

KIC 007456460

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})
007456460-01	OBS	No	248.515972	247.255759	430.9	13.428	32.4	3.1	0.96	5986	2.06	1.77
007456460-02	OBS	No	251.249870	359.184866	4645.1	27.370	34.4	23.8	0.96	5986	11.92	1.75
007456460-03	OBS	No	605.180747	137.988432	2695.9	15.000	20.5	-1.0	0.96	5986	4.95	0.54
007456460-04	OBS	No	557.741942	236.680912	2106.5	14.980	15.4	12.3	0.96	5986	4.84	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007456460-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
007456460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

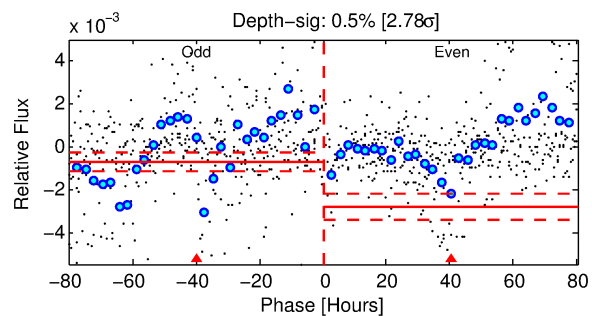
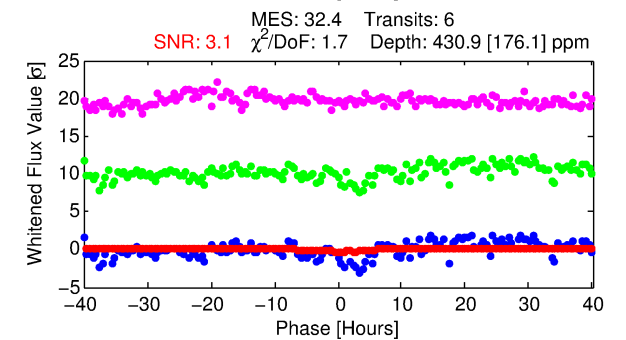
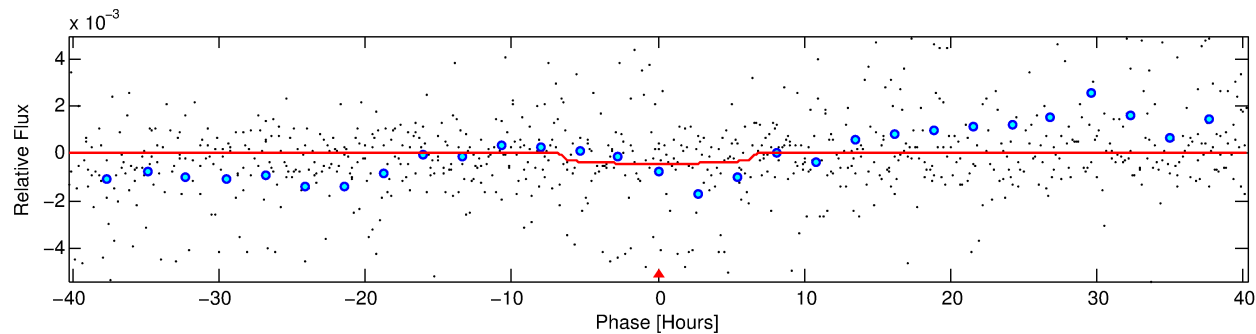
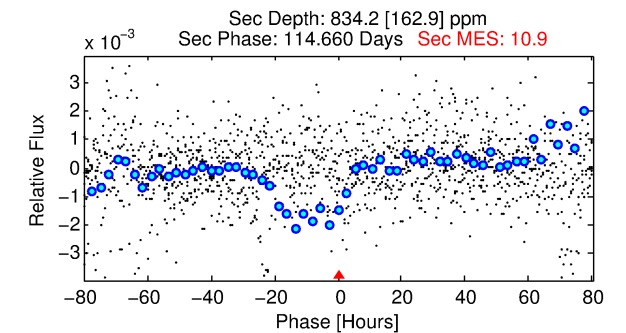
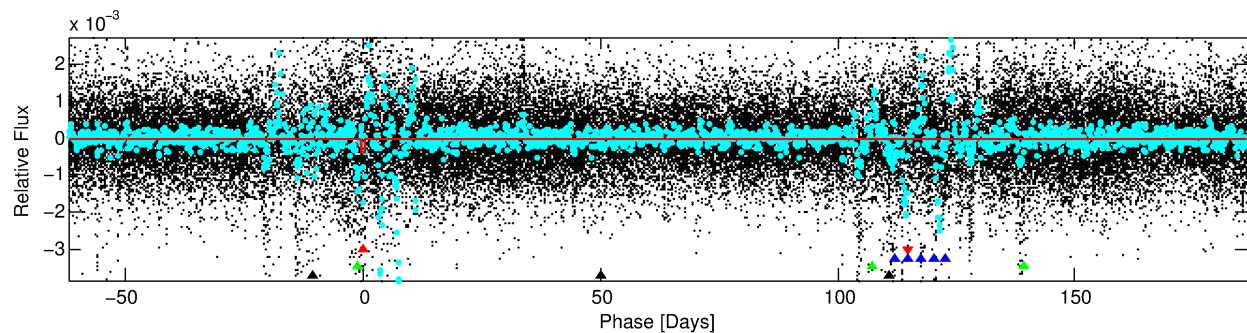
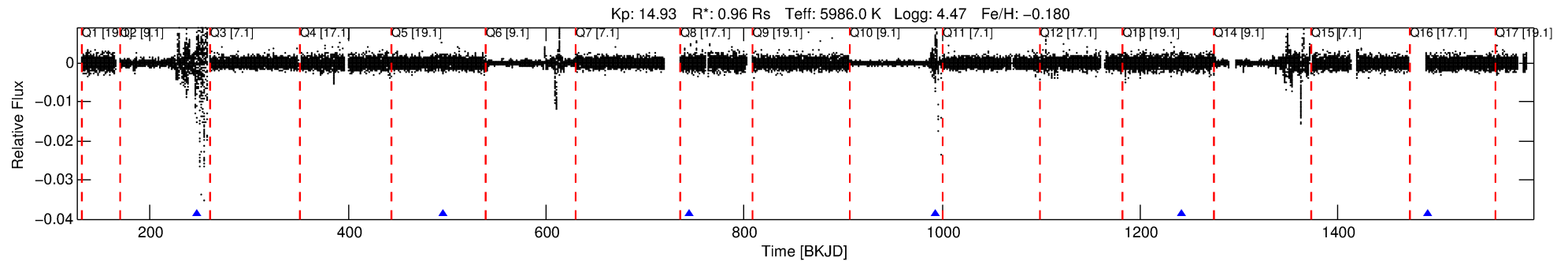
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007456460-01

No Significant Match Found

DV One-Page Summary

KIC: 7456460 Candidate: 1 of 4 Period: 248.516 d



DV Fit Results:

Period = 248.51597 [0.01970] d
Epoch = 247.2558 [0.0638] BKJD
Rp/R* = 0.0197 [0.0392]
a/R* = 120.67 [1142.59]
b = 0.56 [11.75]
Seff = 1.77 [0.72]
Teq = 294 [30] K
Rp = 2.06 [4.15] Re
a = 0.7701 [0.2060] AU
Ag = 64449.71 [258241.74] [0.25 σ]
Teffp = 7248 [7231] K [0.96 σ]

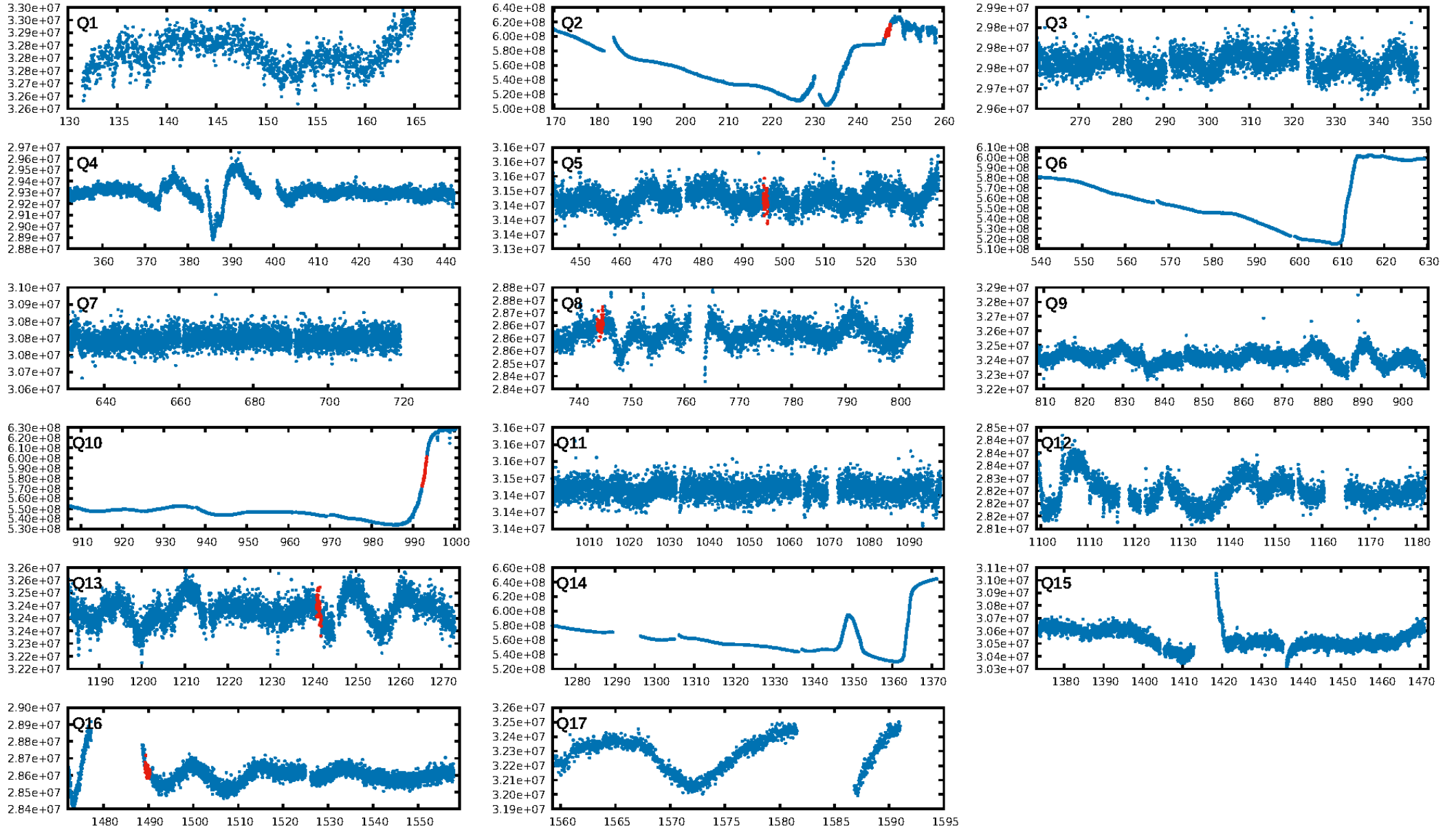
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 96.9% [2.15 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.1%
Bootstrap-pfa: 1.82e-14
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -6.955
Centroid-sig: N/A
Centroid-so: 0.446 arcsec [2.98 σ]
OotOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-rm: N/A
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [4/4]

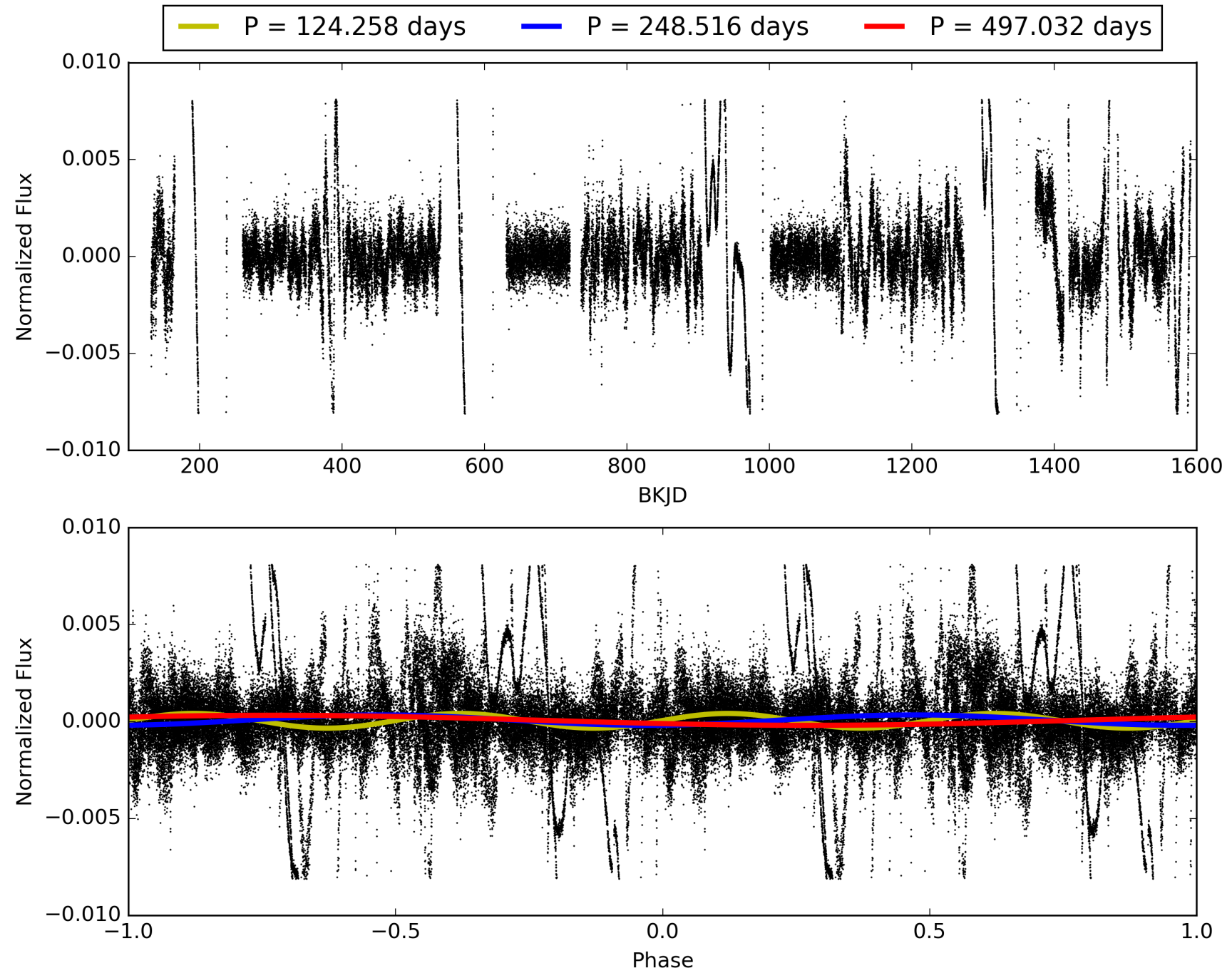
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:16:26 Z

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

TCE 007456460-01, PDC Light Curves

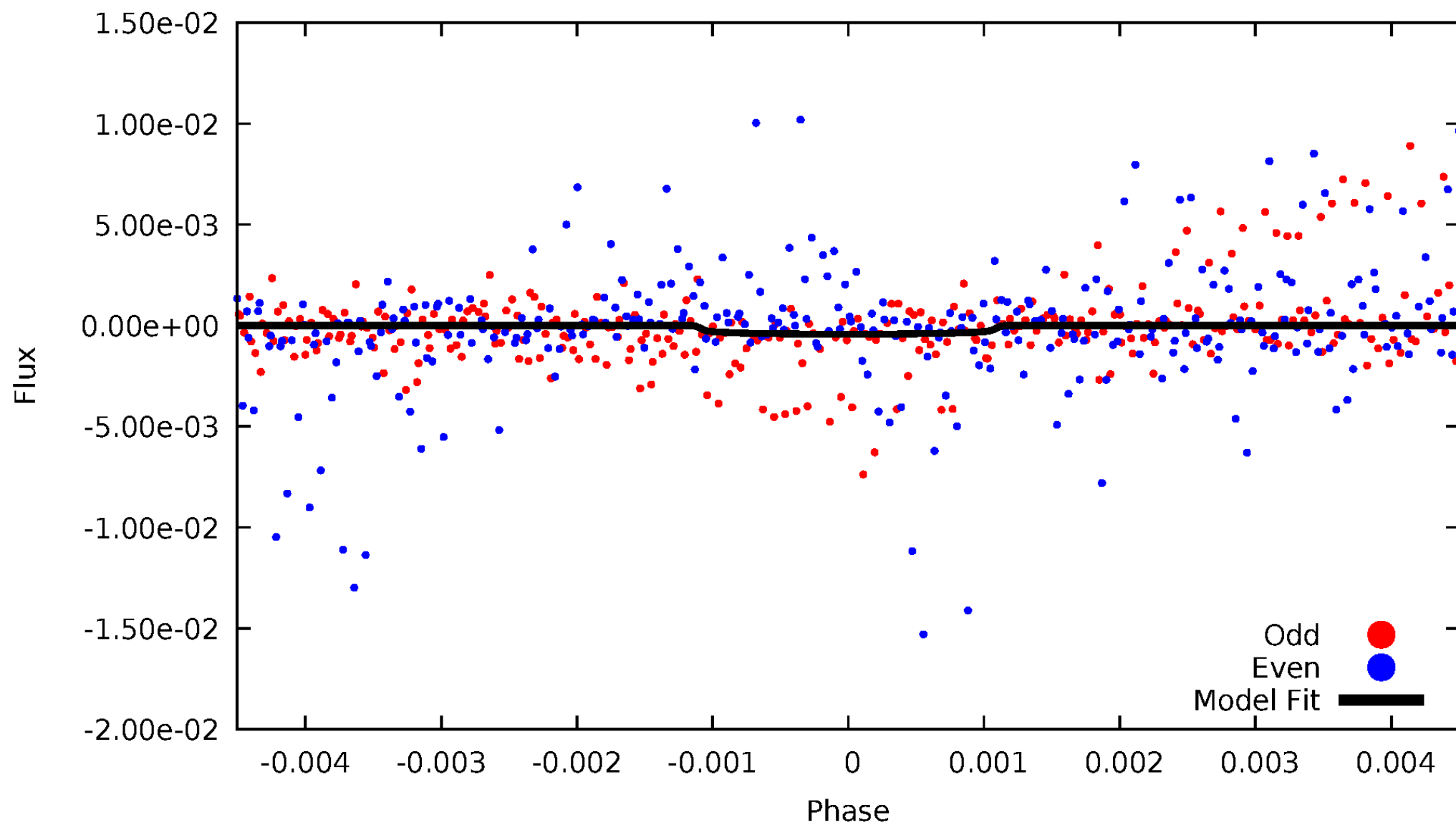


TCE 007456460-01



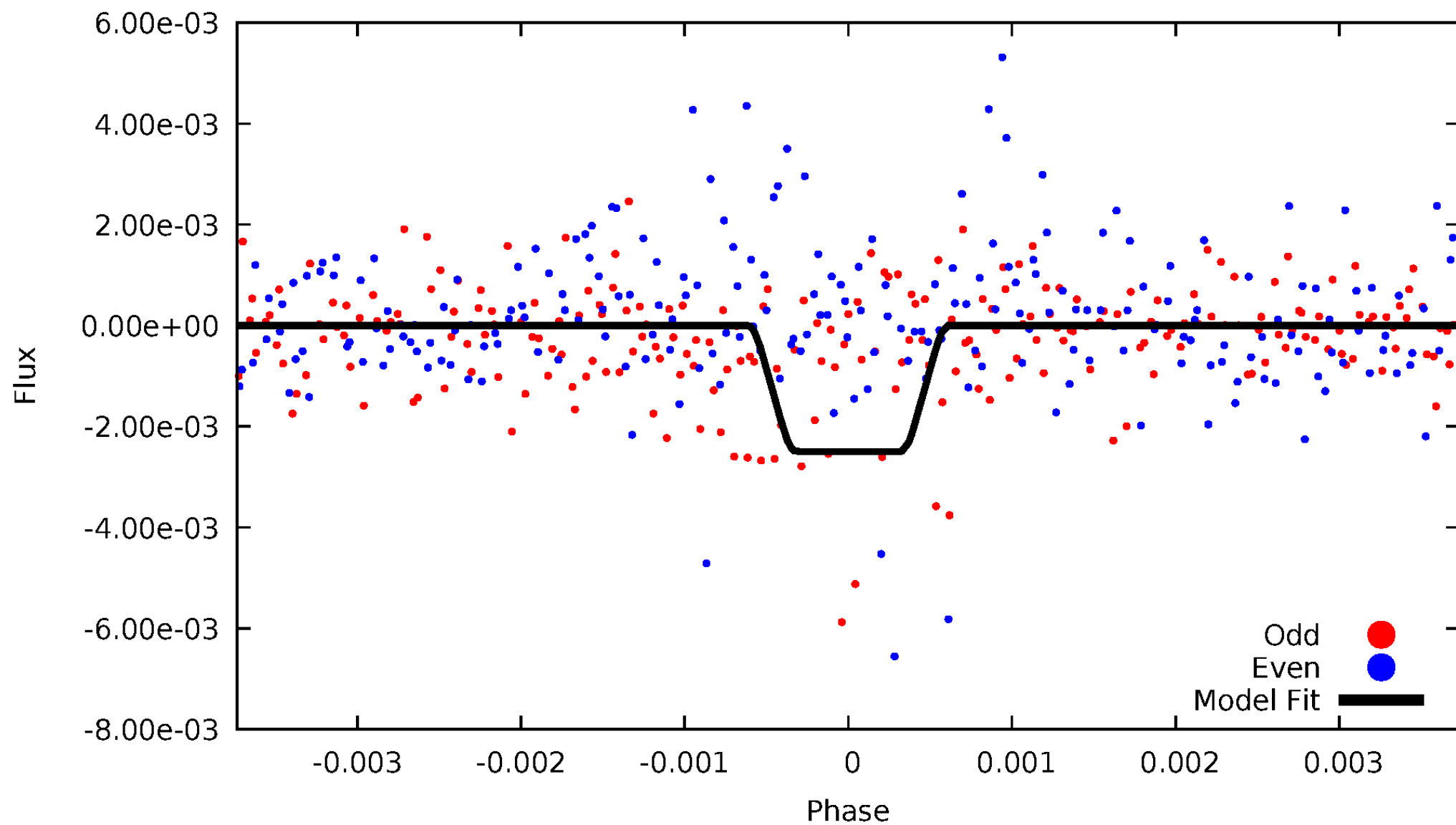
DV Odd/Even

TCE 007456460-01



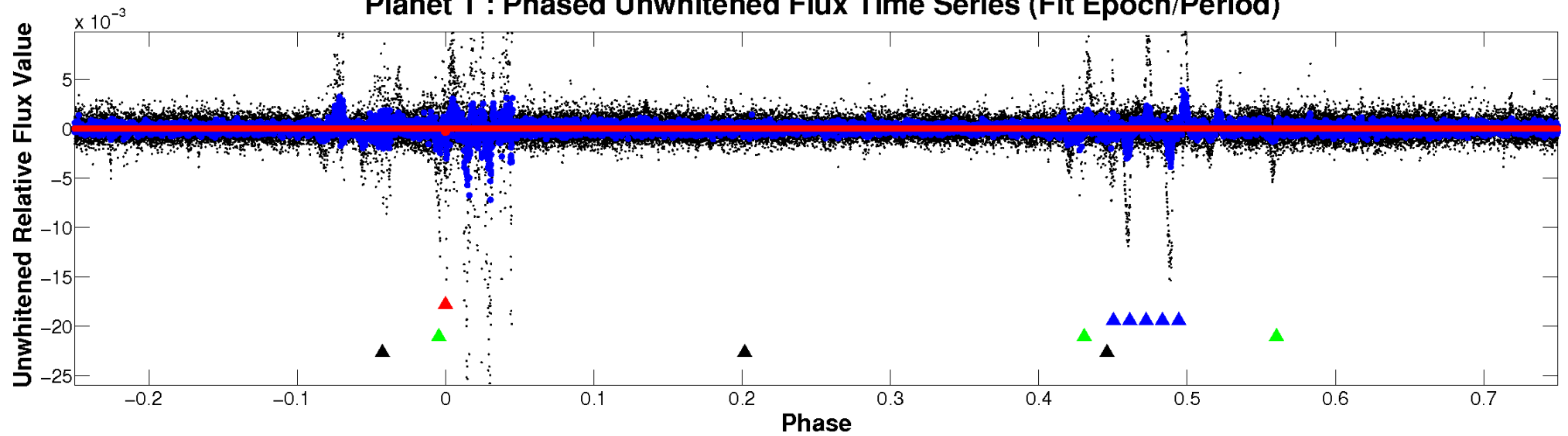
ALT Odd/Even

TCE 007456460-01

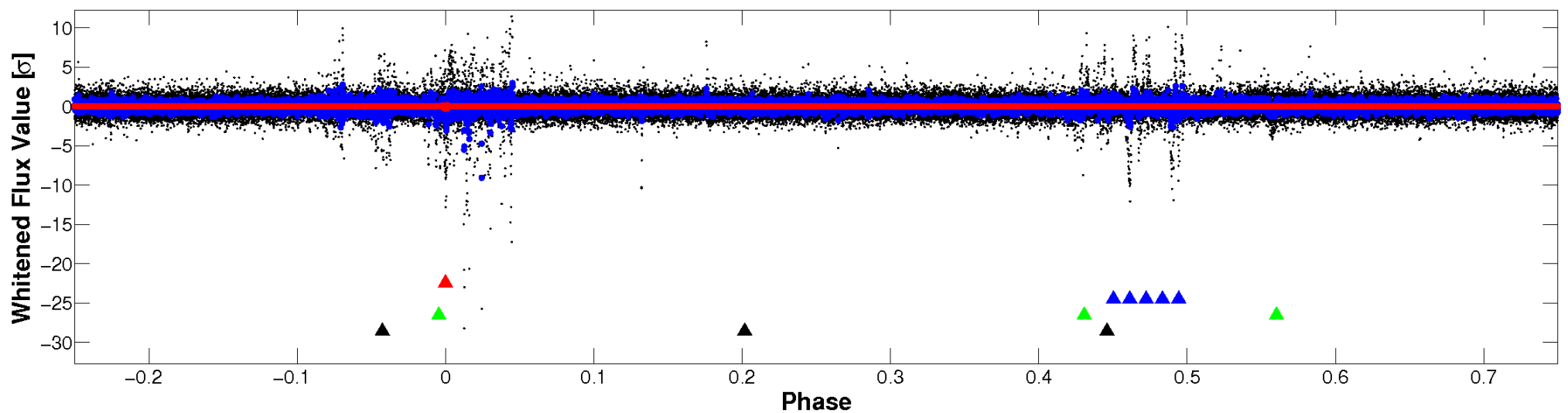


Non-Whitened Vs. Whitened Light Curve

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

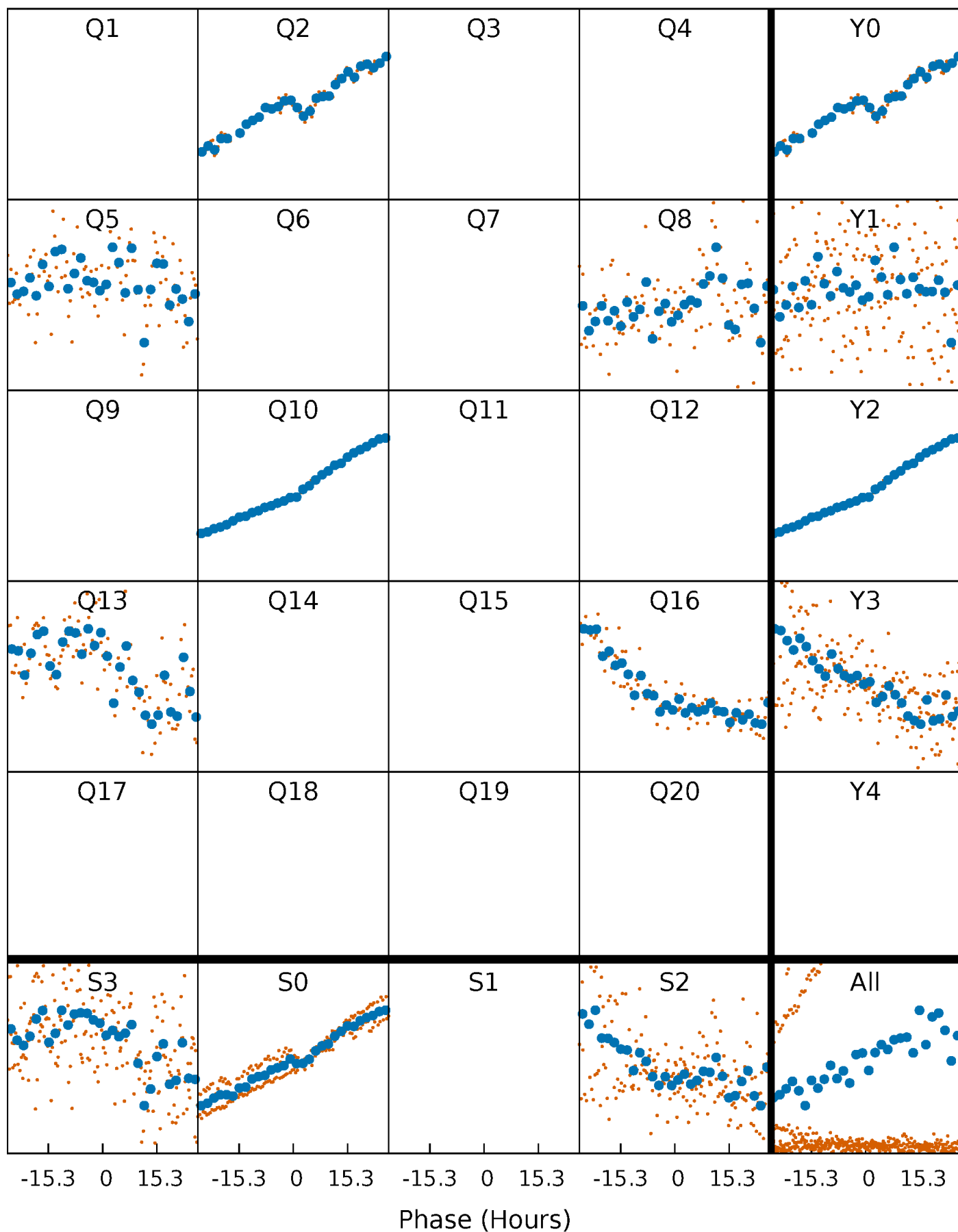


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



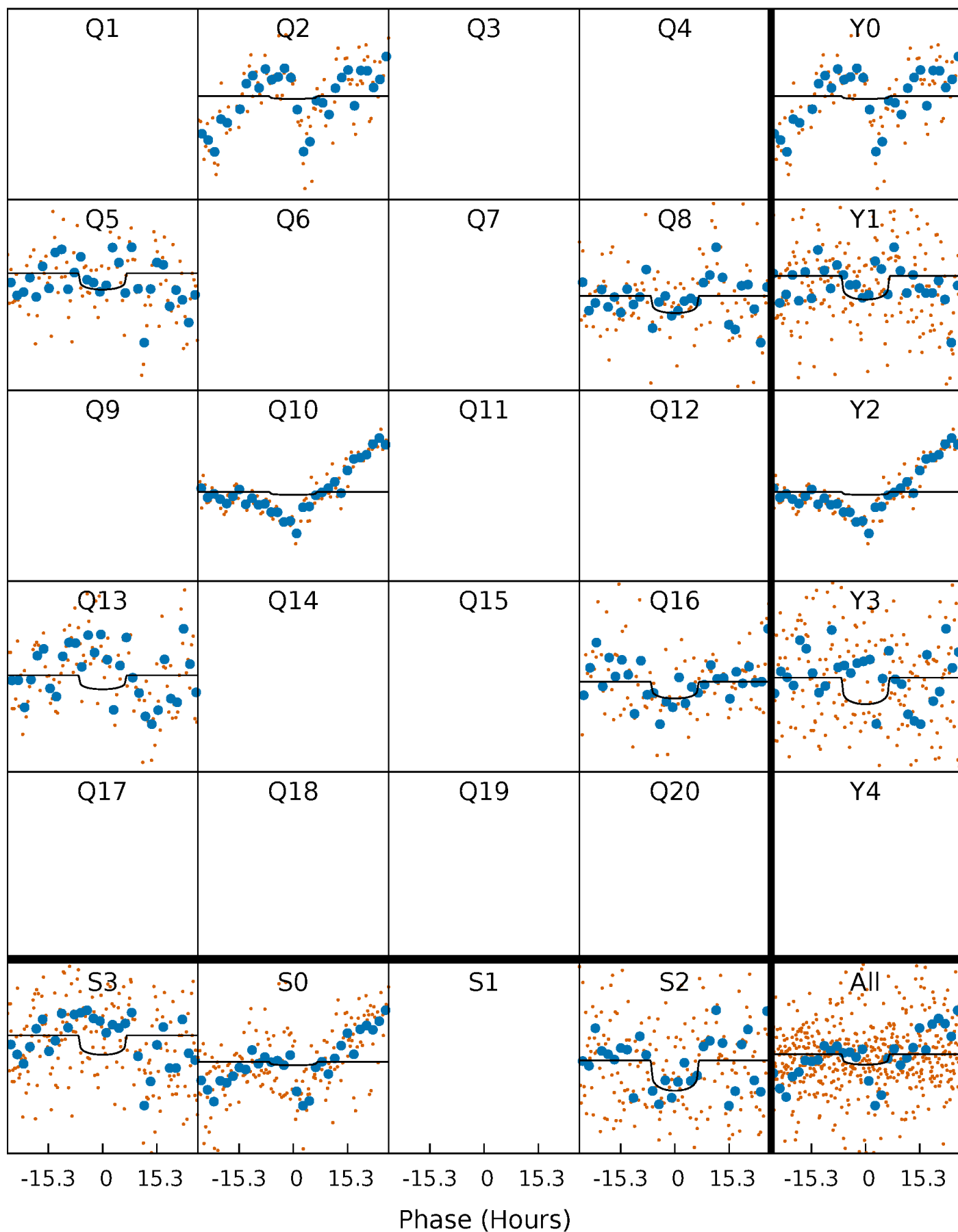
PDC Quarter-Phased Transit Curves

TCE 007456460-01 P=248.515972 Days $T_0=247.255759$ (BKJD)



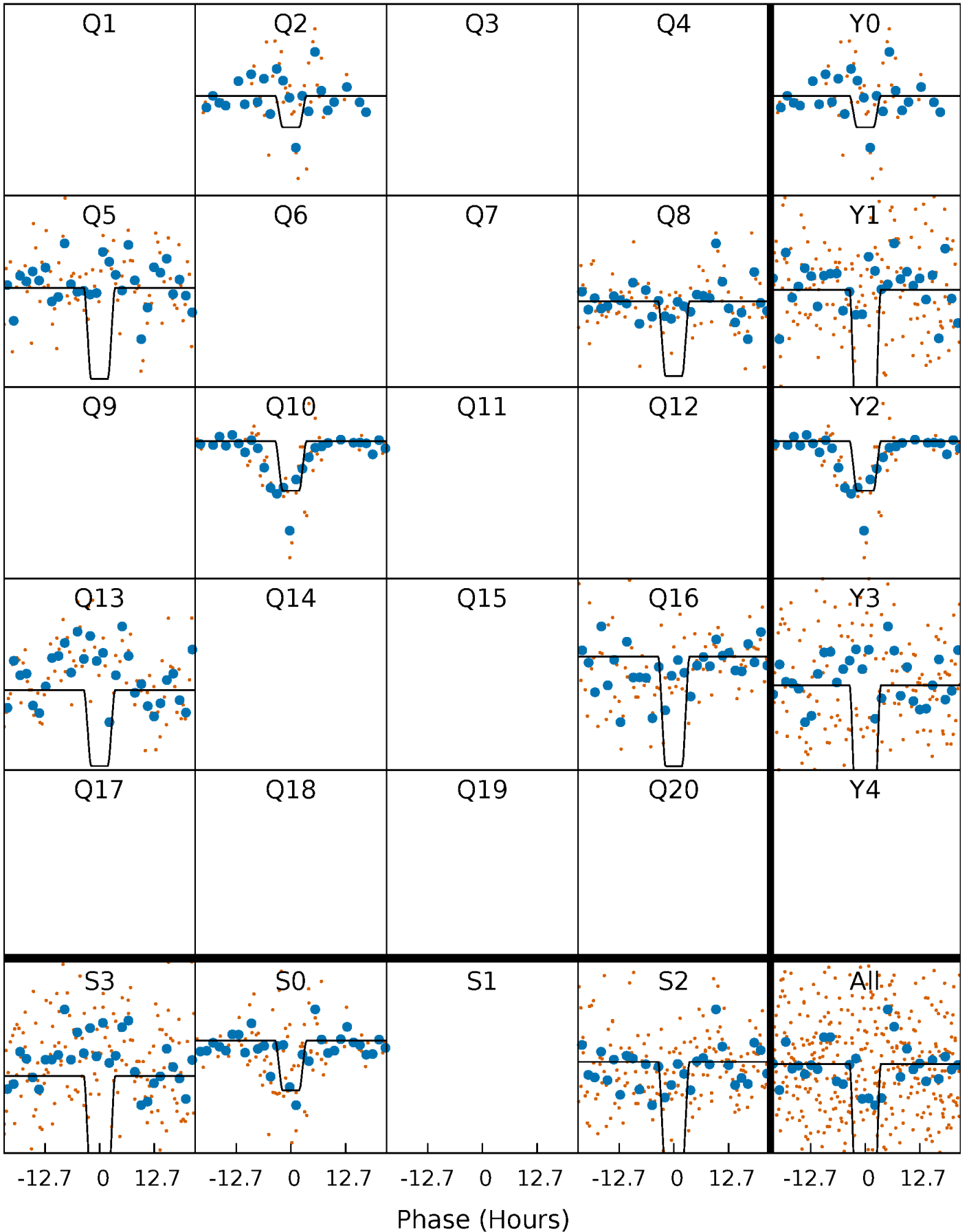
DV Quarter-Phased Transit Curves

TCE 007456460-01 P=248.515972 Days $T_0=247.255759$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

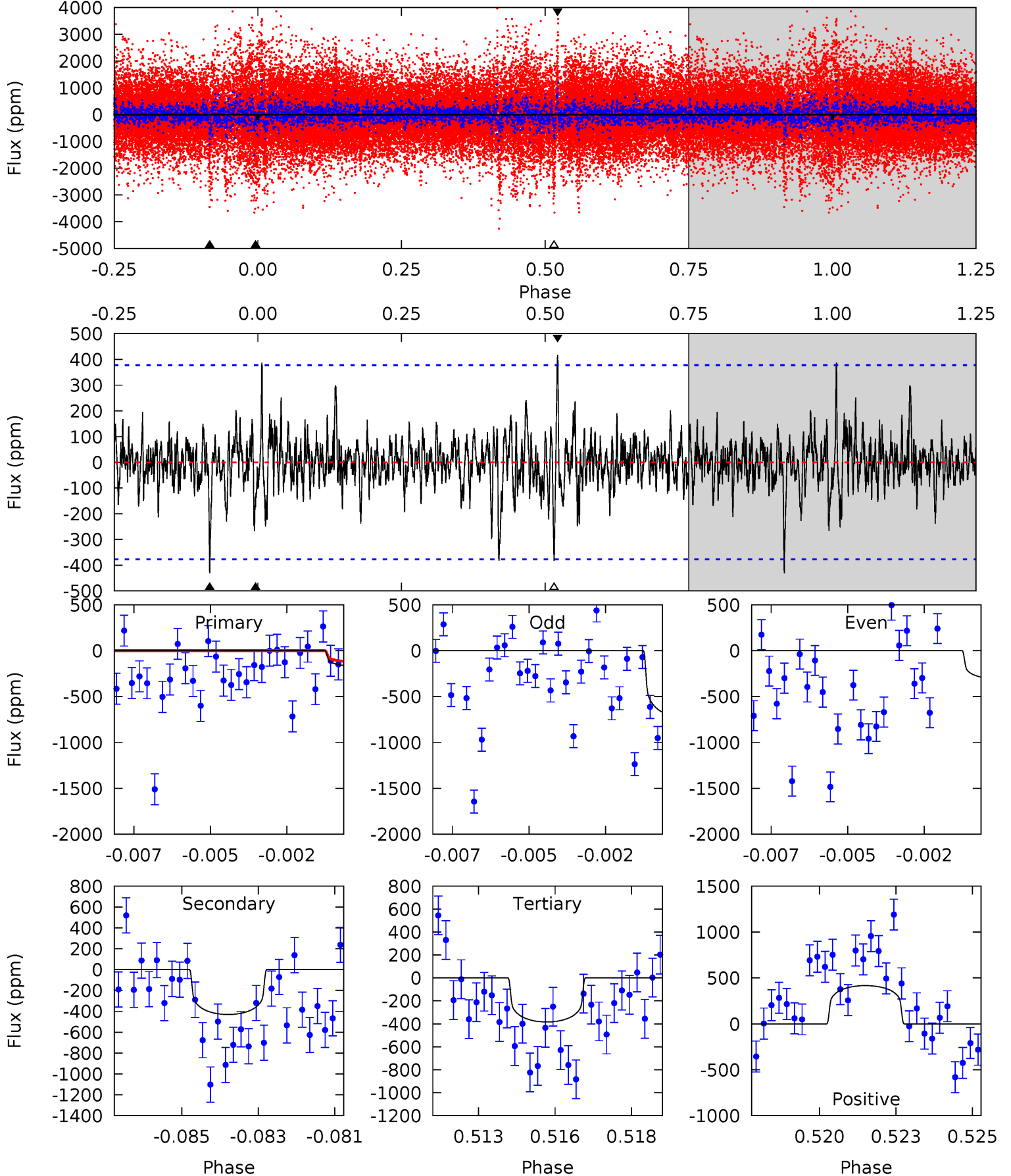
TCE 007456460-01 P=248.506146 Days $T_0=247.322715$ (BKJD)



DV Model-Shift Uniqueness Test

007456460-01, P = 248.515972 Days, E = 247.255759 Days

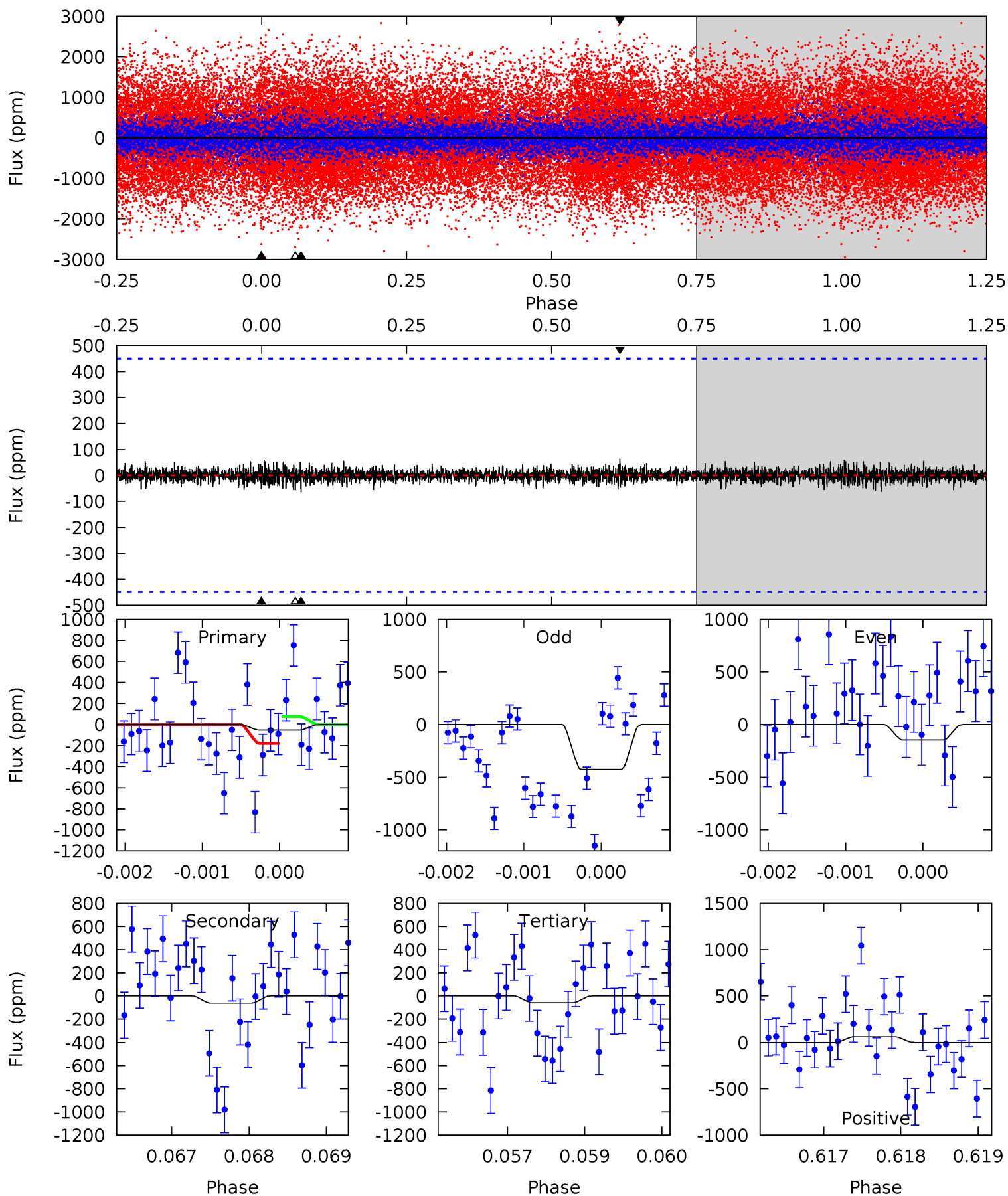
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.44	6.06	5.40	5.85	5.30	3.05	1.16	-2.96	-3.41	0.66	0.21	2.78	2.25	0.49	1.43



Alt Model-Shift Uniqueness Test

007456460-01, P = 248.506146 Days, E = 247.322715 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.64	0.76	0.70	0.75	5.42	3.23	0.19	-0.07	-0.11	0.06	0.01	1.75	1.27	0.50	0.62



Stellar Parameters For KIC 007456460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5986^{+179}_{-197}	$4.471^{+0.070}_{-0.210}$	$-0.180^{+0.300}_{-0.300}$	$0.956^{+0.306}_{-0.102}$	$0.986^{+0.131}_{-0.131}$	$1.587^{+0.454}_{-0.837}$
	+3%/-3%	+2%/-5%	+167%/-167%	+32%/-11%	+13%/-13%	+29%/-53%
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 007456460-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-431 ± 71	$3.72^{+3.59}_{-2.50}$	417^{+29}_{-21}	4786^{+3518}_{-1065}	10173^{+82553}_{-7632}
Alt.	-63 ± 83	$5.88^{+4.36}_{-3.64}$	417^{+29}_{-20}	2860^{+971}_{-5240}	437^{+2752}_{-539}

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

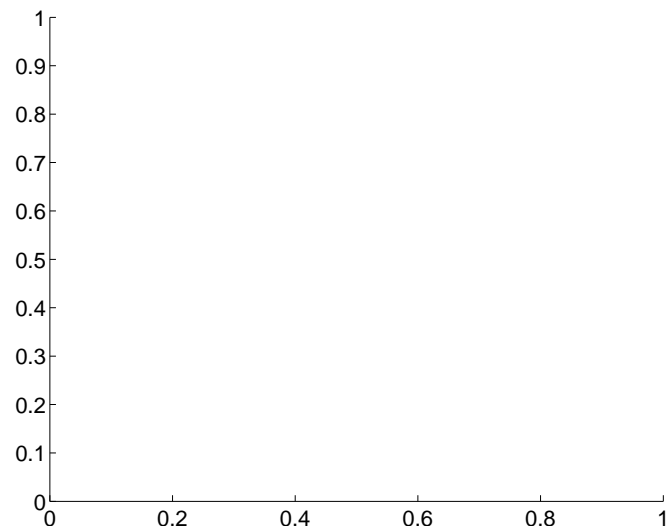
Supplemental centroid analysis for 007456460-01. Kepler magnitude: 14.93. Transit SNR 3.11

There are 0 quarters with good PRF difference image offsets

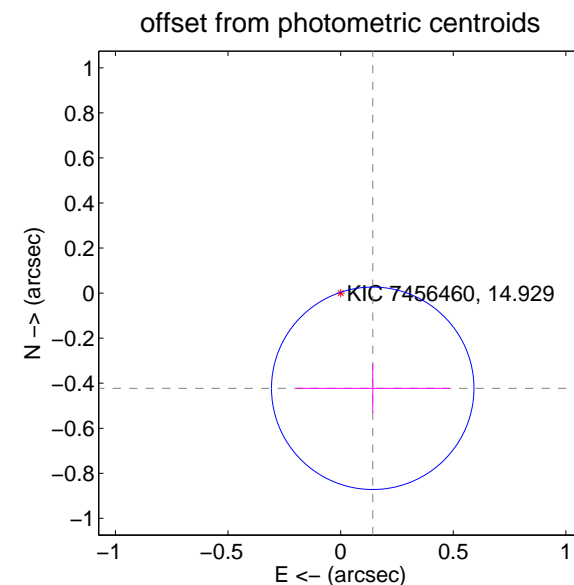
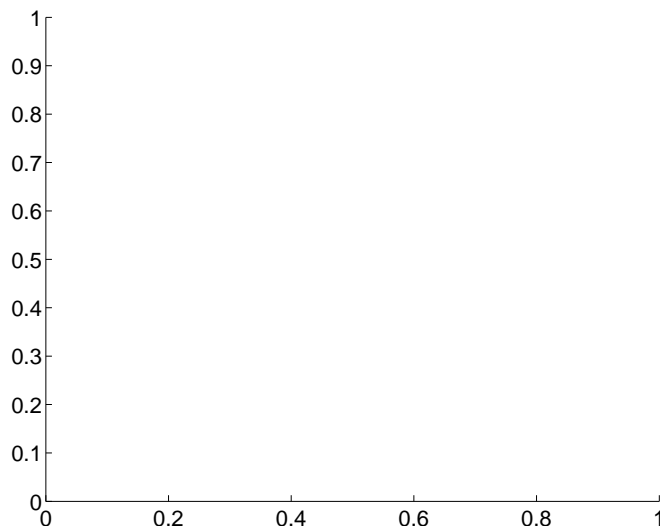
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	0.45 ± 0.15	2.98	-0.14 ± 0.34	-0.42 ± 0.11

There is no PRF-fit offset from OOT-fit

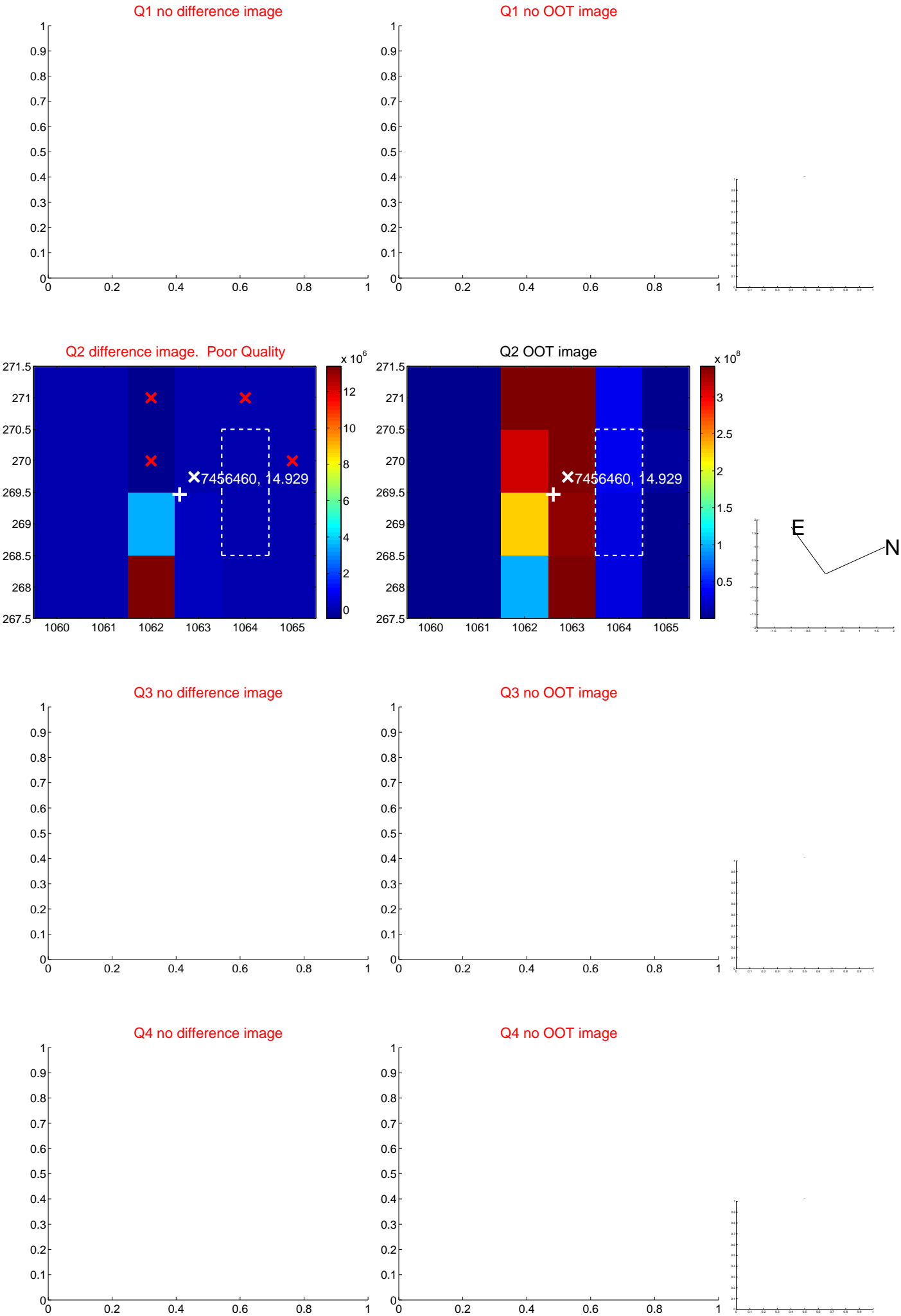


There is no PRF-fit offset from KIC

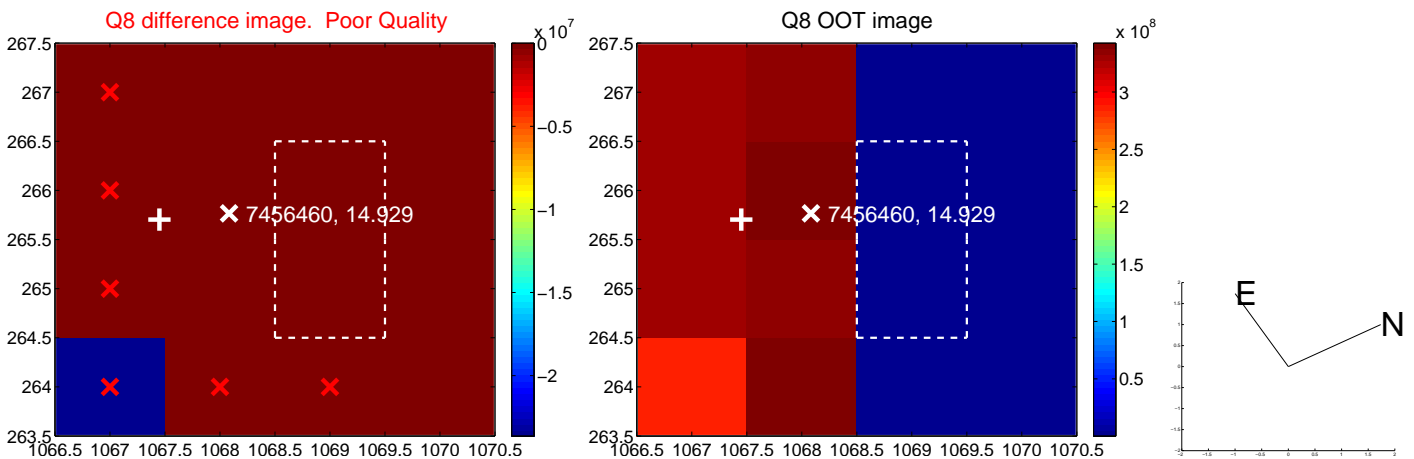
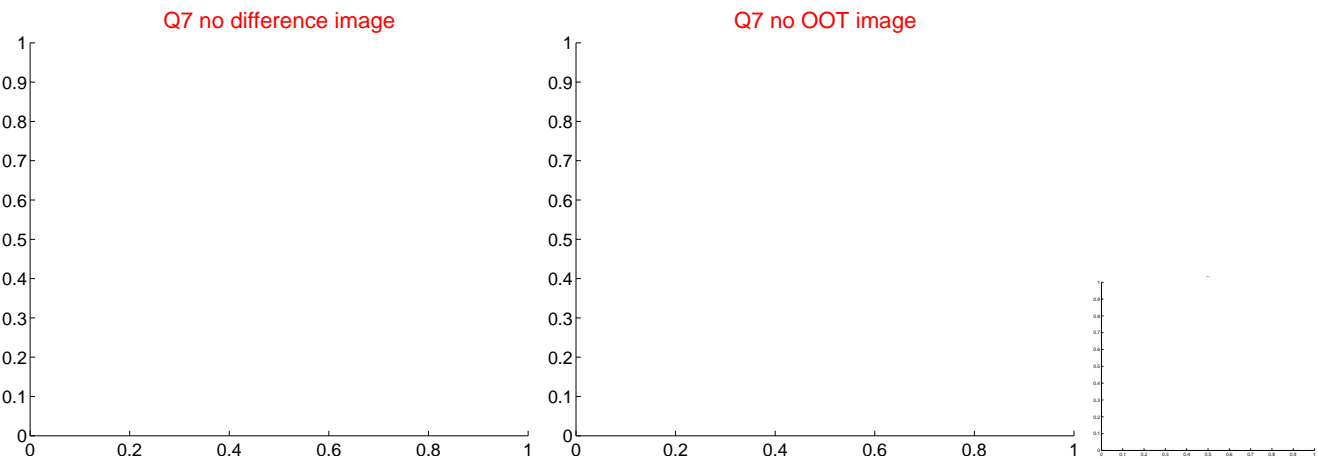
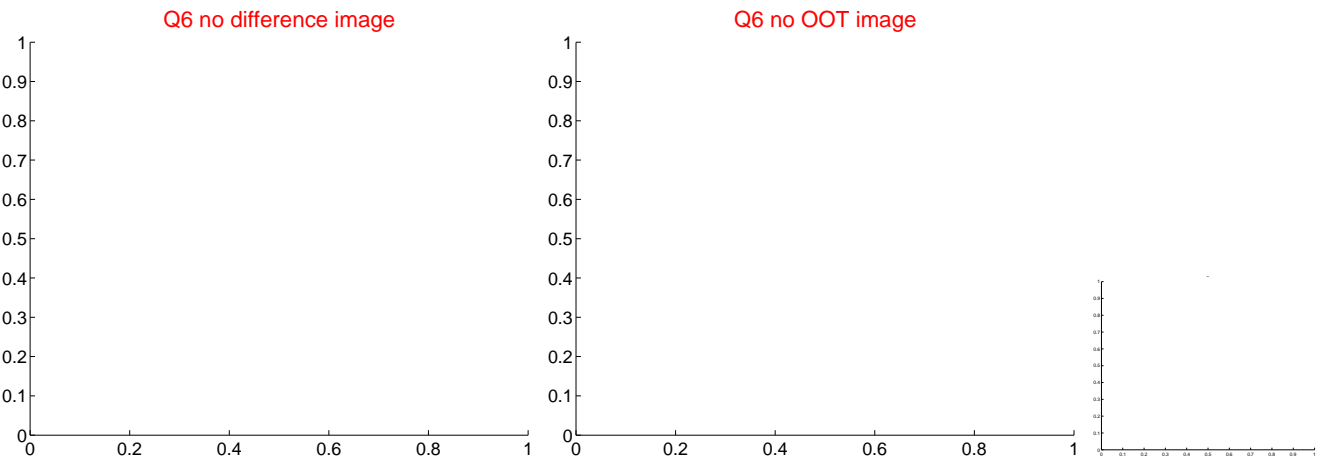
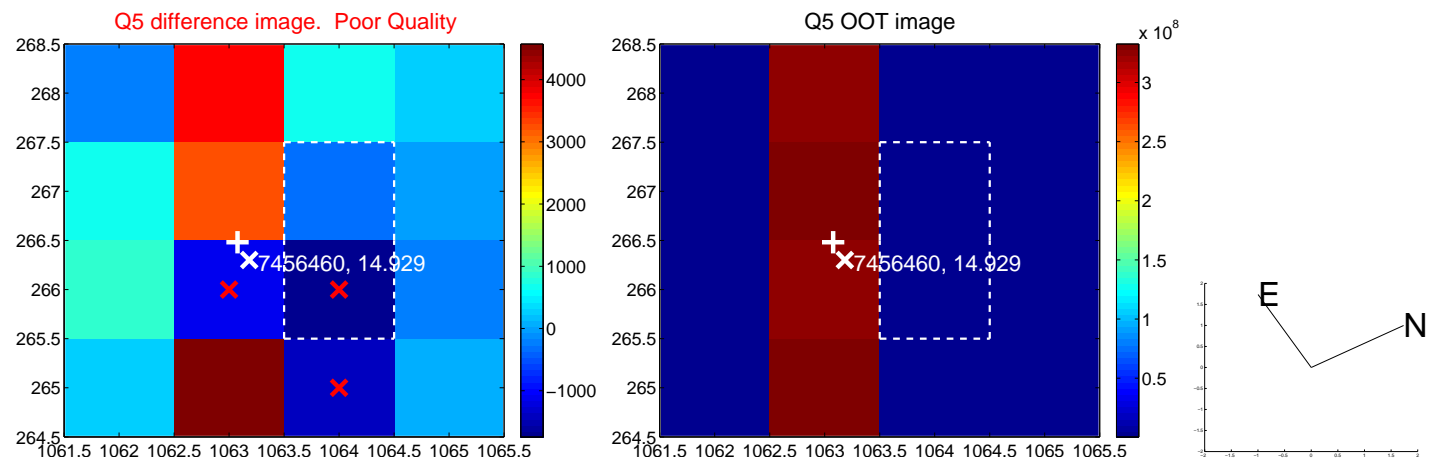


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

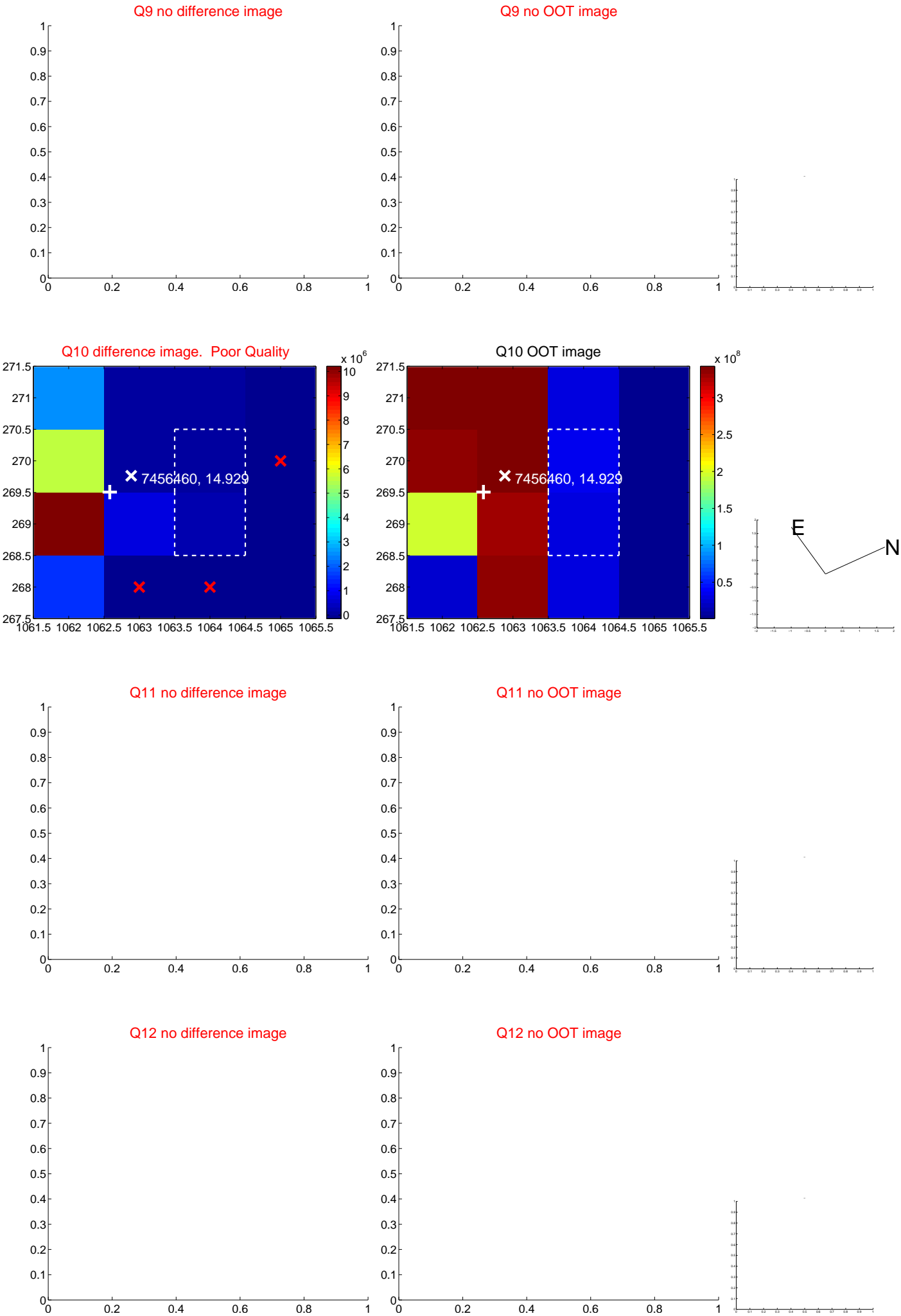
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



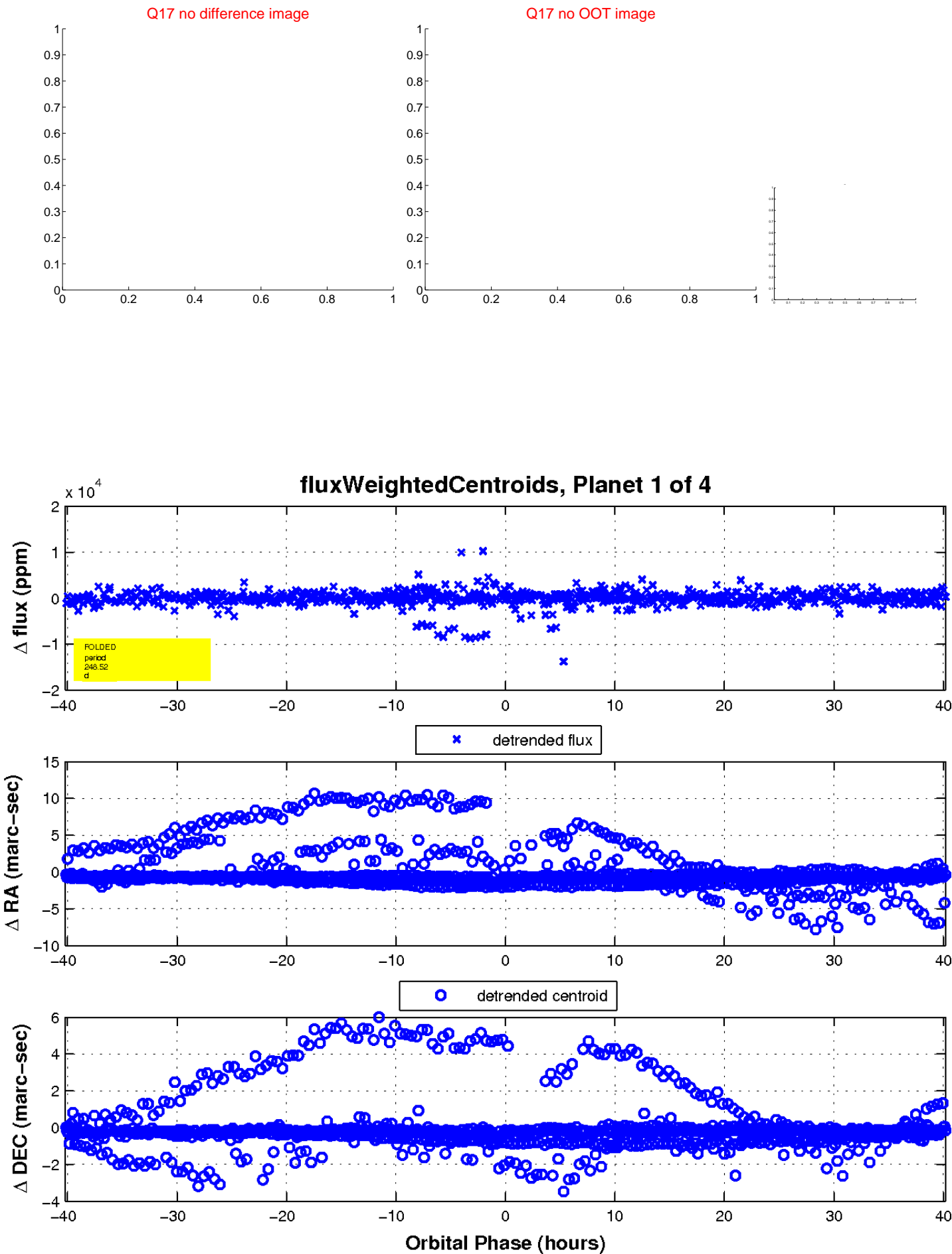
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

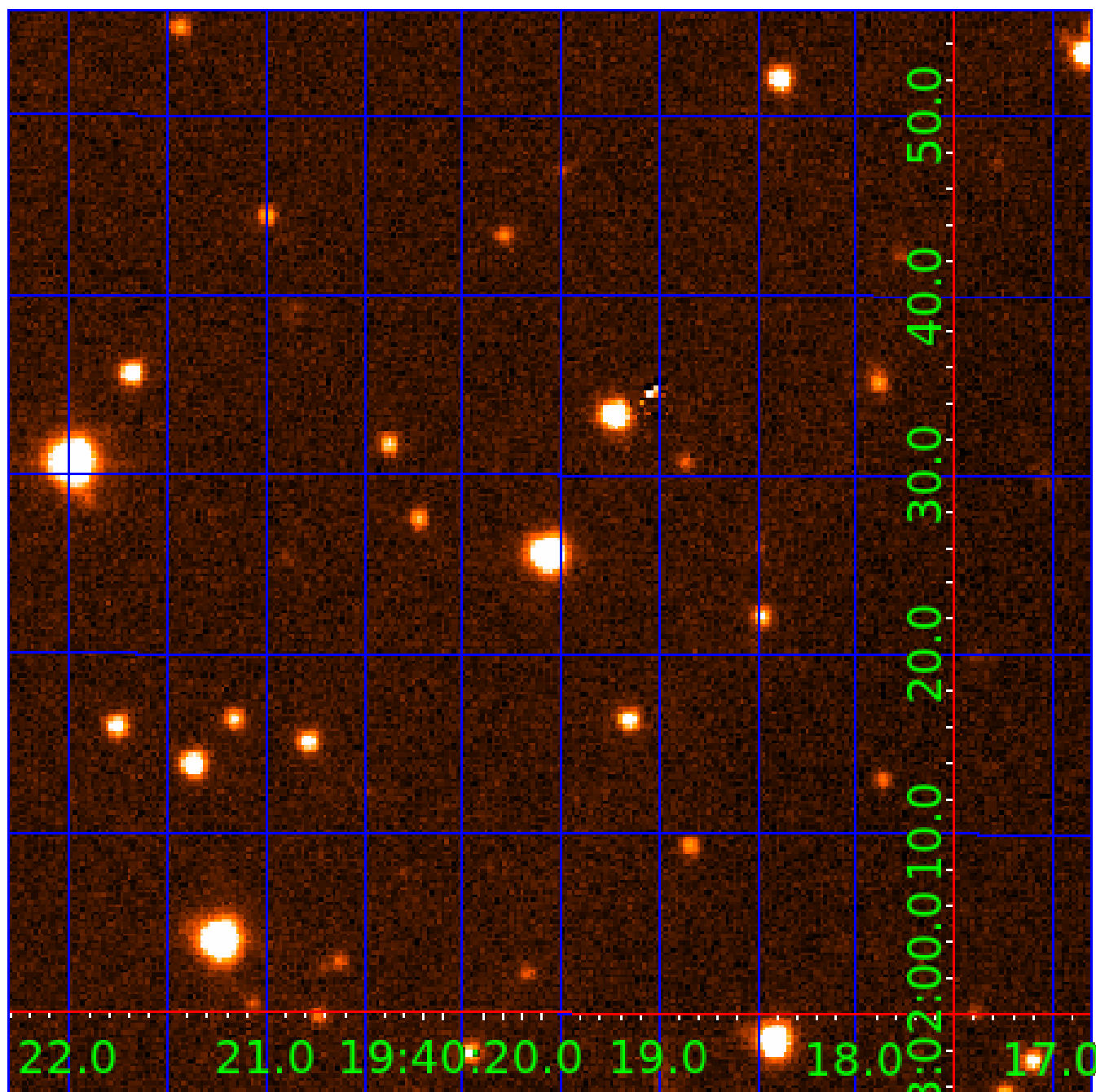


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007456460

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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007456460-04	OBS	No	557.741942	236.680912	2106.5	14.980	15.4	12.3	0.96	5986	4.84	0.60

Robovetter Results

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007456460-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
007456460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

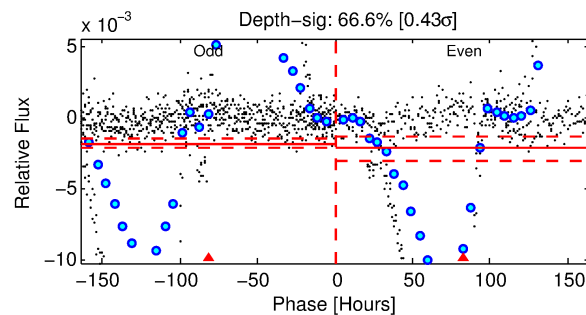
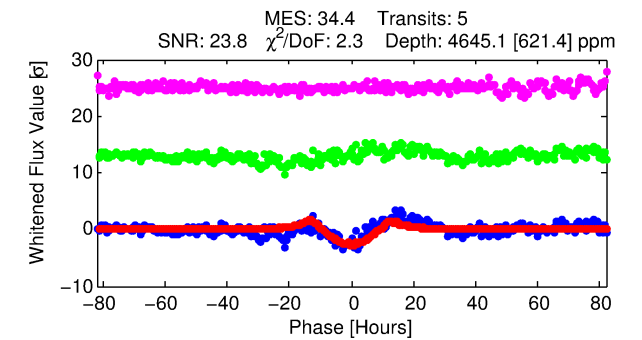
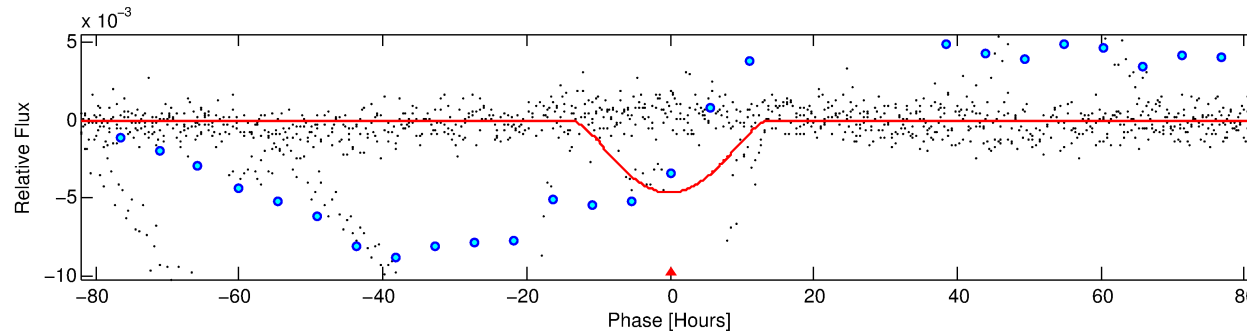
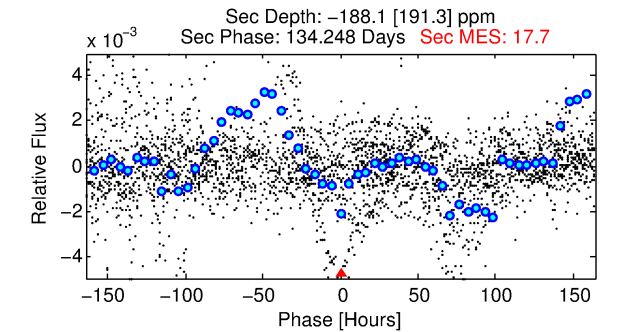
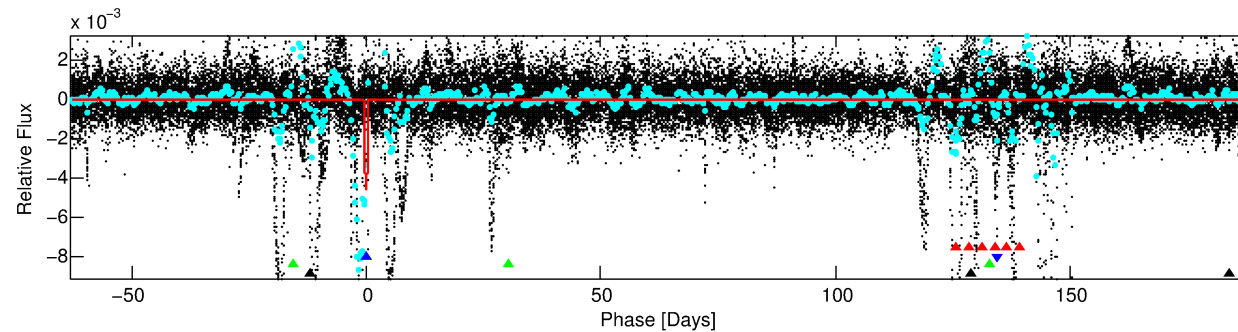
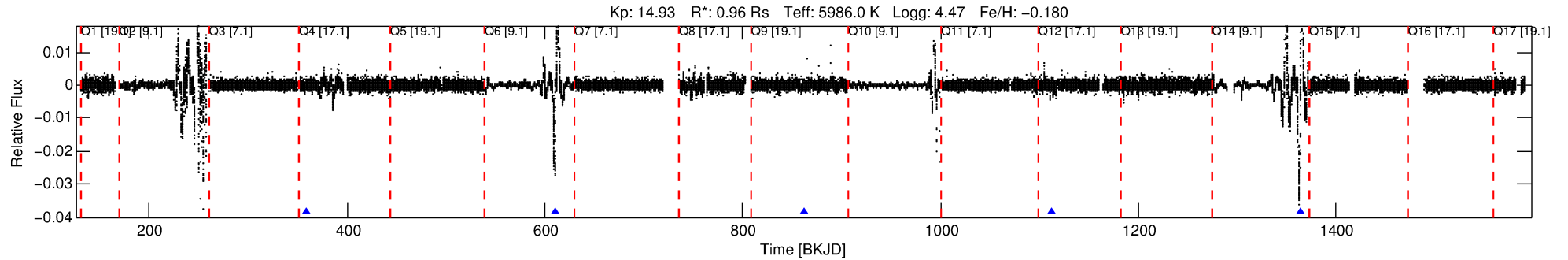
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007456460-02

No Significant Match Found

DV One-Page Summary

KIC: 7456460 Candidate: 2 of 4 Period: 251.250 d



DV Fit Results:

Period = 251.24987 [0.00918] d
Epoch = 359.1849 [0.0202] BKJD
Rp/R* = 0.1143 [0.1101]
a/R* = 34.50 [6.11]
b = 1.00 [0.15]
Seff = 1.75 [0.71]
Teq = 293 [30] K
Rp = 11.92 [12.11] Re
a = 0.7758 [0.2075] AU
Ag = N/A
Teffp = N/A

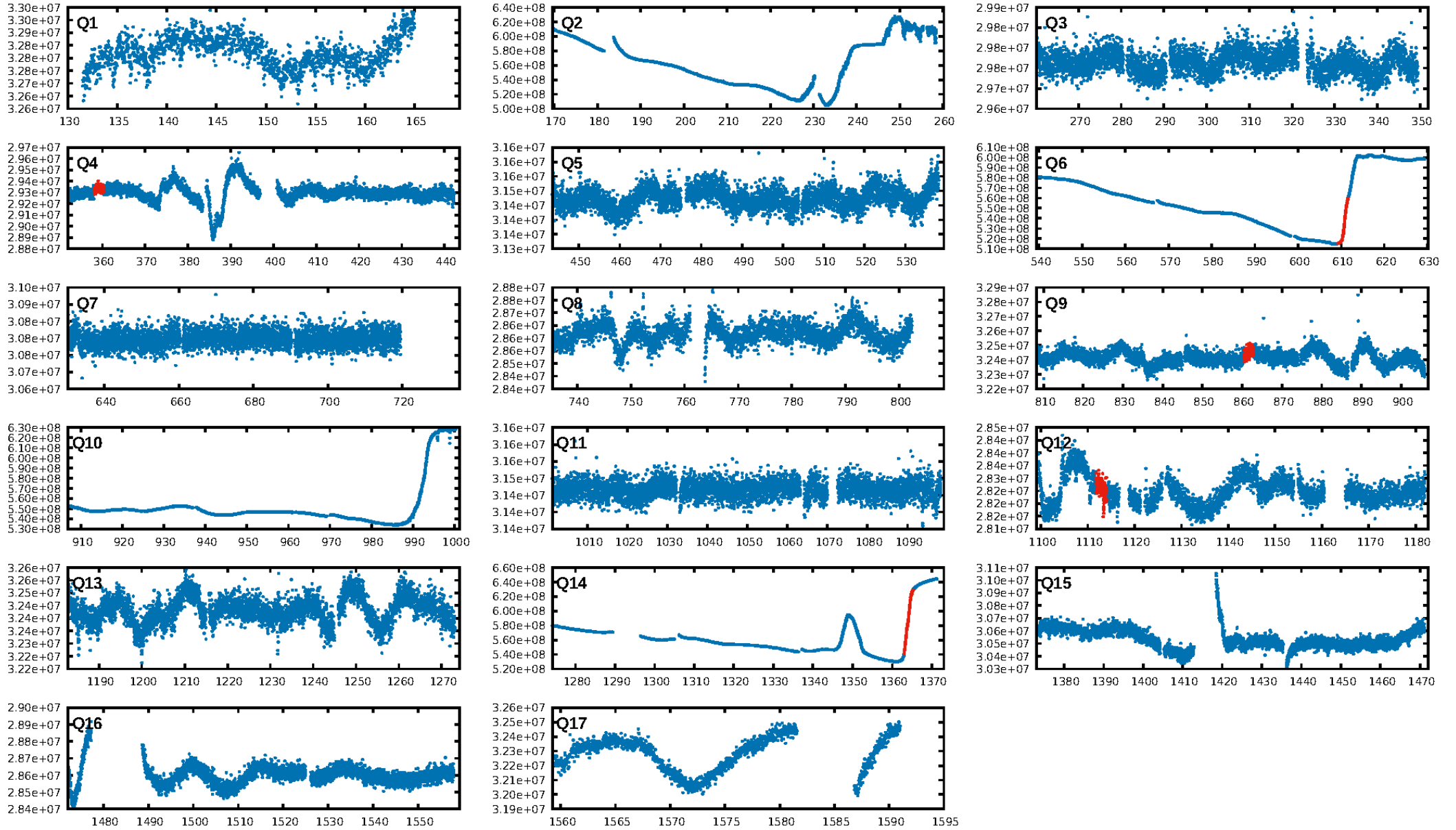
DV Diagnostic Results:

ShortPeriod-sig: 96.9% [2.15σ]
LongPeriod-sig: 100.0% [235.75σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 5.26e-15
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -2.322
Centroid-sig: N/A
Centroid-so: 0.407 arcsec [9.24σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [4/4]

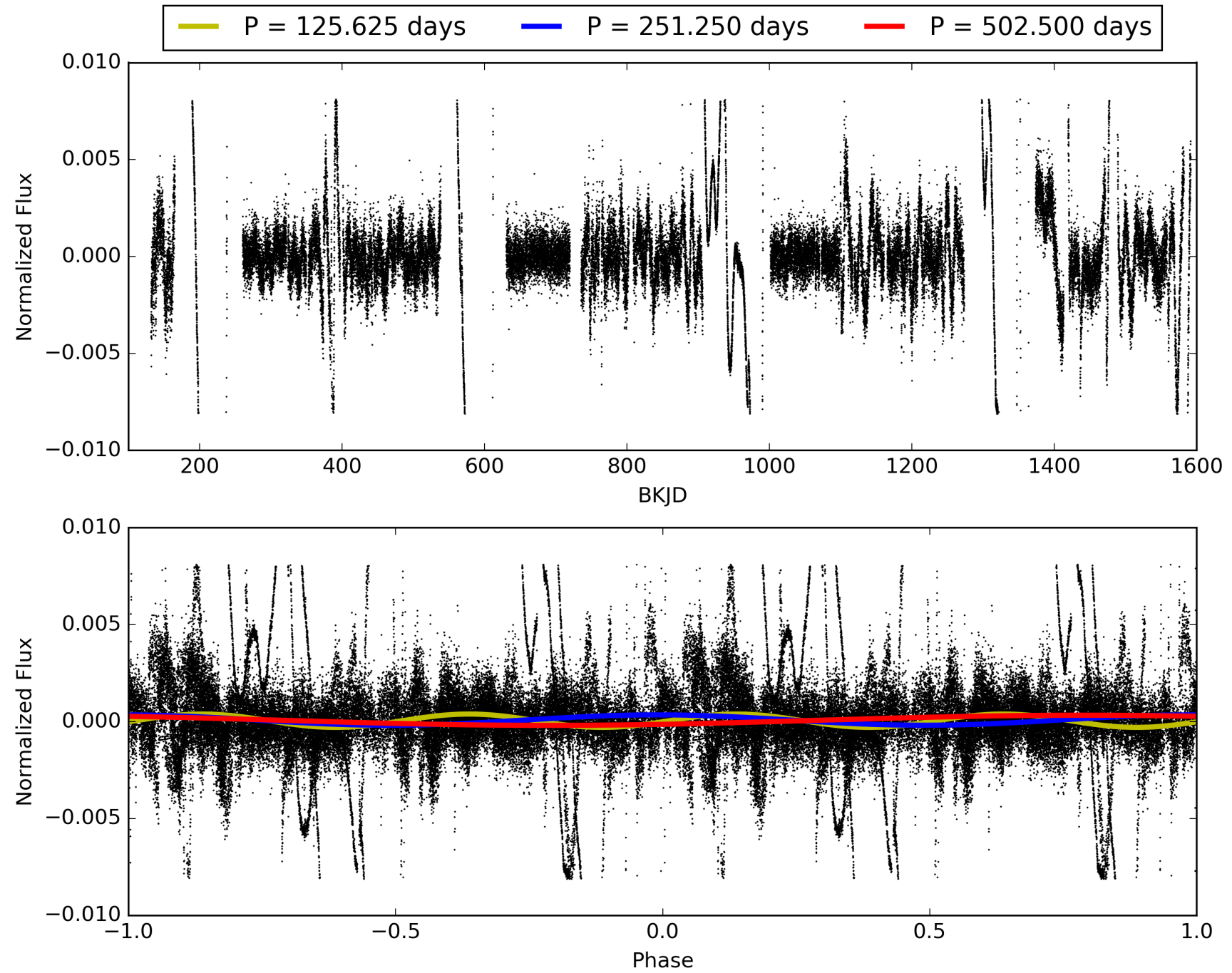
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:16:33 Z

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

TCE 007456460-02, PDC Light Curves

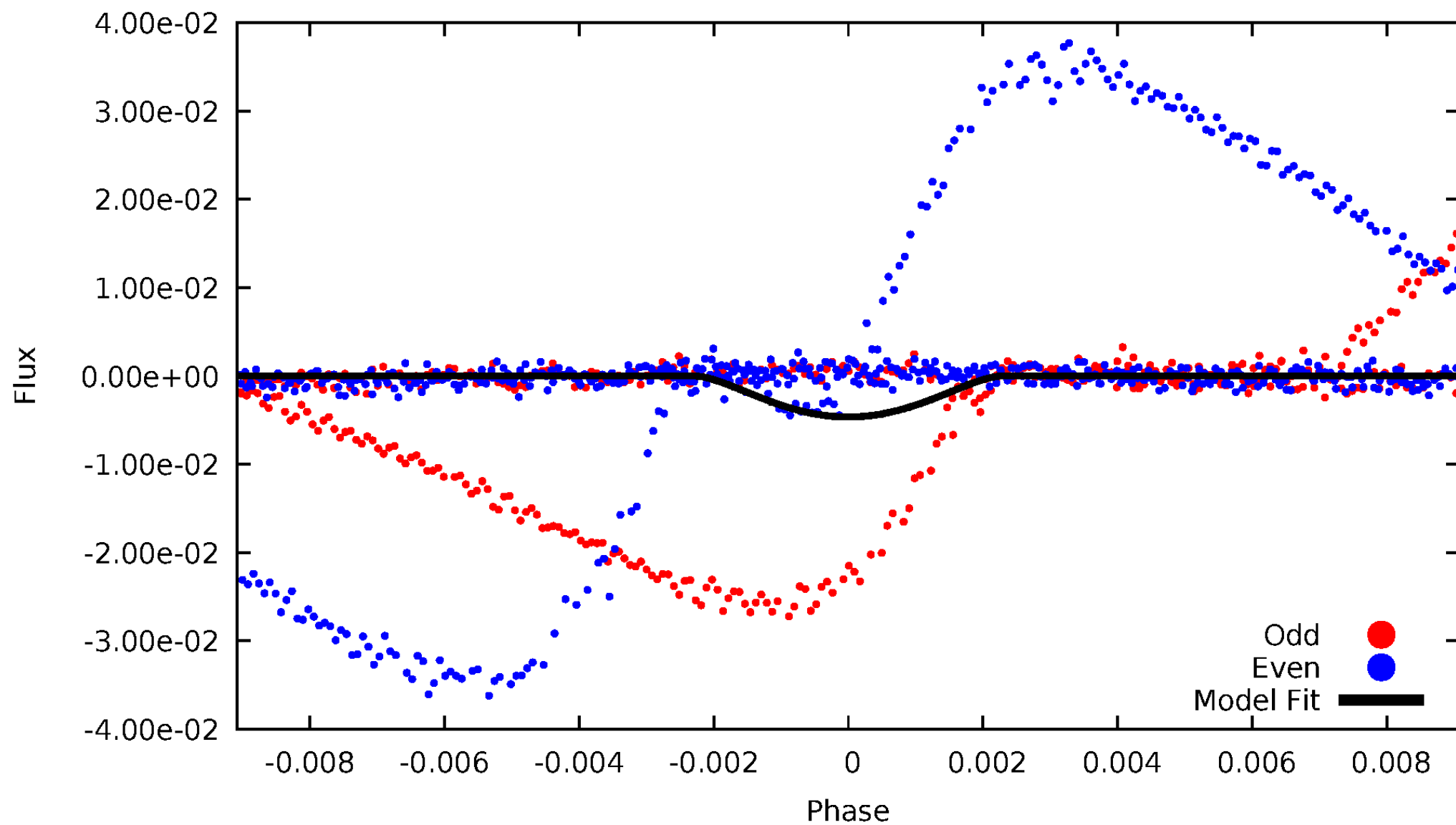


TCE 007456460-02



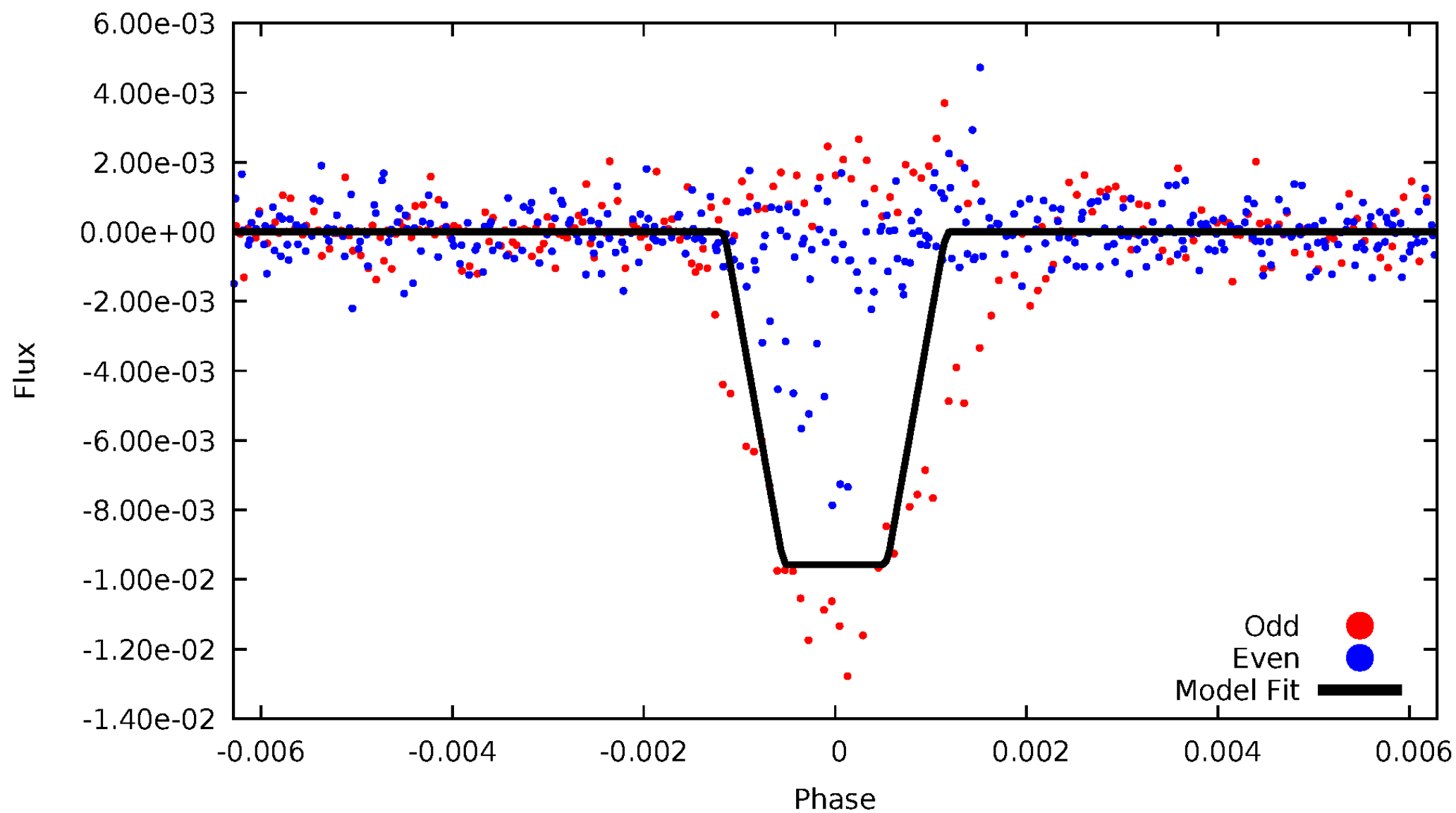
DV Odd/Even

TCE 007456460-02



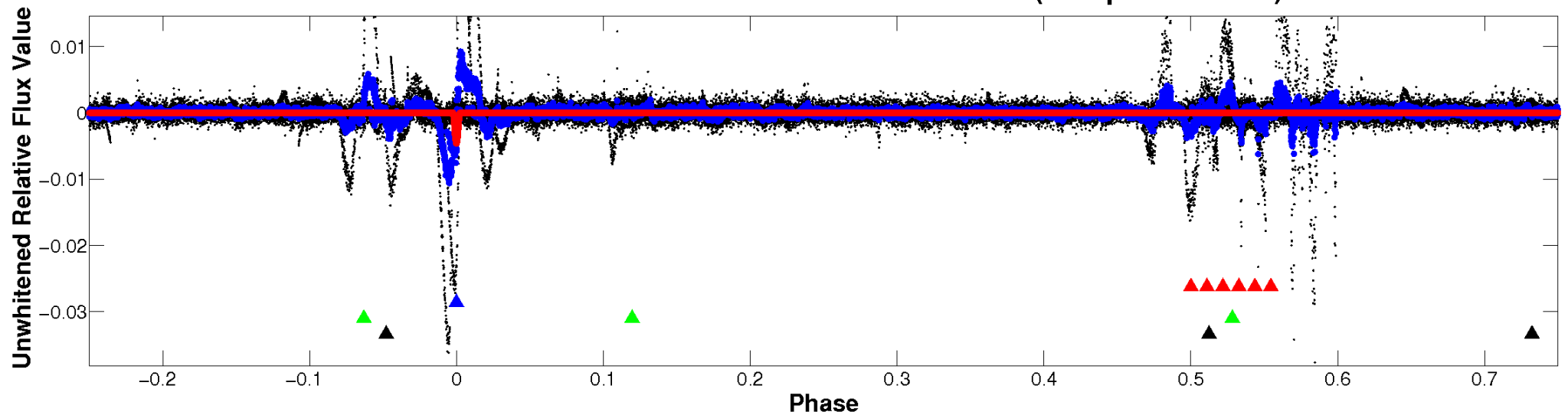
ALT Odd/Even

TCE 007456460-02

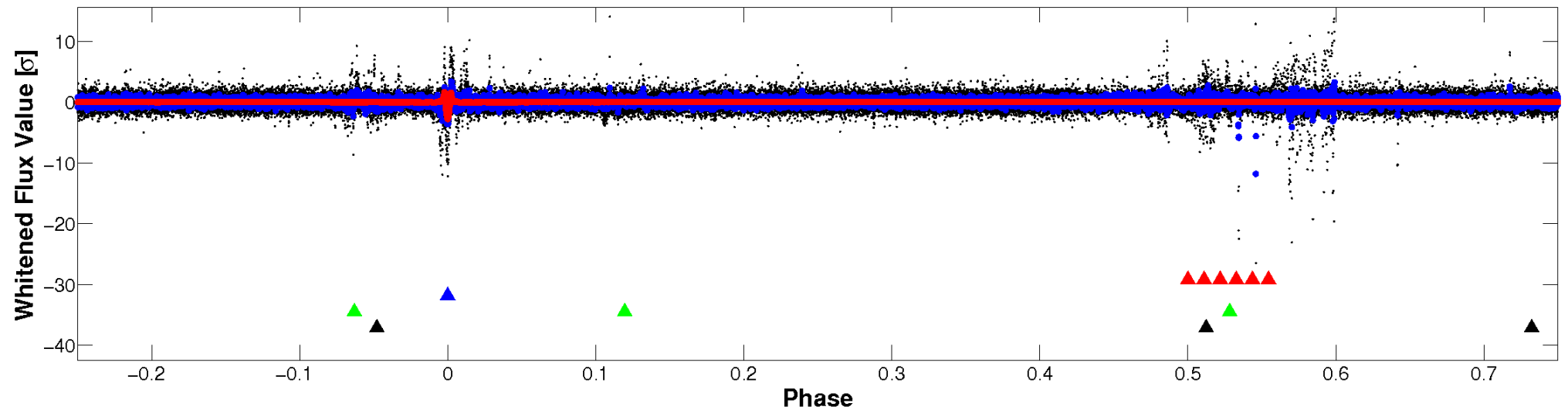


Non-Whitened Vs. Whitened Light Curve

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

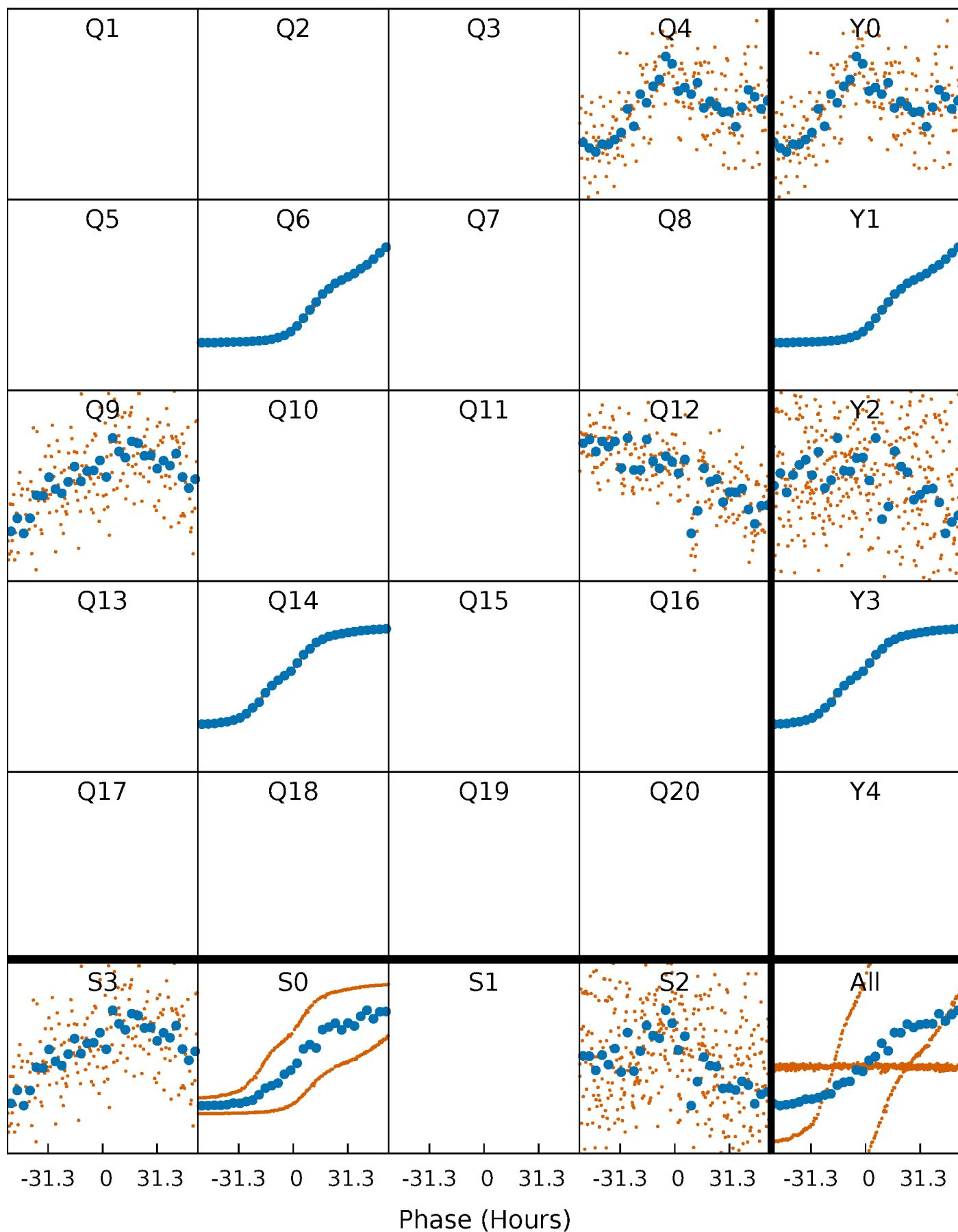


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



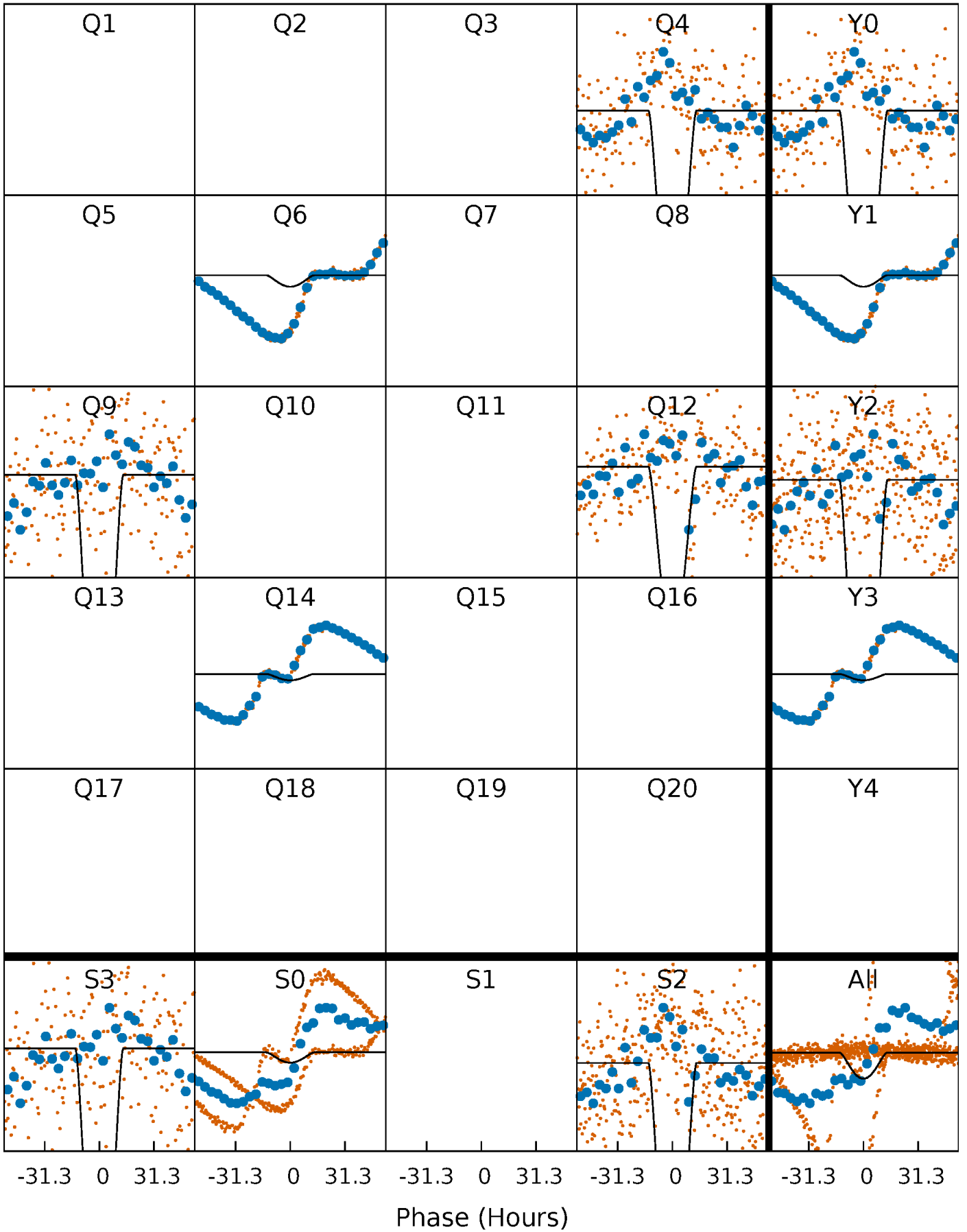
PDC Quarter-Phased Transit Curves

TCE 007456460-02 $P=251.249869$ Days $T_0=359.184866$ (BKJD)



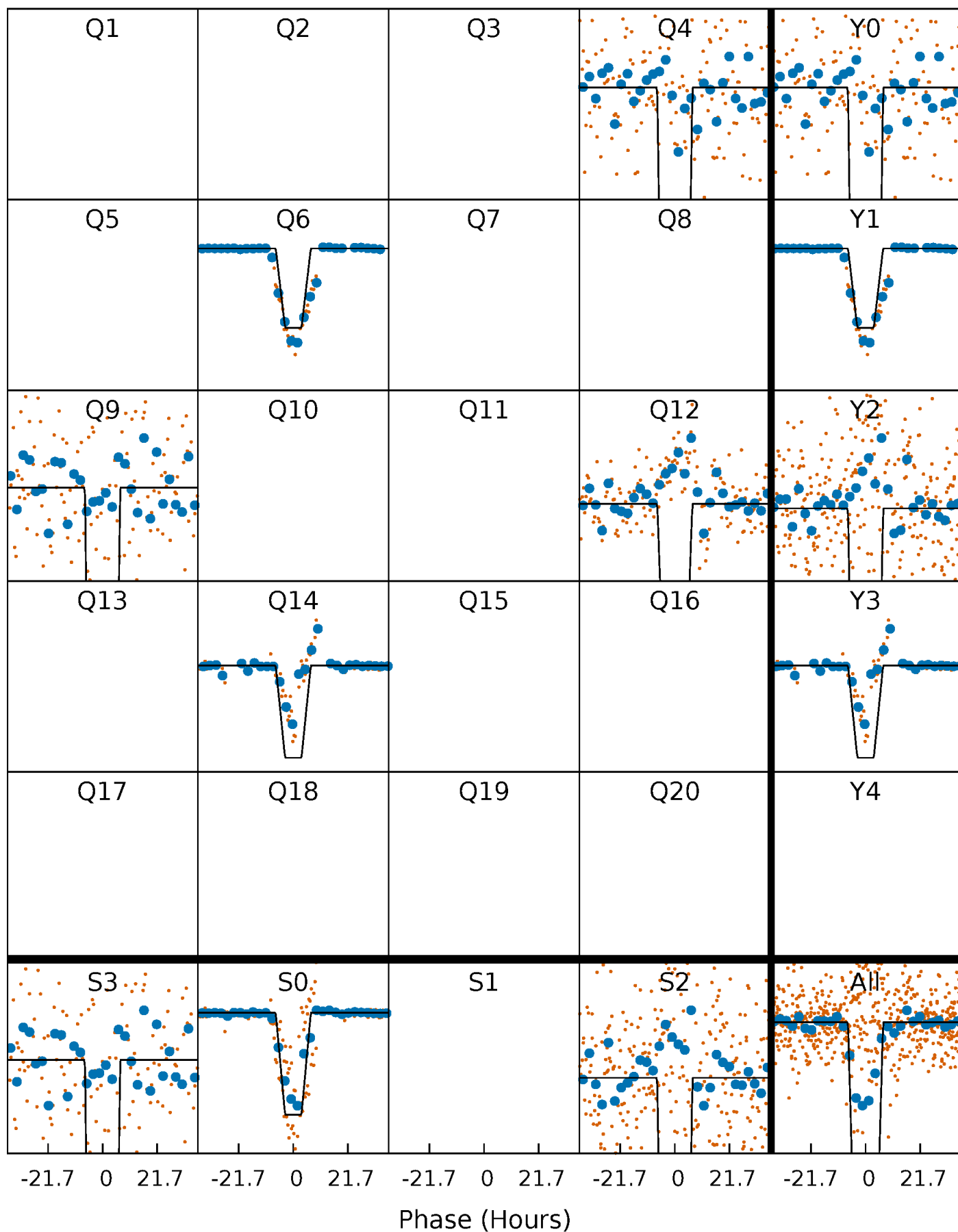
DV Quarter-Phased Transit Curves

TCE 007456460-02 P=251.249869 Days $T_0=359.184866$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

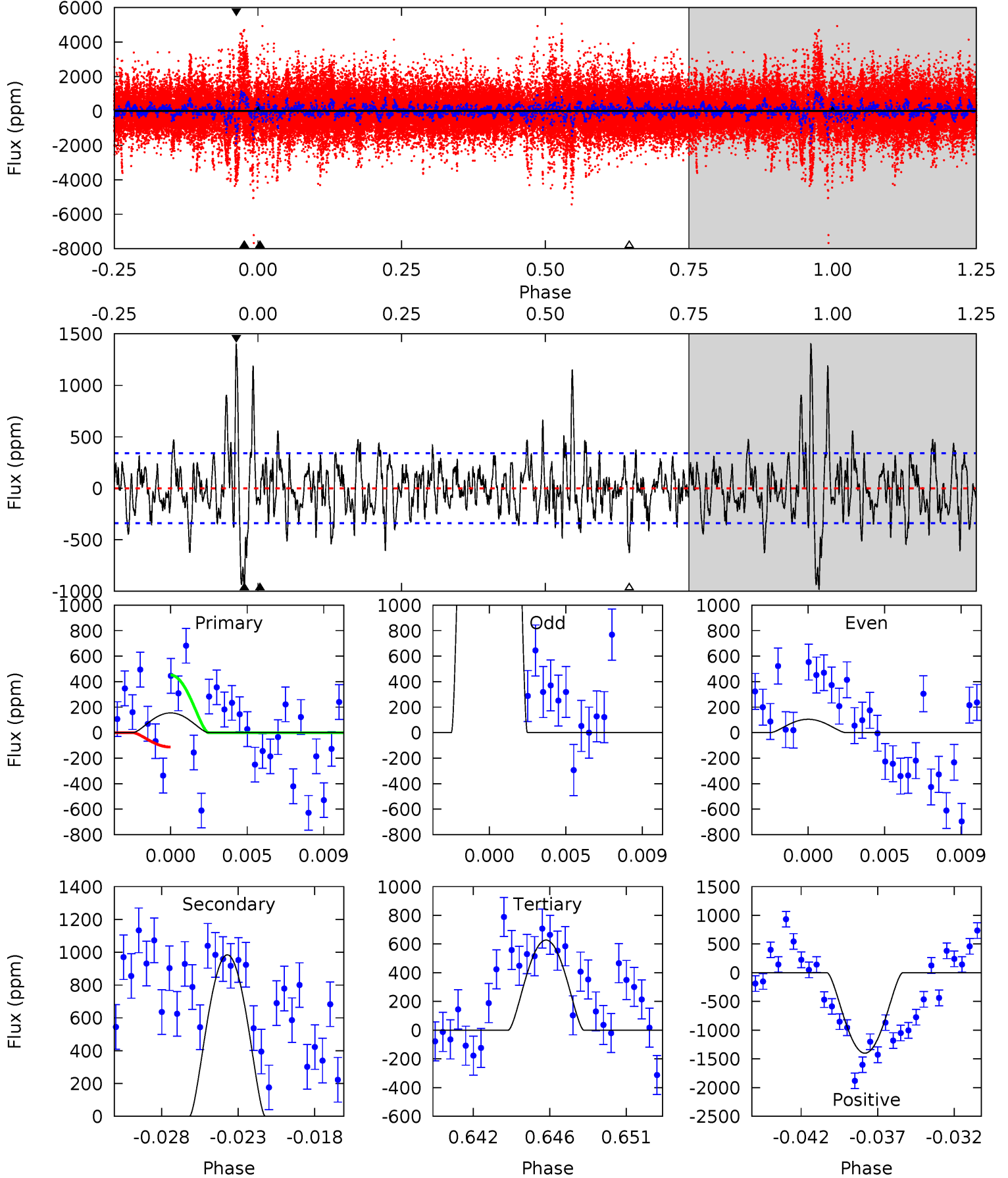
TCE 007456460-02 P=251.223809 Days $T_0=359.222128$ (BKJD)



DV Model-Shift Uniqueness Test

007456460-02, P = 251.249869 Days, E = 107.934997 Days

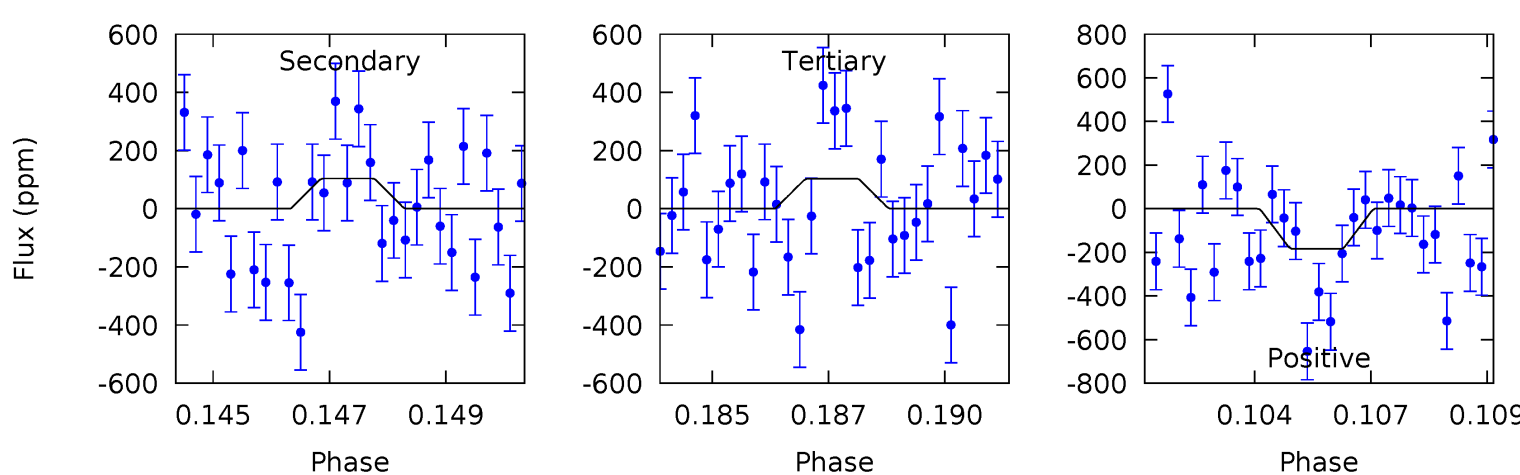
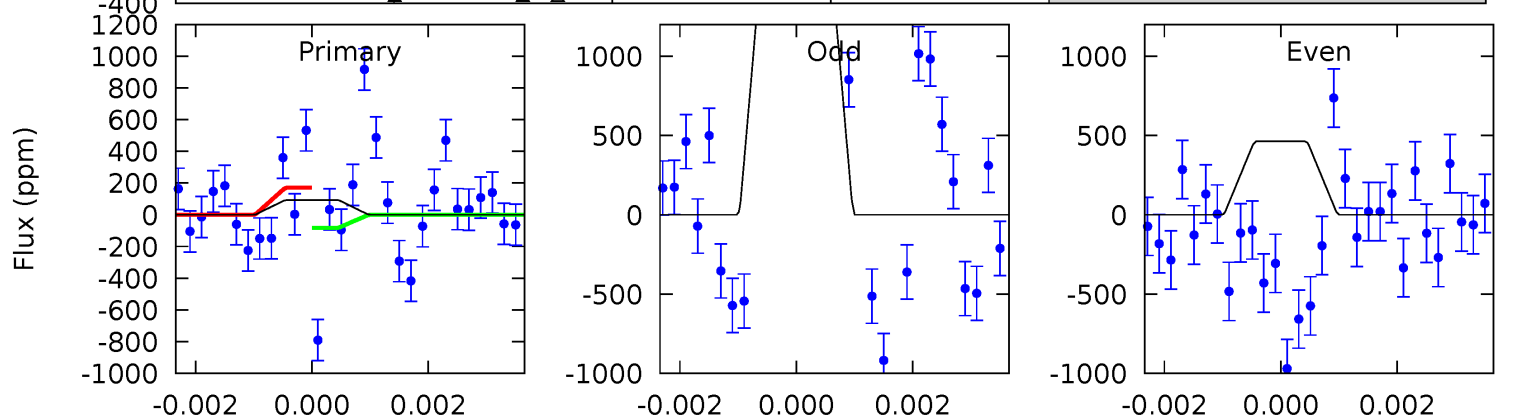
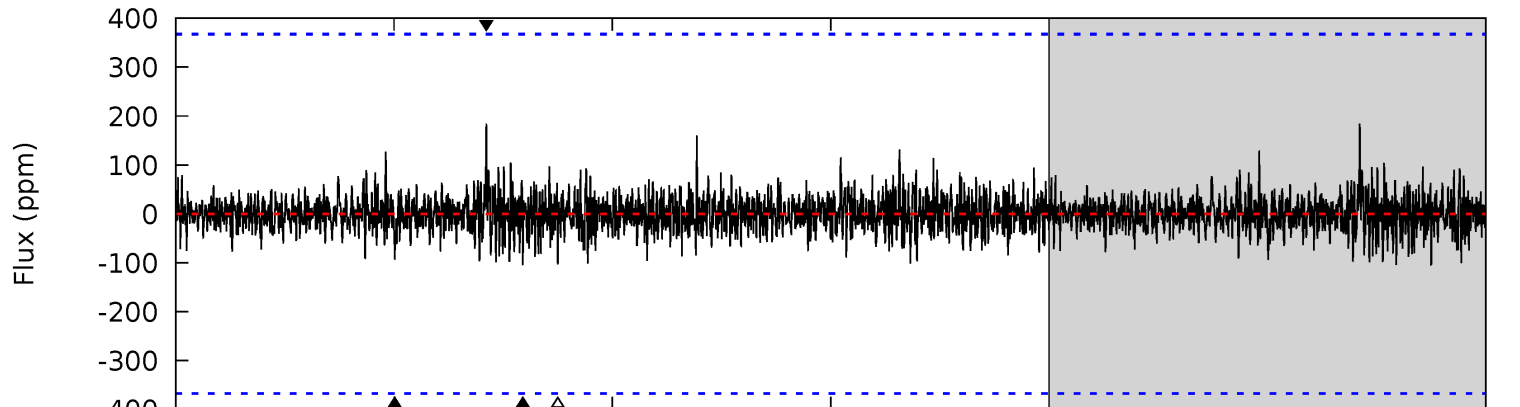
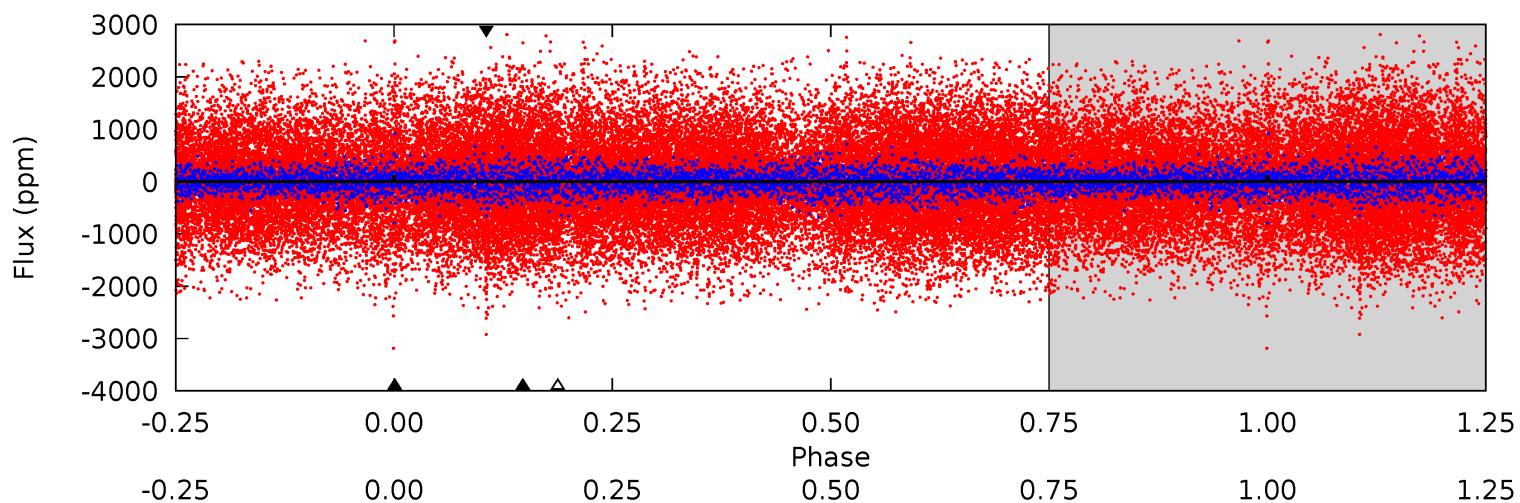
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.36	15.0	9.56	21.3	5.17	2.83	3.50	-7.21	-19.0	5.43	-6.34	57.6	-8.24	0.59	2.60



Alt Model-Shift Uniqueness Test

007456460-02, P = 251.223809 Days, E = 107.998319 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.35	1.50	1.49	2.66	5.30	3.04	0.46	-0.15	-1.31	0.01	-1.15	13.2	12.1	0.64	0.64



Stellar Parameters For KIC 007456460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5986^{+179}_{-197}	$4.471^{+0.070}_{-0.210}$	$-0.180^{+0.300}_{-0.300}$	$0.956^{+0.306}_{-0.102}$	$0.986^{+0.131}_{-0.131}$	$1.587^{+0.454}_{-0.837}$
	+3%/-3%	+2%/-5%	+167%/-167%	+32%/-11%	+13%/-13%	+29%/-53%
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 007456460-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-984 ± 66	$14.51^{+10.74}_{-9.07}$	417^{+34}_{-21}	3407^{+1437}_{-522}	1528^{+8697}_{-1045}
Alt.	-104 ± 69	$13.74^{+12.00}_{-8.97}$	416^{+35}_{-20}	2524^{+881}_{-418}	176^{+1342}_{-143}

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

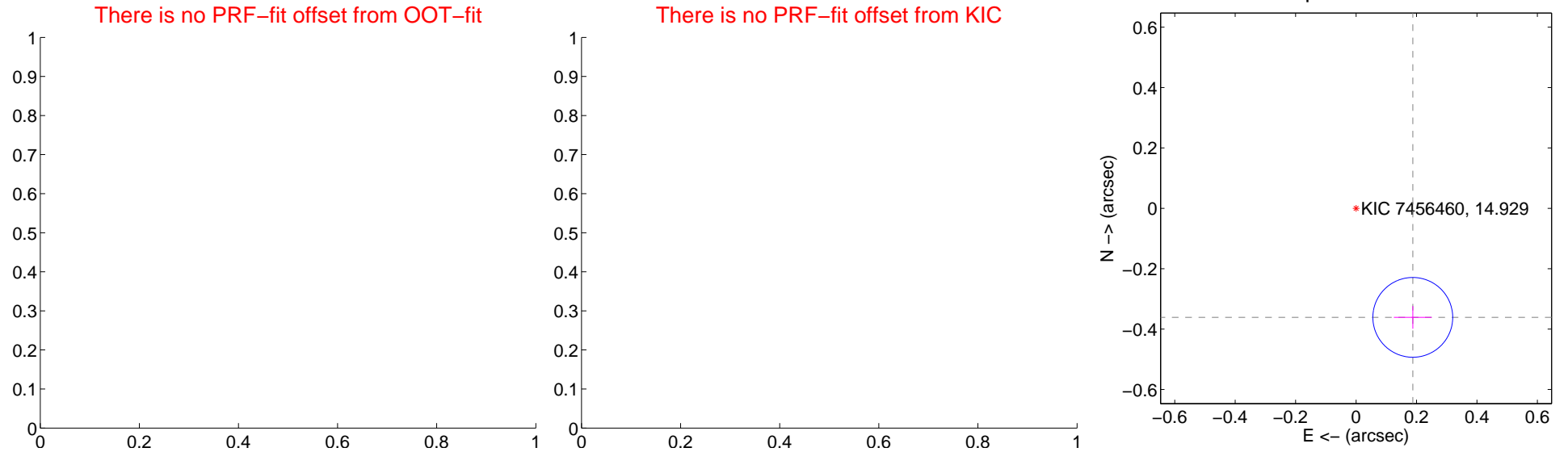
DV Centroid Data

Supplemental centroid analysis for 007456460-02. Kepler magnitude: 14.93. Transit SNR 23.76

There are 0 quarters with good PRF difference image offsets

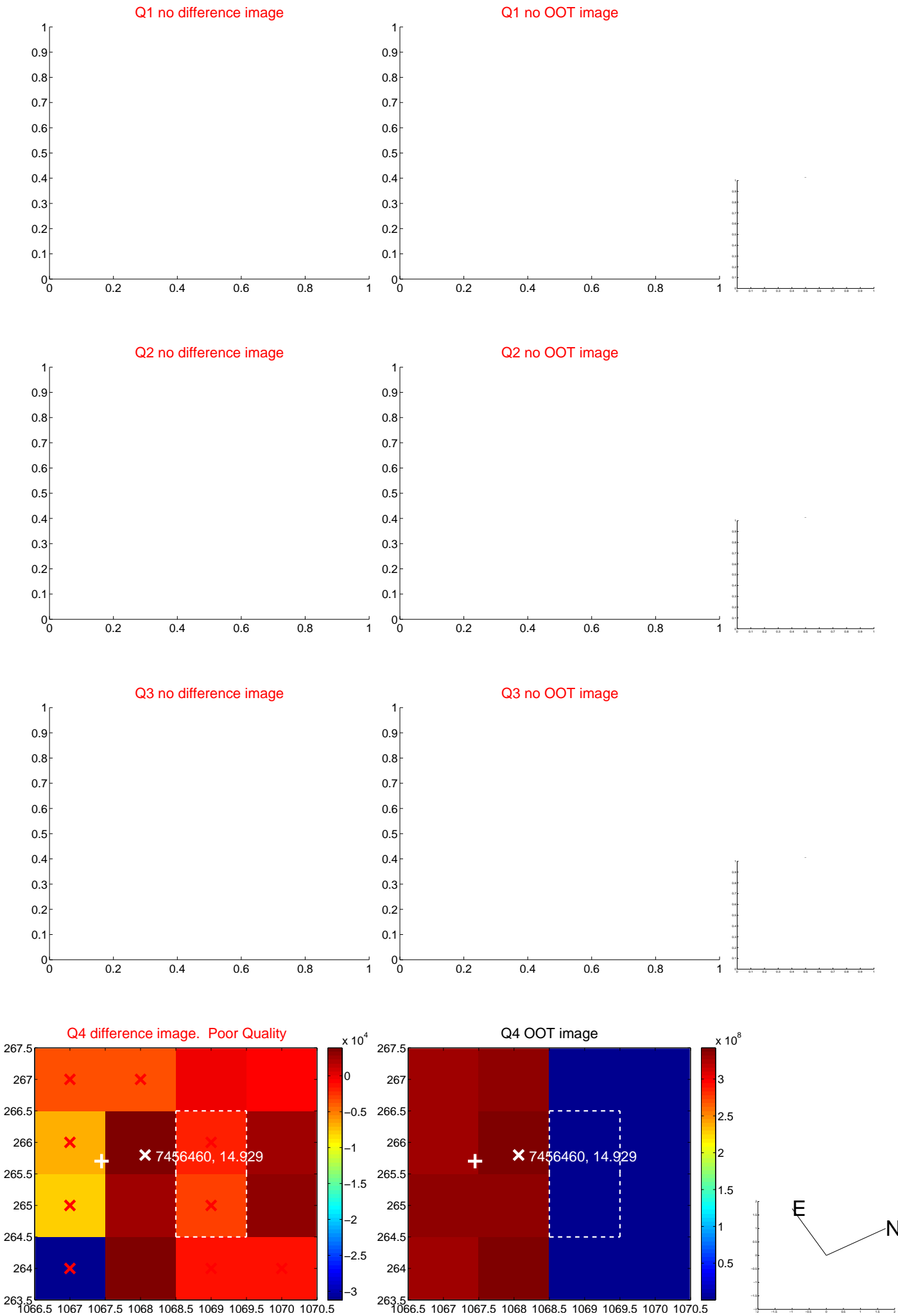
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	0.41 ± 0.04	9.24	-0.19 ± 0.06	-0.36 ± 0.04

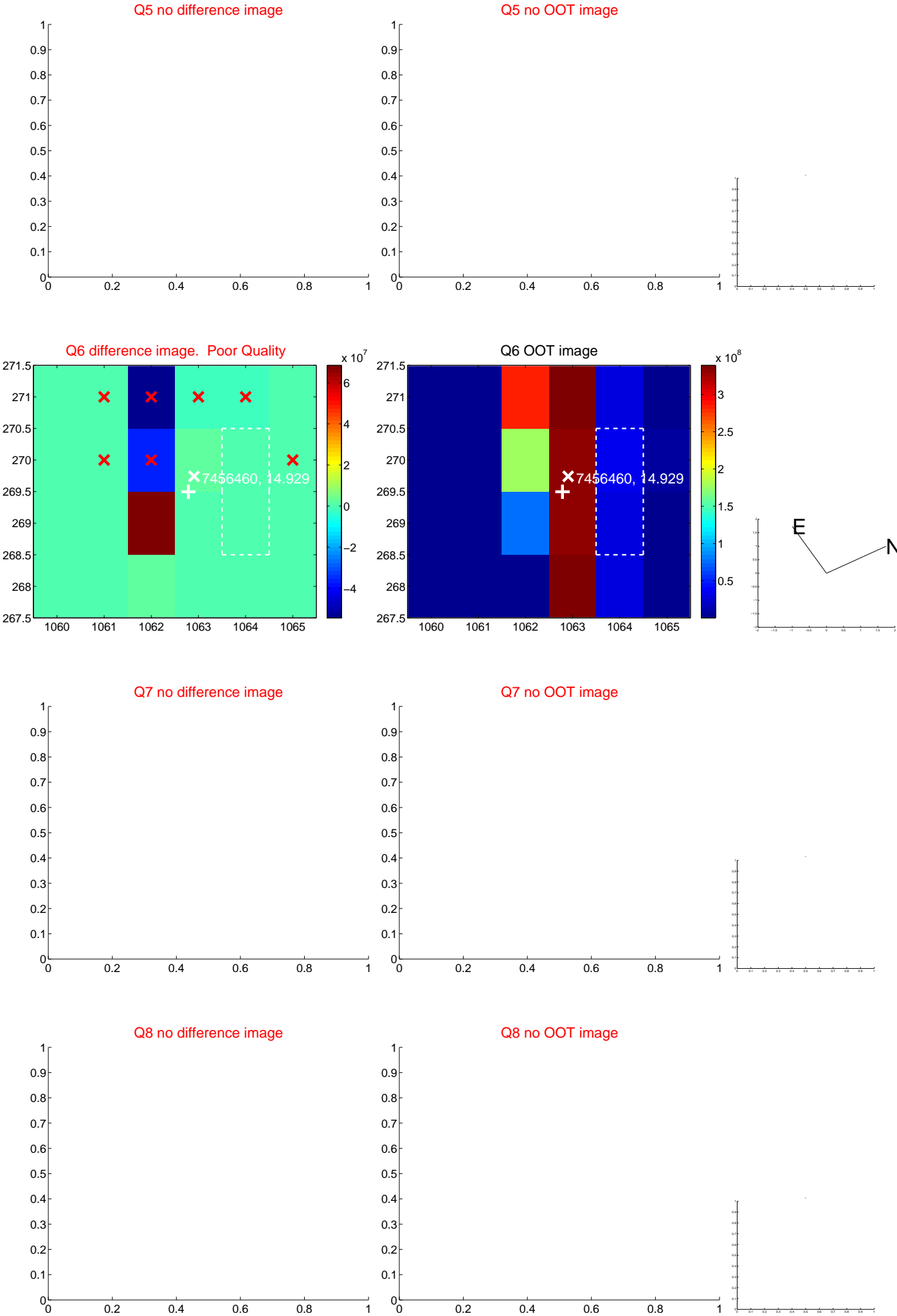


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

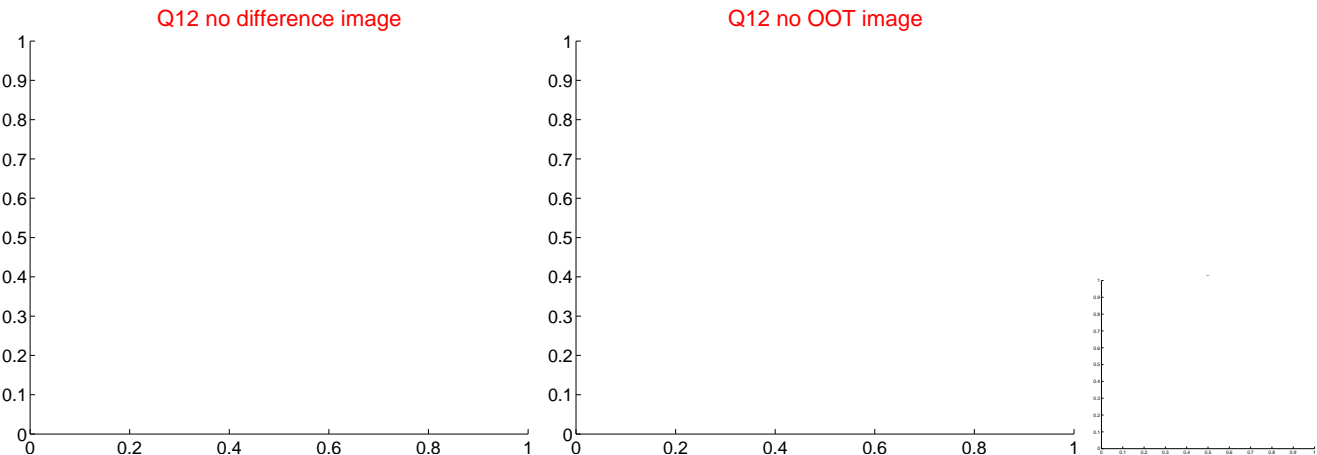
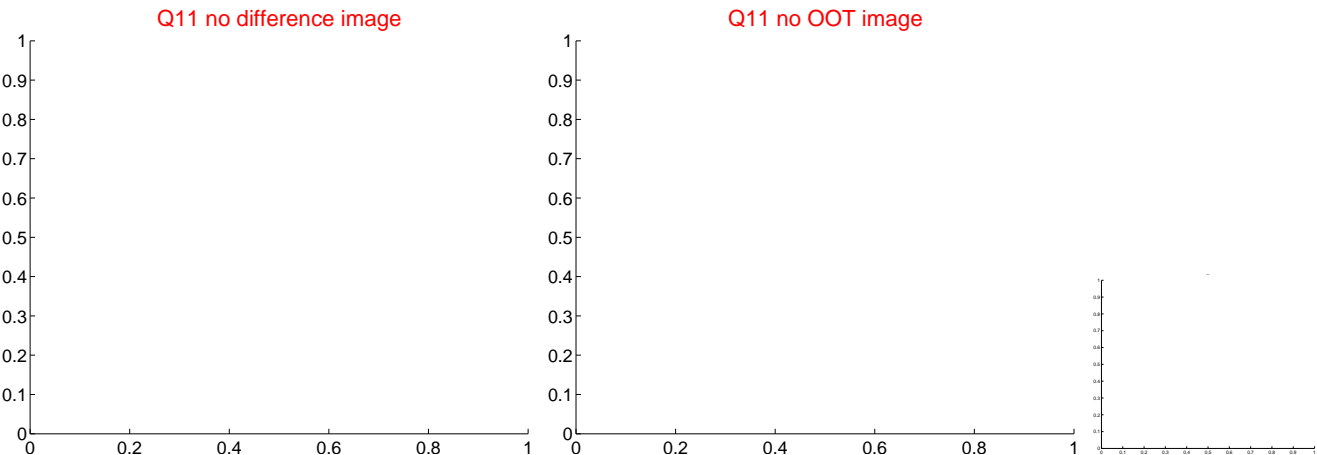
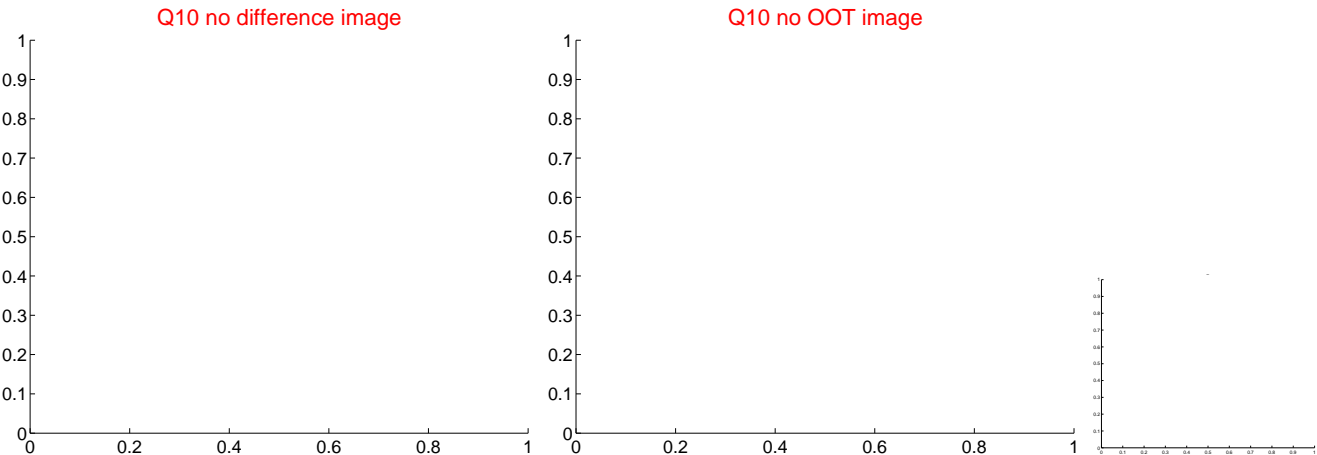
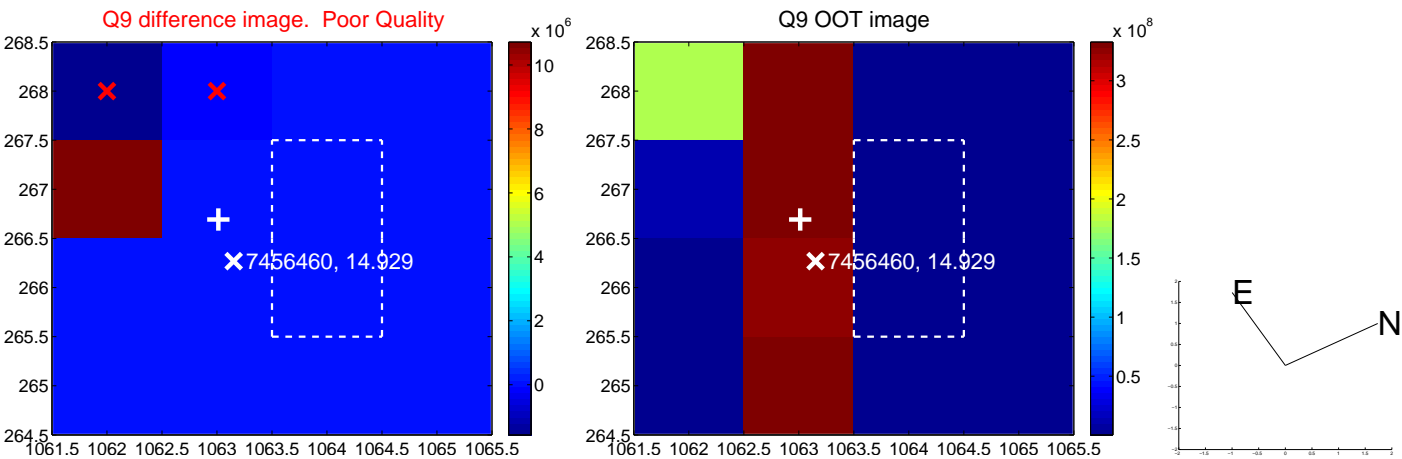
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



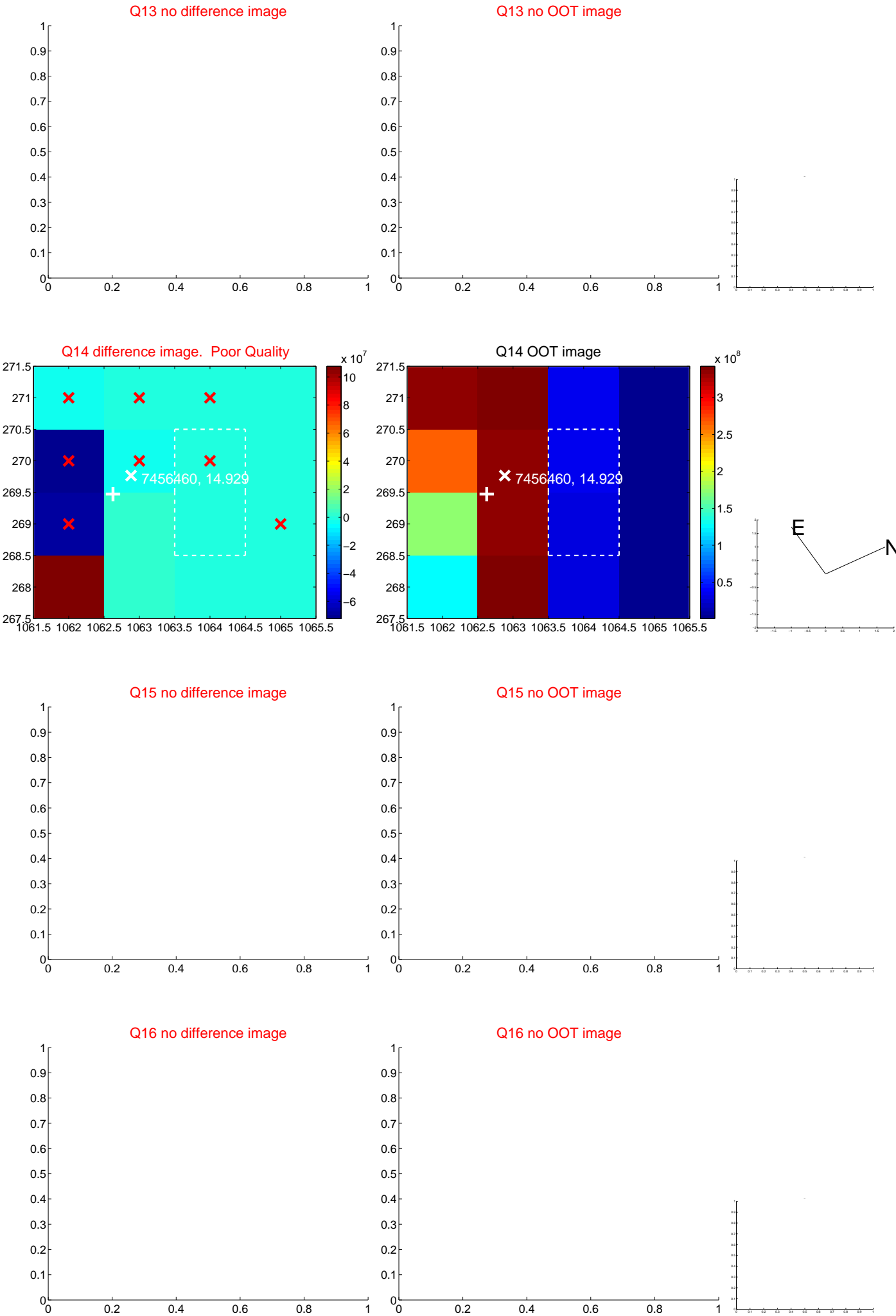
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



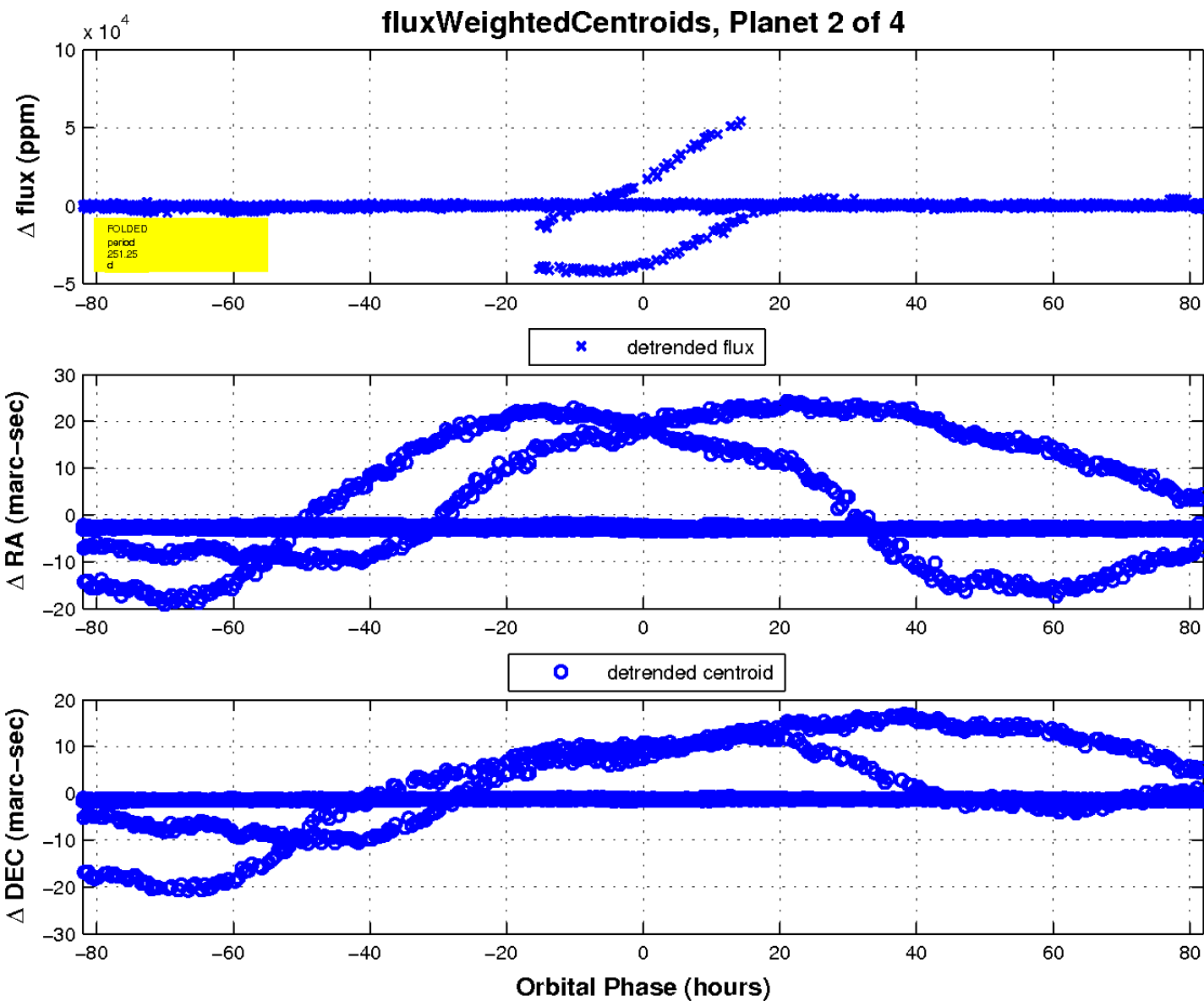
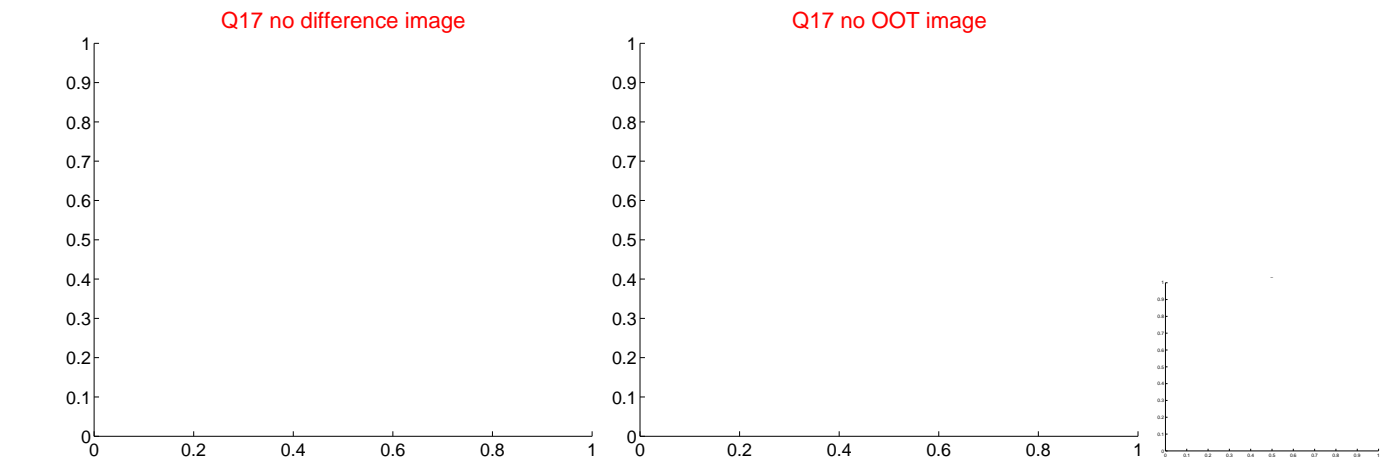
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

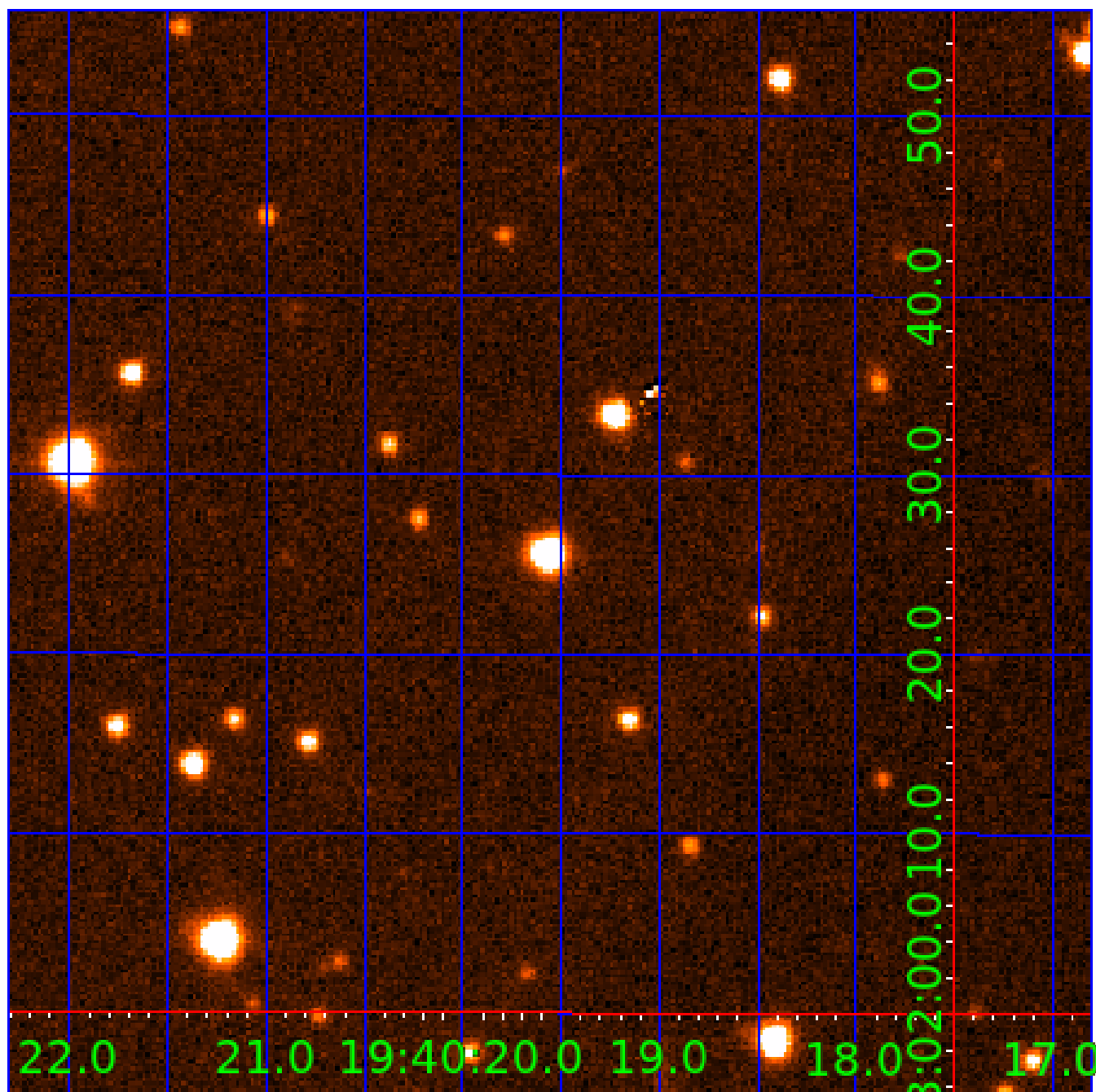


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007456460

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})
007456460-01	OBS	No	248.515972	247.255759	430.9	13.428	32.4	3.1	0.96	5986	2.06	1.77
007456460-02	OBS	No	251.249870	359.184866	4645.1	27.370	34.4	23.8	0.96	5986	11.92	1.75
007456460-03	OBS	No	605.180747	137.988432	2695.9	15.000	20.5	-1.0	0.96	5986	4.95	0.54
007456460-04	OBS	No	557.741942	236.680912	2106.5	14.980	15.4	12.3	0.96	5986	4.84	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007456460-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
007456460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

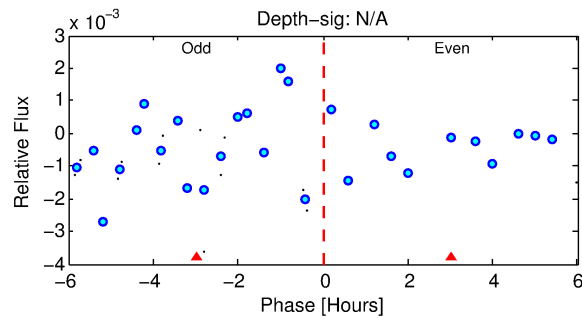
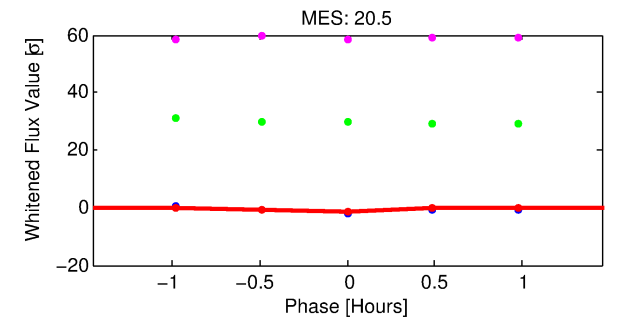
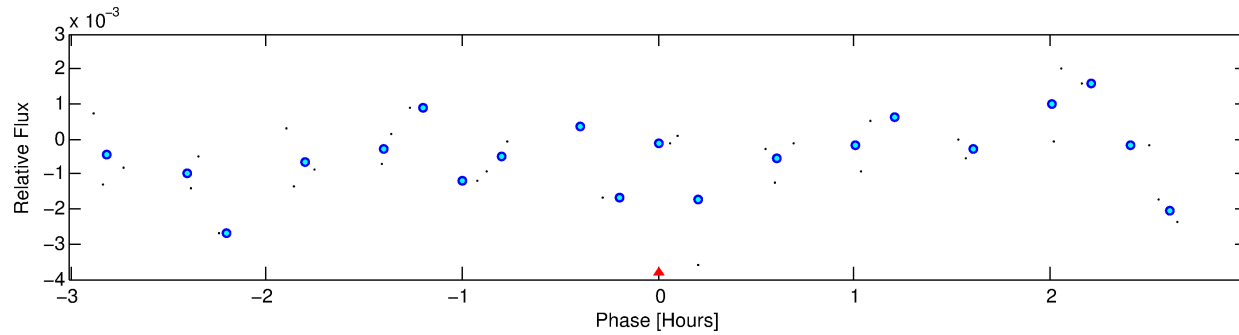
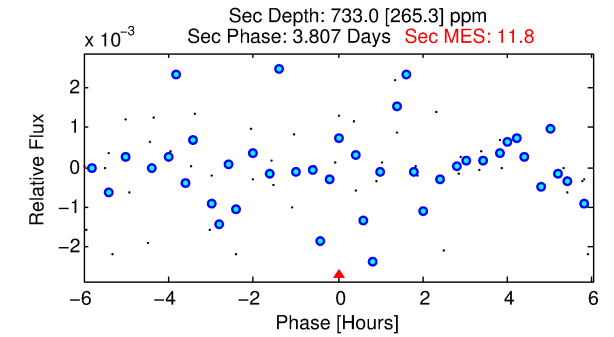
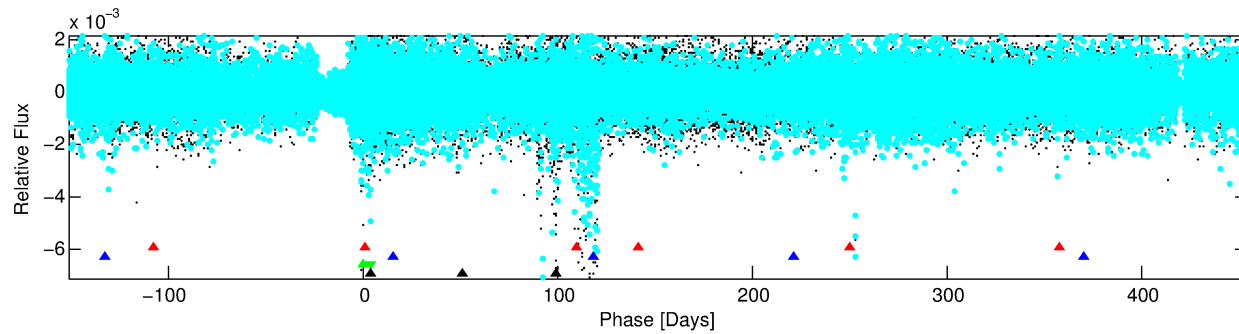
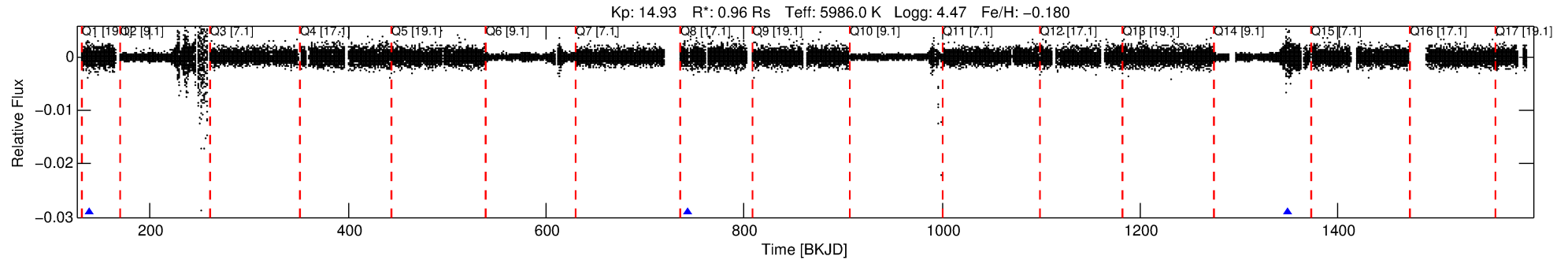
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007456460-03

No Significant Match Found

DV One-Page Summary

KIC: 7456460 Candidate: 3 of 4 Period: 605.181 d



TPS TCE Results:

Period = 605.18075 d
Epoch = 137.9884 BKJD

DV fit results are unavailable

DV Diagnostic Results:

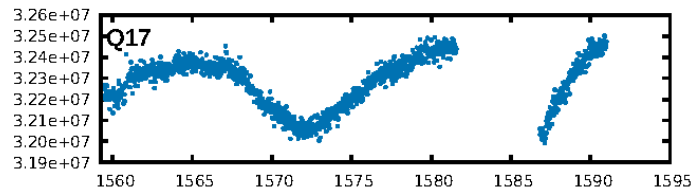
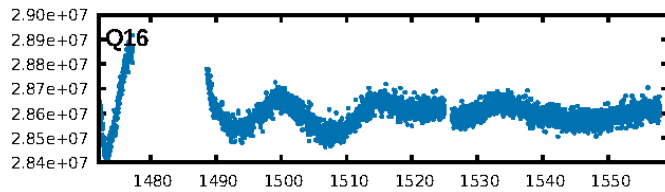
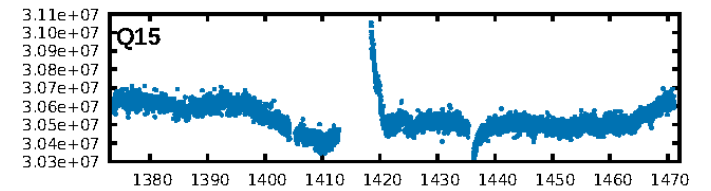
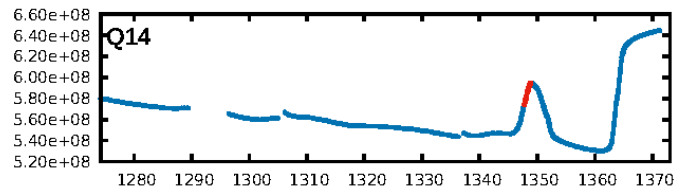
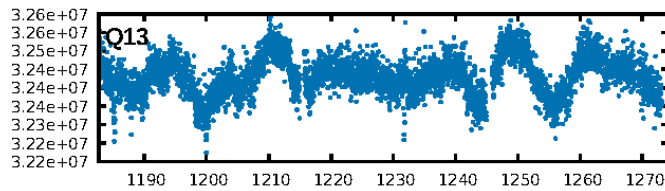
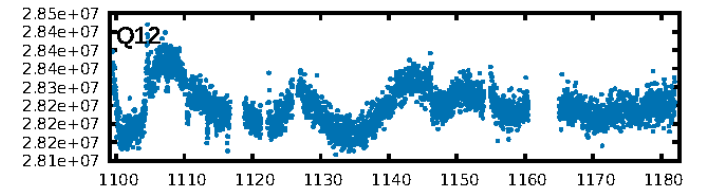
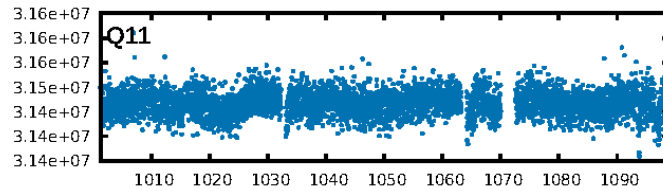
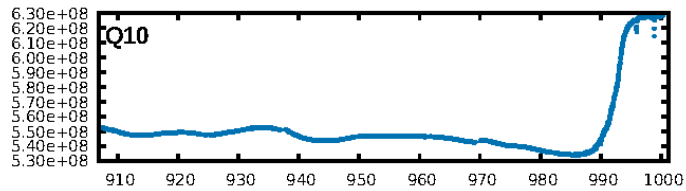
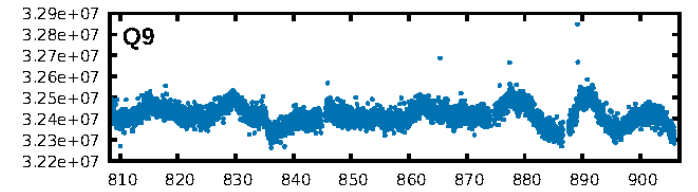
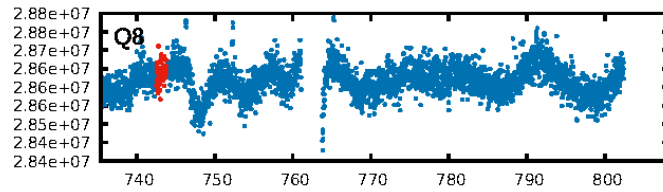
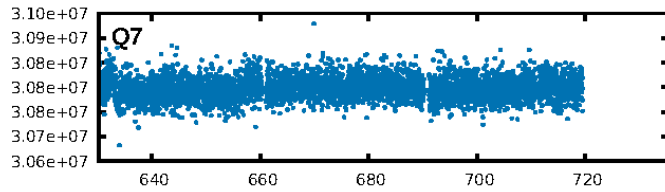
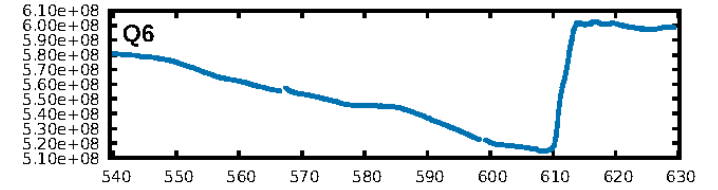
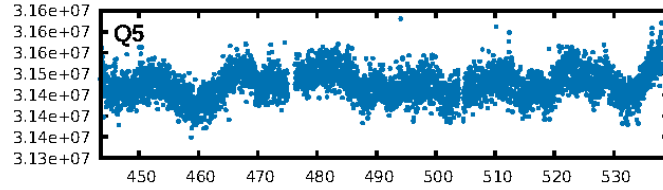
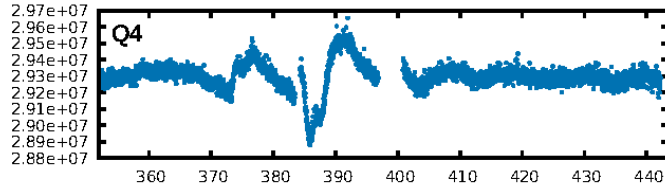
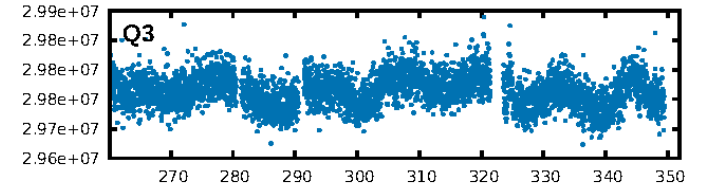
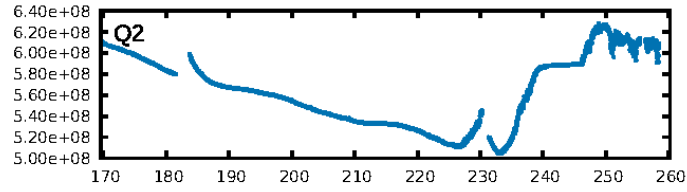
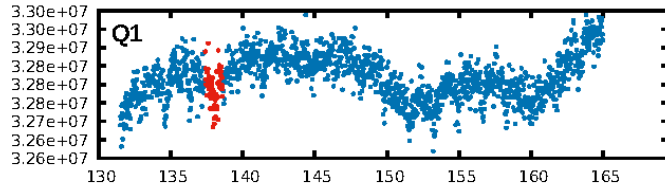
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LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.62e-06
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.742

Centroid-sig: N/A
Centroid-so: 0.416 arcsec [7.52σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
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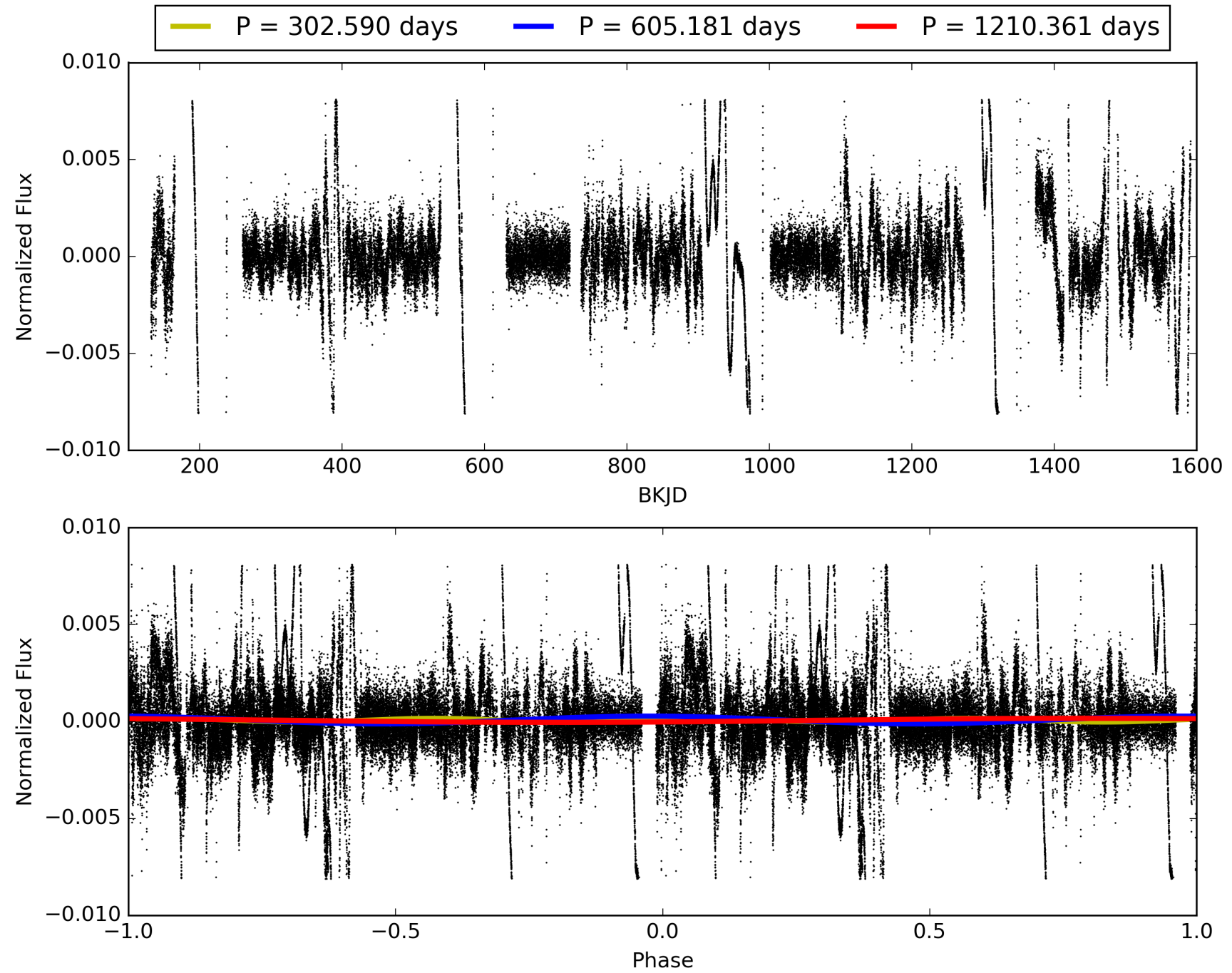
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:17:36 Z

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

TCE 007456460-03, PDC Light Curves

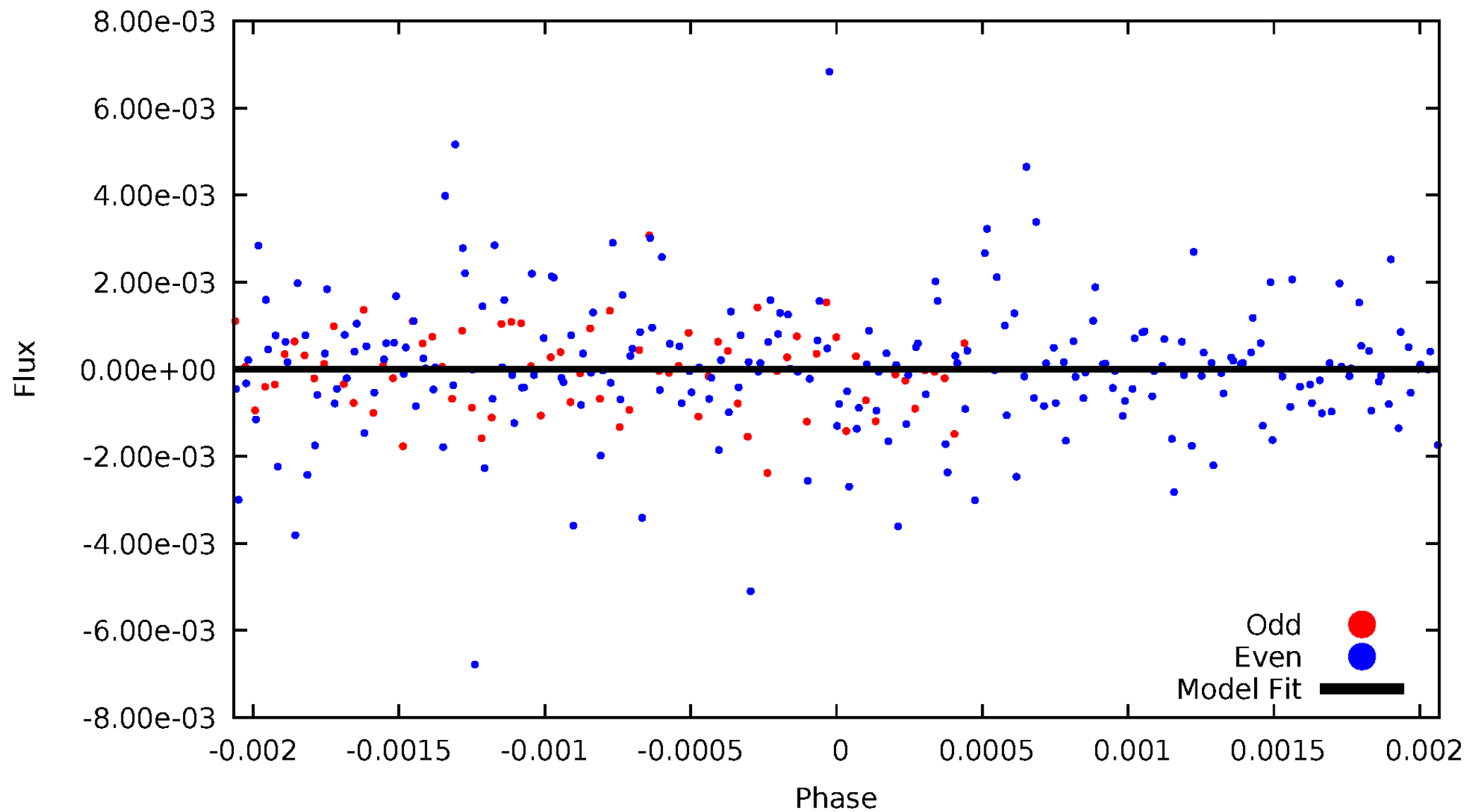


TCE 007456460-03



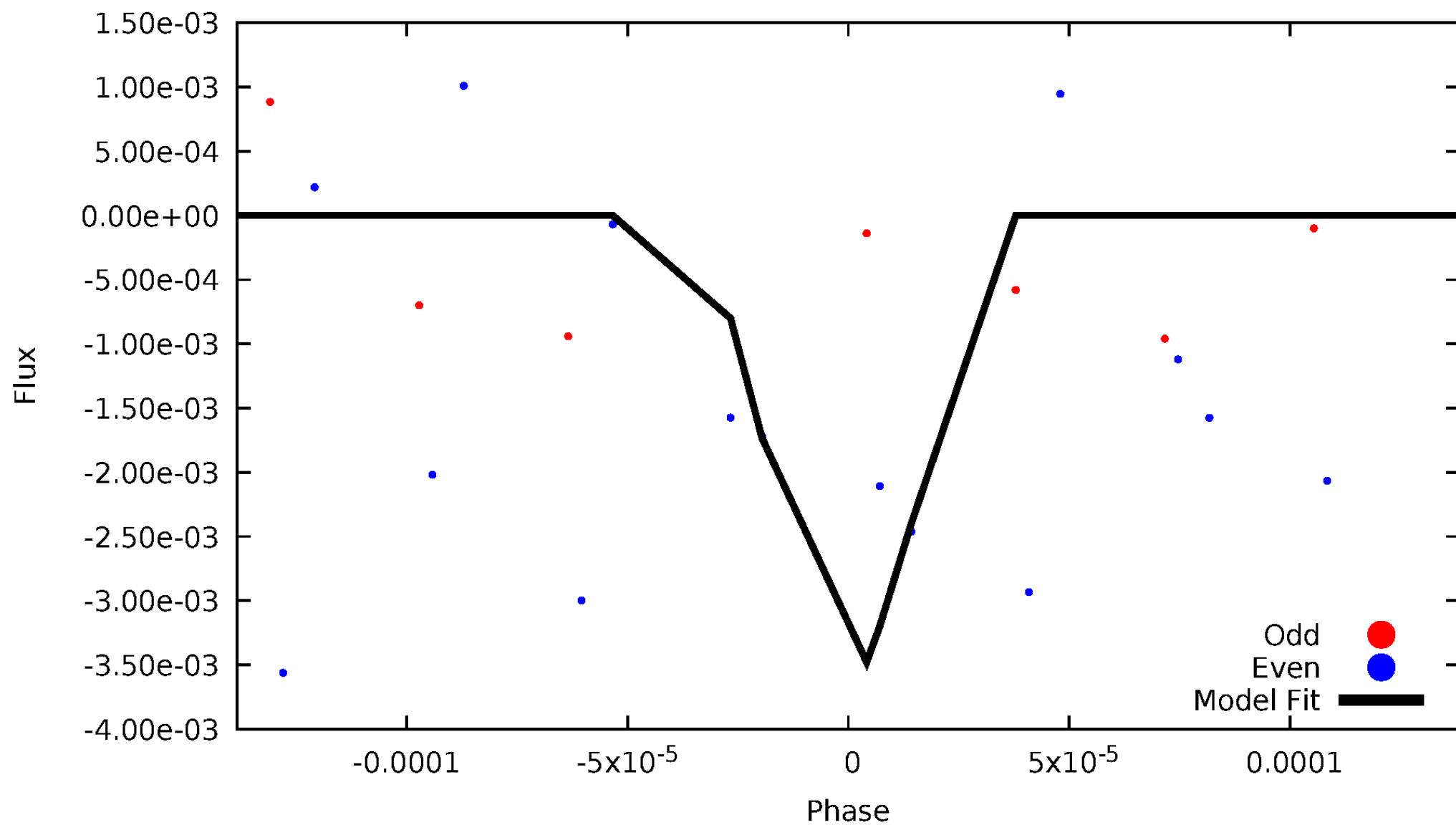
DV Odd/Even

TCE 007456460-03



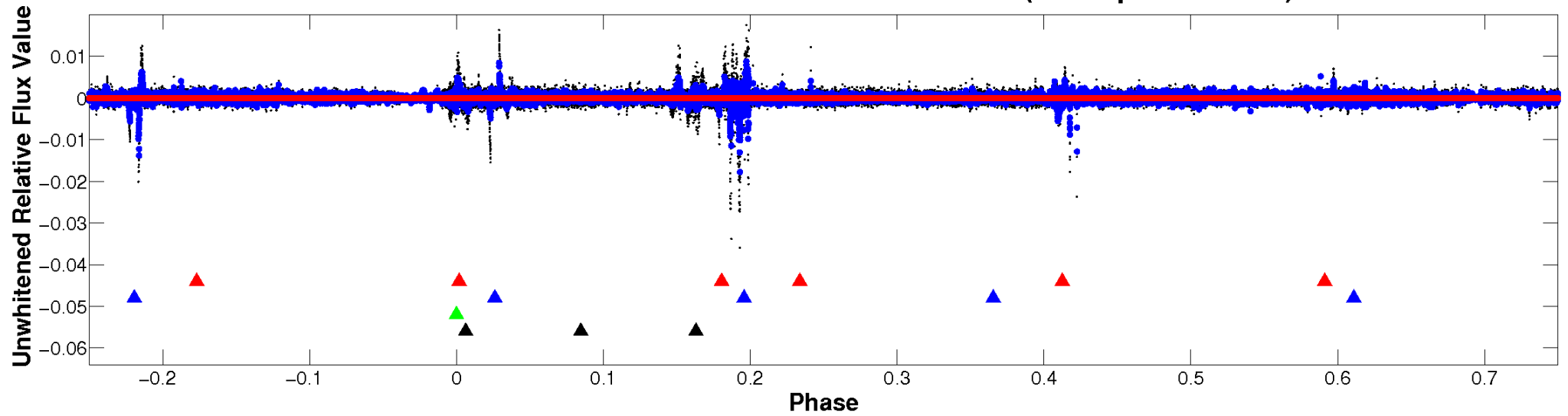
ALT Odd/Even

TCE 007456460-03



Non-Whitened Vs. Whitened Light Curve

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

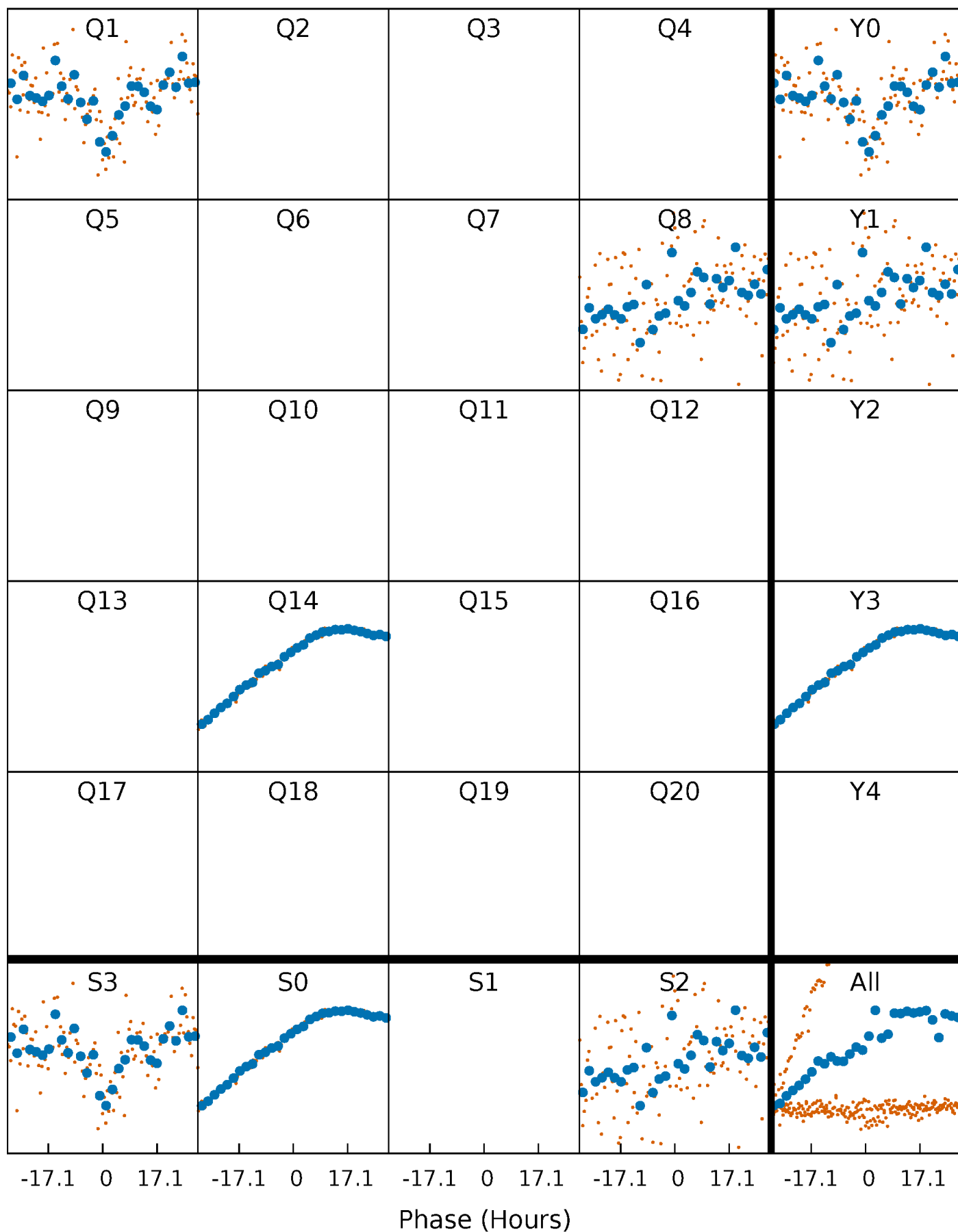


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



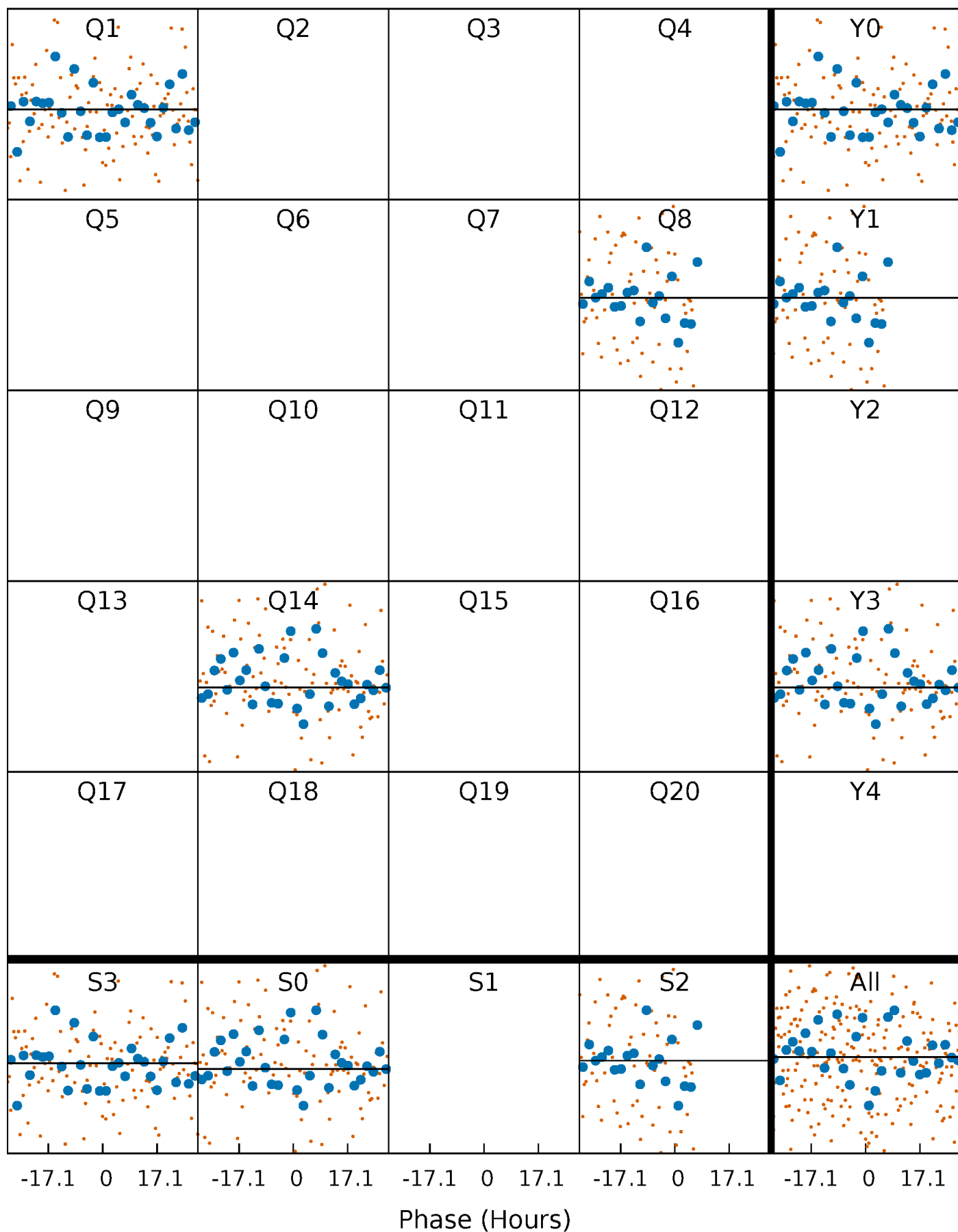
PDC Quarter-Phased Transit Curves

TCE 007456460-03 P=605.180747 Days $T_0=137.988432$ (BKJD)



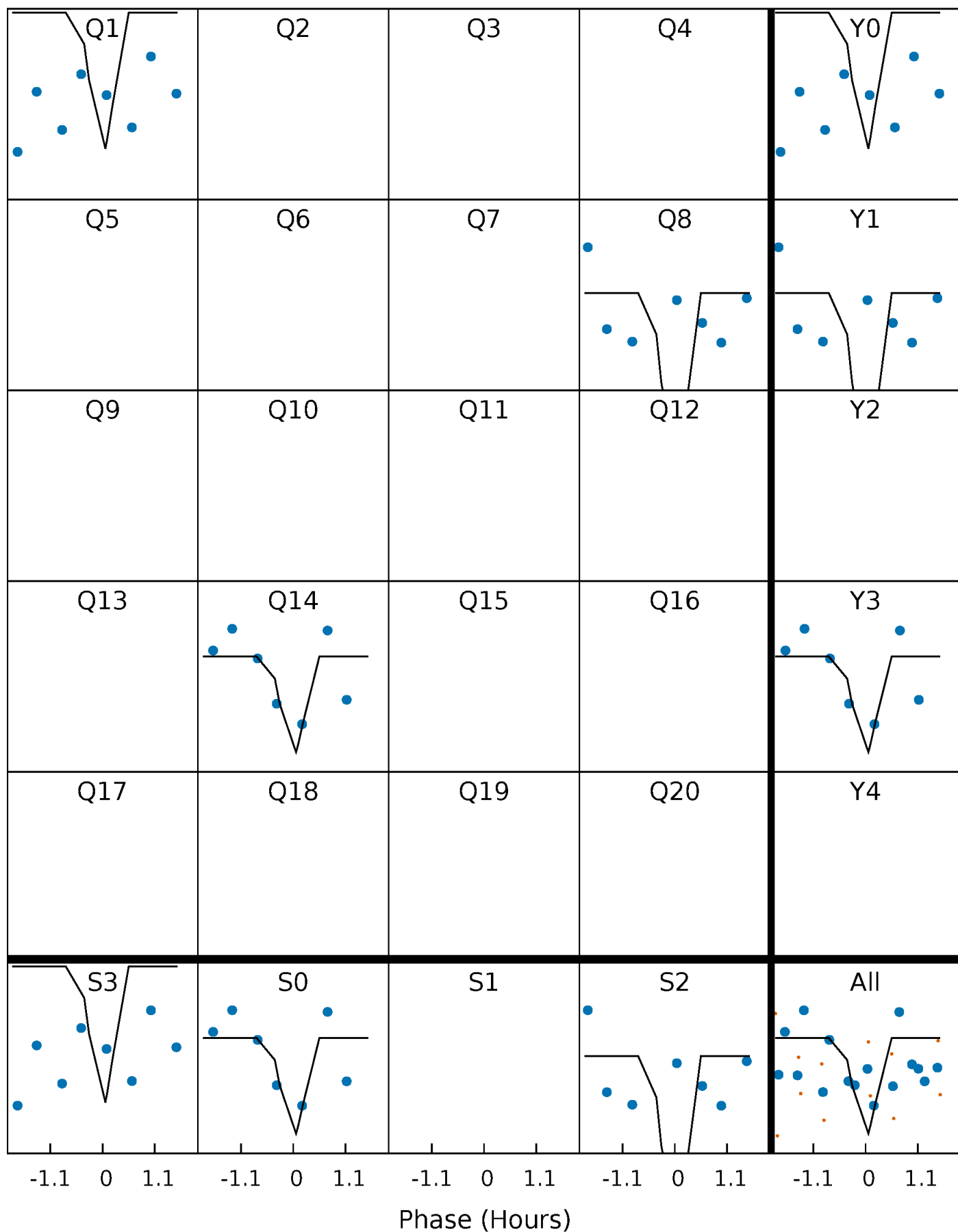
DV Quarter-Phased Transit Curves

TCE 007456460-03 $P=605.180747$ Days $T_0=137.988432$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

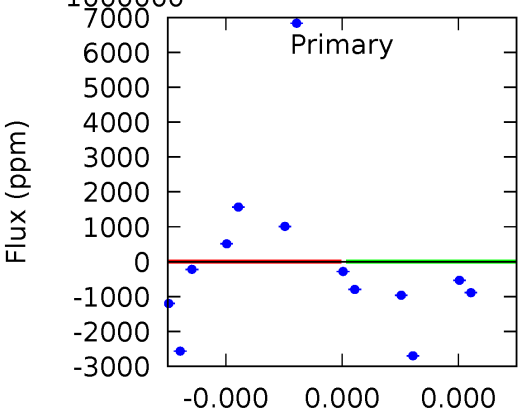
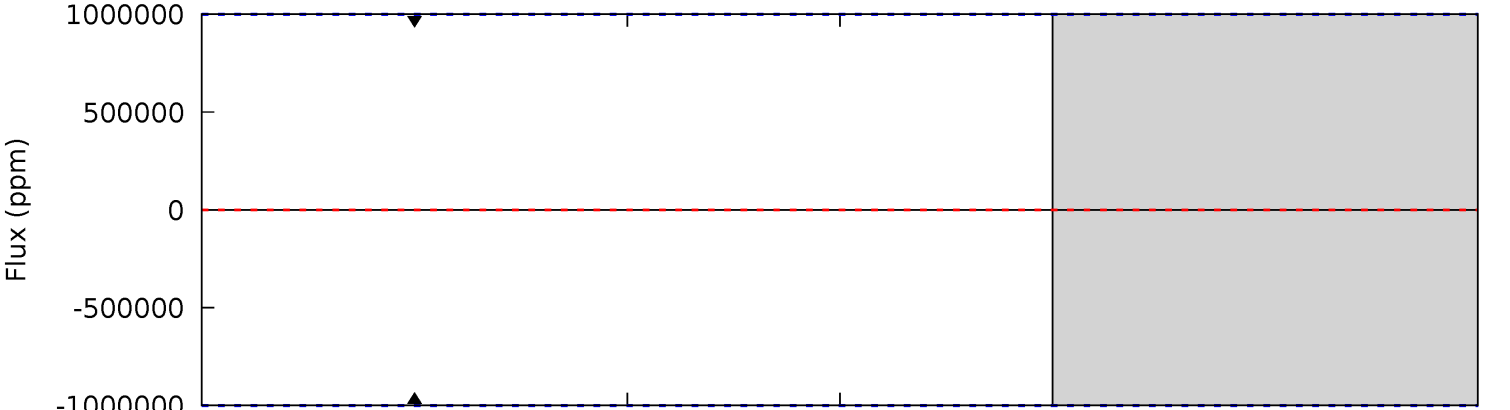
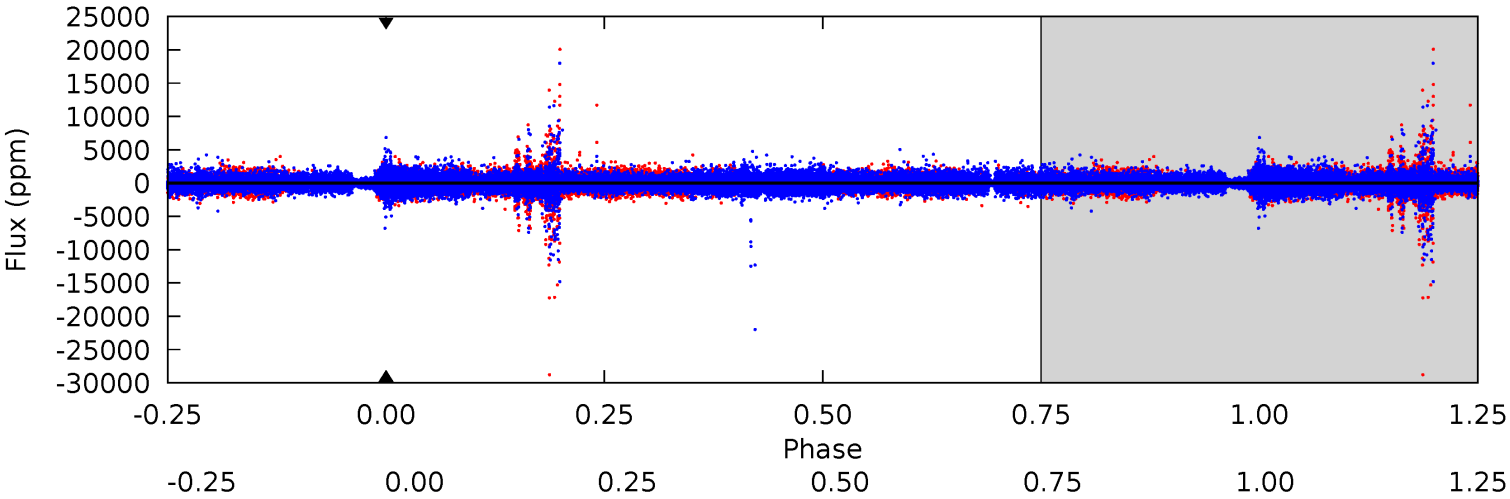
TCE 007456460-03 P=605.180747 Days $T_0=138.108151$ (BKJD)



DV Model-Shift Uniqueness Test

007456460-03, P = 605.180747 Days, E = 137.988432 Days

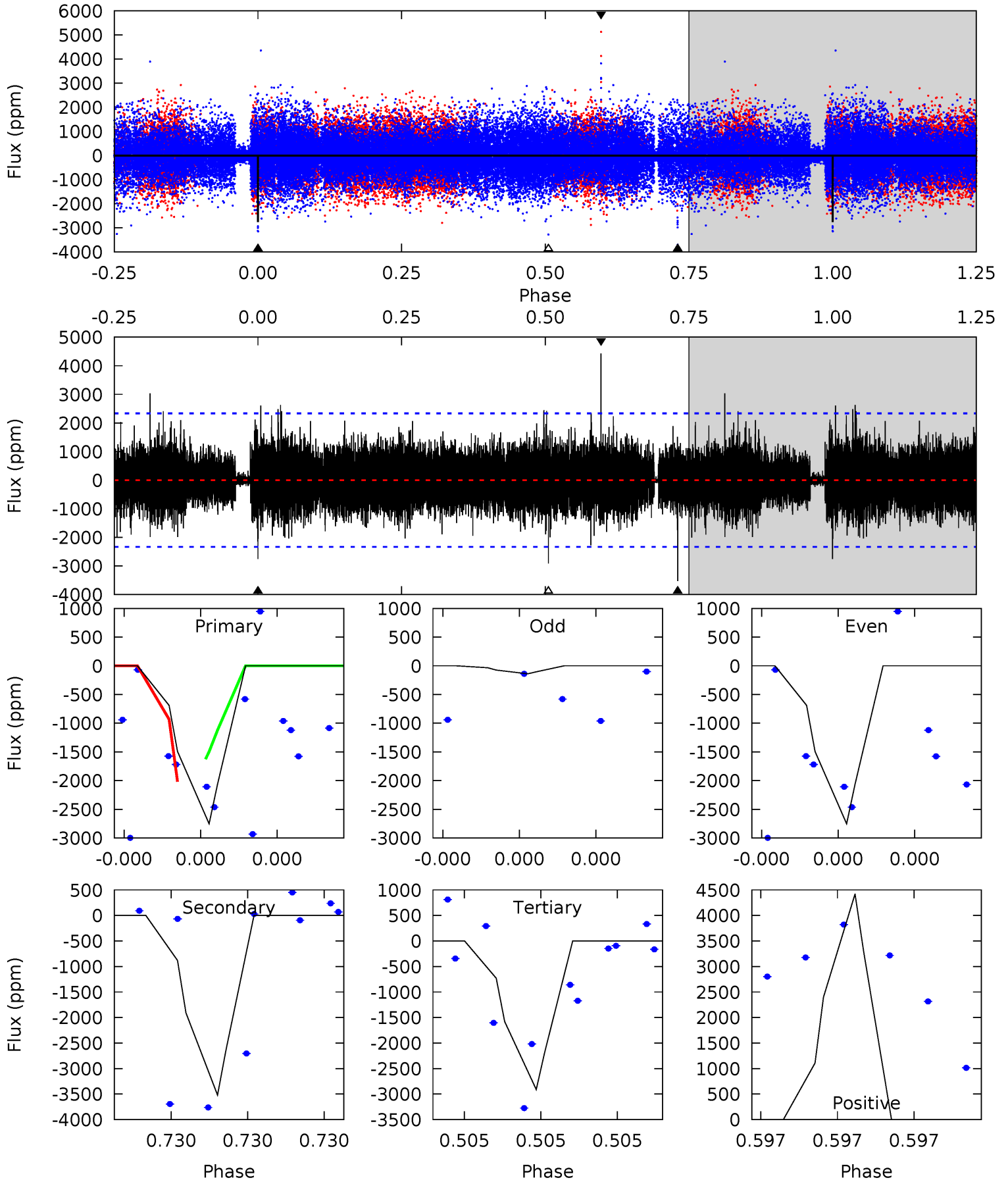
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007456460-03, P = 605.180747 Days, E = 138.108151 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.99	8.94	7.39	11.2	5.92	4.00	1.29	-0.40	-4.24	1.54	-2.29	3.47	1.00	0.56	0.51



Stellar Parameters For KIC 007456460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5986^{+179}_{-197}	$4.471^{+0.070}_{-0.210}$	$-0.180^{+0.300}_{-0.300}$	$0.956^{+0.306}_{-0.102}$	$0.986^{+0.131}_{-0.131}$	$1.587^{+0.454}_{-0.837}$
	+3%/-3%	+2%/-5%	+167%/-167%	+32%/-11%	+13%/-13%	+29%/-53%
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 007456460-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$8.84^{+9.24}_{-5.73}$	311^{+24}_{-16}	4350^{+16047}_{-22023}	$18141^{+2521577}_{-1880563}$
Alt.	-3519 ± 394	$10.47^{+9.32}_{-6.99}$	311^{+23}_{-16}	4887^{+3491}_{-1080}	$34982^{+258136}_{-25548}$

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

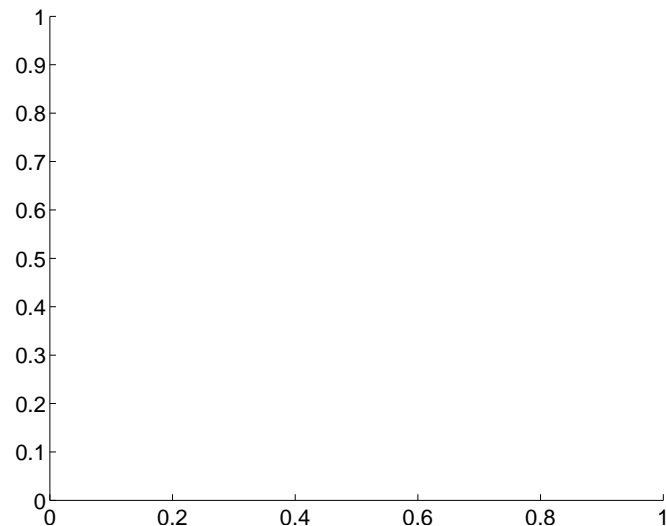
Supplemental centroid analysis for 007456460-03. Kepler magnitude: 14.93. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

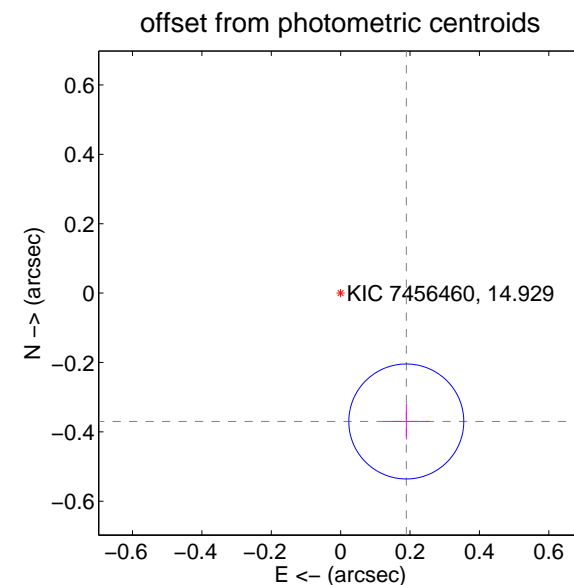
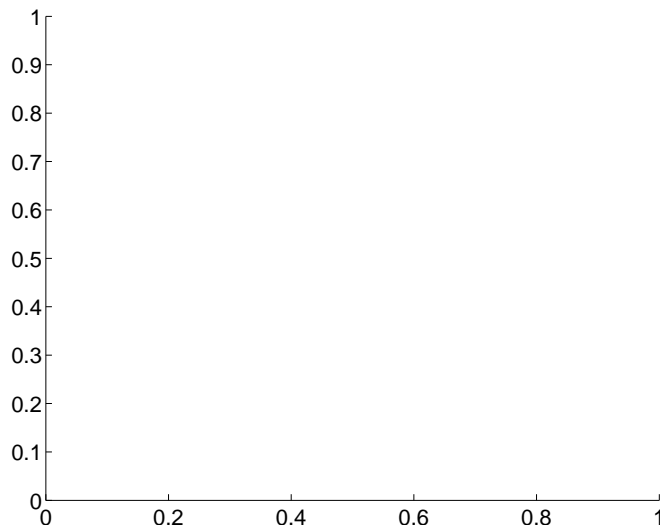
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	0.42 ± 0.06	7.52	-0.19 ± 0.07	-0.37 ± 0.05

There is no PRF-fit offset from OOT-fit

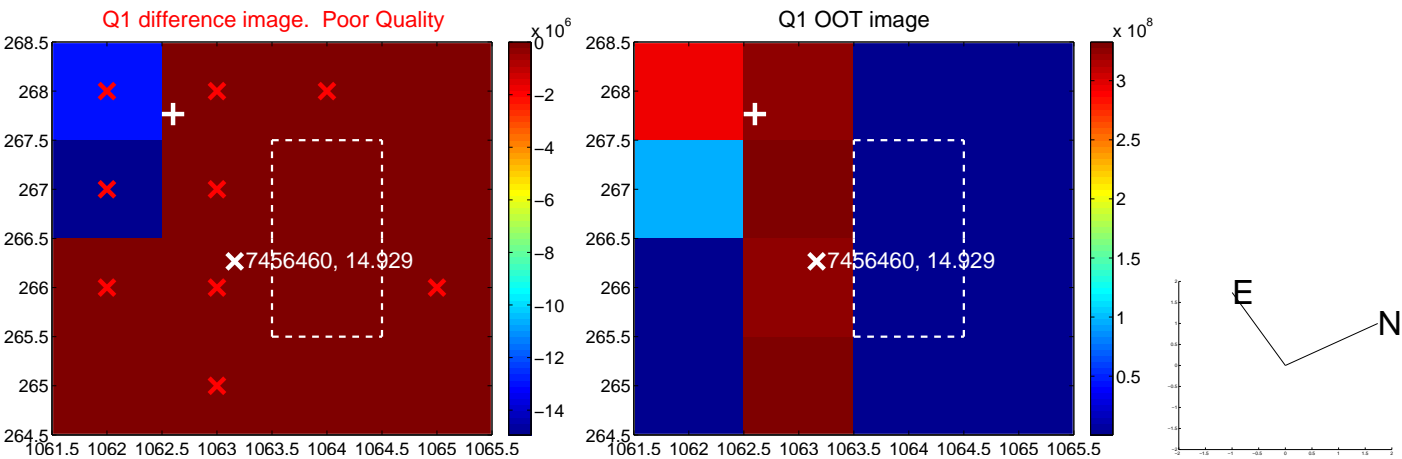


There is no PRF-fit offset from KIC

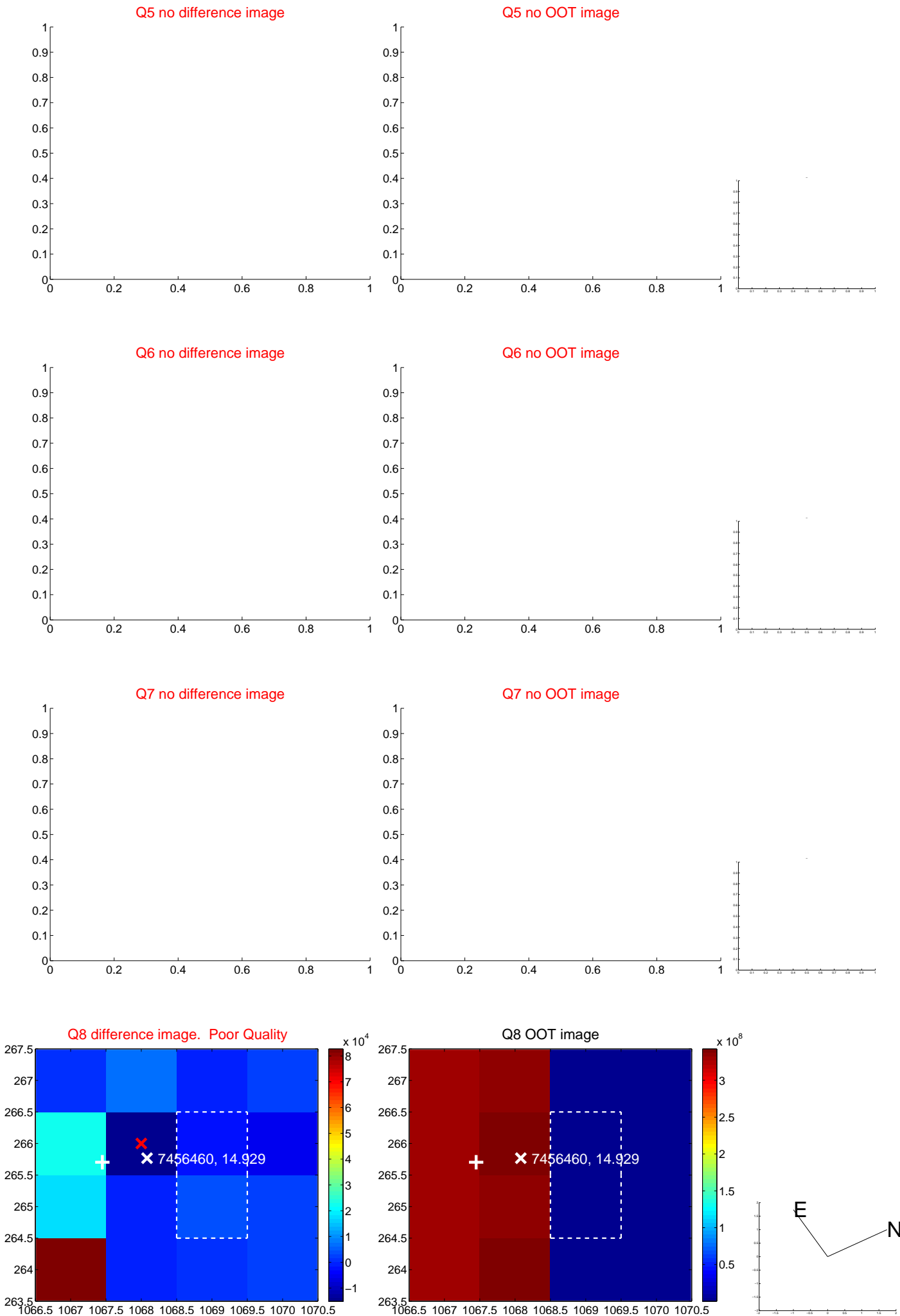


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



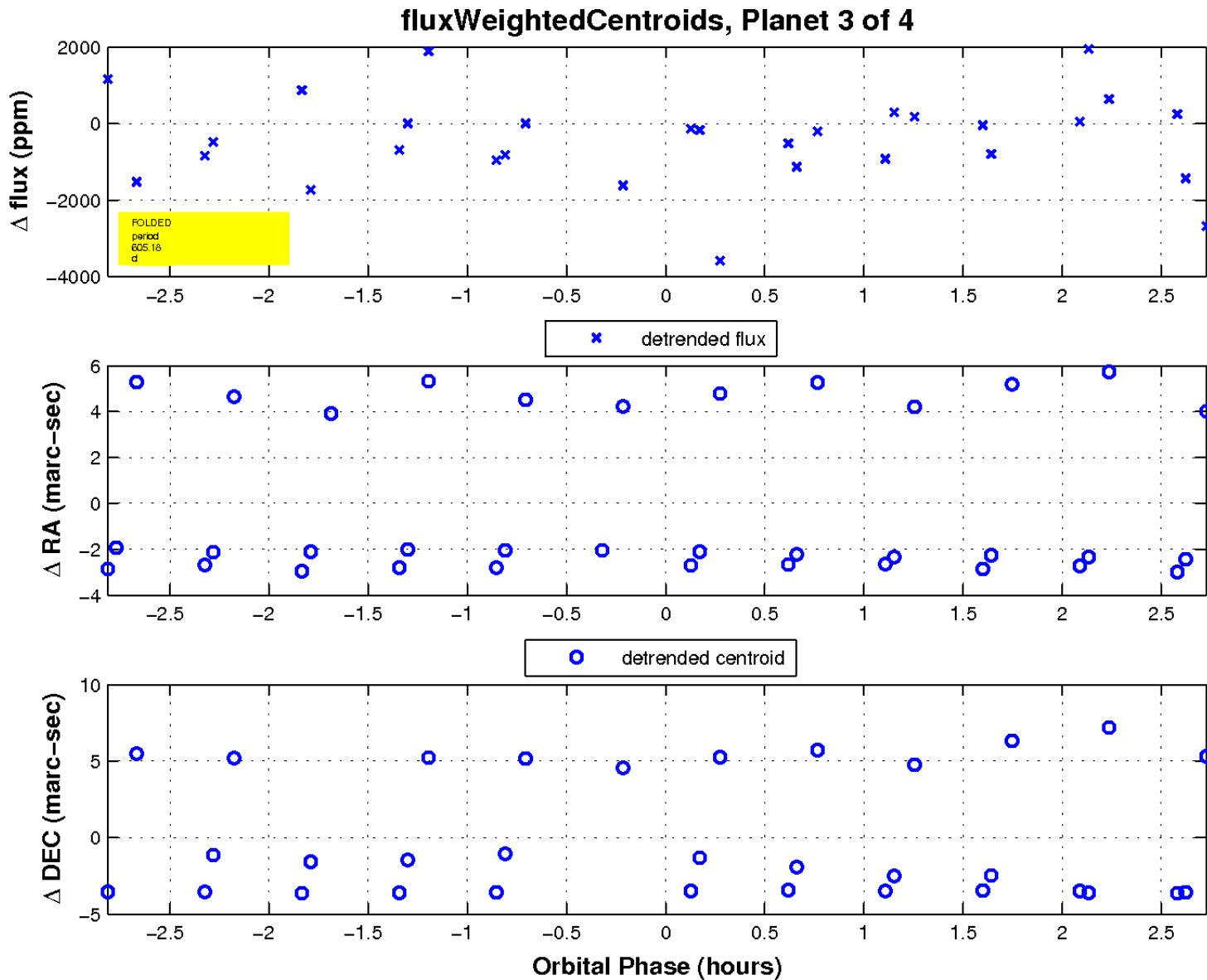
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

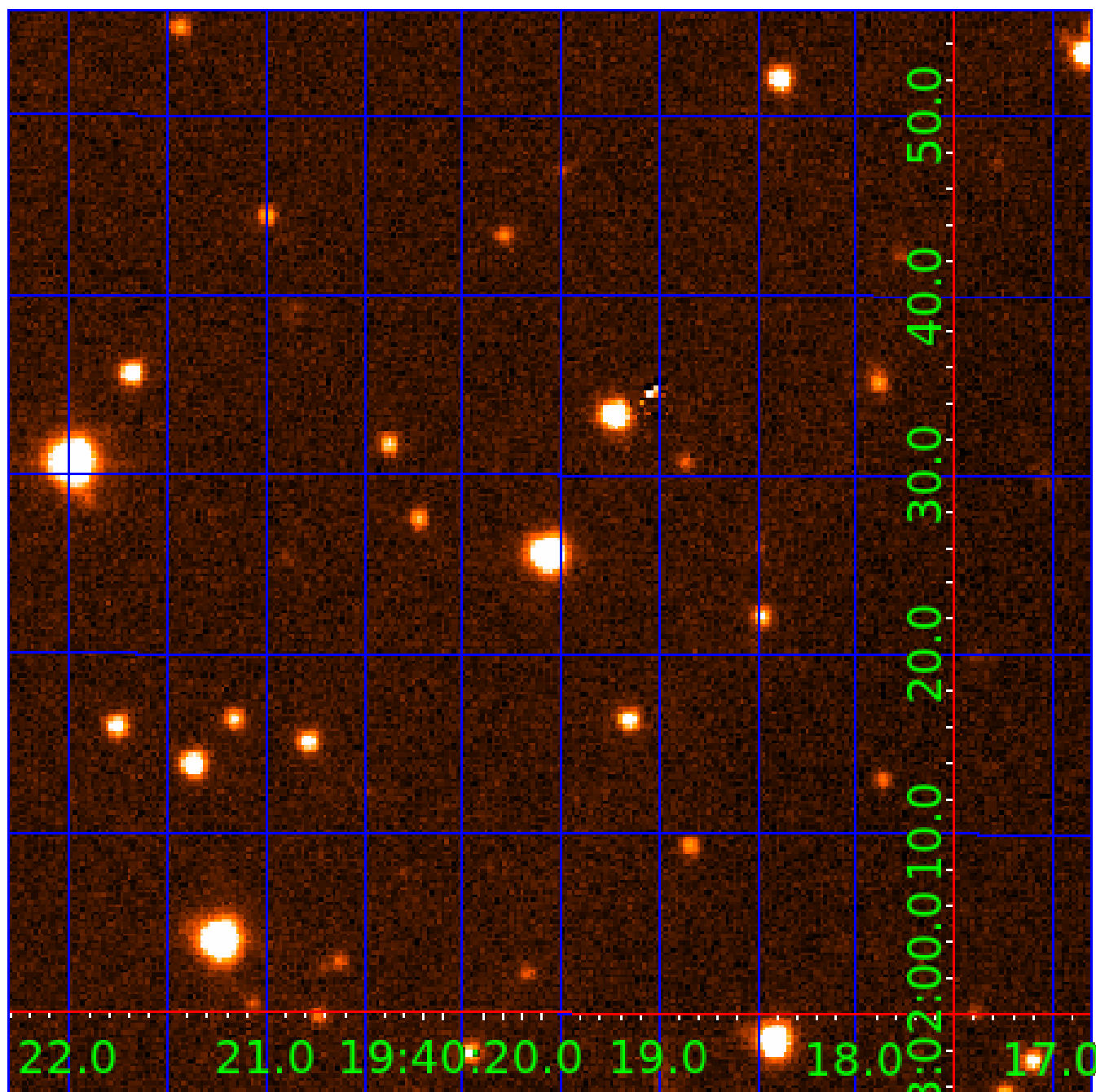


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007456460

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})
007456460-01	OBS	No	248.515972	247.255759	430.9	13.428	32.4	3.1	0.96	5986	2.06	1.77
007456460-02	OBS	No	251.249870	359.184866	4645.1	27.370	34.4	23.8	0.96	5986	11.92	1.75
007456460-03	OBS	No	605.180747	137.988432	2695.9	15.000	20.5	-1.0	0.96	5986	4.95	0.54
007456460-04	OBS	No	557.741942	236.680912	2106.5	14.980	15.4	12.3	0.96	5986	4.84	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007456460-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007456460-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
007456460-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

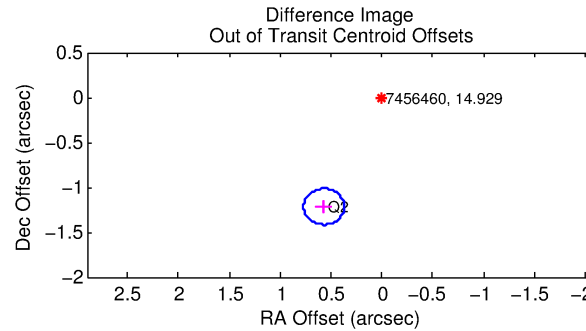
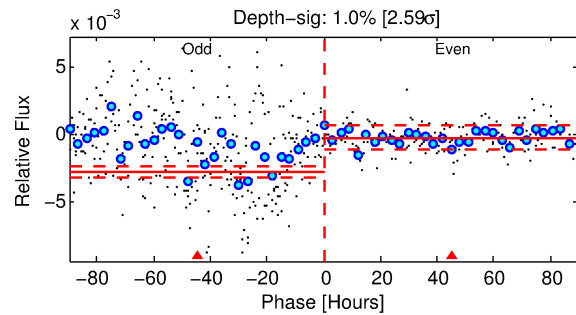
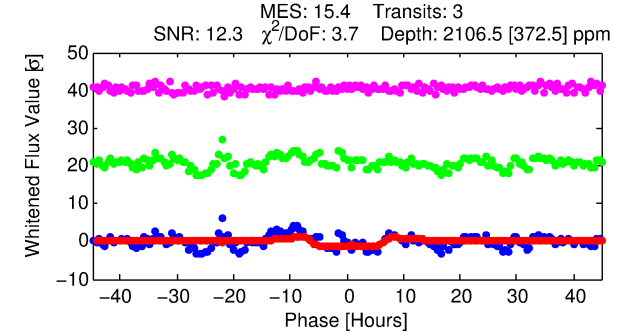
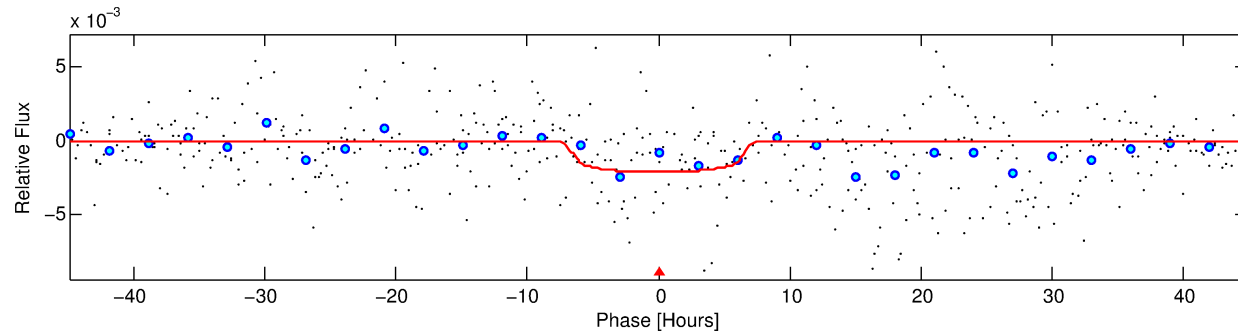
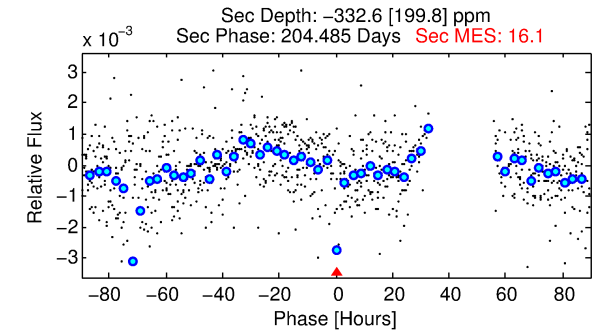
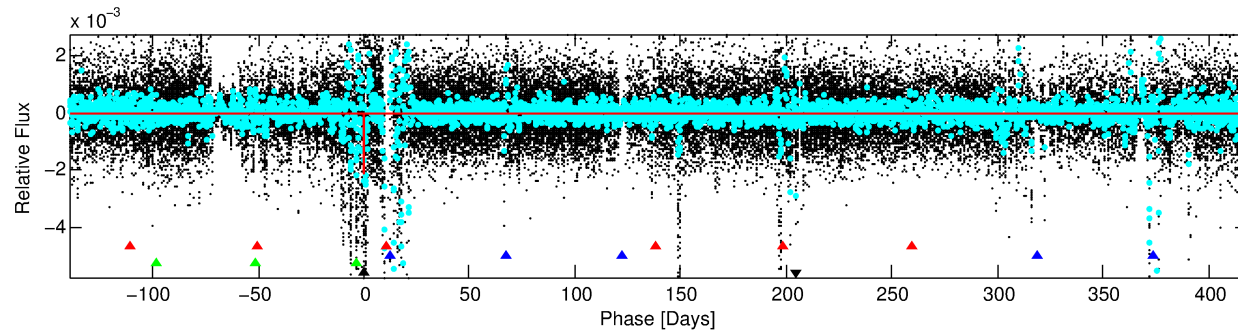
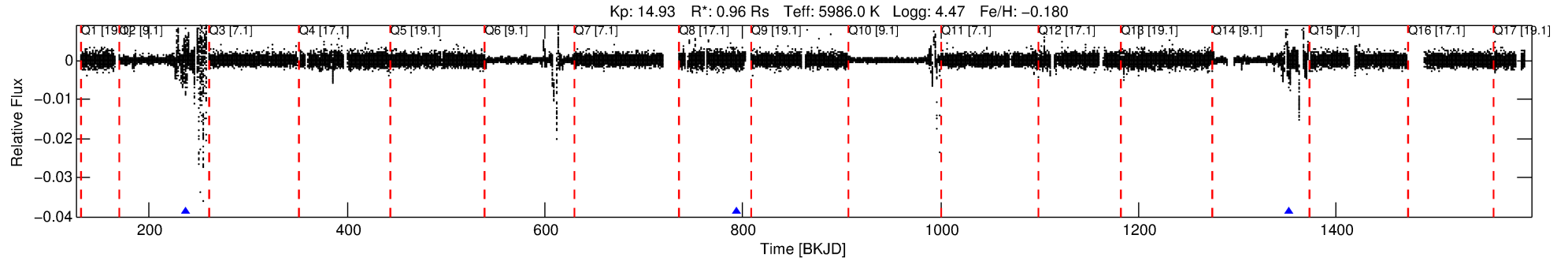
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007456460-04

No Significant Match Found

DV One-Page Summary

KIC: 7456460 Candidate: 4 of 4 Period: 557.742 d



DV Fit Results:

Period = 557.74194 [0.02026] d
Epoch = 236.6809 [0.0338] BKJD
Rp/R* = 0.0464 [0.0102]
a/R* = 195.18 [167.25]
b = 0.79 [0.41]
Seff = 0.60 [0.25]
Teff = 225 [23] K
Rp = 4.84 [1.88] Re
a = 1.3202 [0.3530] AU
Ag = N/A
Teffp = N/A

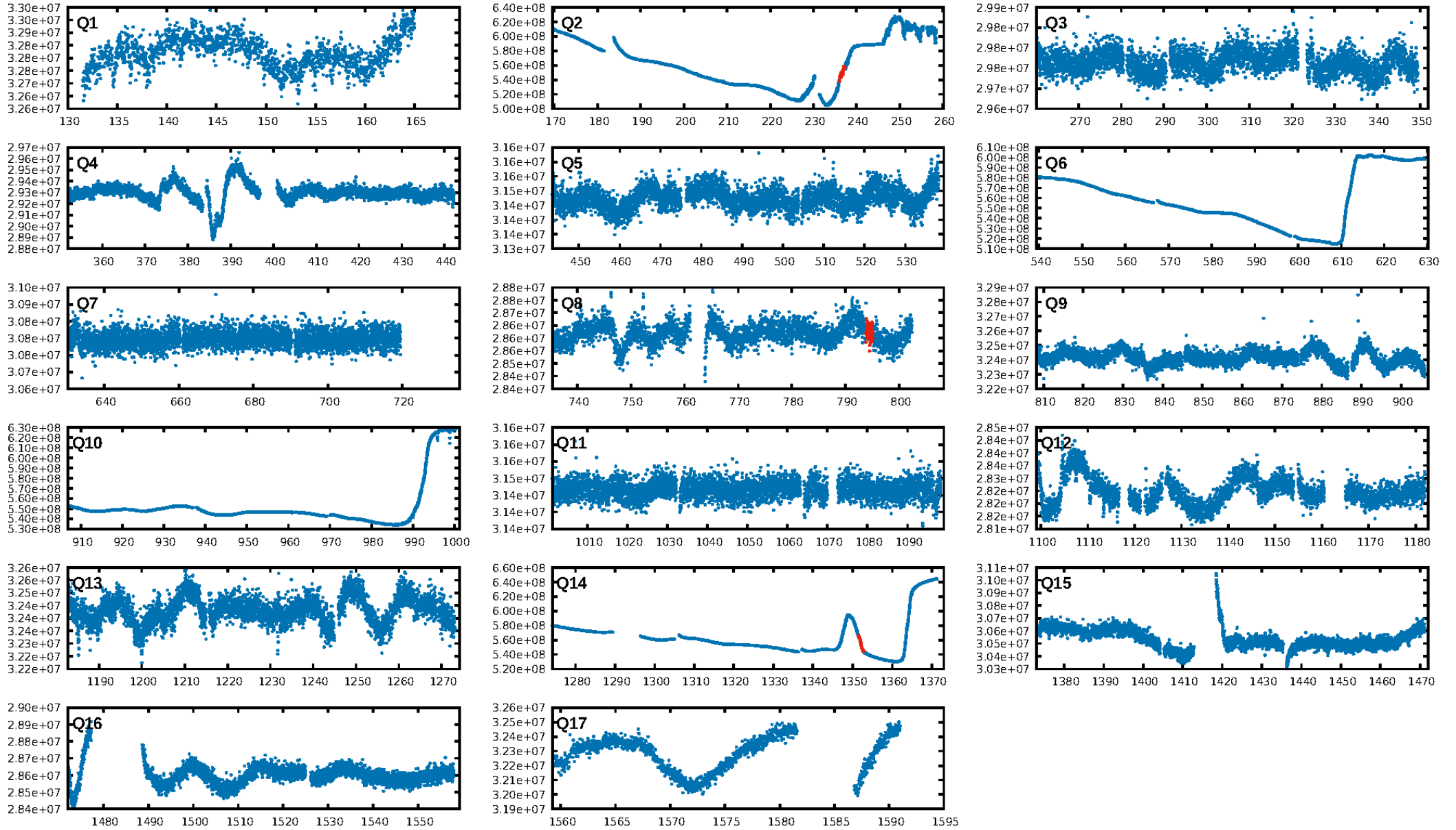
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [235.75σ]
LongPeriod-sig: 100.0% [53.71σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.31e-04
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.126
Centroid-sig: N/A
Centroid-so: 0.474 arcsec [4.87σ]
OotOffset-rm: 1.346 arcsec [20.16σ]
KicOffset-rm: 2.640 arcsec [39.55σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

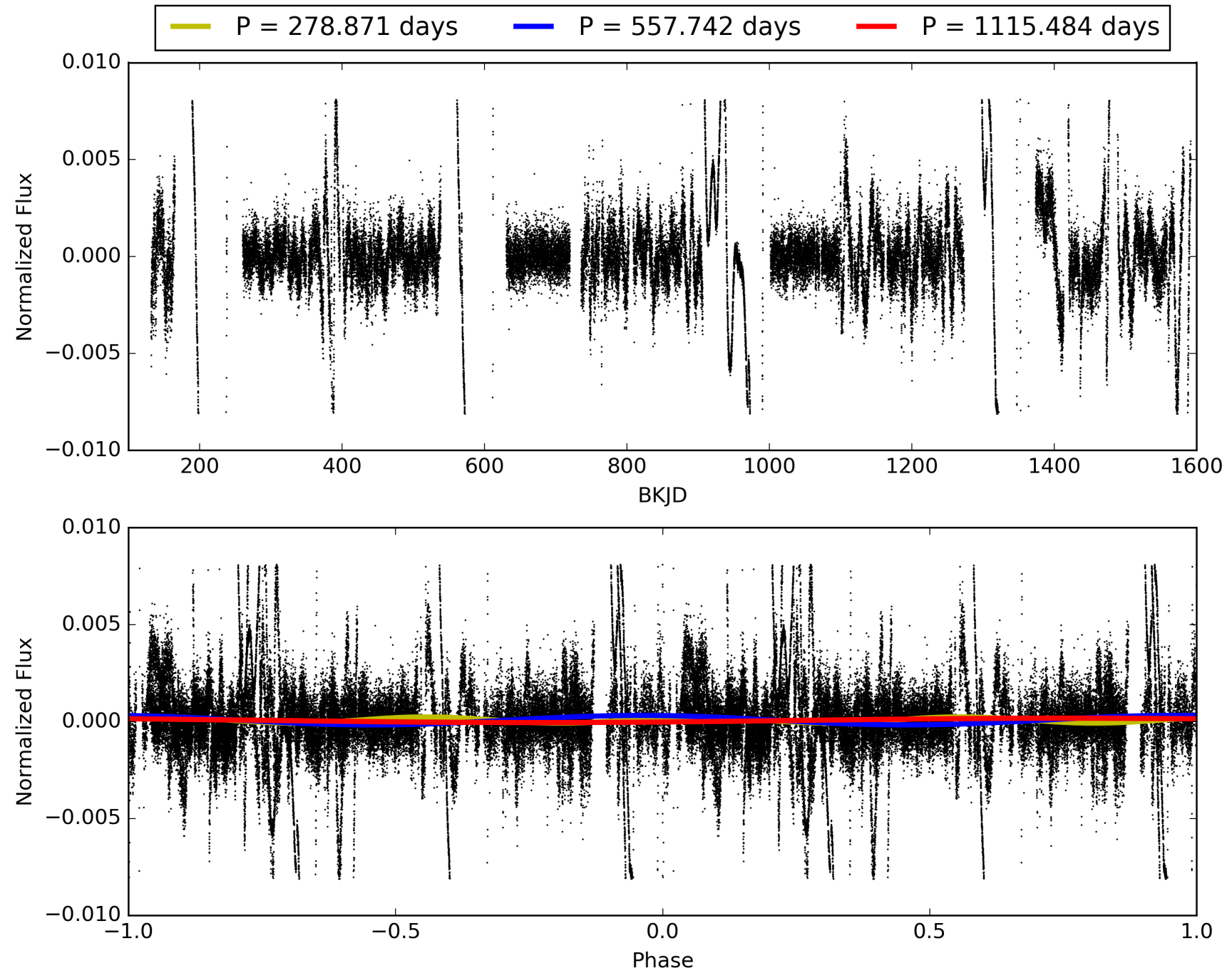
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:17:47 Z

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

TCE 007456460-04, PDC Light Curves

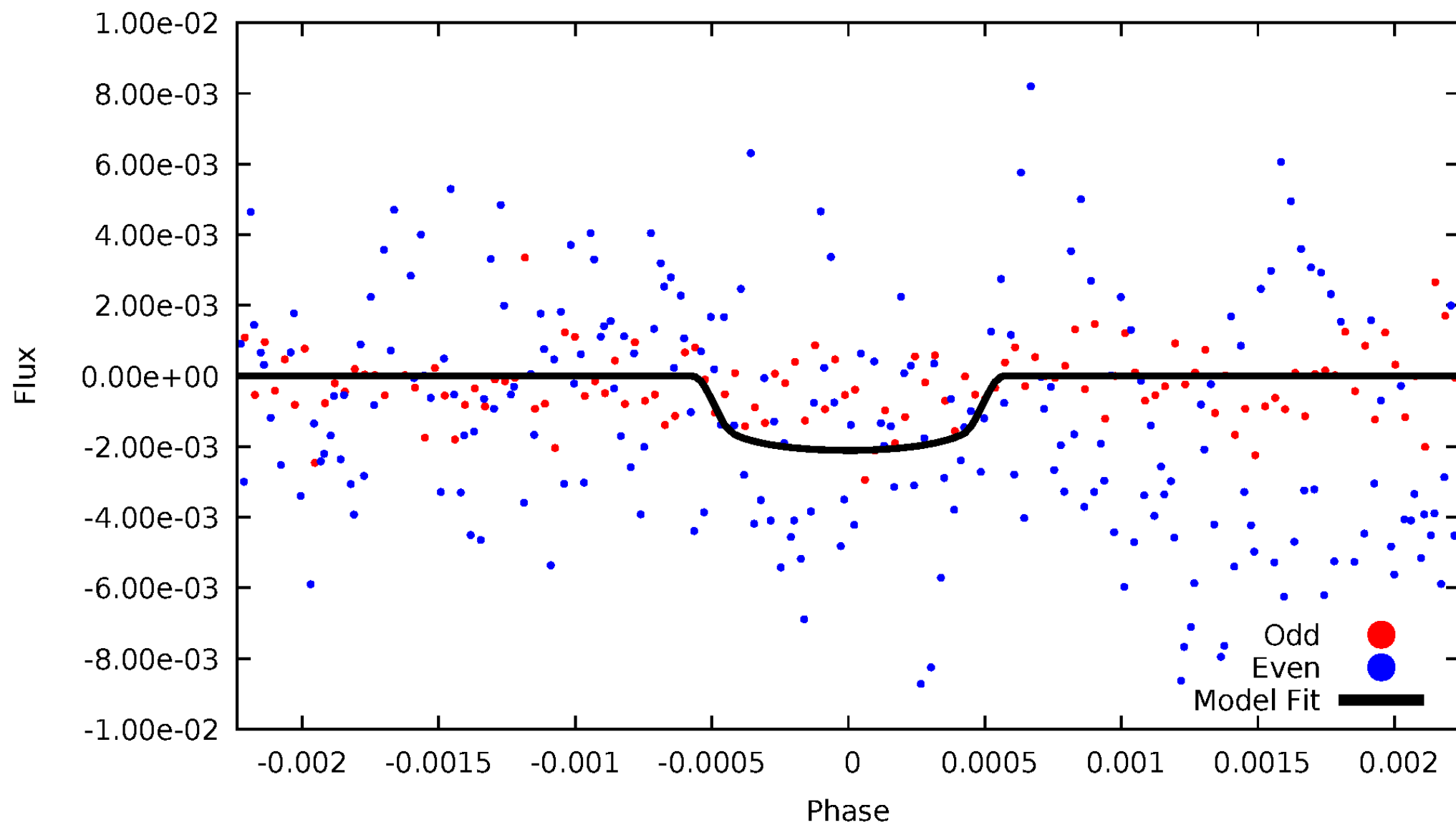


TCE 007456460-04



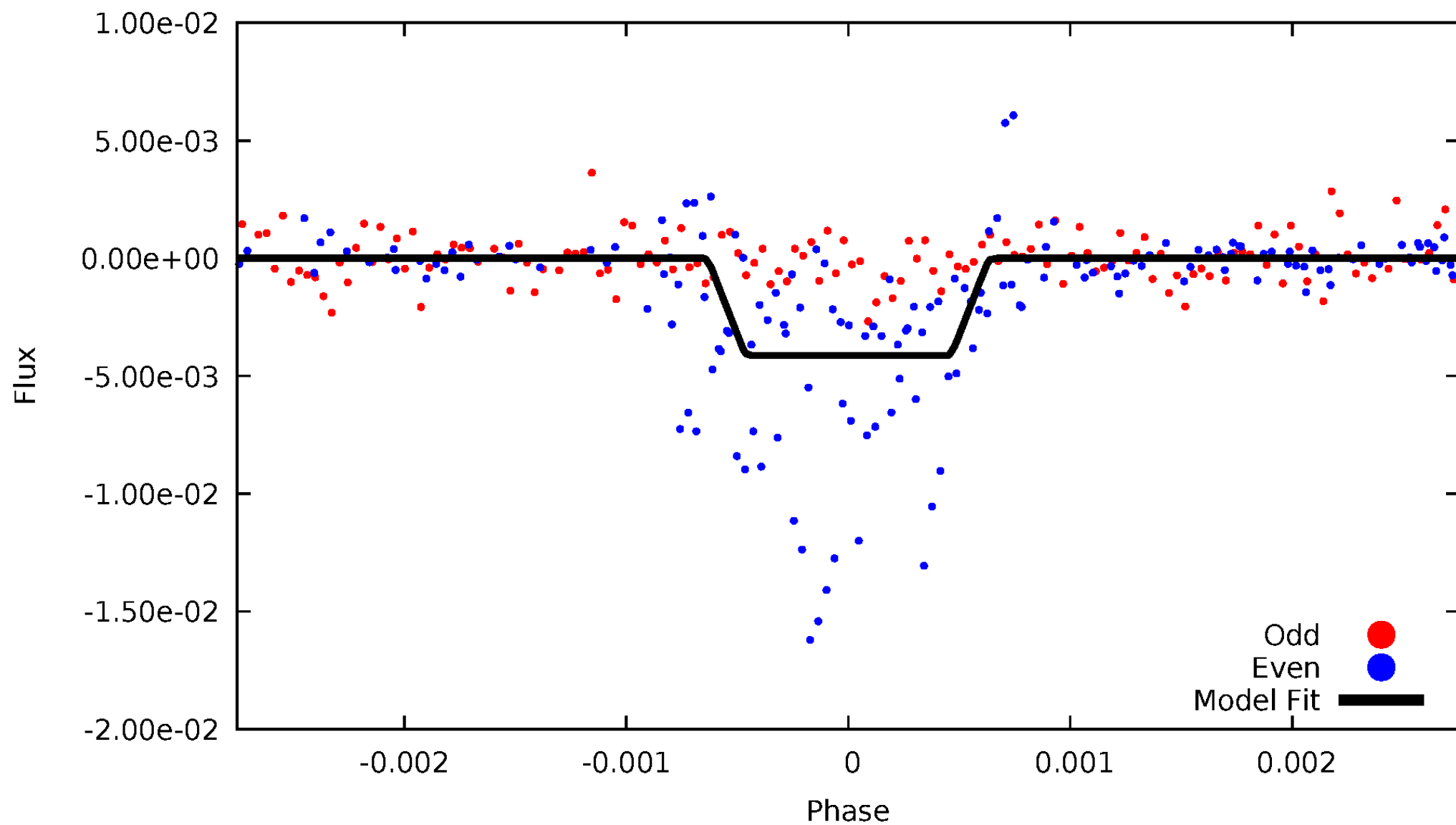
DV Odd/Even

TCE 007456460-04



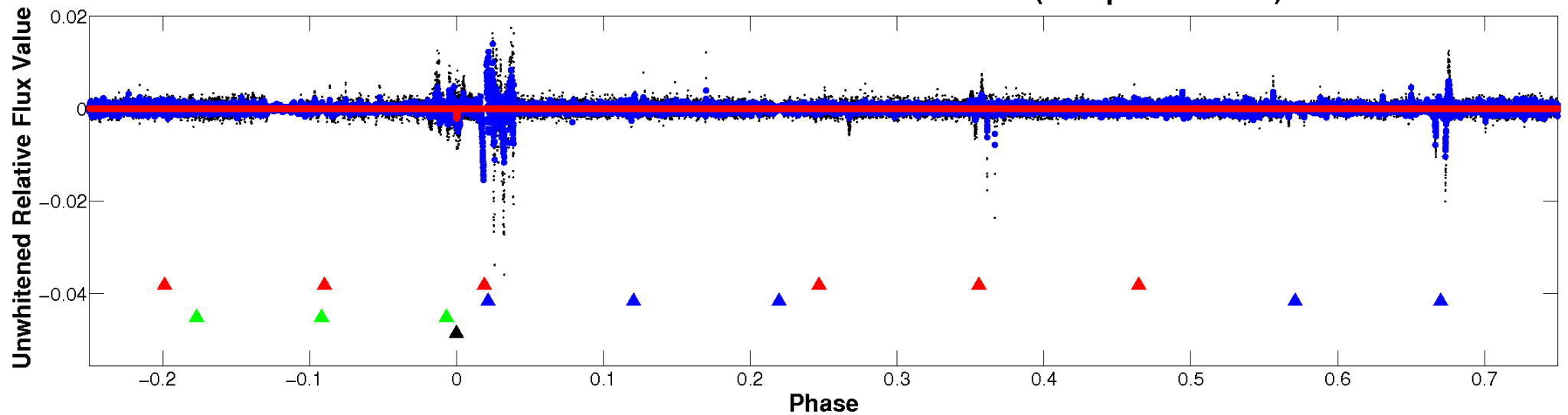
ALT Odd/Even

TCE 007456460-04

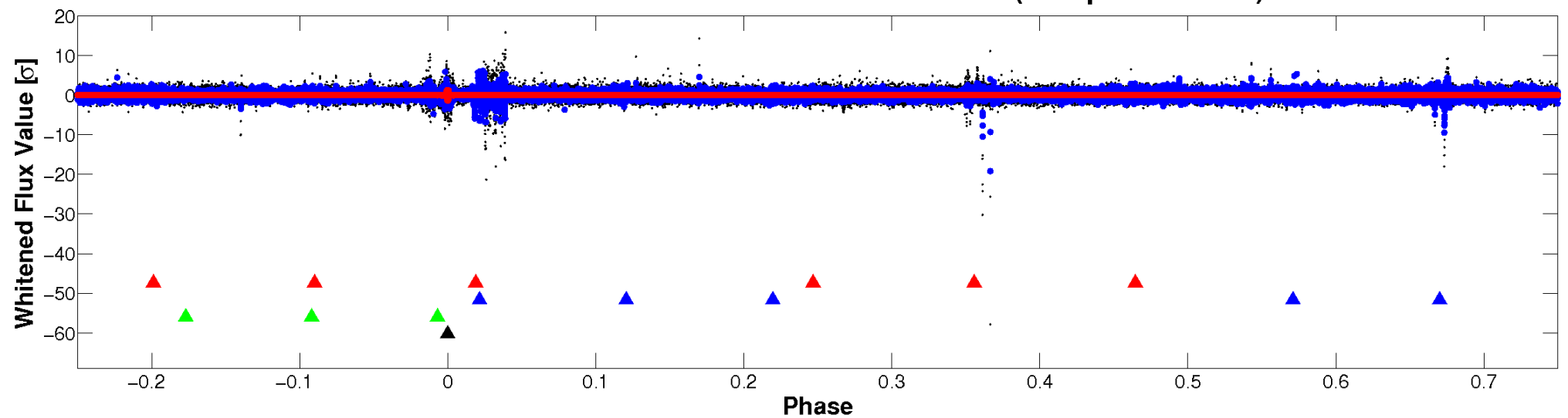


Non-Whitened Vs. Whitened Light Curve

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

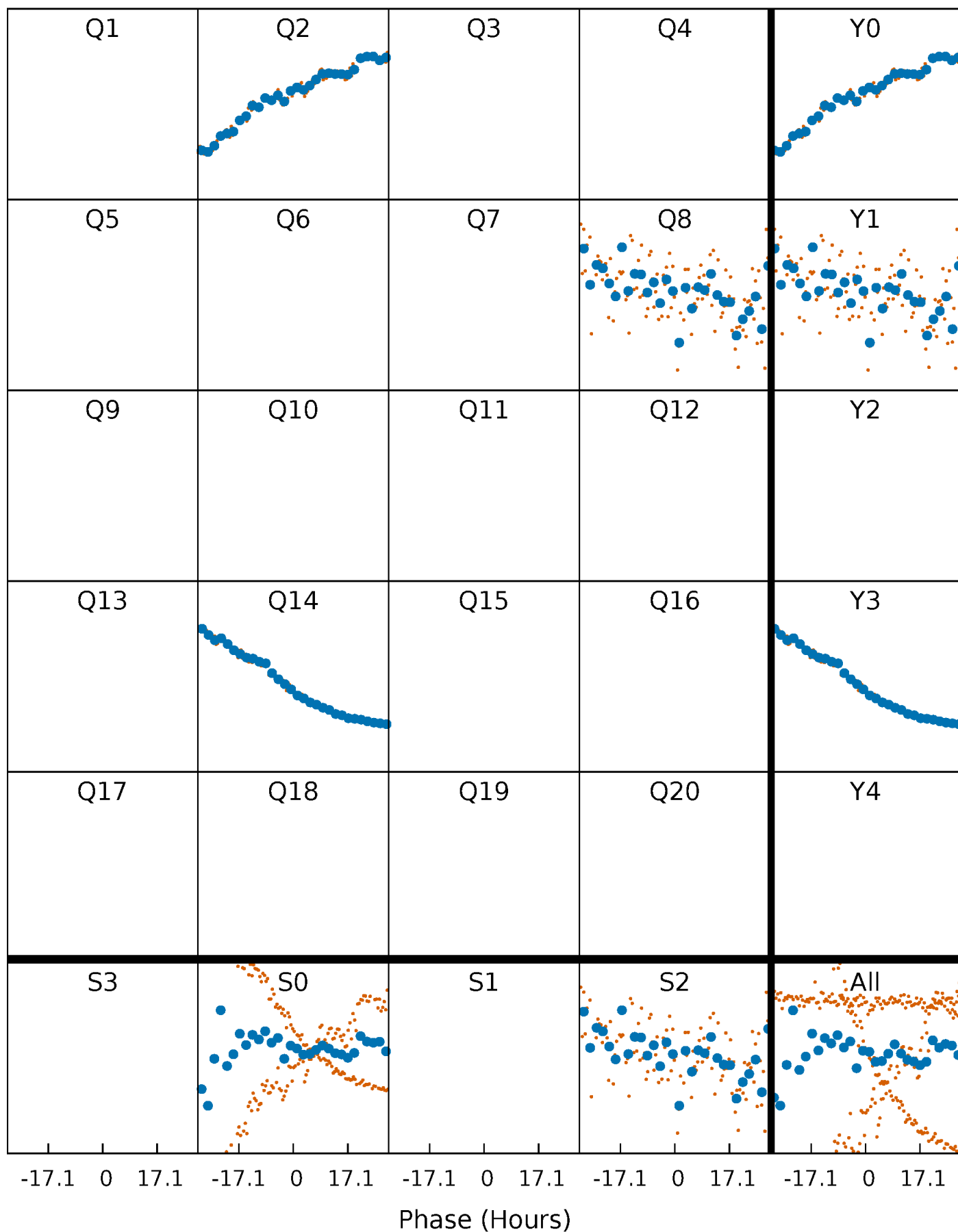


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



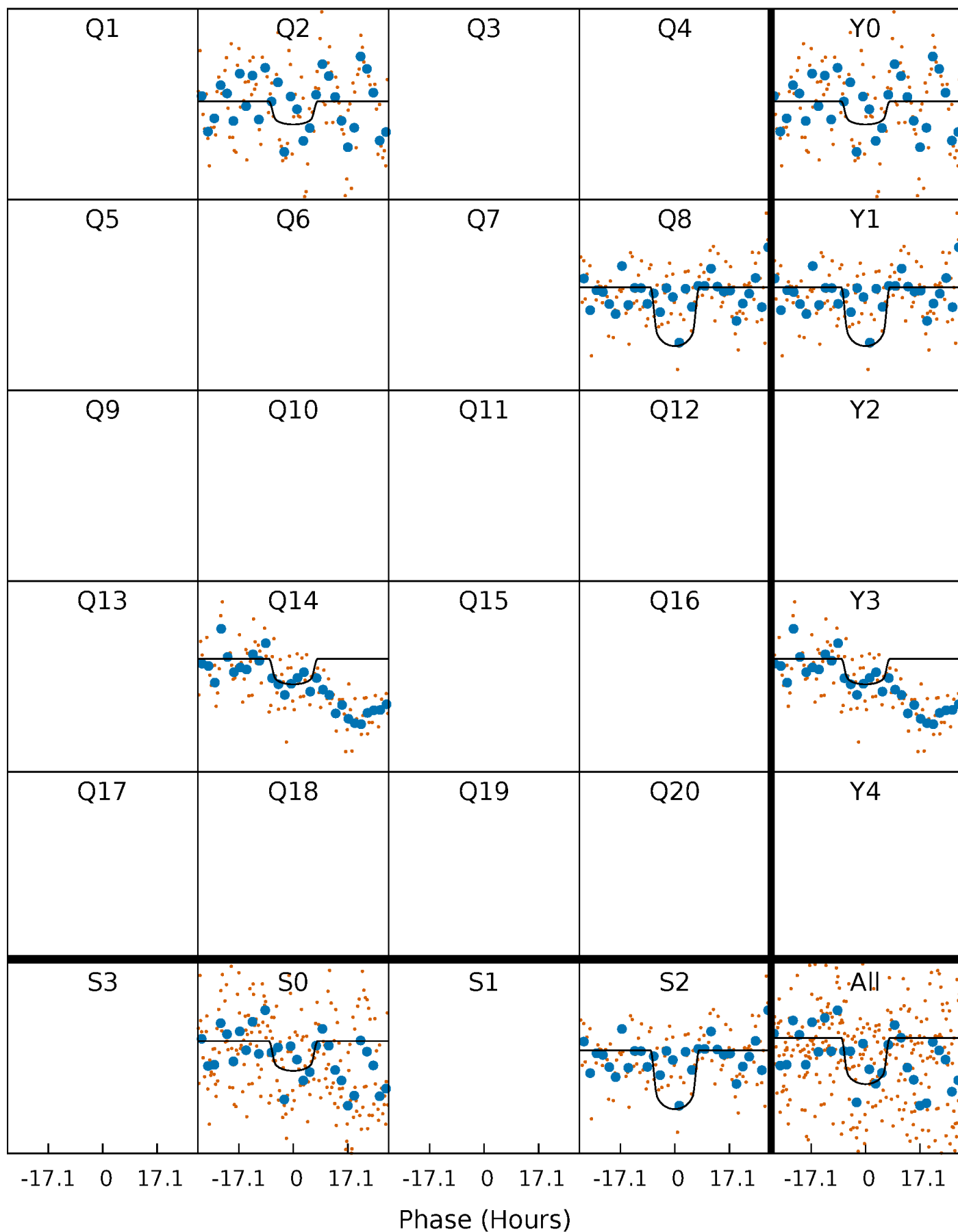
PDC Quarter-Phased Transit Curves

TCE 007456460-04 P=557.741942 Days $T_0=236.680912$ (BKJD)



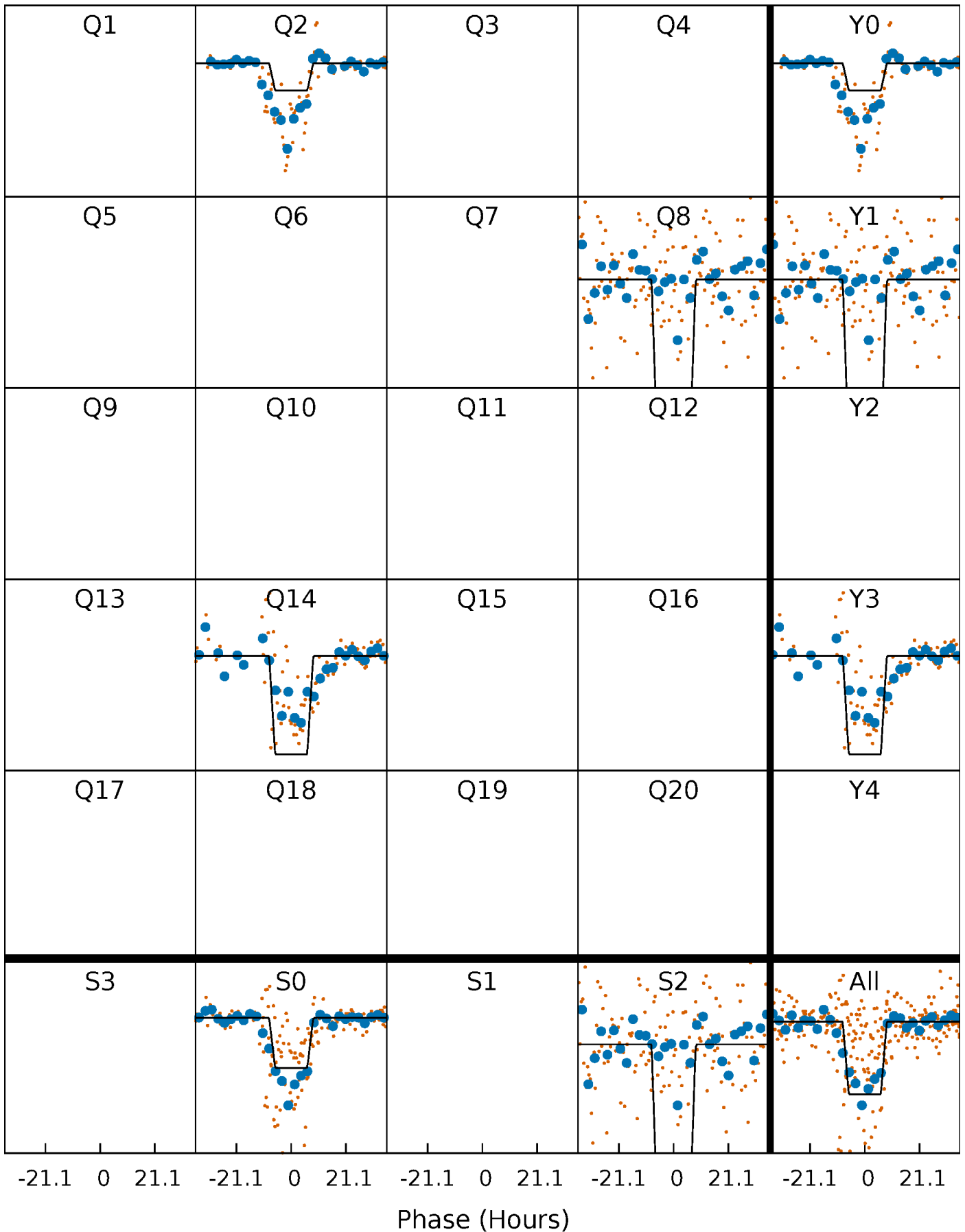
DV Quarter-Phased Transit Curves

TCE 007456460-04 $P=557.741942$ Days $T_0=236.680912$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

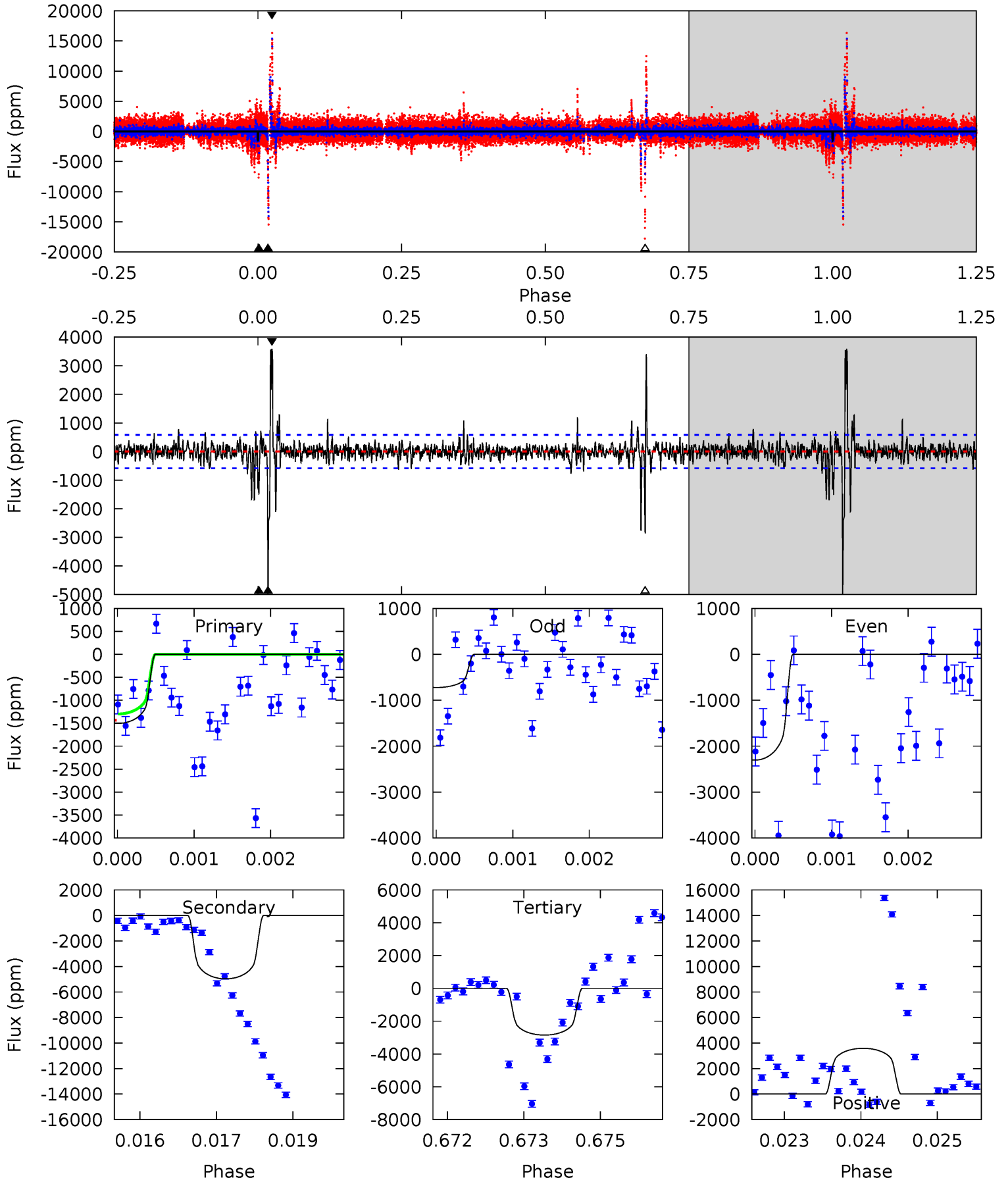
TCE 007456460-04 P=557.768076 Days $T_0=236.639010$ (BKJD)



DV Model-Shift Uniqueness Test

007456460-04, P = 557.741942 Days, E = 236.680912 Days

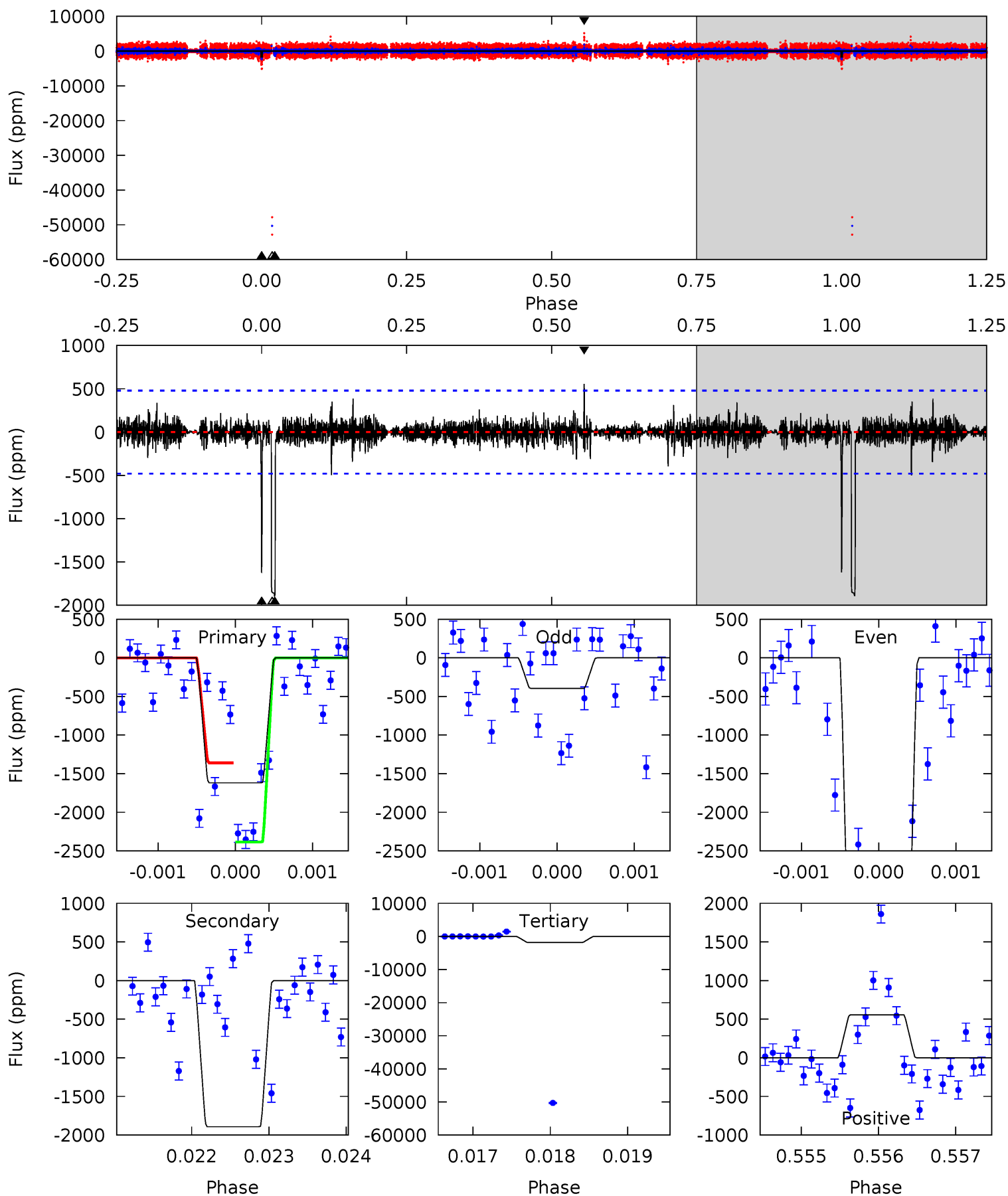
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	46.2	26.5	33.3	5.43	3.25	2.78	-12.5	-19.3	19.7	12.8	7.03	0.82	0.42	0.64



Alt Model-Shift Uniqueness Test

007456460-04, P = 557.768076 Days, E = 236.639010 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	21.3	20.9	6.27	5.41	3.22	0.95	-2.63	12.0	0.46	15.1	29.6	1.68	0.23	0



Stellar Parameters For KIC 007456460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5986^{+179}_{-197}	$4.471^{+0.070}_{-0.210}$	$-0.180^{+0.300}_{-0.300}$	$0.956^{+0.306}_{-0.102}$	$0.986^{+0.131}_{-0.131}$	$1.587^{+0.454}_{-0.837}$
	+3%/-3%	+2%/-5%	+167%/-167%	+32%/-11%	+13%/-13%	+29%/-53%
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 007456460-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4968 ± 108	$4.94^{+1.30}_{-1.19}$	319^{+23}_{-17}	7548^{+1408}_{-839}	$192704^{+135734}_{-70623}$
Alt.	-1893 ± 89	$6.87^{+1.51}_{-1.23}$	320^{+23}_{-17}	5031^{+431}_{-331}	37567^{+18154}_{-11413}

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

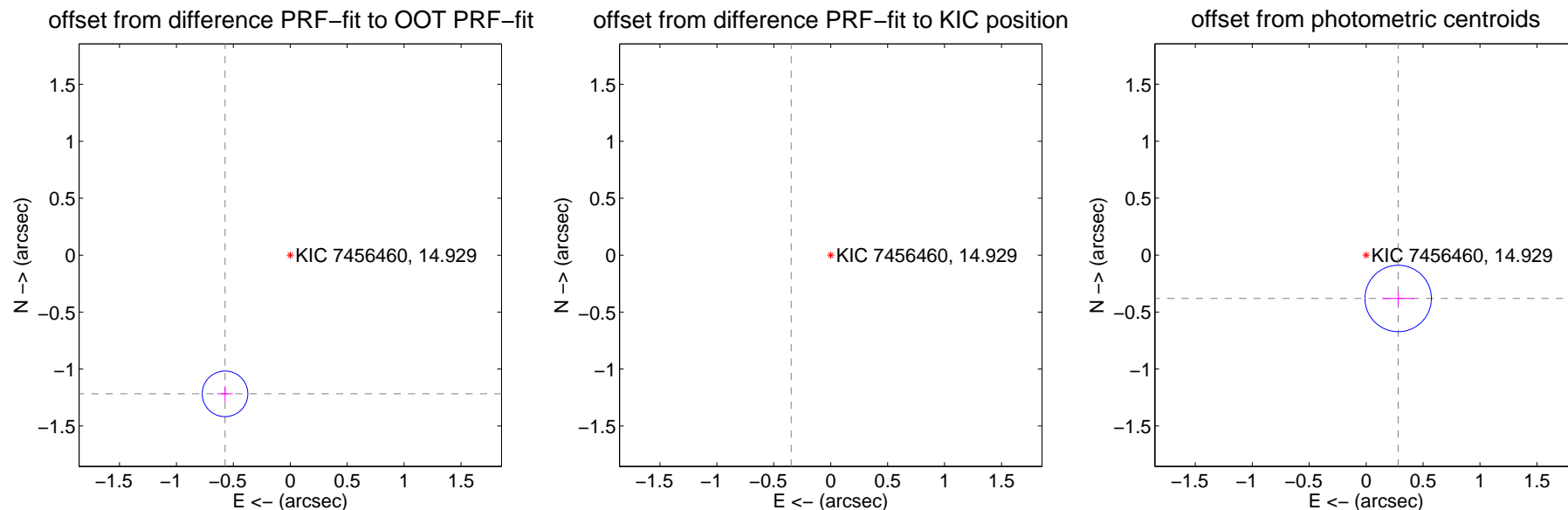
DV Centroid Data

Supplemental centroid analysis for 007456460-04. Kepler magnitude: 14.93. Transit SNR 12.31

There are 0 quarters with good PRF difference image offsets

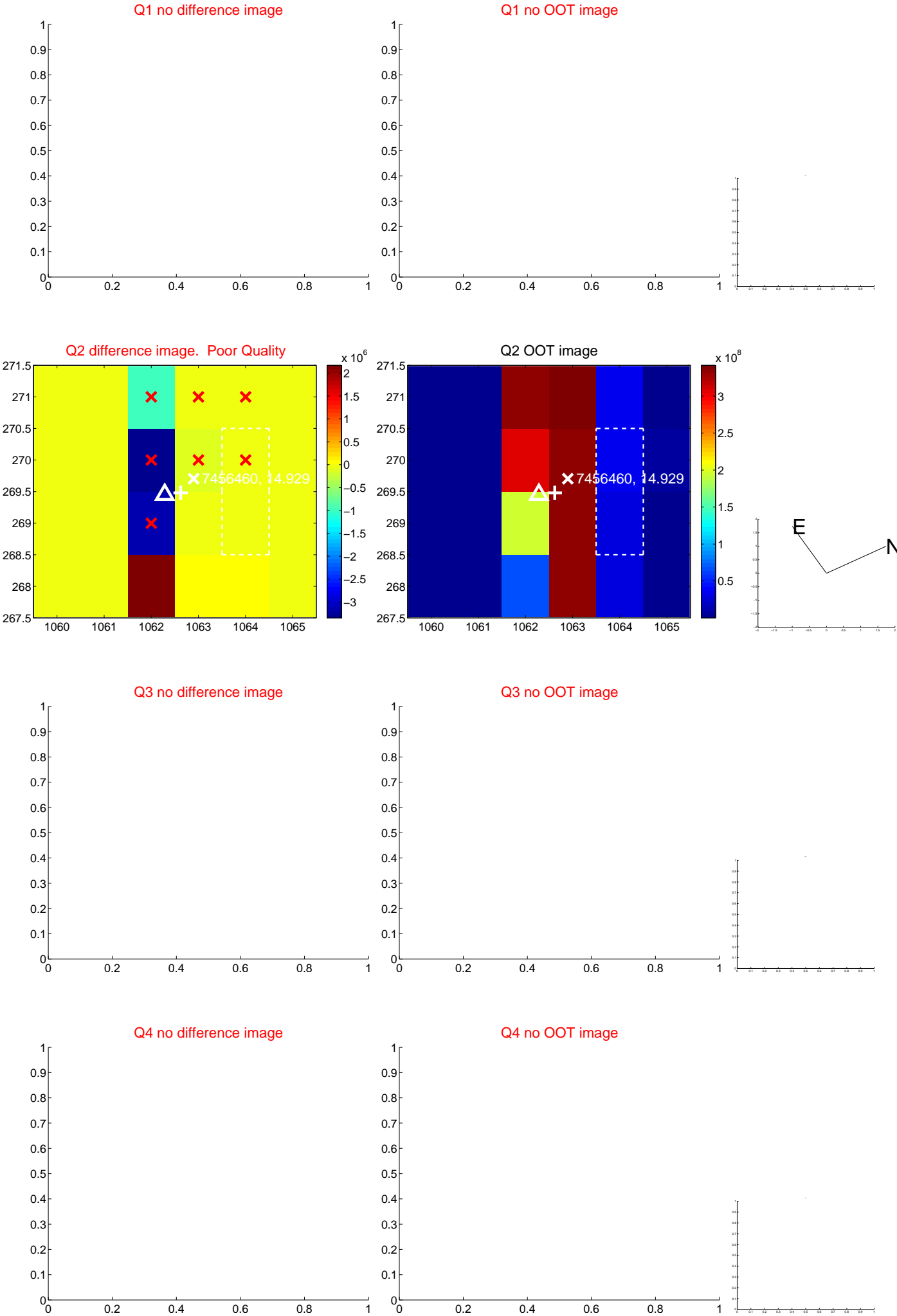
The direct PRF centroid is offset from the target star catalog position by about 1.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.346 ± 0.067	20.16	0.573 ± 0.067	-1.218 ± 0.067
PRF-fit source offset from KIC position	2.640 ± 0.067	39.55	0.347 ± 0.067	-2.617 ± 0.067
photometric centroid source offset	0.47 ± 0.10	4.87	-0.28 ± 0.14	-0.38 ± 0.06

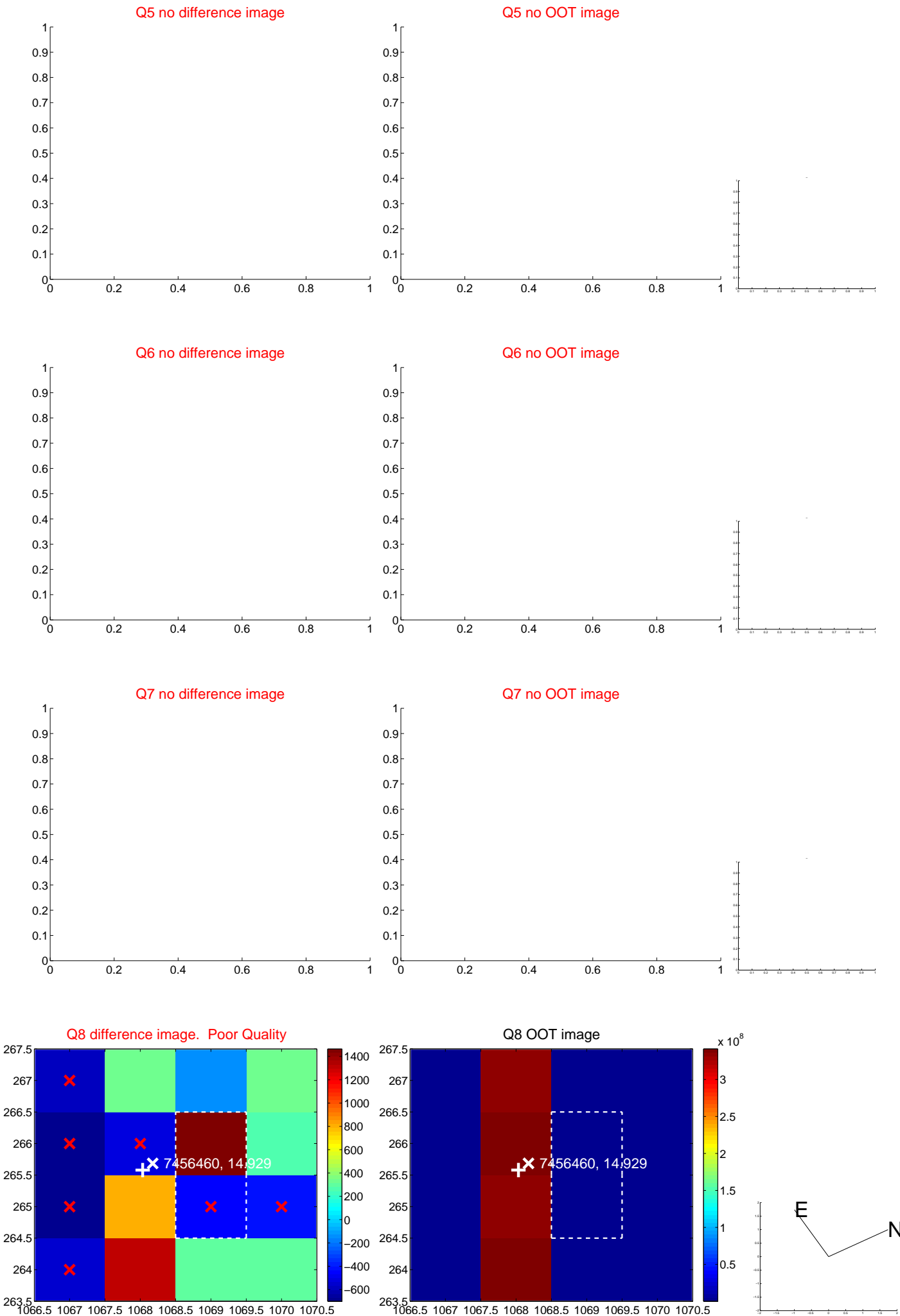


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



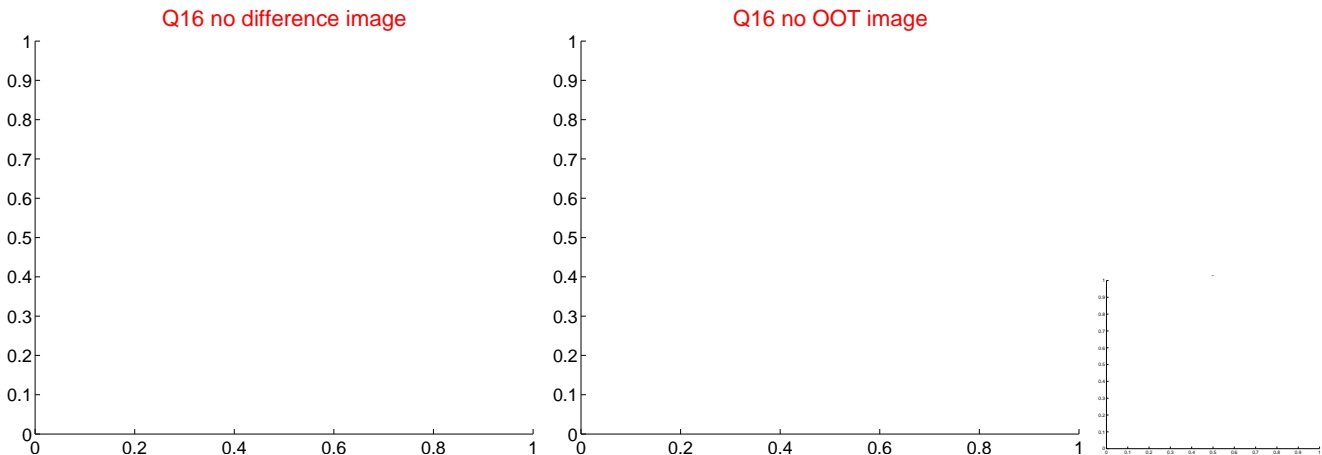
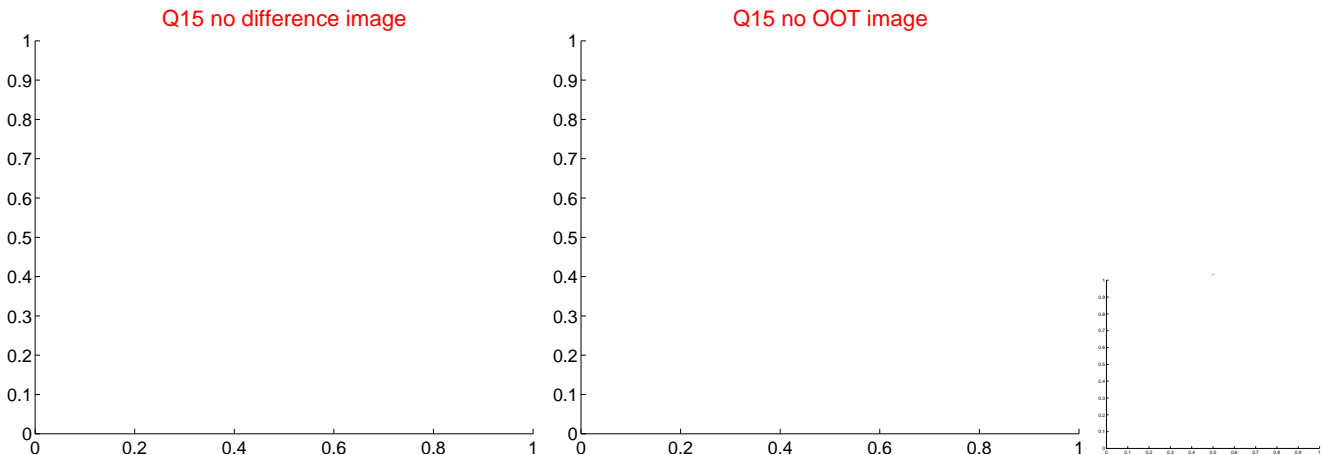
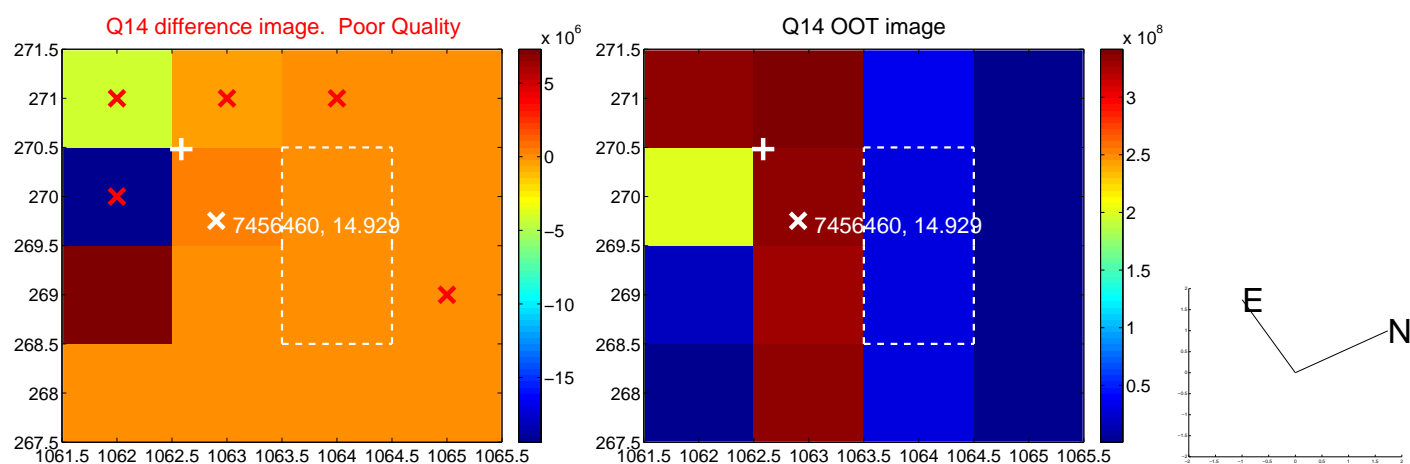
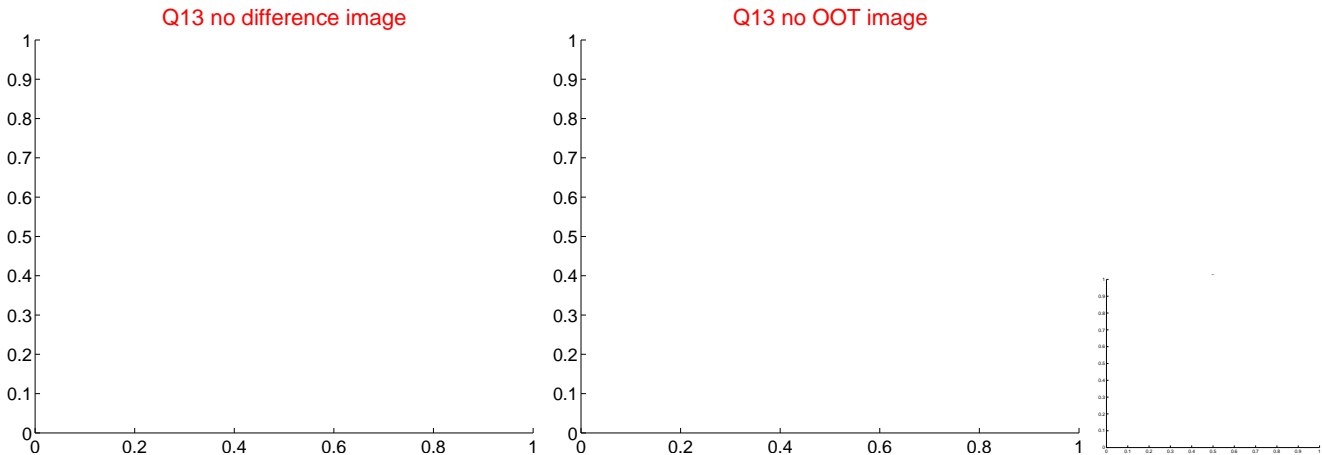
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



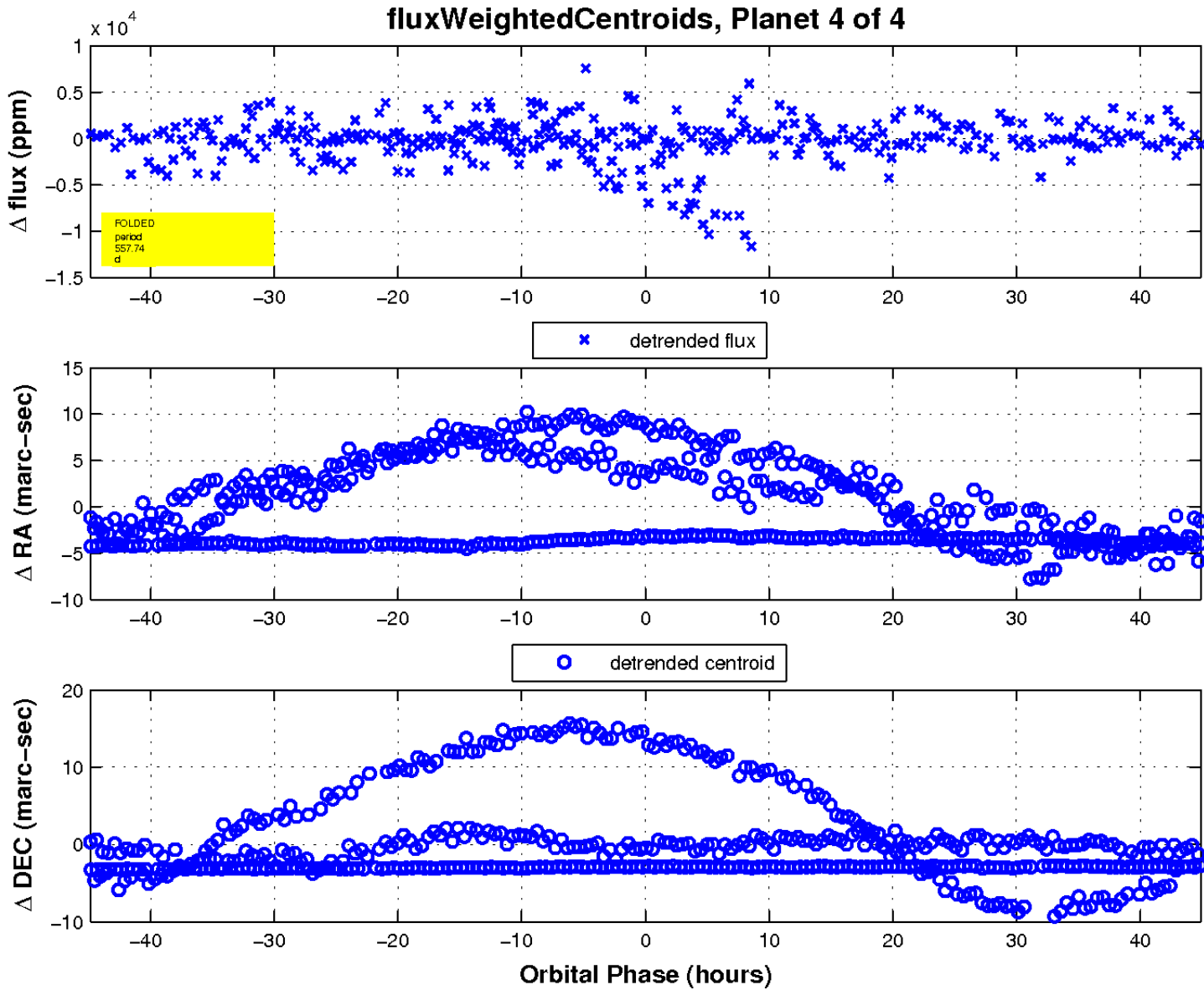
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination

