

KIC 009327458

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})
009327458-01	OBS	No	394.464931	372.031658	29599.5	24.391	284.9	638.9	6.87	4888	174.19	12.96
009327458-02	OBS	No	389.497710	381.011573	3458.1	15.000	73.9	-1.0	6.87	4888	38.79	13.18
009327458-03	OBS	No	391.643233	368.703758	2636.2	15.000	104.4	-1.0	6.87	4888	33.87	13.09
009327458-05	OBS	No	154.719879	182.908167	591.9	13.336	14.9	22.5	6.87	4888	35.22	45.14
009327458-06	OBS	No	393.857576	370.651900	70230.0	16.499	1348.1	1576.5	6.87	4888	188.83	12.99
009327458-07	OBS	No	205.643348	141.312291	163.1	12.500	7.5	-1.0	6.87	4888	8.42	30.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327458-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009327458-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
009327458-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

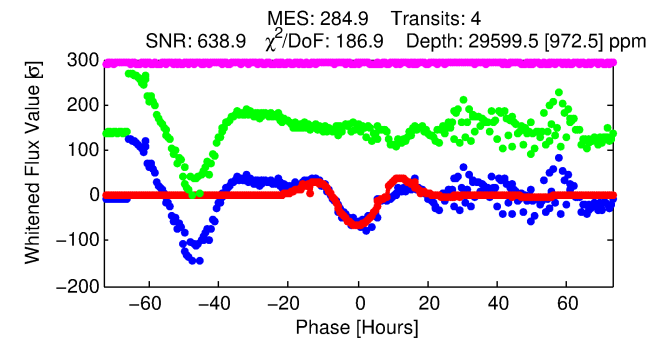
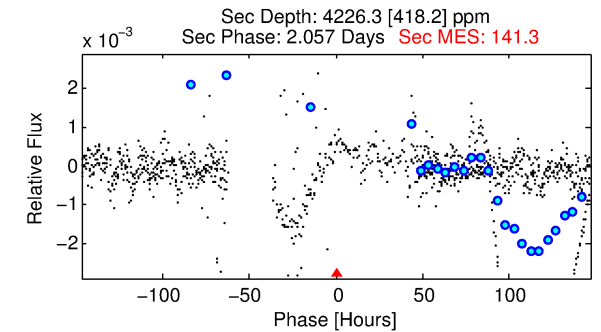
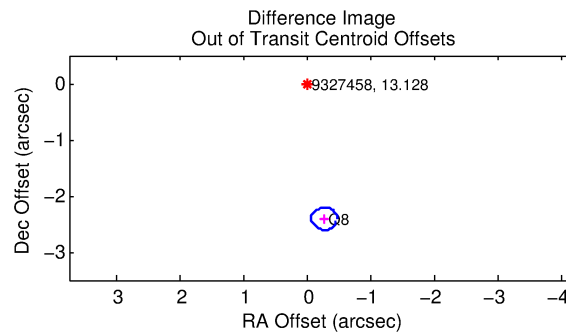
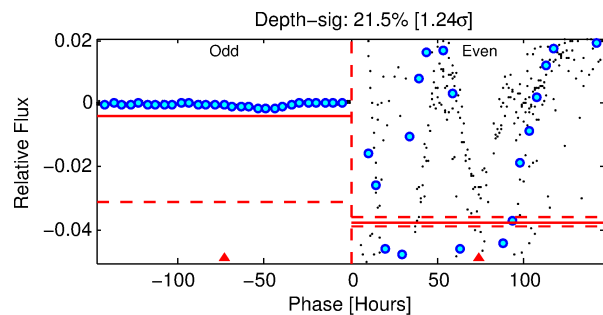
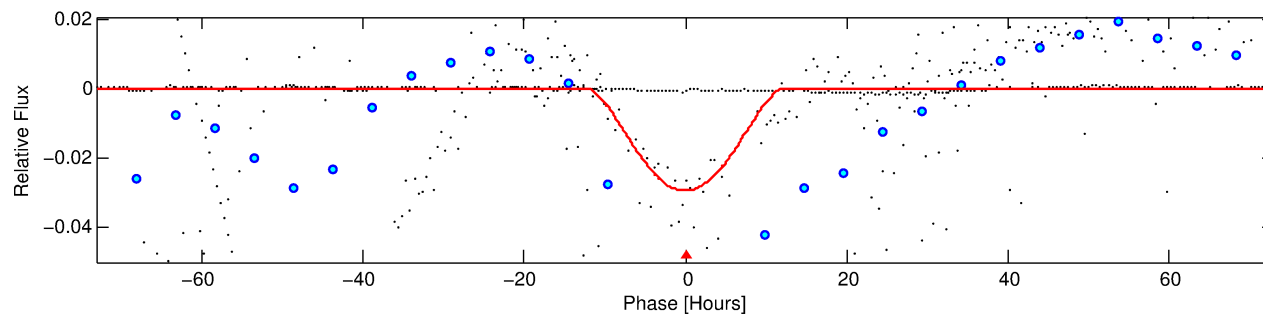
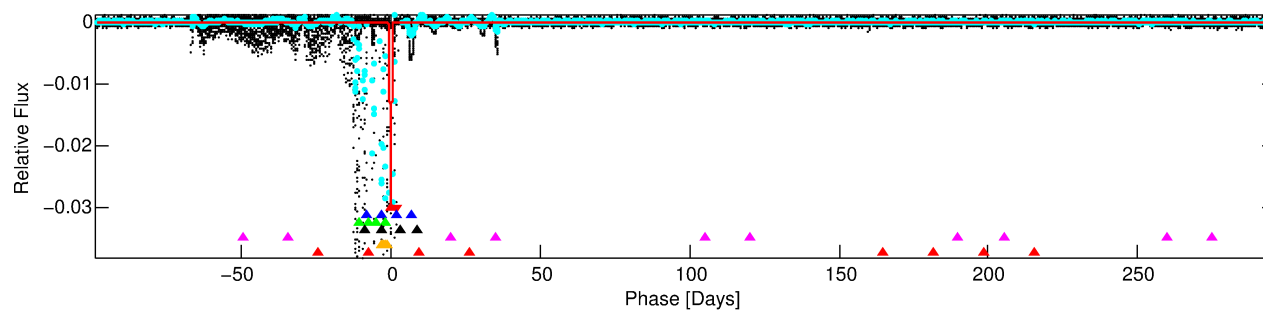
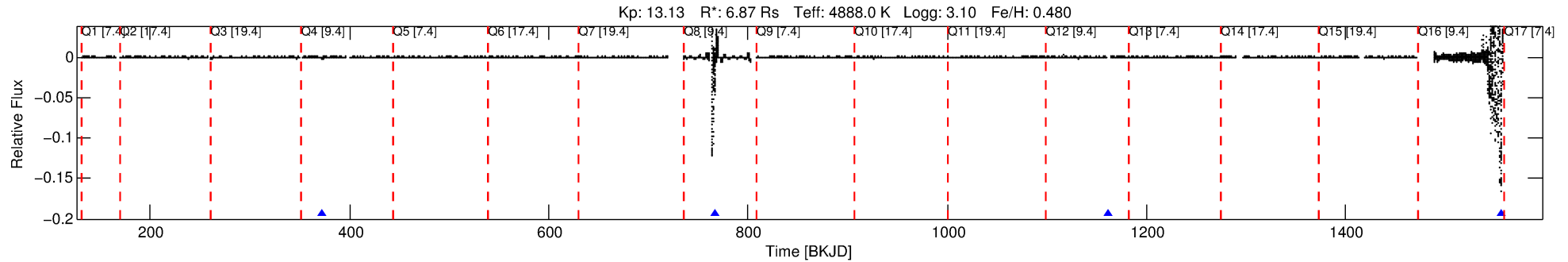
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009327458-01

No Significant Match Found

DV One-Page Summary

KIC: 9327458 Candidate: 1 of 7 Period: 394.465 d



DV Fit Results:

Period = 394.46493 [0.02964] d
Epoch = 372.0317 [0.0294] BKJD
Rp/R* = 0.2324 [0.1629]
a/R* = 100.45 [9.65]
b = 0.93 [0.26]
Seff = 12.96 [10.92]
Teq = 484 [102] K
Rp = 174.19 [161.02] Re
a = 1.3643 [0.7404] AU
Ag = 142.64 [232.94] [0.61 σ]
Teffp = 2585 [912] K [2.29 σ]

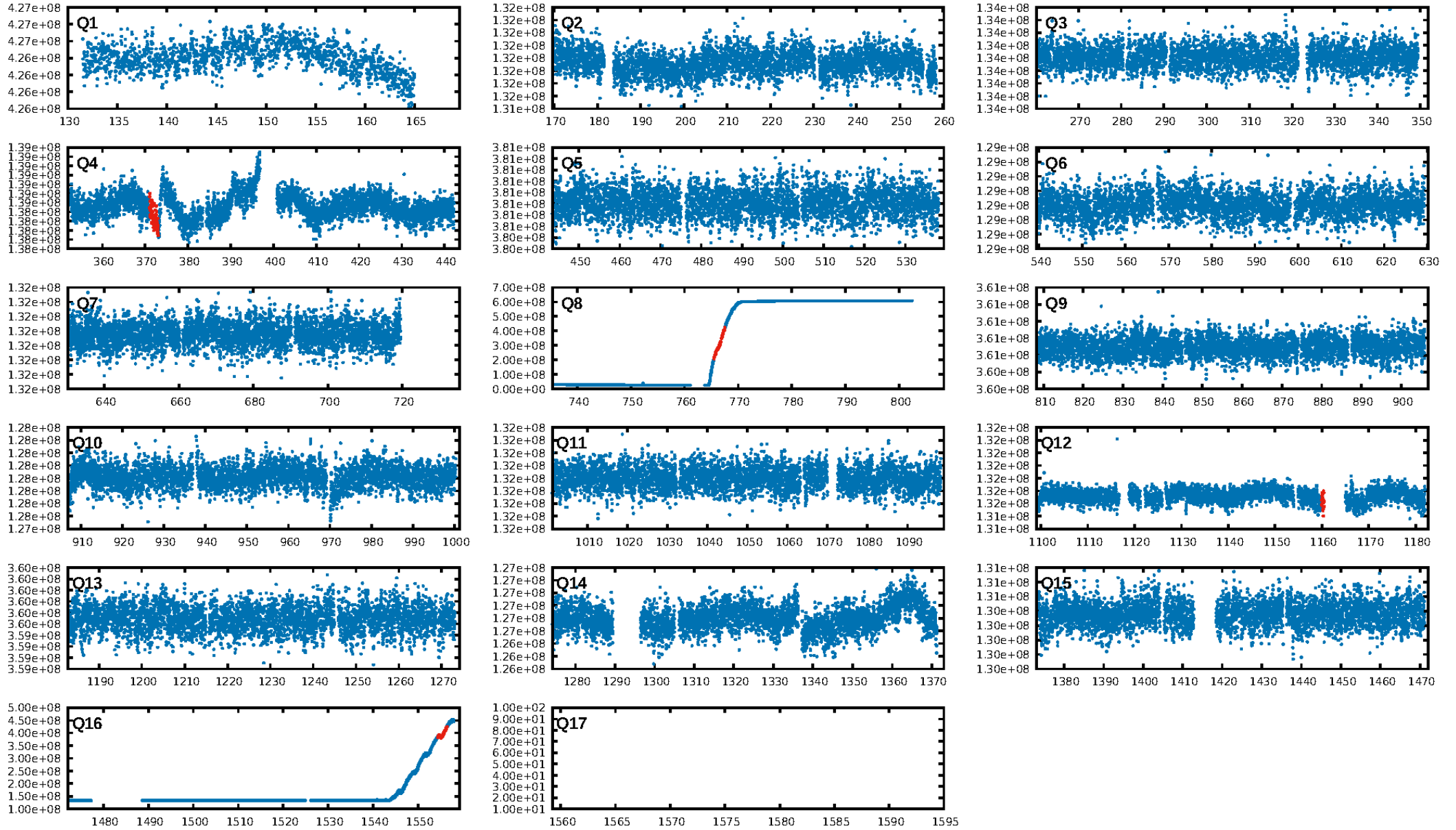
DV Diagnostic Results:

ShortPeriod-sig: 37.9% [0.50 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.69
Centroid-sig: N/A
Centroid-so: 3.734 arcsec [7.33 σ]
OotOffset-rm: 2.423 arcsec [36.30 σ]
KicOffset-rm: 4.913 arcsec [73.60 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.50 [1/2]

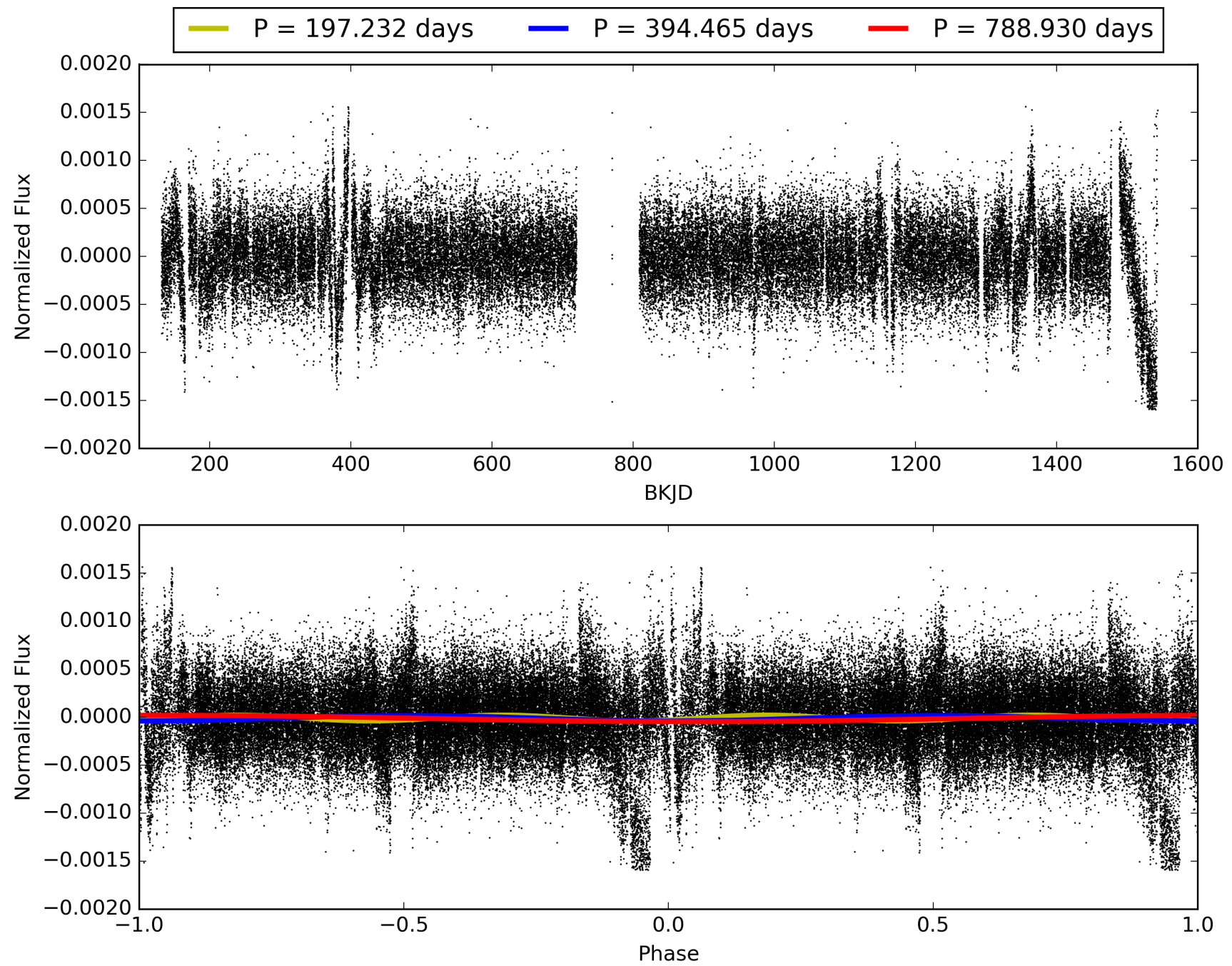
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:16:45 Z

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

TCE 009327458-01, PDC Light Curves

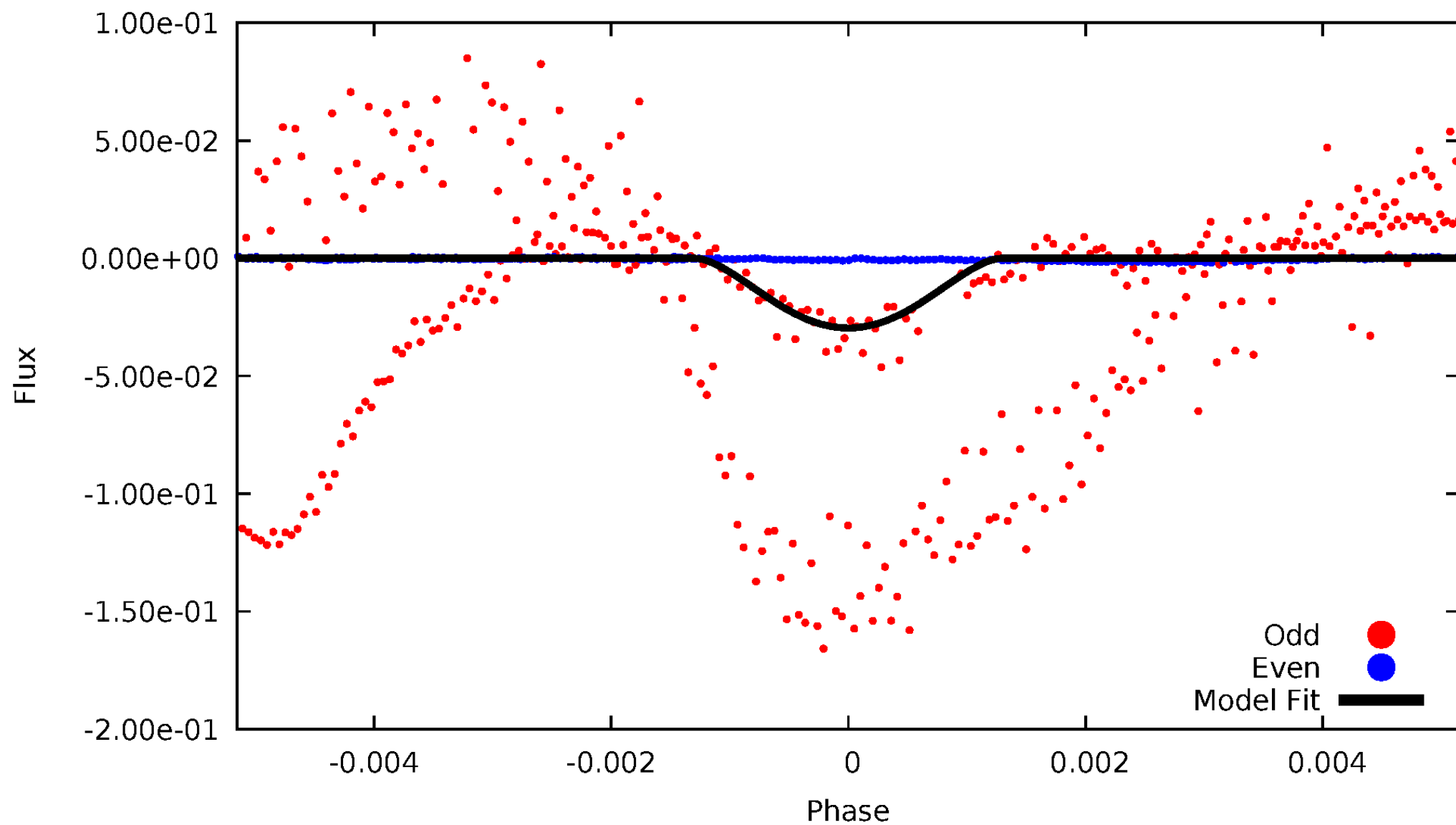


TCE 009327458-01



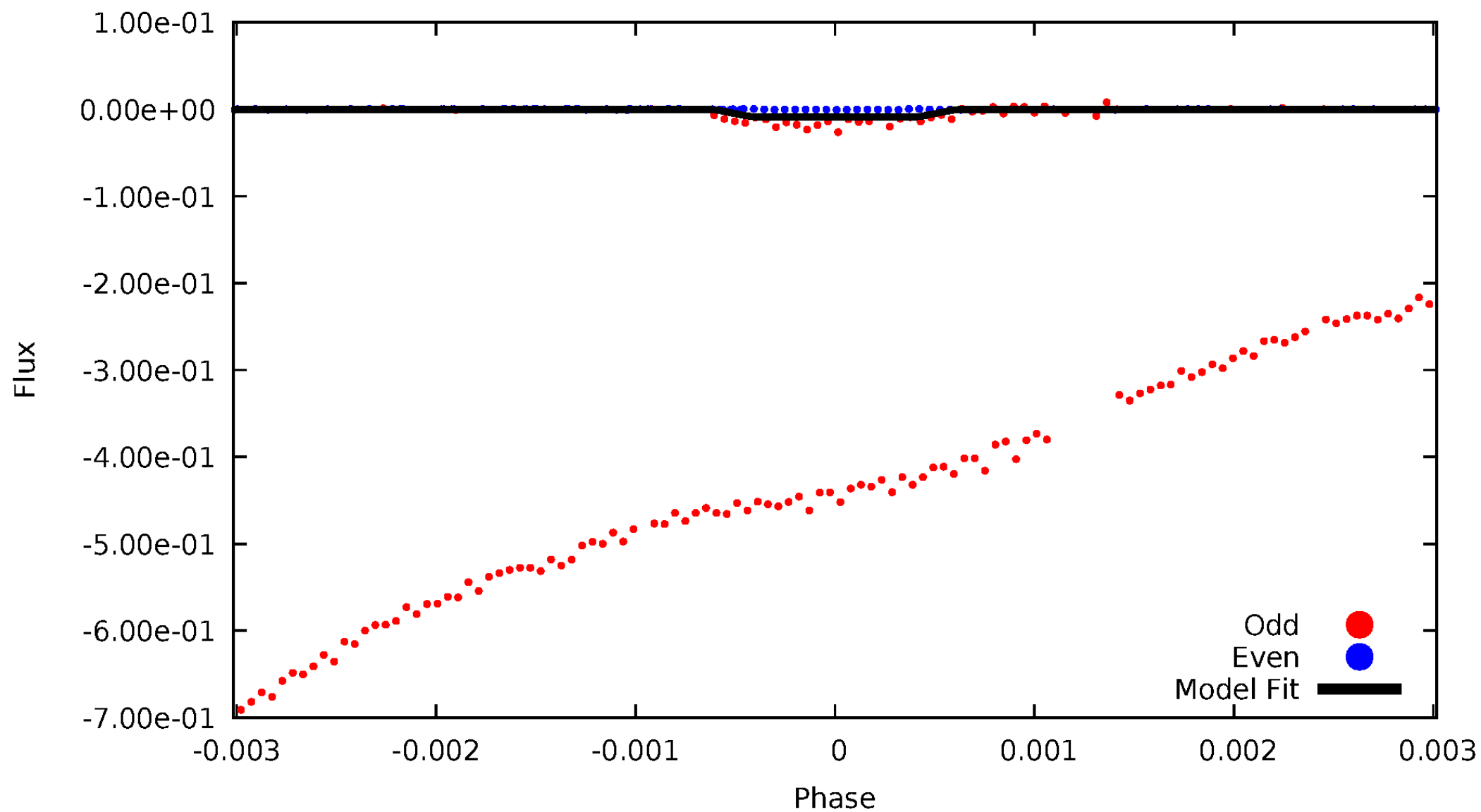
DV Odd/Even

TCE 009327458-01



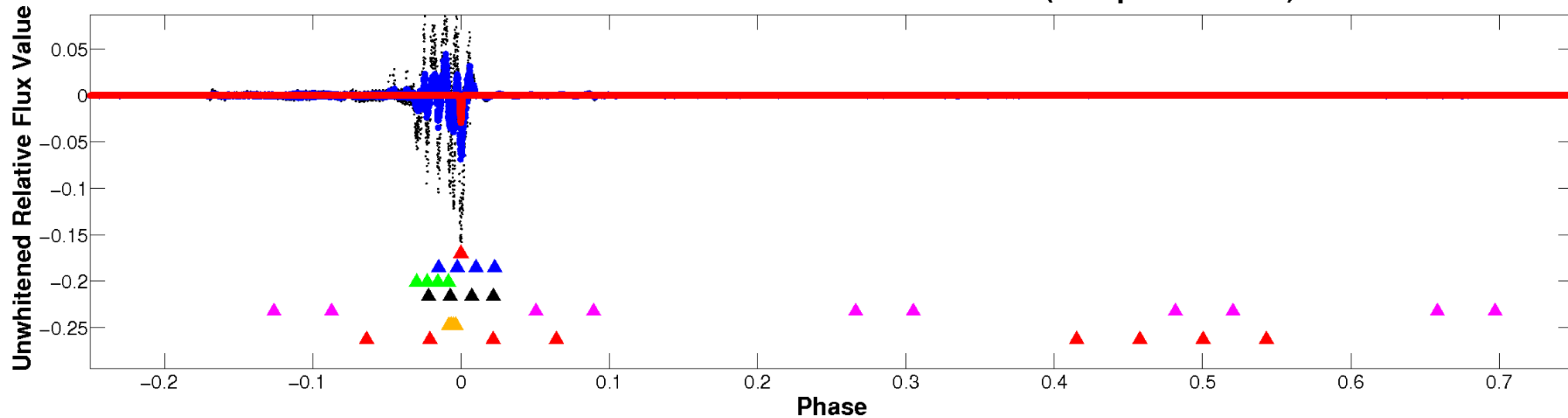
ALT Odd/Even

TCE 009327458-01

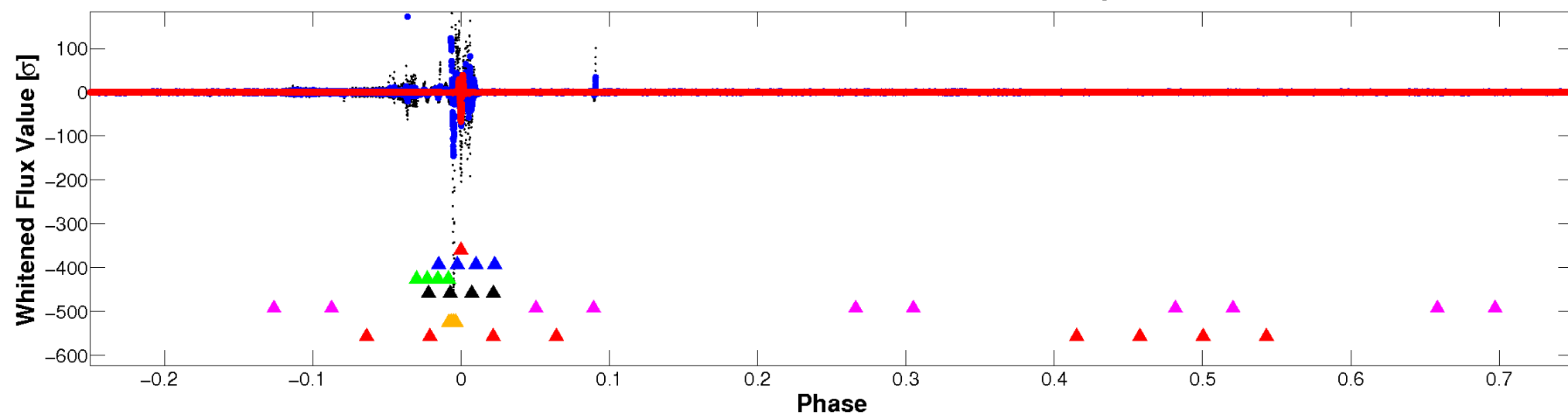


Non-Whitened Vs. Whitened Light Curve

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

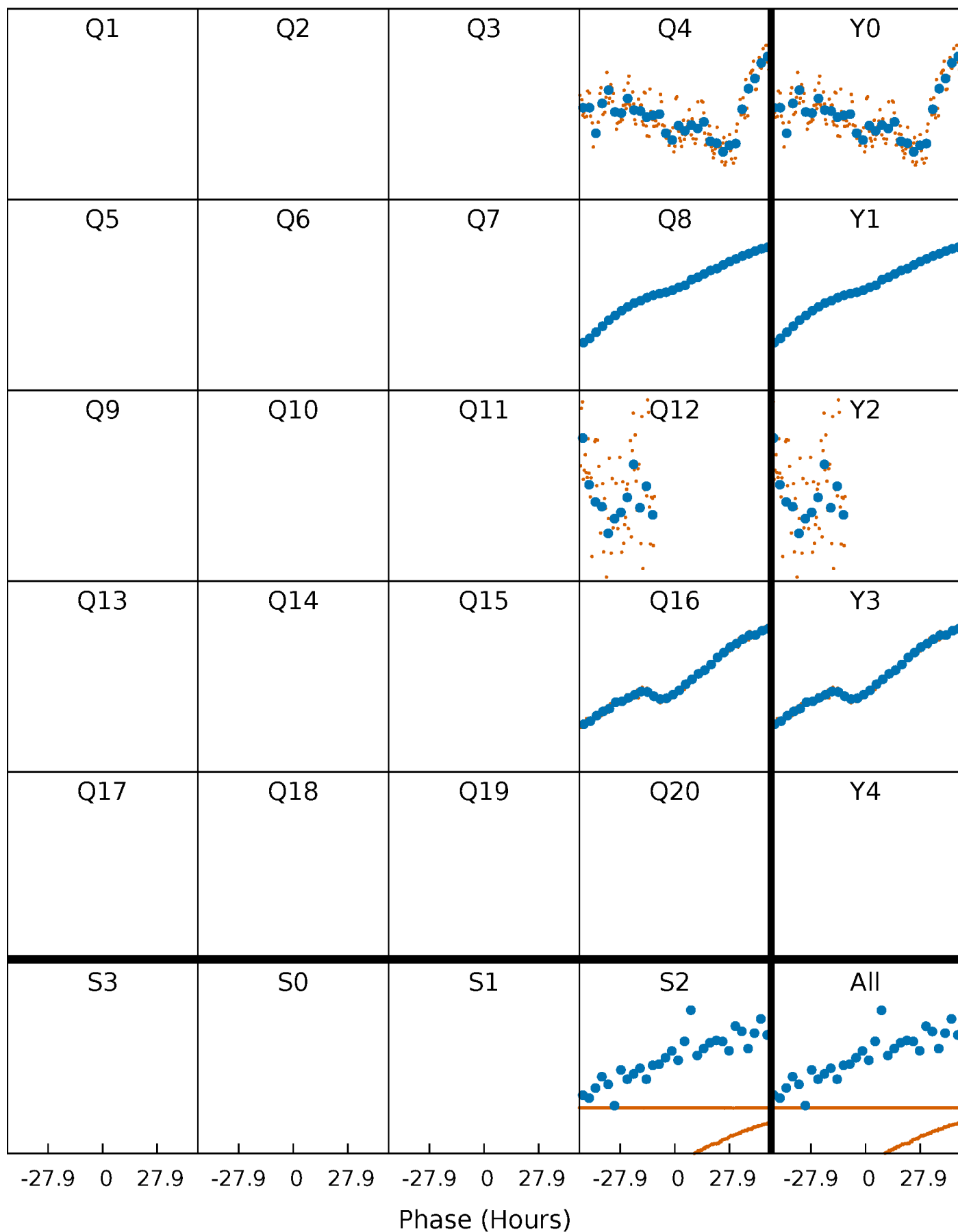


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



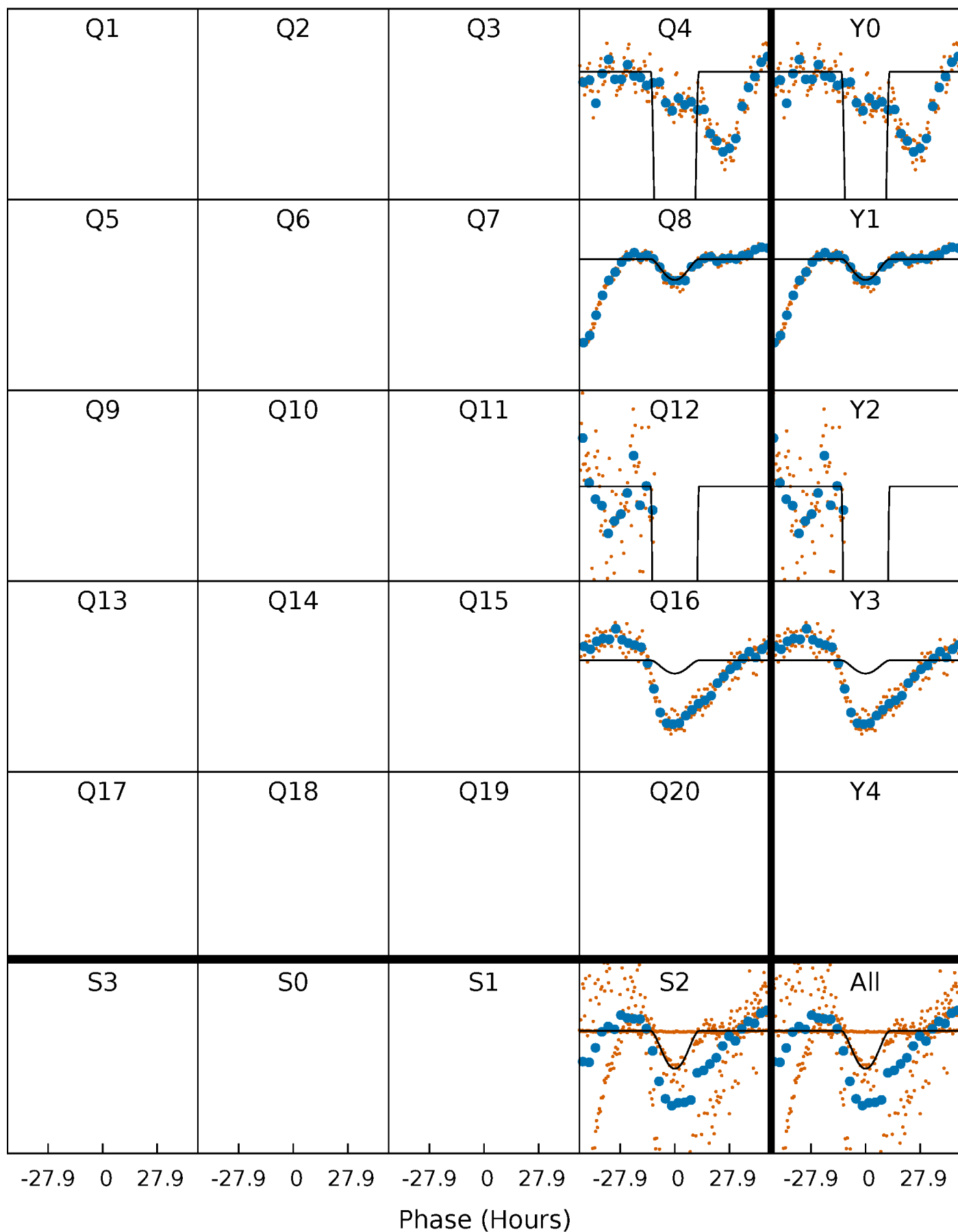
PDC Quarter-Phased Transit Curves

TCE 009327458-01 P=394.464931 Days $T_0=372.031658$ (BKJD)



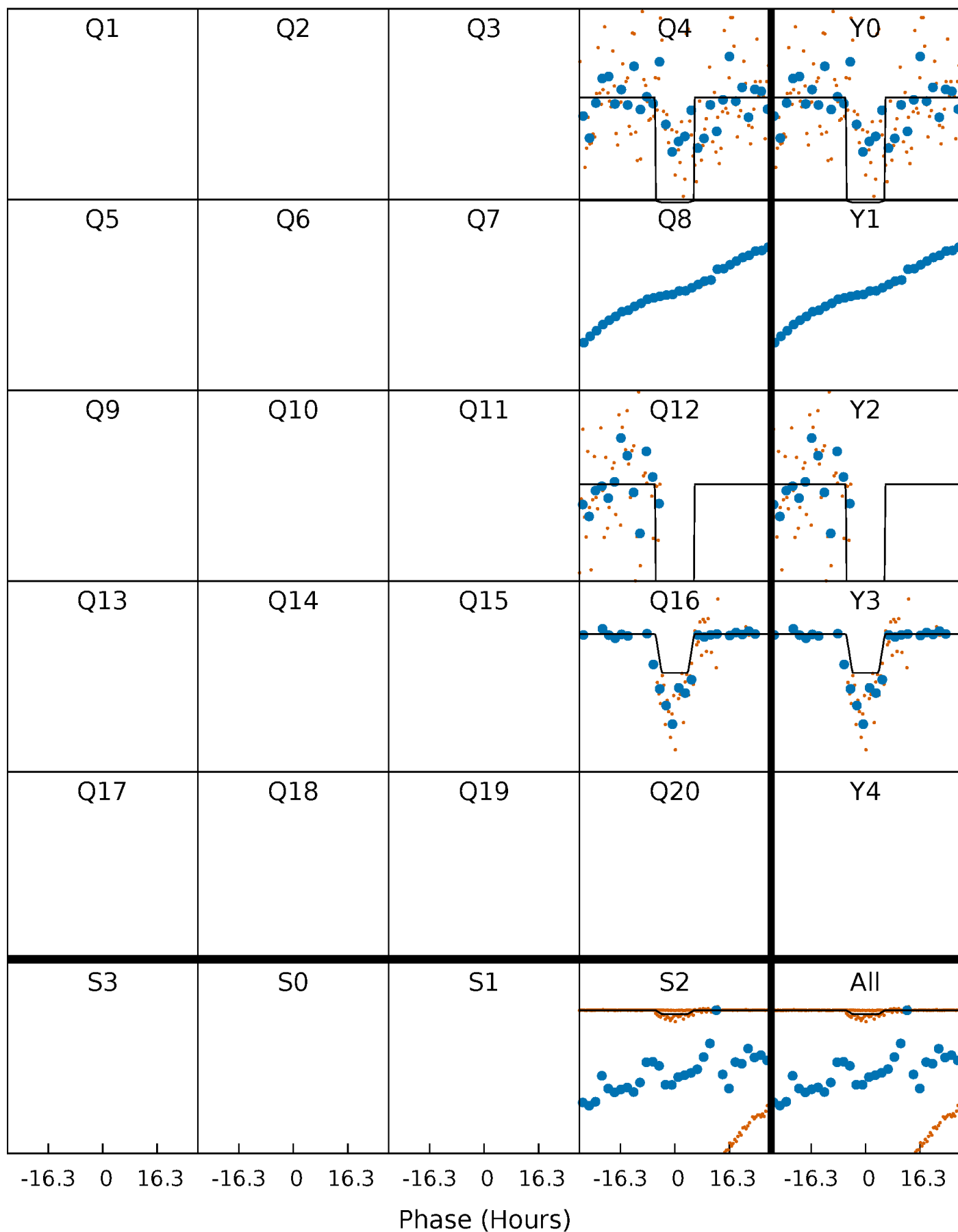
DV Quarter-Phased Transit Curves

TCE 009327458-01 P=394.464931 Days $T_0=372.031658$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

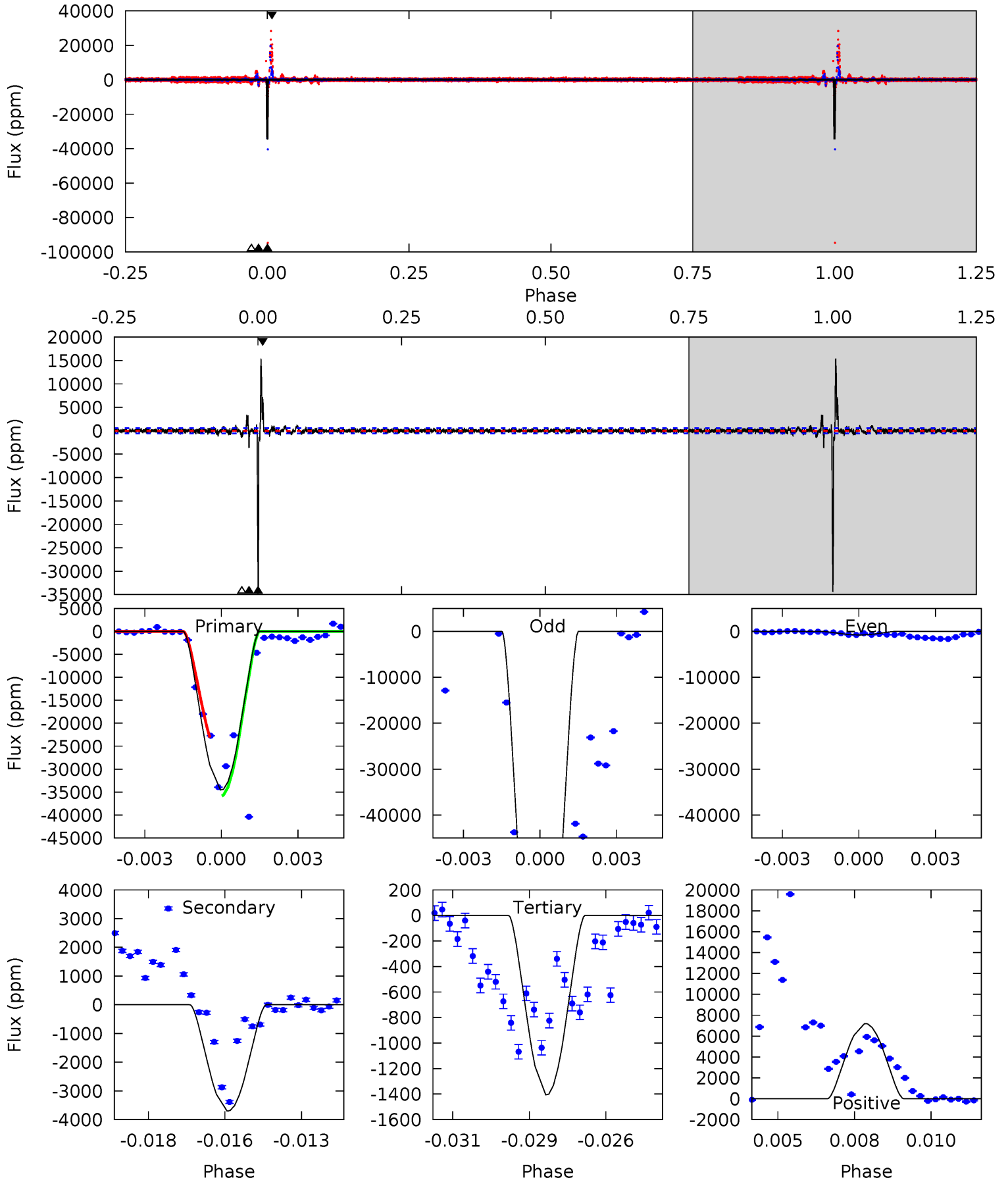
TCE 009327458-01 P=394.401764 Days $T_0=371.907841$ (BKJD)



DV Model-Shift Uniqueness Test

009327458-01, P = 394.464931 Days, E = 372.031658 Days

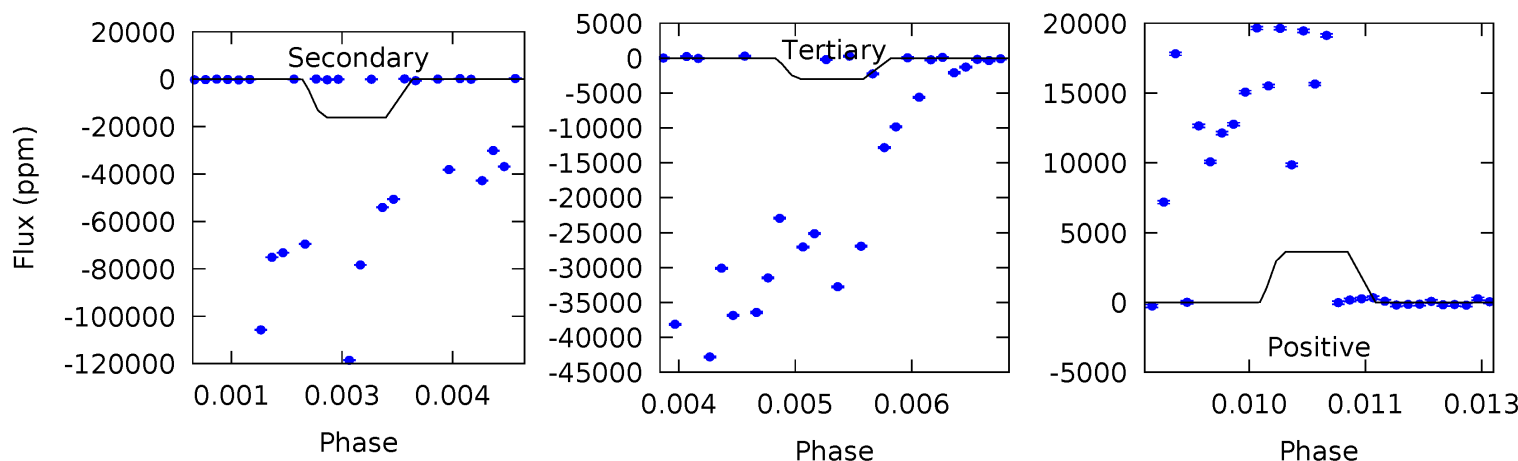
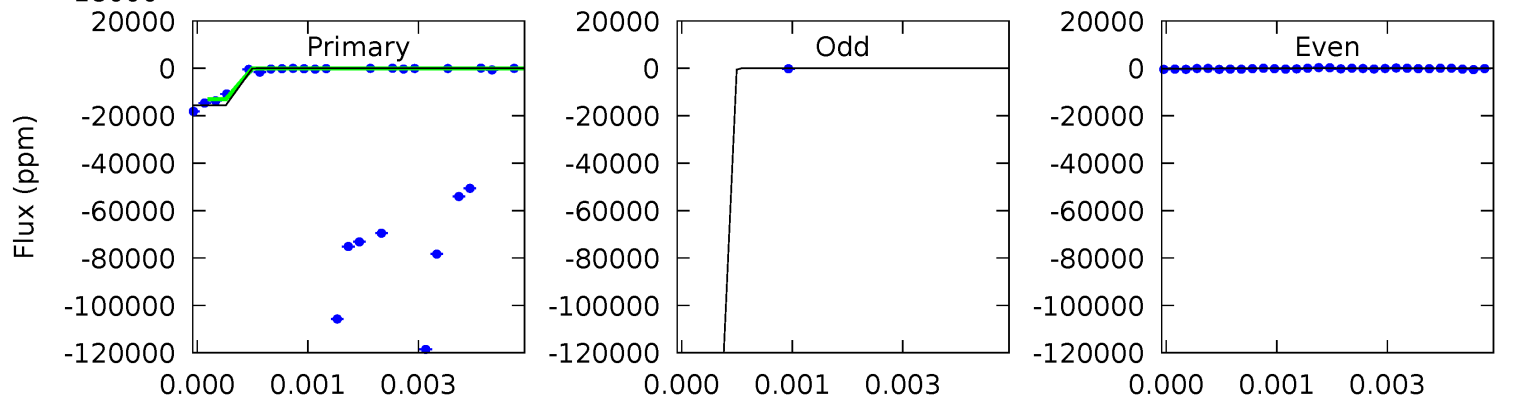
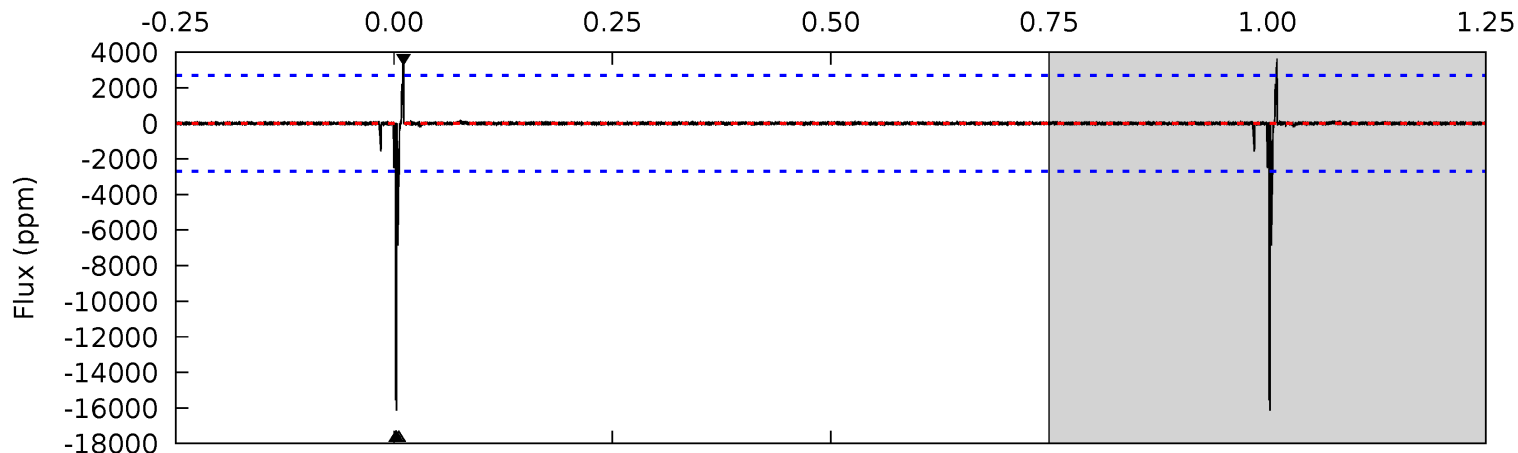
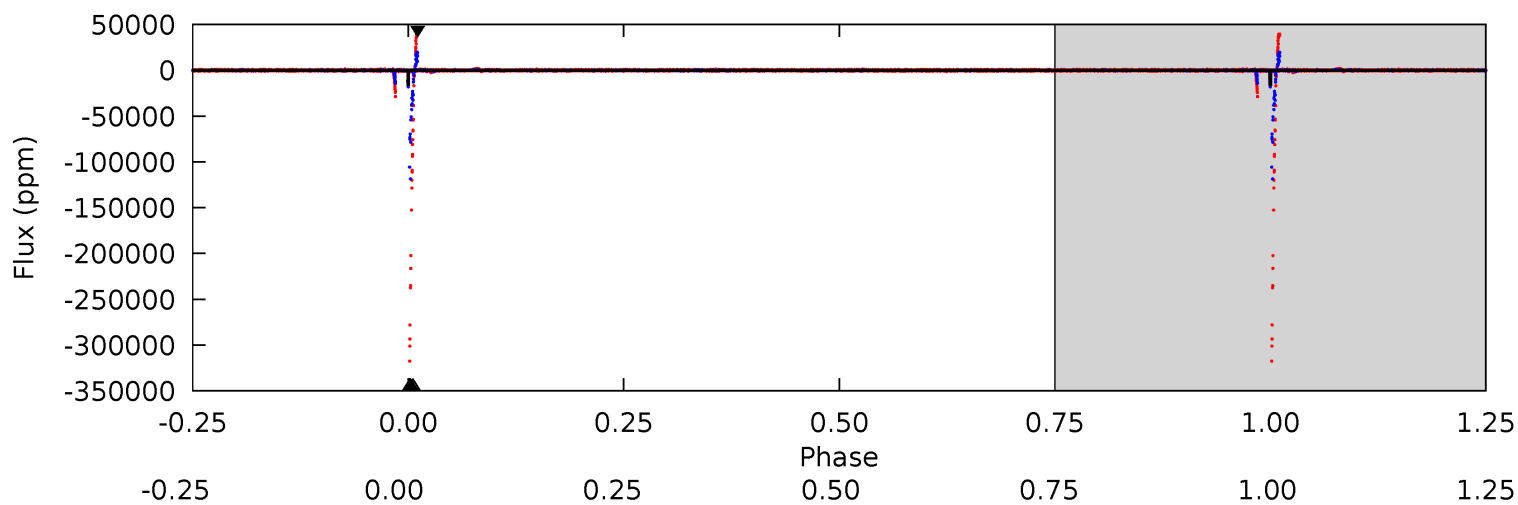
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
314.5	33.7	12.8	65.6	5.28	3.01	3.62	301.7	248.9	20.9	-31.9	198.9	3.03	0.31	0



Alt Model-Shift Uniqueness Test

009327458-01, P = 394.401764 Days, E = 371.907841 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.2	32.3	6.02	7.27	5.41	3.22	0.30	25.1	23.9	26.3	25.1	50.5	15.4	0.18	0



Stellar Parameters For KIC 009327458

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4888^{+97}_{-158}	$3.102^{+0.475}_{-0.256}$	$0.480^{+0.050}_{-0.350}$	$6.868^{+3.764}_{-4.141}$	$2.174^{+0.700}_{-1.137}$	$0.009^{+0.053}_{-0.006}$
	+2%/-3%	+15%/-8%	+10%/-73%	+55%/-60%	+32%/-52%	+565%/-59%
Source	PHO1	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 009327458-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3686 ± 109	$170.11^{+149.60}_{-100.52}$	673^{+81}_{-105}	3038^{+834}_{-396}	127^{+546}_{-89}
Alt.	-16139 ± 499	$104.75^{+106.69}_{-72.57}$	662^{+86}_{-93}	4622^{+3522}_{-974}	1553^{+15455}_{-1186}

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

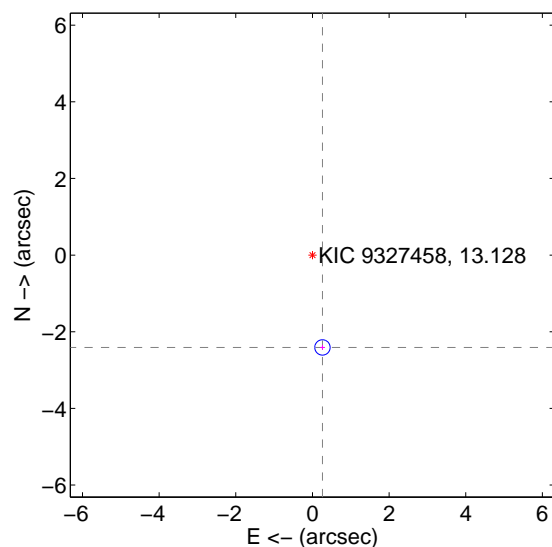
Supplemental centroid analysis for 009327458-01. Kepler magnitude: 13.13. Transit SNR 638.93

There are 1 quarters with good PRF difference image offsets

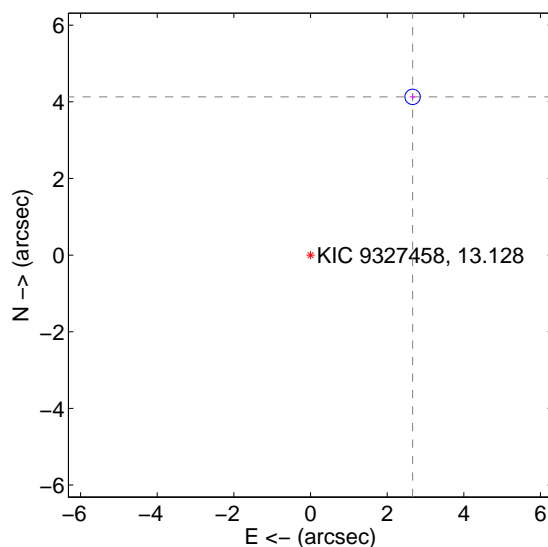
The OOT PRF centroid is offset from the target star catalog position by about 6.97 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.423 ± 0.067	36.30	-0.261 ± 0.067	-2.409 ± 0.067
PRF-fit source offset from KIC position	4.913 ± 0.067	73.60	-2.663 ± 0.067	4.129 ± 0.067
photometric centroid source offset	3.73 ± 0.51	7.33	-2.89 ± 0.63	2.36 ± 0.21

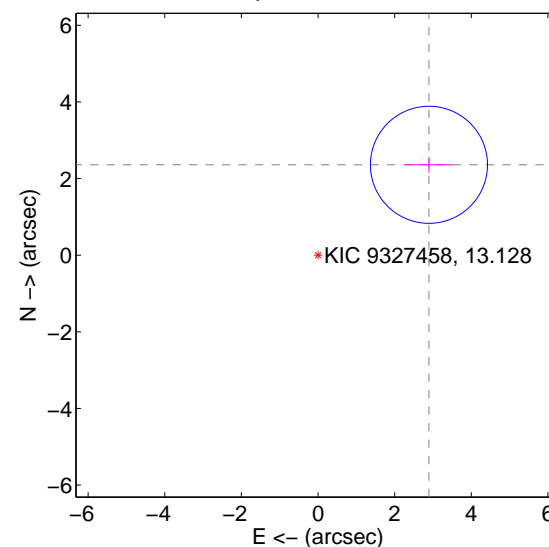
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

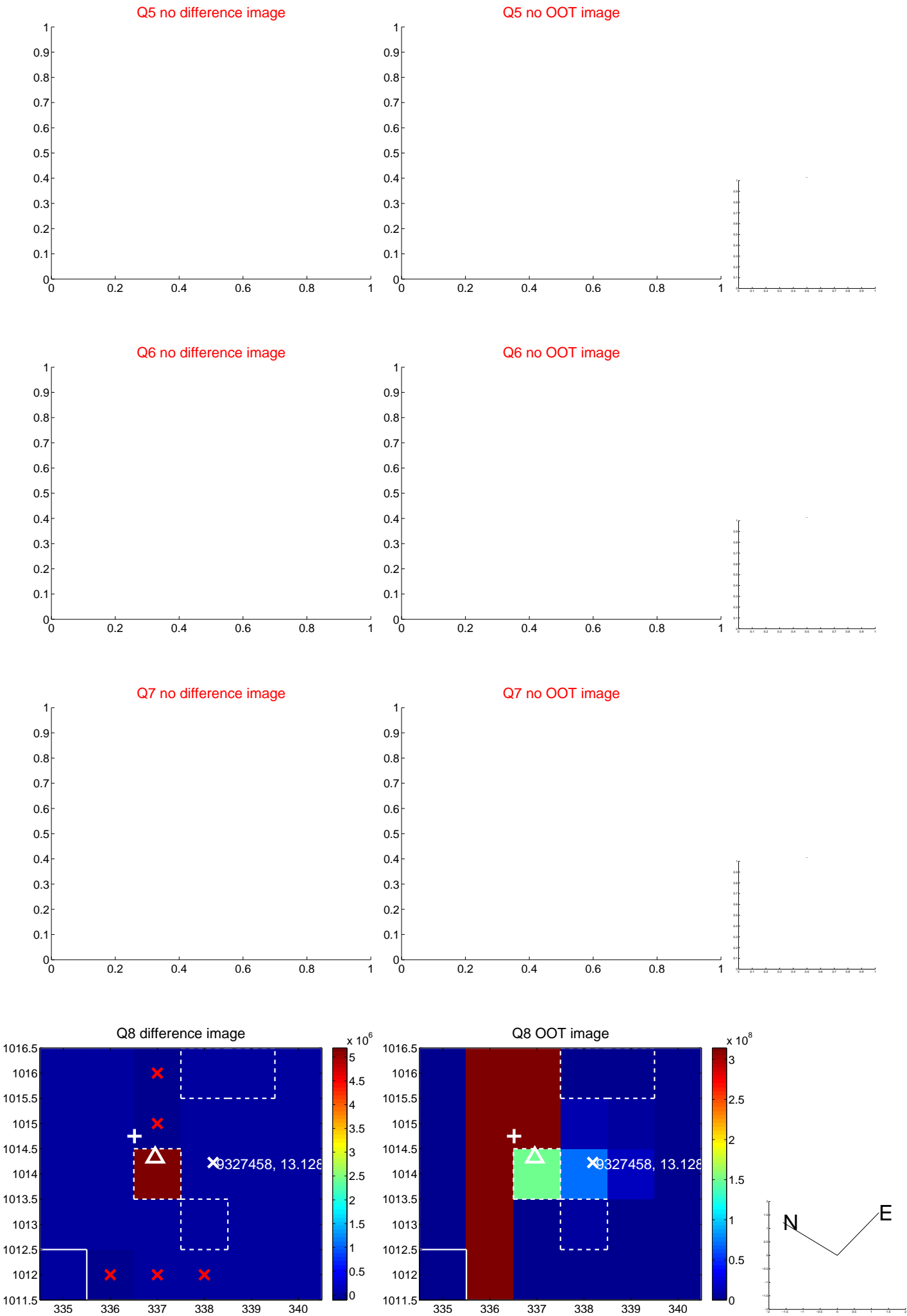


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



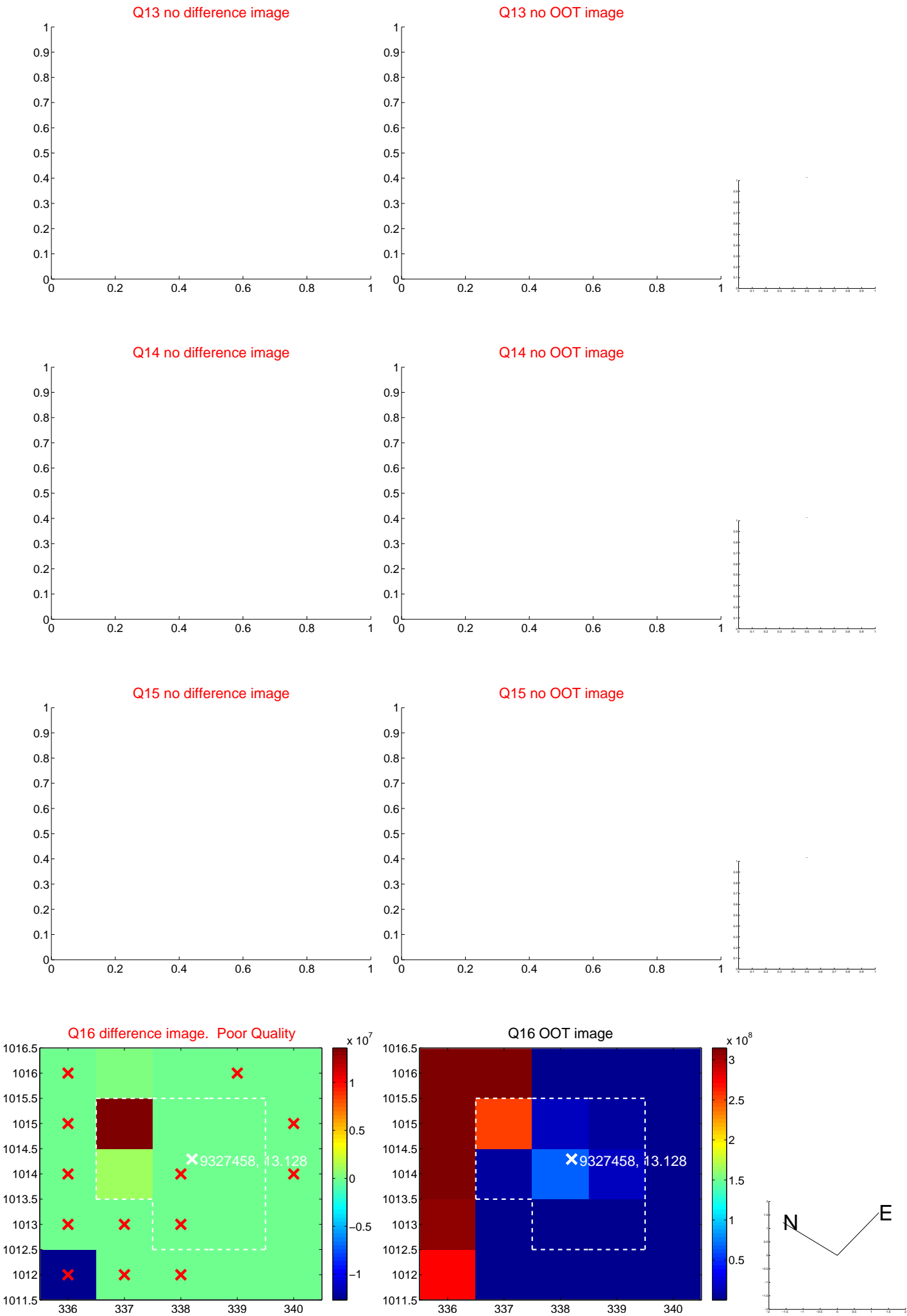
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



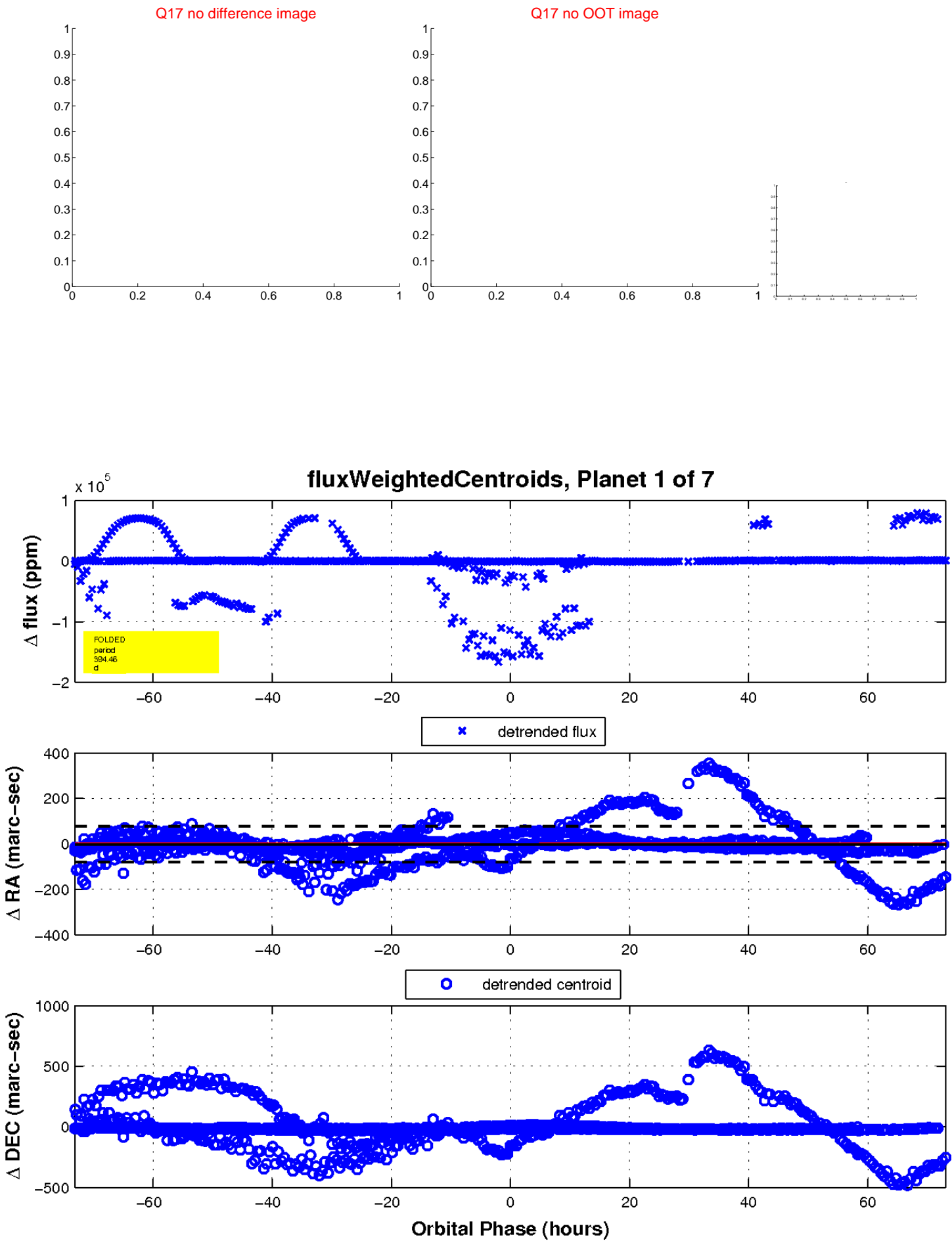
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

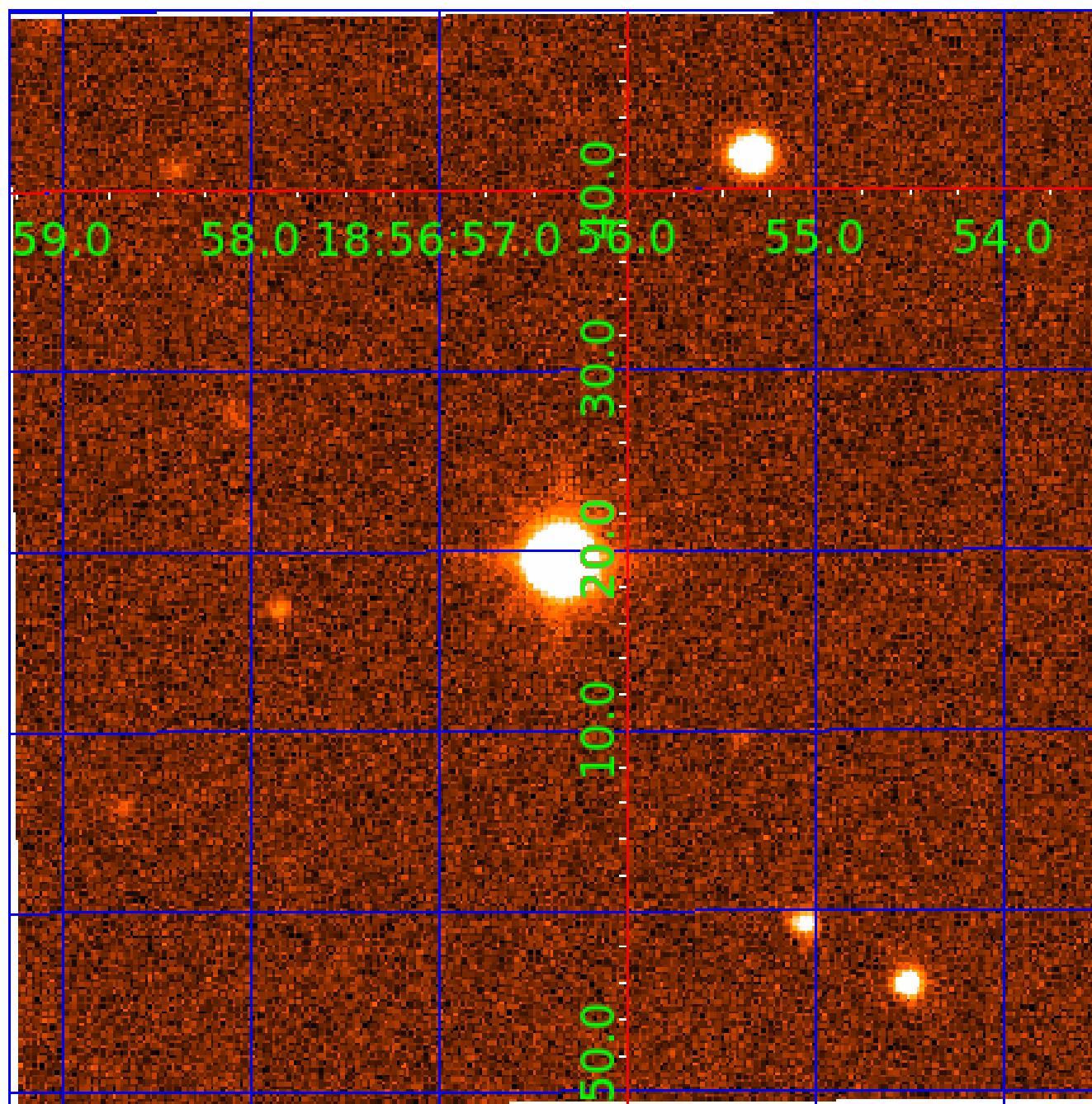


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009327458

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})
009327458-01	OBS	No	394.464931	372.031658	29599.5	24.391	284.9	638.9	6.87	4888	174.19	12.96
009327458-02	OBS	No	389.497710	381.011573	3458.1	15.000	73.9	-1.0	6.87	4888	38.79	13.18
009327458-03	OBS	No	391.643233	368.703758	2636.2	15.000	104.4	-1.0	6.87	4888	33.87	13.09
009327458-05	OBS	No	154.719879	182.908167	591.9	13.336	14.9	22.5	6.87	4888	35.22	45.14
009327458-06	OBS	No	393.857576	370.651900	70230.0	16.499	1348.1	1576.5	6.87	4888	188.83	12.99
009327458-07	OBS	No	205.643348	141.312291	163.1	12.500	7.5	-1.0	6.87	4888	8.42	30.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327458-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009327458-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
009327458-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

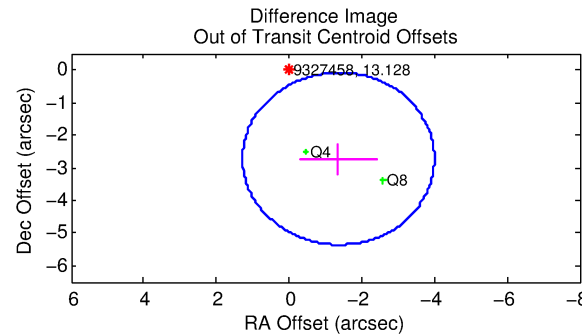
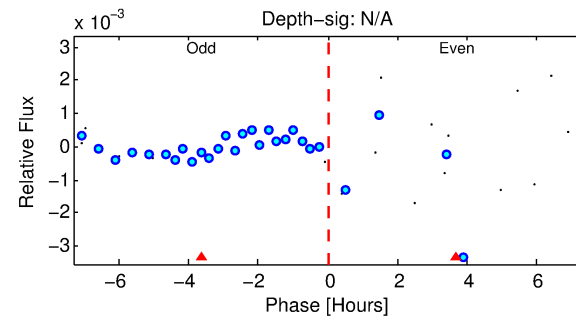
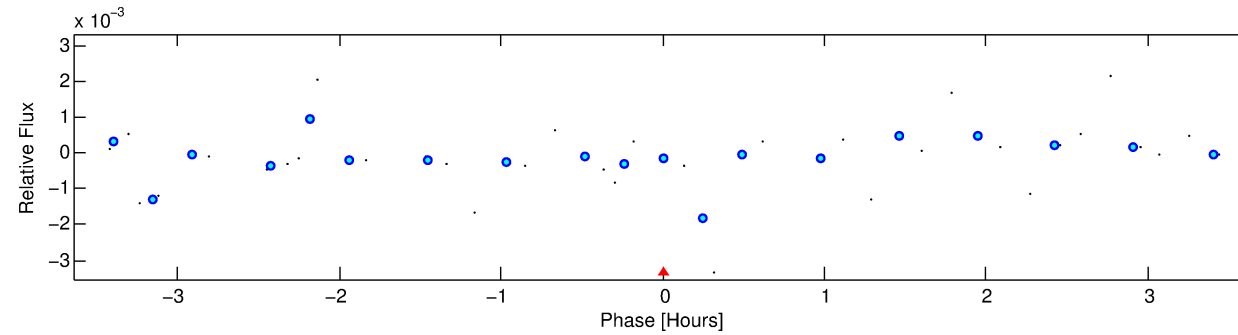
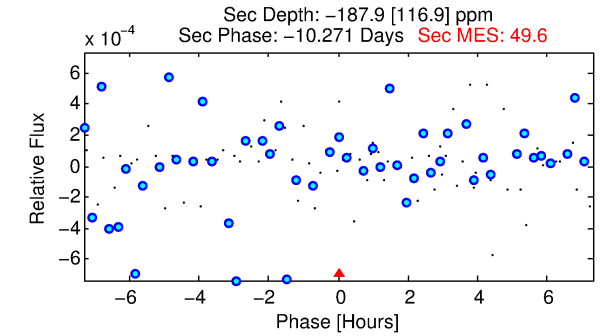
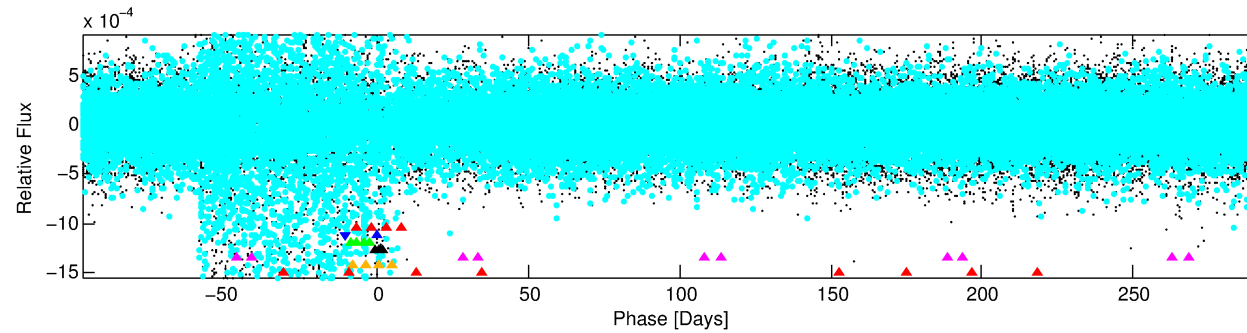
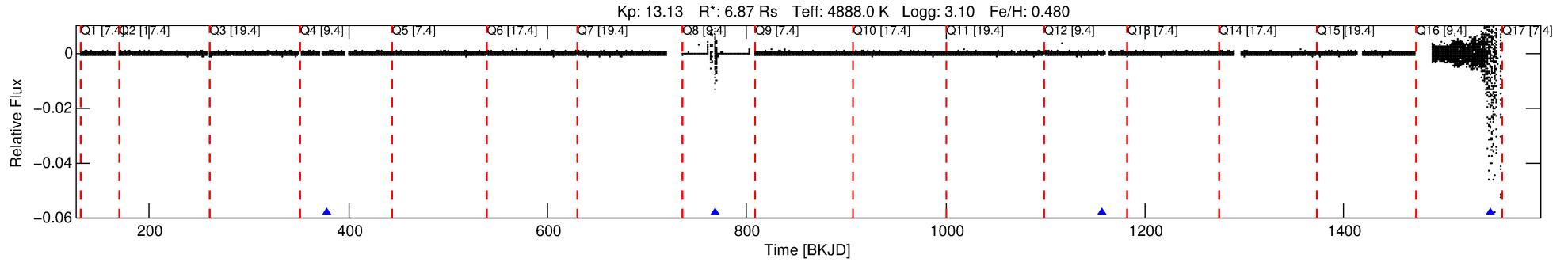
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009327458-02

No Significant Match Found

DV One-Page Summary

KIC: 9327458 Candidate: 2 of 7 Period: 389.498 d



TPS TCE Results:

Period = 389.49771 d
Epoch = 381.0116 BKJD

DV fit results are unavailable

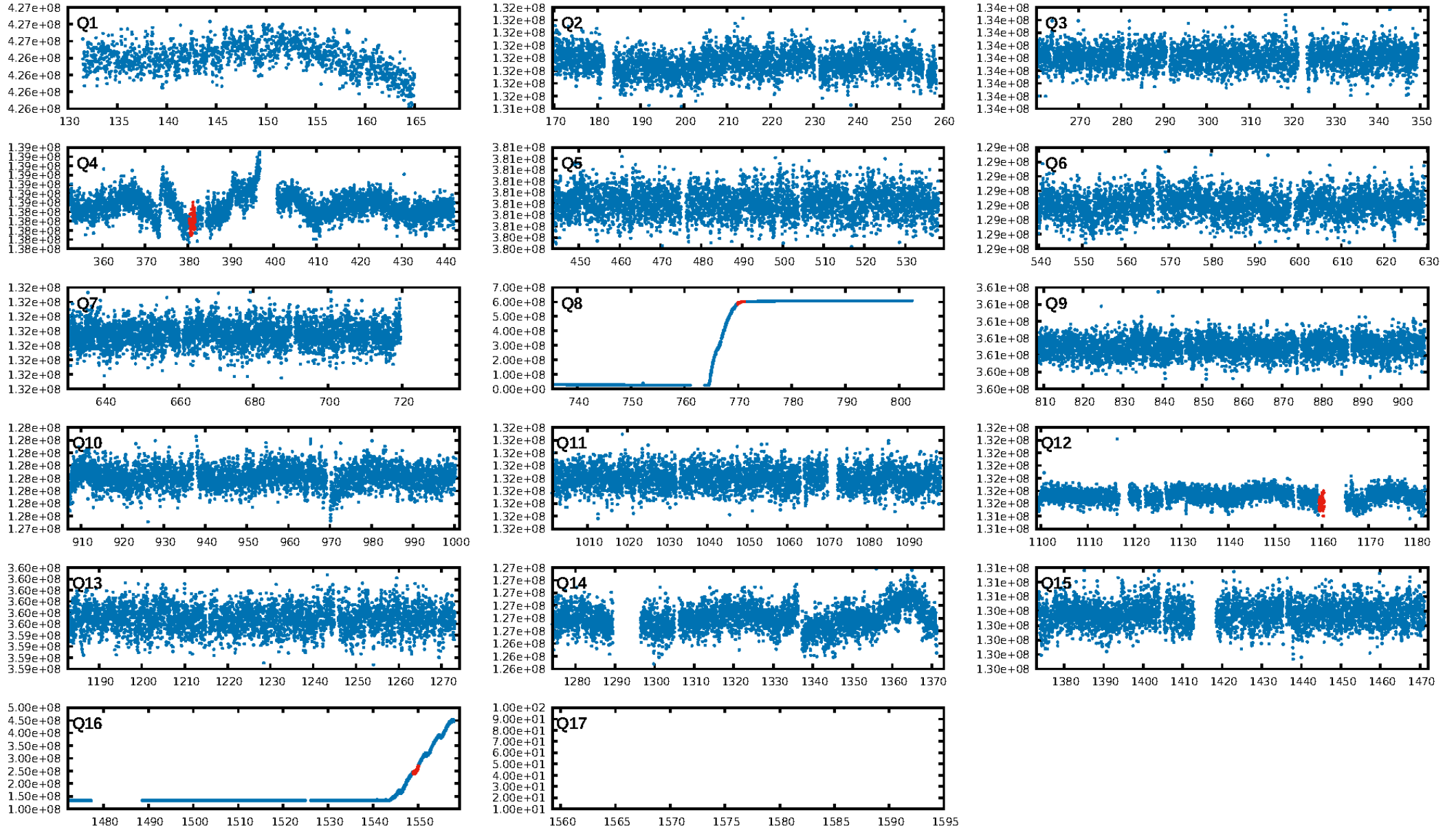
DV Diagnostic Results:

ShortPeriod-sig: 74.7% [1.14 σ]
LongPeriod-sig: 98.5% [2.43 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.74e-58
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.7
Centroid-sig: N/A
Centroid-so: 55.014 arcsec [1.86 σ]
OotOffset-rm: 3.041 arcsec [3.46 σ]
KicOffset-rm: 6.155 arcsec [2.92 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.67 [2/3]

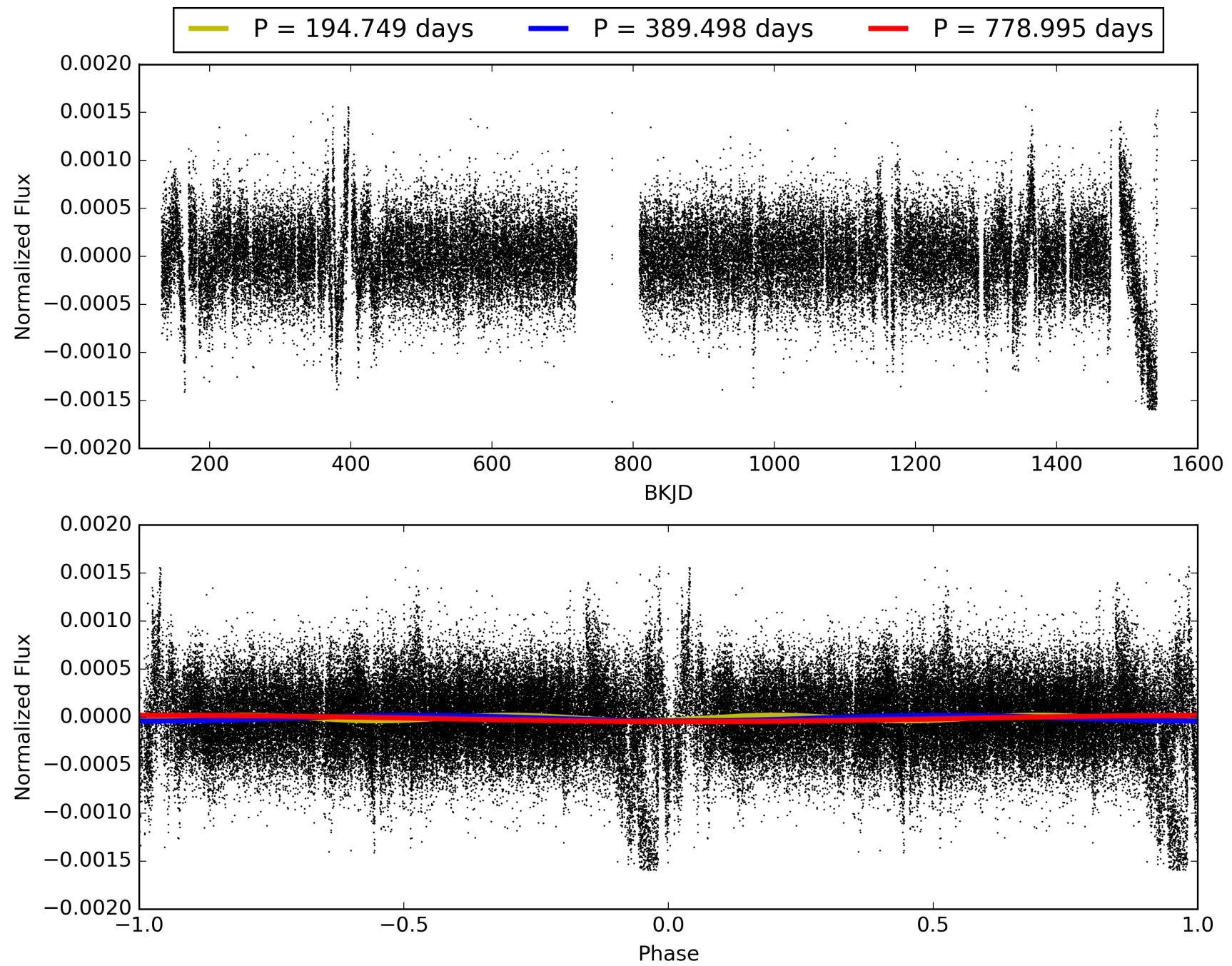
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:17:20 Z

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

TCE 009327458-02, PDC Light Curves

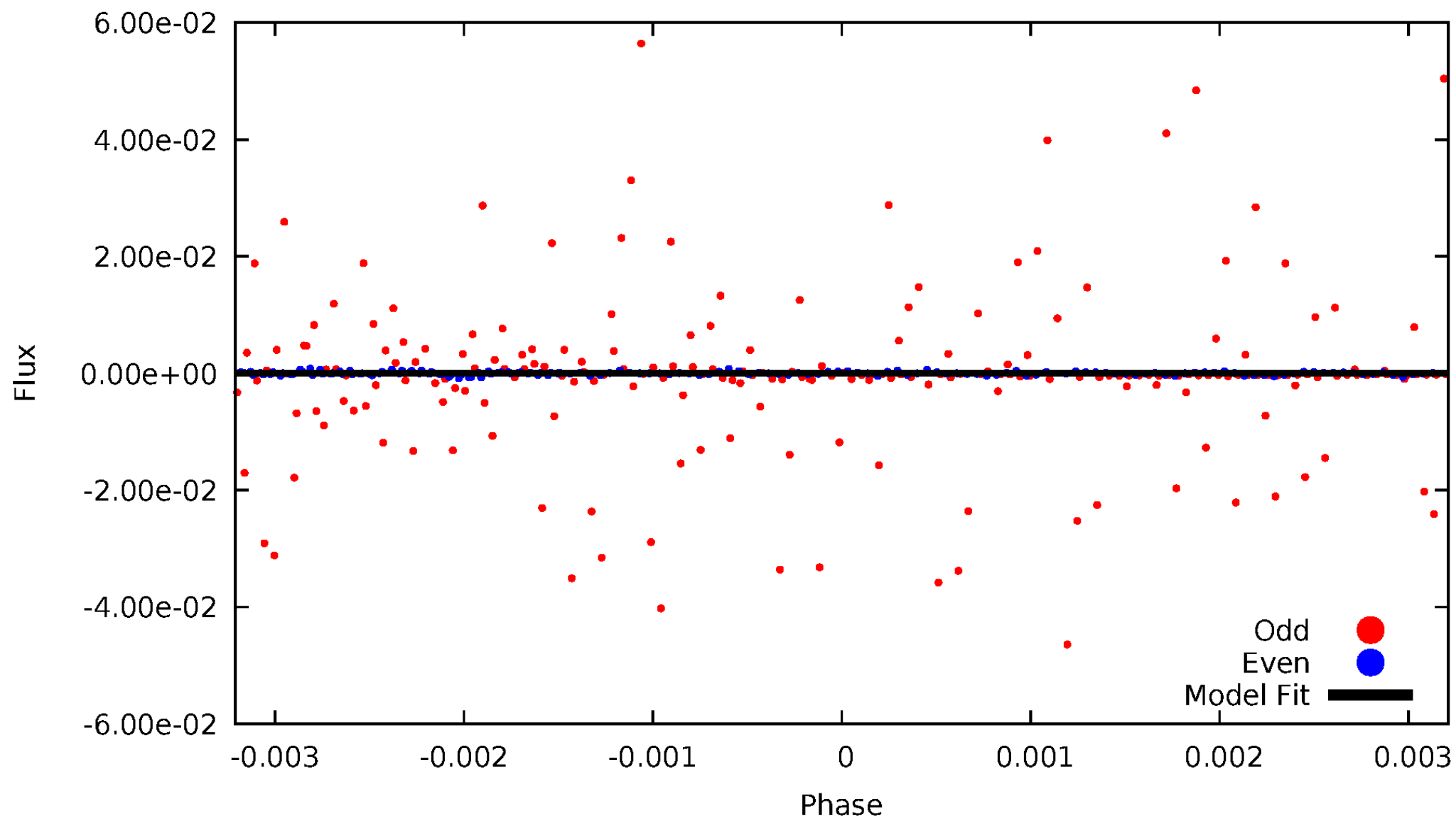


TCE 009327458-02



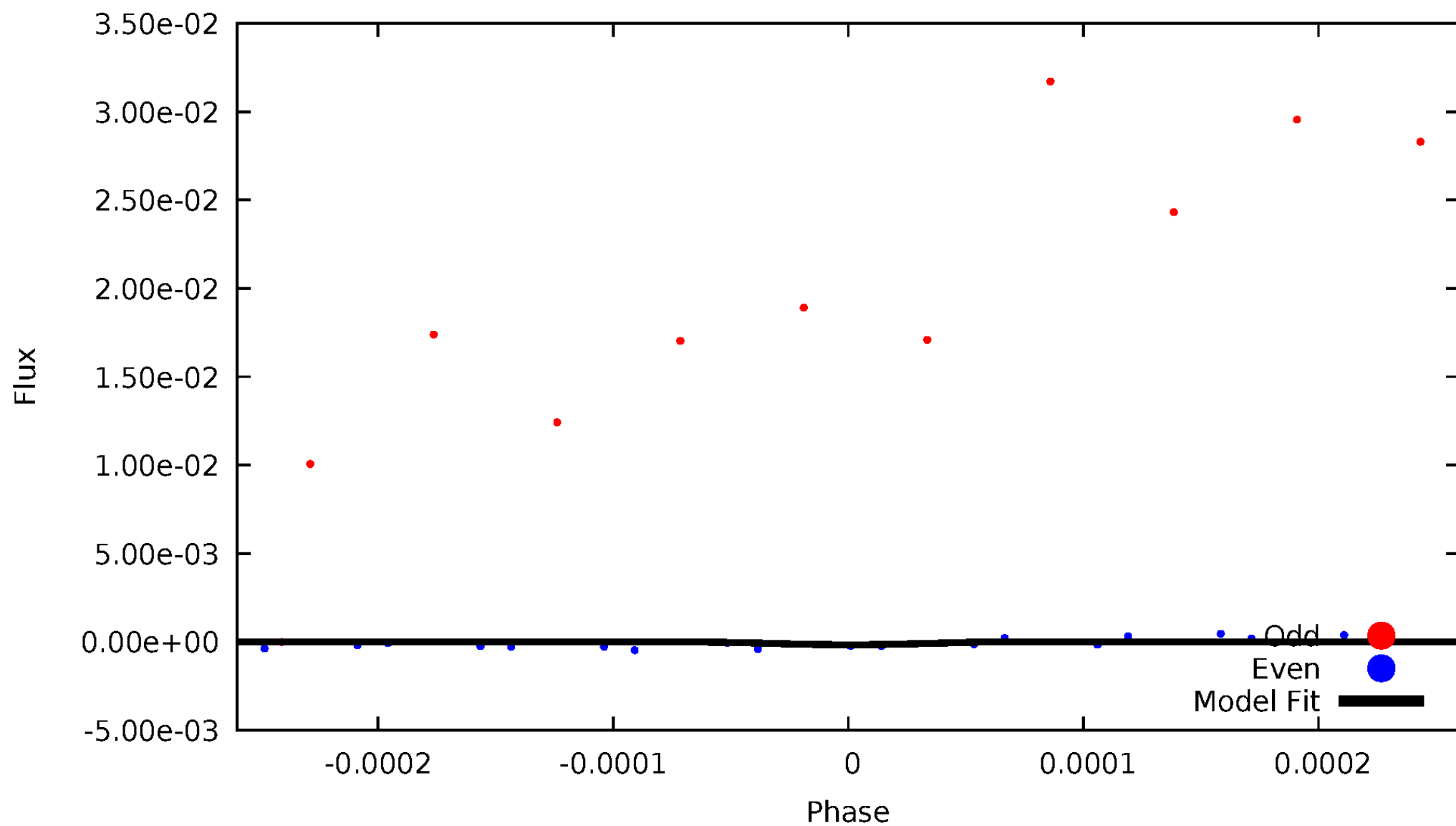
DV Odd/Even

TCE 009327458-02



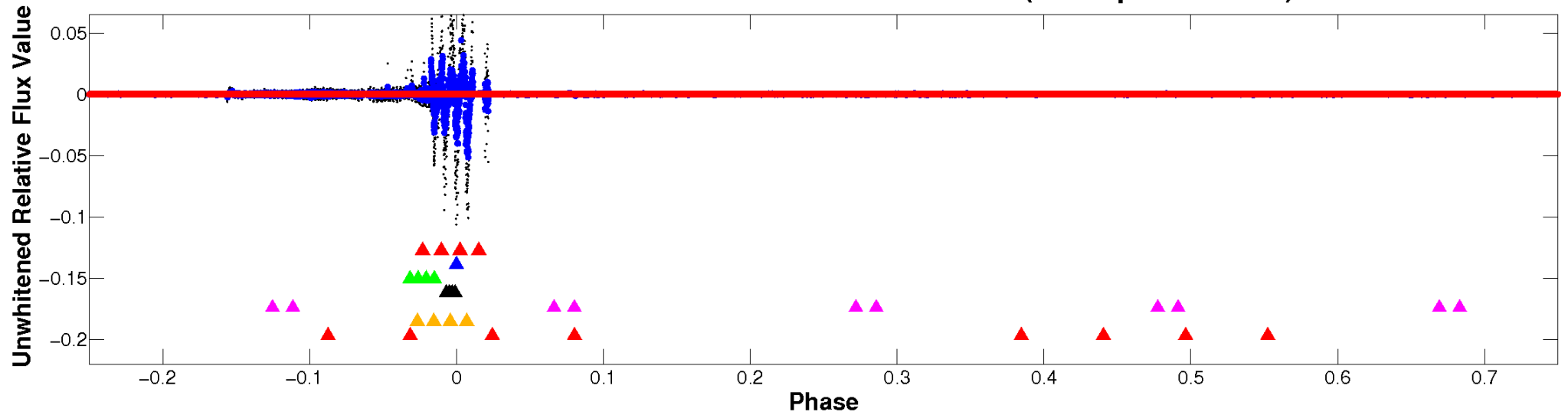
ALT Odd/Even

TCE 009327458-02

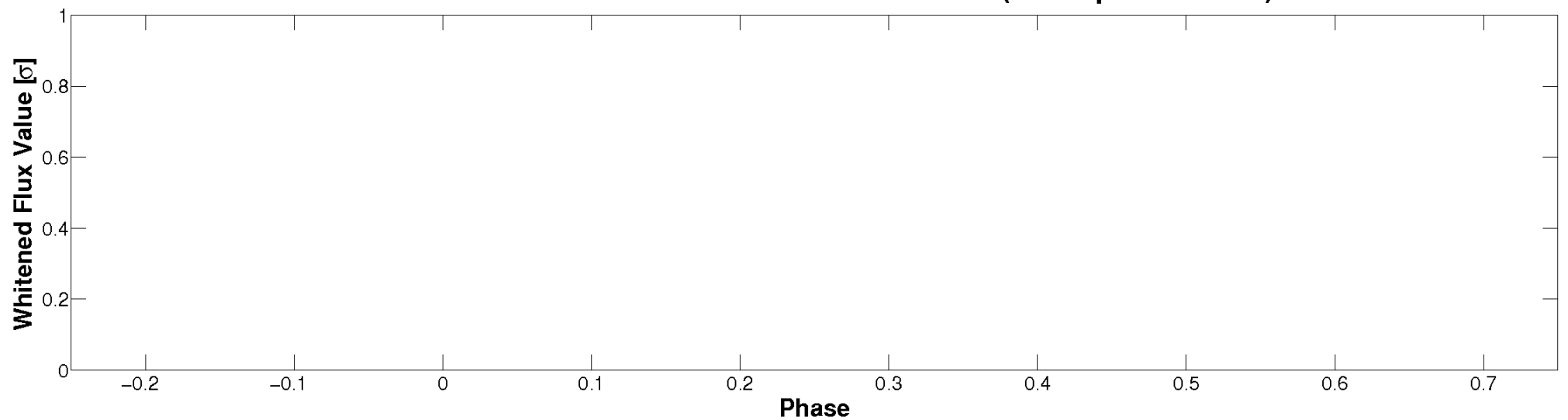


Non-Whitened Vs. Whitened Light Curve

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

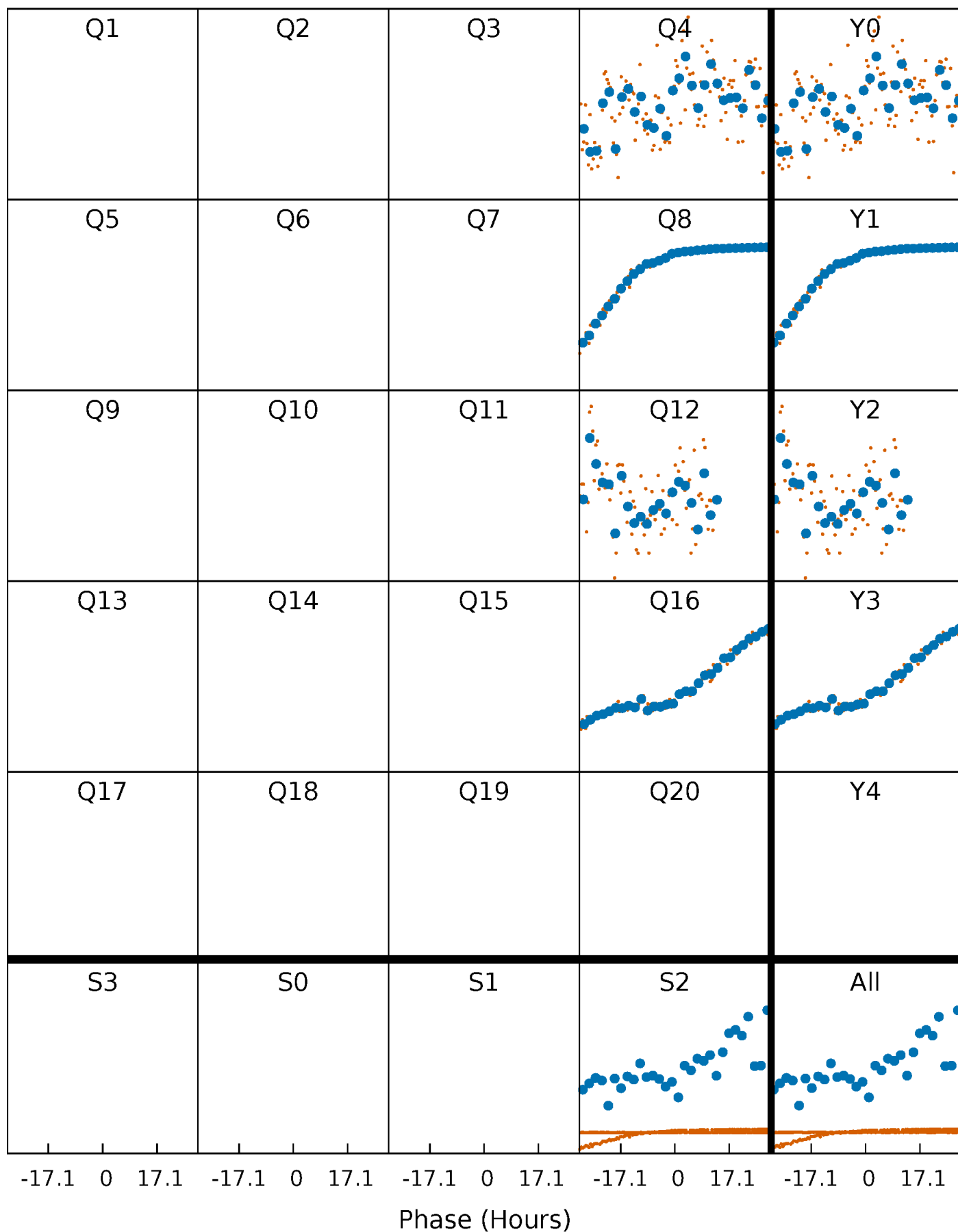


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



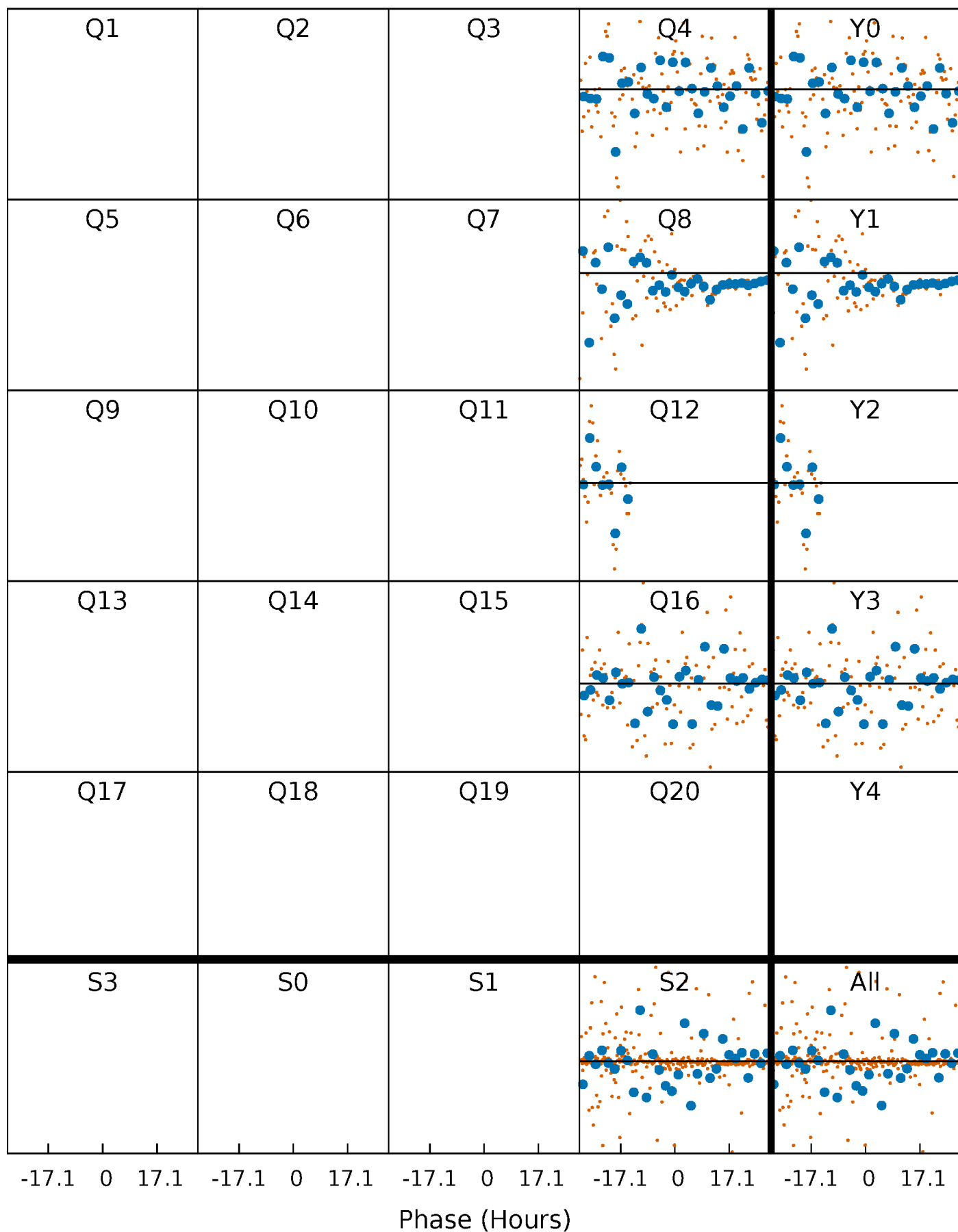
PDC Quarter-Phased Transit Curves

TCE 009327458-02 $P=389.497709$ Days $T_0=381.011573$ (BKJD)



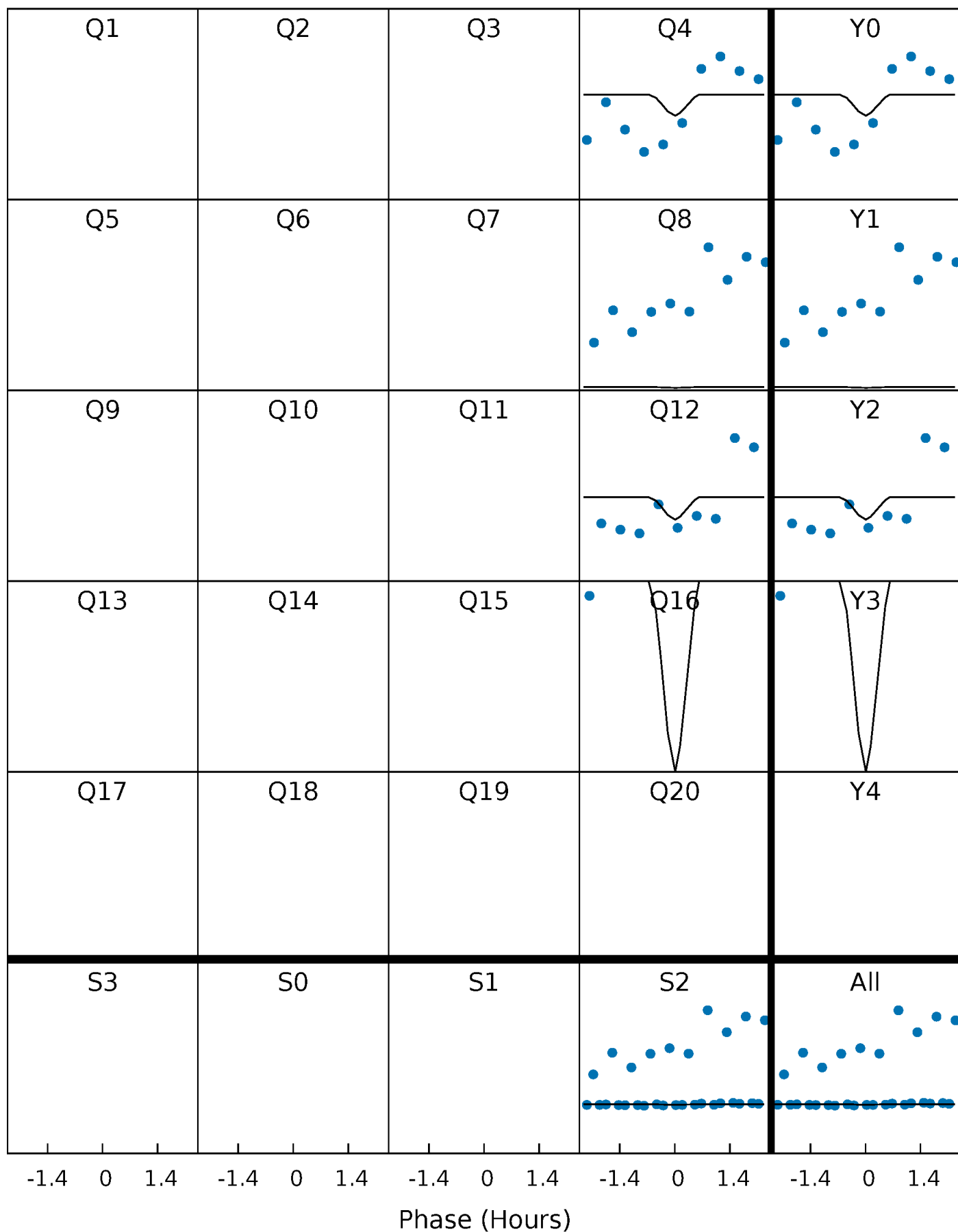
DV Quarter-Phased Transit Curves

TCE 009327458-02 $P=389.497709$ Days $T_0=381.011573$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

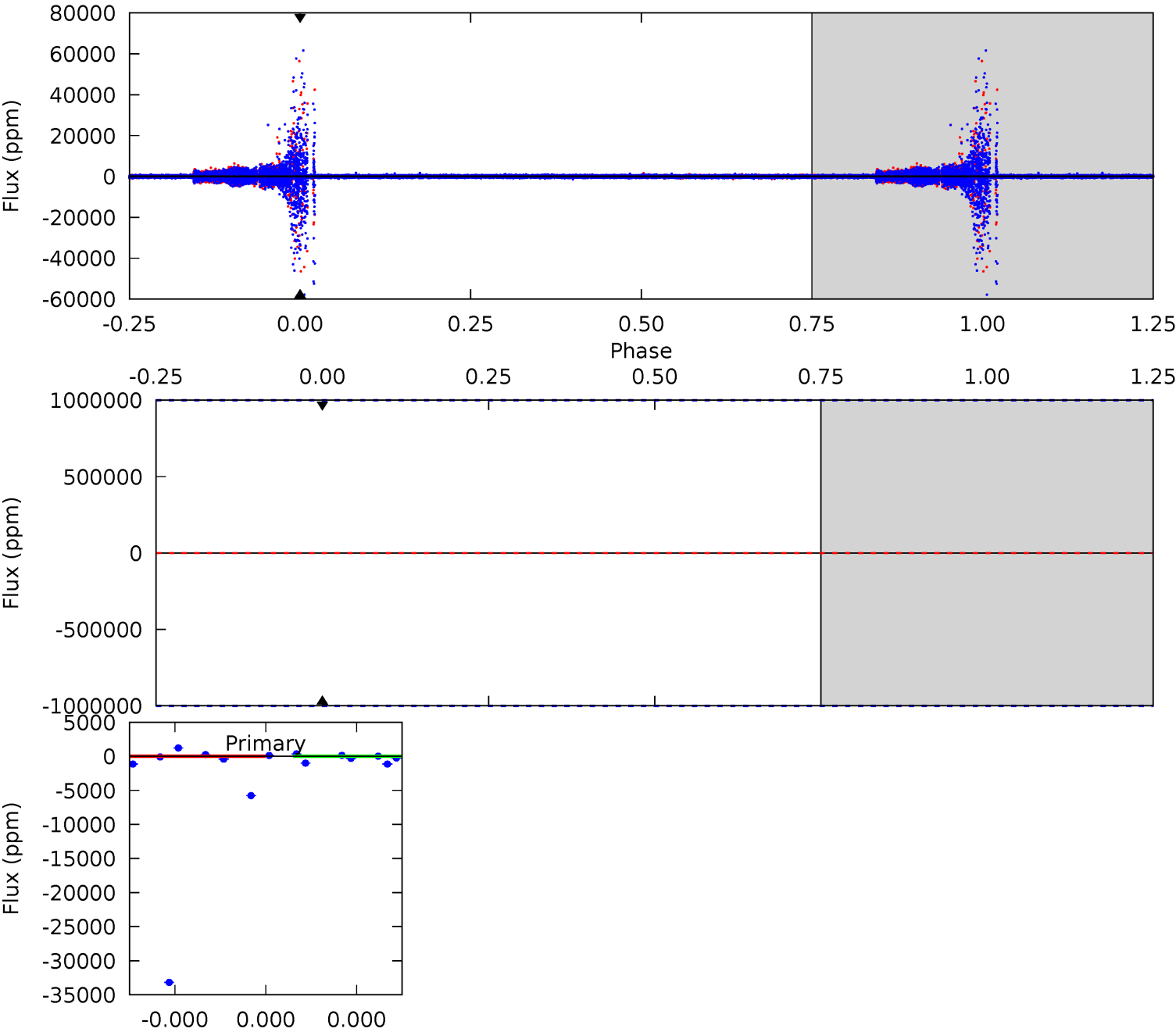
TCE 009327458-02 P=389.497709 Days $T_0=378.750655$ (BKJD)



DV Model-Shift Uniqueness Test

009327458-02, P = 389.497709 Days, E = 381.011573 Days

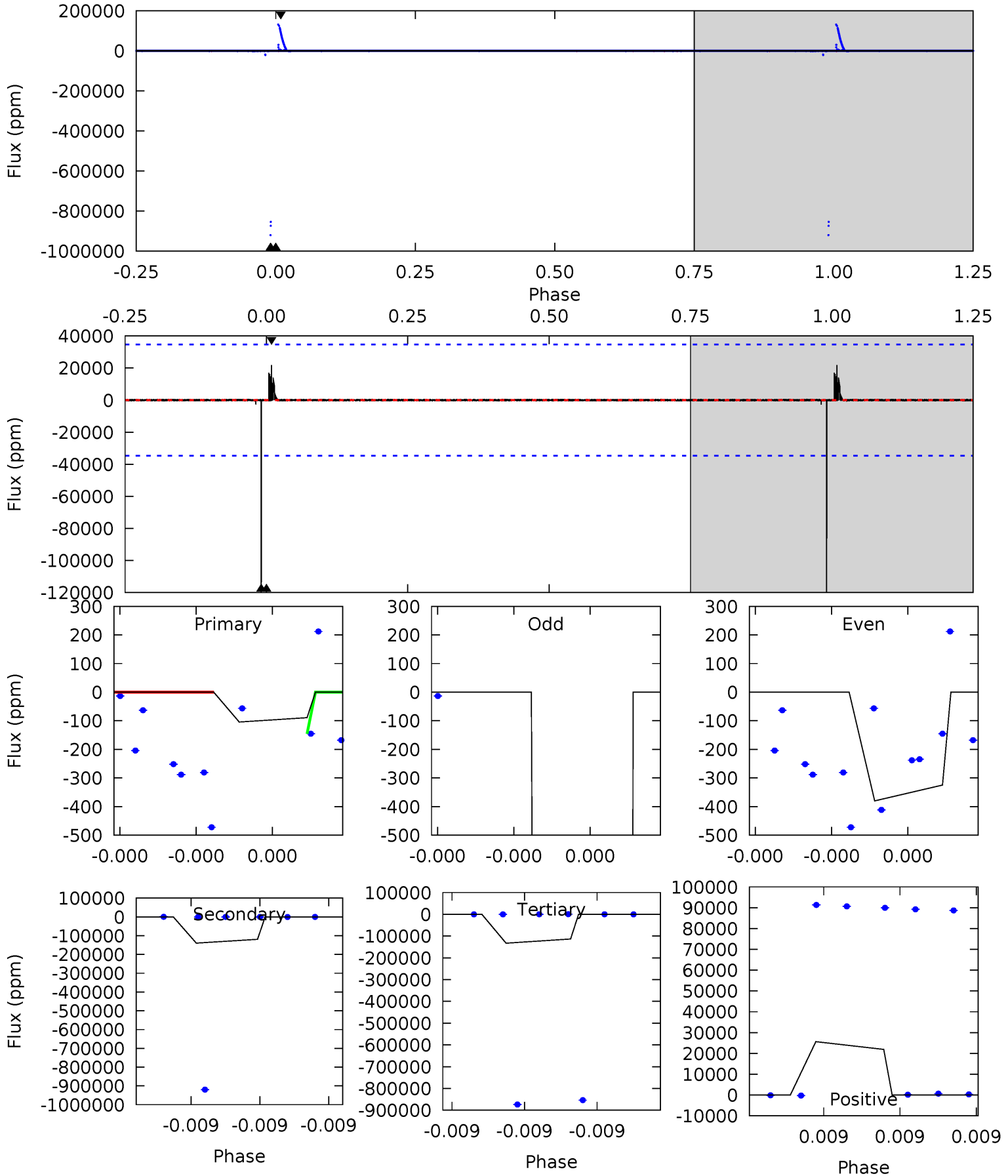
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009327458-02, P = 389.497709 Days, E = 378.750655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.01	20.1	19.1	3.68	5.82	3.85	0.18	-19.0	-3.67	1.01	16.4	0.42	-33.8	0.16	0



Stellar Parameters For KIC 009327458

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4888^{+97}_{-158}	$3.102^{+0.475}_{-0.256}$	$0.480^{+0.050}_{-0.350}$	$6.868^{+3.764}_{-4.141}$	$2.174^{+0.700}_{-1.137}$	$0.009^{+0.053}_{-0.006}$
	+2%/-3%	+15%/-8%	+10%/-73%	+55%/-60%	+32%/-52%	+565%/-59%
Source	PHO1	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 009327458-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$60.66^{+69.15}_{-41.92}$	673^{+84}_{-98}	3611^{+8771}_{-15070}	271^{+49860}_{-43306}
Alt.	-119459 ± 5956	$49.93^{+62.42}_{-35.87}$	669^{+76}_{-96}	13161^{+47664}_{-5864}	$54951^{+583772}_{-44225}$

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 $A_{obs} \gg 1.0$

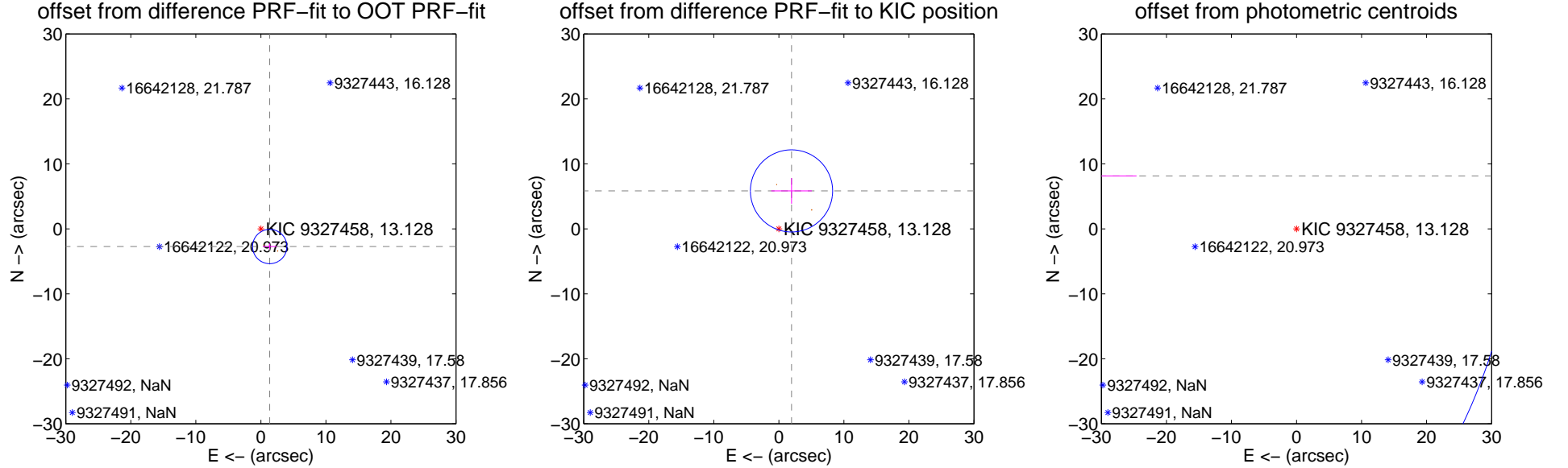
DV Centroid Data

Supplemental centroid analysis for 009327458-02. Kepler magnitude: 13.13. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

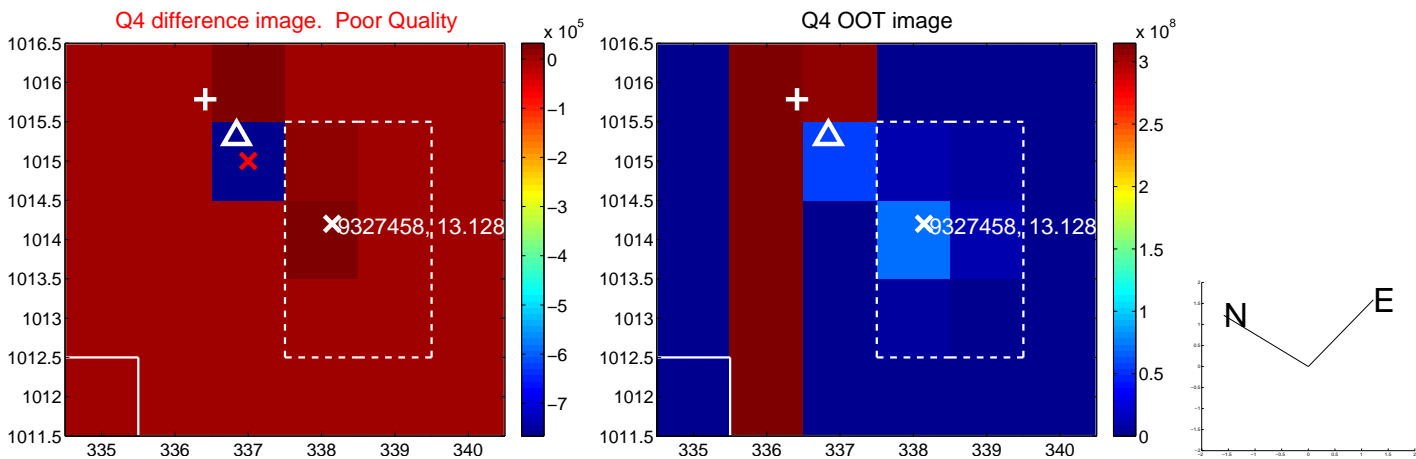
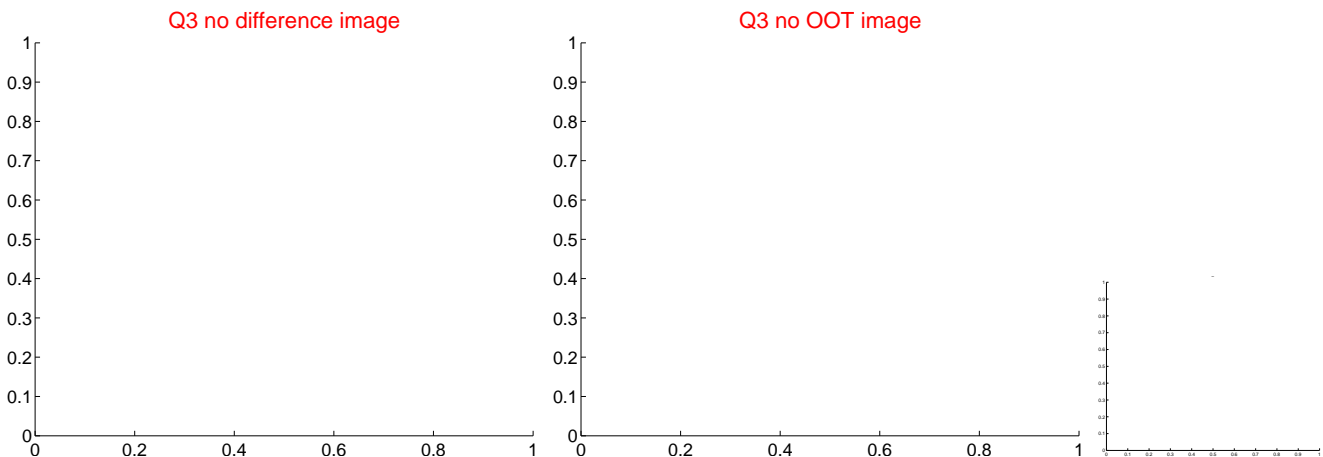
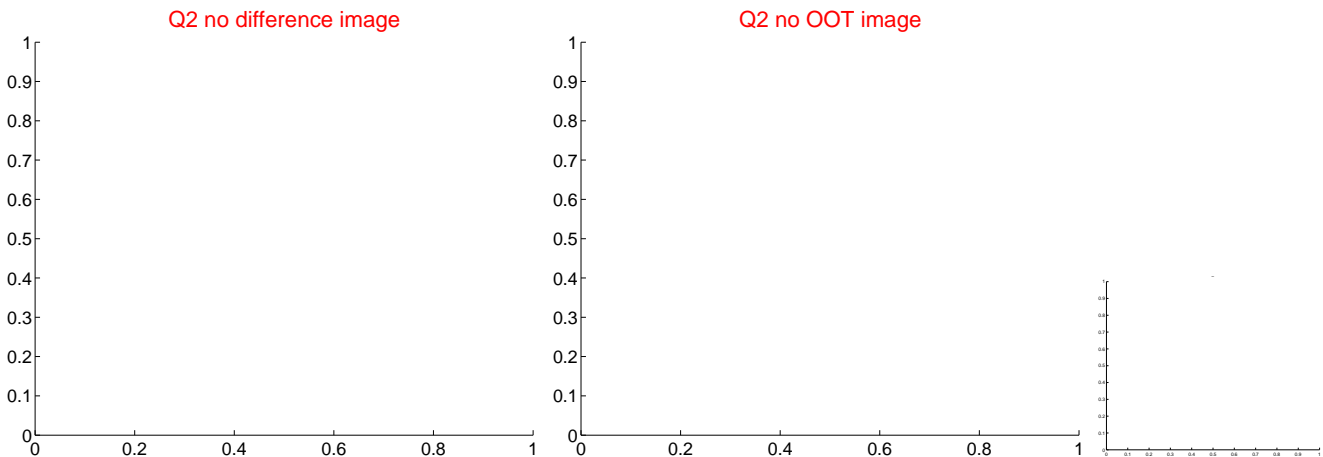
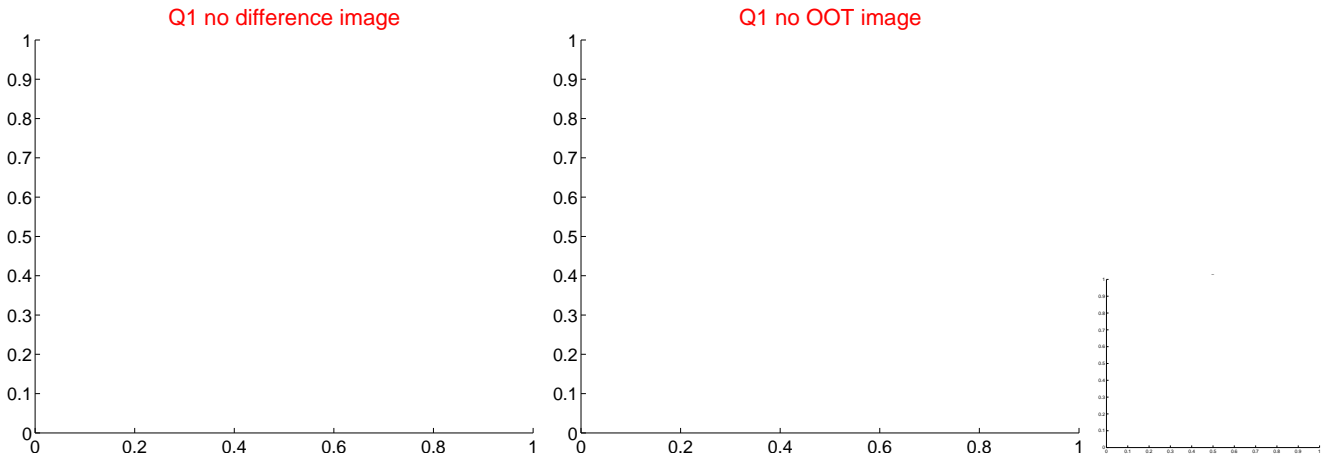
The OOT PRF centroid is offset from the target star catalog position by about 6.78 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.041 ± 0.880	3.46	-1.360 ± 1.062	-2.721 ± 0.456
PRF-fit source offset from KIC position	6.155 ± 2.107	2.92	-1.945 ± 3.111	5.840 ± 1.964
photometric centroid source offset	55.01 ± 29.54	1.86	54.41 ± 29.80	8.14 ± 12.96

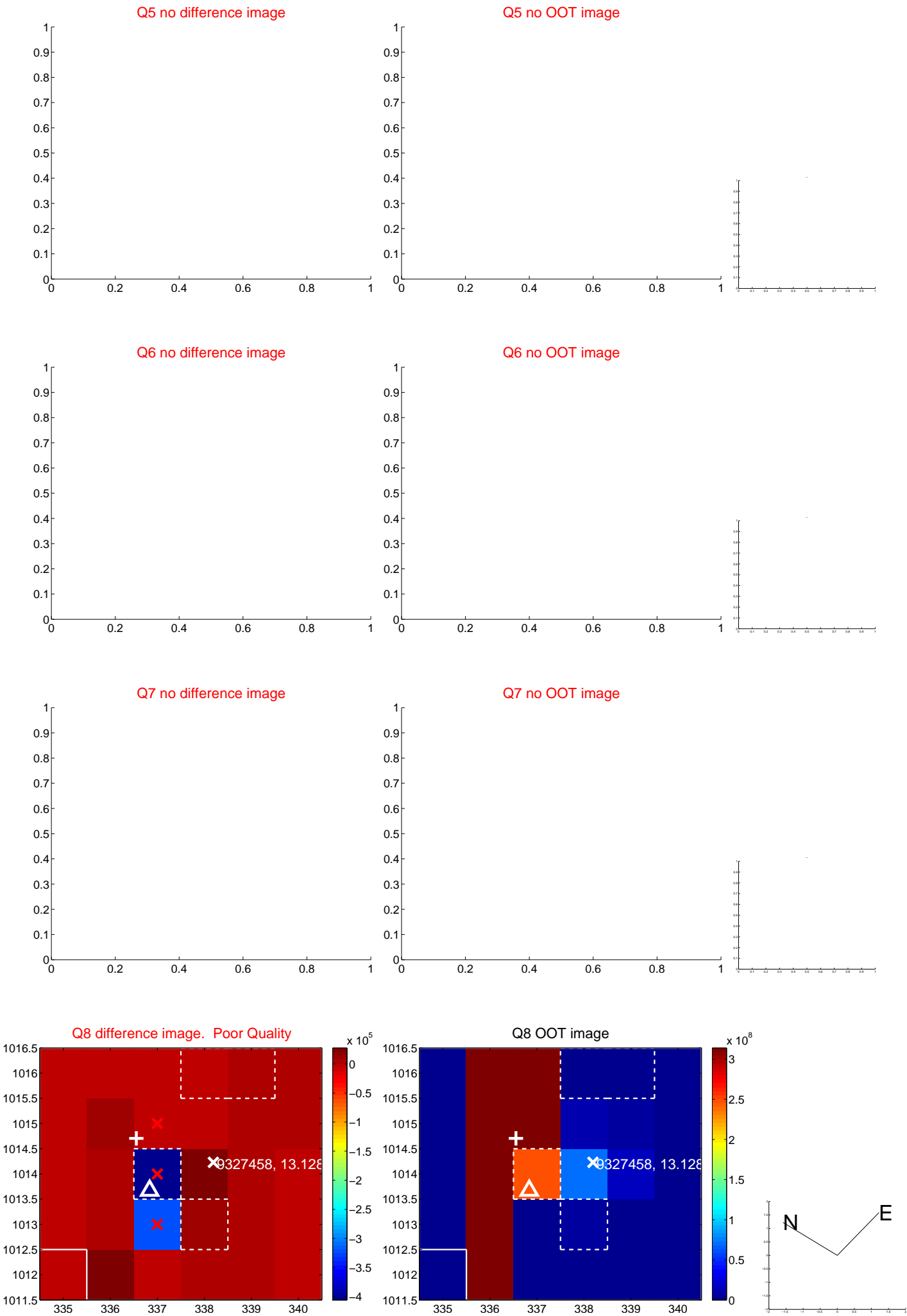


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

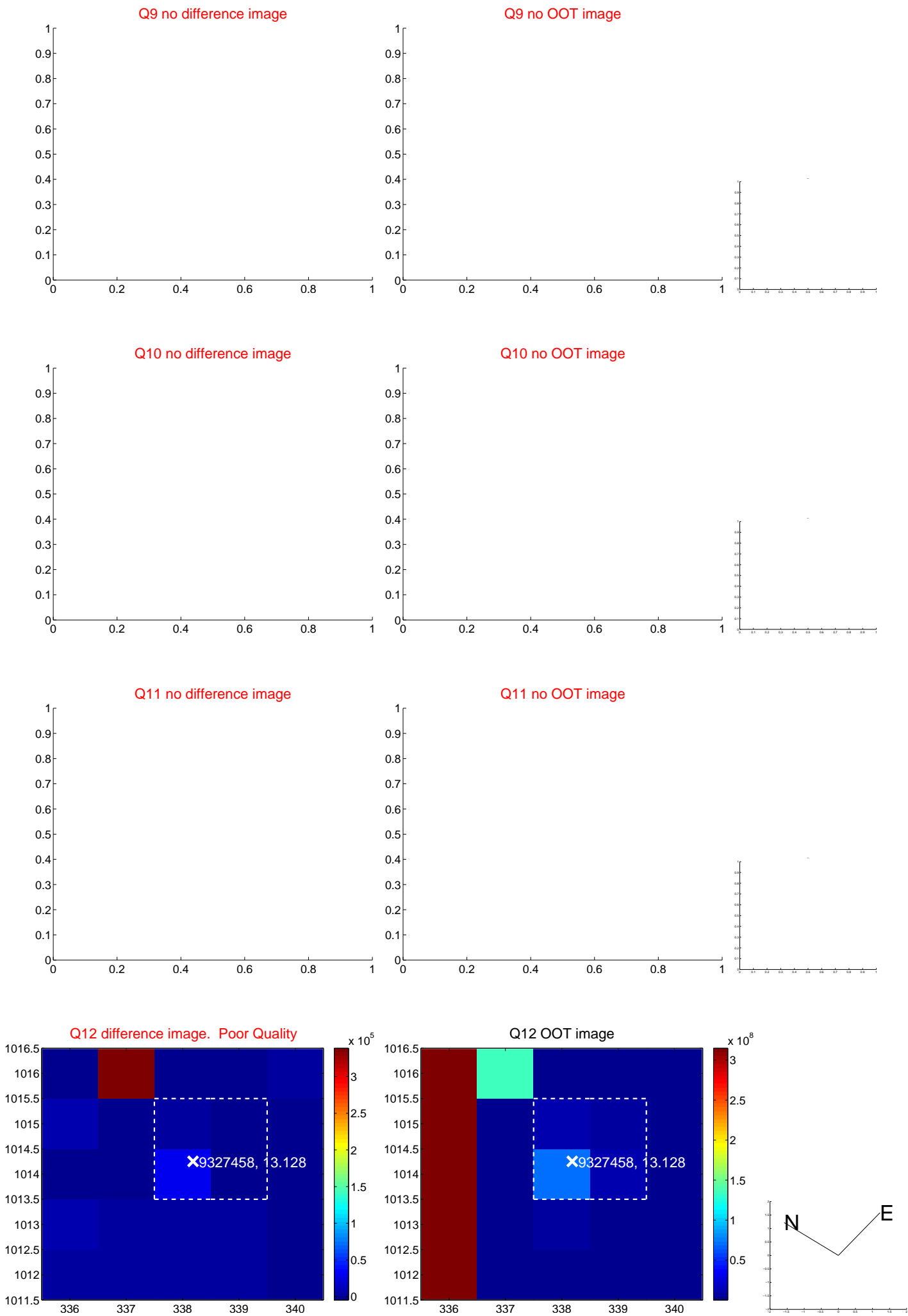
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



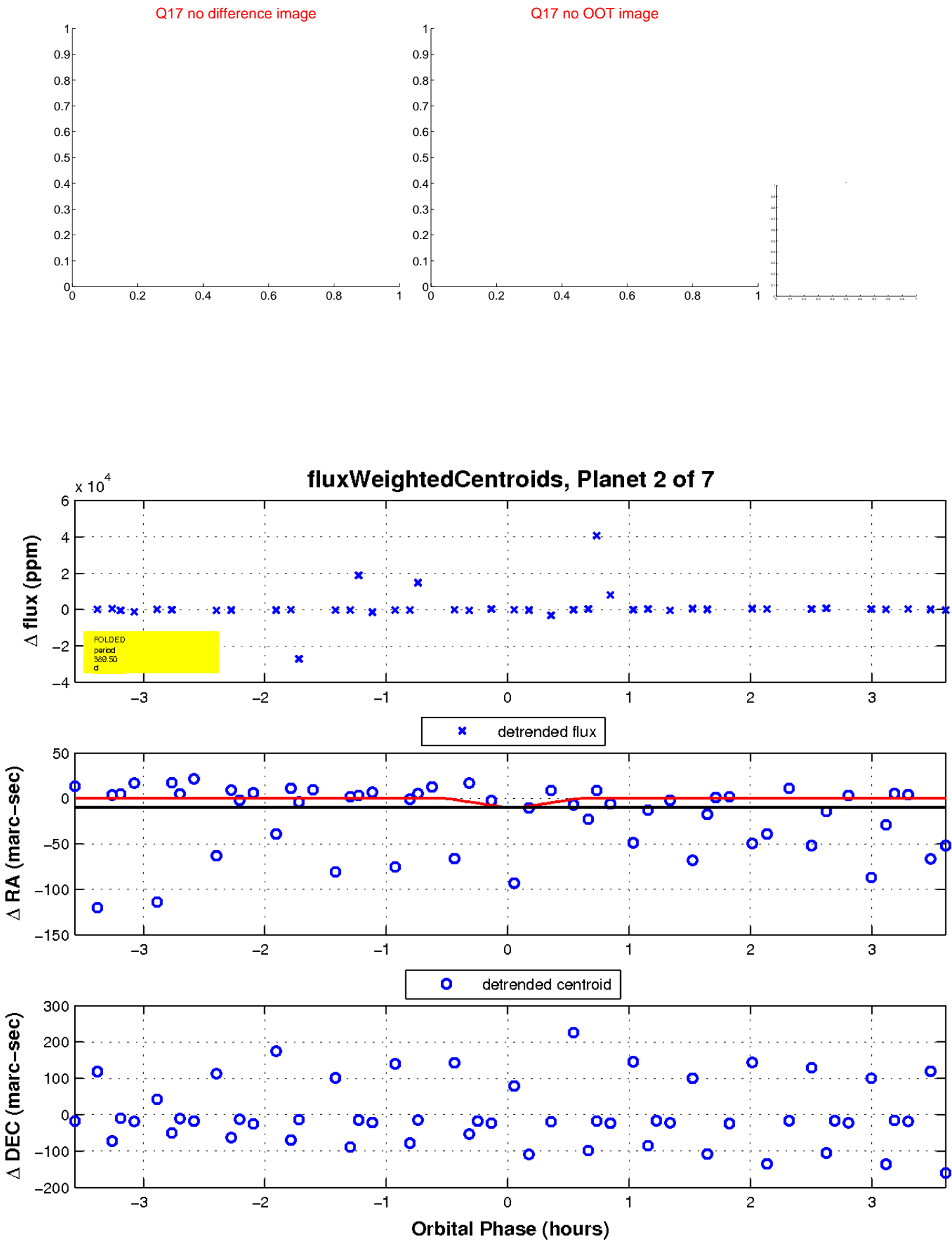
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

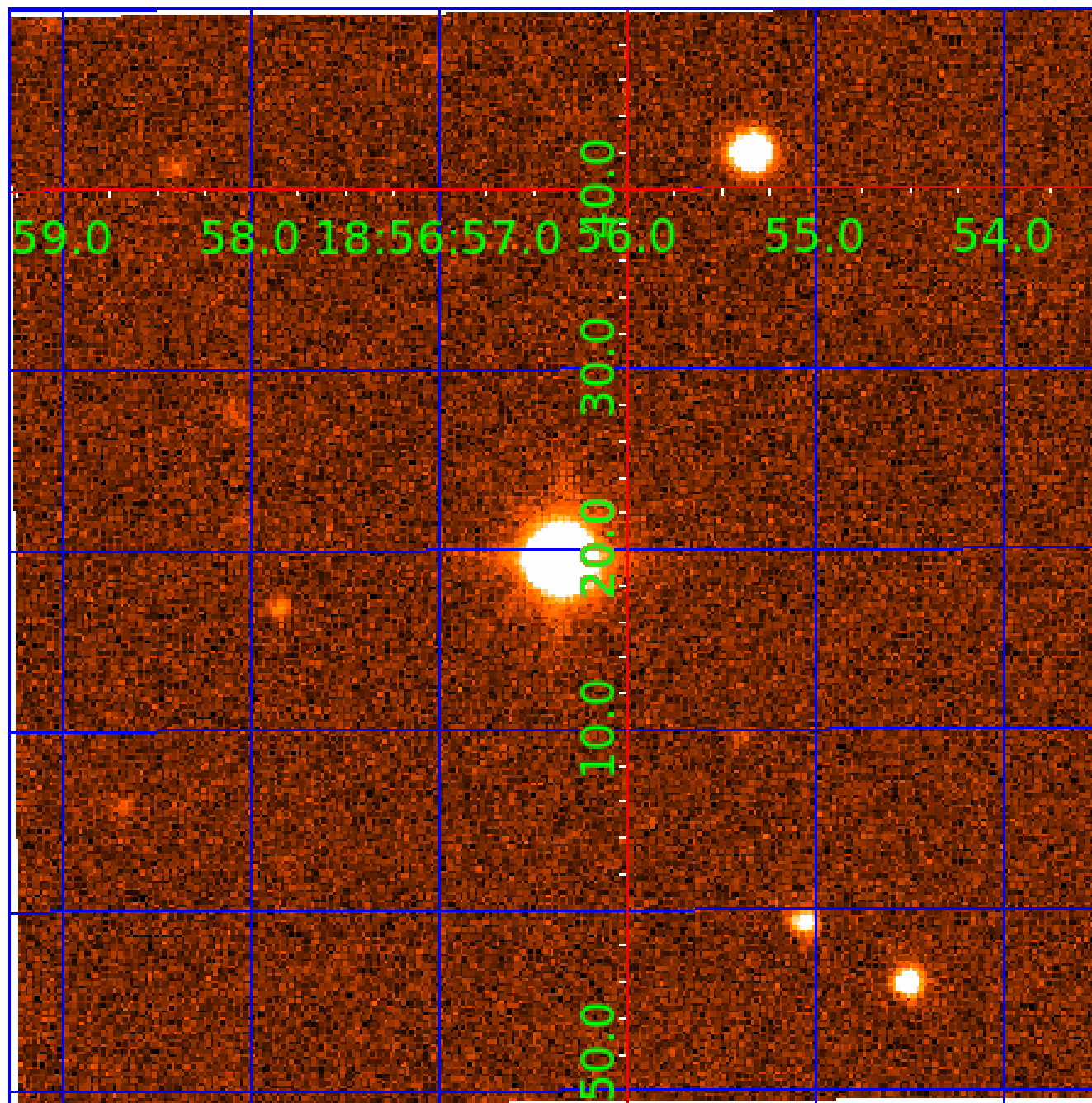


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009327458

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})
009327458-01	OBS	No	394.464931	372.031658	29599.5	24.391	284.9	638.9	6.87	4888	174.19	12.96
009327458-02	OBS	No	389.497710	381.011573	3458.1	15.000	73.9	-1.0	6.87	4888	38.79	13.18
009327458-03	OBS	No	391.643233	368.703758	2636.2	15.000	104.4	-1.0	6.87	4888	33.87	13.09
009327458-05	OBS	No	154.719879	182.908167	591.9	13.336	14.9	22.5	6.87	4888	35.22	45.14
009327458-06	OBS	No	393.857576	370.651900	70230.0	16.499	1348.1	1576.5	6.87	4888	188.83	12.99
009327458-07	OBS	No	205.643348	141.312291	163.1	12.500	7.5	-1.0	6.87	4888	8.42	30.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327458-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009327458-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
009327458-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

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

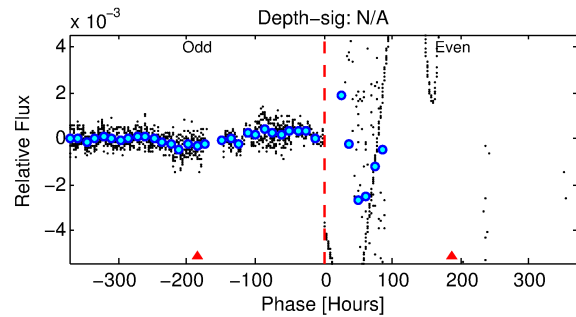
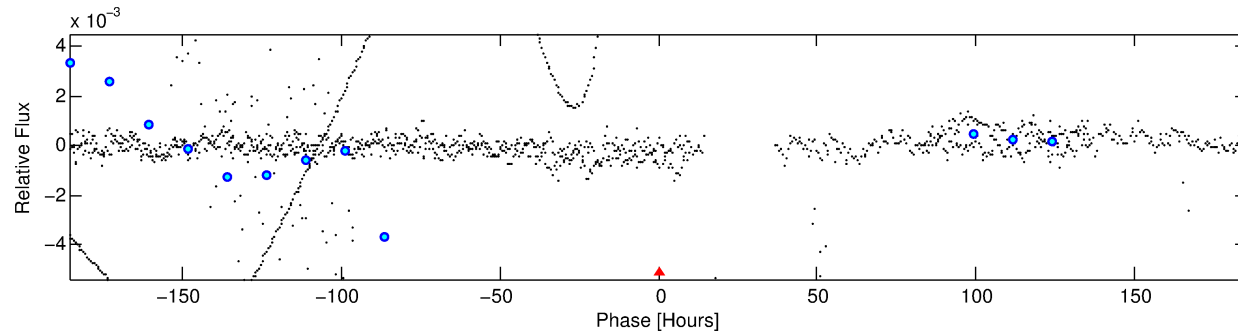
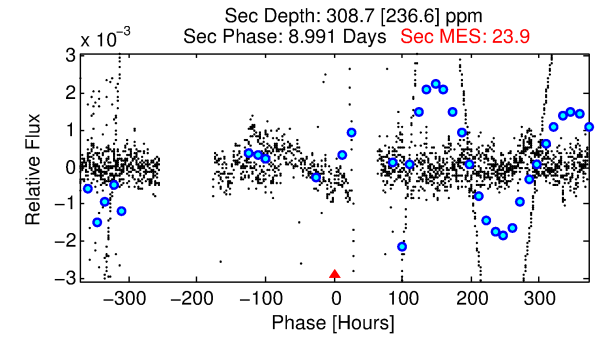
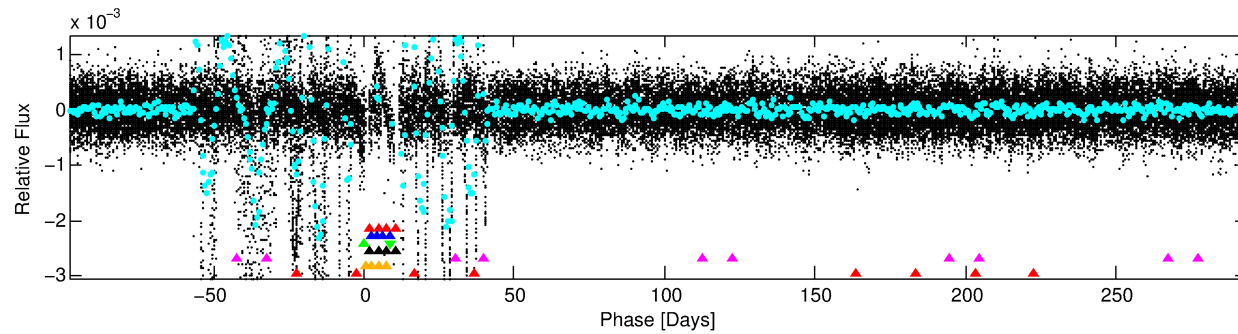
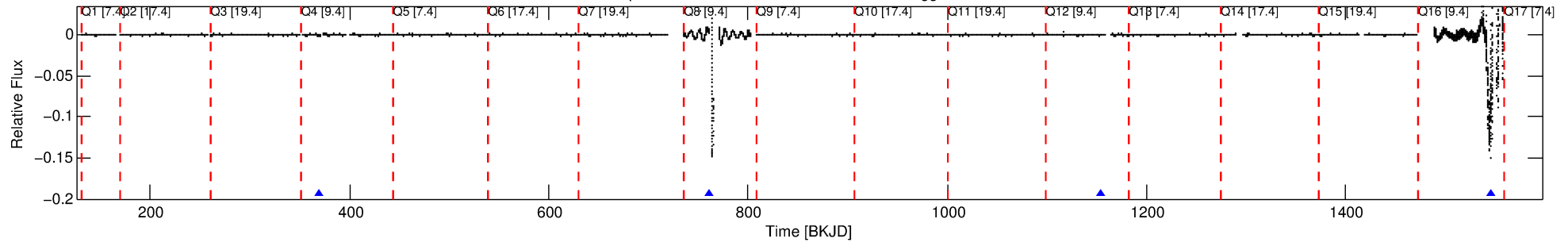
Ephemeris Match Information For 009327458-03

No Significant Match Found

DV One-Page Summary

KIC: 9327458 Candidate: 3 of 7 Period: 391.643 d

Kp: 13.13 R*: 6.87 Rs Teff: 4888.0 K Logg: 3.10 Fe/H: 0.480



TPS TCE Results:

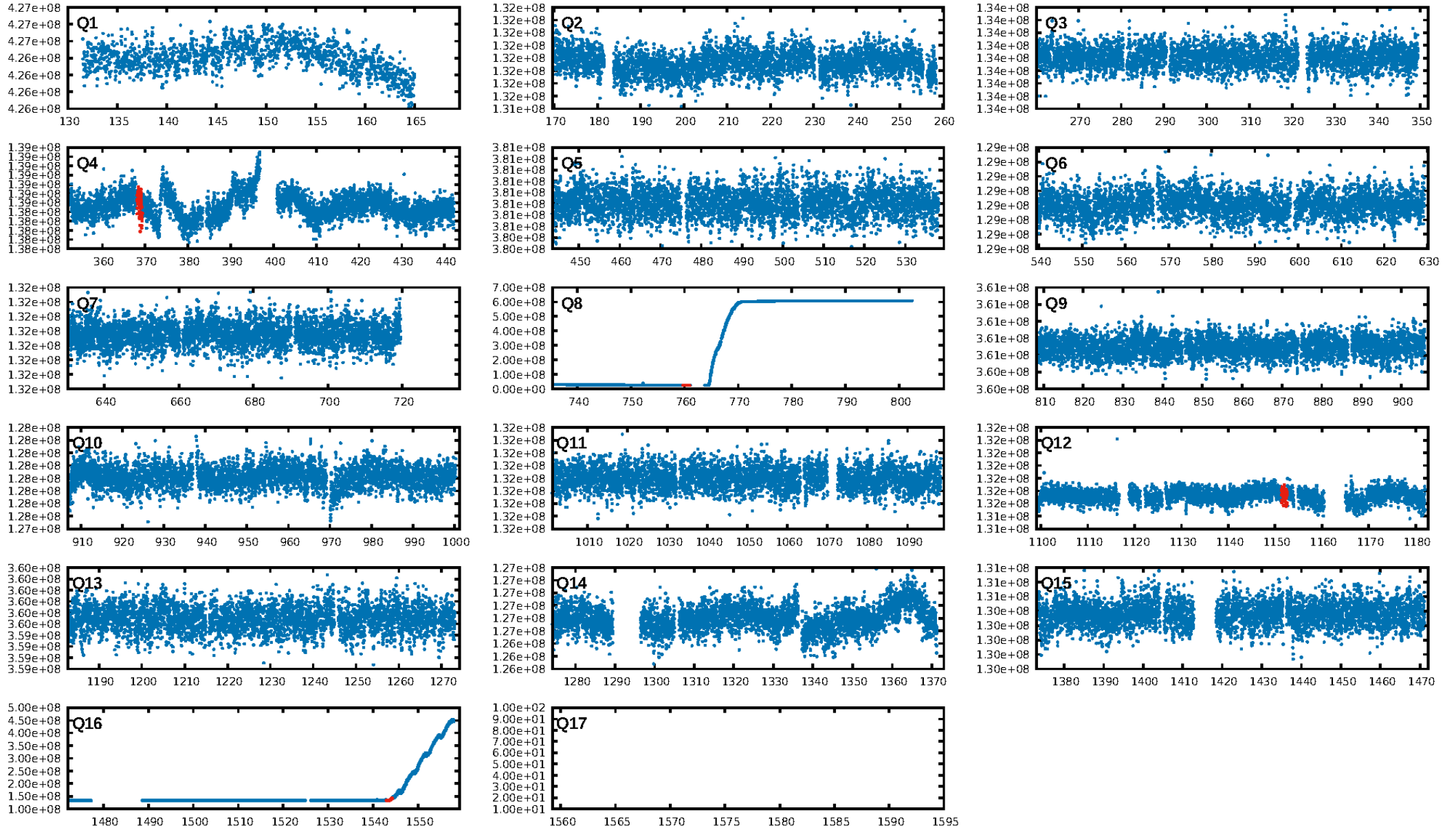
Period = 391.64323 d
Epoch = 368.7038 BKJD

DV fit results are unavailable

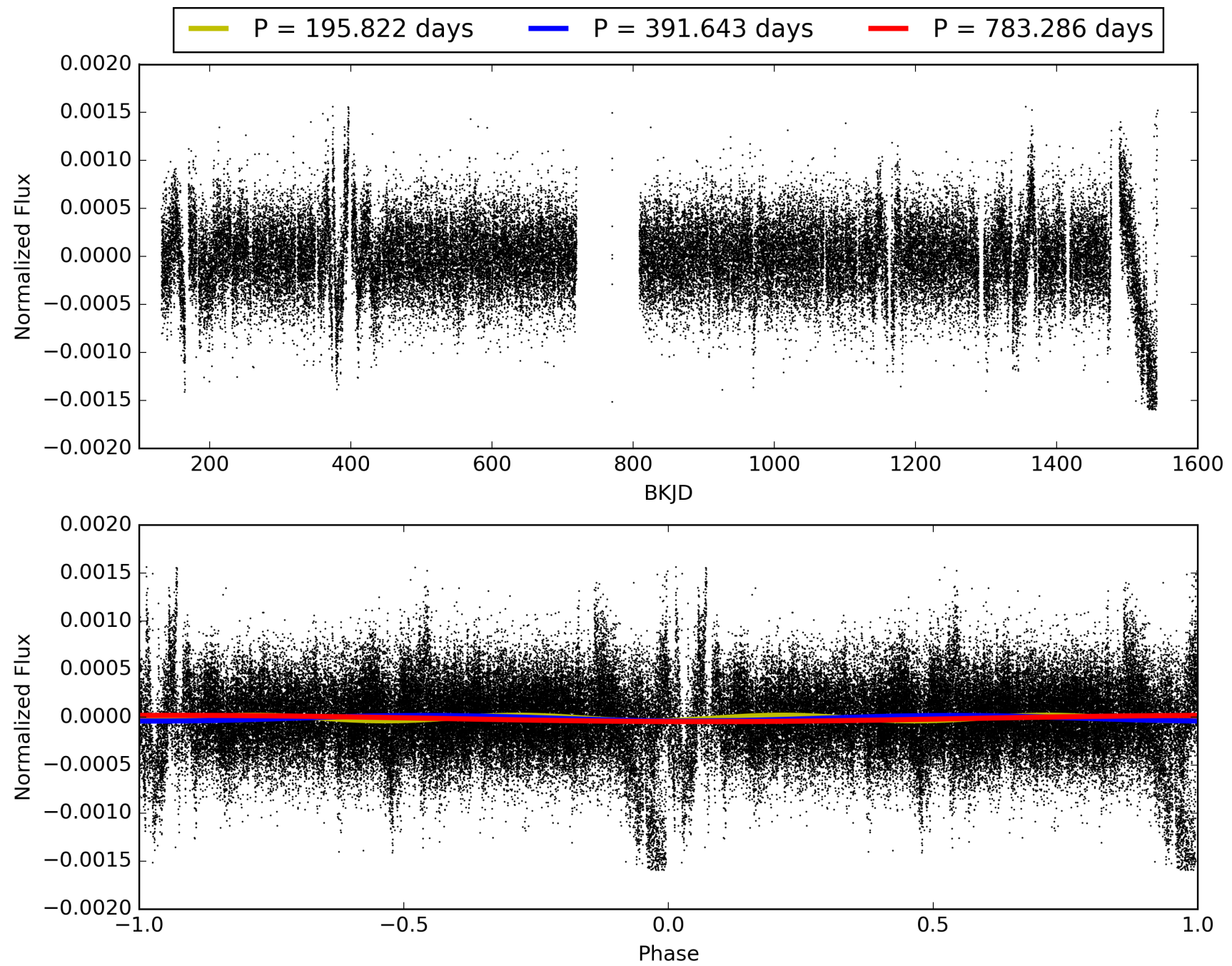
DV Diagnostic Results:

ShortPeriod-sig: 98.5% [2.43 σ]
LongPeriod-sig: 98.3% [2.38 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.15e-111
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.663
Centroid-sig: N/A
Centroid-so: 144.018 arcsec [2.89 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

TCE 009327458-03, PDC Light Curves

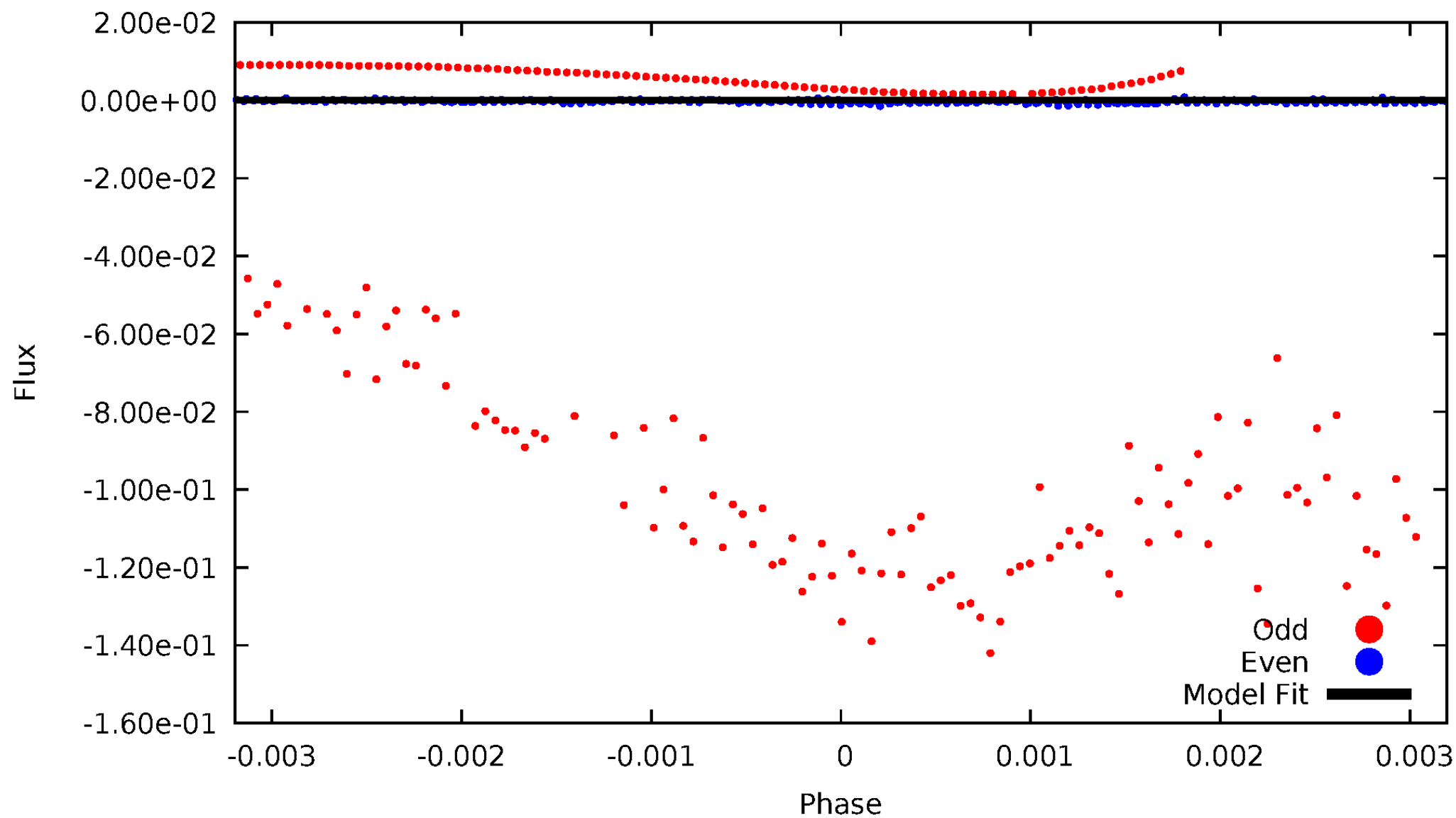


TCE 009327458-03



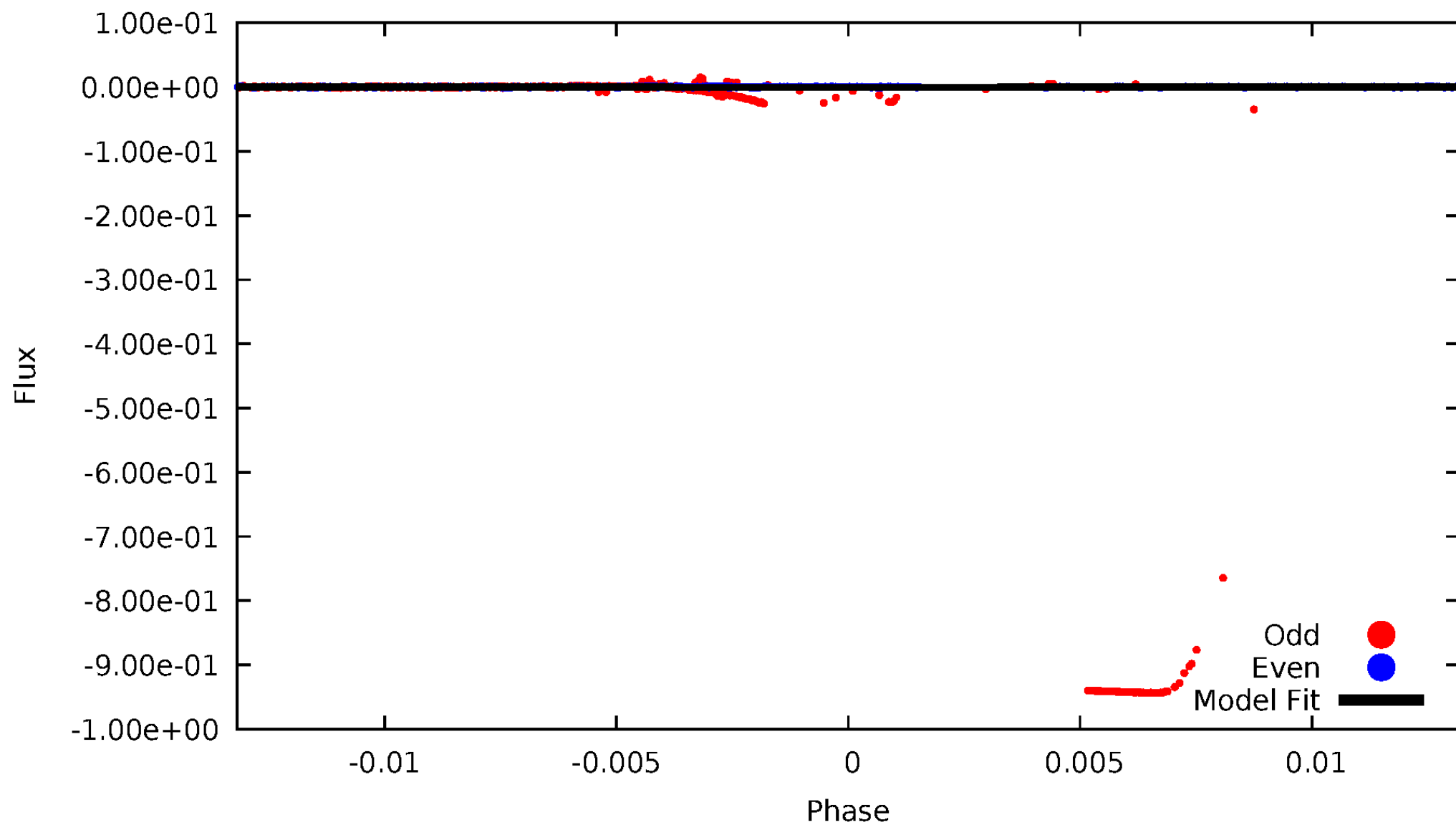
DV Odd/Even

TCE 009327458-03



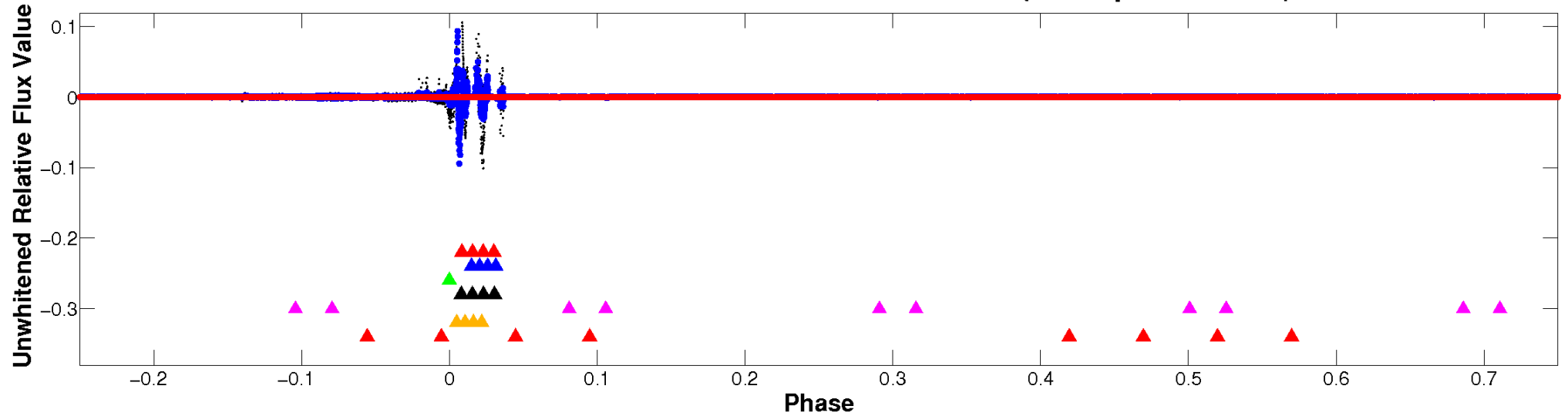
ALT Odd/Even

TCE 009327458-03

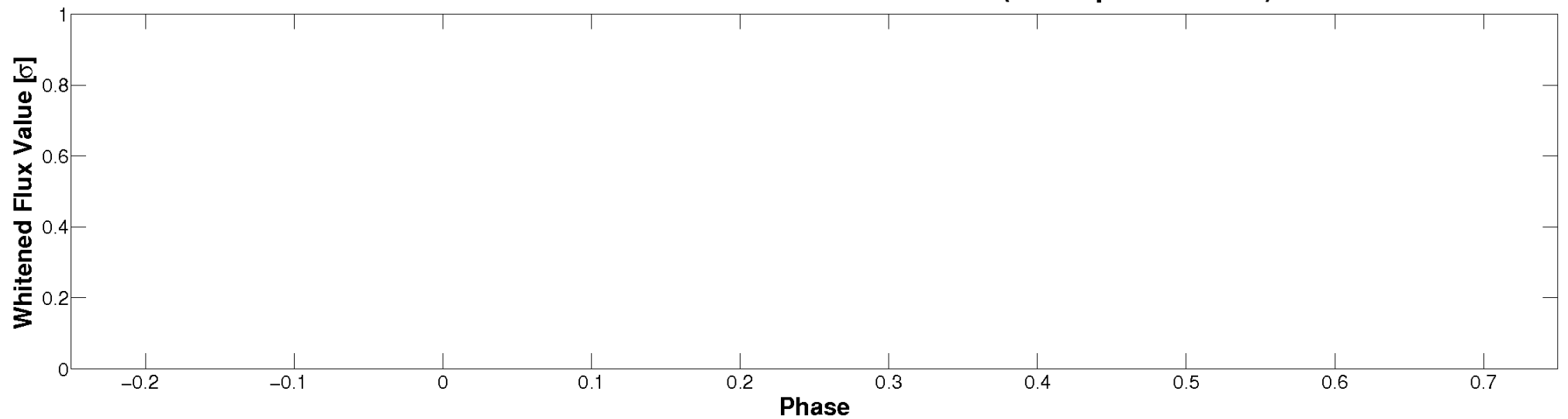


Non-Whitened Vs. Whitened Light Curve

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



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



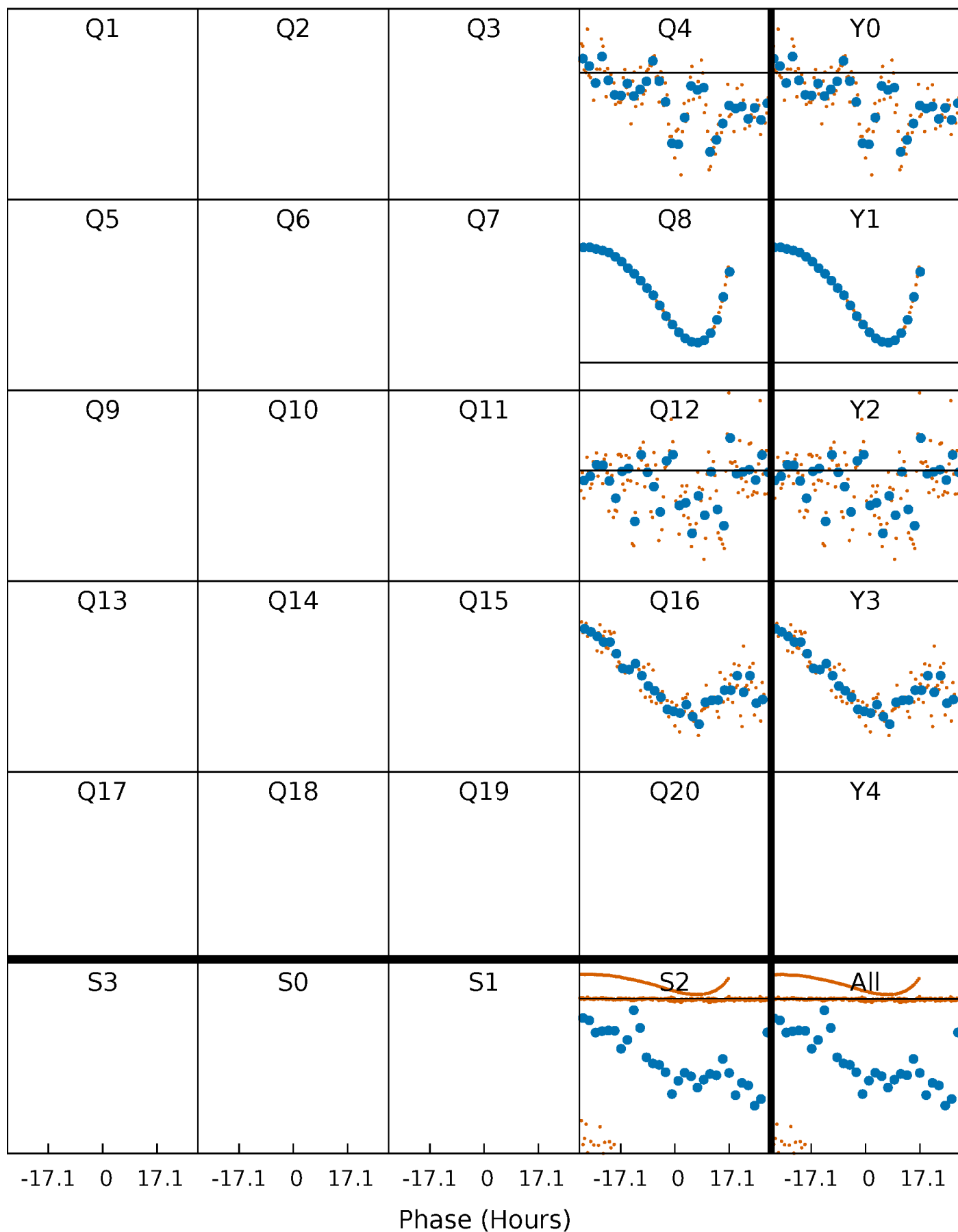
PDC Quarter-Phased Transit Curves

TCE 009327458-03 $P=391.643233$ Days $T_0=368.703758$ (BKJD)



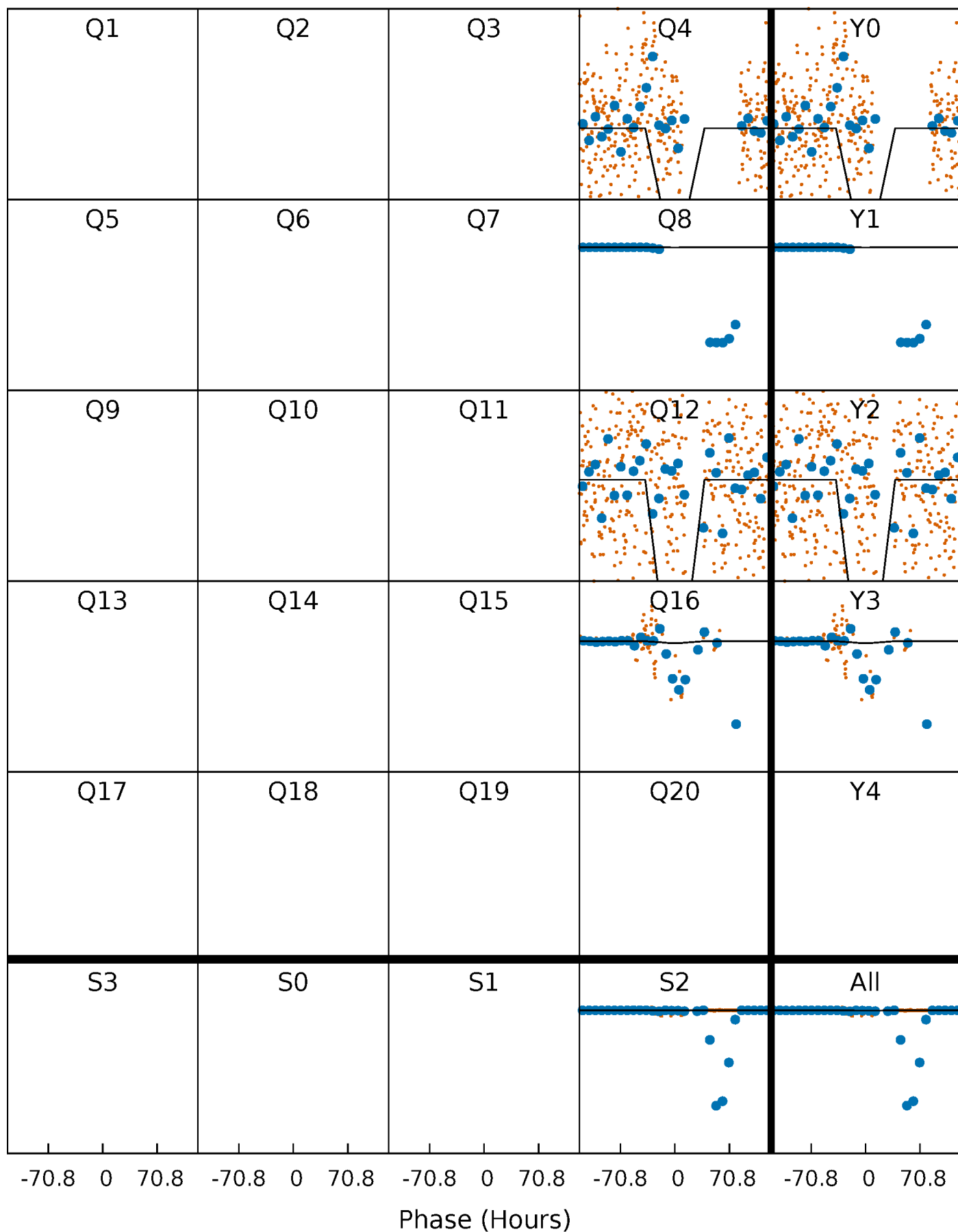
DV Quarter-Phased Transit Curves

TCE 009327458-03 P=391.643233 Days $T_0=368.703758$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

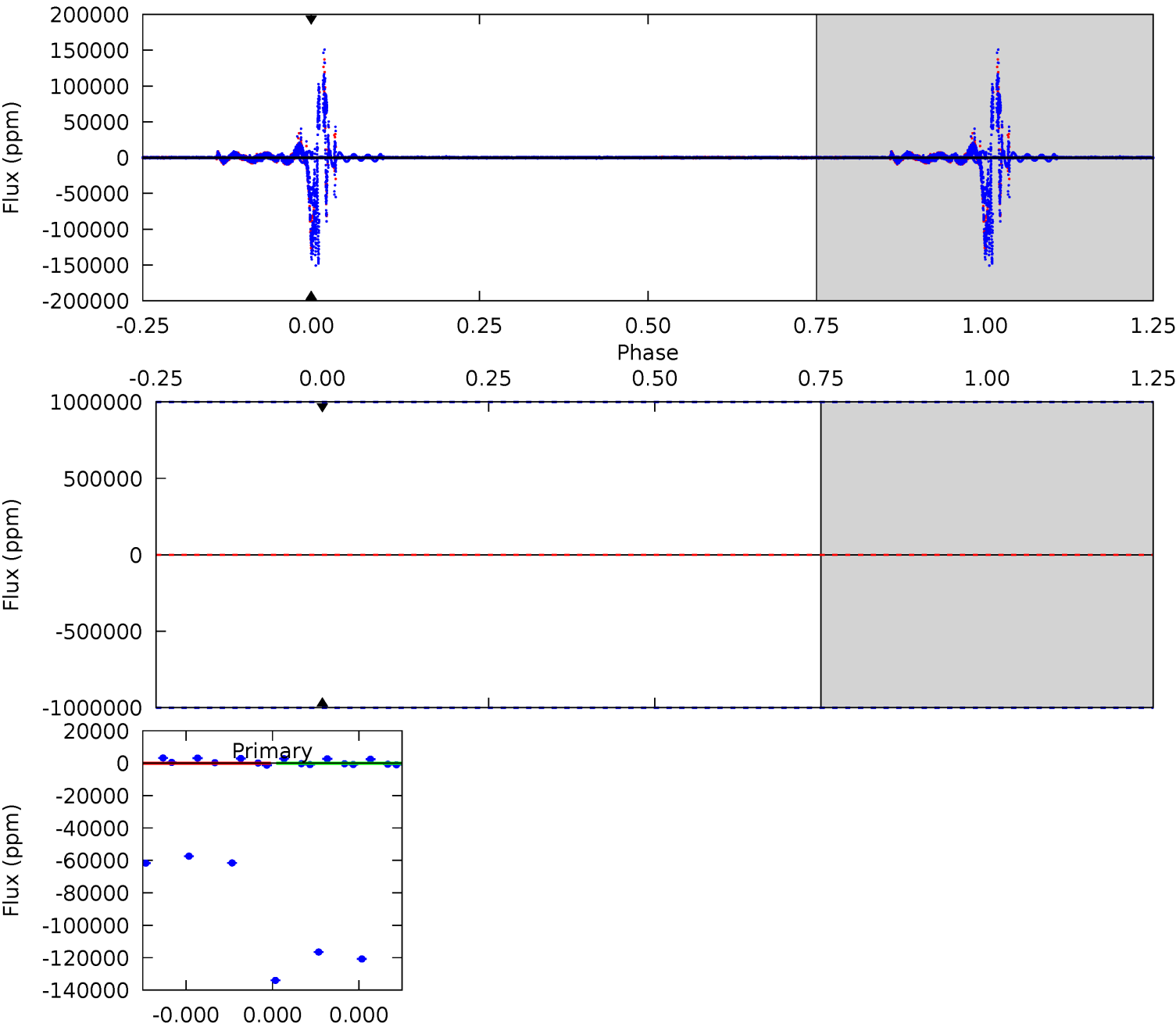
TCE 009327458-03 P=391.643233 Days $T_0=370.099226$ (BKJD)



DV Model-Shift Uniqueness Test

009327458-03, P = 391.643233 Days, E = 368.703758 Days

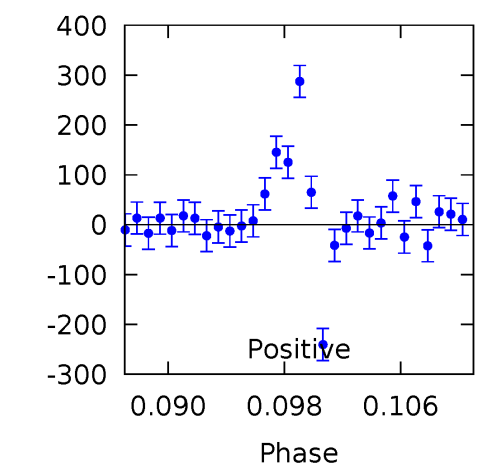
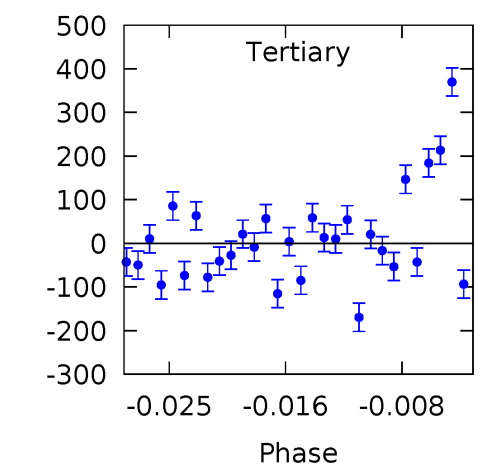
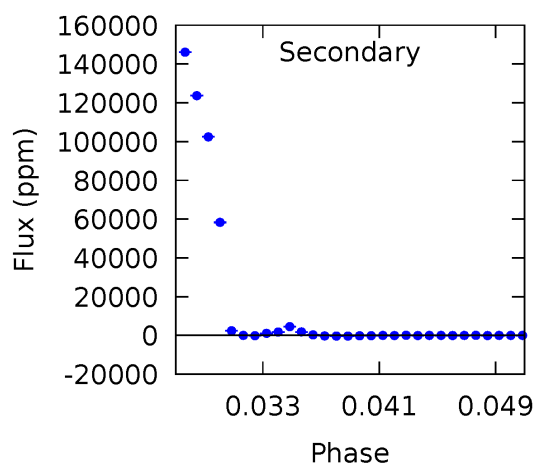
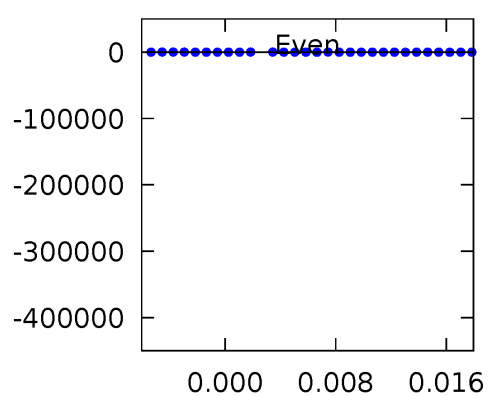
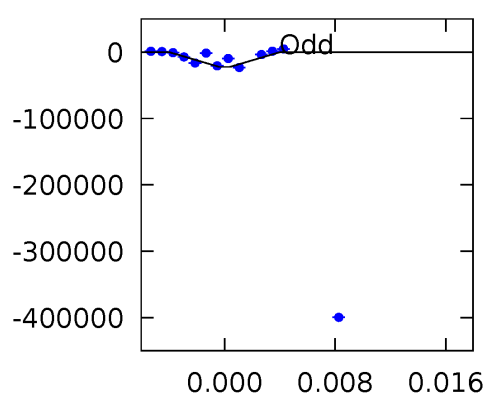
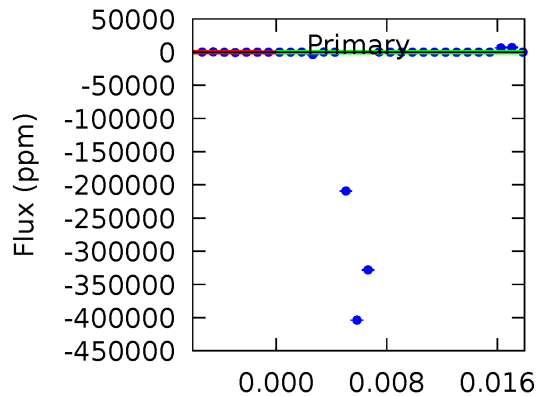
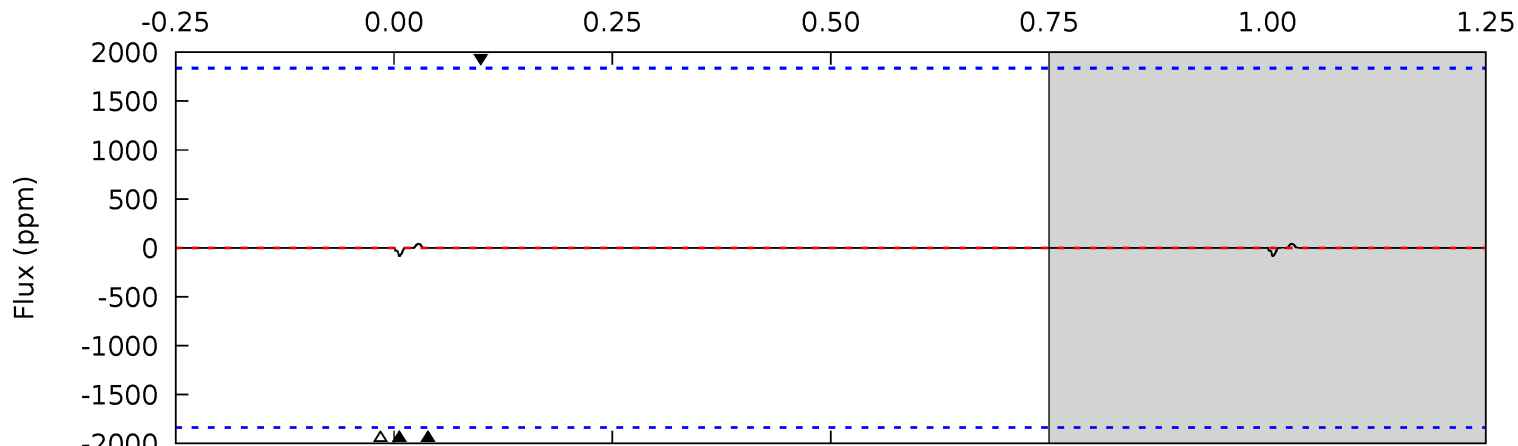
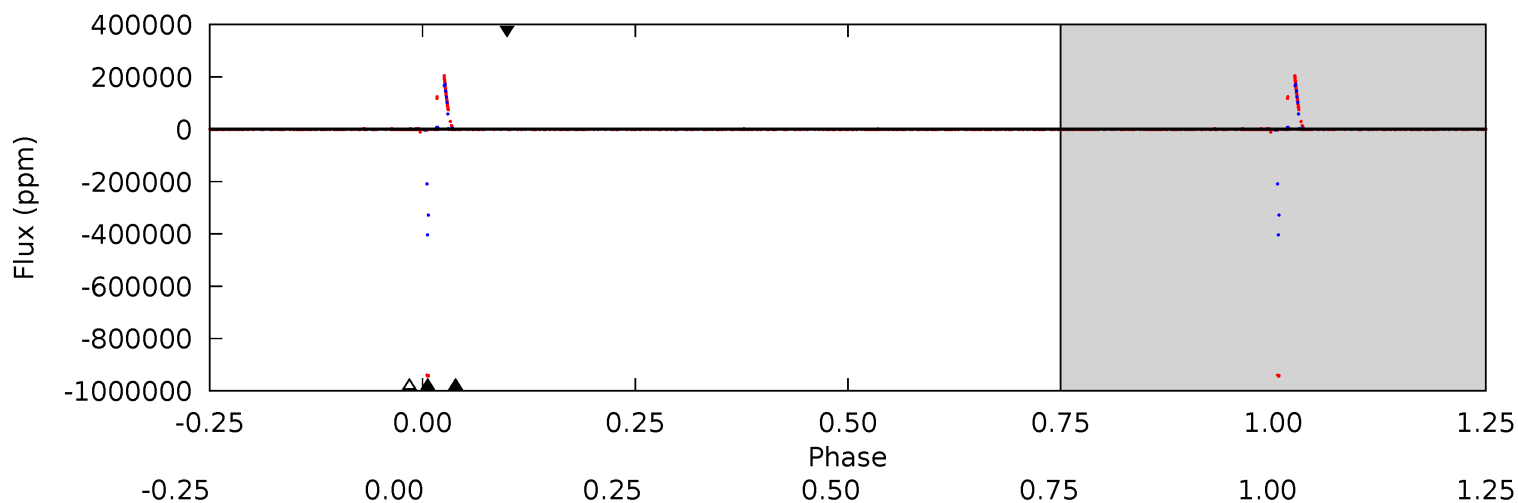
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009327458-03, P = 391.643233 Days, E = 370.099226 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.23	0	0	0	5.06	2.64	0.00	0.23	0.23	0	0	17.1	1.77	0.33	0.03



Stellar Parameters For KIC 009327458

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4888^{+97}_{-158}	$3.102^{+0.475}_{-0.256}$	$0.480^{+0.050}_{-0.350}$	$6.868^{+3.764}_{-4.141}$	$2.174^{+0.700}_{-1.137}$	$0.009^{+0.053}_{-0.006}$
	+2%/-3%	+15%/-8%	+10%/-73%	+55%/-60%	+32%/-52%	+565%/-59%
Source	PHO1	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 009327458-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$63.52^{+70.55}_{-44.35}$	670^{+83}_{-97}	3518^{+8545}_{-14947}	387^{+55092}_{-42541}
Alt.	-0 ± 363	$52.43^{+62.41}_{-36.36}$	662^{+87}_{-103}	-1609^{+4801}_{-1759}	$-0.255^{+189.035}_{-276.714}$

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 $A_{obs} \gg 1.0$

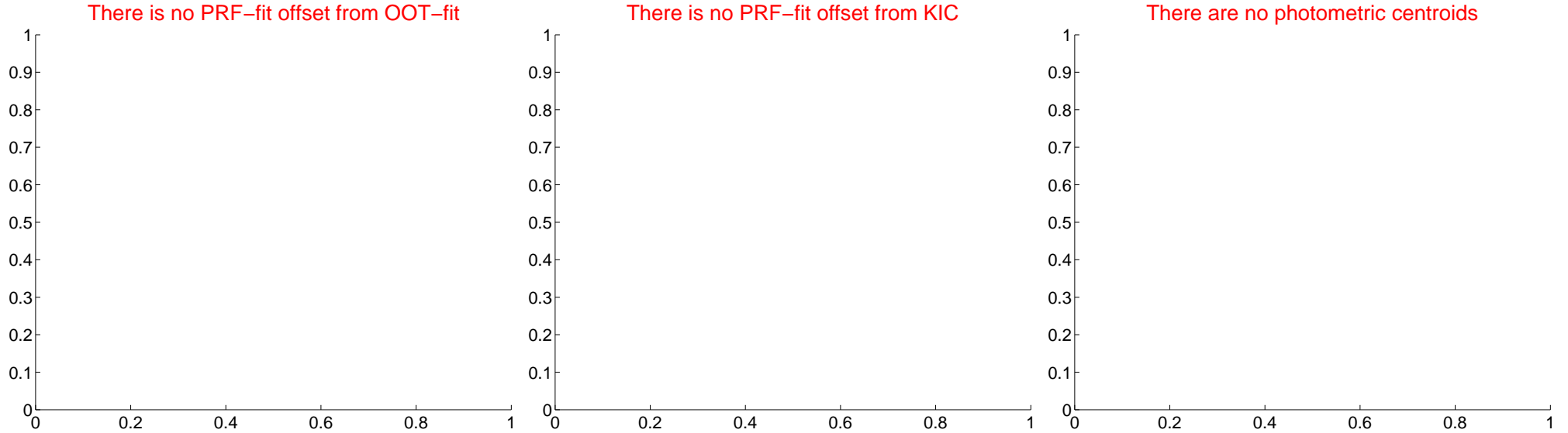
DV Centroid Data

Supplemental centroid analysis for 009327458-03. Kepler magnitude: 13.13. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

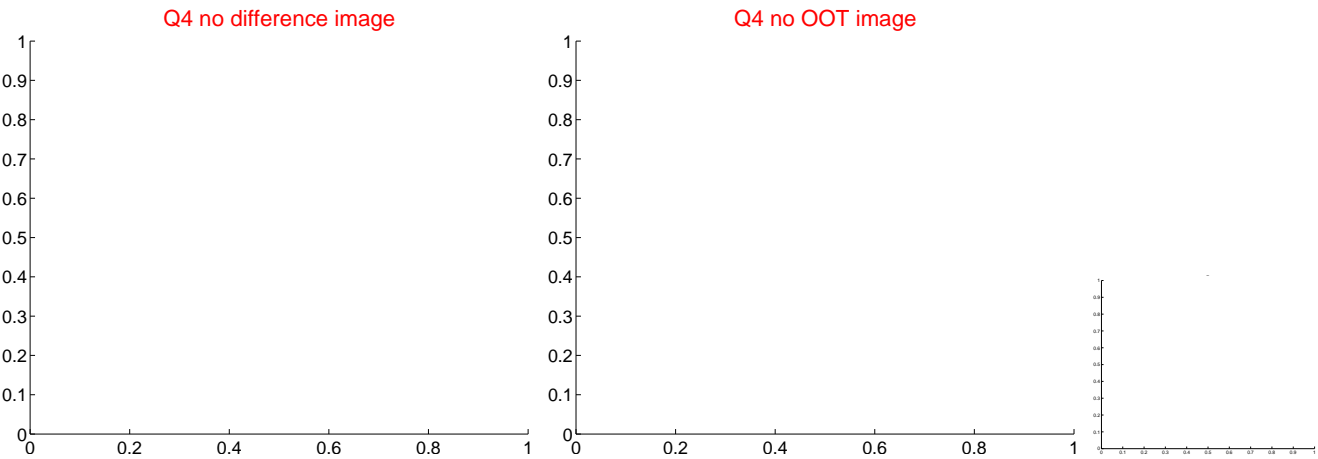
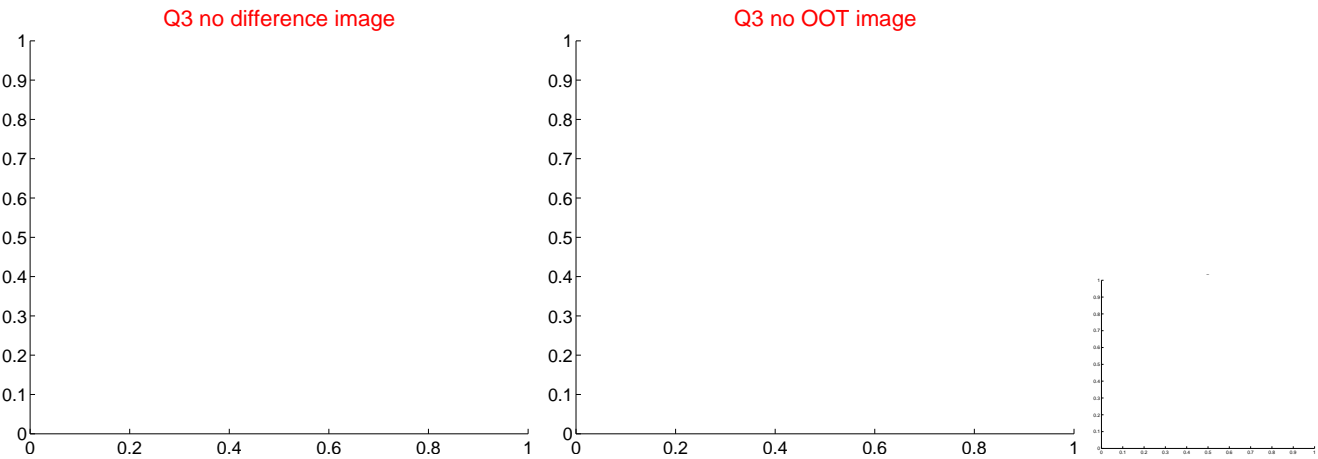
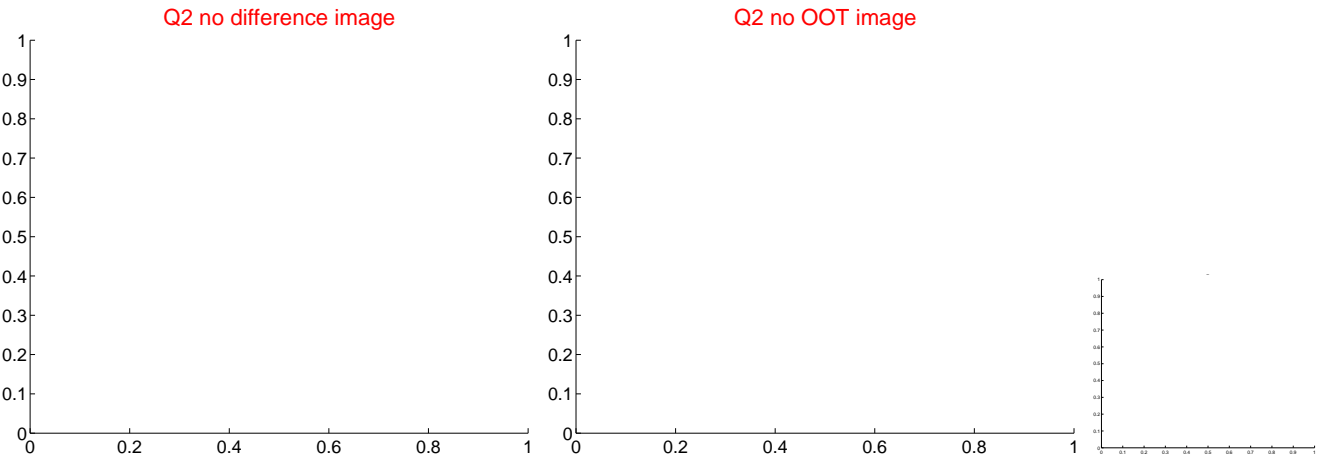
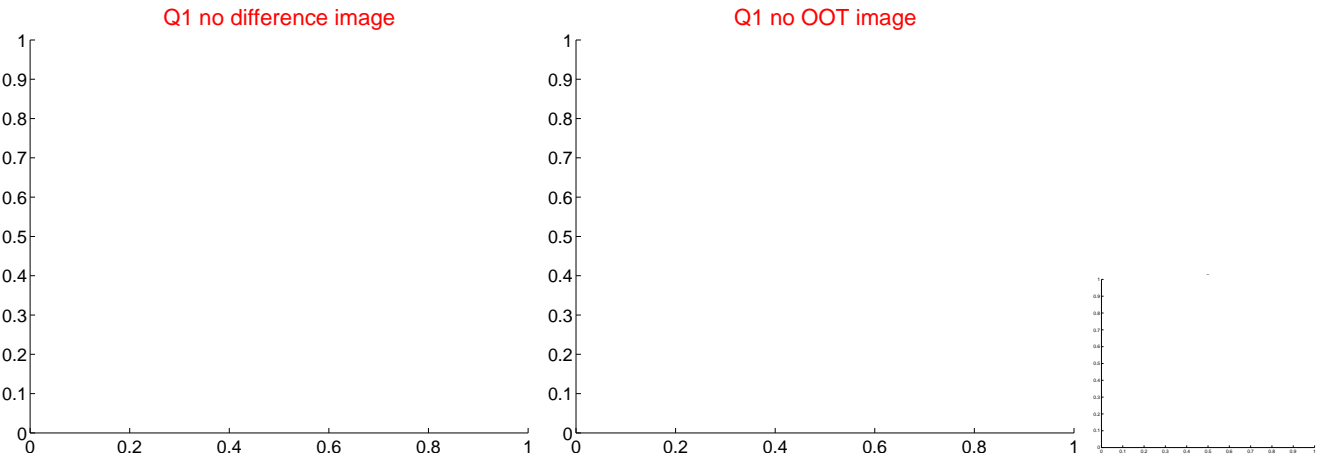
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.

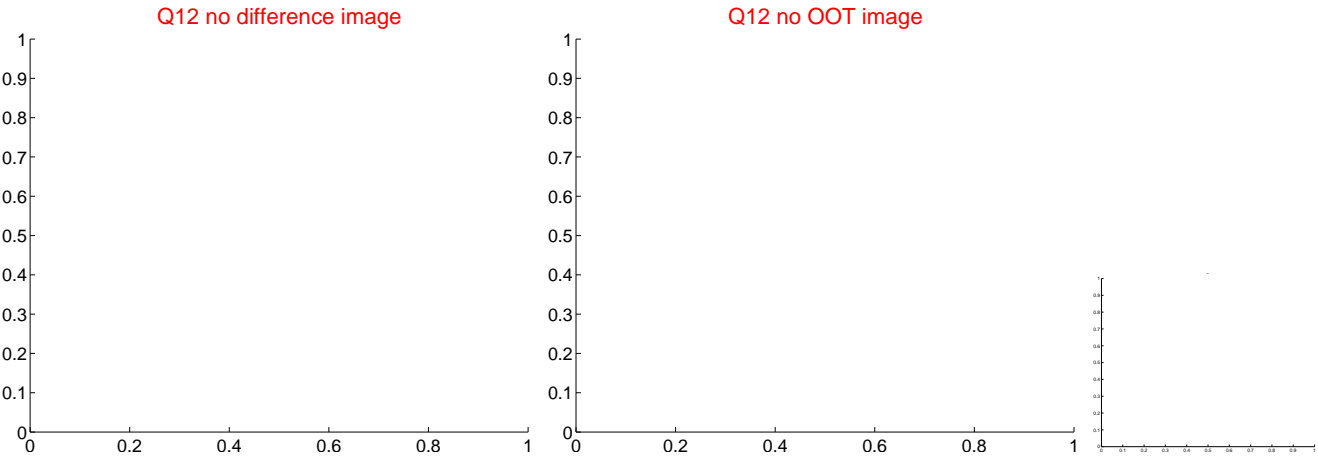
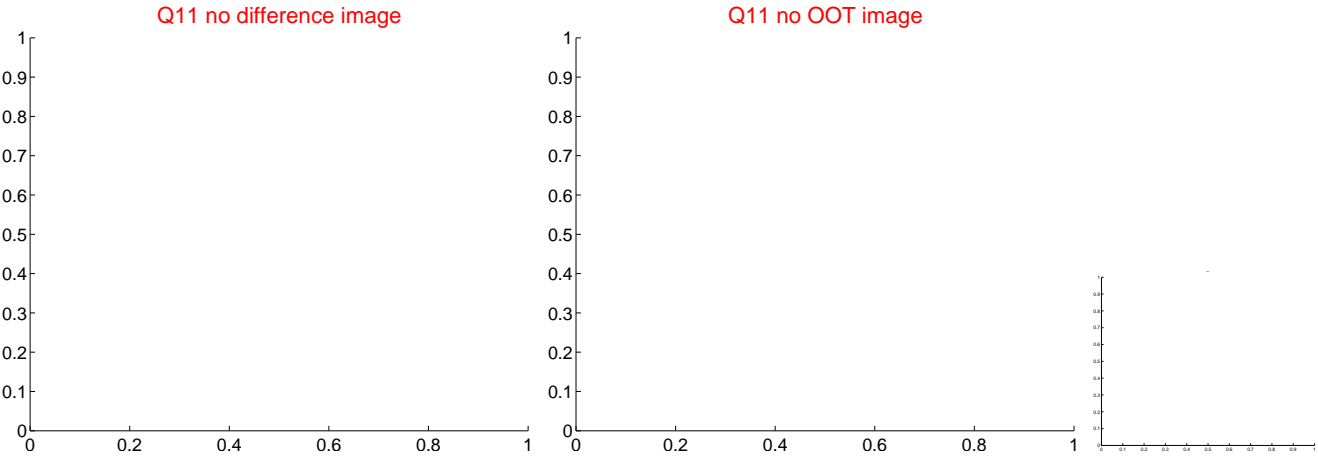
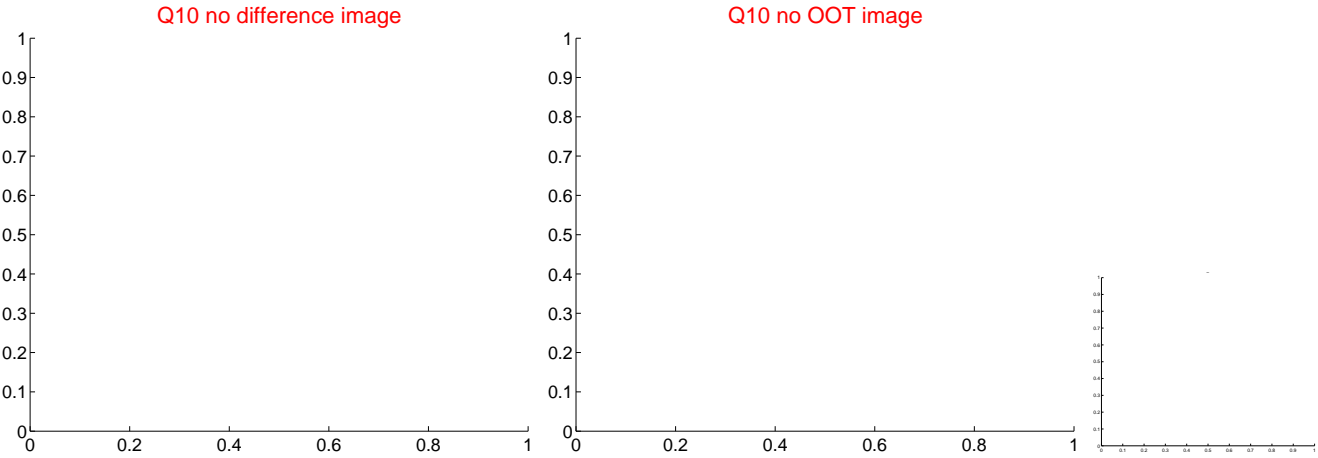
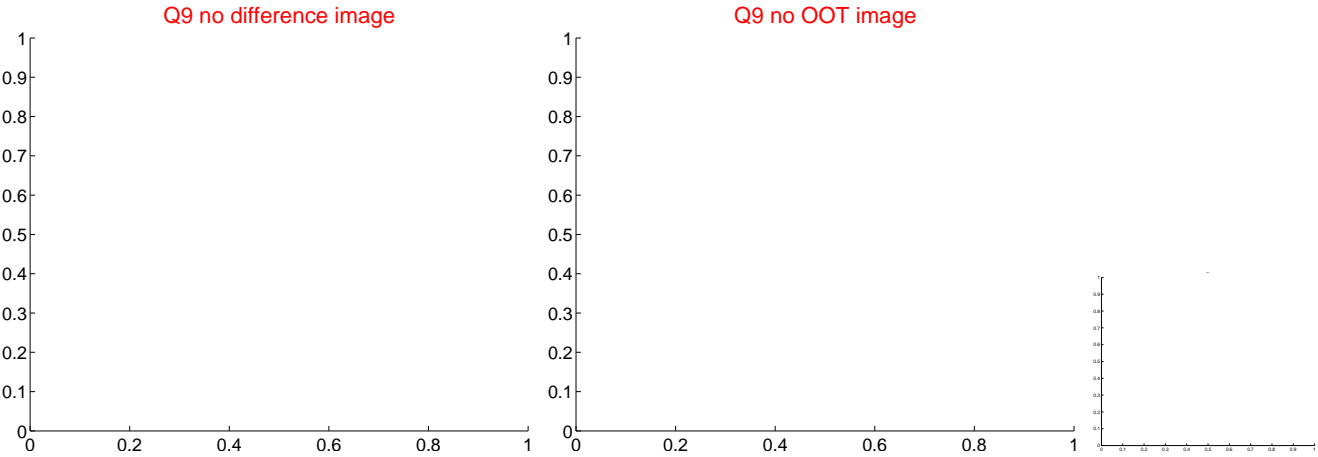
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



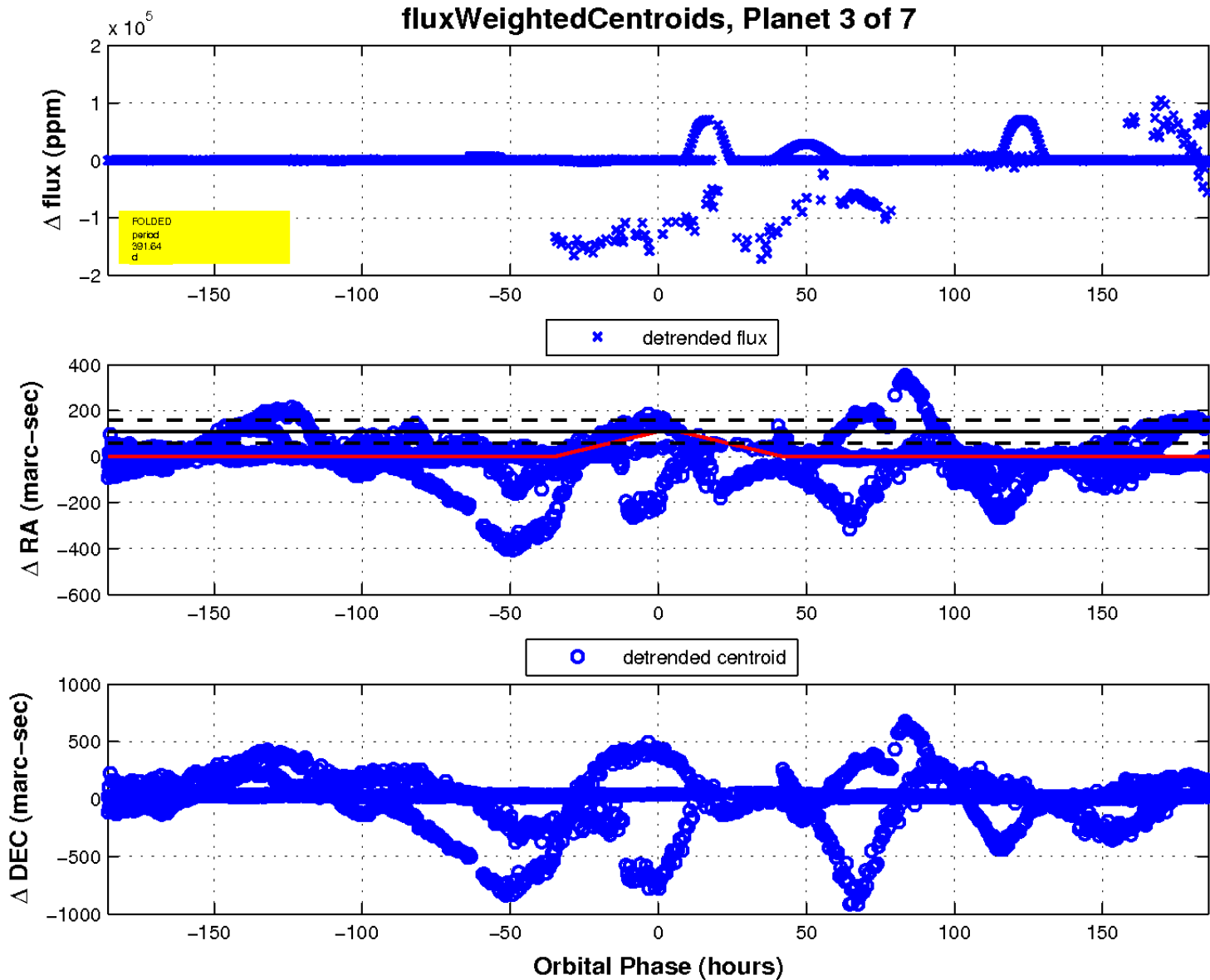
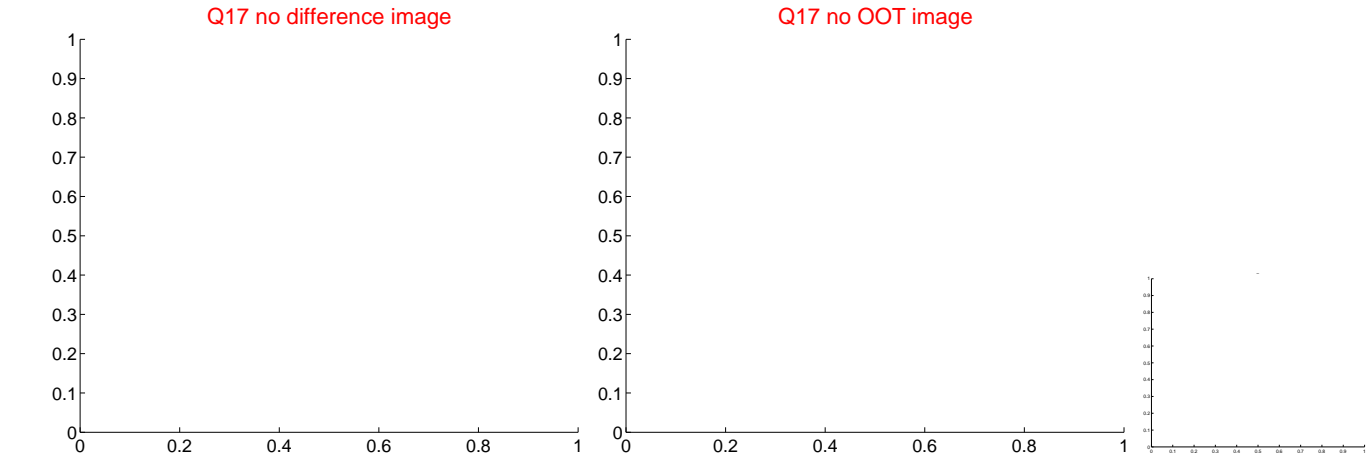
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

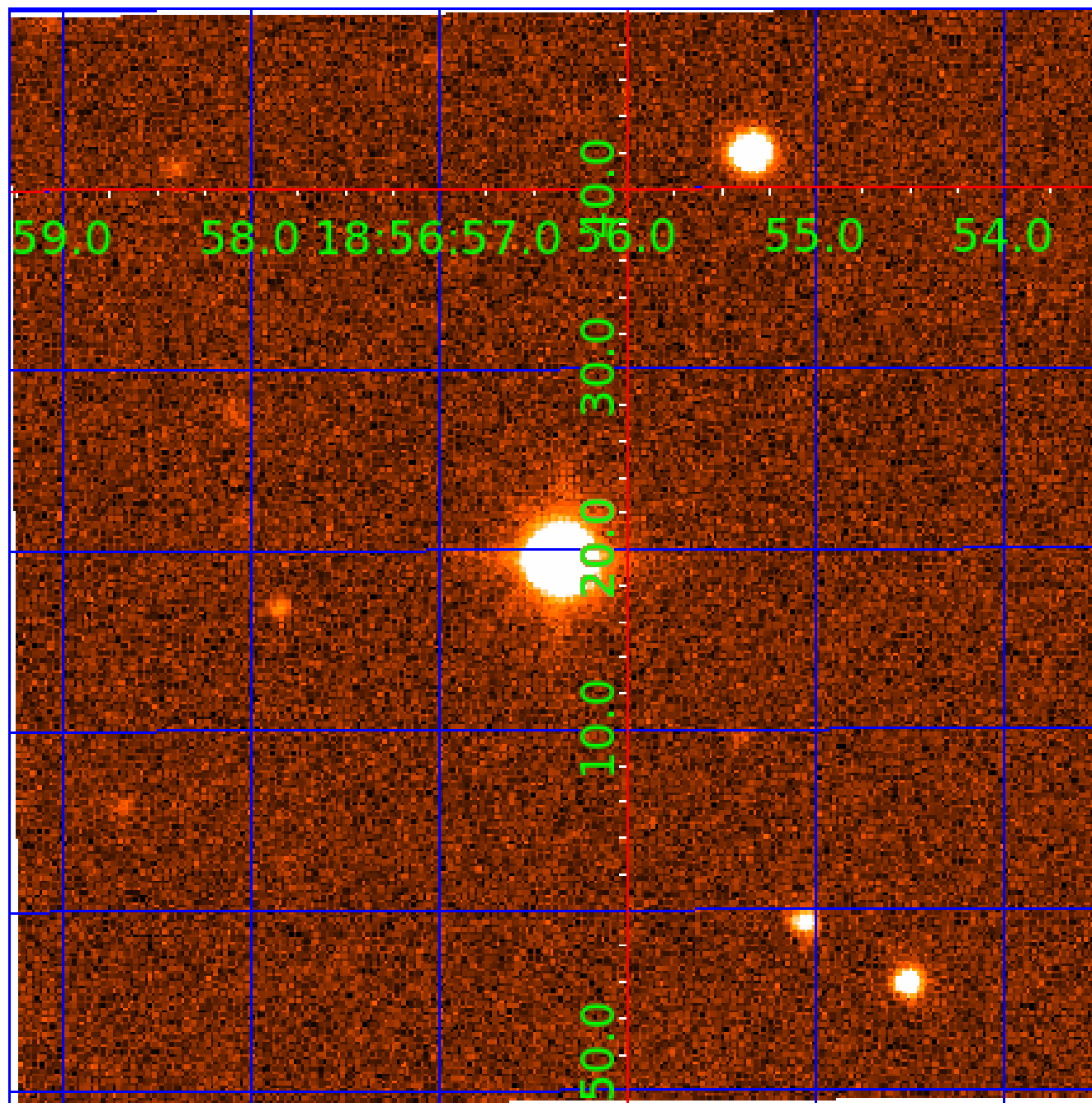


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009327458

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})
009327458-01	OBS	No	394.464931	372.031658	29599.5	24.391	284.9	638.9	6.87	4888	174.19	12.96
009327458-02	OBS	No	389.497710	381.011573	3458.1	15.000	73.9	-1.0	6.87	4888	38.79	13.18
009327458-03	OBS	No	391.643233	368.703758	2636.2	15.000	104.4	-1.0	6.87	4888	33.87	13.09
009327458-05	OBS	No	154.719879	182.908167	591.9	13.336	14.9	22.5	6.87	4888	35.22	45.14
009327458-06	OBS	No	393.857576	370.651900	70230.0	16.499	1348.1	1576.5	6.87	4888	188.83	12.99
009327458-07	OBS	No	205.643348	141.312291	163.1	12.500	7.5	-1.0	6.87	4888	8.42	30.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327458-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009327458-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
009327458-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

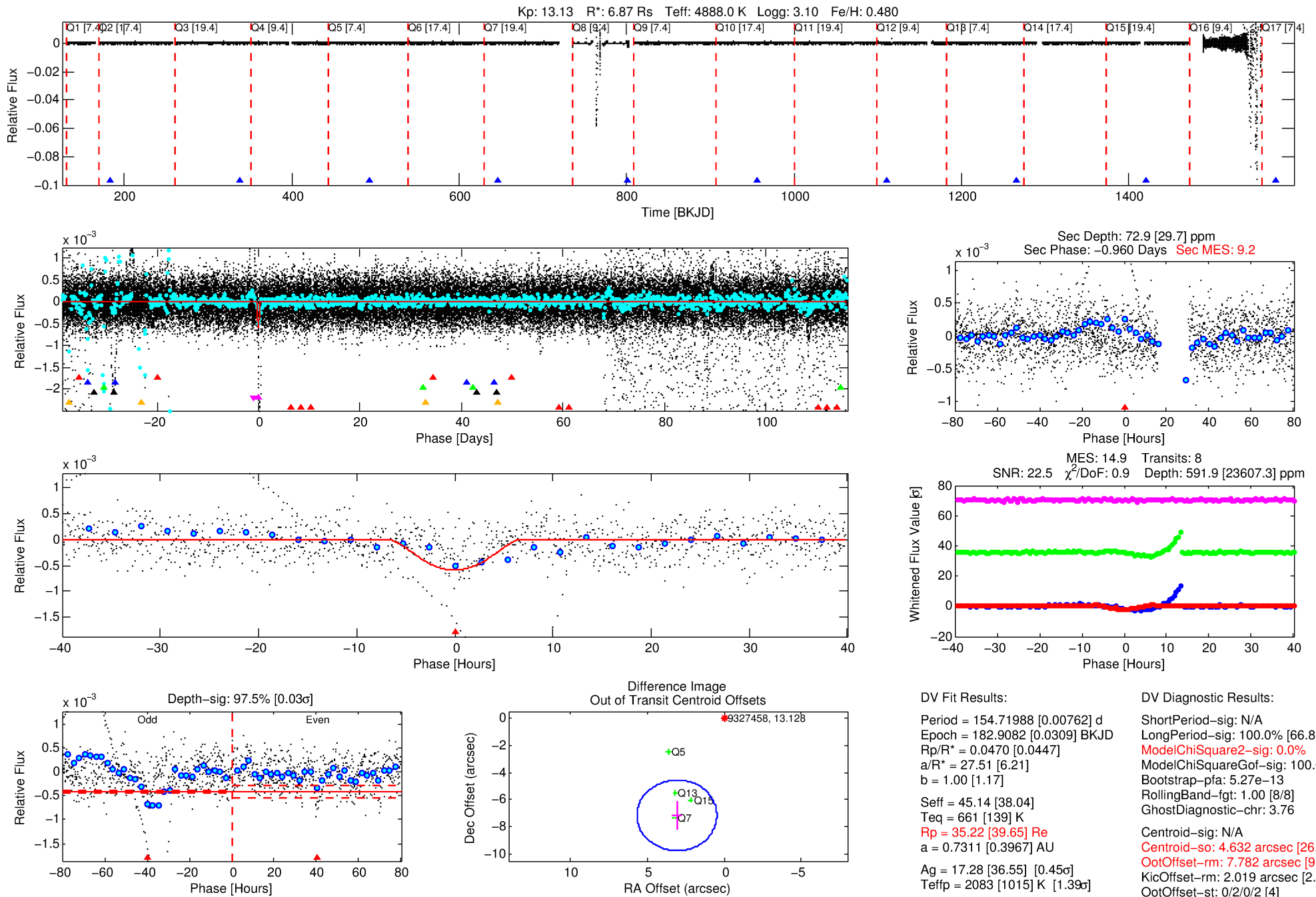
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009327458-05

No Significant Match Found

DV One-Page Summary

KIC: 9327458 Candidate: 5 of 7 Period: 154.720 d



DV Fit Results:

Period = 154.71988 [0.00762] d
Epoch = 182.9082 [0.0309] BKJD
Rp/R* = 0.0470 [0.0447]
a/R* = 27.51 [6.21]
b = 1.00 [1.17]
Seff = 45.14 [38.04]
Teq = 661 [139] K
Rp = 35.22 [39.65] Re
a = 0.7311 [0.3967] AU
Ag = 17.28 [36.55] [0.45σ]
Teffp = 2083 [1015] K [1.39σ]

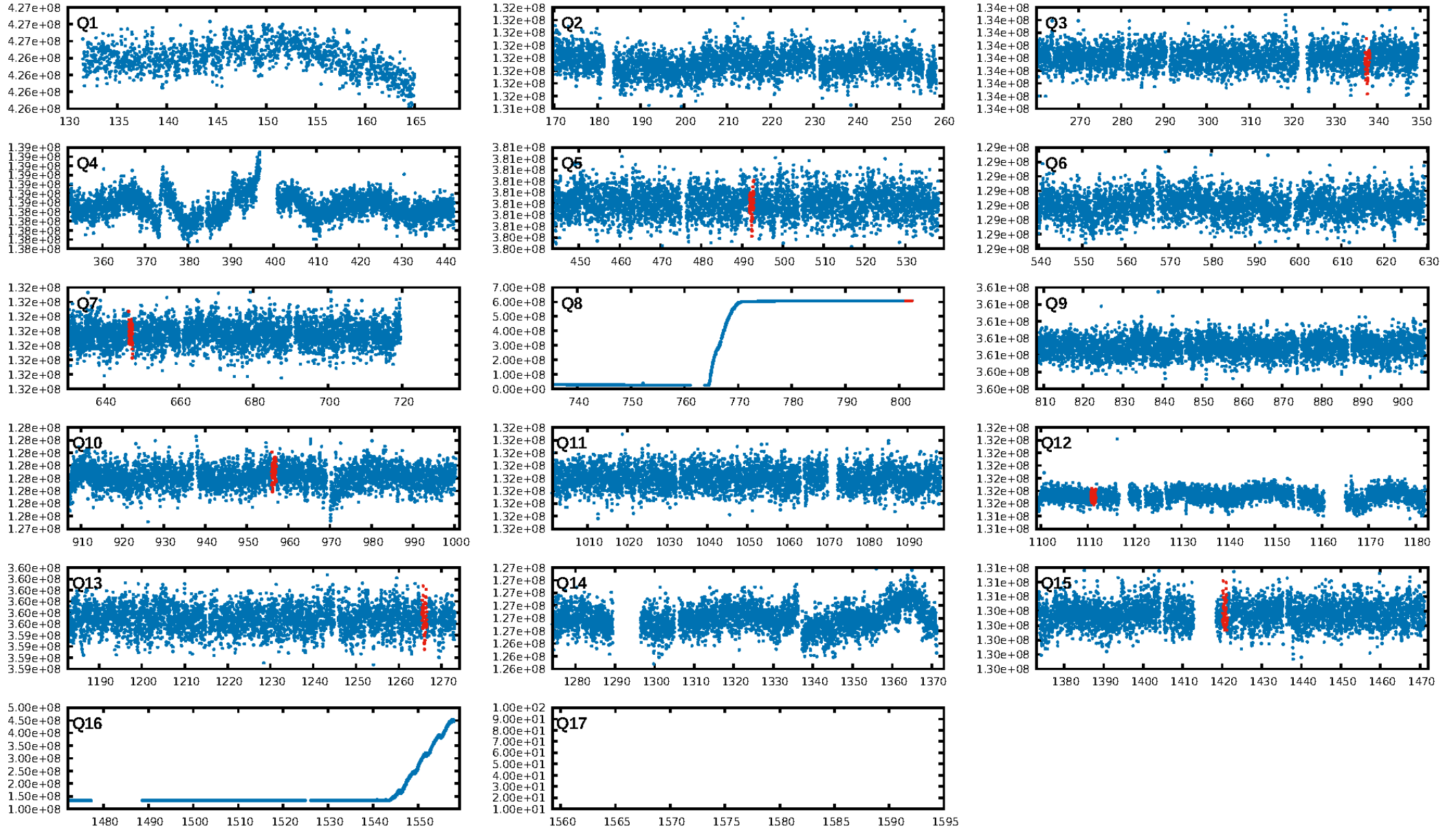
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [66.87σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.27e-13
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 3.76
Centroid-sig: N/A
Centroid-so: 4.632 arcsec [26.91σ]
OotOffset-rm: 7.782 arcsec [9.00σ]
KicOffset-rm: 2.019 arcsec [2.51σ]
OotOffset-st: 0/2/0/2 [4]
KicOffset-st: 0/2/0/2 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [6/6]

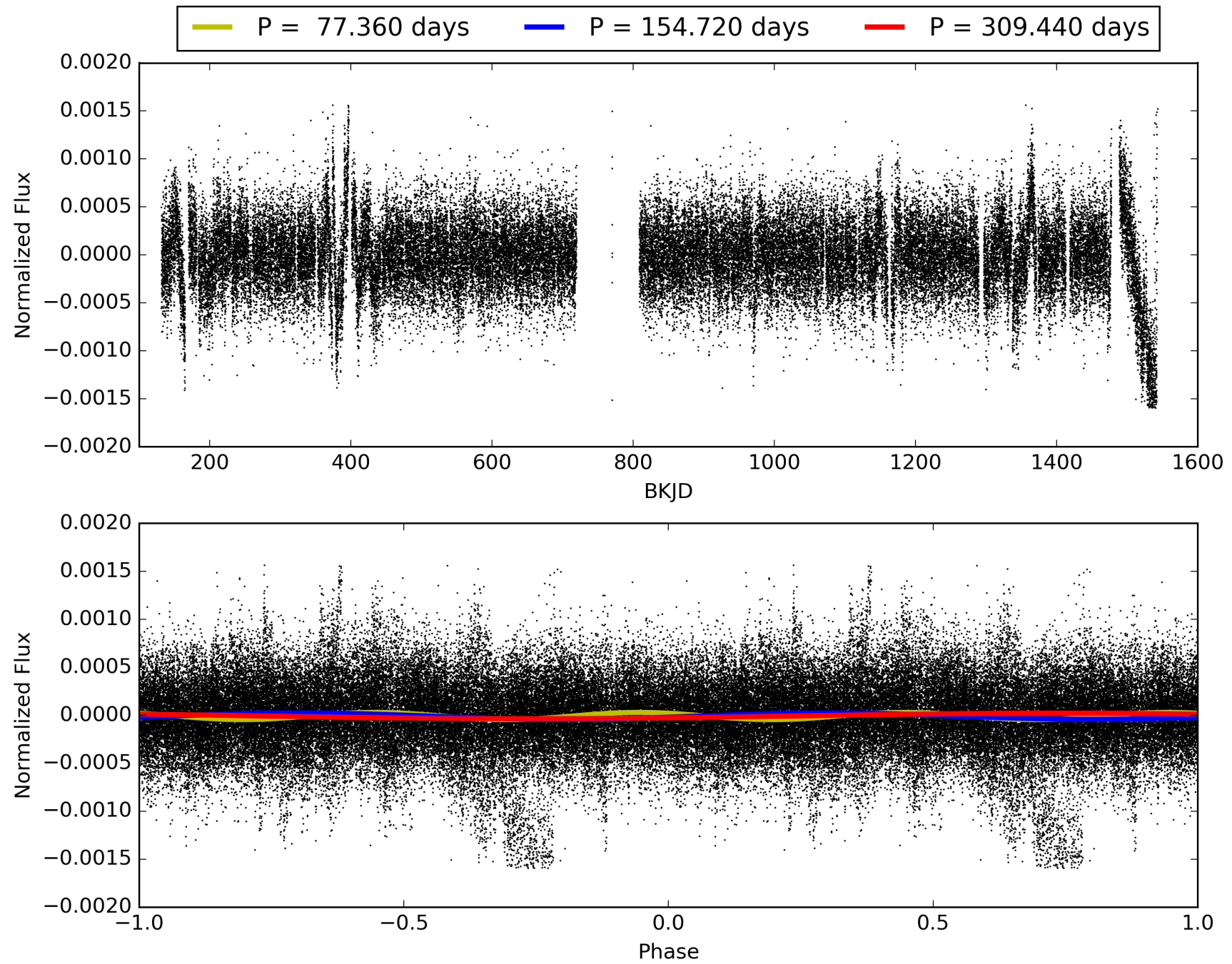
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:17:45 Z

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

TCE 009327458-05, PDC Light Curves

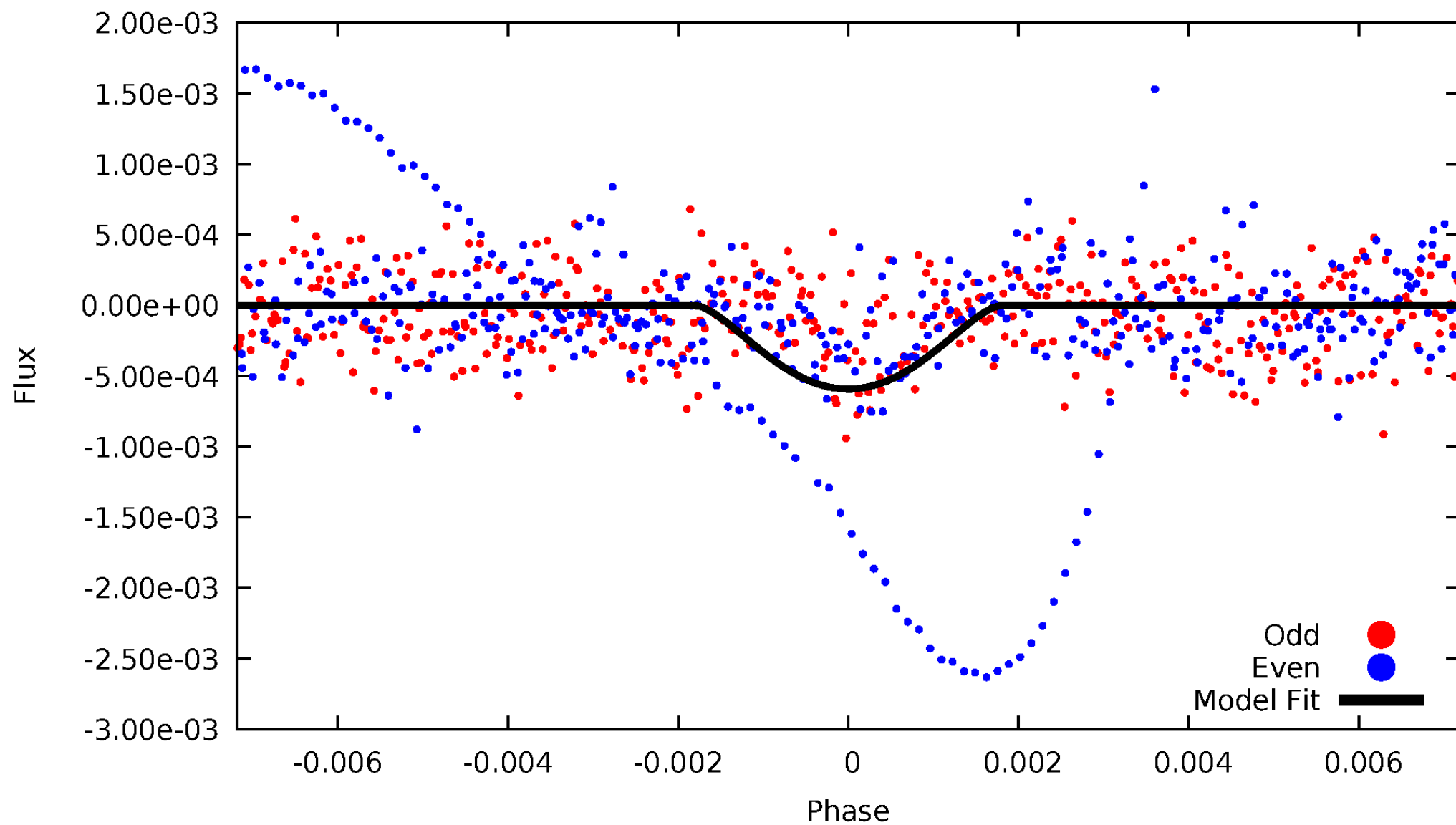


TCE 009327458-05



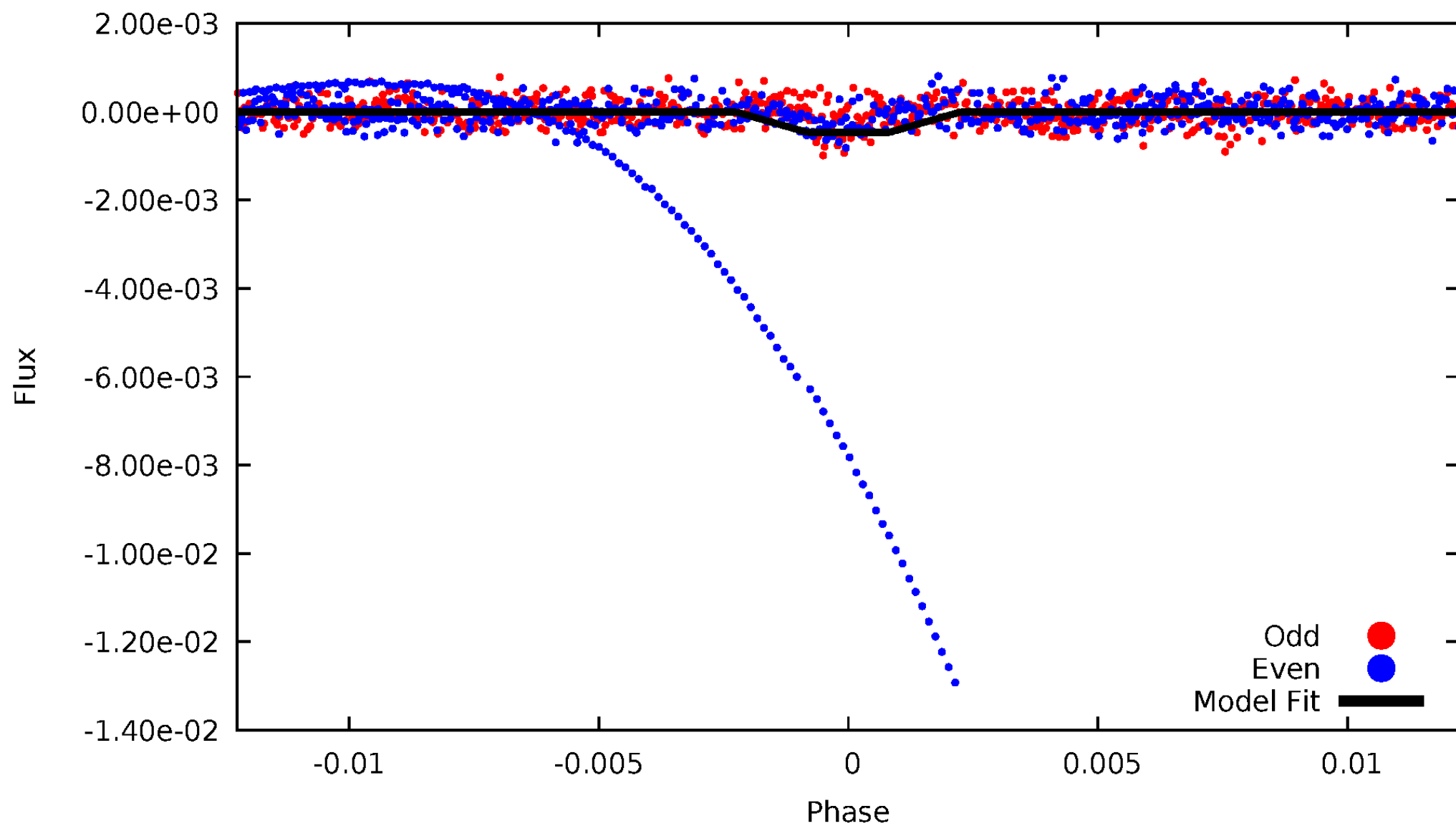
DV Odd/Even

TCE 009327458-05



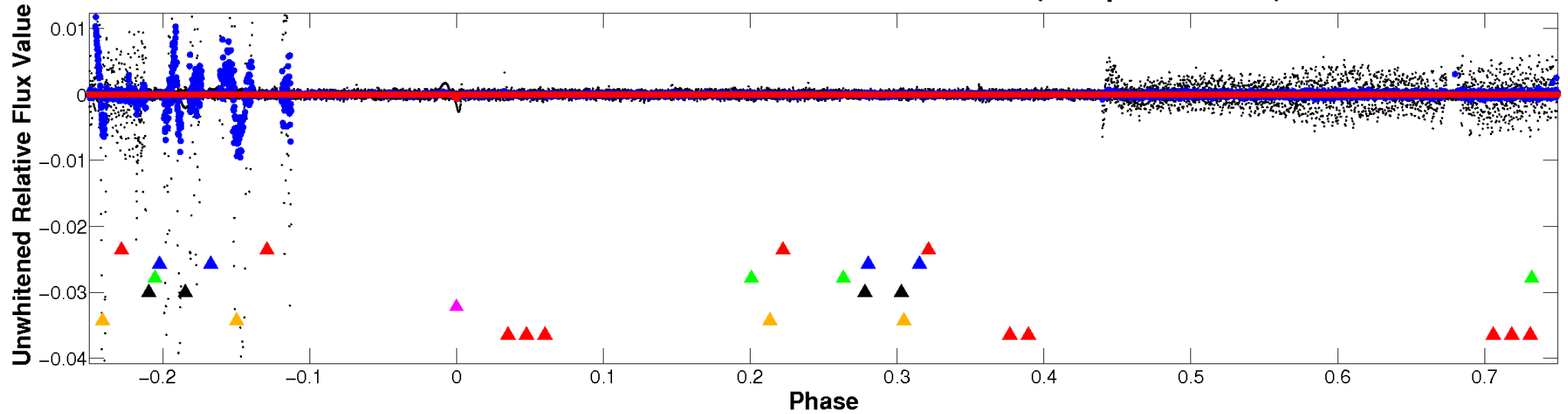
ALT Odd/Even

TCE 009327458-05

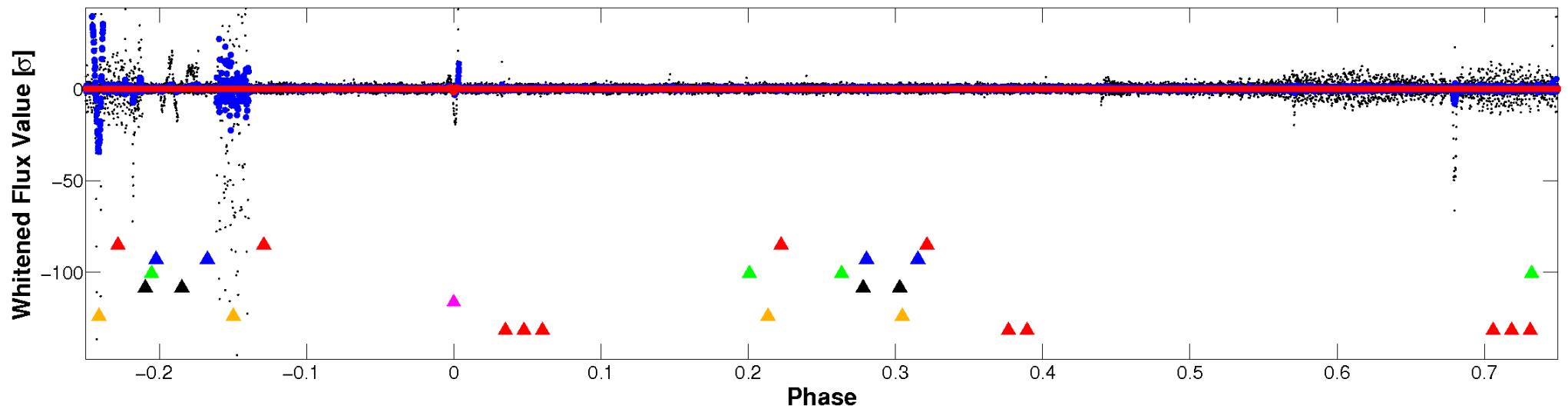


Non-Whitened Vs. Whitened Light Curve

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

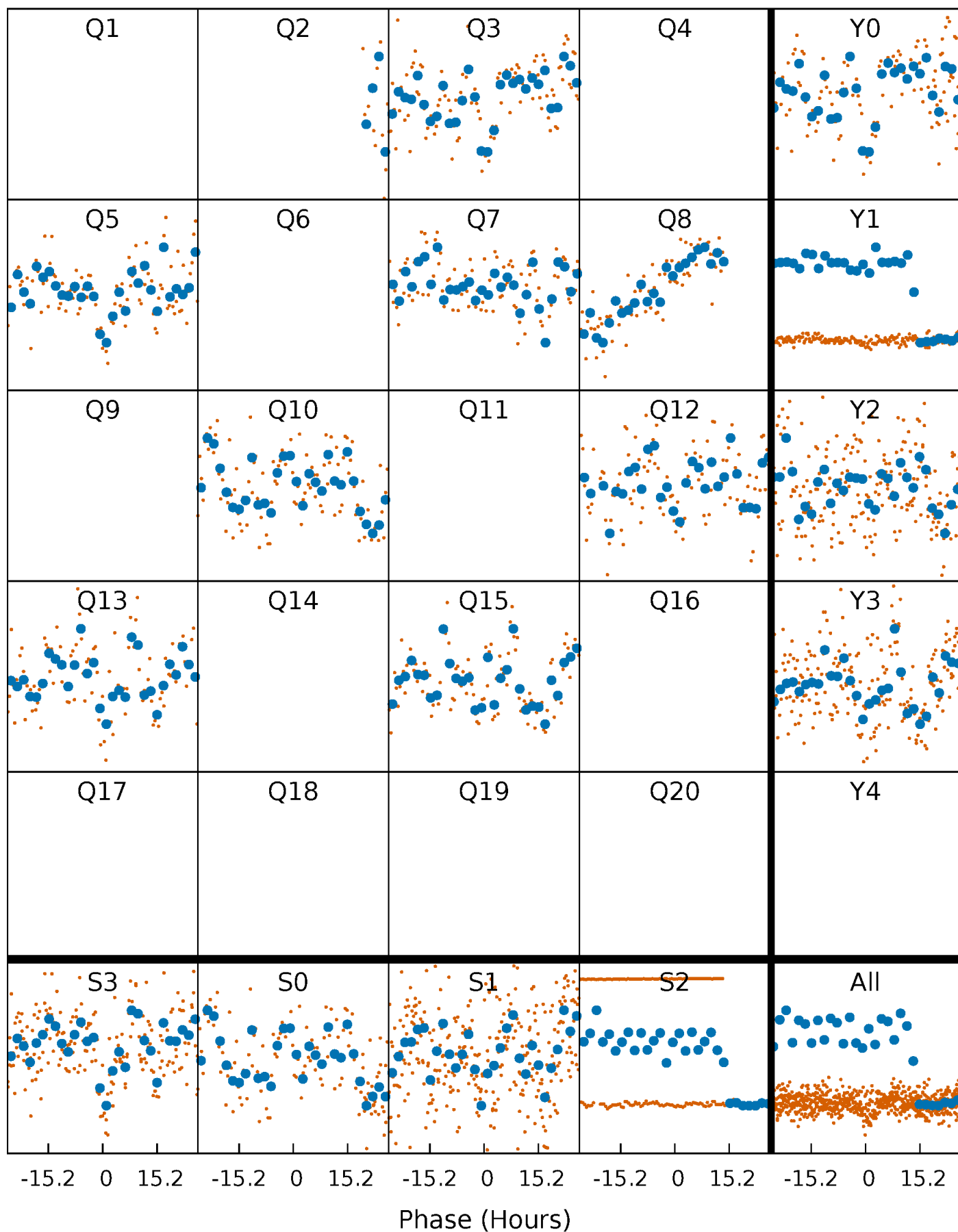


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



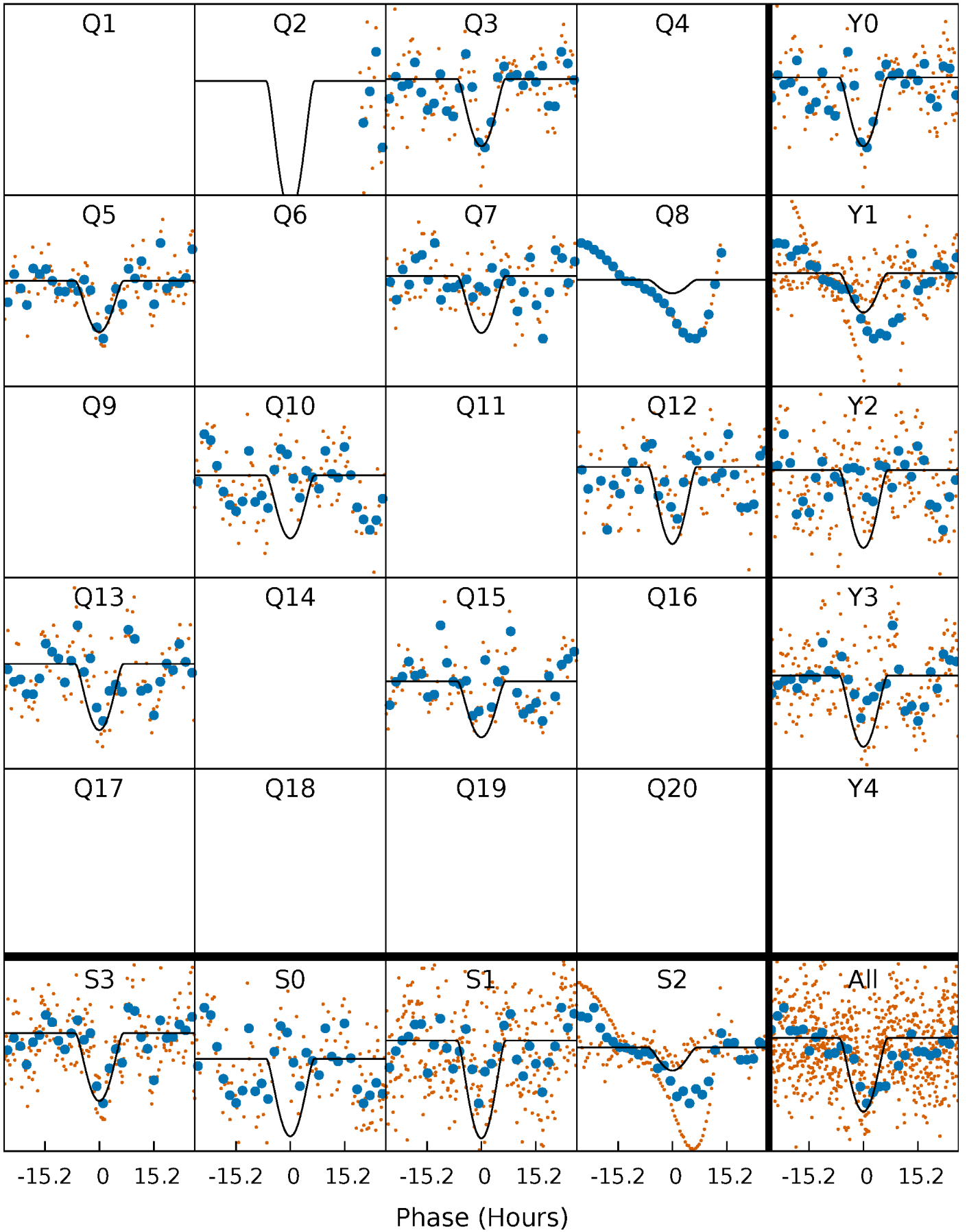
PDC Quarter-Phased Transit Curves

TCE 009327458-05 $P=154.719879$ Days $T_0=182.908167$ (BKJD)



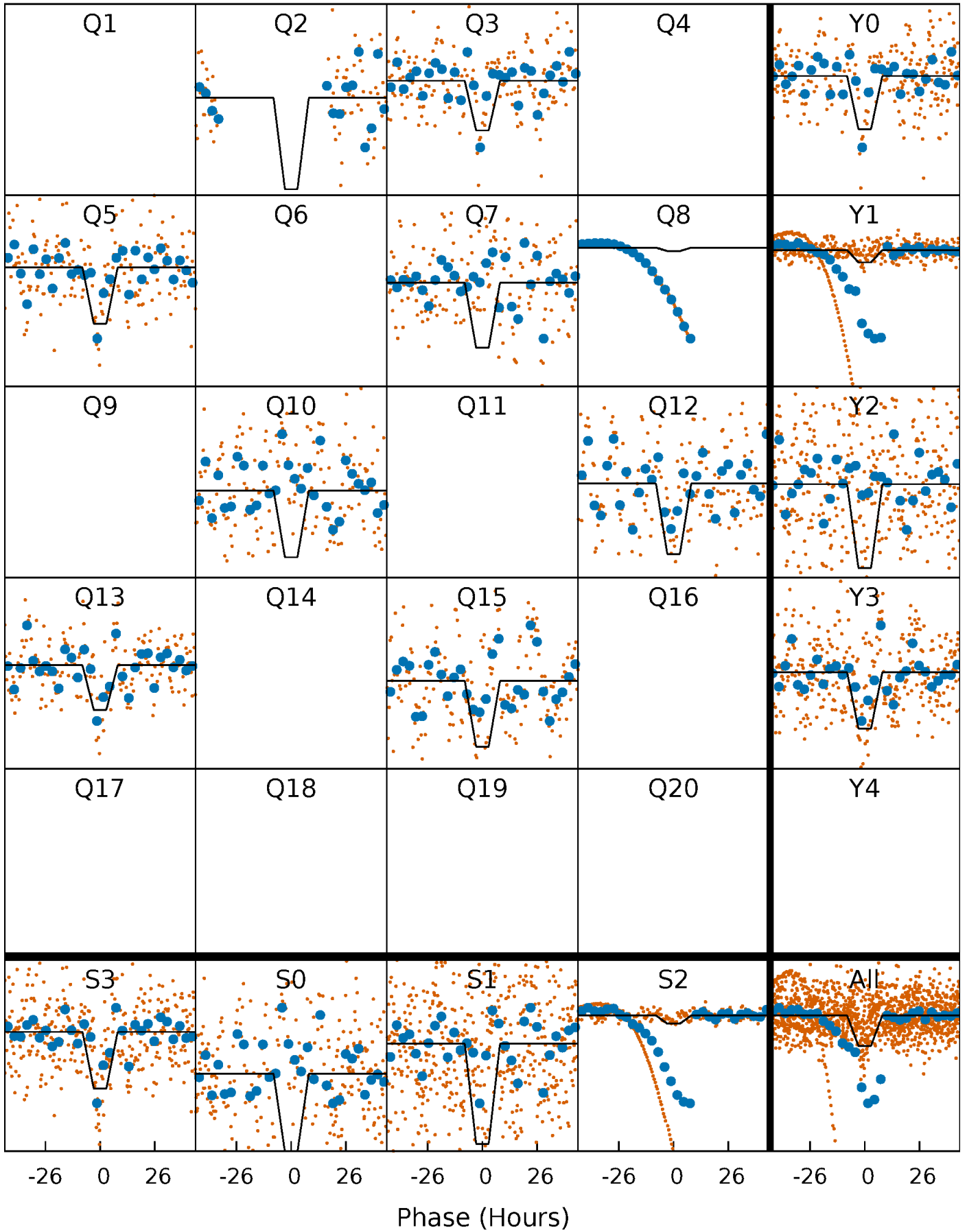
DV Quarter-Phased Transit Curves

TCE 009327458-05 $P=154.719879$ Days $T_0=182.908167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

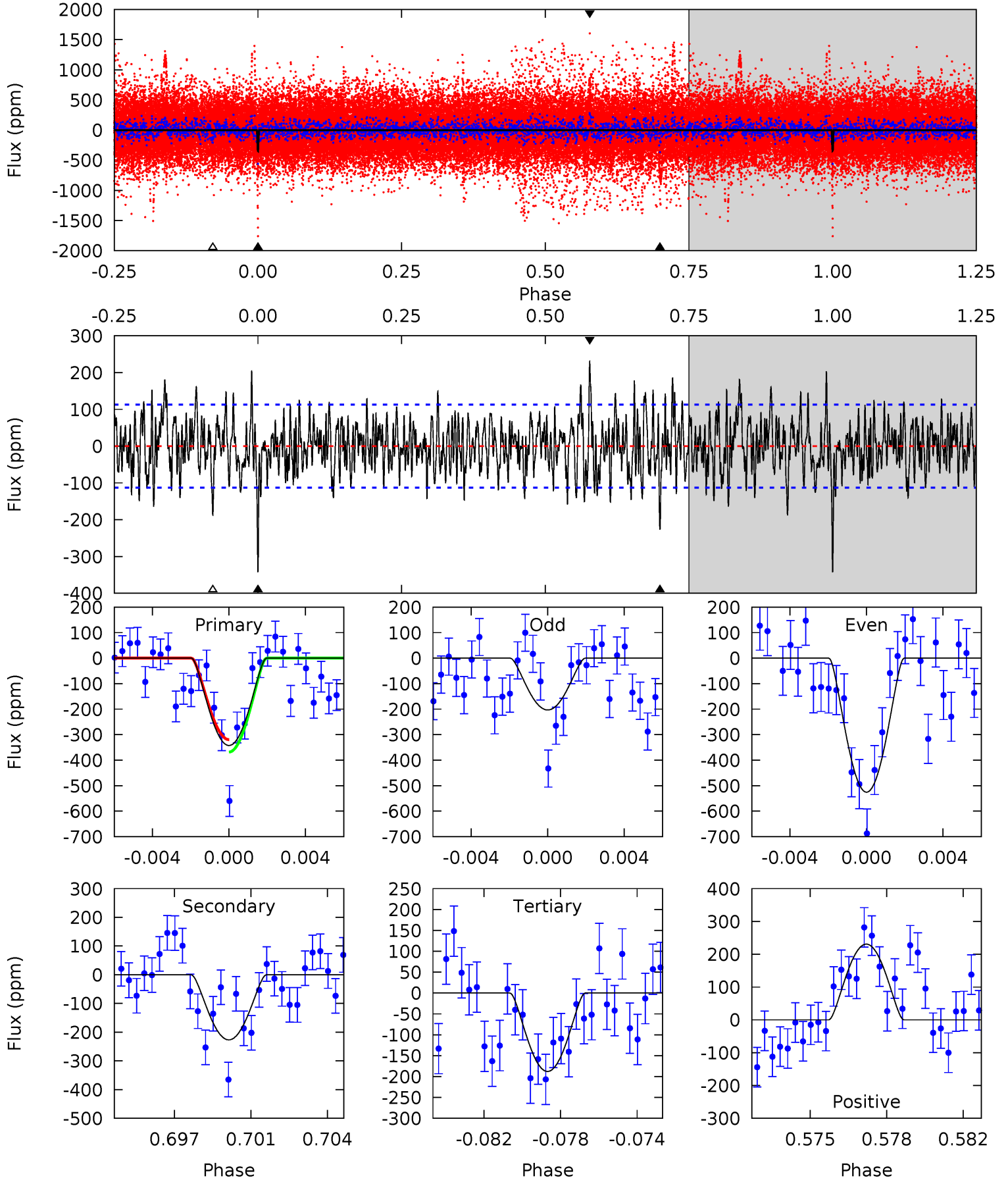
TCE 009327458-05 $P=154.716105$ Days $T_0=182.986302$ (BKJD)



DV Model-Shift Uniqueness Test

009327458-05, $P = 154.719879$ Days, $E = 28.188288$ Days

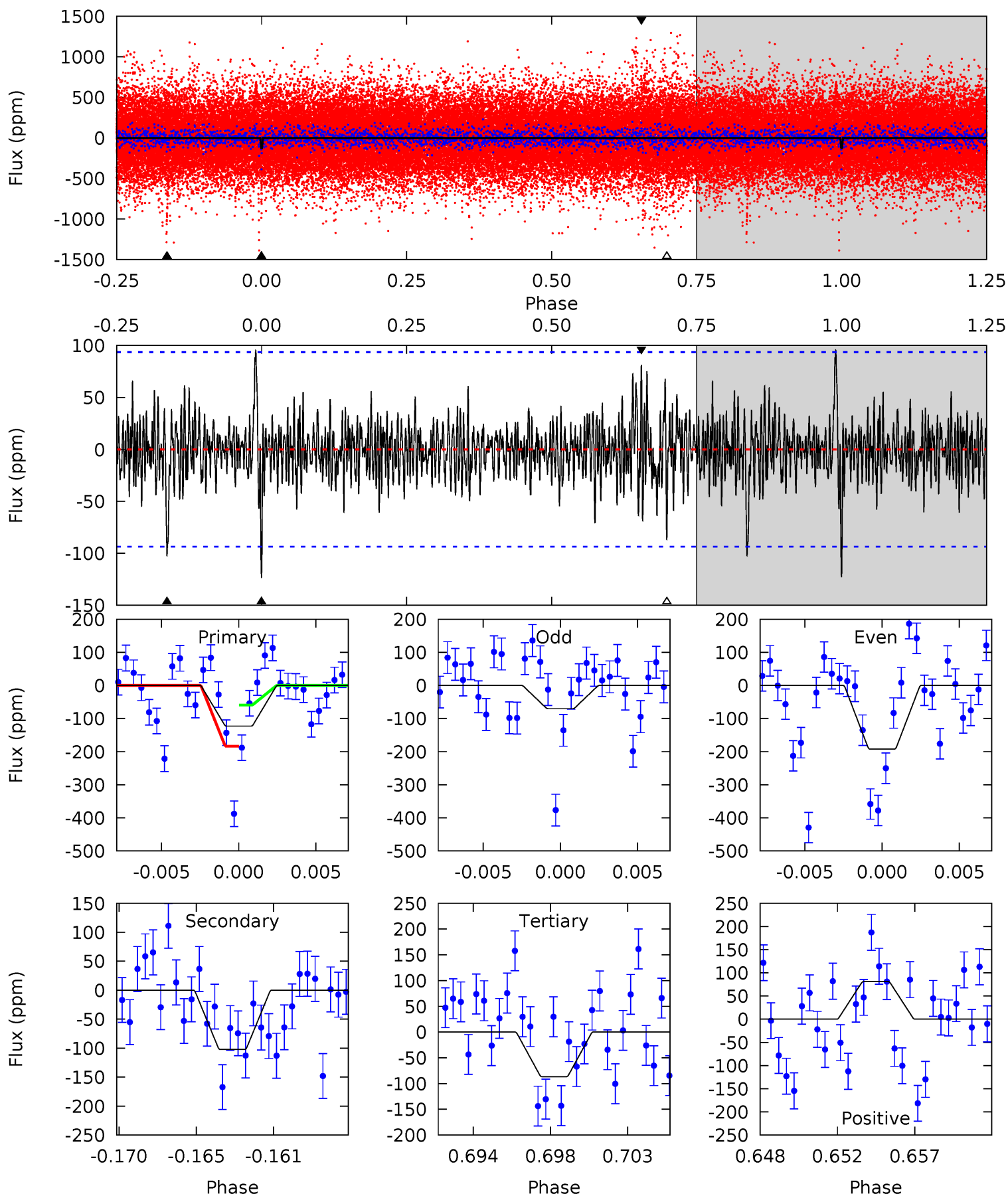
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	10.5	8.69	10.7	5.21	2.90	2.91	7.16	5.17	1.81	-0.18	7.50	1.52	0.40	1.13



Alt Model-Shift Uniqueness Test

009327458-05, P = 154.716105 Days, E = 28.270197 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.79	5.65	4.78	4.48	5.17	2.83	1.28	2.01	2.31	0.87	1.18	3.33	7.00	0.44	3.45



Stellar Parameters For KIC 009327458

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4888^{+97}_{-158}	$3.102^{+0.475}_{-0.256}$	$0.480^{+0.050}_{-0.350}$	$6.868^{+3.764}_{-4.141}$	$2.174^{+0.700}_{-1.137}$	$0.009^{+0.053}_{-0.006}$
	+2%/-3%	+15%/-8%	+10%/-73%	+55%/-60%	+32%/-52%	+565%/-59%
Source	PHO1	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 009327458-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-227 ± 22	$37.17^{+36.16}_{-24.47}$	919^{+106}_{-133}	3154^{+1206}_{-477}	49^{+337}_{-36}
Alt.	-102 ± 18	$29.11^{+30.34}_{-21.48}$	911^{+109}_{-129}	2997^{+1567}_{-451}	35^{+424}_{-26}

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

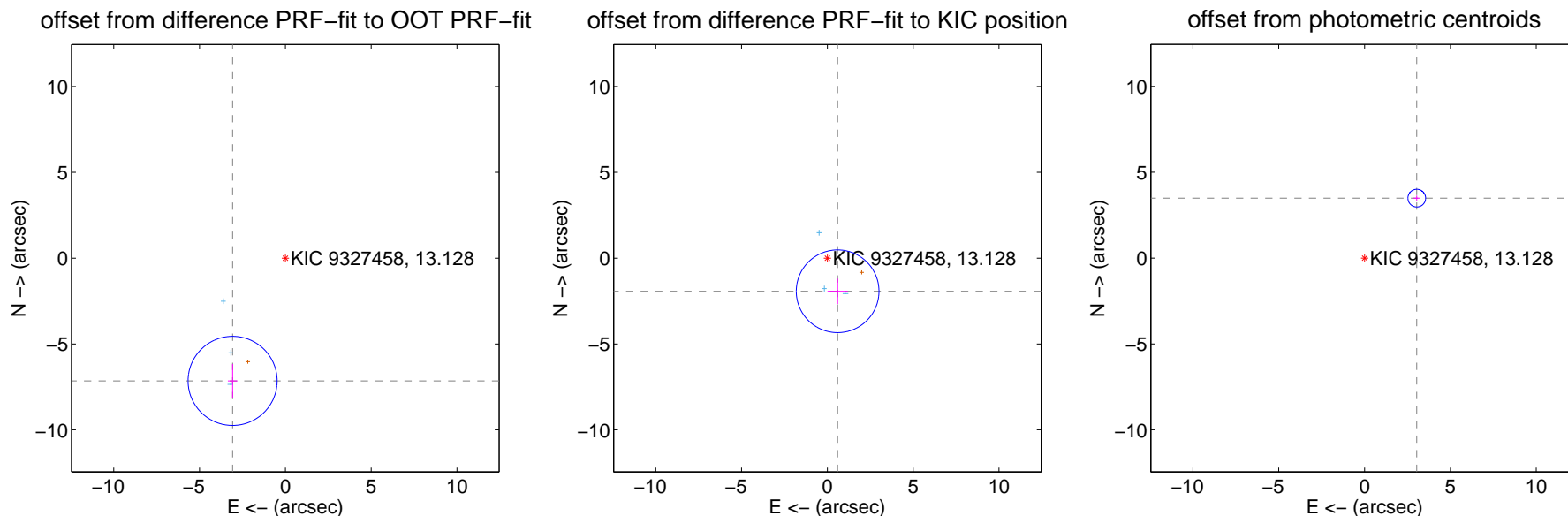
DV Centroid Data

Supplemental centroid analysis for 009327458-05. Kepler magnitude: 13.13. Transit SNR 22.47

There are 3 quarters with good PRF difference image offsets

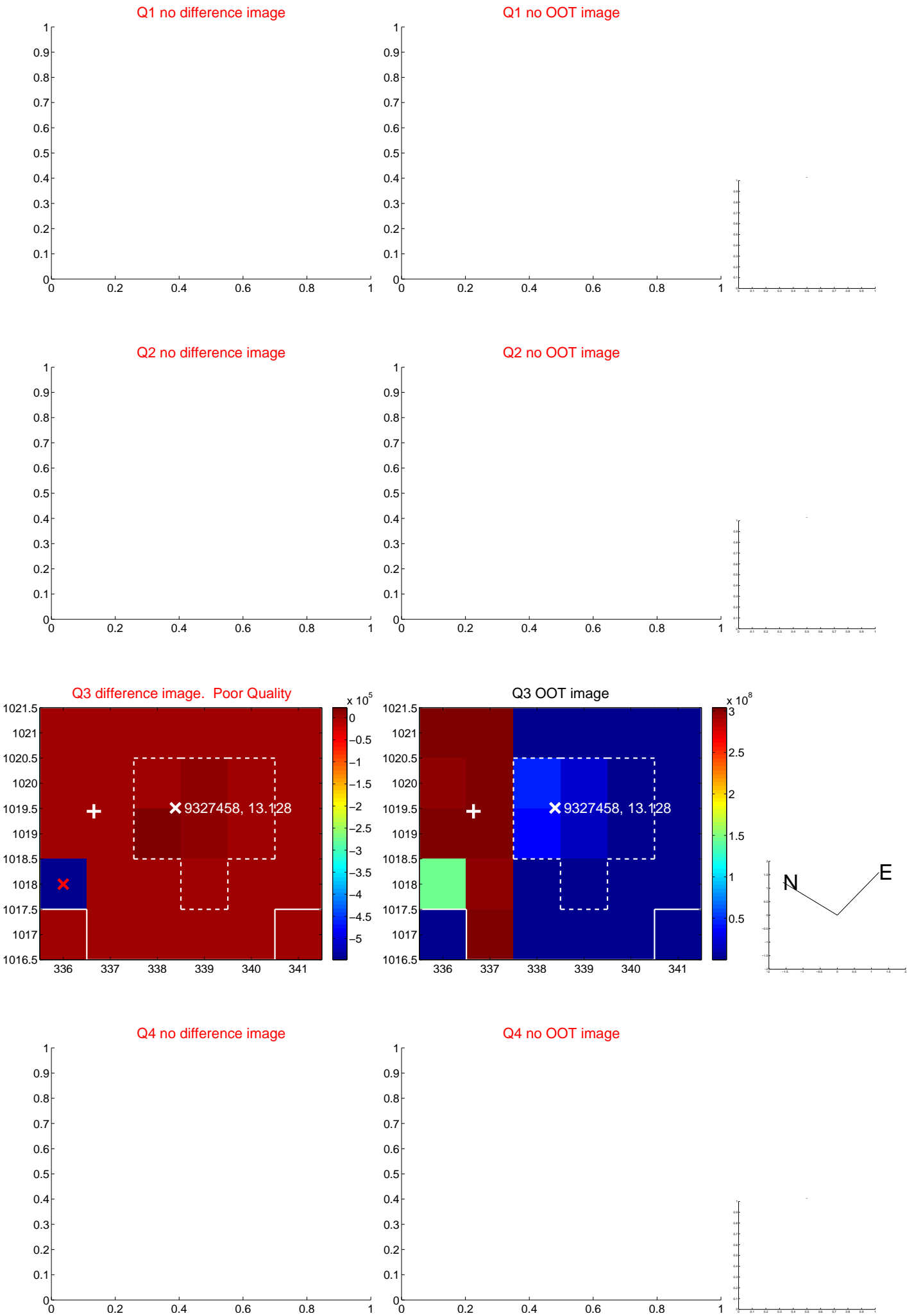
The OOT PRF centroid is offset from the target star catalog position by about 6.68 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.782 ± 0.865	9.00	3.074 ± 0.276	-7.150 ± 0.982
PRF-fit source offset from KIC position	2.019 ± 0.803	2.51	-0.598 ± 0.587	-1.928 ± 0.743
photometric centroid source offset	4.63 ± 0.17	26.91	-3.04 ± 0.20	3.49 ± 0.15

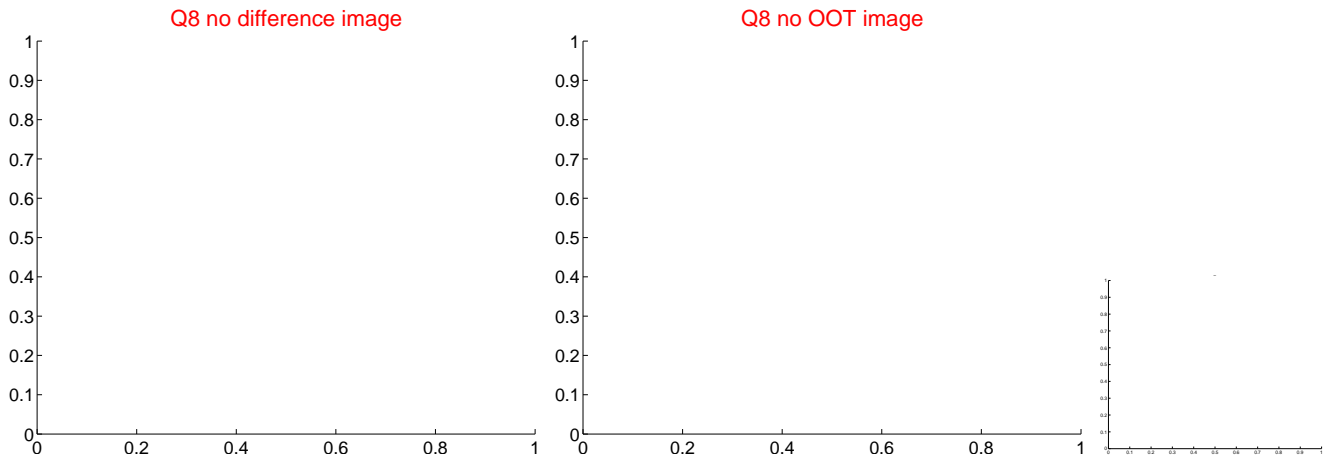
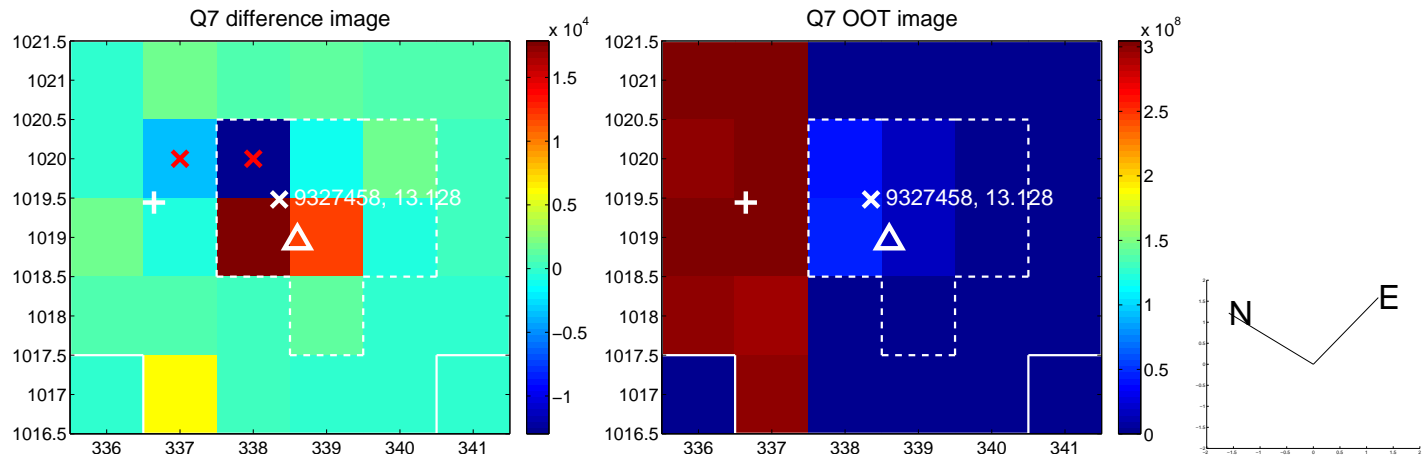
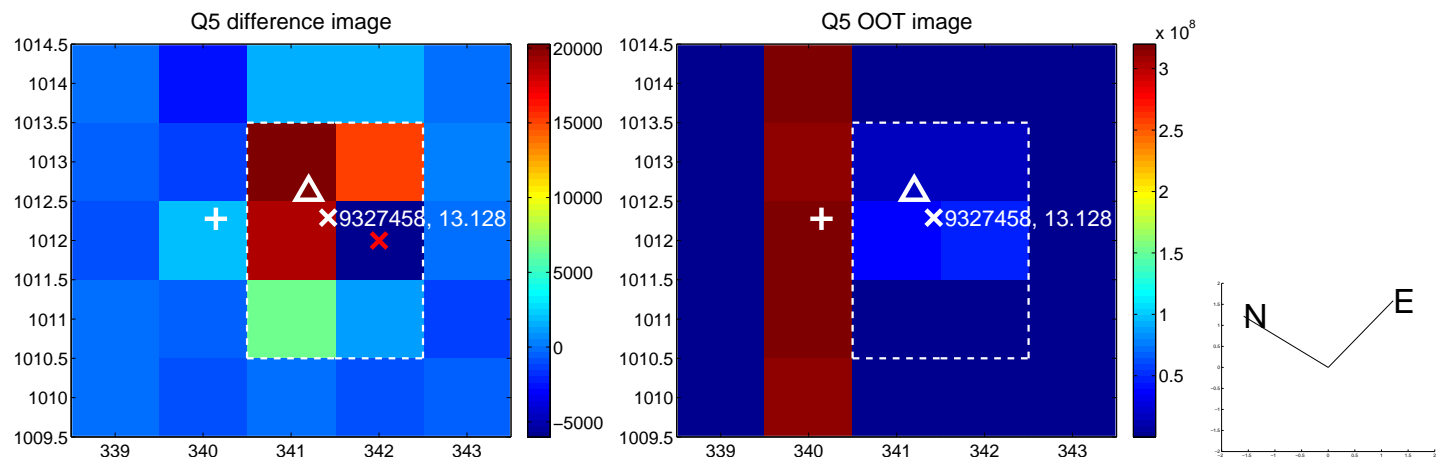


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

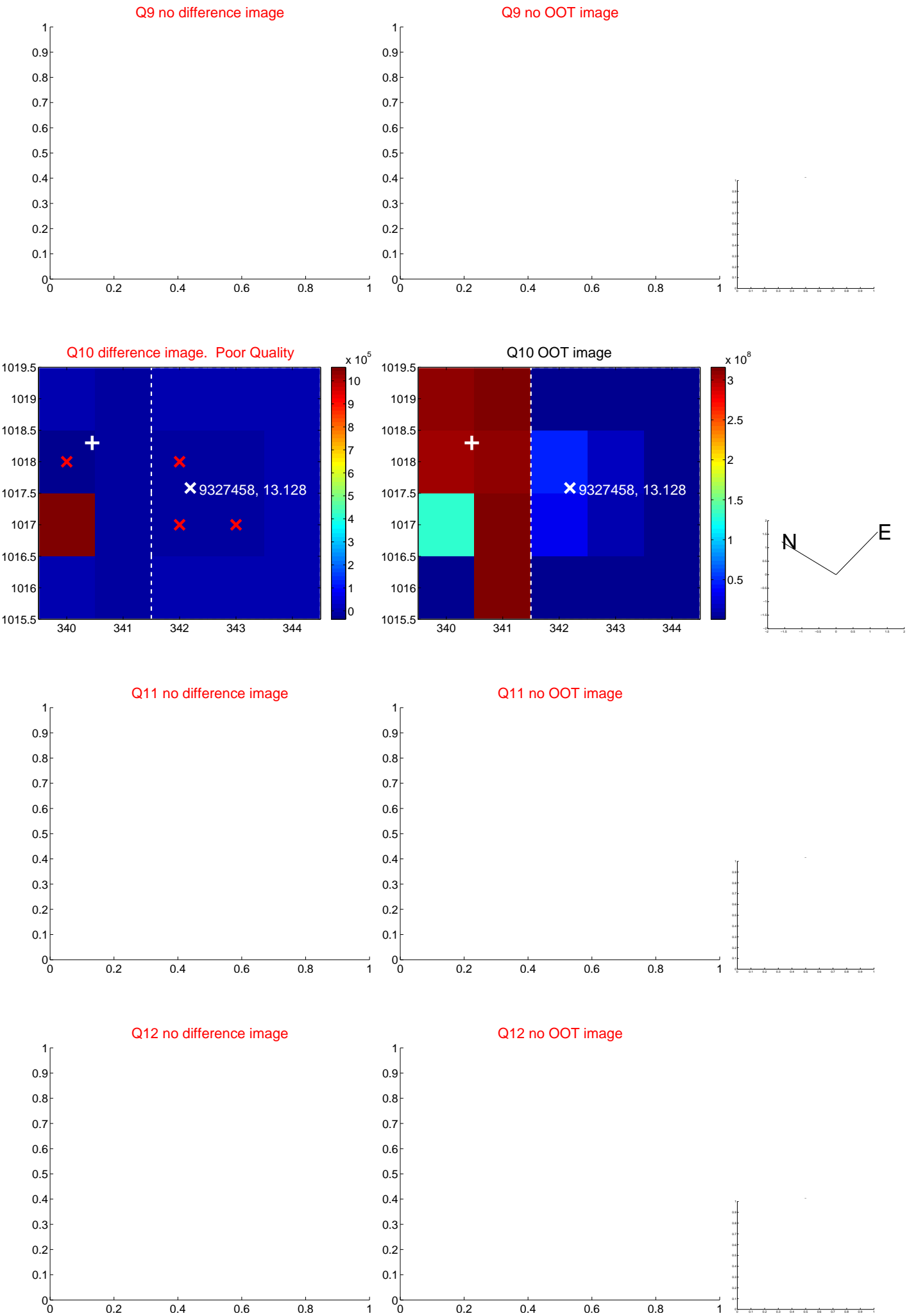
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



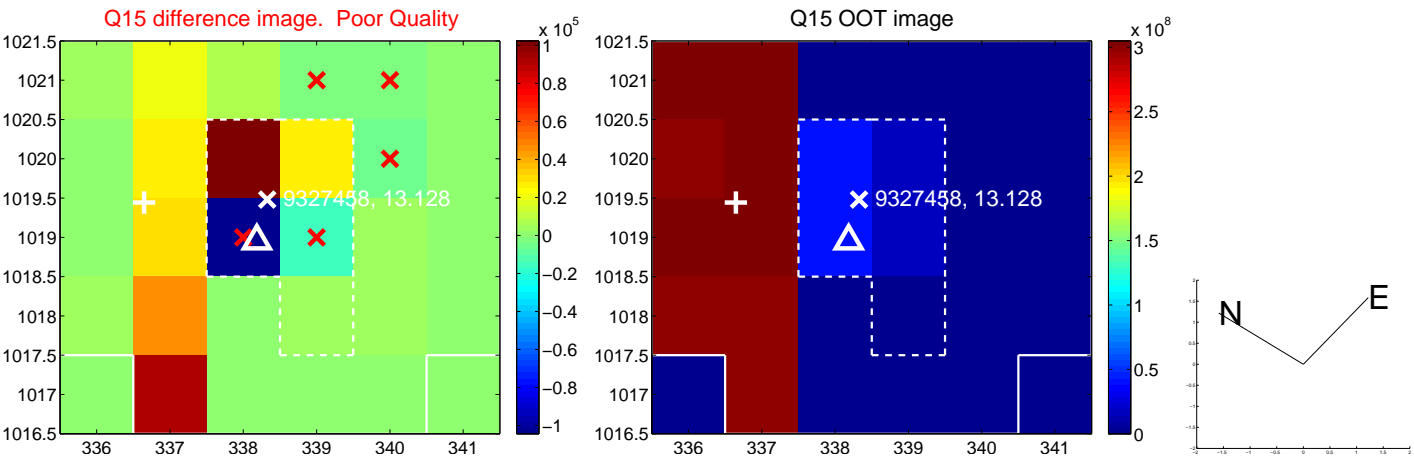
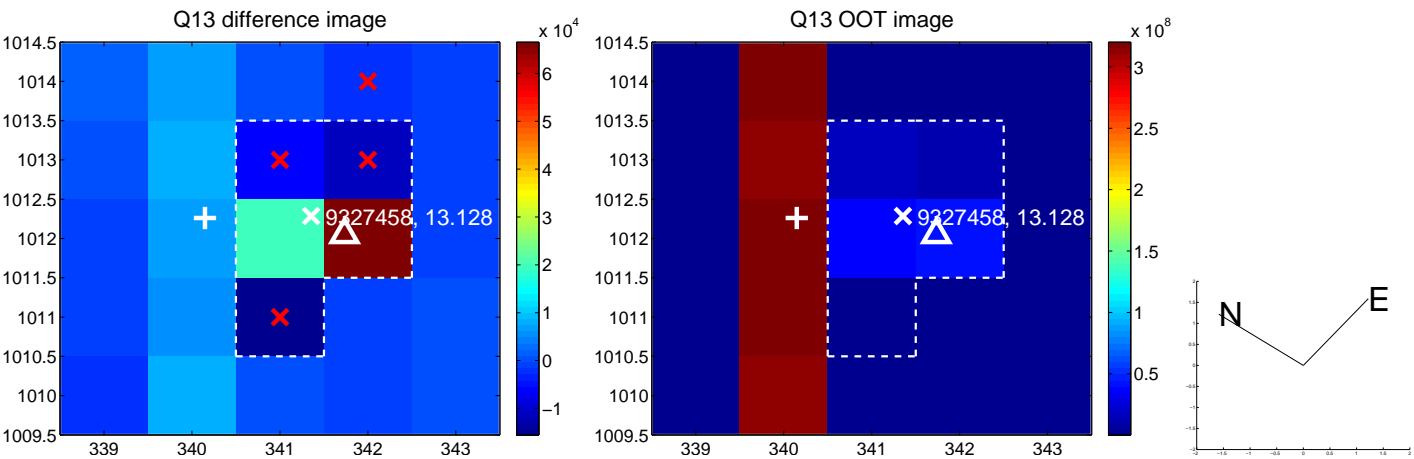
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



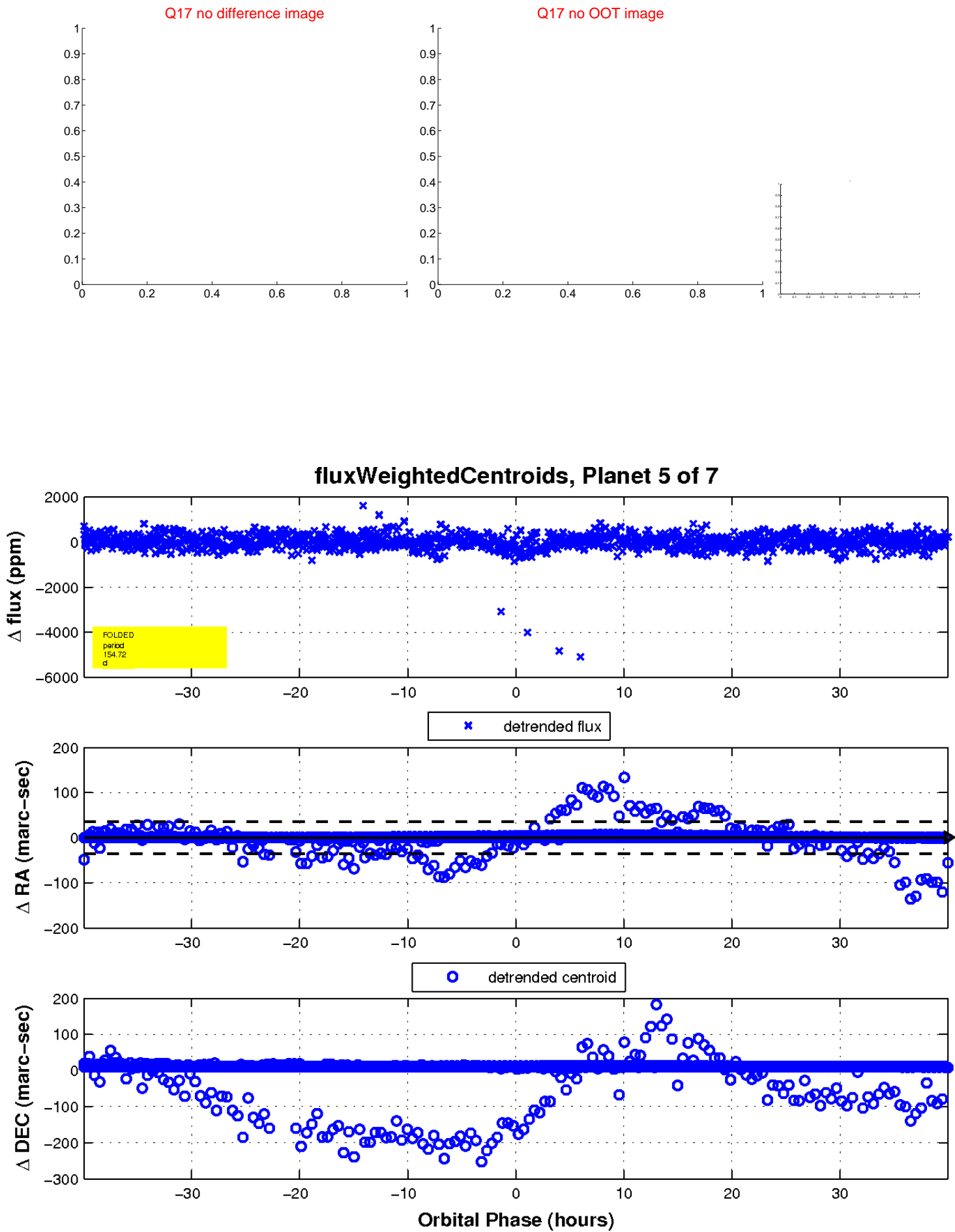
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

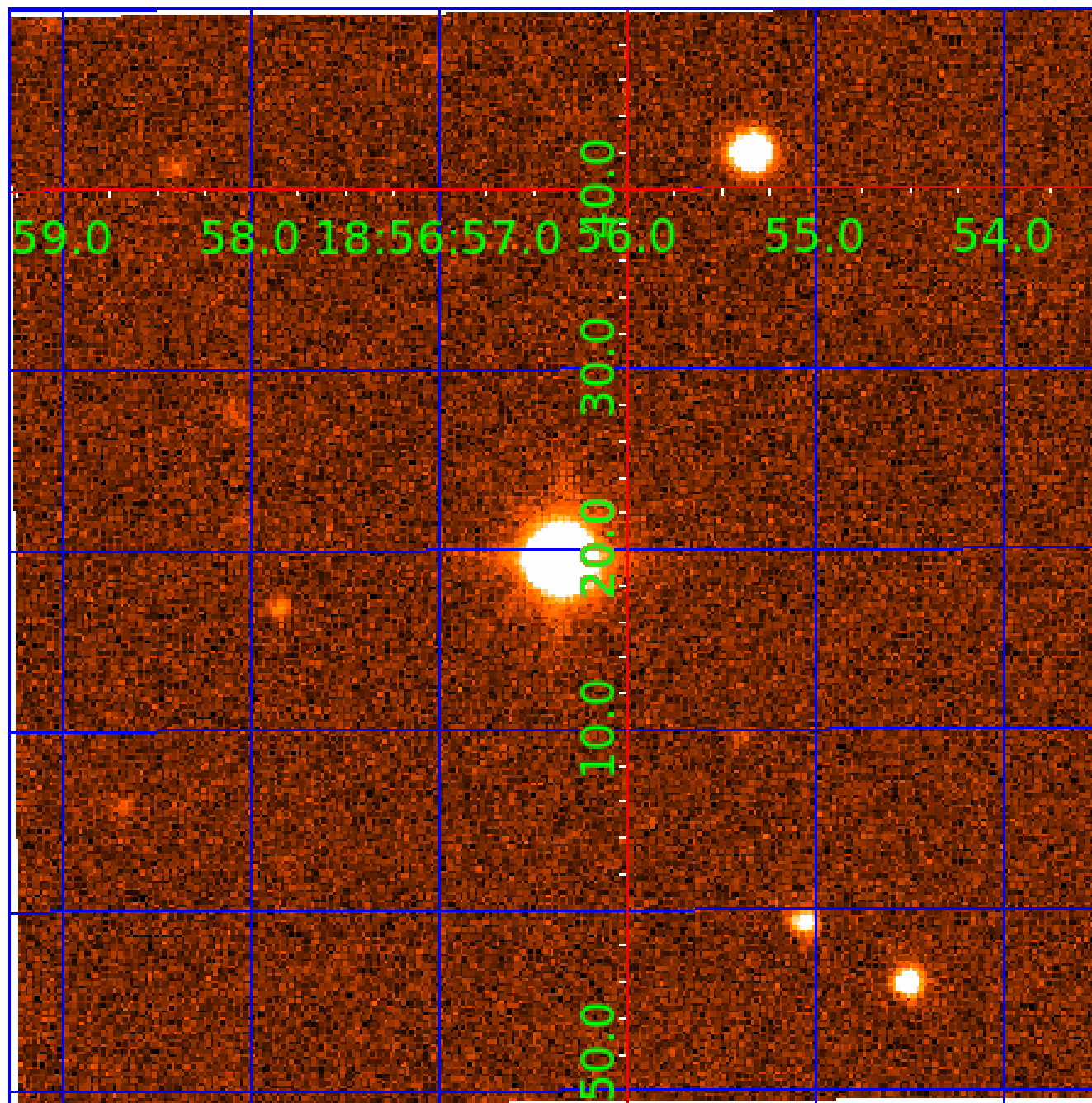


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009327458

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})
009327458-01	OBS	No	394.464931	372.031658	29599.5	24.391	284.9	638.9	6.87	4888	174.19	12.96
009327458-02	OBS	No	389.497710	381.011573	3458.1	15.000	73.9	-1.0	6.87	4888	38.79	13.18
009327458-03	OBS	No	391.643233	368.703758	2636.2	15.000	104.4	-1.0	6.87	4888	33.87	13.09
009327458-05	OBS	No	154.719879	182.908167	591.9	13.336	14.9	22.5	6.87	4888	35.22	45.14
009327458-06	OBS	No	393.857576	370.651900	70230.0	16.499	1348.1	1576.5	6.87	4888	188.83	12.99
009327458-07	OBS	No	205.643348	141.312291	163.1	12.500	7.5	-1.0	6.87	4888	8.42	30.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327458-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009327458-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
009327458-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

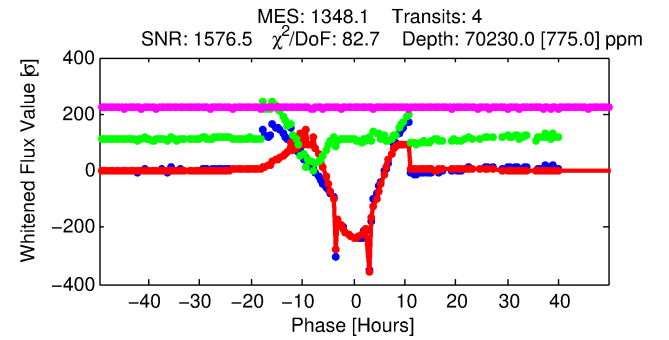
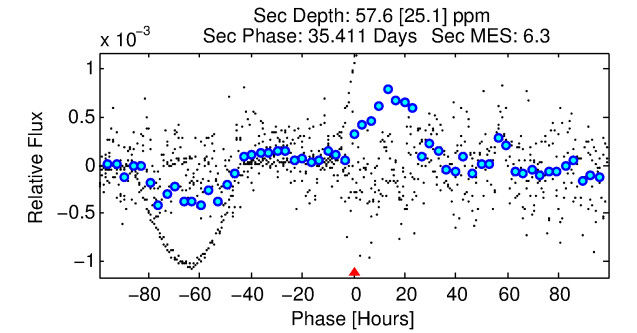
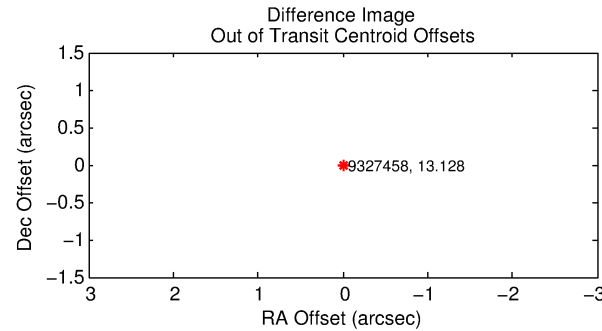
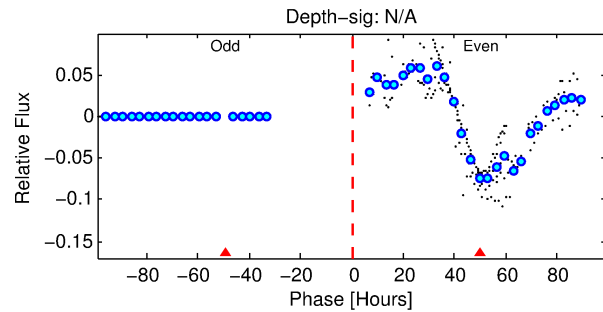
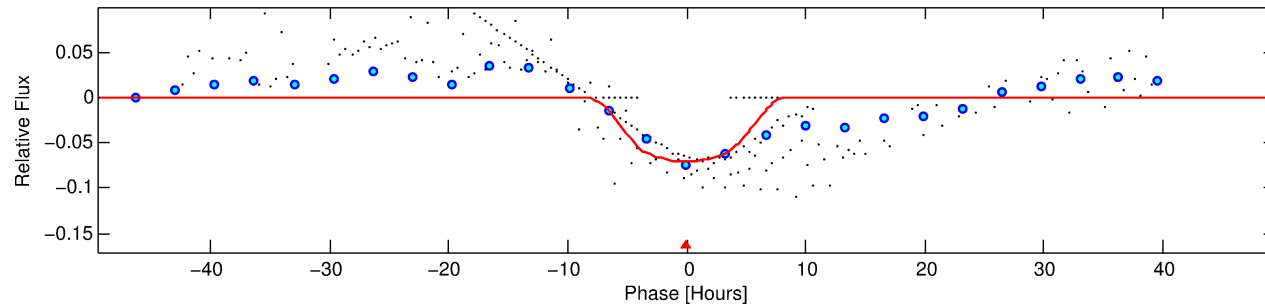
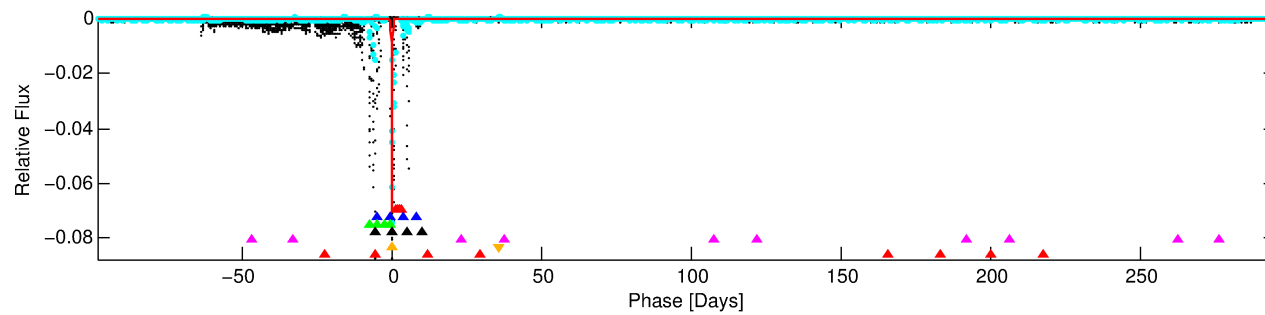
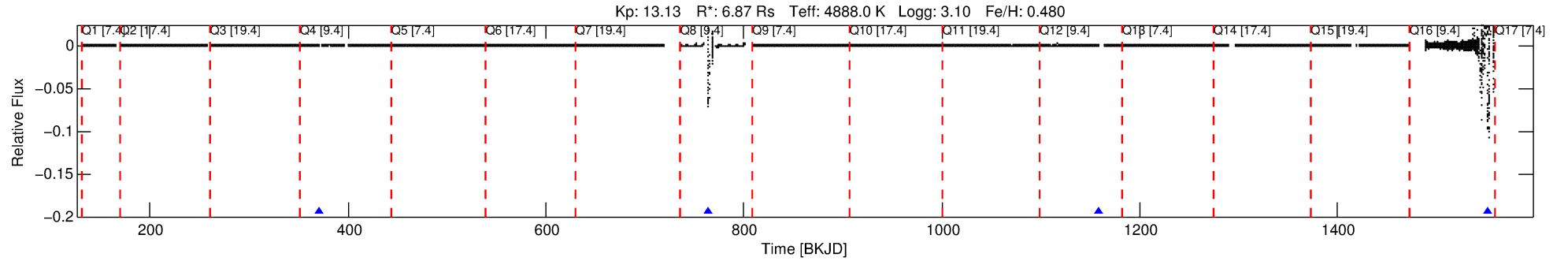
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009327458-06

No Significant Match Found

DV One-Page Summary

KIC: 9327458 Candidate: 6 of 7 Period: 393.858 d



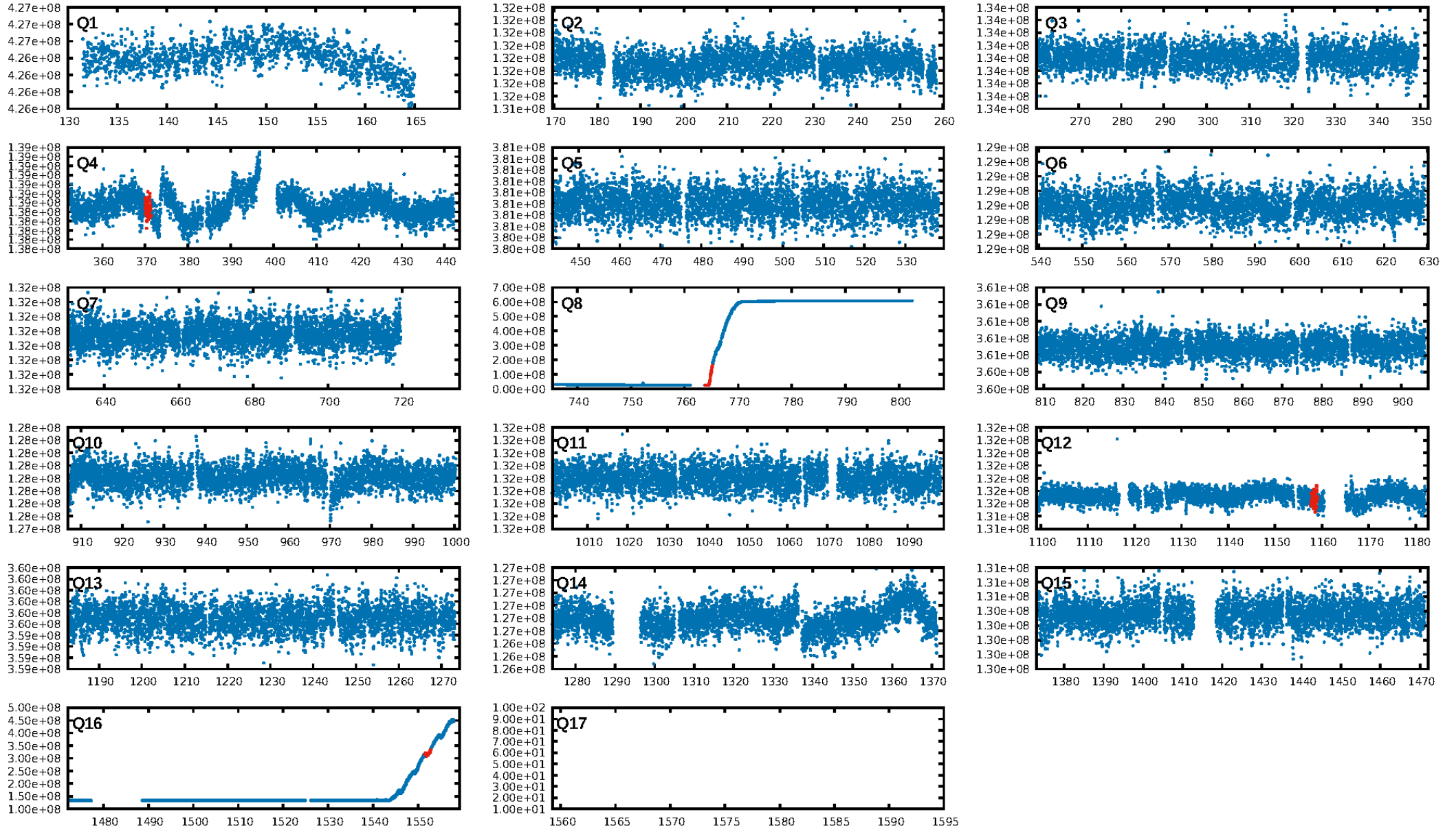
DV Fit Results:

Period = 393.85758 [0.00580] d
Epoch = 370.6519 [0.0060] BKJD
Rp/R* = 0.2520 [0.0040]
a/R* = 201.31 [6.09]
b = 0.59 [0.04]
Seff = 12.99 [10.94]
Teq = 484 [102] K
Rp = 188.83 [113.89] Re
a = 1.3629 [0.7396] AU
Ag = 1.65 [1.55] [0.42σ]
Teffp = 848 [97] K [2.59σ]

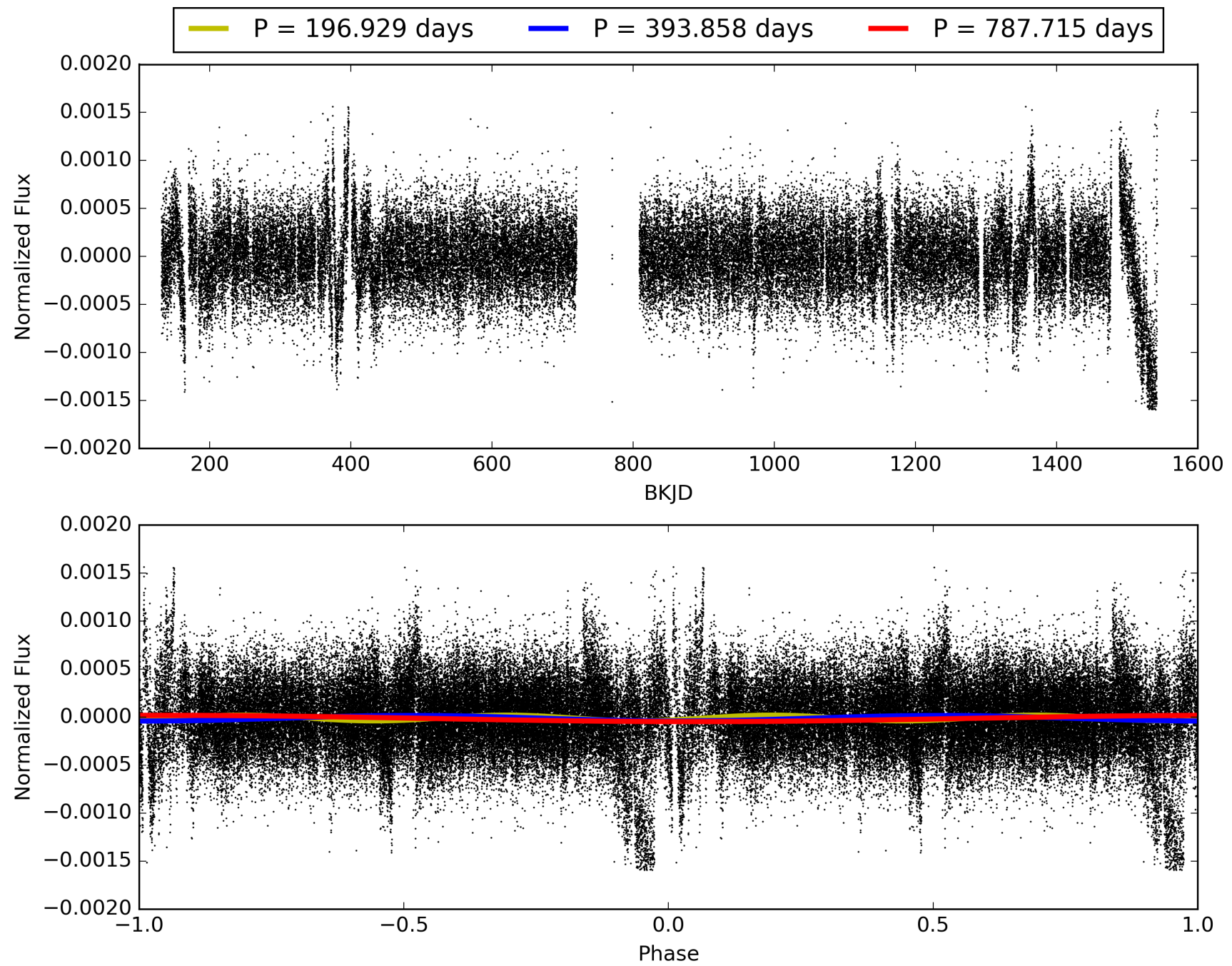
DV Diagnostic Results:

ShortPeriod-sig: 98.3% [2.38σ]
LongPeriod-sig: 37.9% [0.50σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.7145
Centroid-sig: N/A
Centroid-so: 5.004 arcsec [41.06σ]
OotOffset-rm: N/A
KicOffset-rm: 4.731 arcsec [70.90σ]
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.33 [1/3]

TCE 009327458-06, PDC Light Curves

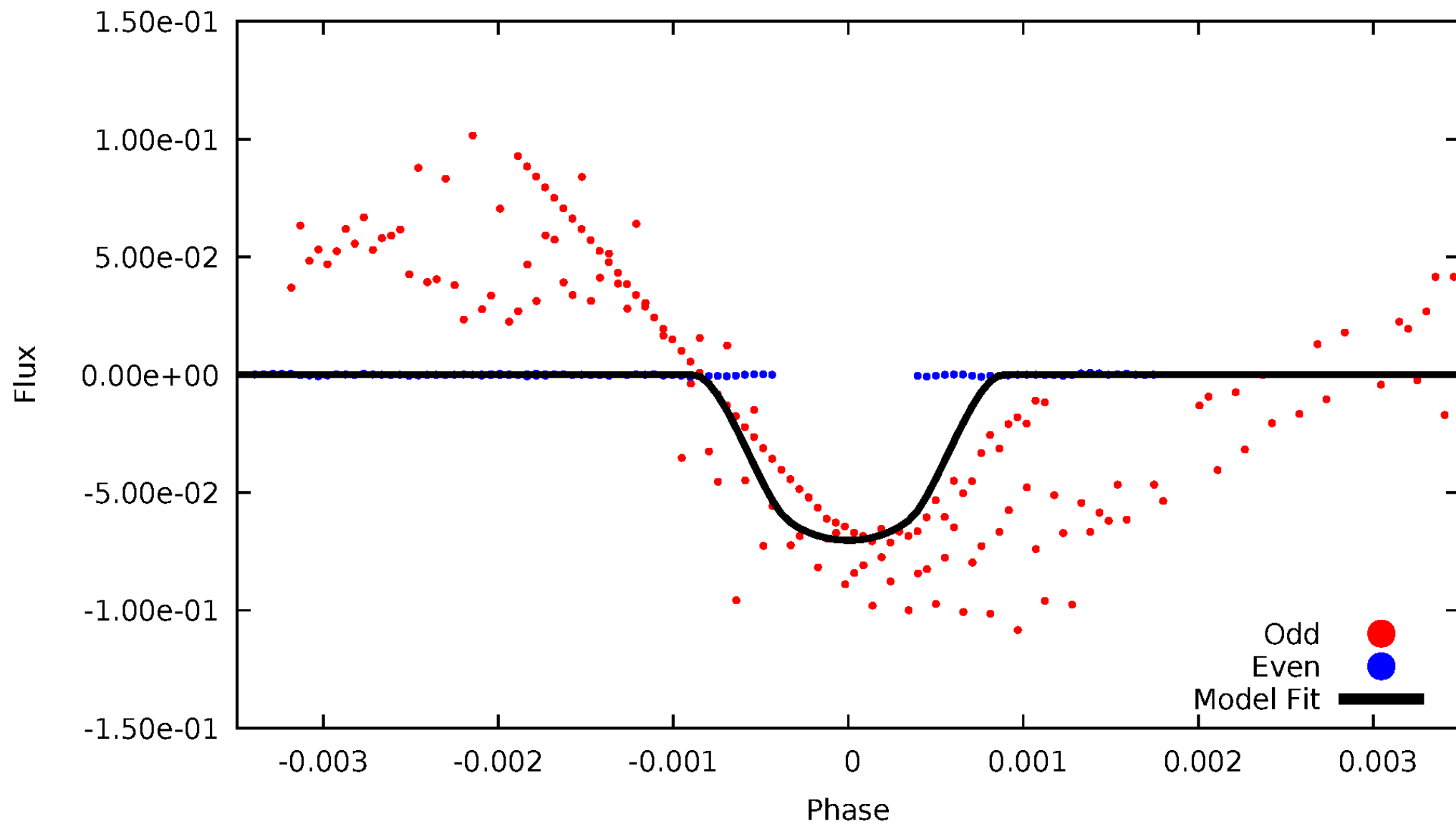


TCE 009327458-06



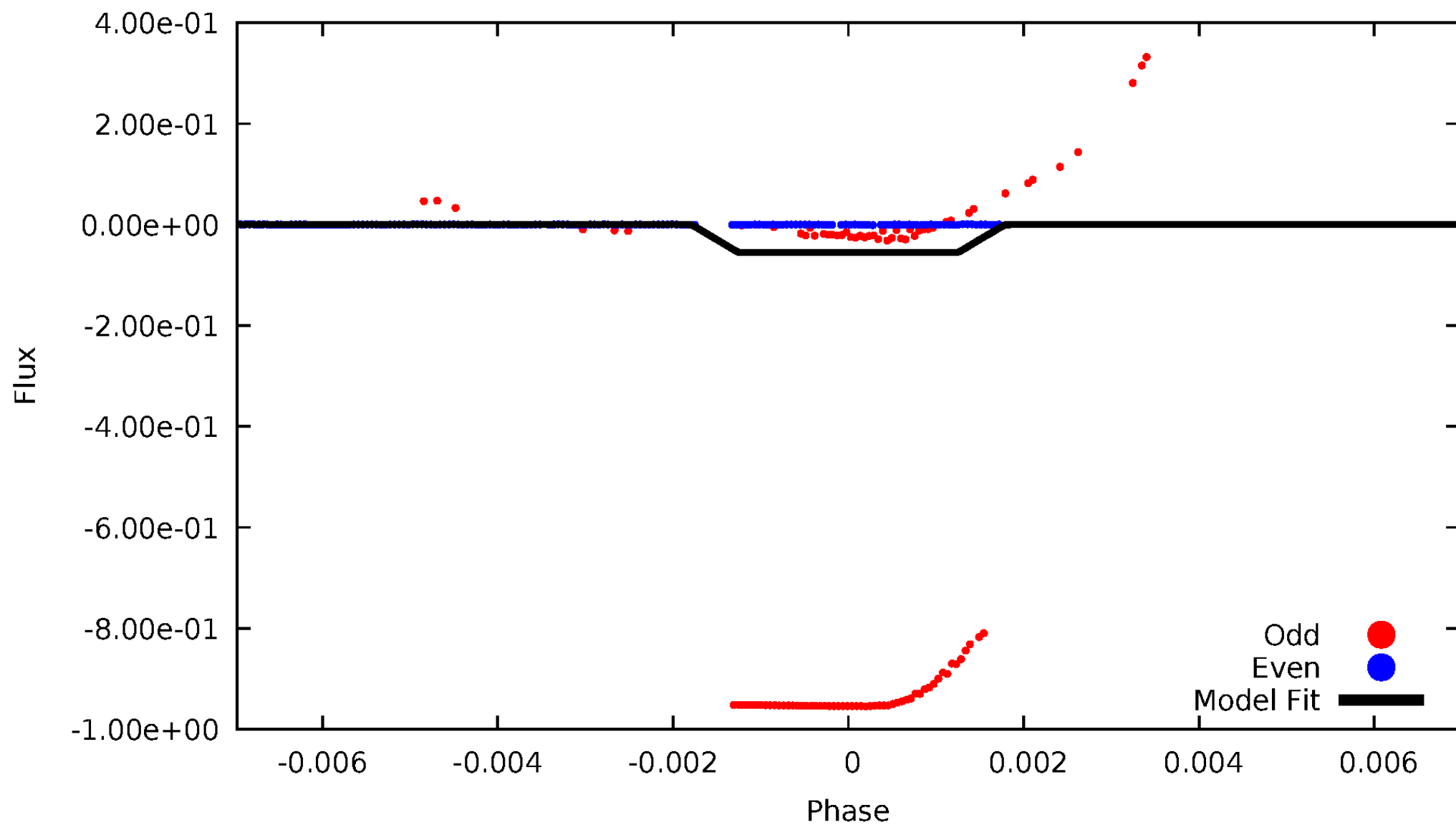
DV Odd/Even

TCE 009327458-06



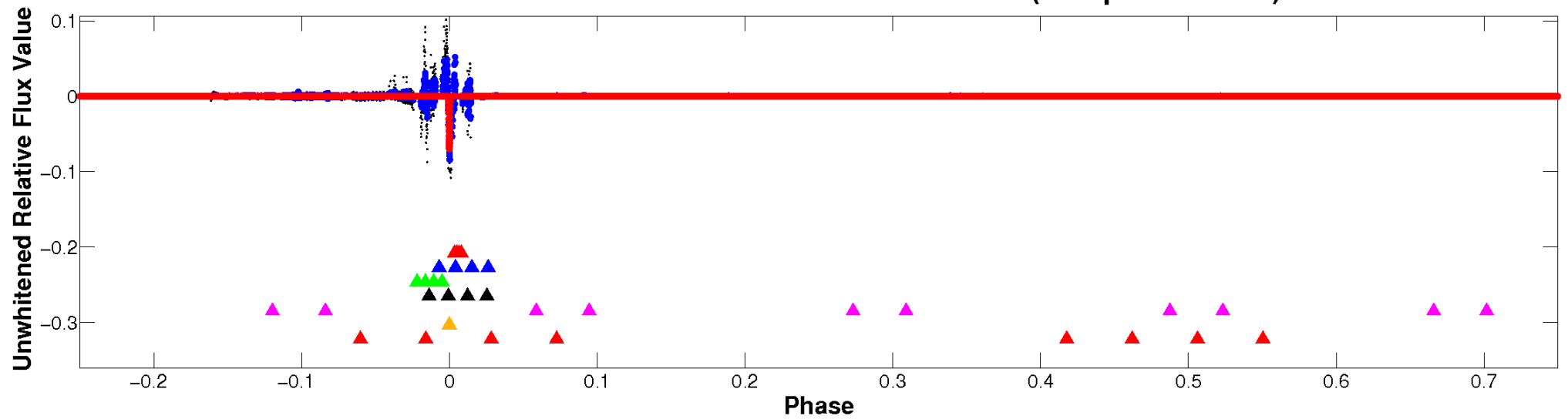
ALT Odd/Even

TCE 009327458-06

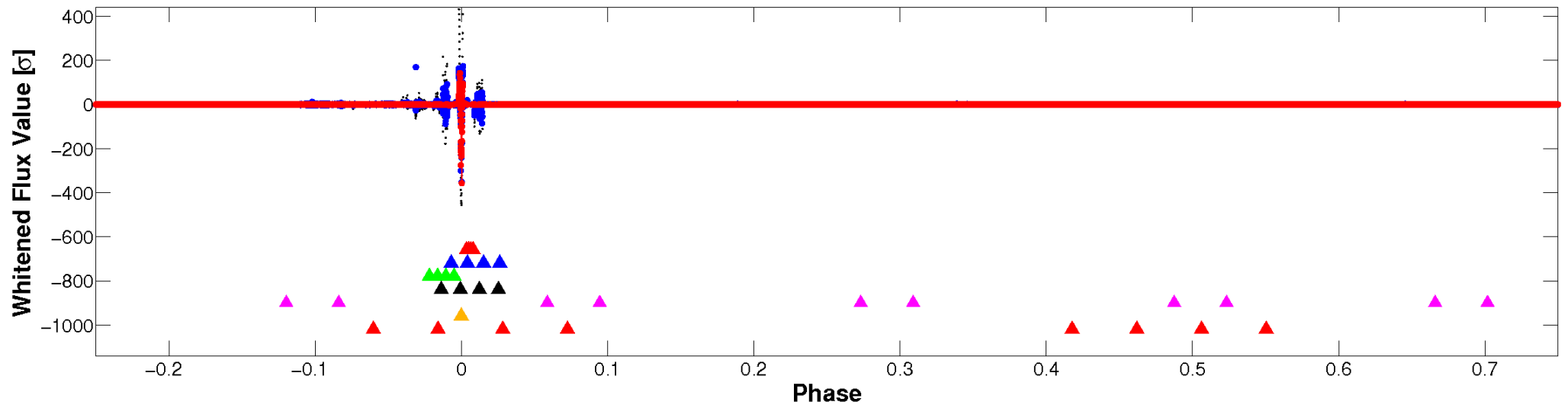


Non-Whitened Vs. Whitened Light Curve

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

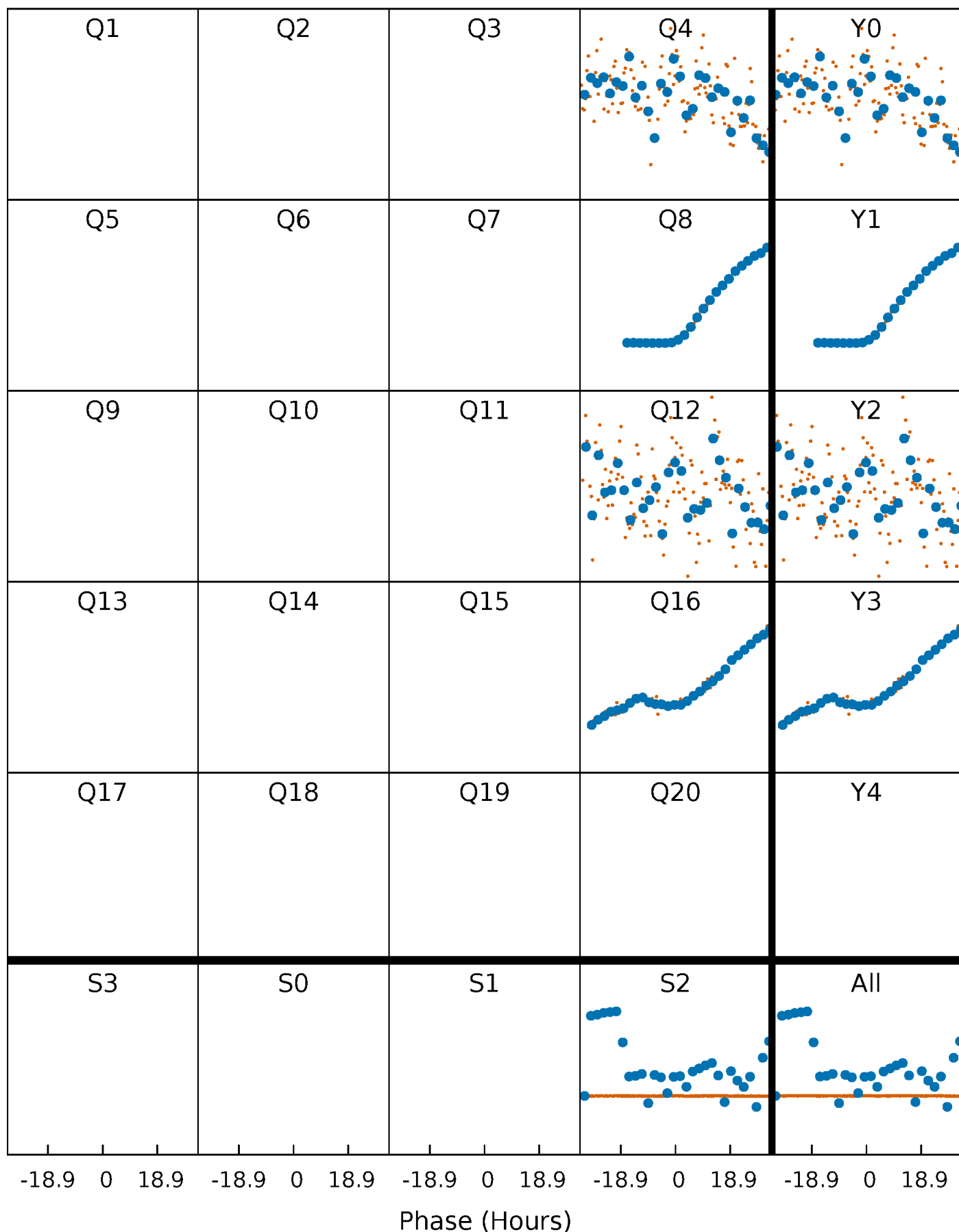


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



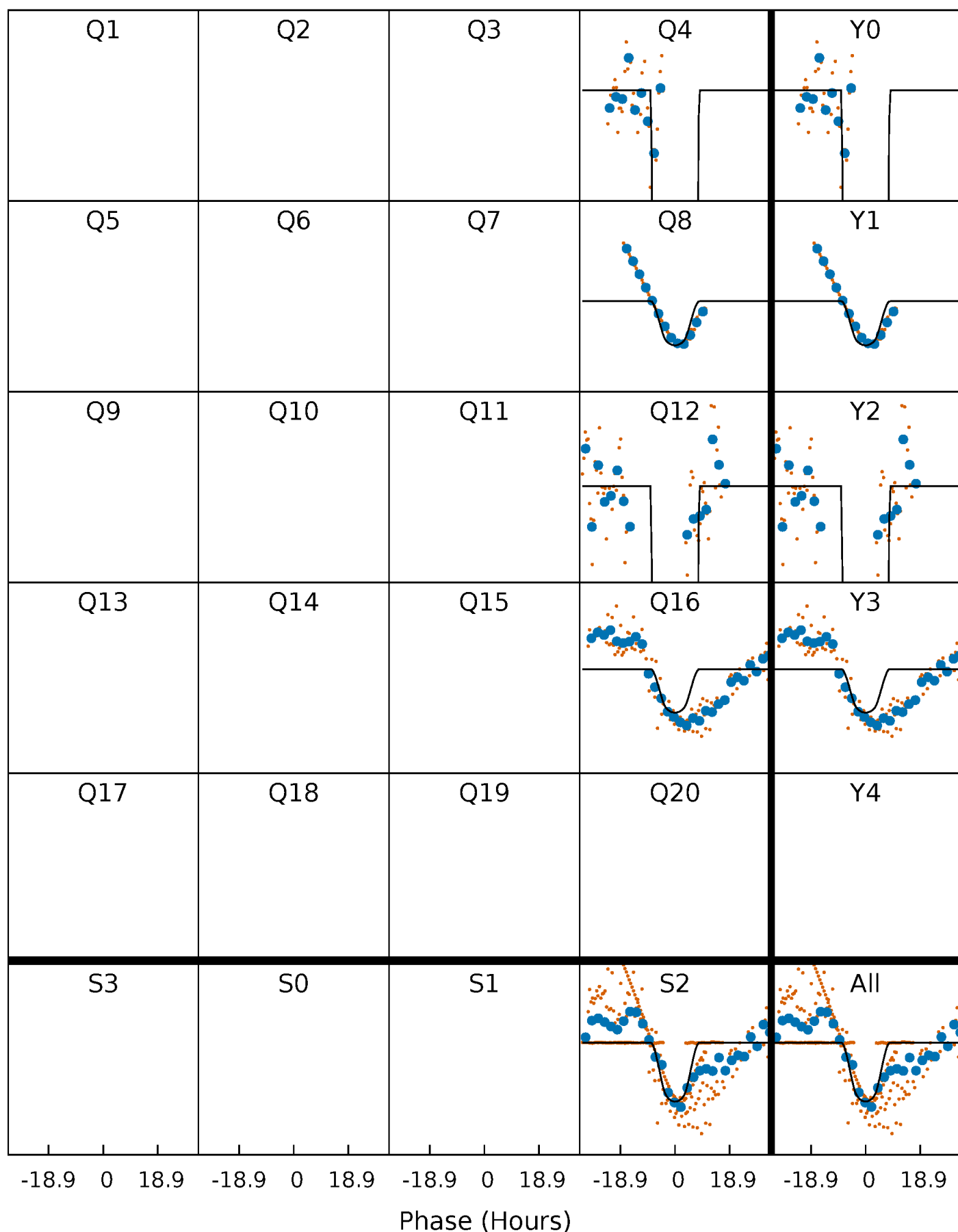
PDC Quarter-Phased Transit Curves

TCE 009327458-06 P=393.857576 Days $T_0=370.651900$ (BKJD)



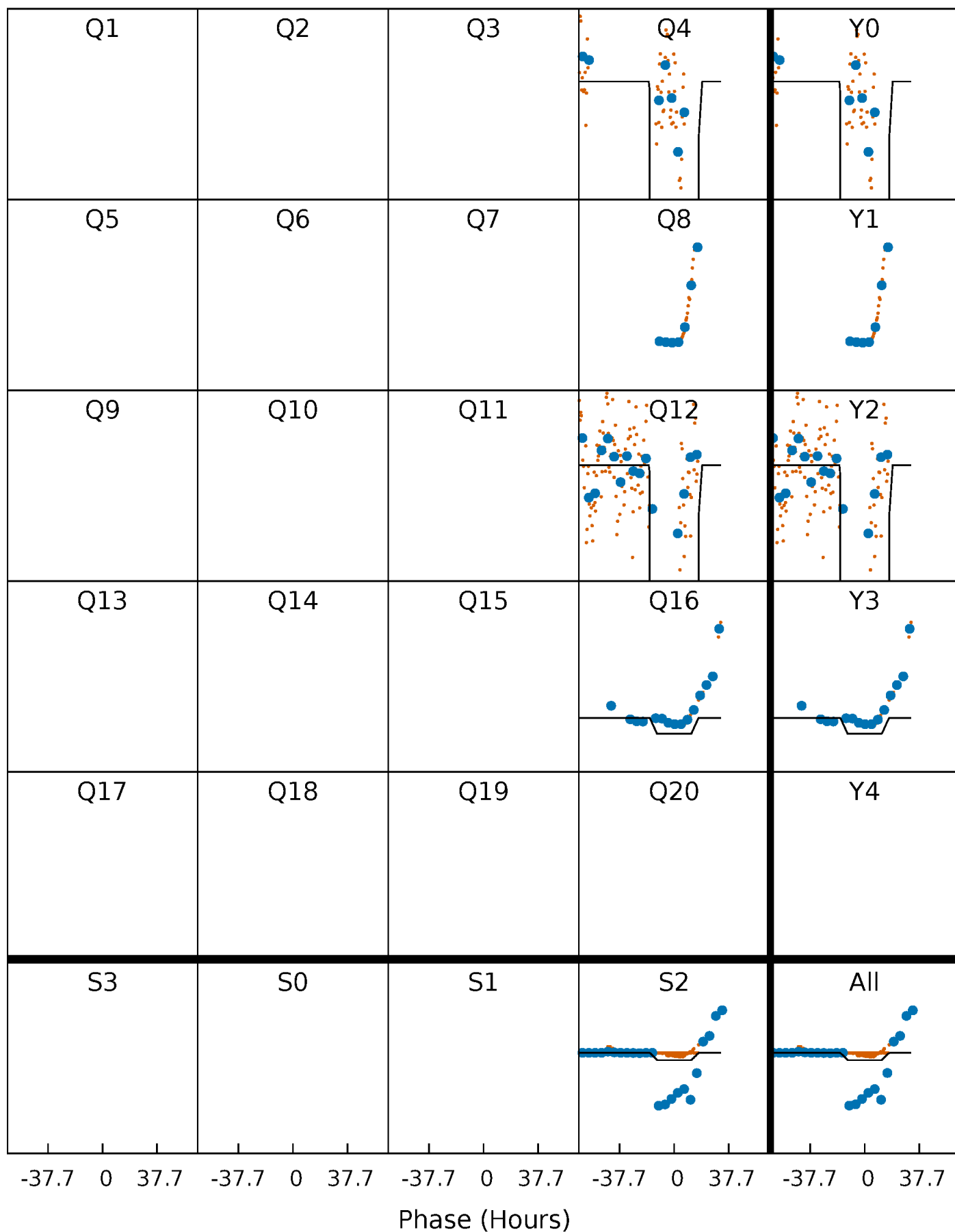
DV Quarter-Phased Transit Curves

TCE 009327458-06 $P=393.857576$ Days $T_0=370.651900$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

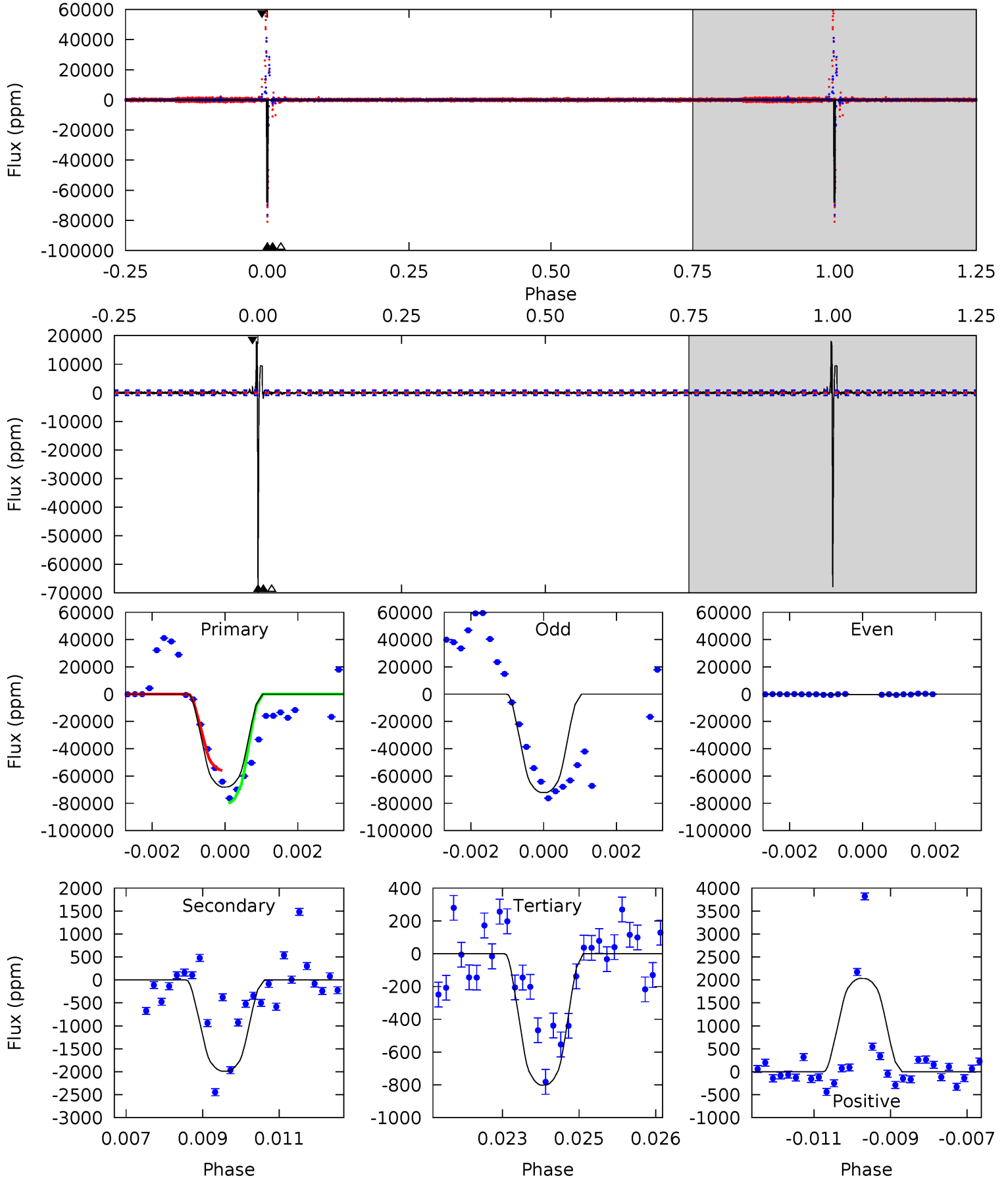
TCE 009327458-06 P=394.095260 Days $T_0=370.185698$ (BKJD)



DV Model-Shift Uniqueness Test

009327458-06, P = 393.857576 Days, E = 370.651900 Days

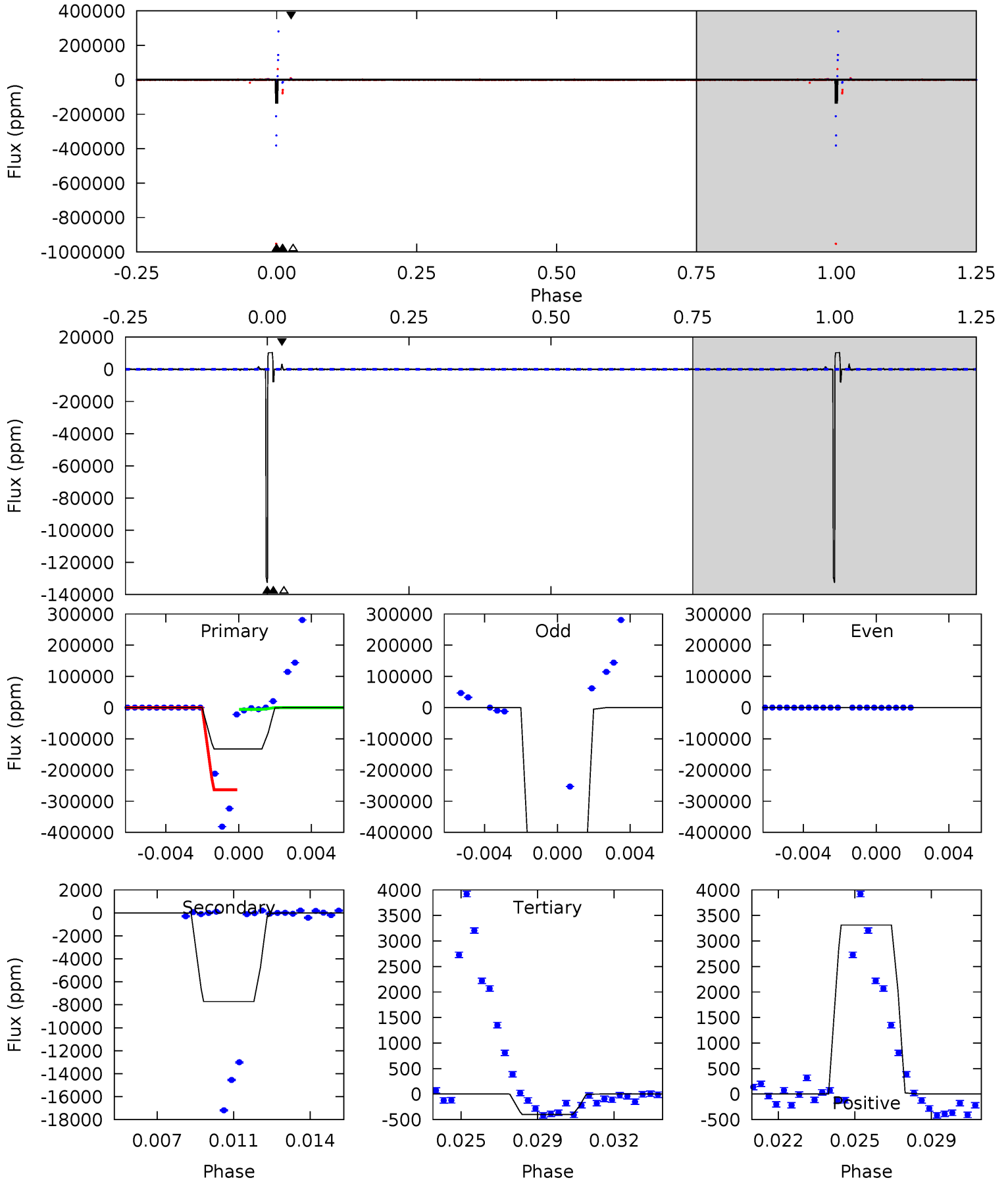
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
416.6	12.2	4.90	12.4	5.35	3.13	2.25	411.7	404.1	7.27	-0.27	219.3	1.18	0.21	0



Alt Model-Shift Uniqueness Test

009327458-06, P = 394.095260 Days, E = 370.185698 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2916	170.0	8.85	72.9	5.22	2.91	2.51	2908	2843	161.2	97.1	237.0	32.7	0.07	0



Stellar Parameters For KIC 009327458

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4888^{+97}_{-158}	$3.102^{+0.475}_{-0.256}$	$0.480^{+0.050}_{-0.350}$	$6.868^{+3.764}_{-4.141}$	$2.174^{+0.700}_{-1.137}$	$0.009^{+0.053}_{-0.006}$
	+2%/-3%	+15%/-8%	+10%/-73%	+55%/-60%	+32%/-52%	+565%/-59%
Source	PHO1	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 009327458-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1985 ± 163	$186.42^{+55.39}_{-54.96}$	663^{+83}_{-86}	2758^{+55}_{-56}	61^{+45}_{-24}
Alt.	-7721 ± 45	$172.37^{+52.06}_{-51.85}$	666^{+79}_{-95}	3435^{+57}_{-91}	270^{+211}_{-99}

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

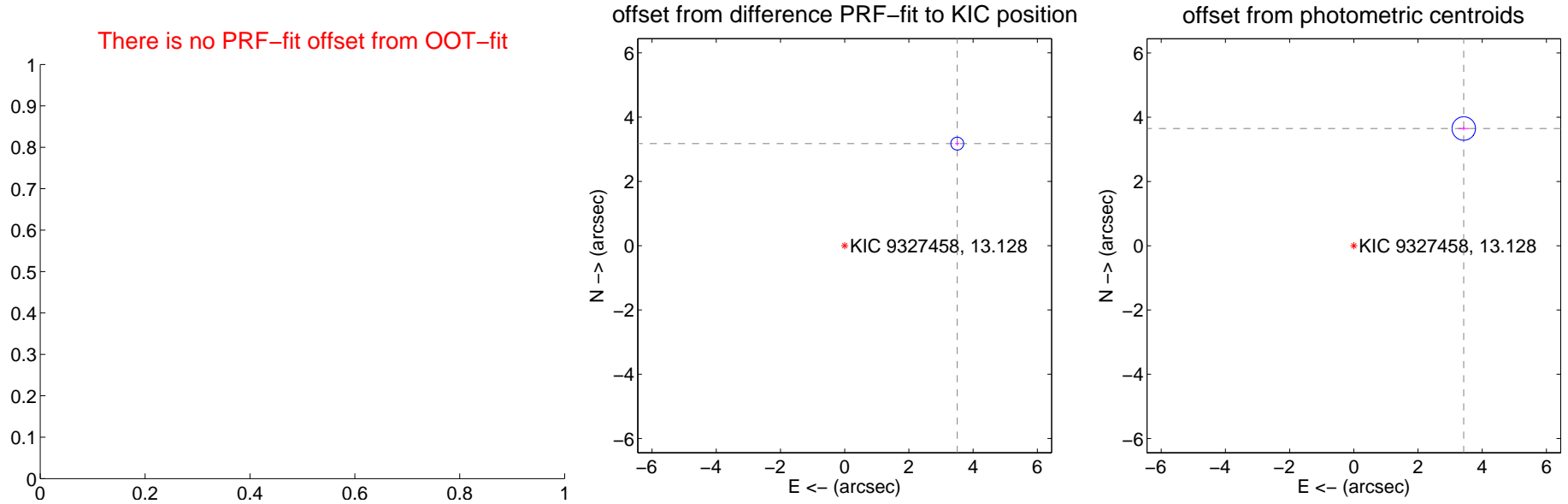
DV Centroid Data

Supplemental centroid analysis for 009327458-06. Kepler magnitude: 13.13. Transit SNR 1576.46

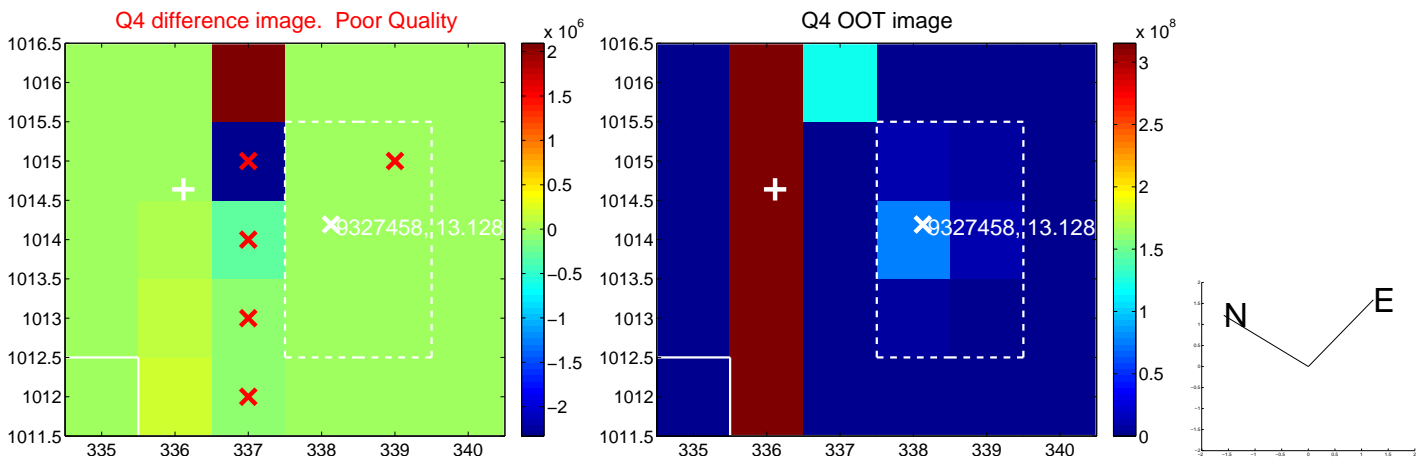
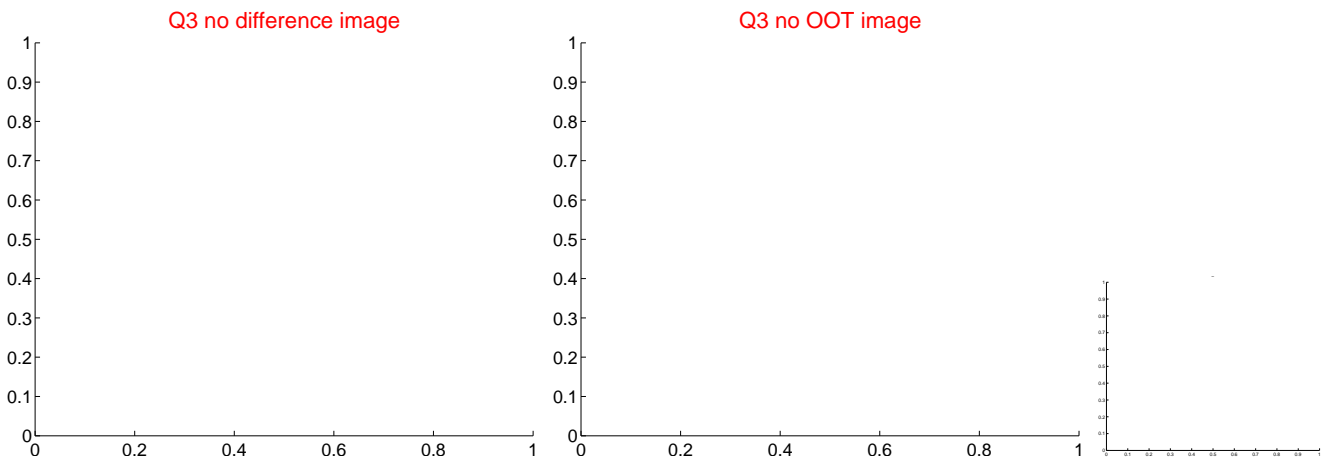
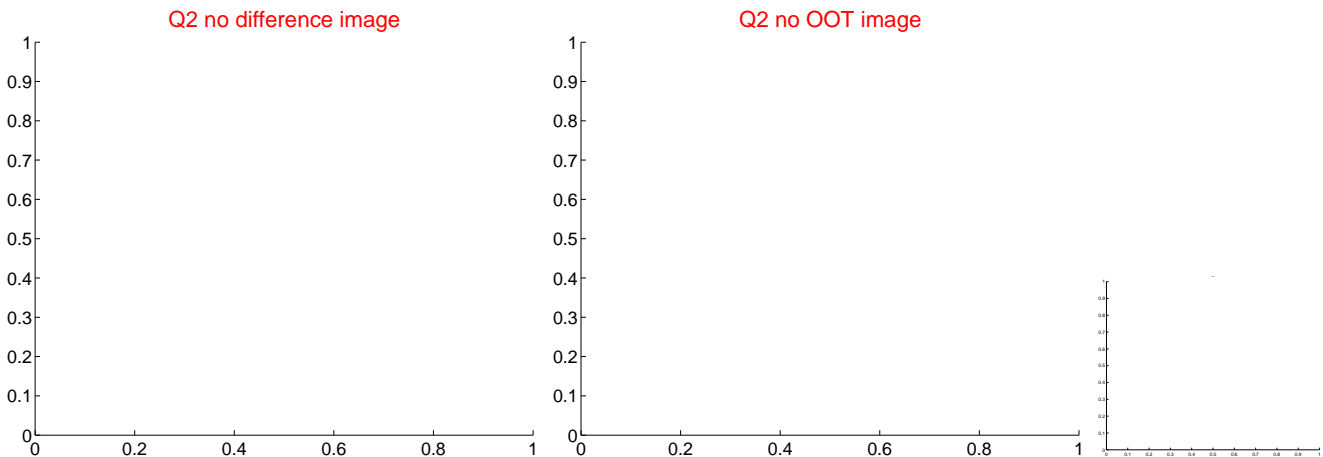
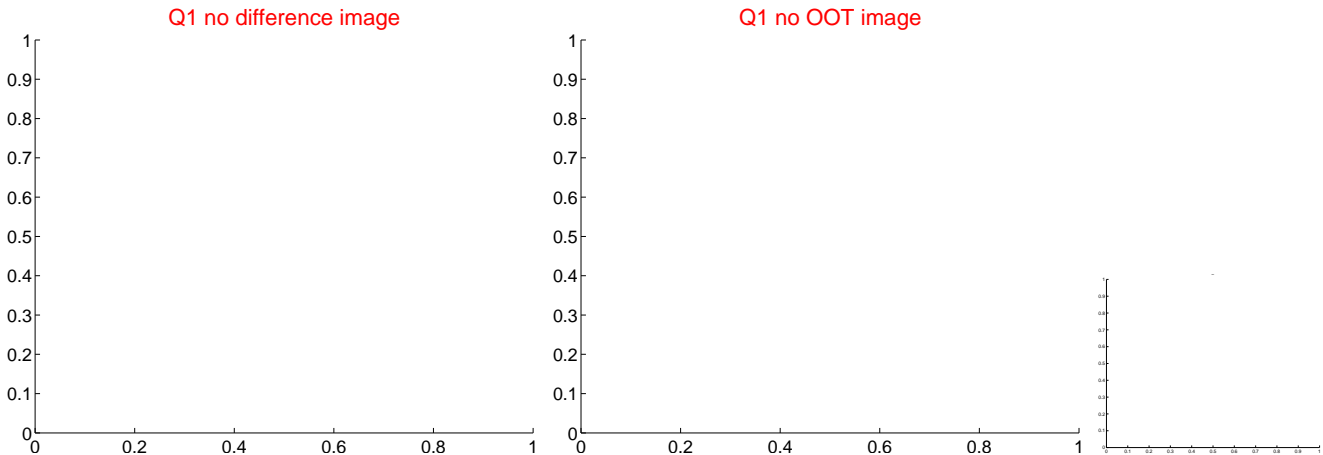
There are 0 quarters with good PRF difference image offsets

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

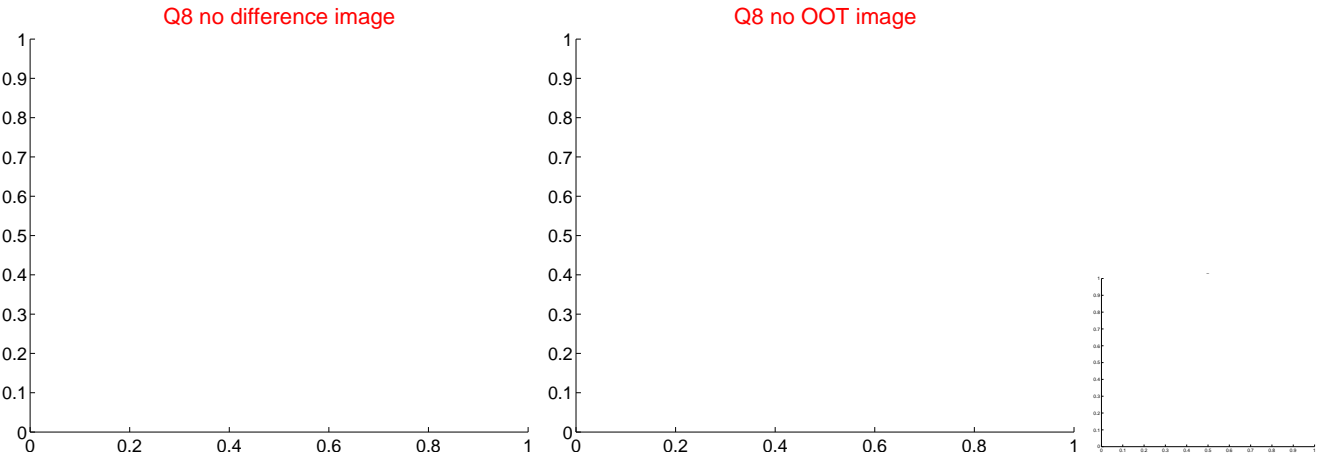
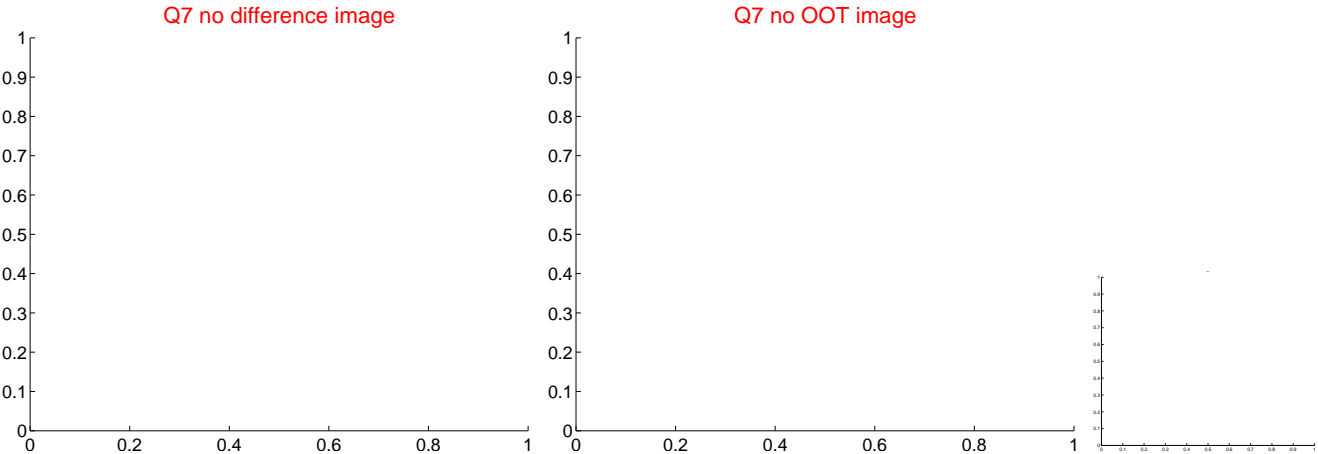
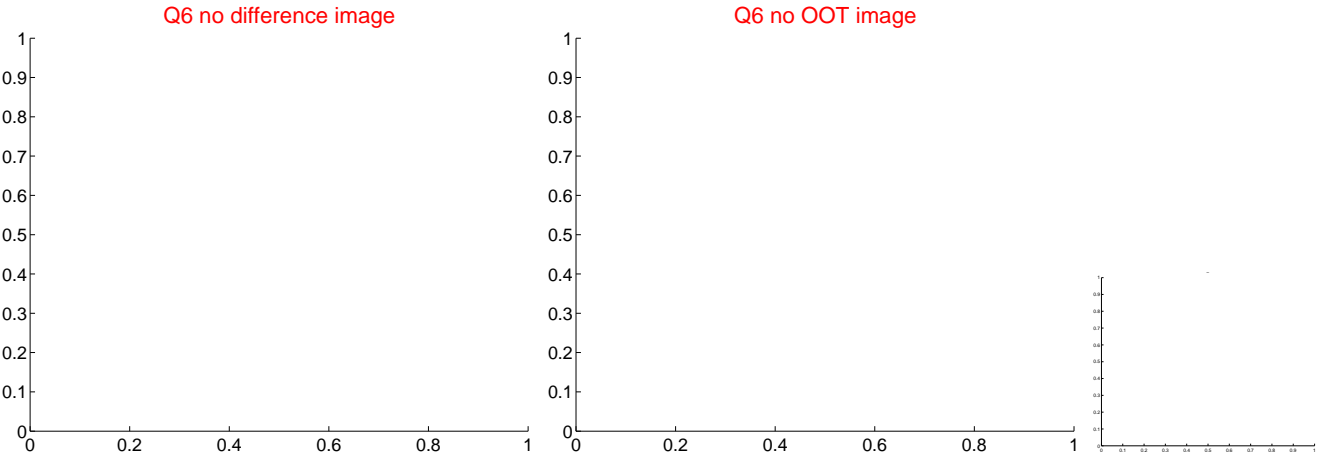
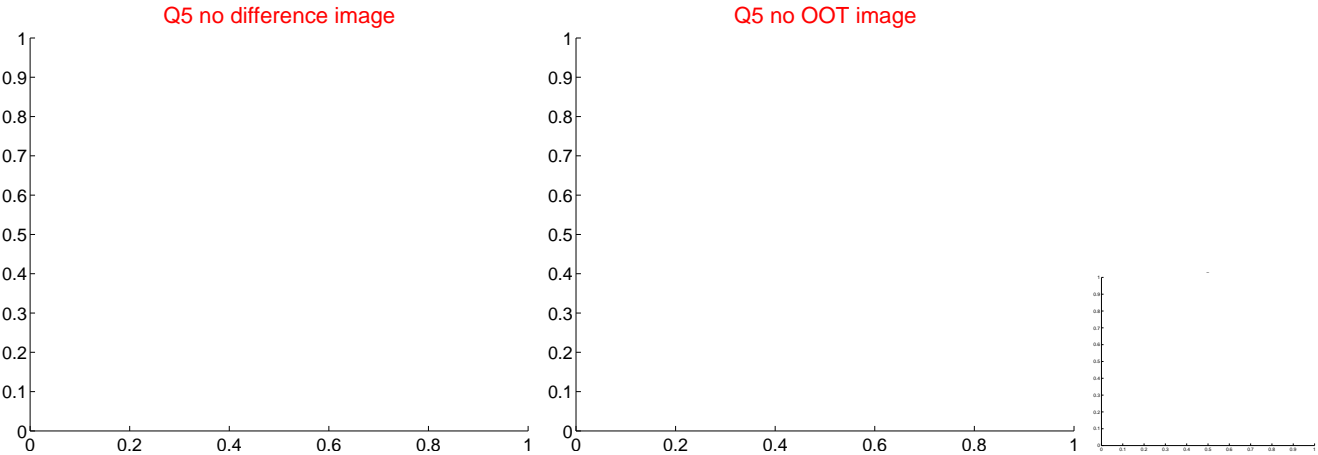
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	4.731 ± 0.067	70.90	-3.506 ± 0.067	3.176 ± 0.067
photometric centroid source offset	5.00 ± 0.12	41.06	-3.42 ± 0.17	3.65 ± 0.06



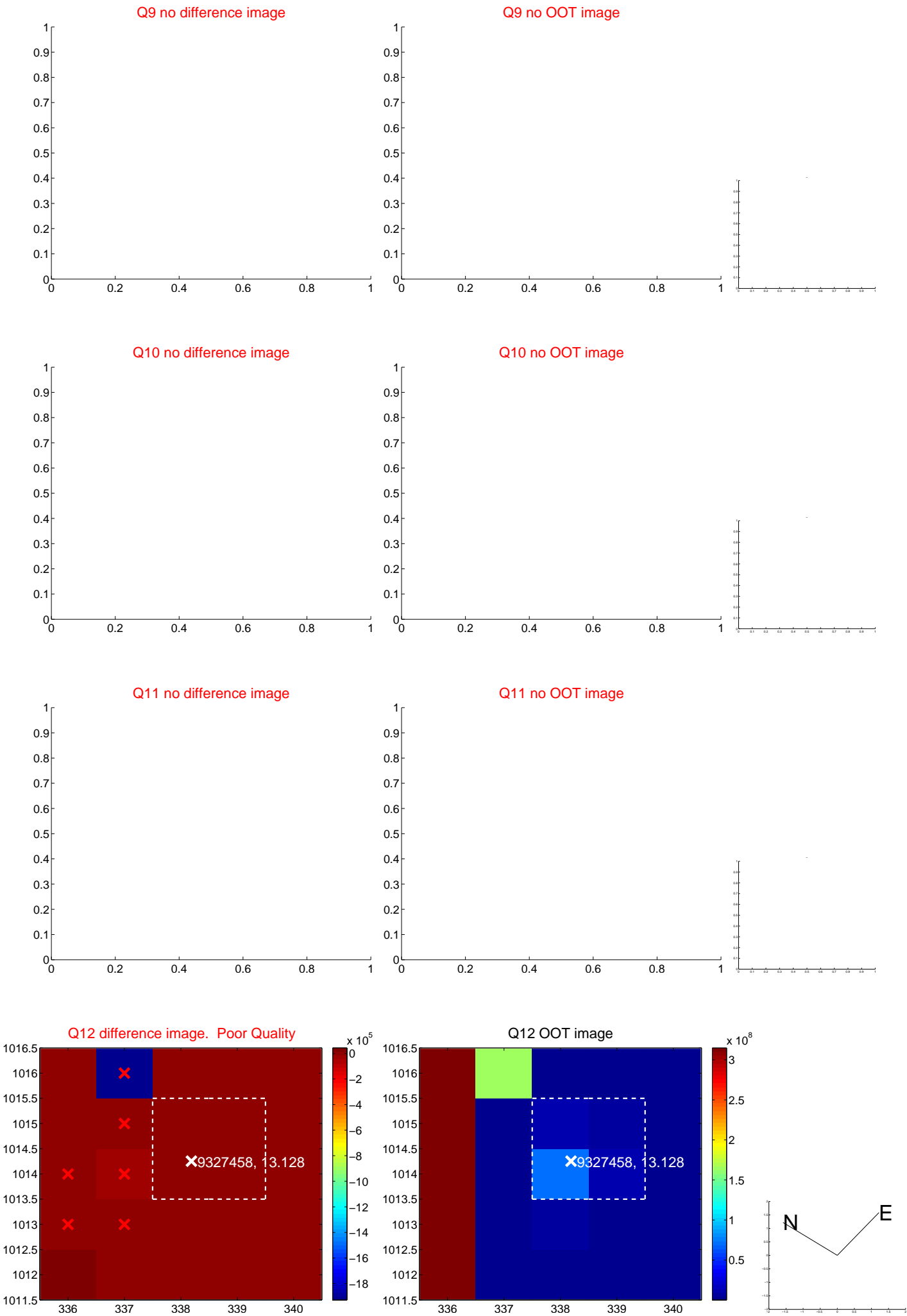
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



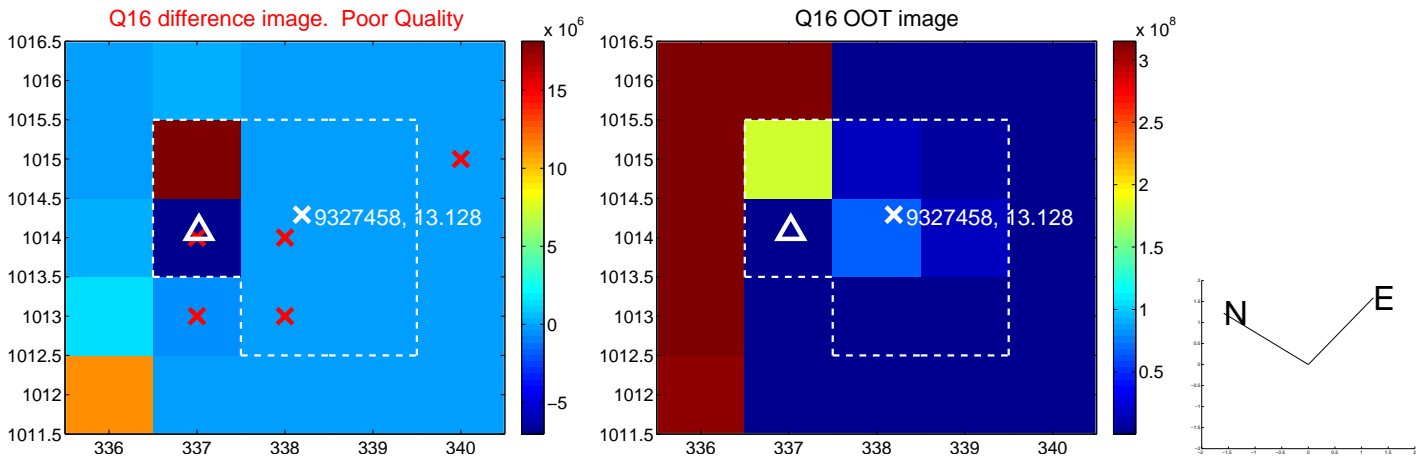
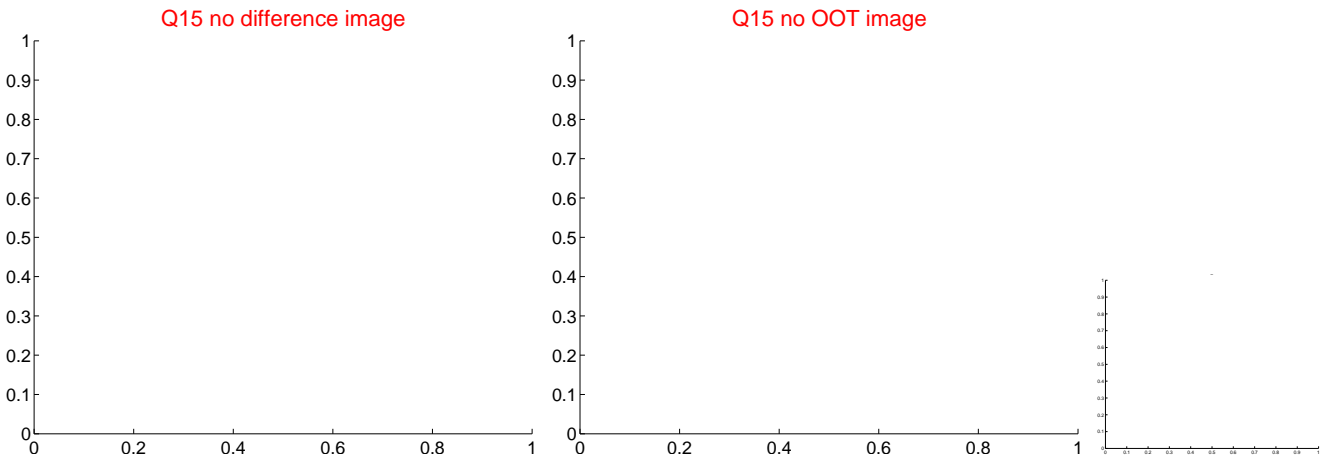
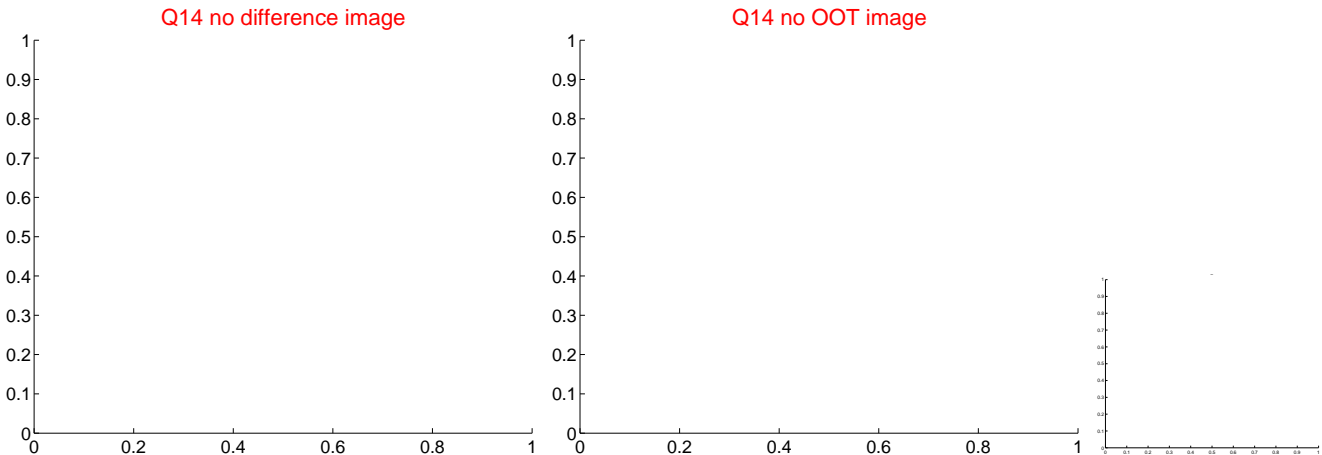
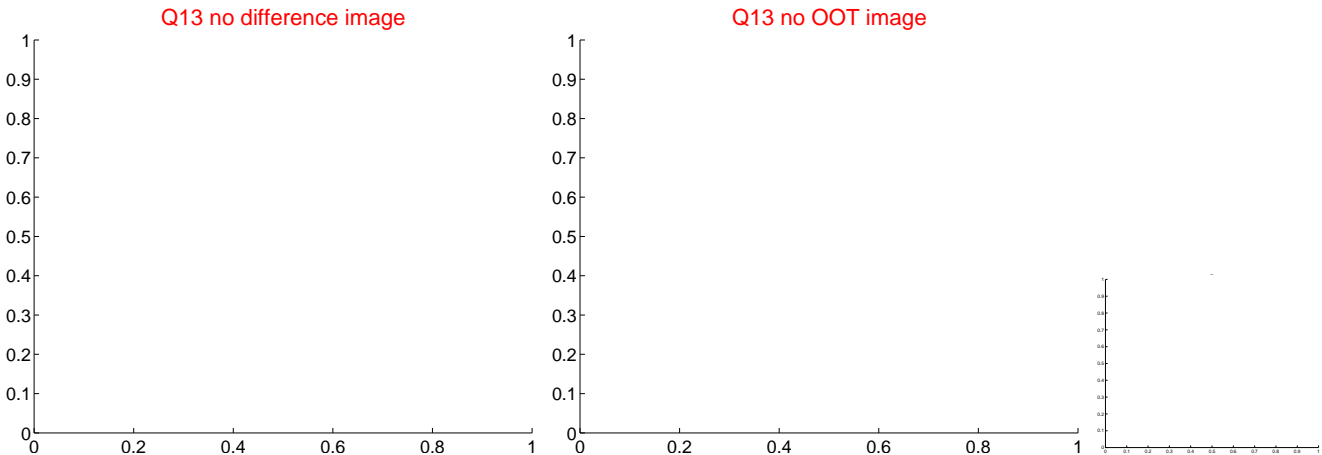
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



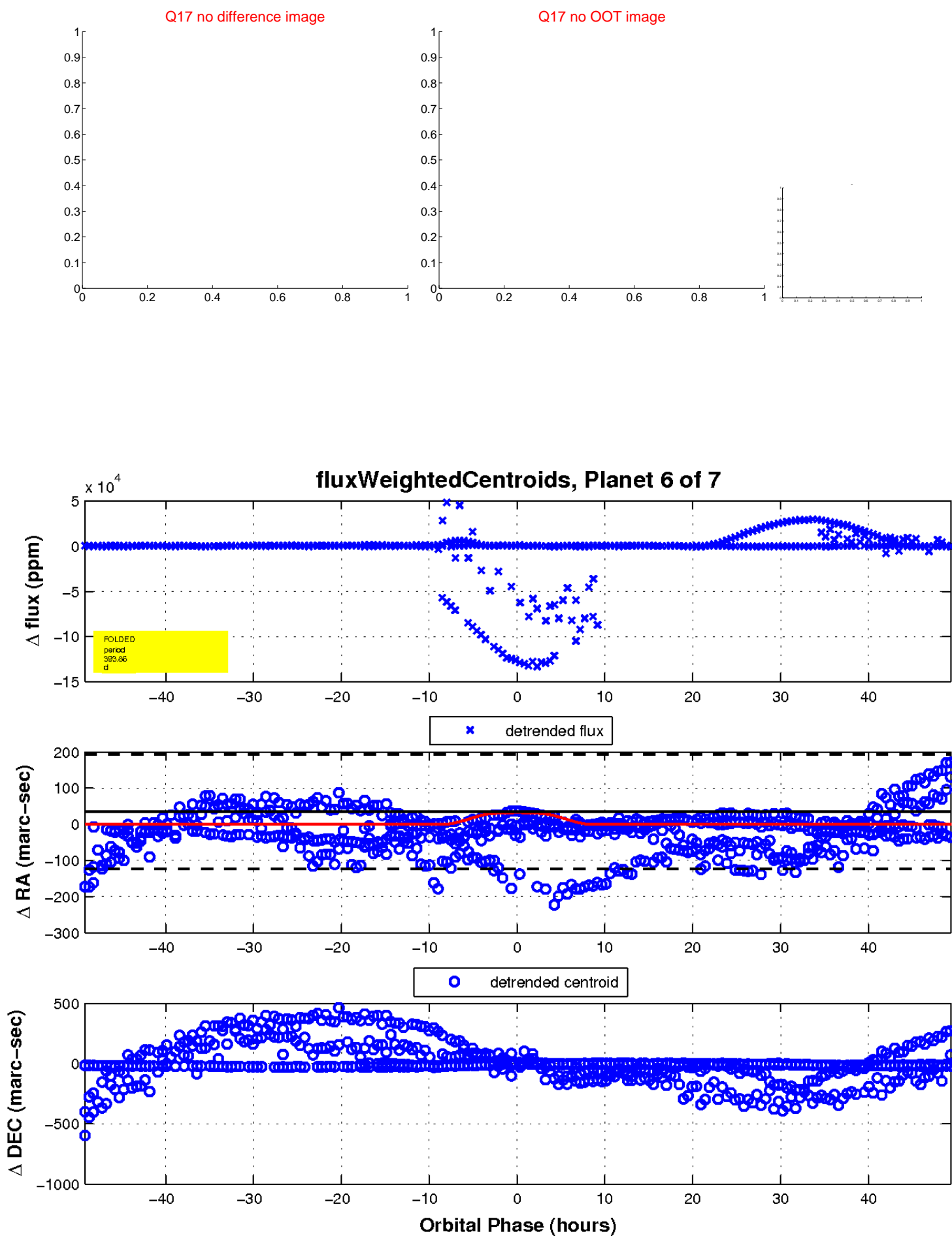
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

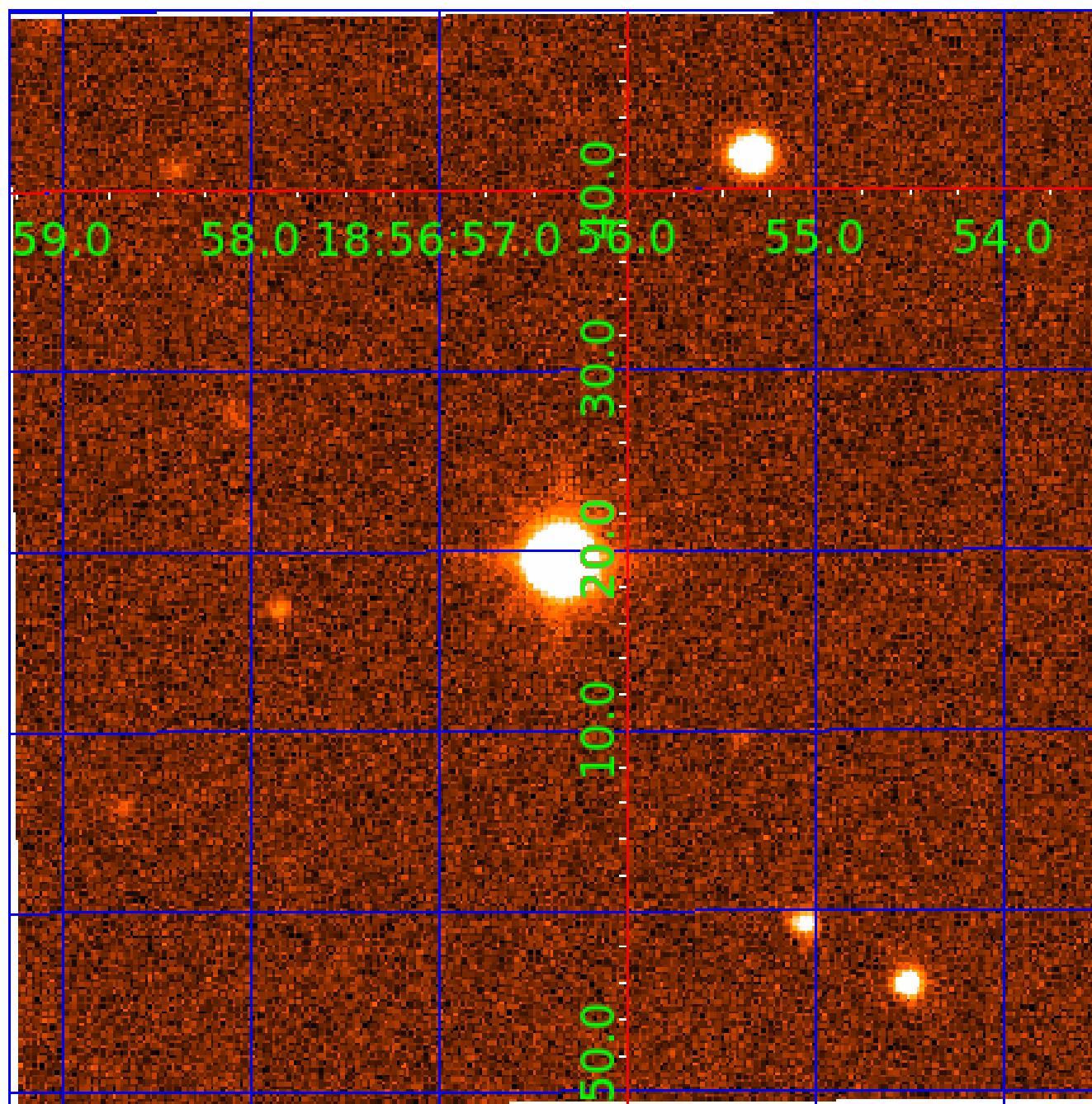


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009327458

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})
009327458-01	OBS	No	394.464931	372.031658	29599.5	24.391	284.9	638.9	6.87	4888	174.19	12.96
009327458-02	OBS	No	389.497710	381.011573	3458.1	15.000	73.9	-1.0	6.87	4888	38.79	13.18
009327458-03	OBS	No	391.643233	368.703758	2636.2	15.000	104.4	-1.0	6.87	4888	33.87	13.09
009327458-05	OBS	No	154.719879	182.908167	591.9	13.336	14.9	22.5	6.87	4888	35.22	45.14
009327458-06	OBS	No	393.857576	370.651900	70230.0	16.499	1348.1	1576.5	6.87	4888	188.83	12.99
009327458-07	OBS	No	205.643348	141.312291	163.1	12.500	7.5	-1.0	6.87	4888	8.42	30.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327458-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009327458-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
009327458-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009327458-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

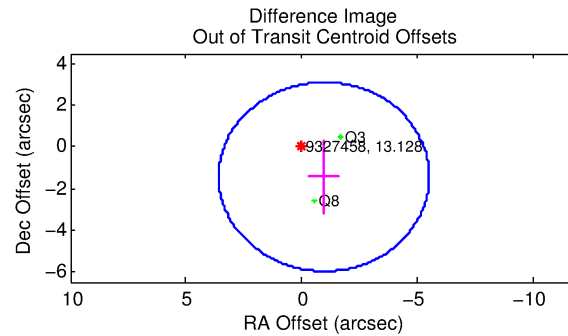
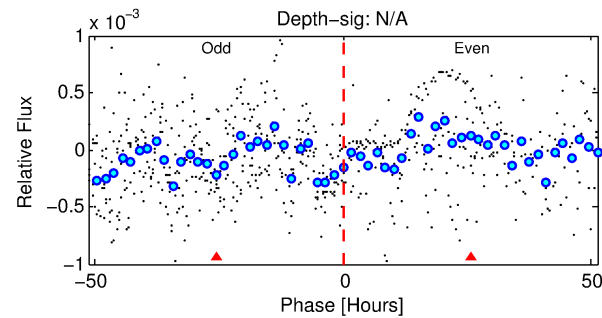
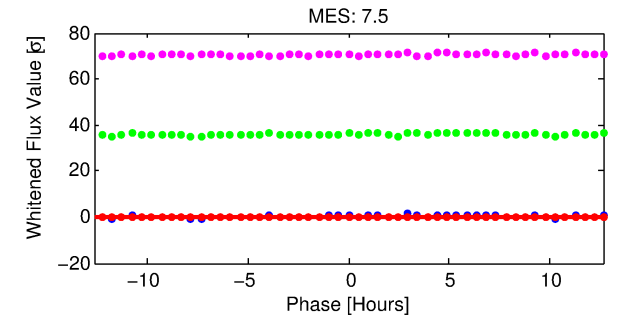
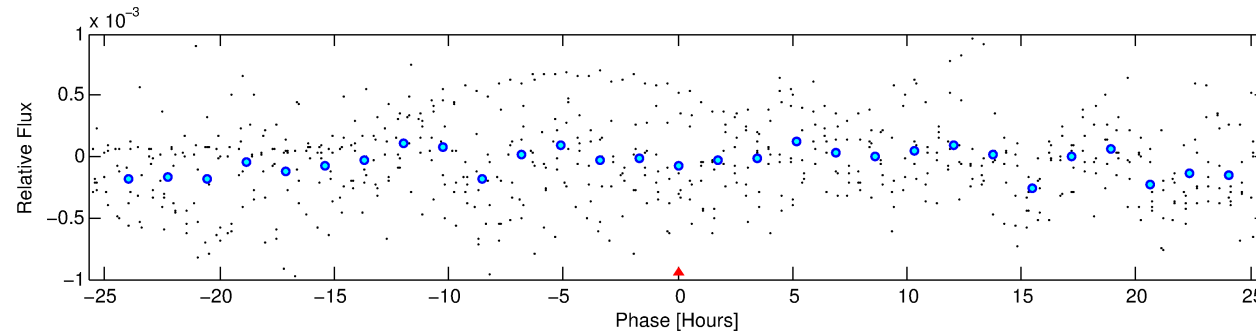
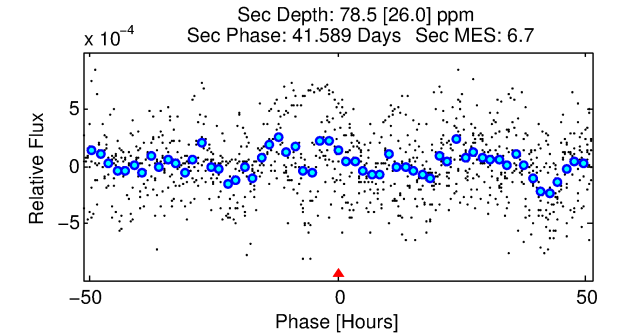
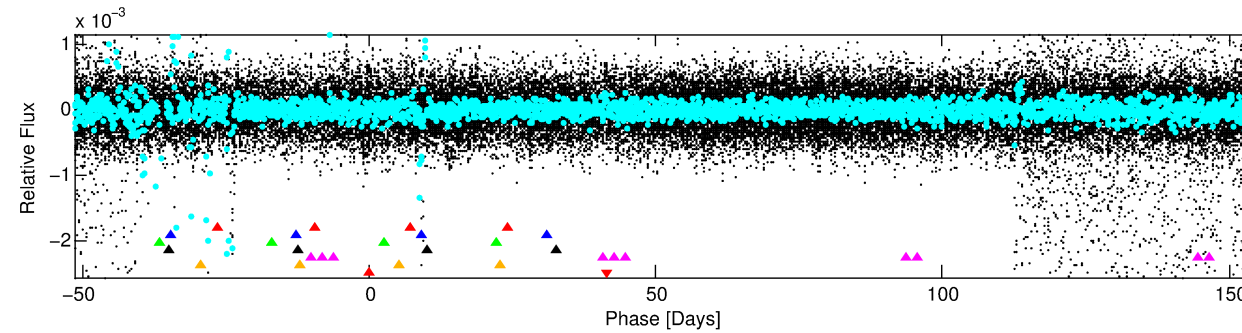
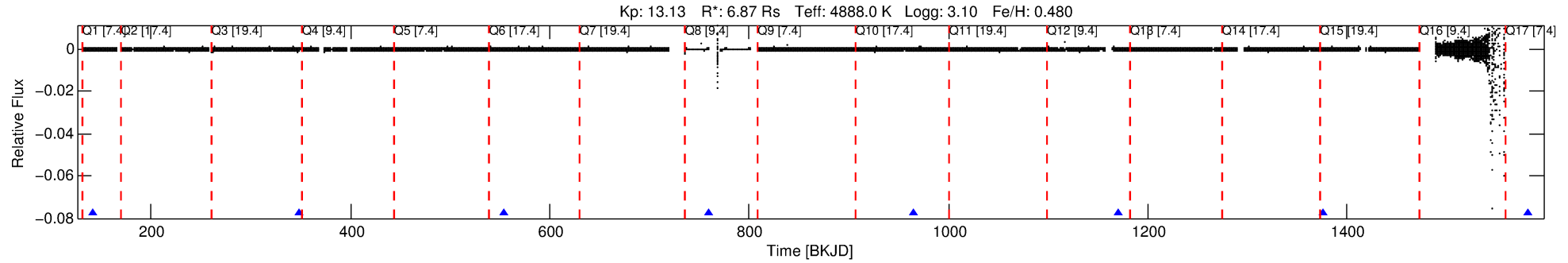
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009327458-07

No Significant Match Found

DV One-Page Summary

KIC: 9327458 Candidate: 7 of 7 Period: 205.643 d



TPS TCE Results:

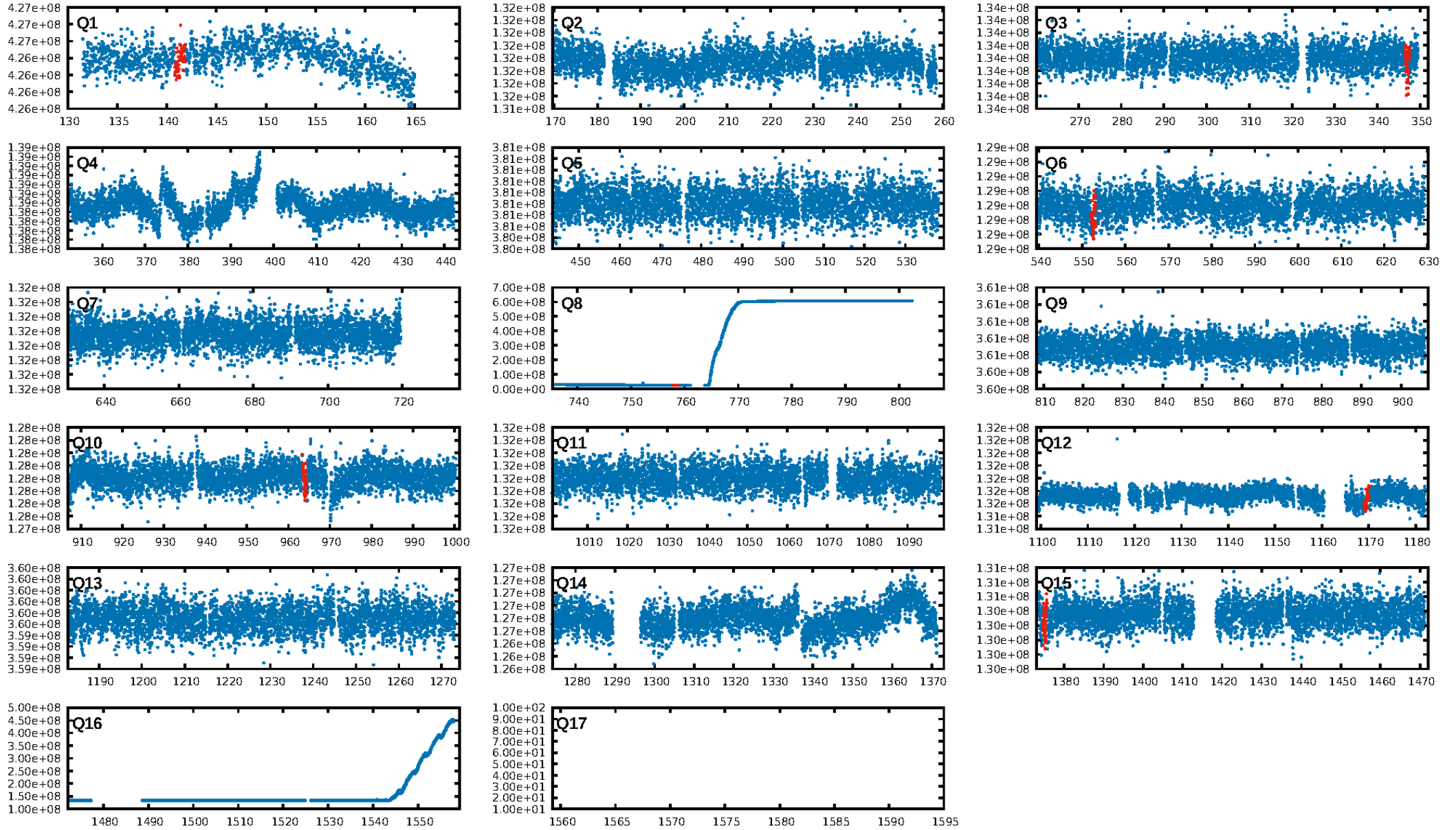
Period = 205.64335 d
Epoch = 141.3123 BKJD

DV fit results are unavailable

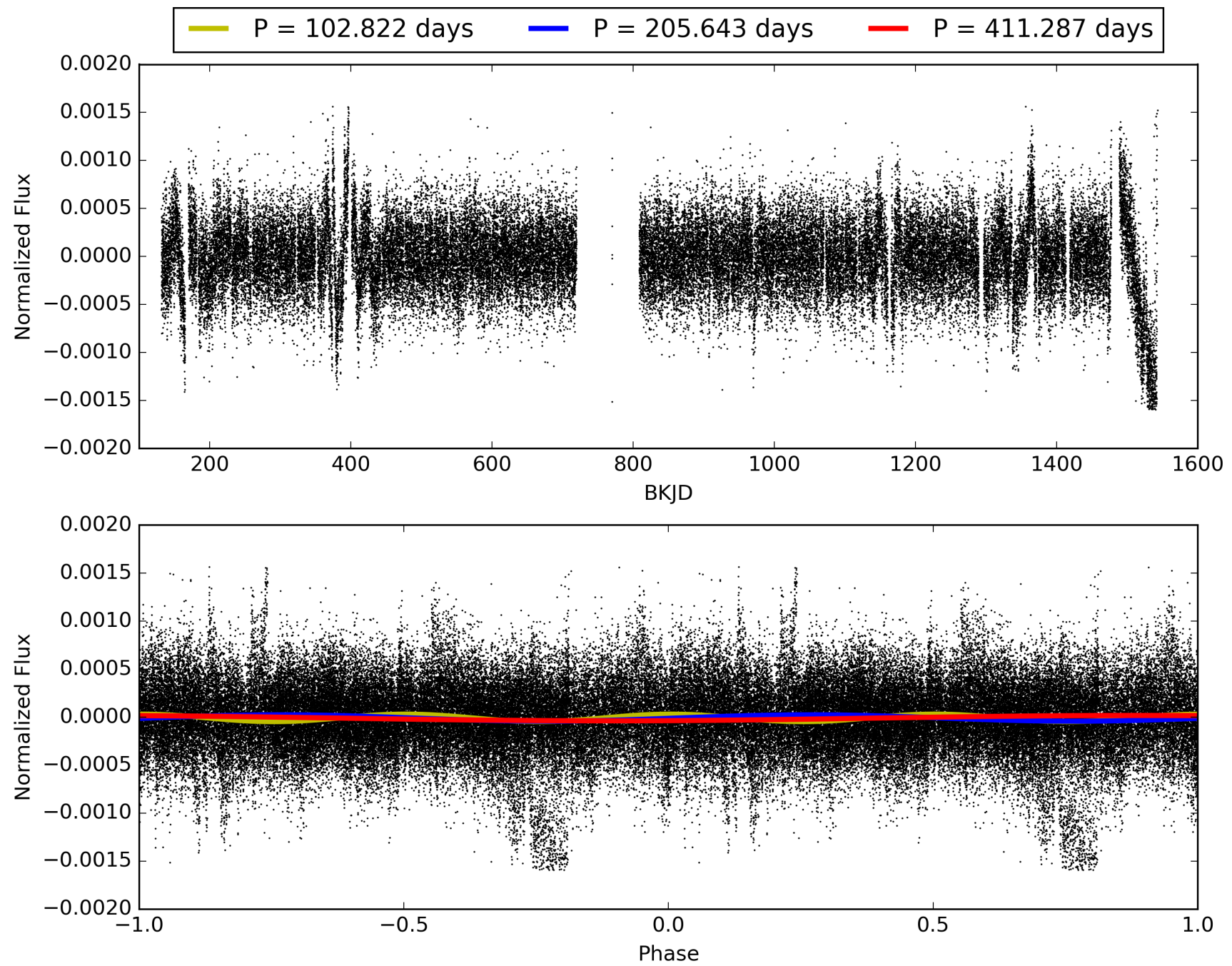
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [66.87σ]
LongPeriod-sig: 100.0% [312.87σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 1.66e-05
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.695
Centroid-sig: N/A
Centroid-so: 4.831 arcsec [35.57σ]
OotOffset-rm: 1.731 arcsec [1.14σ]
KicOffset-rm: 7.400 arcsec [14.54σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [7/7]

TCE 009327458-07, PDC Light Curves

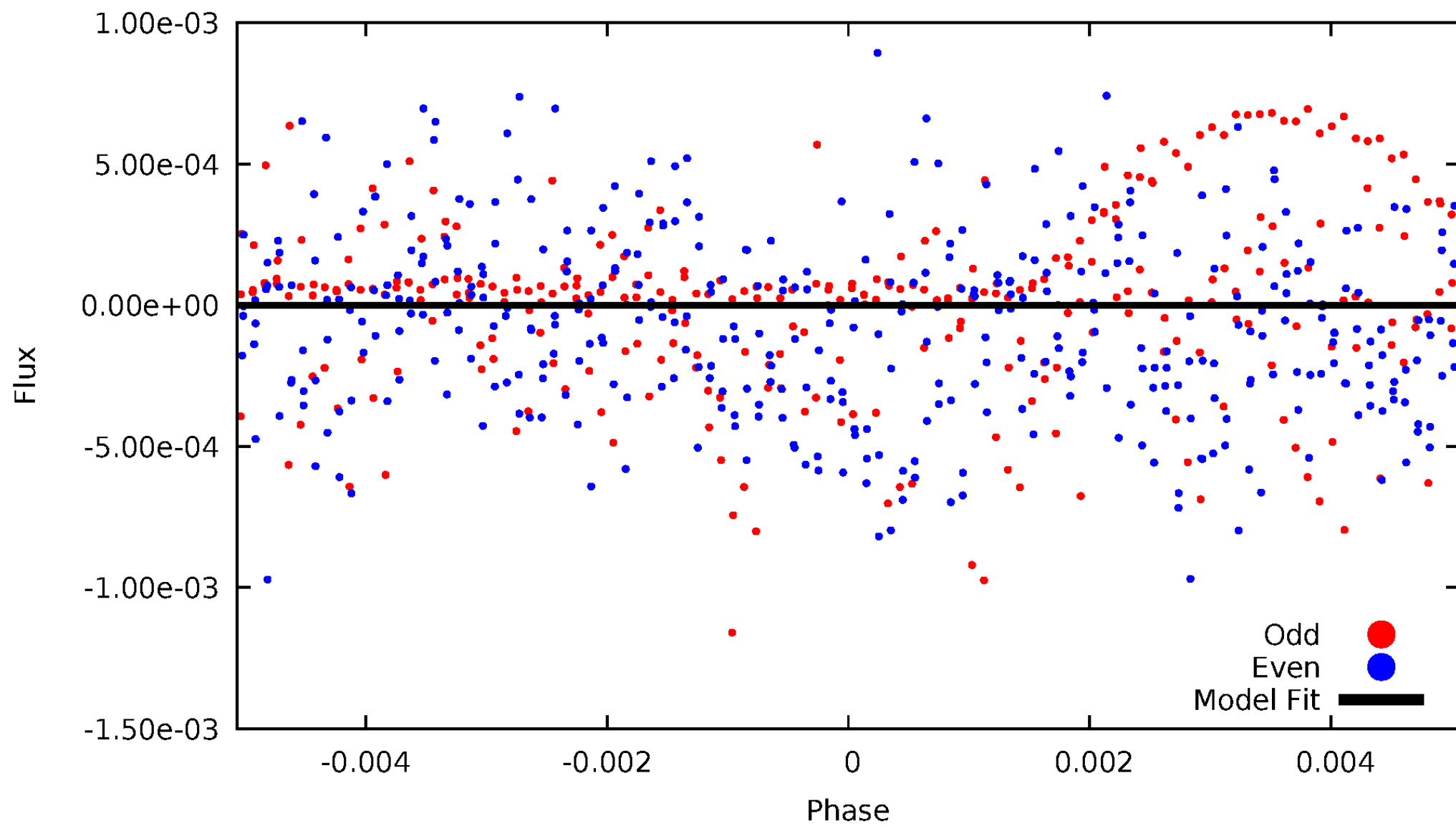


TCE 009327458-07



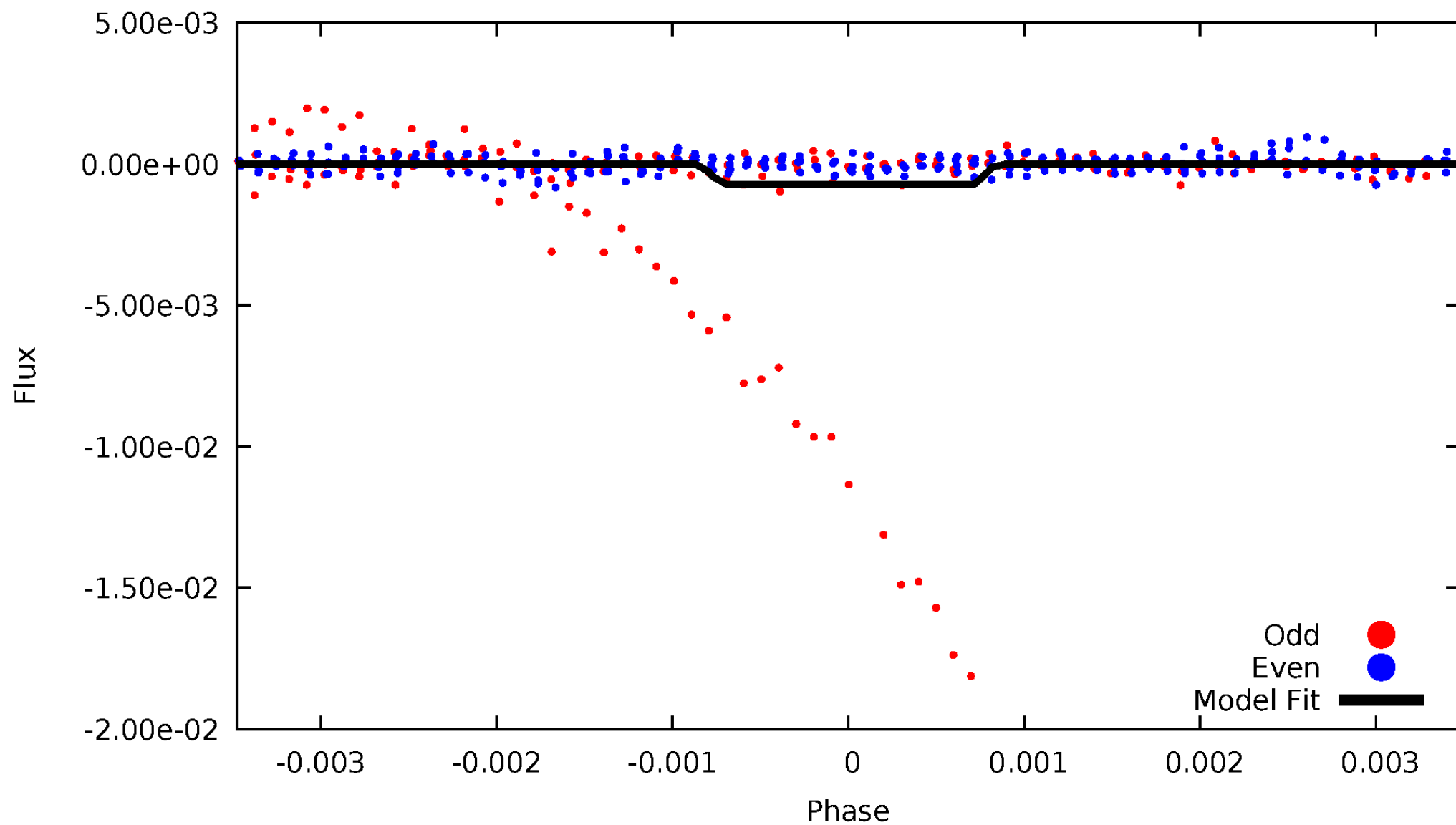
DV Odd/Even

TCE 009327458-07



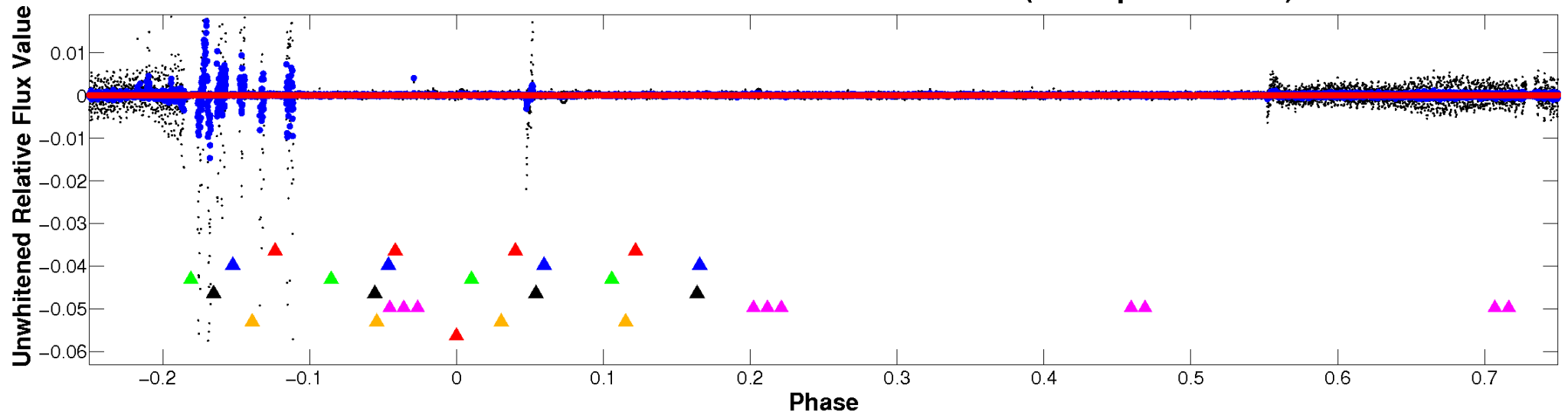
ALT Odd/Even

TCE 009327458-07

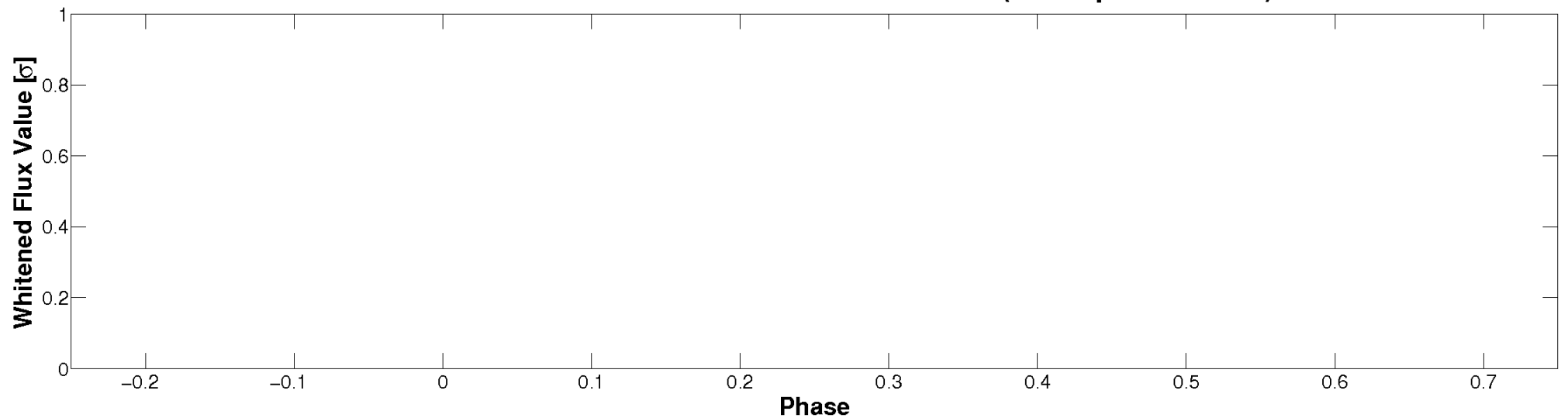


Non-Whitened Vs. Whitened Light Curve

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

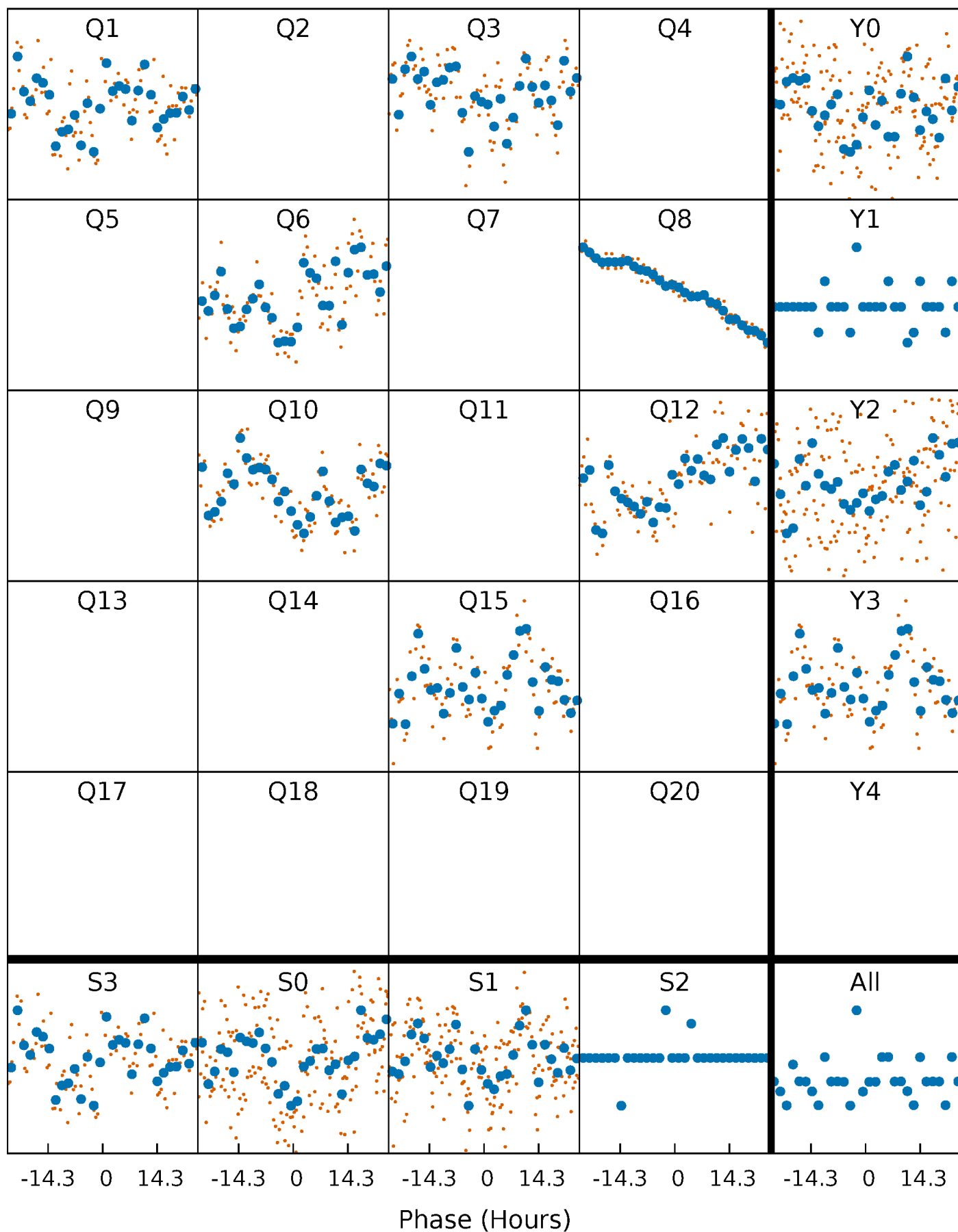


Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)



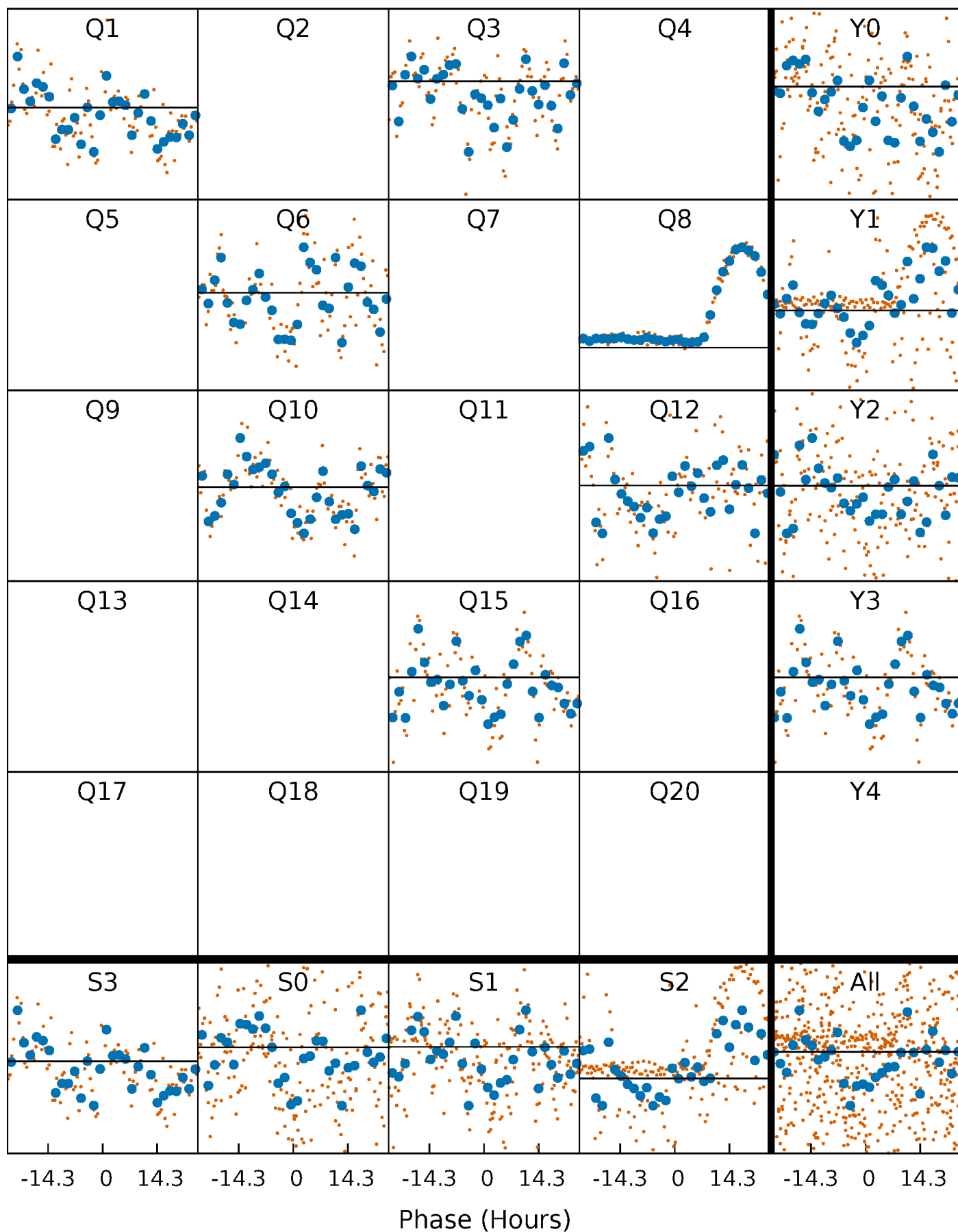
PDC Quarter-Phased Transit Curves

TCE 009327458-07 $P=205.643348$ Days $T_0=141.312291$ (BKJD)



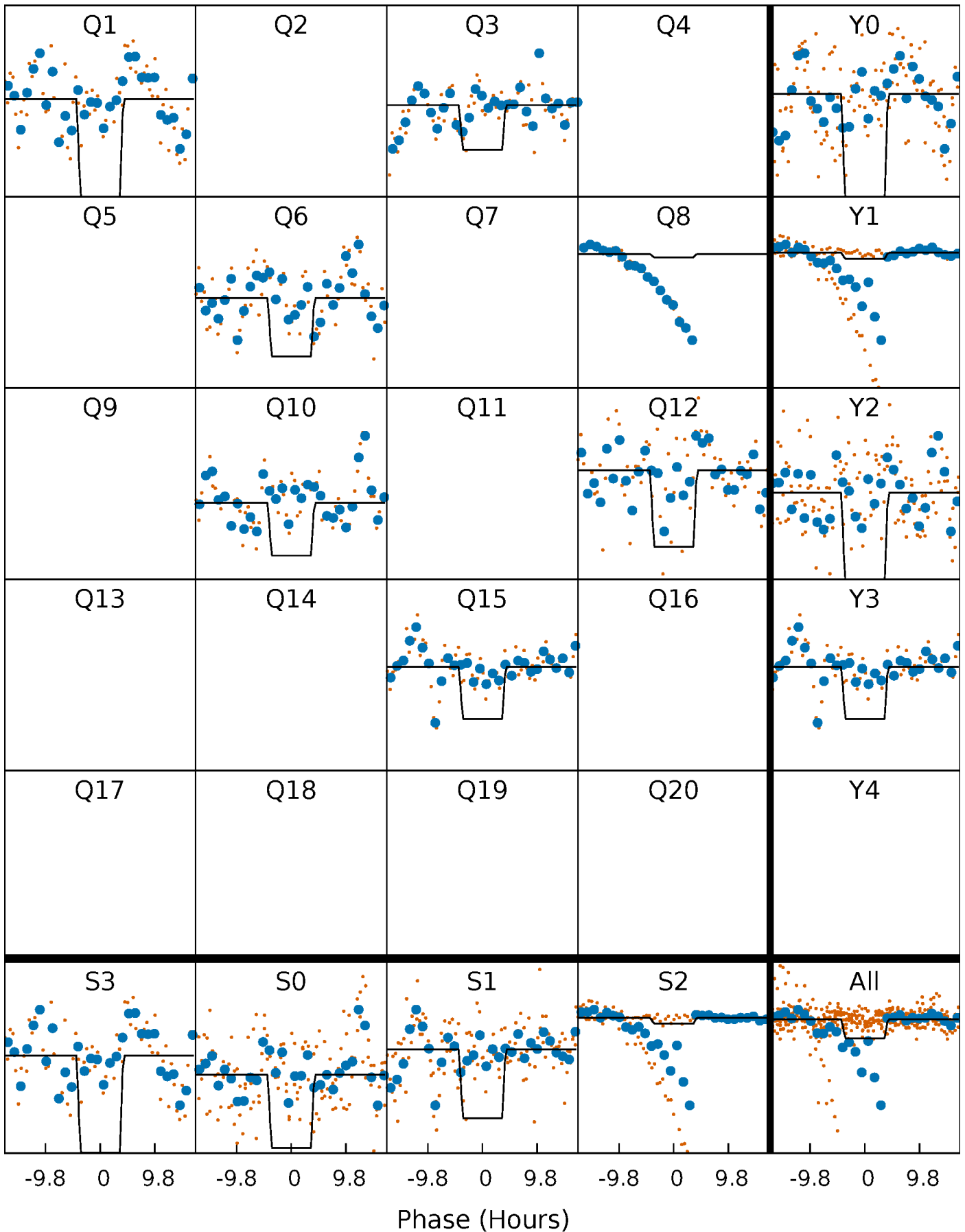
DV Quarter-Phased Transit Curves

TCE 009327458-07 $P=205.643348$ Days $T_0=141.312291$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

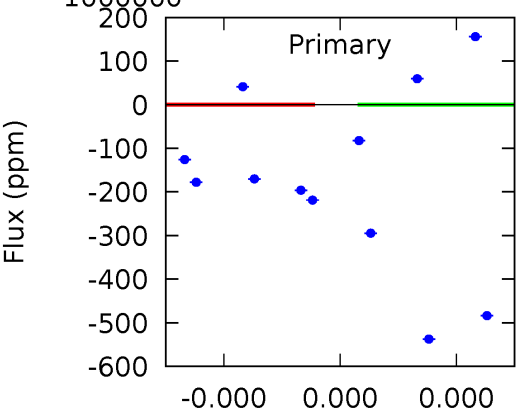
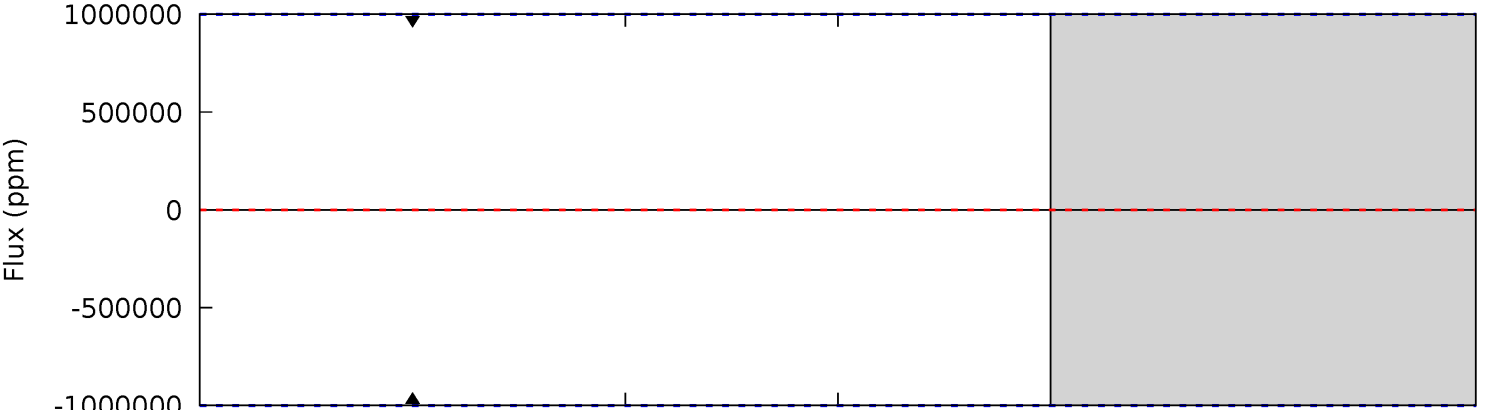
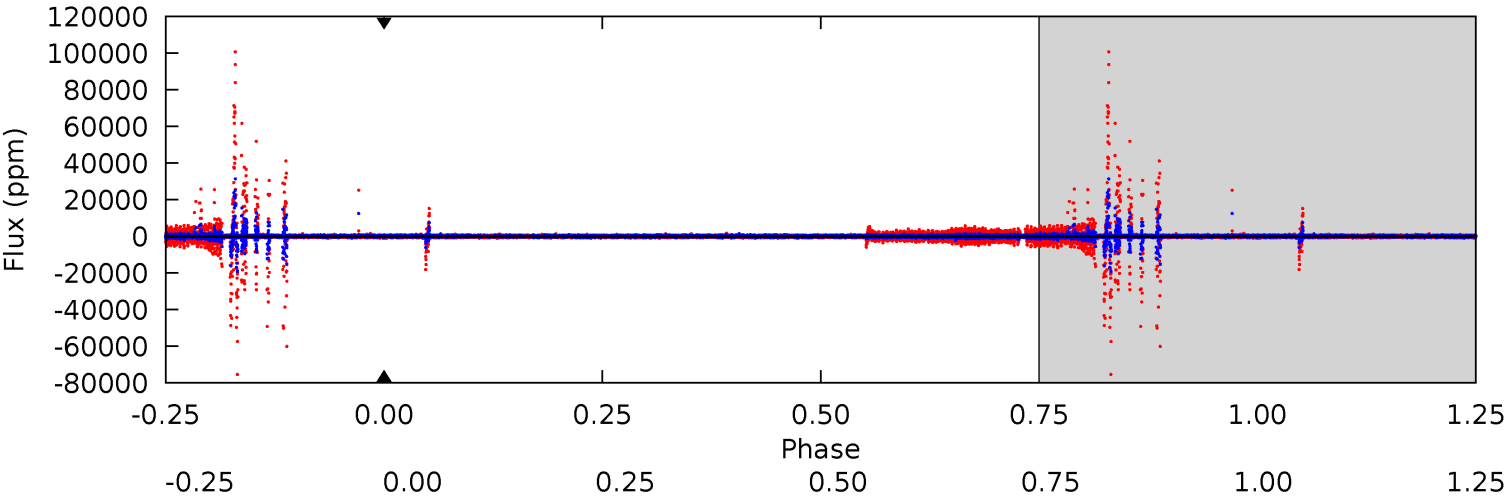
TCE 009327458-07 $P=205.643348$ Days $T_0=142.237970$ (BKJD)



DV Model-Shift Uniqueness Test

009327458-07, P = 205.643348 Days, E = 141.312291 Days

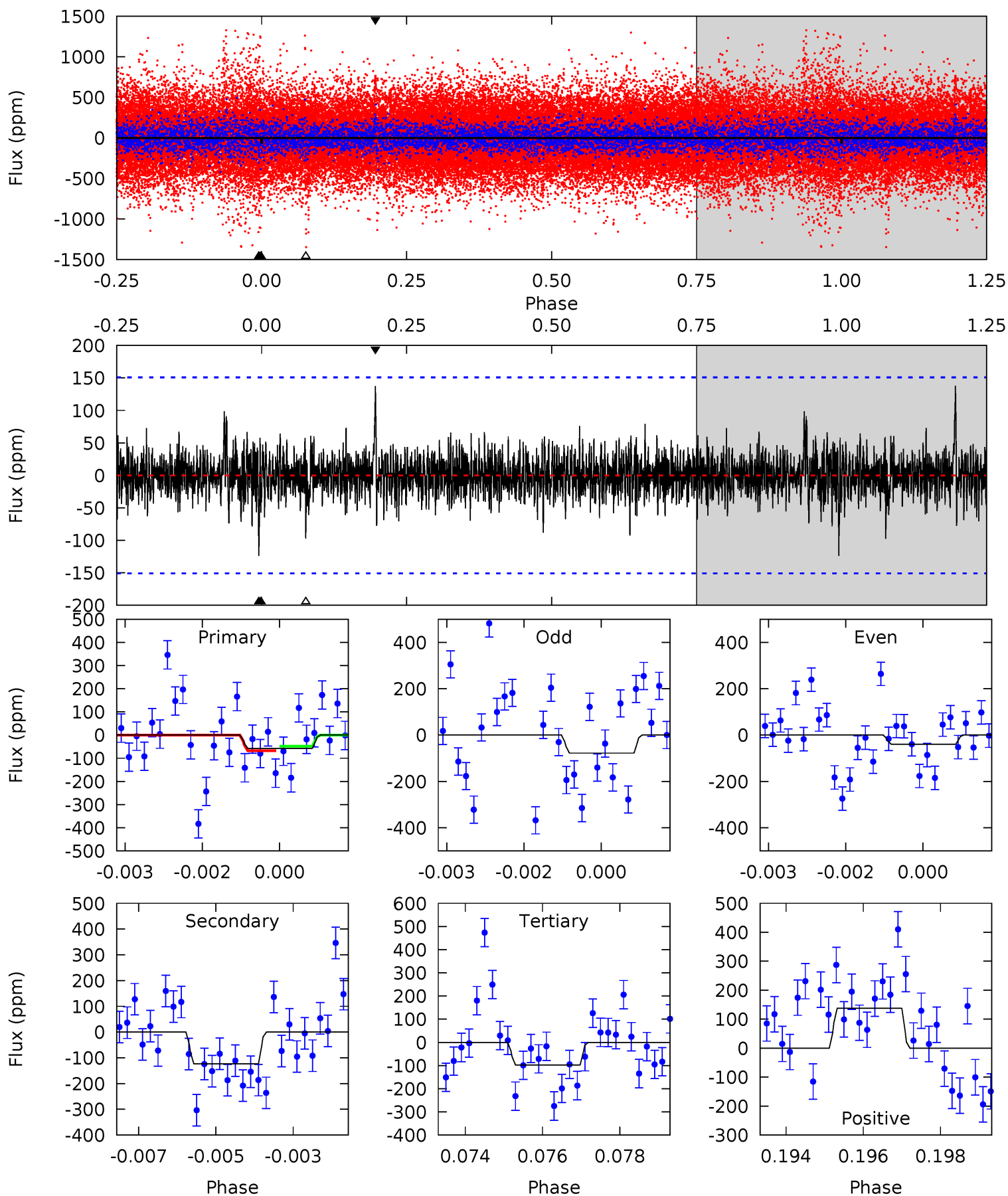
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009327458-07, P = 205.643348 Days, E = 142.237970 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.04	4.39	3.46	4.89	5.36	3.14	0.89	-1.43	-2.85	0.93	-0.50	0.61	22.6	0.53	0.34



Stellar Parameters For KIC 009327458

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4888^{+97}_{-158}	$3.102^{+0.475}_{-0.256}$	$0.480^{+0.050}_{-0.350}$	$6.868^{+3.764}_{-4.141}$	$2.174^{+0.700}_{-1.137}$	$0.009^{+0.053}_{-0.006}$
	+2%/-3%	+15%/-8%	+10%/-73%	+55%/-60%	+32%/-52%	+565%/-59%
Source	PHO1	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 009327458-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$49.93^{+61.03}_{-35.98}$	824^{+102}_{-124}	3811^{+11485}_{-17168}	200^{+35041}_{-25793}
Alt.	-124 ± 28	$50.99^{+61.83}_{-35.56}$	828^{+108}_{-128}	2602^{+1110}_{-432}	18^{+193}_{-15}

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 $A_{obs} \gg 1.0$

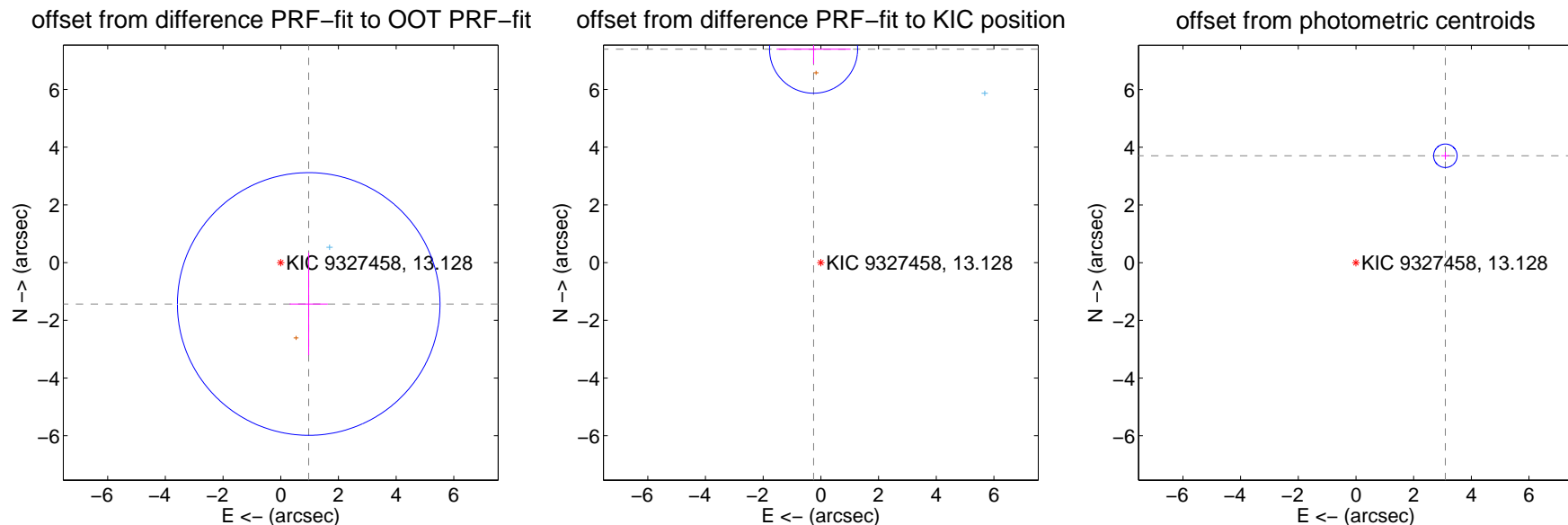
DV Centroid Data

Supplemental centroid analysis for 009327458-07. Kepler magnitude: 13.13. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

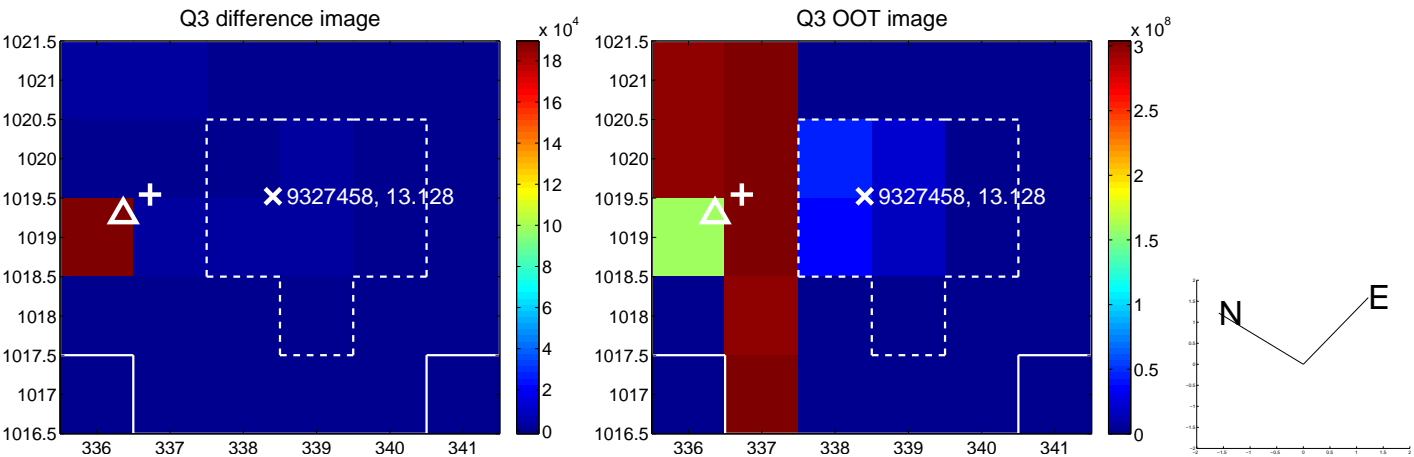
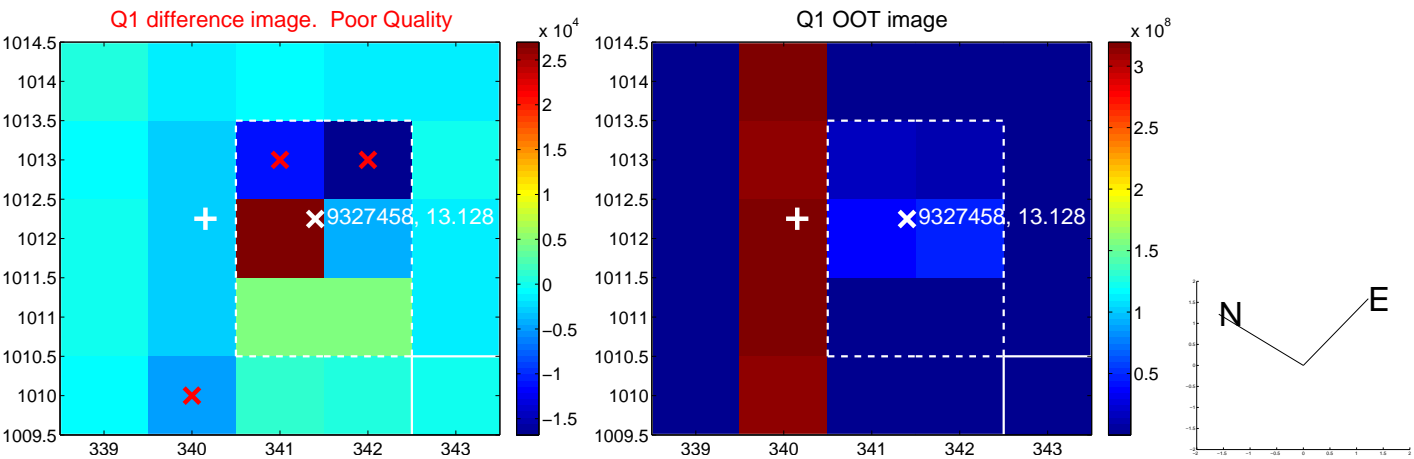
The OOT PRF centroid is offset from the target star catalog position by about 9.21 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.731 ± 1.517	1.14	-0.969 ± 0.660	-1.434 ± 1.776
PRF-fit source offset from KIC position	7.400 ± 0.509	14.54	0.252 ± 1.284	7.396 ± 0.507
photometric centroid source offset	4.83 ± 0.14	35.57	-3.10 ± 0.14	3.71 ± 0.13

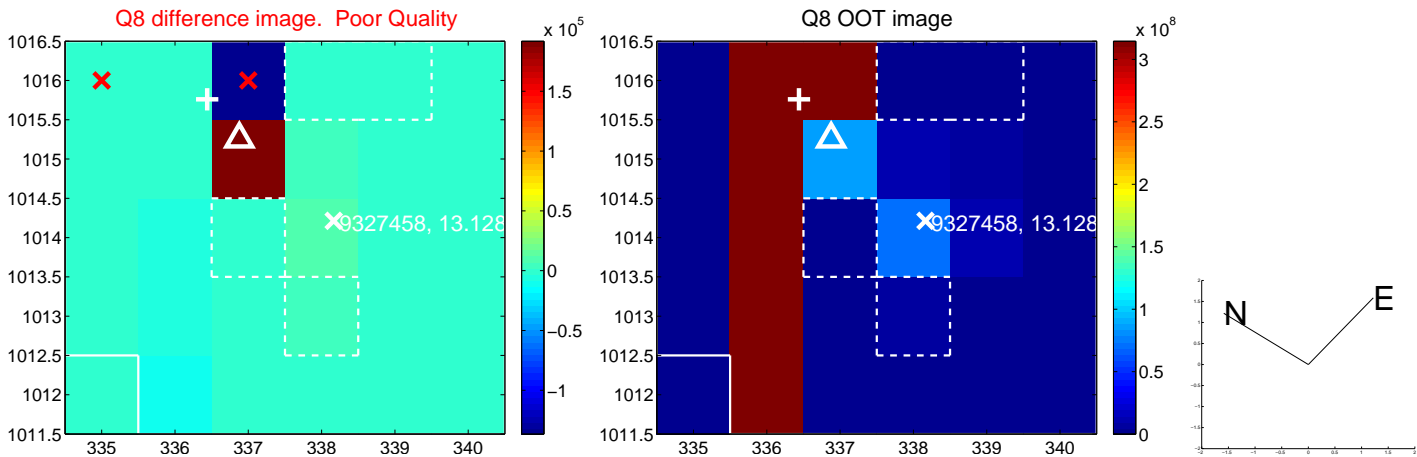
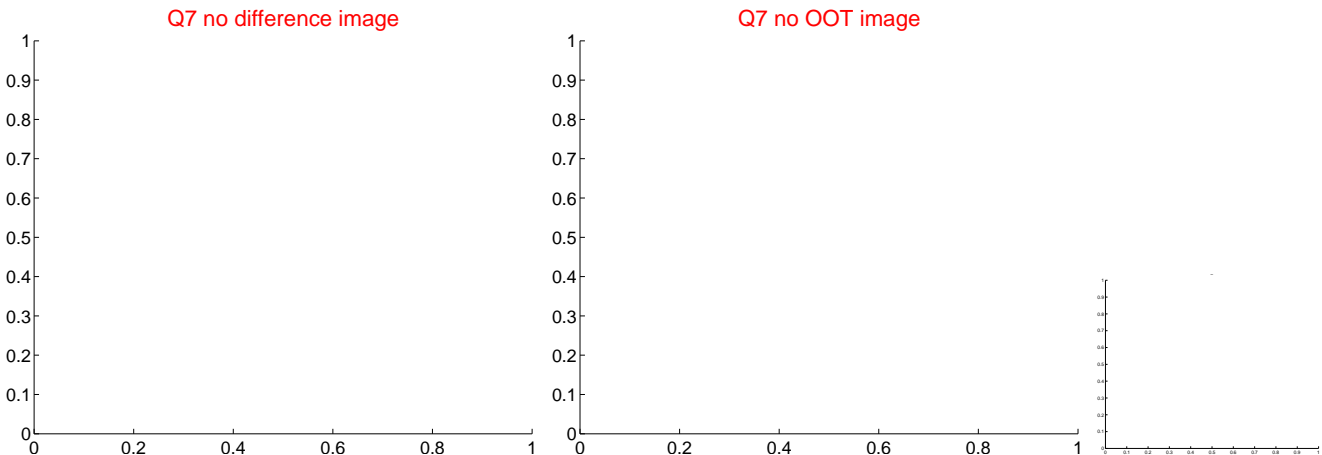
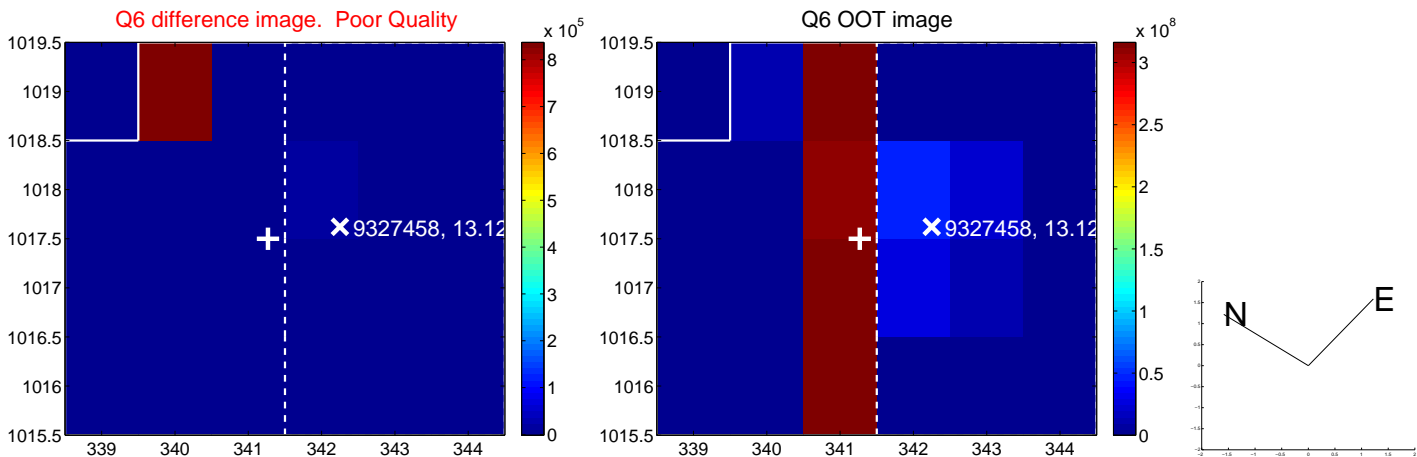
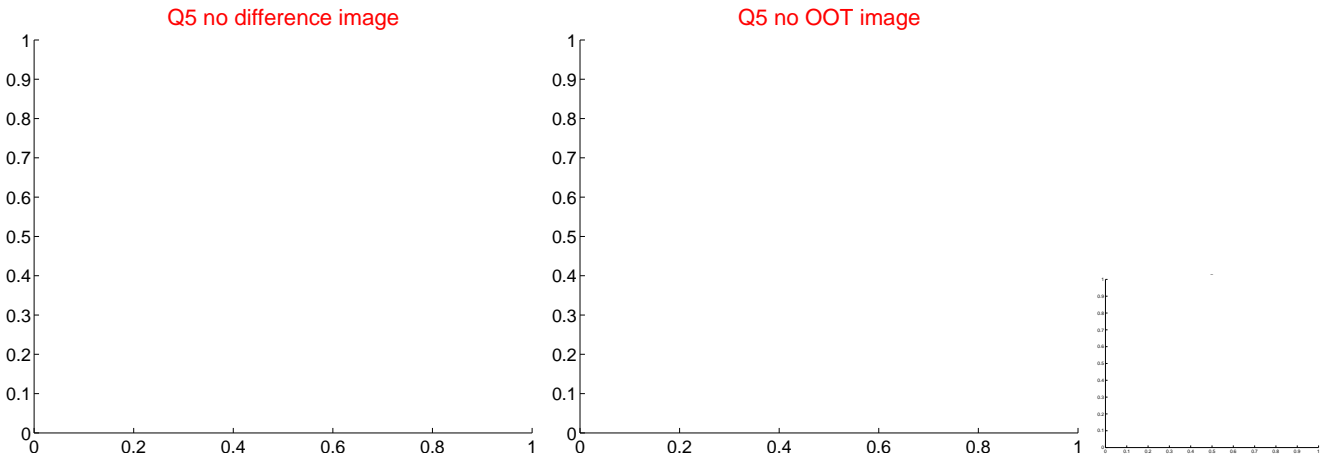


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

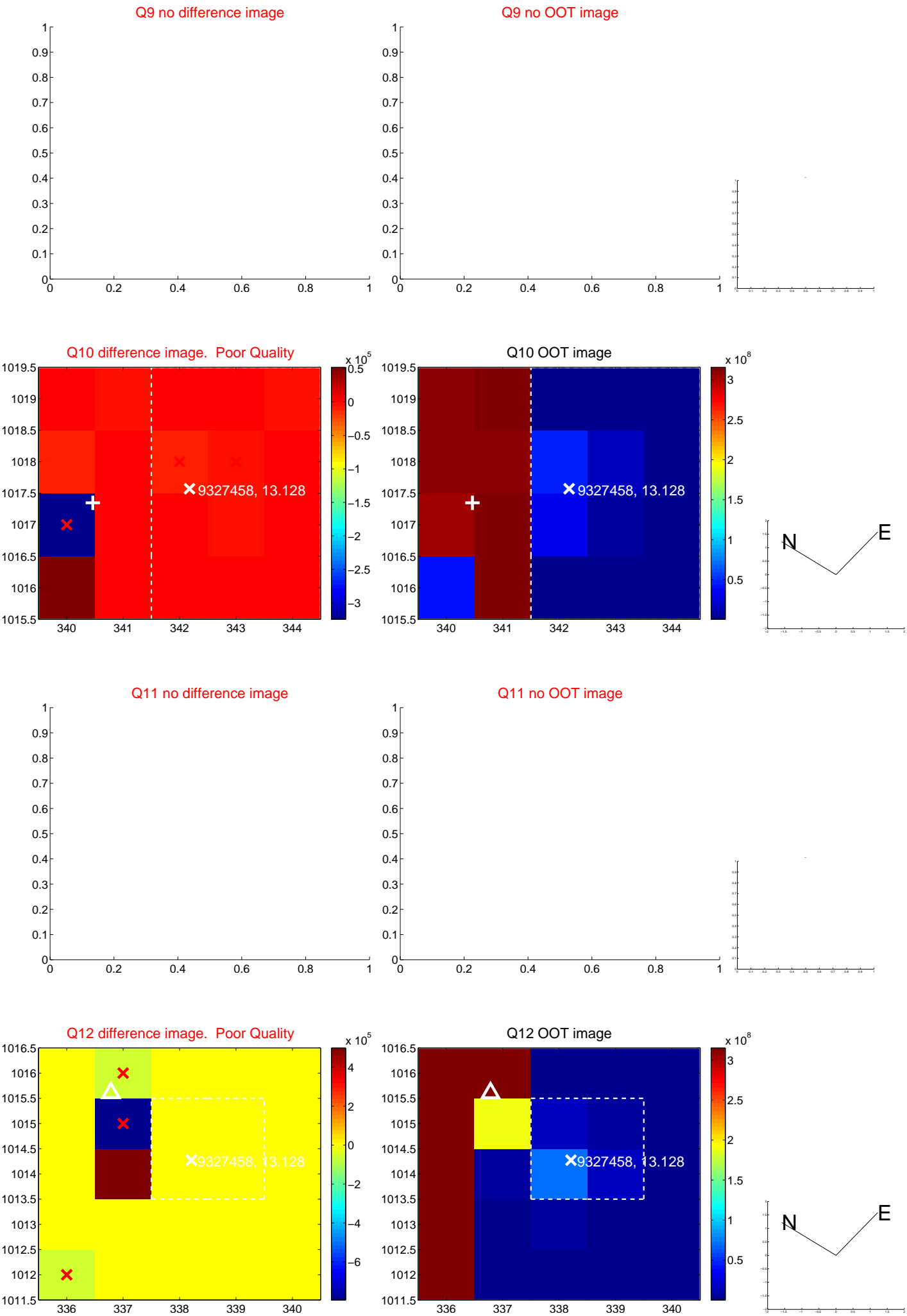
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



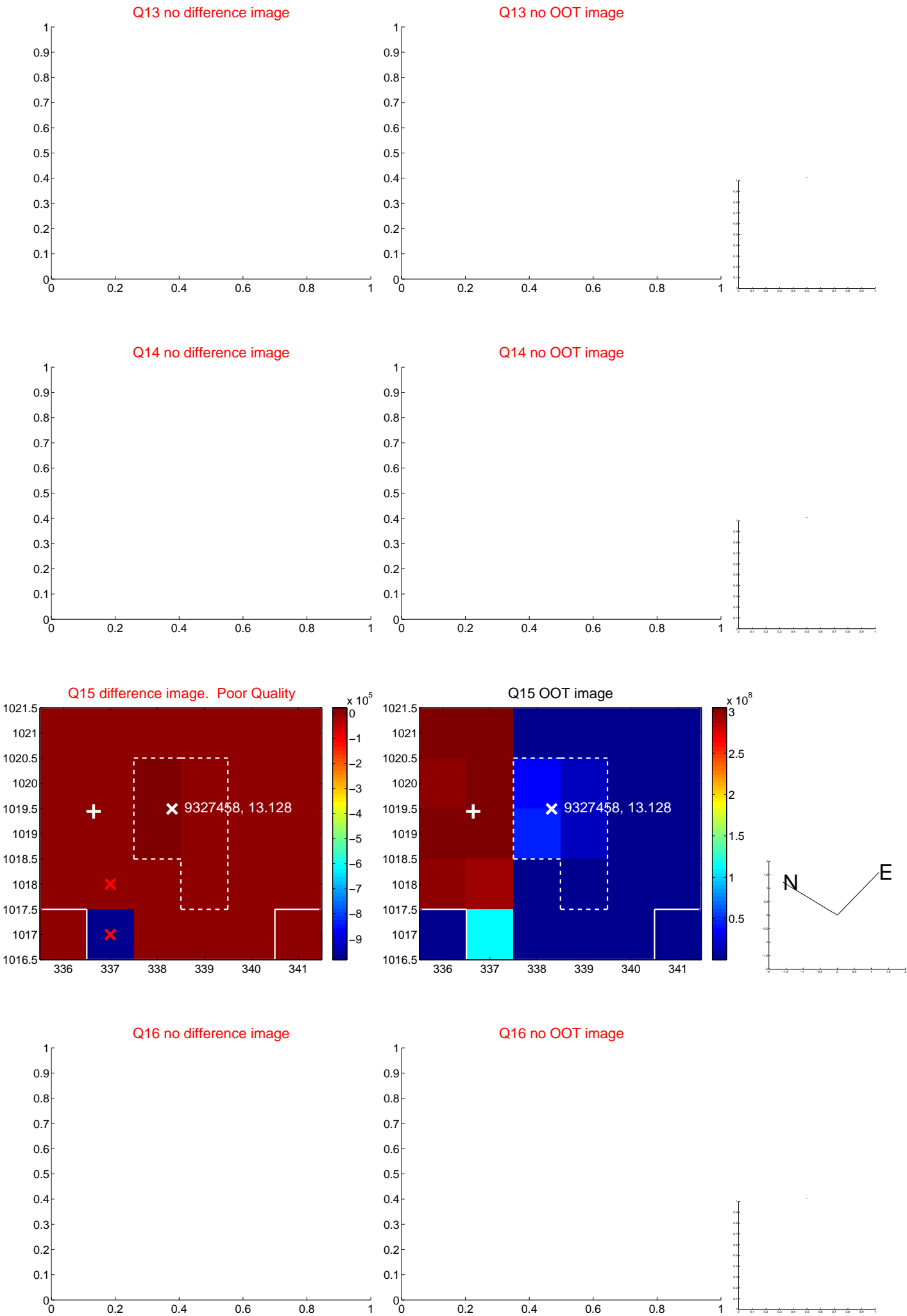
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



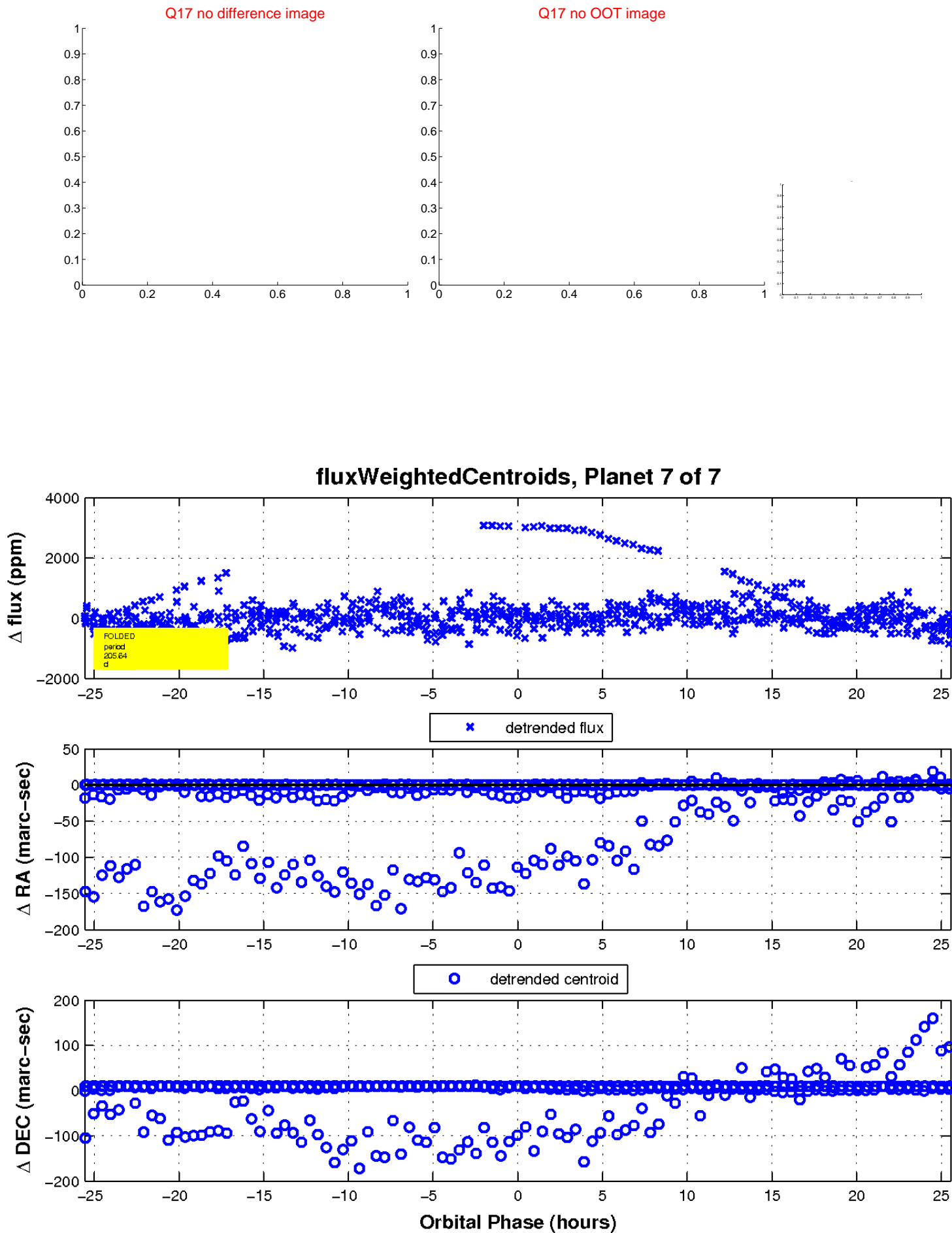
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

