

KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
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009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
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009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

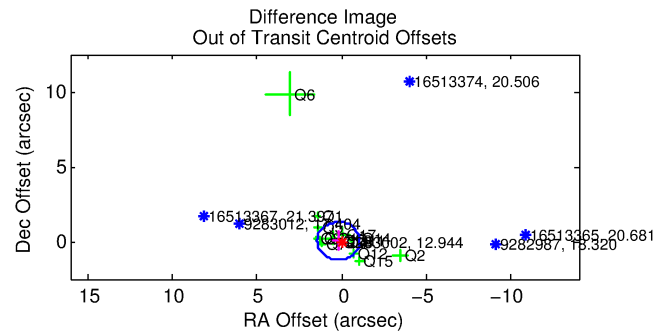
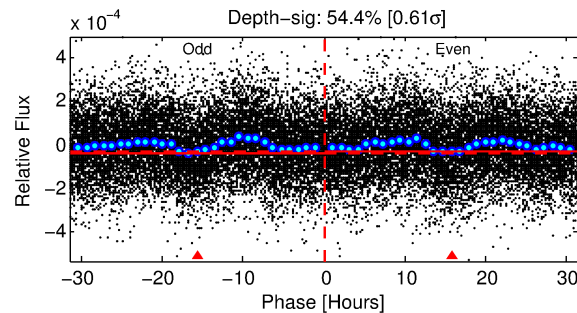
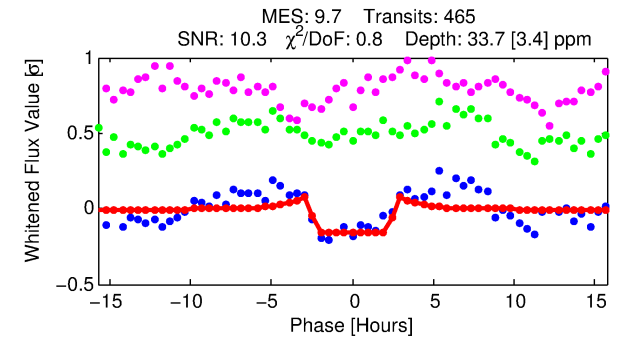
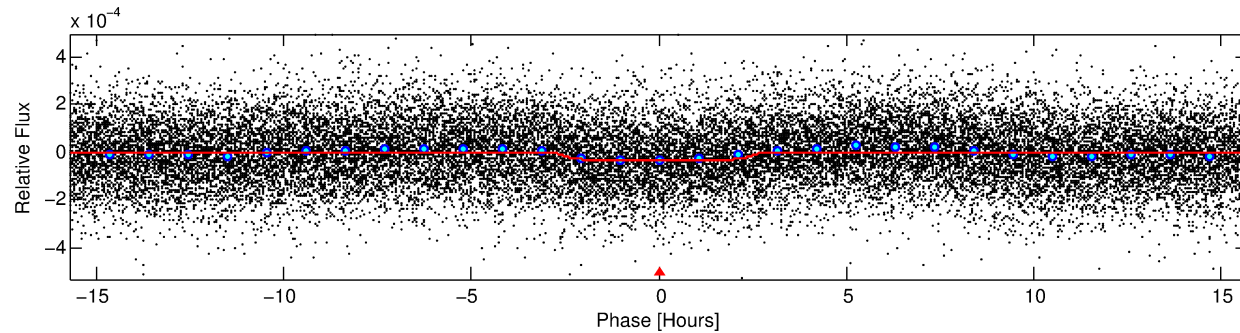
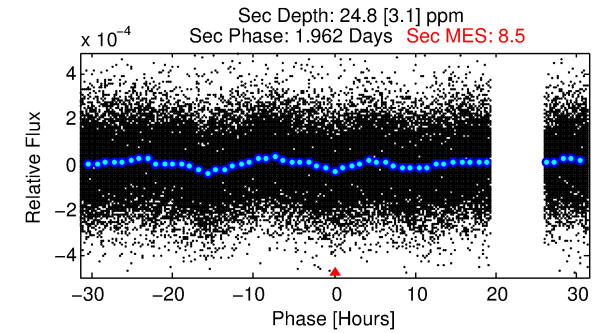
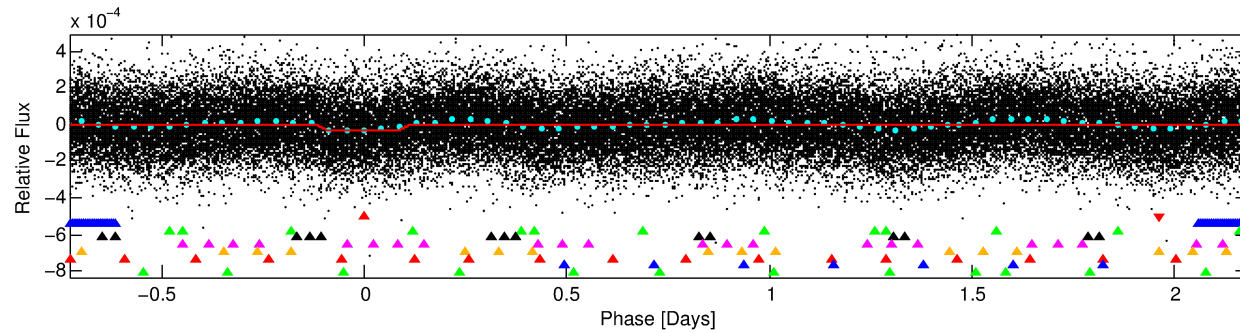
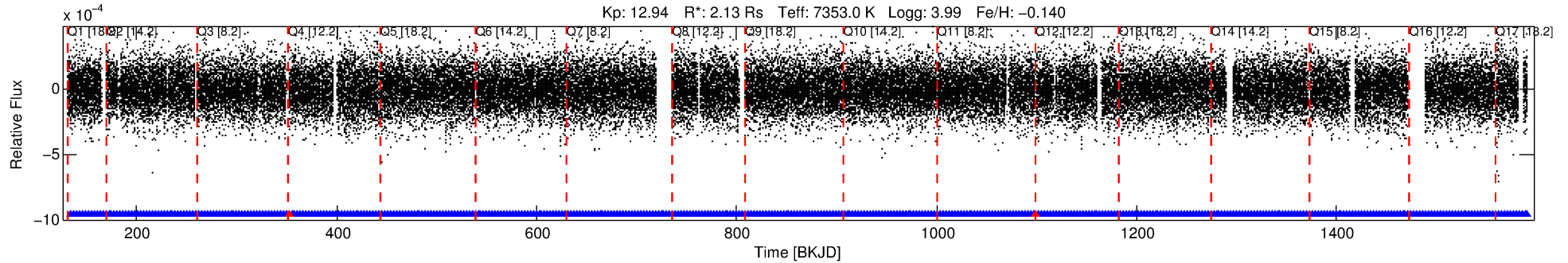
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-01

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 1 of 9 Period: 2.907 d



DV Fit Results:

Period = 2.90742 [0.00002] d
Epoch = 134.3874 [0.0038] BKJD
Rp/R* = 0.0063 [0.0013]
a/R* = 2.03 [1.89]
b = 0.91 [0.23]
Seff = 5410.70 [2413.30]
Teq = 2187 [244] K
Rp = 1.46 [0.54] Re
a = 0.0468 [0.0128] AU
Ag = 14.13 [8.47] [1.55σ]
Teffp = 6555 [762] K [5.46σ]

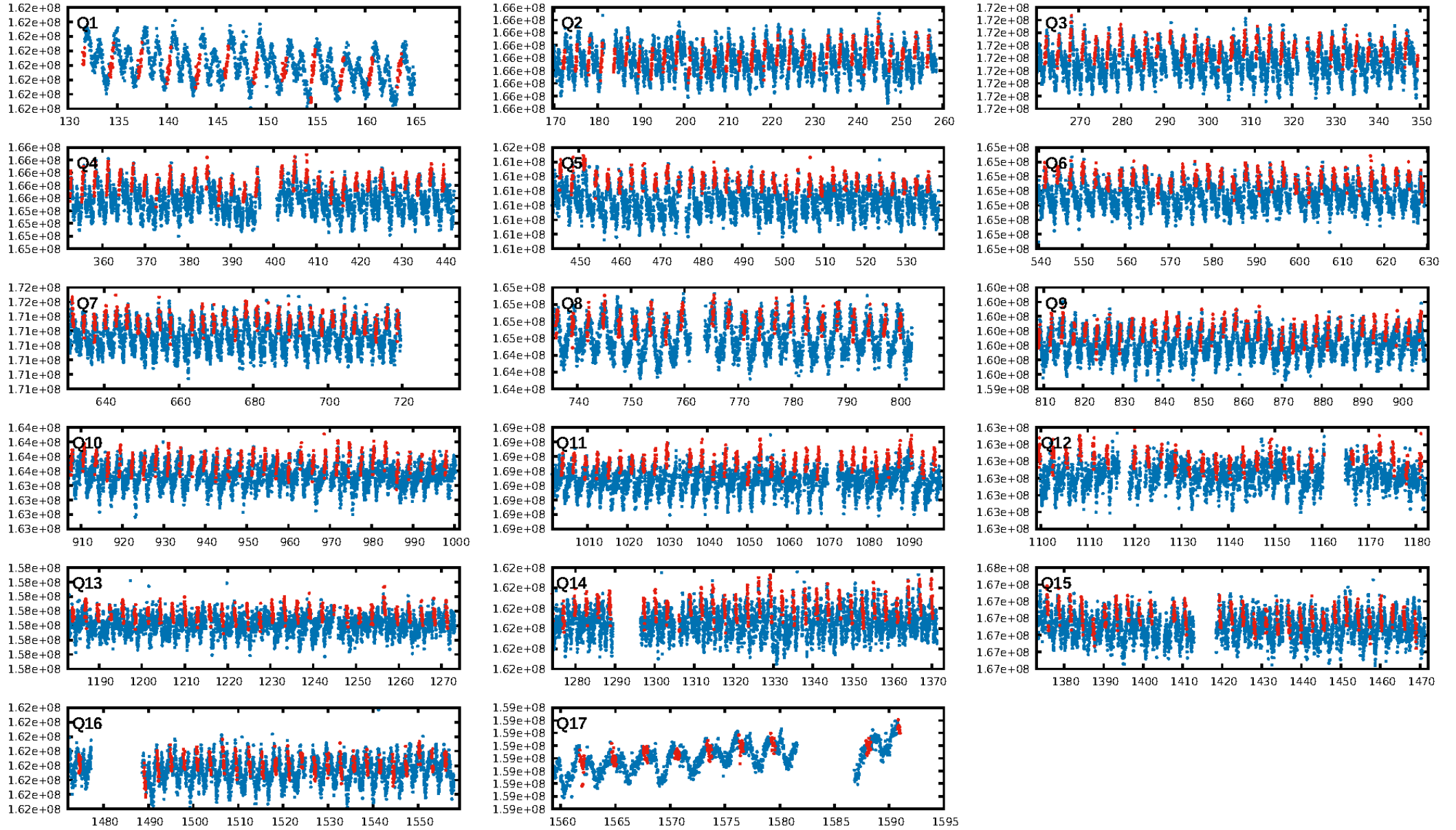
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [128.64σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.20e-13
RollingBand-fgt: 1.00 [442/444]
GhostDiagnostic-chr: 4.305
Centroid-sig: 5.6%
Centroid-so: 1.025 arcsec [1.58σ]
OotOffset-rm: 0.197 arcsec [0.47σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.277 arcsec [0.65σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.38 [6/16]
DiffImageOverlap-fno: 0.35 [6/17]

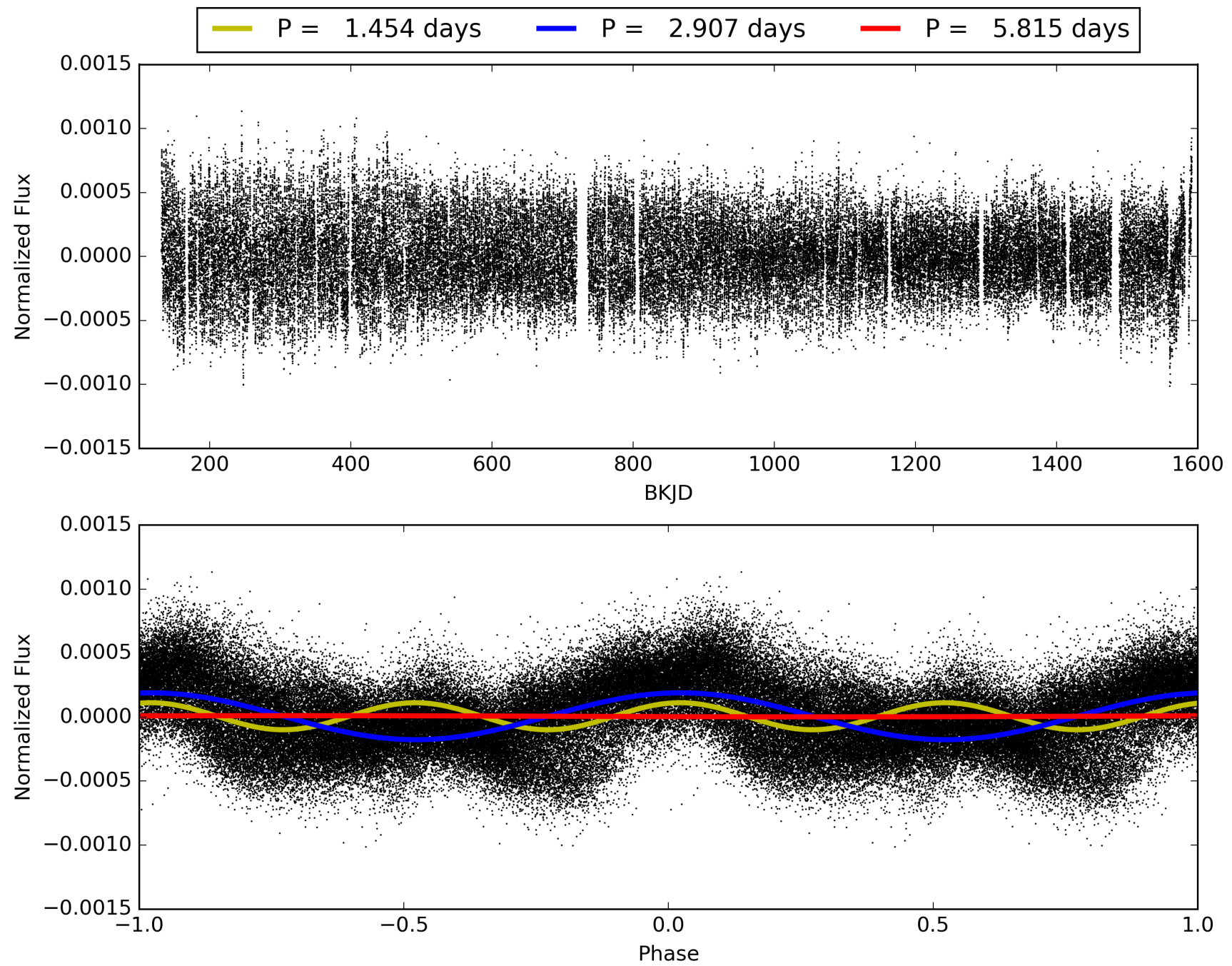
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:08 Z

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

TCE 009283002-01, PDC Light Curves

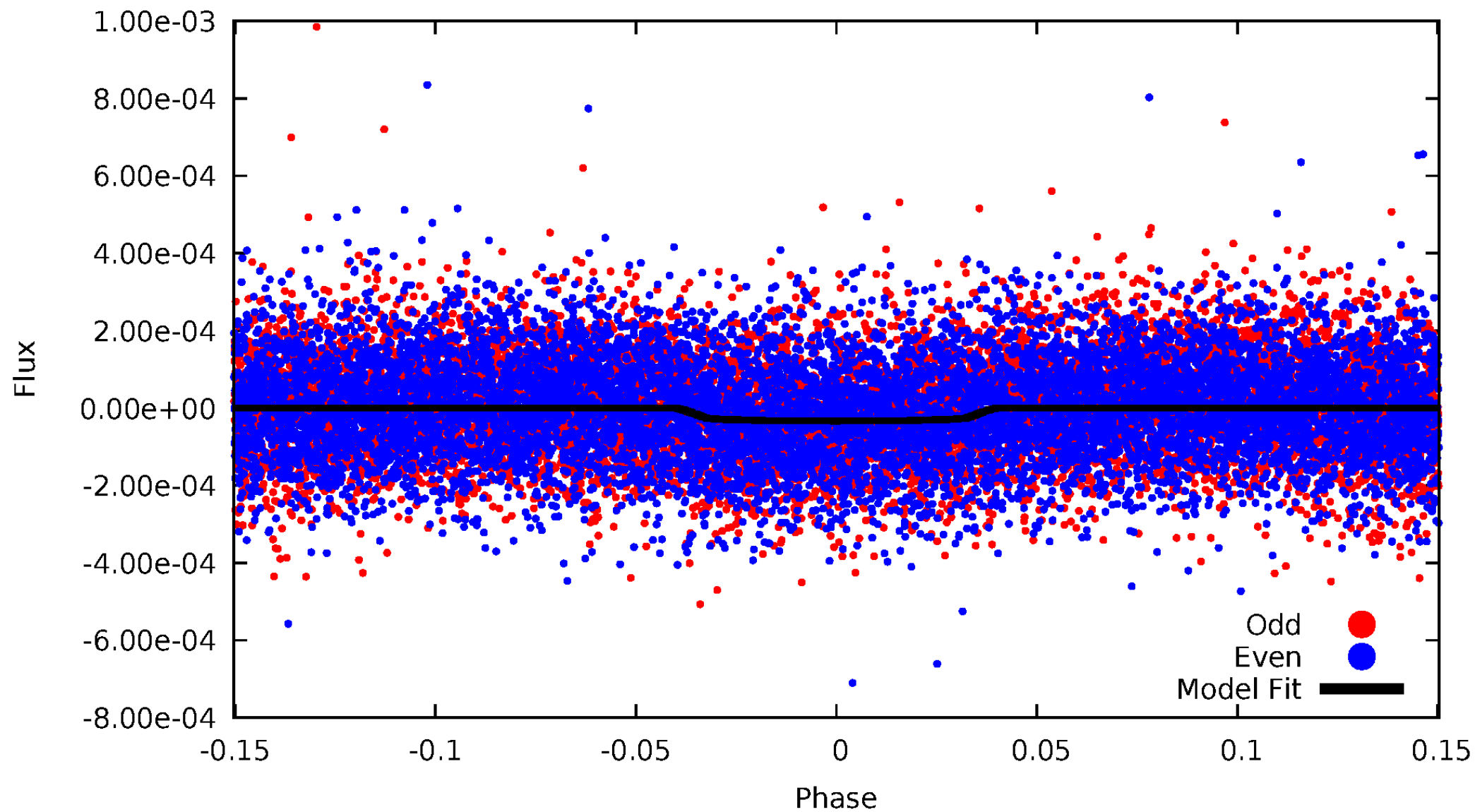


TCE 009283002-01



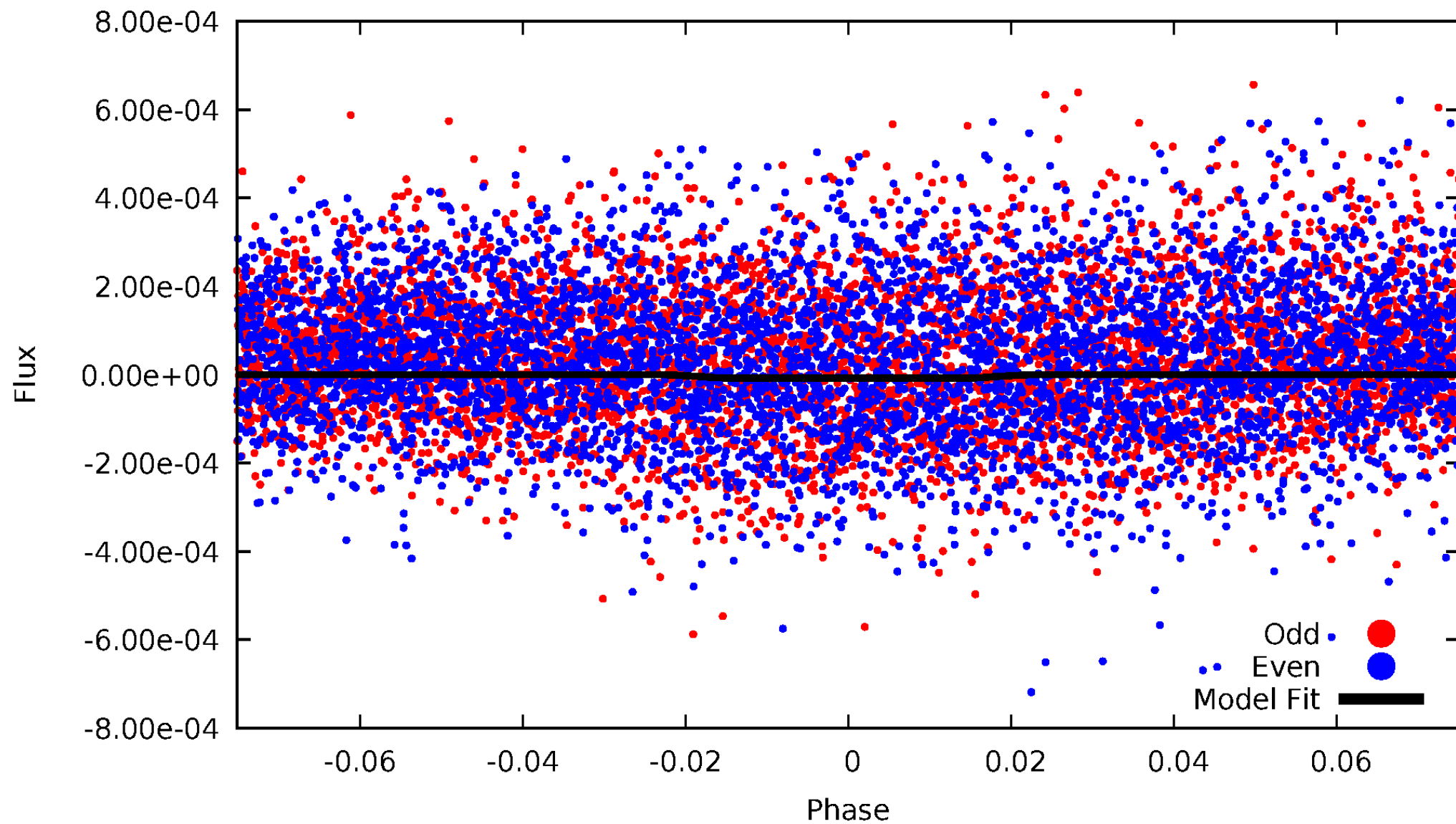
DV Odd/Even

TCE 009283002-01



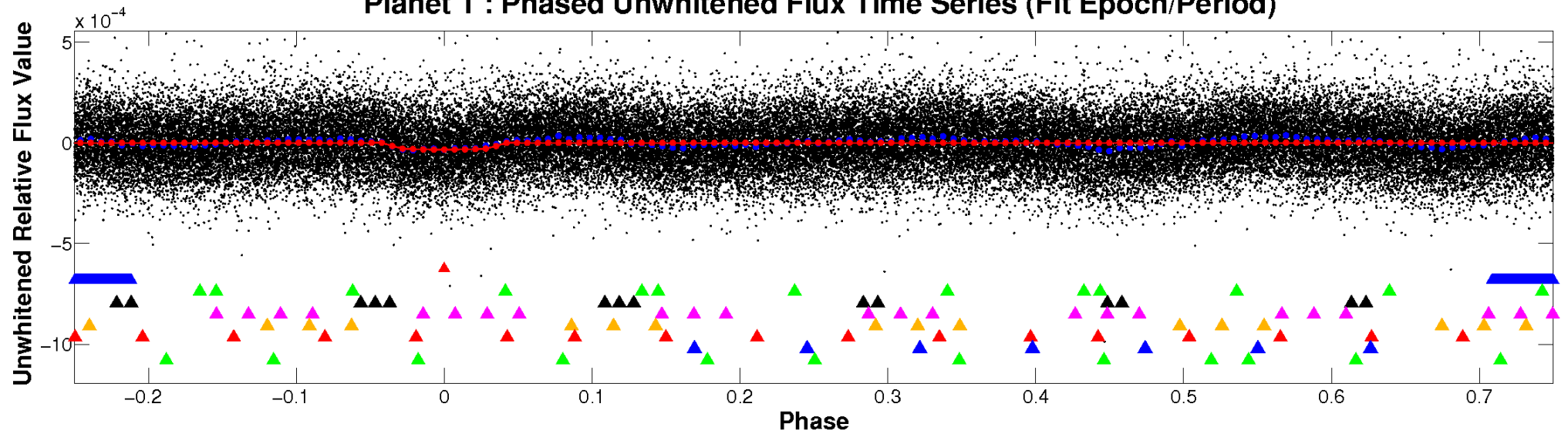
ALT Odd/Even

TCE 009283002-01

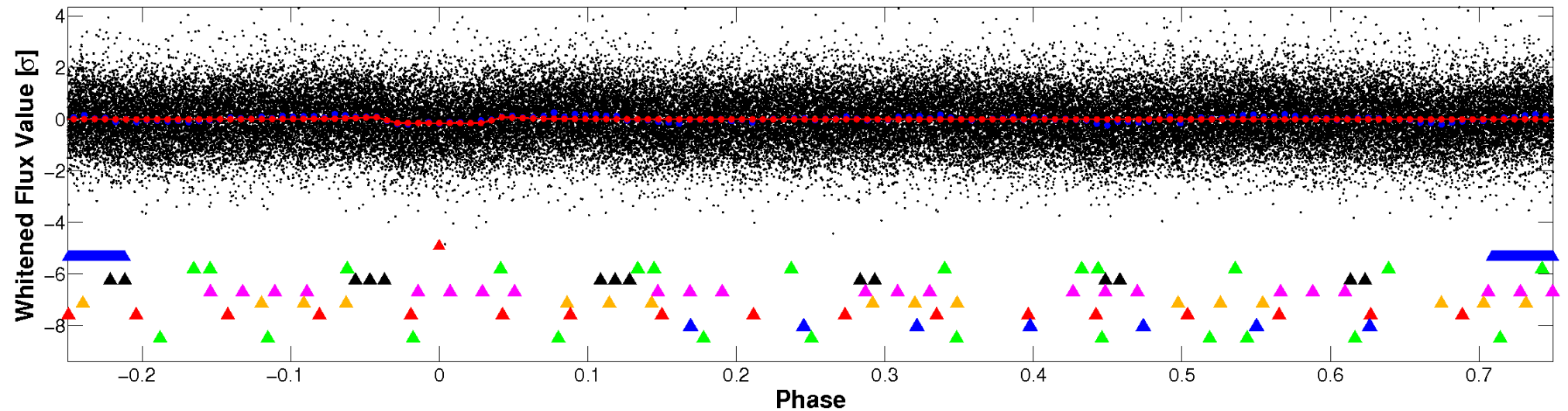


Non-Whitened Vs. Whitened Light Curve

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

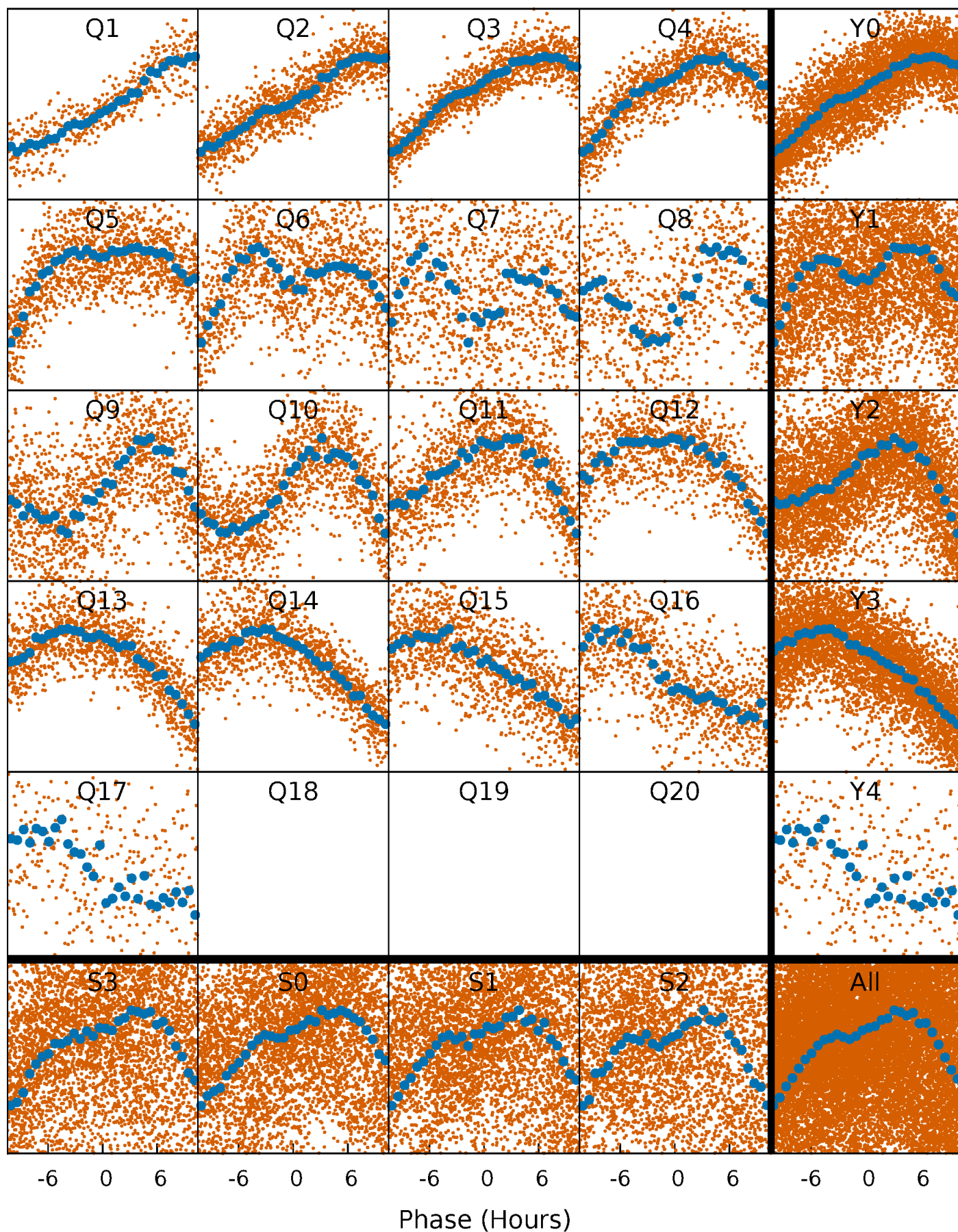


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



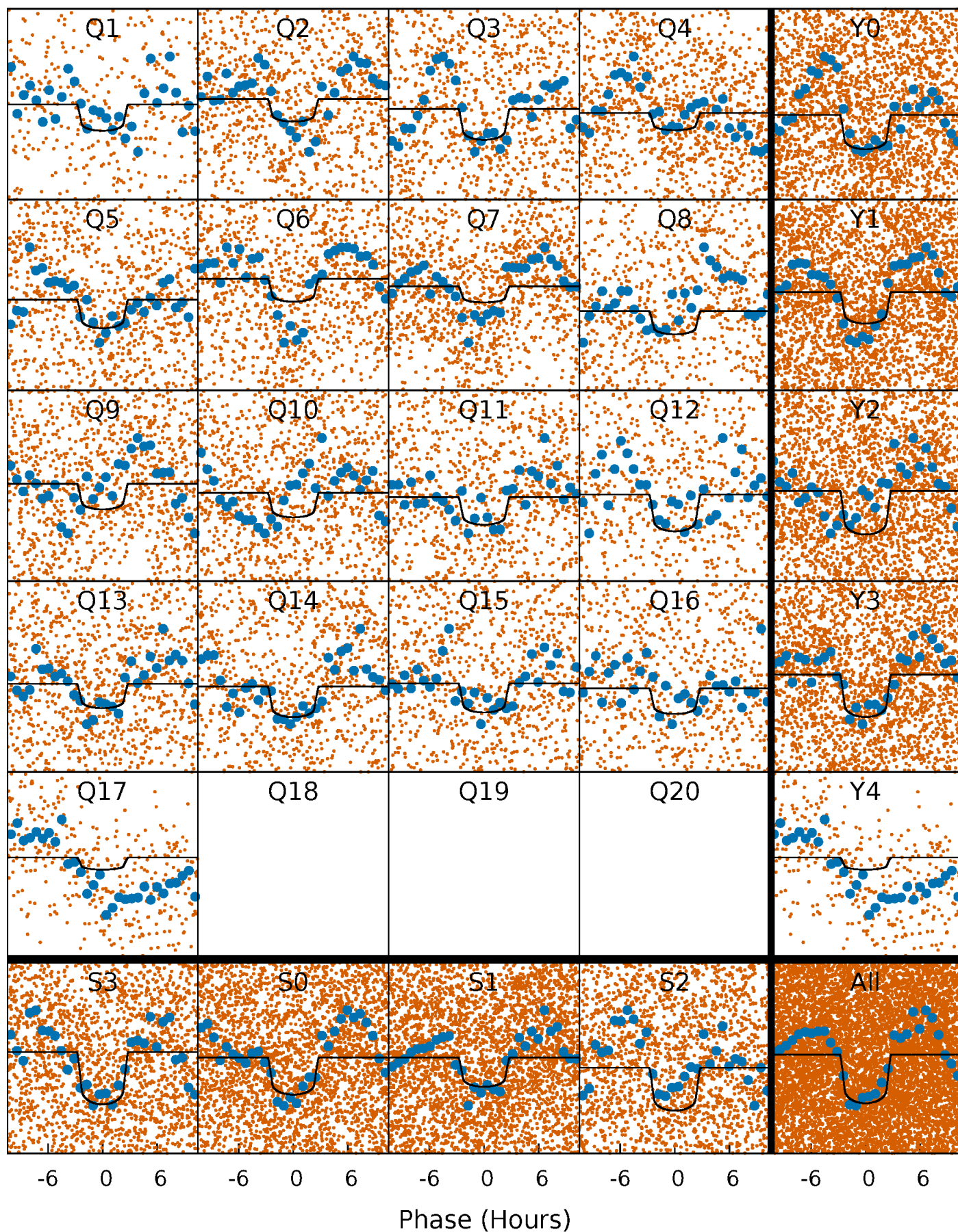
PDC Quarter-Phased Transit Curves

TCE 009283002-01 P= 2.907423 Days $T_0=134.387372$ (BKJD)



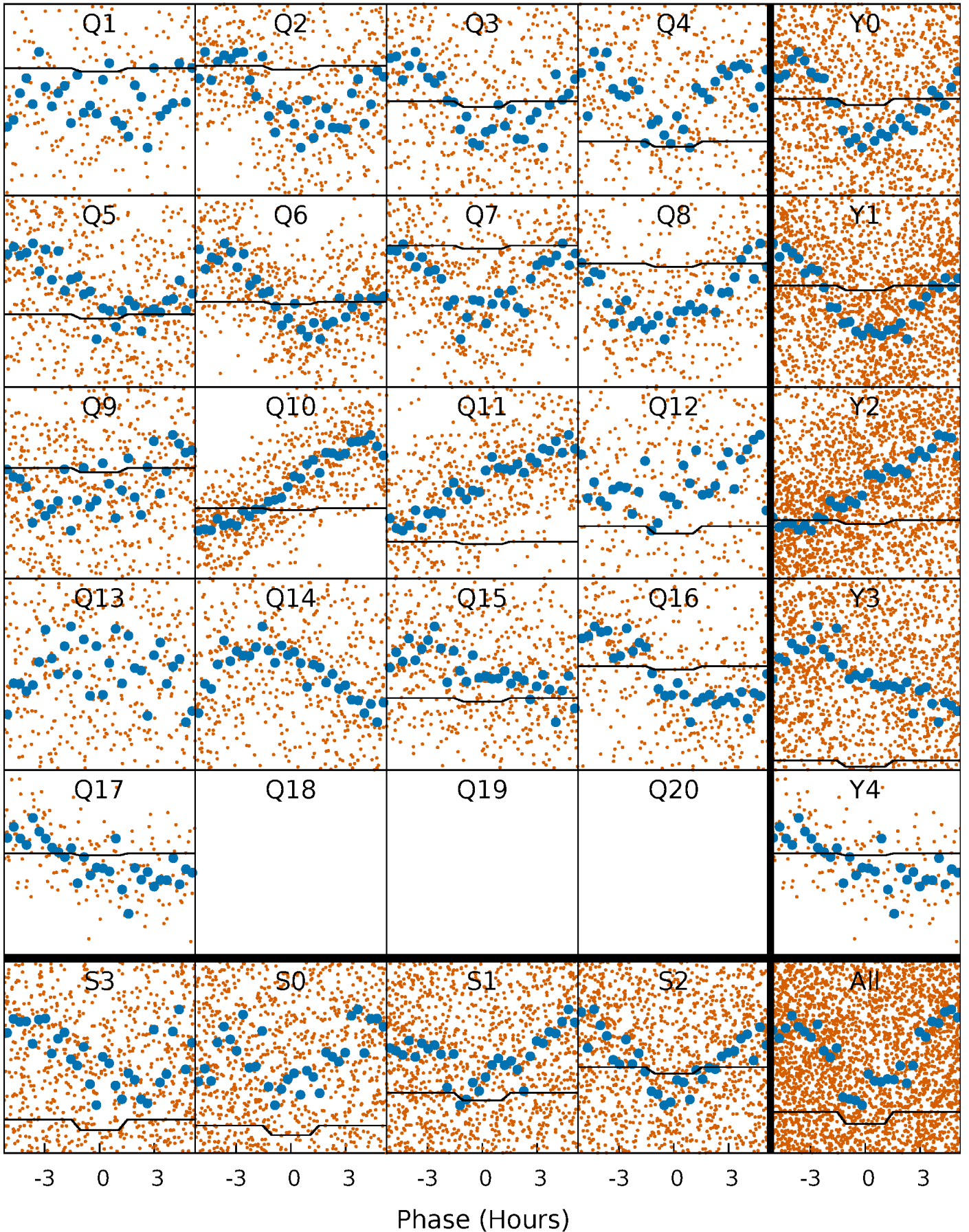
DV Quarter-Phased Transit Curves

TCE 009283002-01 P= 2.907423 Days $T_0=134.387372$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

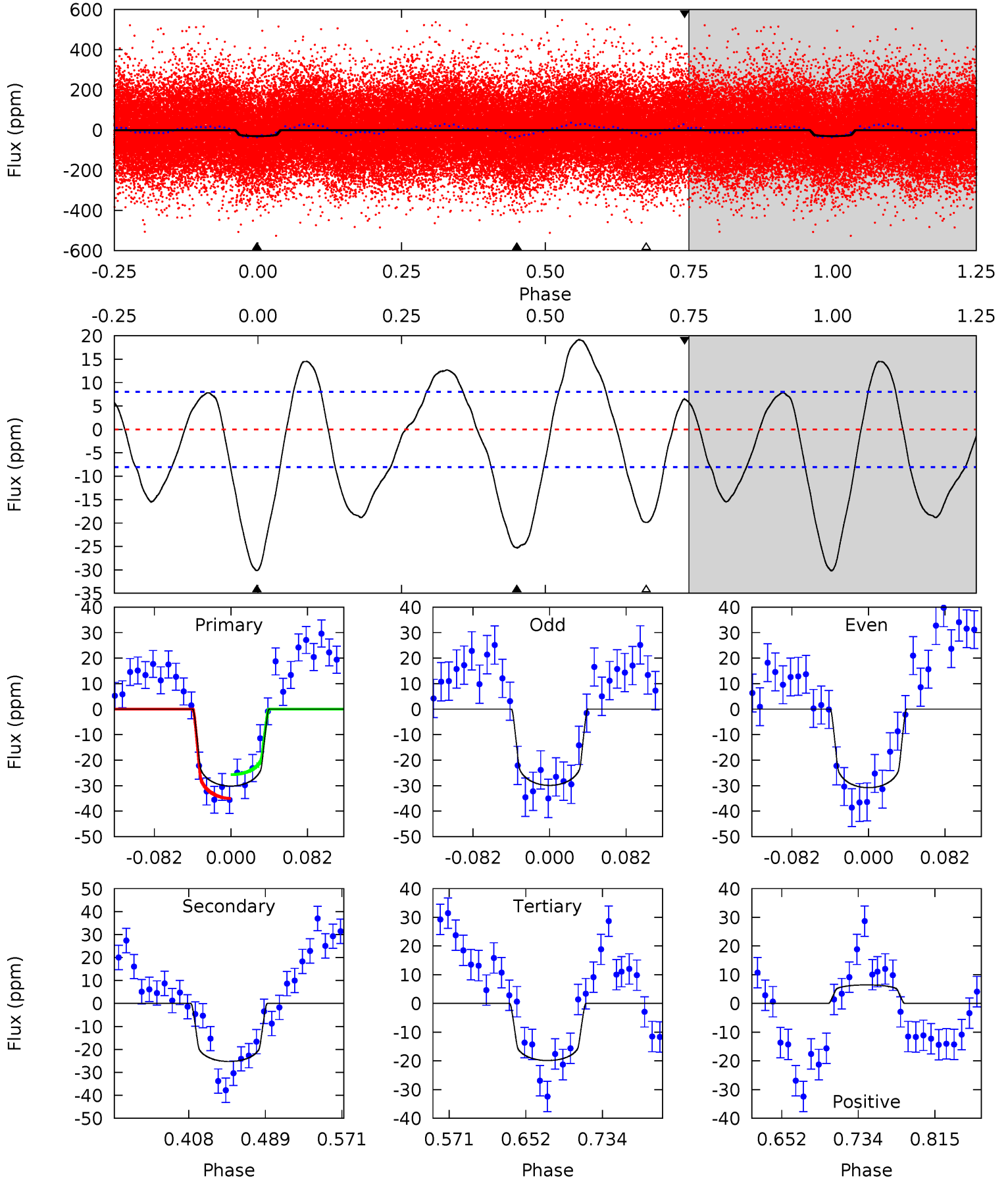
TCE 009283002-01 P= 2.907350 Days $T_0=134.369489$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-01, P = 2.907423 Days, E = 131.479949 Days

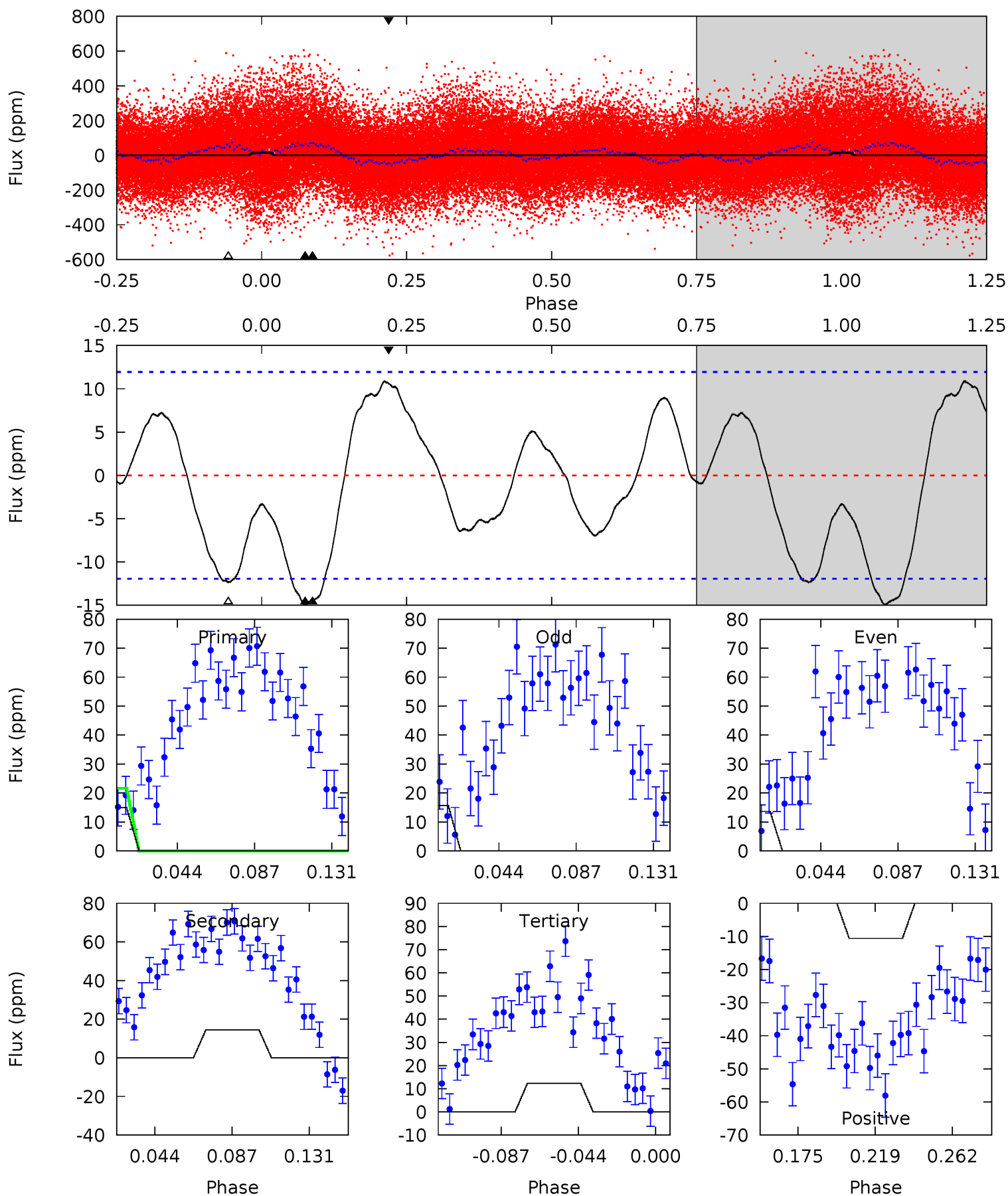
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	14.5	11.4	3.71	4.61	1.74	6.46	5.88	13.6	3.08	10.8	0.26	1.05	0.39	2.67



Alt Model-Shift Uniqueness Test

009283002-01, P = 2.907350 Days, E = 131.462139 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.91	5.72	4.90	4.21	4.74	2.02	2.37	1.02	1.70	0.82	1.51	0.40	5.76	0.42	2.63



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 2	$1.41^{+0.39}_{-0.33}$	3022^{+246}_{-249}	6450^{+957}_{-658}	15^{+11}_{-6}
Alt.	-14 ± 3	$0.64^{+0.30}_{-0.31}$	3026^{+235}_{-264}	8745^{+6194}_{-1793}	41^{+130}_{-22}

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

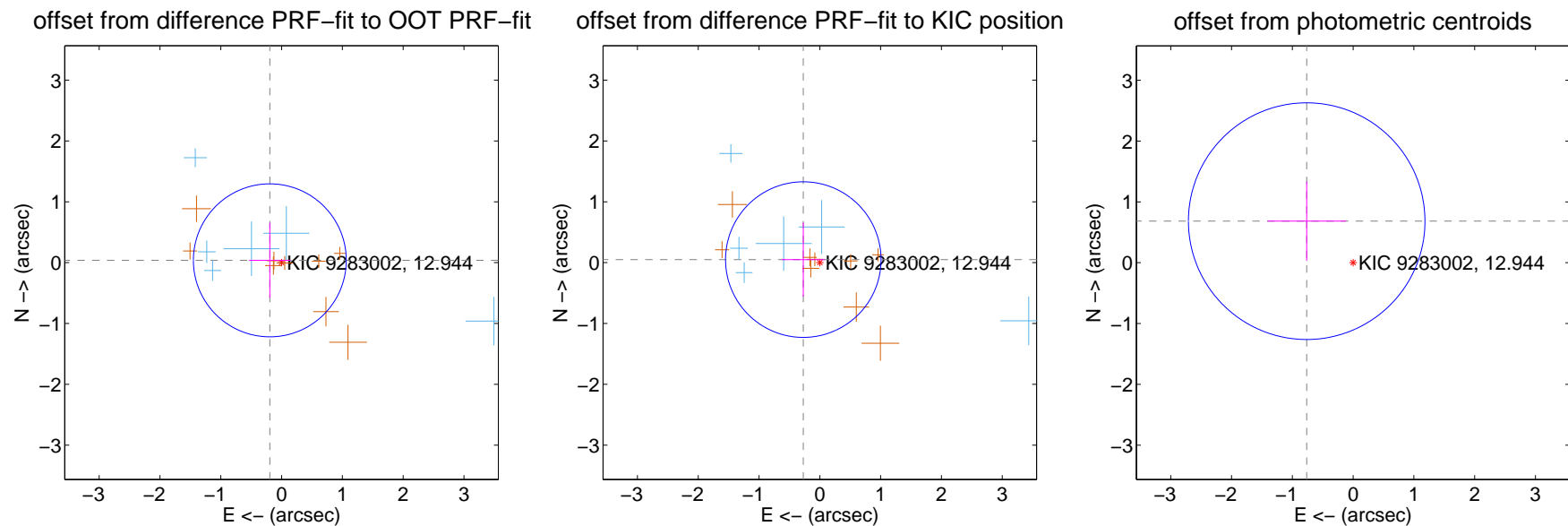
DV Centroid Data

Supplemental centroid analysis for 009283002-01. Kepler magnitude: 12.94. Transit SNR 10.34

There are 6 quarters with good PRF difference image offsets

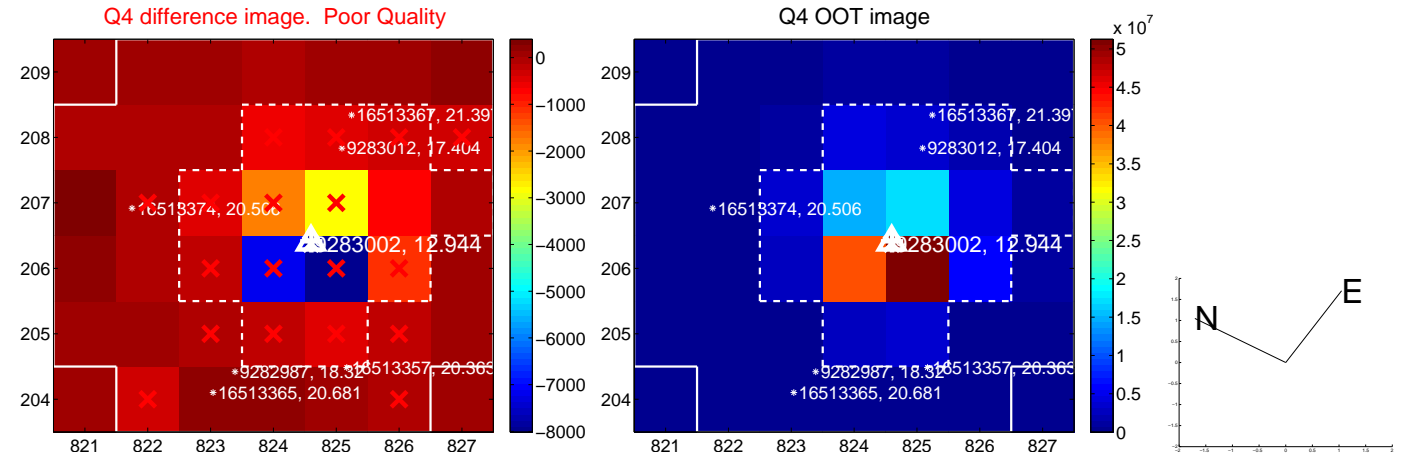
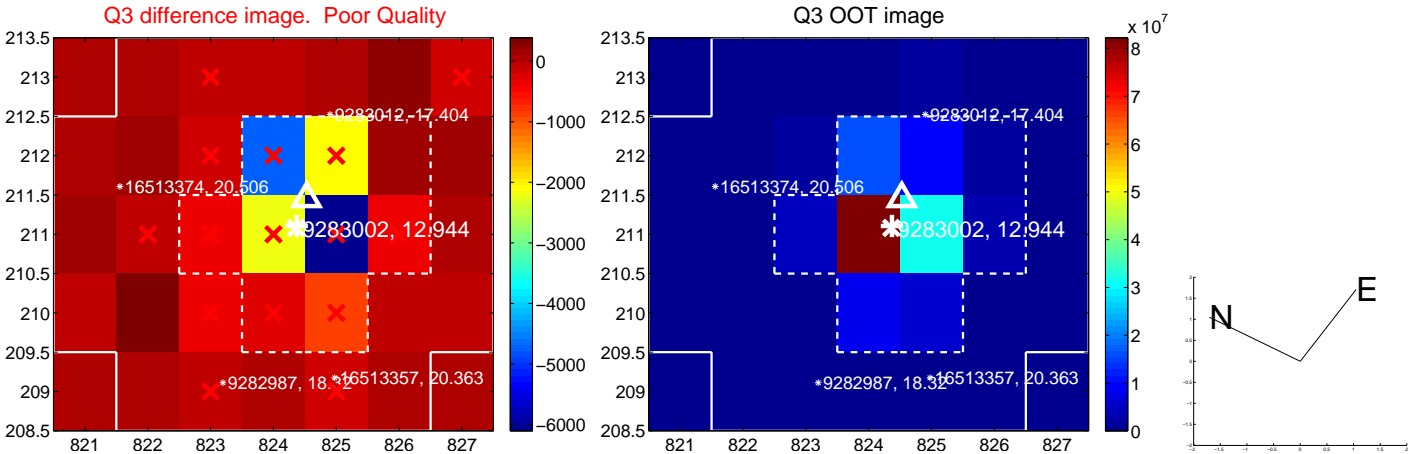
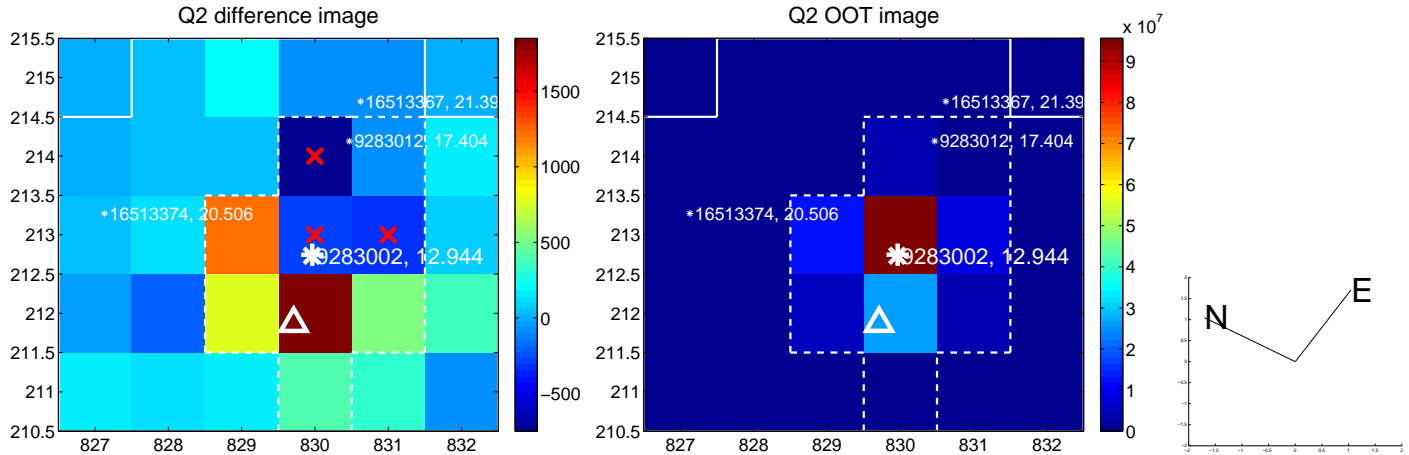
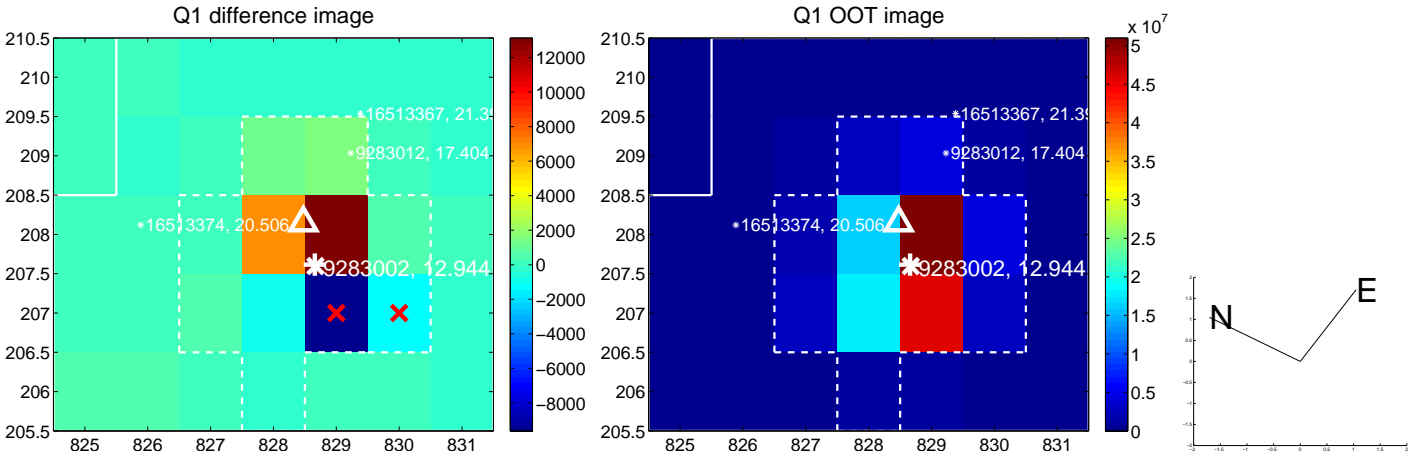
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.197 ± 0.419	0.47	0.193 ± 0.341	0.038 ± 0.616
PRF-fit source offset from KIC position	0.277 ± 0.426	0.65	0.272 ± 0.355	0.050 ± 0.609
photometric centroid source offset	1.02 ± 0.65	1.58	0.76 ± 0.65	0.68 ± 0.65

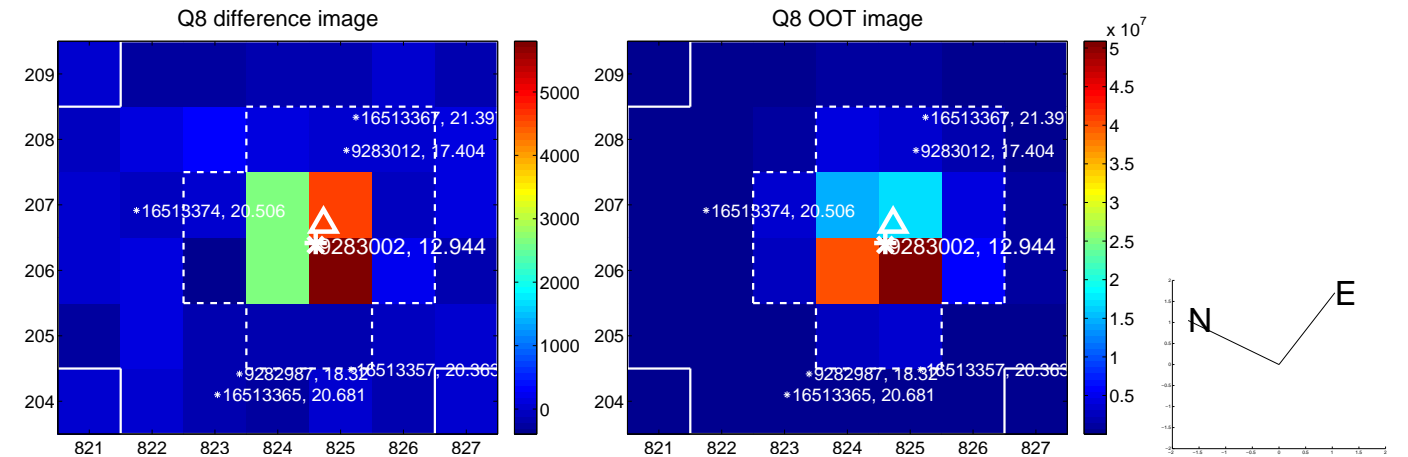
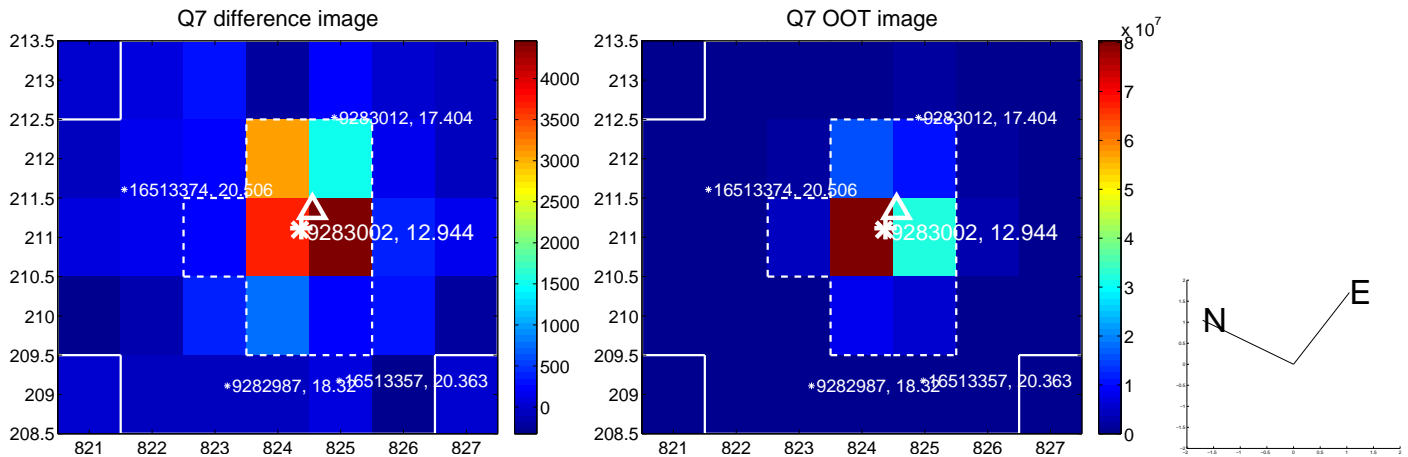
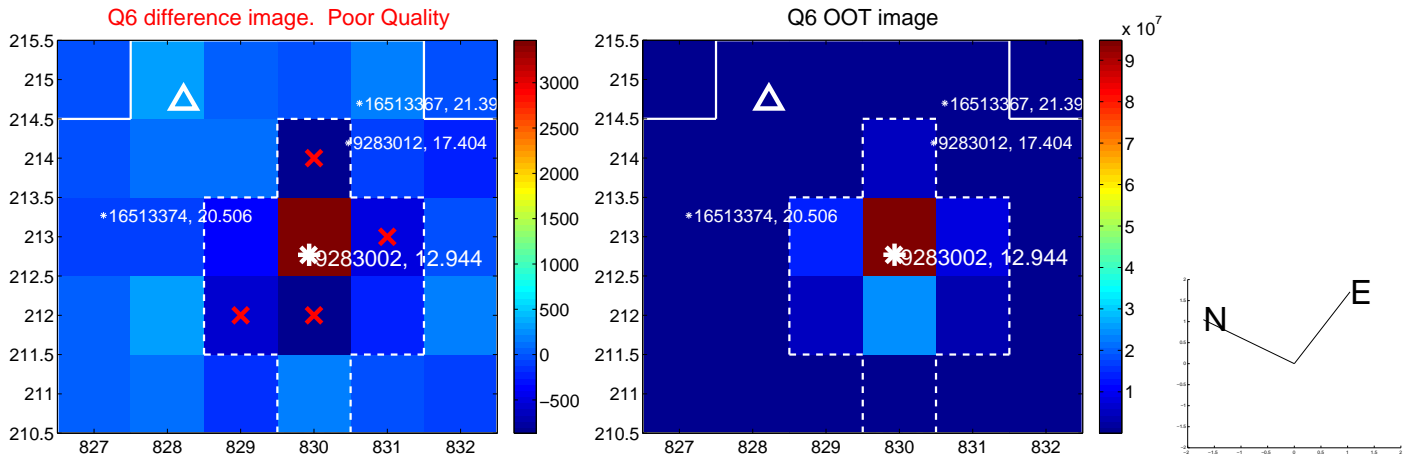
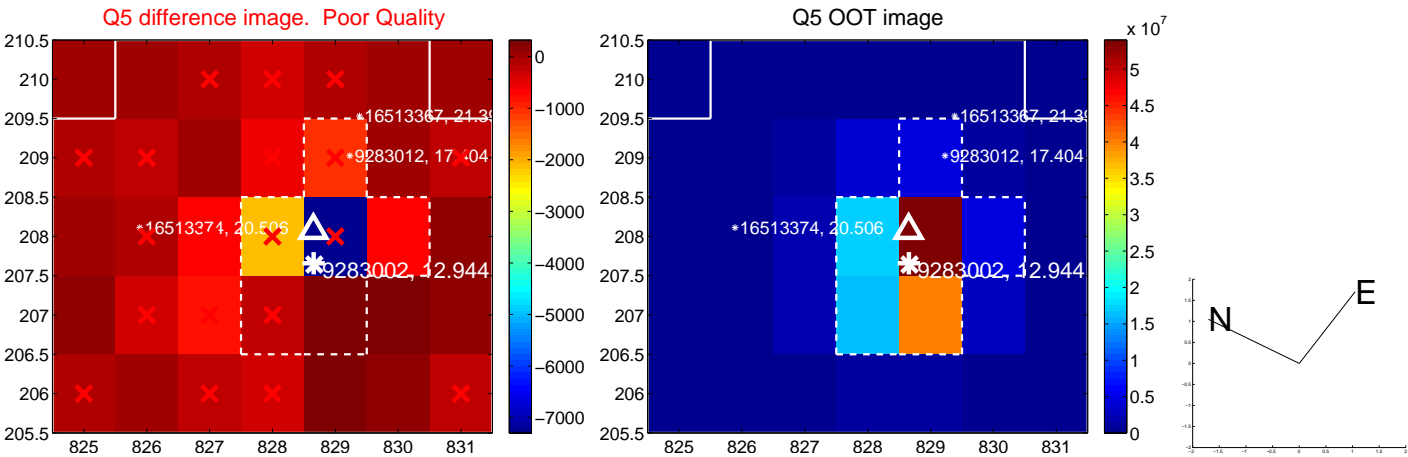


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

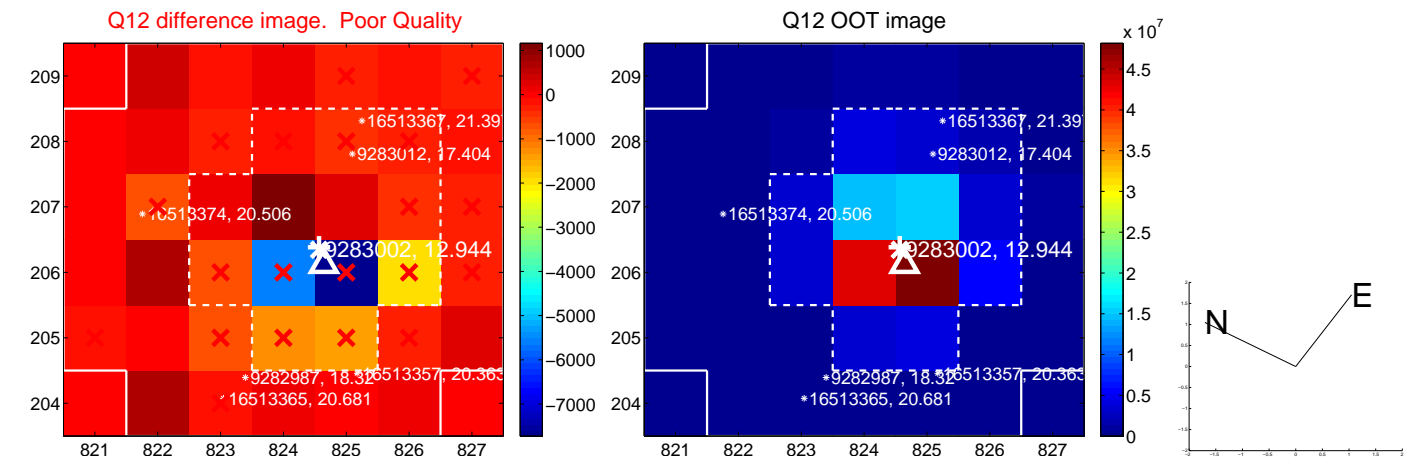
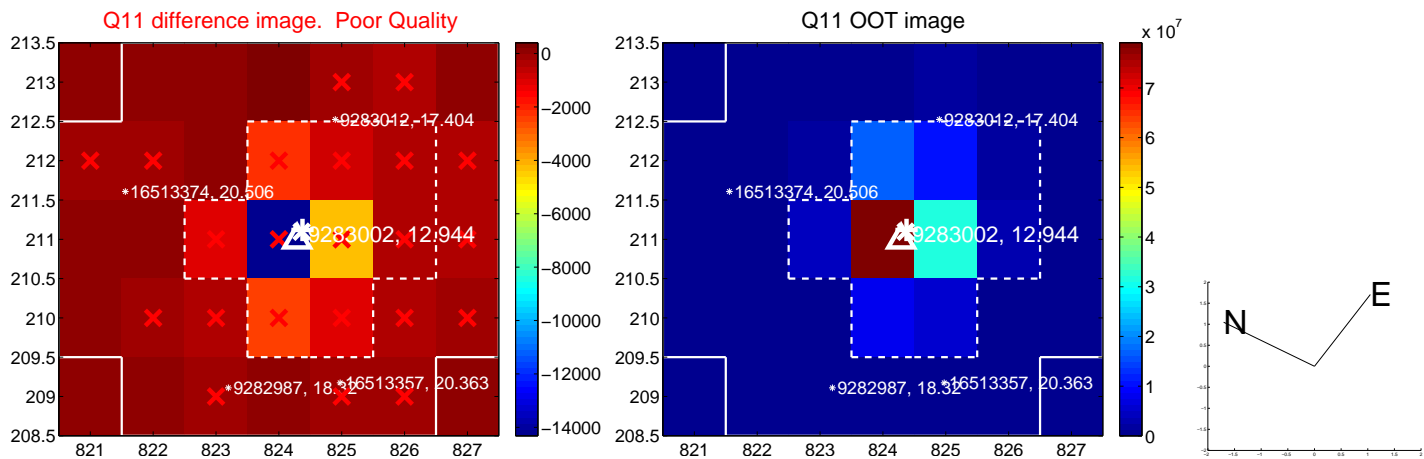
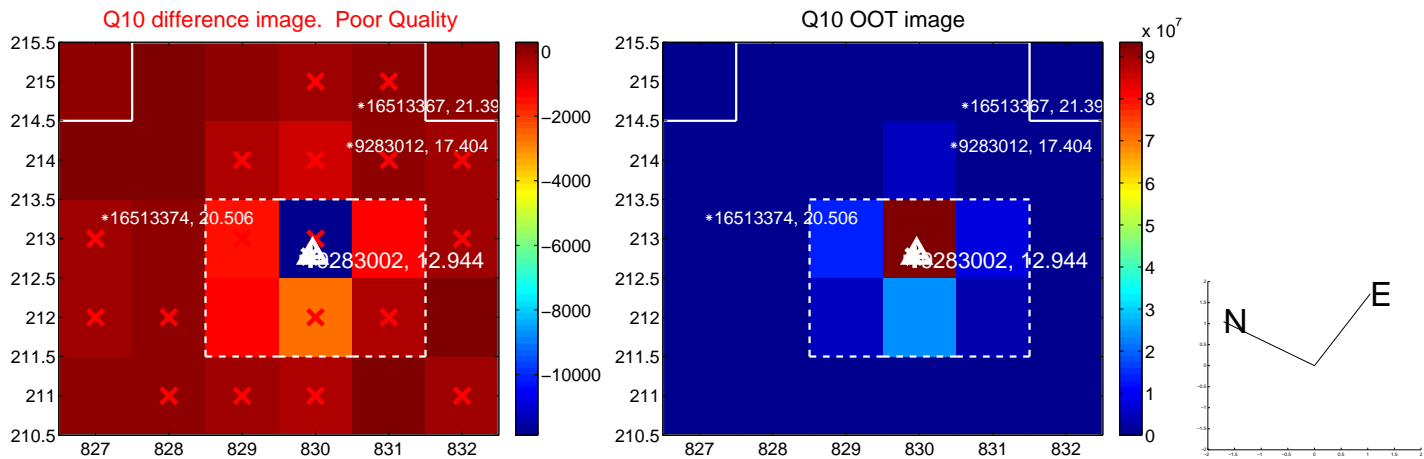
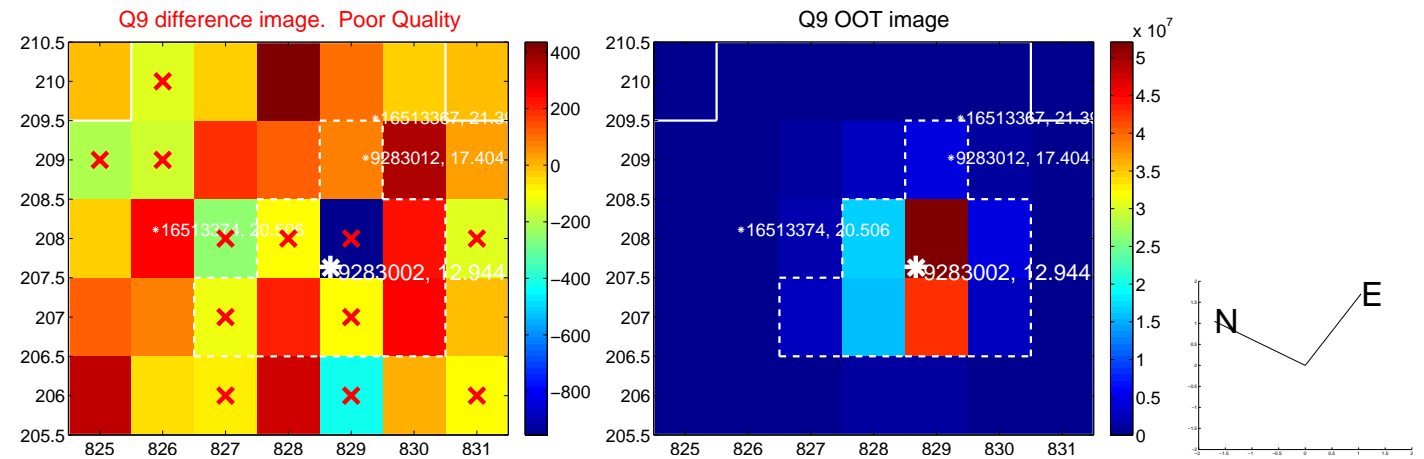
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



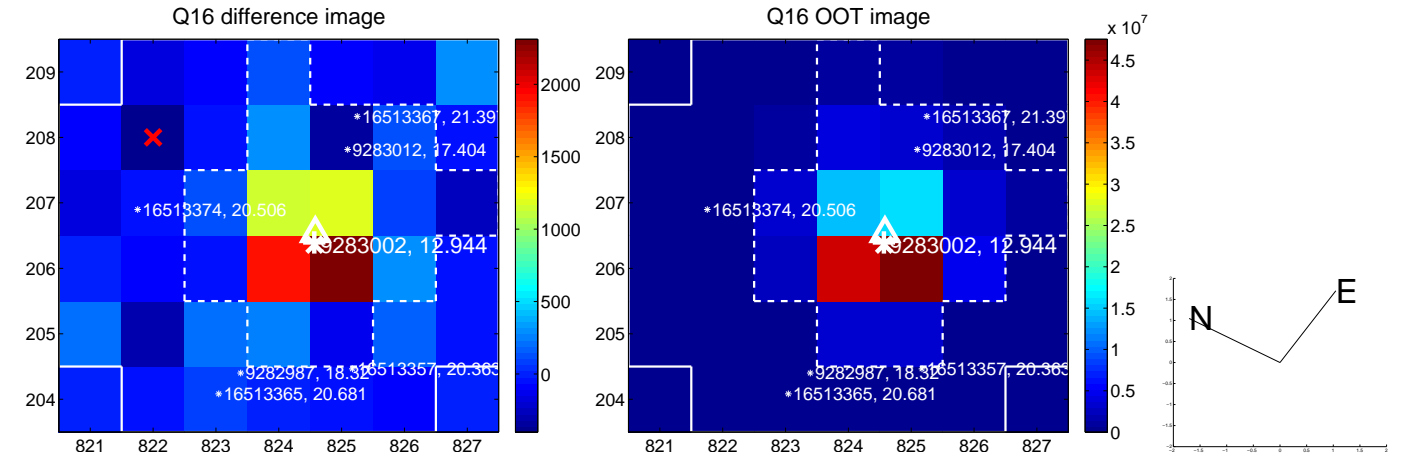
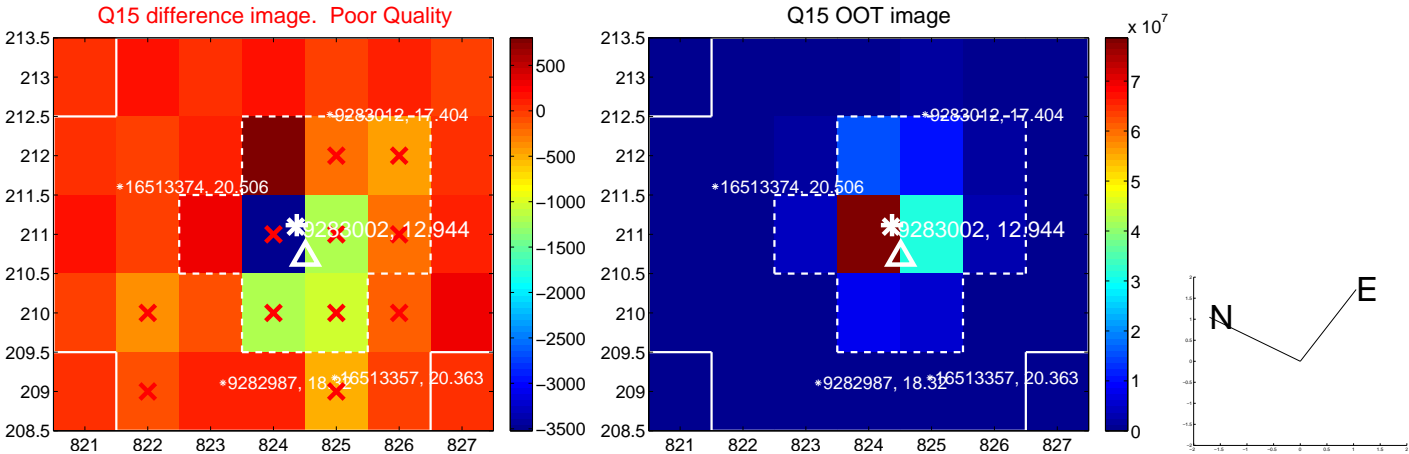
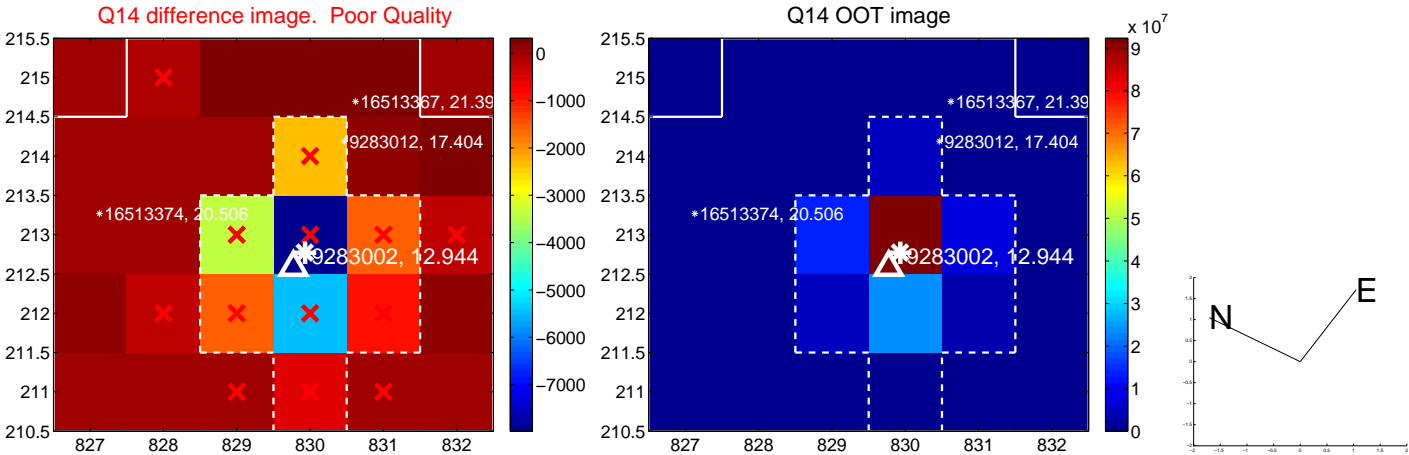
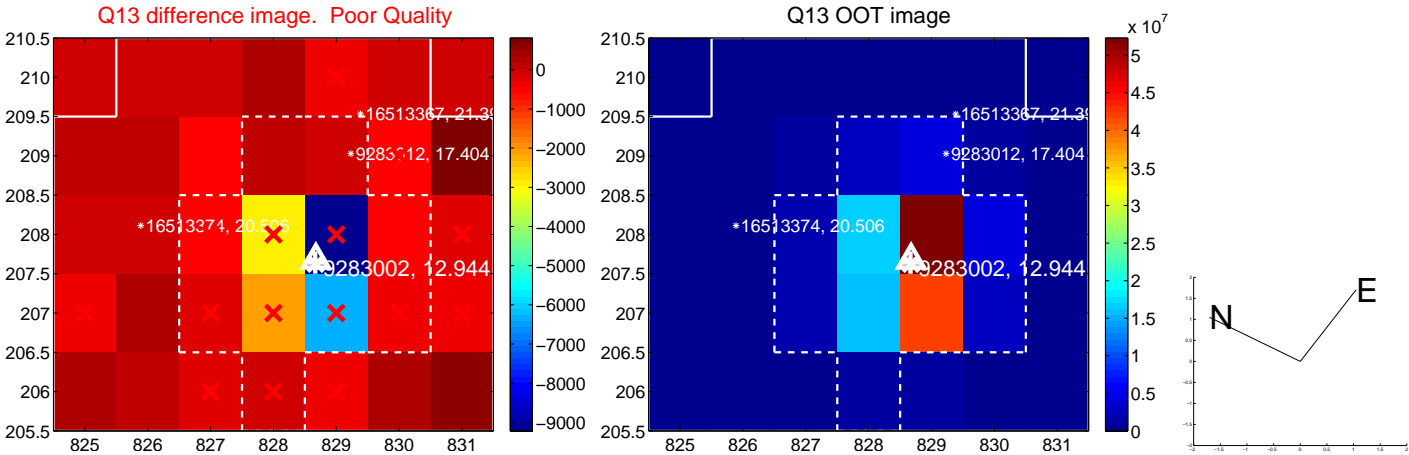
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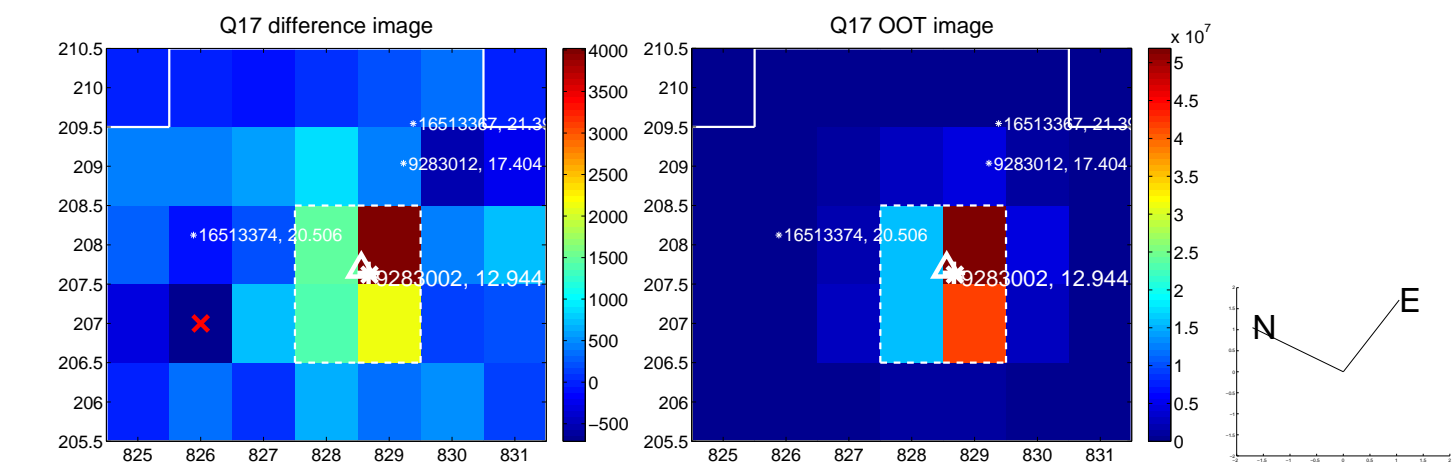
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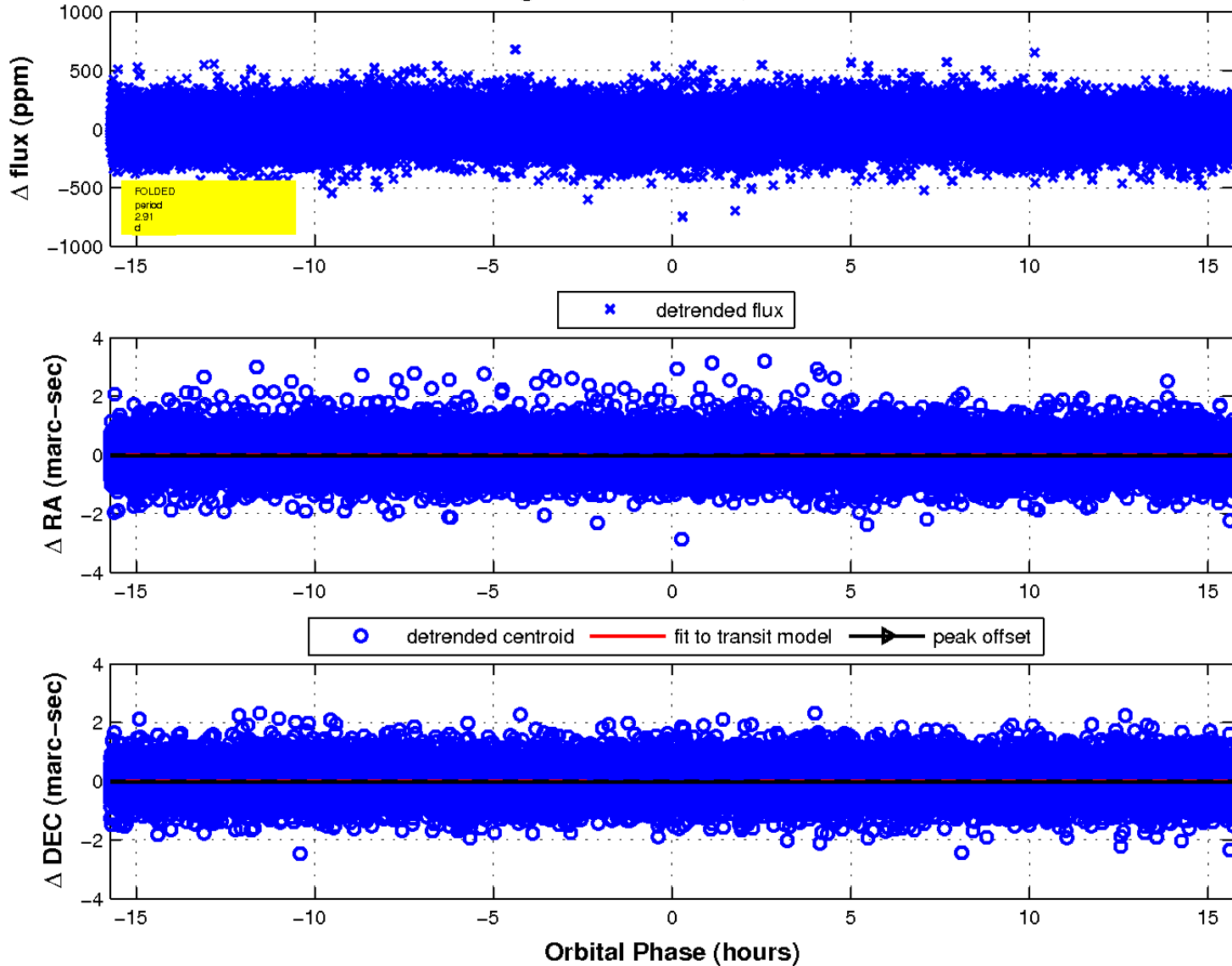
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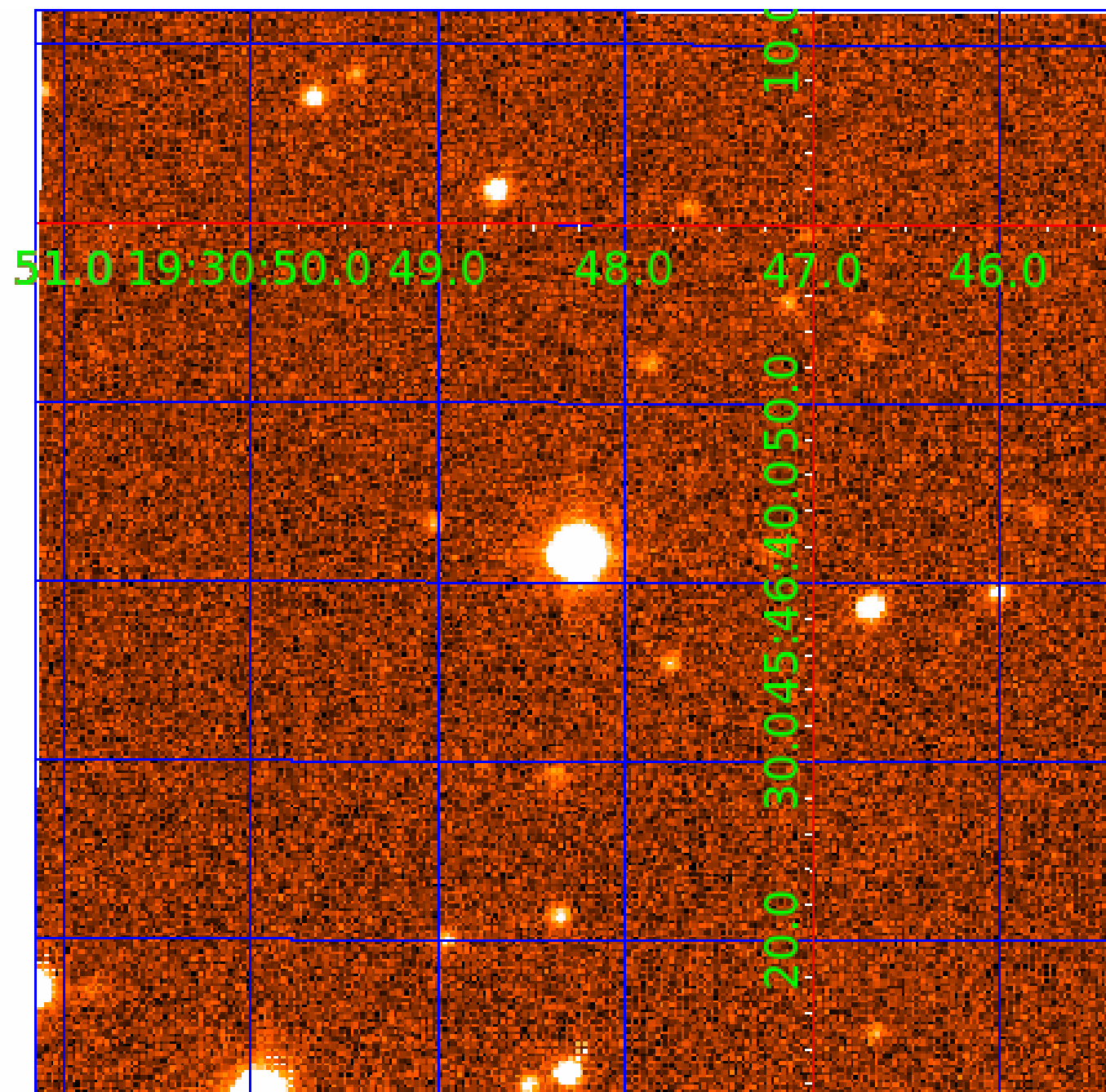


fluxWeightedCentroids, Planet 1 of 9



UKIRT Image

Declination



KIC 009283002

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009283002-04	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—INCONSISTENT_TRANS
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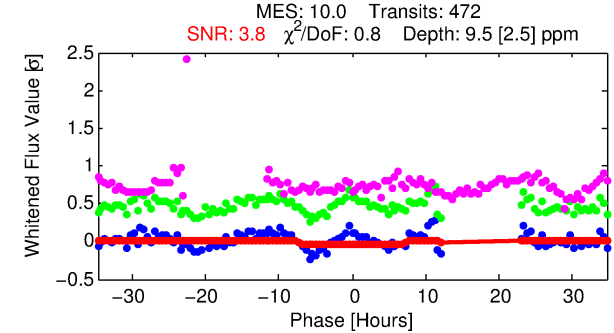
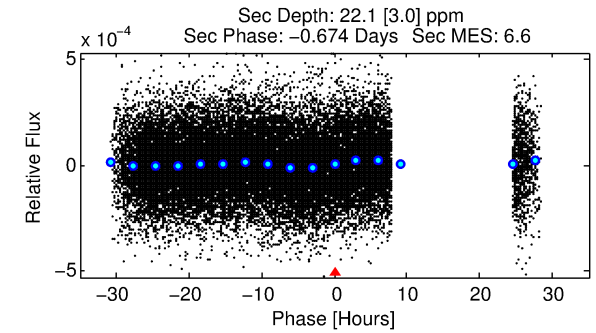
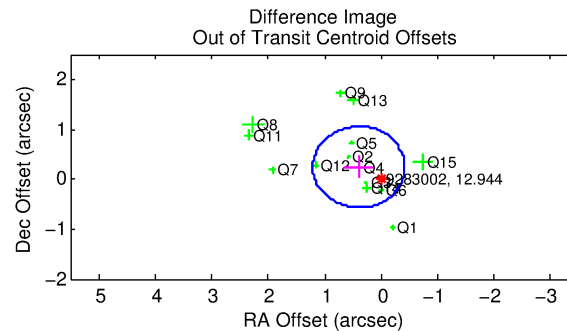
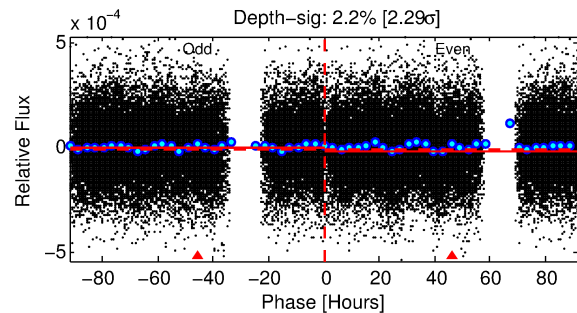
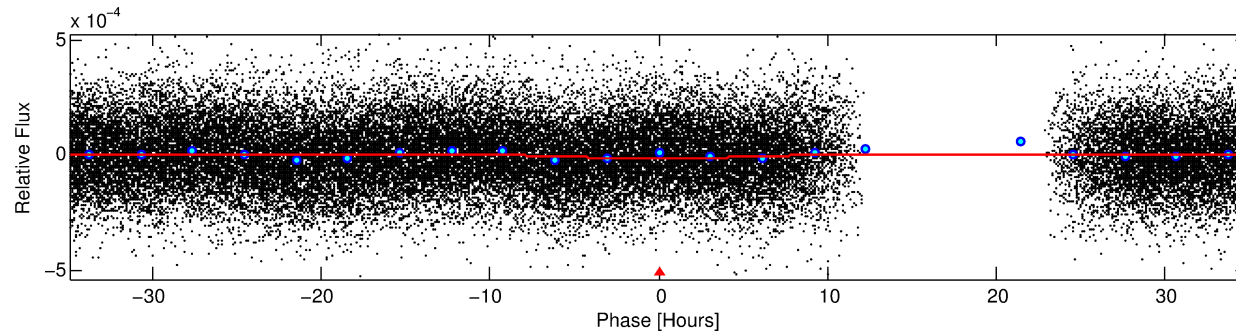
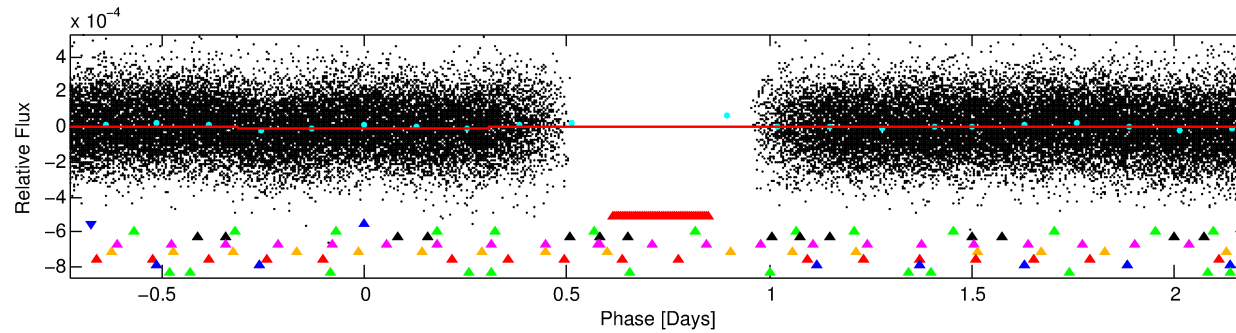
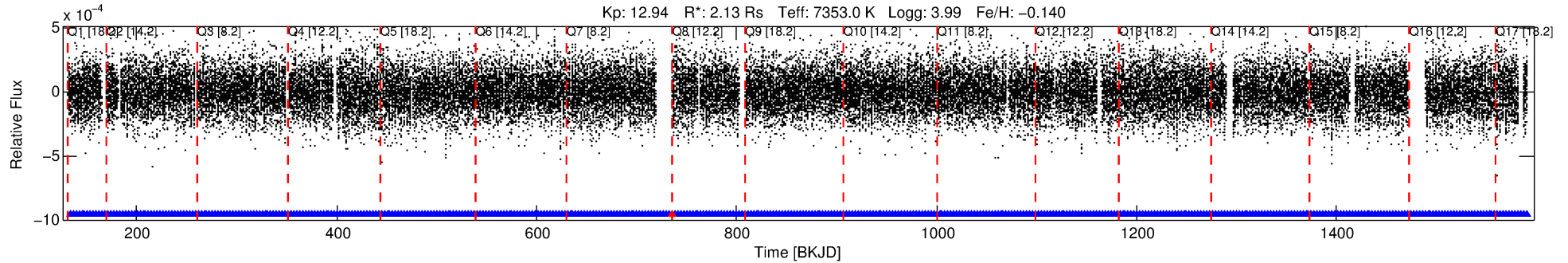
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-02

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 2 of 9 Period: 2.907 d



DV Fit Results:

Period = 2.90696 [0.00009] d
Epoch = 133.7719 [0.0179] BKJD
Rp/R* = 0.0029 [0.0016]
a/R* = 1.46 [2.34]
b = 0.50 [4.64]
Seff = 5411.85 [2413.81]
Teq = 2187 [244] K
Rp = 0.68 [0.43] Re
a = 0.0468 [0.0128] AU
Ag = 58.17 [68.92] [0.83σ]
Teffp = 9338 [2621] K [2.72σ]

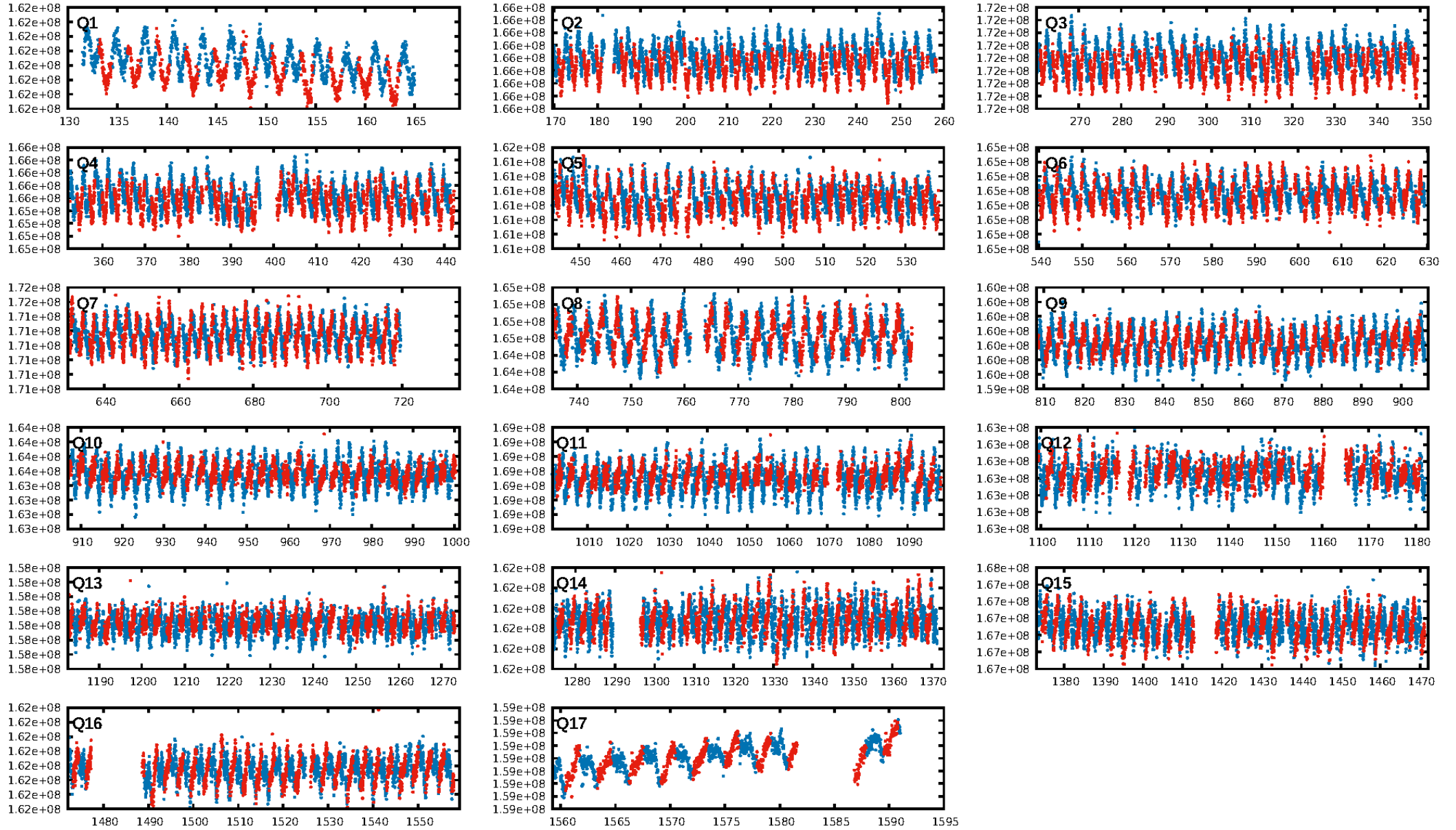
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.07e-13
RollingBand-fgt: 1.00 [450/451]
GhostDiagnostic-chr: 1.247
Centroid-sig: 3.6%
Centroid-so: 2.889 arcsec [1.86σ]
OotOffset-rm: 0.465 arcsec [1.71σ]
KicOffset-rm: 0.550 arcsec [2.15σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 0.00 [0/17]

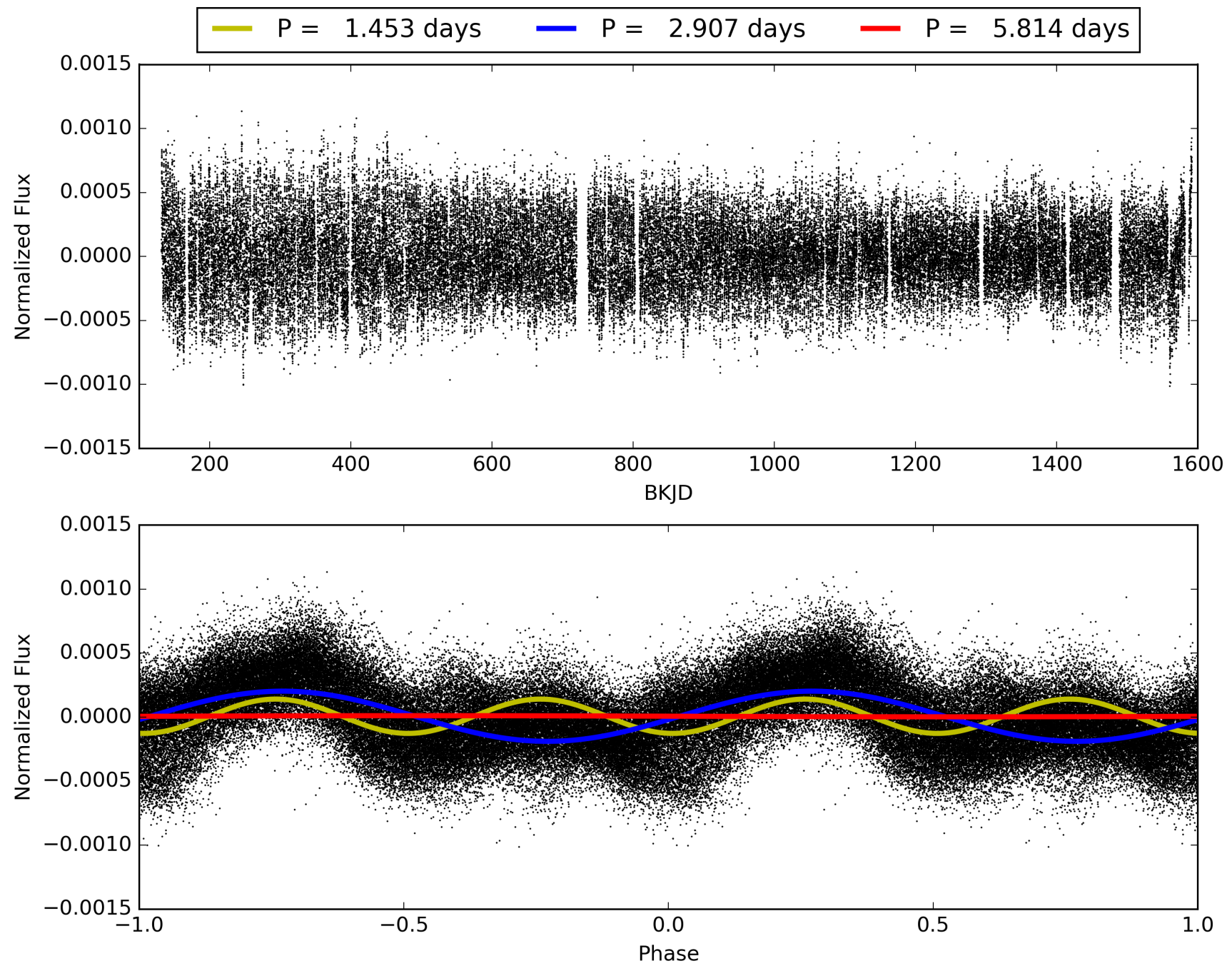
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:20 Z

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

TCE 009283002-02, PDC Light Curves

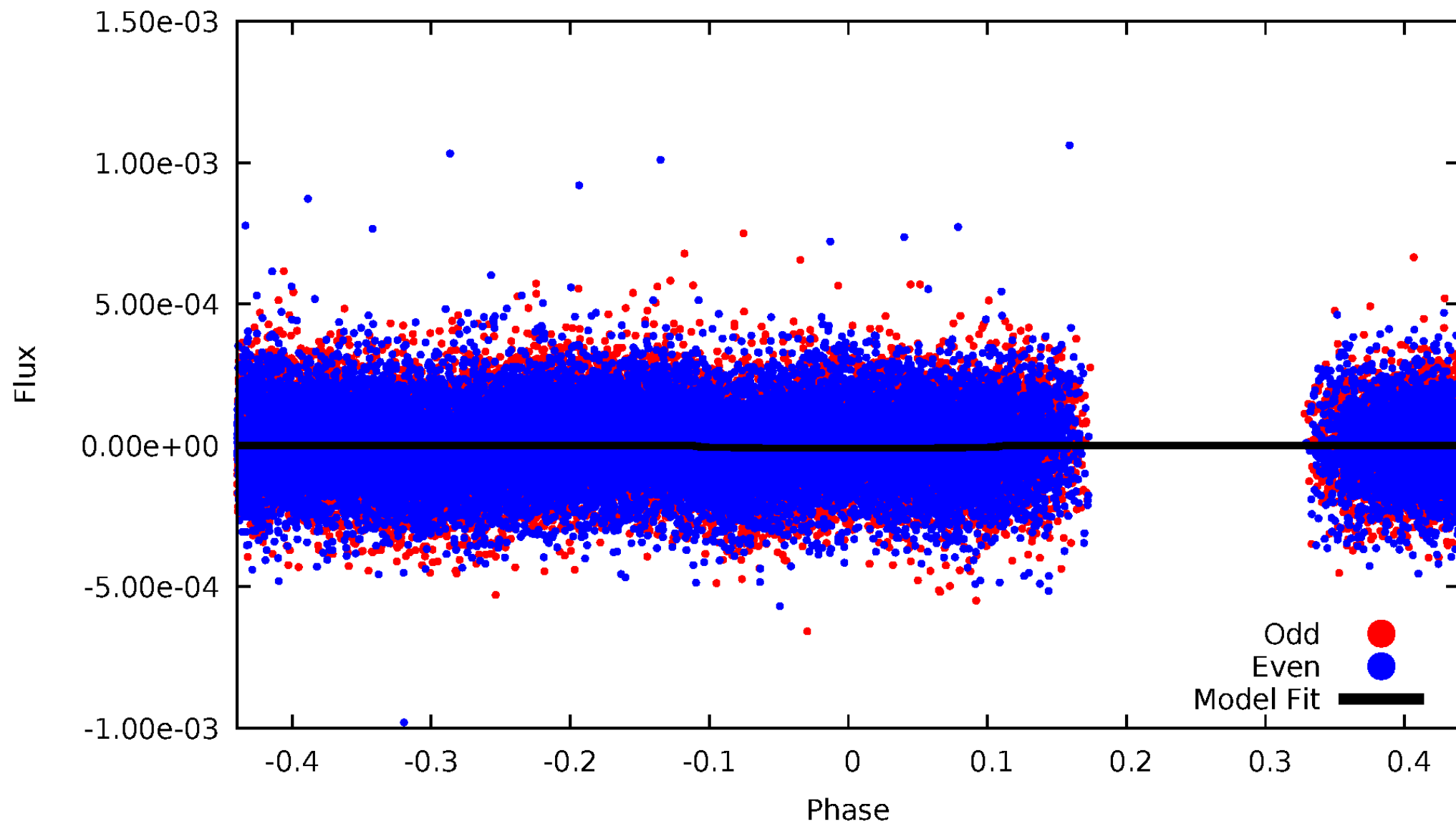


TCE 009283002-02



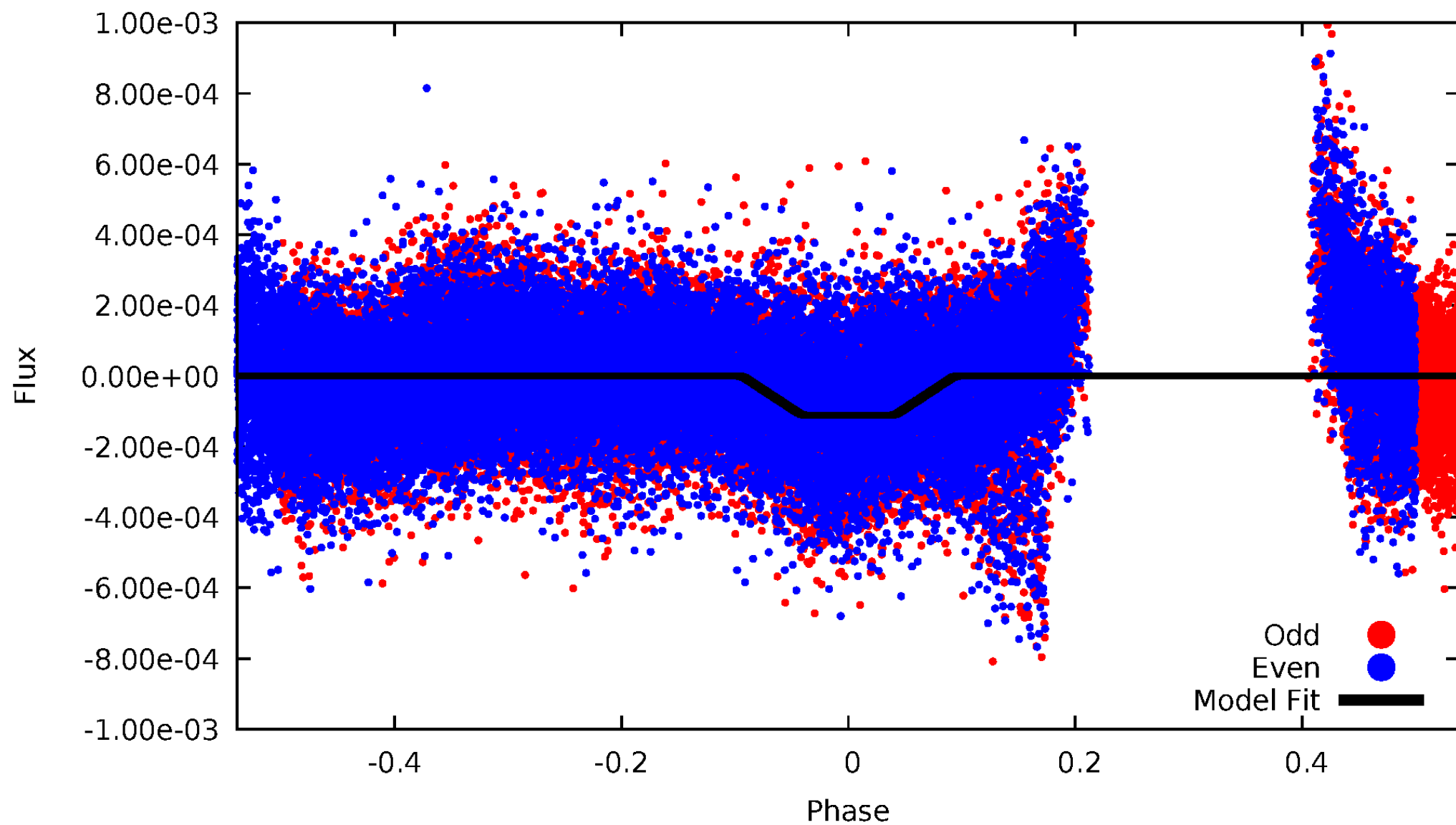
DV Odd/Even

TCE 009283002-02



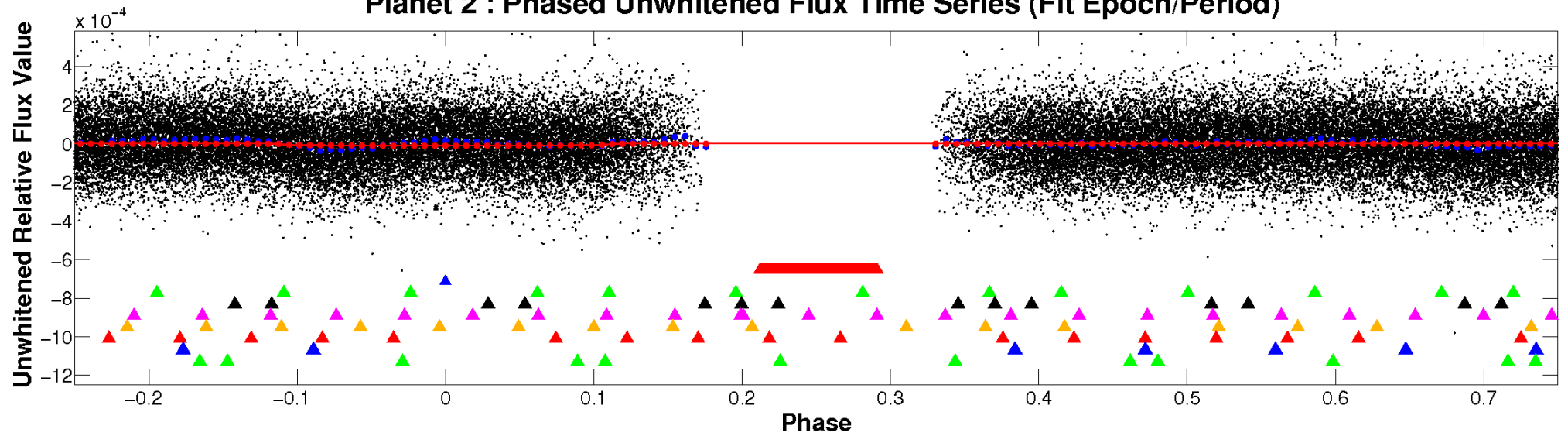
ALT Odd/Even

TCE 009283002-02

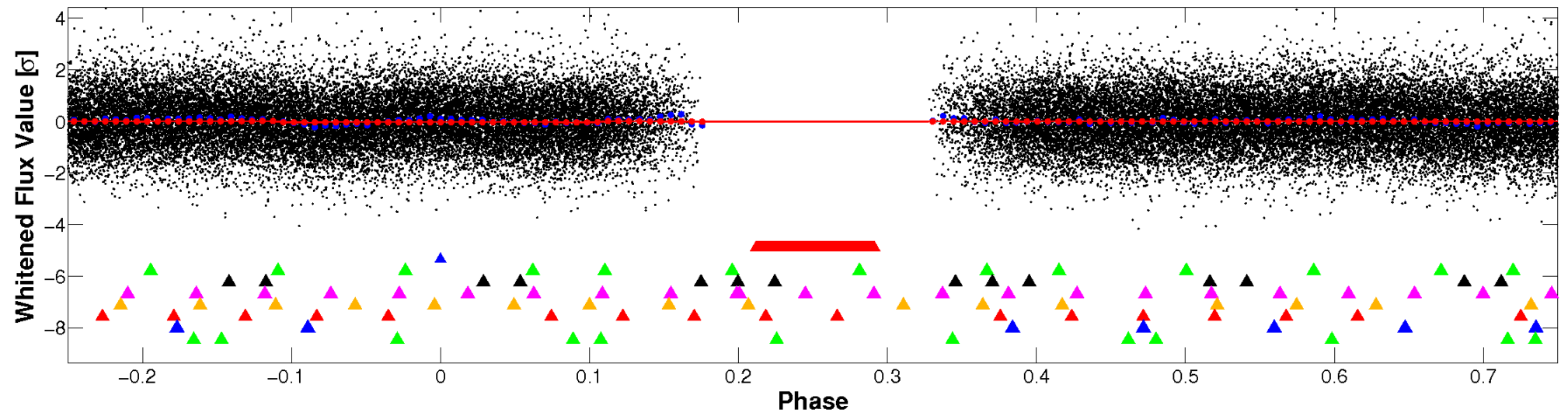


Non-Whitened Vs. Whitened Light Curve

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

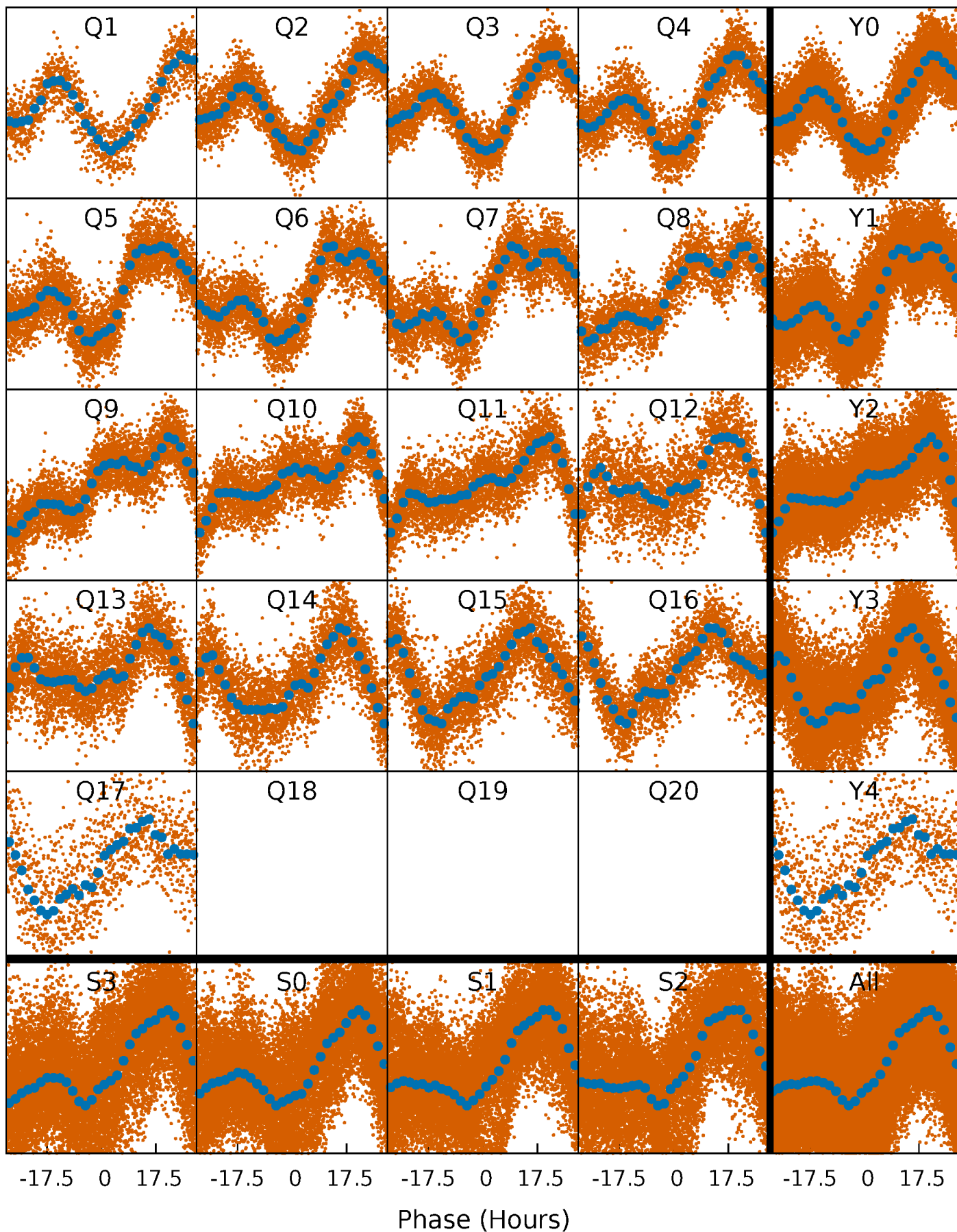


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



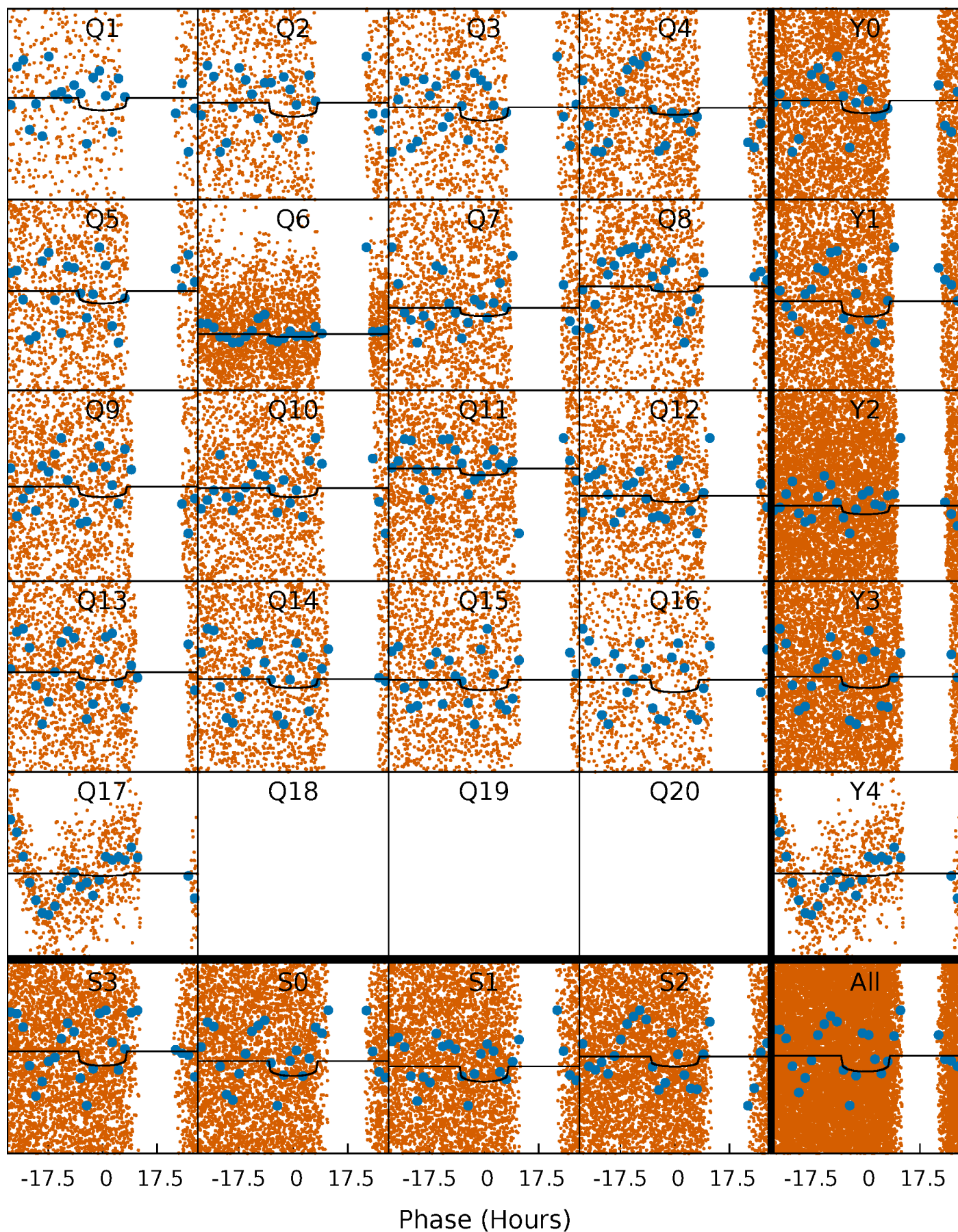
PDC Quarter-Phased Transit Curves

TCE 009283002-02 $P = 2.906960$ Days $T_0 = 133.771947$ (BKJD)



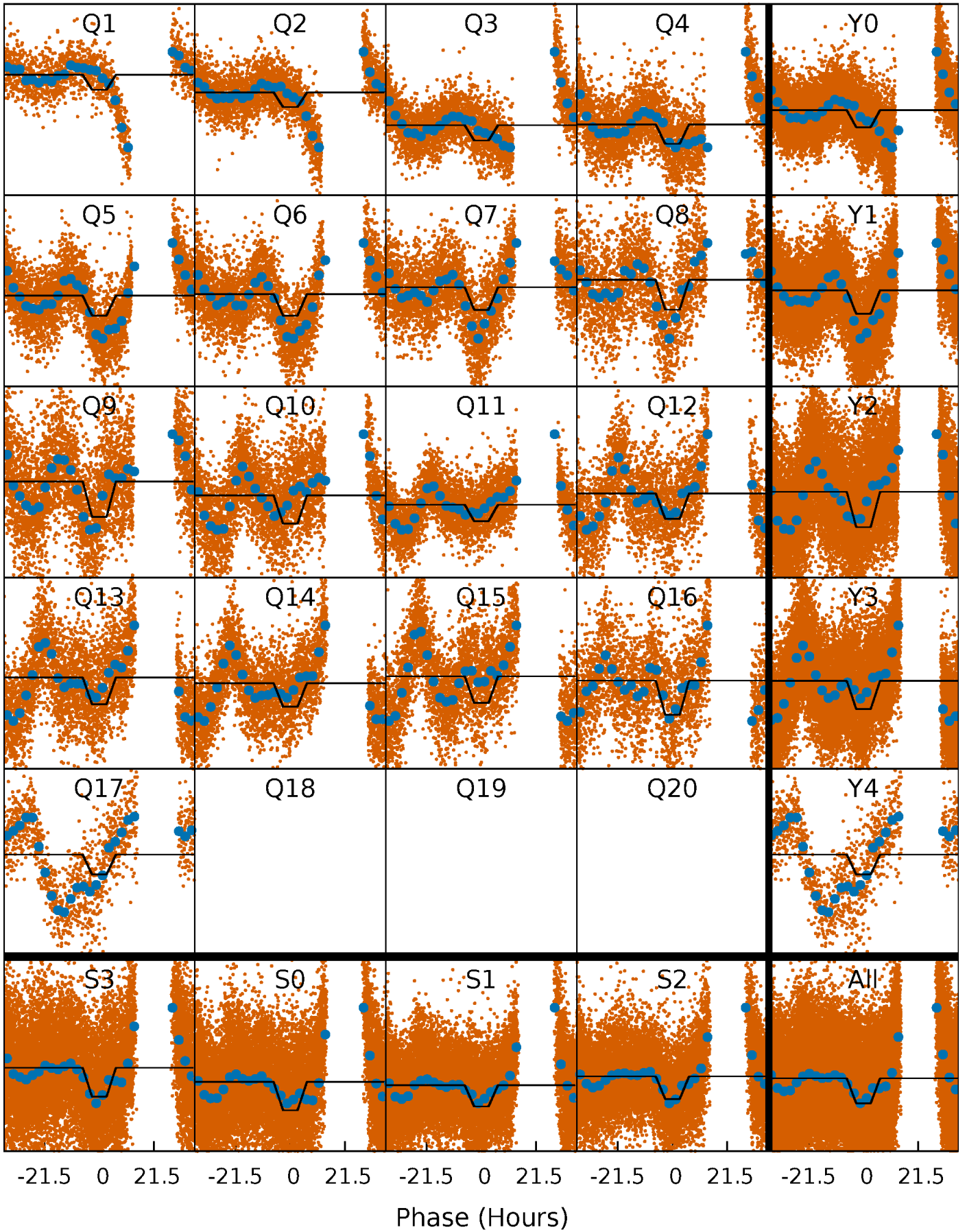
DV Quarter-Phased Transit Curves

TCE 009283002-02 P= 2.906960 Days $T_0=133.771947$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

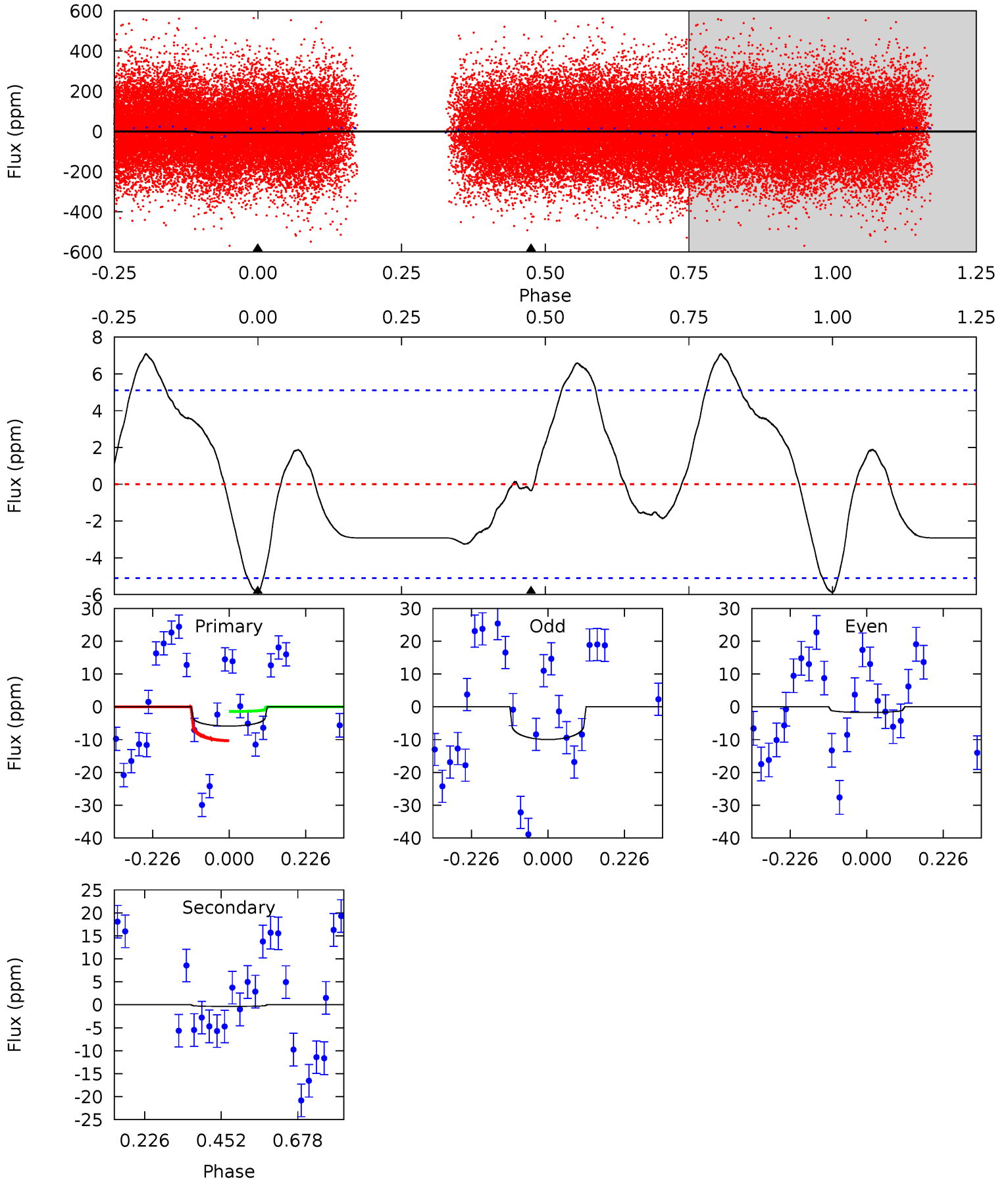
TCE 009283002-02 $P = 2.907184$ Days $T_0 = 133.546174$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-02, P = 2.906960 Days, E = 130.864987 Days

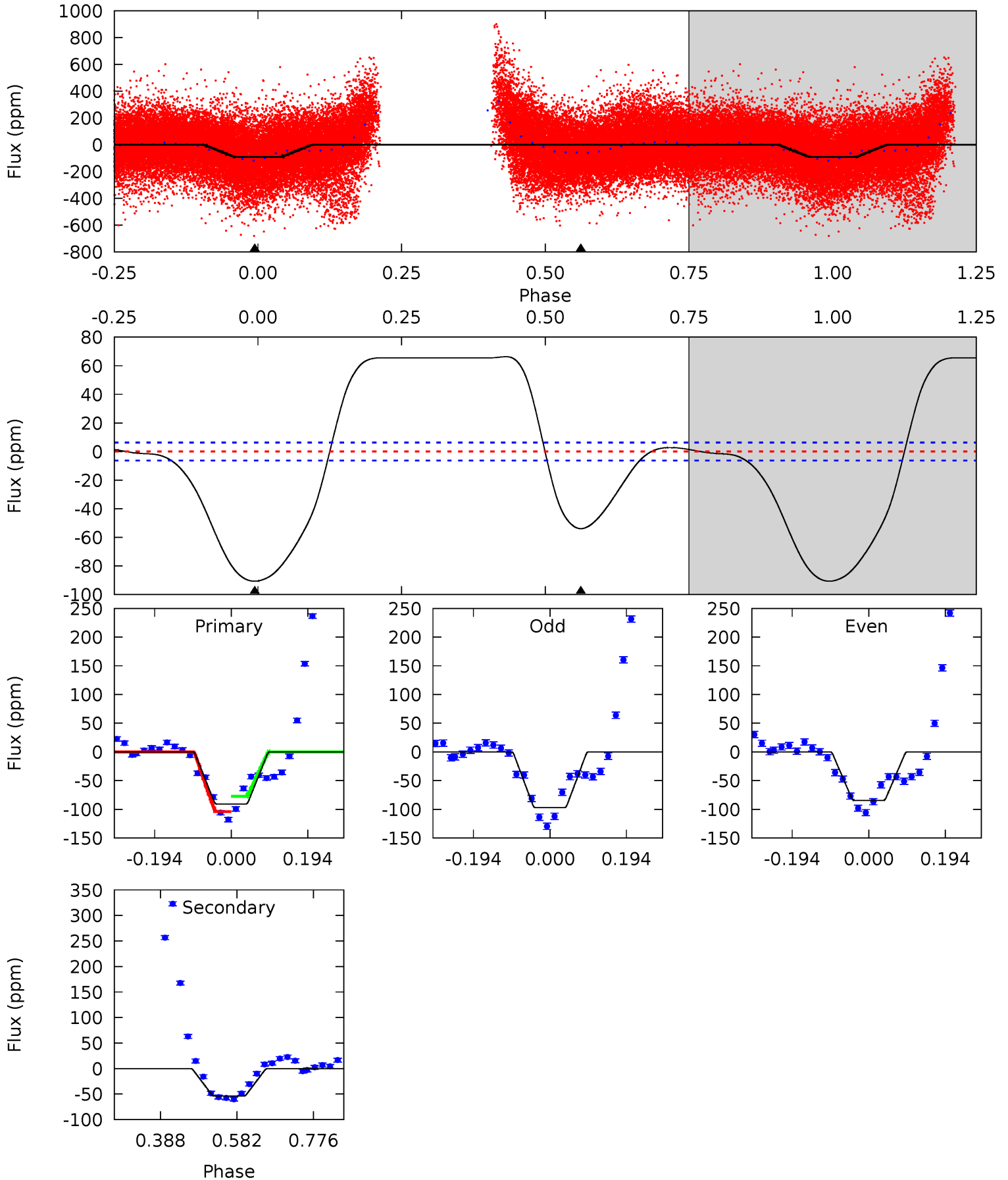
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.06	0.30	0	0	4.39	1.21	1.74	5.06	5.06	0.30	0.30	3.58	1.19	0.55	3.96



Alt Model-Shift Uniqueness Test

009283002-02, P = 2.907184 Days, E = 130.638990 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.4	37.7	0	0	4.42	1.30	17.5	63.4	63.4	37.7	37.7	4.34	1.23	0.42	8.06



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-0 ± 1	$0.66^{+0.41}_{-0.33}$	3033^{+221}_{-276}	3338^{+1881}_{-7629}	$0.834^{+6.135}_{-2.840}$
Alt.	-54 ± 1	$2.37^{+0.57}_{-0.49}$	3029^{+217}_{-260}	6006^{+549}_{-437}	11^{+6}_{-4}

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

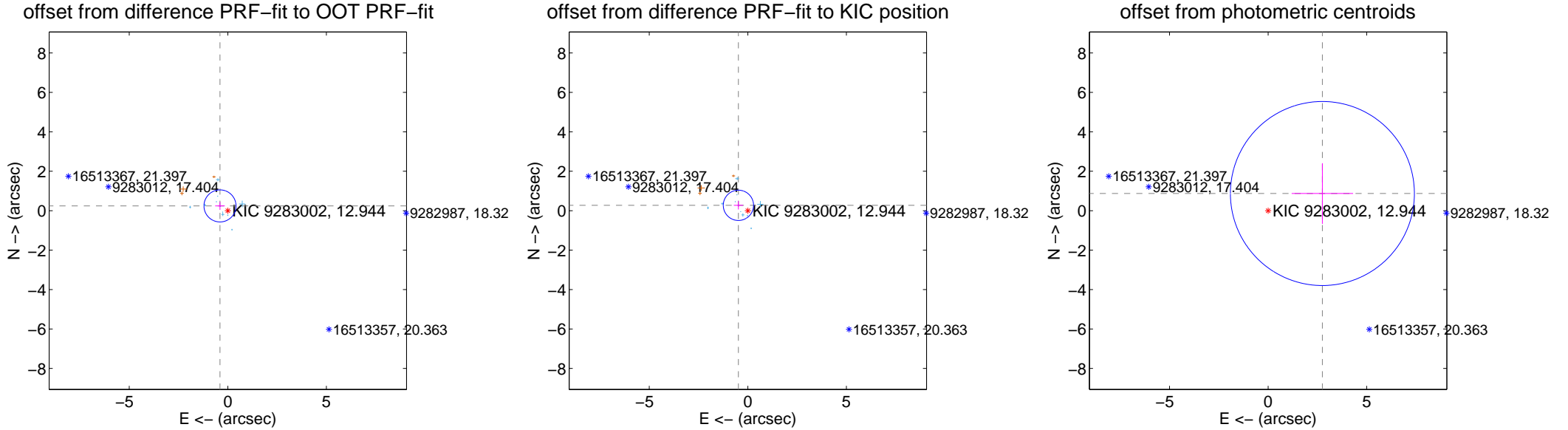
DV Centroid Data

Supplemental centroid analysis for 009283002-02. Kepler magnitude: 12.94. Transit SNR 3.80

There are 11 quarters with good PRF difference image offsets

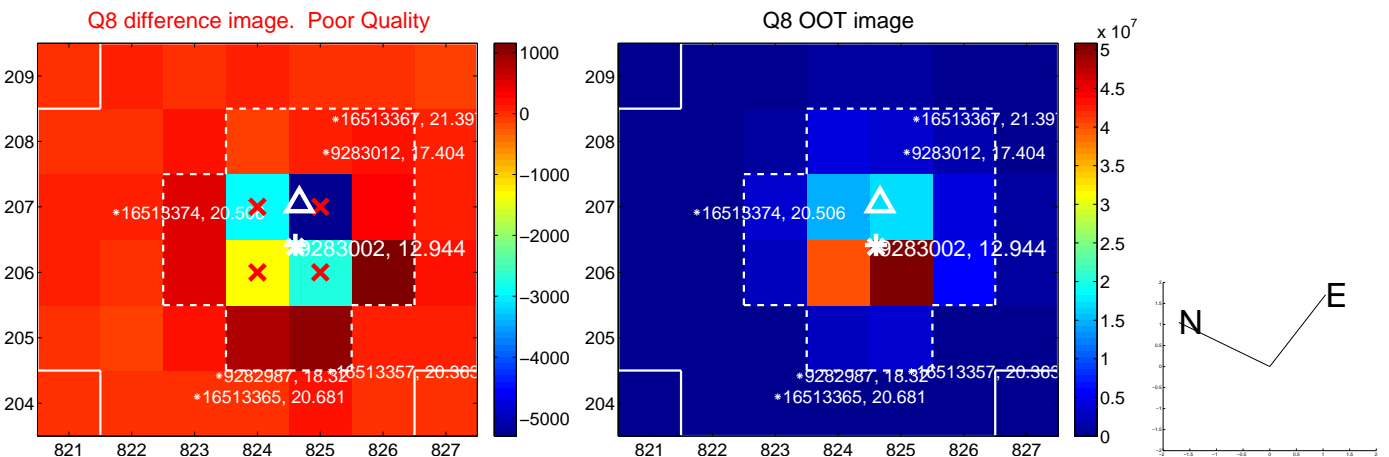
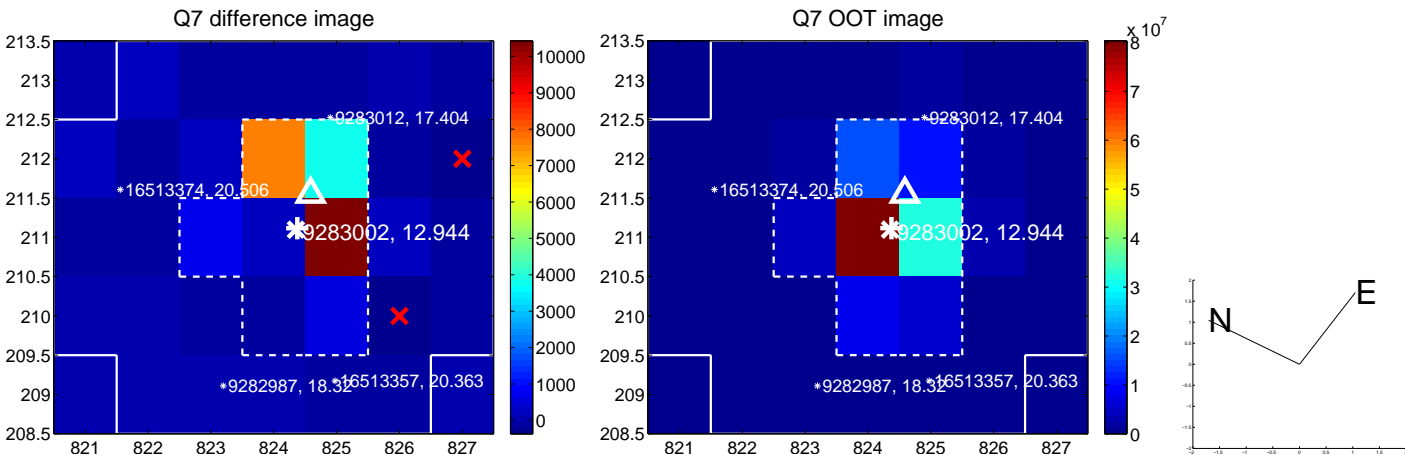
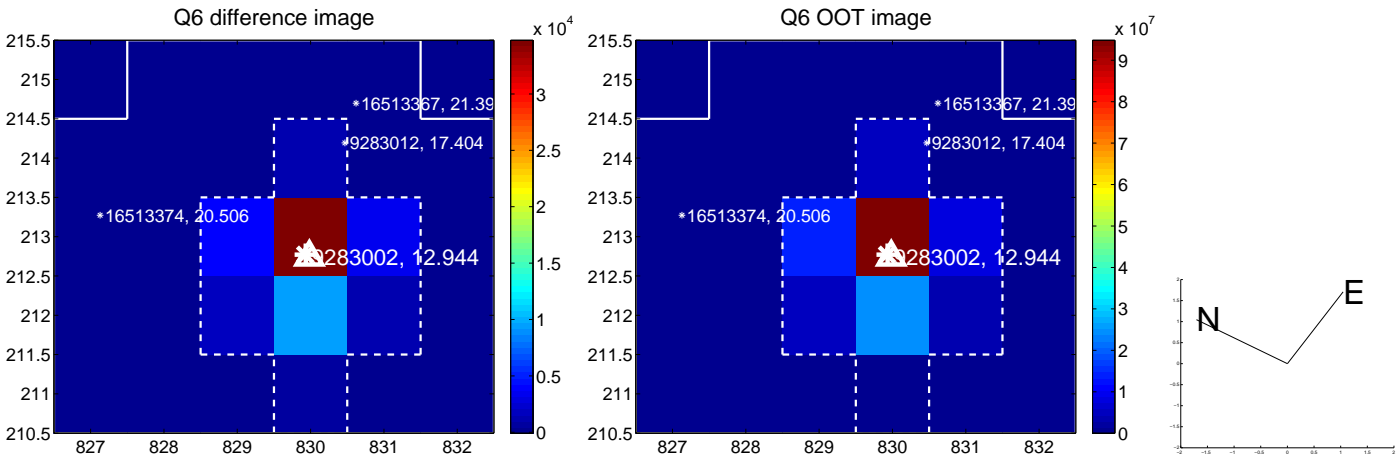
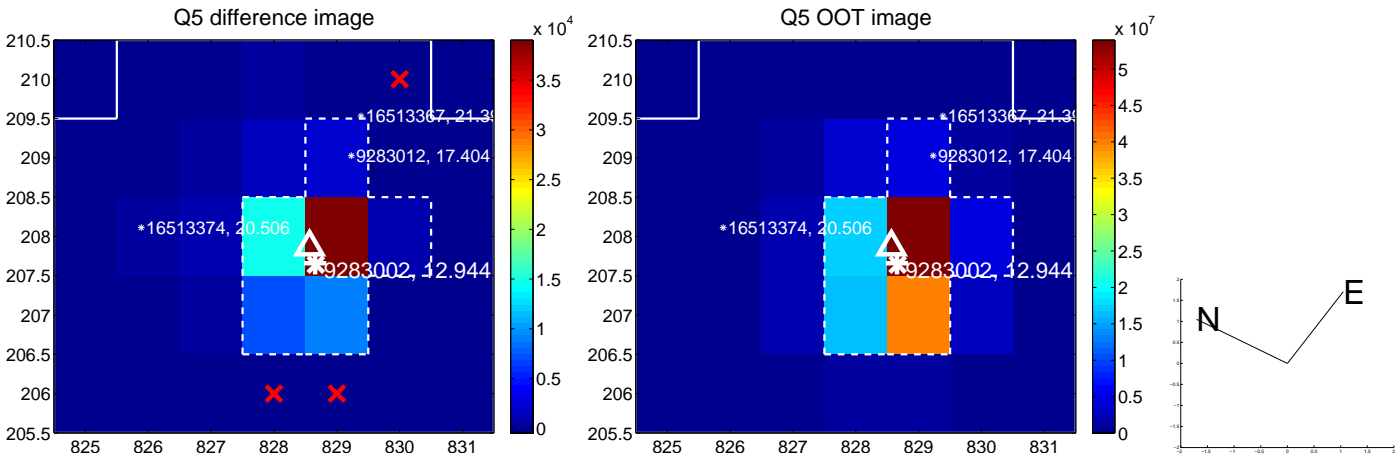
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.465 ± 0.271	1.71	0.397 ± 0.244	0.242 ± 0.201
PRF-fit source offset from KIC position	0.550 ± 0.256	2.15	0.477 ± 0.235	0.272 ± 0.212
photometric centroid source offset	2.89 ± 1.56	1.86	-2.75 ± 1.56	0.87 ± 1.54

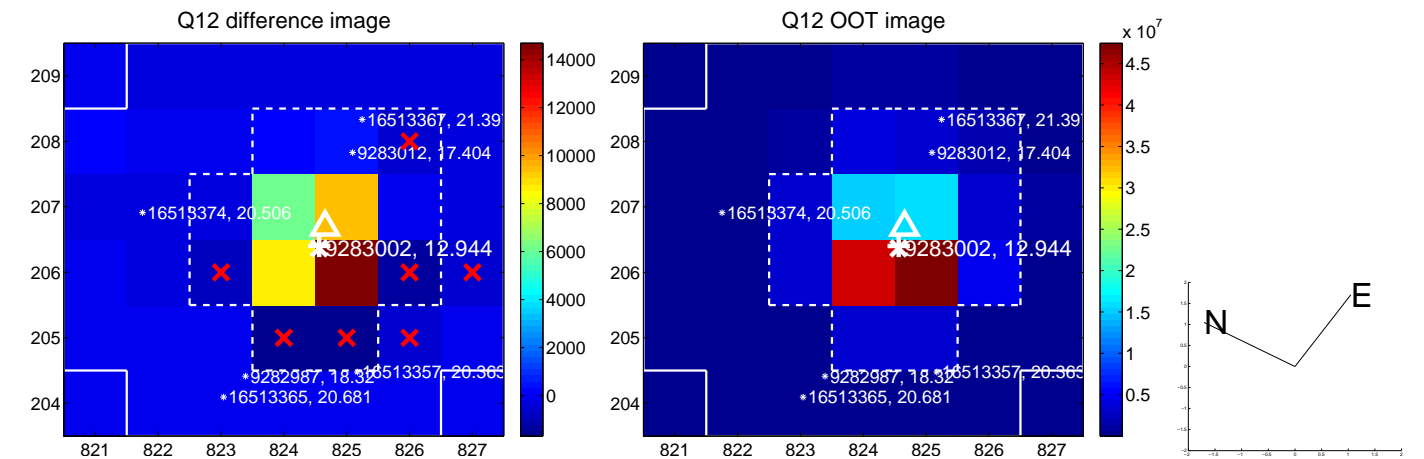
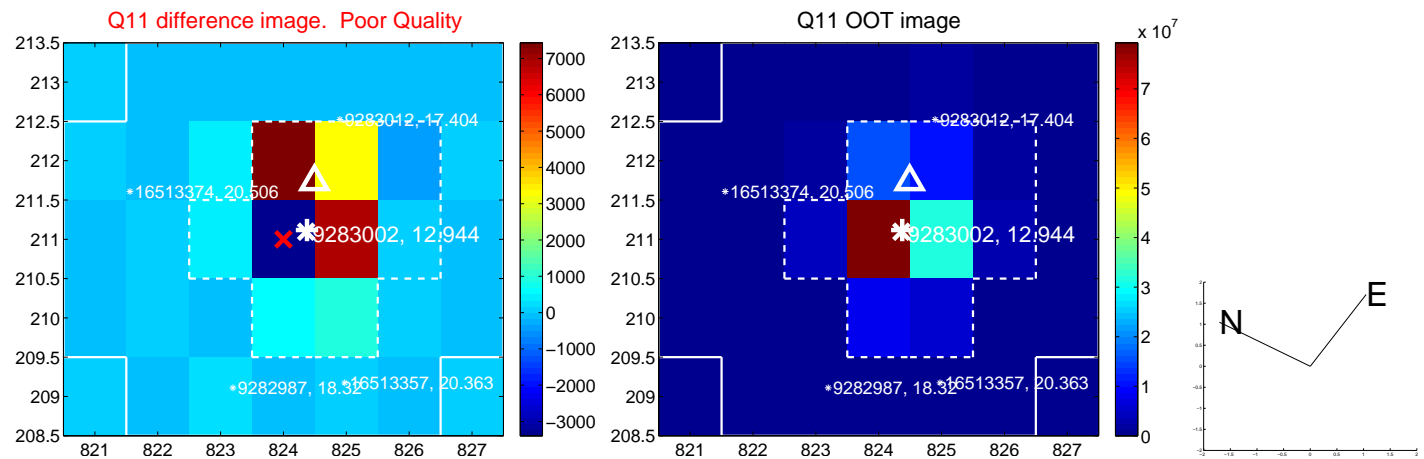
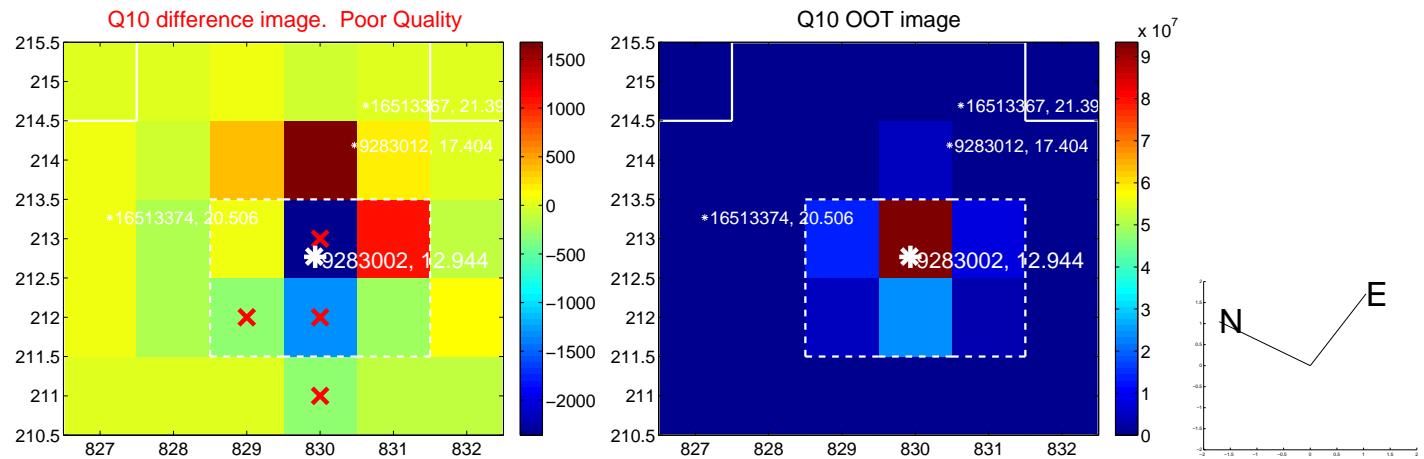
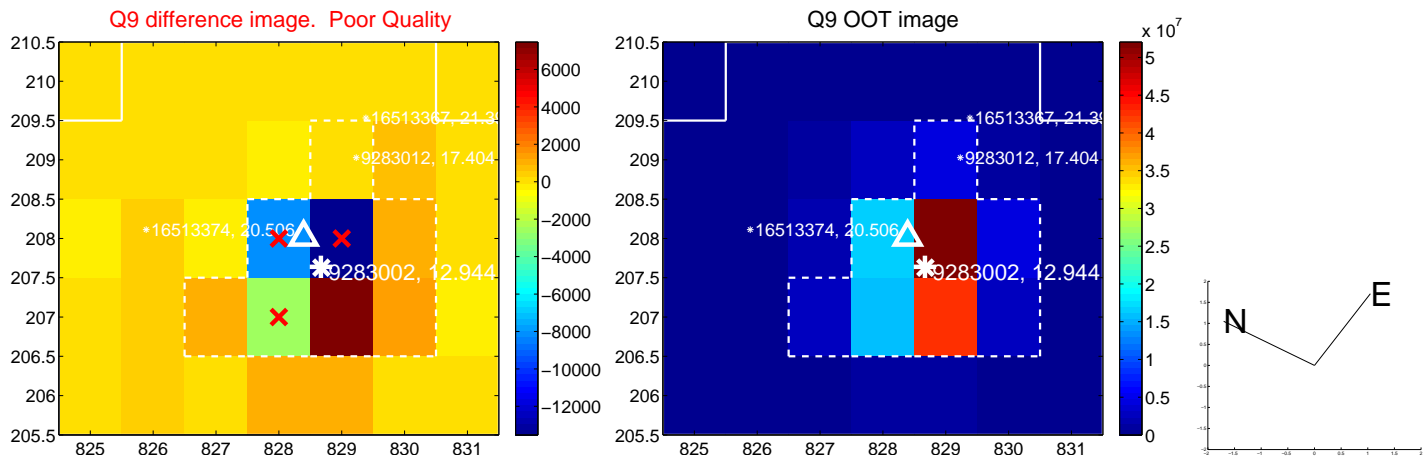


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

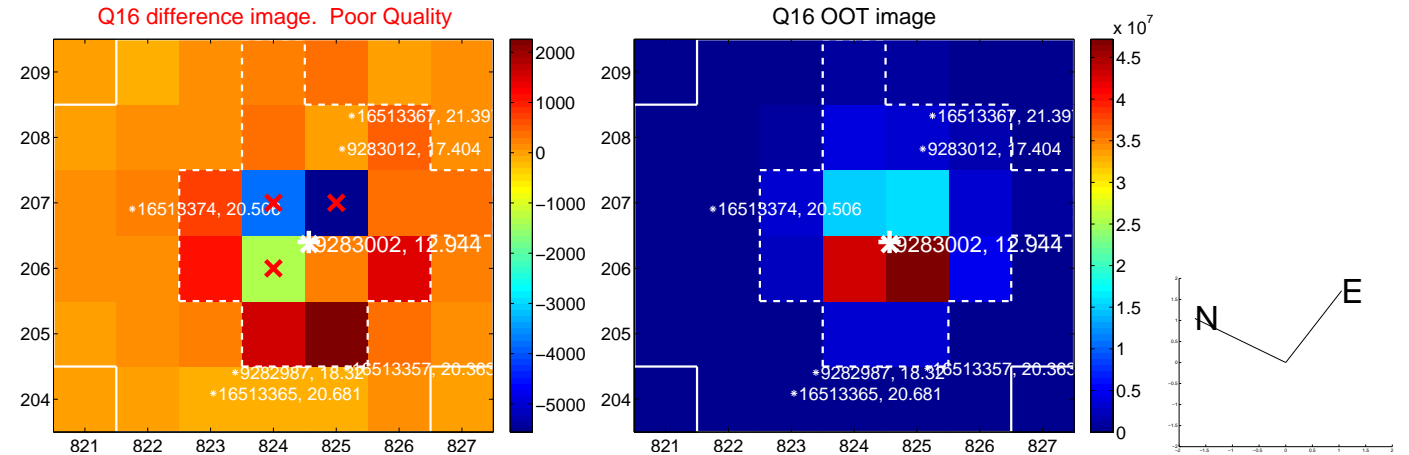
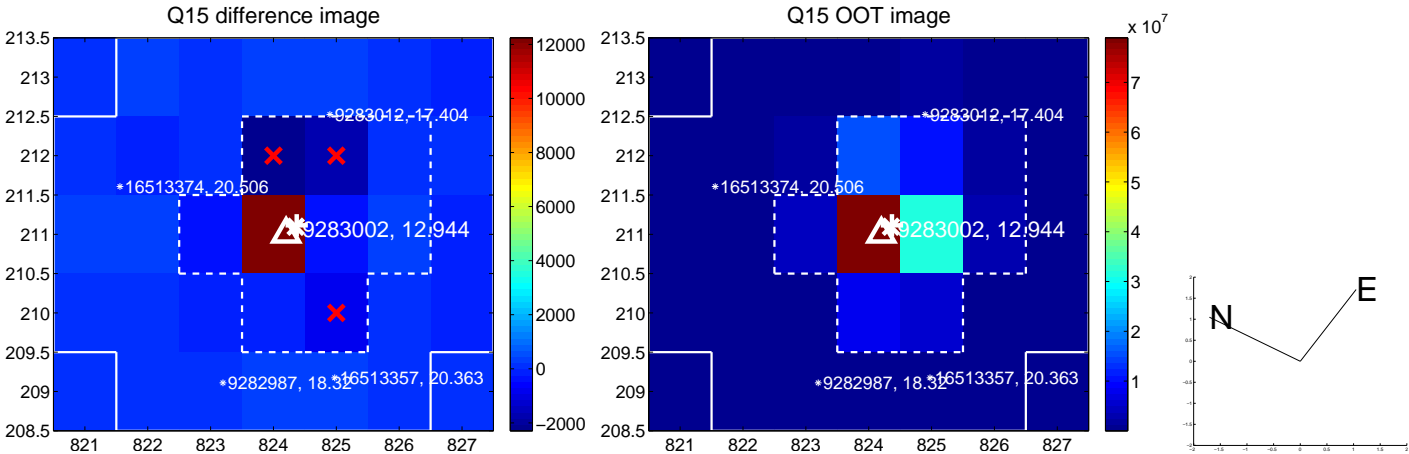
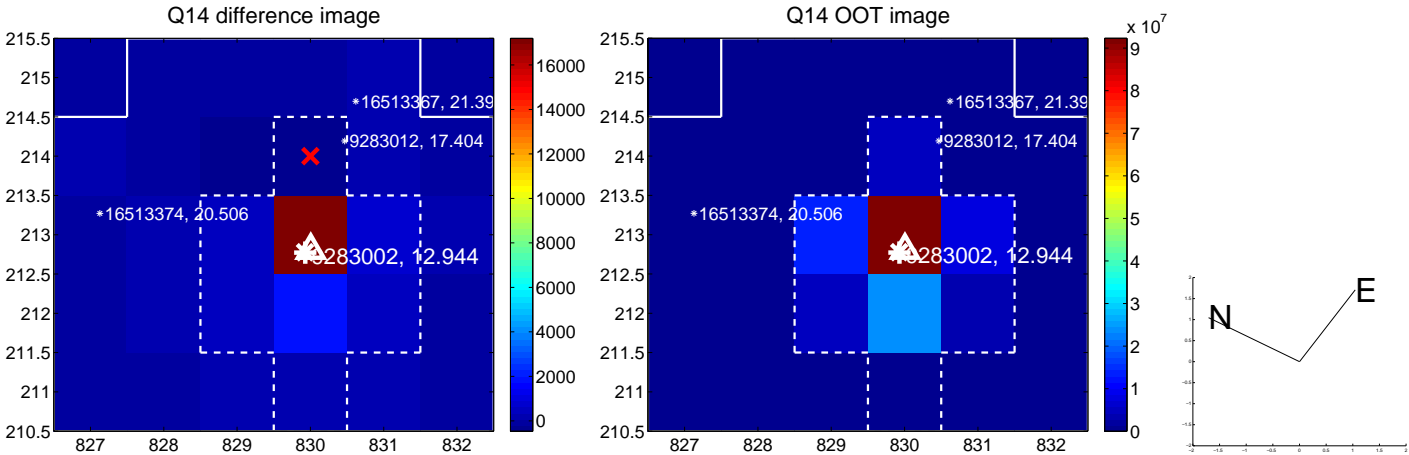
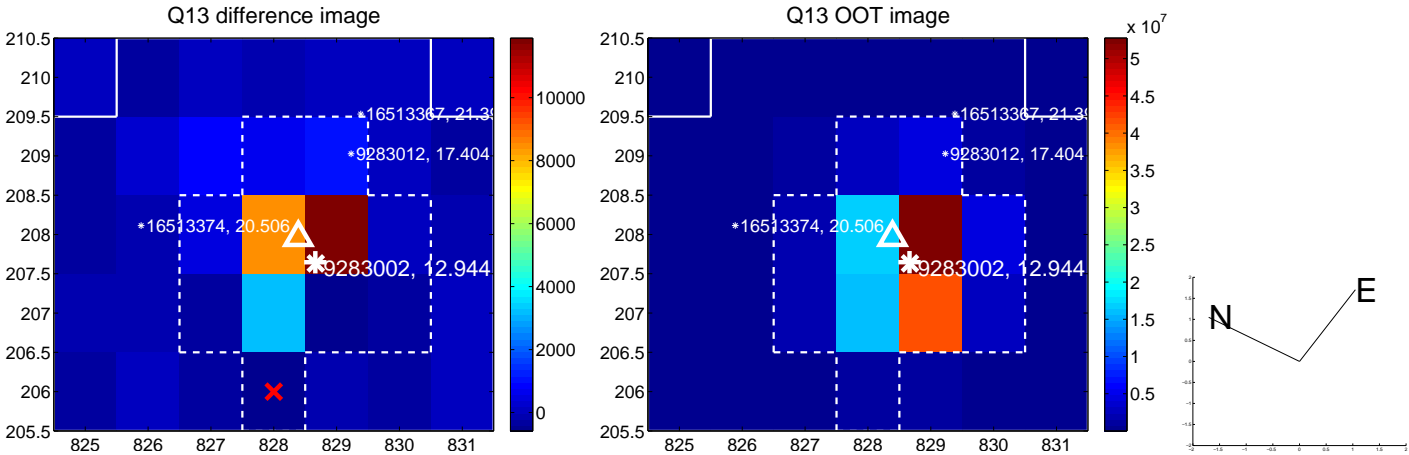
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



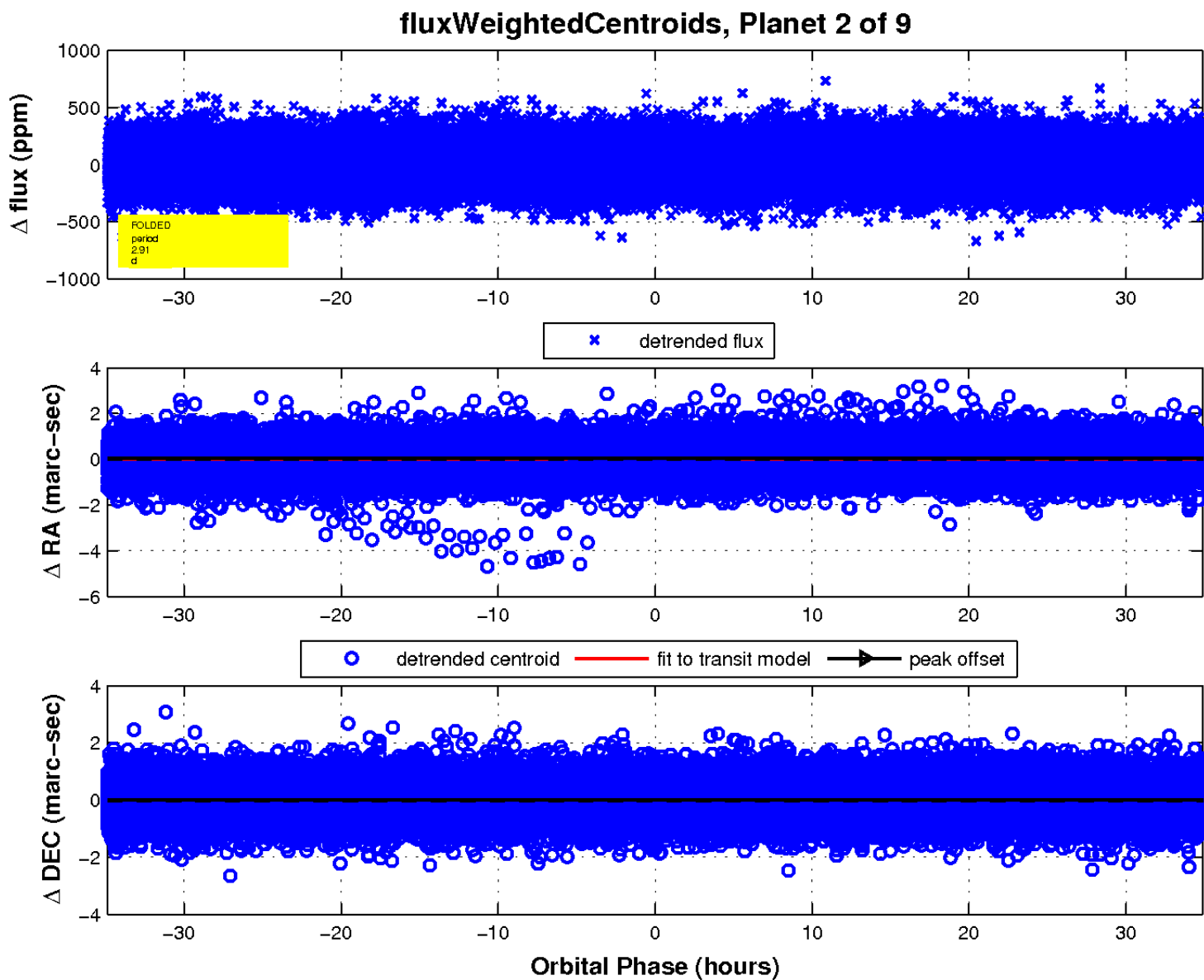
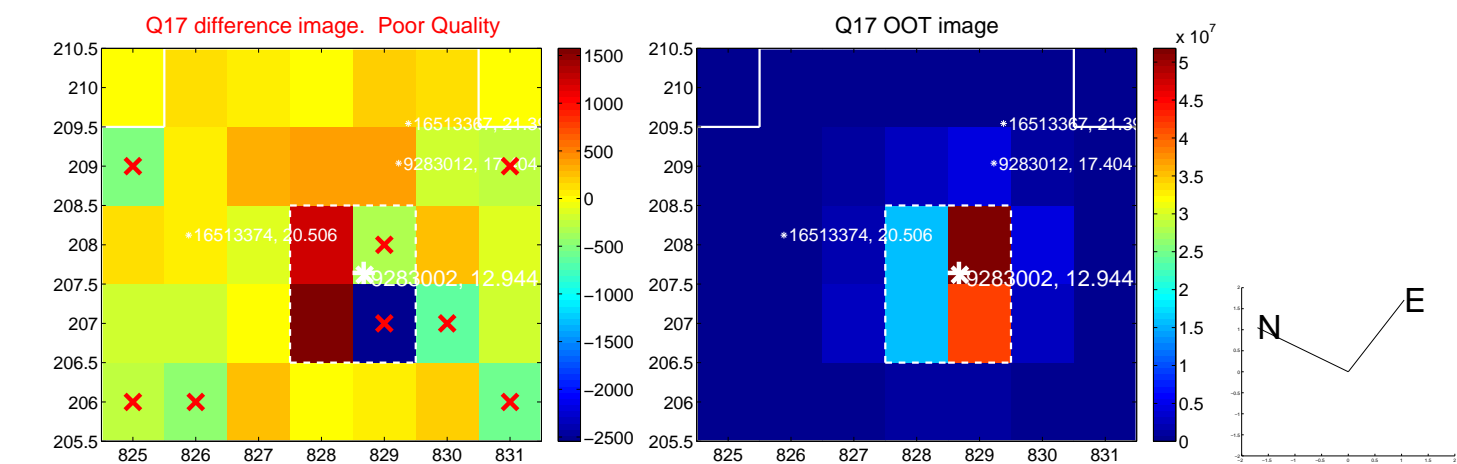
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

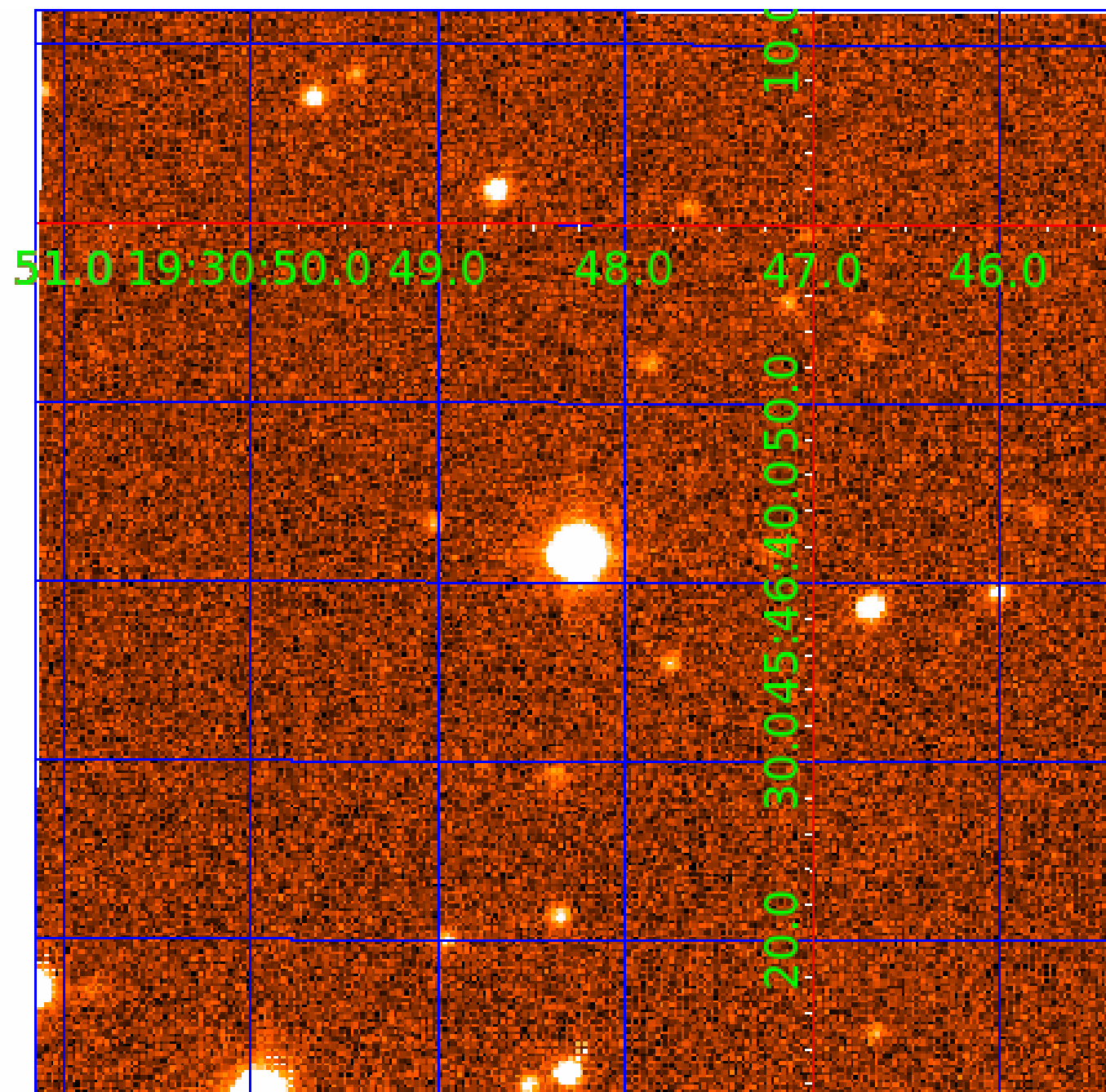


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

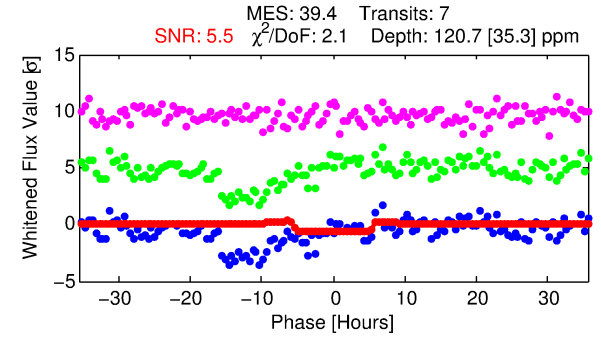
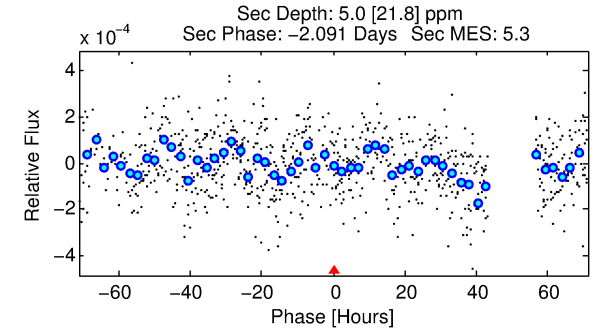
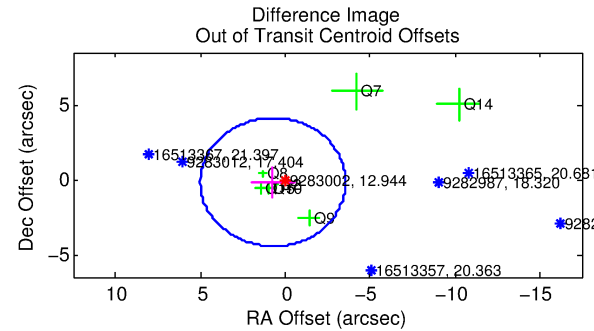
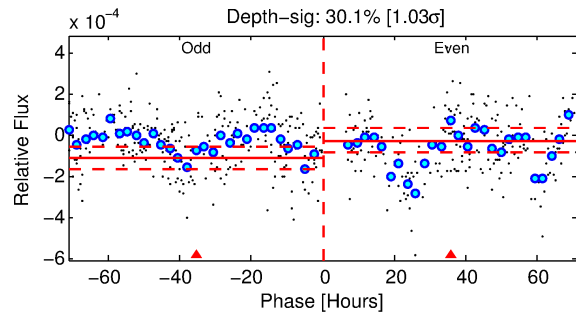
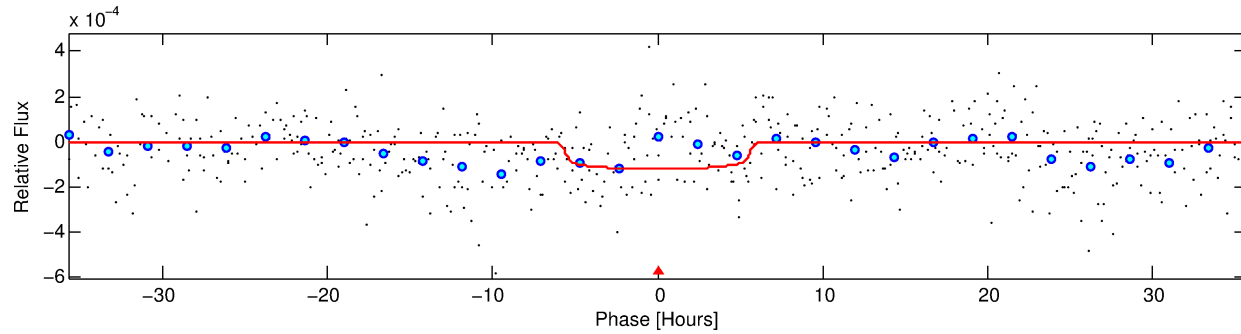
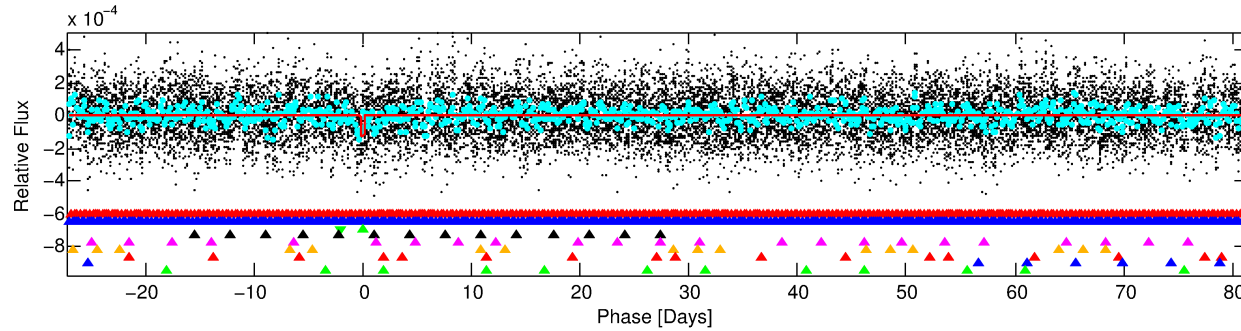
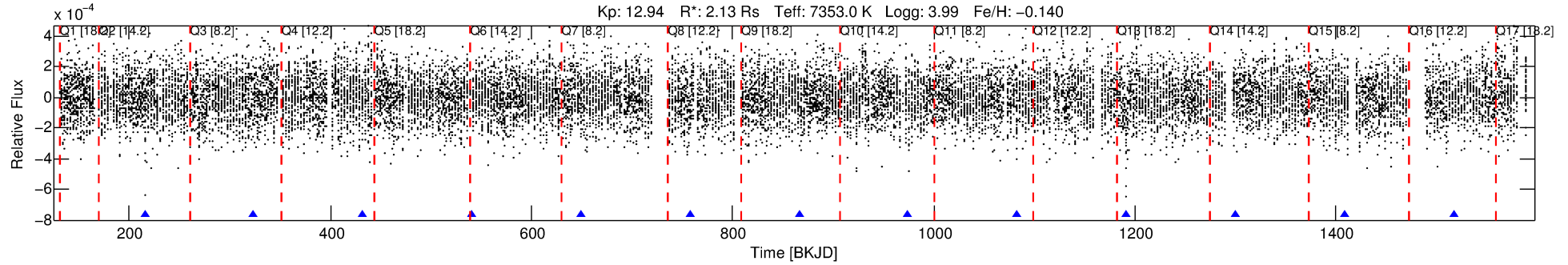
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-03

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 3 of 9 Period: 108.444 d



DV Fit Results:

Period = 108.44367 [0.00466] d
Epoch = 215.3469 [0.0360] BKJD
Rp/R* = 0.0116 [0.0037]
a/R* = 34.37 [54.00]
b = 0.88 [0.40]
Seff = 43.42 [19.36]
Teff = 655 [73] K
Rp = 2.69 [1.18] Re
a = 0.5224 [0.1424] AU
Ag = 103.37 [458.99] [0.22 σ]
Teffp = 3227 [3569] K [0.72 σ]

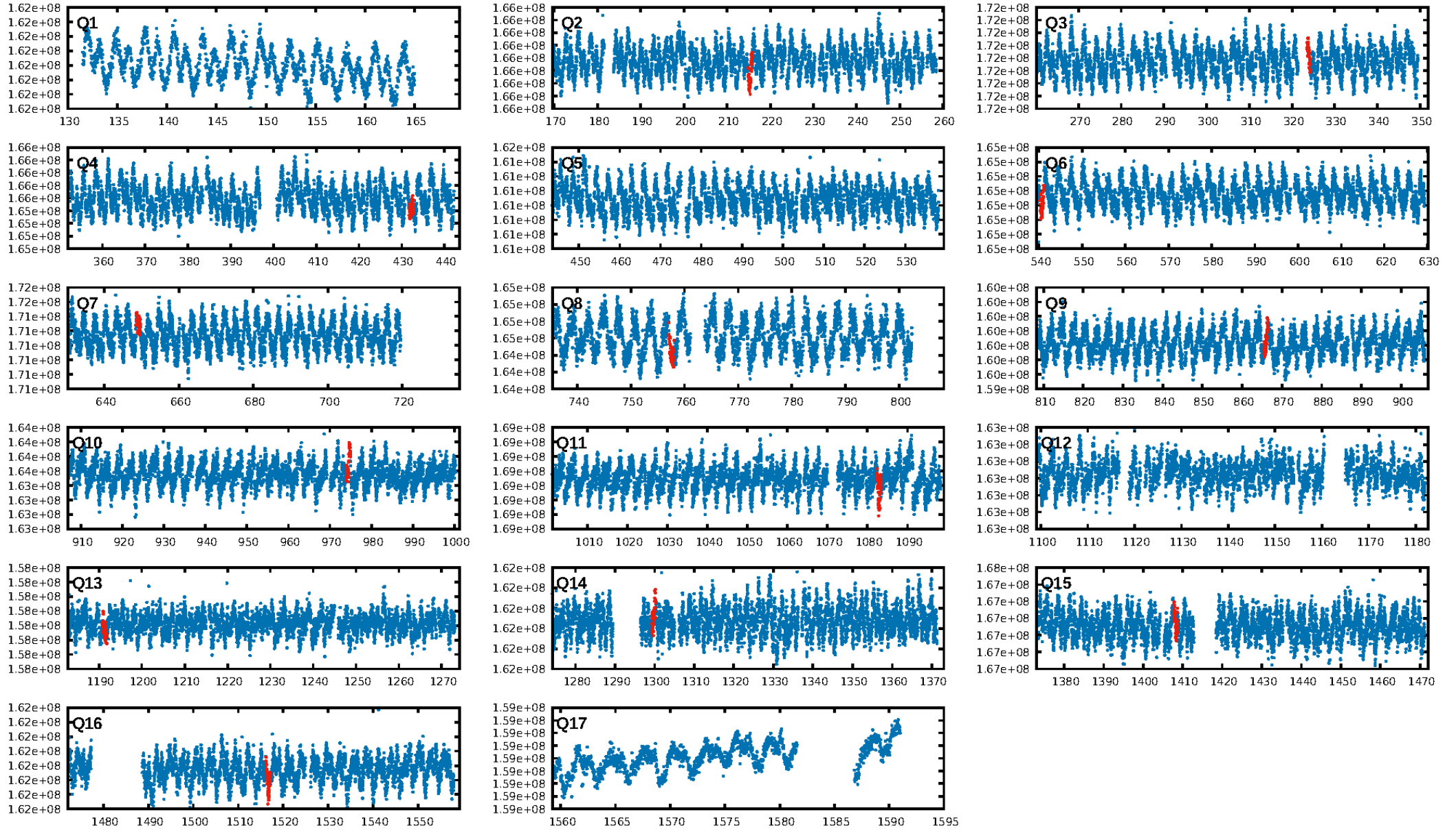
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.57 σ]
LongPeriod-sig: 100.0% [25.63 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.6%
Bootstrap-pfa: 6.45e-147
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -3.669
Centroid-sig: 1.4%
Centroid-so: 1.660 arcsec [2.02 σ]
OotOffset-rm: 0.736 arcsec [0.52 σ]
OotOffset-st: 3/2/1/1 [7]
KicOffset-rm: 0.796 arcsec [0.56 σ]
KicOffset-st: 3/2/1/1 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.11 [1/9]

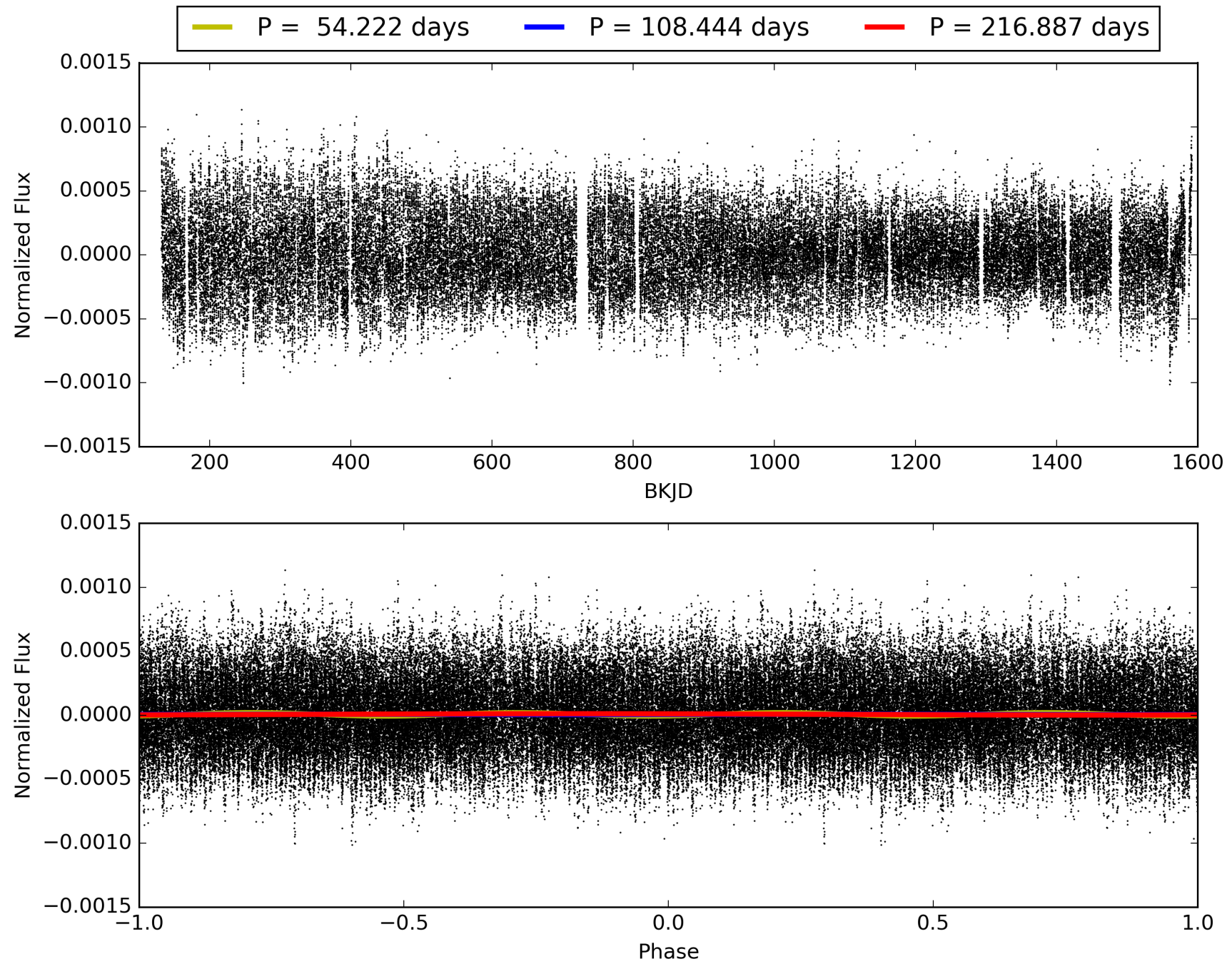
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:29 Z

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

TCE 009283002-03, PDC Light Curves

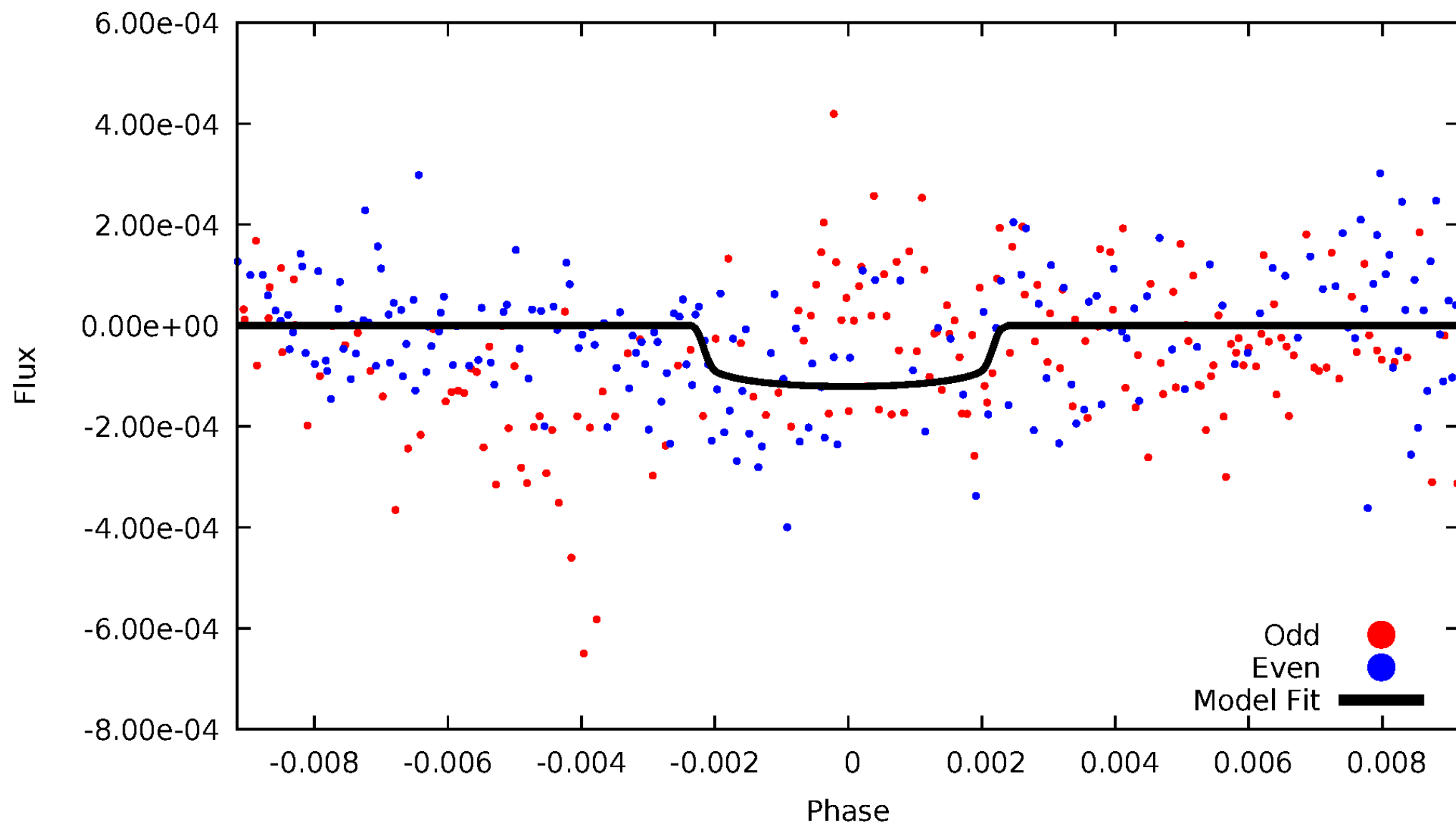


TCE 009283002-03



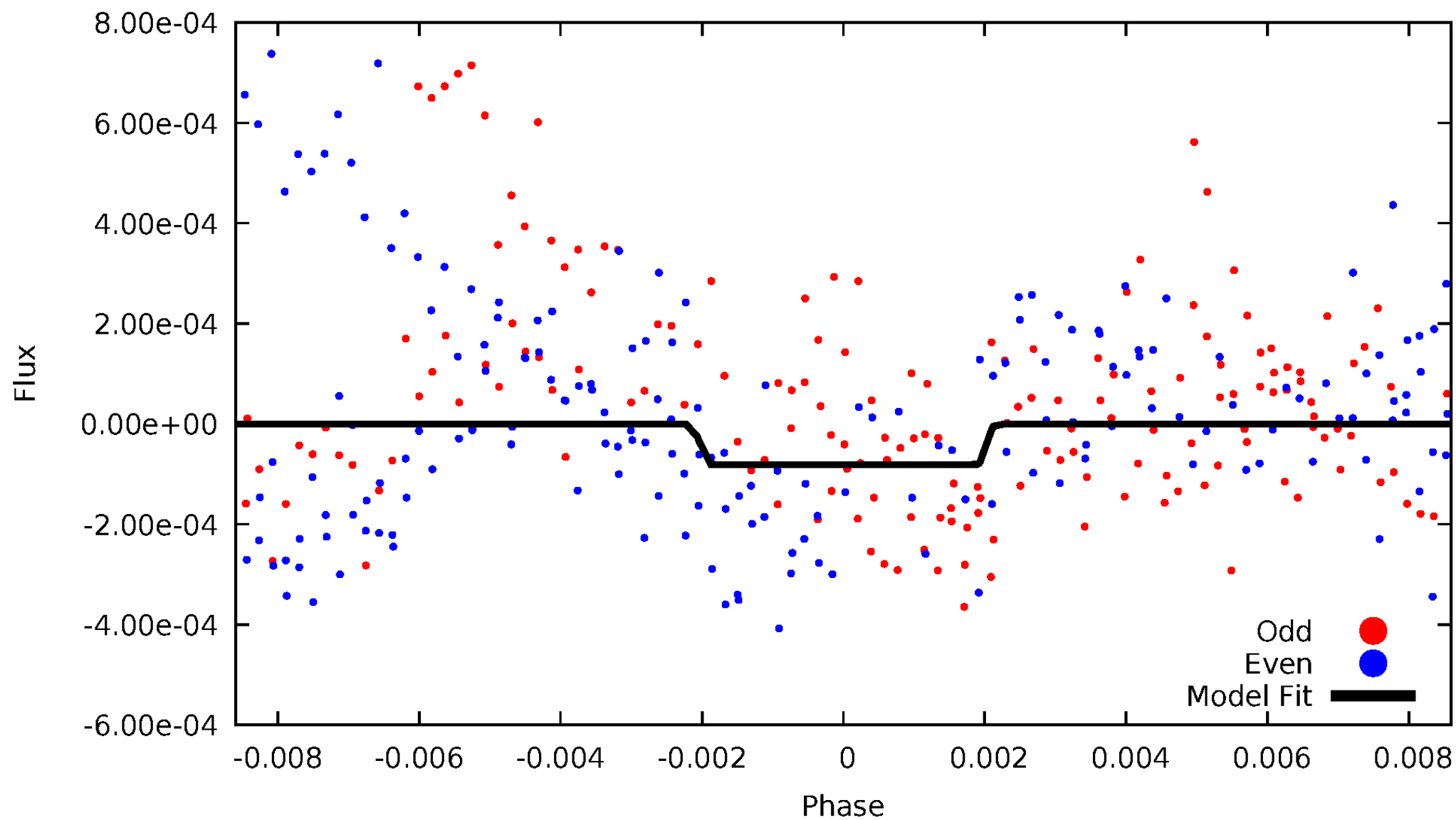
DV Odd/Even

TCE 009283002-03

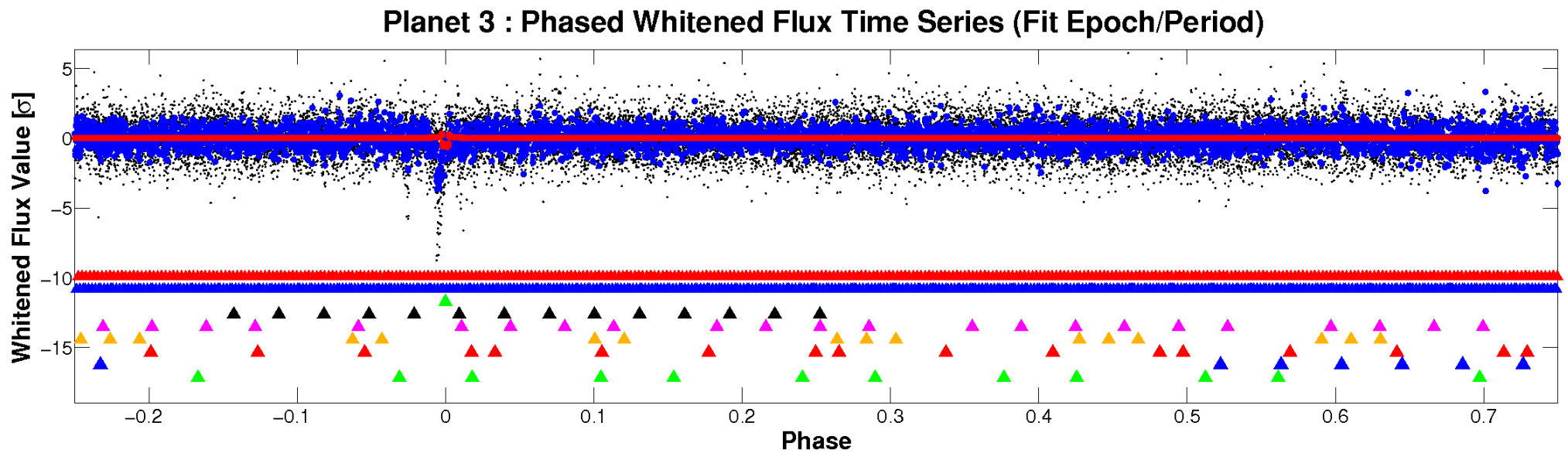
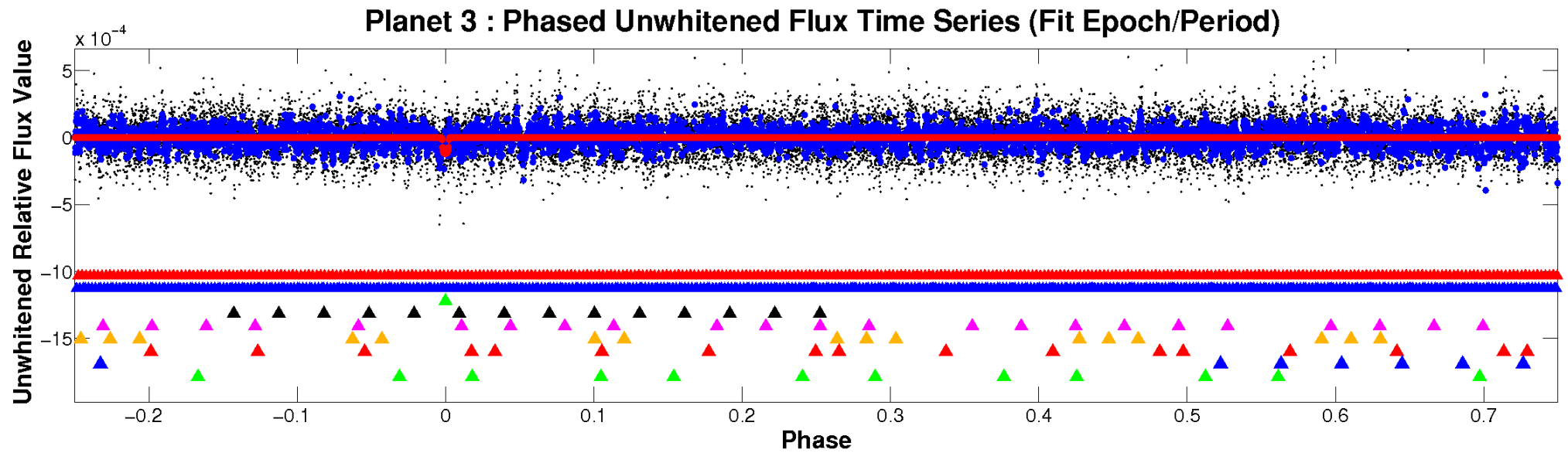


ALT Odd/Even

TCE 009283002-03

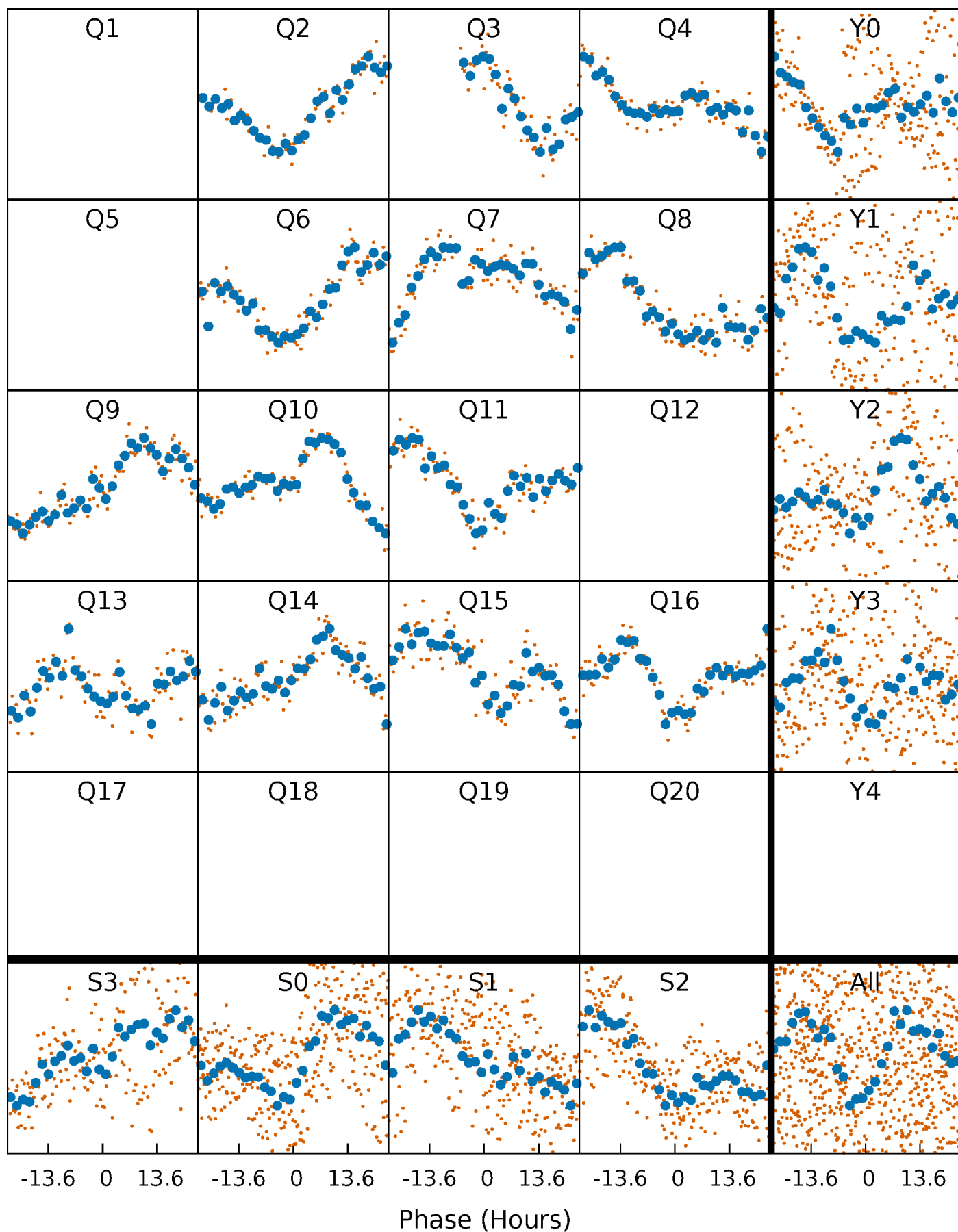


Non-Whitened Vs. Whitened Light Curve



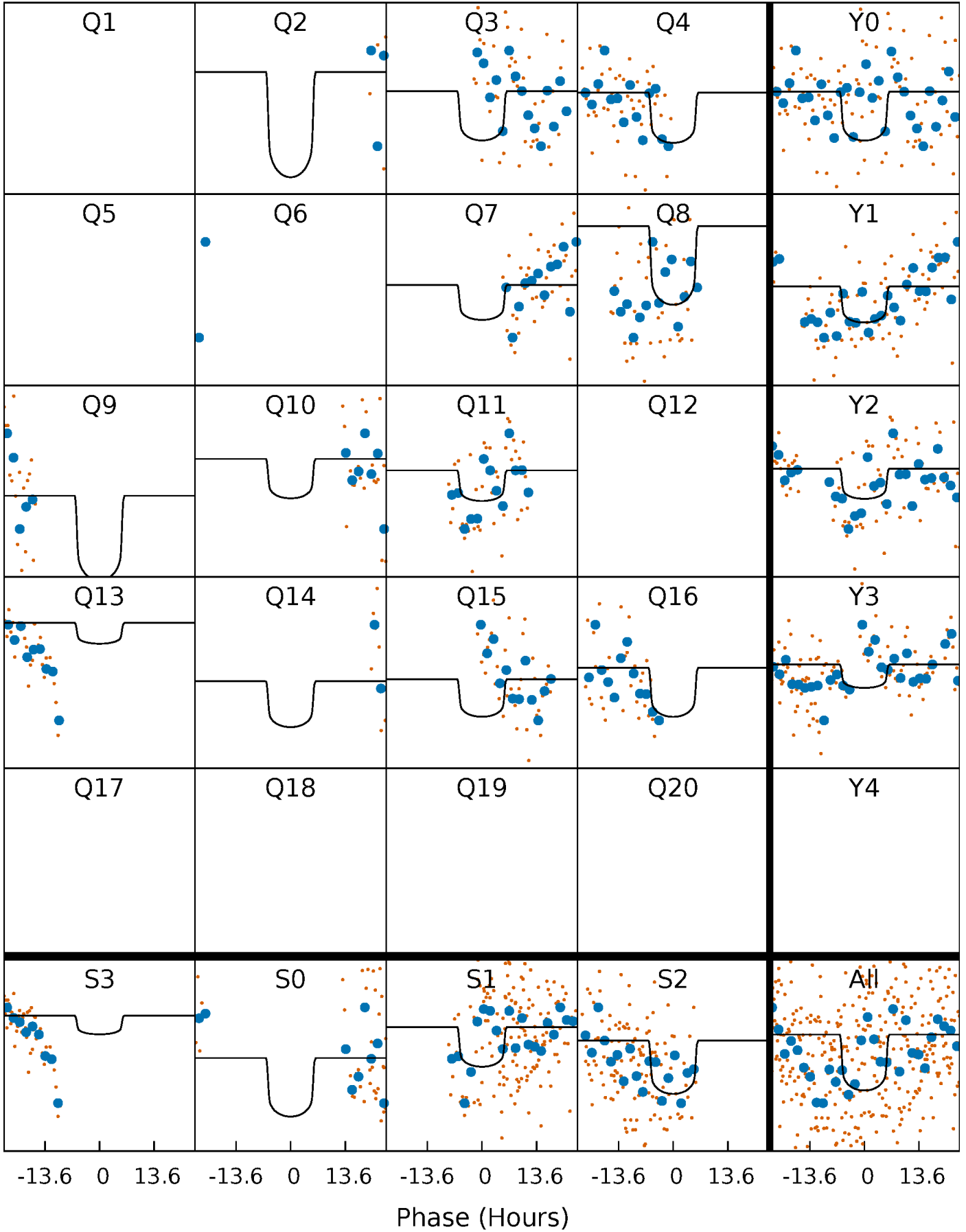
PDC Quarter-Phased Transit Curves

TCE 009283002-03 $P=108.443674$ Days $T_0=215.346918$ (BKJD)



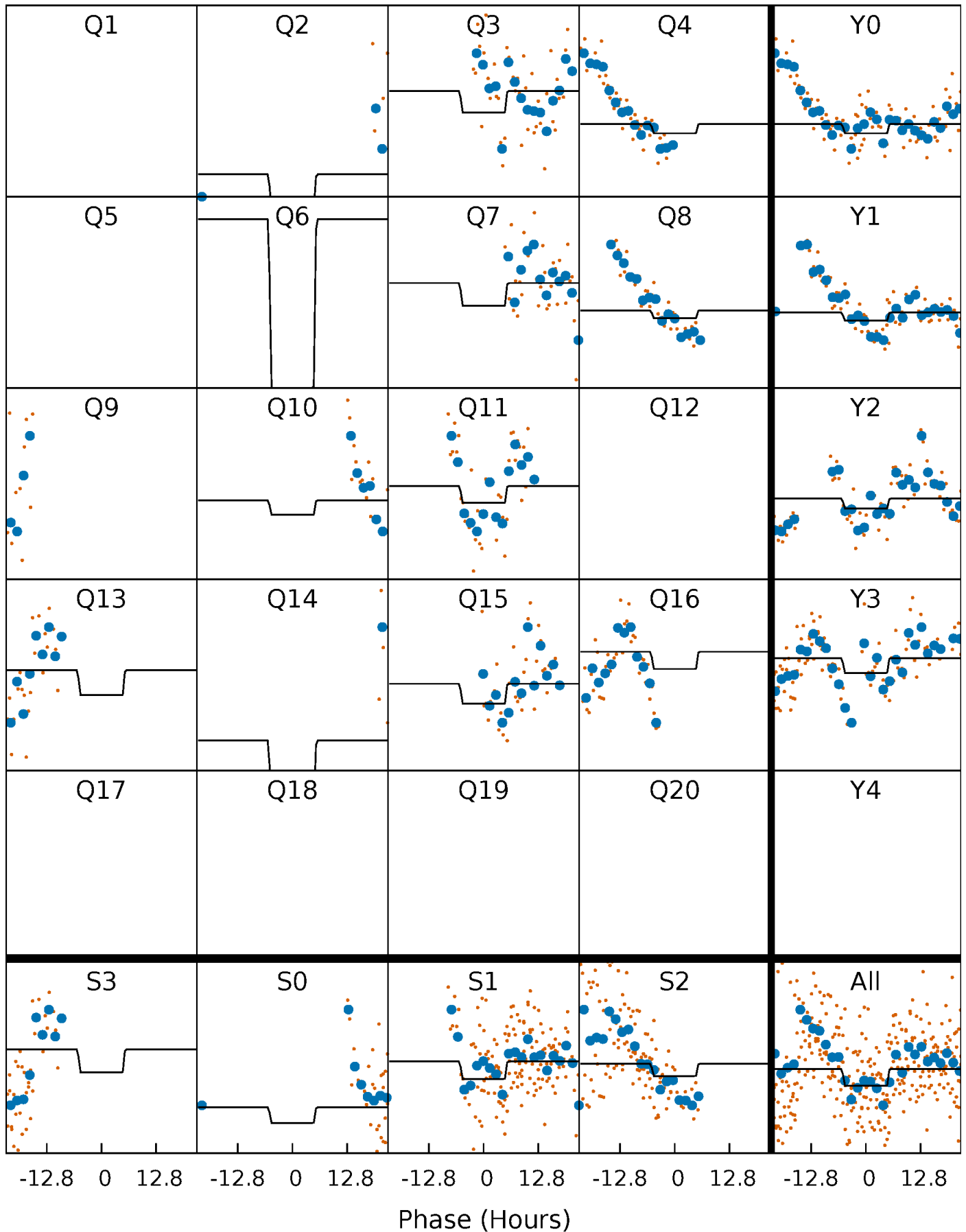
DV Quarter-Phased Transit Curves

TCE 009283002-03 $P=108.443674$ Days $T_0=215.346918$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

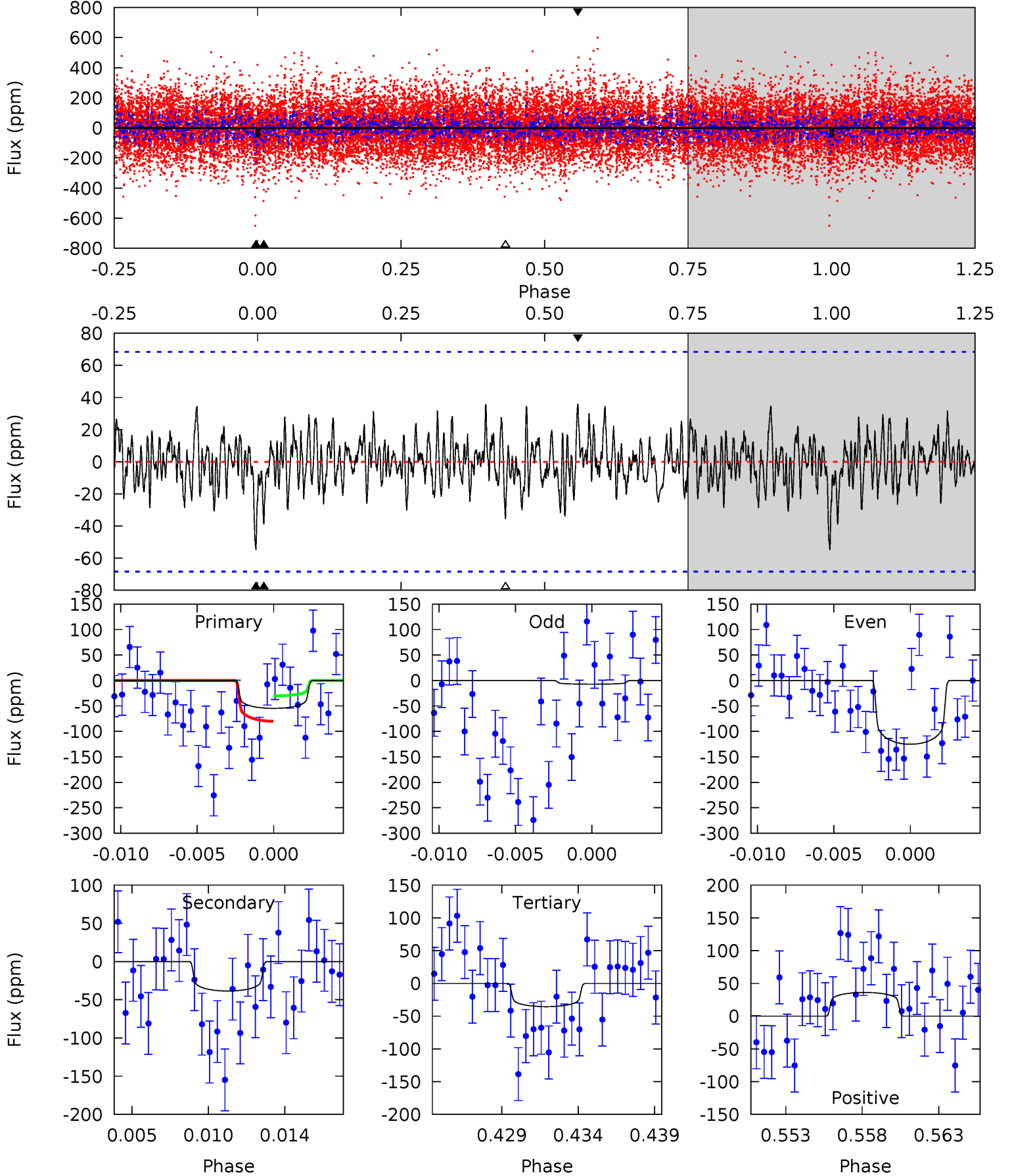
TCE 009283002-03 $P=108.440903$ Days $T_0=215.368380$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-03, P = 108.443674 Days, E = 106.903244 Days

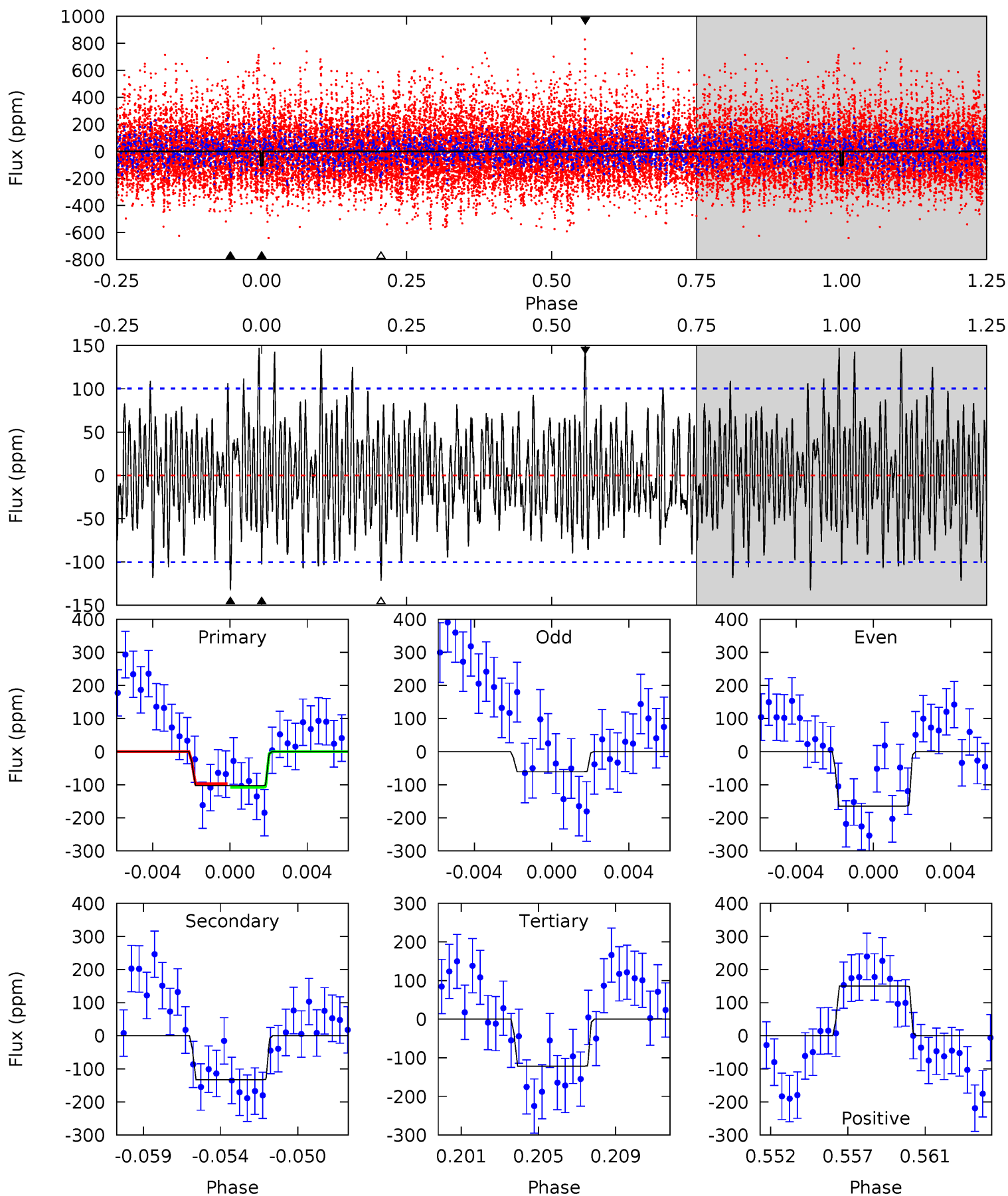
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.14	2.92	2.69	2.73	5.17	2.82	0.93	1.46	1.41	0.23	0.18	4.42	0.55	0.40	1.89



Alt Model-Shift Uniqueness Test

009283002-03, P = 108.440903 Days, E = 106.927477 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.32	6.87	6.30	7.75	5.19	2.86	2.33	-0.98	-2.43	0.57	-0.88	2.66	0.79	0.53	0.28



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-39 ± 13	$2.59^{+1.06}_{-0.81}$	906^{+72}_{-71}	5308^{+1168}_{-702}	858^{+1011}_{-477}
Alt.	-133 ± 19	$2.07^{+0.94}_{-0.85}$	907^{+70}_{-74}	8492^{+3725}_{-1635}	4731^{+8961}_{-2610}

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

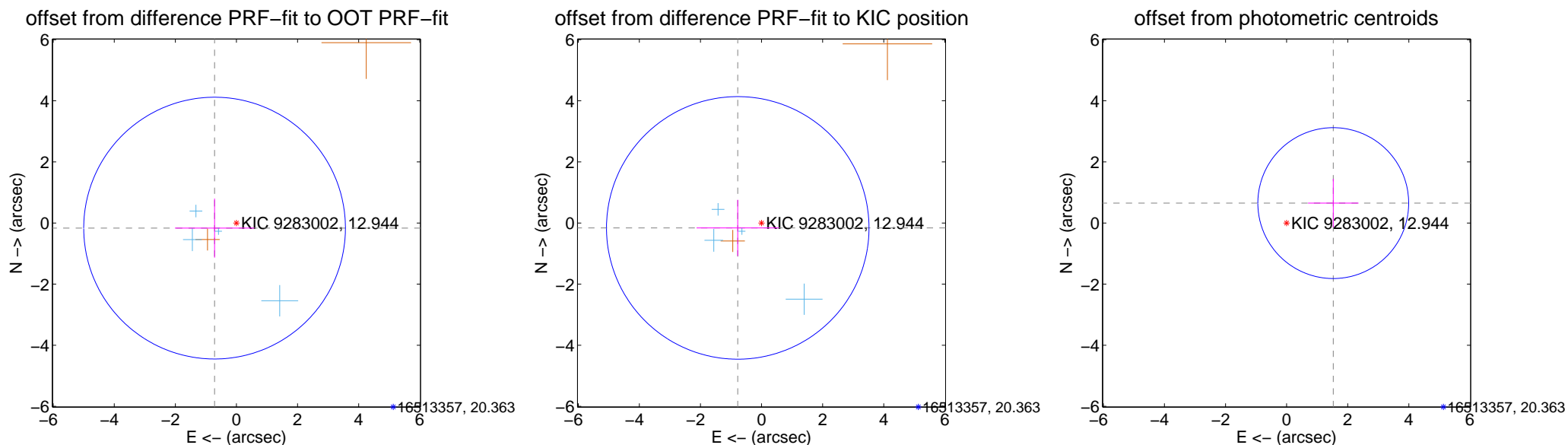
DV Centroid Data

Supplemental centroid analysis for 009283002-03. Kepler magnitude: 12.94. Transit SNR 5.54

There are 4 quarters with good PRF difference image offsets

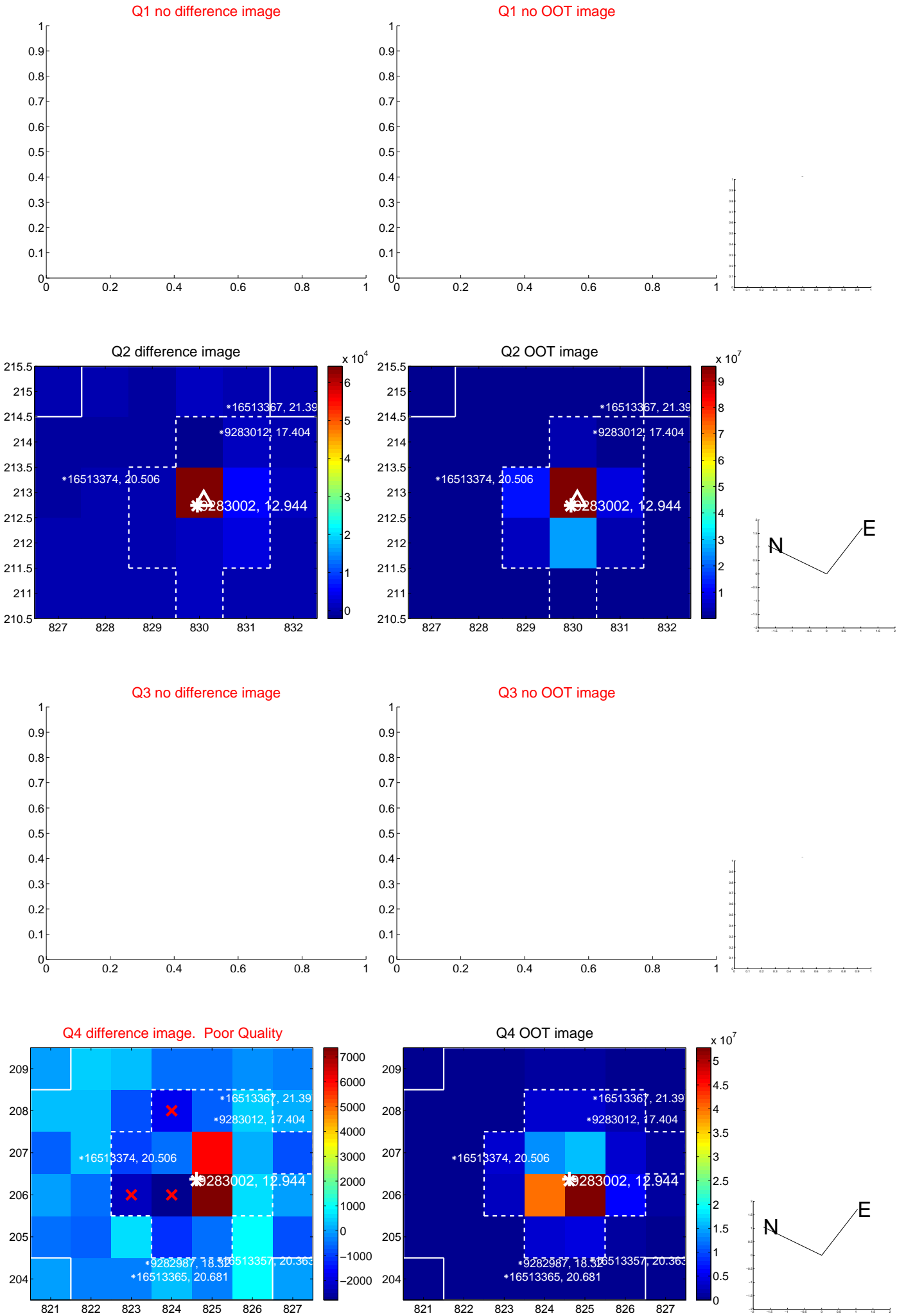
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.736 ± 1.428	0.52	0.717 ± 1.297	-0.167 ± 0.966
PRF-fit source offset from KIC position	0.796 ± 1.432	0.56	0.779 ± 1.347	-0.160 ± 0.920
photometric centroid source offset	1.66 ± 0.82	2.02	-1.53 ± 0.83	0.65 ± 0.80

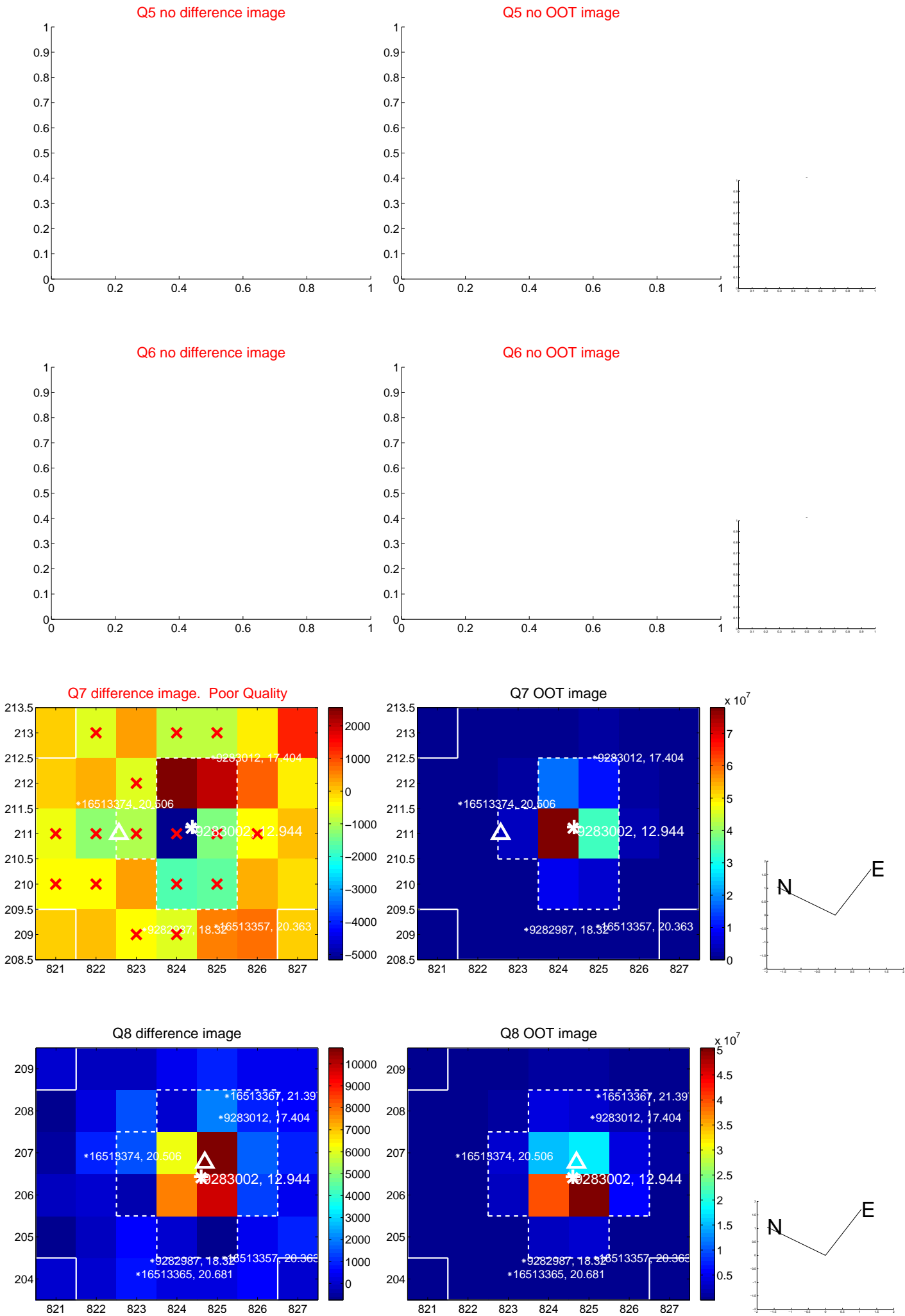


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

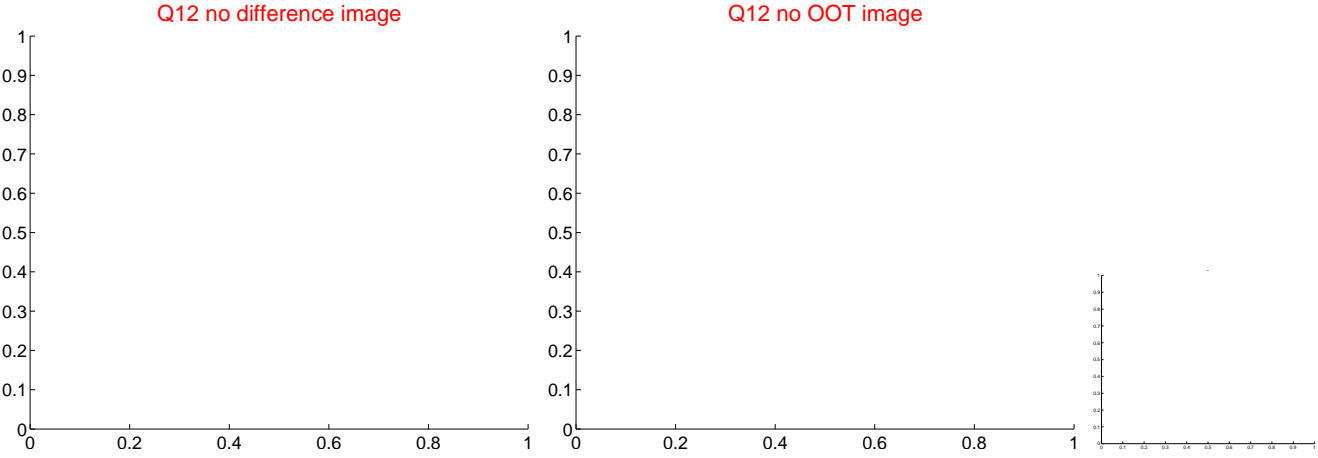
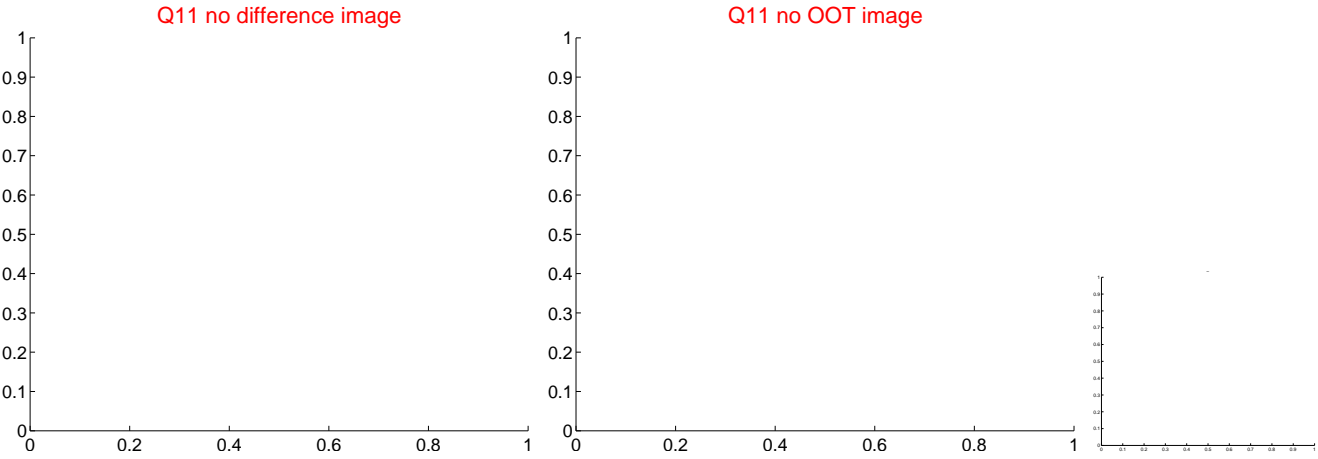
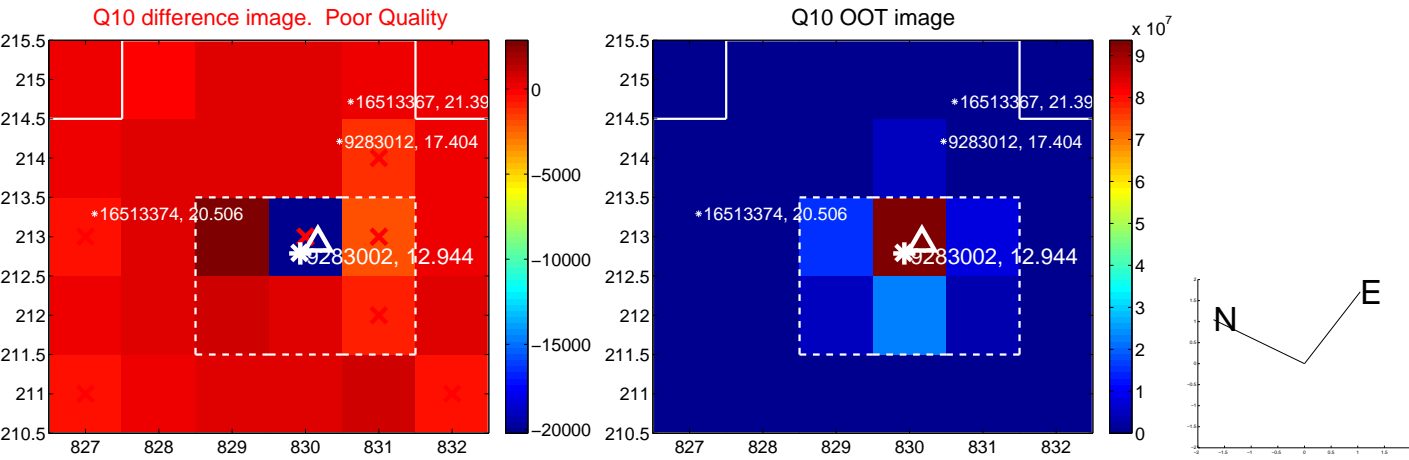
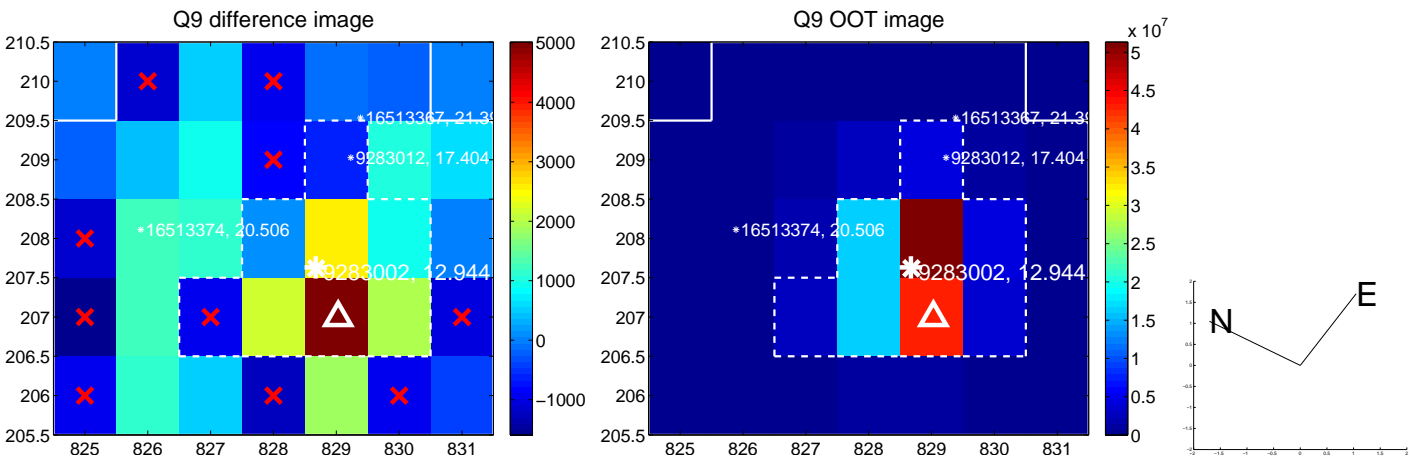
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



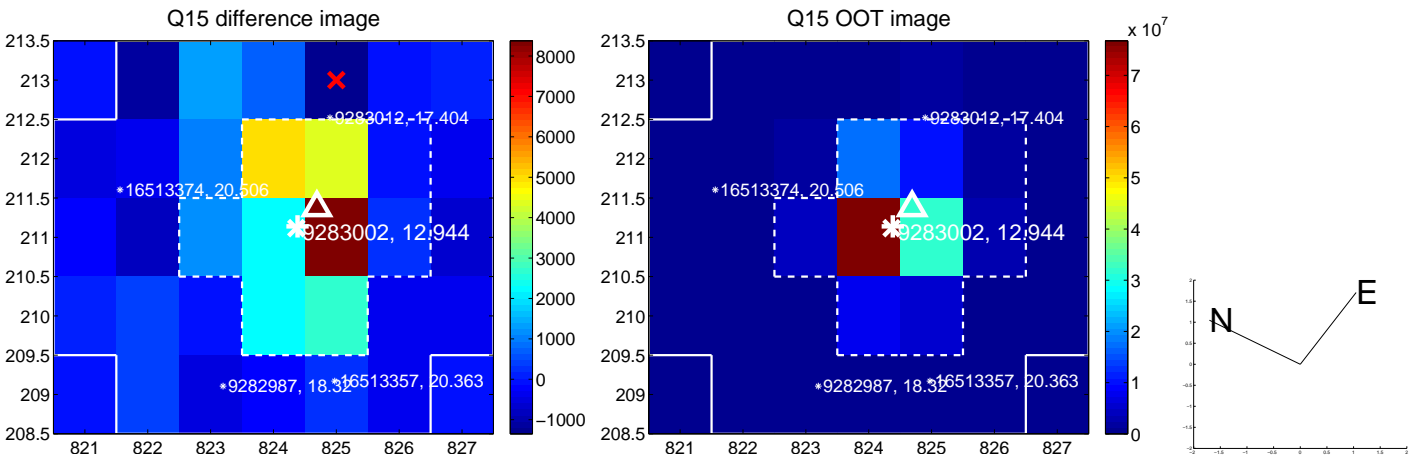
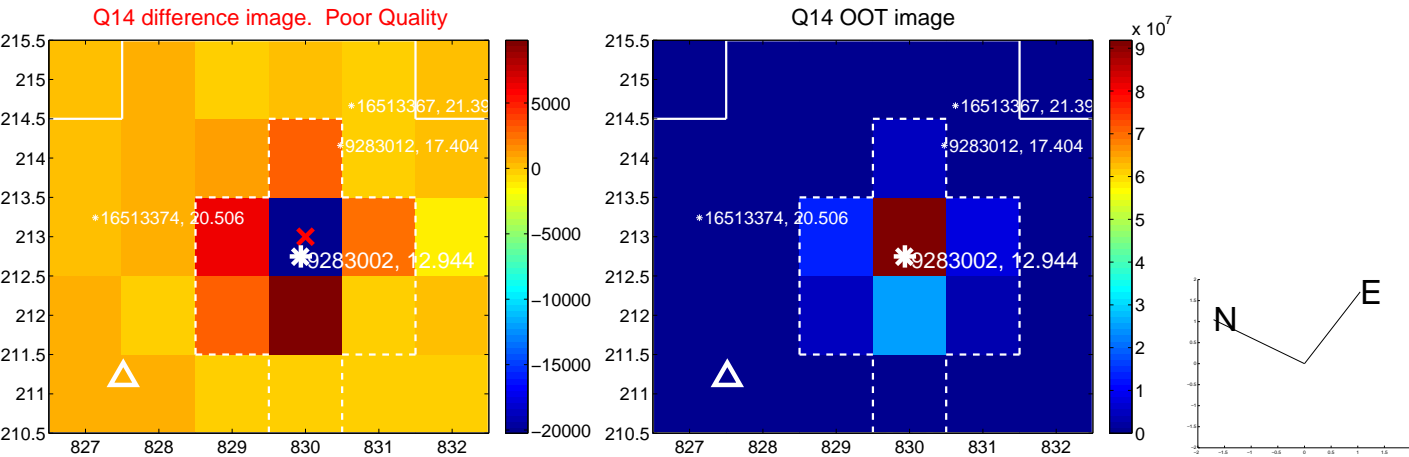
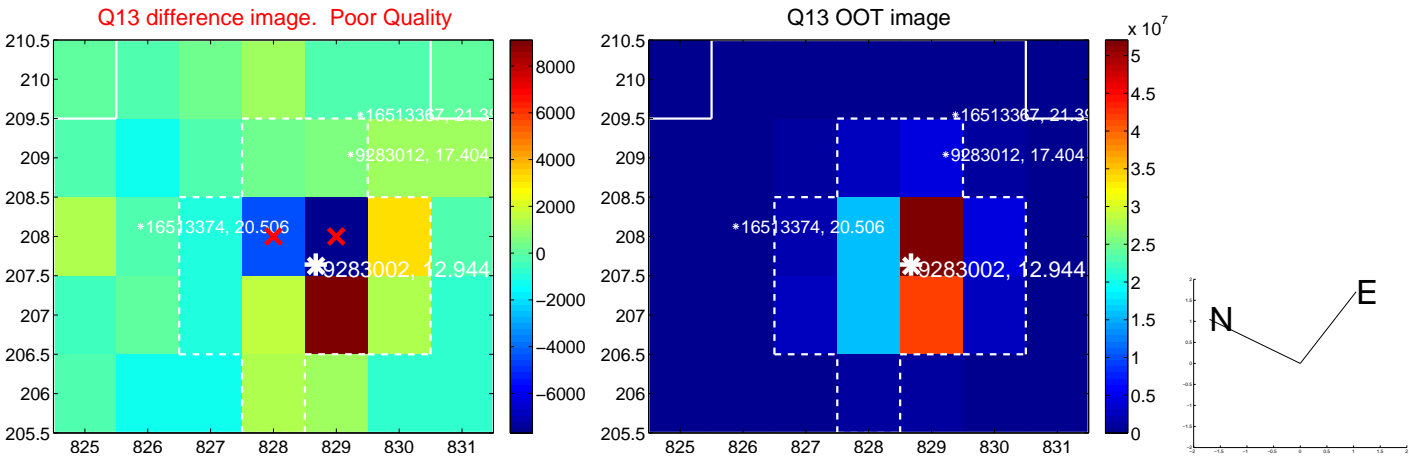
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



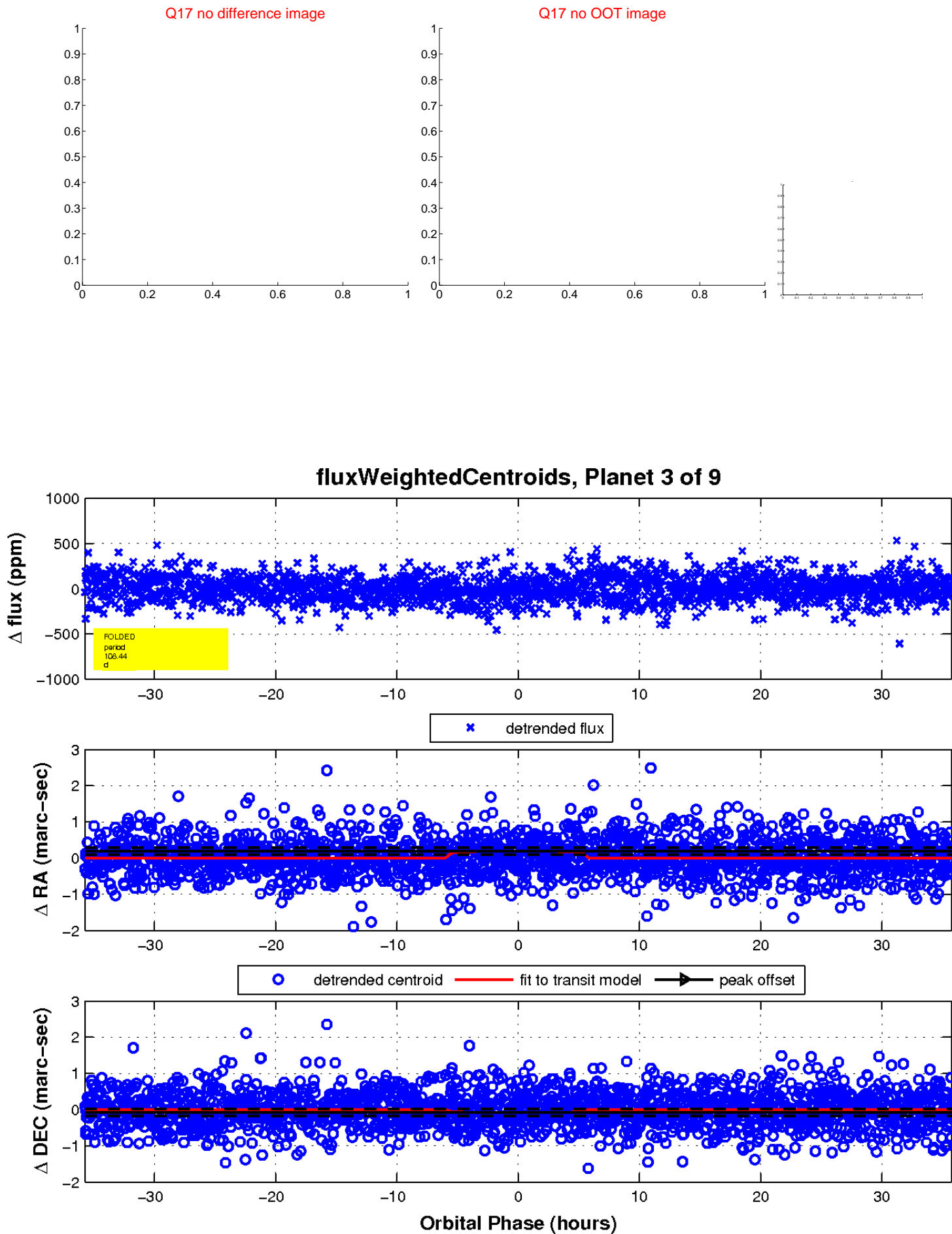
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

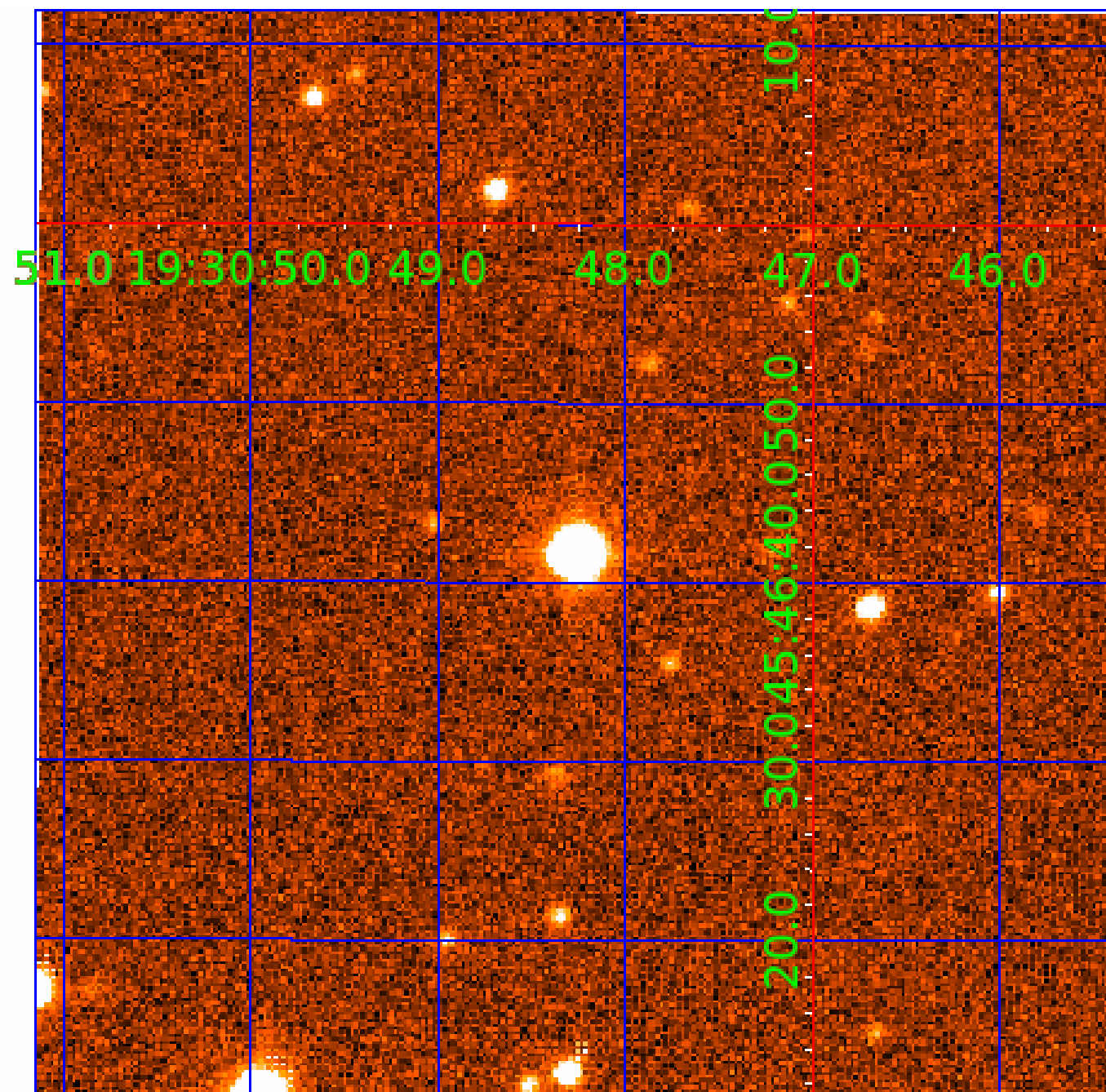


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

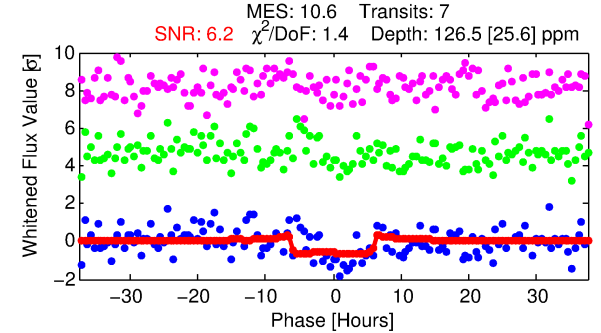
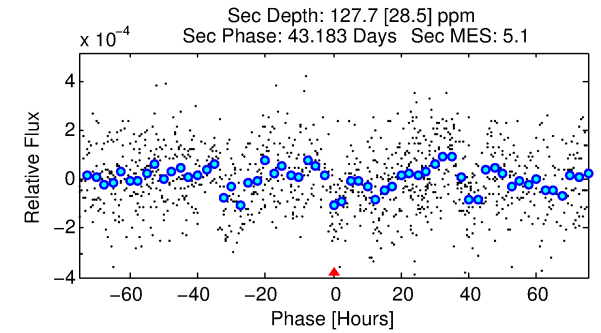
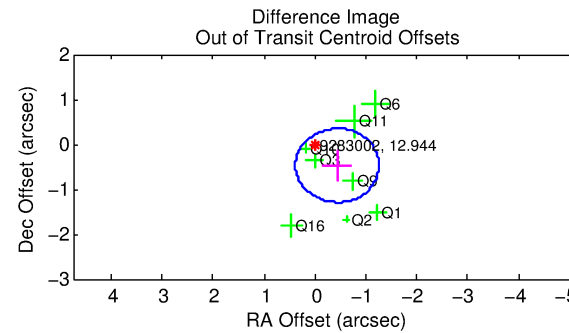
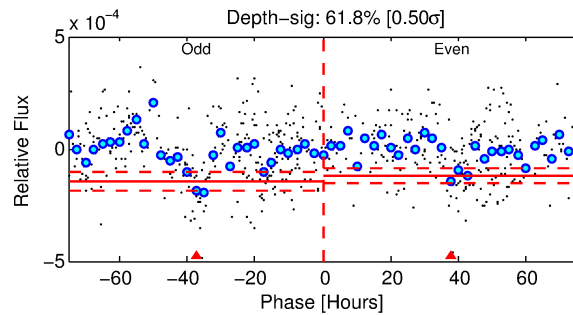
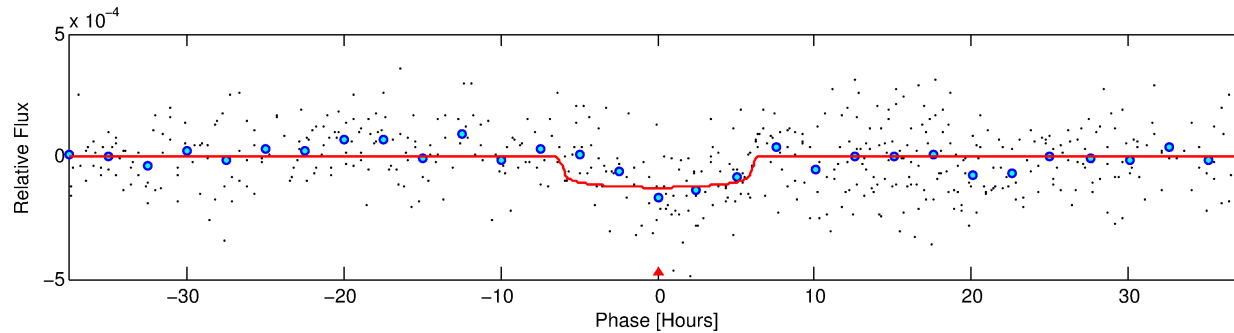
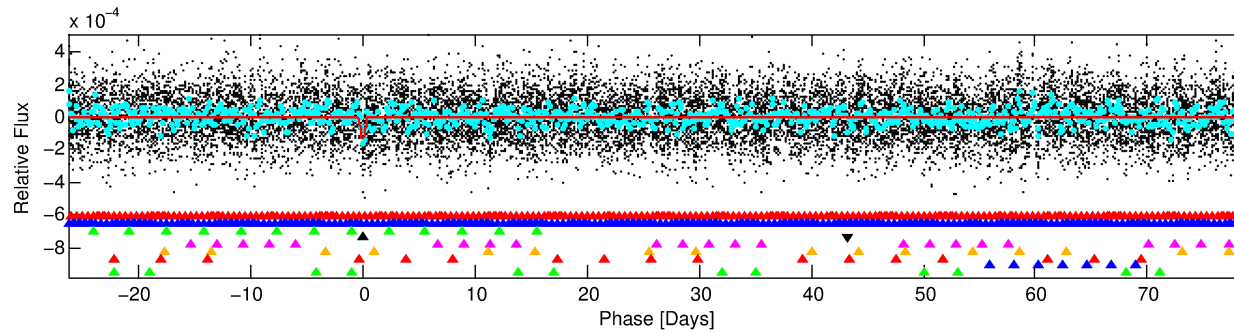
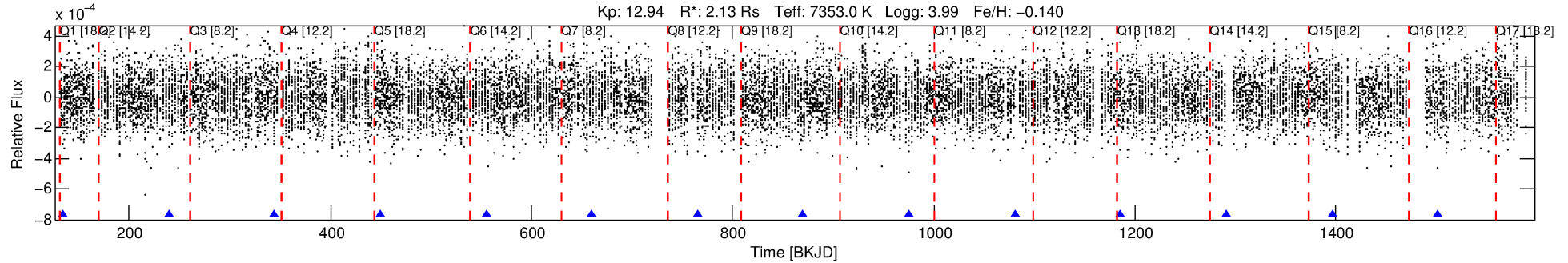
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-04

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 4 of 9 Period: 105.147 d



DV Fit Results:

Period = 105.14705 [0.00349] d
Epoch = 134.2803 [0.0245] BKJD
Rp/R* = 0.0113 [0.0042]
a/R* = 41.53 [82.90]
b = 0.78 [1.03]
Seff = 45.24 [20.18]
Teq = 661 [74] K
Rp = 2.62 [1.26] Re
a = 0.5118 [0.1395] AU
Ag = 2685.57 [2352.65] [1.14 σ]
Teffp = 7361 [1454] K [4.60 σ]

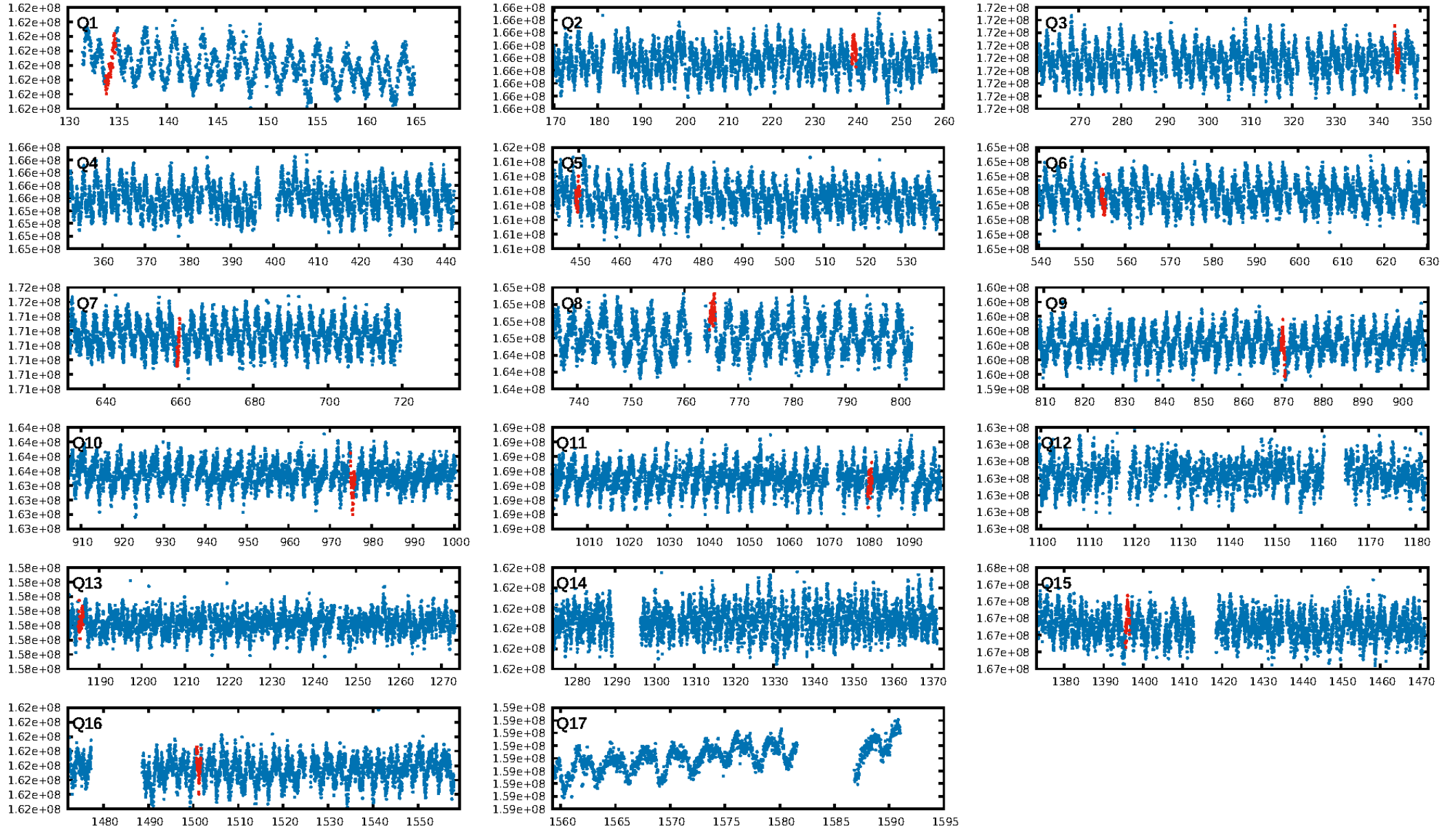
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.45 σ]
LongPeriod-sig: 100.0% [4.57 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.17e-12
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.5981
Centroid-sig: 4.2%
Centroid-so: 1.593 arcsec [2.08 σ]
OotOffset-rm: 0.645 arcsec [2.36 σ]
KicOffset-rm: 0.613 arcsec [2.42 σ]
OotOffset-st: 3/2/1/2 [8]
KicOffset-st: 3/2/1/2 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 0.00 [0/9]

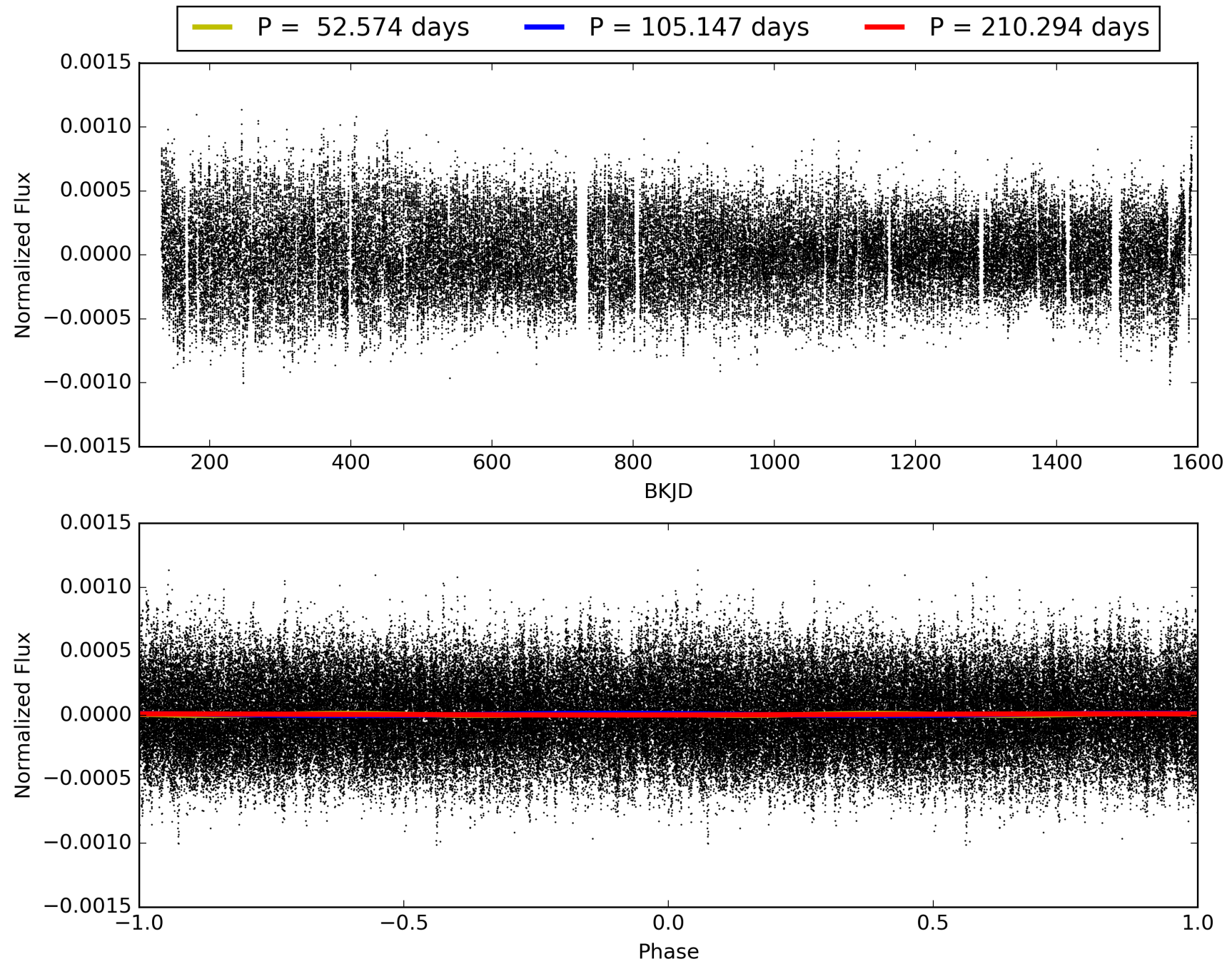
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:33 Z

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

TCE 009283002-04, PDC Light Curves

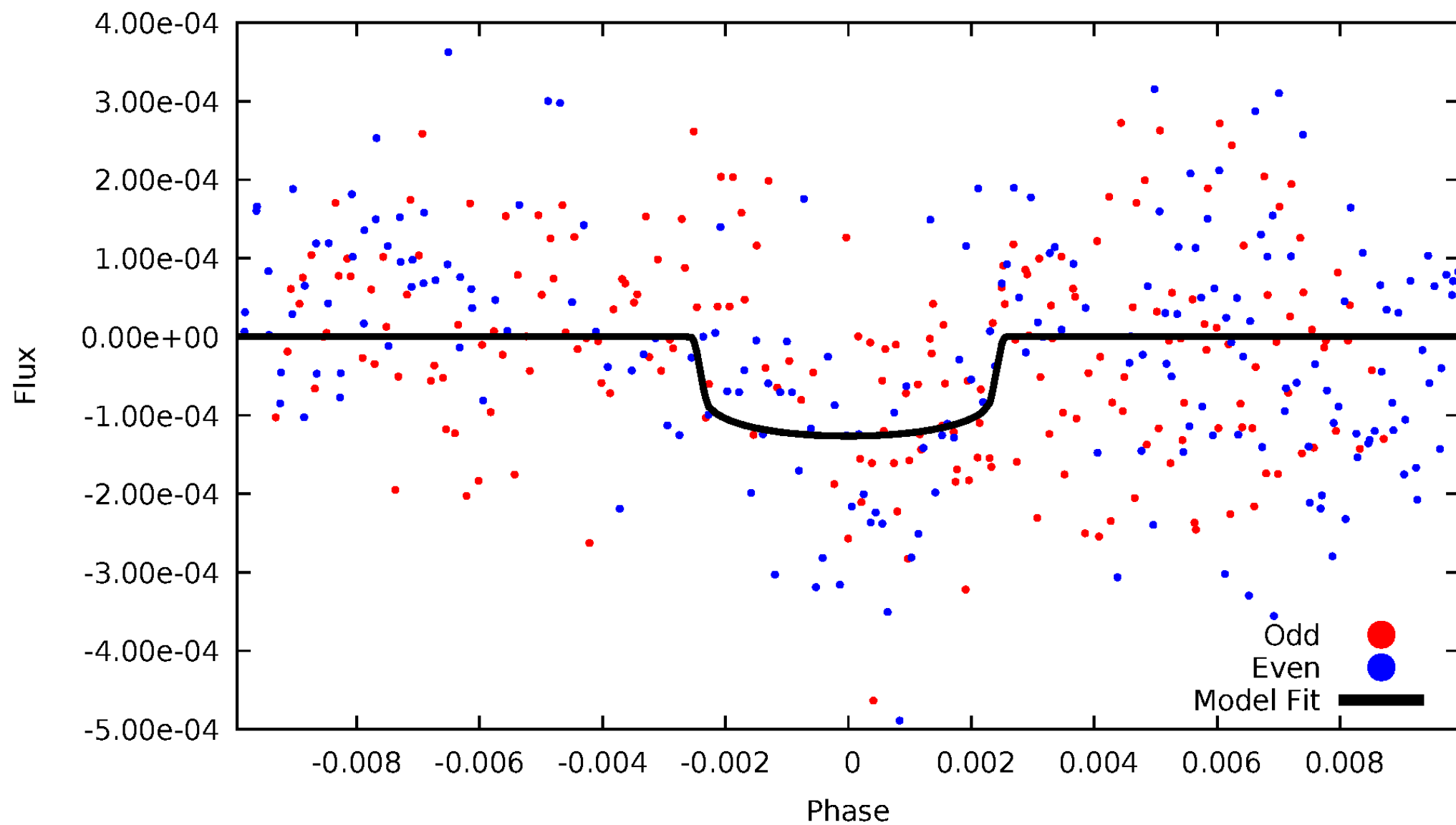


TCE 009283002-04



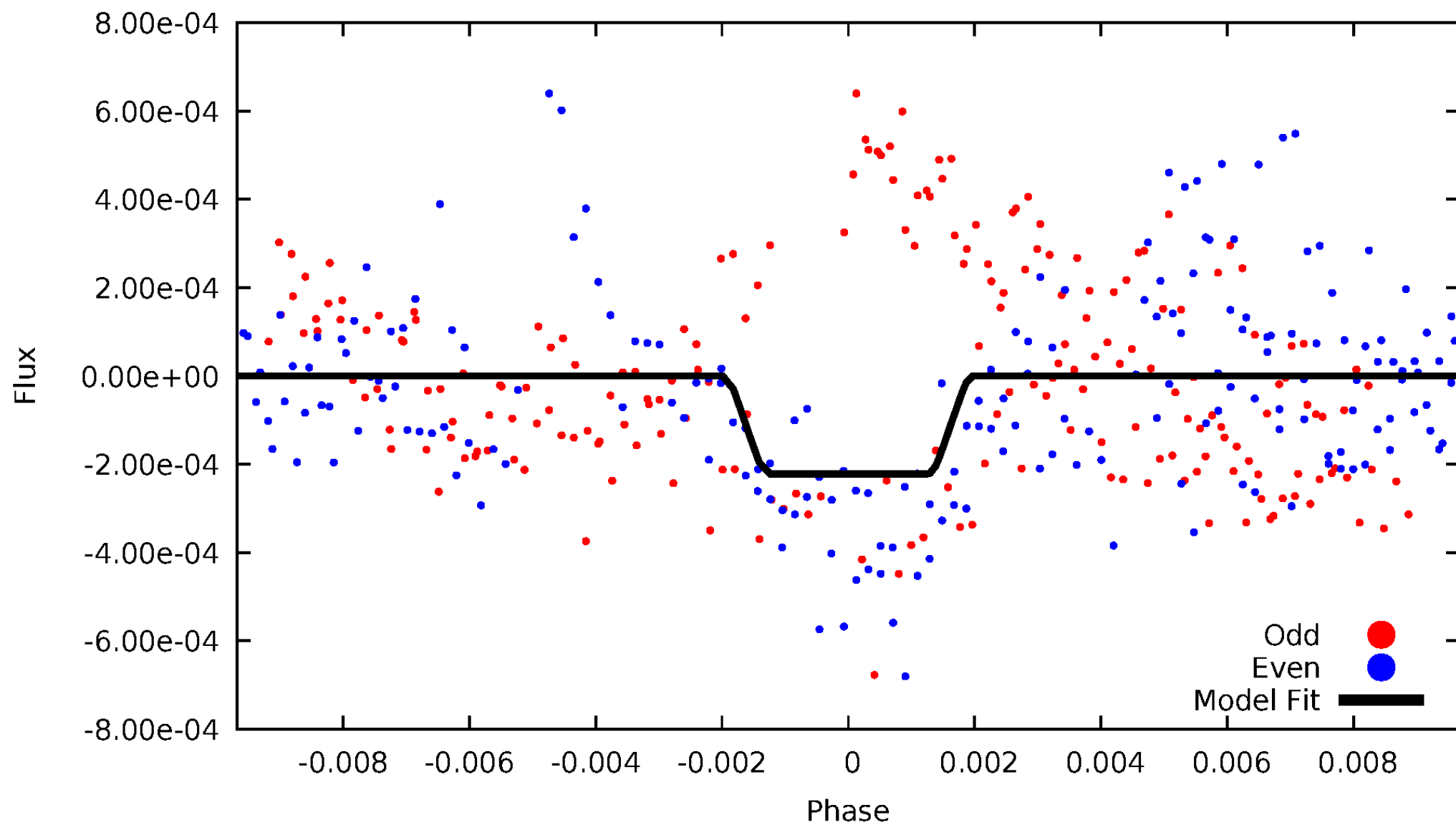
DV Odd/Even

TCE 009283002-04



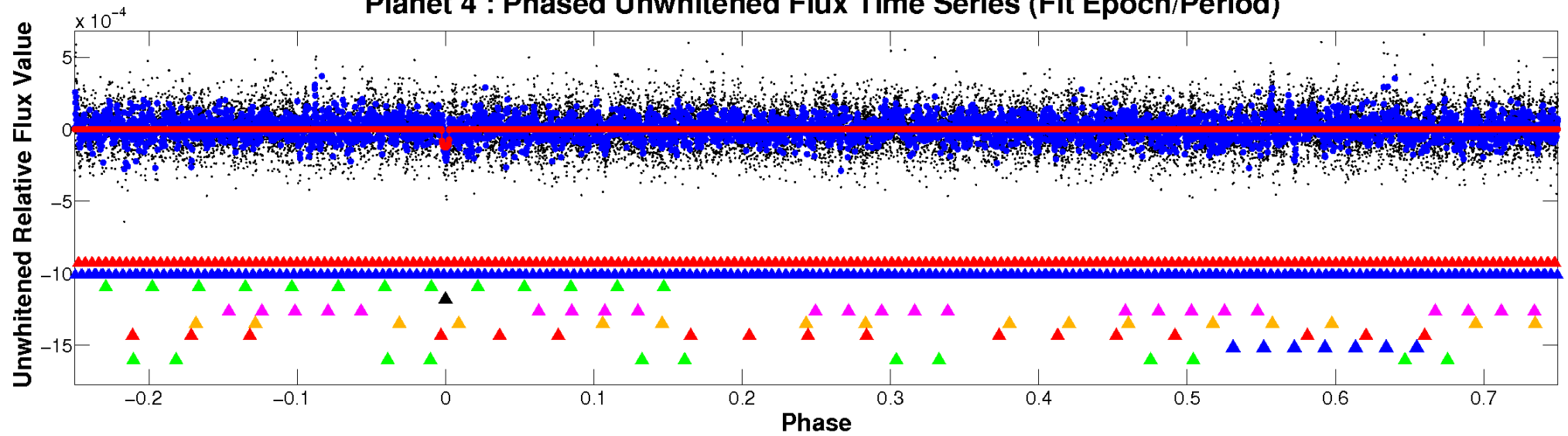
ALT Odd/Even

TCE 009283002-04

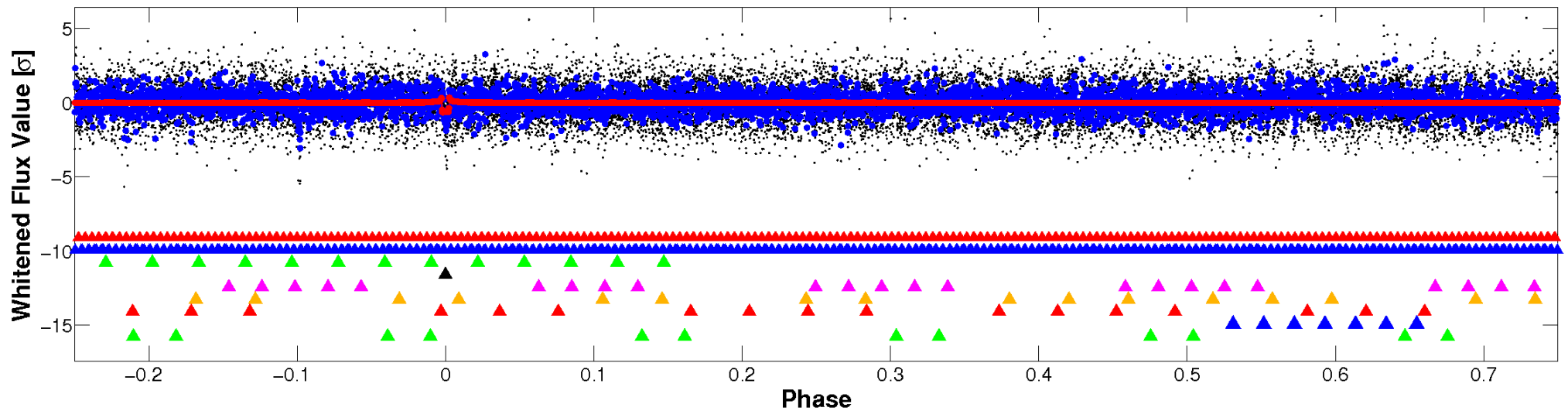


Non-Whitened Vs. Whitened Light Curve

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

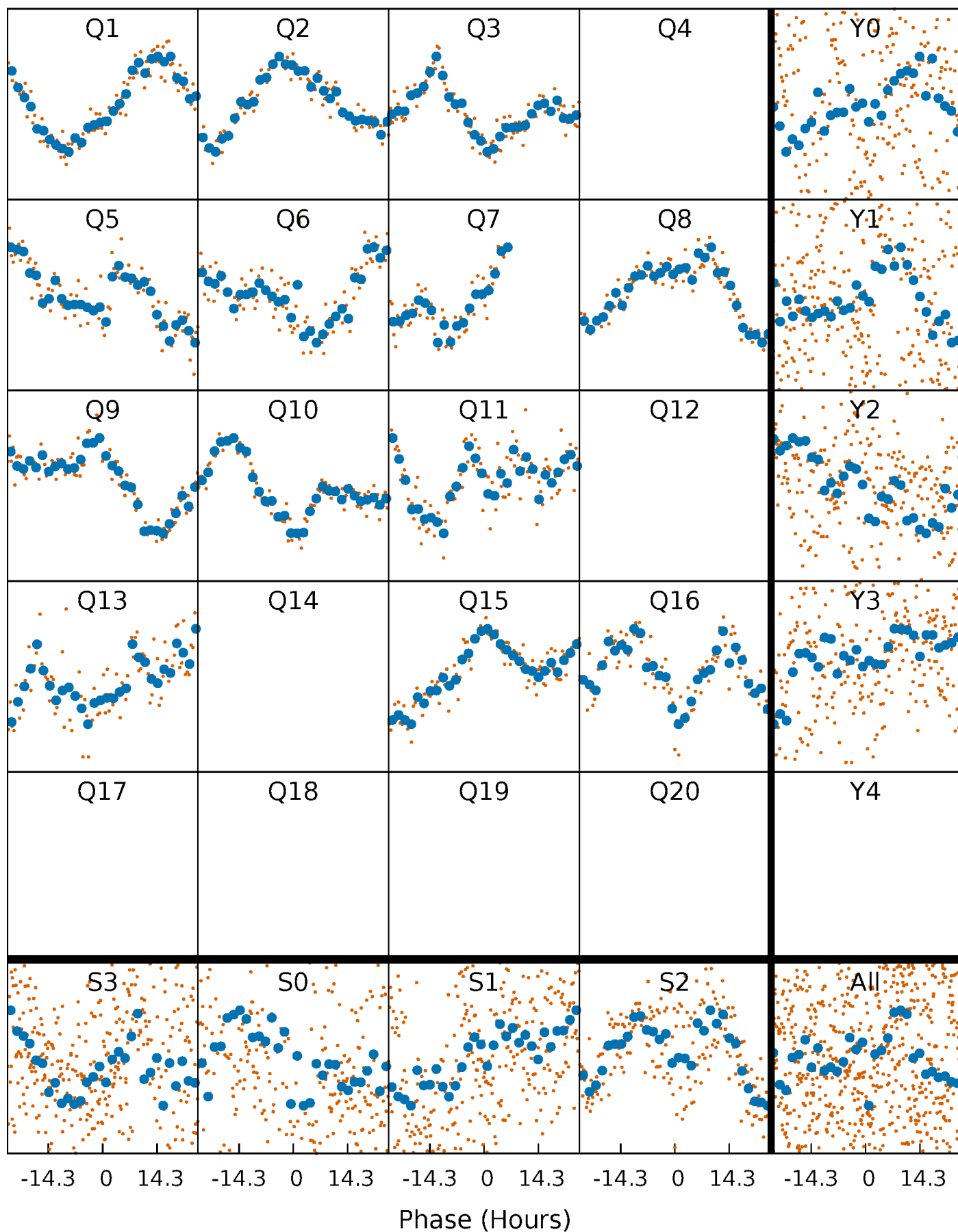


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



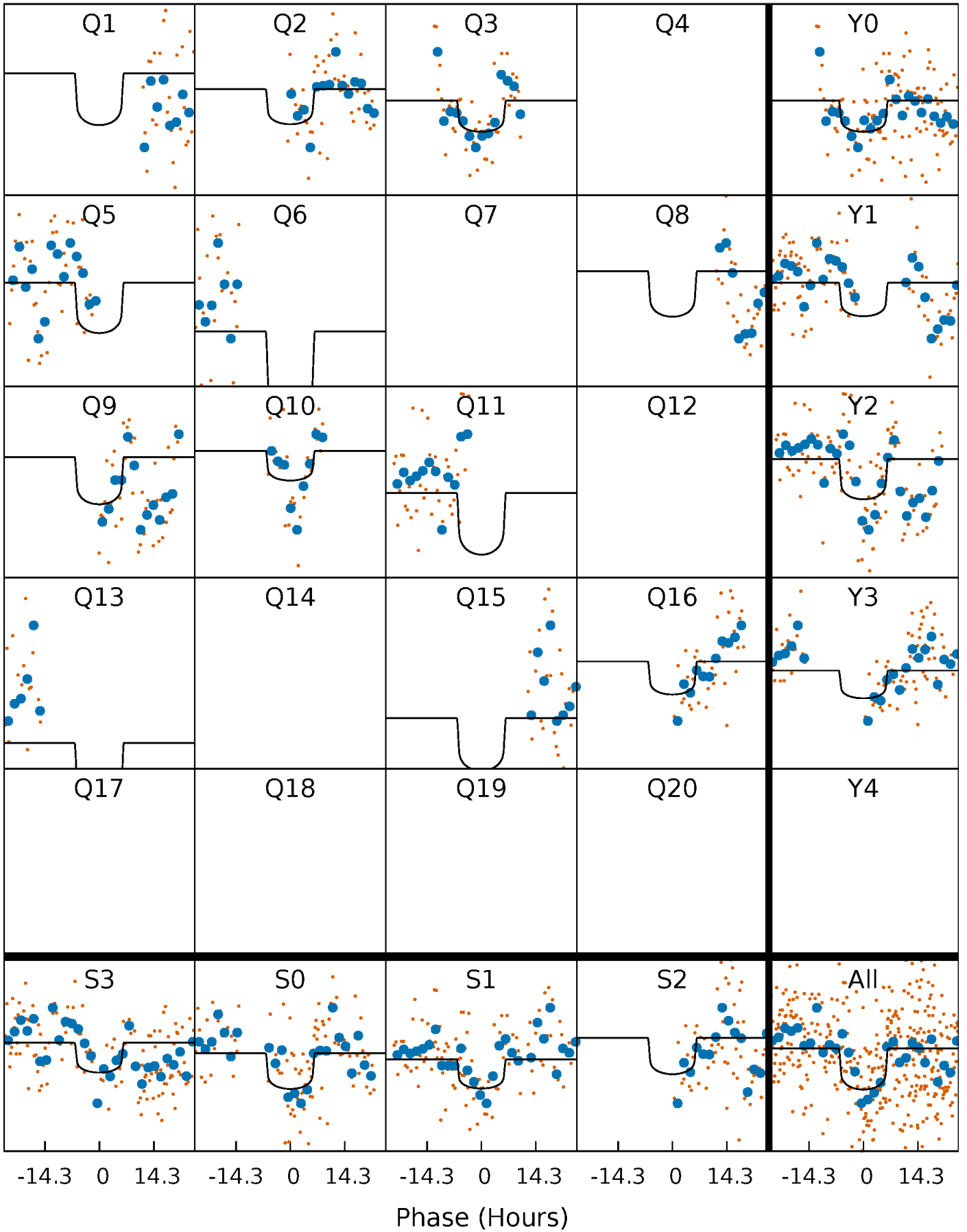
PDC Quarter-Phased Transit Curves

TCE 009283002-04 P=105.147049 Days $T_0=134.280339$ (BKJD)



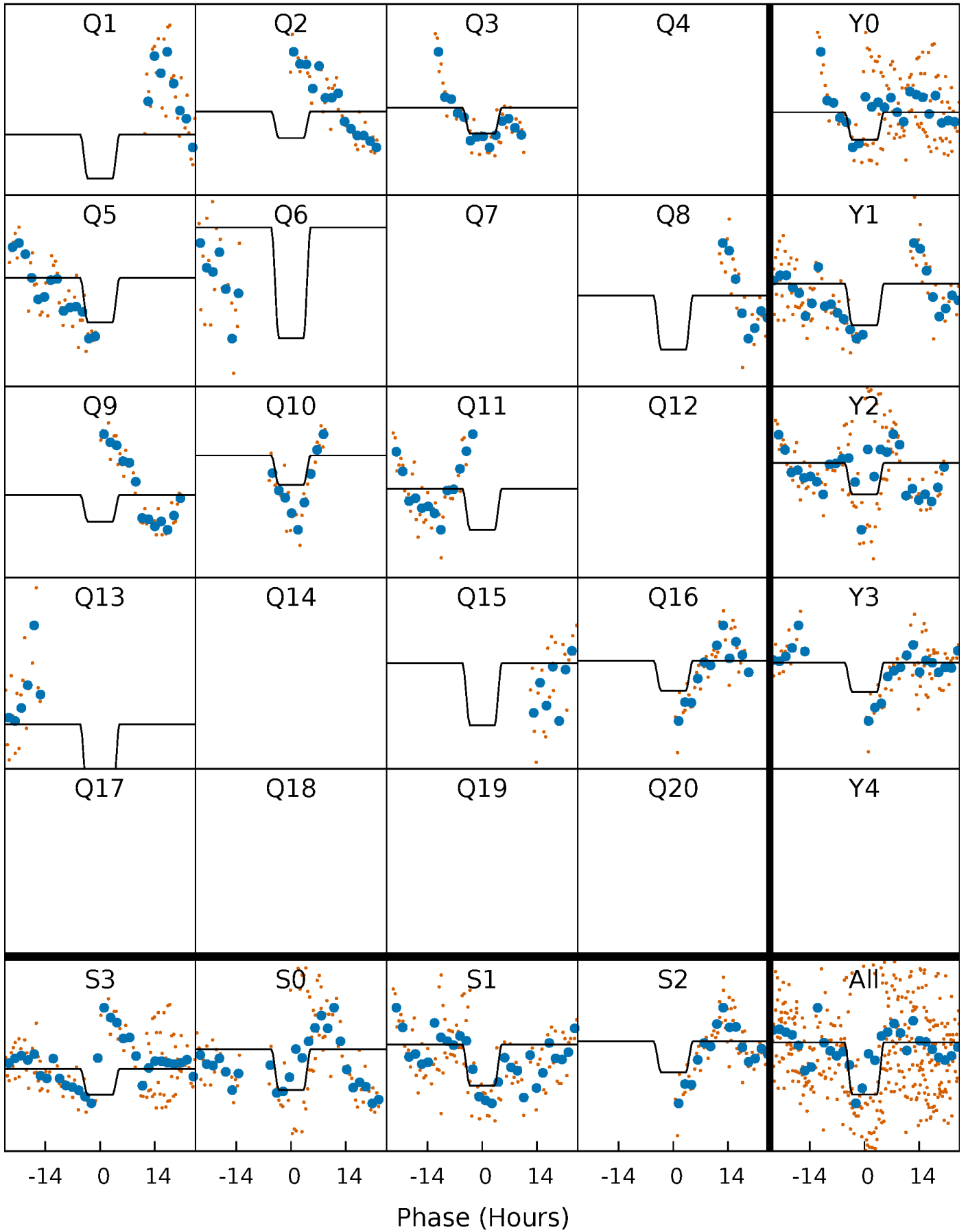
DV Quarter-Phased Transit Curves

TCE 009283002-04 P=105.147049 Days $T_0=134.280339$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

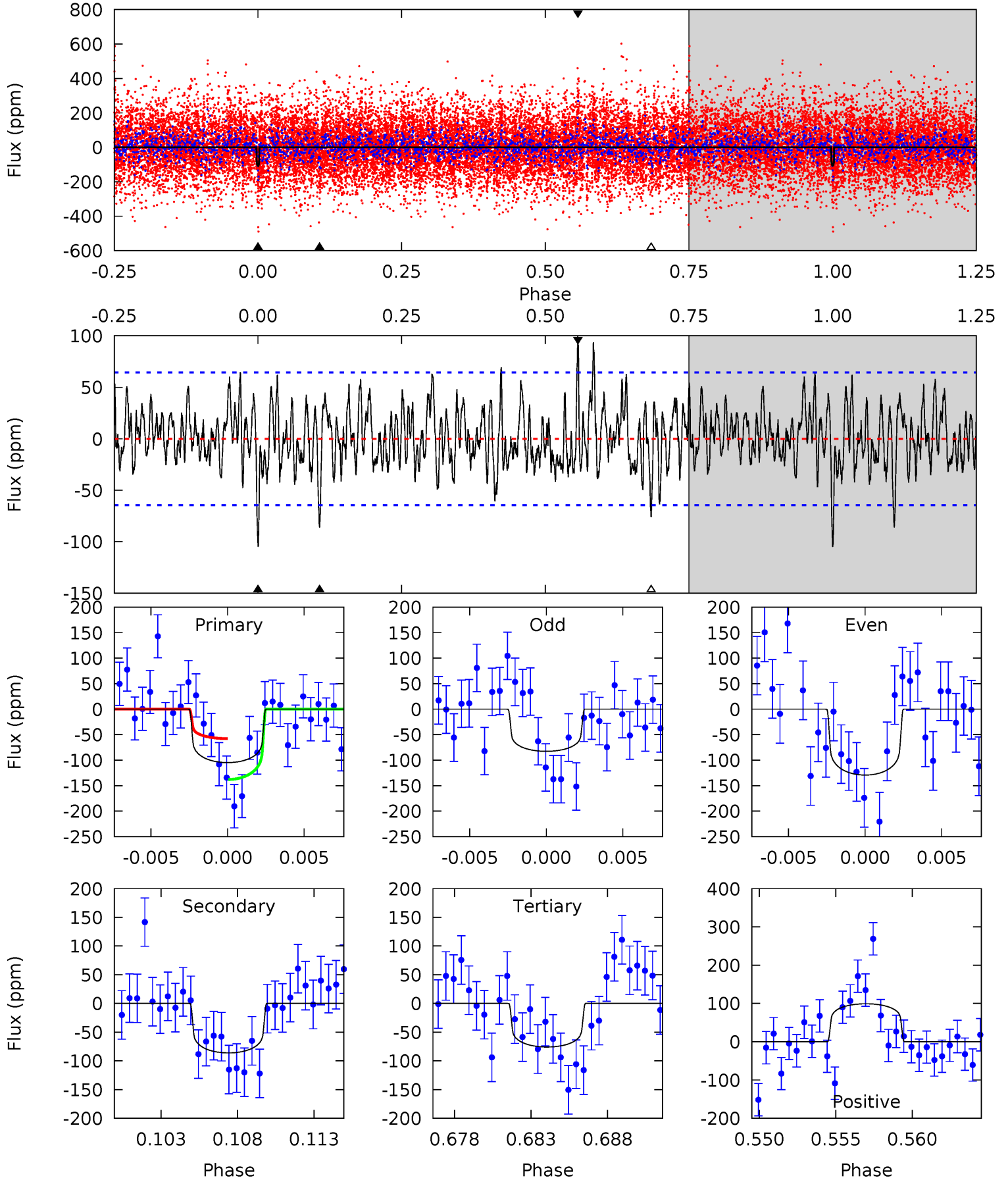
TCE 009283002-04 P=105.148420 Days $T_0=134.262099$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-04, P = 105.147049 Days, E = 29.133290 Days

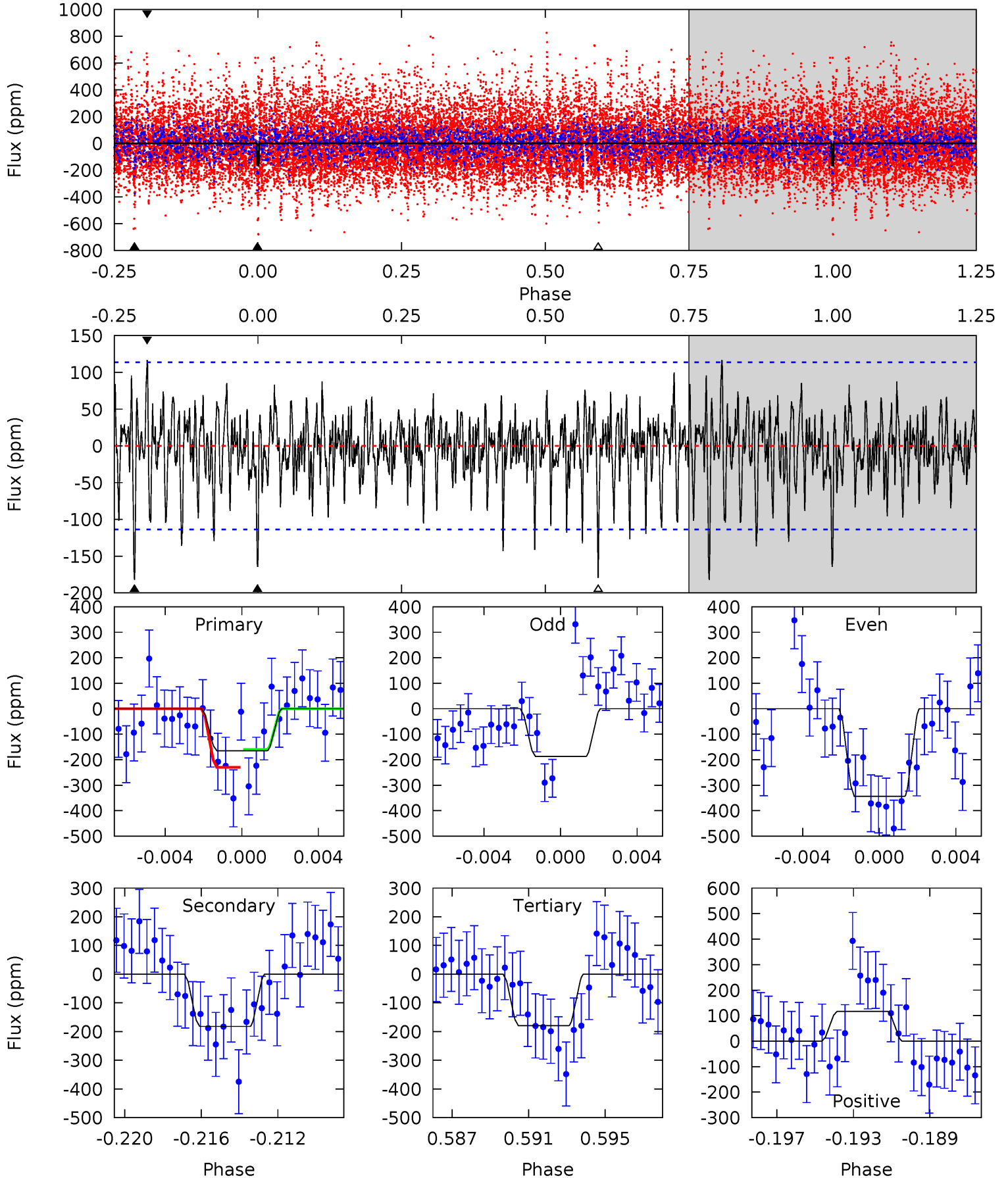
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.37	6.89	6.06	7.93	5.15	2.80	2.05	2.31	0.44	0.82	-1.04	1.85	0.68	0.49	3.14



Alt Model-Shift Uniqueness Test

009283002-04, P = 105.148420 Days, E = 29.113679 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.54	8.34	8.23	5.34	5.21	2.90	1.75	-0.69	2.19	0.12	3.00	3.64	0.07	0.39	1.57



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-86 ± 13	$2.56^{+1.03}_{-0.97}$	918^{+70}_{-76}	6585^{+2106}_{-1039}	1881^{+2949}_{-934}
Alt.	-182 ± 22	$3.32^{+1.10}_{-1.05}$	916^{+67}_{-71}	6977^{+1609}_{-902}	2333^{+2621}_{-1037}

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

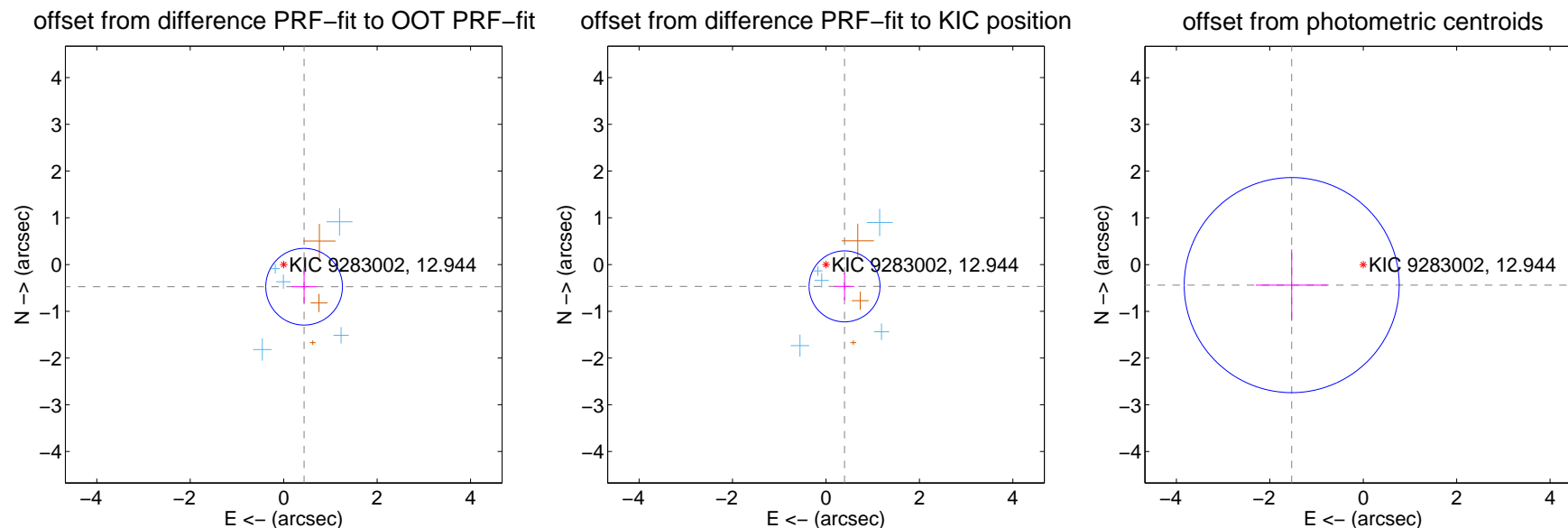
DV Centroid Data

Supplemental centroid analysis for 009283002-04. Kepler magnitude: 12.94. Transit SNR 6.21

There are 5 quarters with good PRF difference image offsets

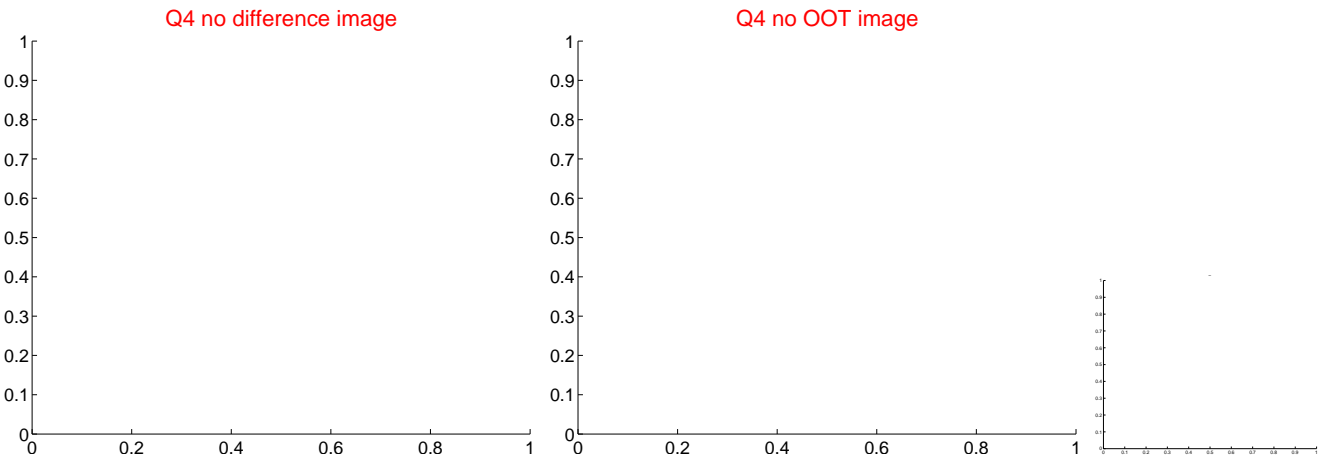
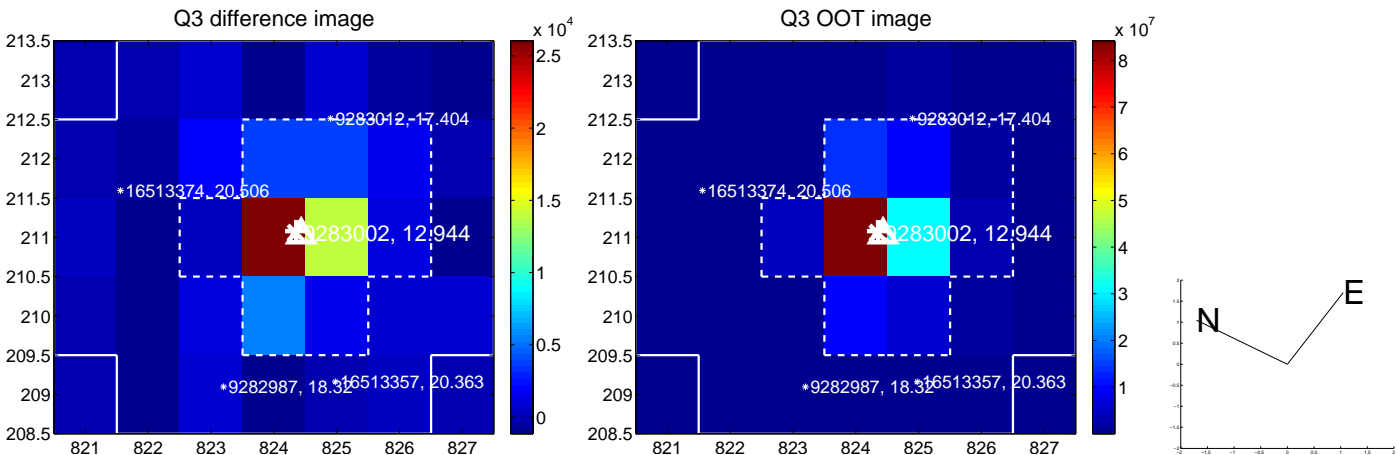
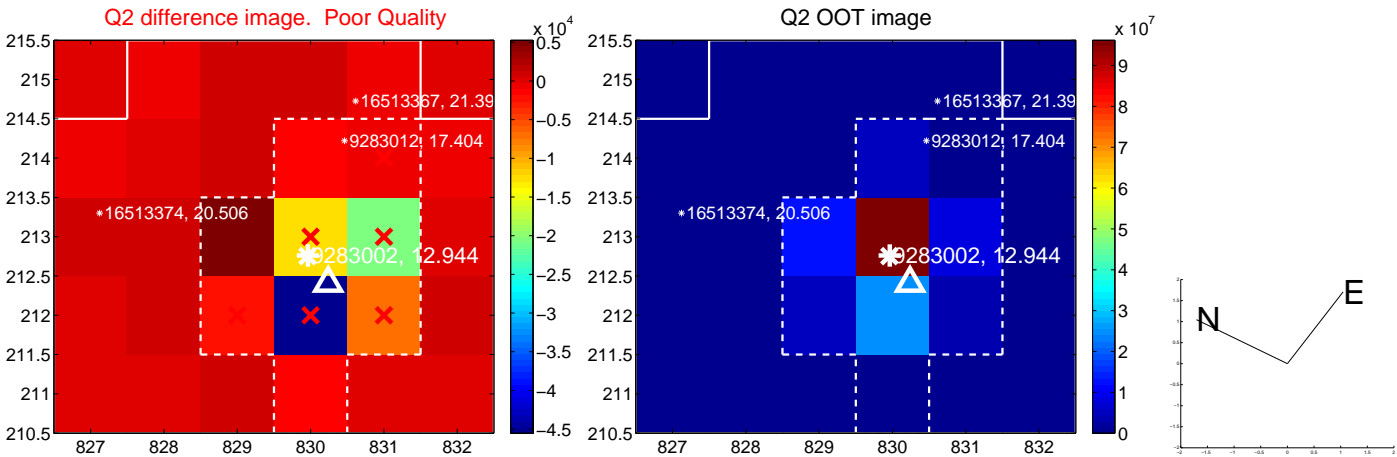
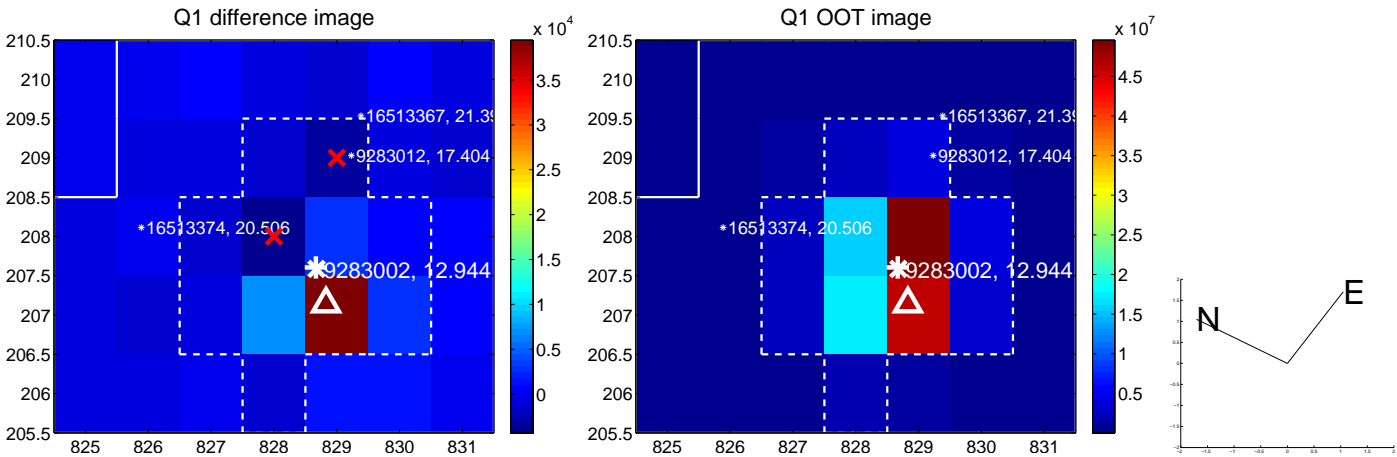
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.645 ± 0.274	2.36	-0.437 ± 0.267	-0.474 ± 0.344
PRF-fit source offset from KIC position	0.613 ± 0.253	2.42	-0.397 ± 0.210	-0.467 ± 0.297
photometric centroid source offset	1.59 ± 0.77	2.08	1.53 ± 0.77	-0.44 ± 0.77

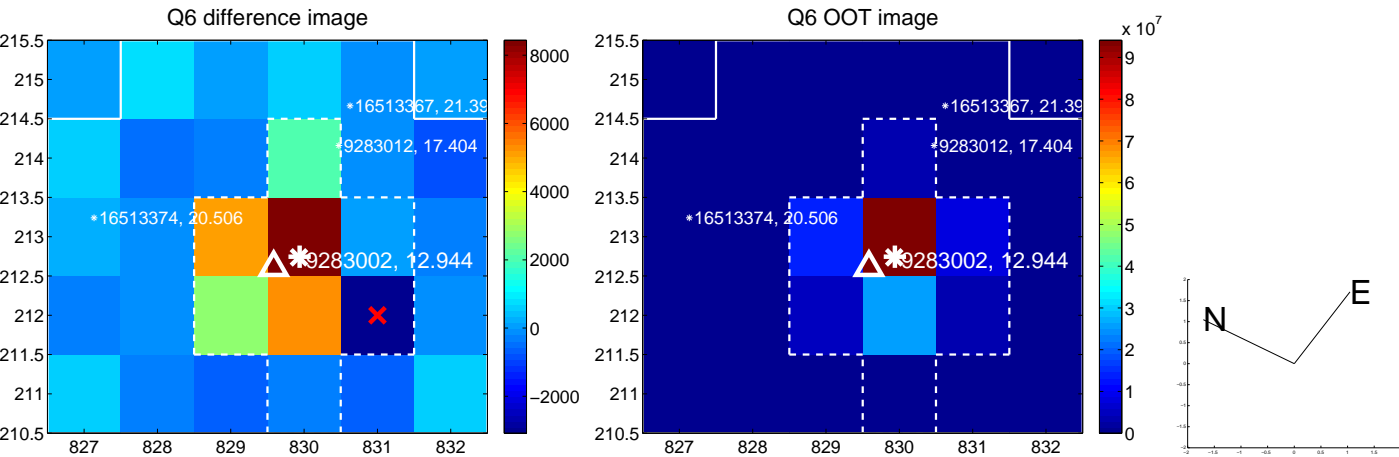
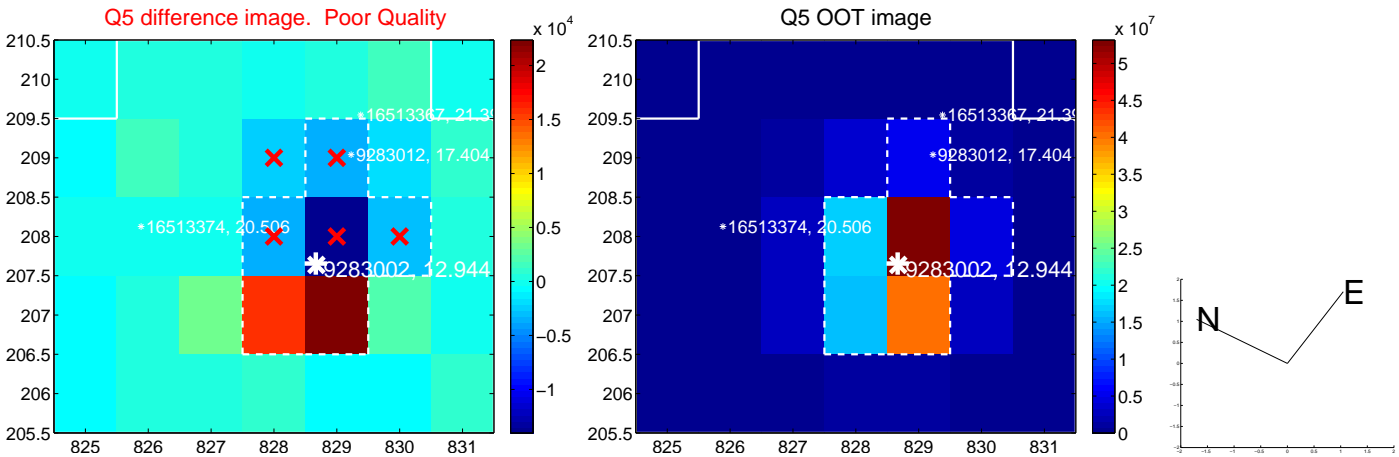


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

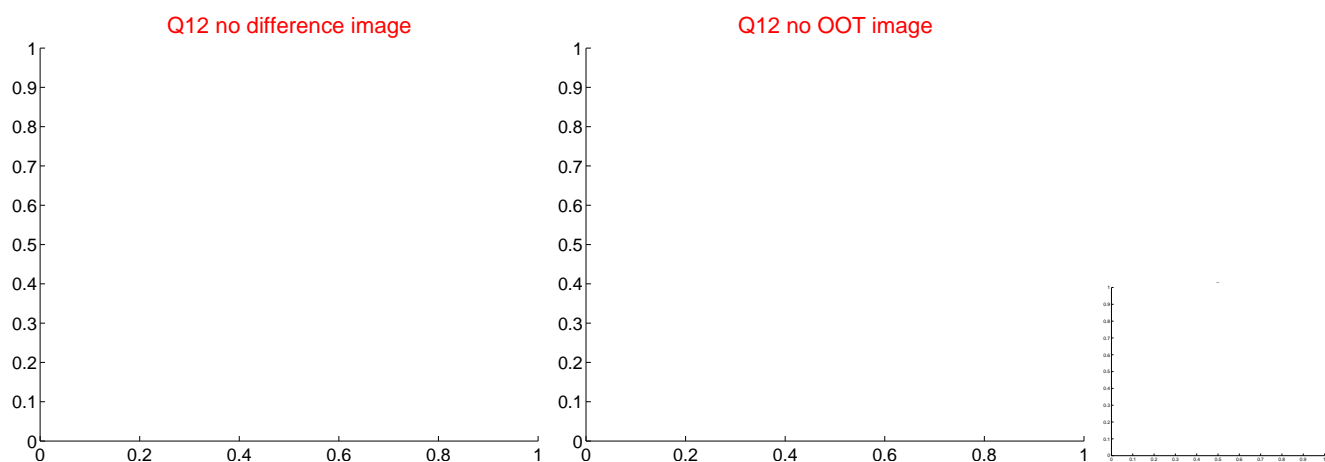
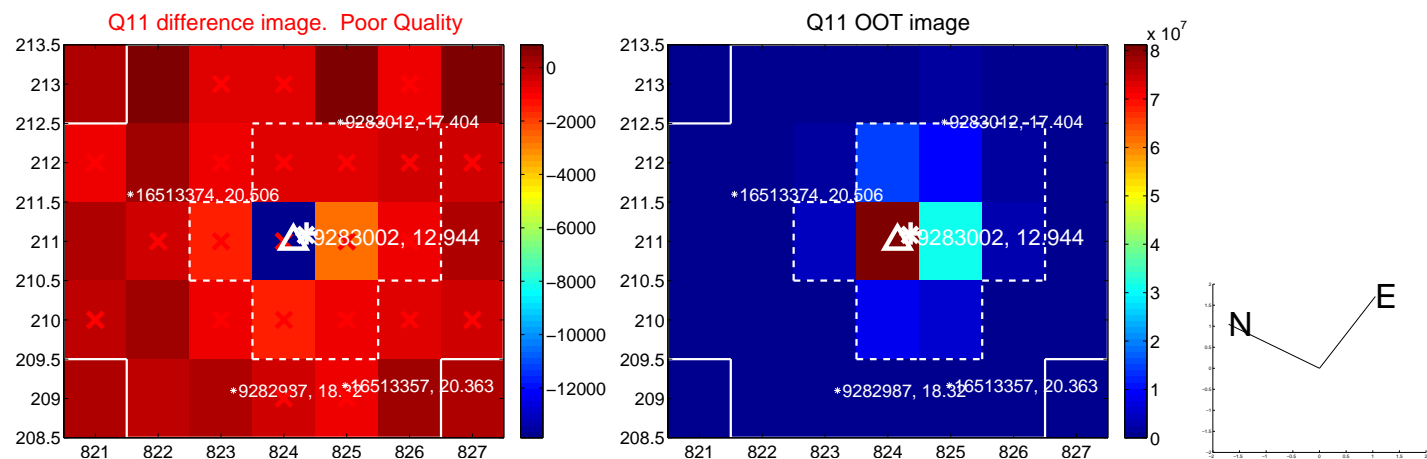
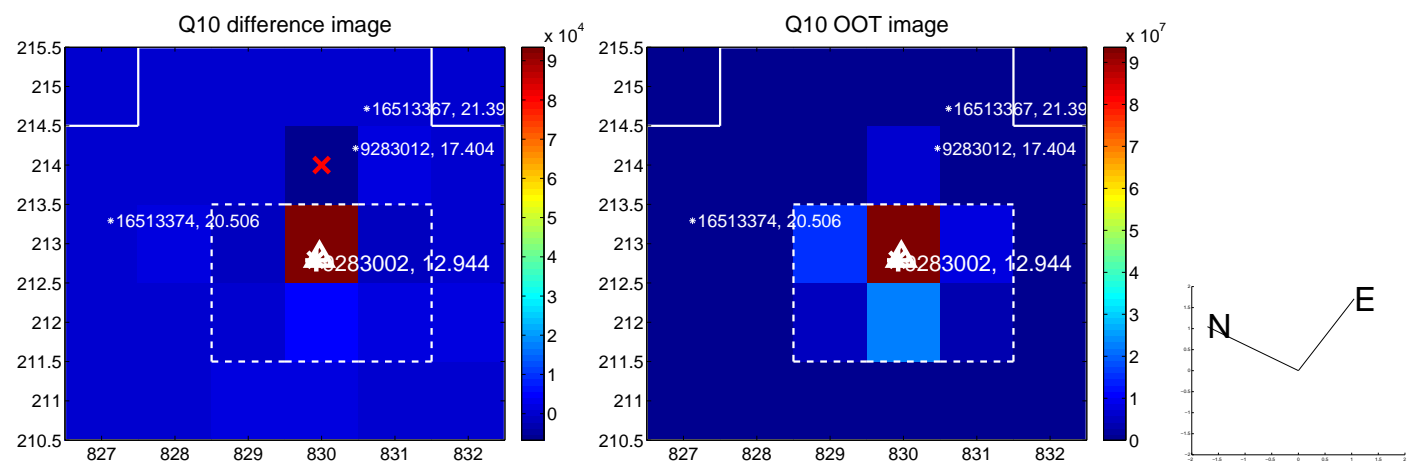
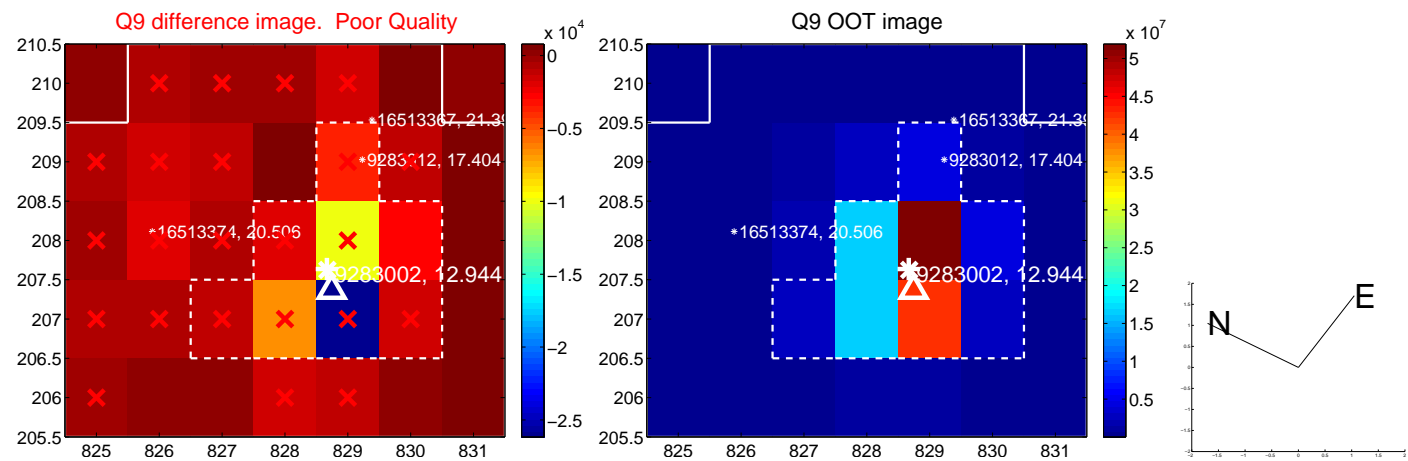
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



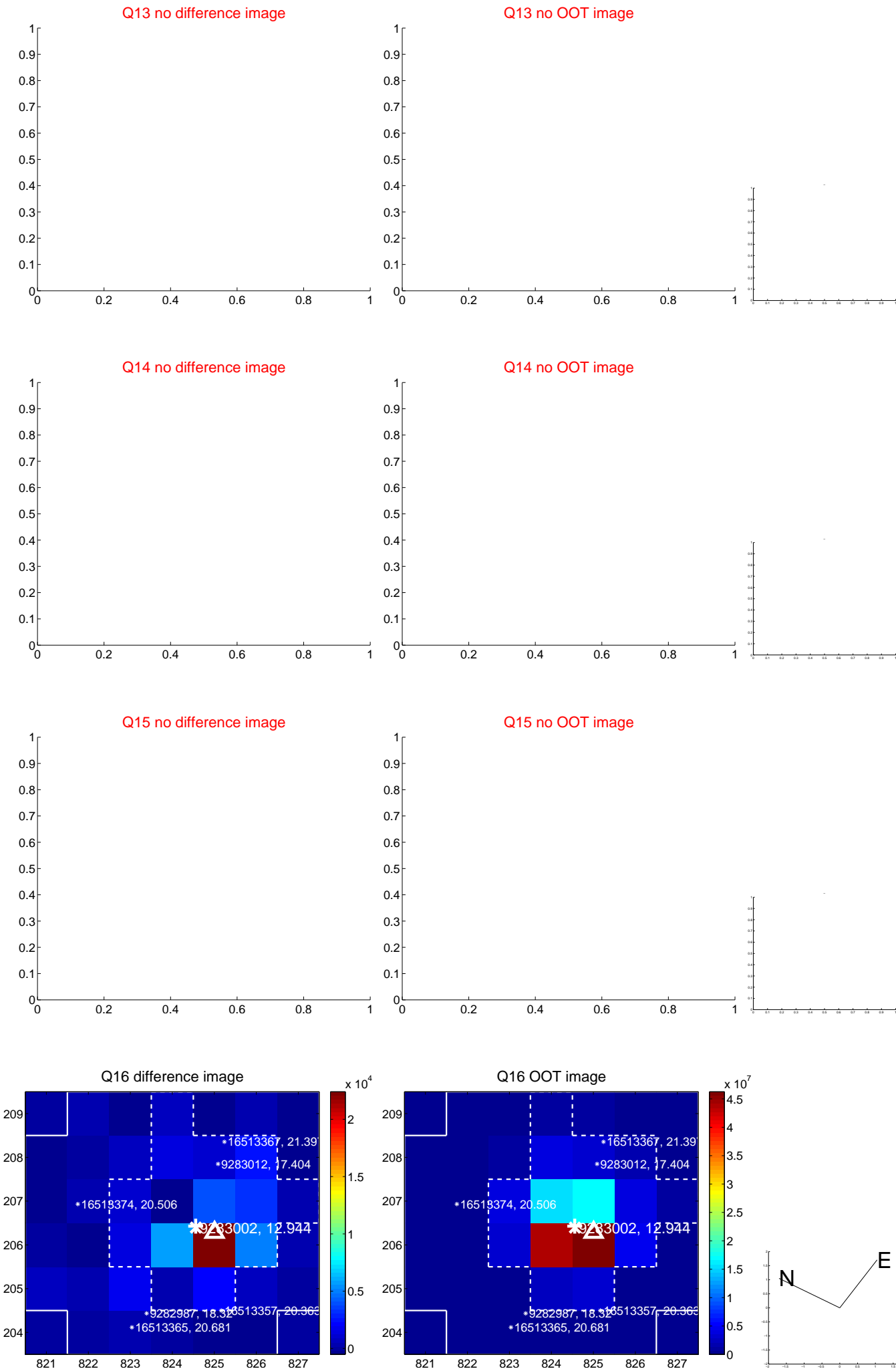
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



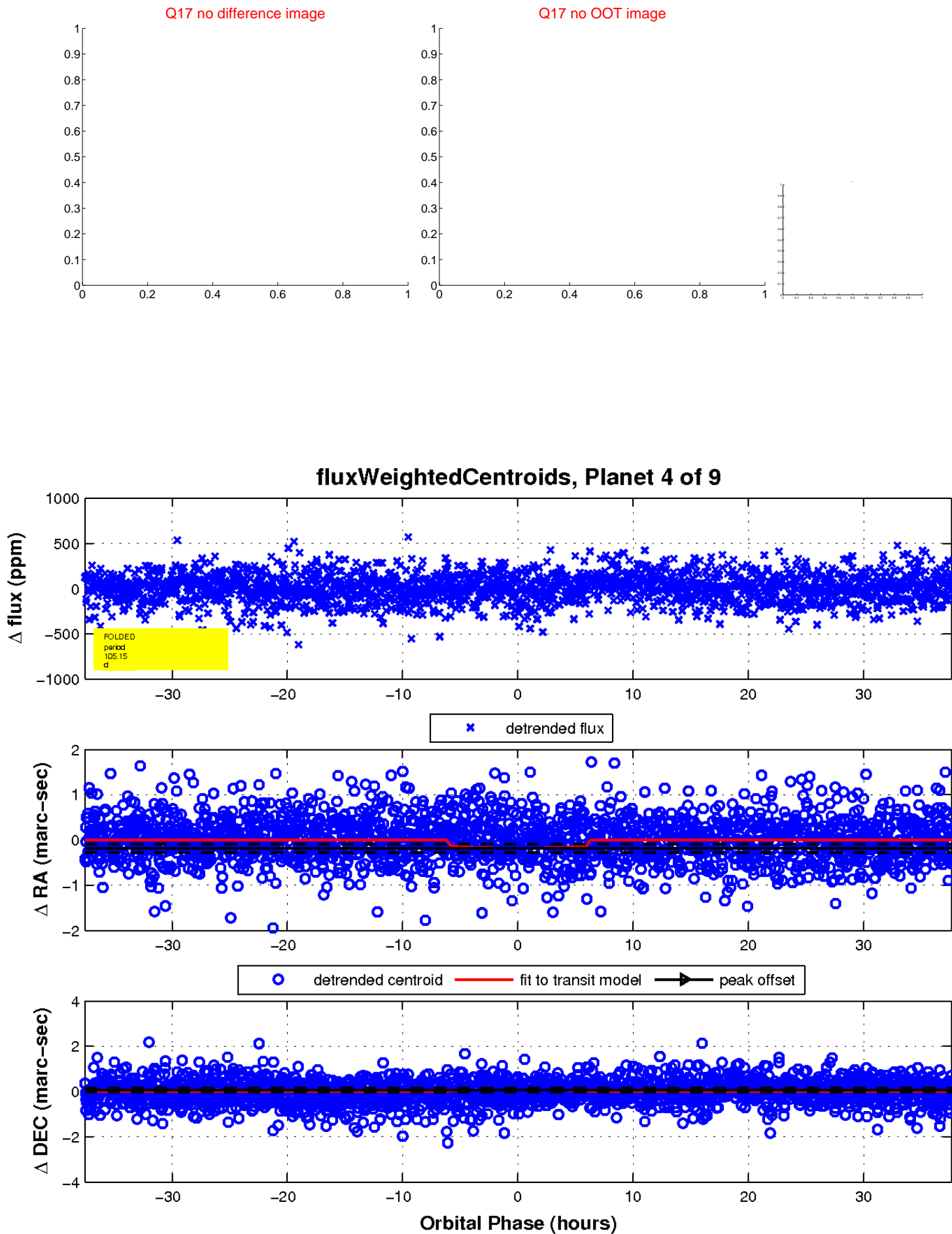
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

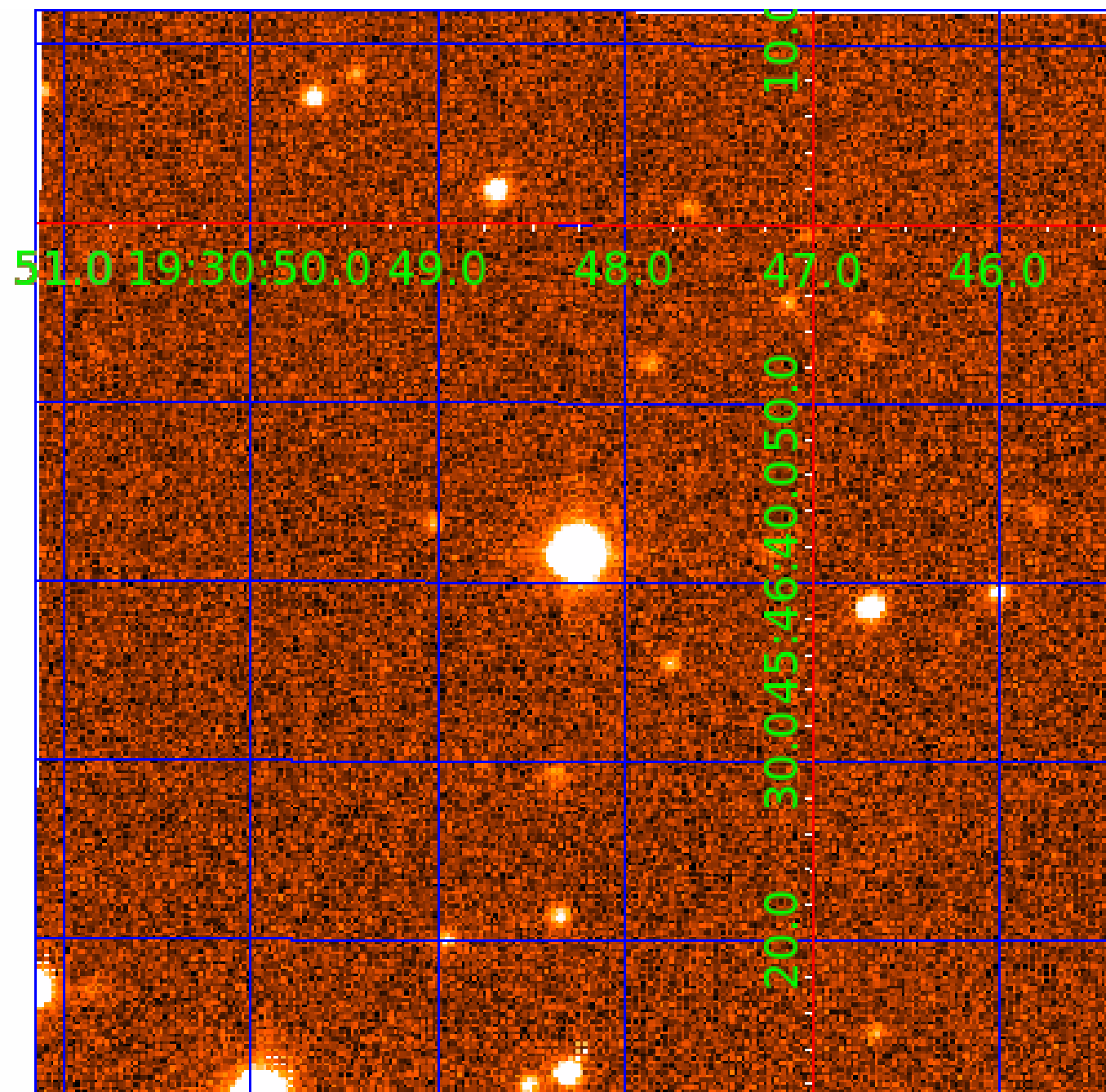


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

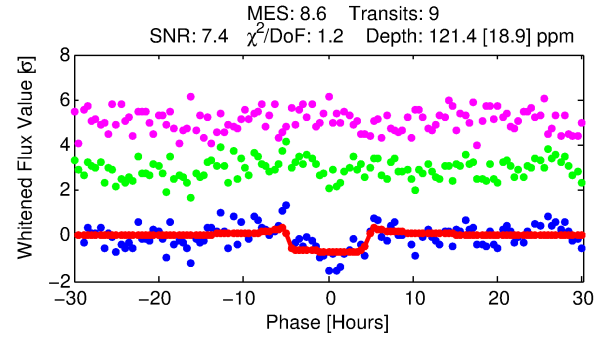
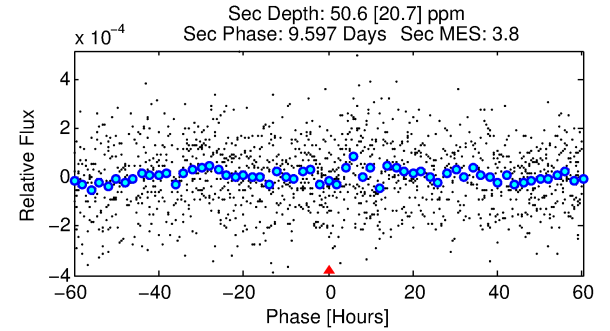
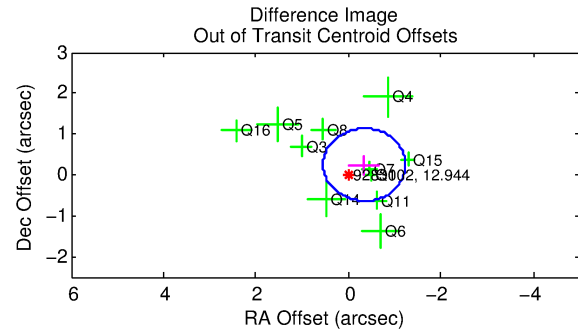
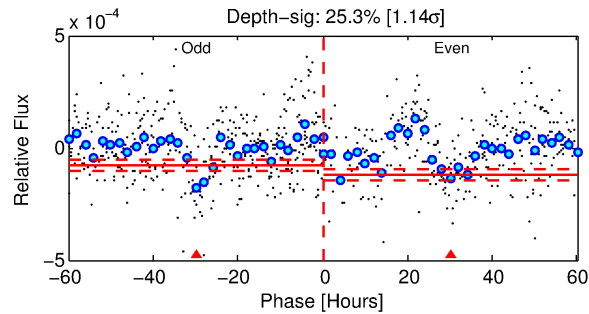
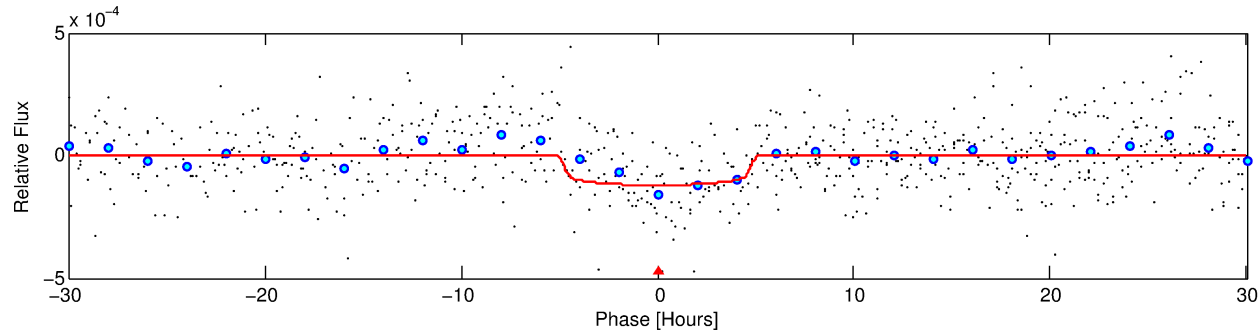
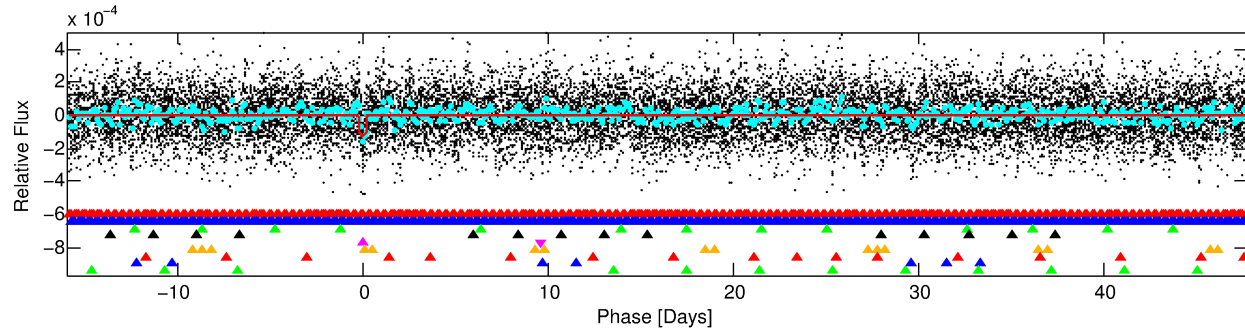
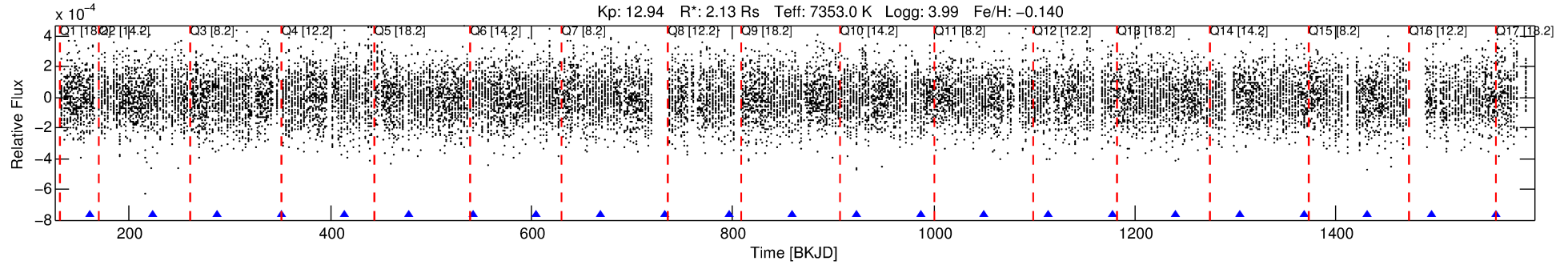
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-05

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 5 of 9 Period: 63.557 d



DV Fit Results:

Period = 63.55695 [0.00148] d
Epoch = 160.5128 [0.0200] BKJD
Rp/R* = 0.0115 [0.0028]
a/R* = 24.90 [32.66]
b = 0.87 [0.37]
Seff = 88.52 [39.48]
Teq = 782 [87] K
Rp = 2.68 [1.05] Re
a = 0.3659 [0.0997] AU
Ag = 520.00 [393.09] [1.32σ]
Teffp = 5775 [945] K [5.26σ]

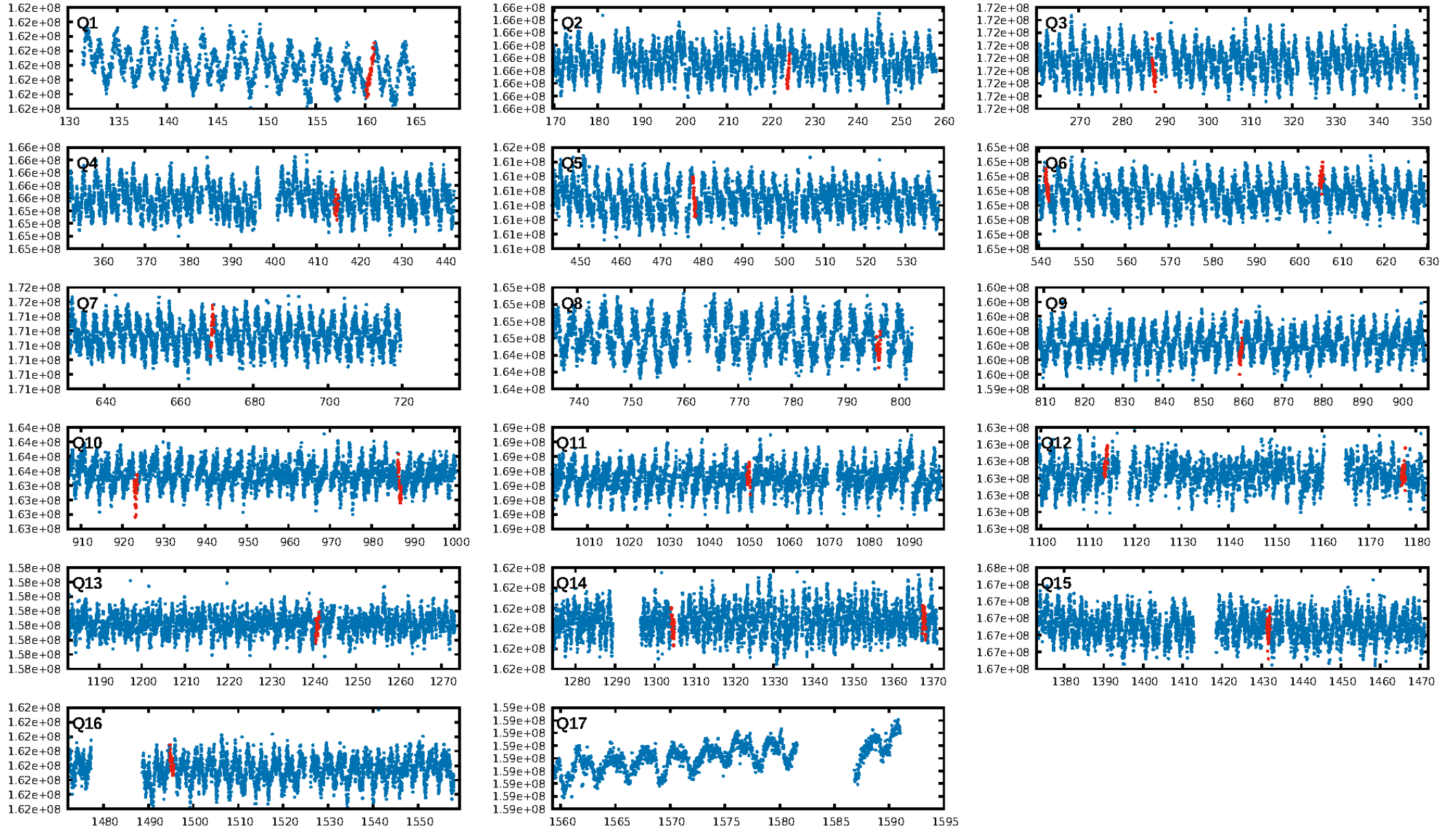
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [128.64σ]
LongPeriod-sig: 100.0% [28.93σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.81e-09
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -0.7626
Centroid-sig: 0.0%
Centroid-so: 2.217 arcsec [3.30σ]
OotOffset-rm: 0.418 arcsec [1.41σ]
KicOffset-rm: 0.358 arcsec [1.19σ]
OotOffset-st: 3/4/3/1 [11]
KicOffset-st: 3/4/3/1 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.08 [1/13]

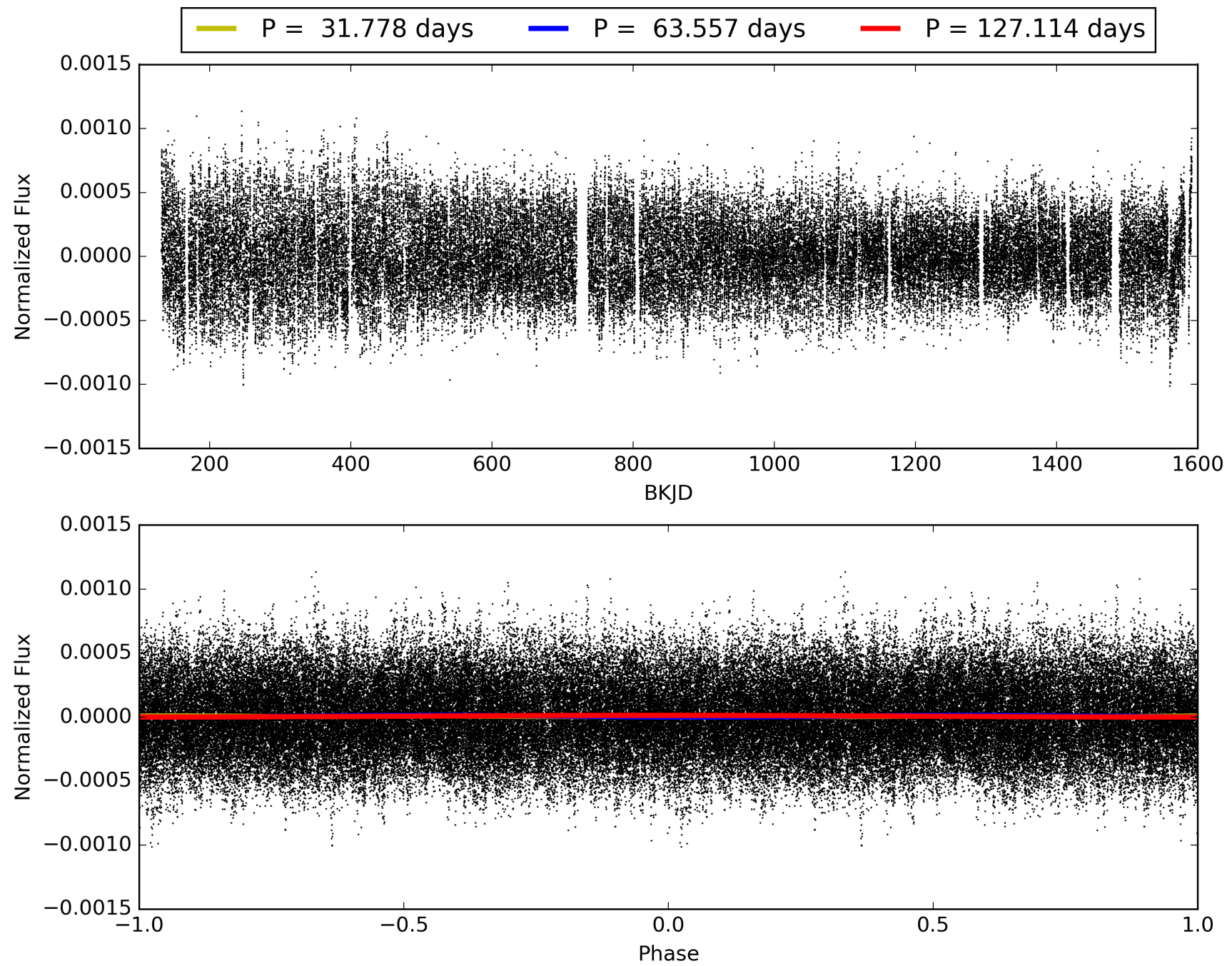
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:38 Z

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

TCE 009283002-05, PDC Light Curves

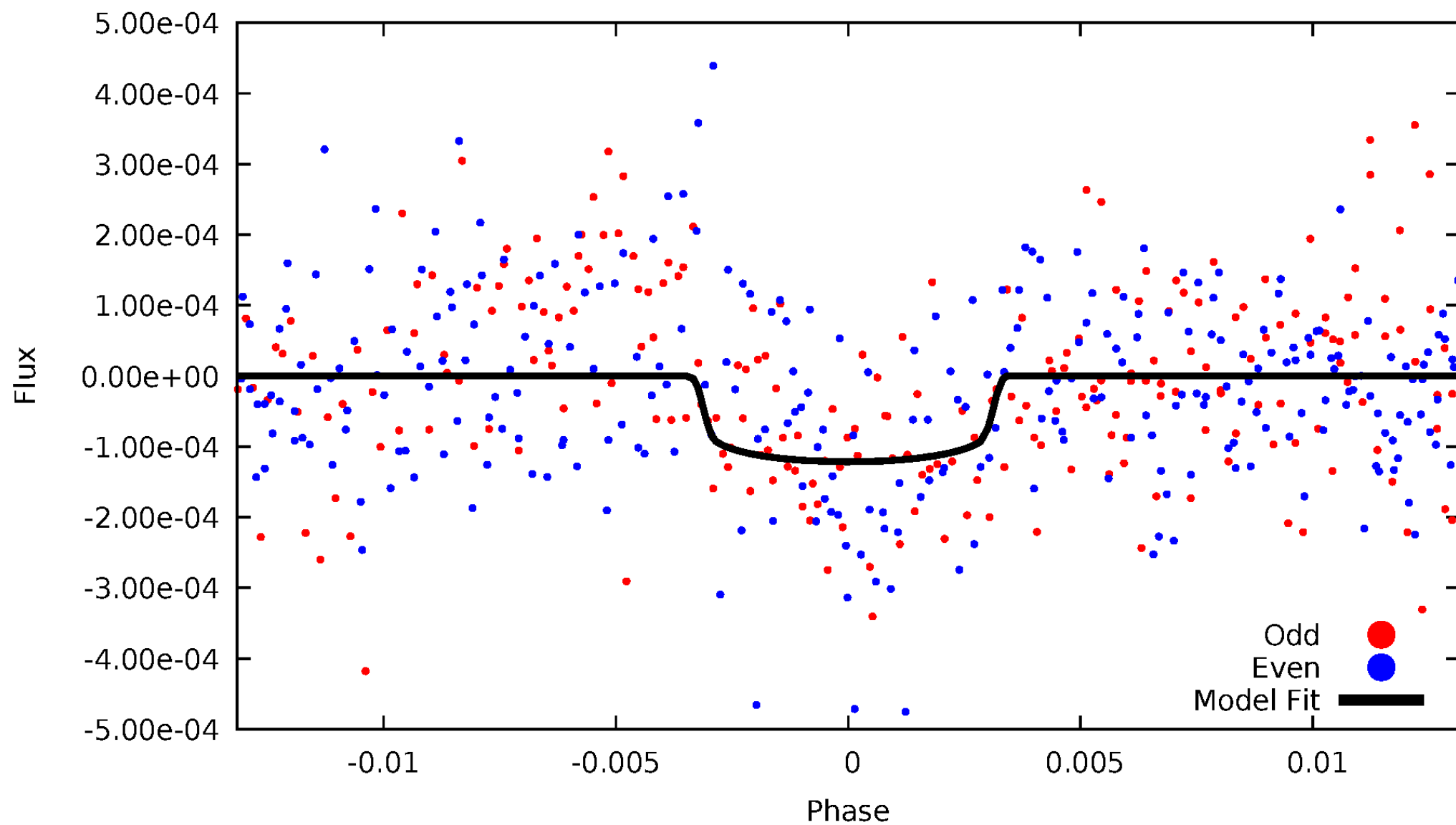


TCE 009283002-05



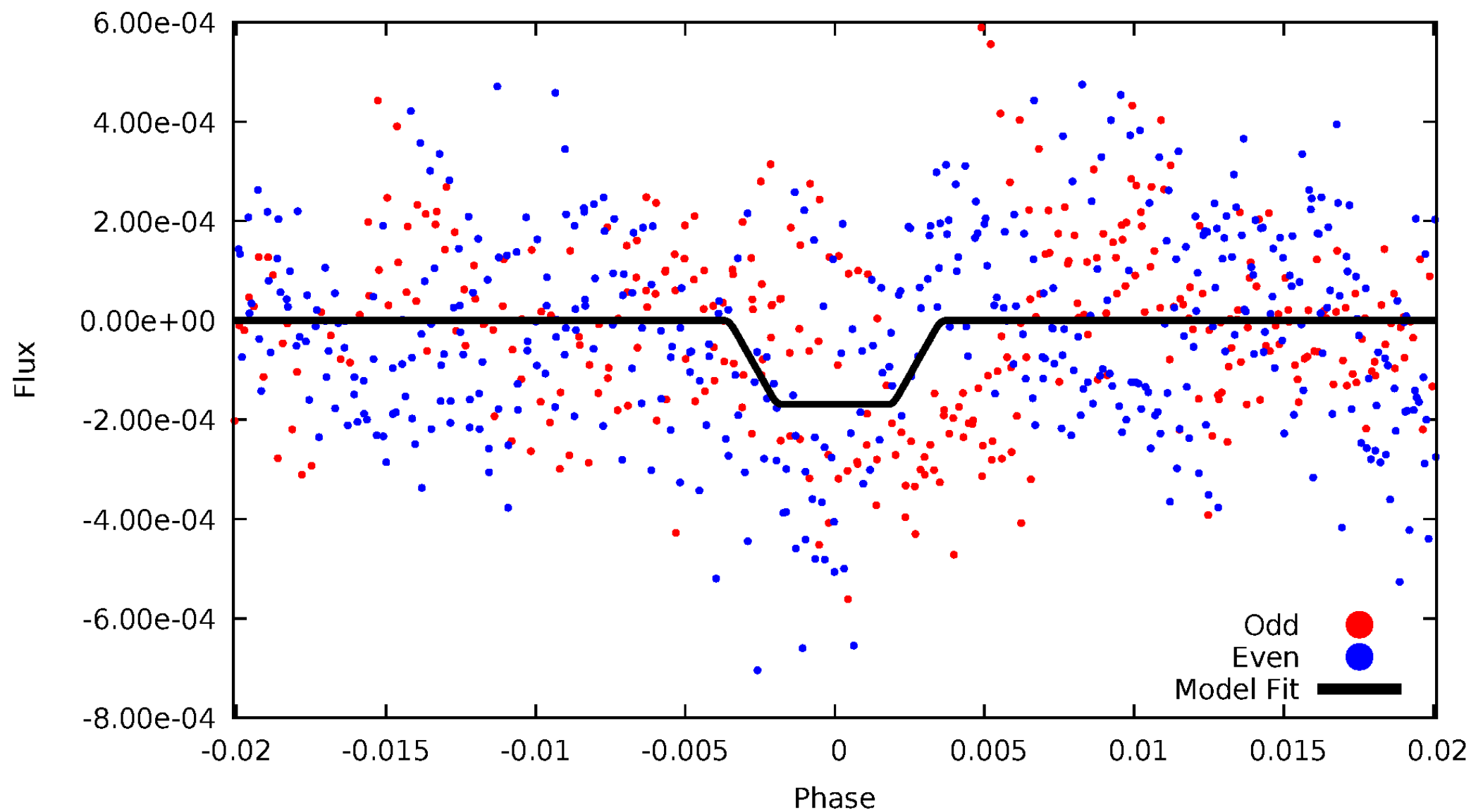
DV Odd/Even

TCE 009283002-05



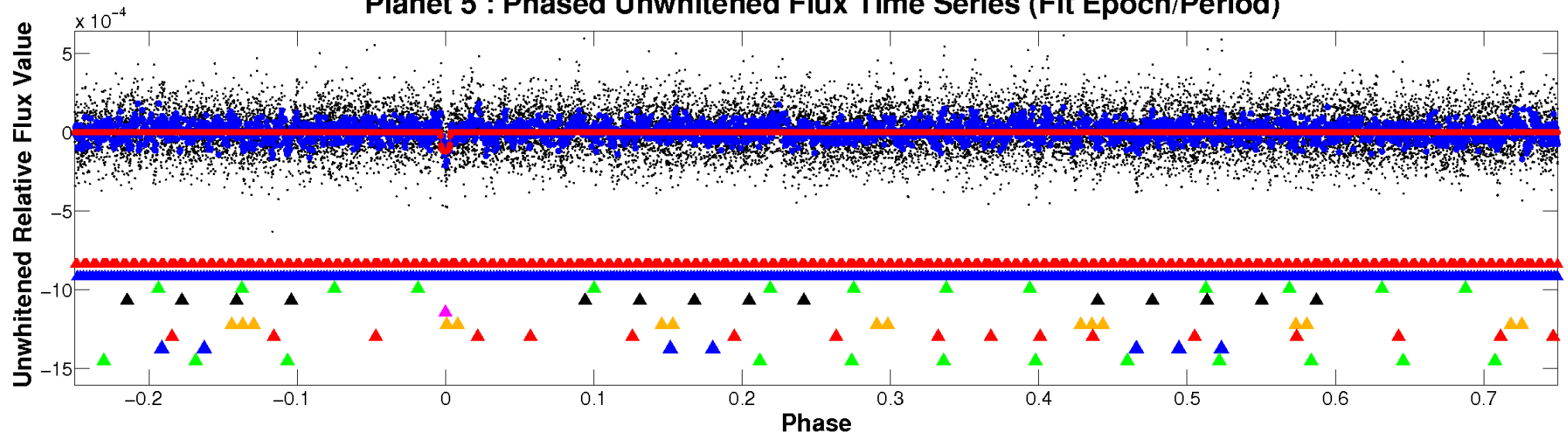
ALT Odd/Even

TCE 009283002-05

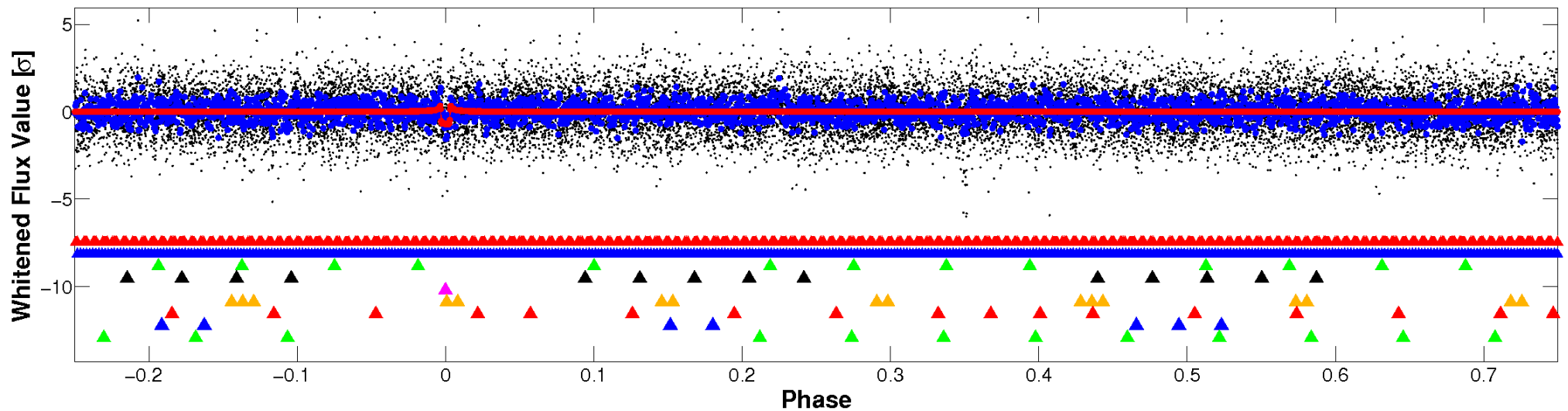


Non-Whitened Vs. Whitened Light Curve

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

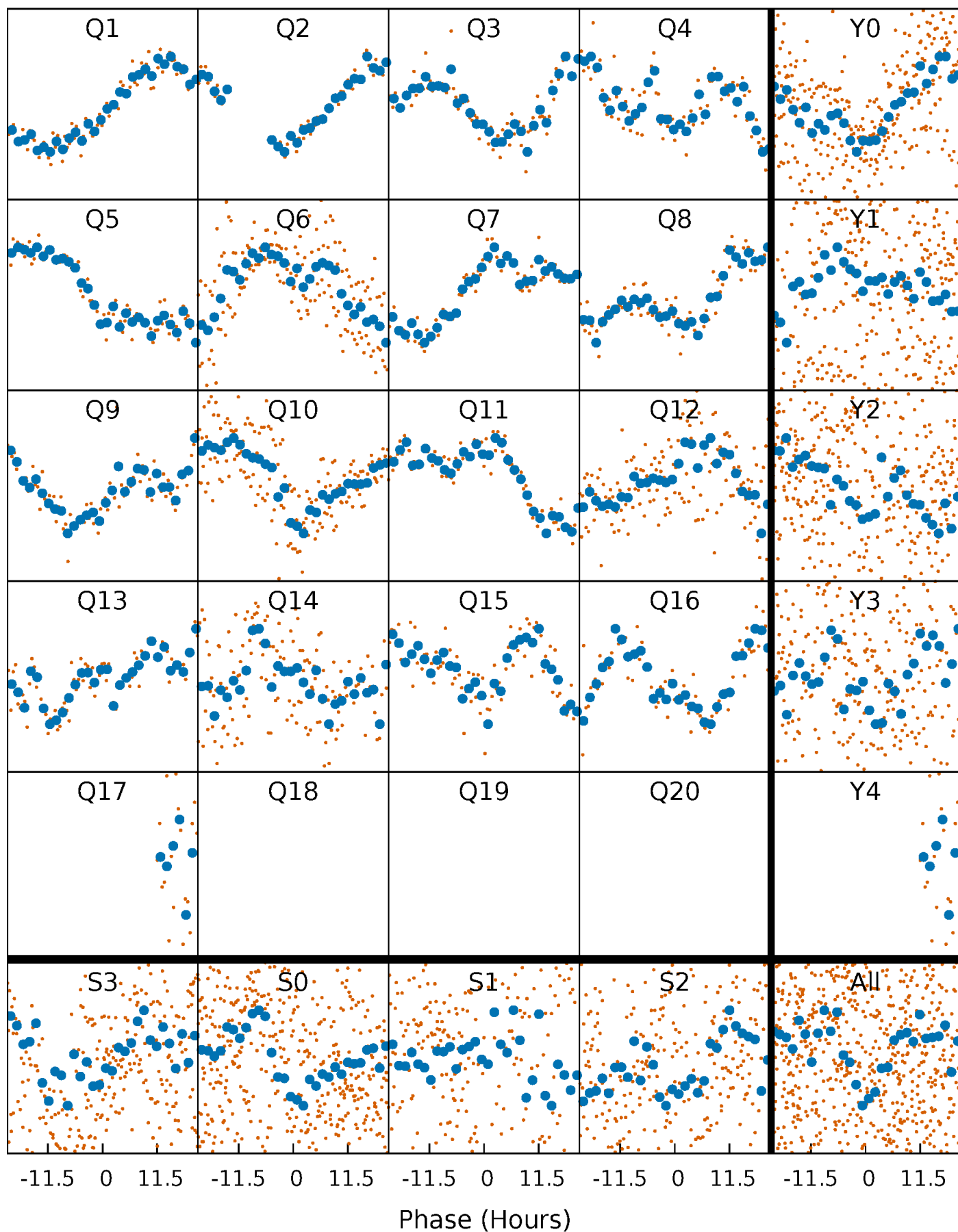


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



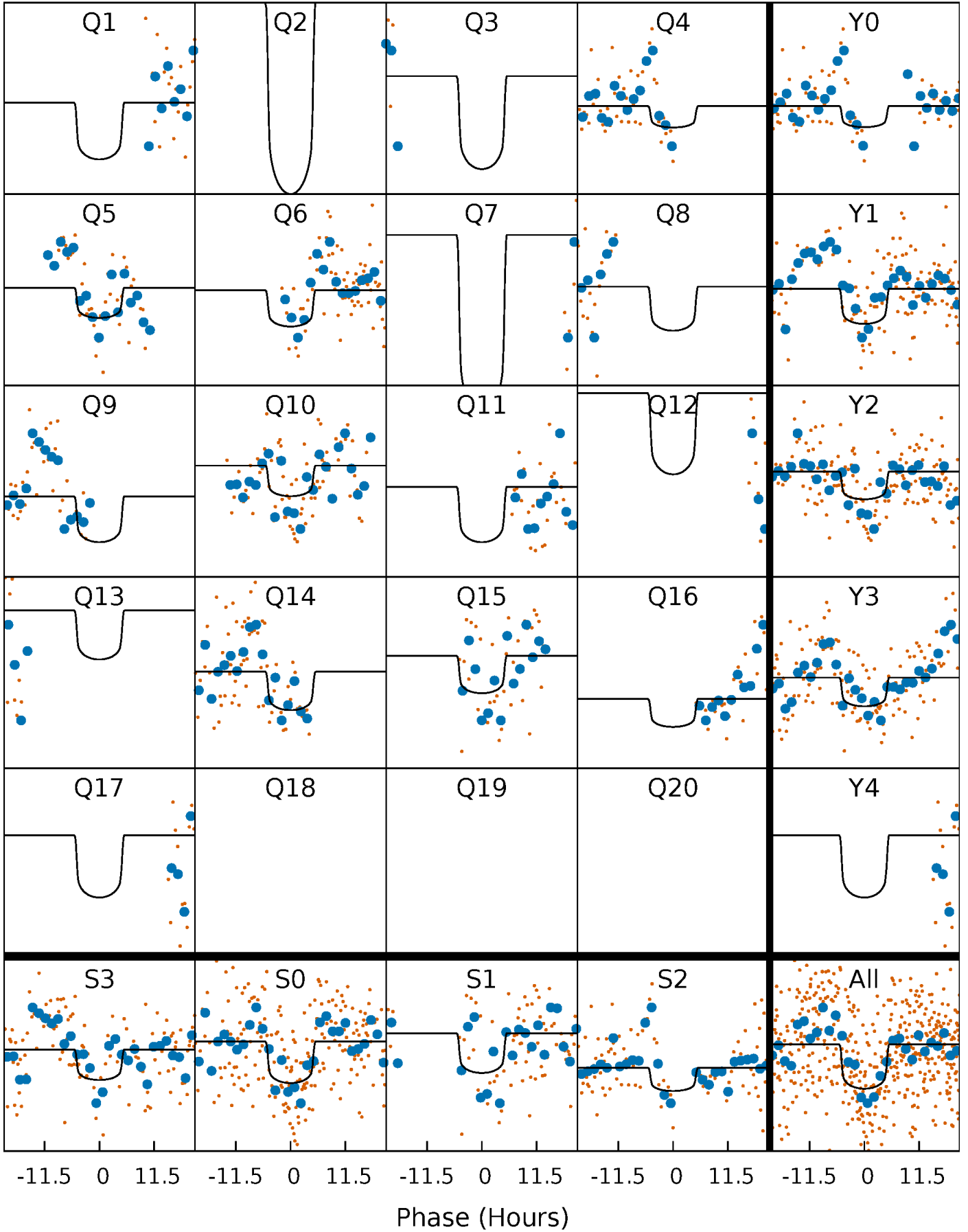
PDC Quarter-Phased Transit Curves

TCE 009283002-05 $P = 63.556954$ Days $T_0 = 160.512816$ (BKJD)



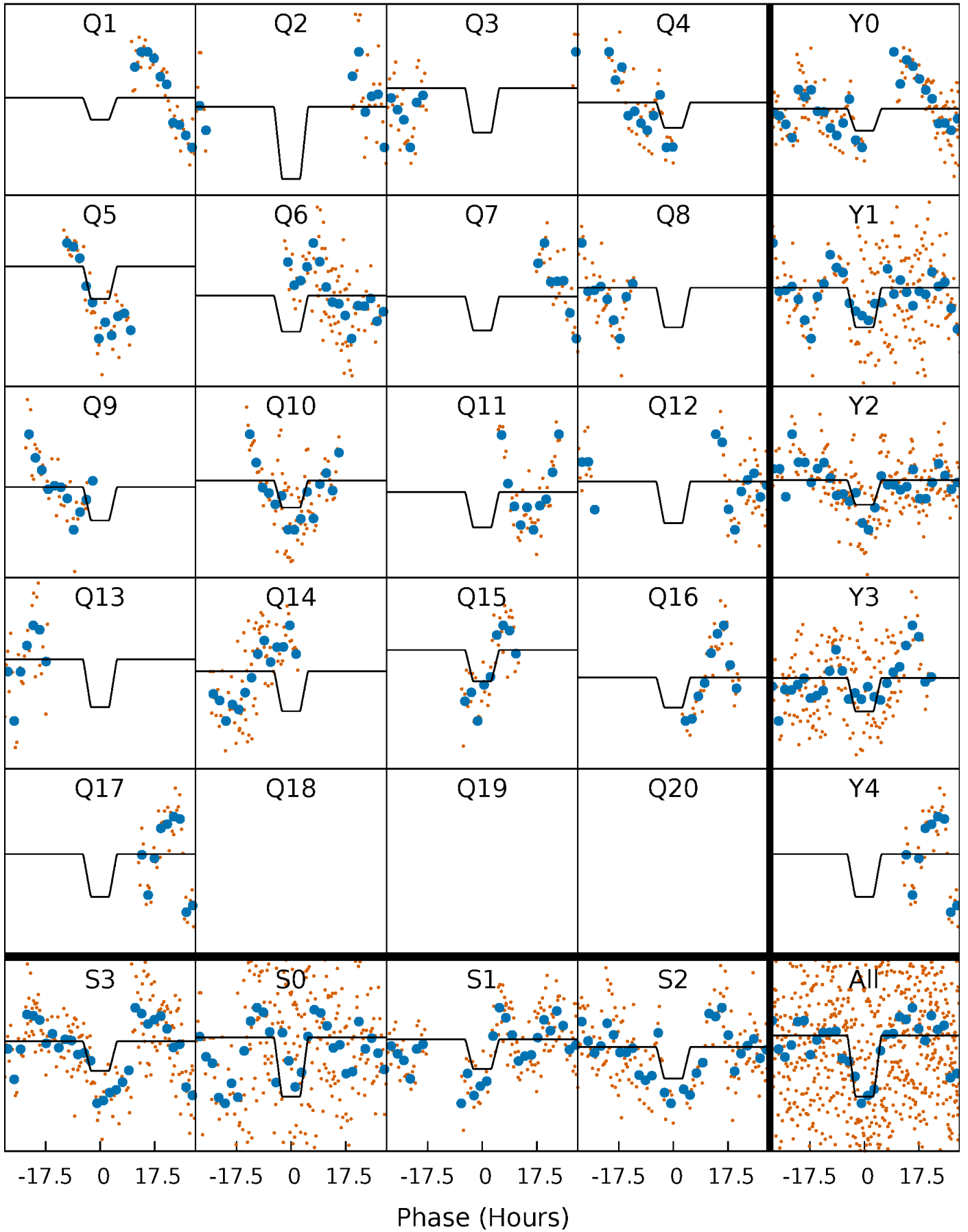
DV Quarter-Phased Transit Curves

TCE 009283002-05 $P = 63.556954$ Days $T_0 = 160.512816$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

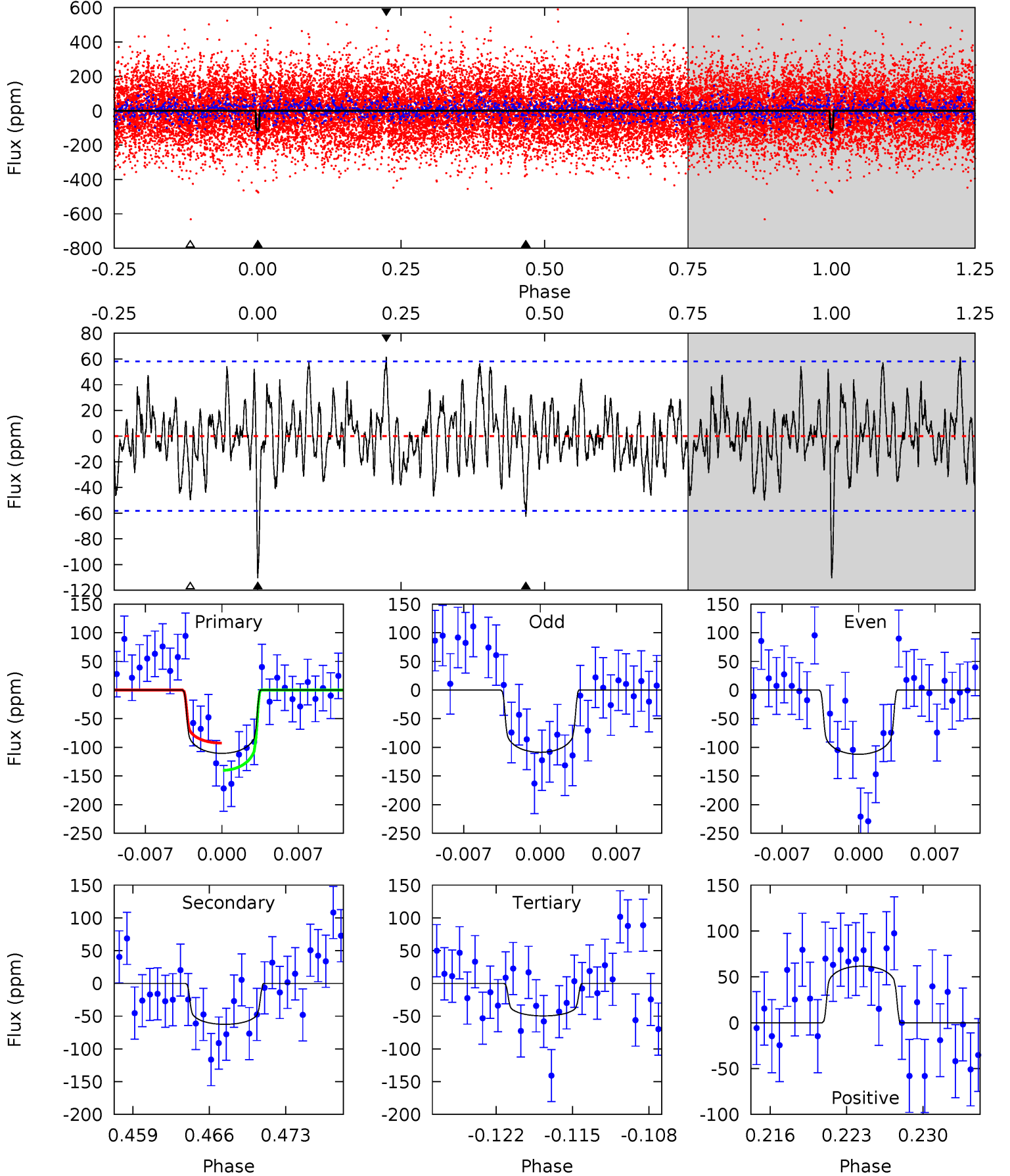
TCE 009283002-05 $P = 63.561739$ Days $T_0 = 160.494187$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-05, P = 63.556954 Days, E = 96.955862 Days

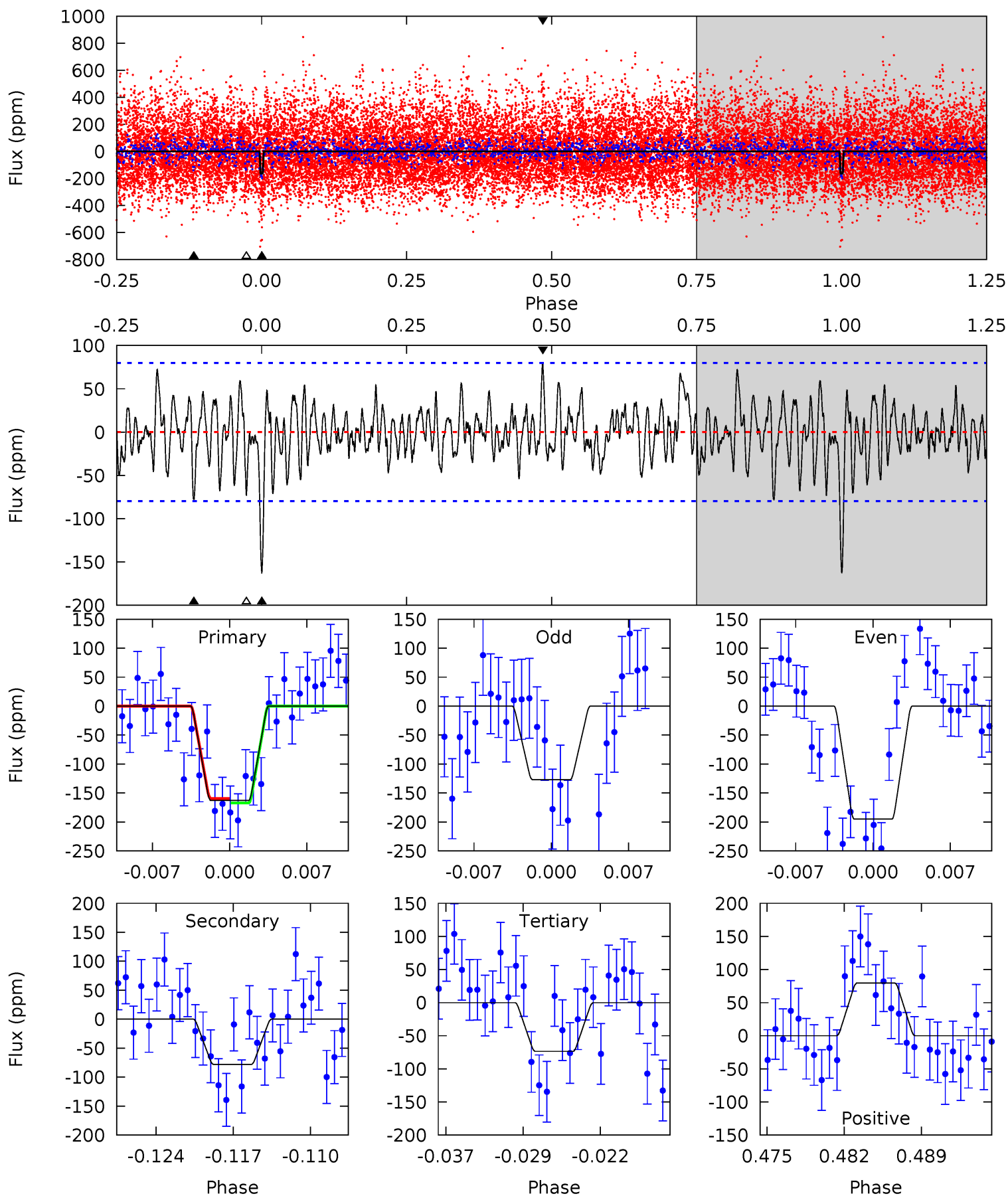
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.70	5.49	4.36	5.41	5.10	2.71	1.73	5.34	4.28	1.13	0.08	0.16	1.01	0.36	2.08



Alt Model-Shift Uniqueness Test

009283002-05, P = 63.561739 Days, E = 96.932448 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	4.97	4.69	5.08	5.09	2.68	1.61	5.70	5.32	0.28	-0.10	2.18	0.67	0.33	0.24



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-63 ± 11	$2.60^{+0.75}_{-0.69}$	1084^{+77}_{-84}	6016^{+907}_{-649}	680^{+562}_{-286}
Alt.	-78 ± 16	$2.89^{+0.83}_{-0.72}$	1082^{+82}_{-93}	5954^{+871}_{-631}	659^{+522}_{-271}

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

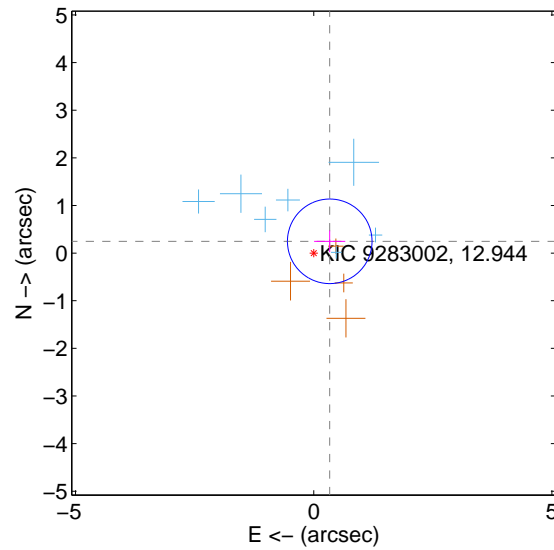
Supplemental centroid analysis for 009283002-05. Kepler magnitude: 12.94. Transit SNR 7.44

There are 7 quarters with good PRF difference image offsets

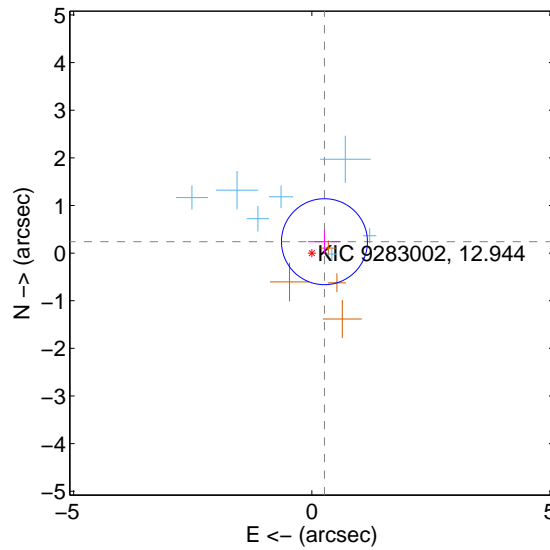
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.418 ± 0.296	1.41	-0.336 ± 0.327	0.247 ± 0.227
PRF-fit source offset from KIC position	0.358 ± 0.301	1.19	-0.266 ± 0.345	0.239 ± 0.236
photometric centroid source offset	2.22 ± 0.67	3.30	0.25 ± 0.68	-2.20 ± 0.67

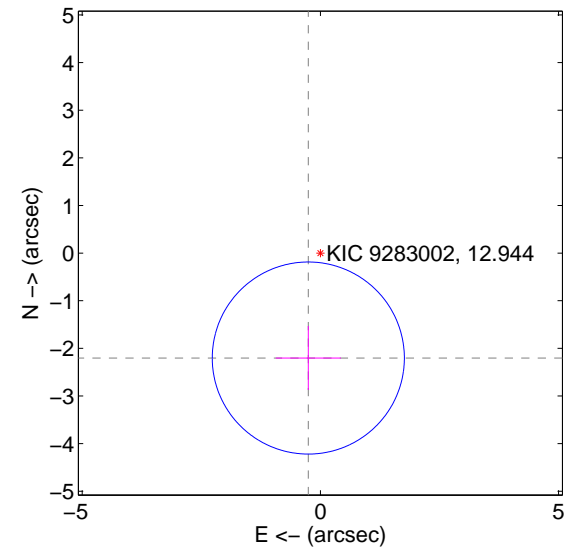
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

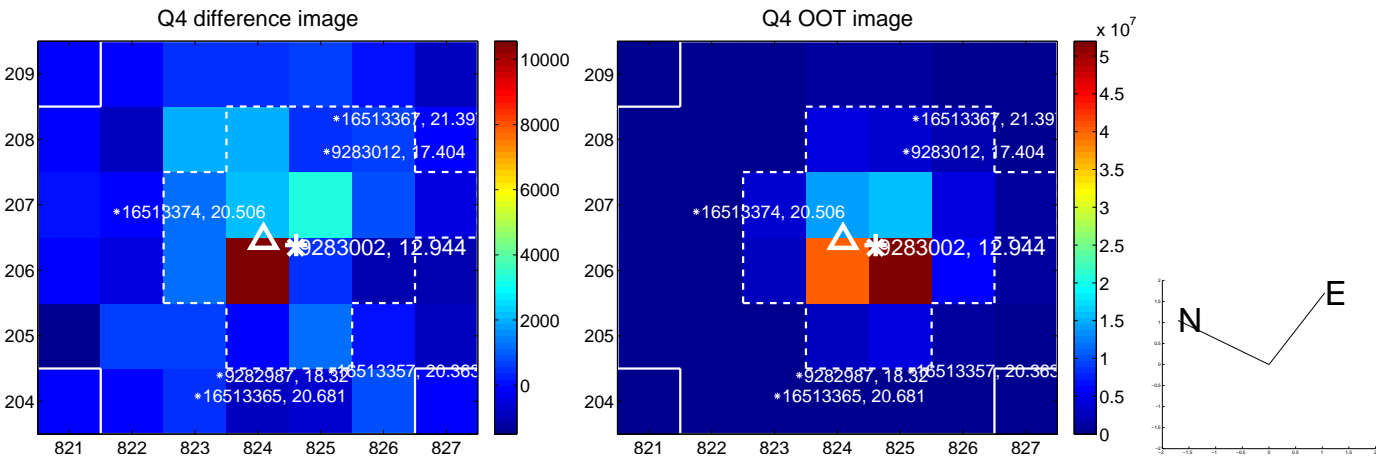
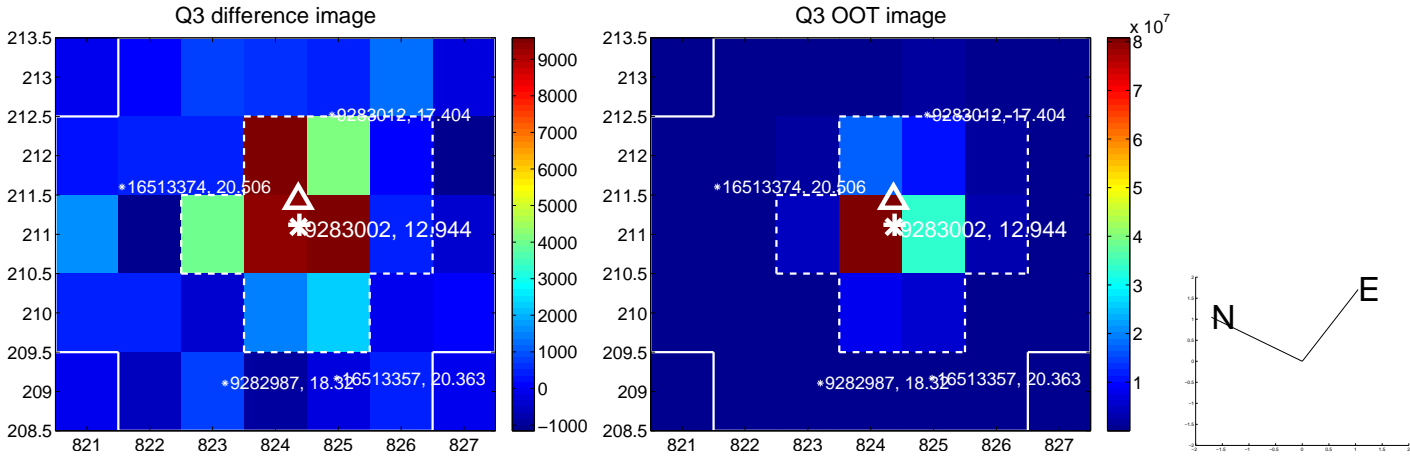
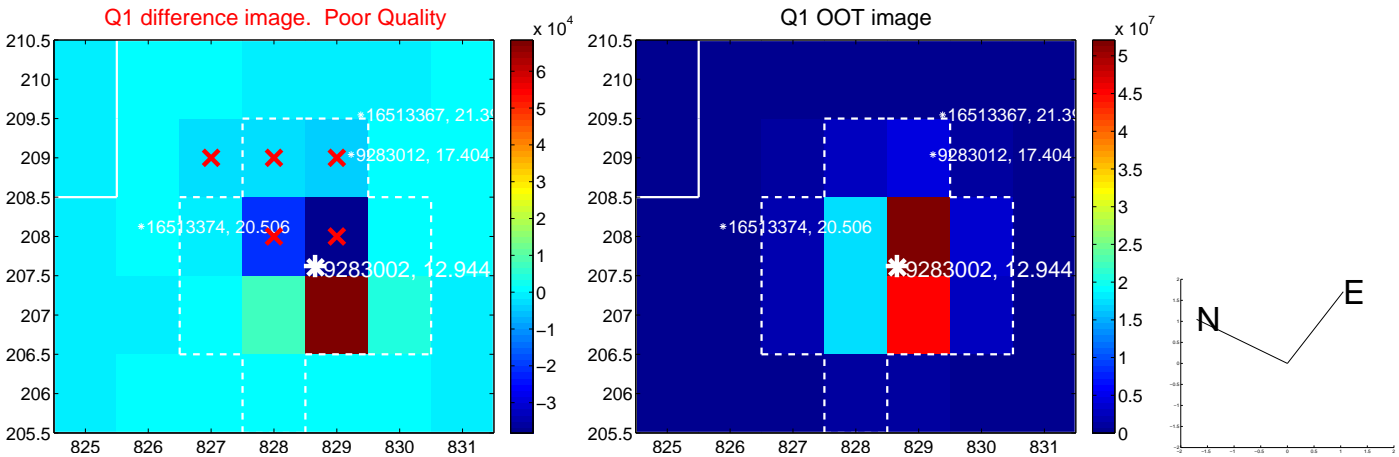


offset from photometric centroids

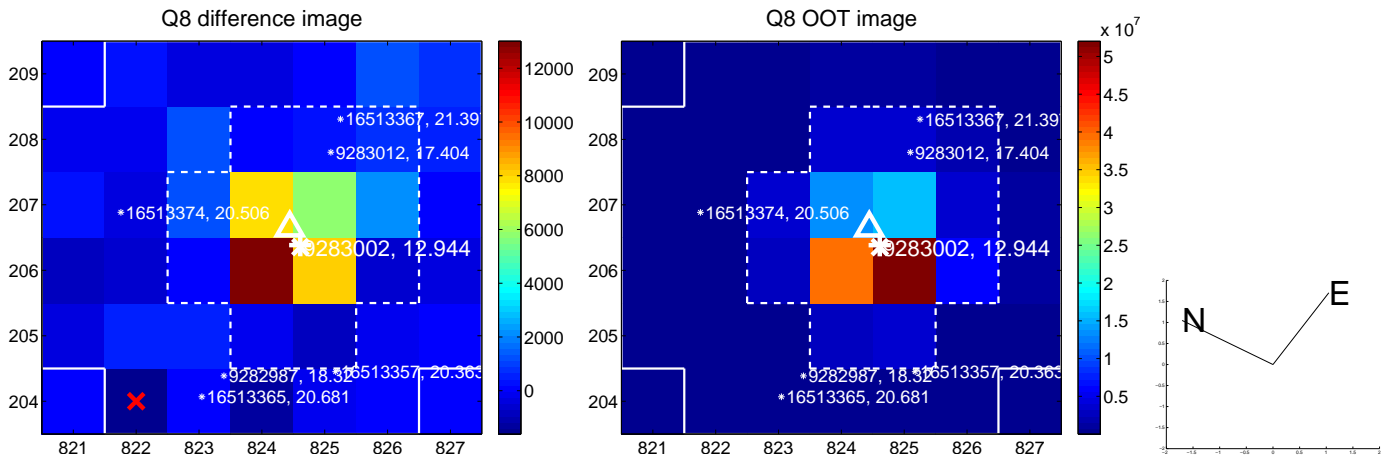
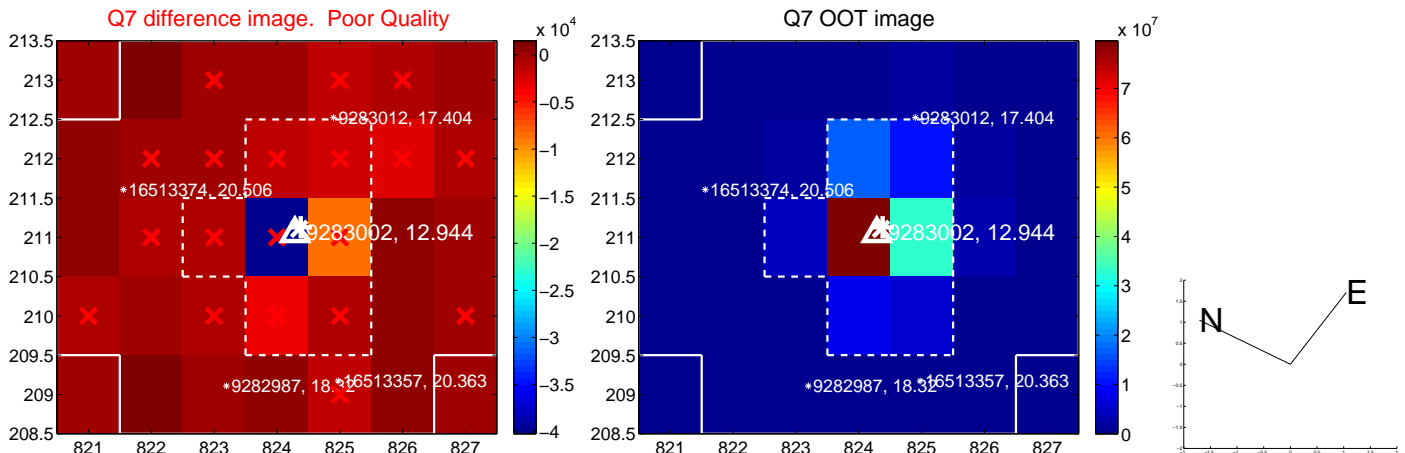
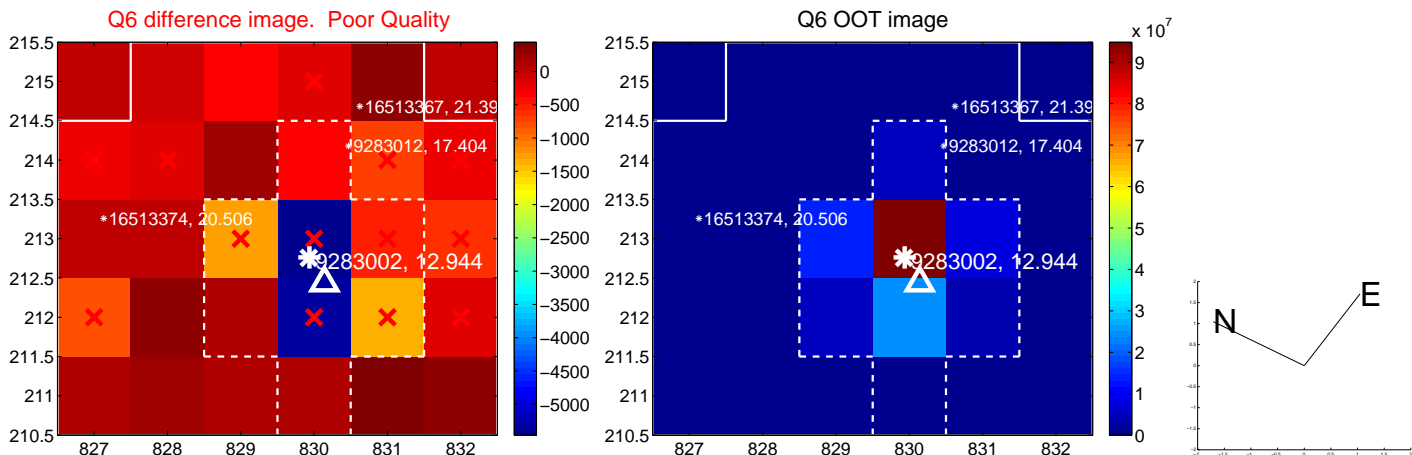
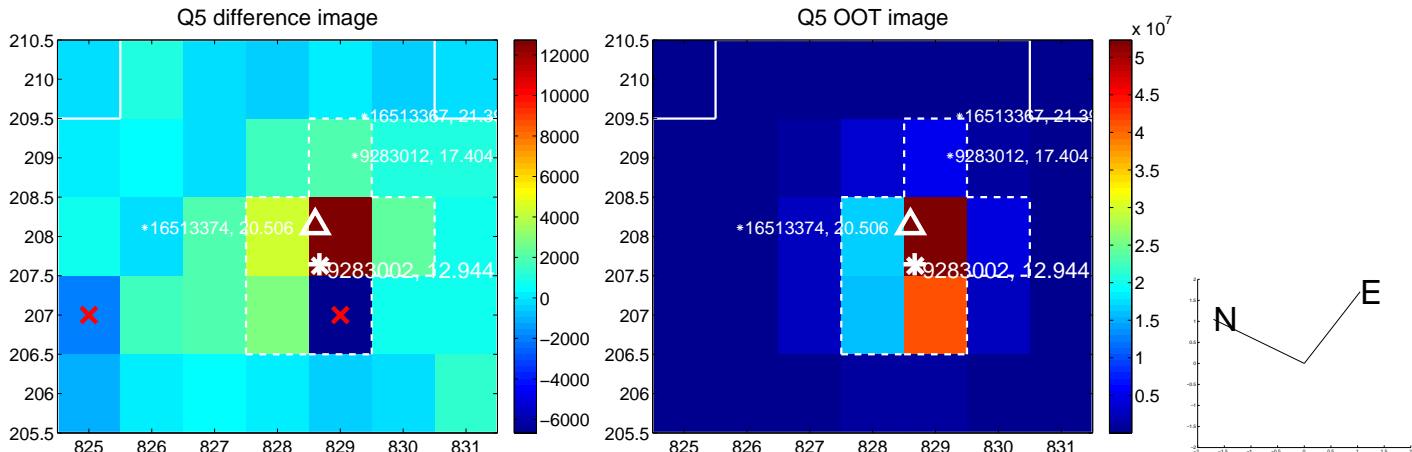


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

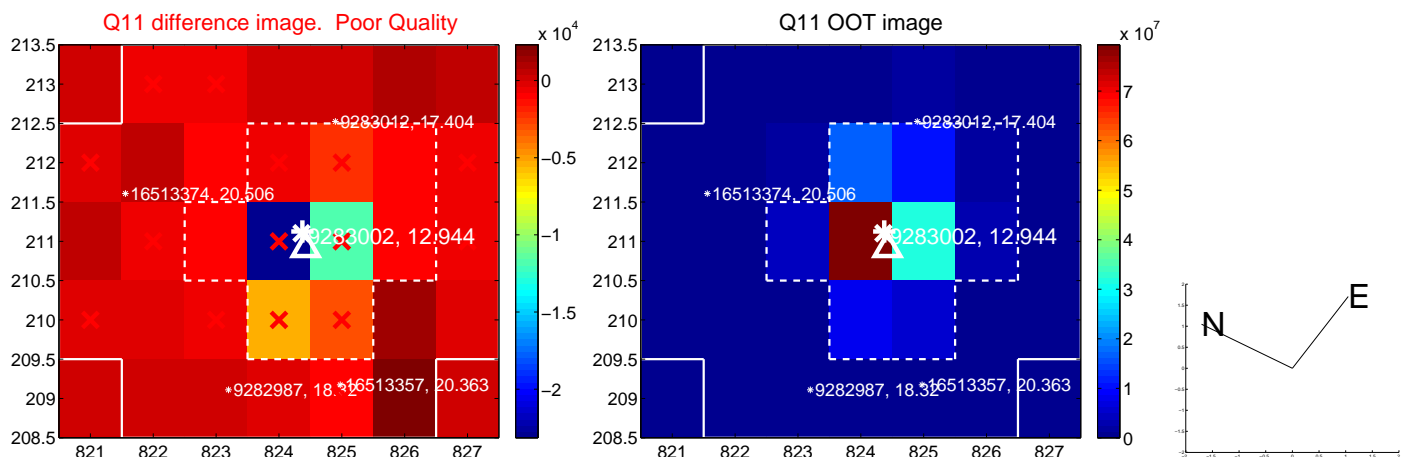
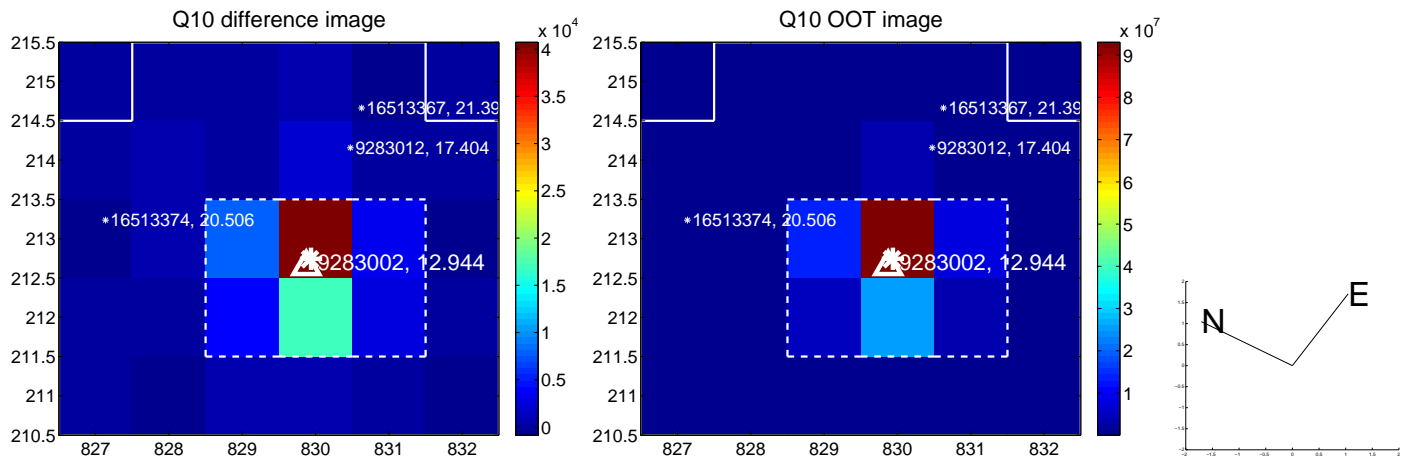
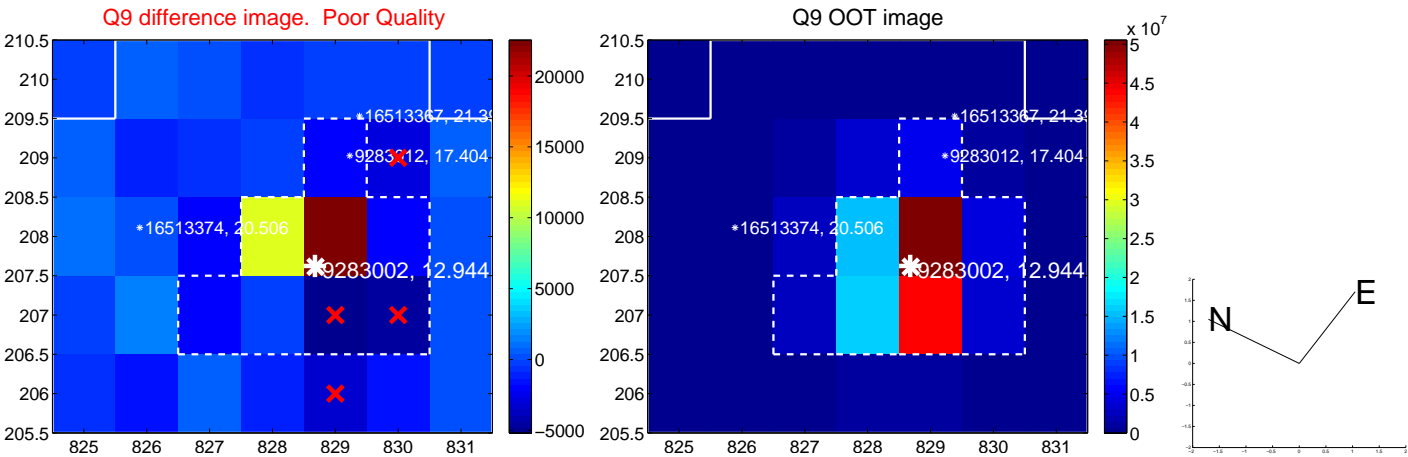
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



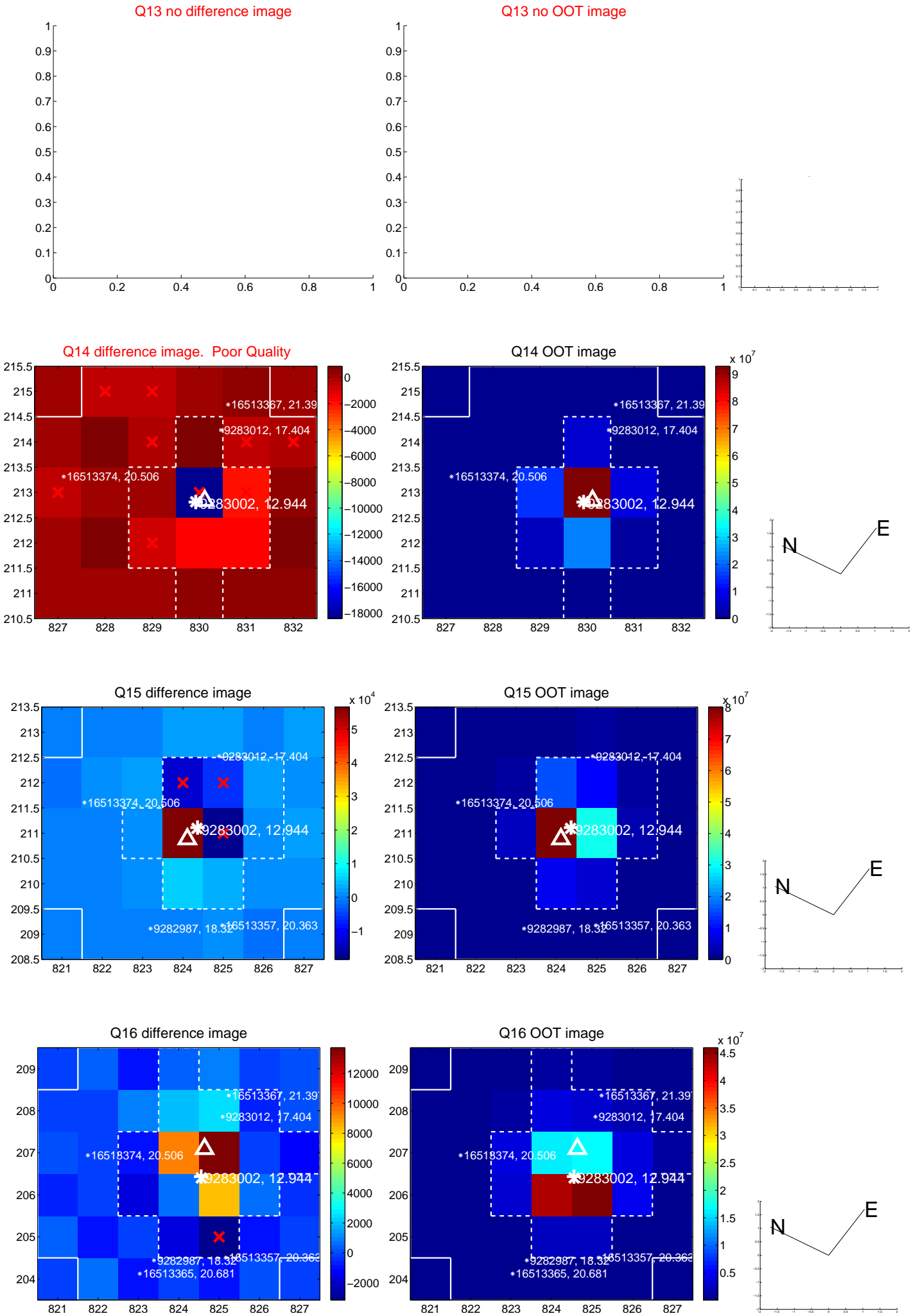
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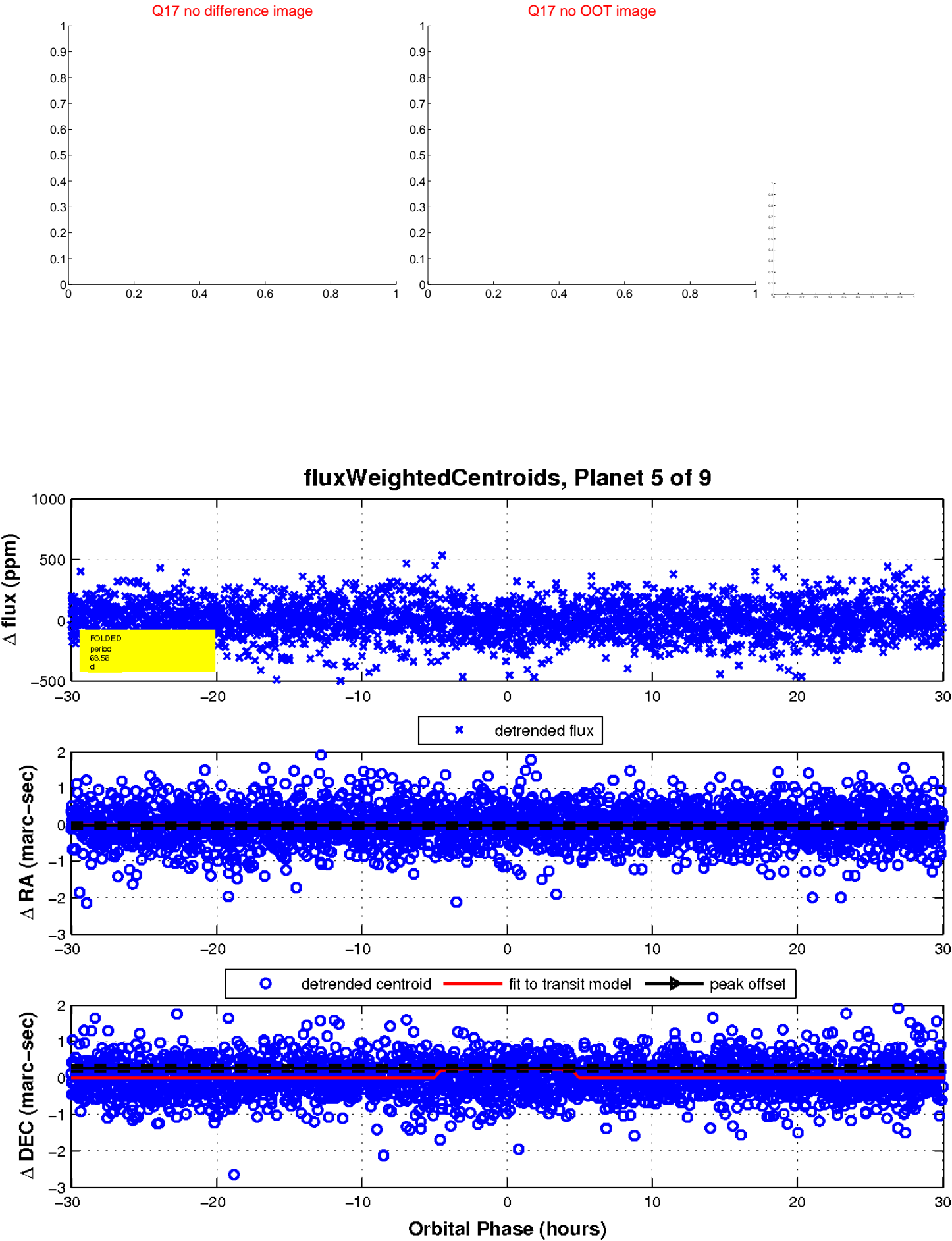
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

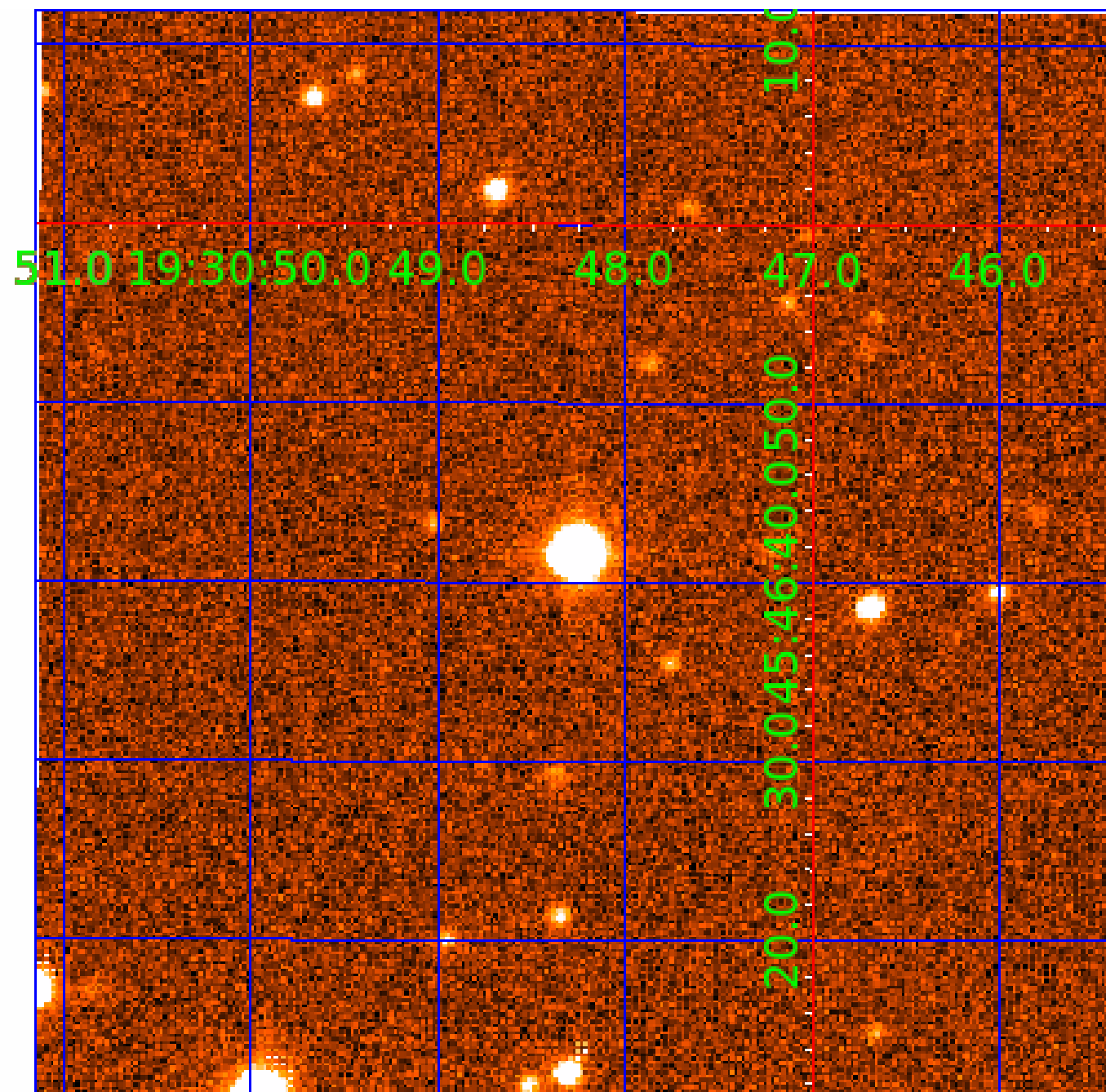


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
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009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
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009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

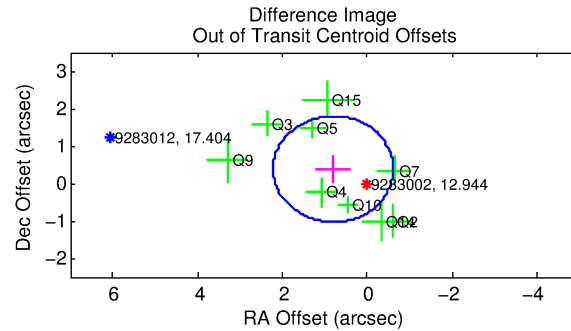
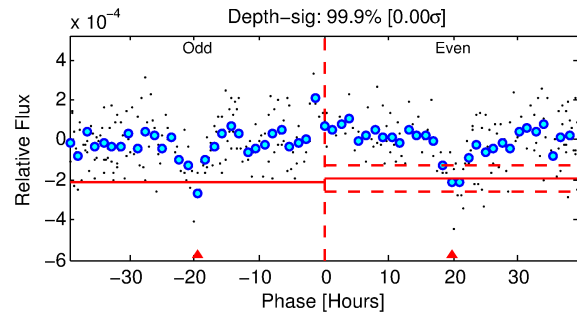
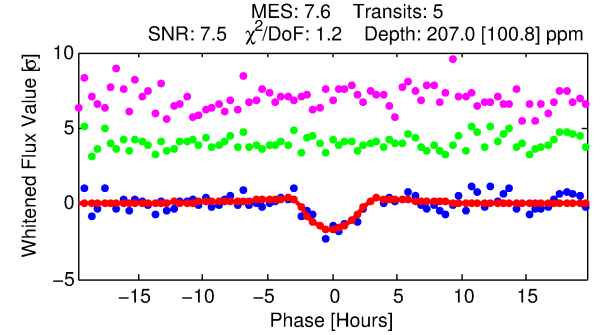
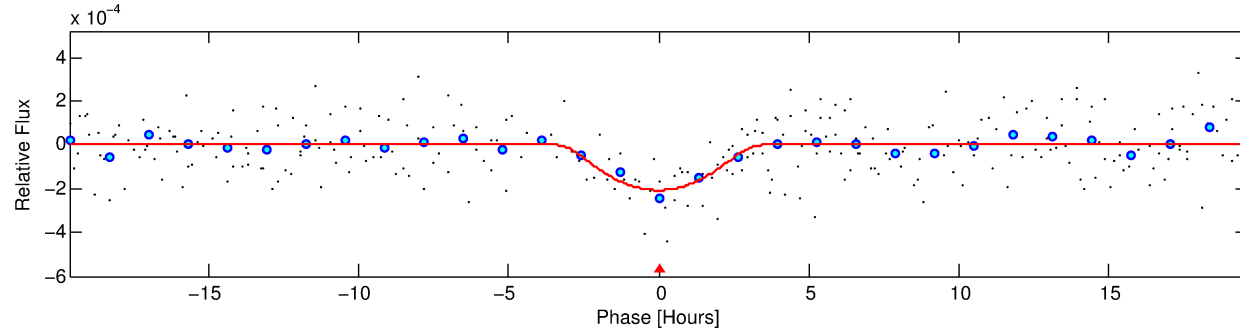
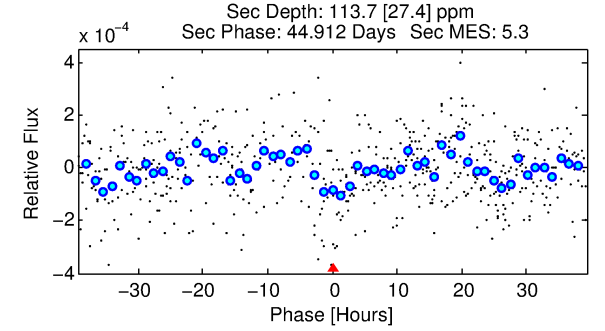
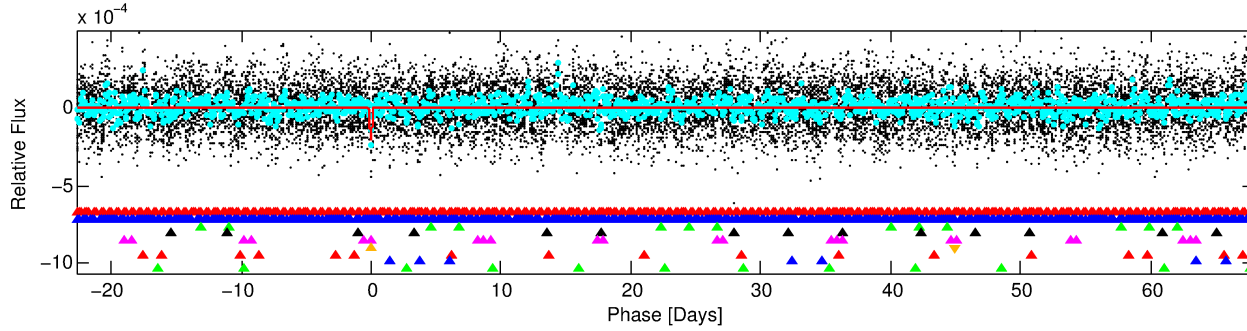
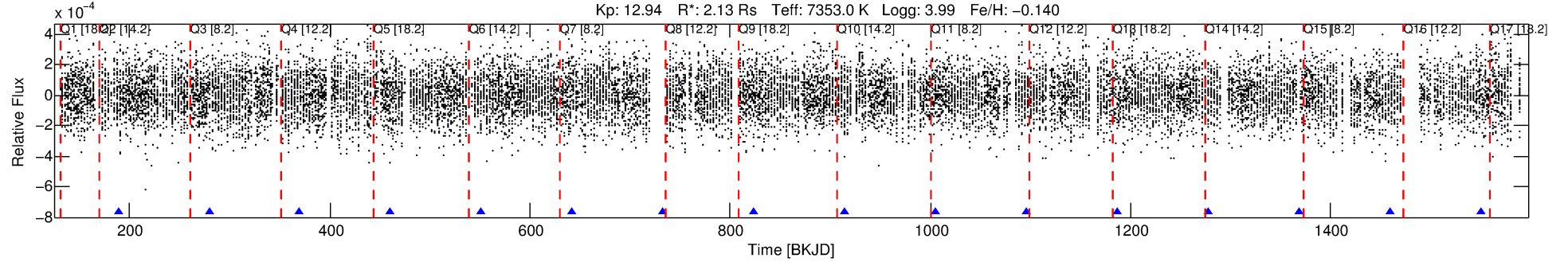
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-06

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 6 of 9 Period: 90.728 d



DV Fit Results:

Period = 90.72815 [0.00318] d
Epoch = 188.6827 [0.0253] BKJD
Rp/R* = 0.0207 [0.0372]
a/R* = 25.62 [19.05]
b = 0.99 [0.07]
Seff = 55.07 [24.56]
Teq = 695 [77] K
Rp = 4.81 [8.76] Re
a = 0.4638 [0.1264] AU
Ag = 580.81 [2101.14] [0.28σ]
Teffp = 5272 [4742] K [0.97σ]

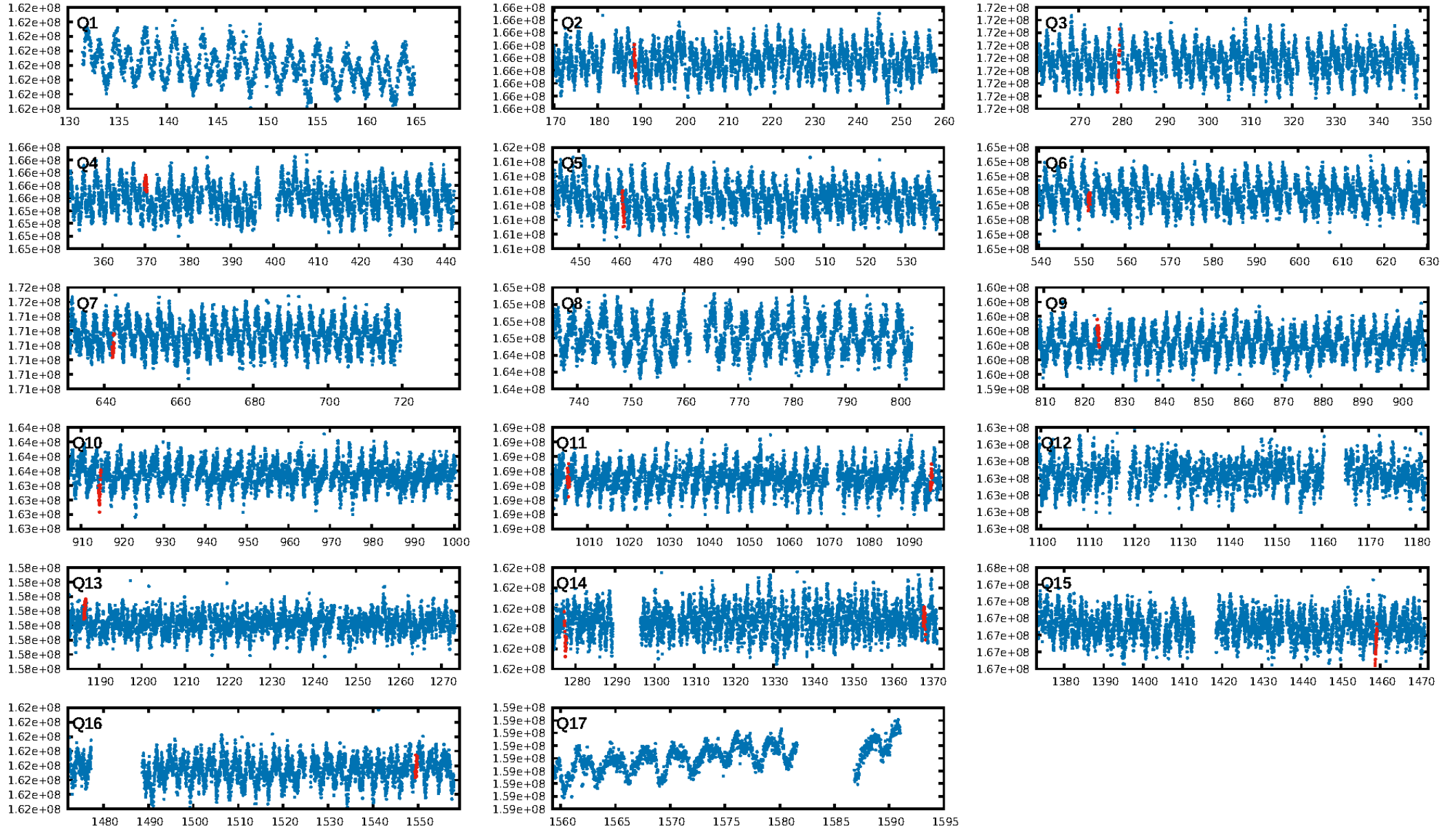
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.32σ]
LongPeriod-sig: 100.0% [24.45σ]
ModelChiSquare2-sig: 66.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.08e-07
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.6986
Centroid-sig: 70.8%
Centroid-so: 0.289 arcsec [0.43σ]
OotOffset-rm: 0.886 arcsec [1.87σ]
KicOffset-rm: 0.964 arcsec [2.18σ]
OotOffset-st: 3/3/1/2 [9]
KicOffset-st: 3/3/1/2 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 0.17 [2/12]

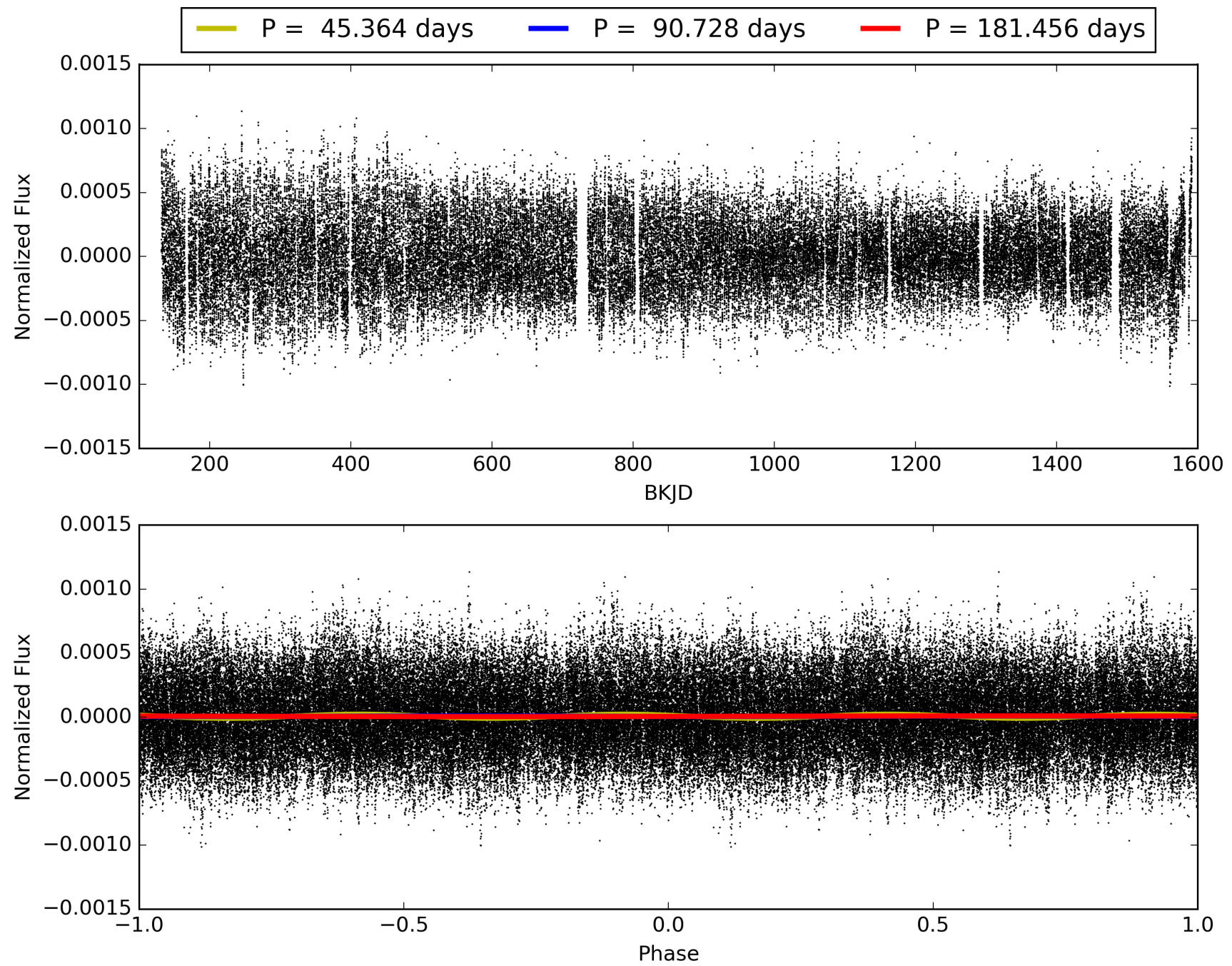
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:42 Z

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

TCE 009283002-06, PDC Light Curves

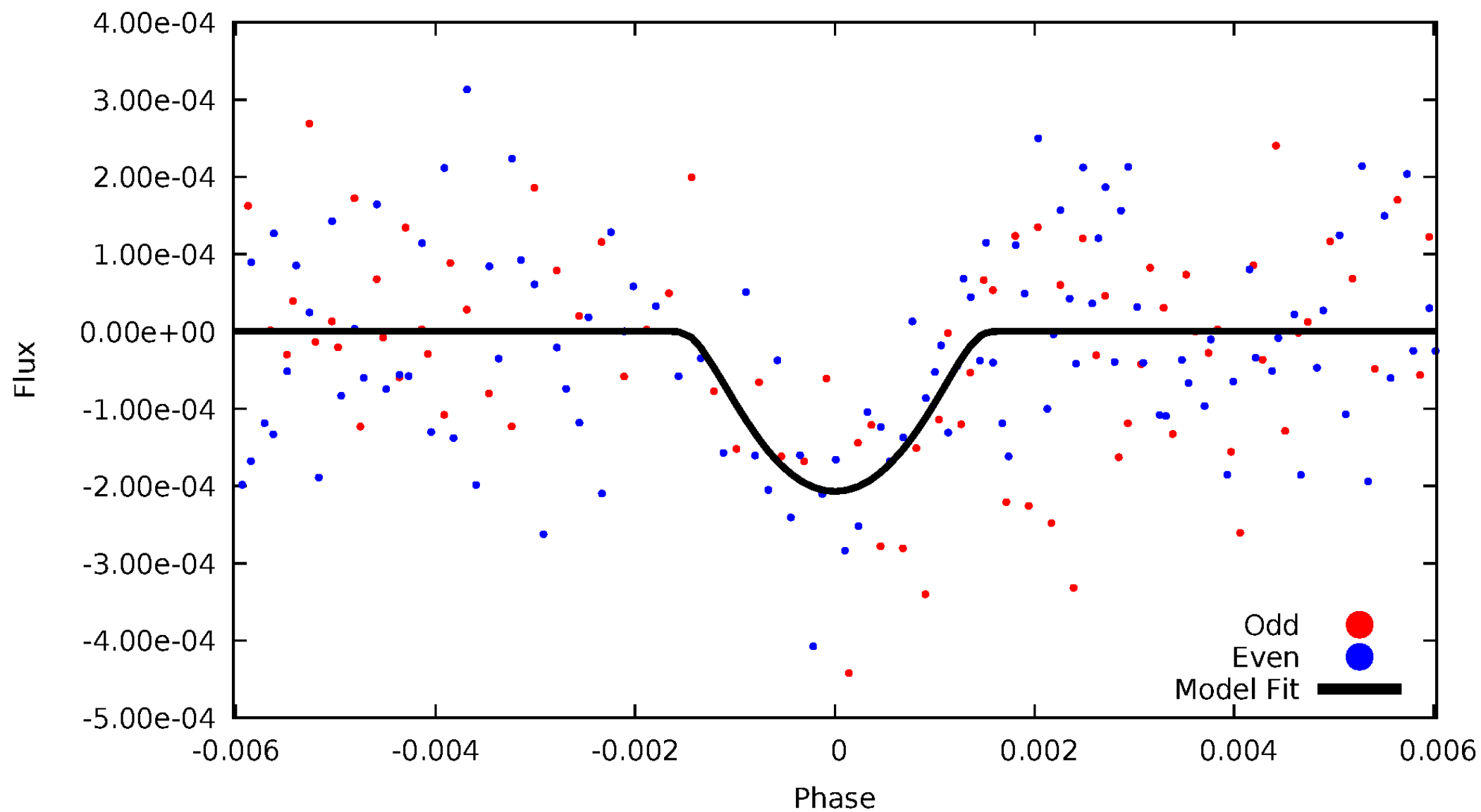


TCE 009283002-06



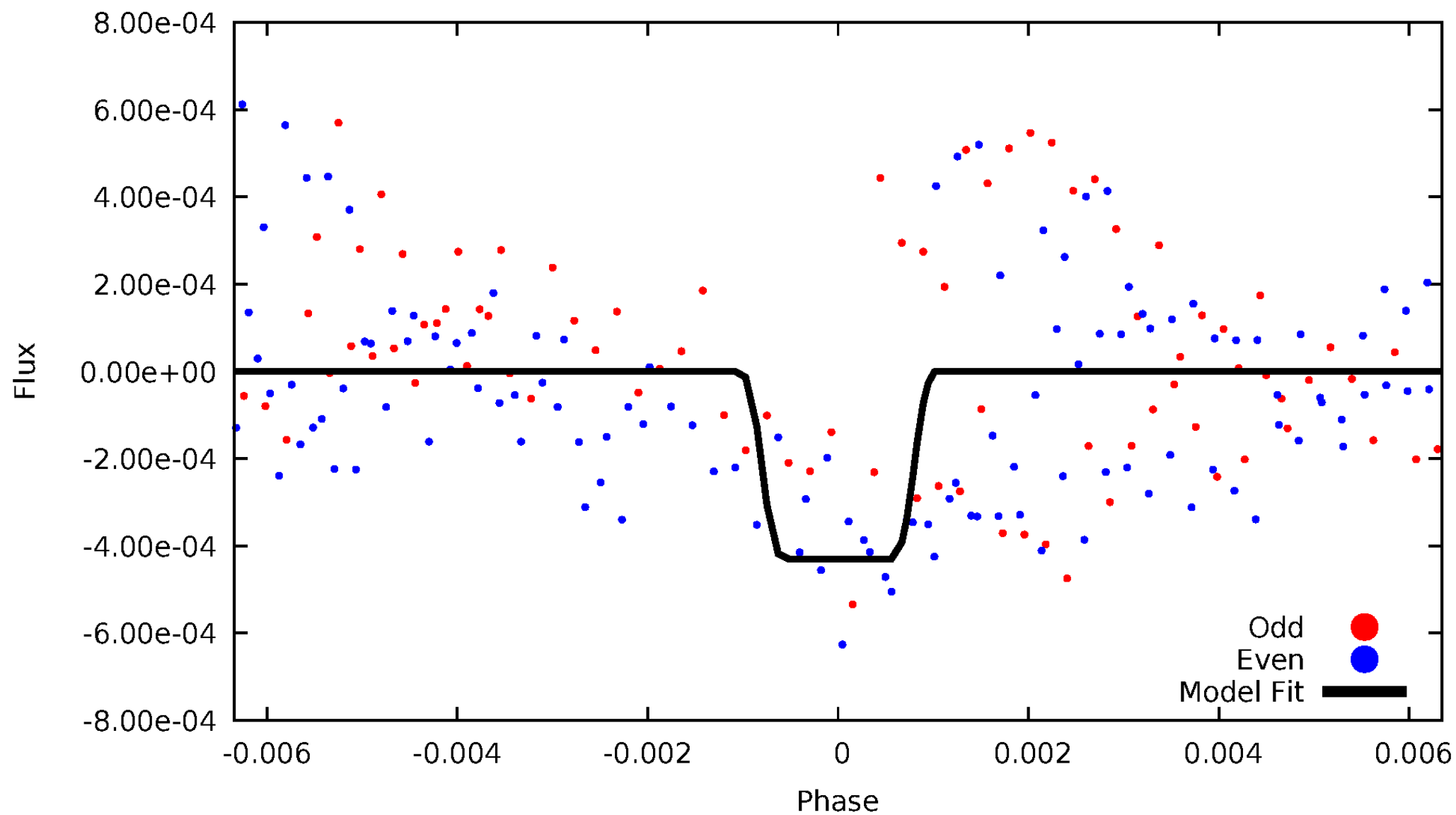
DV Odd/Even

TCE 009283002-06



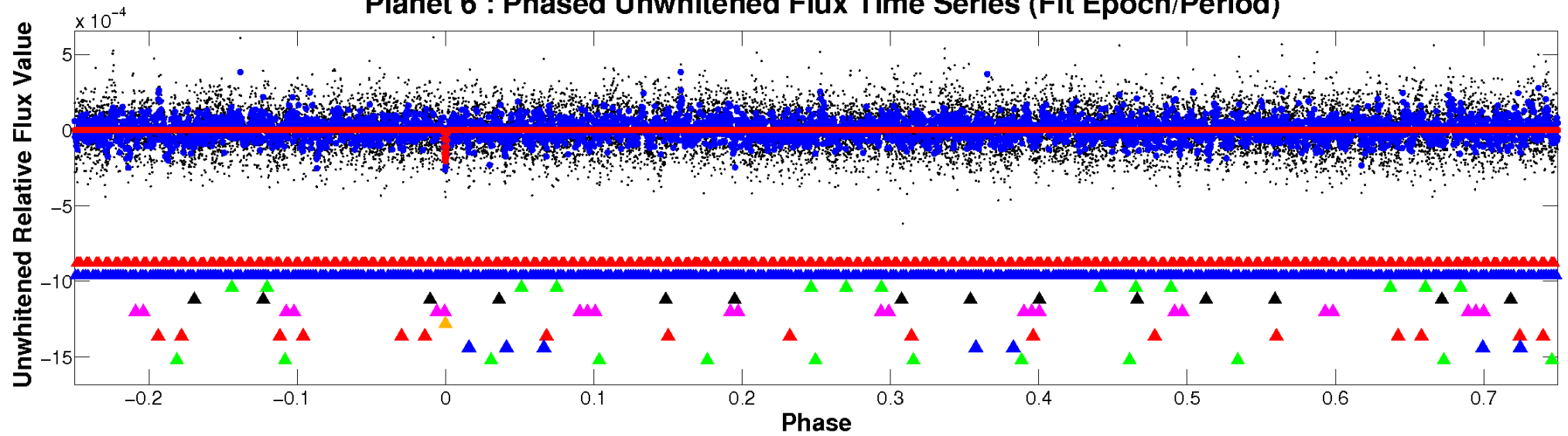
ALT Odd/Even

TCE 009283002-06

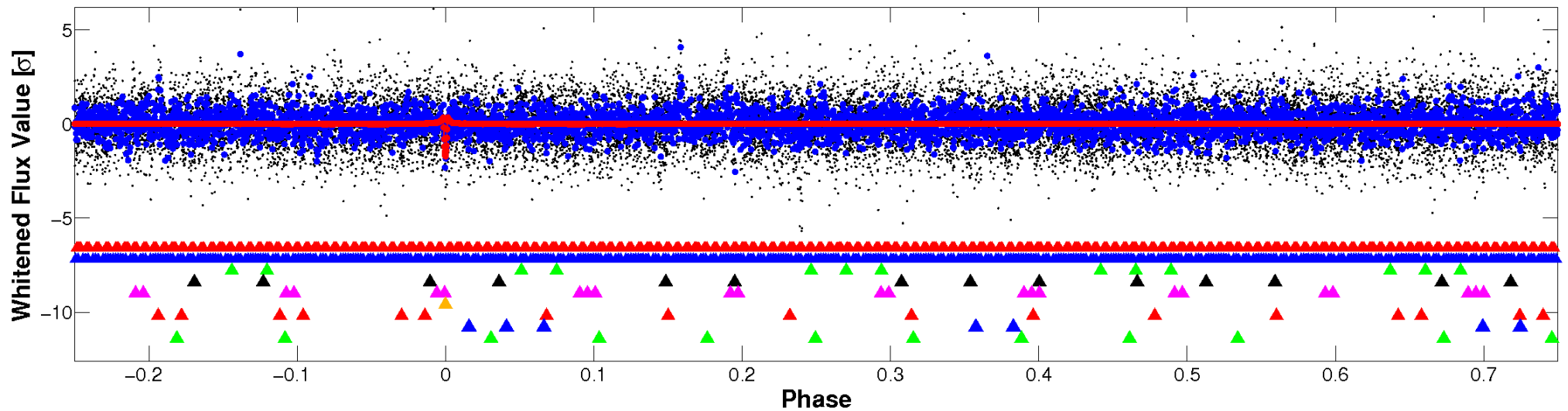


Non-Whitened Vs. Whitened Light Curve

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

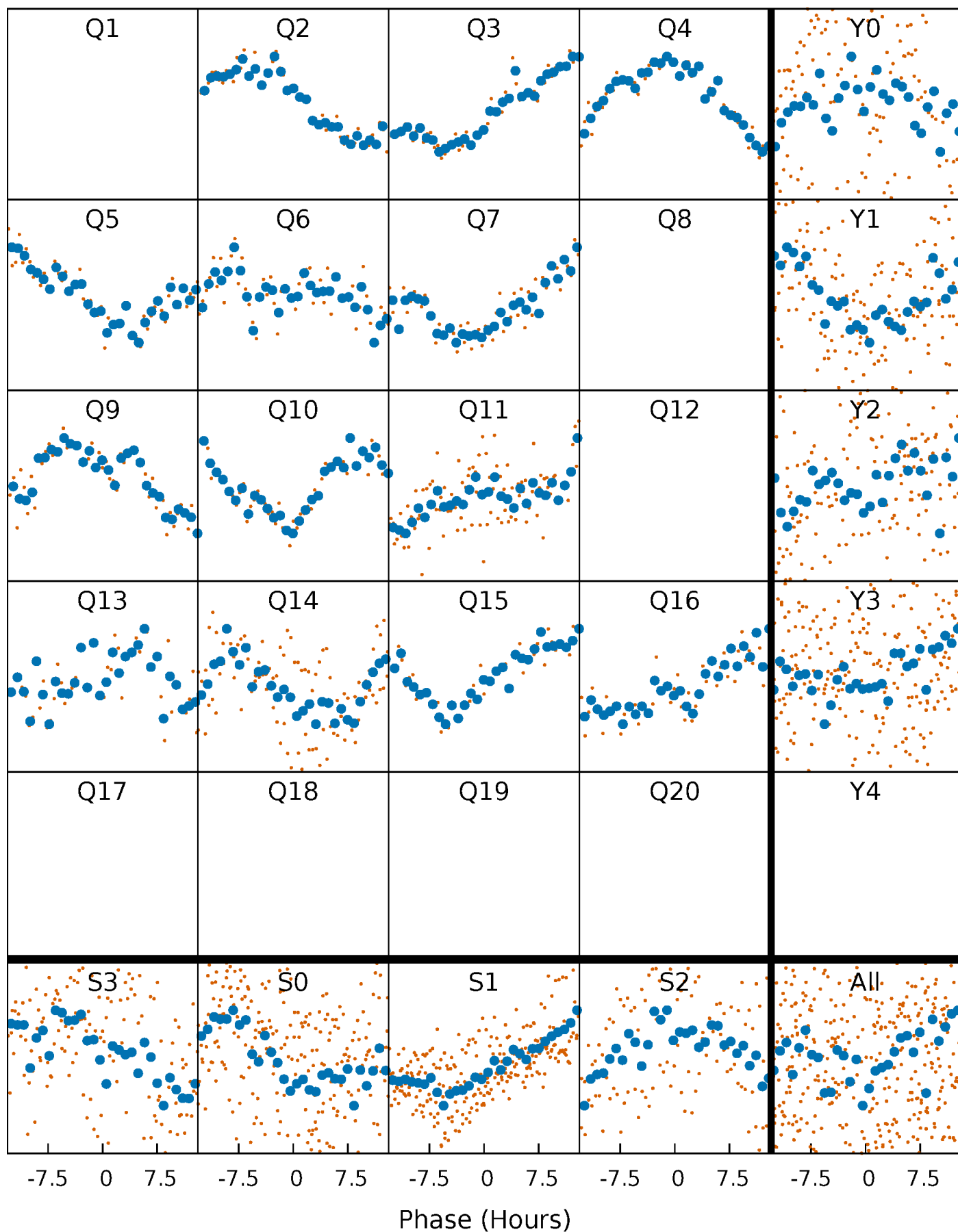


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



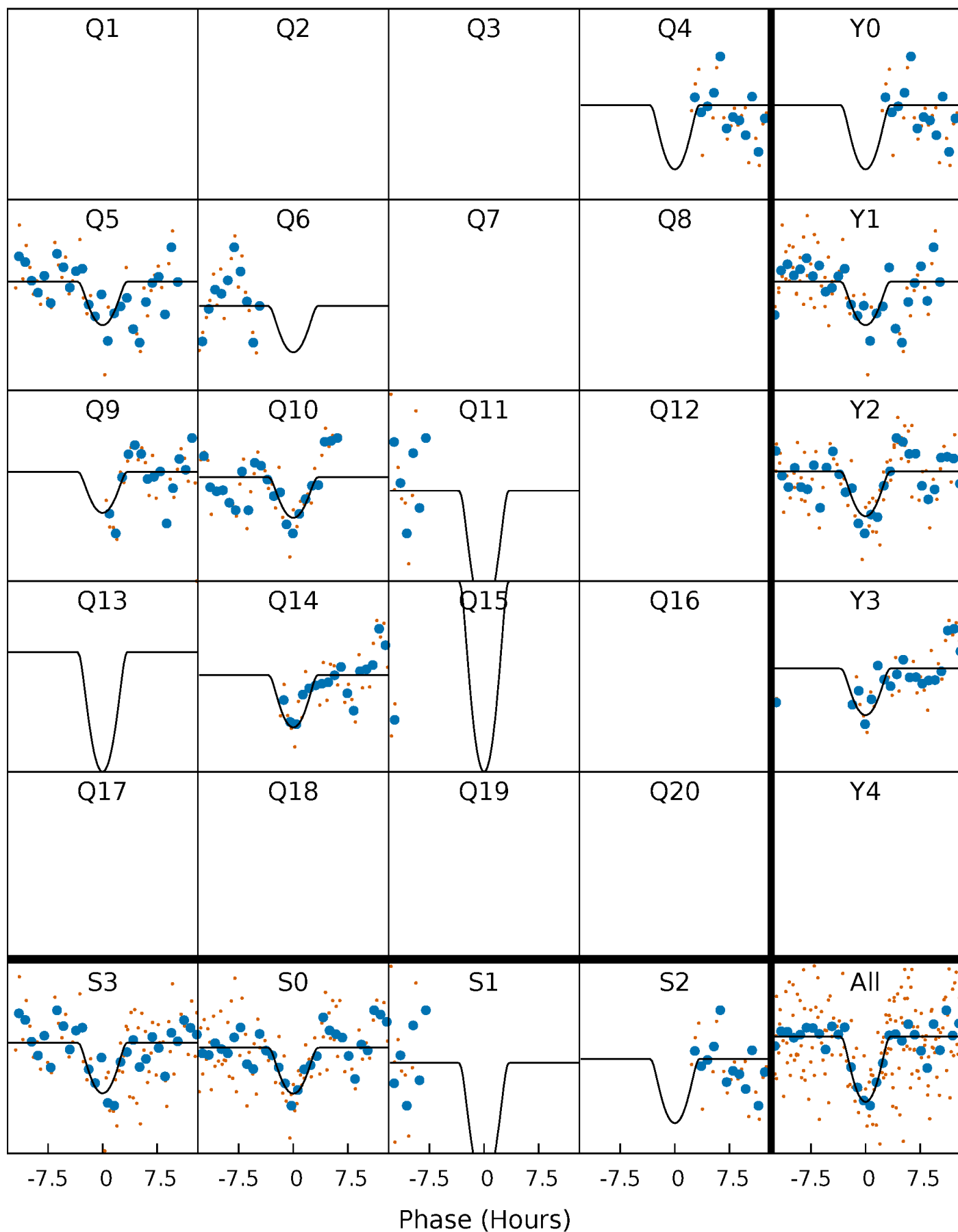
PDC Quarter-Phased Transit Curves

TCE 009283002-06 P= 90.728148 Days $T_0=188.682657$ (BKJD)



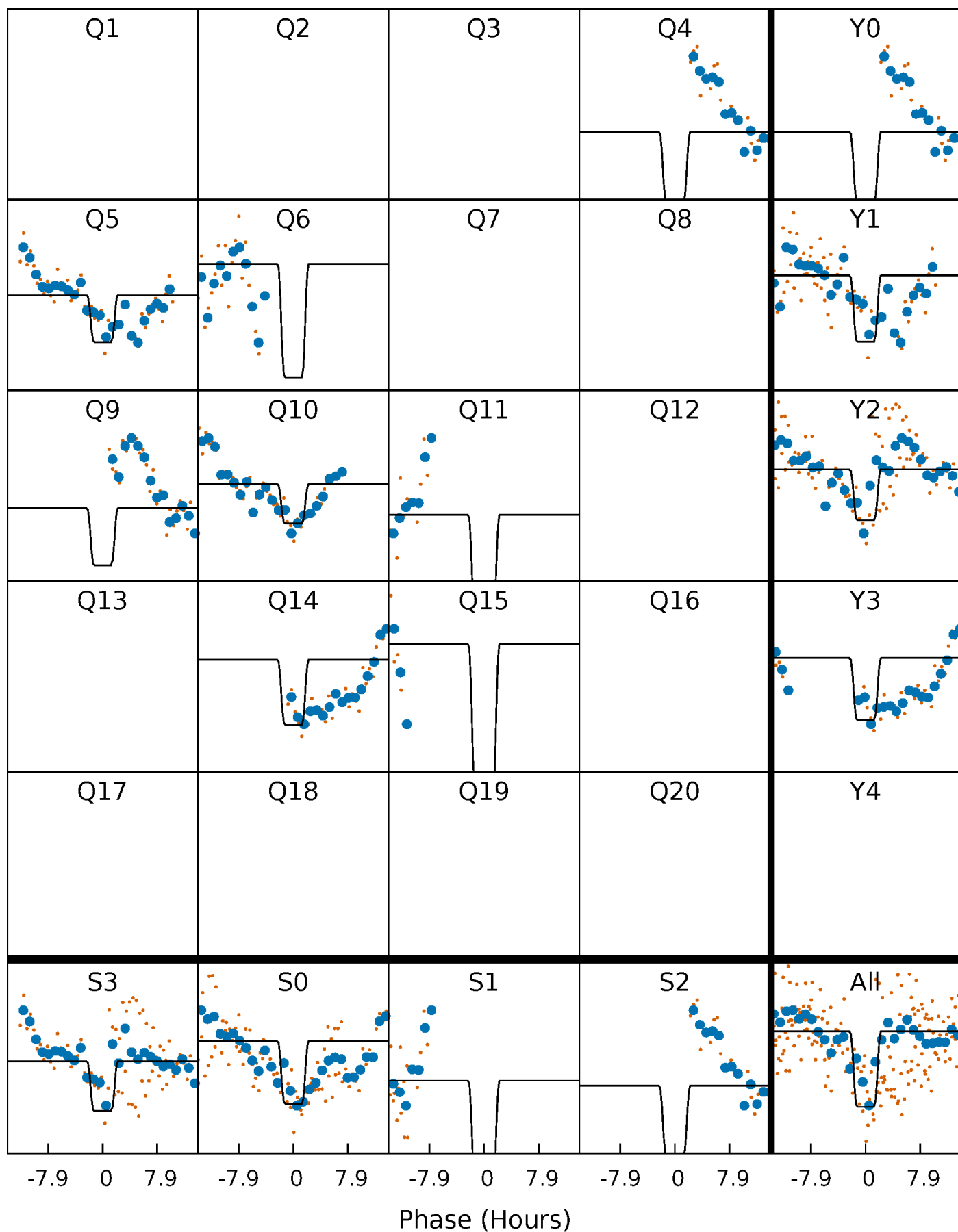
DV Quarter-Phased Transit Curves

TCE 009283002-06 P= 90.728148 Days $T_0=188.682657$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

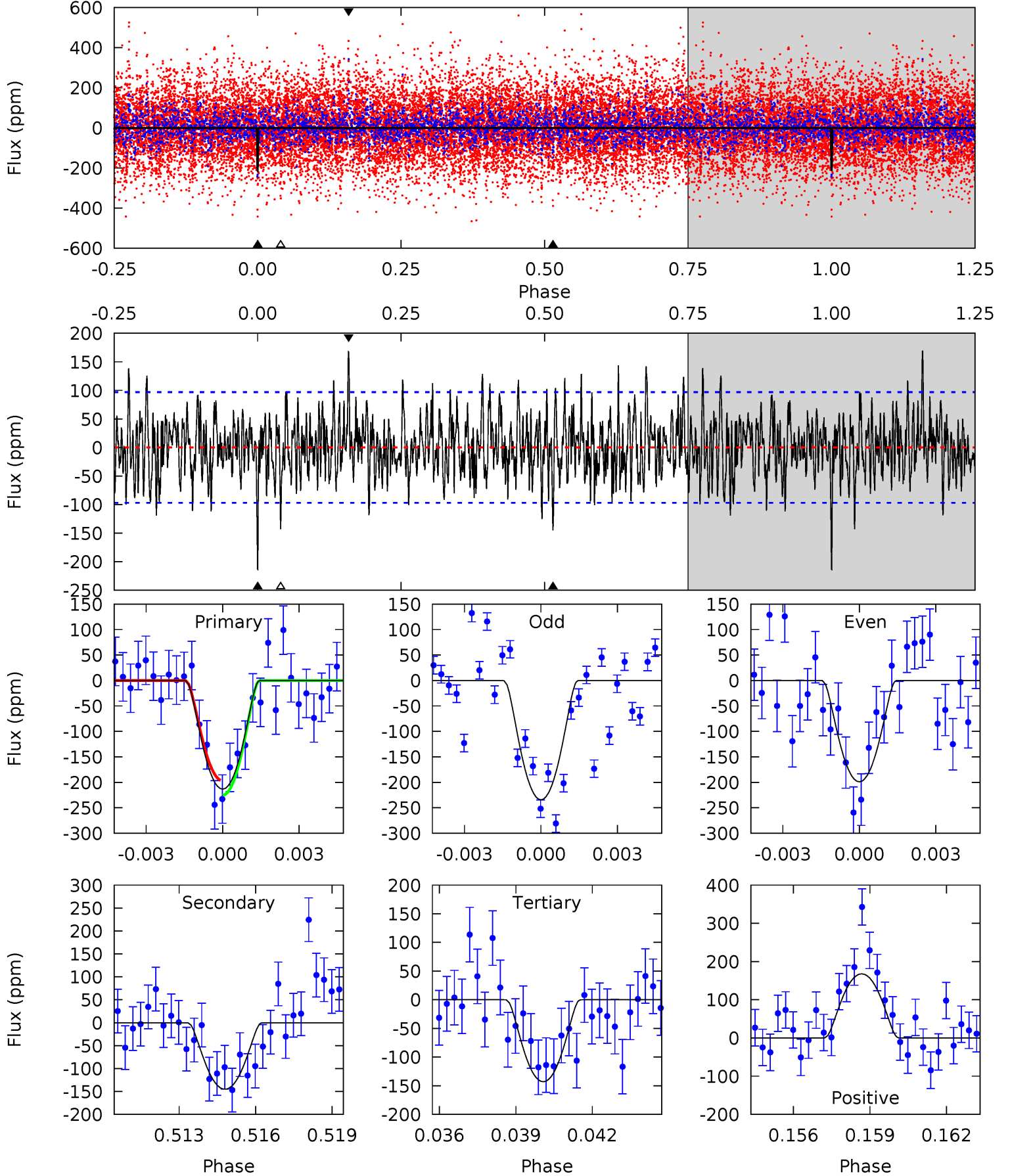
TCE 009283002-06 P= 90.723651 Days $T_0=188.694712$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-06, P = 90.728148 Days, E = 97.954509 Days

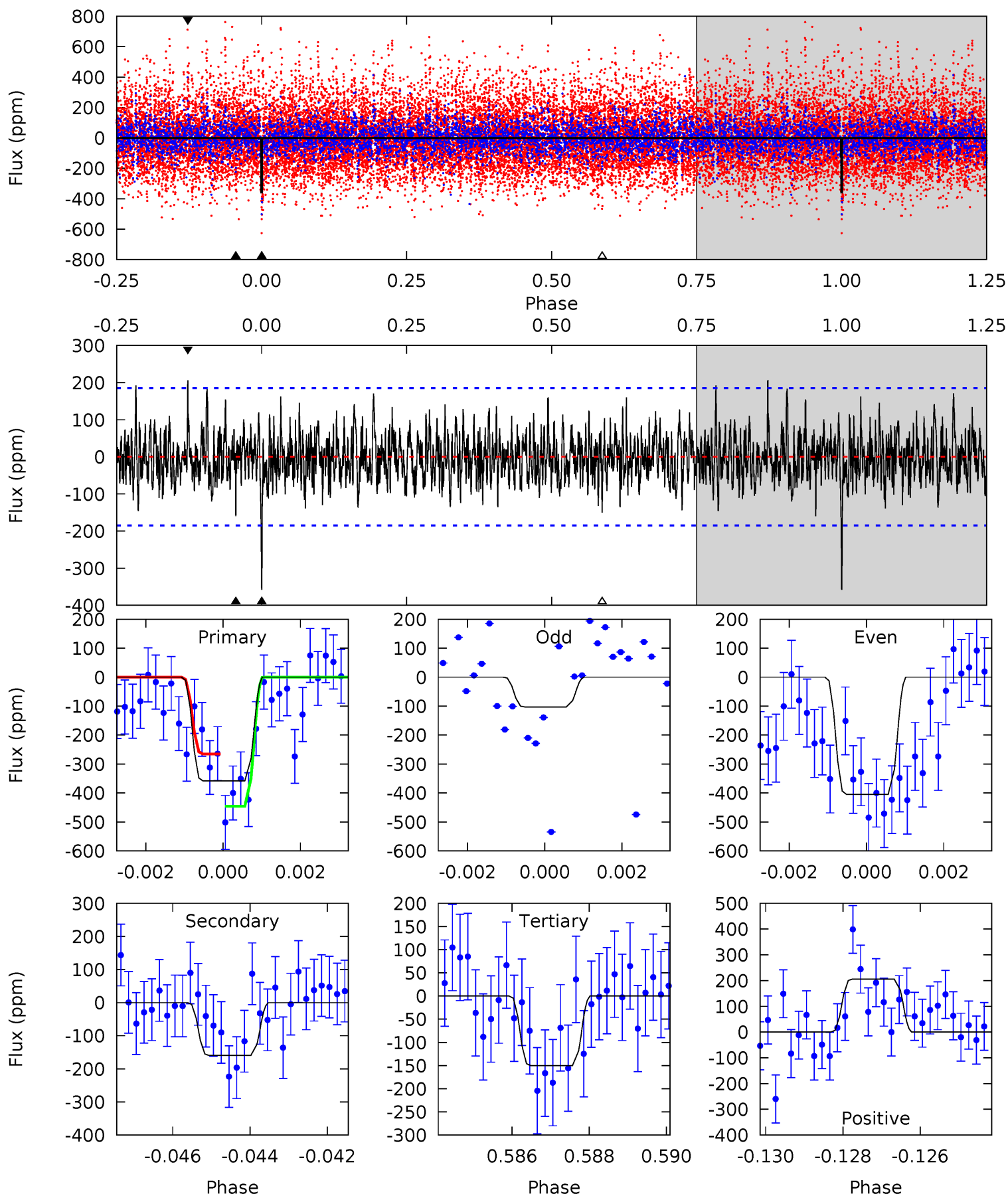
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	7.85	7.74	9.08	5.24	2.94	2.38	3.80	2.46	0.11	-1.23	0.96	0.84	0.44	0.76



Alt Model-Shift Uniqueness Test

009283002-06, P = 90.723651 Days, E = 97.971061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.60	4.33	5.93	5.33	3.09	1.49	6.00	4.40	0.28	-1.33	4.38	0.52	0.36	2.57



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-145 ± 18	$7.83^{+7.32}_{-5.25}$	966^{+68}_{-87}	4463^{+3007}_{-871}	275^{+2166}_{-201}
Alt.	-160 ± 35	$7.44^{+7.35}_{-5.24}$	964^{+73}_{-81}	4600^{+3779}_{-991}	323^{+3328}_{-243}

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

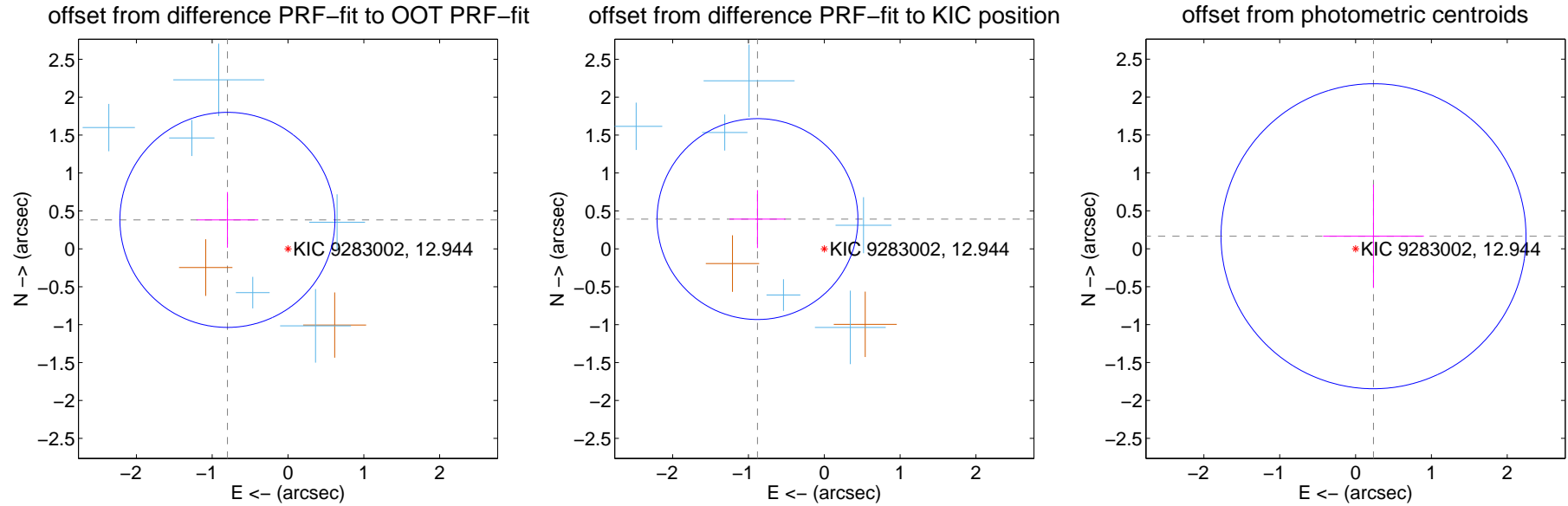
DV Centroid Data

Supplemental centroid analysis for 009283002-06. Kepler magnitude: 12.94. Transit SNR 7.49

There are 6 quarters with good PRF difference image offsets

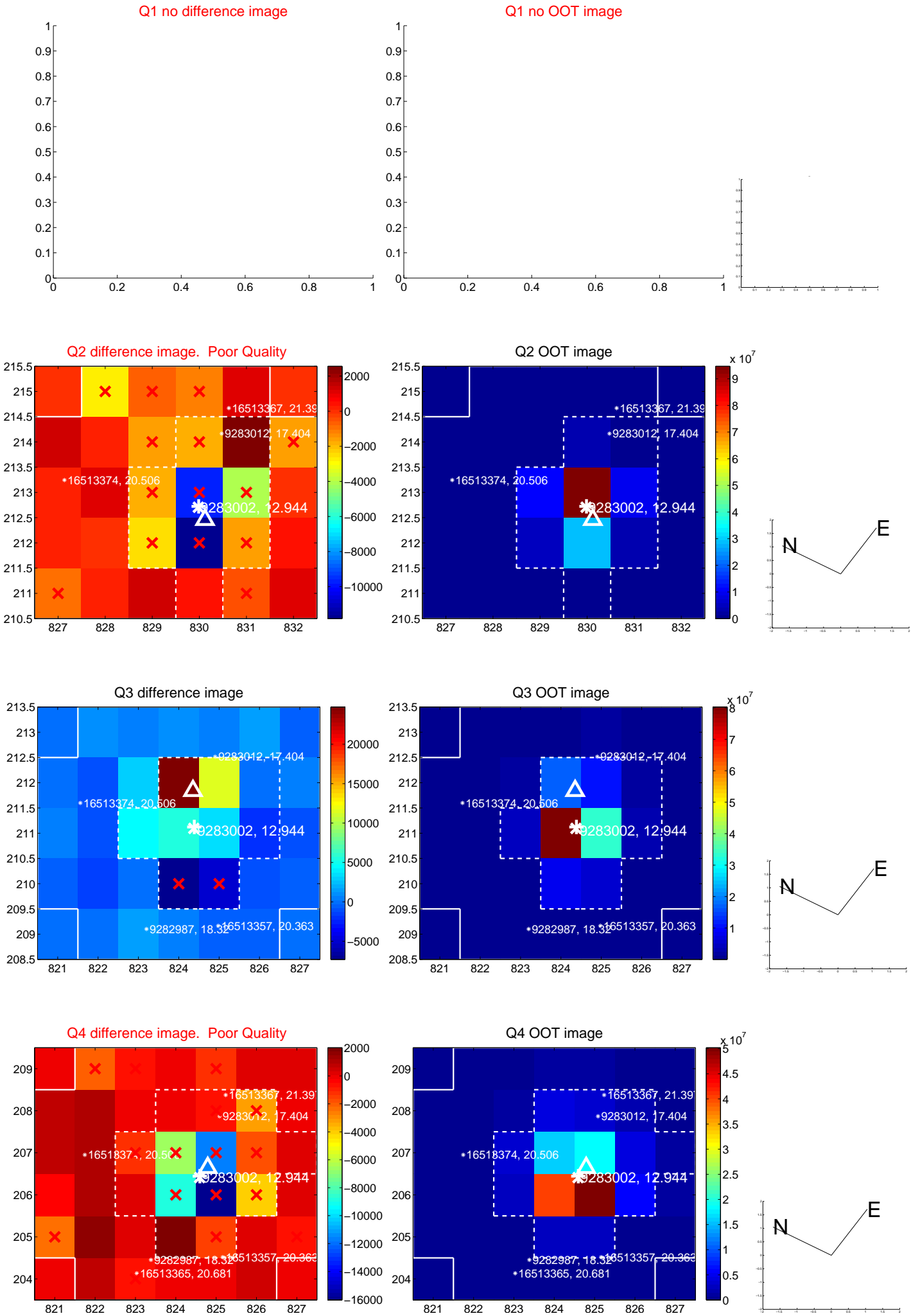
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.886 ± 0.473	1.87	0.799 ± 0.407	0.382 ± 0.367
PRF-fit source offset from KIC position	0.964 ± 0.441	2.18	0.881 ± 0.370	0.392 ± 0.382
photometric centroid source offset	0.29 ± 0.67	0.43	-0.24 ± 0.66	0.17 ± 0.68

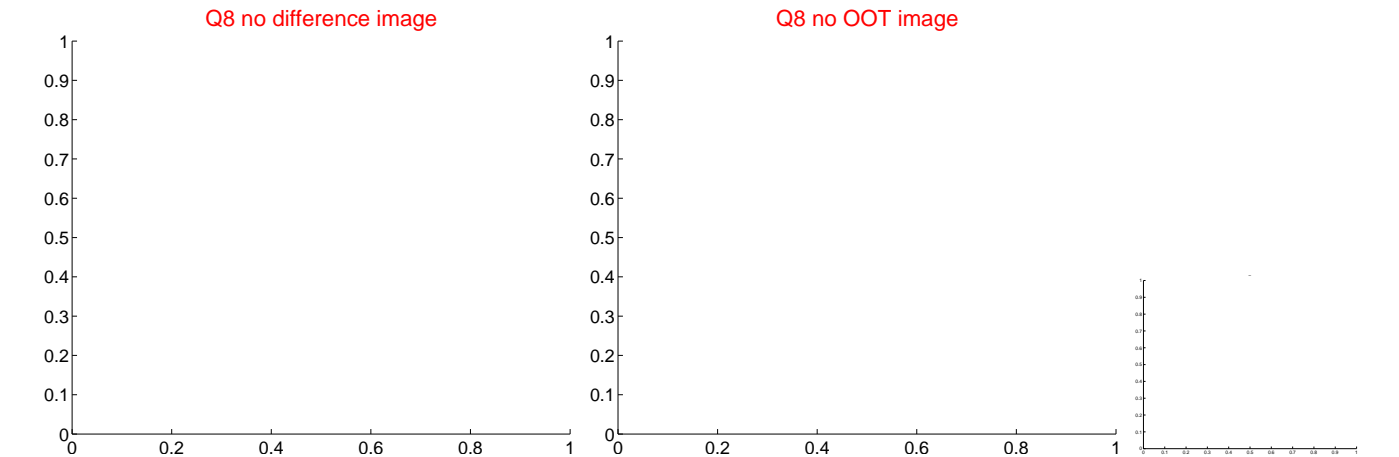
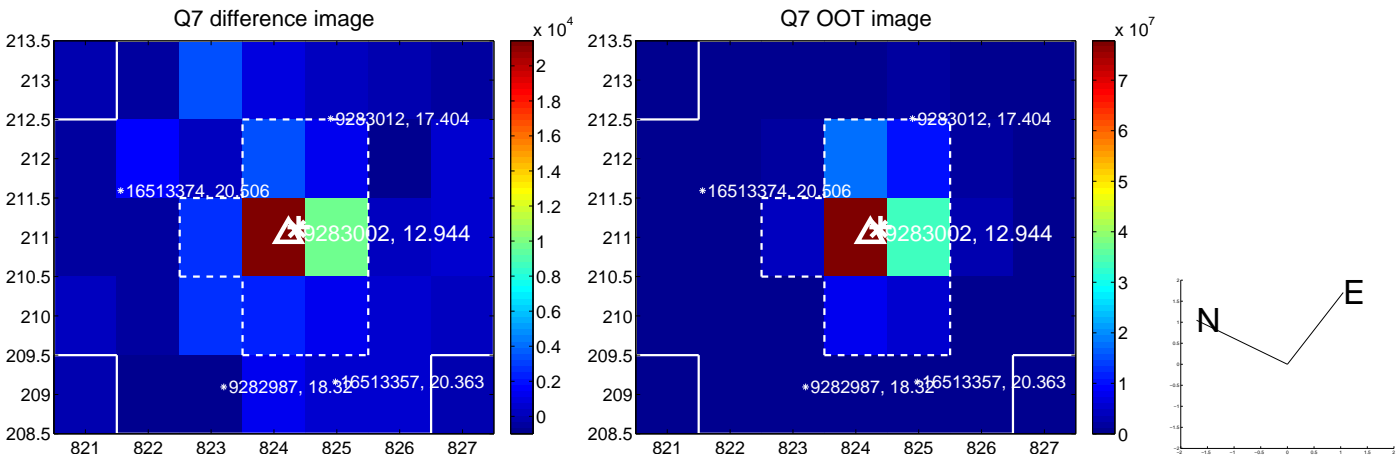
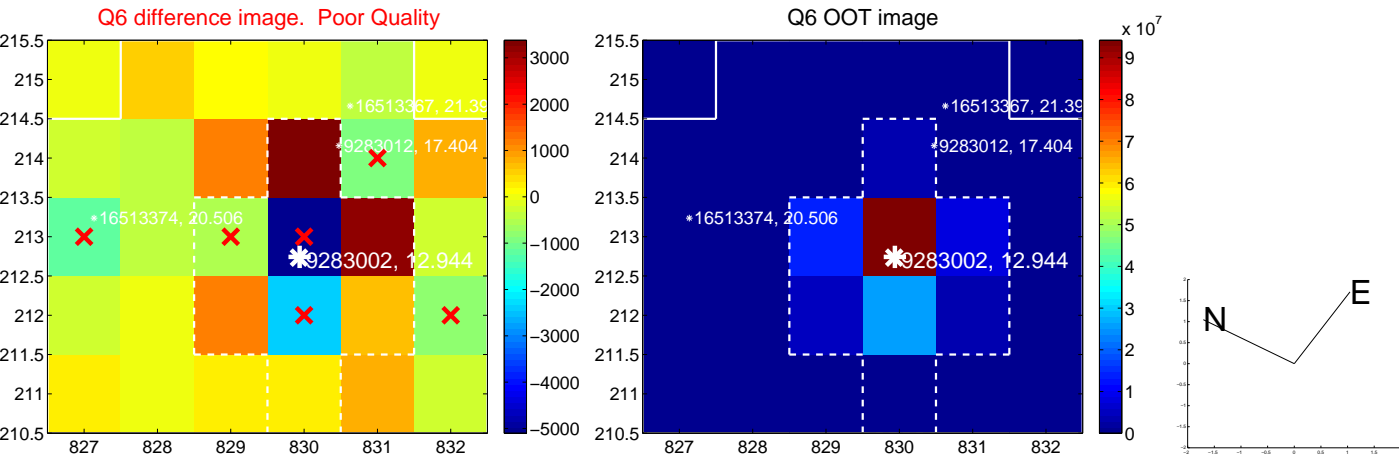
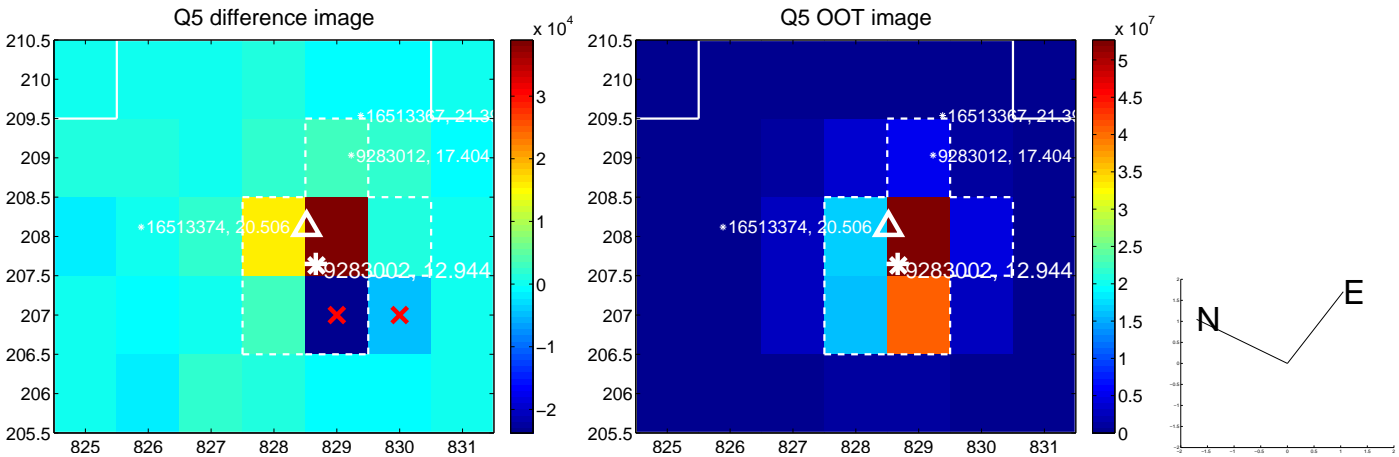


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

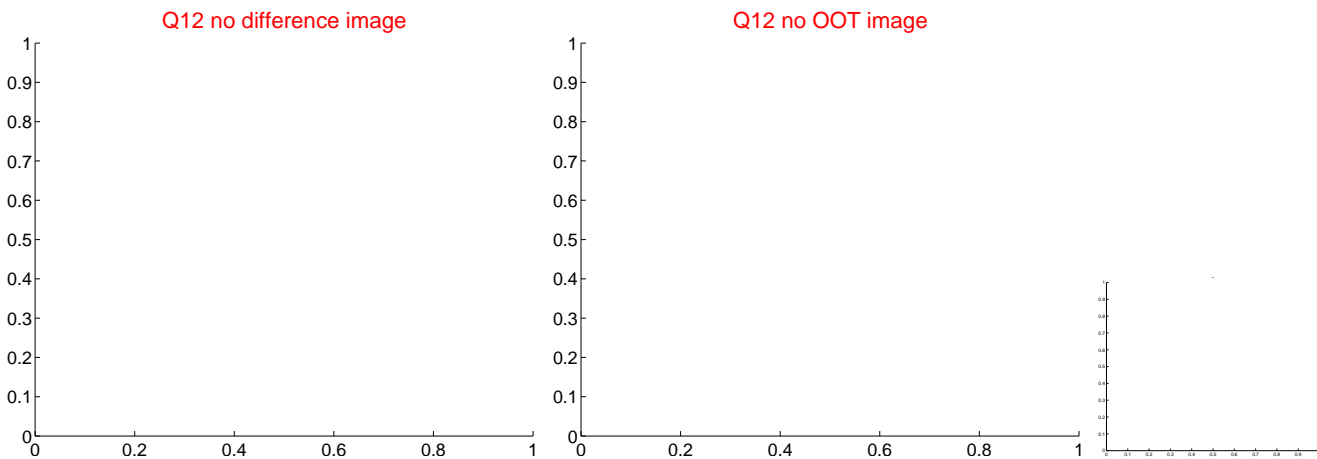
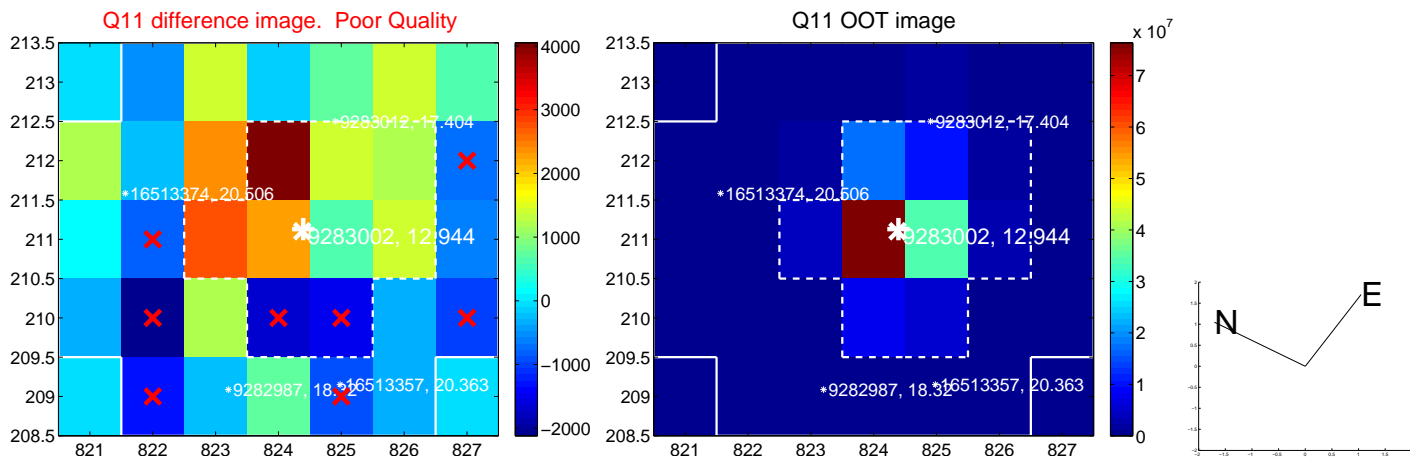
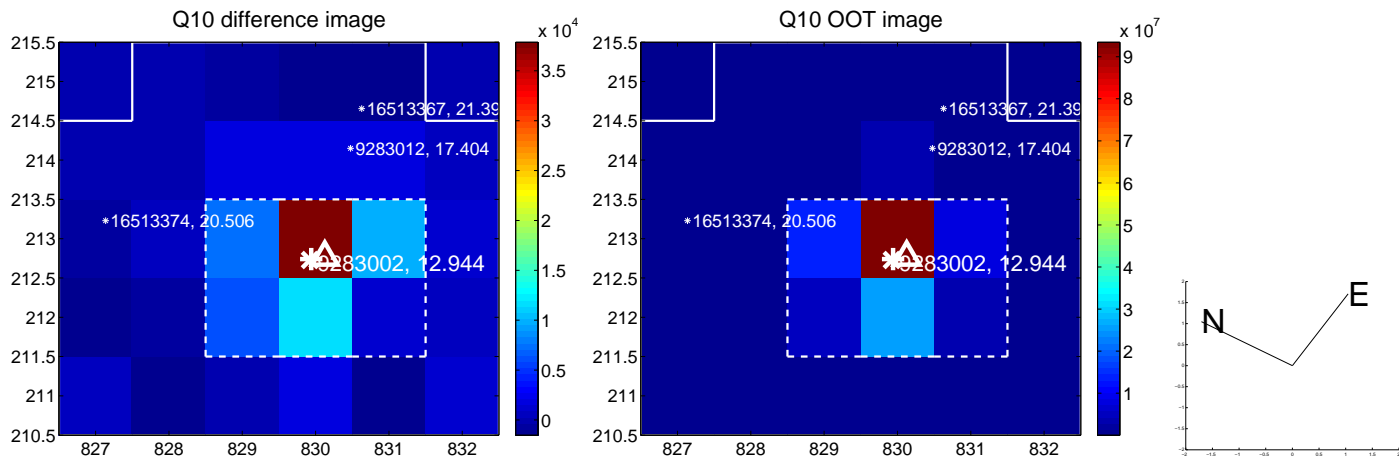
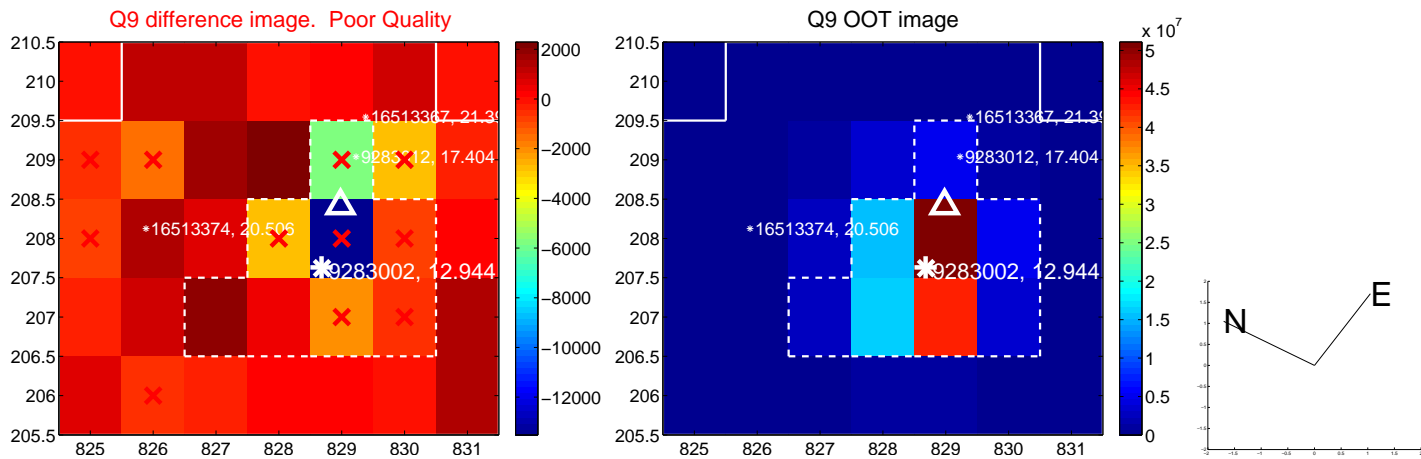
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



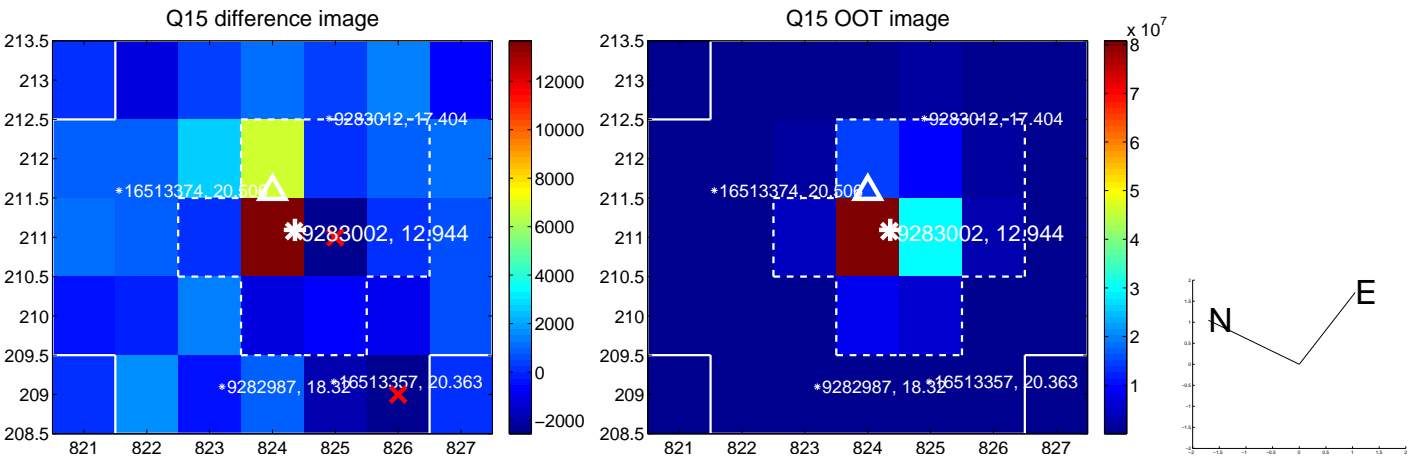
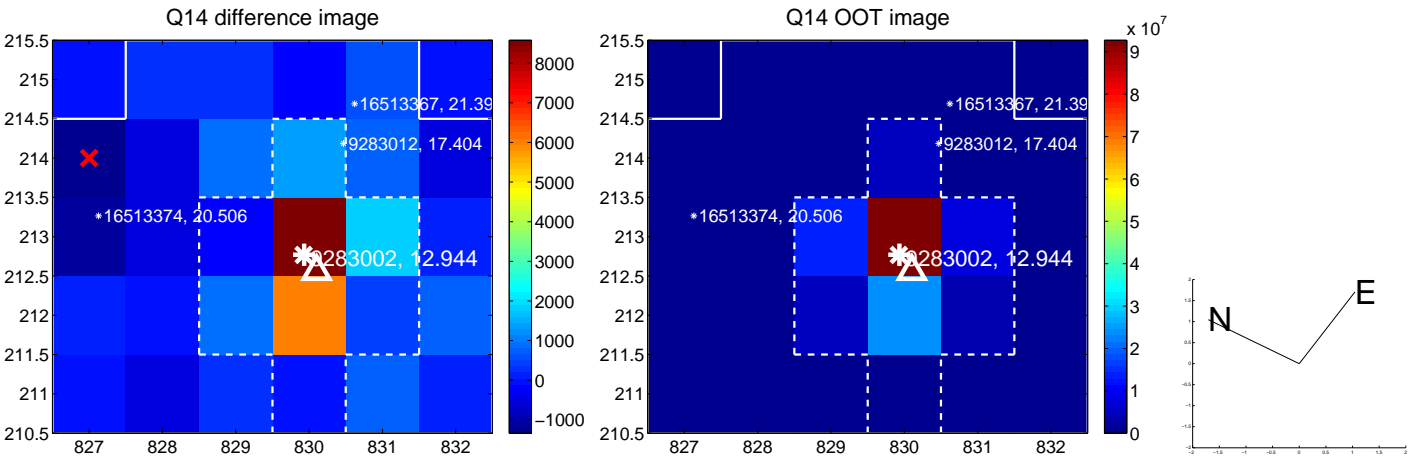
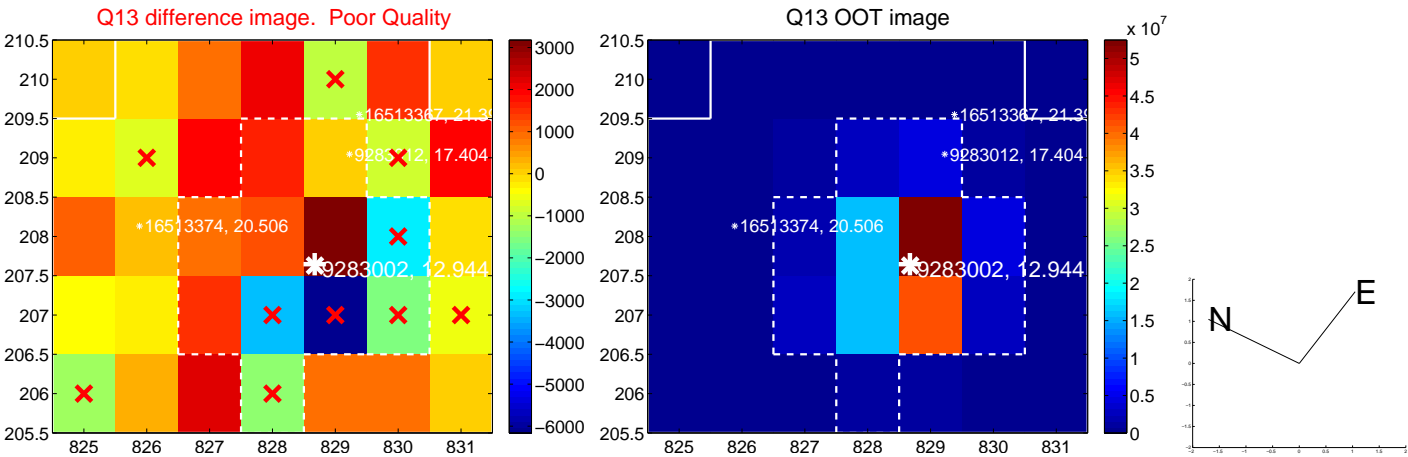
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



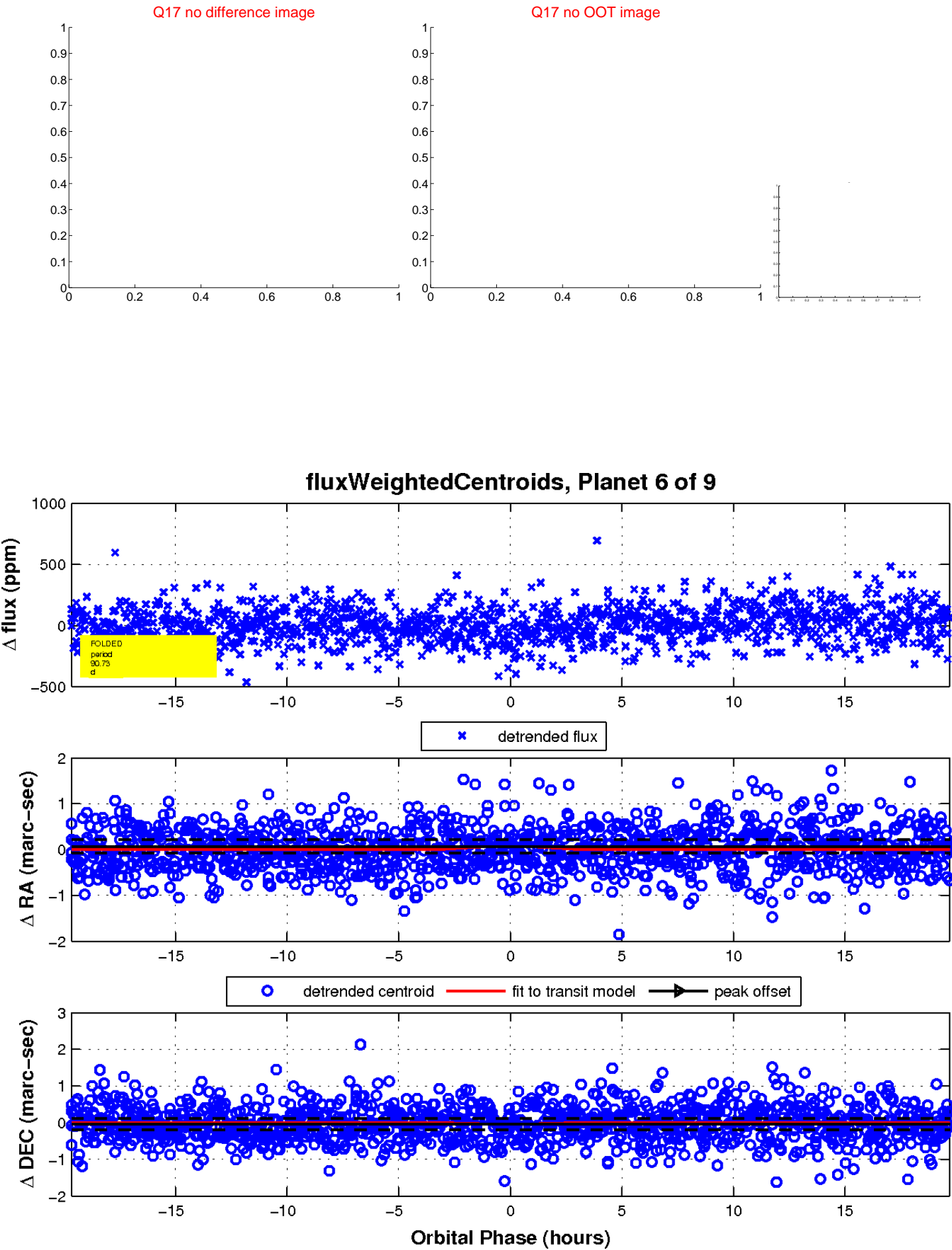
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

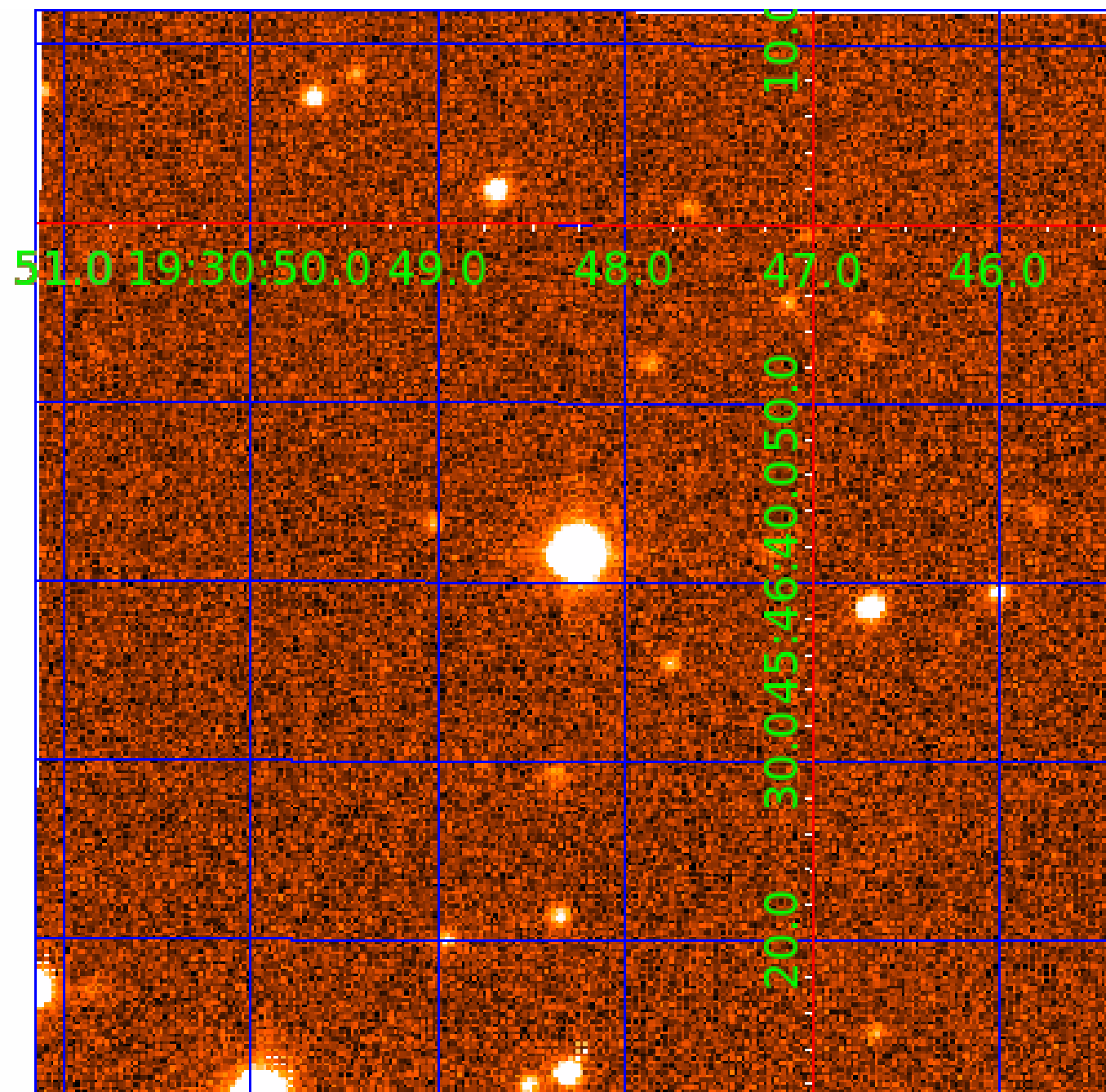


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

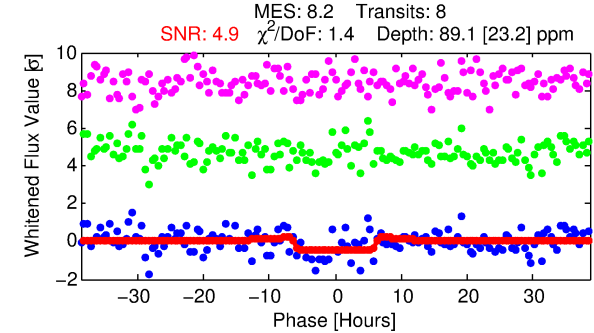
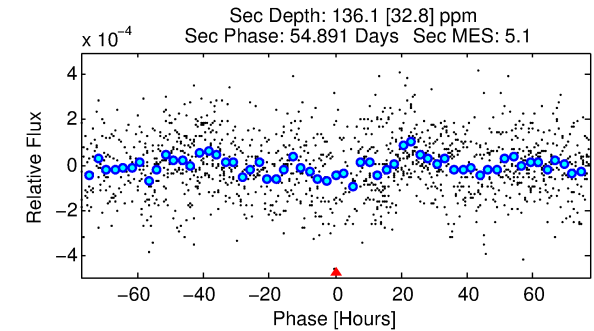
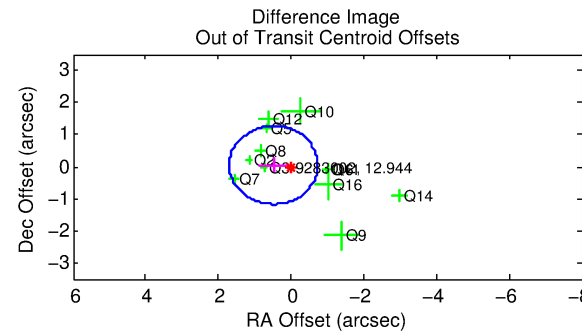
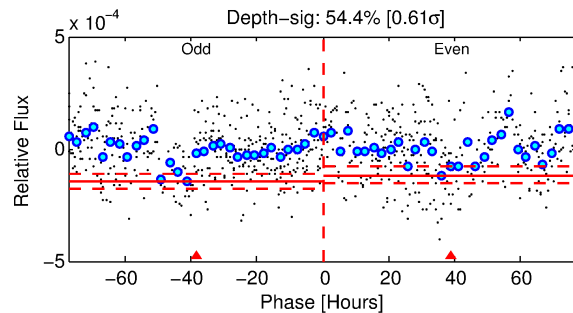
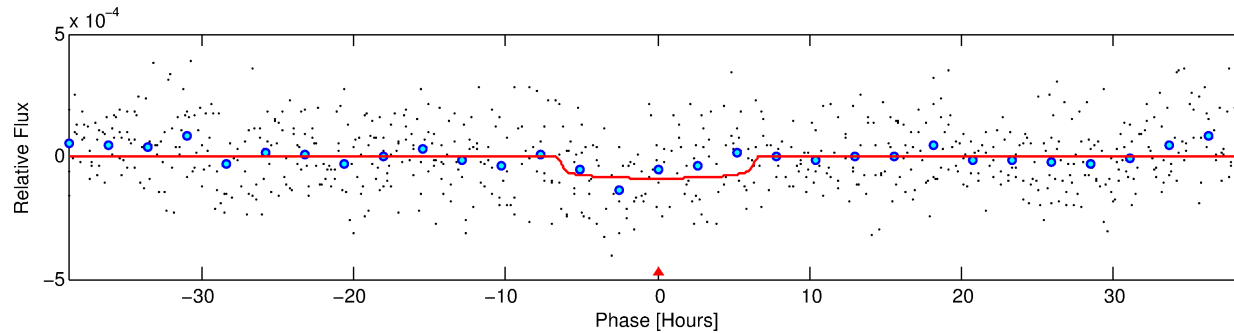
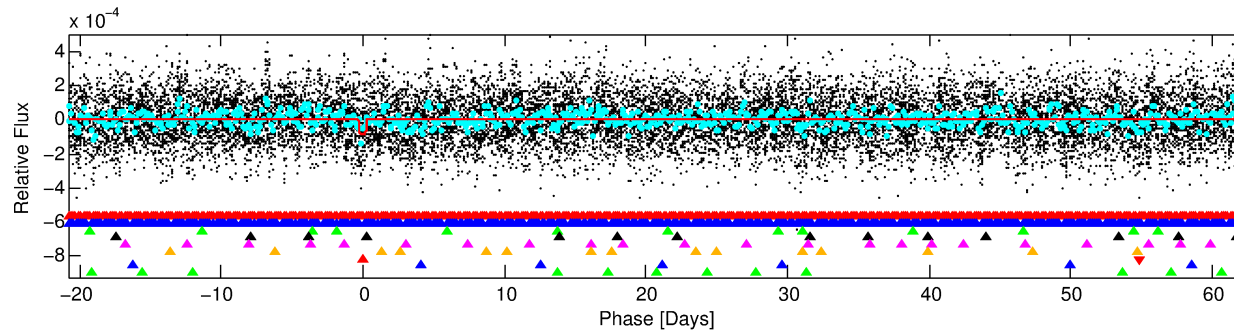
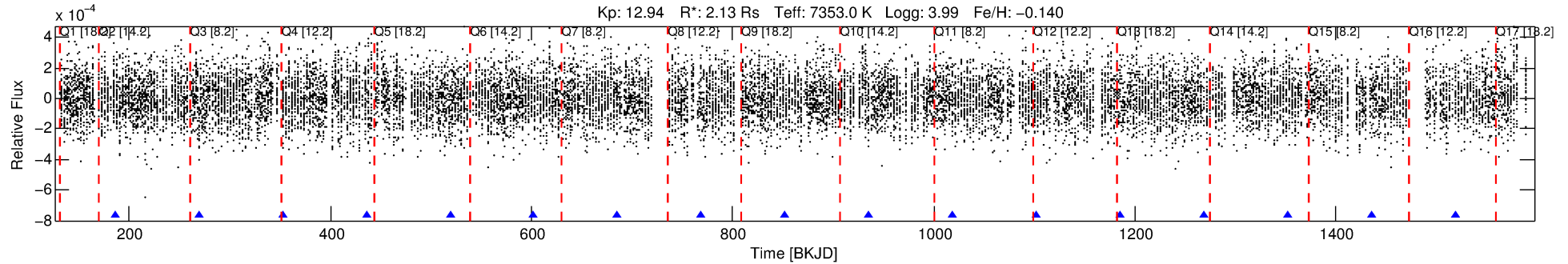
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-07

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 7 of 9 Period: 83.286 d



DV Fit Results:

Period = 83.28638 [0.00319] d
Epoch = 185.9954 [0.0292] BKJD
Rp/R* = 0.0095 [0.0038]
a/R* = 30.53 [63.48]
b = 0.80 [0.97]
Seff = 61.73 [27.53]
Teq = 715 [80] K
Rp = 2.21 [1.11] Re
a = 0.4381 [0.1194] AU
Ag = 2933.46 [2714.45] [1.08 σ]
Teffp = 8133 [1717] K [4.32 σ]

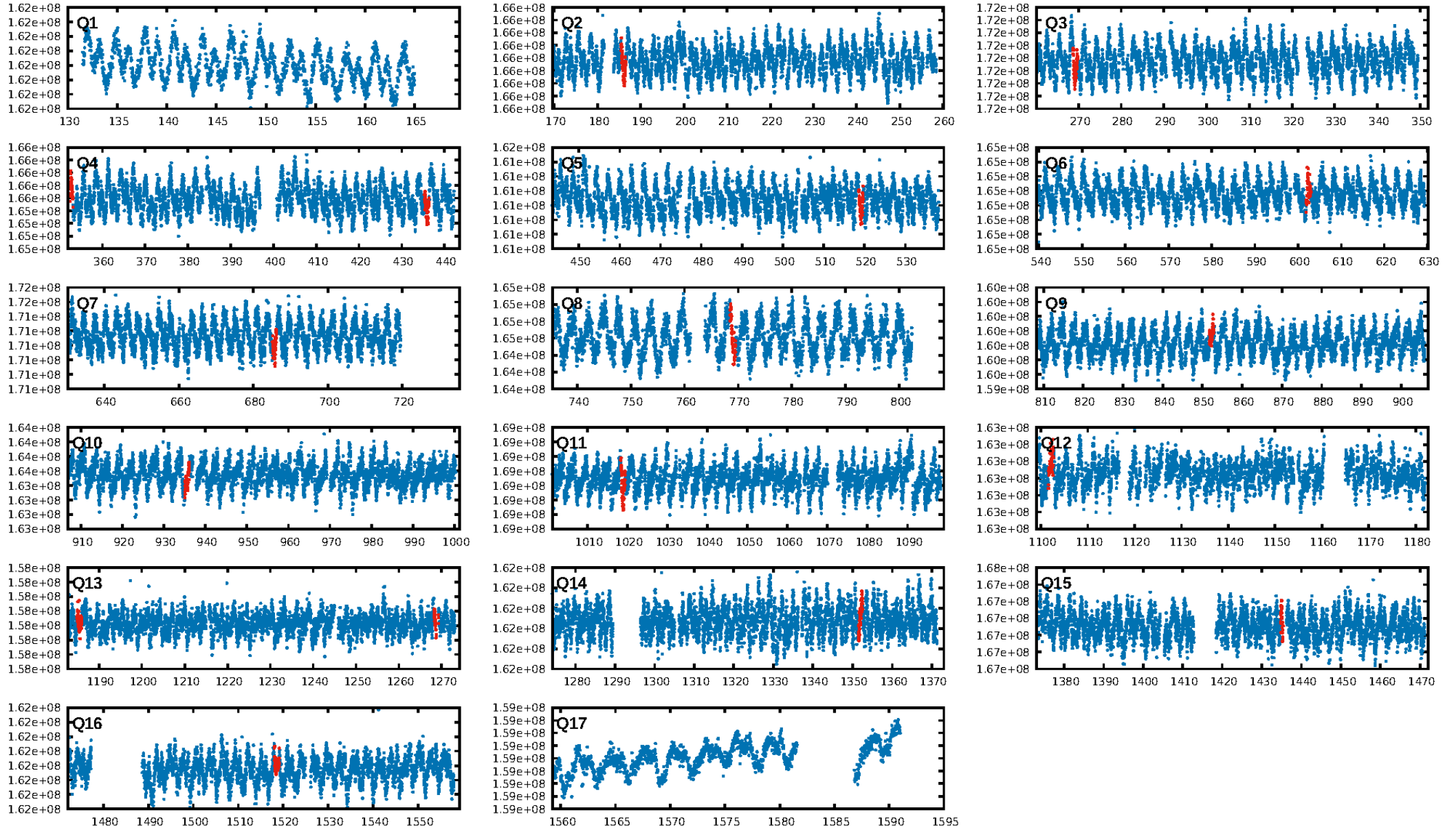
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.93 σ]
LongPeriod-sig: 100.0% [12.32 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.30e-08
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 23.15
Centroid-sig: 0.0%
Centroid-so: 3.248 arcsec [3.35 σ]
OotOffset-rm: 0.491 arcsec [1.21 σ]
KicOffset-rm: 0.571 arcsec [1.36 σ]
OotOffset-st: 4/3/3/2 [12]
KicOffset-st: 4/3/3/2 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.00 [0/12]

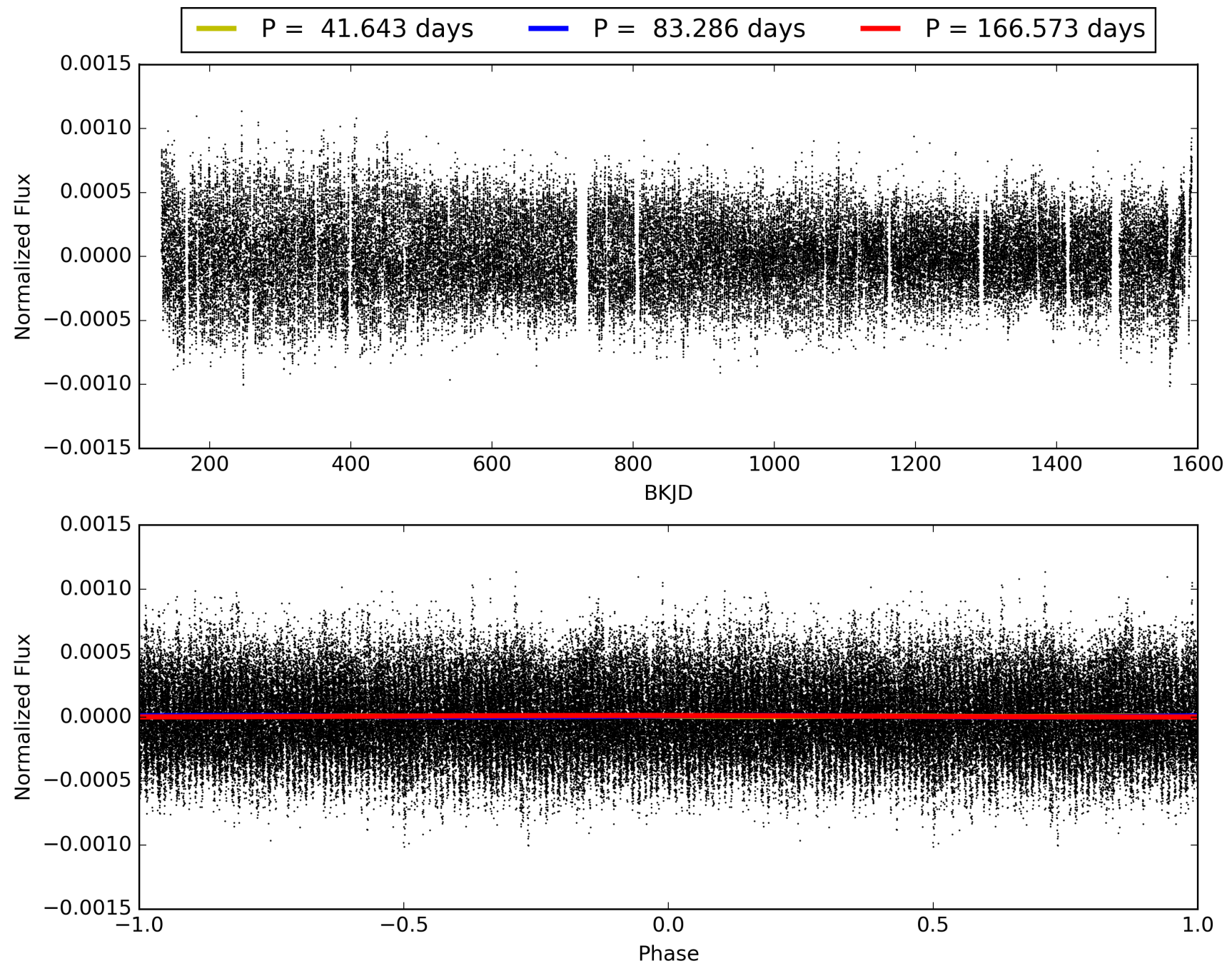
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:47 Z

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

TCE 009283002-07, PDC Light Curves

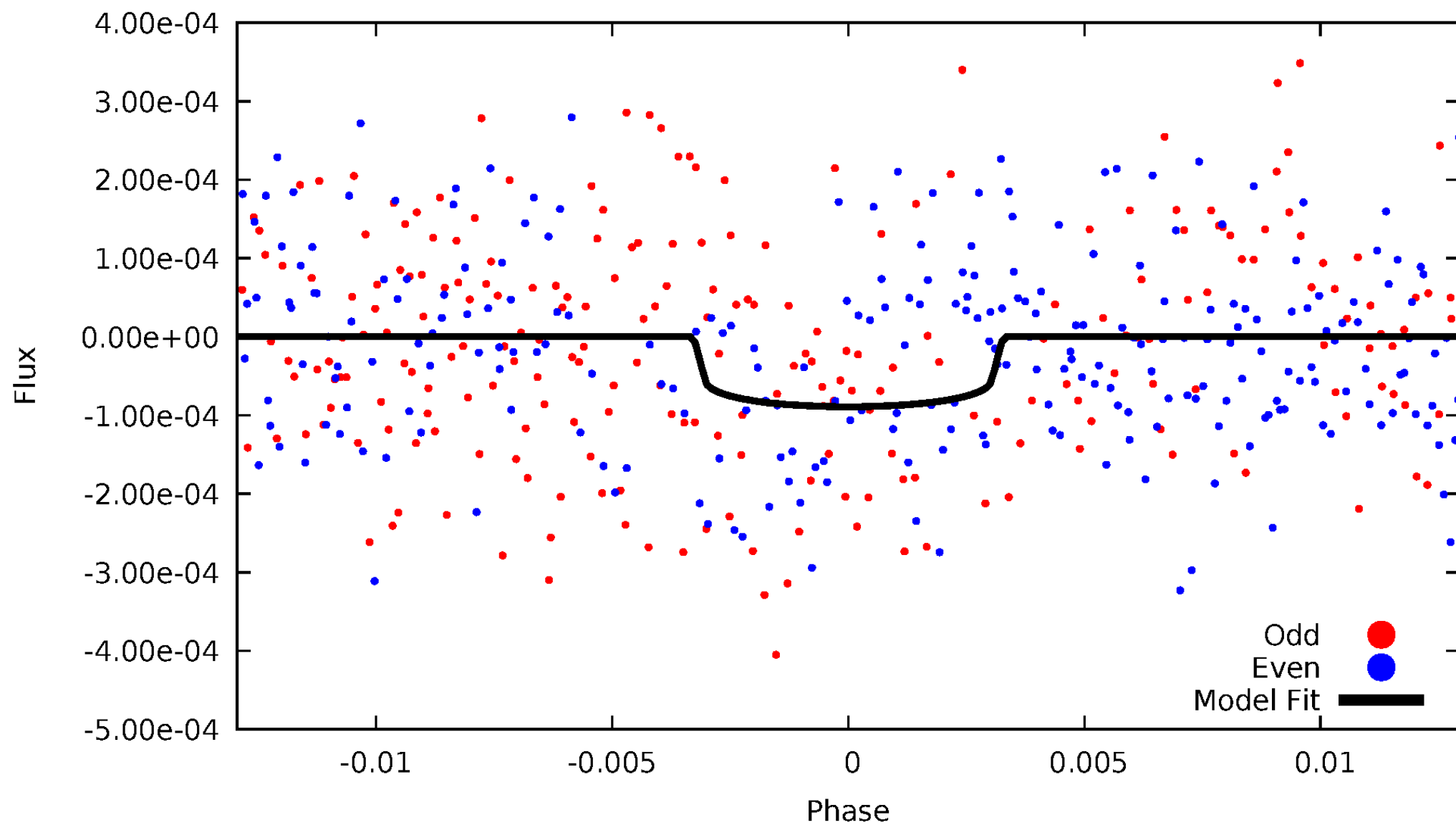


TCE 009283002-07



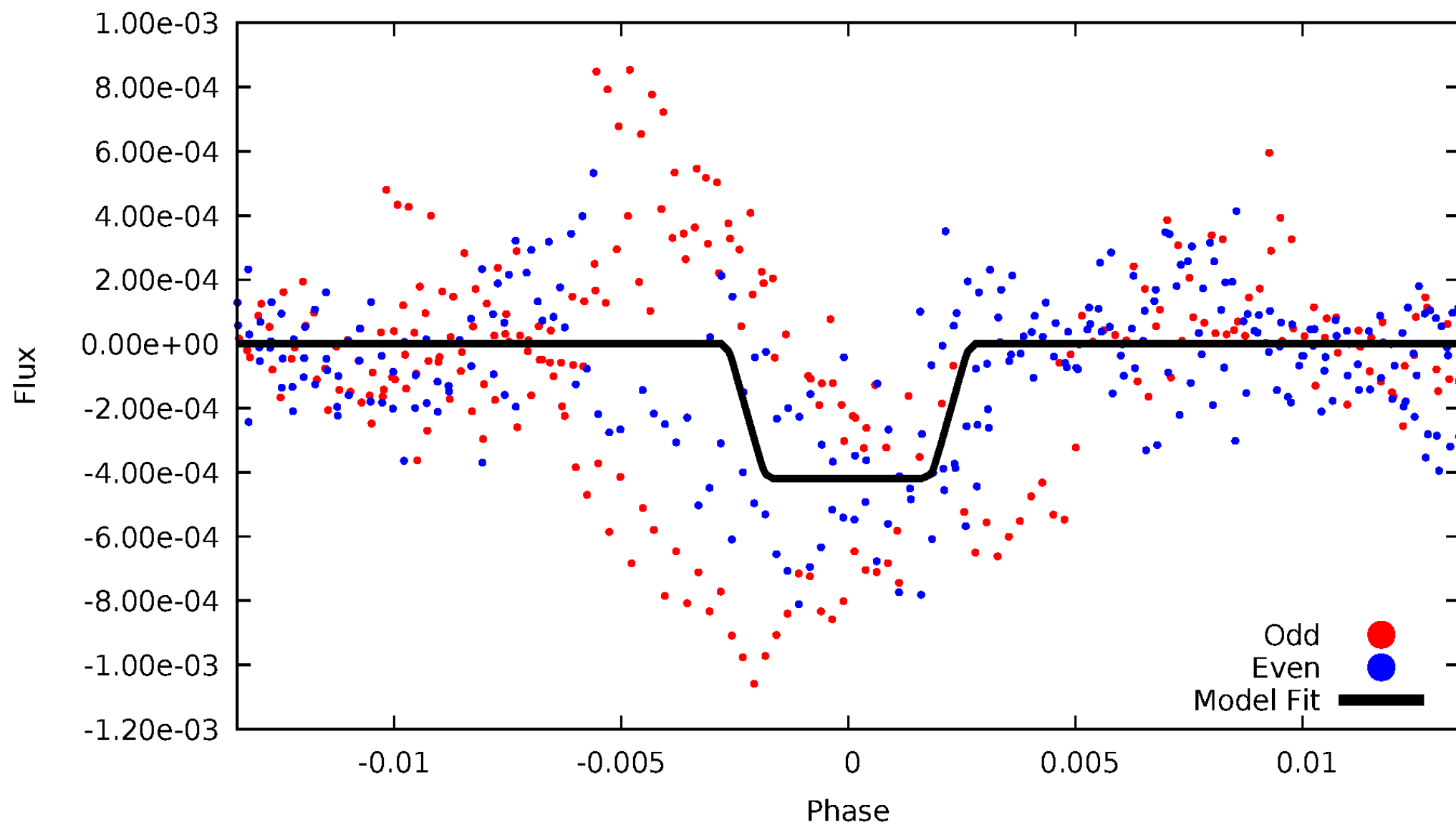
DV Odd/Even

TCE 009283002-07



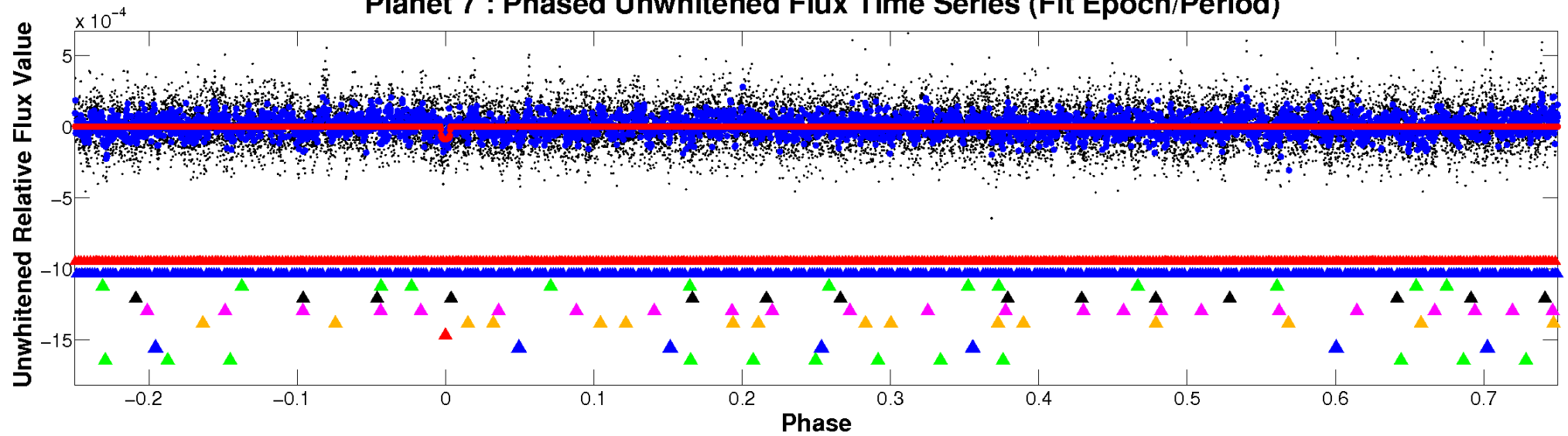
ALT Odd/Even

TCE 009283002-07

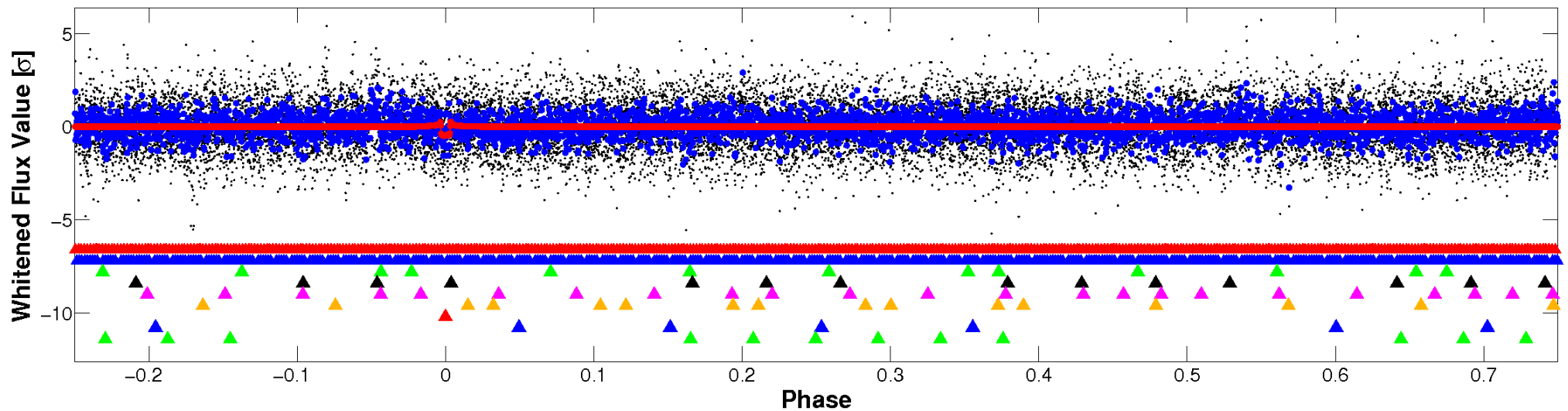


Non-Whitened Vs. Whitened Light Curve

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

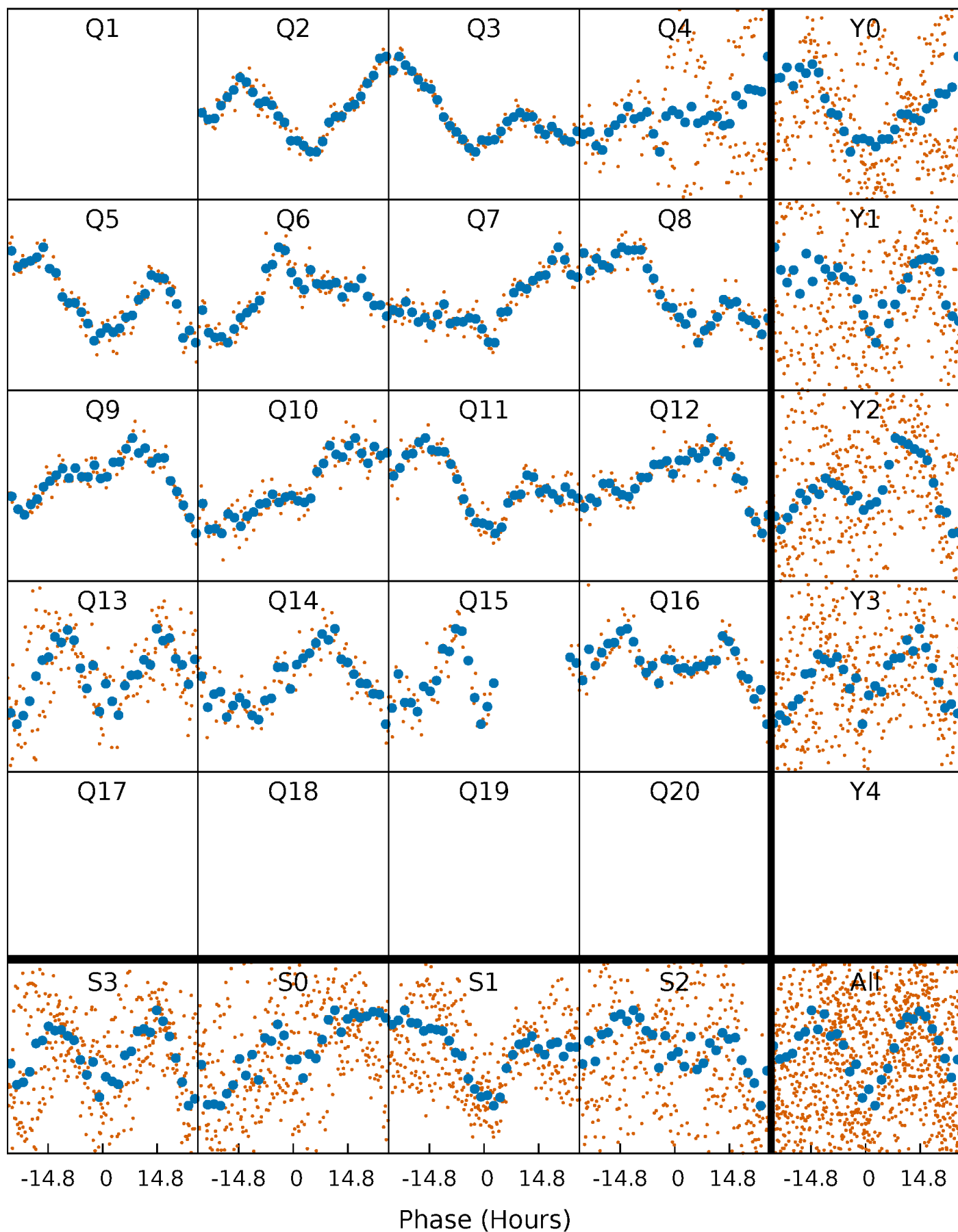


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



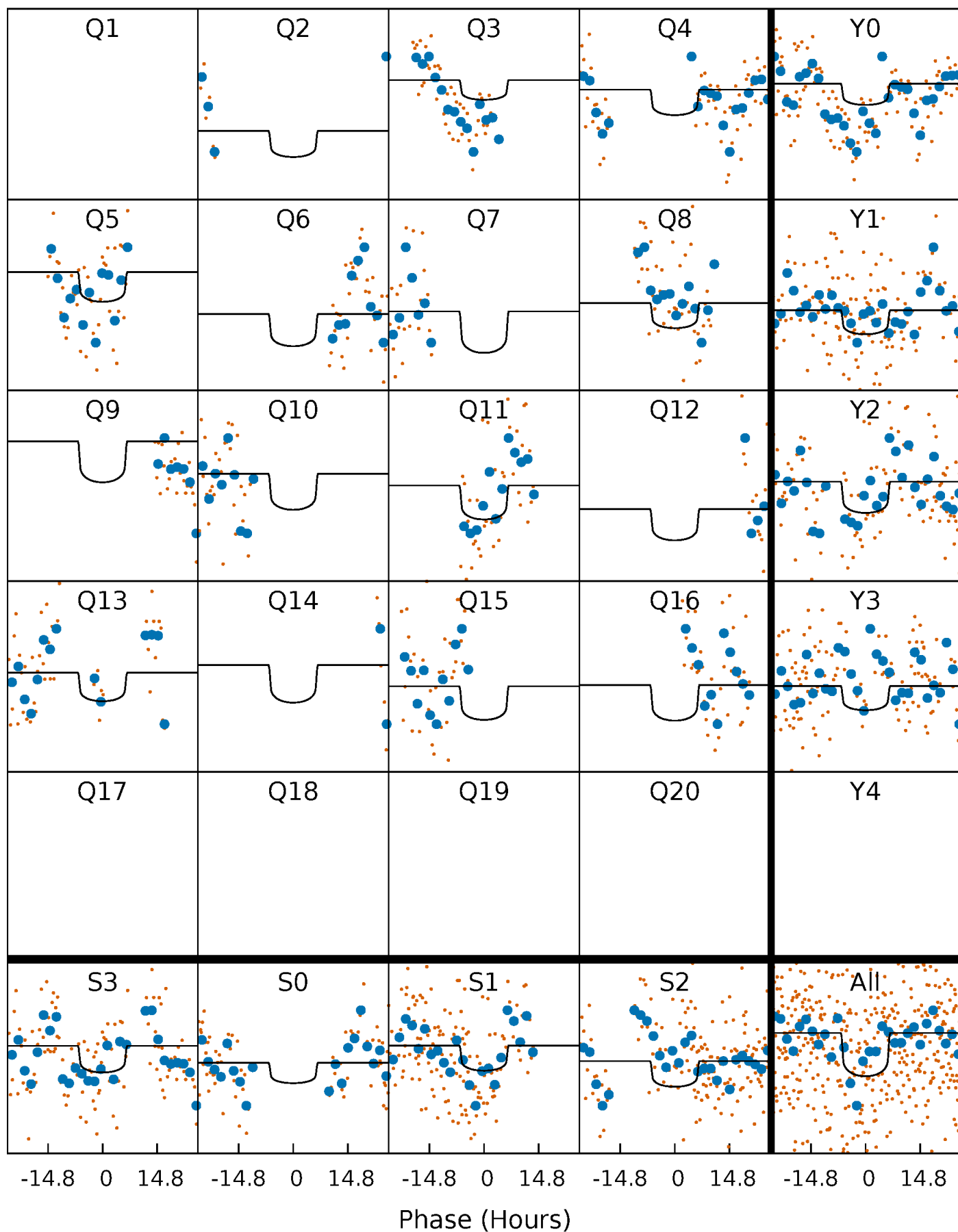
PDC Quarter-Phased Transit Curves

TCE 009283002-07 P= 83.286375 Days $T_0=185.995353$ (BKJD)



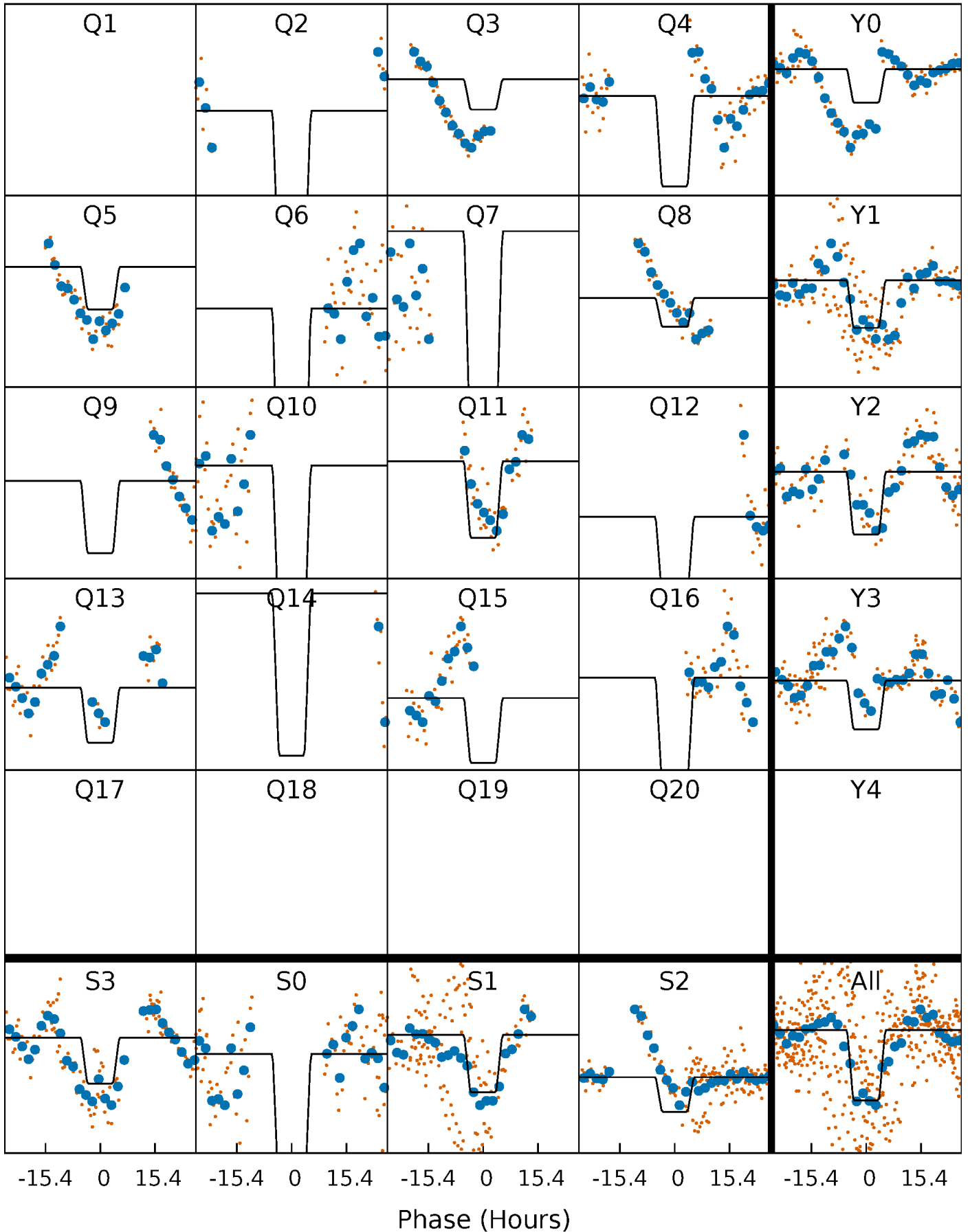
DV Quarter-Phased Transit Curves

TCE 009283002-07 $P = 83.286375$ Days $T_0 = 185.995353$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

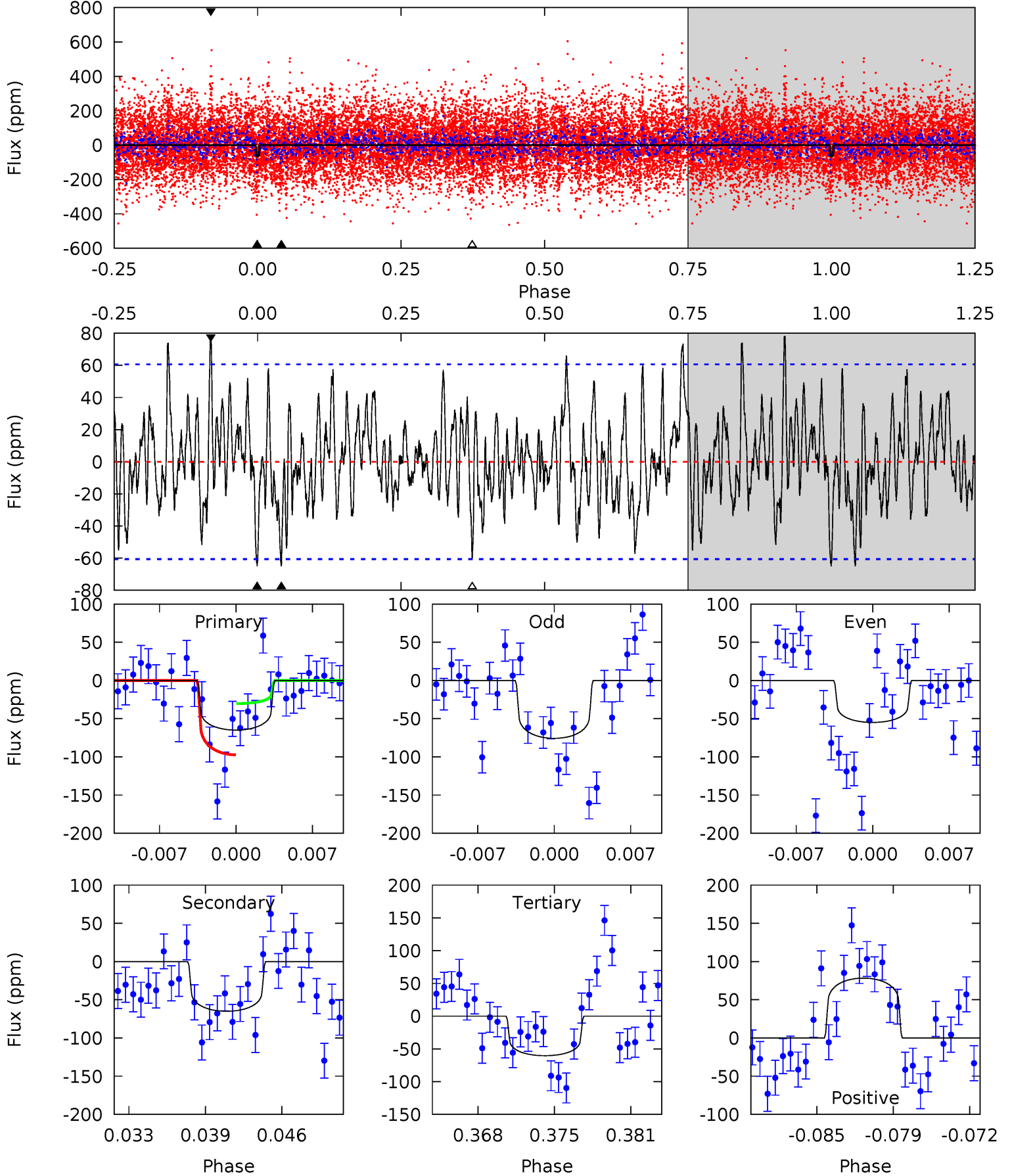
TCE 009283002-07 $P = 83.280379$ Days $T_0 = 186.046497$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-07, P = 83.286375 Days, E = 102.708978 Days

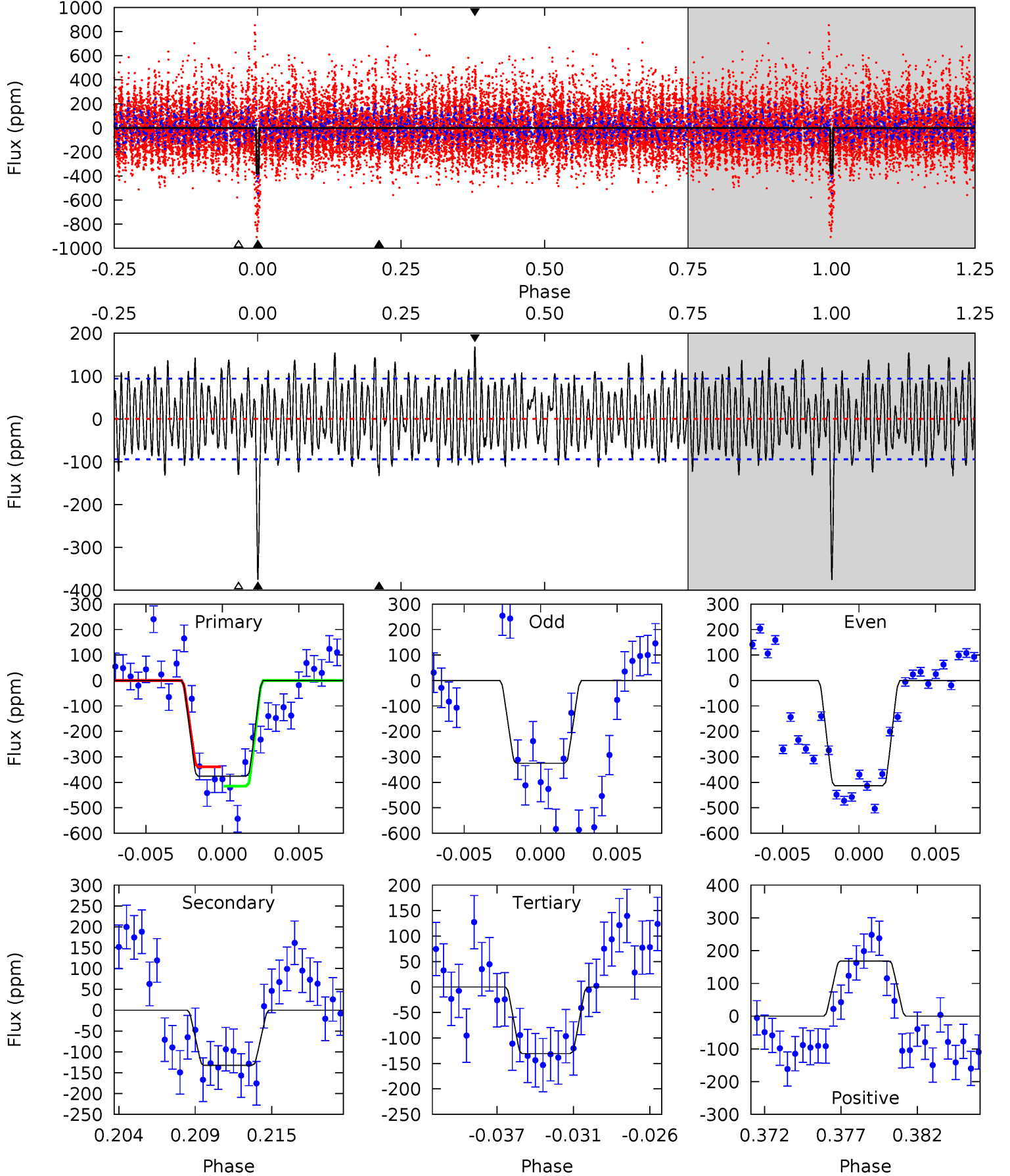
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.47	5.48	5.09	6.60	5.11	2.72	1.99	0.38	-1.13	0.39	-1.12	0.87	0.80	0.55	2.83



Alt Model-Shift Uniqueness Test

009283002-07, P = 83.280379 Days, E = 102.766118 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	7.23	7.13	9.20	5.15	2.79	3.41	13.4	11.3	0.10	-1.97	2.40	0.85	0.31	2.08



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-65 ± 12	$2.13^{+0.95}_{-0.81}$	991^{+69}_{-78}	6679^{+2060}_{-1042}	1479^{+2290}_{-777}
Alt.	-132 ± 18	$4.71^{+1.13}_{-1.21}$	992^{+77}_{-81}	5466^{+618}_{-473}	637^{+484}_{-237}

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

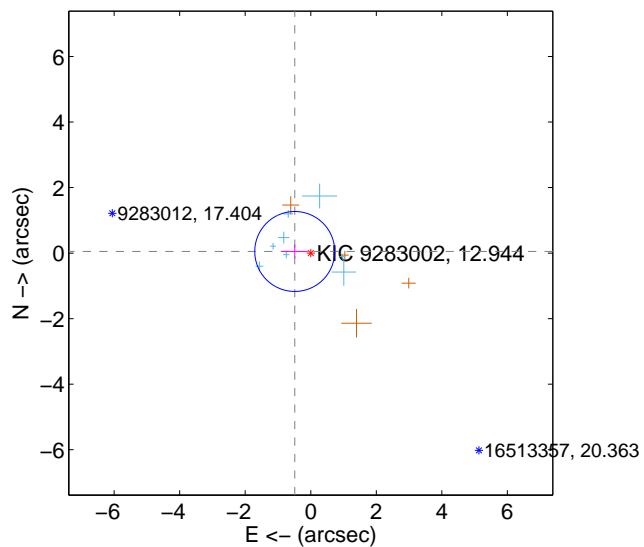
Supplemental centroid analysis for 009283002-07. Kepler magnitude: 12.94. Transit SNR 4.89

There are 8 quarters with good PRF difference image offsets

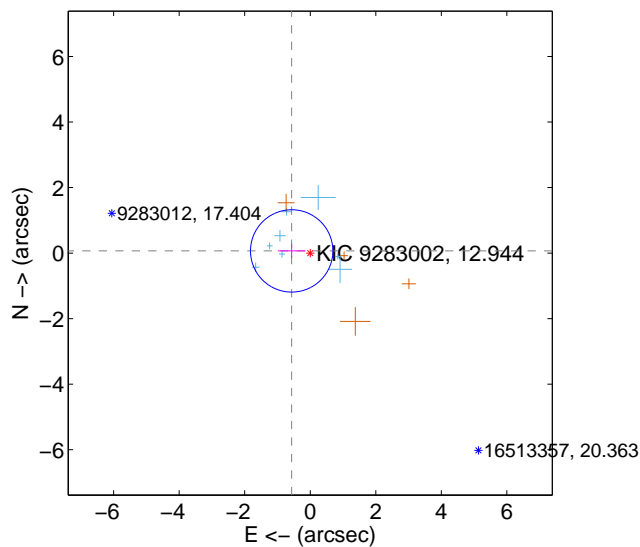
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.491 ± 0.407	1.21	0.488 ± 0.408	0.050 ± 0.212
PRF-fit source offset from KIC position	0.571 ± 0.419	1.36	0.567 ± 0.421	0.066 ± 0.215
photometric centroid source offset	3.25 ± 0.97	3.35	0.58 ± 1.00	-3.20 ± 0.97

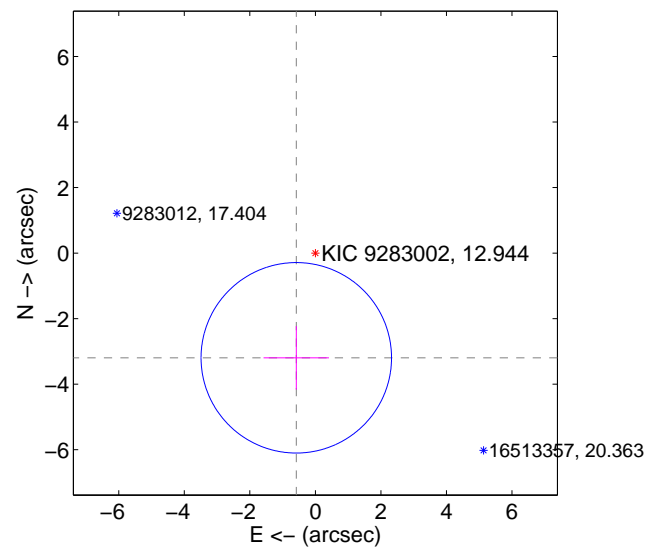
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



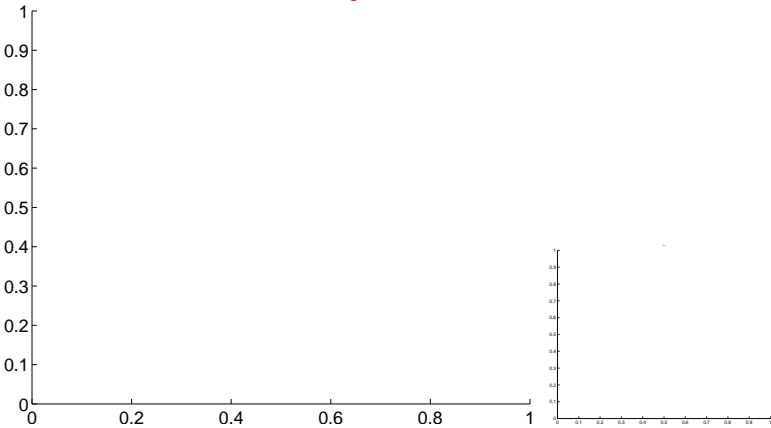
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

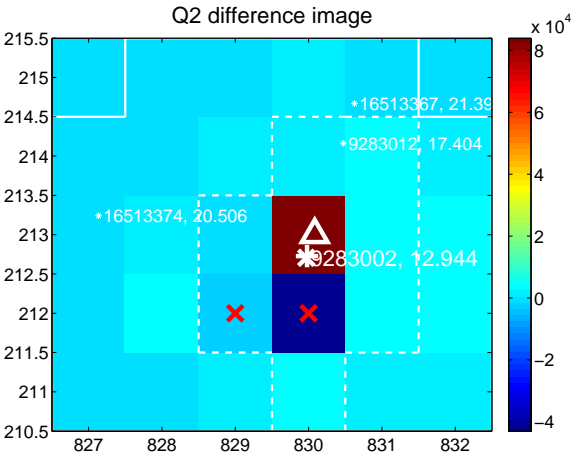
Q1 no difference image



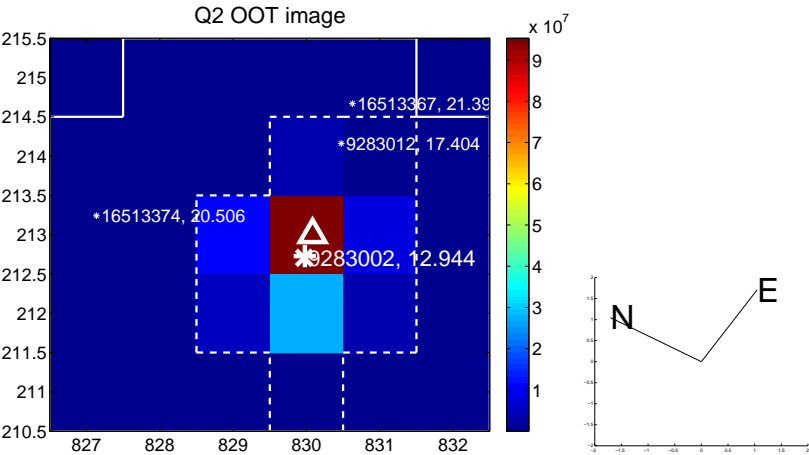
Q1 no OOT image



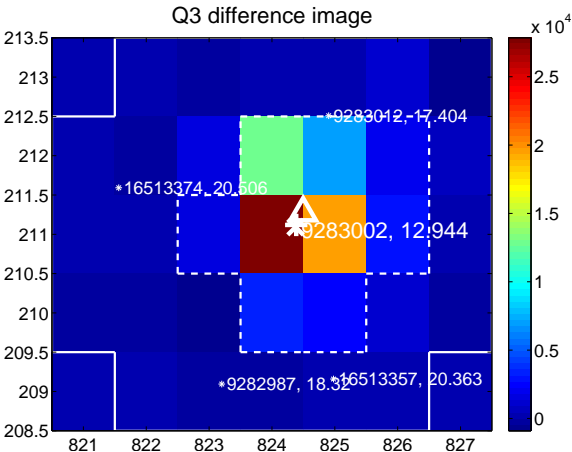
Q2 difference image



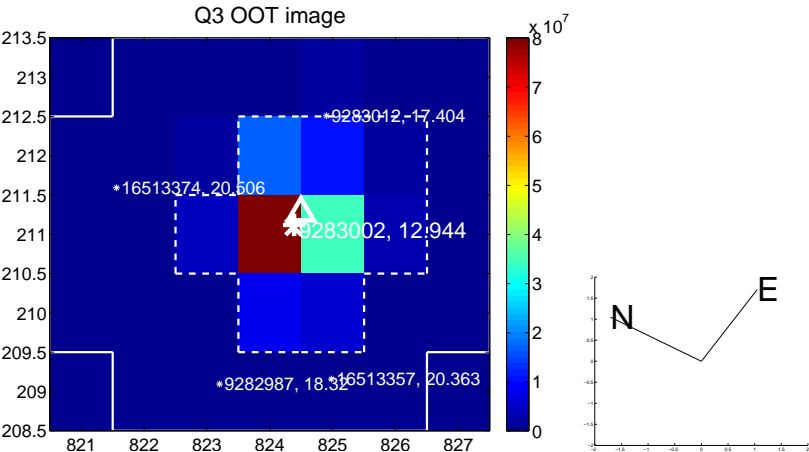
Q2 OOT image



Q3 difference image



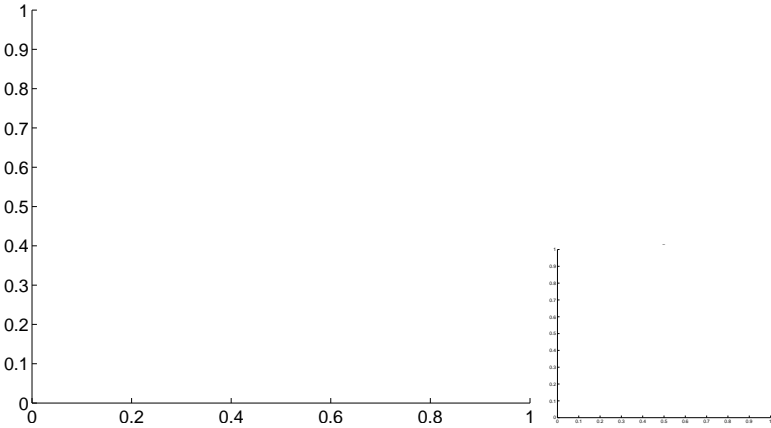
Q3 OOT image



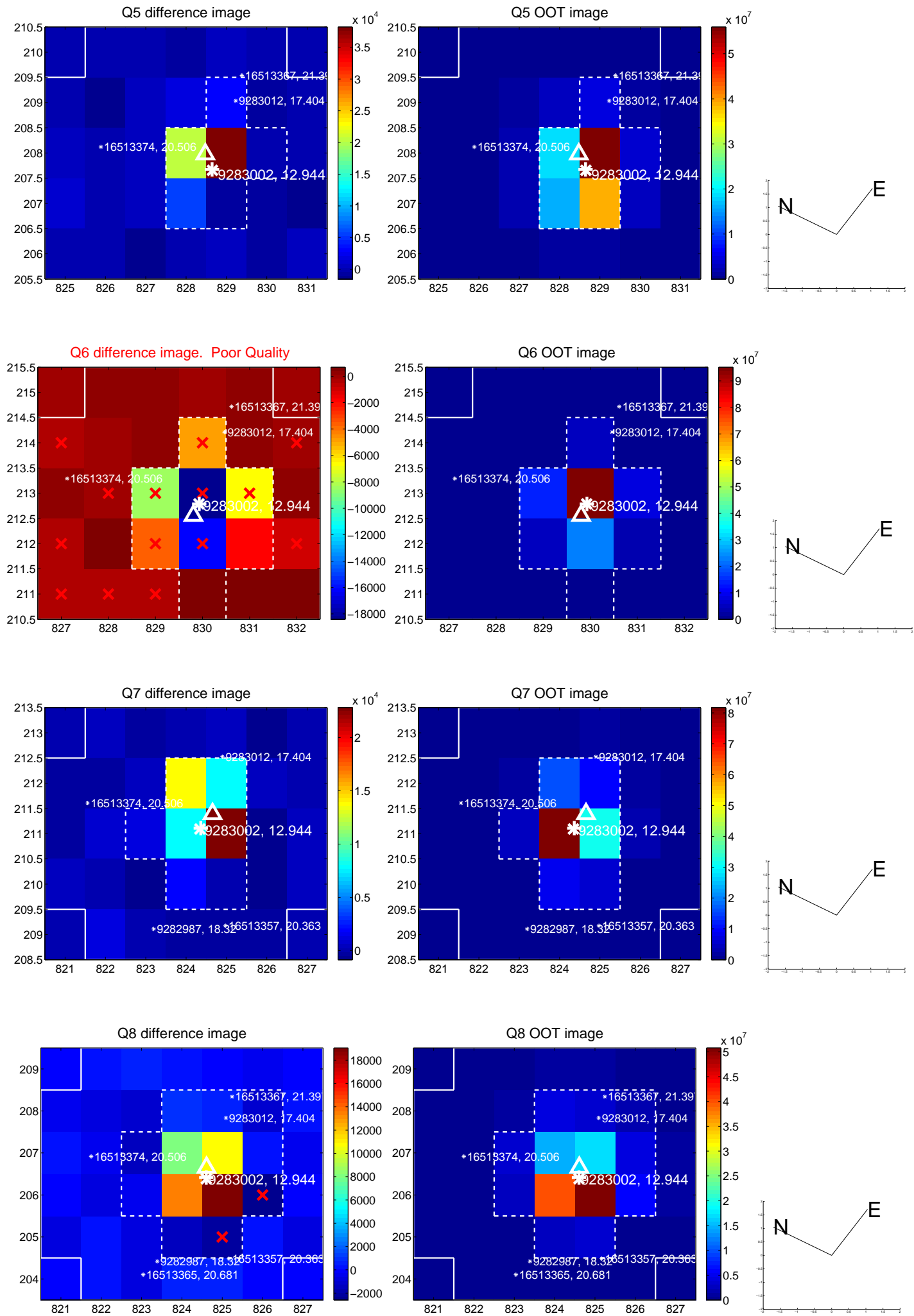
Q4 no difference image



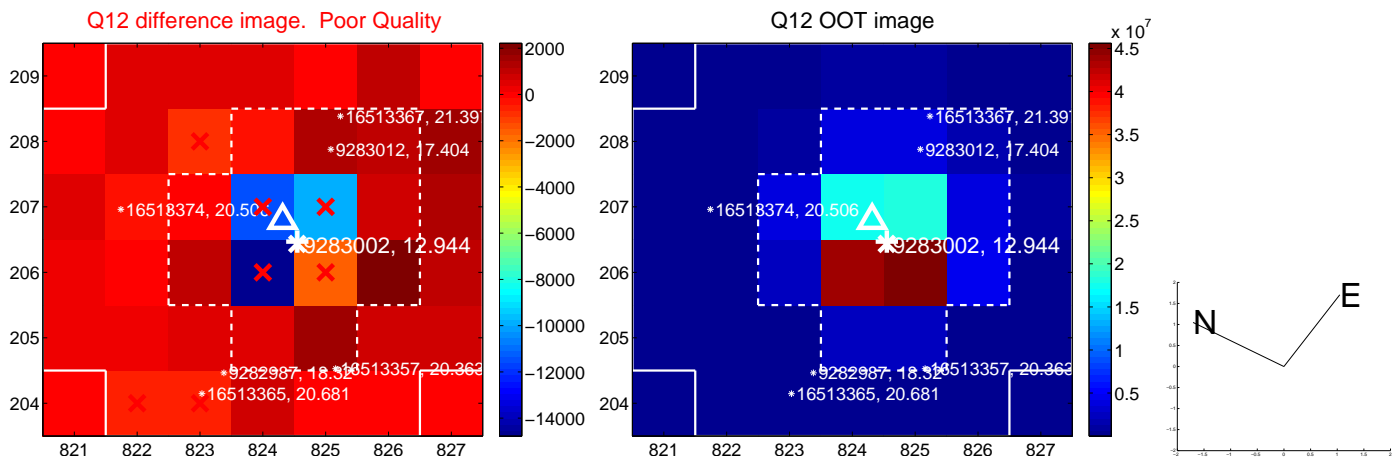
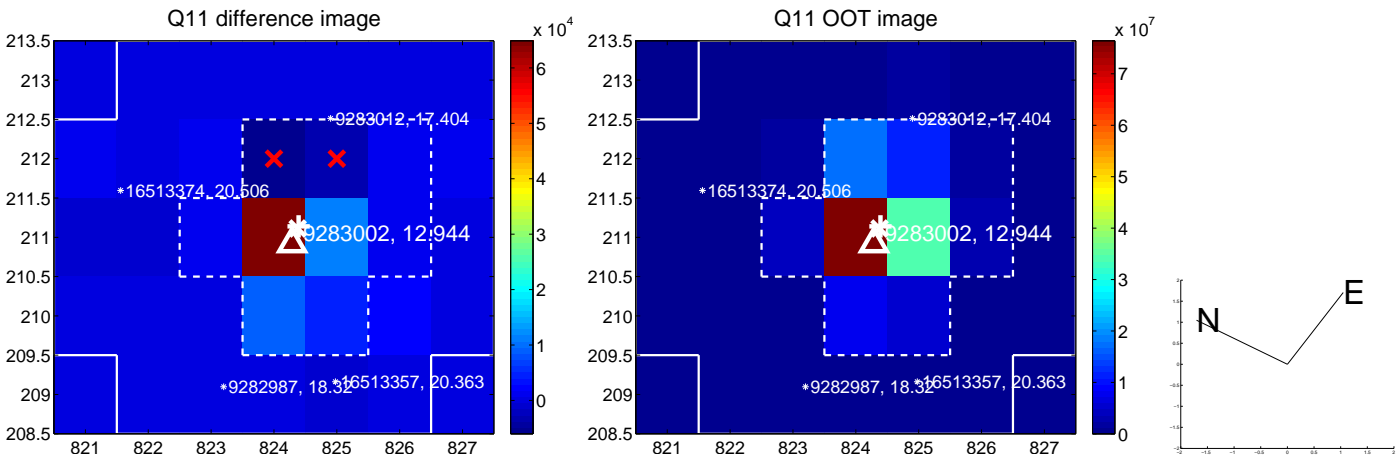
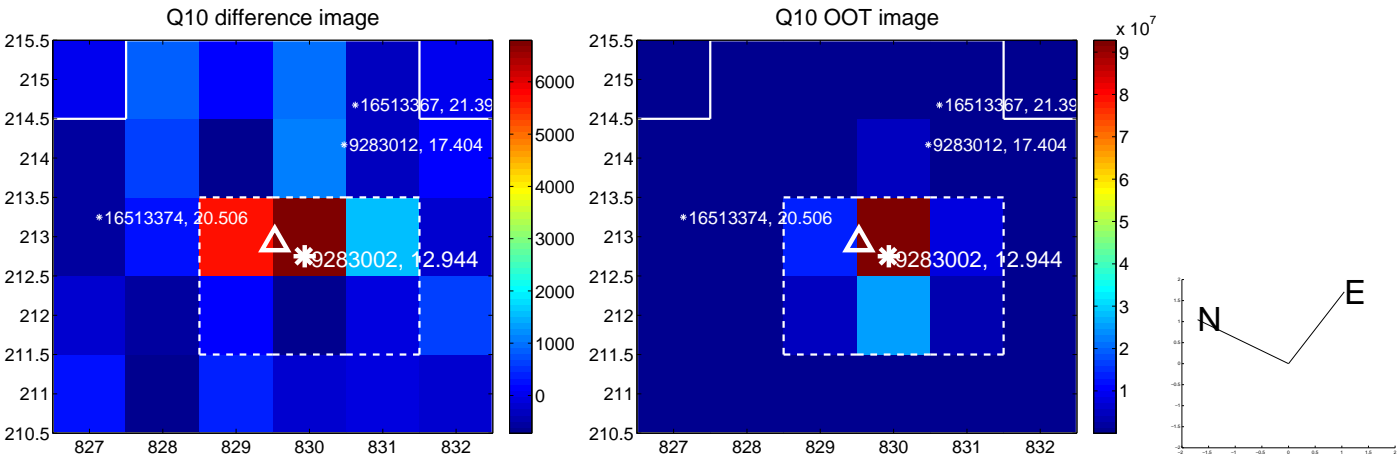
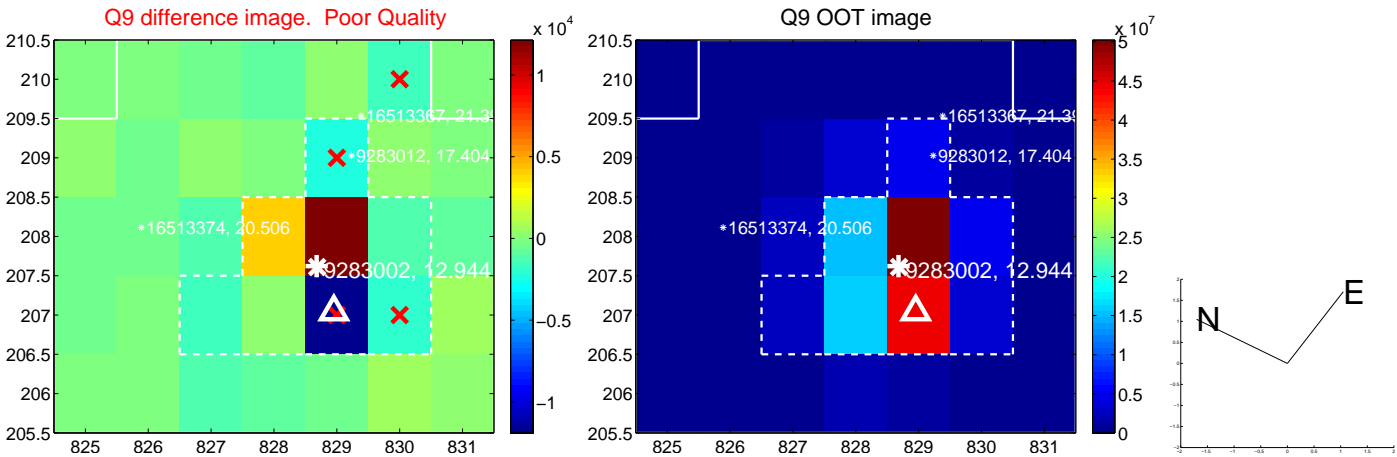
Q4 no OOT image



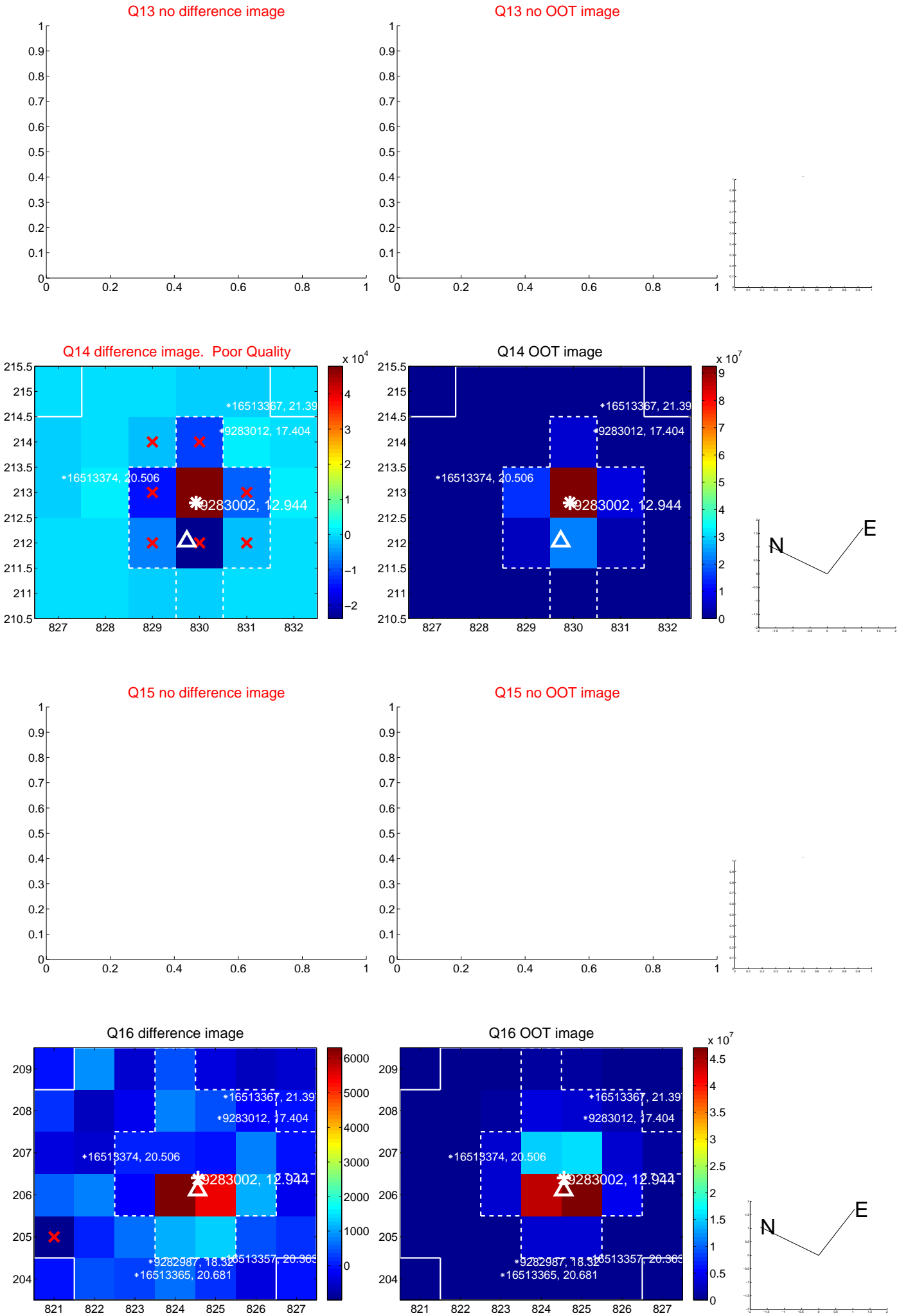
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



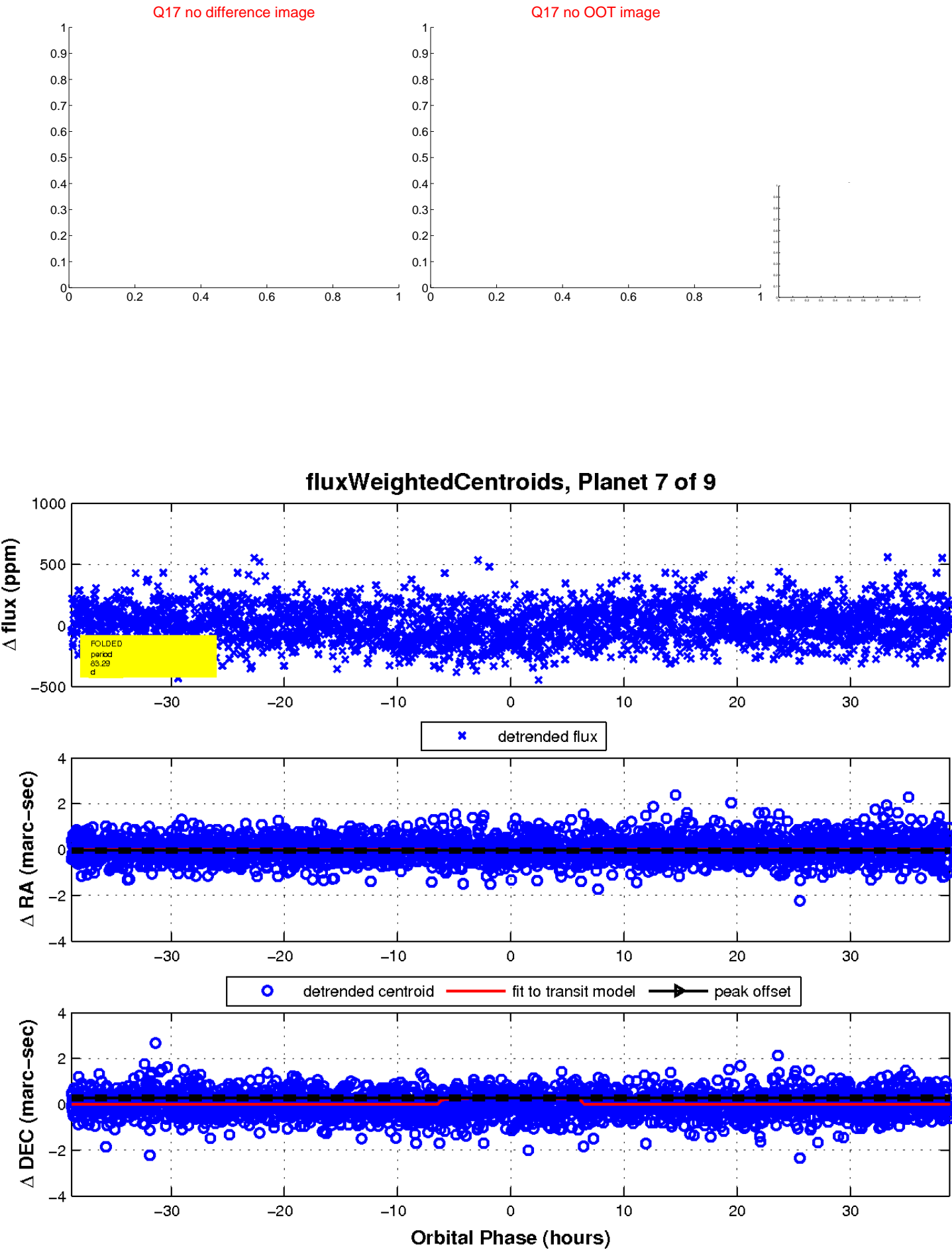
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

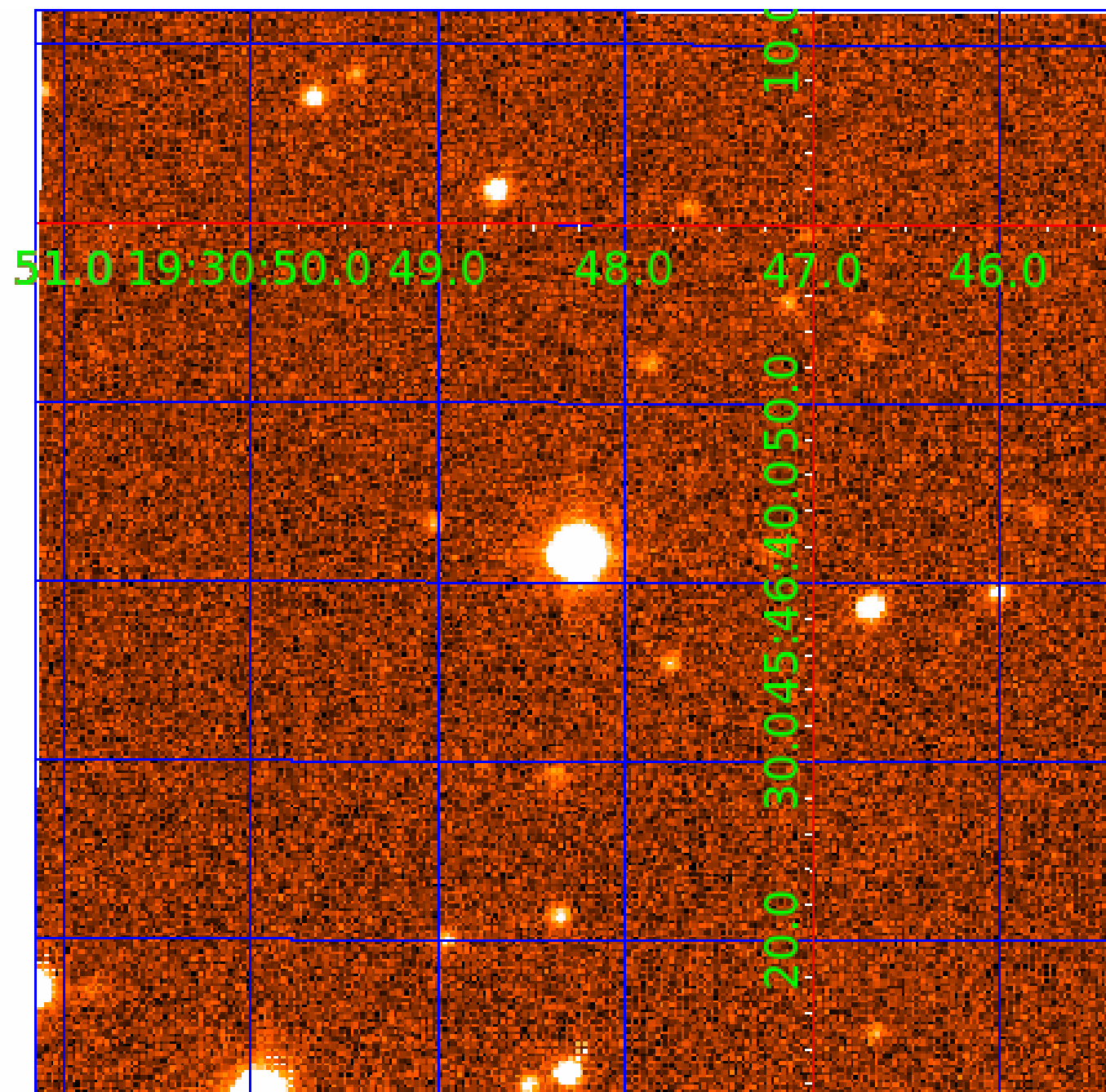


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

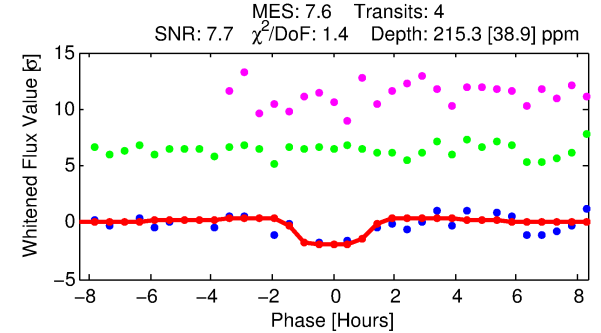
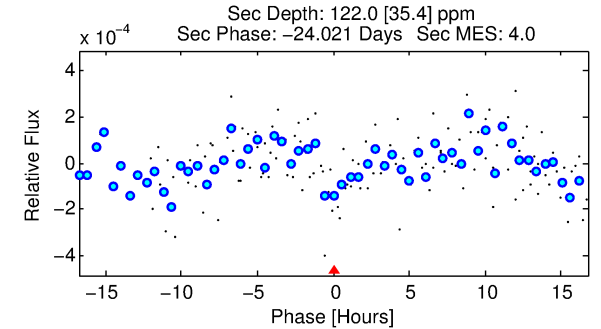
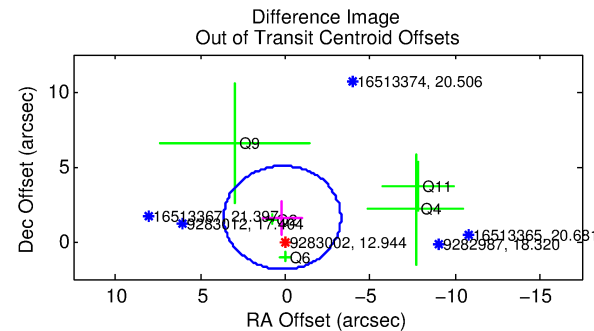
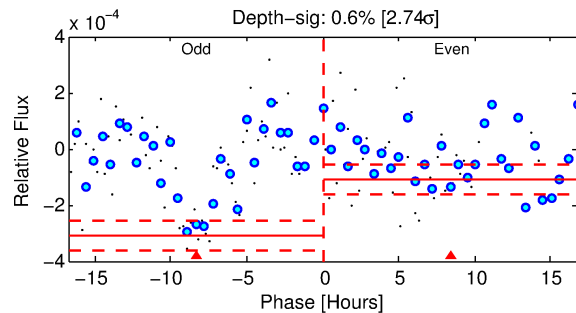
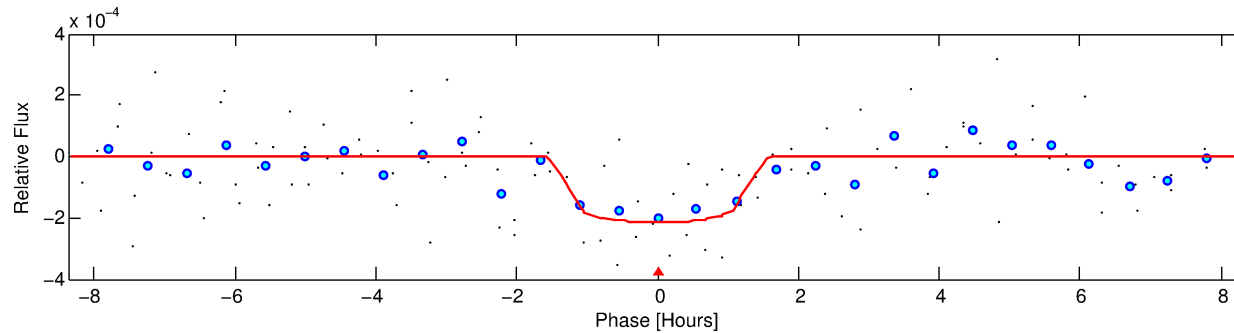
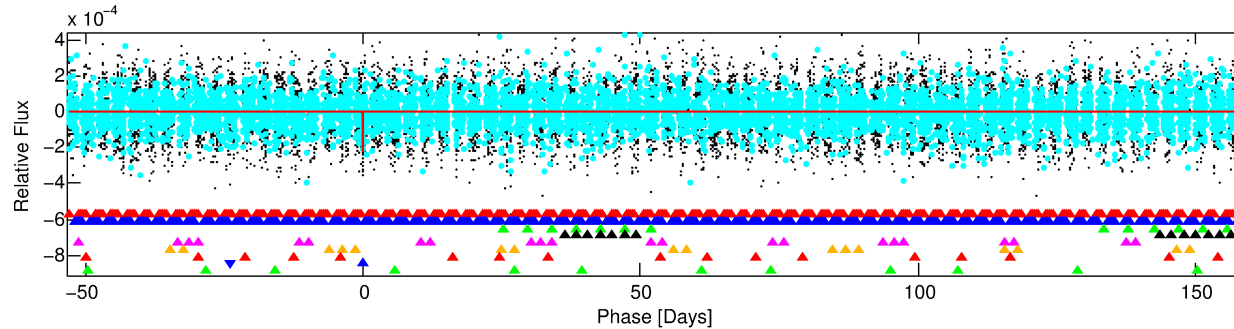
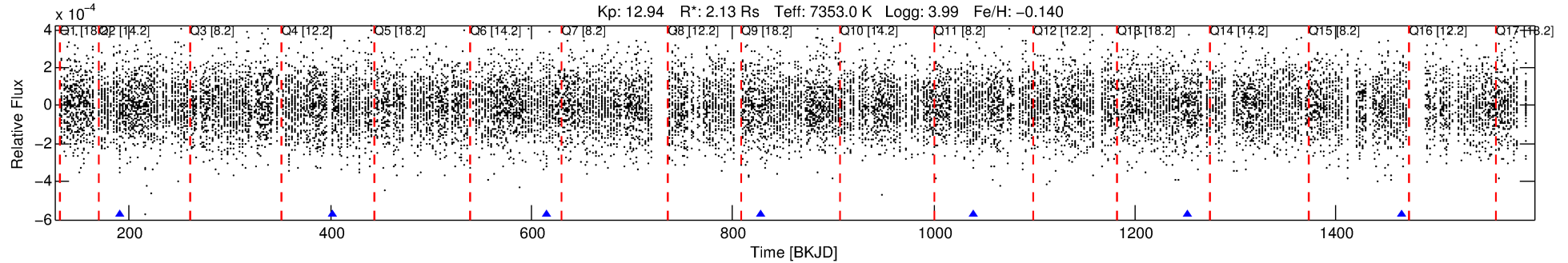
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-08

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 8 of 9 Period: 212.463 d



DV Fit Results:

Period = 212.46342 [0.00438] d
Epoch = 190.1205 [0.0087] BKJD
Rp/R* = 0.0151 [0.0162]
a/R* = 332.40 [2045.58]
b = 0.84 [2.20]
Seff = 17.71 [7.90]
Teq = 523 [58] K
Rp = 3.51 [3.92] Re
a = 0.8180 [0.2229] AU
Ag = 3650.29 [8054.27] [0.45 σ]
Teffp = 6286 [3416] K [1.69 σ]

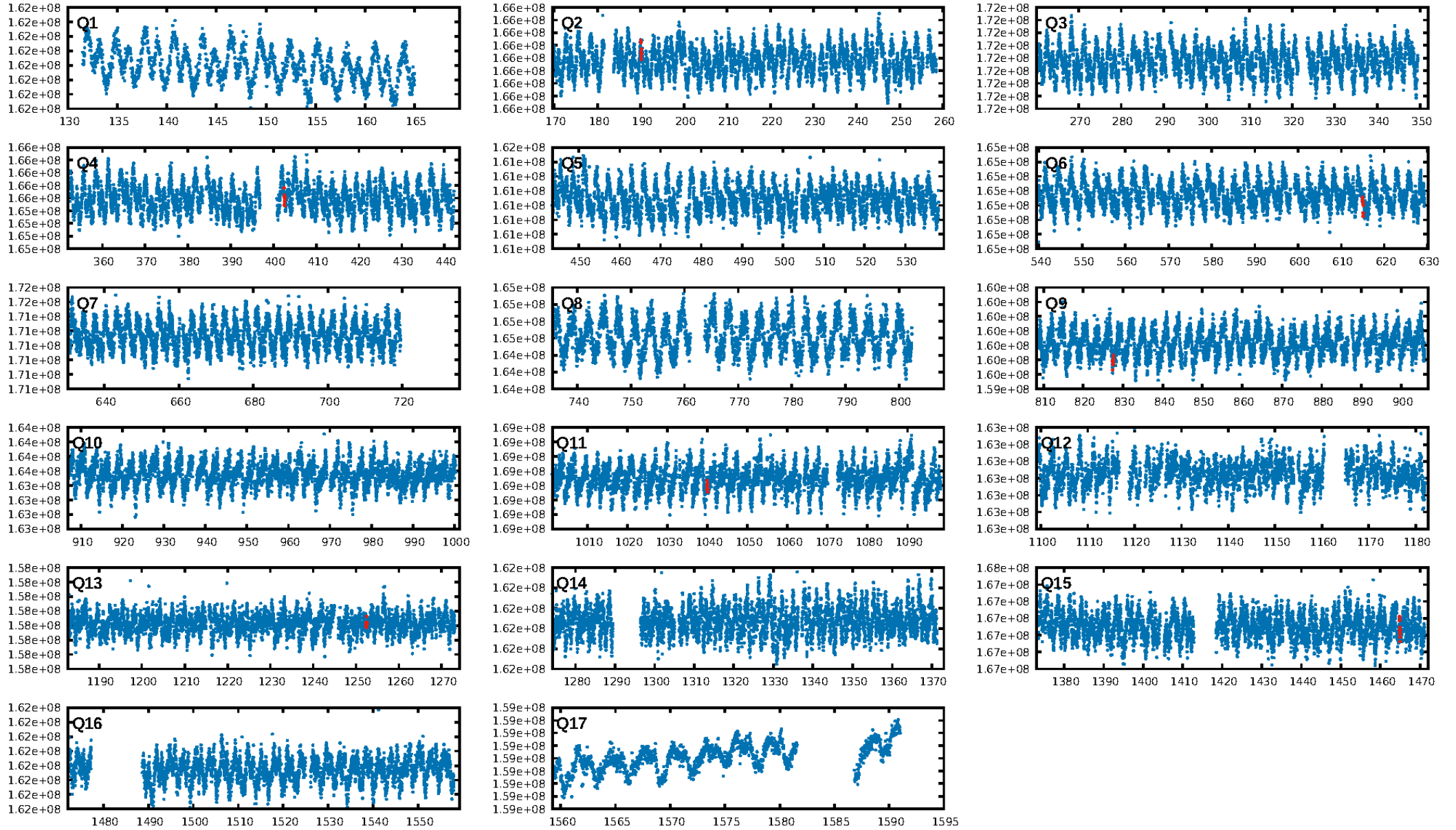
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [286.14 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 79.5%
Bootstrap-pfa: 2.18e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.722
Centroid-sig: 4.5%
Centroid-so: 1.711 arcsec [1.46 σ]
OotOffset-rm: 1.600 arcsec [1.39 σ]
KicOffset-rm: 1.613 arcsec [1.35 σ]
OotOffset-st: 2/1/1/1 [5]
KicOffset-st: 2/1/1/1 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.71 [5/7]

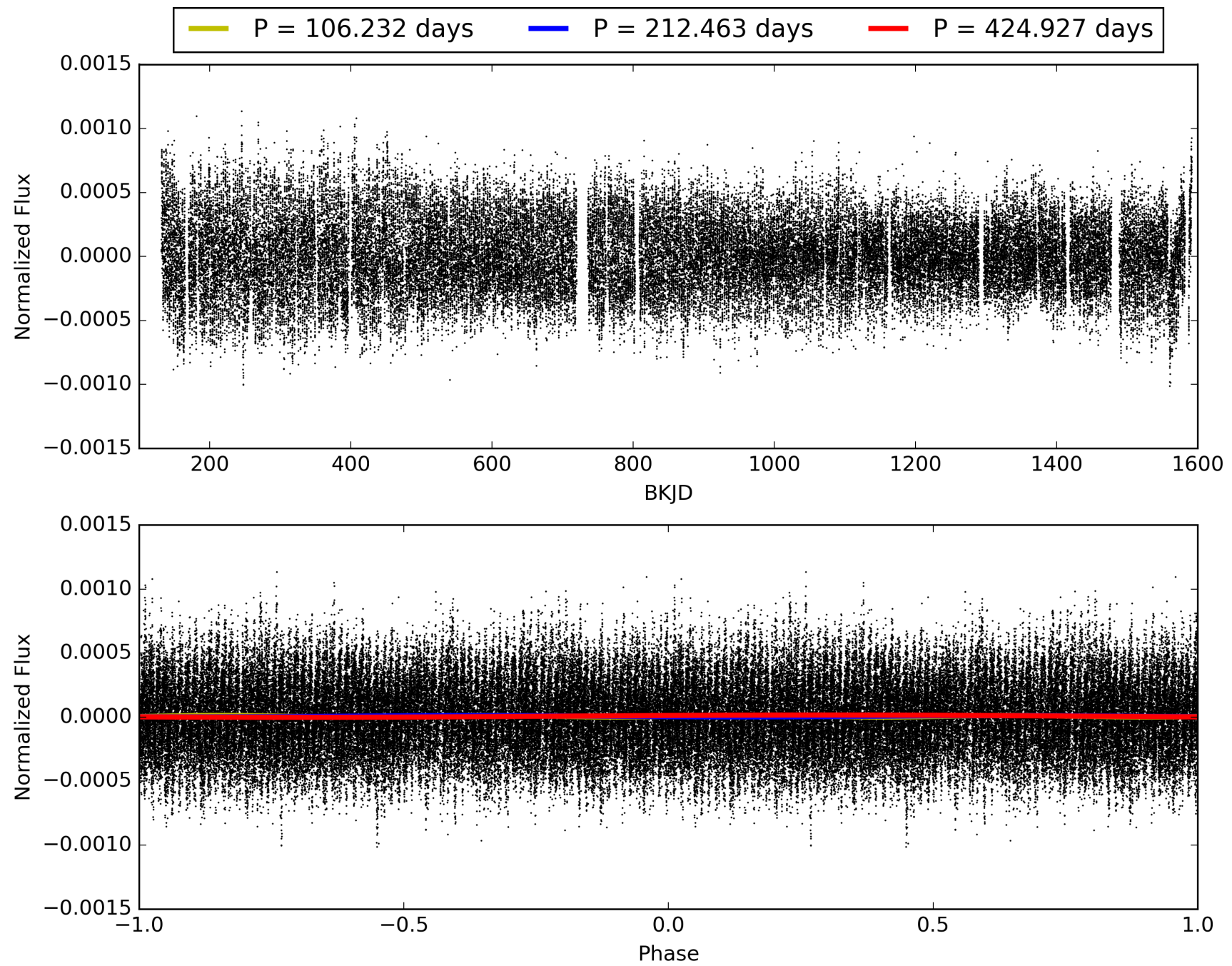
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:53 Z

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

TCE 009283002-08, PDC Light Curves

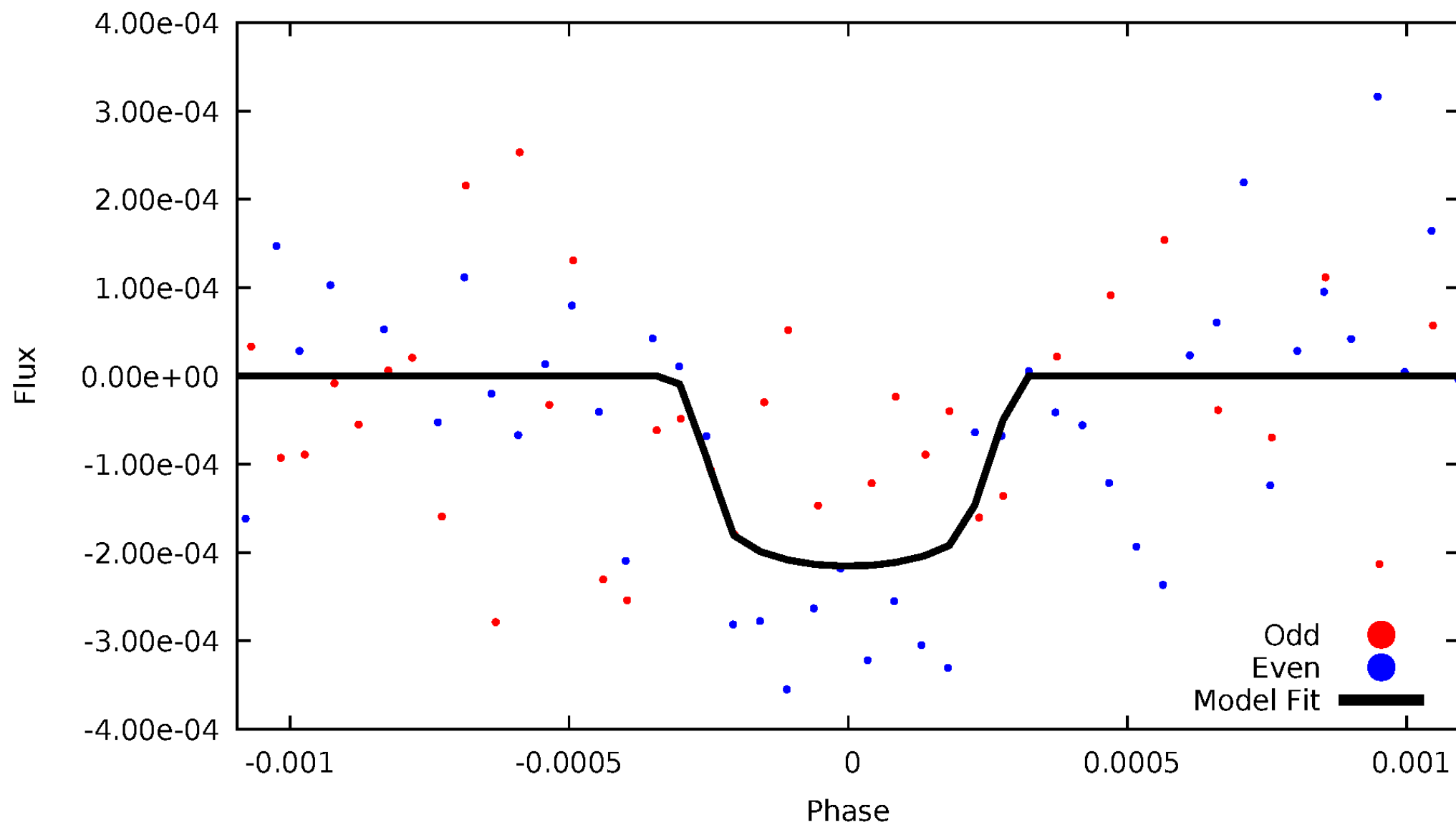


TCE 009283002-08



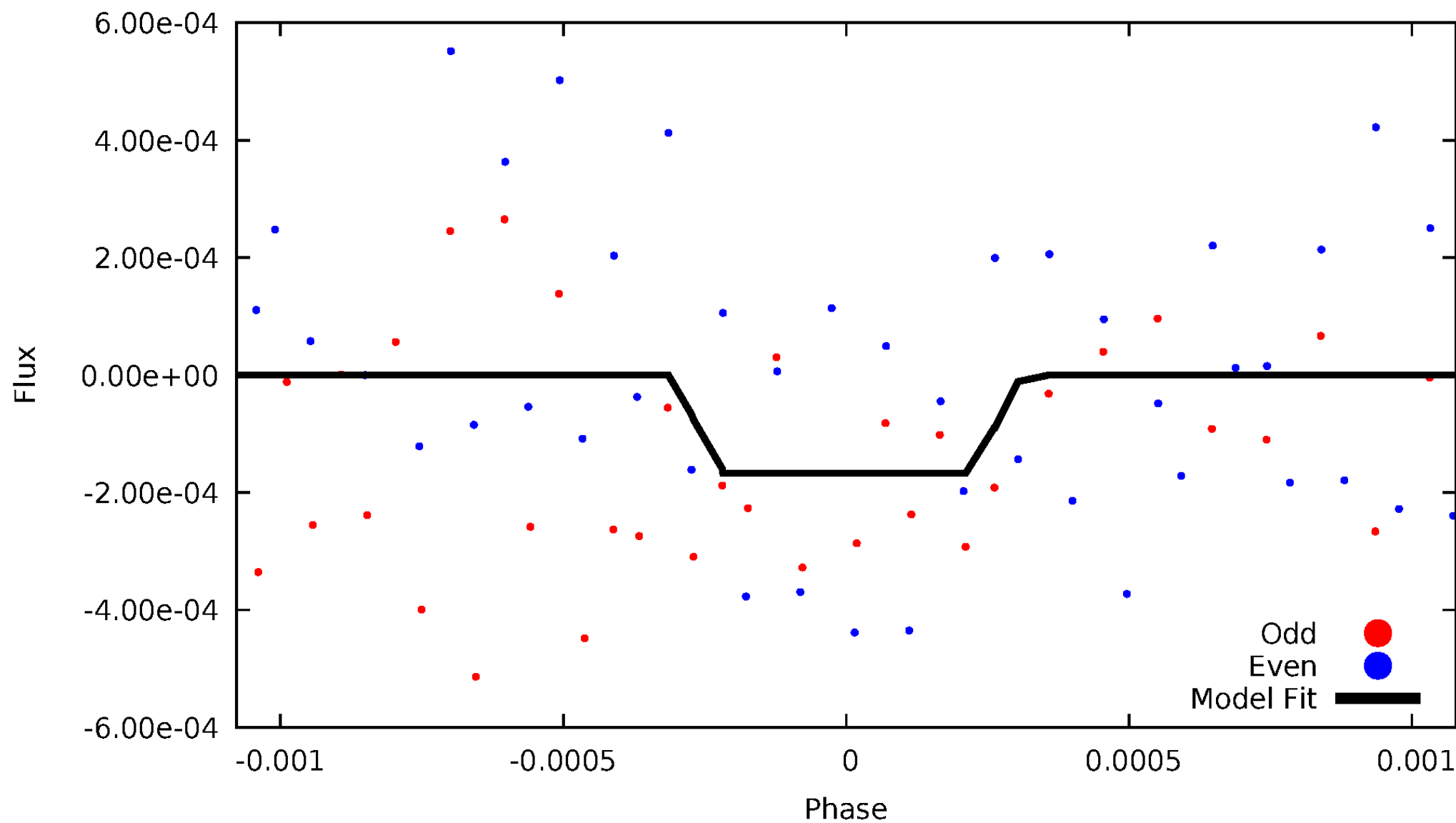
DV Odd/Even

TCE 009283002-08



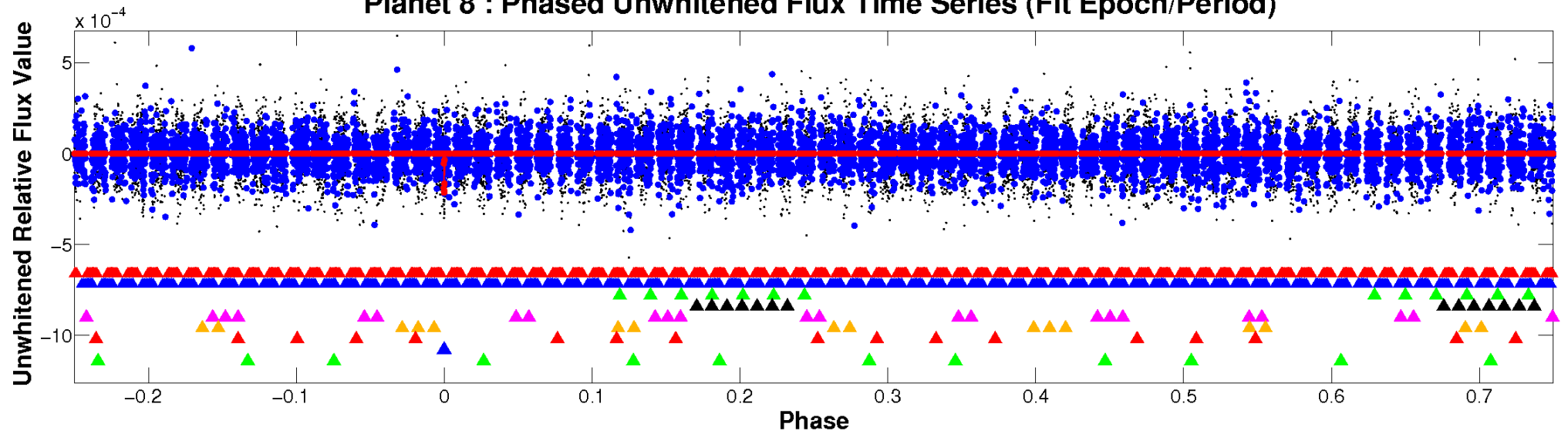
ALT Odd/Even

TCE 009283002-08

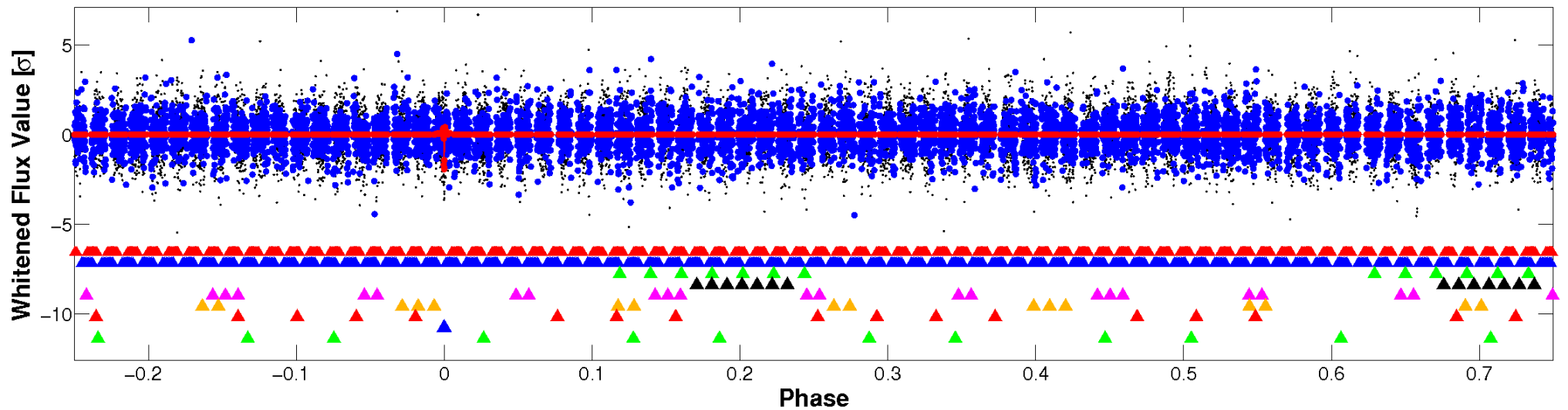


Non-Whitened Vs. Whitened Light Curve

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

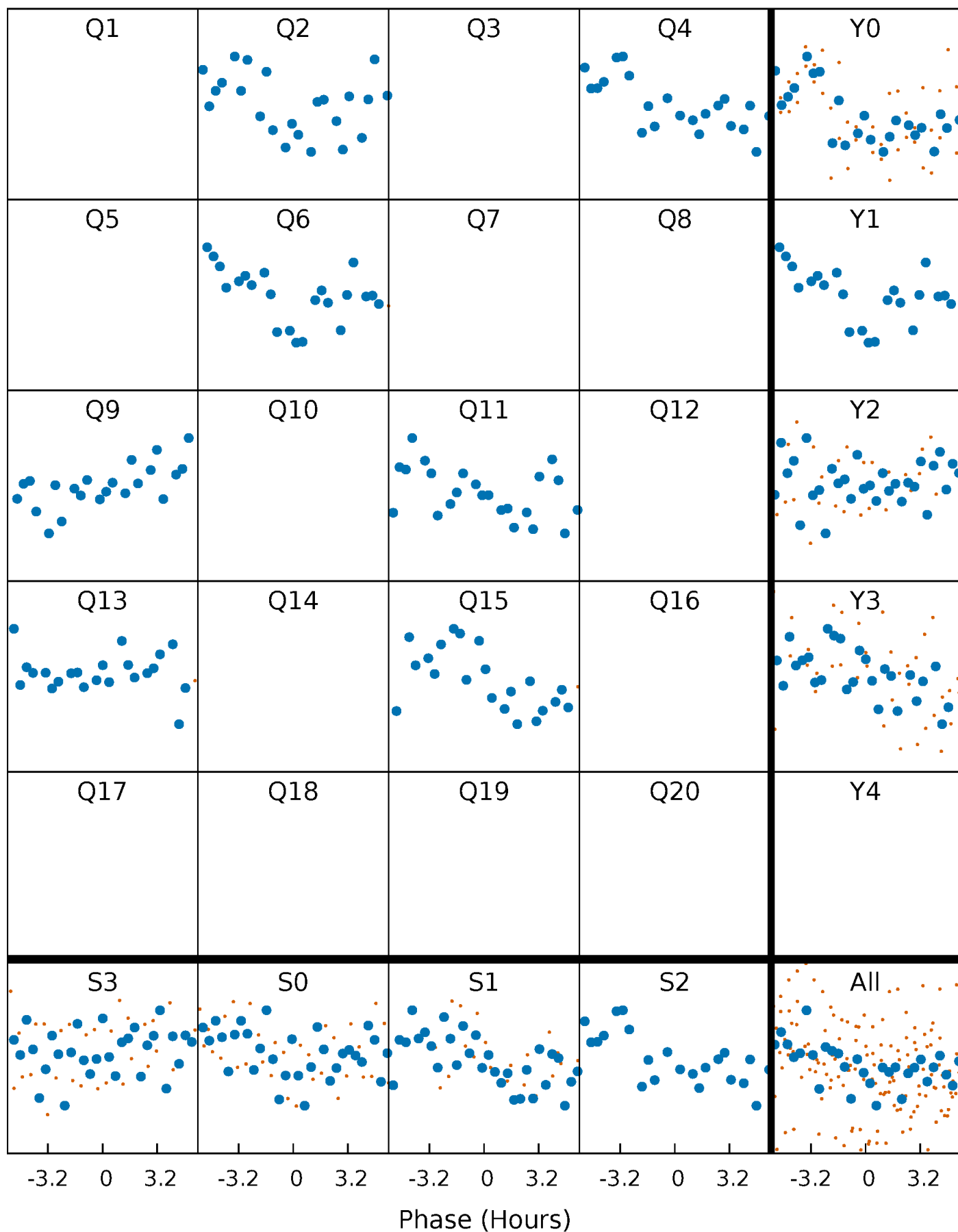


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



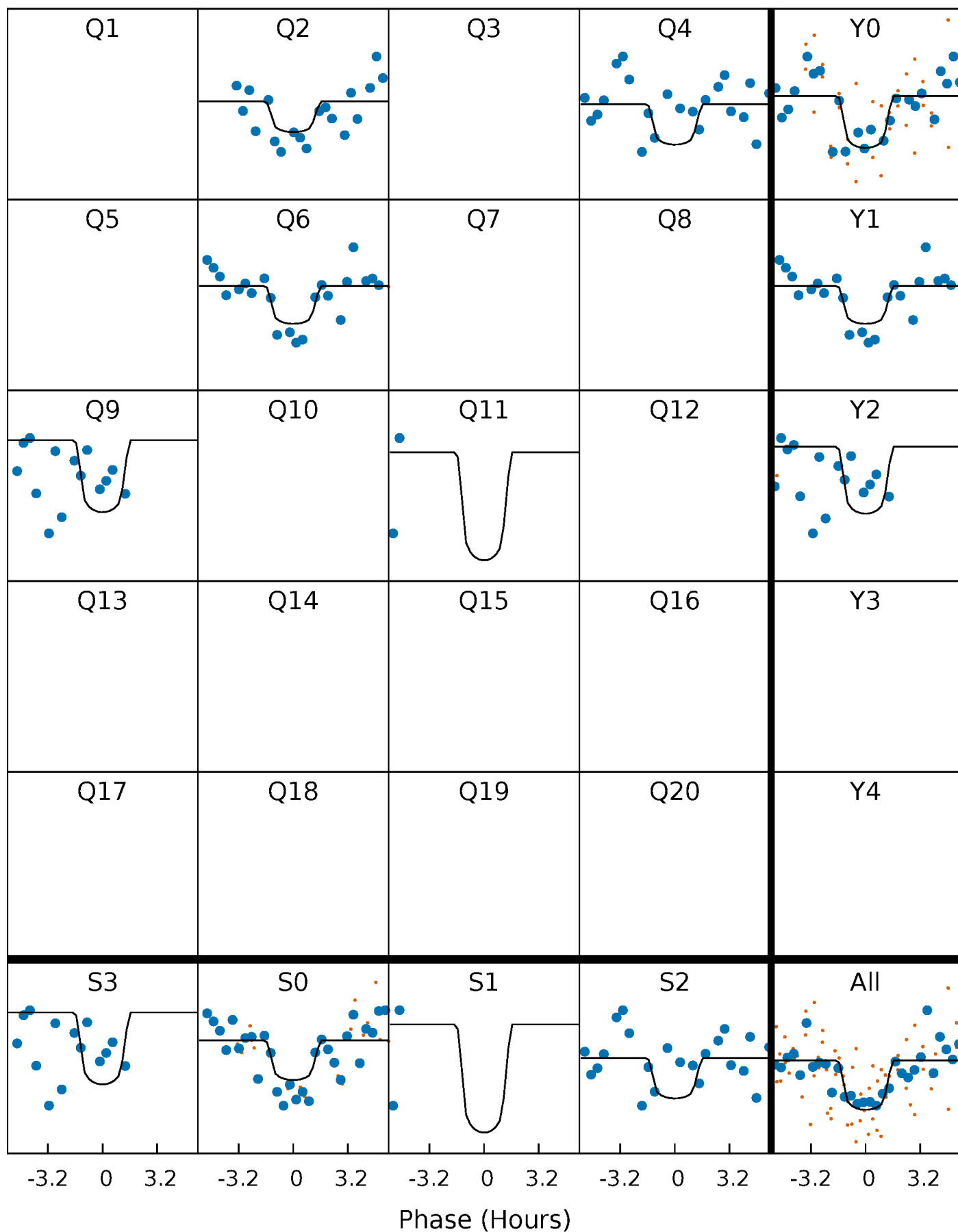
PDC Quarter-Phased Transit Curves

TCE 009283002-08 P=212.463421 Days $T_0=190.120481$ (BKJD)



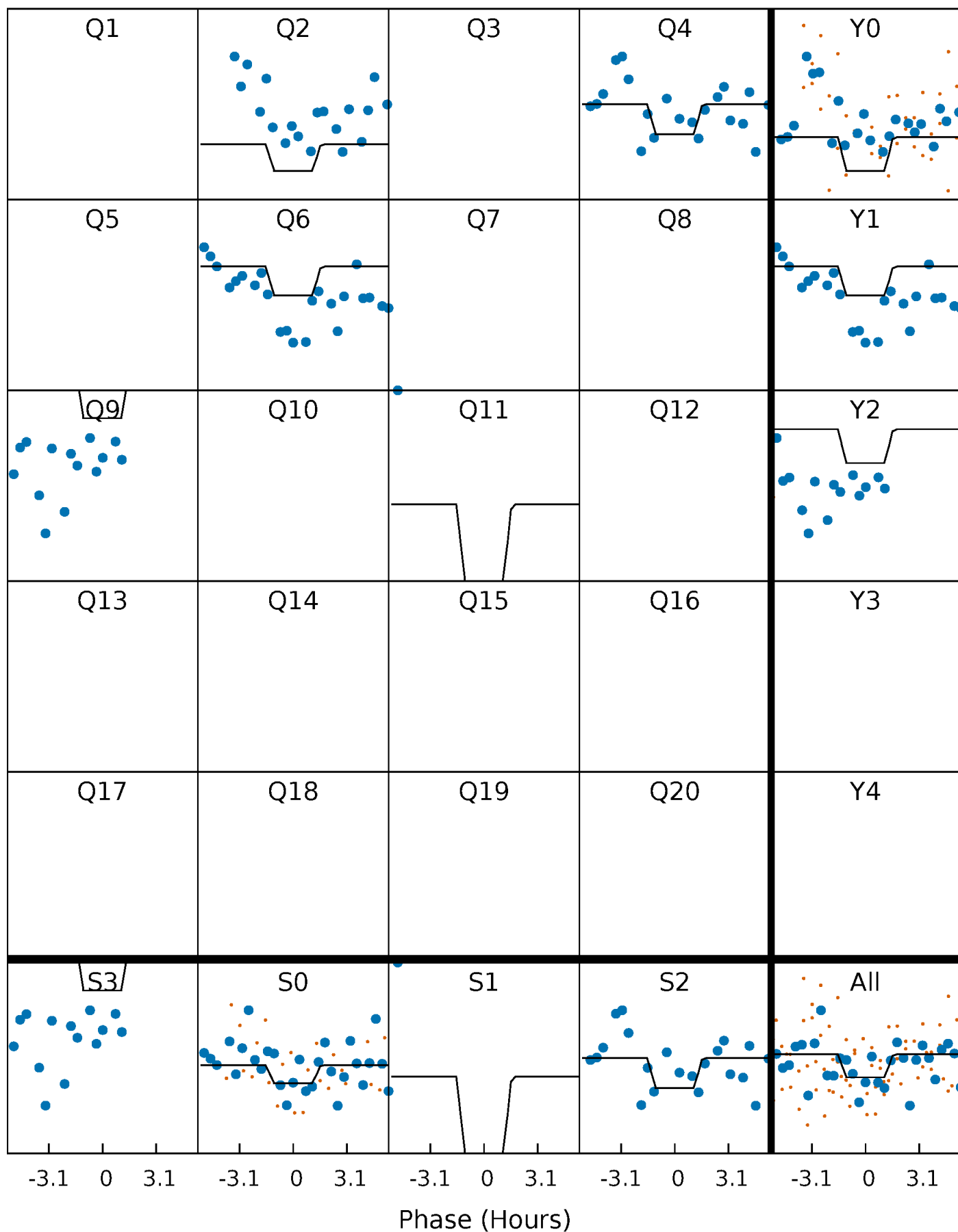
DV Quarter-Phased Transit Curves

TCE 009283002-08 $P=212.463421$ Days $T_0=190.120481$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

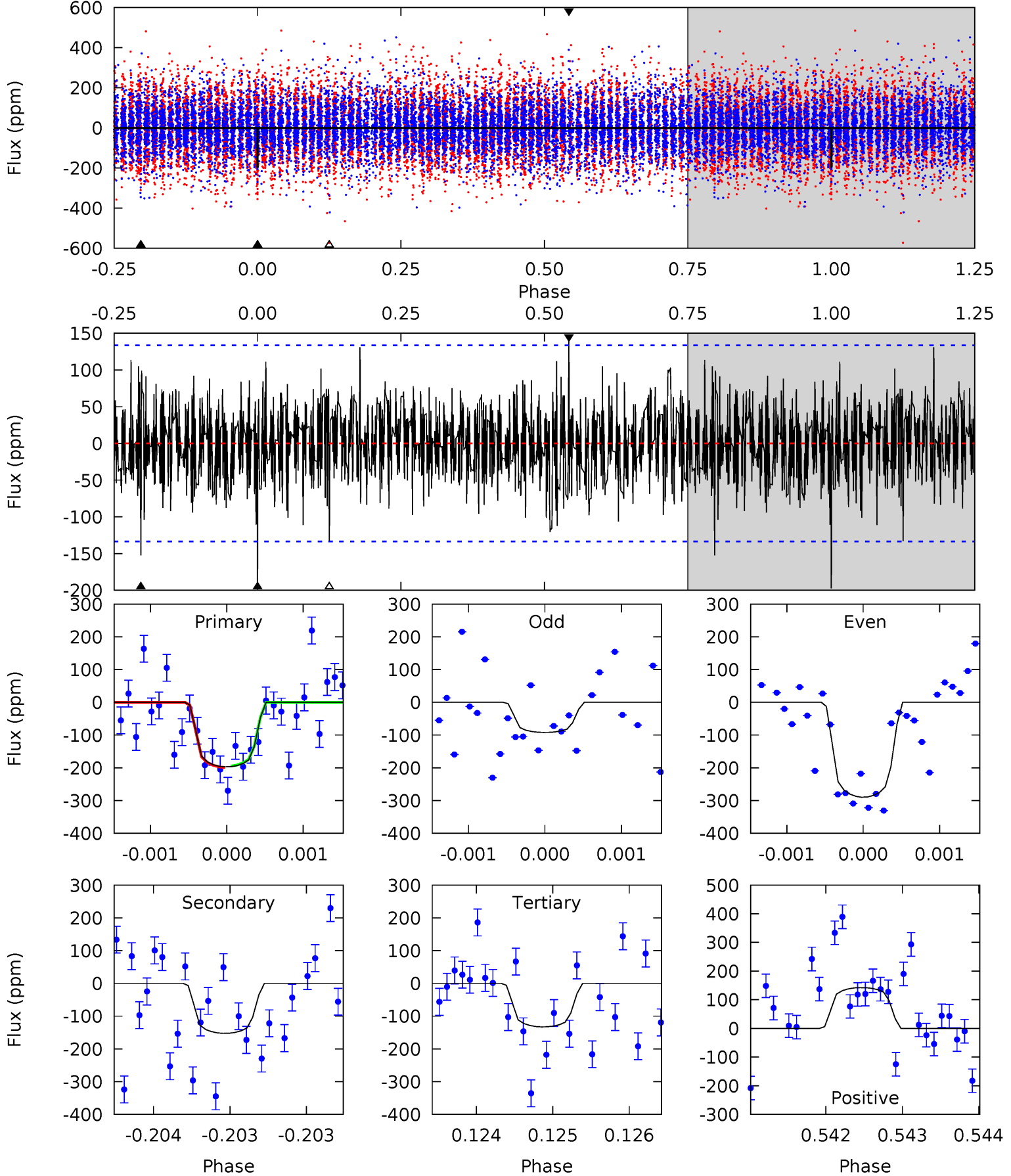
TCE 009283002-08 P=212.464242 Days $T_0=190.122954$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-08, P = 212.463421 Days, E = 190.120481 Days

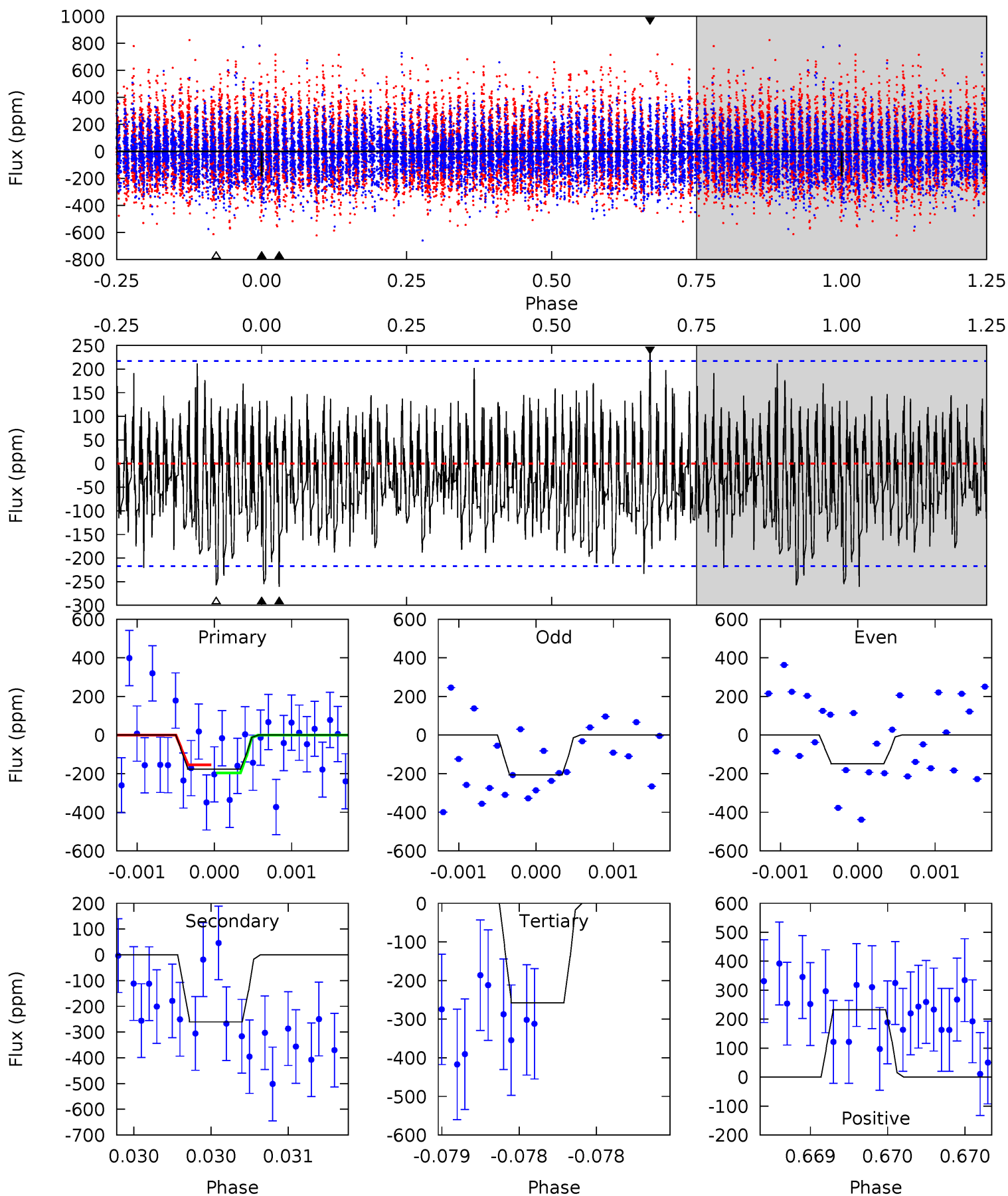
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	6.32	5.51	5.91	5.53	3.42	1.48	2.67	2.27	0.82	0.42	4.24	0.96	0.42	0.09



Alt Model-Shift Uniqueness Test

009283002-08, P = 212.464242 Days, E = 190.122954 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.49	6.65	6.56	5.93	5.53	3.42	1.82	-2.07	-1.44	0.09	0.71	0.73	0.88	0.47	0.53



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-152 ± 24	$4.25^{+3.28}_{-2.57}$	724^{+56}_{-59}	5812^{+4611}_{-1199}	3035^{+16896}_{-2053}
Alt.	-261 ± 39	$3.95^{+2.93}_{-2.54}$	727^{+49}_{-60}	7005^{+7494}_{-1748}	6138^{+40944}_{-4196}

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 $A_{obs} \gg 1.0$

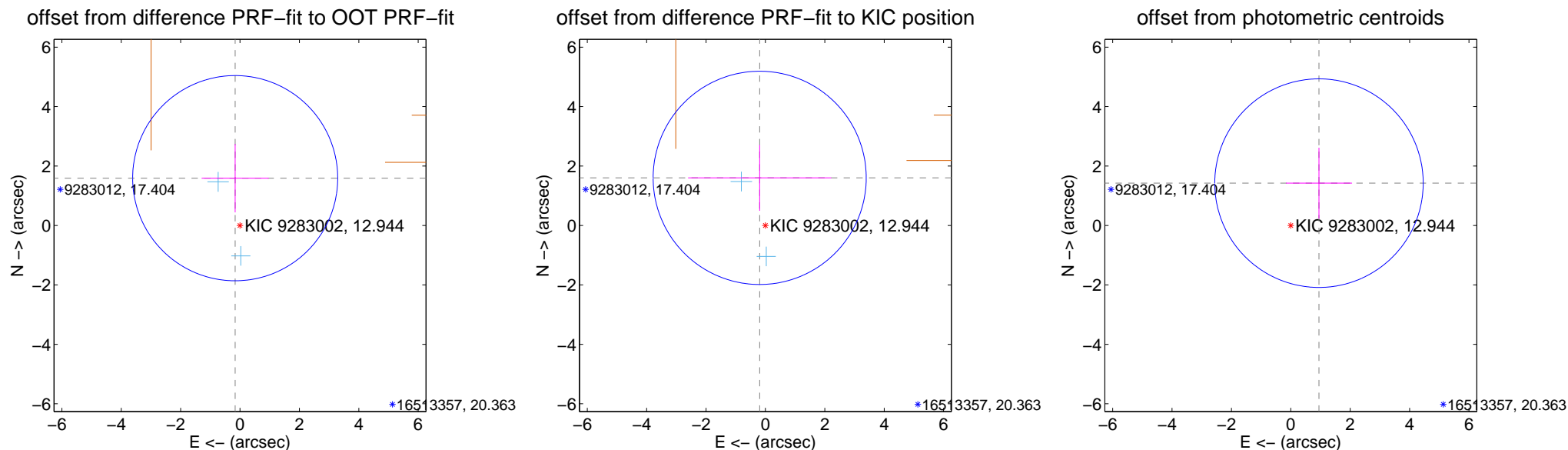
DV Centroid Data

Supplemental centroid analysis for 009283002-08. Kepler magnitude: 12.94. Transit SNR 7.74

There are 2 quarters with good PRF difference image offsets

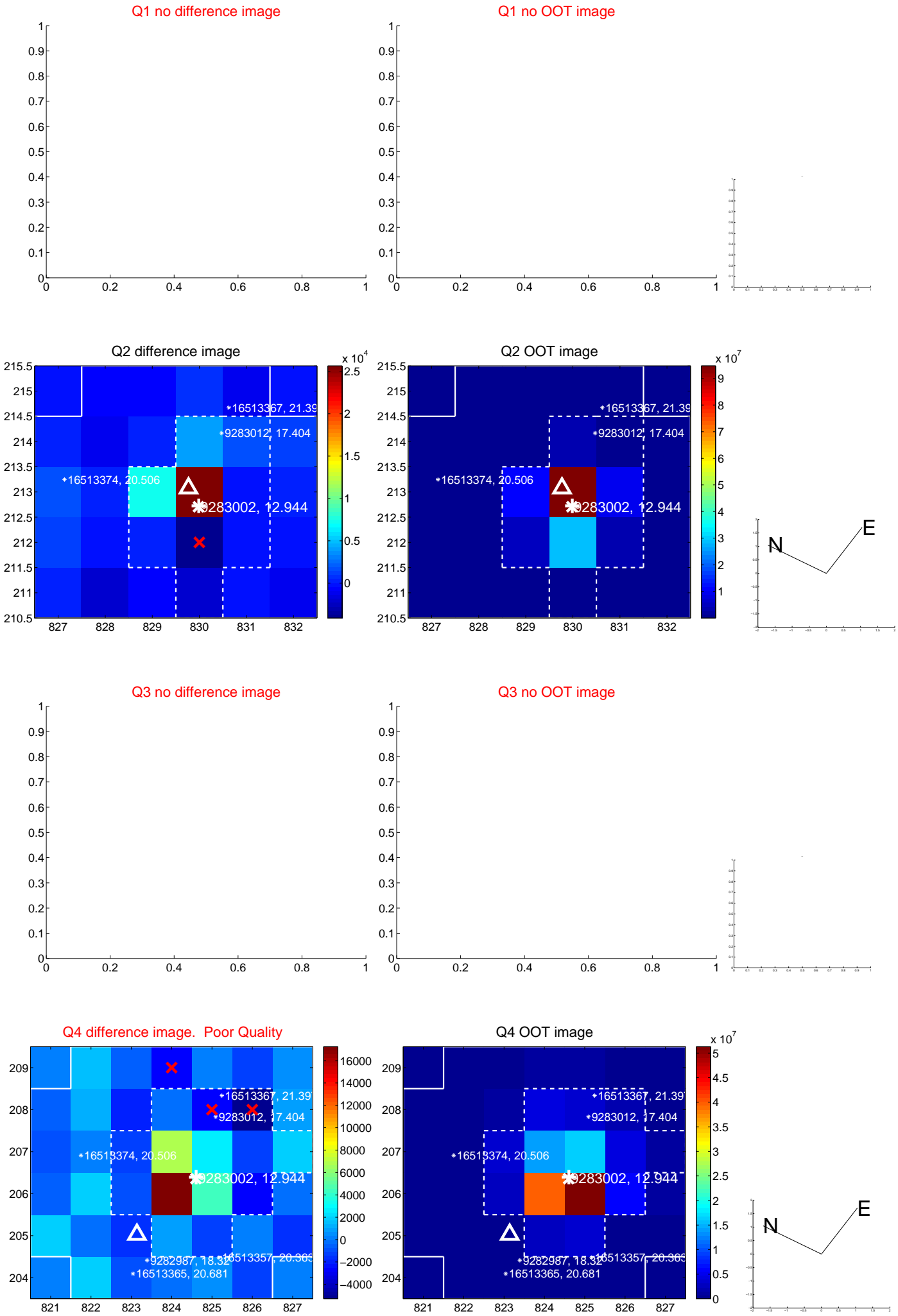
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.600 ± 1.151	1.39	0.164 ± 1.131	1.591 ± 1.151
PRF-fit source offset from KIC position	1.613 ± 1.196	1.35	0.194 ± 2.410	1.602 ± 1.108
photometric centroid source offset	1.71 ± 1.17	1.46	-0.95 ± 1.11	1.42 ± 1.19

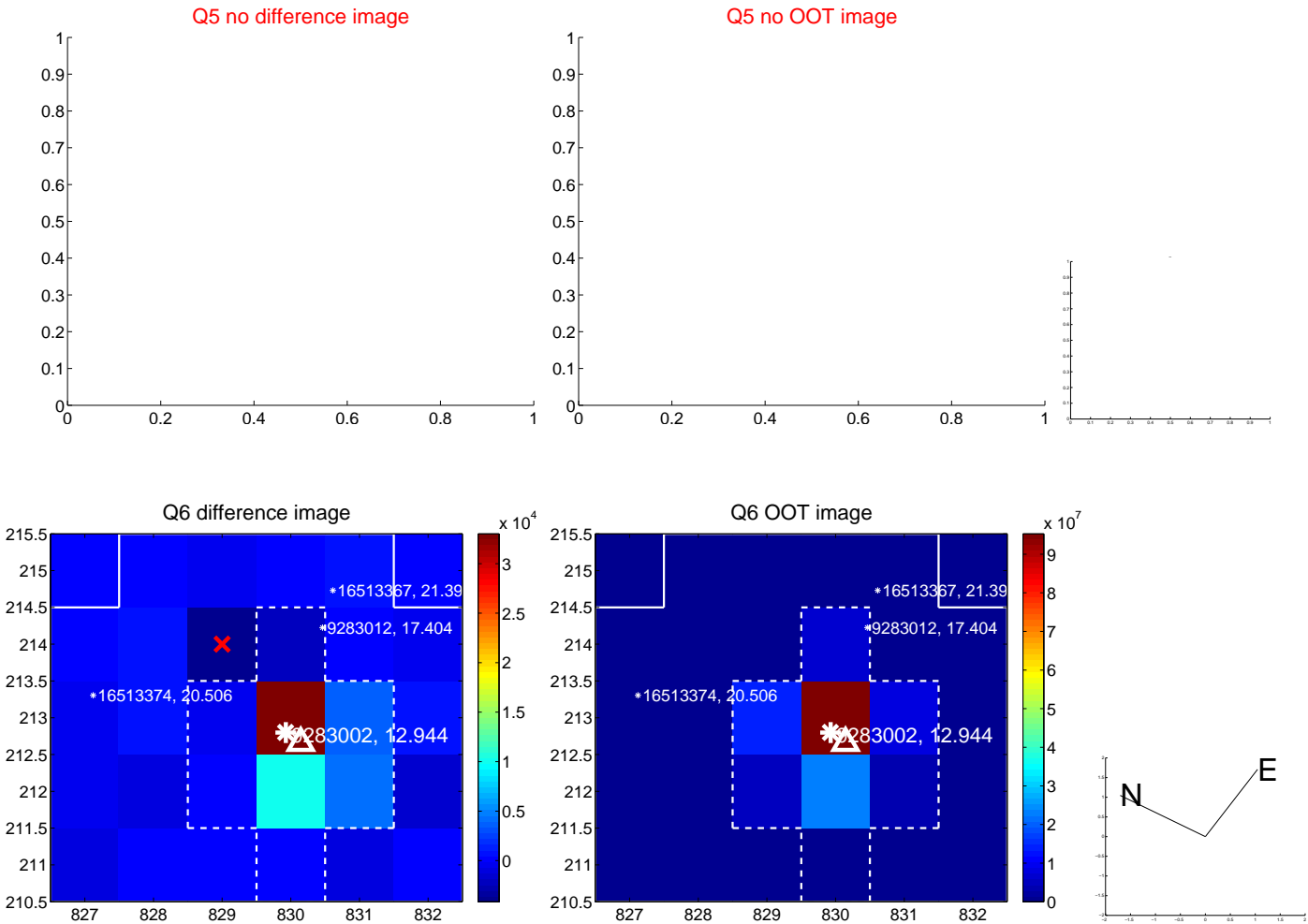


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

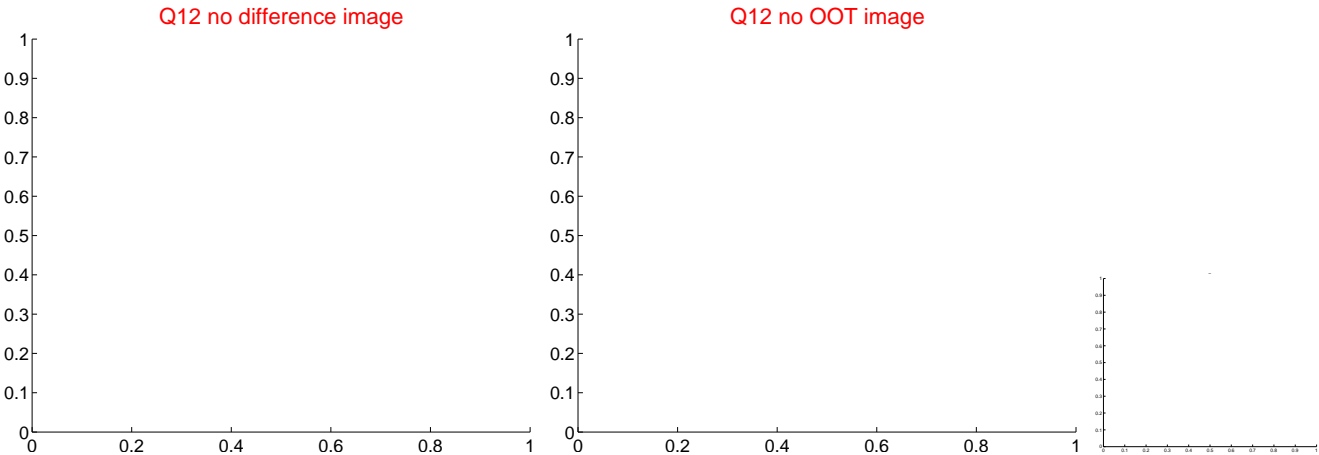
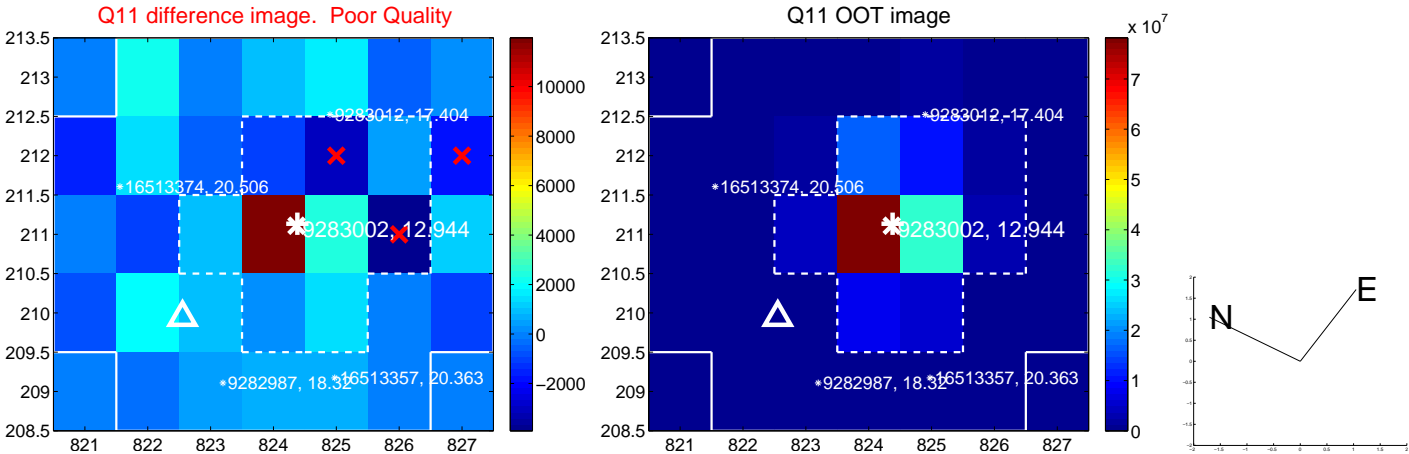
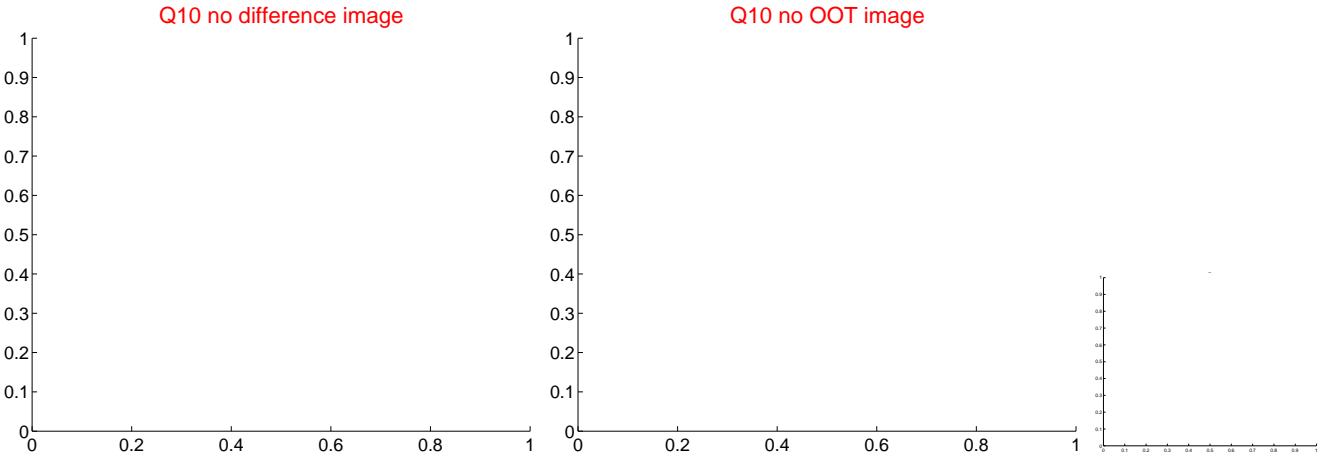
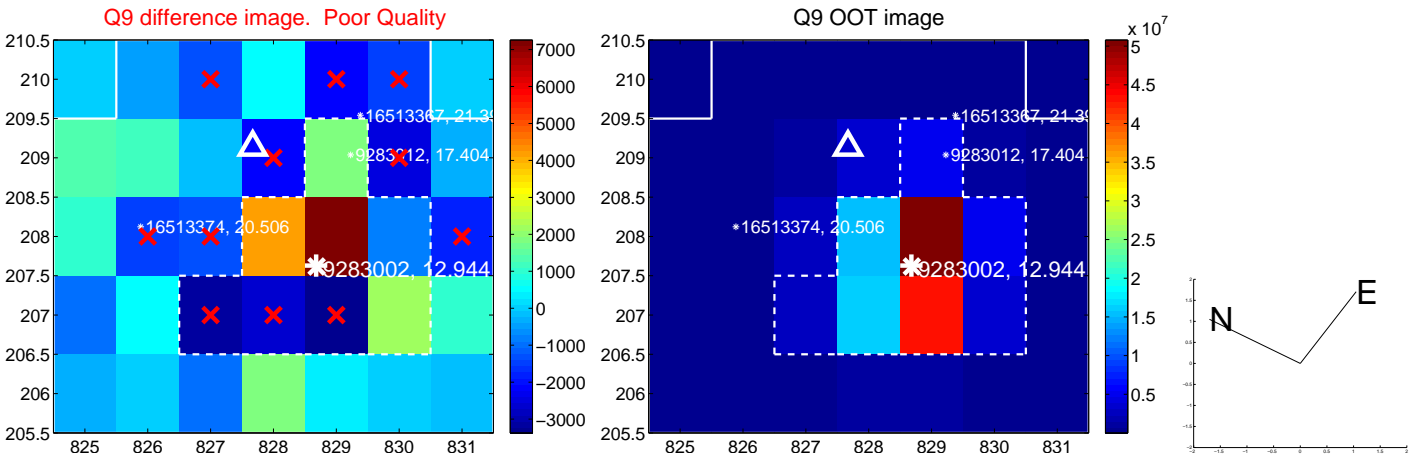
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



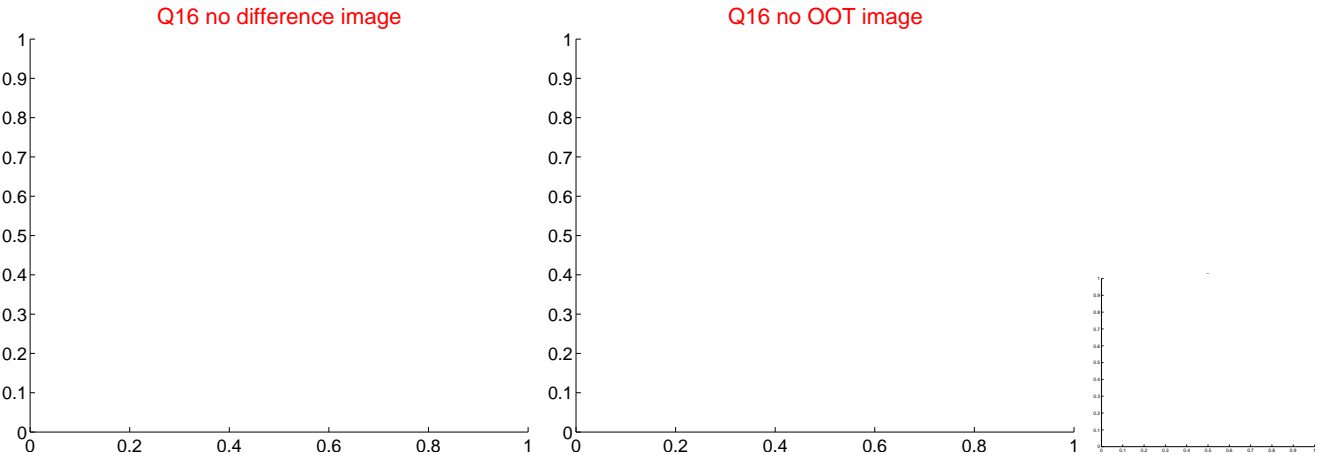
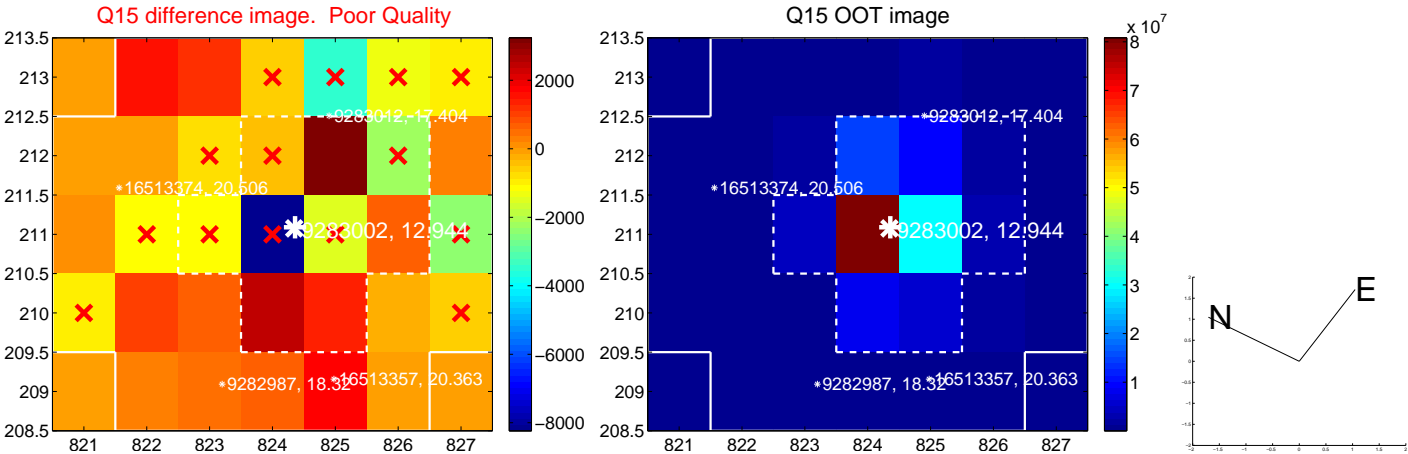
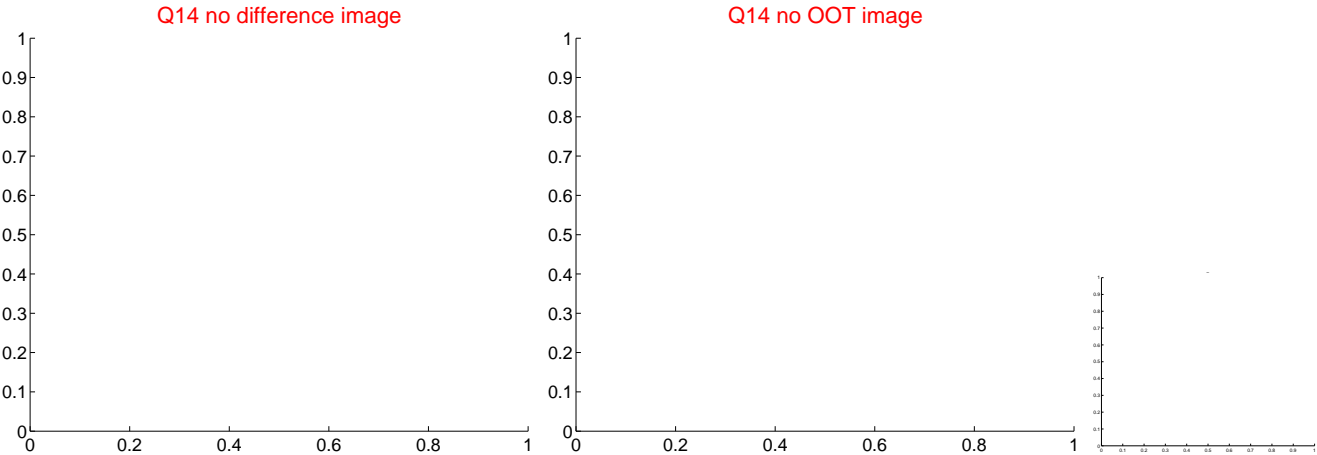
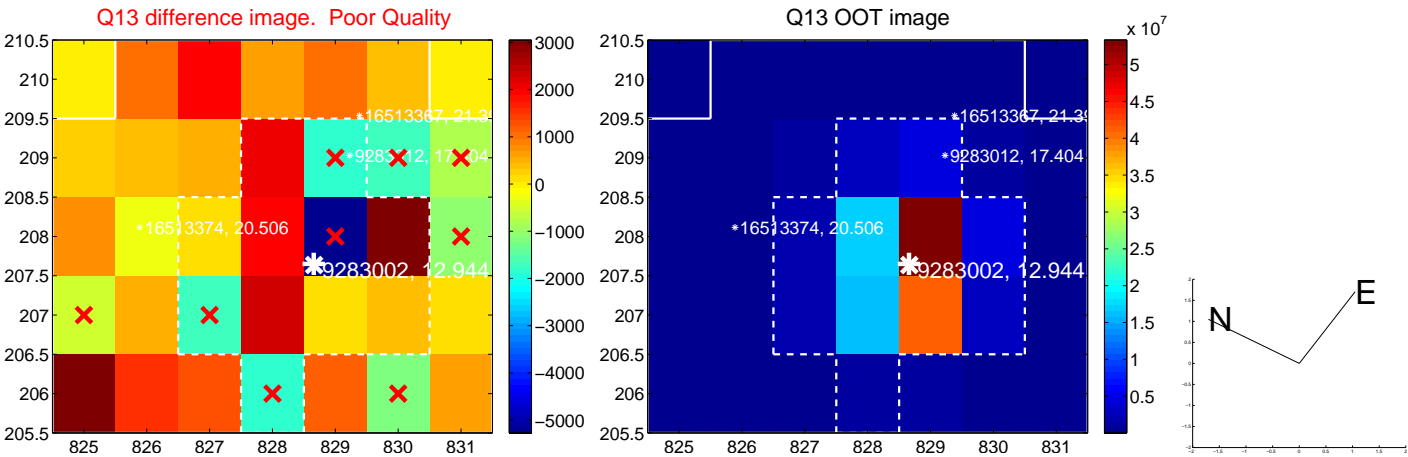
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



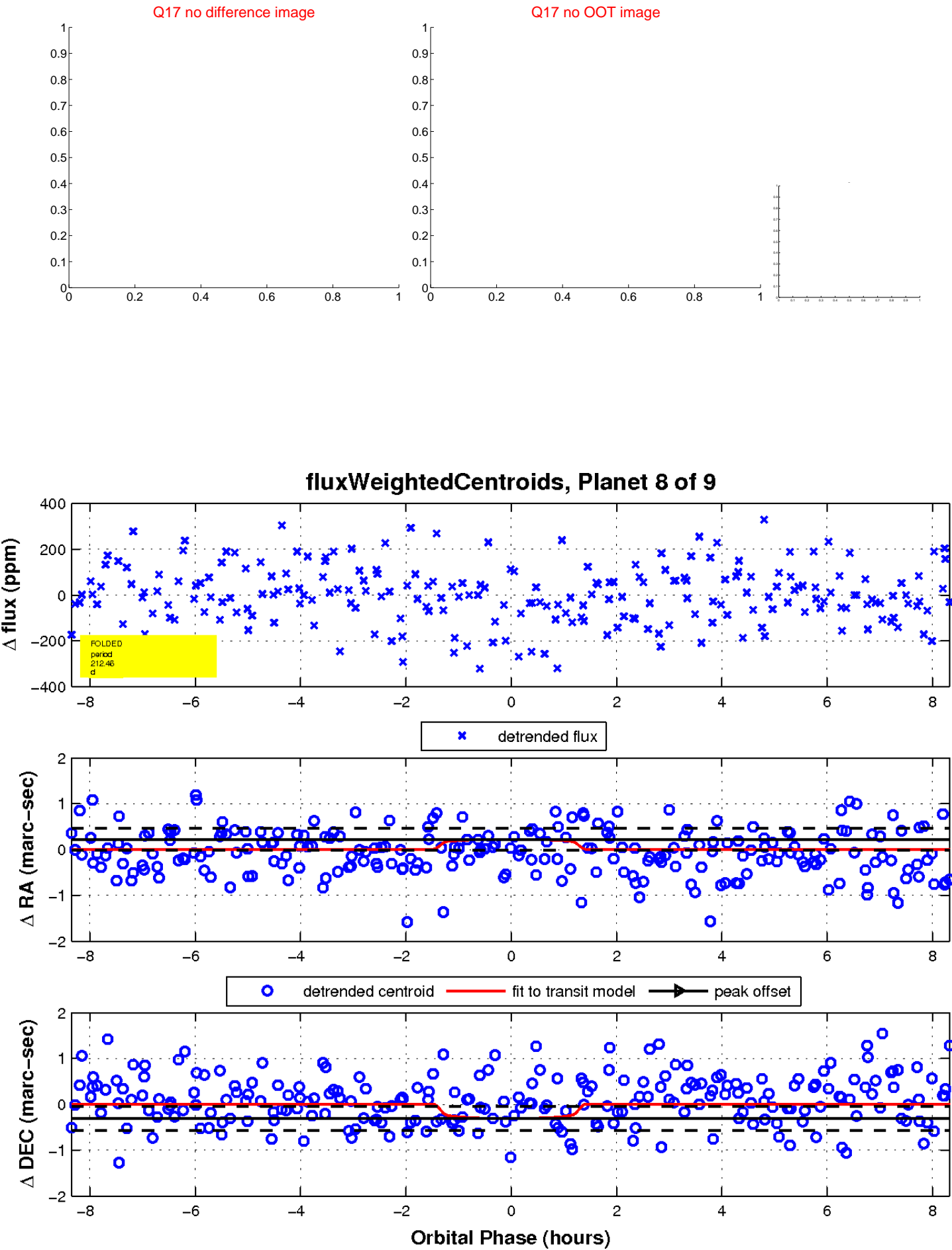
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

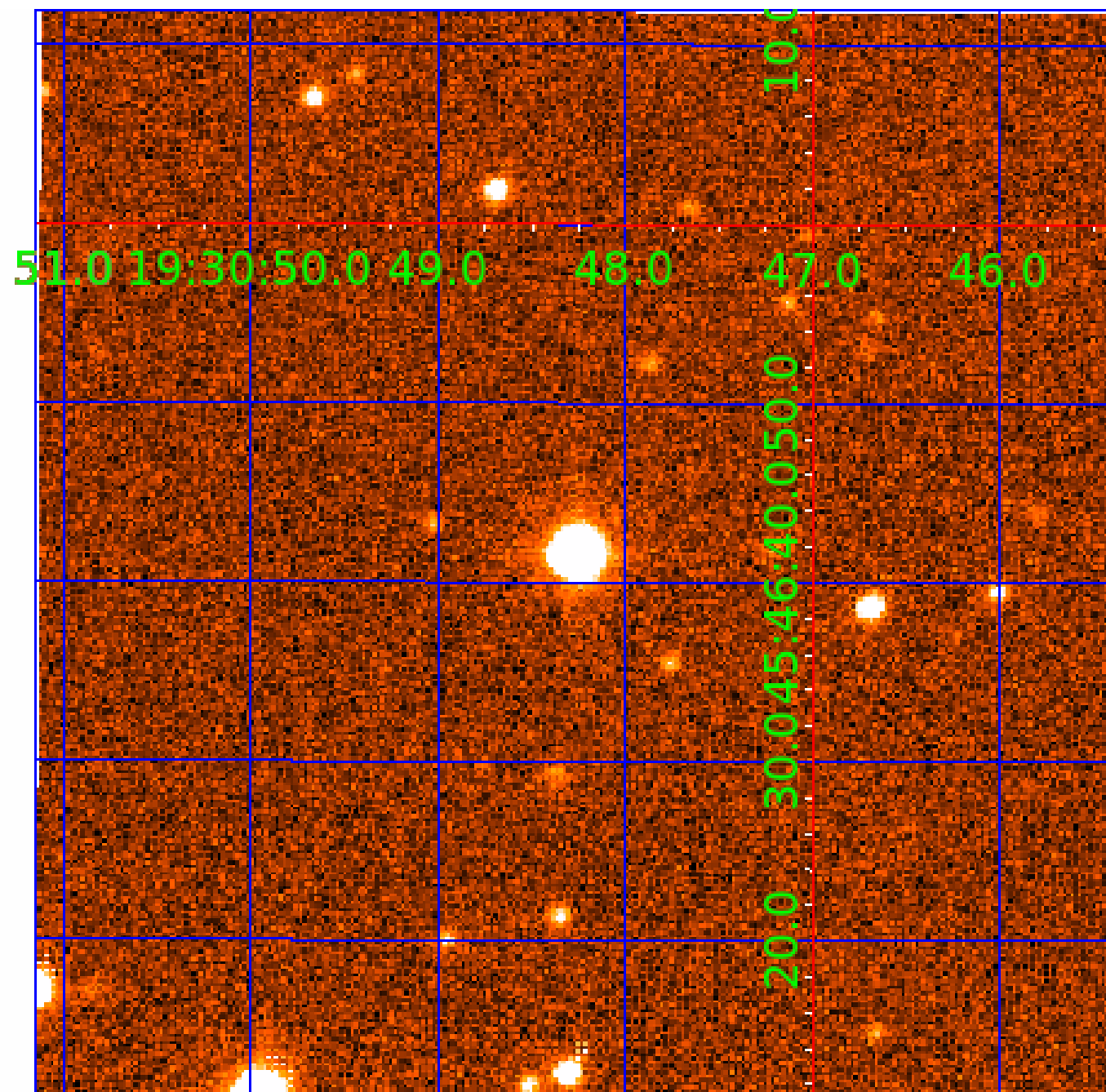


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009283002

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})
009283002-01	OBS	No	2.907423	134.387373	33.7	5.244	9.7	10.3	2.13	7353	1.46	5410.70
009283002-02	OBS	No	2.906960	133.771947	9.5	15.330	10.0	3.8	2.13	7353	0.68	5411.85
009283002-03	OBS	No	108.443674	215.346918	120.7	11.917	39.4	5.5	2.13	7353	2.69	43.42
009283002-04	OBS	No	105.147049	134.280339	126.5	12.544	10.6	6.2	2.13	7353	2.62	45.24
009283002-05	OBS	No	63.556954	160.512816	121.4	10.027	8.6	7.4	2.13	7353	2.68	88.52
009283002-06	OBS	No	90.728148	188.682657	207.0	6.560	7.6	7.5	2.13	7353	4.81	55.07
009283002-07	OBS	No	83.286375	185.995353	89.1	12.934	8.2	4.9	2.13	7353	2.21	61.73
009283002-08	OBS	No	212.463421	190.120481	215.3	2.789	7.6	7.7	2.13	7353	3.51	17.71
009283002-09	OBS	No	123.175675	217.303365	199.2	6.950	7.9	8.1	2.13	7353	3.33	36.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009283002-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009283002-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
009283002-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
009283002-04	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—INCONSISTENT_TRANS
009283002-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009283002-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
009283002-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009283002-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

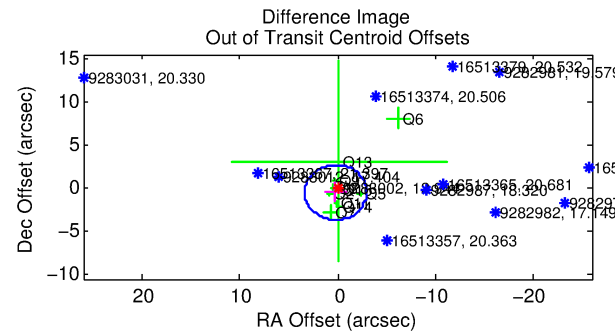
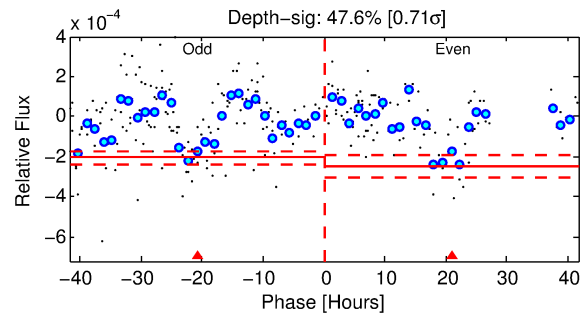
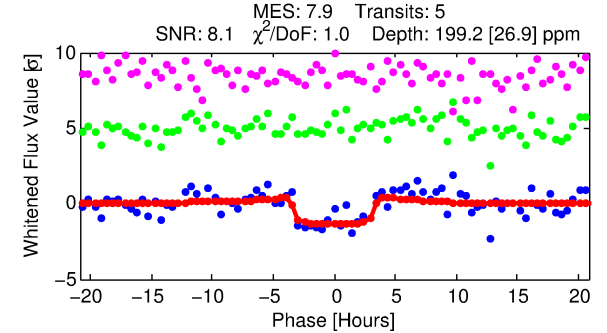
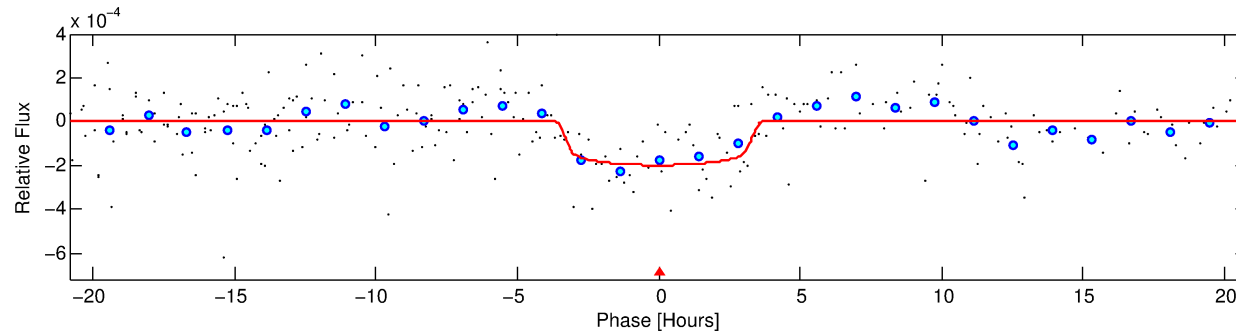
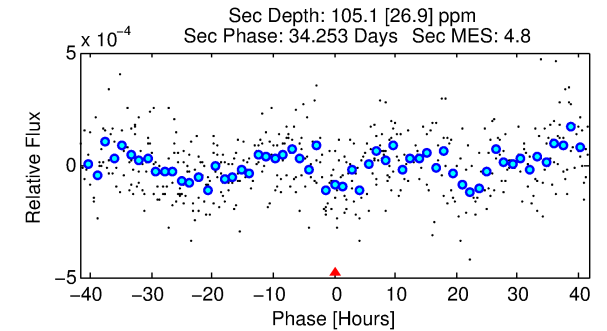
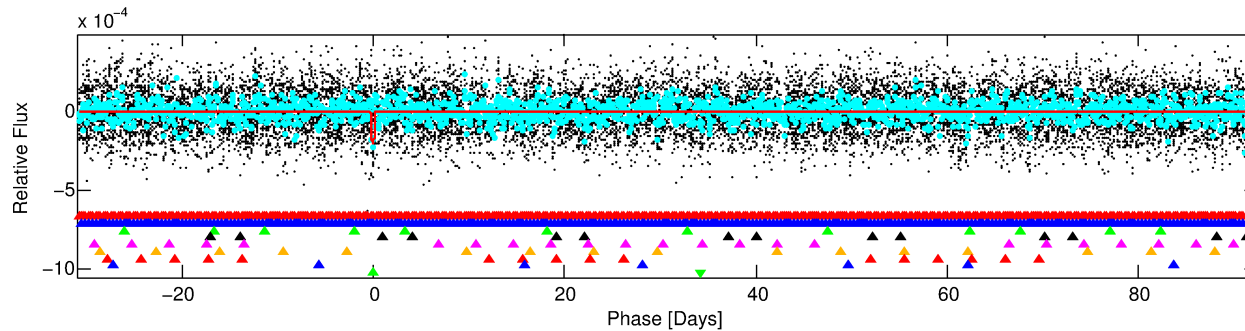
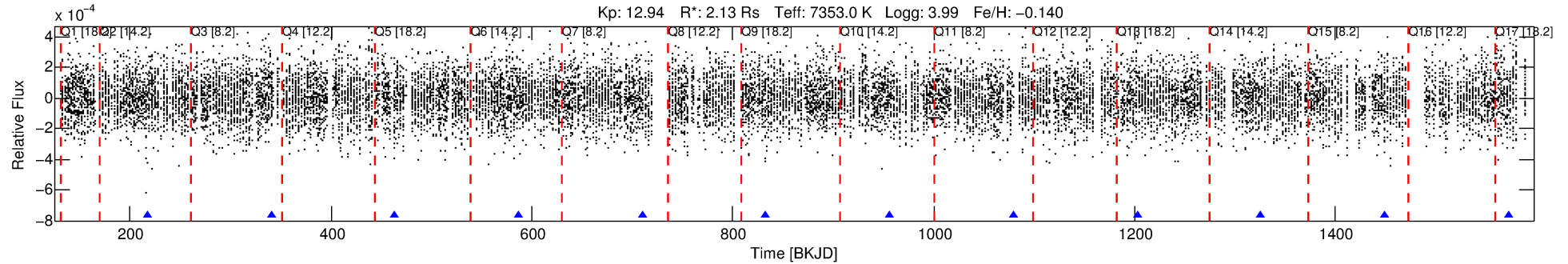
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009283002-09

No Significant Match Found

DV One-Page Summary

KIC: 9283002 Candidate: 9 of 9 Period: 123.176 d



DV Fit Results:

Period = 123.17567 [0.00202] d
Epoch = 217.3034 [0.0138] BKJD
Rp/R* = 0.0144 [0.0079]
a/R* = 81.83 [256.91]
b = 0.81 [1.31]
Seff = 36.64 [16.34]
Teq = 627 [70] K
Rp = 3.33 [2.10] Re
a = 0.5687 [0.1550] AU
Ag = 1682.29 [2022.05] [0.83σ]
Teffp = 6212 [1772] K [3.15σ]

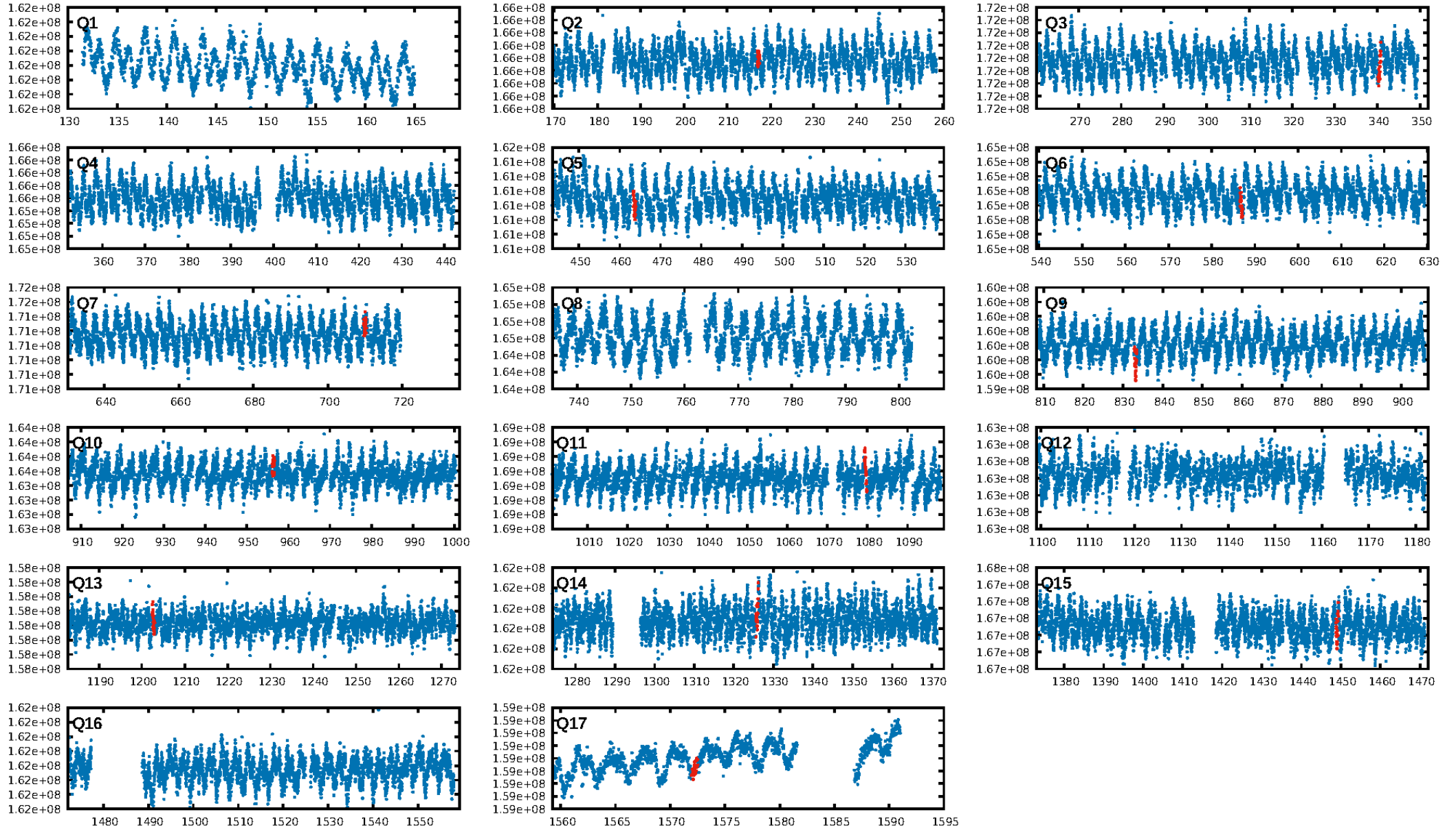
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.63σ]
LongPeriod-sig: 100.0% [286.14σ]
ModelChiSquare2-sig: 6.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.27e-07
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.803
Centroid-sig: 0.2%
Centroid-so: 1.134 arcsec [1.91σ]
OotOffset-rm: 0.529 arcsec [0.50σ]
KicOffset-rm: 0.540 arcsec [0.51σ]
OotOffset-st: 4/4/0/3 [11]
KicOffset-st: 4/4/0/3 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 0.17 [2/12]

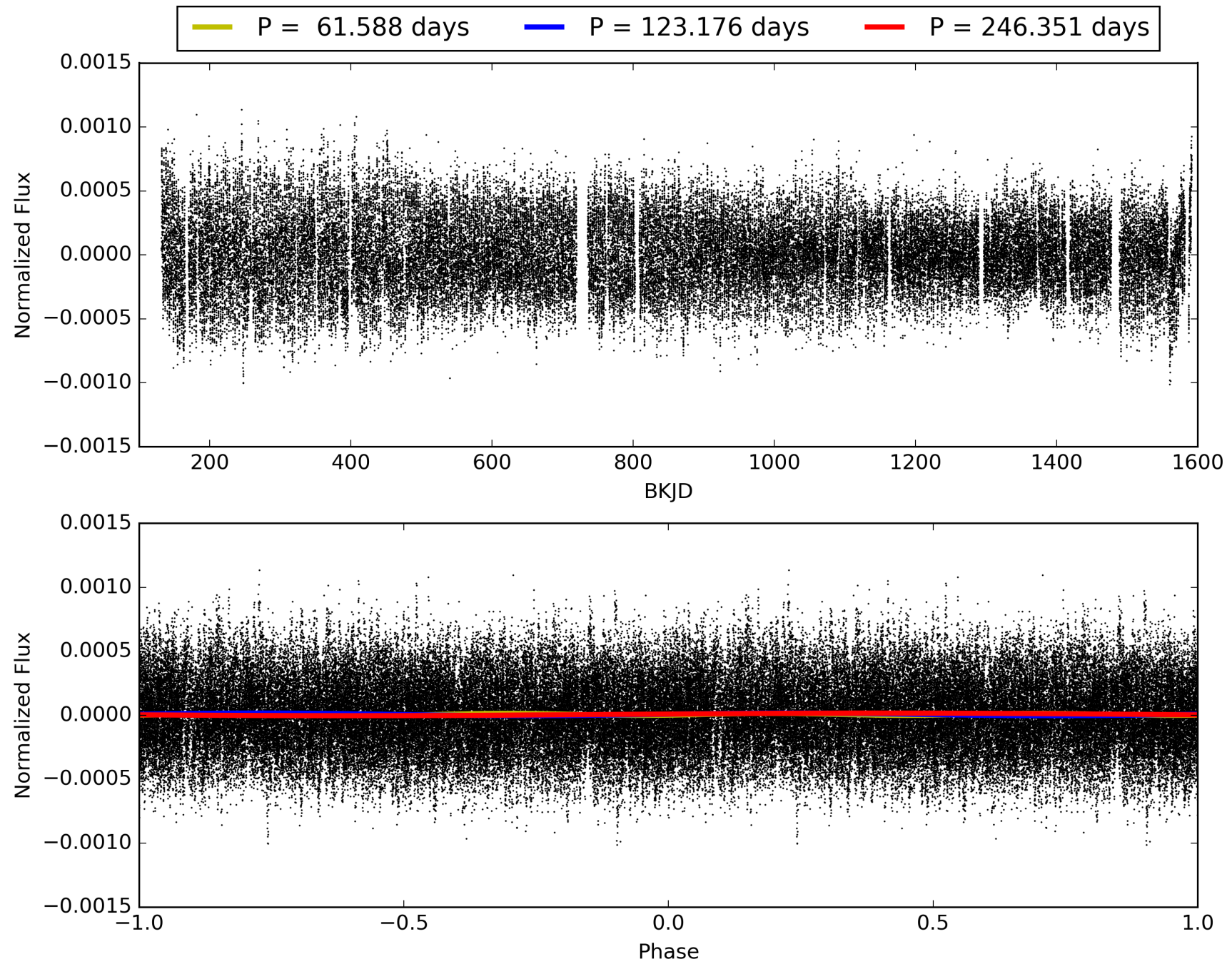
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:38:57 Z

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

TCE 009283002-09, PDC Light Curves

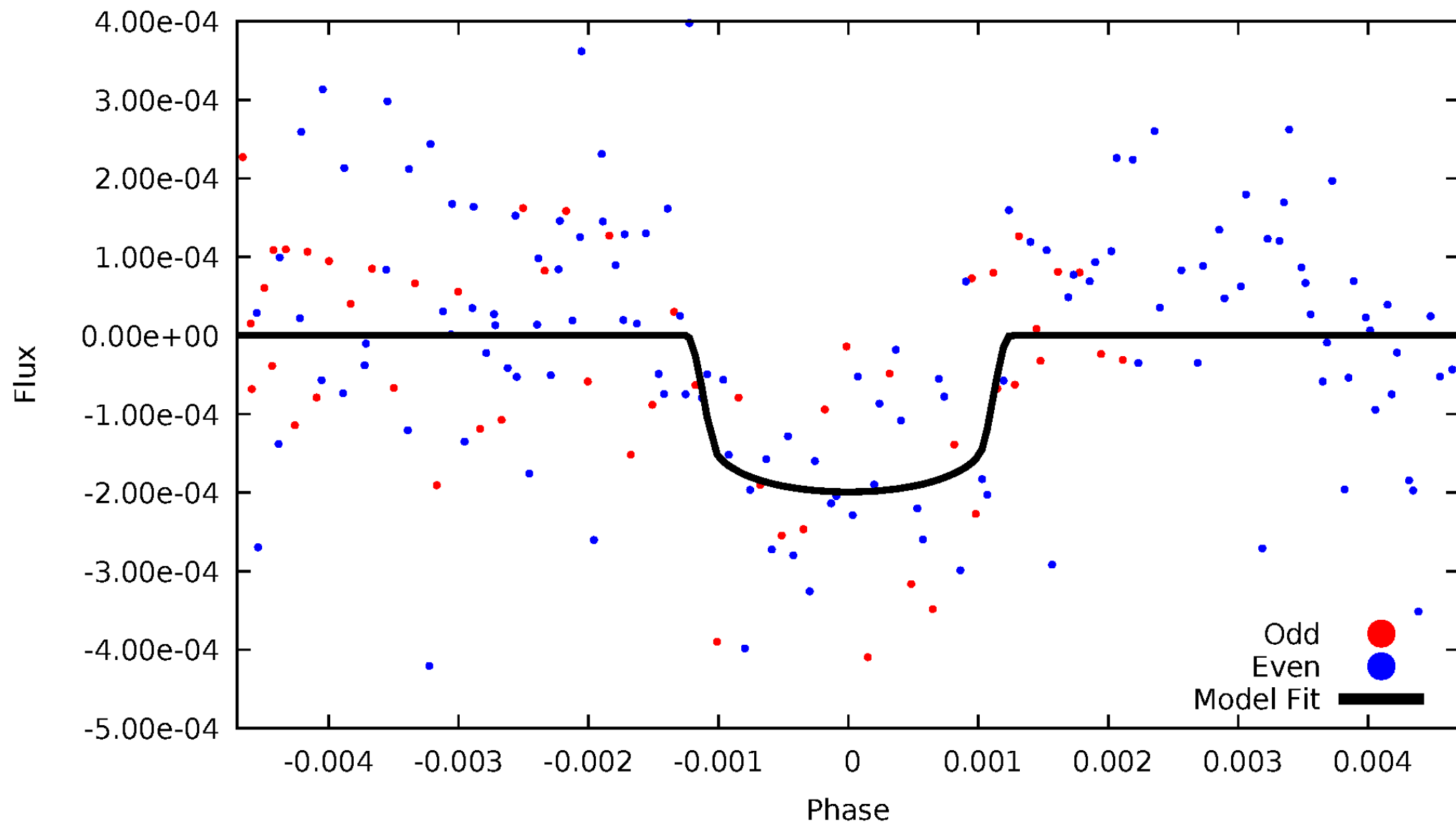


TCE 009283002-09



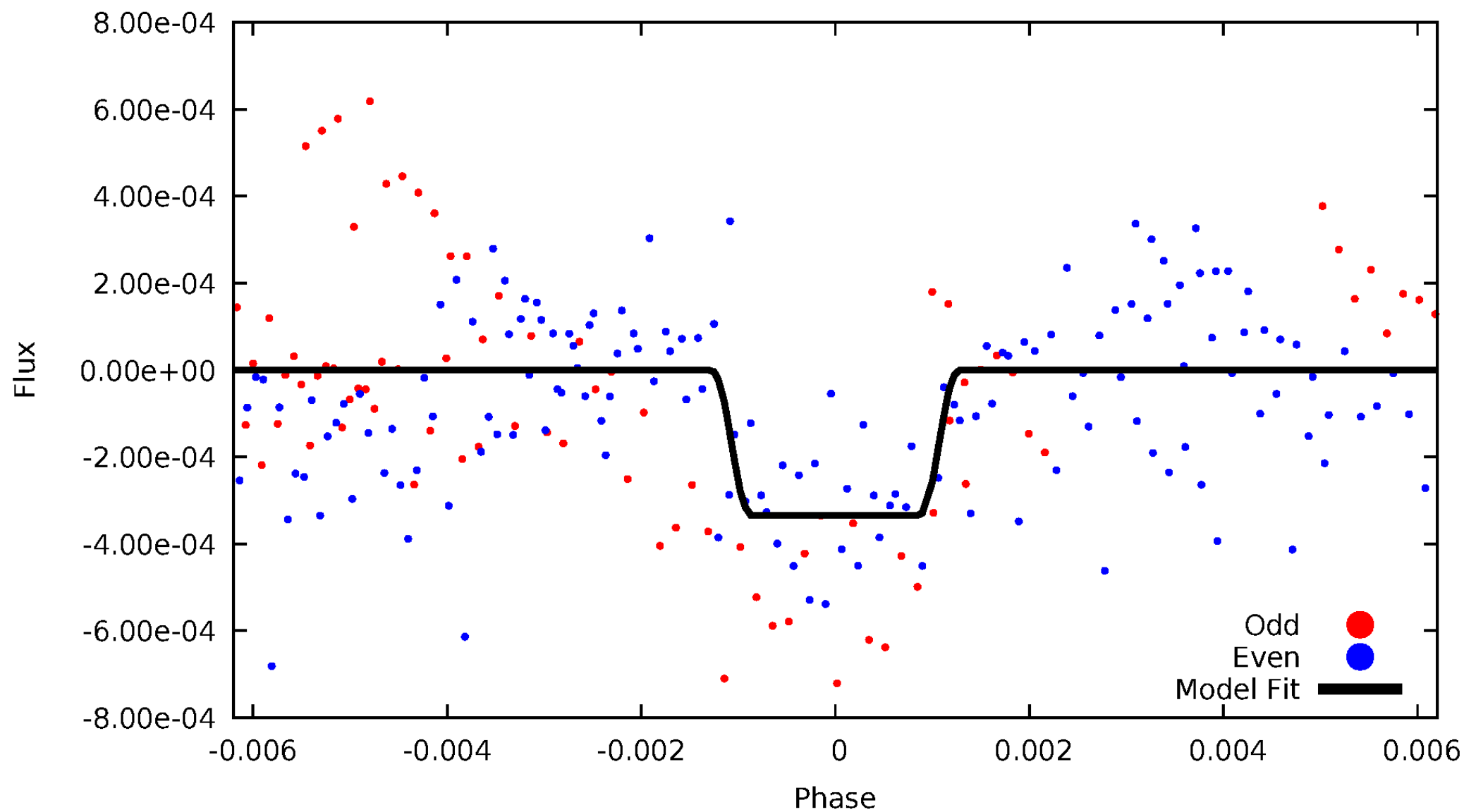
DV Odd/Even

TCE 009283002-09



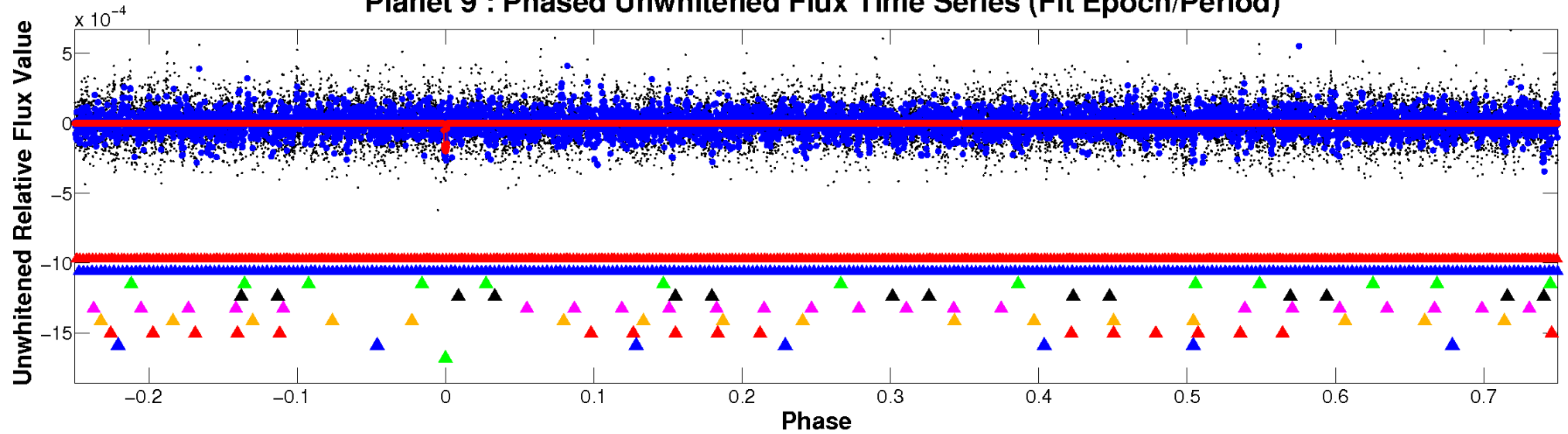
ALT Odd/Even

TCE 009283002-09

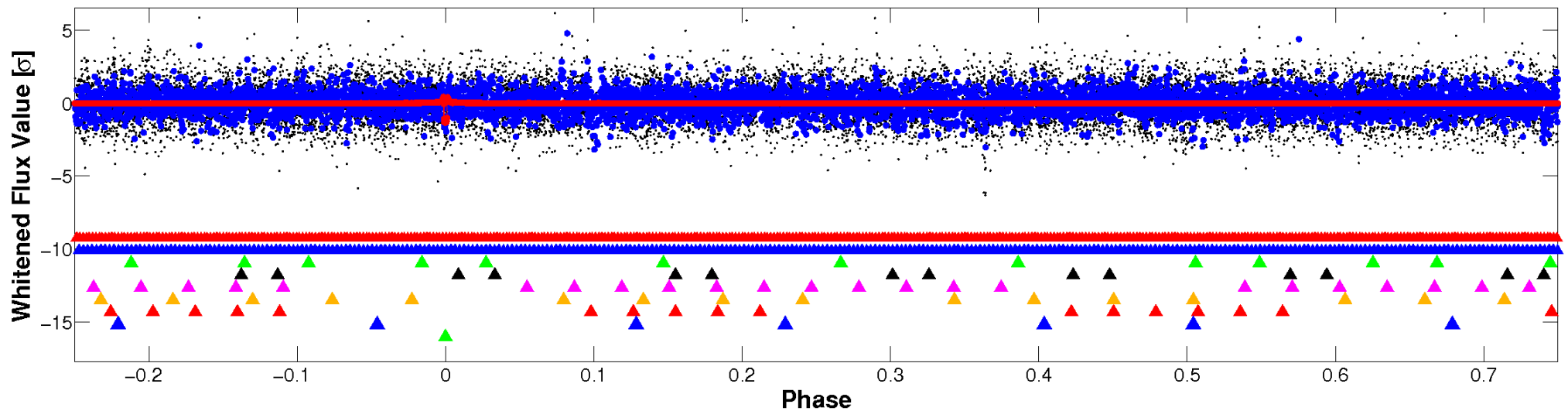


Non-Whitened Vs. Whitened Light Curve

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

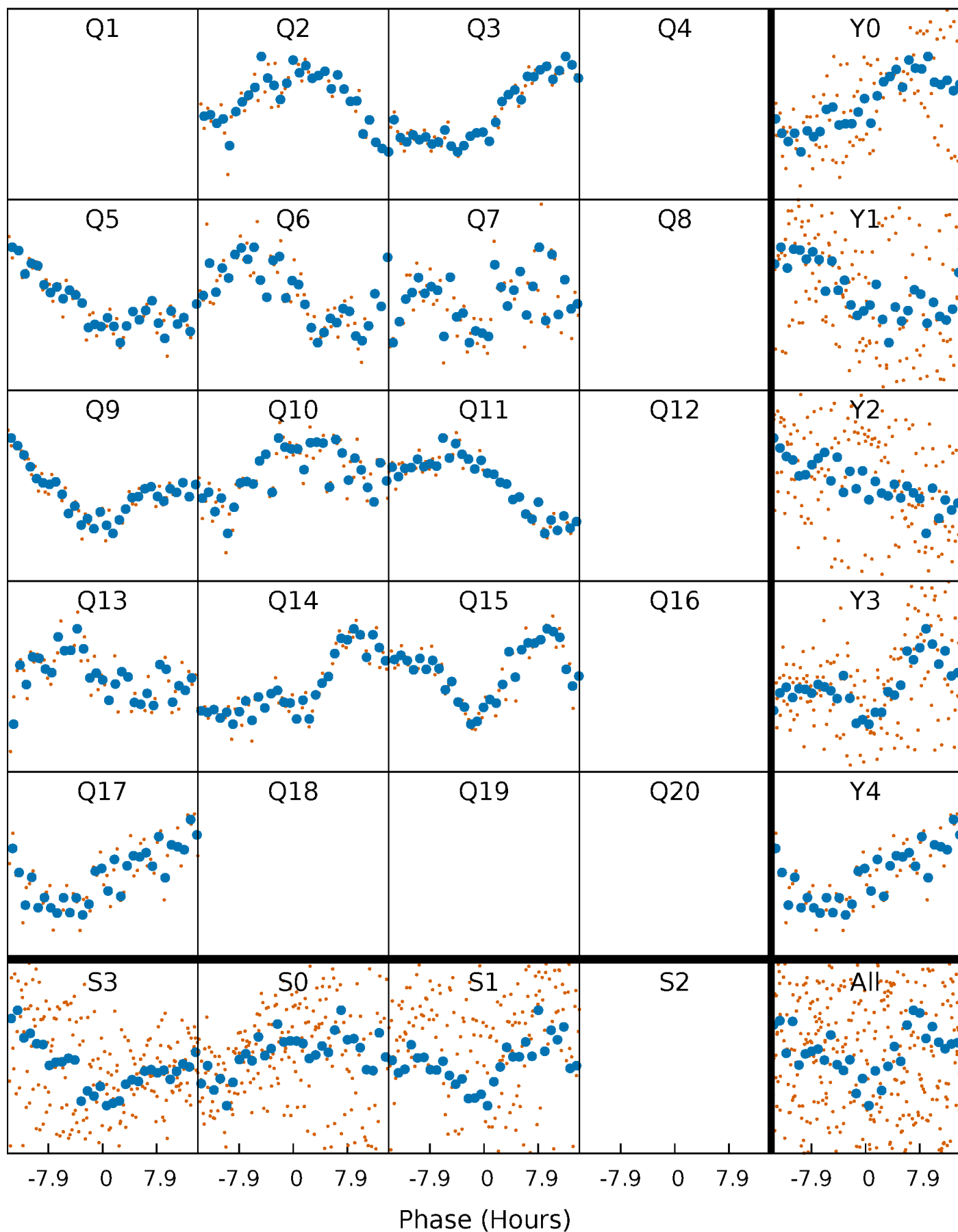


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



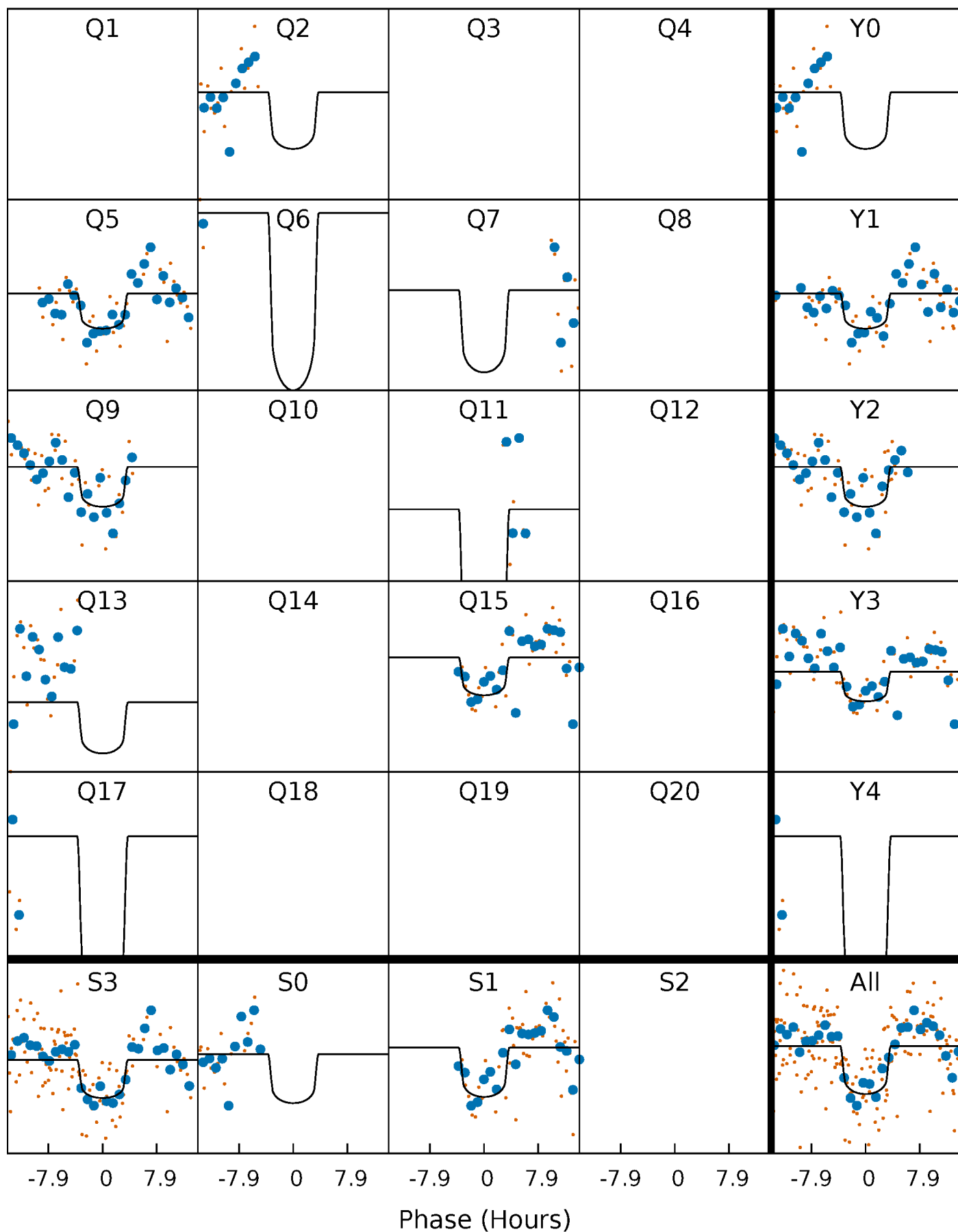
PDC Quarter-Phased Transit Curves

TCE 009283002-09 $P=123.175675$ Days $T_0=217.303365$ (BKJD)



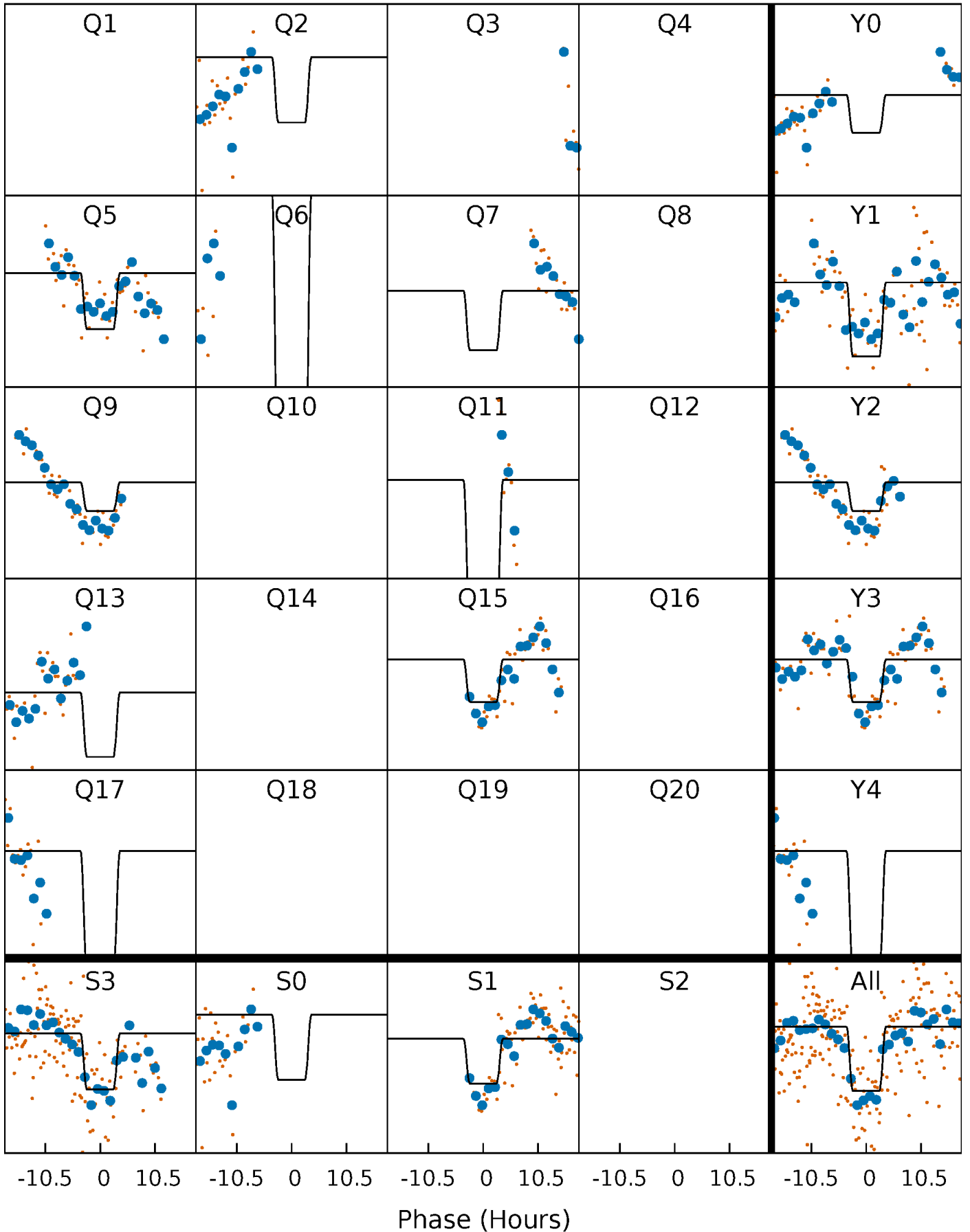
DV Quarter-Phased Transit Curves

TCE 009283002-09 $P=123.175675$ Days $T_0=217.303365$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

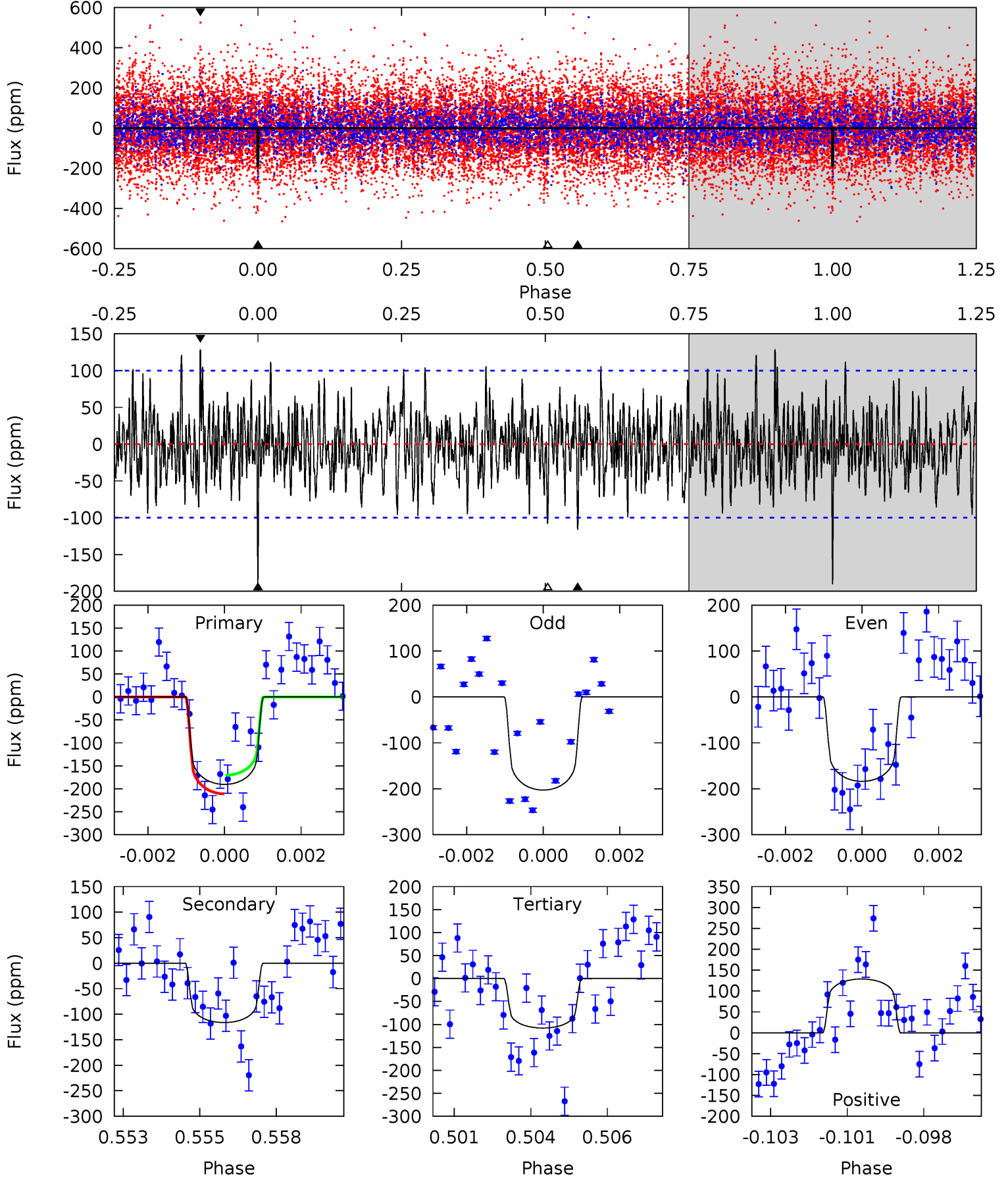
TCE 009283002-09 $P=123.164395$ Days $T_0=217.376313$ (BKJD)



DV Model-Shift Uniqueness Test

009283002-09, P = 123.175675 Days, E = 94.127690 Days

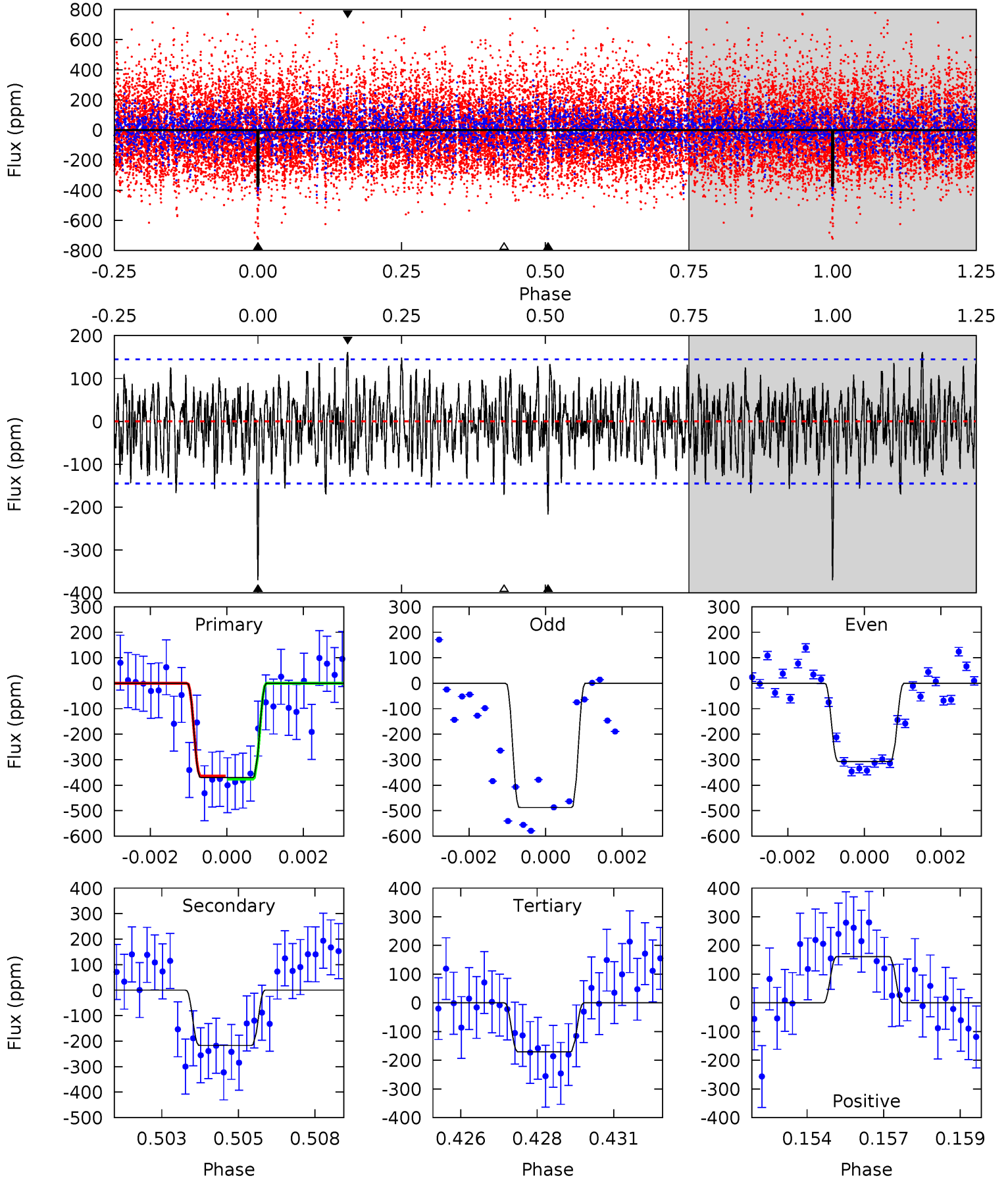
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.17	5.72	6.82	5.29	3.03	1.92	4.38	3.27	0.45	-0.66	0.48	0.65	0.40	1.07



Alt Model-Shift Uniqueness Test

009283002-09, P = 123.164395 Days, E = 94.211918 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	7.91	6.23	5.88	5.29	3.02	2.02	7.27	7.62	1.68	2.03	3.17	0.11	0.30	0.22



Stellar Parameters For KIC 009283002

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7353^{+230}_{-307}	$3.991^{+0.234}_{-0.156}$	$-0.140^{+0.250}_{-0.350}$	$2.127^{+0.535}_{-0.654}$	$1.616^{+0.197}_{-0.321}$	$0.236^{+0.337}_{-0.106}$
	+3%/-4%	+6%/-4%	+179%/-250%	+25%/-31%	+12%/-20%	+143%/-45%
Source	KIC0	KIC0	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 009283002-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-116 ± 19	$3.31^{+1.83}_{-1.61}$	868^{+66}_{-70}	6149^{+3135}_{-1064}	1855^{+5166}_{-1122}
Alt.	-217 ± 27	$4.28^{+1.84}_{-1.90}$	868^{+69}_{-66}	6398^{+2482}_{-1000}	2102^{+4705}_{-1107}

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

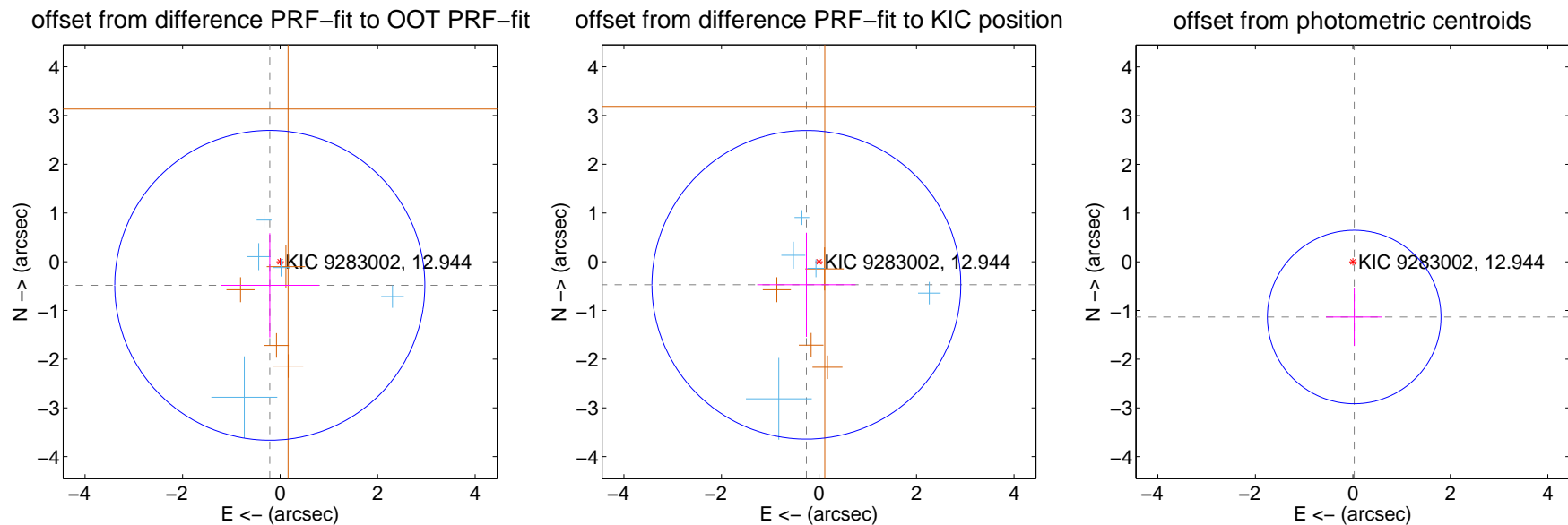
DV Centroid Data

Supplemental centroid analysis for 009283002-09. Kepler magnitude: 12.94. Transit SNR 8.09

There are 5 quarters with good PRF difference image offsets

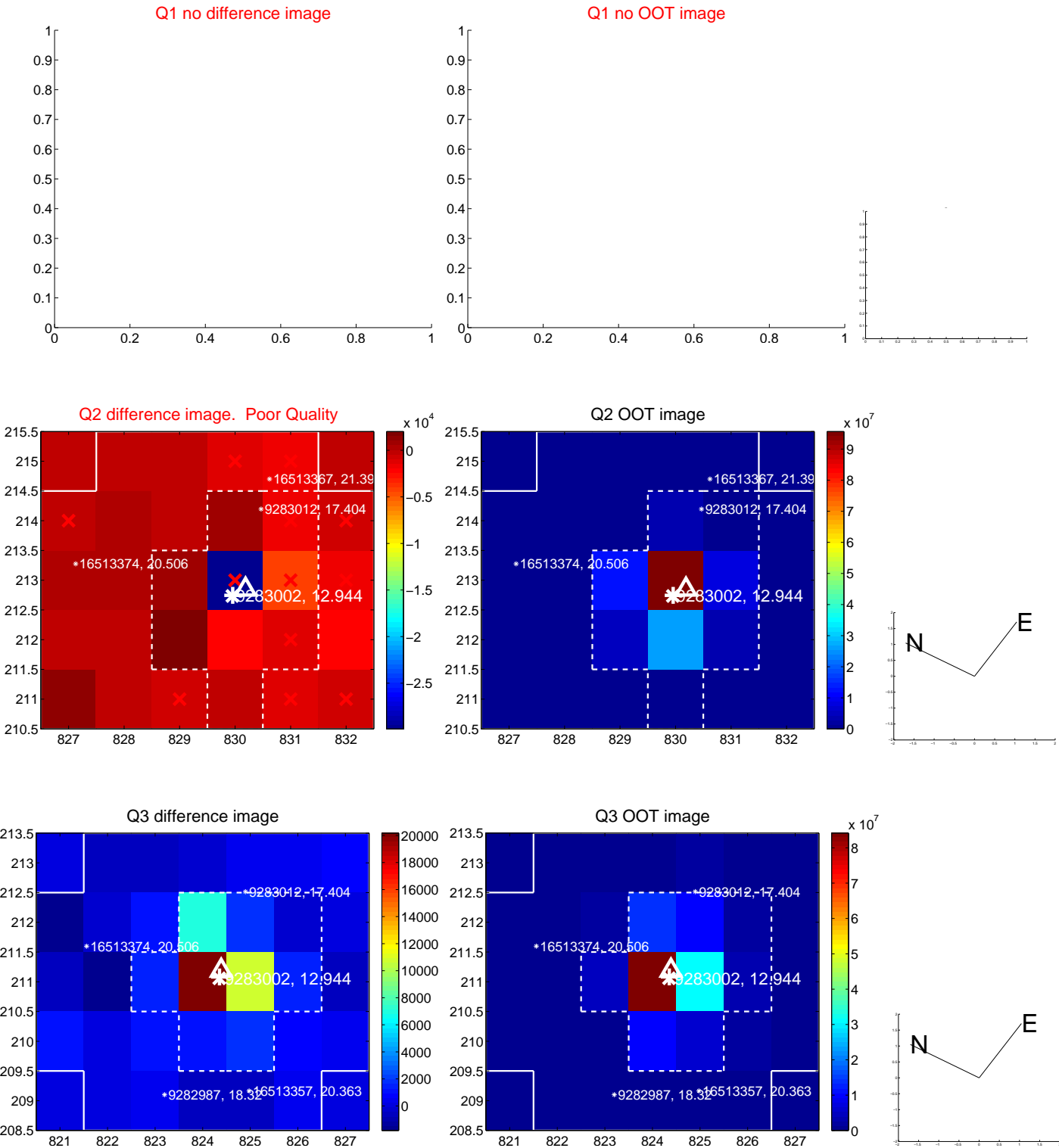
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.529 ± 1.060	0.50	0.211 ± 1.009	-0.485 ± 1.069
PRF-fit source offset from KIC position	0.540 ± 1.055	0.51	0.259 ± 1.009	-0.474 ± 1.069
photometric centroid source offset	1.13 ± 0.59	1.91	-0.03 ± 0.58	-1.13 ± 0.59

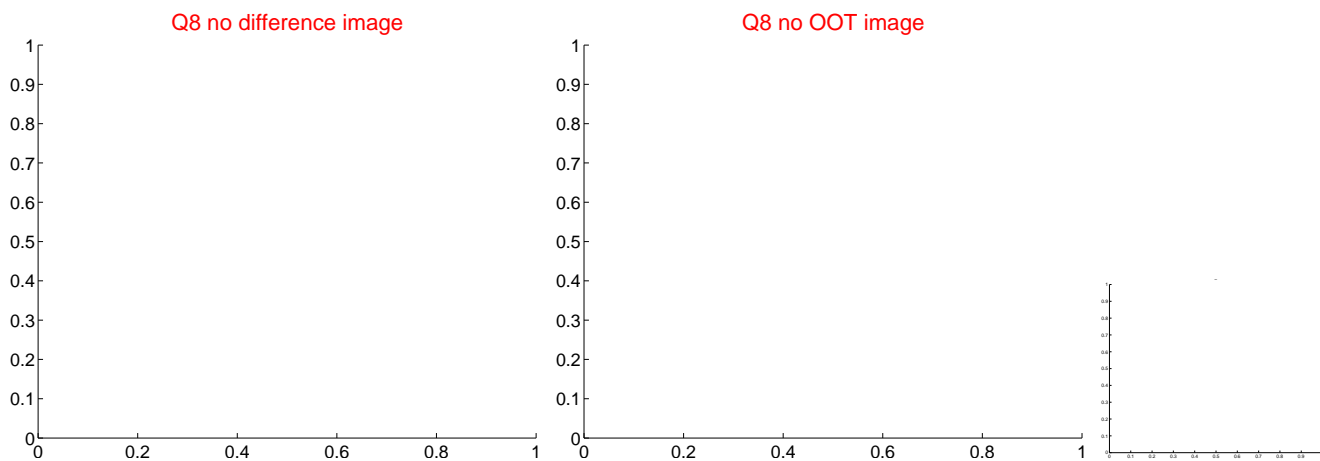
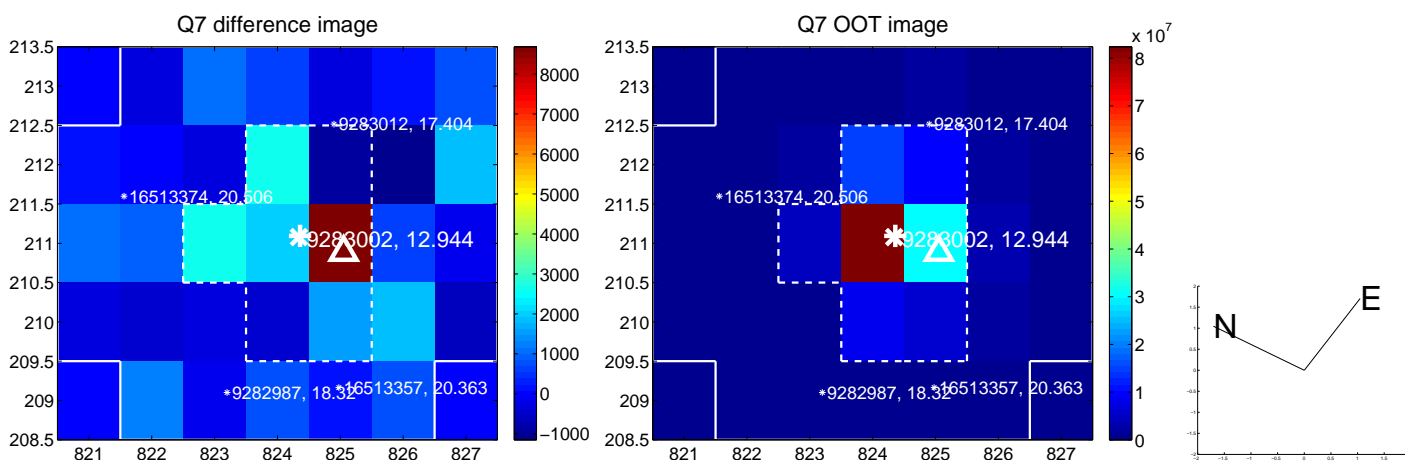
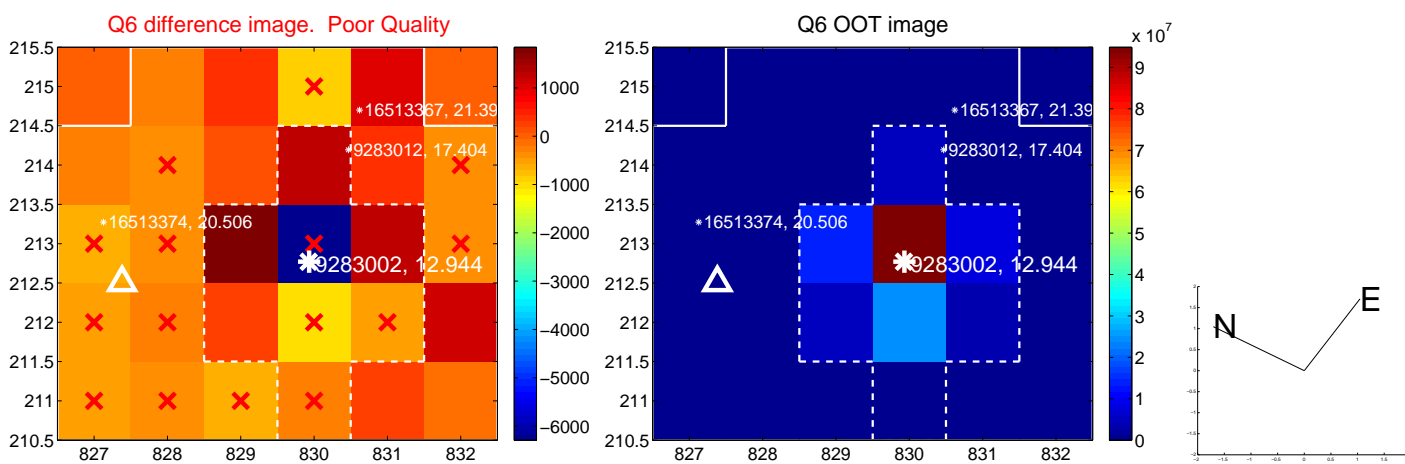
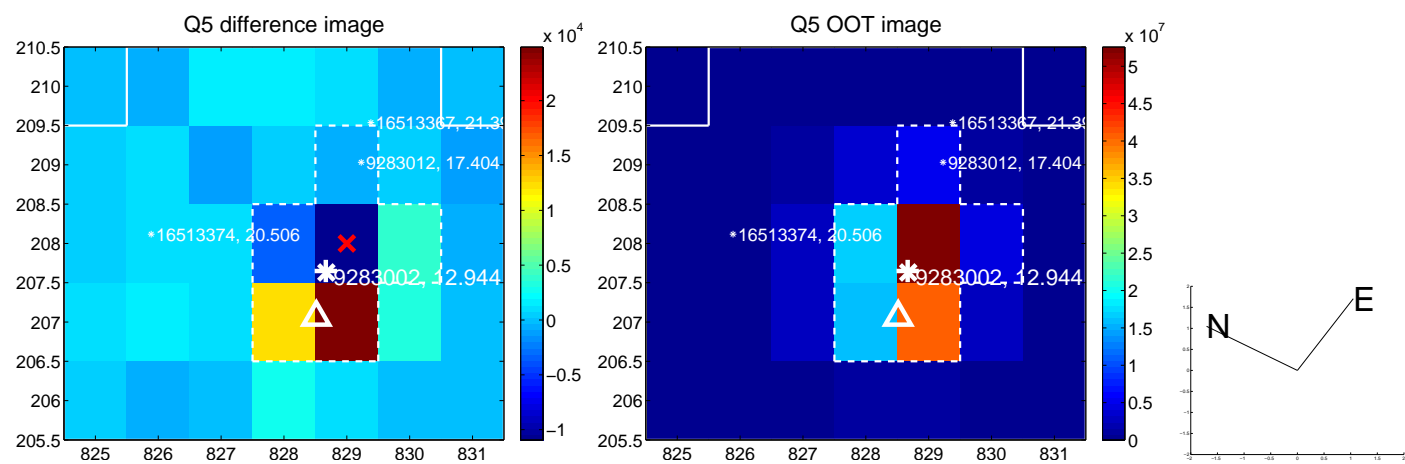


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

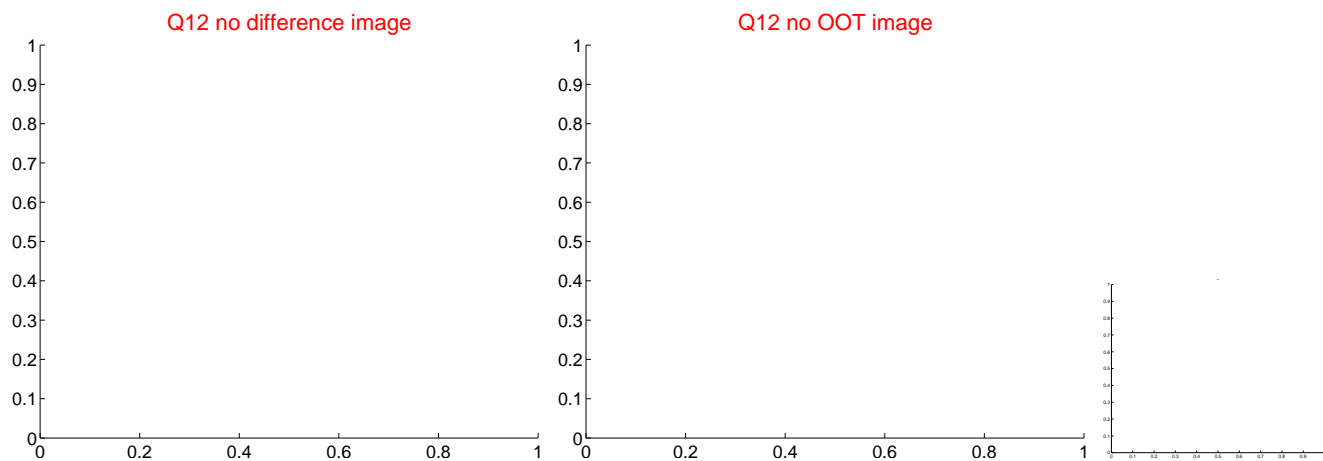
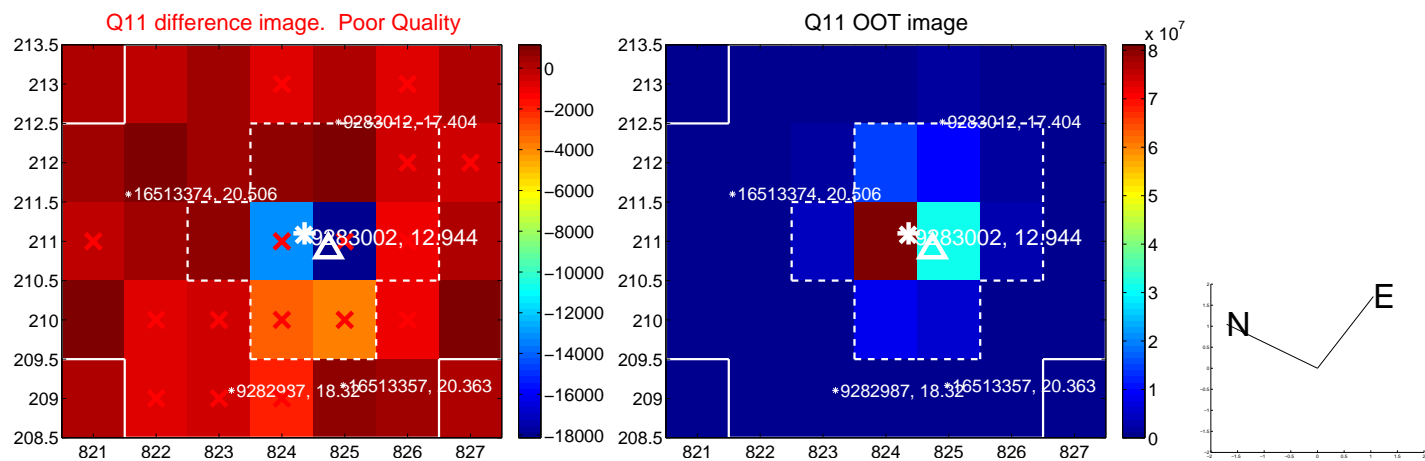
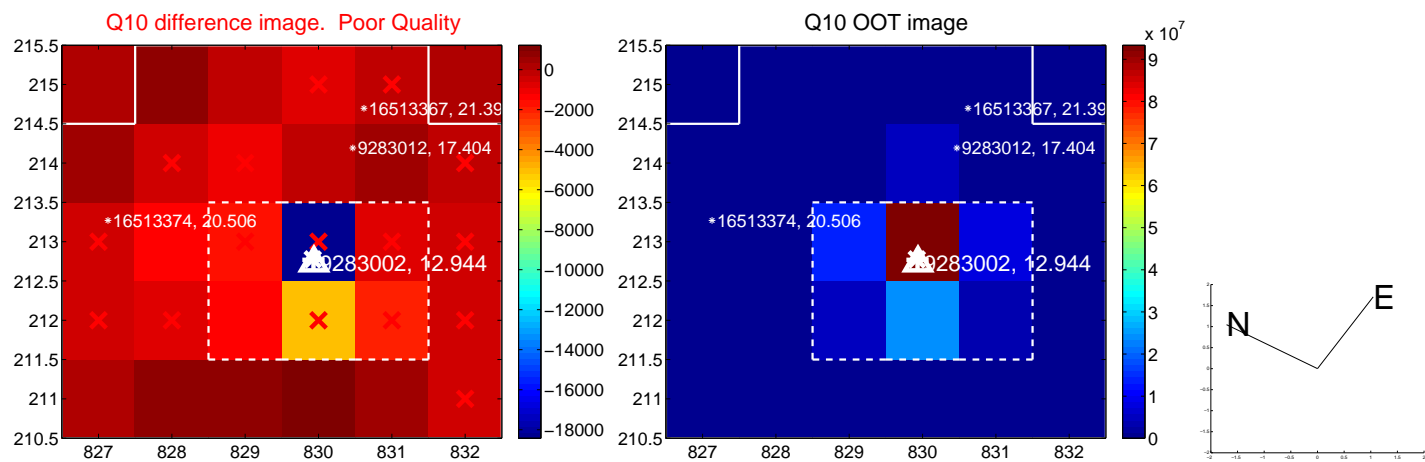
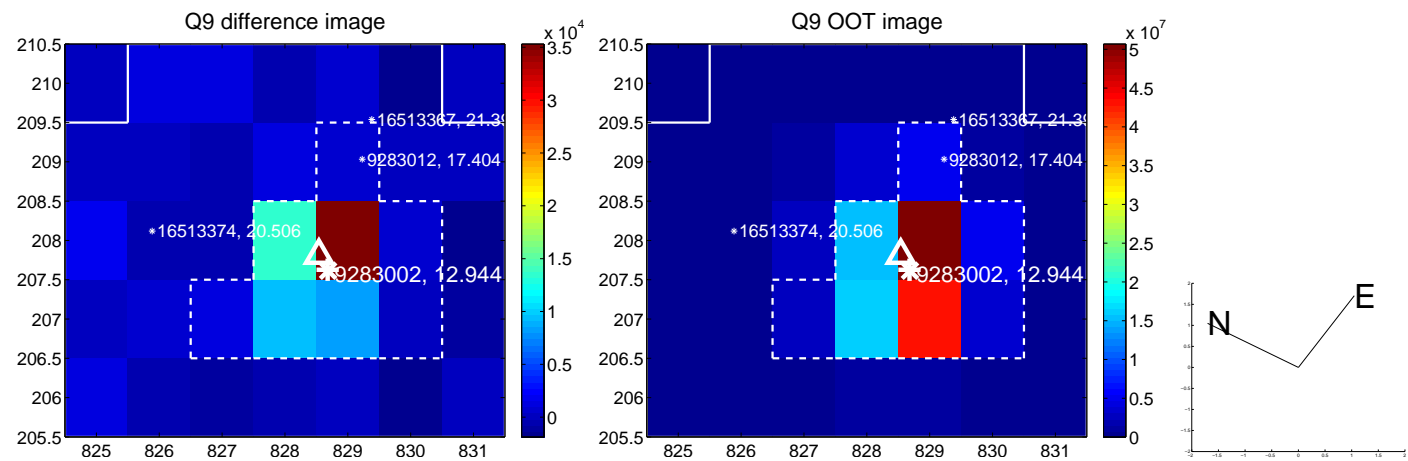
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



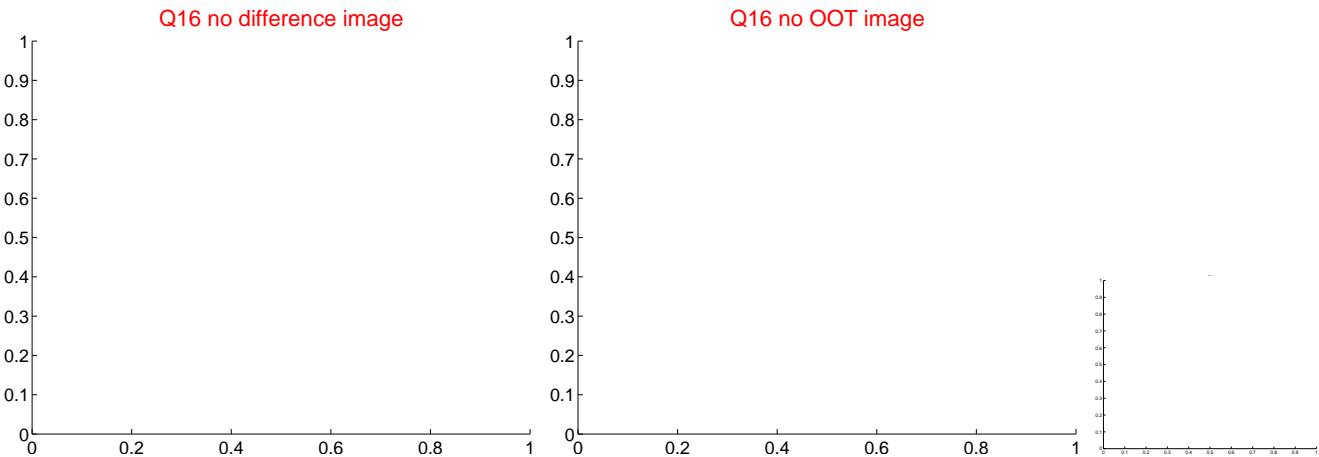
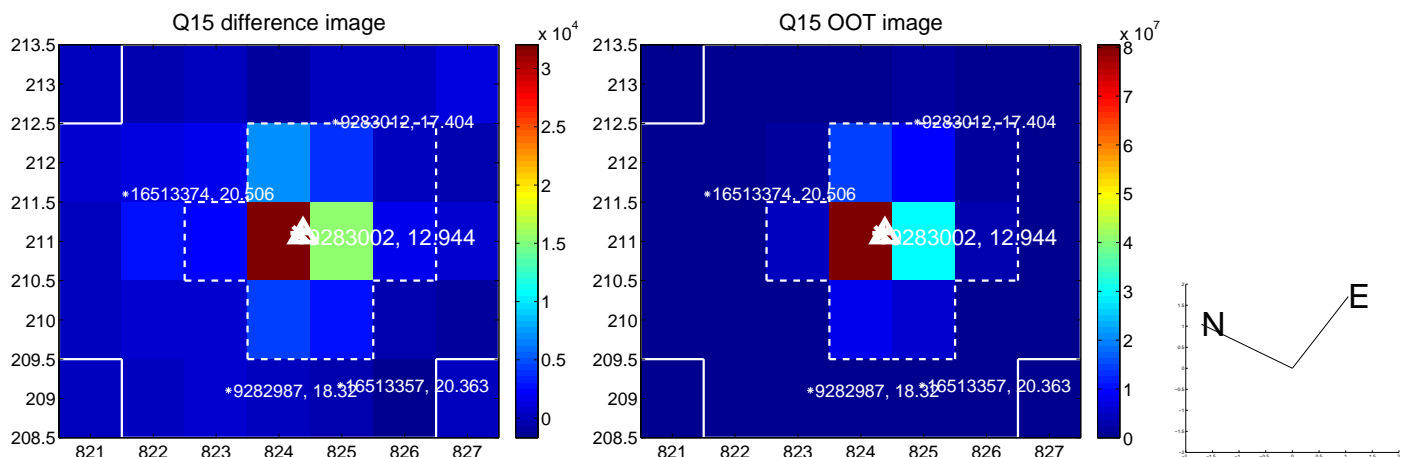
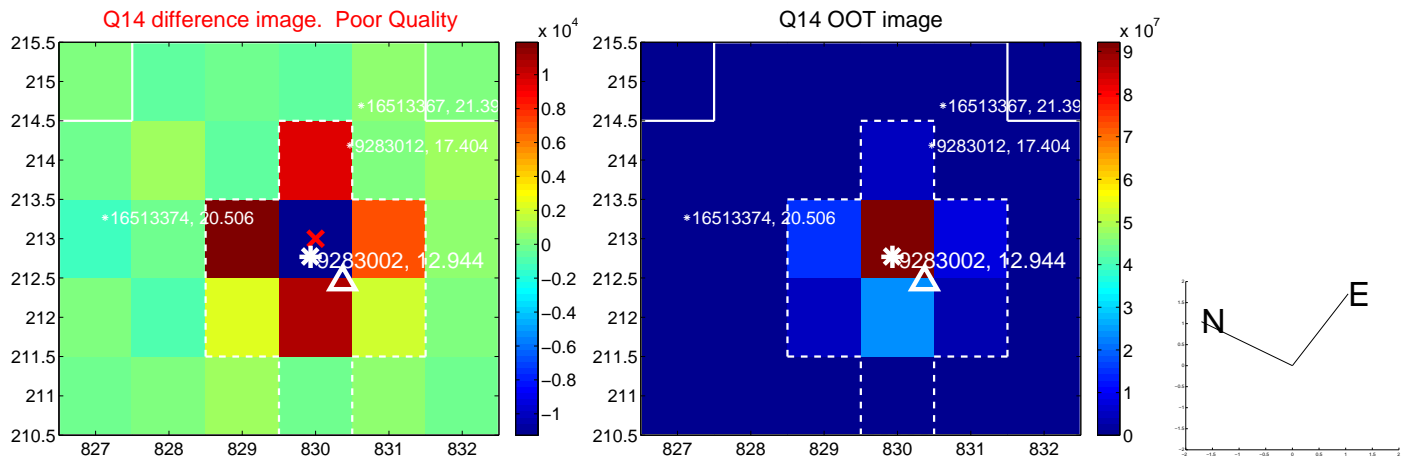
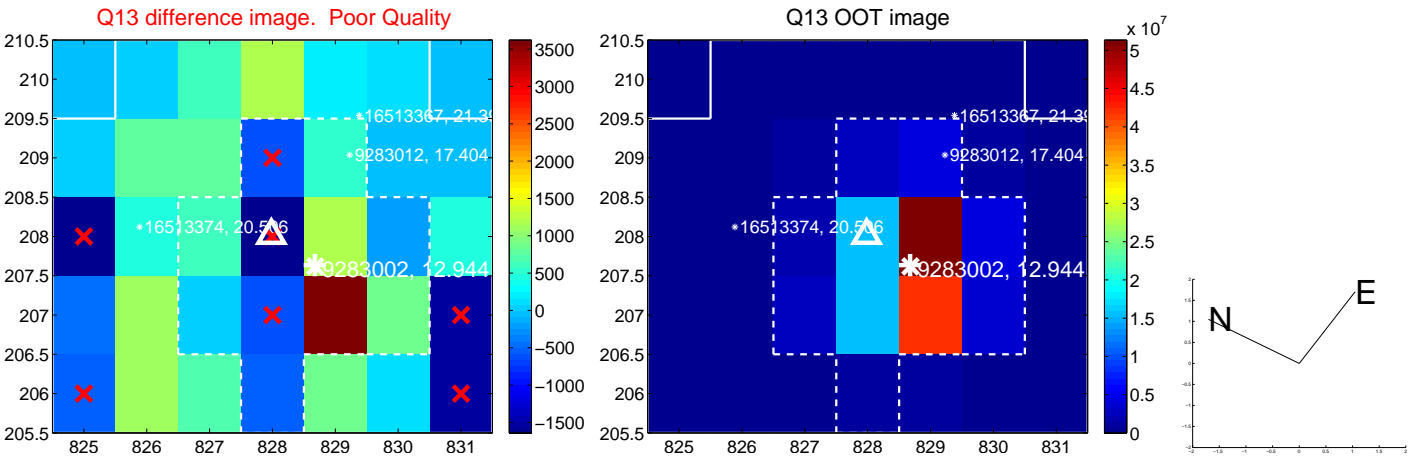
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



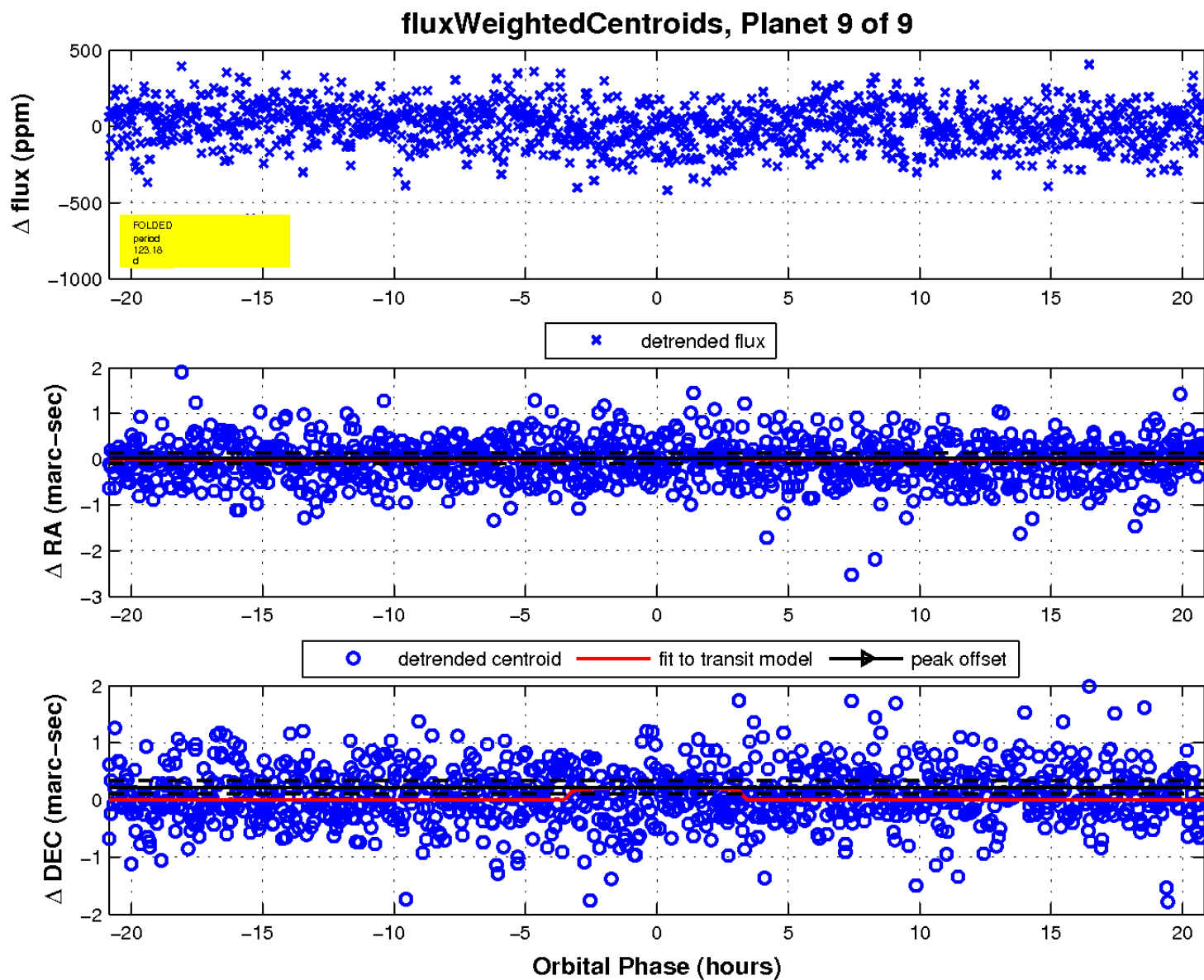
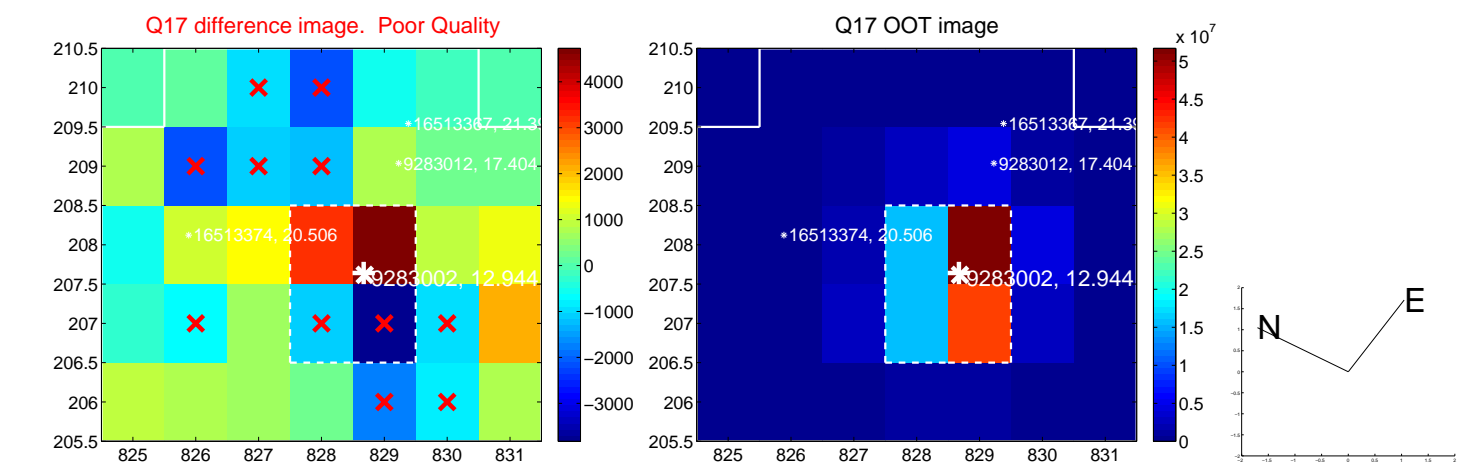
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

