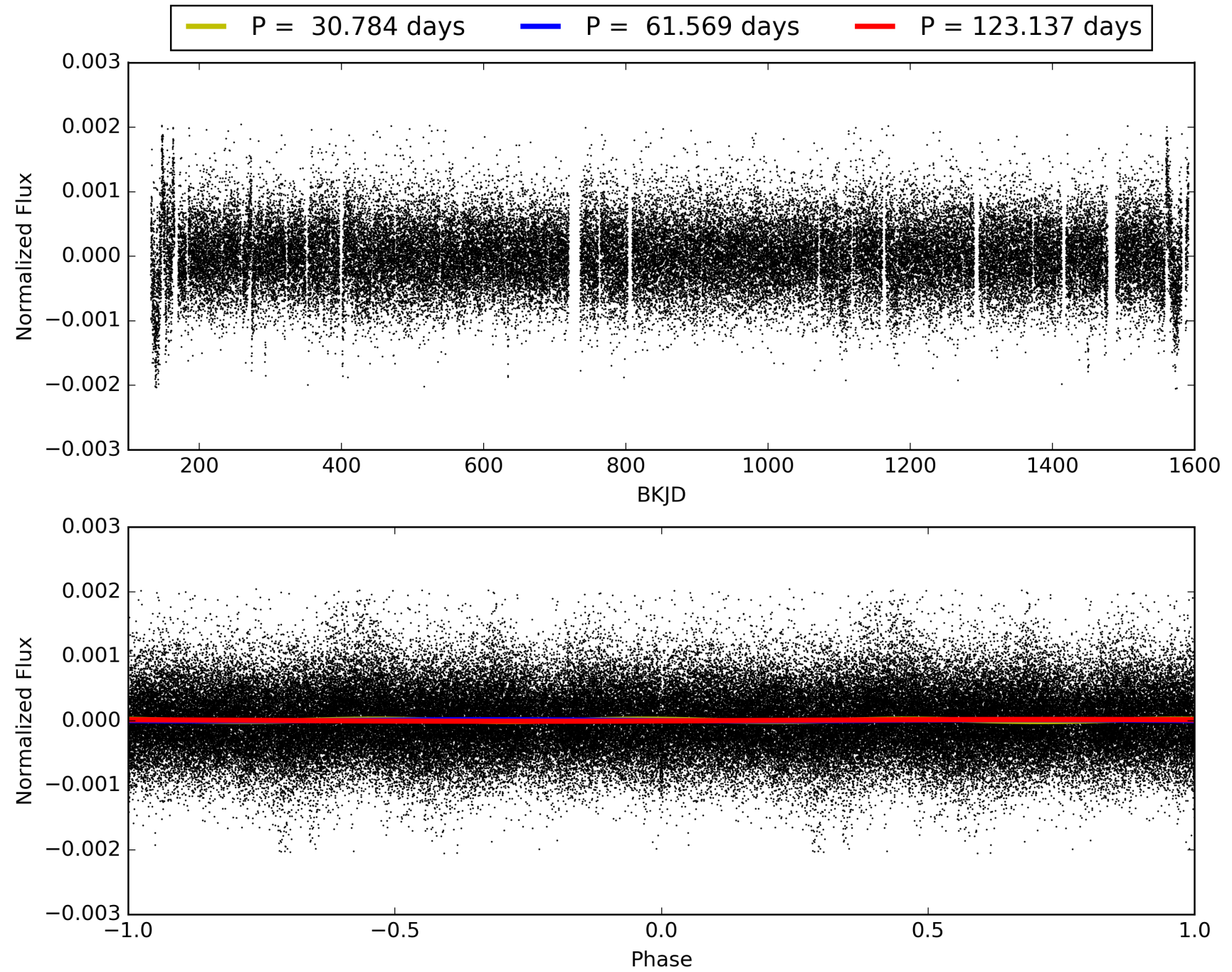
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:33:11 Z

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

TCE 009285265-02, PDC Light Curves

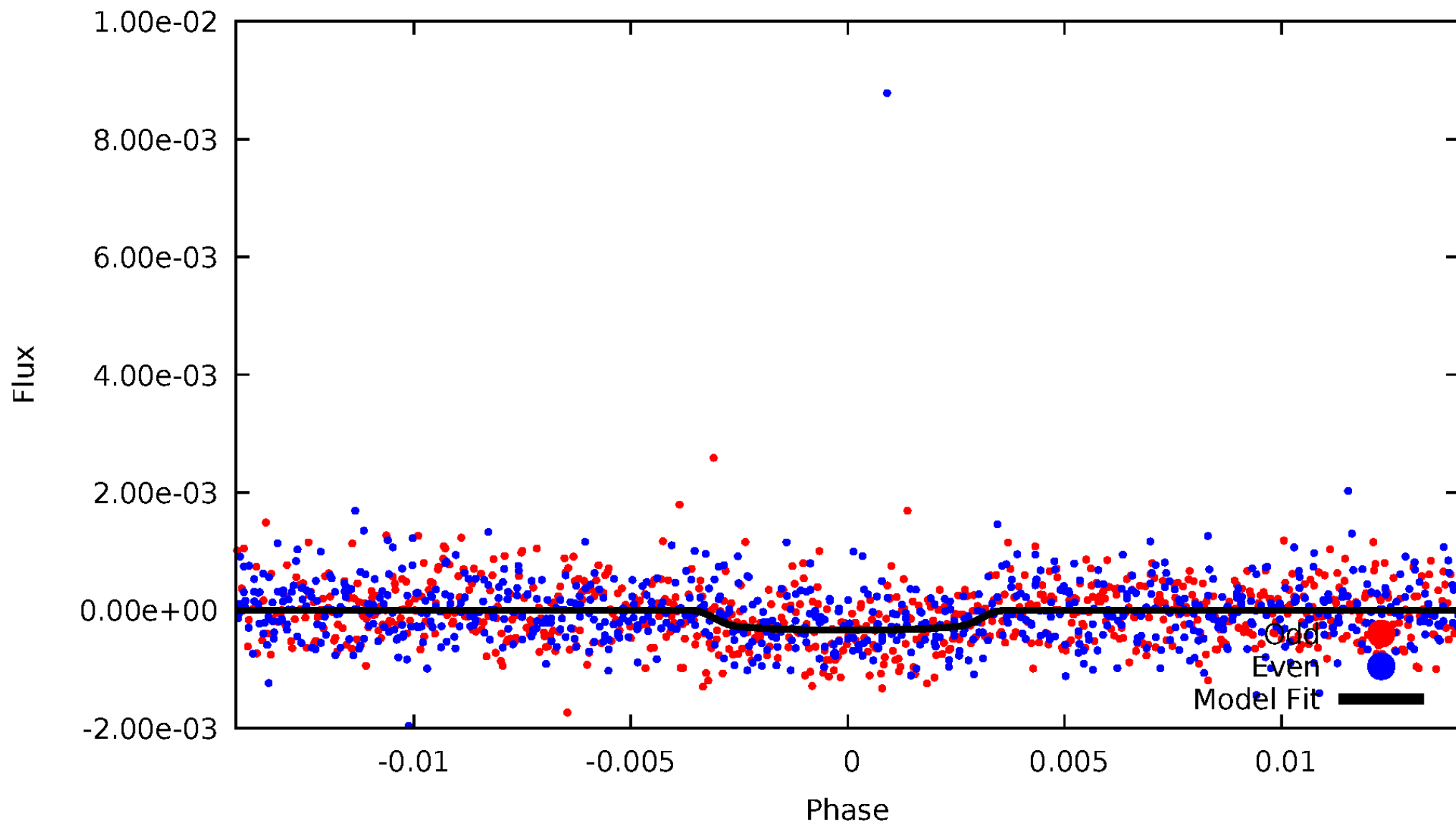


TCE 009285265-02



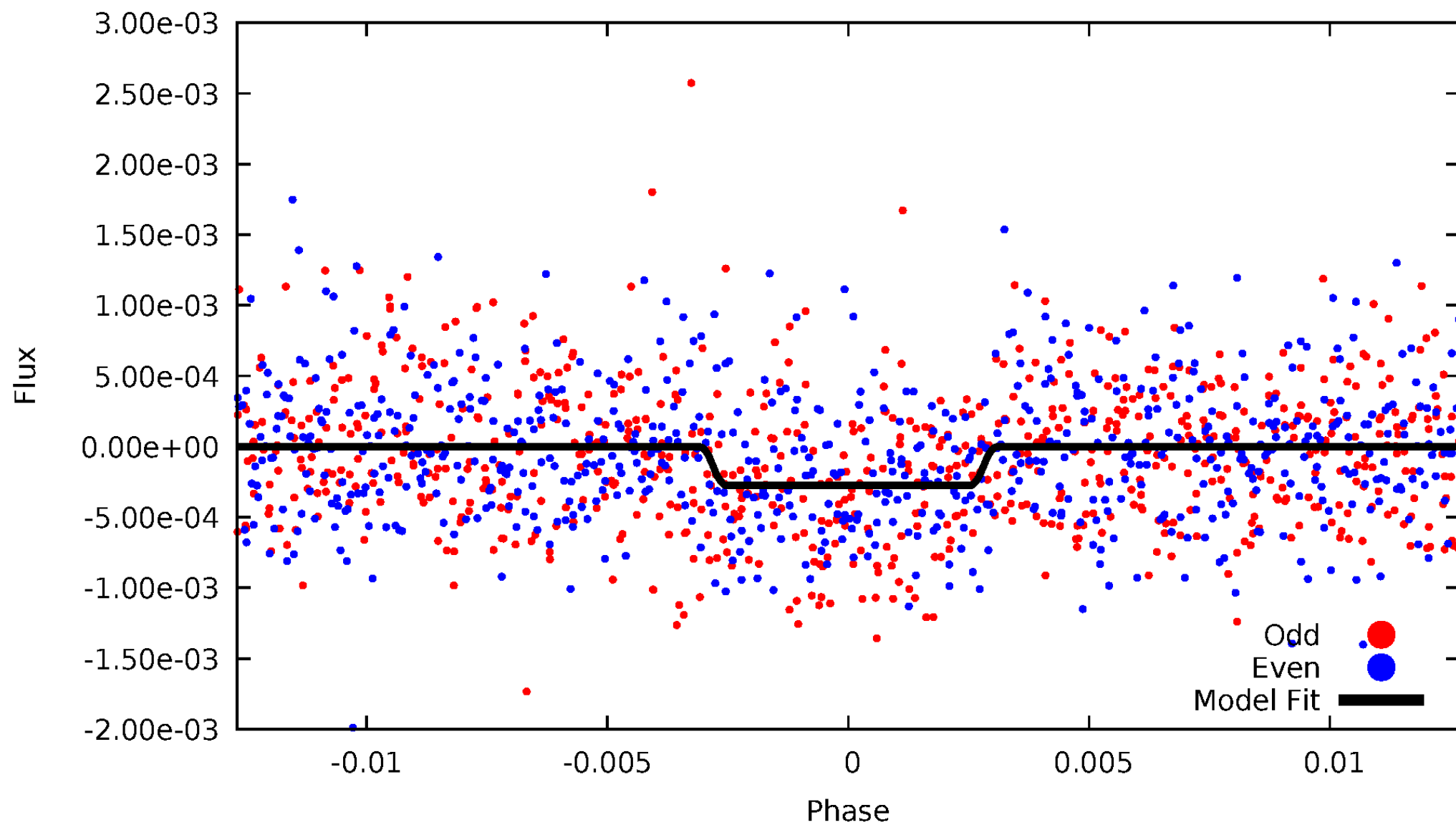
DV Odd/Even

TCE 009285265-02



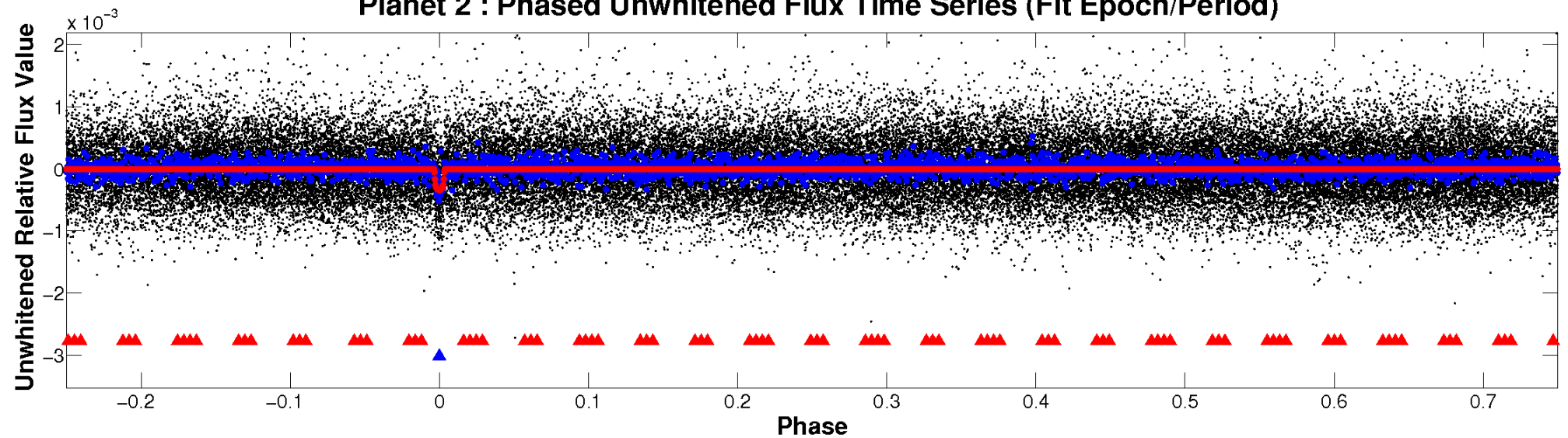
ALT Odd/Even

TCE 009285265-02

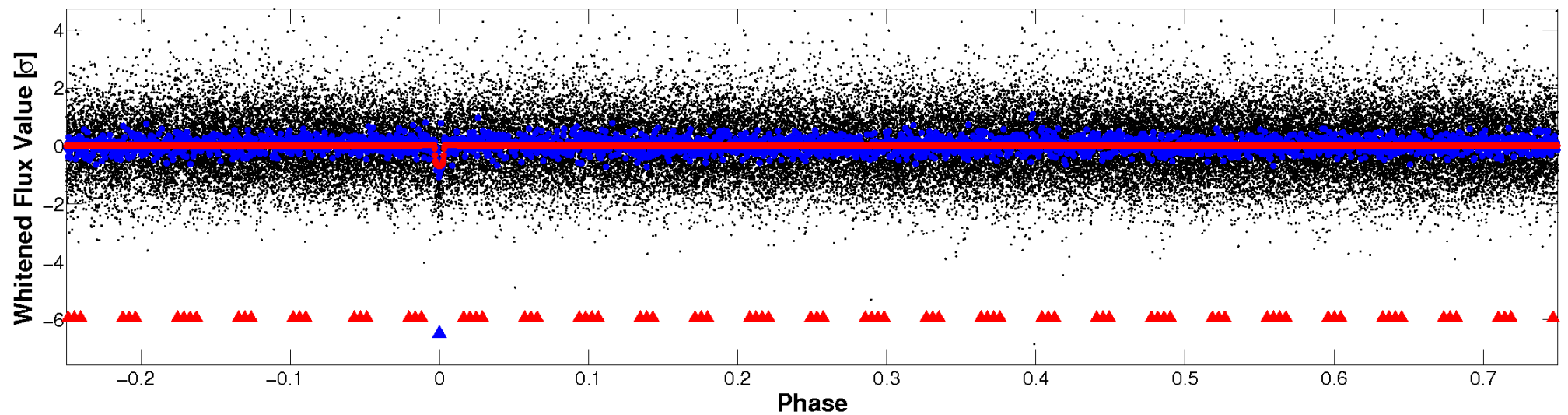


Non-Whitened Vs. Whitened Light Curve

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

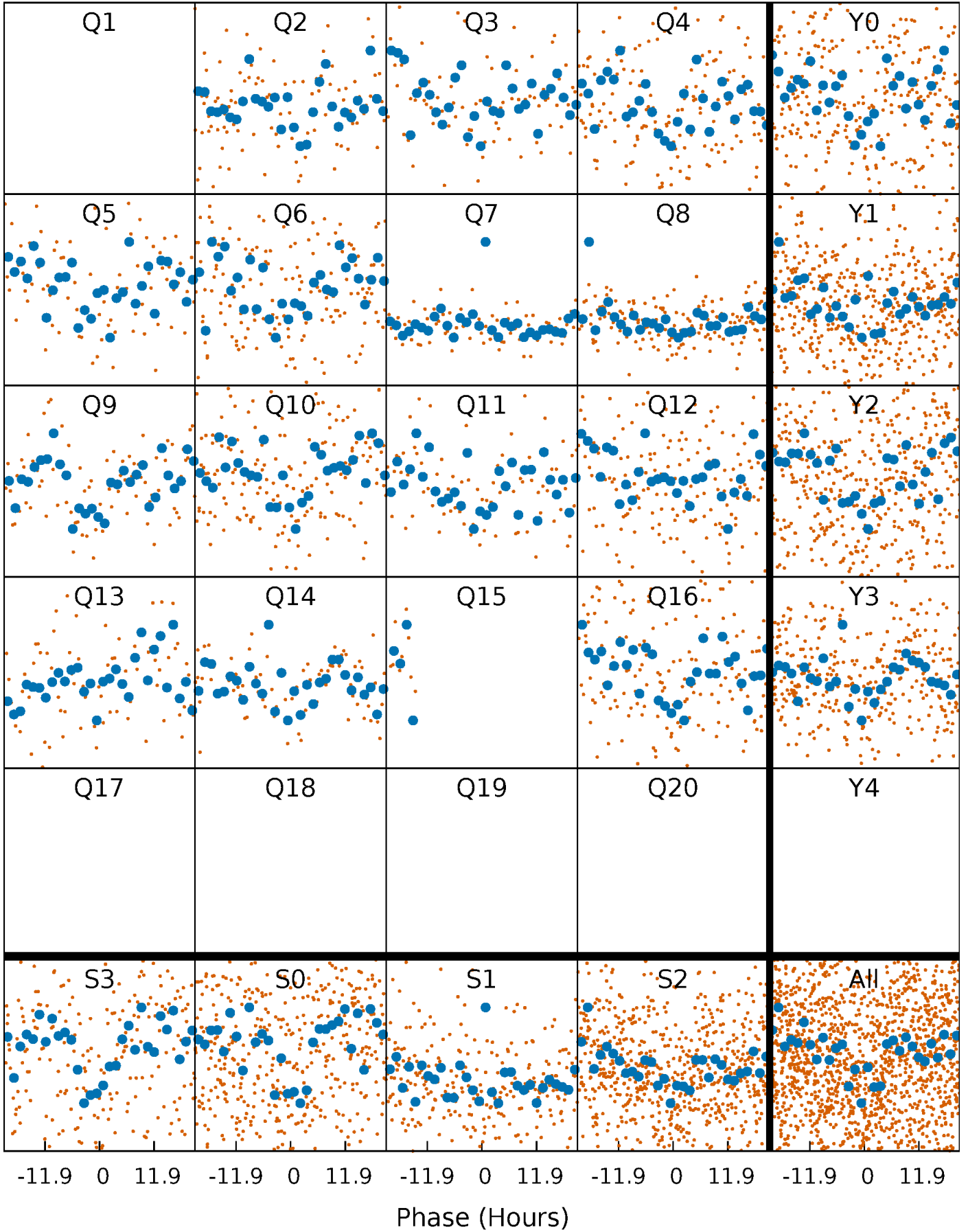


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



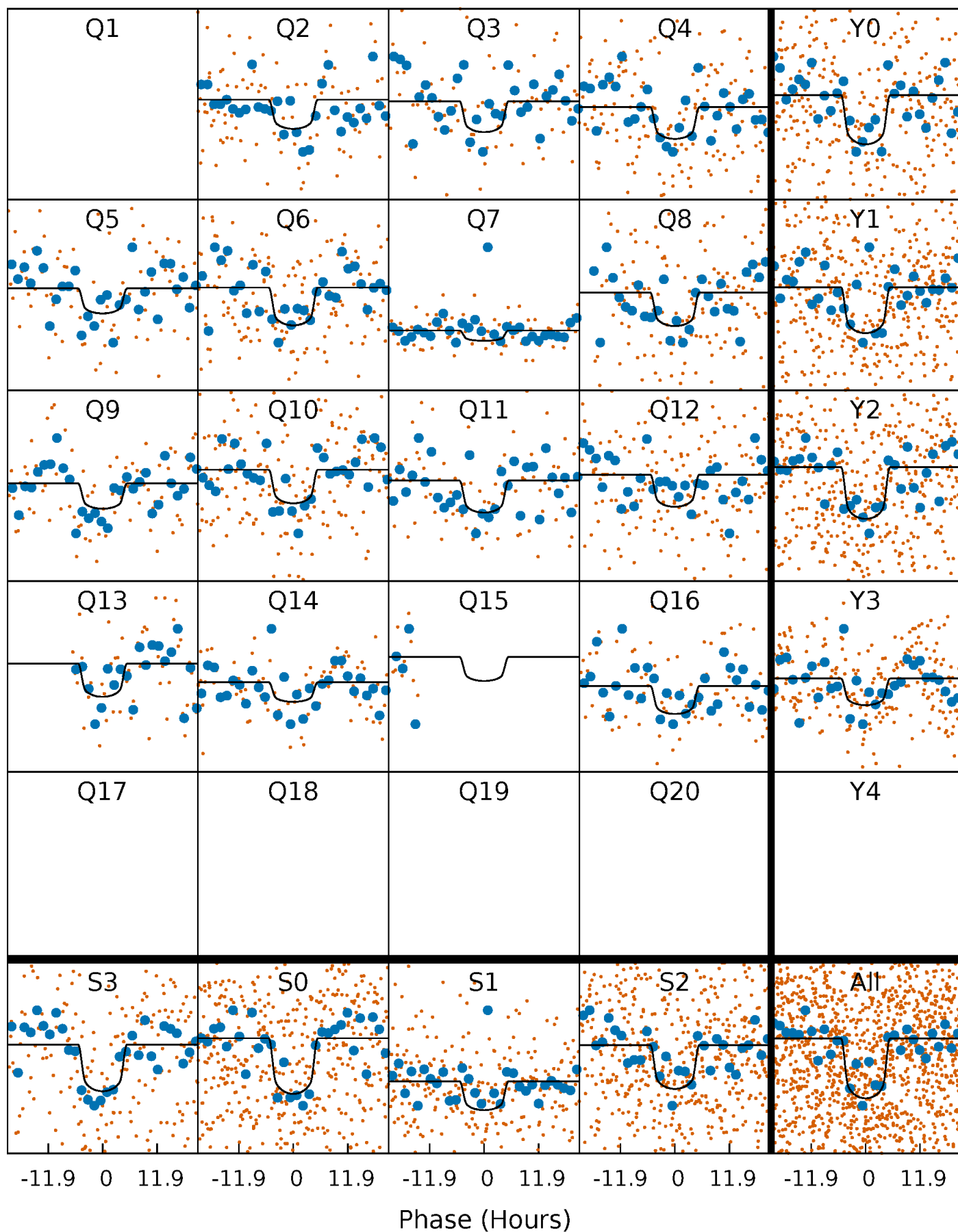
PDC Quarter-Phased Transit Curves

TCE 009285265-02 P= 61.568584 Days $T_0=182.032549$ (BKJD)



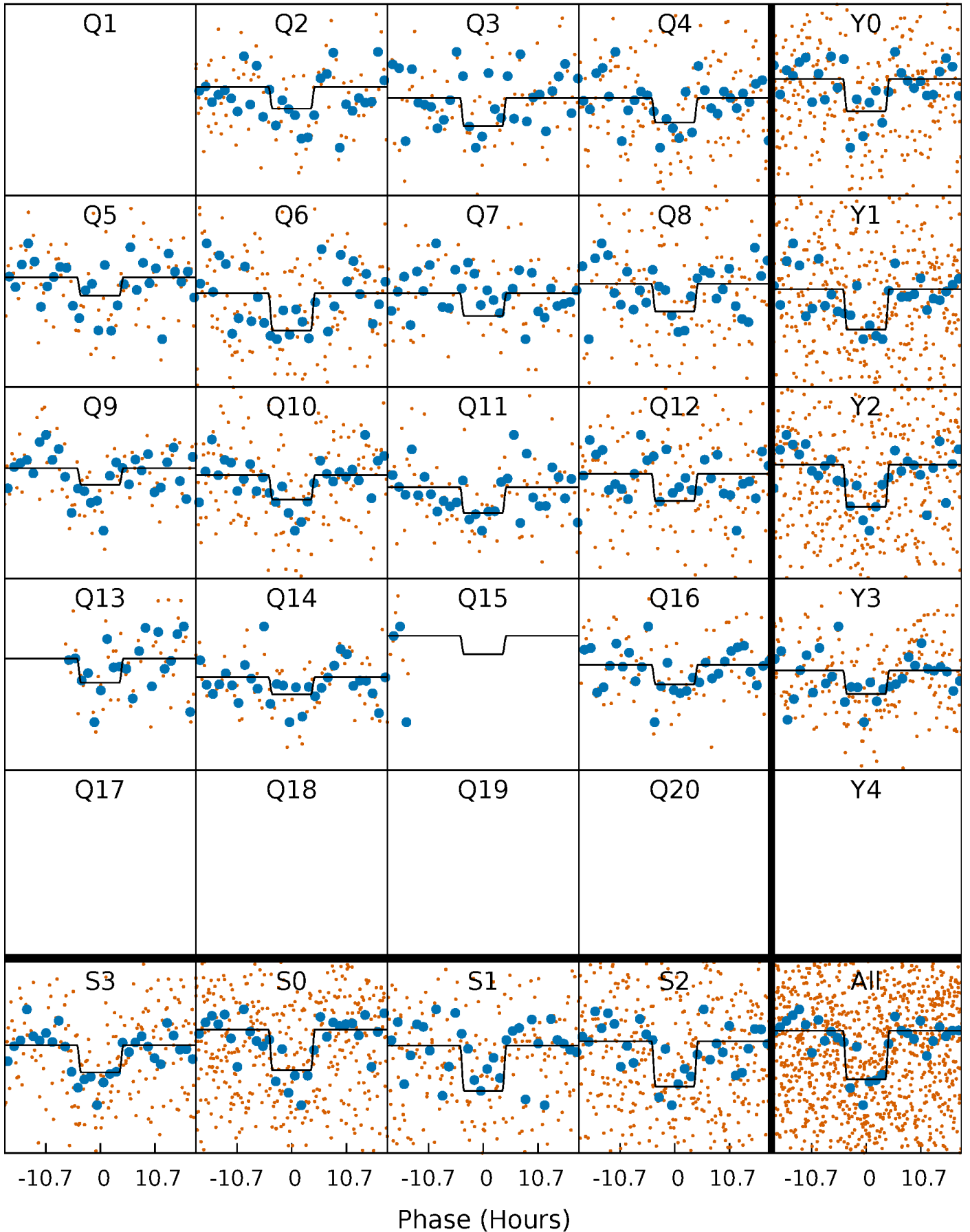
DV Quarter-Phased Transit Curves

TCE 009285265-02 P= 61.568584 Days $T_0=182.032549$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

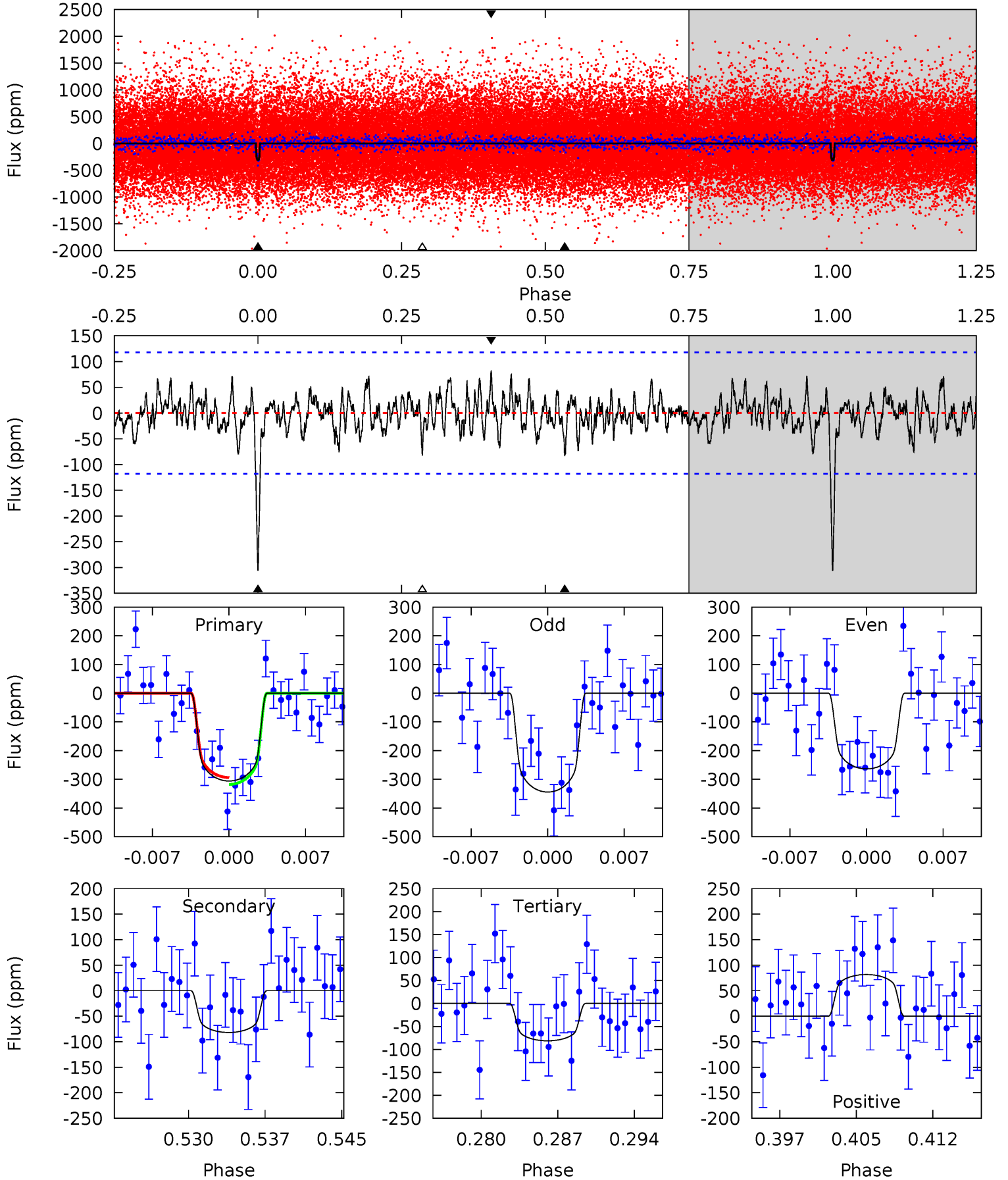
TCE 009285265-02 P= 61.568287 Days $T_0=182.048522$ (BKJD)



DV Model-Shift Uniqueness Test

009285265-02, P = 61.568584 Days, E = 120.463965 Days

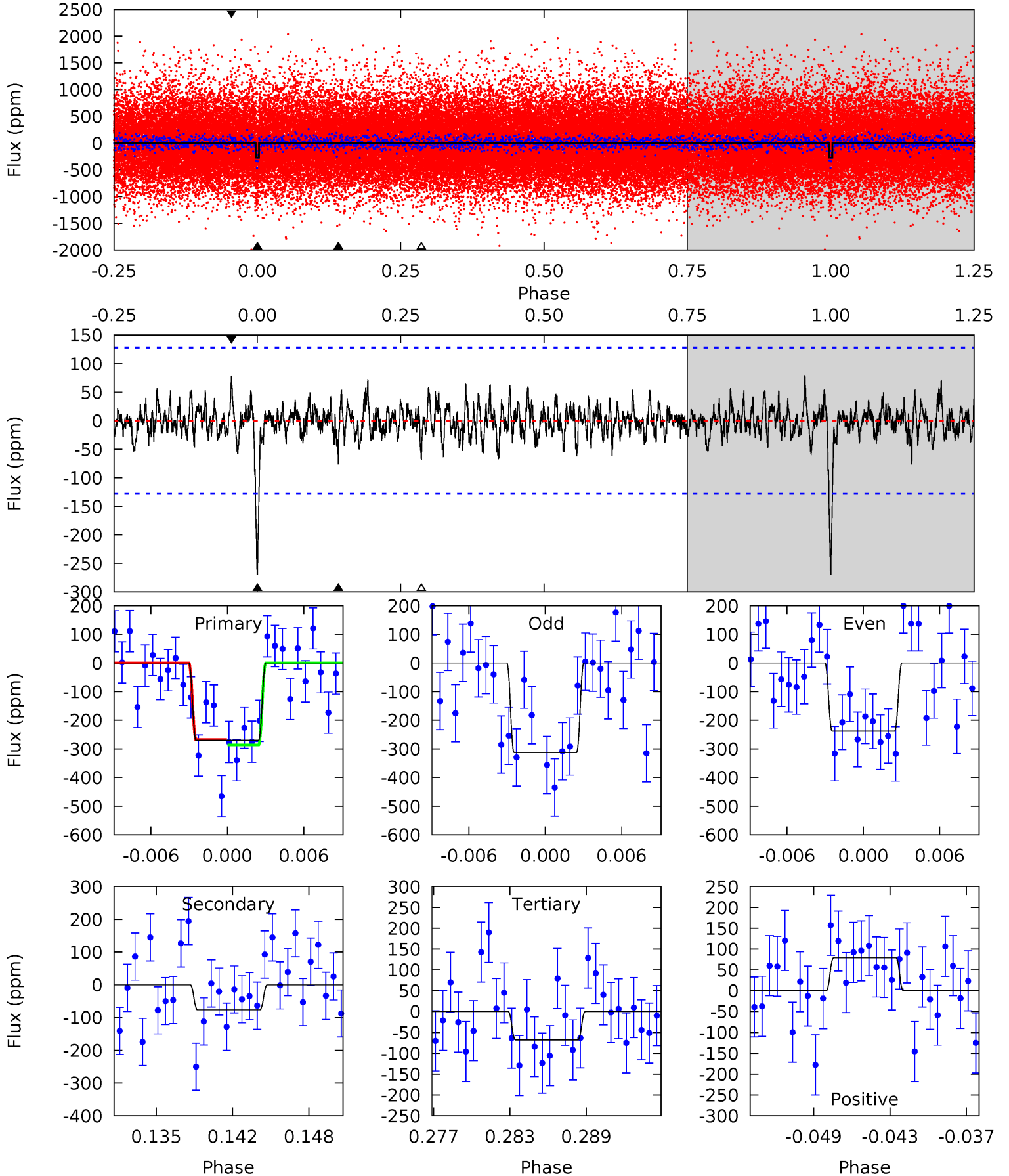
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	3.53	3.51	3.52	5.08	2.68	1.17	9.69	9.67	0.02	0.01	1.74	0.84	0.21	0.52



Alt Model-Shift Uniqueness Test

009285265-02, P = 61.568287 Days, E = 120.480235 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	3.05	2.71	3.15	5.12	2.74	0.88	8.09	7.65	0.33	-0.10	1.49	0.82	0.23	0.38



Stellar Parameters For KIC 009285265

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5626^{+77}_{-77}	$4.149^{+0.188}_{-0.101}$	$0.140^{+0.150}_{-0.150}$	$1.389^{+0.223}_{-0.298}$	$0.991^{+0.079}_{-0.065}$	$0.521^{+0.508}_{-0.159}$
	+1%/-1%	+5%/-2%	+107%/-107%	+16%/-21%	+8%/-7%	+97%/-30%
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 009285265-02 / KOI 3410.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-82 ± 23	$3.06^{+0.54}_{-0.49}$	736^{+32}_{-46}	4011^{+274}_{-259}	446^{+235}_{-168}
Alt.	-76 ± 25	$2.46^{+0.48}_{-0.43}$	736^{+33}_{-44}	4298^{+378}_{-372}	635^{+387}_{-260}

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

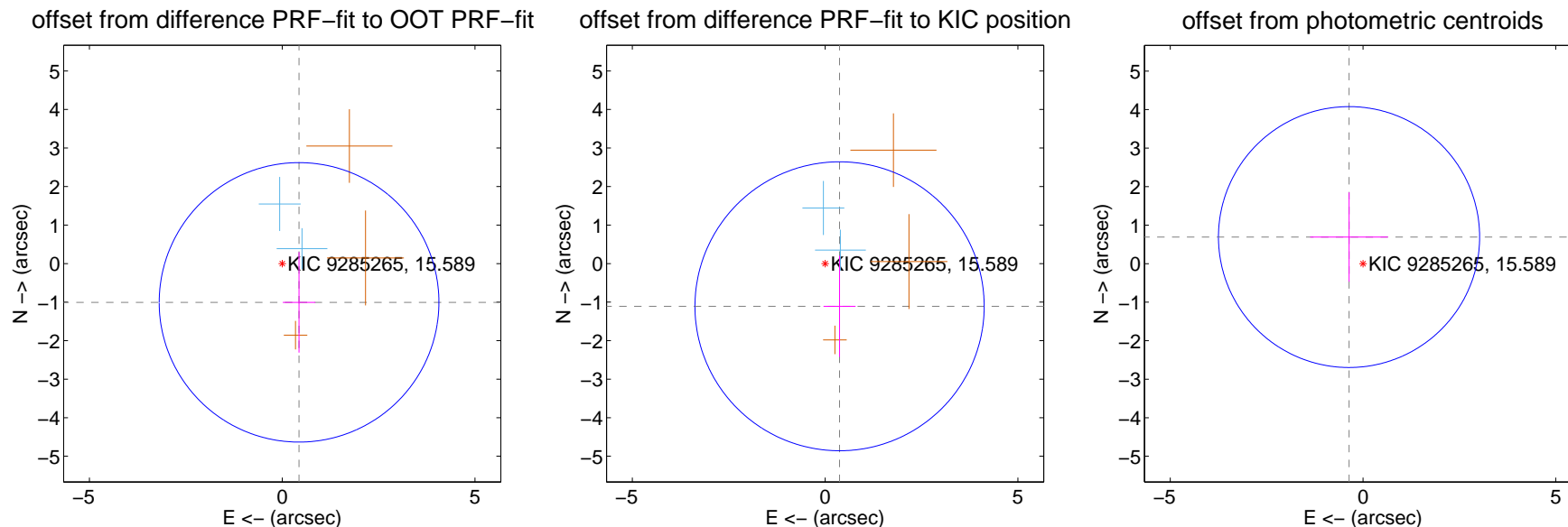
DV Centroid Data

Supplemental centroid analysis for 009285265-02. Kepler magnitude: 15.59. Transit SNR 11.22

There are 2 quarters with good PRF difference image offsets

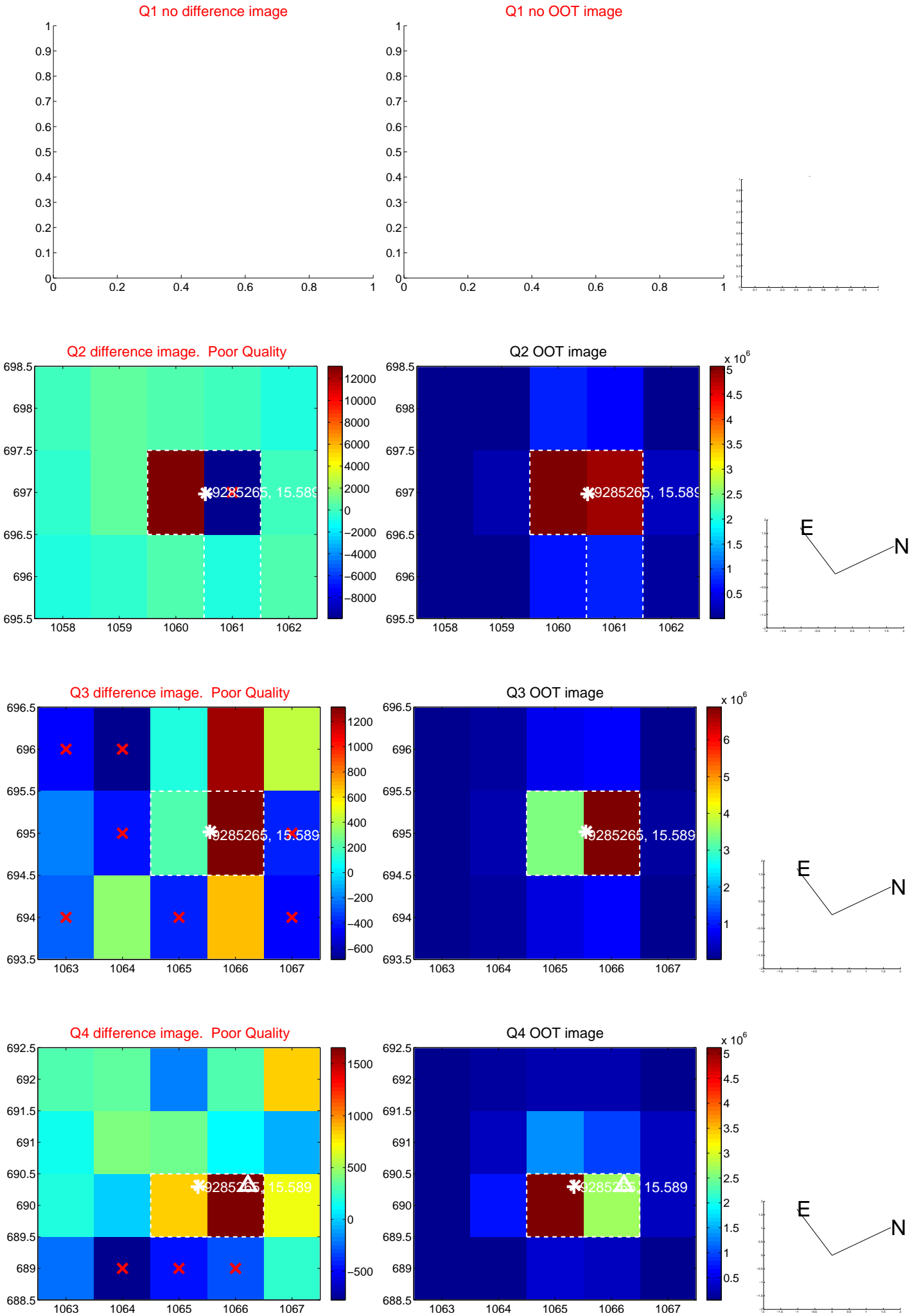
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.097 ± 1.209	0.91	-0.437 ± 0.422	-1.006 ± 1.305
PRF-fit source offset from KIC position	1.170 ± 1.250	0.94	-0.375 ± 0.416	-1.108 ± 1.312
photometric centroid source offset	0.78 ± 1.13	0.69	0.36 ± 1.01	0.69 ± 1.16

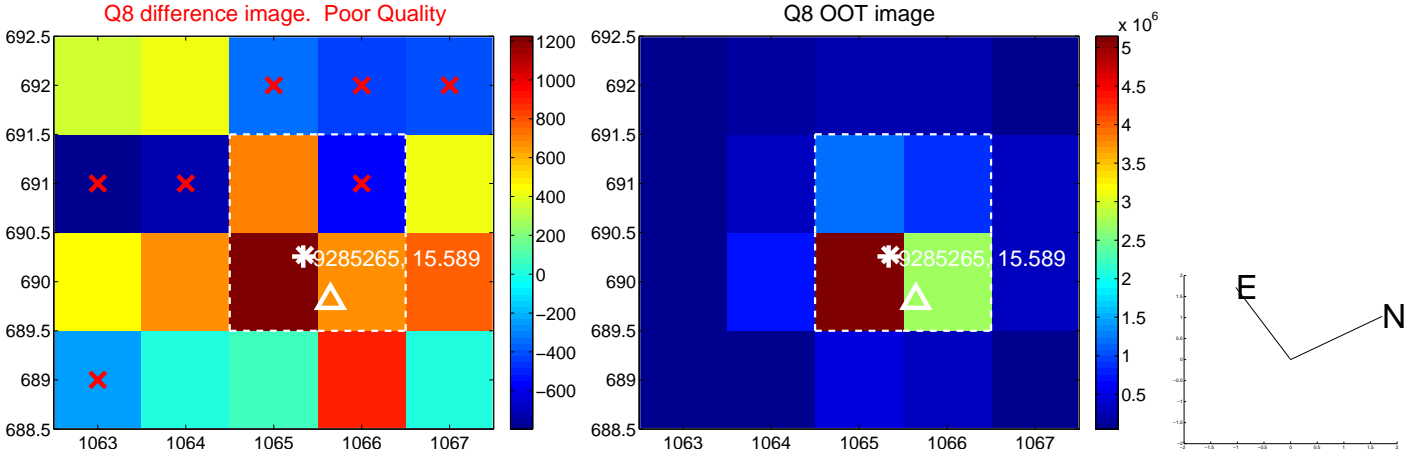
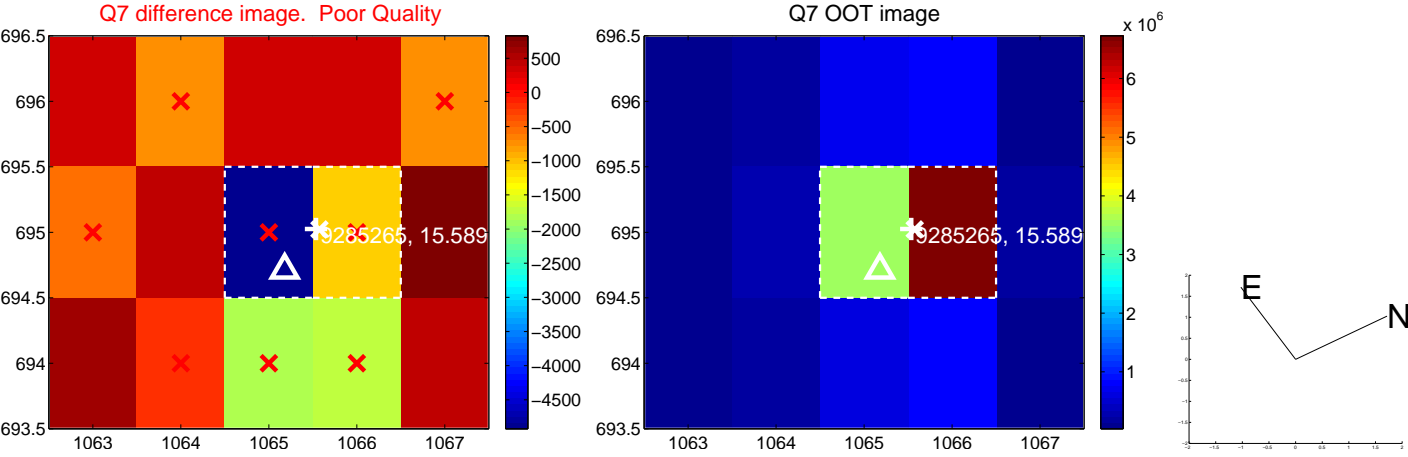
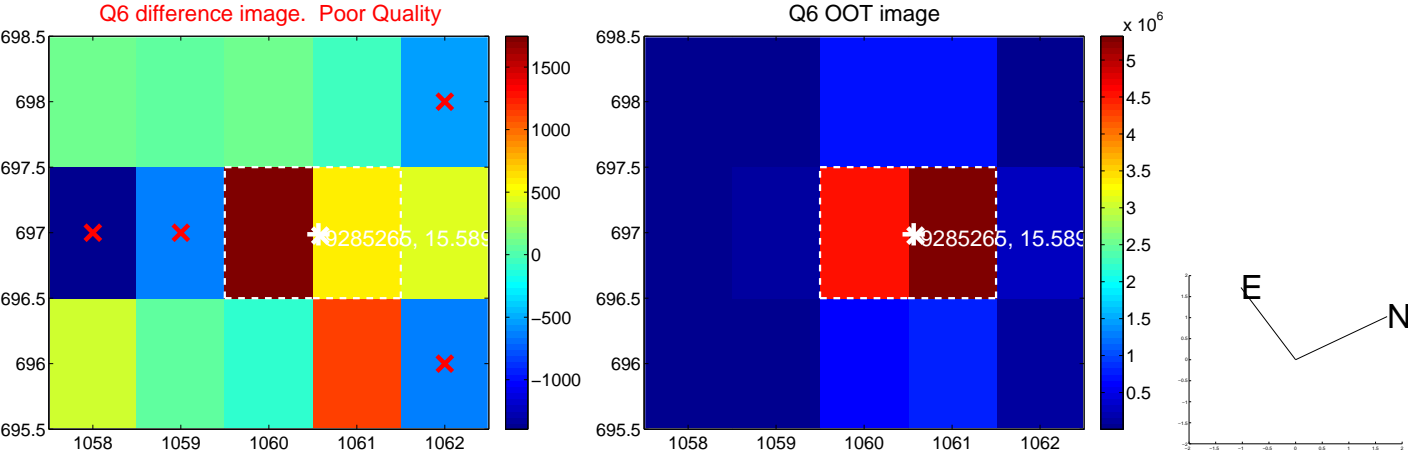
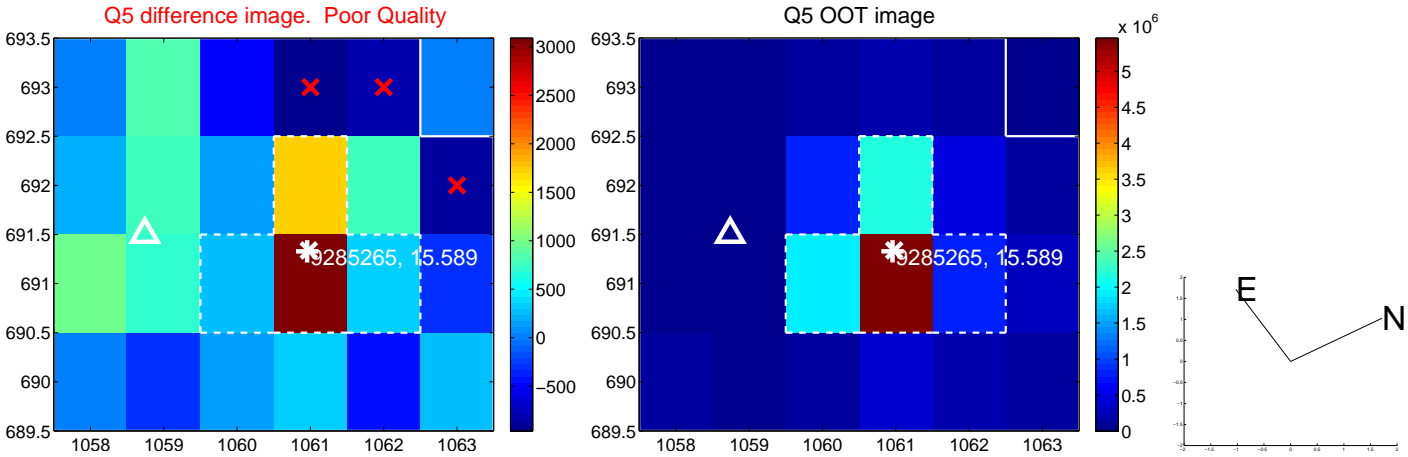


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

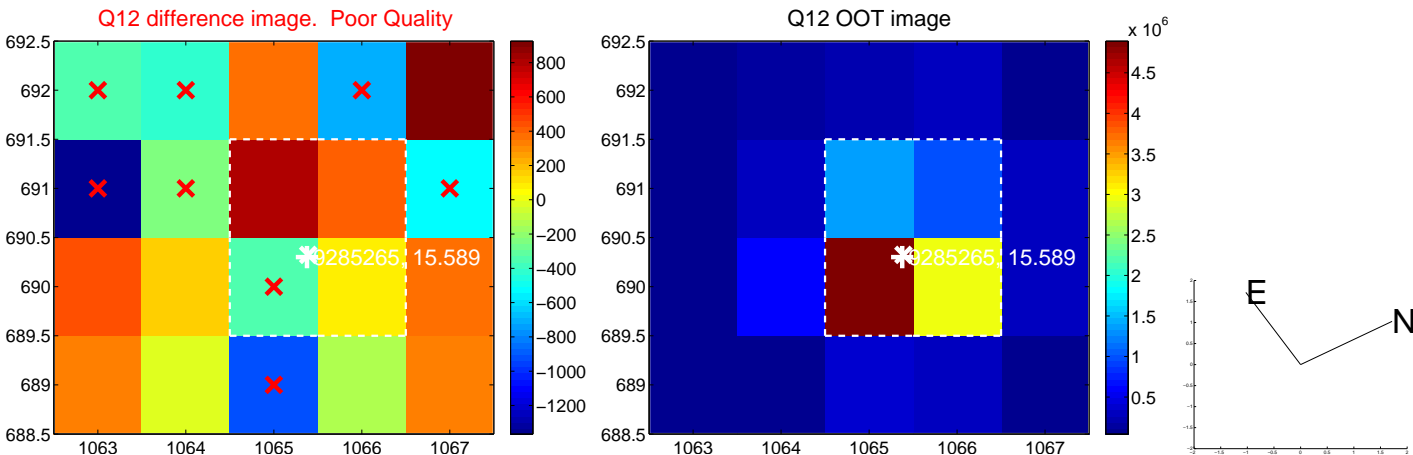
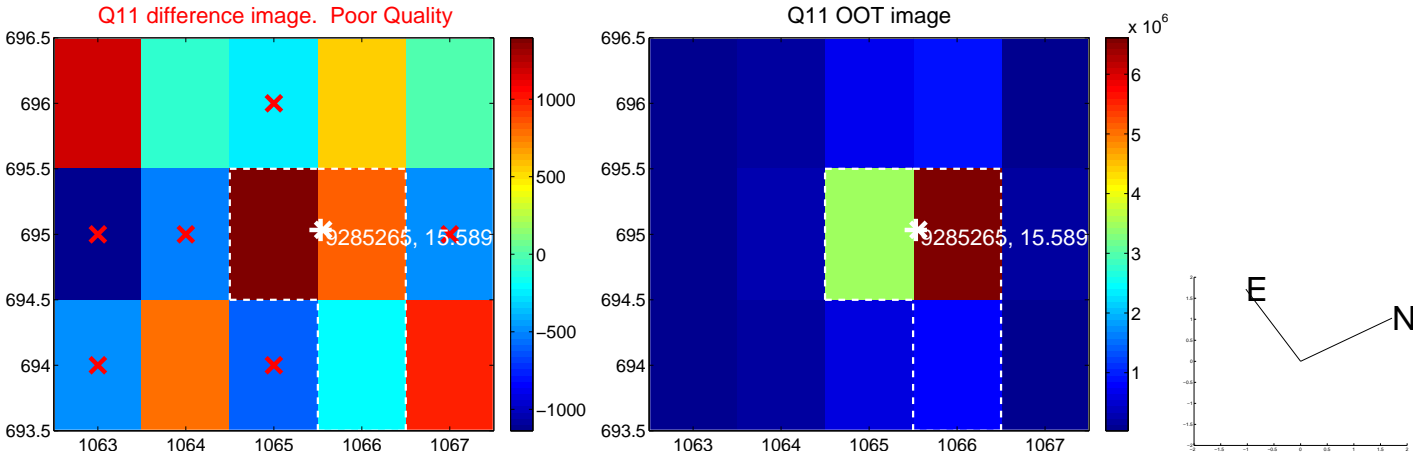
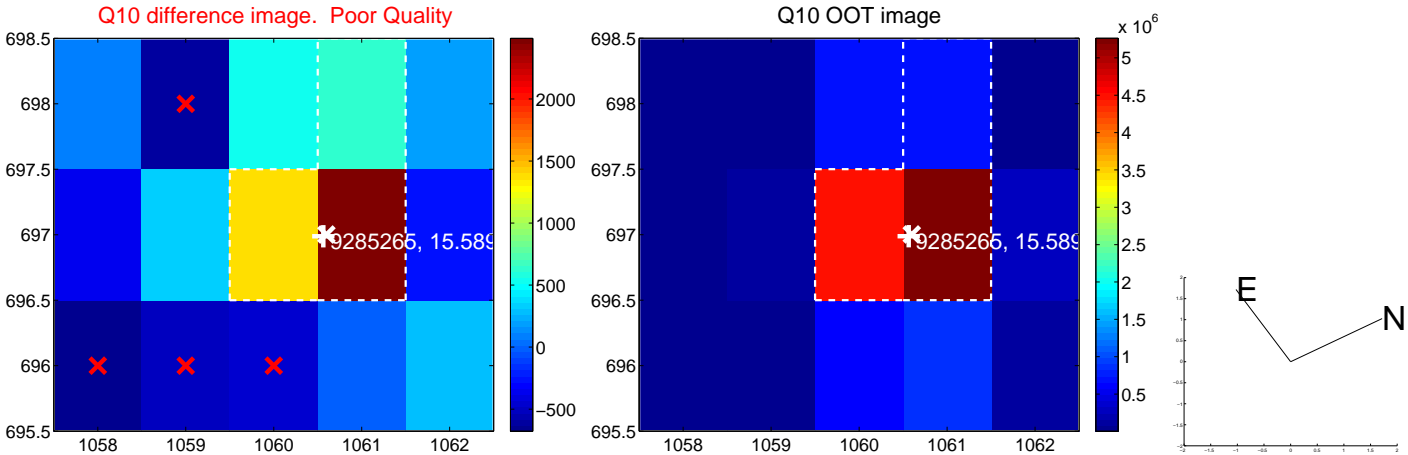
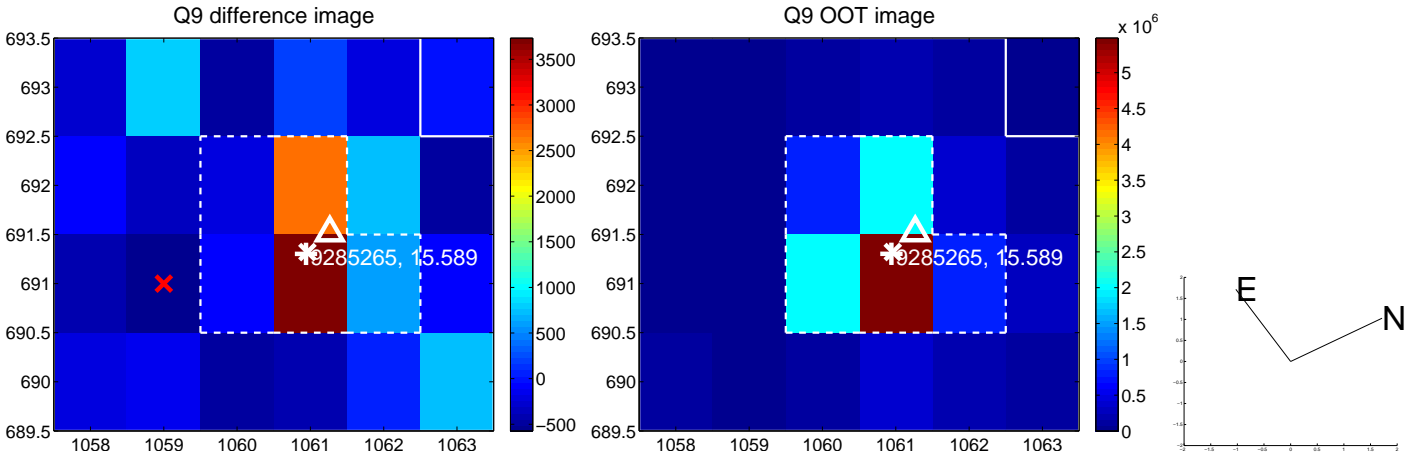
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



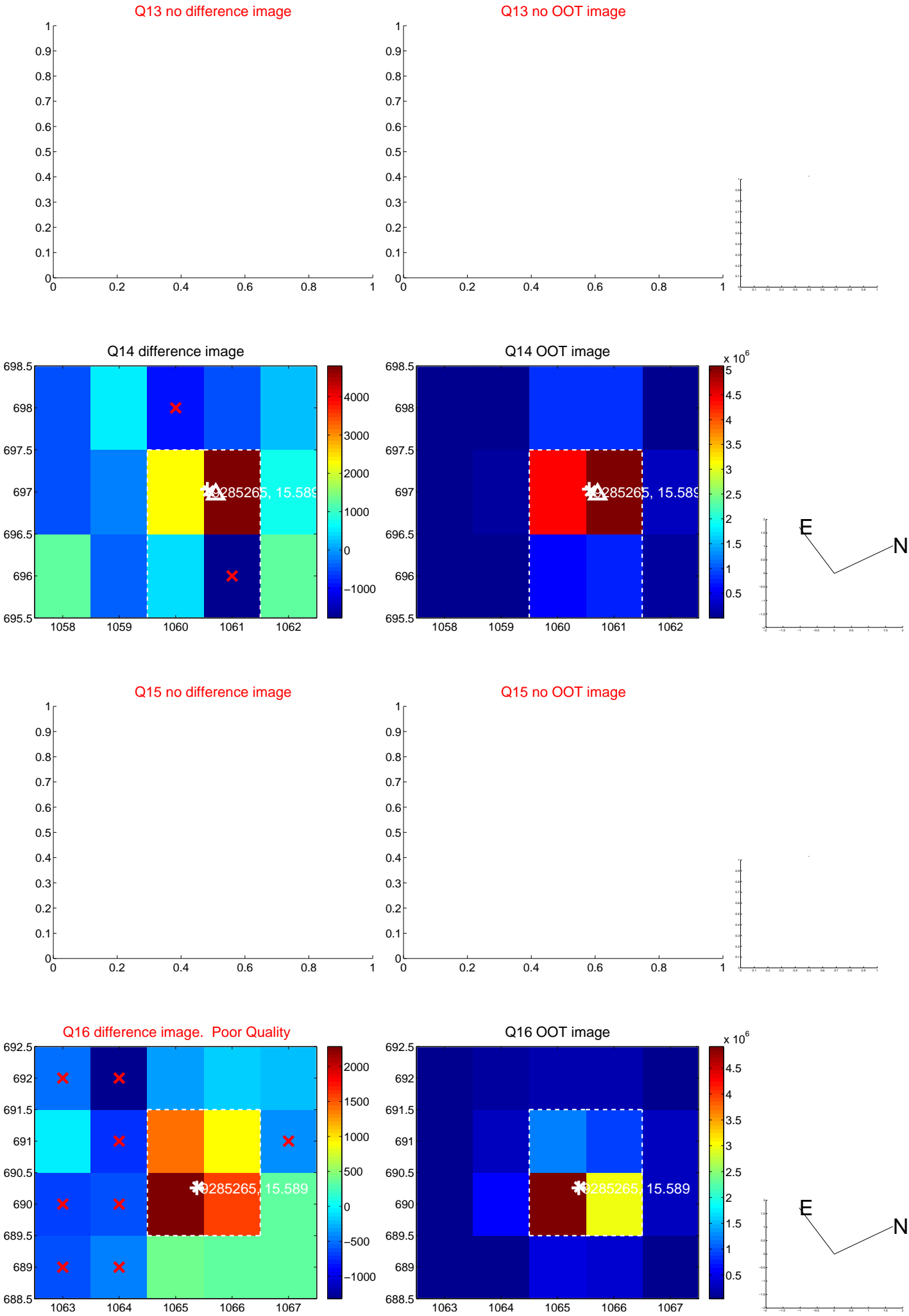
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



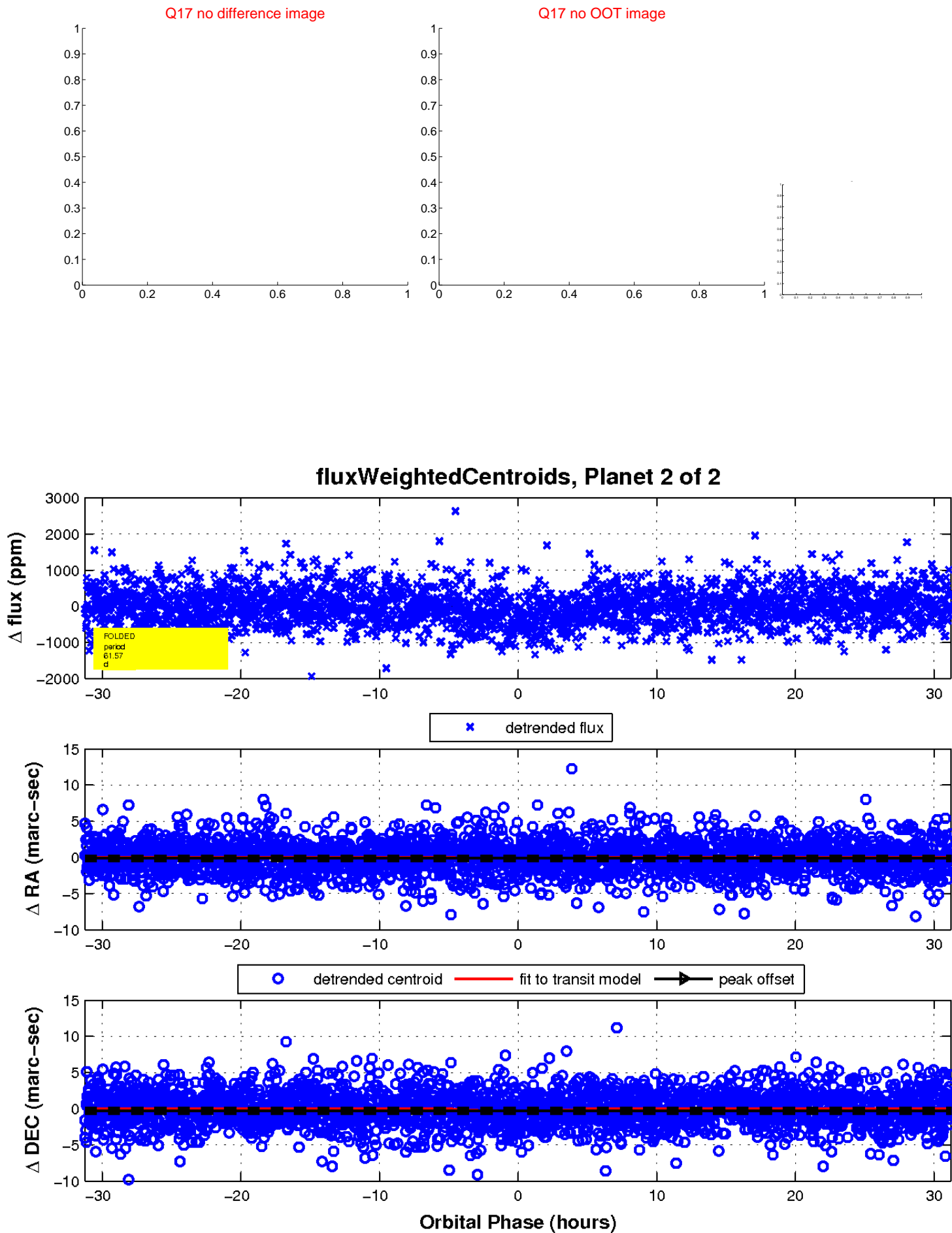
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

