

KIC 010156064

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})
010156064-01	OBS	7290.01	2.427969	133.598919	60404.7	5.304	31448.9	15600.6	1.92	7652	79.79	6339.01
010156064-02	OBS	No	264.399952	314.665564	3087.4	49.844	32.4	24.8	1.92	7652	19.05	12.19
010156064-03	OBS	No	298.609235	276.006913	316.1	6.000	33.4	-1.0	1.92	7652	3.47	10.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010156064-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_SATURATED
010156064-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010156064-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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.

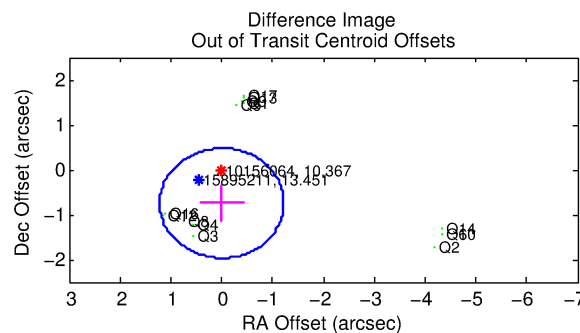
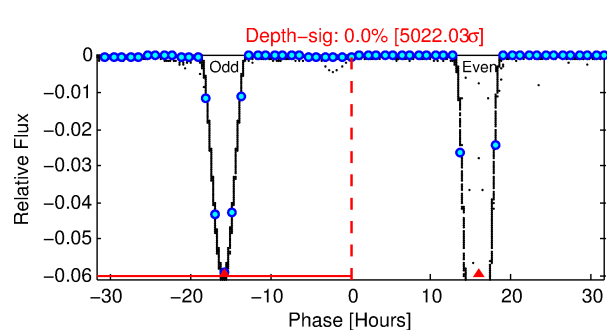
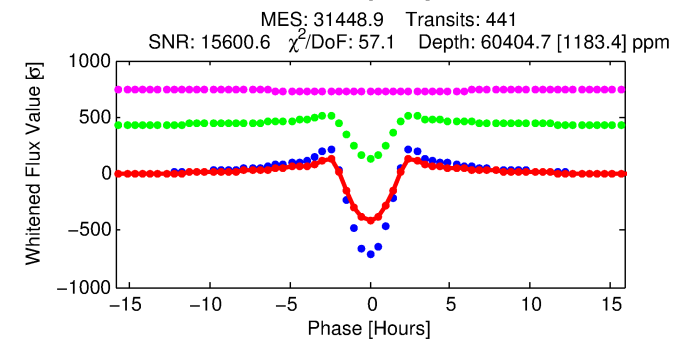
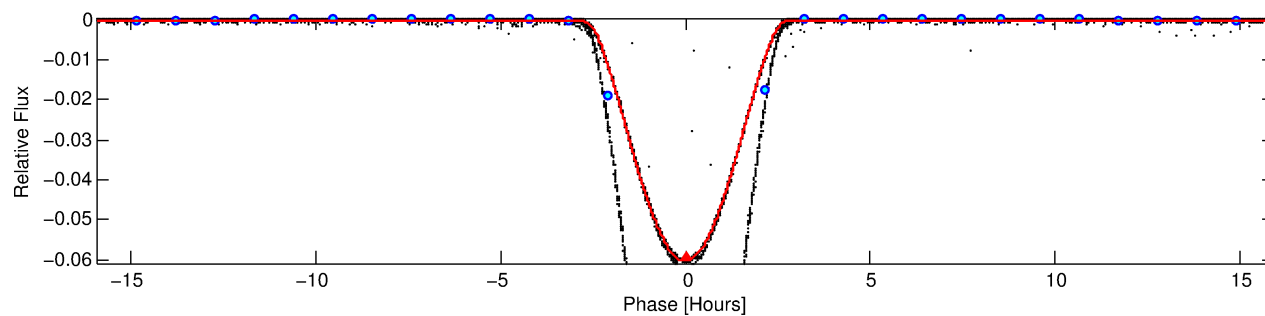
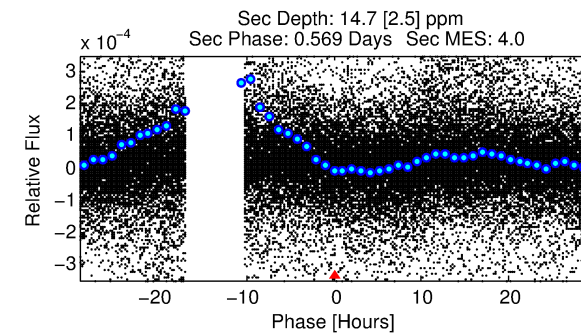
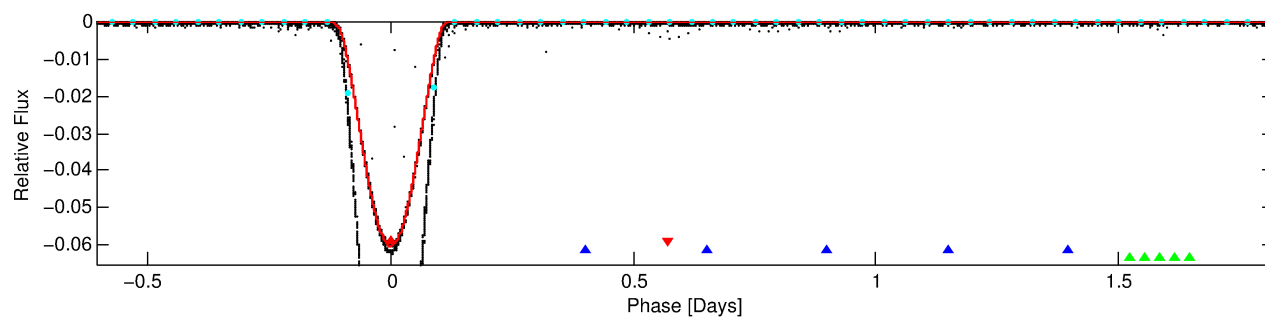
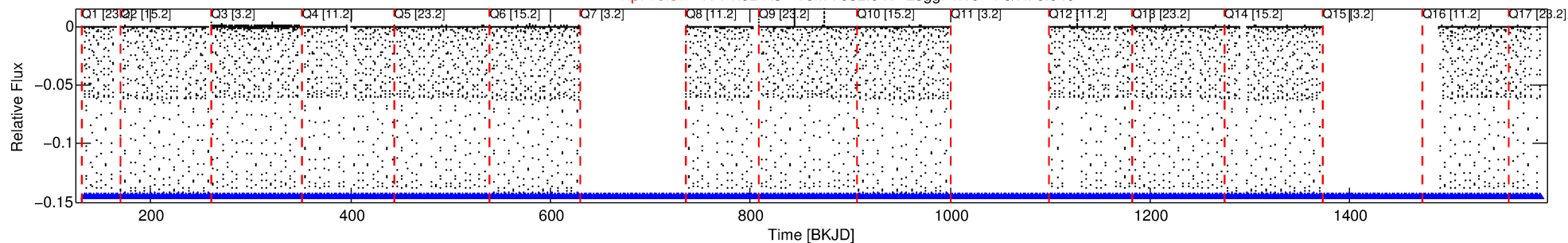
Ephemeris Match Information For 010156064-01

No Significant Match Found

DV One-Page Summary

KIC: 10156064 Candidate: 1 of 3 Period: 2.428 d
KOI: K07290.01 Corr: 0.979

Kp: 10.37 R*: 1.92 Rs Teff: 7652.0 K Logg: 4.10 Fe/H: 0.040



DV Fit Results:

Period = 2.42797 [0.00000] d
Epoch = 133.5989 [0.0000] BKJD
Rp/R* = 0.3806 [0.0121]
a/R* = 3.52 [0.00]
b = 1.00 [0.01]
Seff = 6339.01 [2264.41]
Teq = 2275 [203] K
Rp = 79.79 [22.57] Re
a = 0.0423 [0.0096] AU
Ag = 0.00 [0.00] [-1205.86σ]
Teffp = 769 [47] K [-7.22σ]

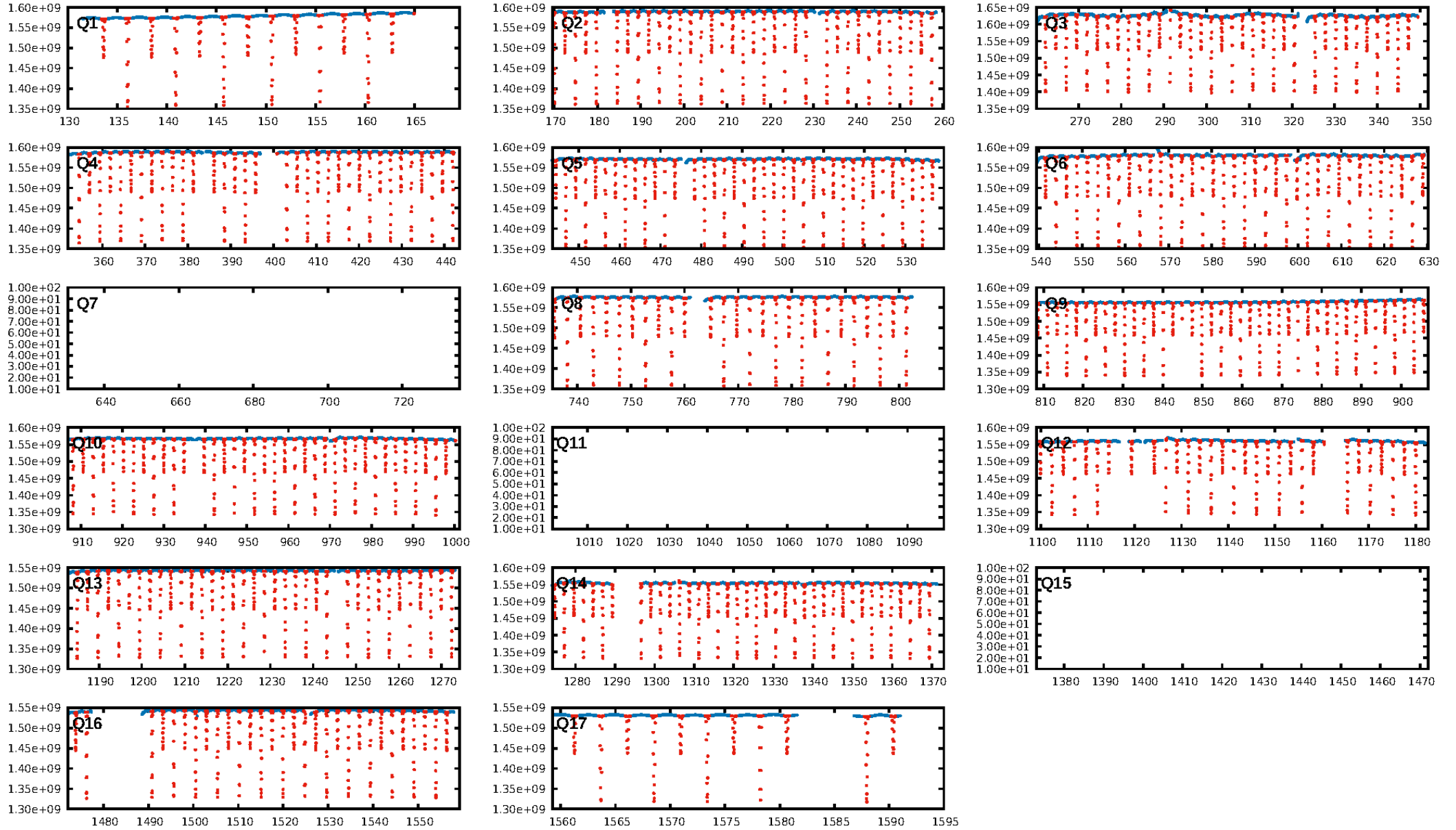
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [125.43σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [417/417]
GhostDiagnostic-chr: 9.936
Centroid-sig: N/A
Centroid-so: 0.327 arcsec [667.39σ]
OotOffset-rm: 0.746 arcsec [1.83σ]
KicOffset-rm: 2.185 arcsec [3.11σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [14/14]

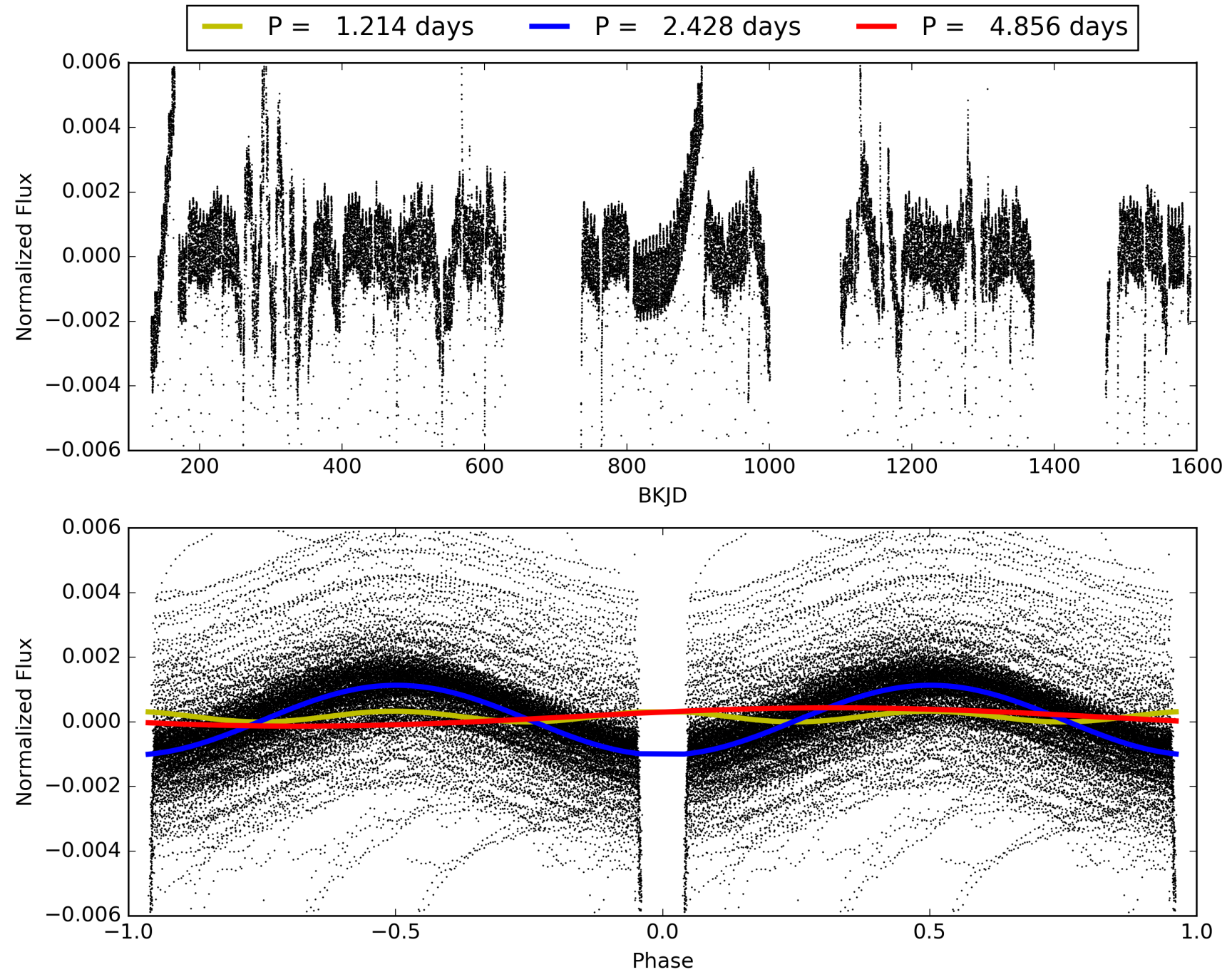
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:15:29 Z

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

TCE 010156064-01, PDC Light Curves

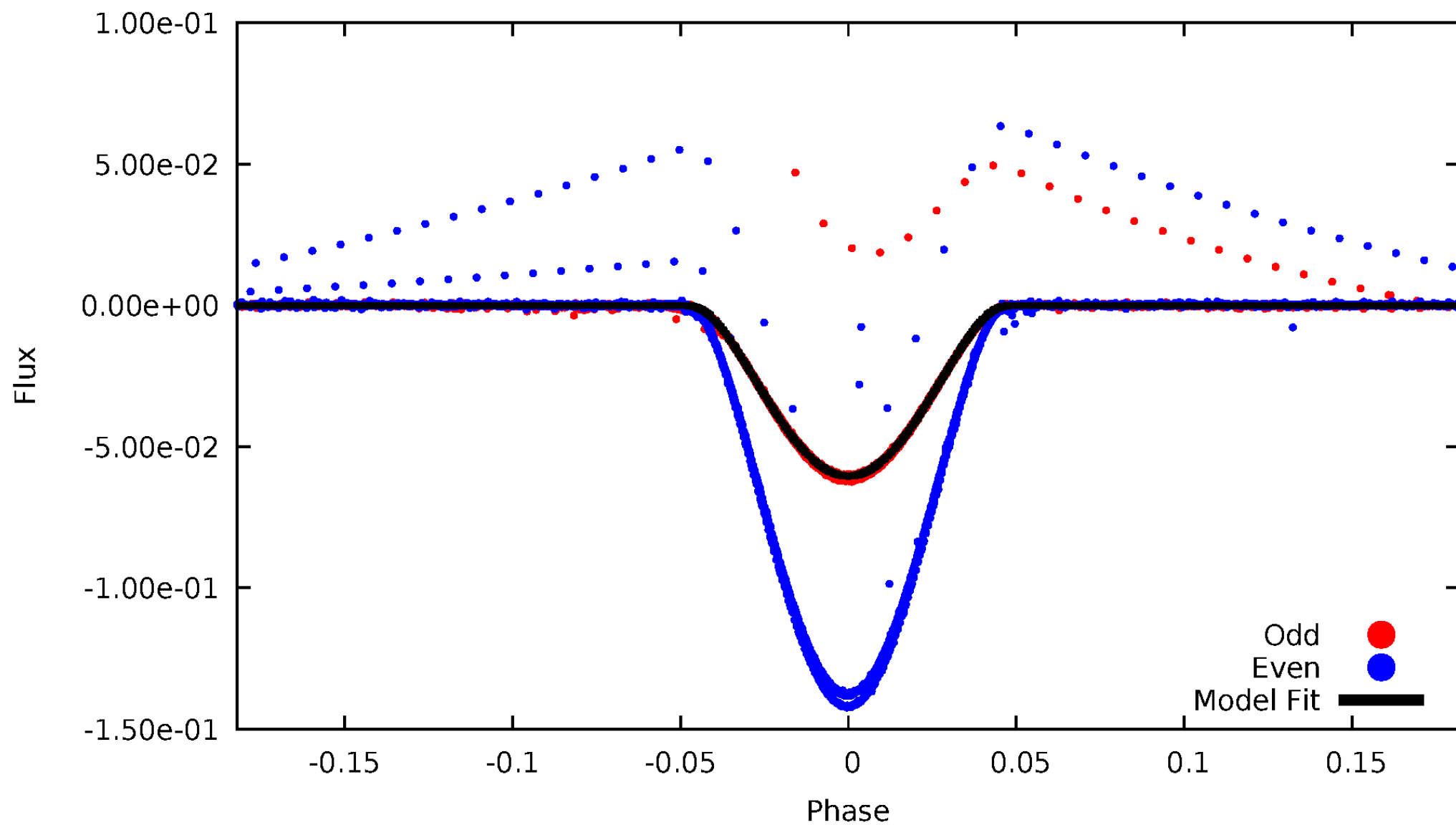


TCE 010156064-01



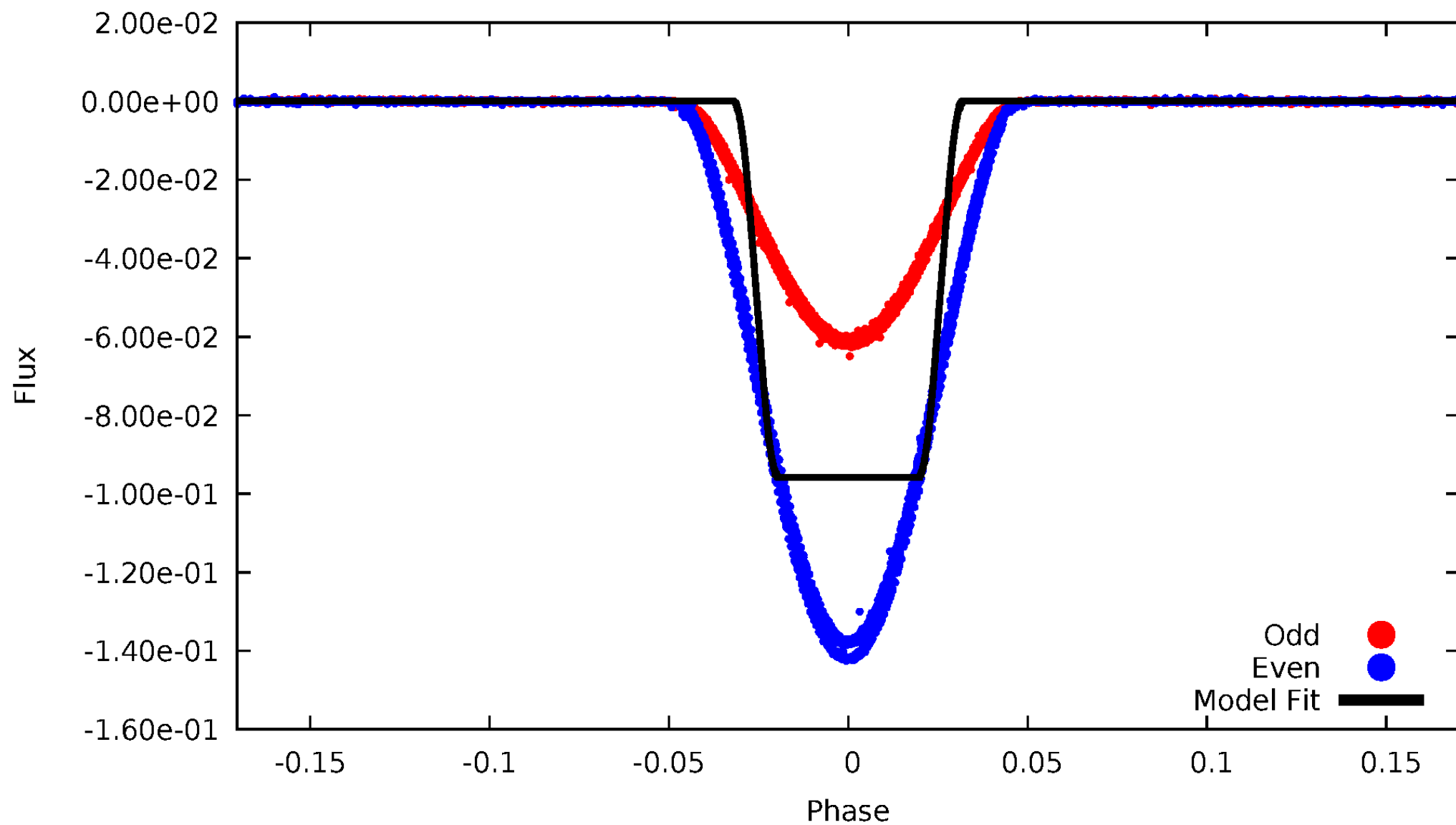
DV Odd/Even

TCE 010156064-01



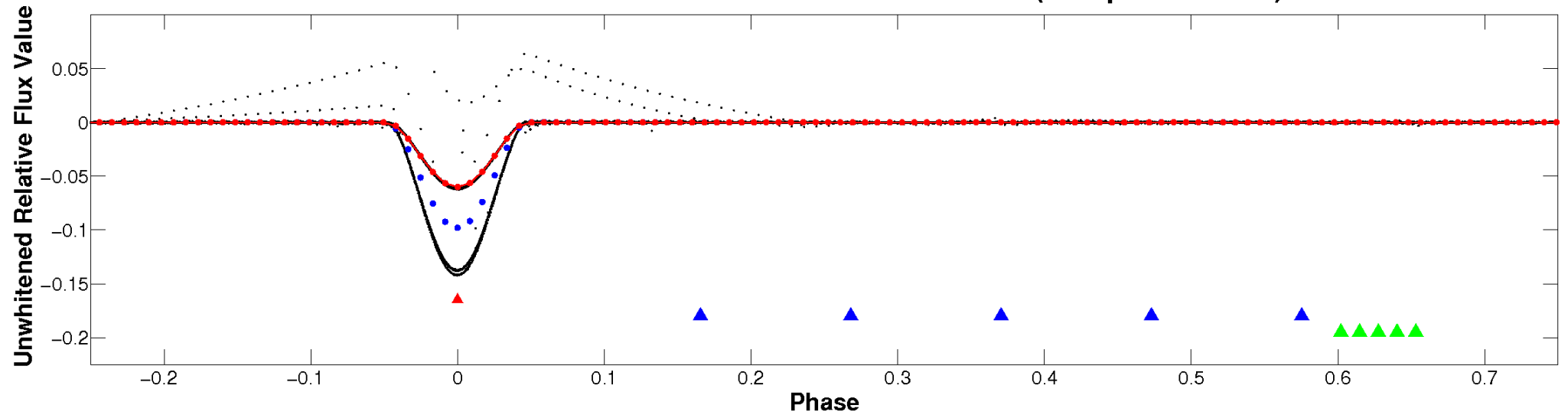
ALT Odd/Even

TCE 010156064-01

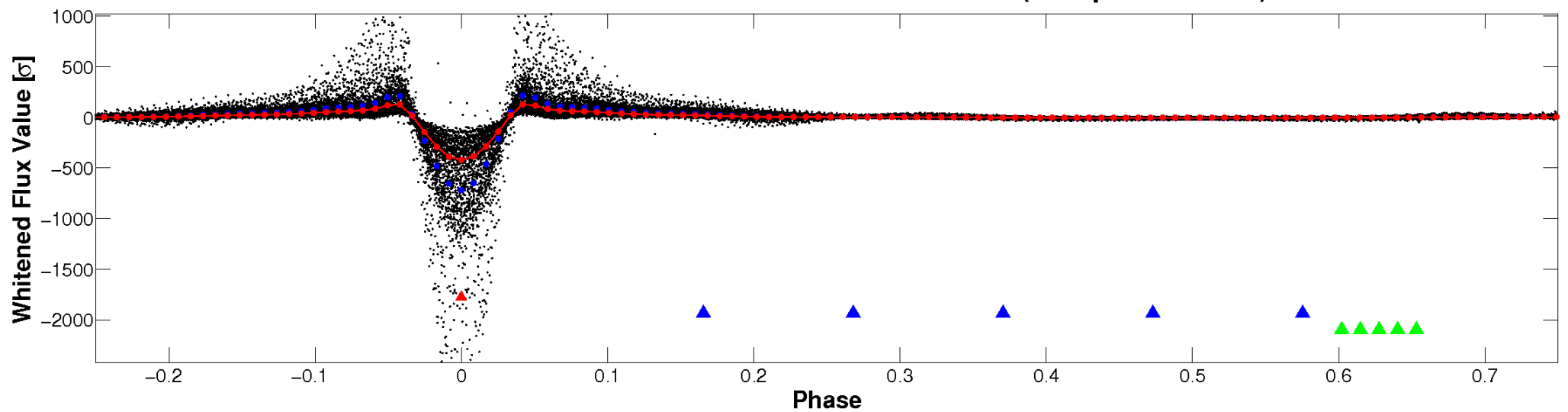


Non-Whitened Vs. Whitened Light Curve

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

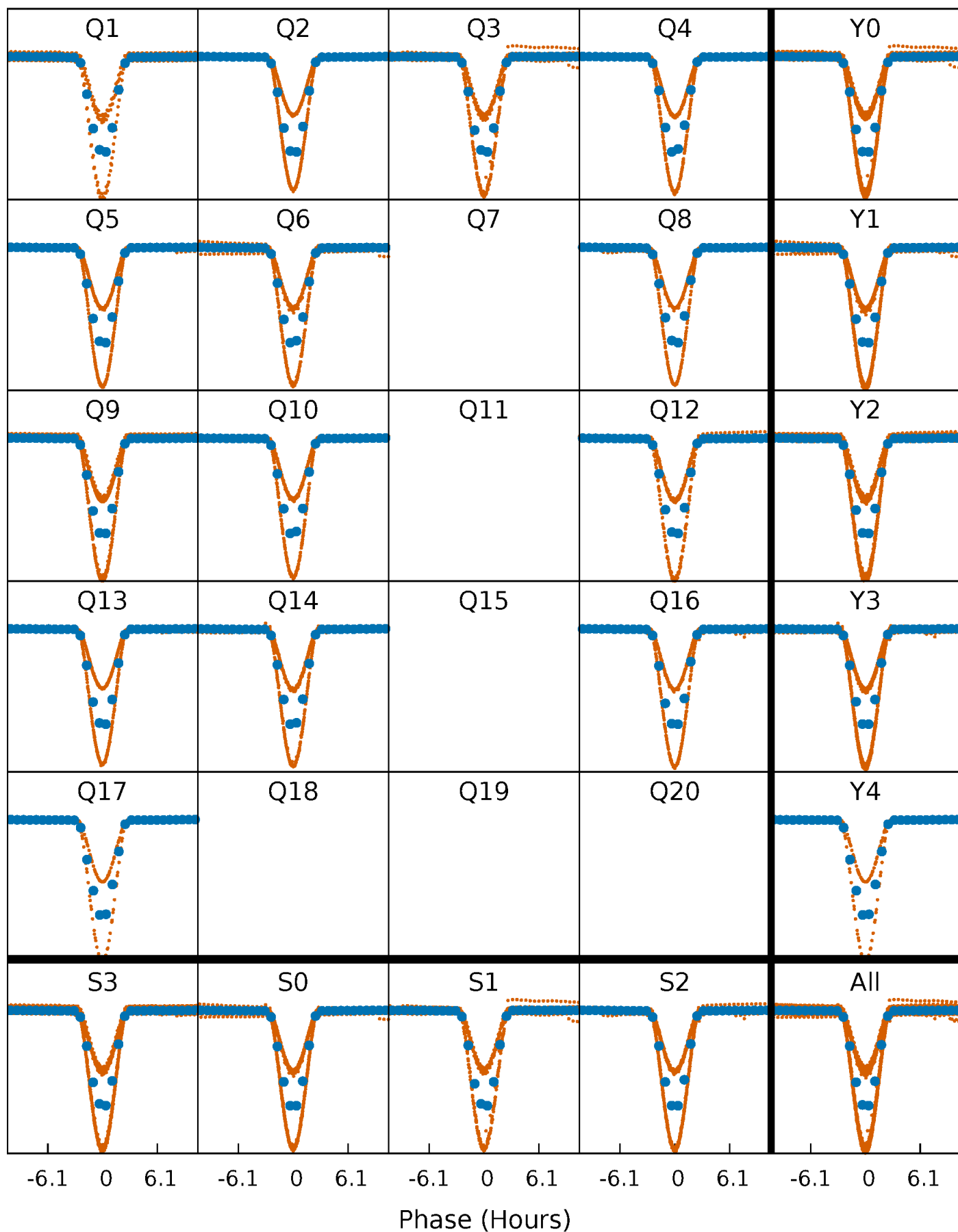


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



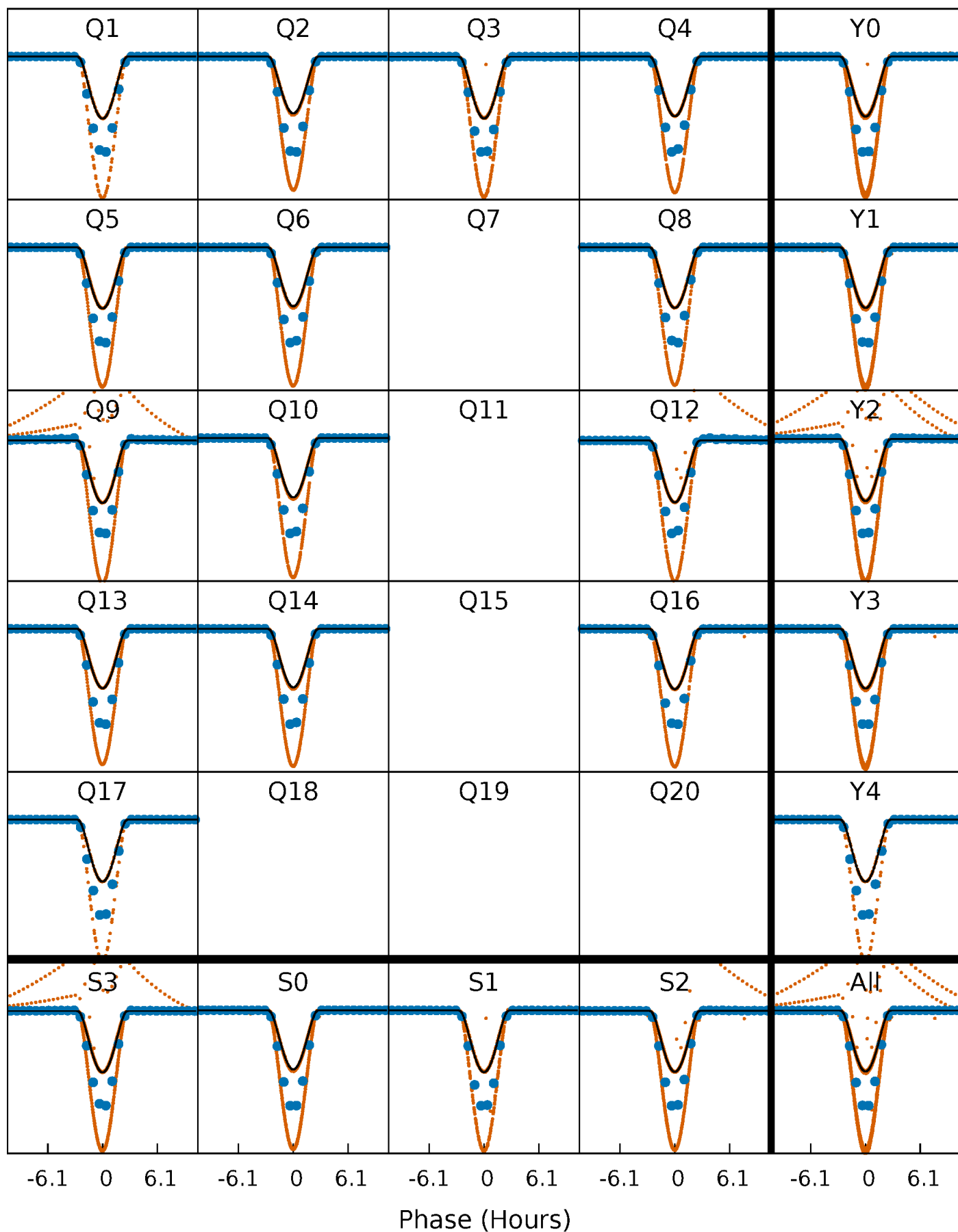
PDC Quarter-Phased Transit Curves

TCE 010156064-01 P= 2.427969 Days $T_0=133.598919$ (BKJD)



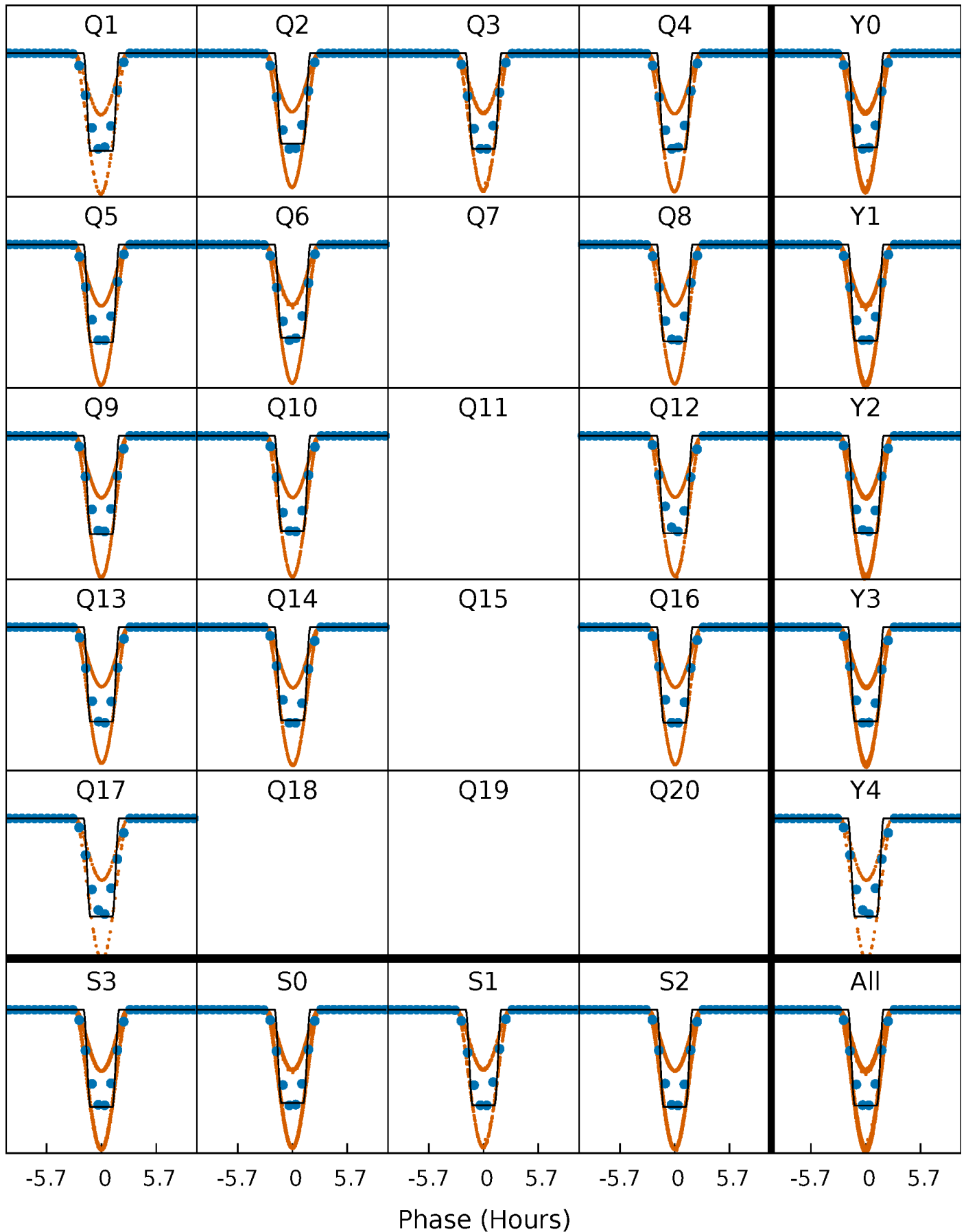
DV Quarter-Phased Transit Curves

TCE 010156064-01 P= 2.427969 Days $T_0=133.598919$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

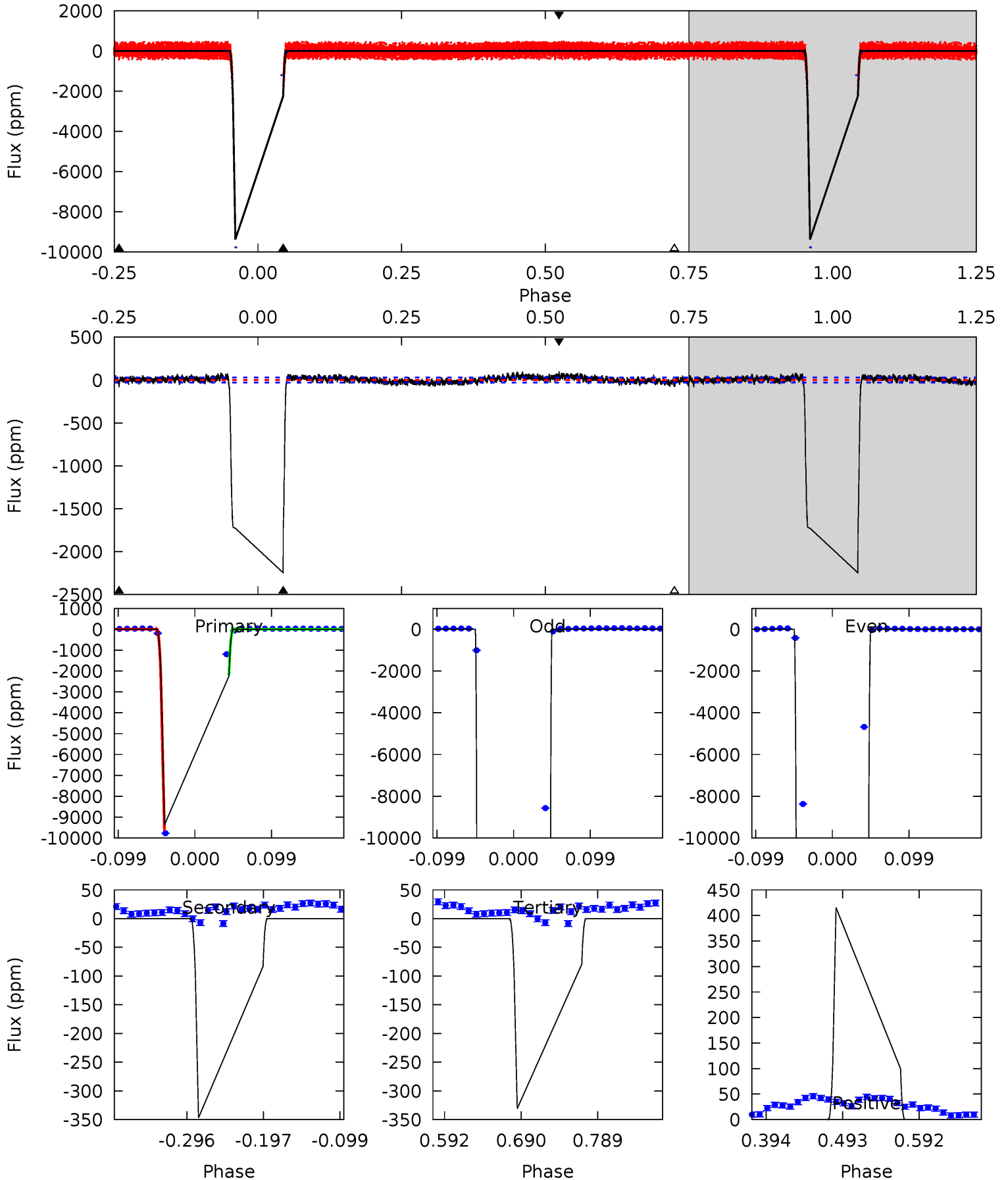
TCE 010156064-01 P= 2.427961 Days $T_0=133.601010$ (BKJD)



DV Model-Shift Uniqueness Test

010156064-01, P = 2.427969 Days, E = 131.170950 Days

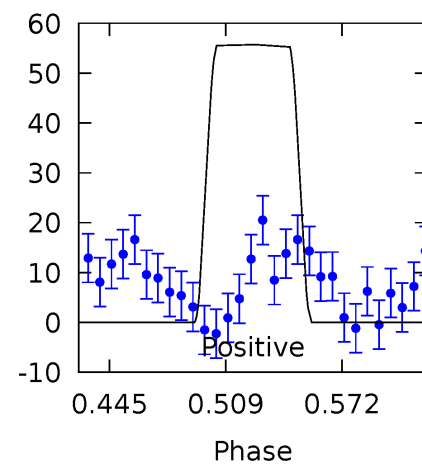
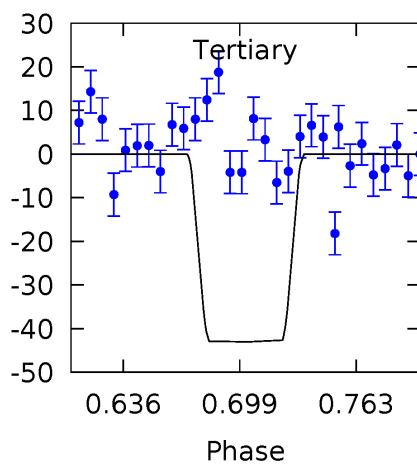
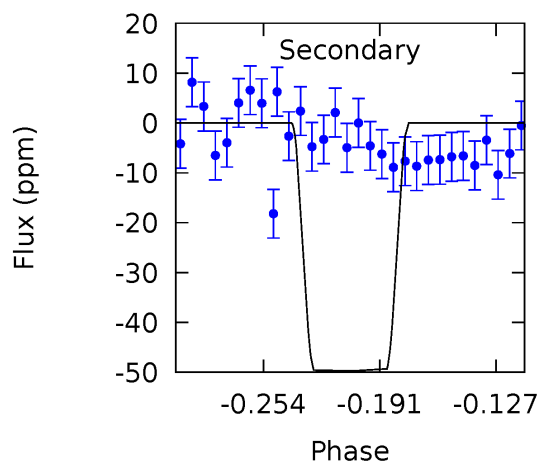
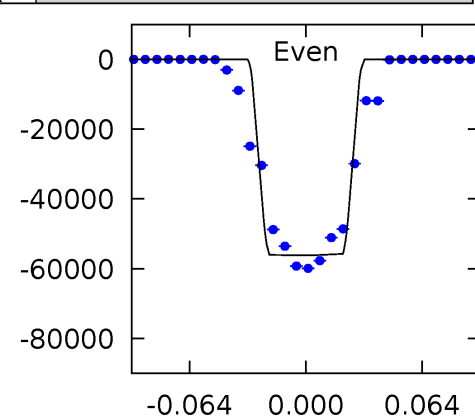
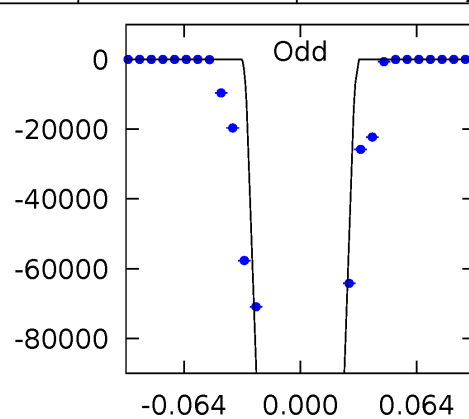
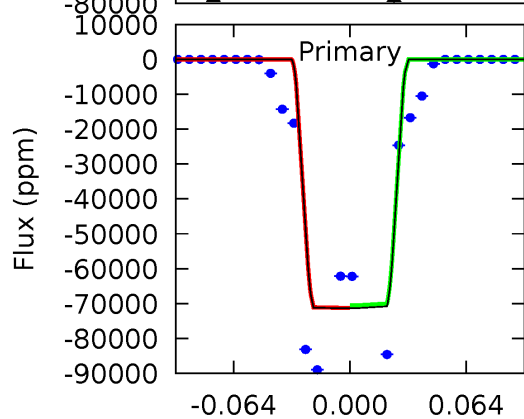
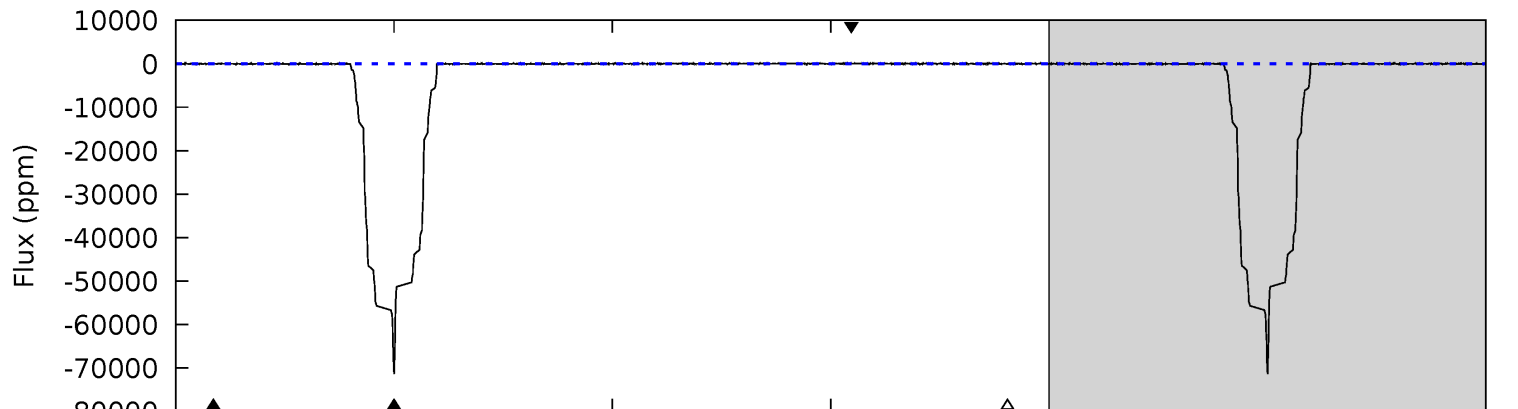
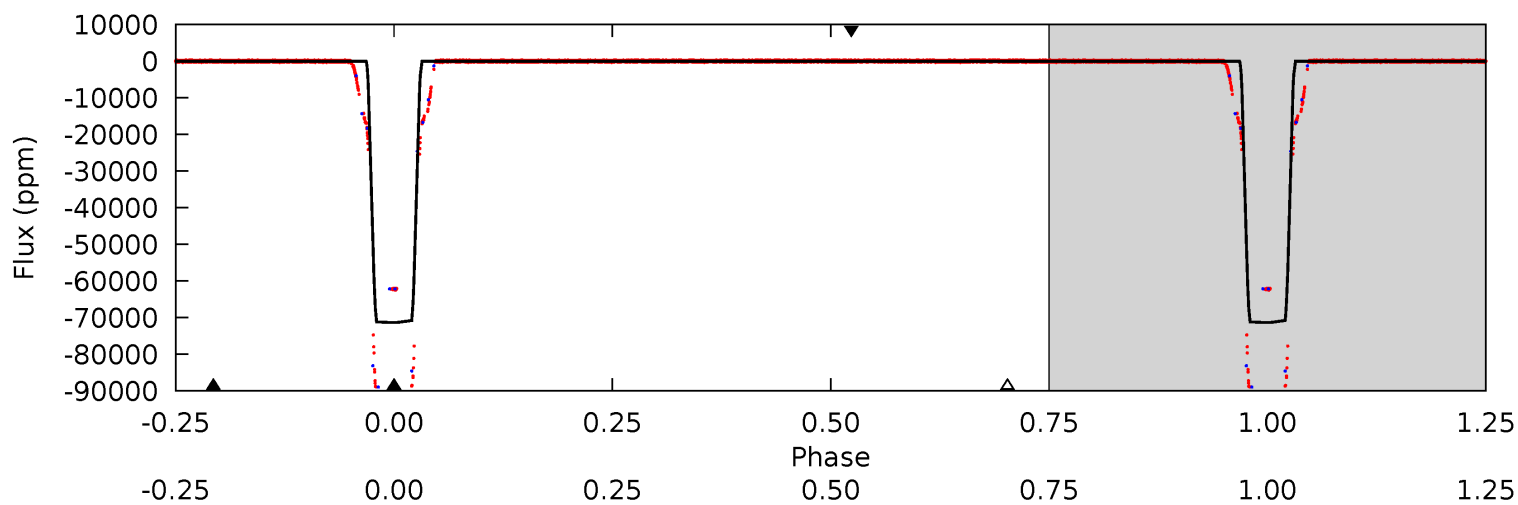
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
354.6	13.1	12.5	15.7	4.57	1.65	4.15	342.1	338.9	0.61	-2.59	16733	1.58	0.04	0



Alt Model-Shift Uniqueness Test

010156064-01, P = 2.427961 Days, E = 131.173049 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6404	4.46	3.86	5.00	4.66	1.86	1.24	6400	6399	0.60	-0.54	8113	1.53	0.00	0



Stellar Parameters For KIC 010156064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7652^{+214}_{-322}	$4.104^{+0.135}_{-0.165}$	$0.040^{+0.200}_{-0.350}$	$1.921^{+0.540}_{-0.360}$	$1.707^{+0.194}_{-0.267}$	$0.339^{+0.230}_{-0.159}$
	+3%/-4%	+3%/-4%	+500%/-875%	+28%/-19%	+11%/-16%	+68%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010156064-01 / KOI 7290.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-83 ± 6	$79.85^{+11.91}_{-9.04}$	3182^{+218}_{-219}	-3147^{+122}_{-129}	$0.013^{+0.003}_{-0.003}$
Alt.	-50 ± 11	$64.93^{+9.89}_{-7.22}$	3182^{+240}_{-207}	-3151^{+119}_{-139}	$0.011^{+0.004}_{-0.003}$

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 $A_{obs} \gg 1.0$

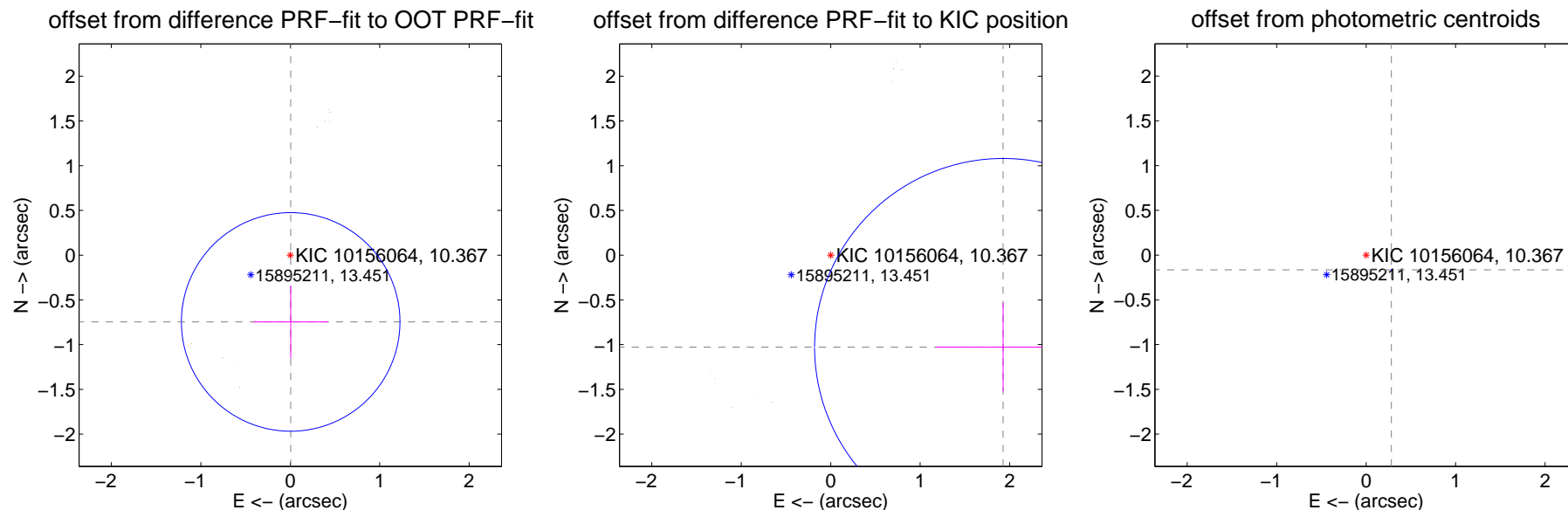
DV Centroid Data

Supplemental centroid analysis for 010156064-01. **Kepler magnitude: 10.37.** Transit SNR 15600.62

There are 1 quarters with good PRF difference image offsets

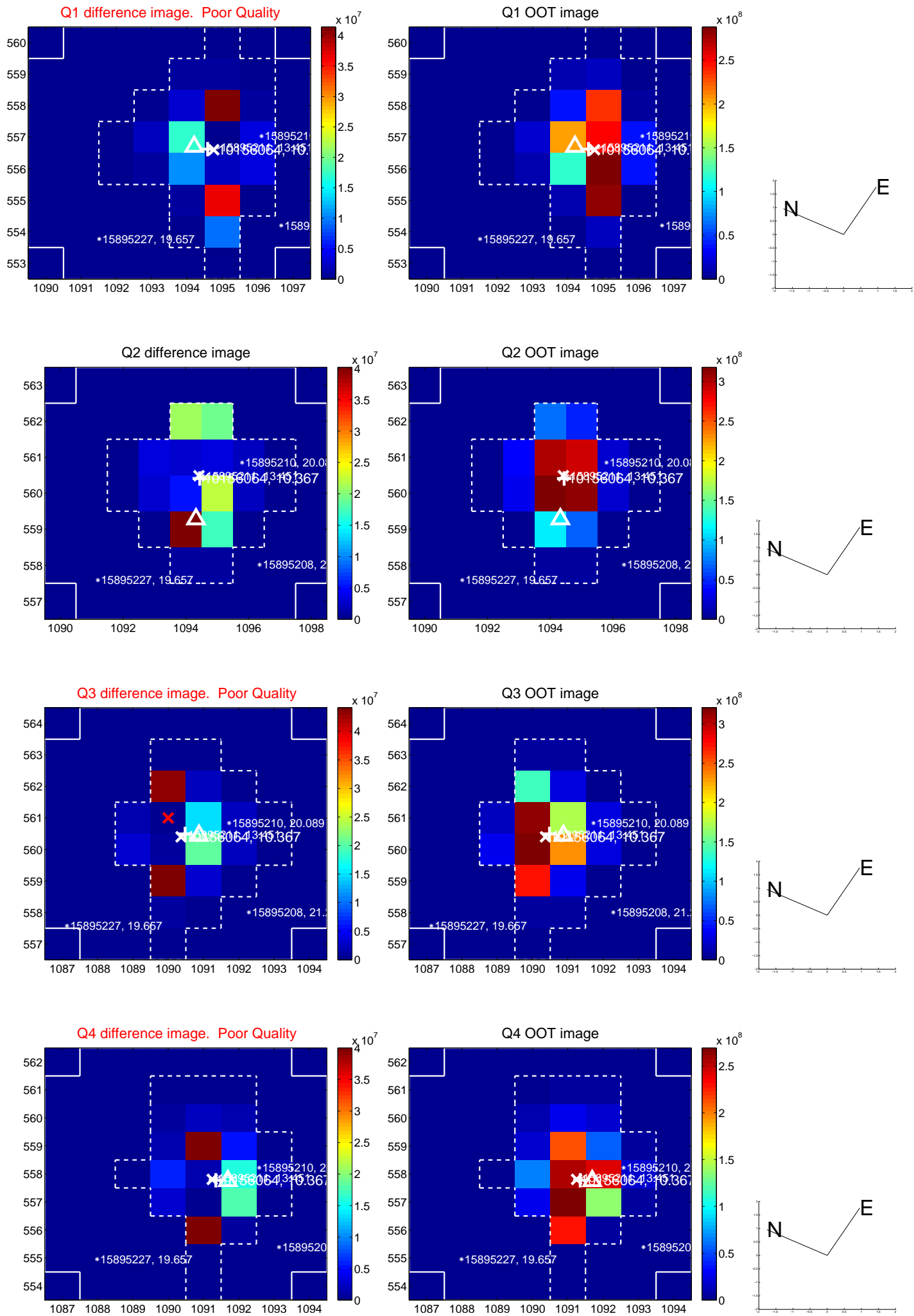
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.746 ± 0.407	1.83	-0.005 ± 0.422	-0.746 ± 0.407
PRF-fit source offset from KIC position	2.185 ± 0.703	3.11	-1.928 ± 0.751	-1.027 ± 0.496
photometric centroid source offset	0.33 ± 0.00	667.39	-0.28 ± 0.00	-0.17 ± 0.00

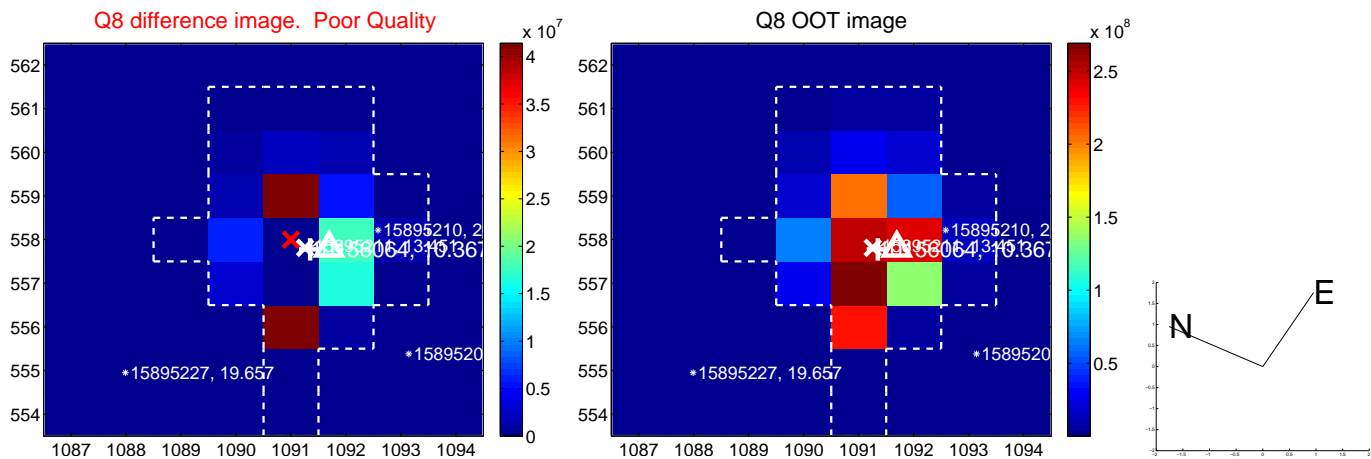
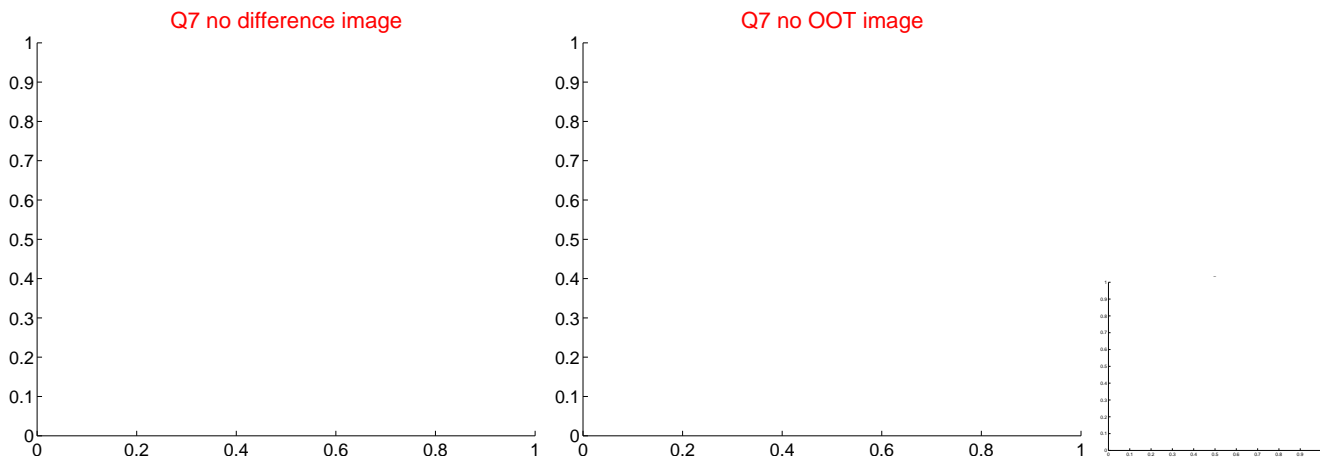
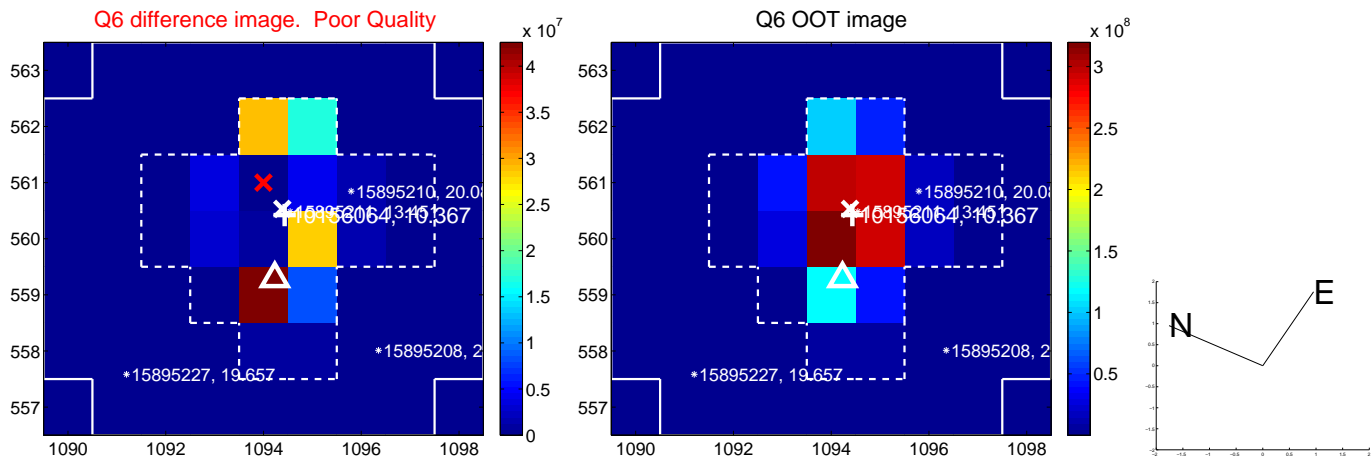
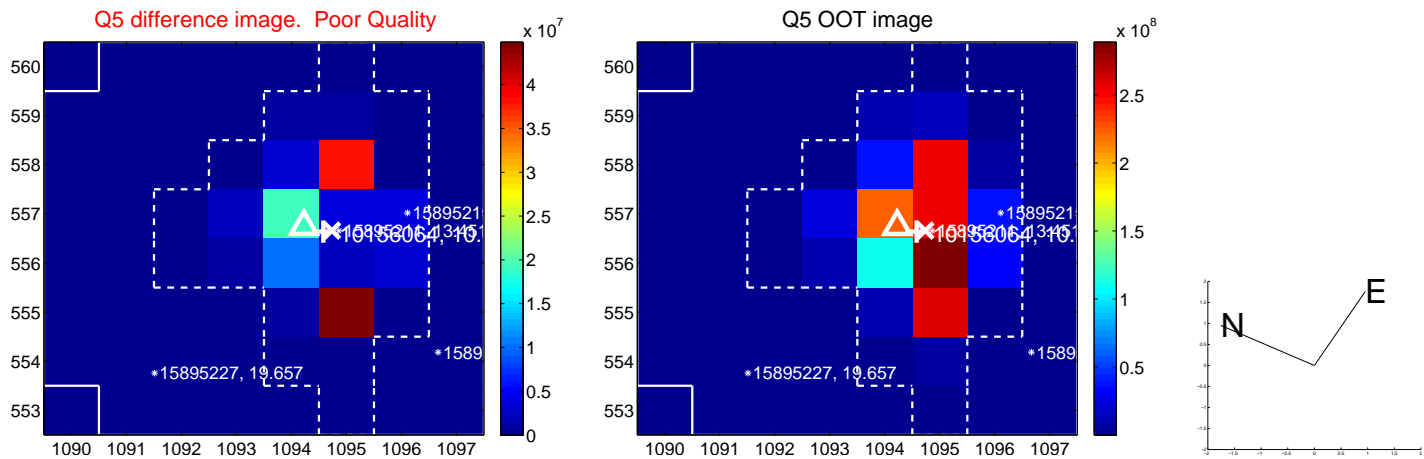


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

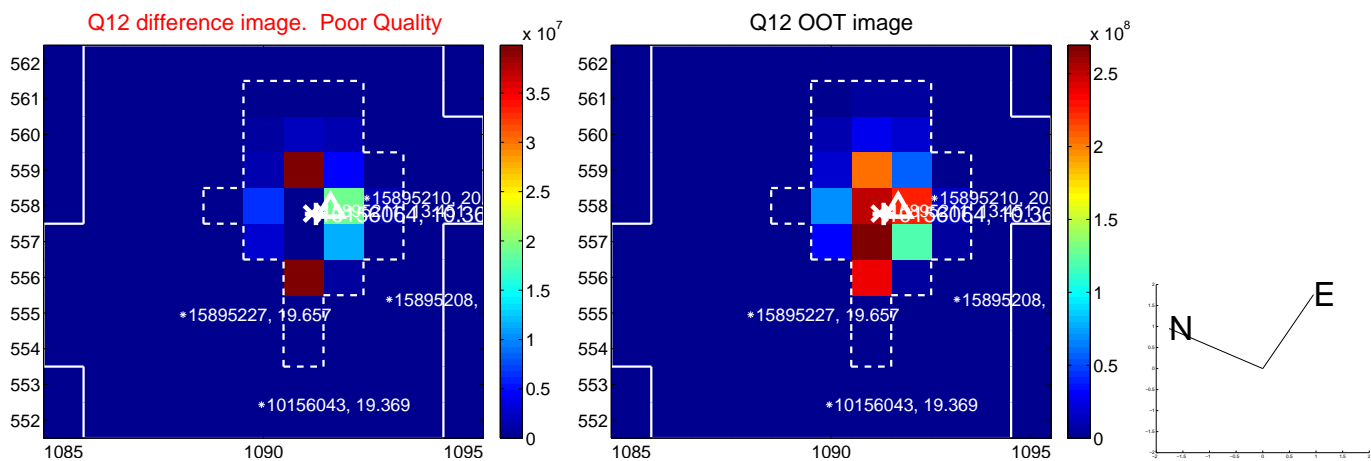
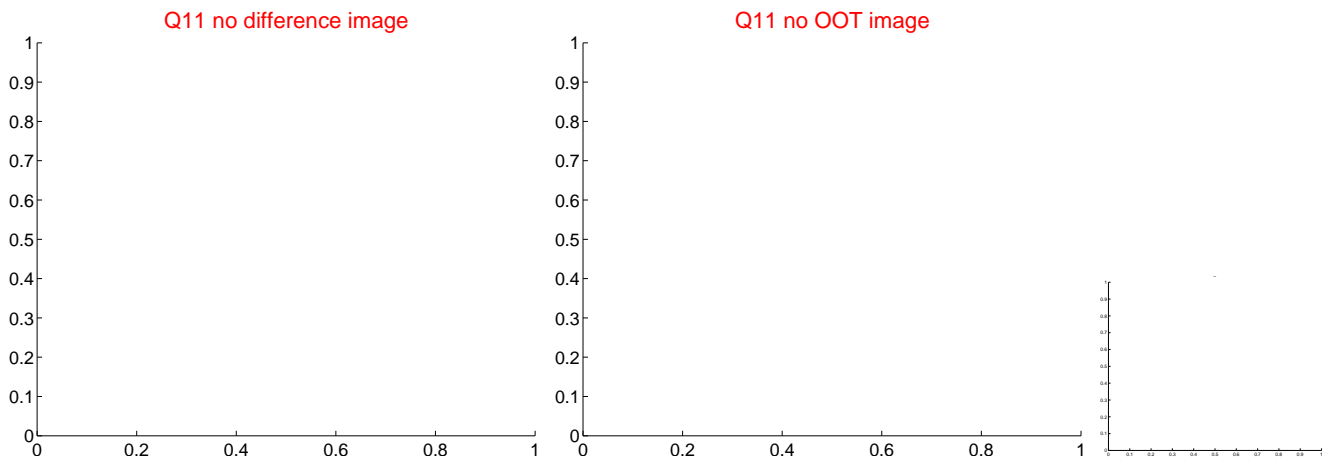
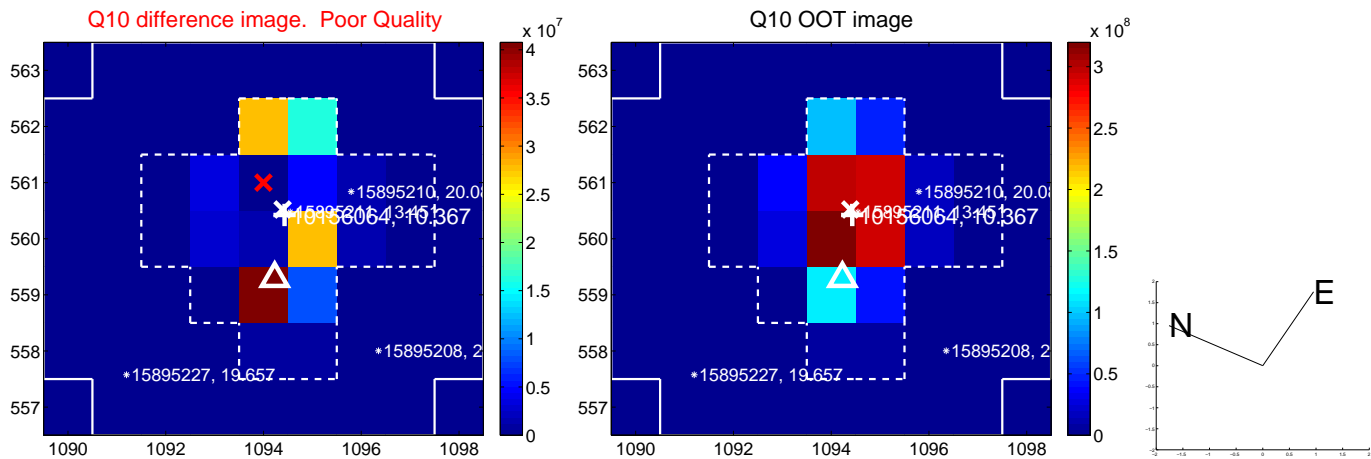
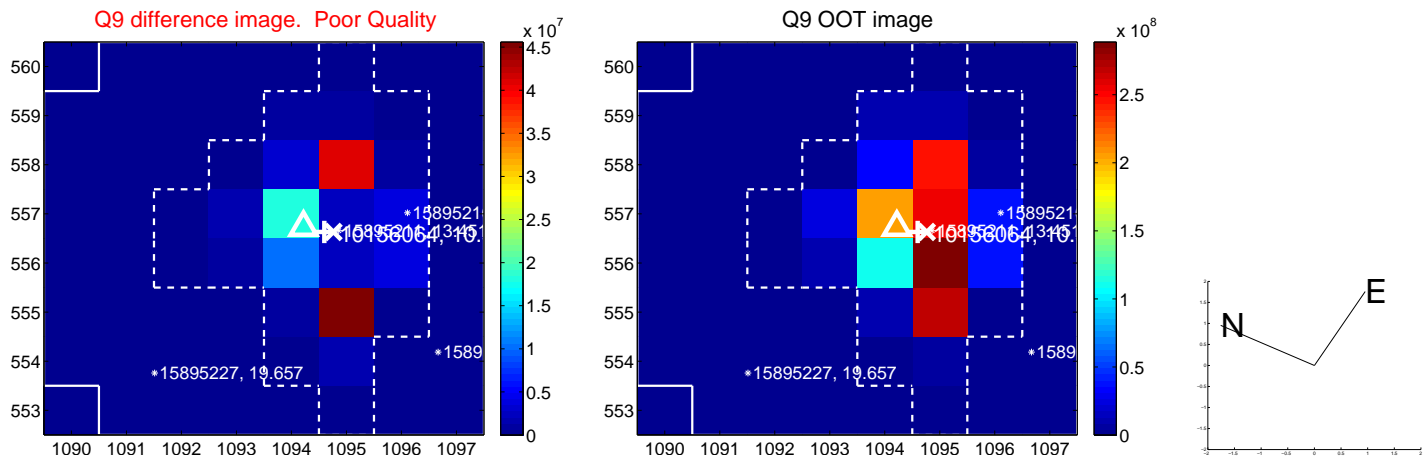
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



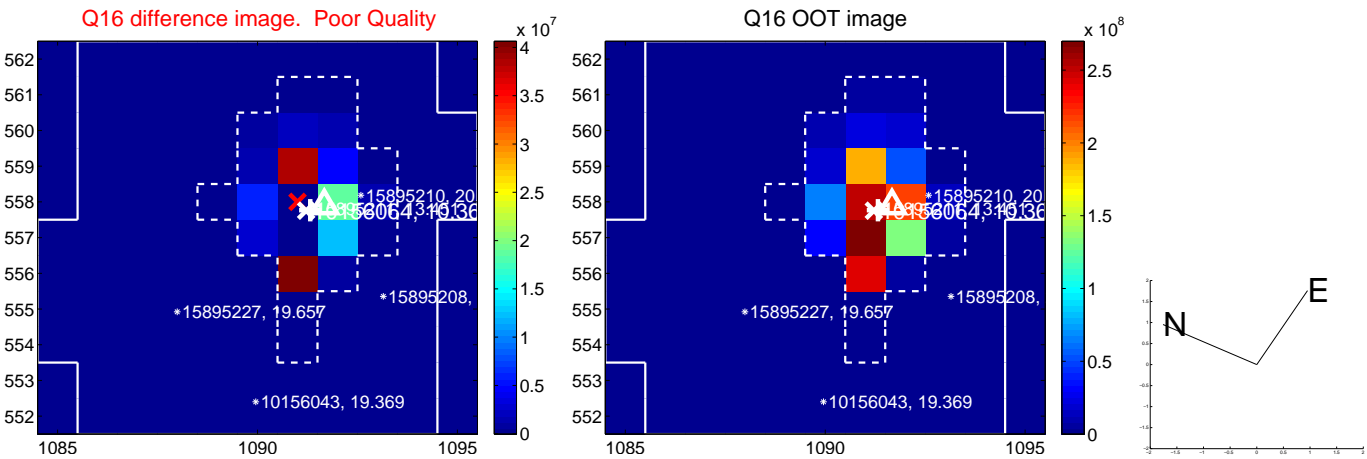
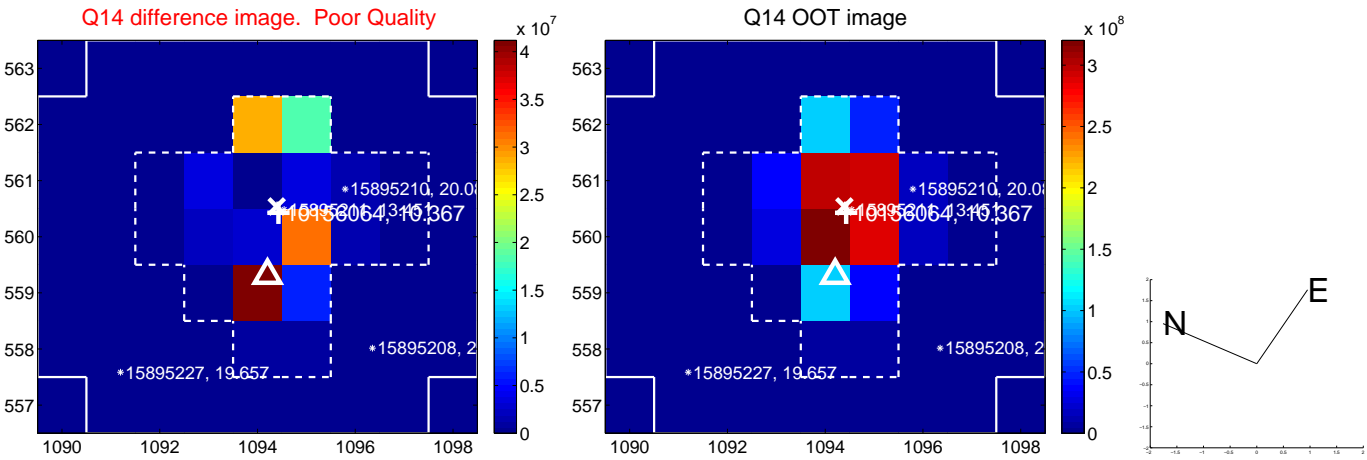
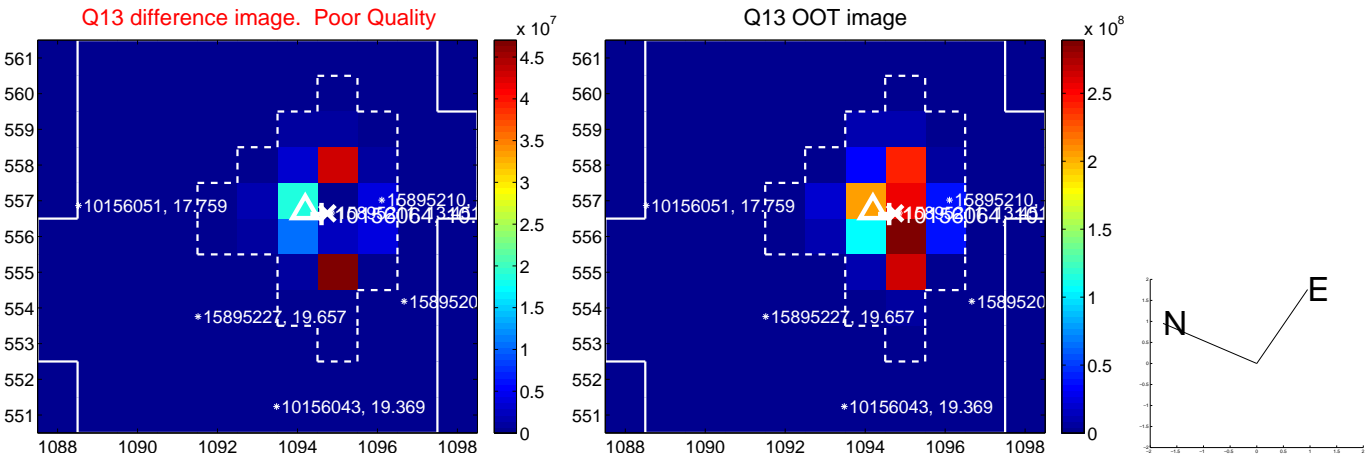
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



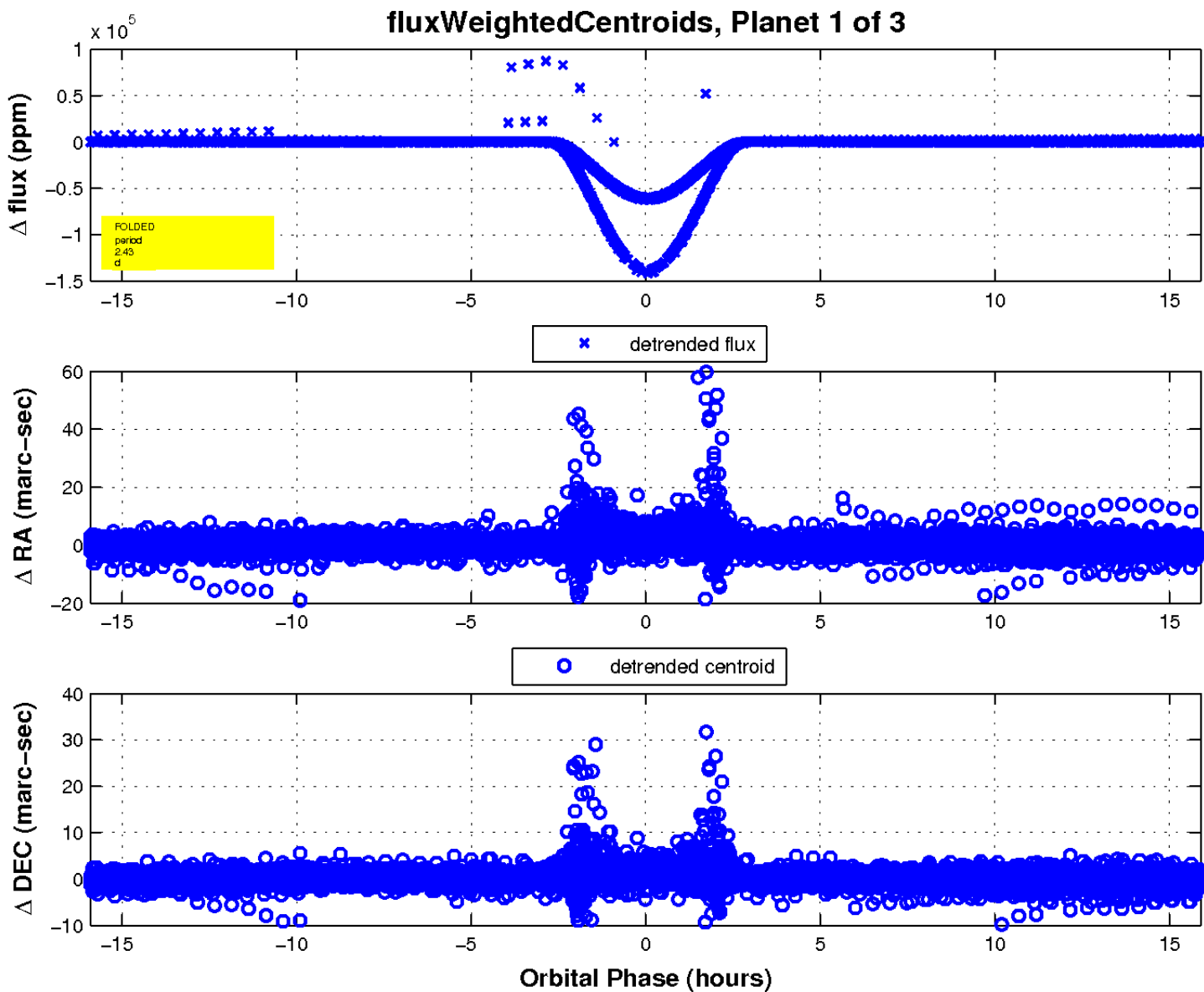
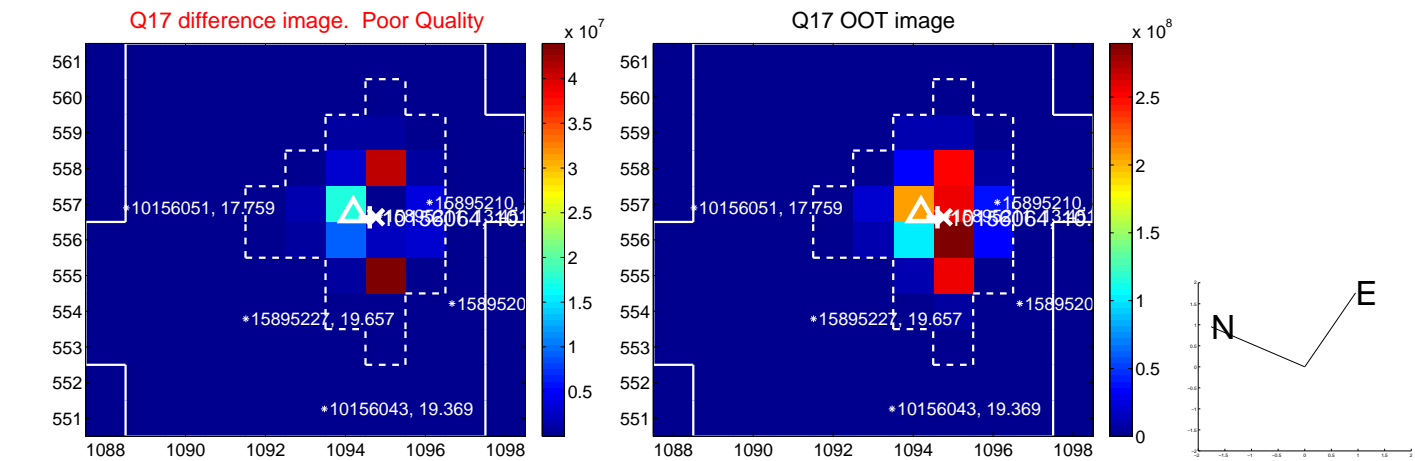
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

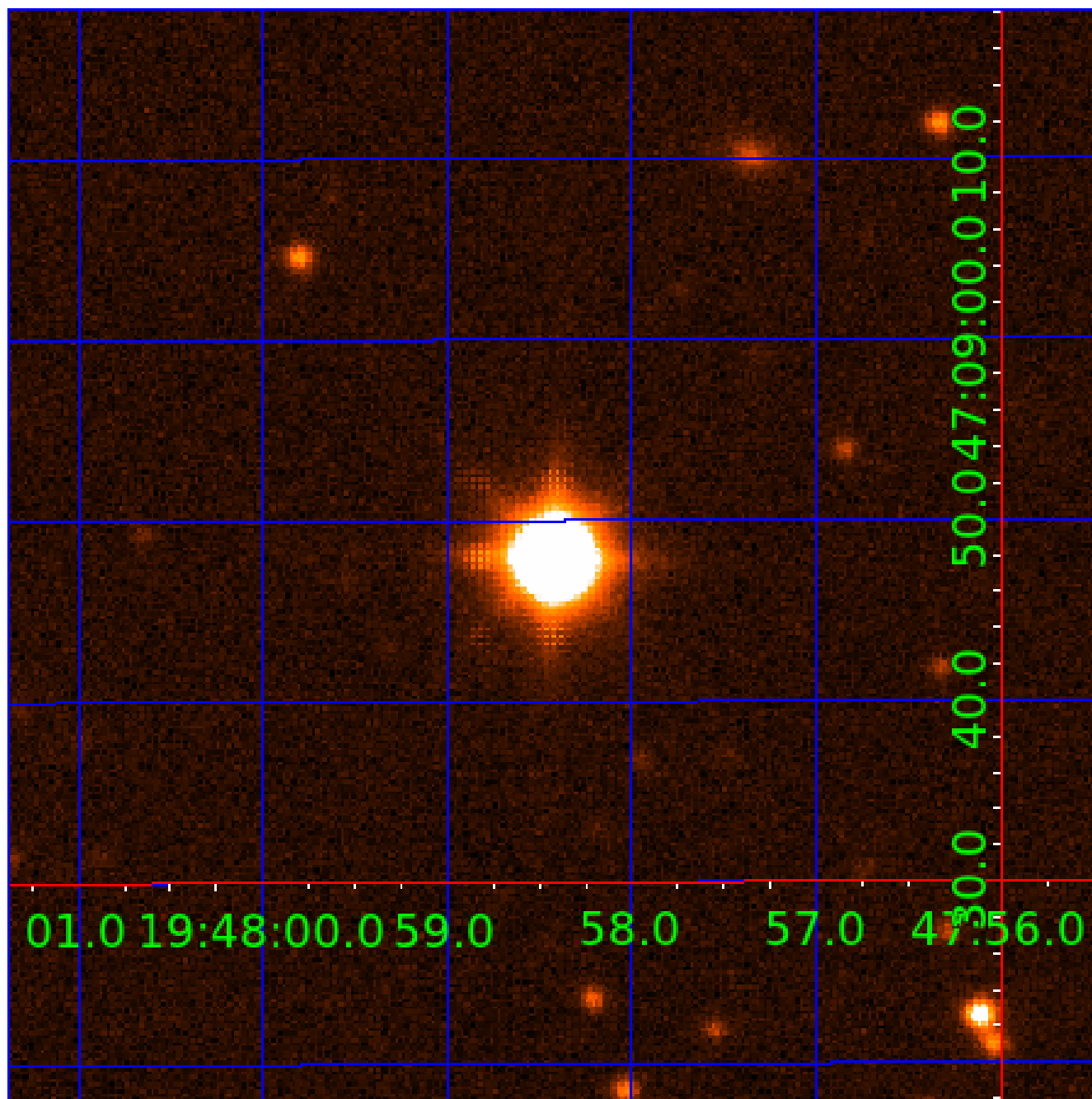


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010156064

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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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010156064-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010156064-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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 010156064-02

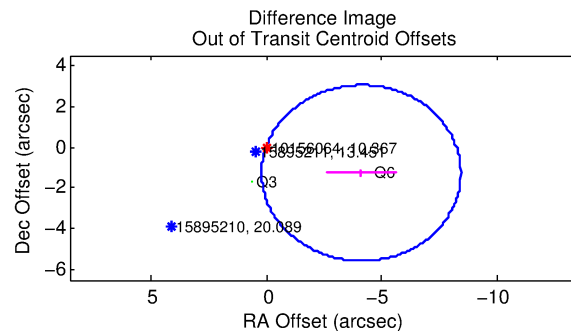
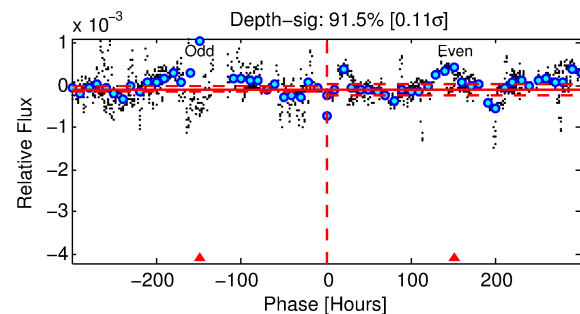
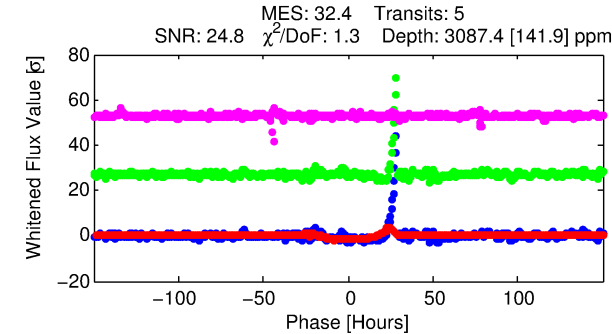
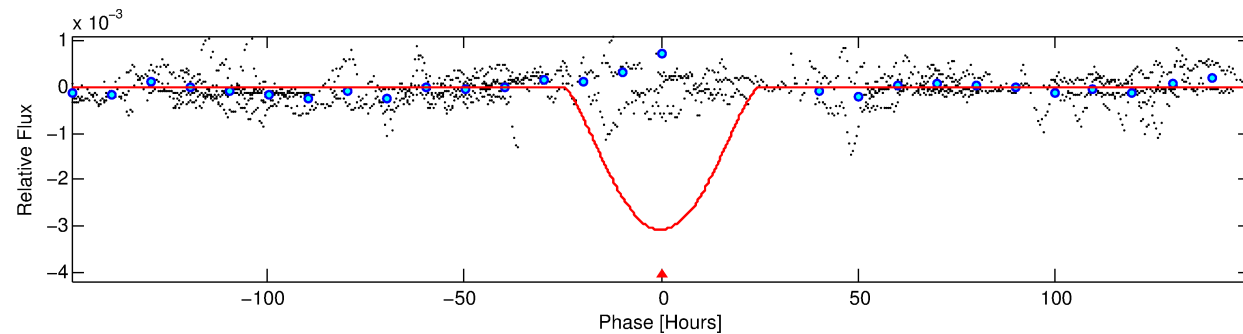
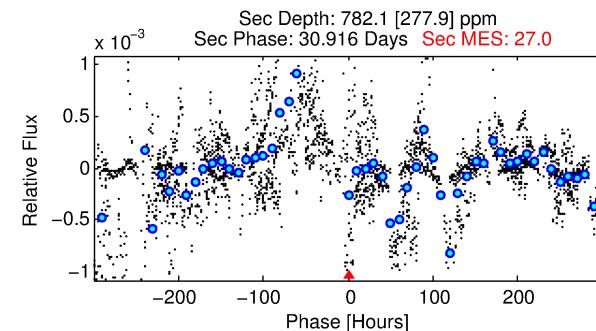
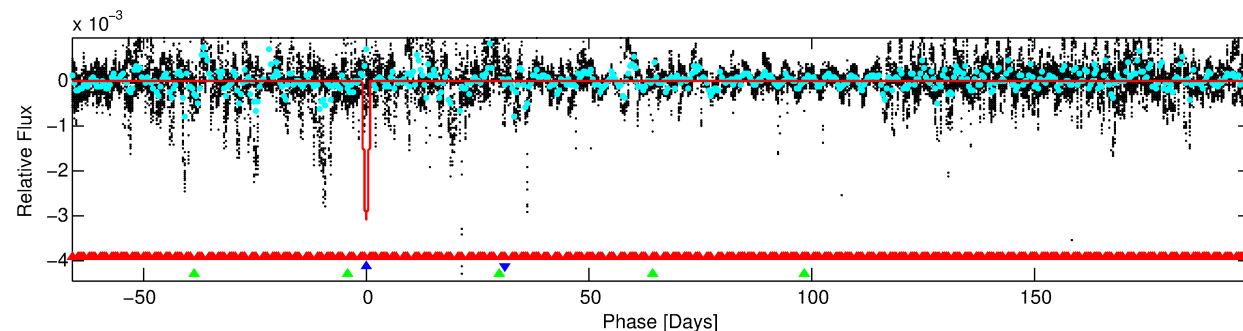
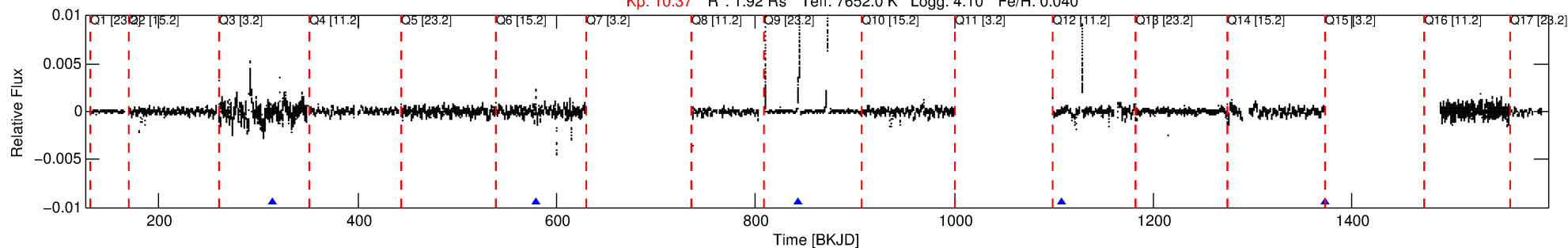
No Significant Match Found

DV One-Page Summary

KIC: 10156064 Candidate: 2 of 3 Period: 264.400 d

KOI: K07290 Corr: No Ephemeris Match

Kp: 10.37 R*: 1.92 Rs Teff: 7652.0 K Logg: 4.10 Fe/H: 0.040



DV Fit Results:

Period = 264.39995 [0.01509] d
Epoch = 314.6656 [0.0383] BKJD
Rp/R* = 0.0909 [0.0263]
a/R* = 17.75 [1.04]
b = 1.00 [0.04]
Seff = 12.19 [4.35]
Teq = 476 [43] K
Rp = 19.06 [7.69] Re
a = 0.9643 [0.2181] AU
Ag = 1101.90 [824.92] [1.33σ]
Teff = 4244 [742] K [5.07σ]

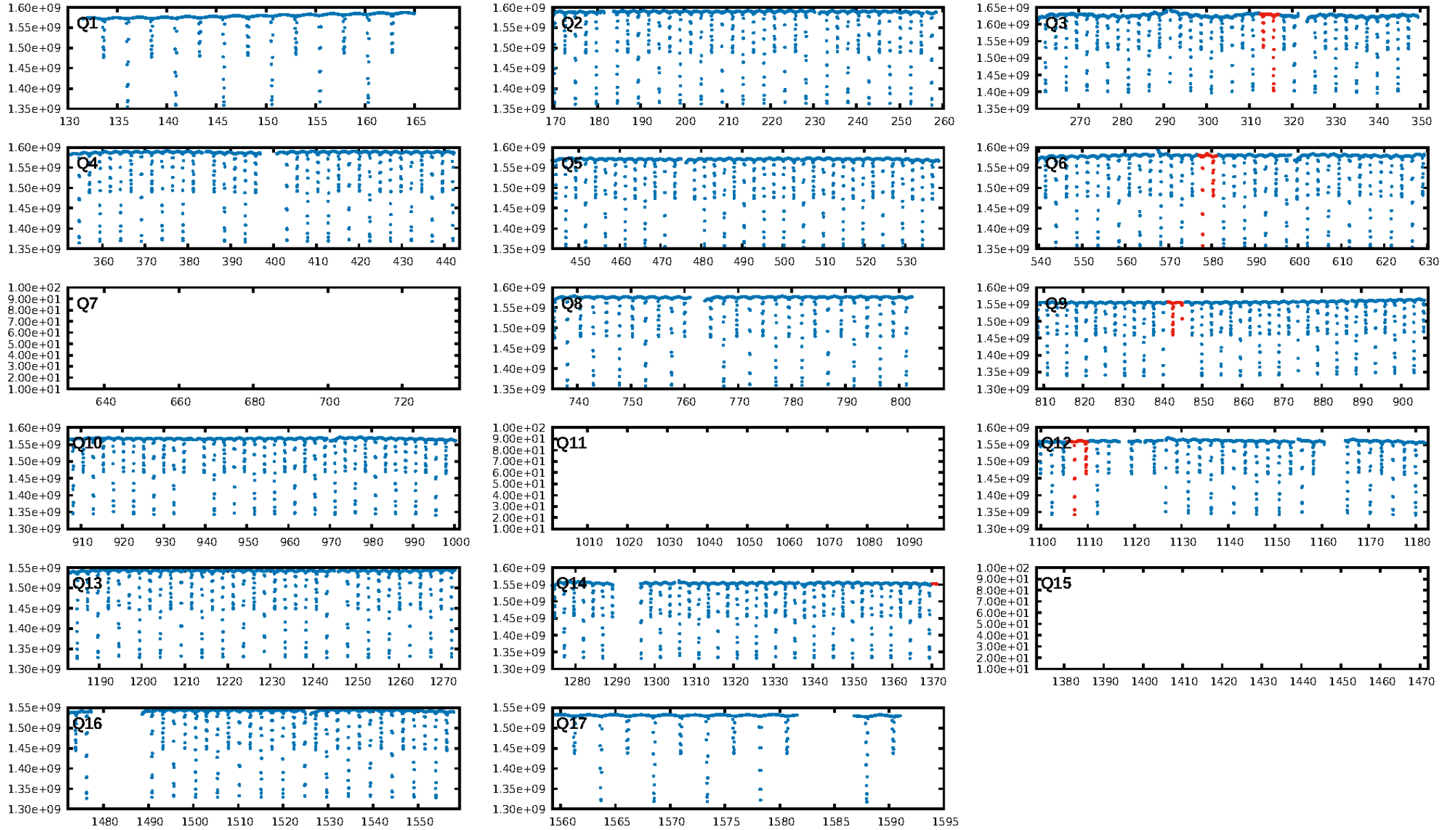
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [125.43σ]
LongPeriod-sig: 100.0% [16.35σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 8.201
Centroid-sig: N/A
Centroid-so: 0.229 arcsec [1.87σ]
OotOffset-rm: 4.295 arcsec [2.99σ]
KicOffset-rm: 4.599 arcsec [2.86σ]
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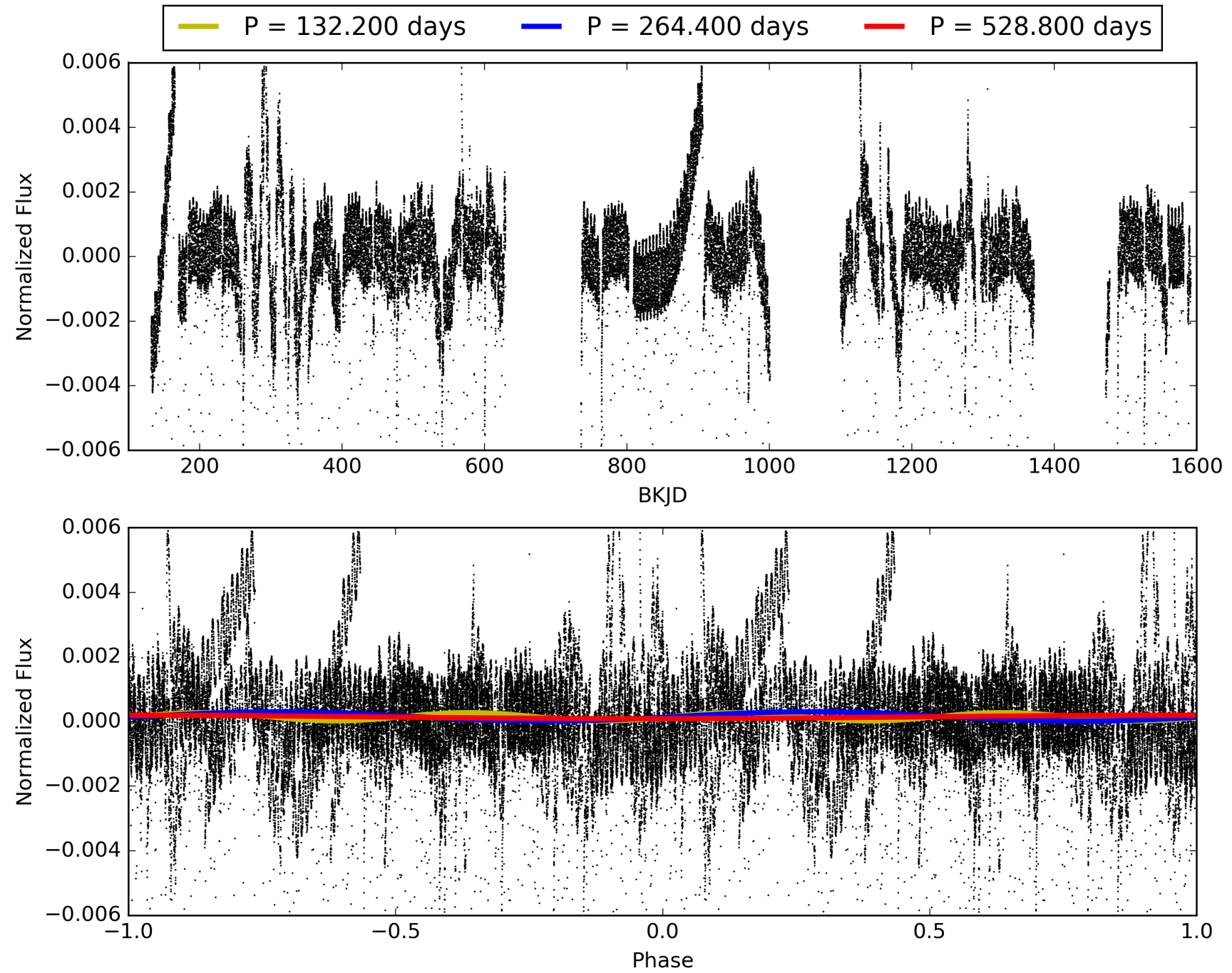
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010156064-02, PDC Light Curves

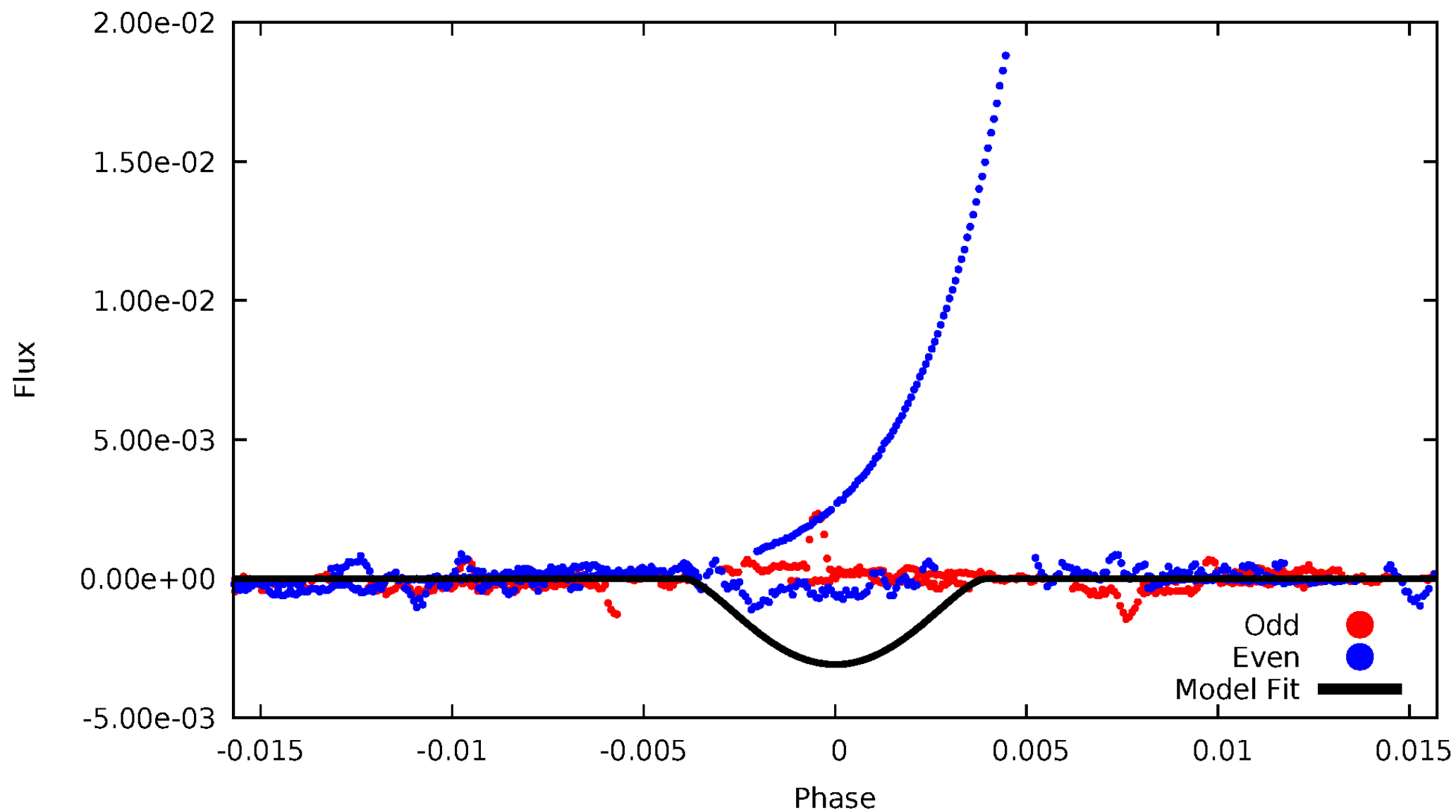


TCE 010156064-02



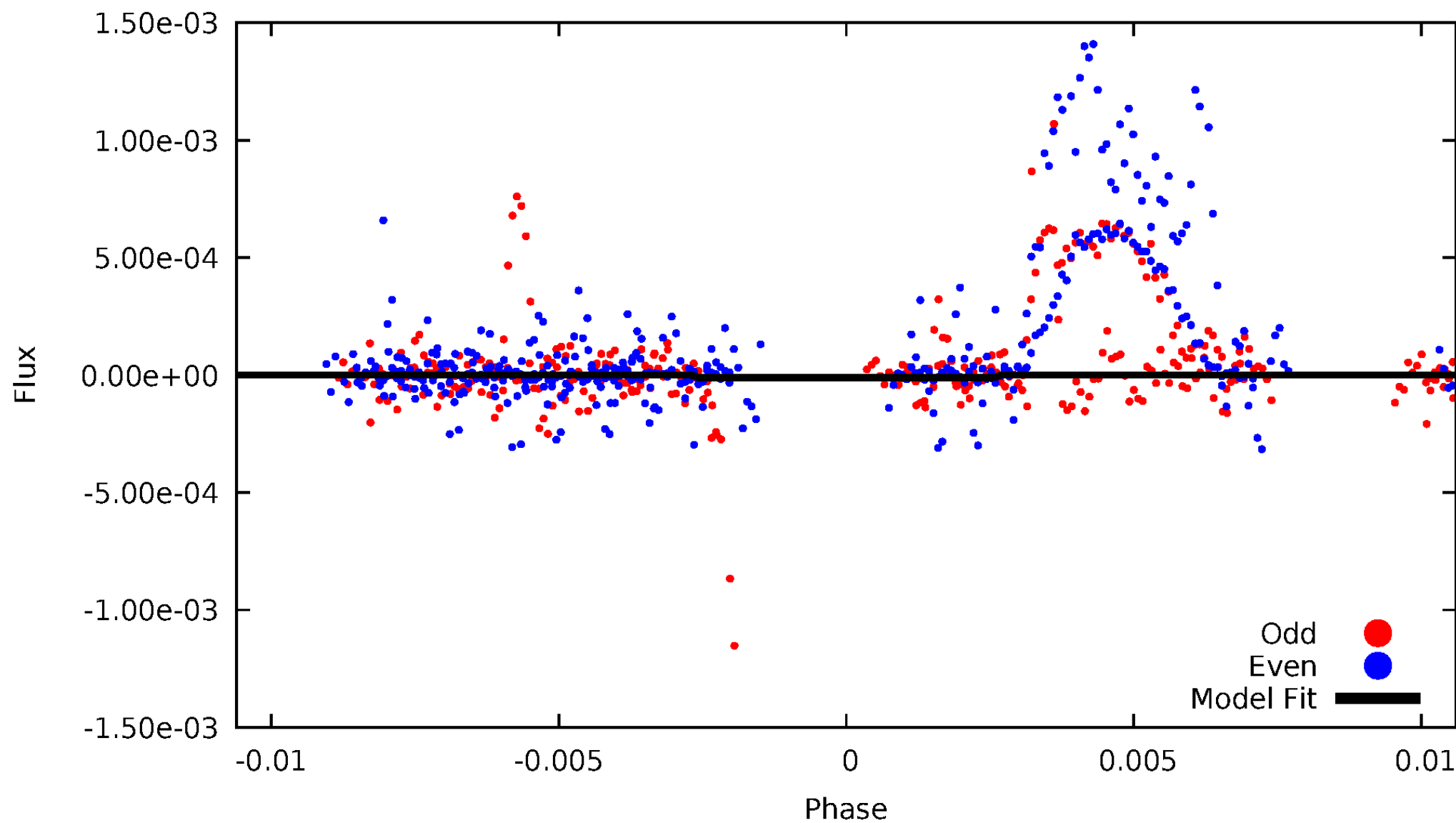
DV Odd/Even

TCE 010156064-02



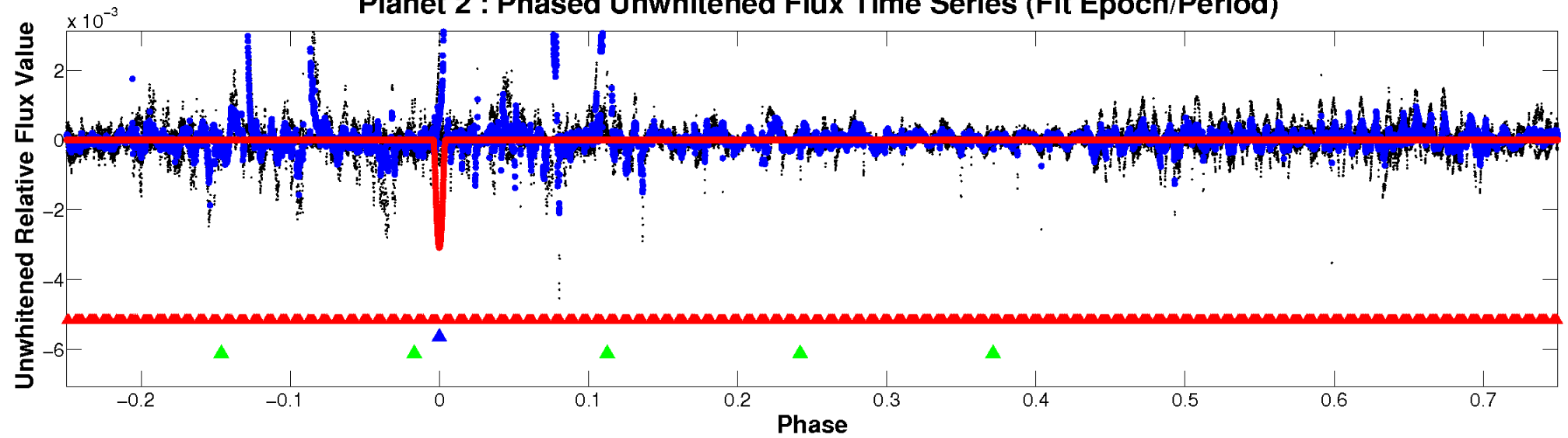
ALT Odd/Even

TCE 010156064-02

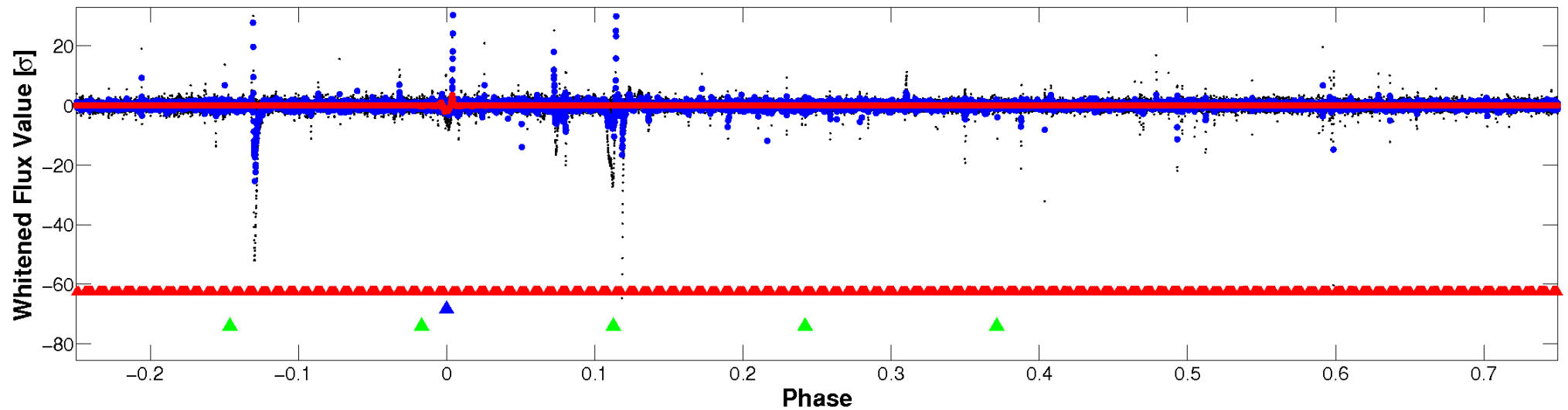


Non-Whitened Vs. Whitened Light Curve

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

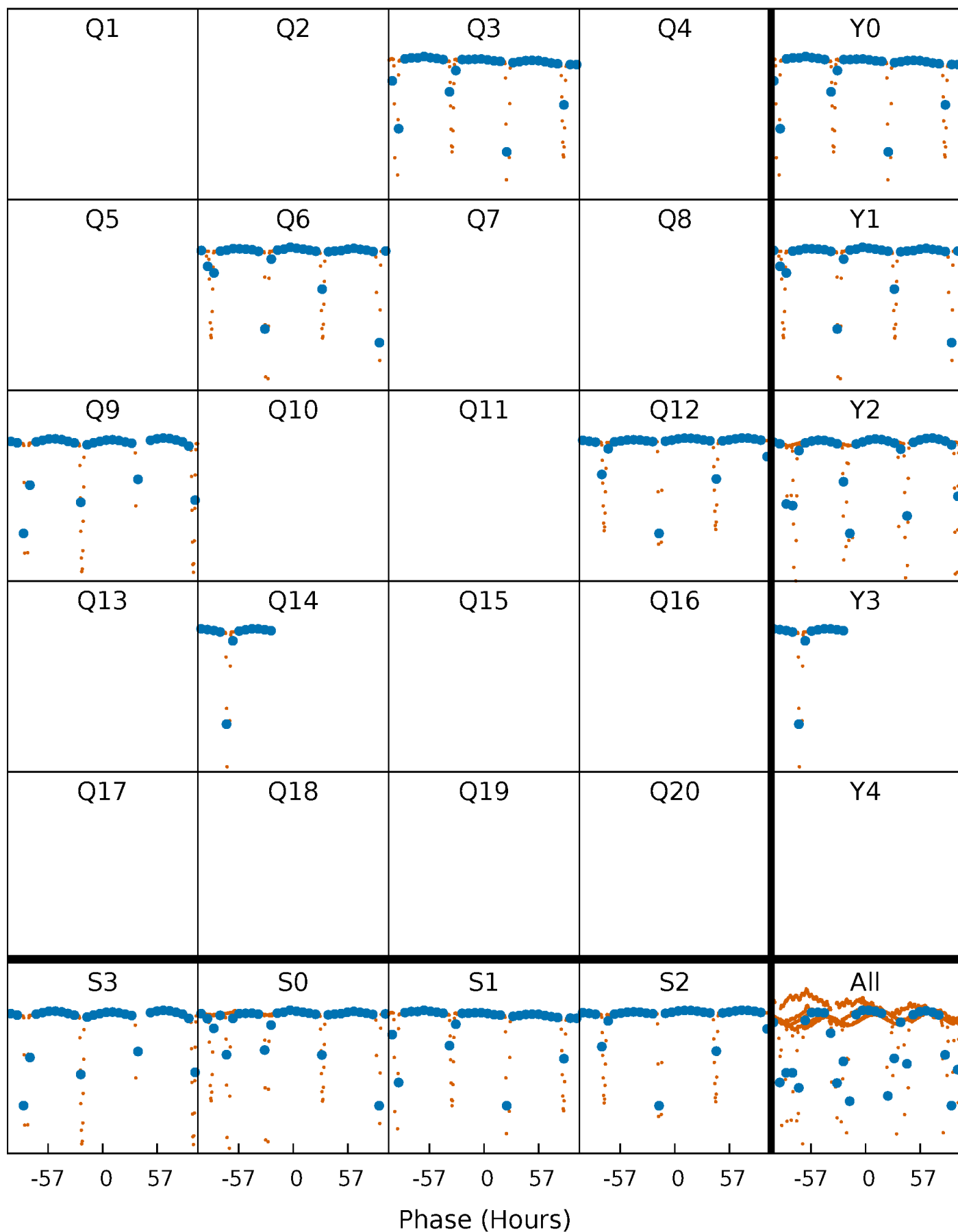


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



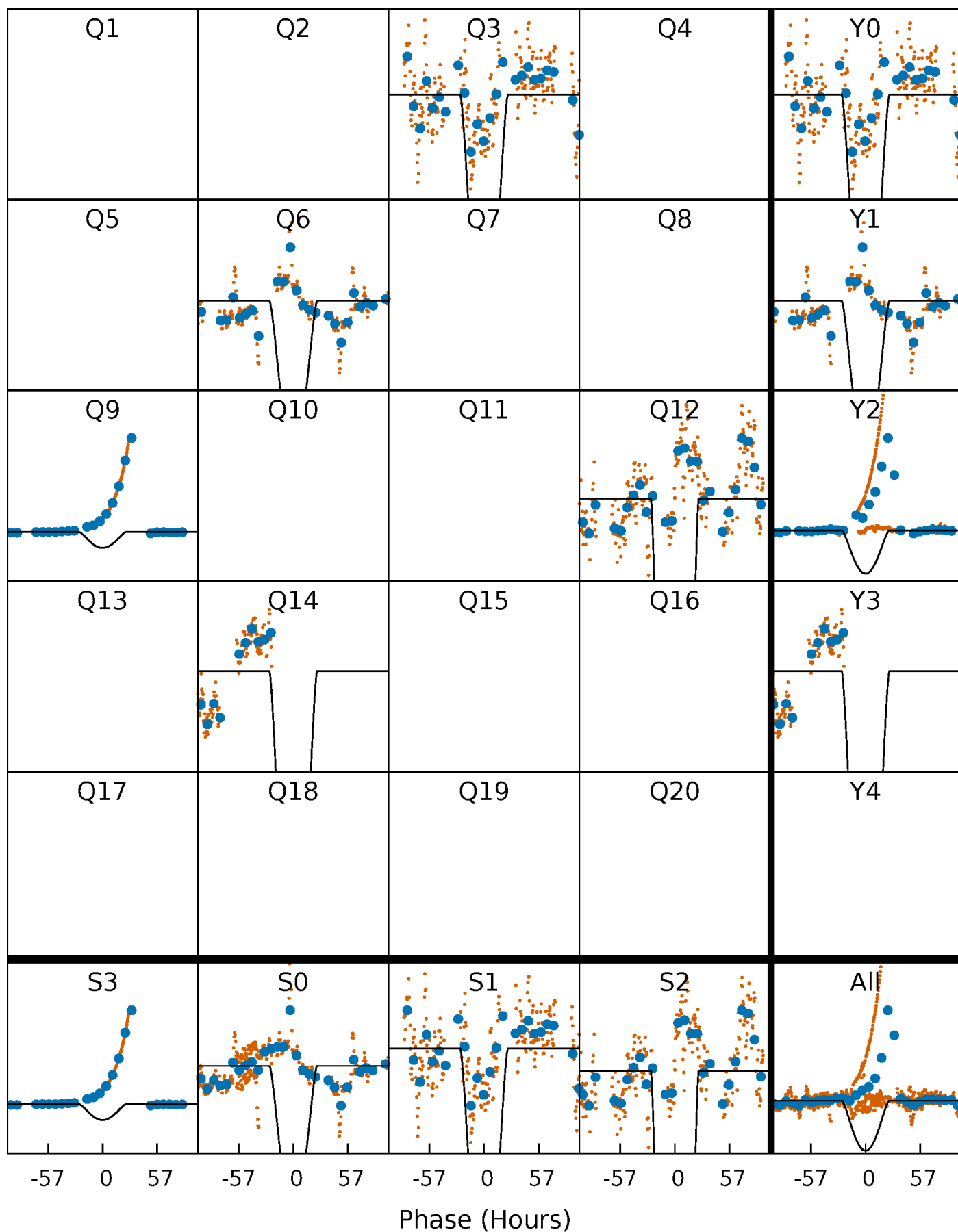
PDC Quarter-Phased Transit Curves

TCE 010156064-02 P=264.399952 Days $T_0=314.665564$ (BKJD)



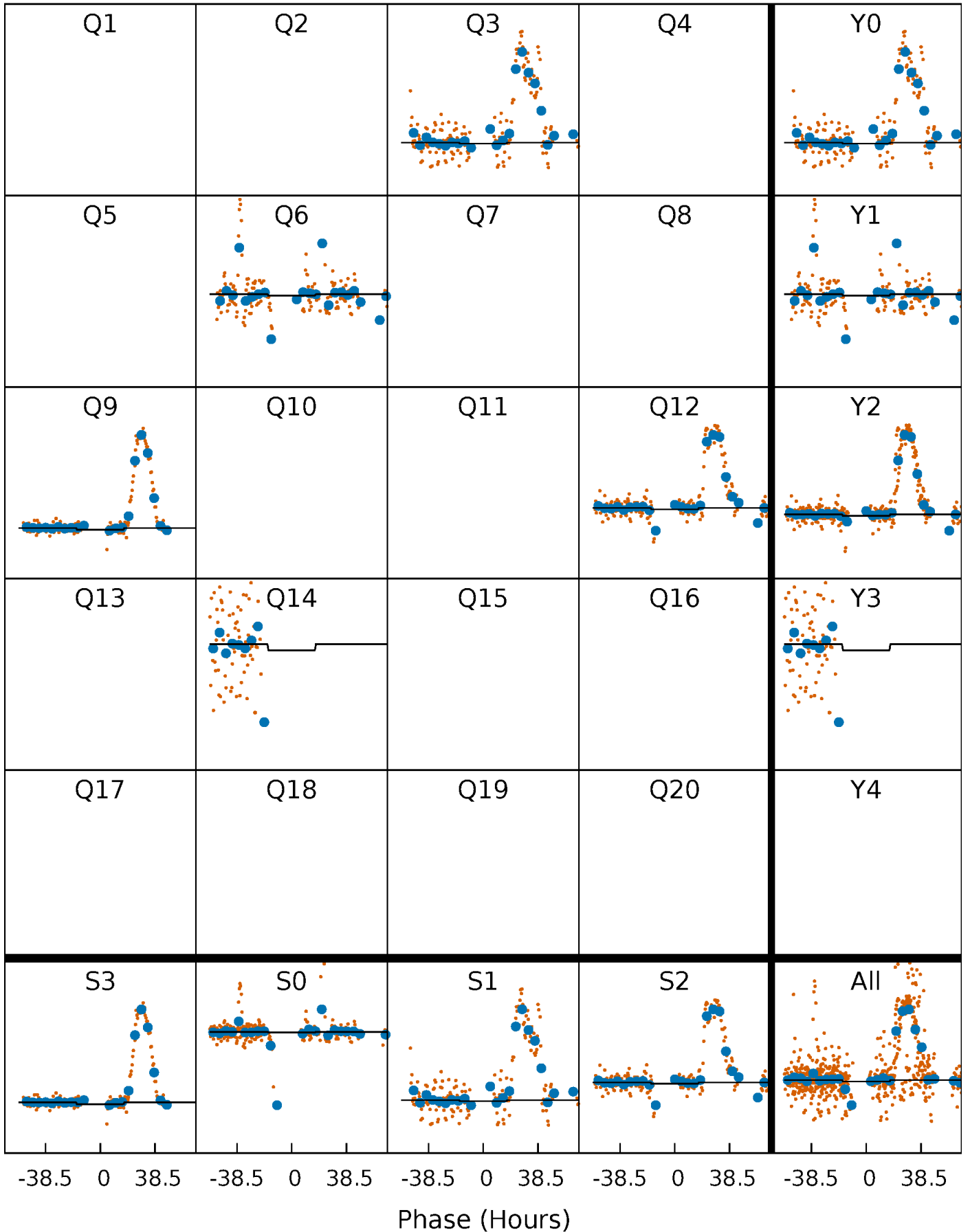
DV Quarter-Phased Transit Curves

TCE 010156064-02 P=264.399952 Days $T_0=314.665564$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

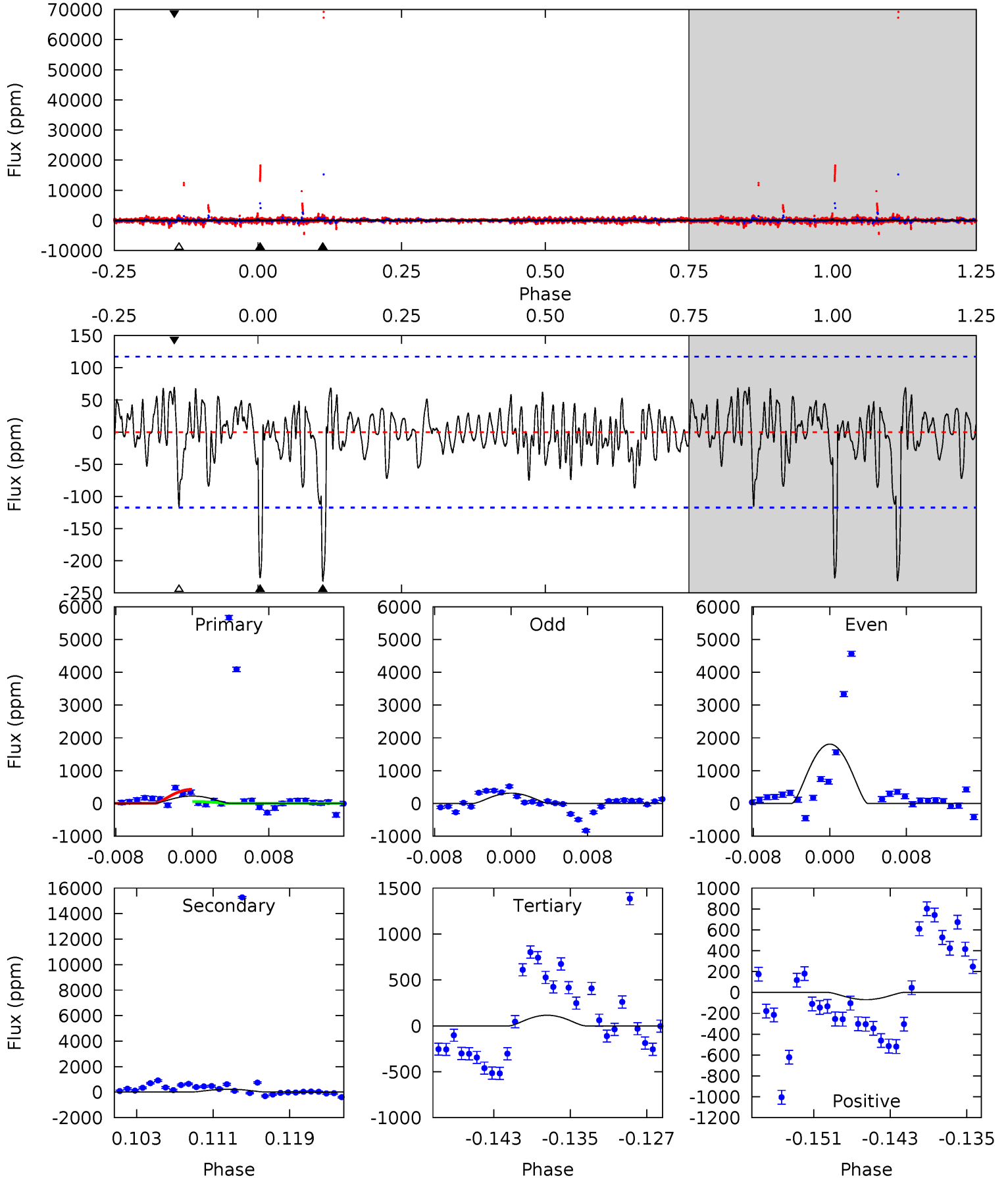
TCE 010156064-02 $P=264.716770$ Days $T_0=313.316363$ (BKJD)



DV Model-Shift Uniqueness Test

010156064-02, P = 264.399952 Days, E = 50.265612 Days

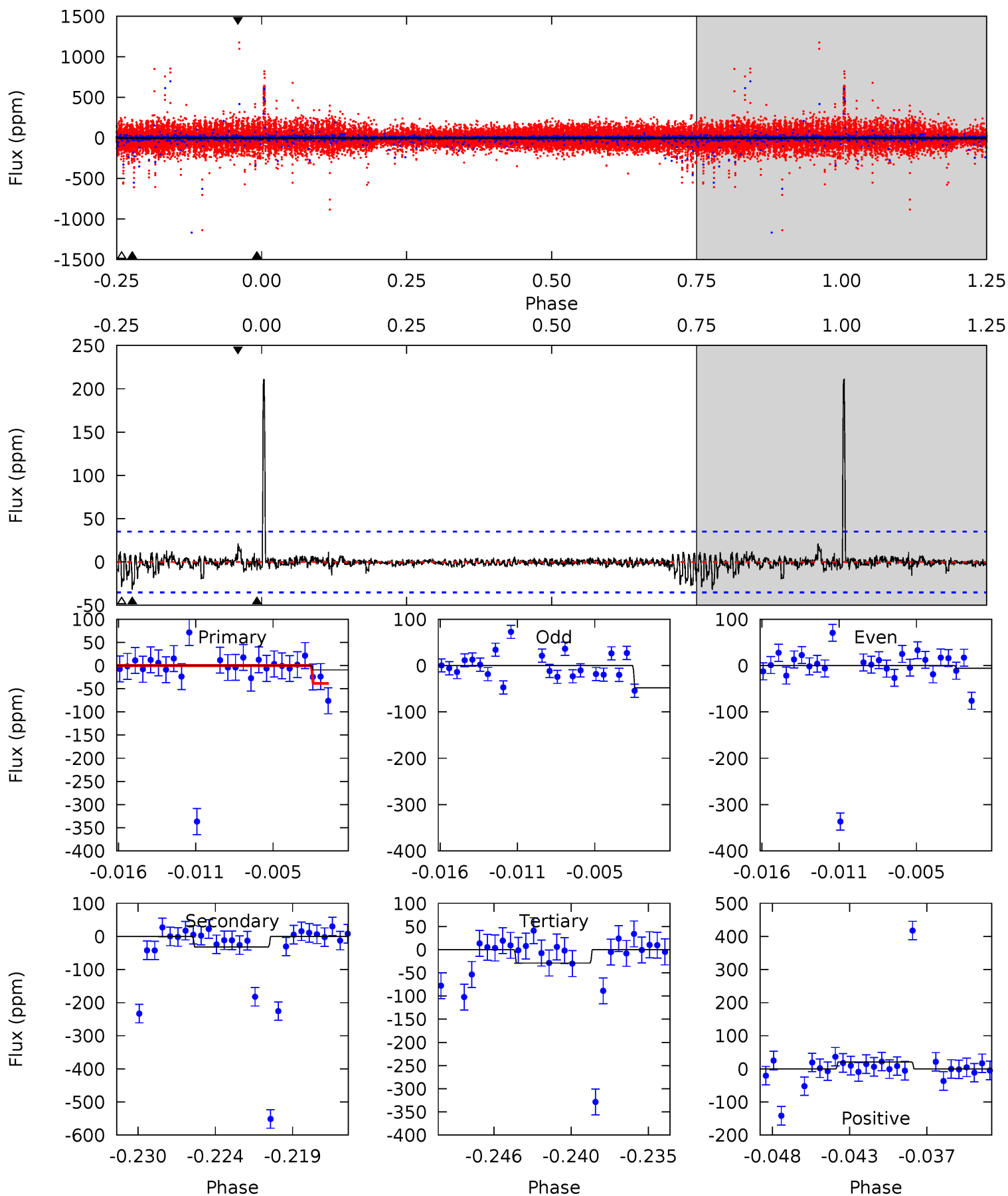
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.78	10.00	4.98	2.99	5.07	2.65	1.25	4.80	6.79	5.01	7.00	27.4	3.59	0.23	8.57



Alt Model-Shift Uniqueness Test

010156064-02, P = 264.716770 Days, E = 48.599593 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.40	4.69	4.22	3.09	5.15	2.79	1.75	-2.82	-1.70	0.47	1.60	1.18	2.64	0.87	2.49



Stellar Parameters For KIC 010156064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7652^{+214}_{-322}	$4.104^{+0.135}_{-0.165}$	$0.040^{+0.200}_{-0.350}$	$1.921^{+0.540}_{-0.360}$	$1.707^{+0.194}_{-0.267}$	$0.339^{+0.230}_{-0.159}$
	+3%/-4%	+3%/-4%	+500%/-875%	+28%/-19%	+11%/-16%	+68%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010156064-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-231 ± 23	$18.91^{+5.74}_{-5.89}$	662^{+41}_{-39}	3533^{+446}_{-293}	321^{+360}_{-136}
Alt.	-32 ± 7	$3.90^{+4.03}_{-2.74}$	664^{+51}_{-41}	4344^{+2949}_{-964}	1080^{+10373}_{-834}

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

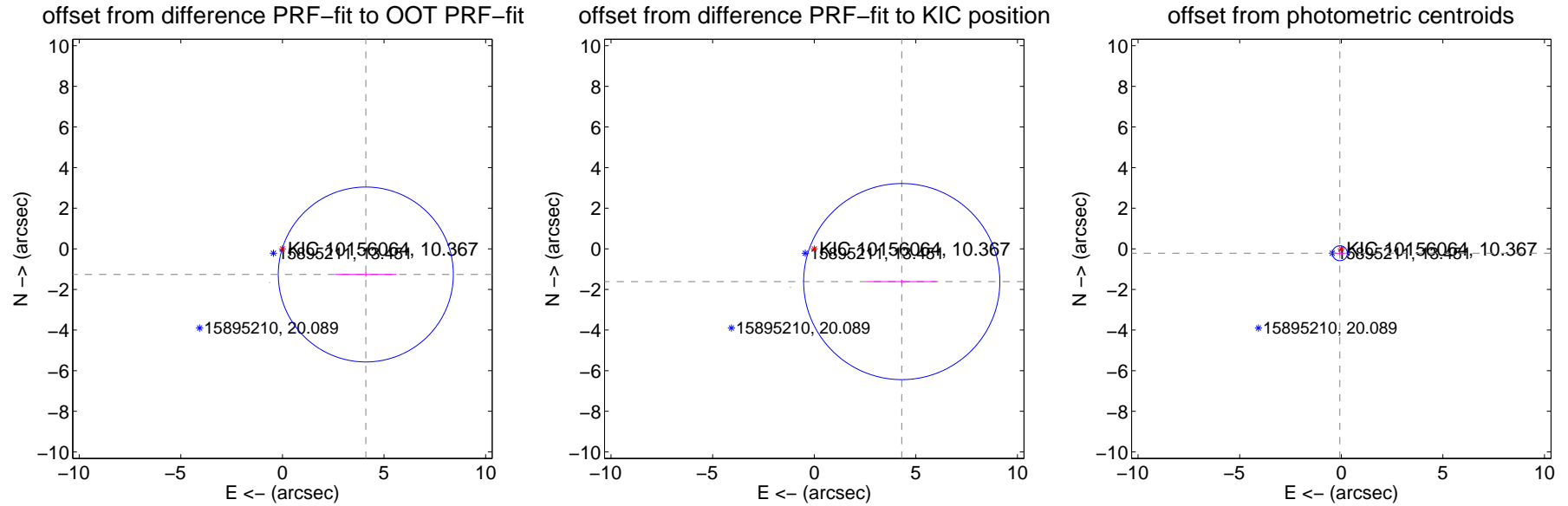
DV Centroid Data

Supplemental centroid analysis for 010156064-02. **Kepler magnitude: 10.37.** Transit SNR 24.84

There are 0 quarters with good PRF difference image offsets

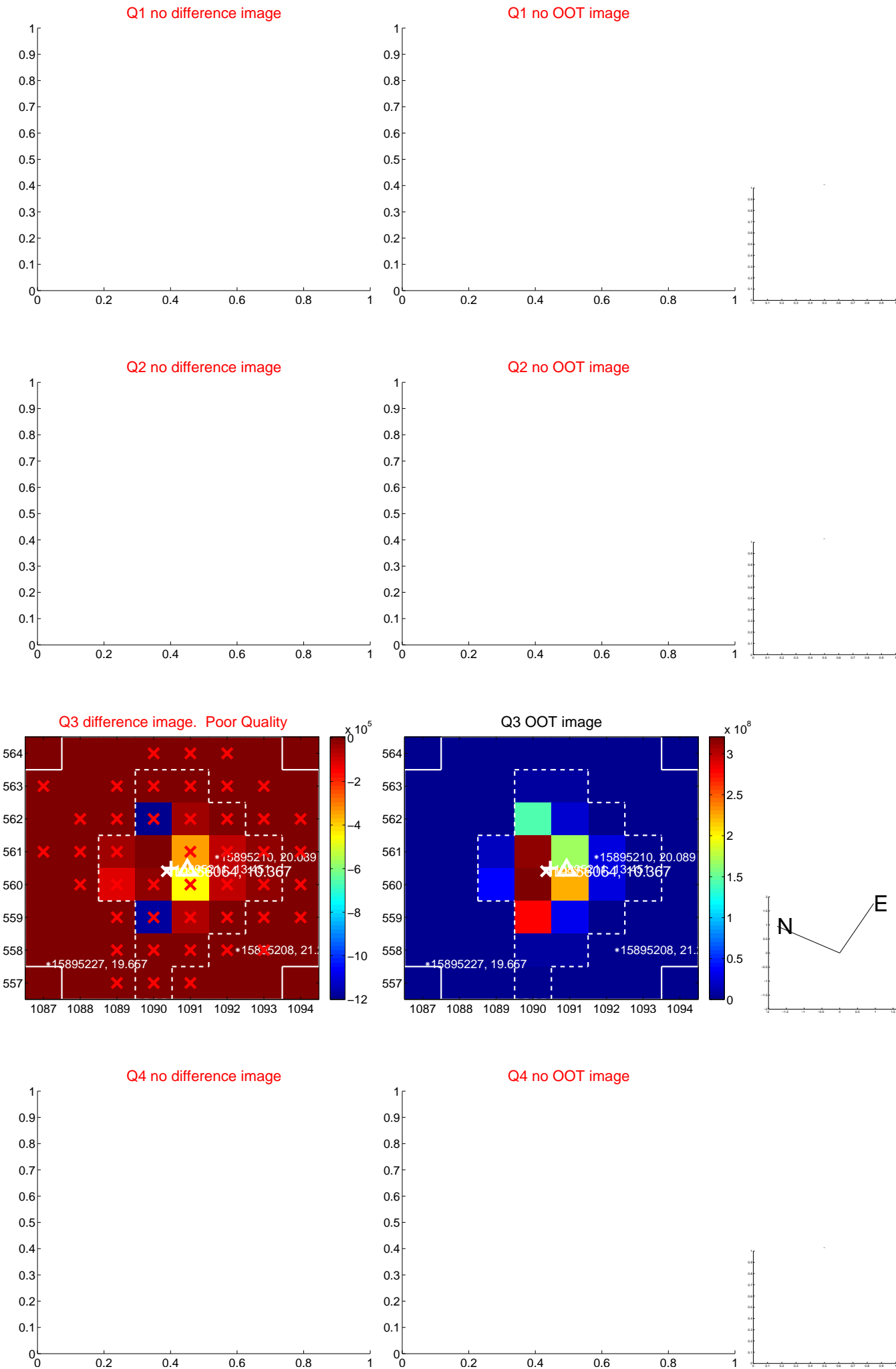
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.295 ± 1.436	2.99	-4.105 ± 1.502	-1.264 ± 0.109
PRF-fit source offset from KIC position	4.599 ± 1.609	2.86	-4.307 ± 1.718	-1.613 ± 0.091
photometric centroid source offset	0.23 ± 0.12	1.87	0.07 ± 0.22	-0.22 ± 0.11

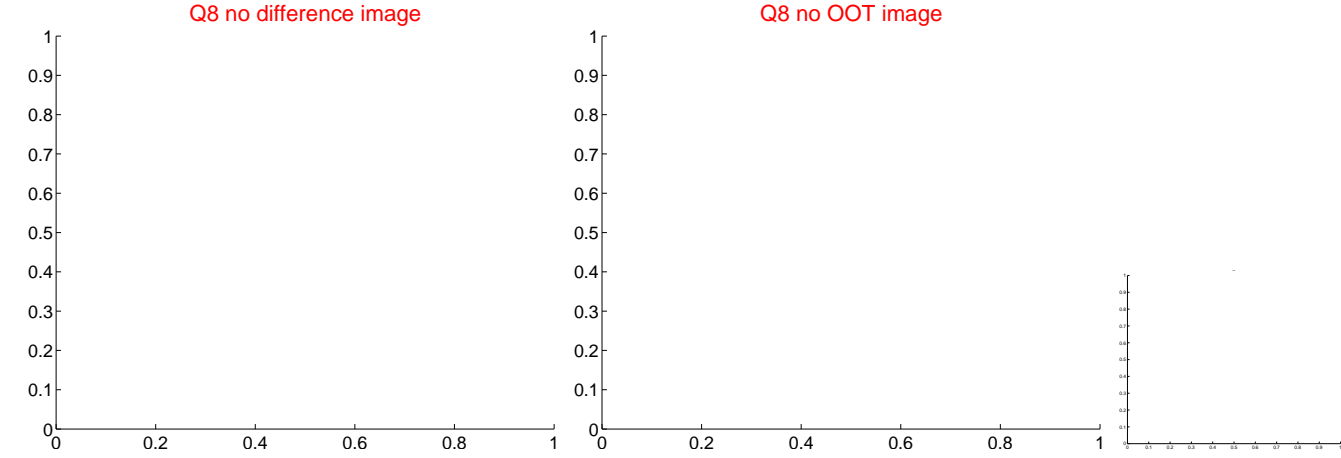
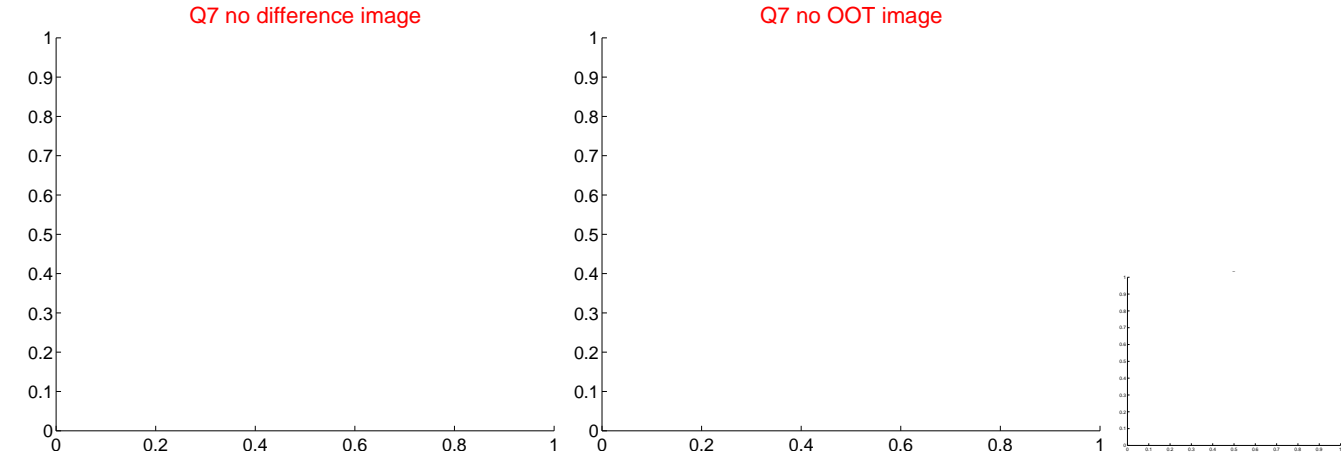
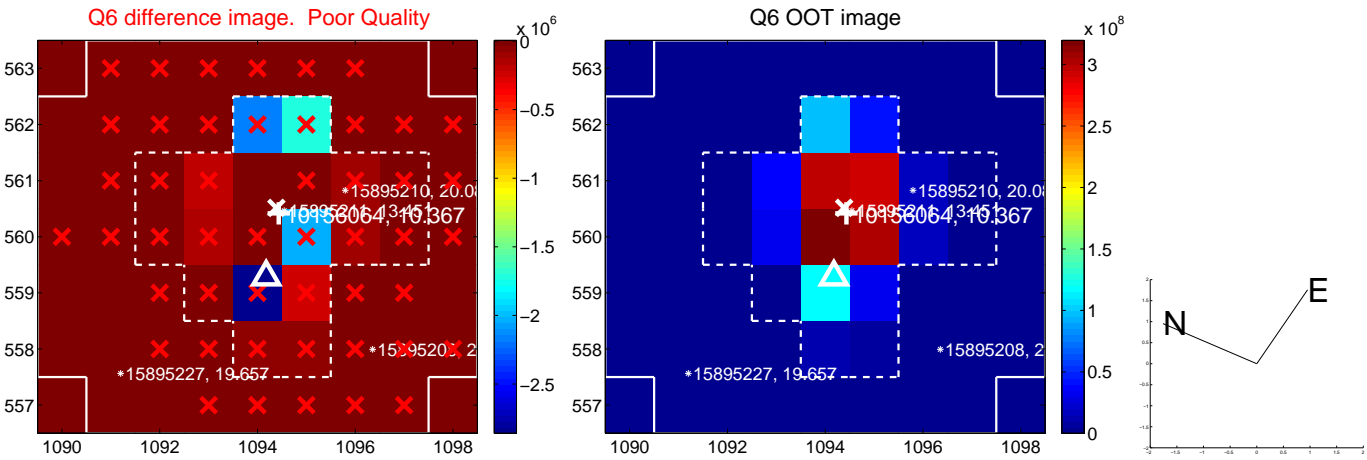


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



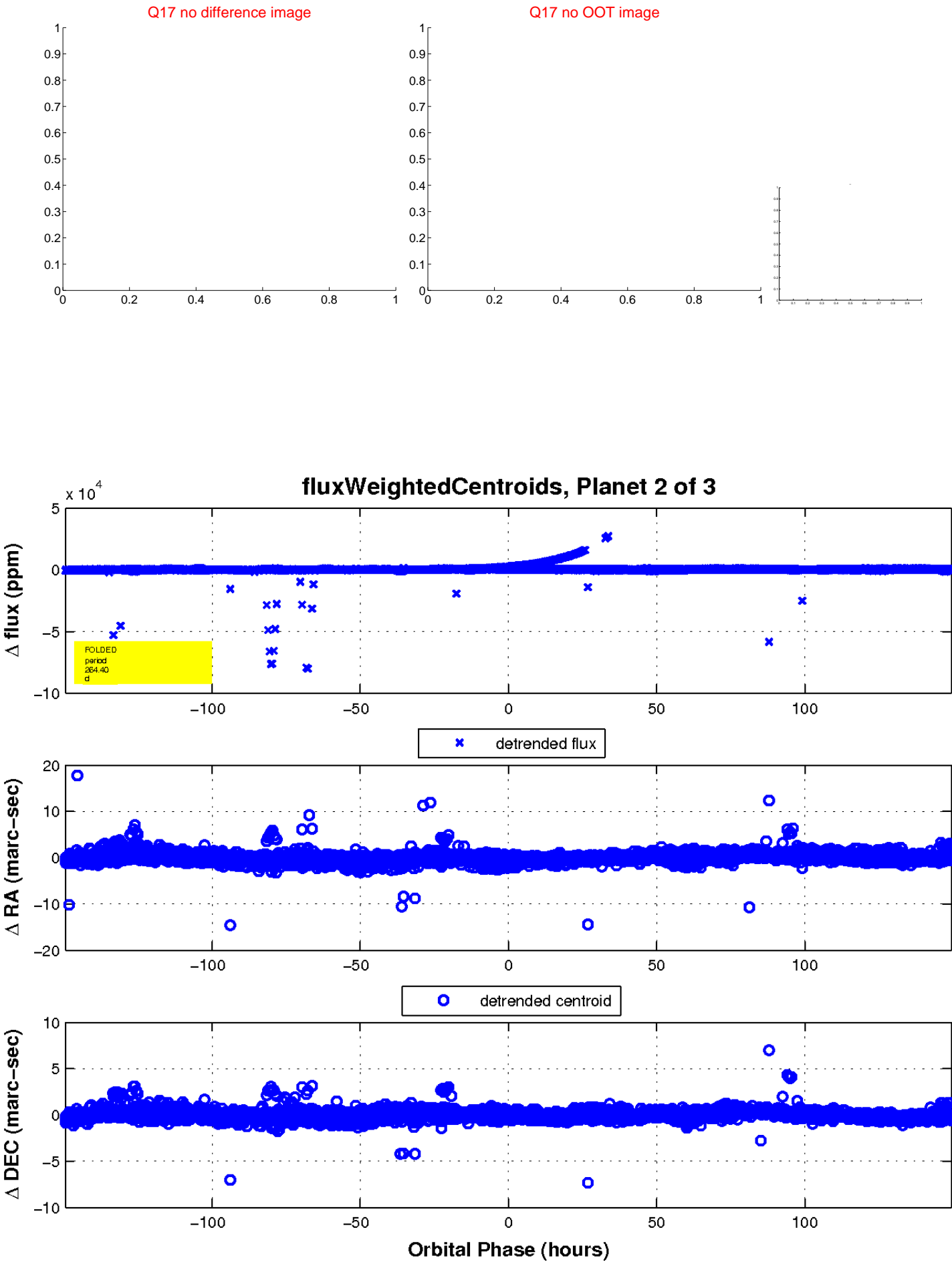
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

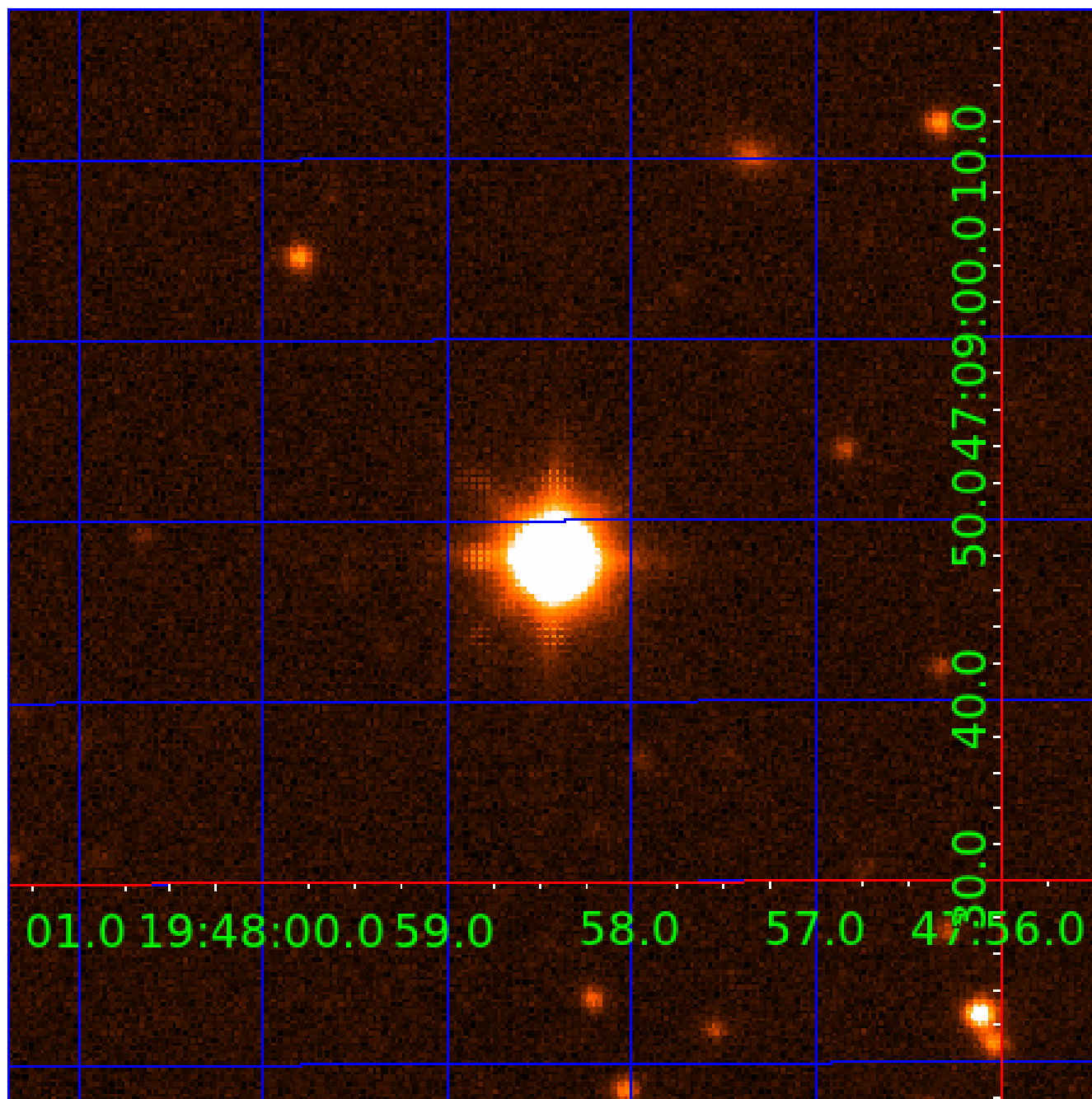


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010156064

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})
010156064-01	OBS	7290.01	2.427969	133.598919	60404.7	5.304	31448.9	15600.6	1.92	7652	79.79	6339.01
010156064-02	OBS	No	264.399952	314.665564	3087.4	49.844	32.4	24.8	1.92	7652	19.05	12.19
010156064-03	OBS	No	298.609235	276.006913	316.1	6.000	33.4	-1.0	1.92	7652	3.47	10.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010156064-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_SATURATED
010156064-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010156064-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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 010156064-03

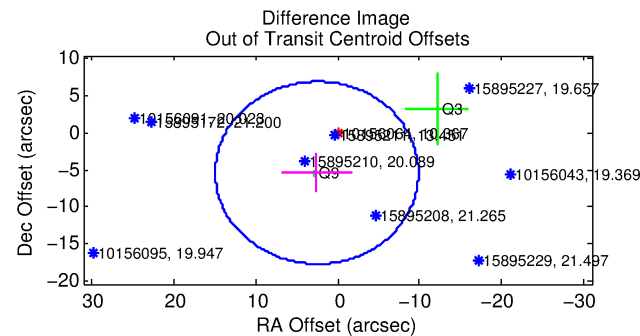
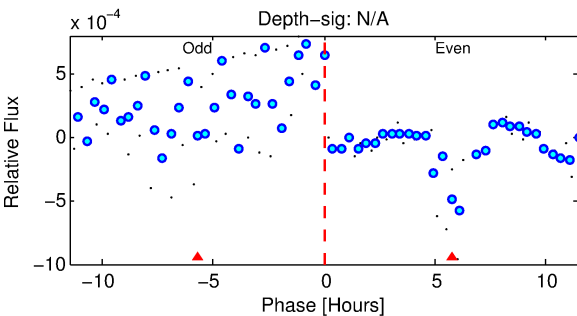
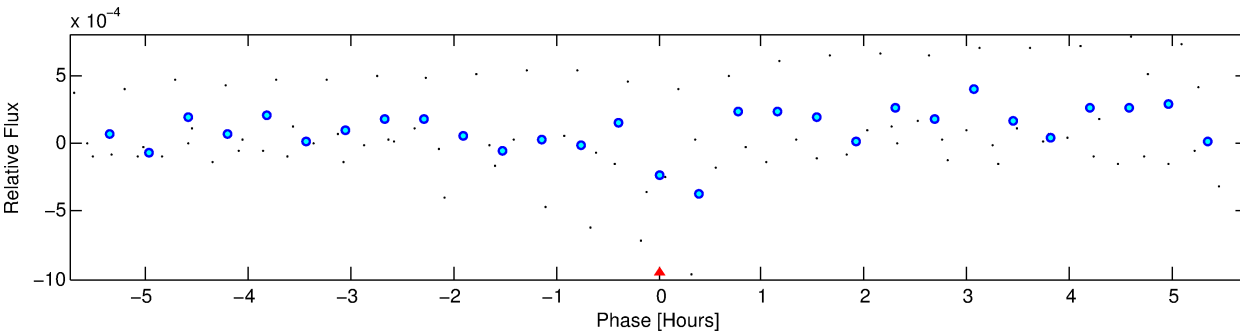
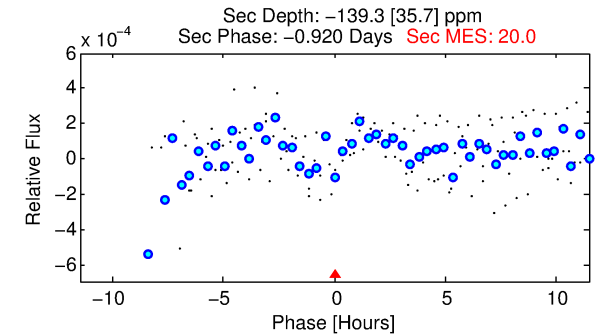
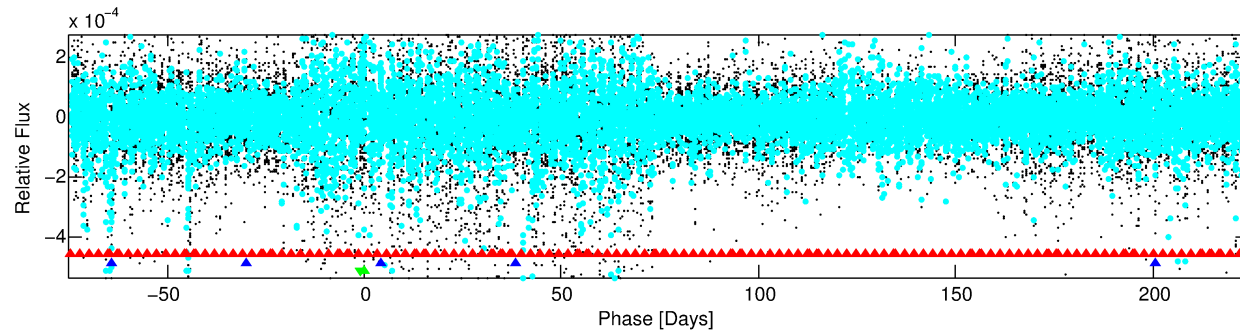
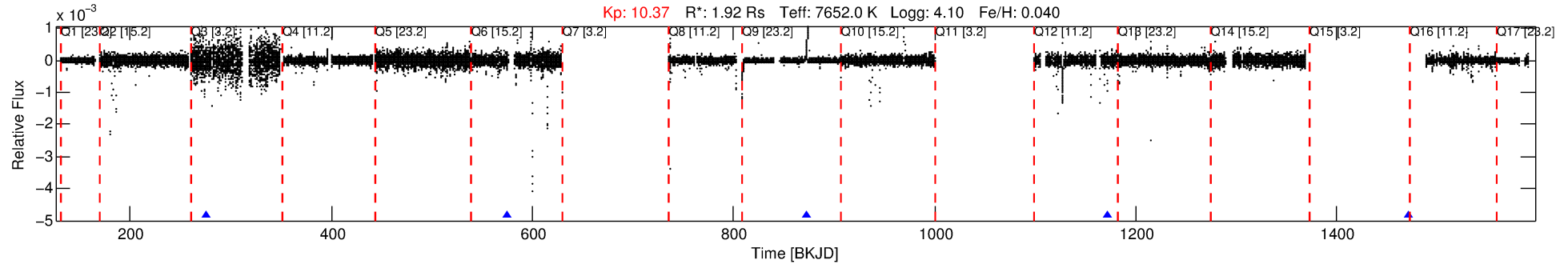
No Significant Match Found

DV One-Page Summary

KIC: 10156064 Candidate: 3 of 3 Period: 298.609 d

KOI: K07290 Corr: No Ephemeris Match

Kp: 10.37 R*: 1.92 Rs Teff: 7652.0 K Logg: 4.10 Fe/H: 0.040



TPS TCE Results:

Period = 298.60923 d
Epoch = 276.0069 BKJD

DV fit results are unavailable

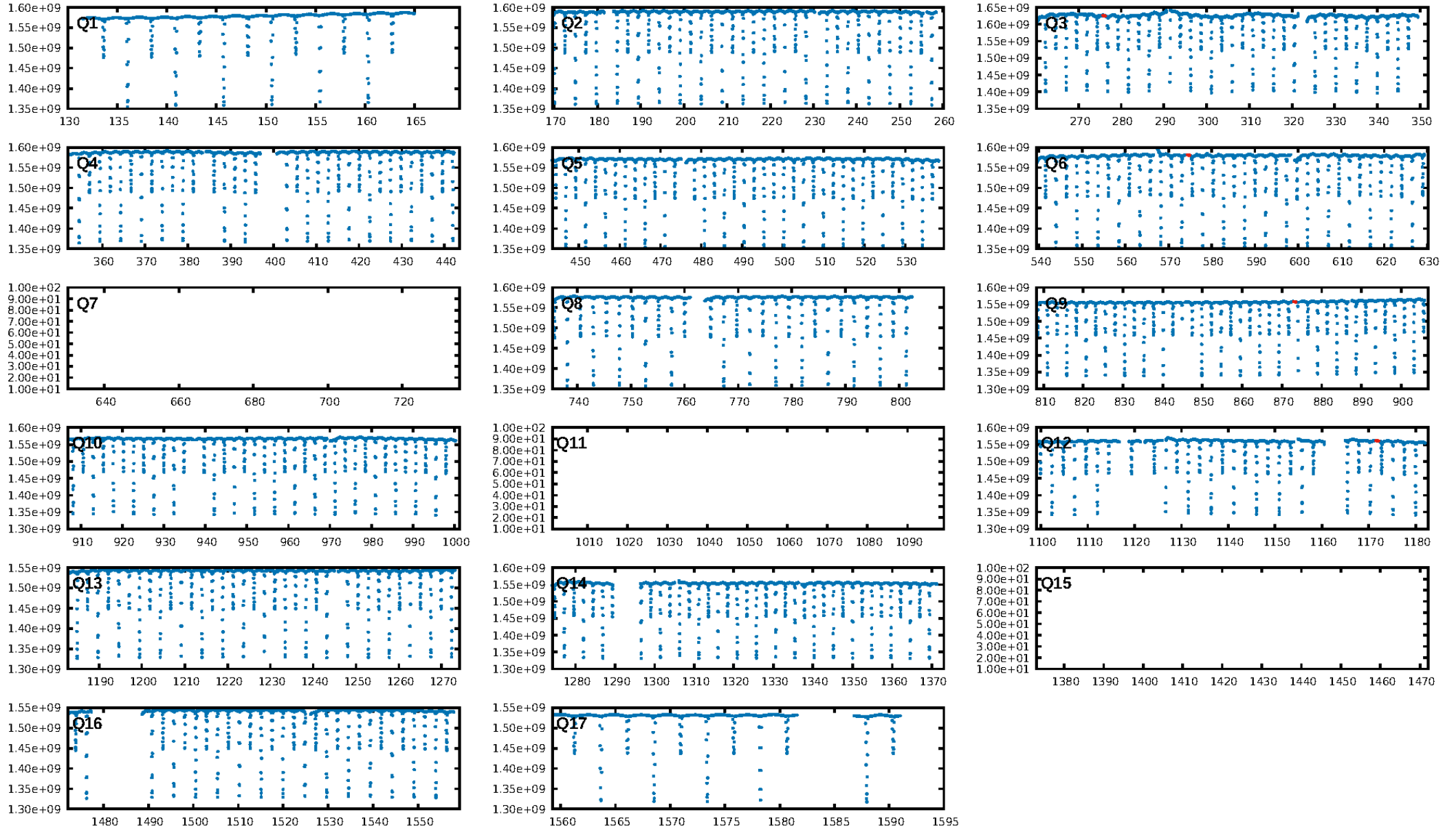
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.35σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.041
Centroid-sig: N/A
Centroid-so: 4.947 arcsec [2.21σ]
OotOffset-rm: 5.975 arcsec [1.45σ]
KicOffset-rm: 5.304 arcsec [0.84σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

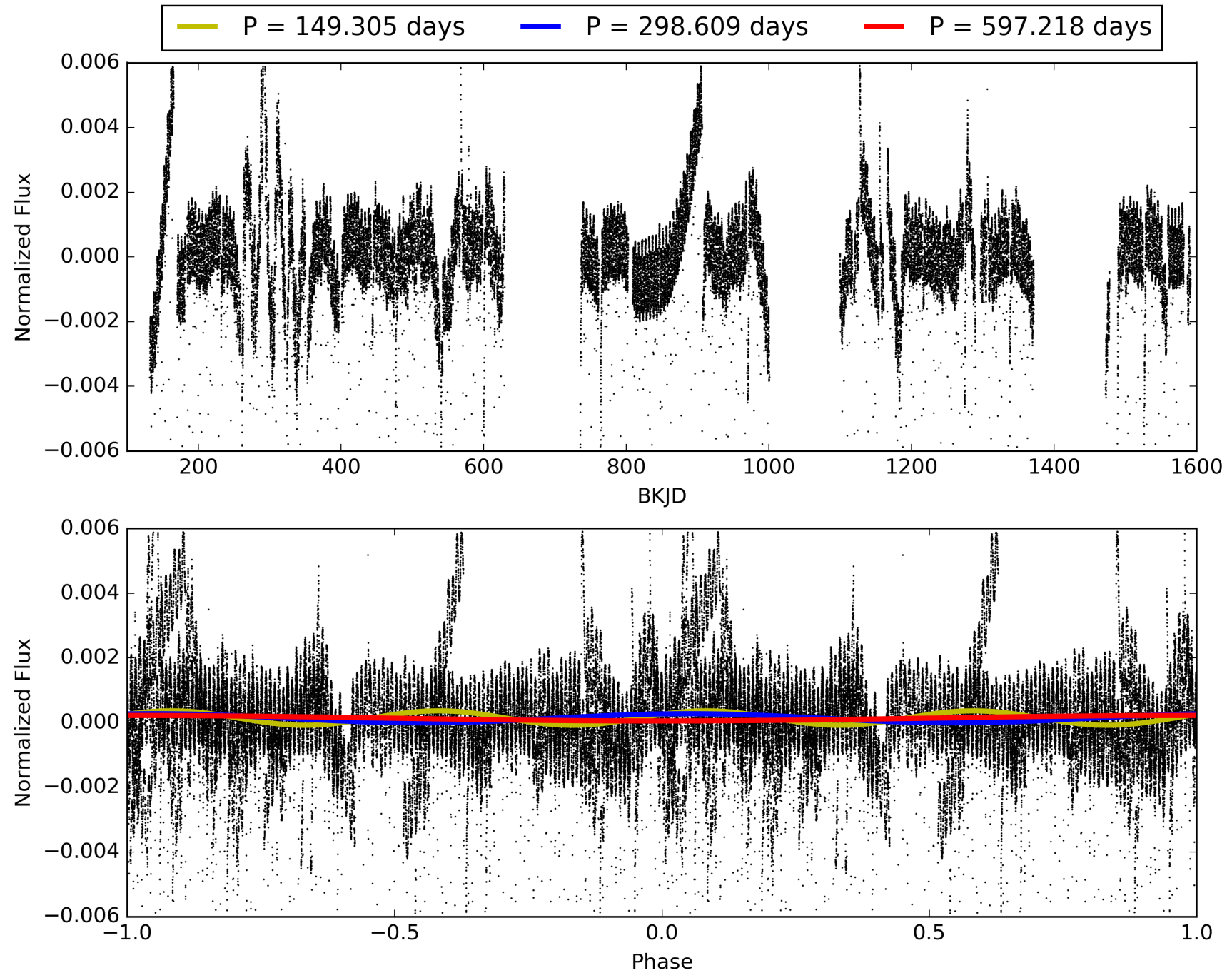
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:15:49 Z

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

TCE 010156064-03, PDC Light Curves

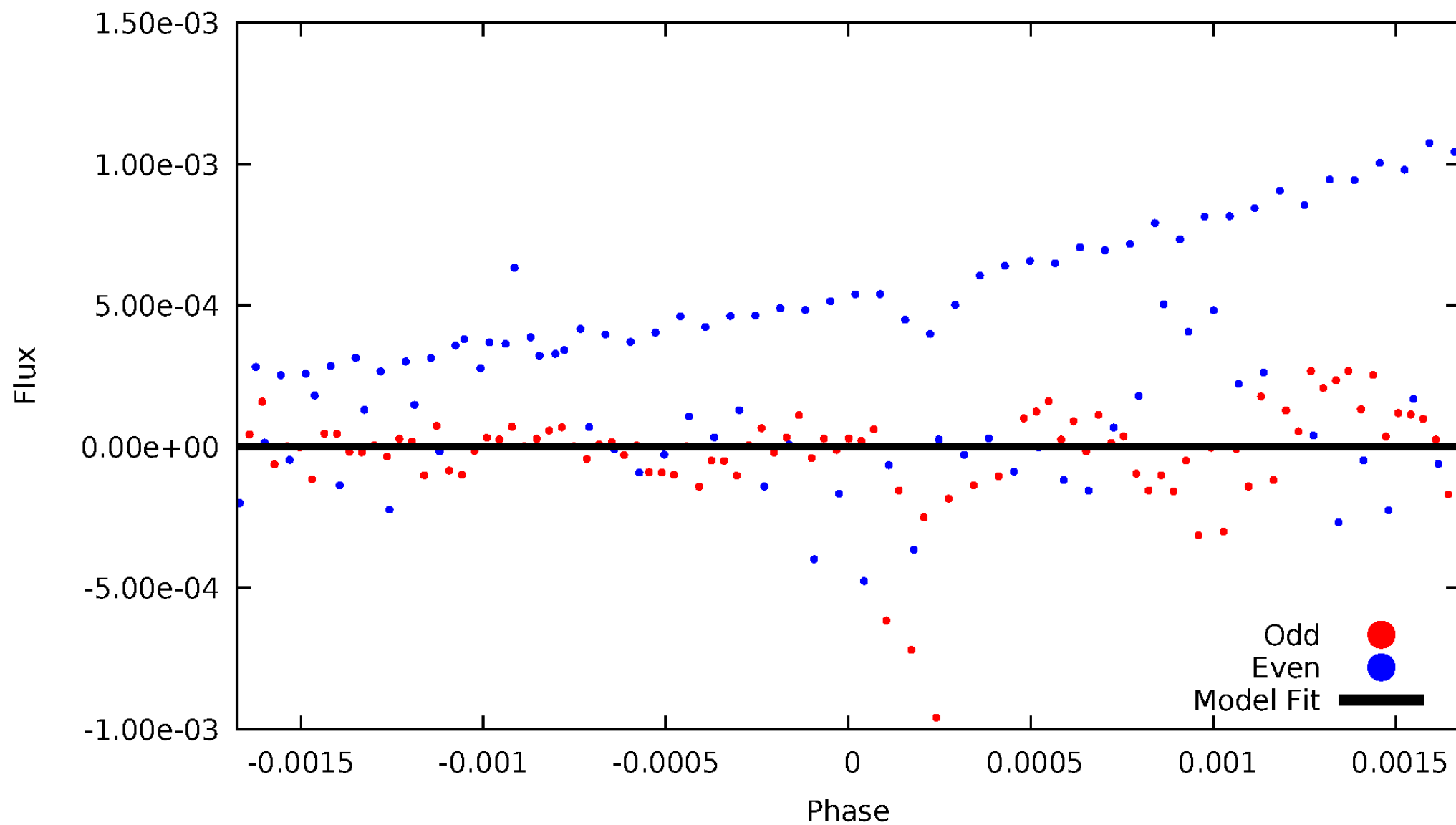


TCE 010156064-03



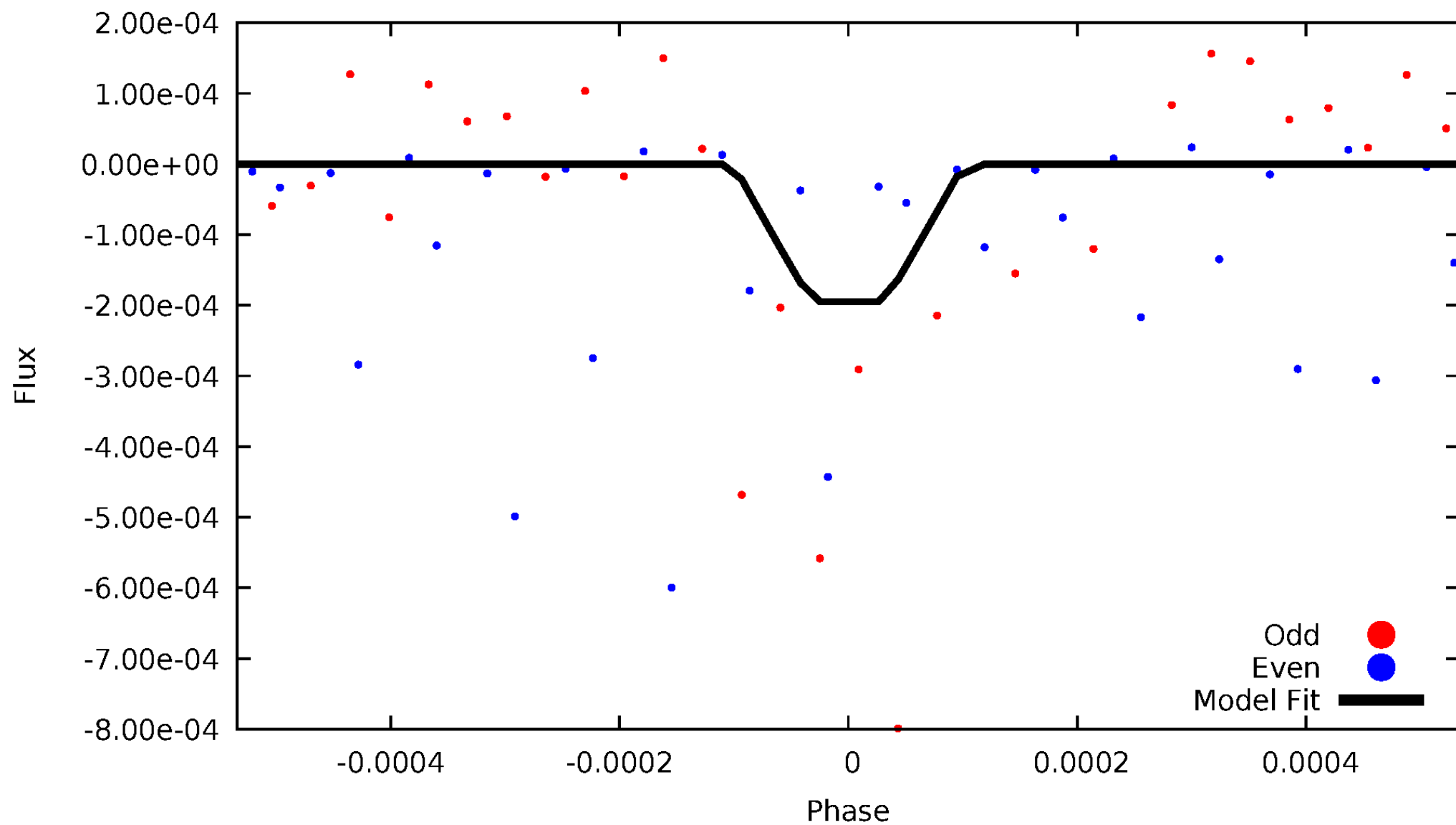
DV Odd/Even

TCE 010156064-03

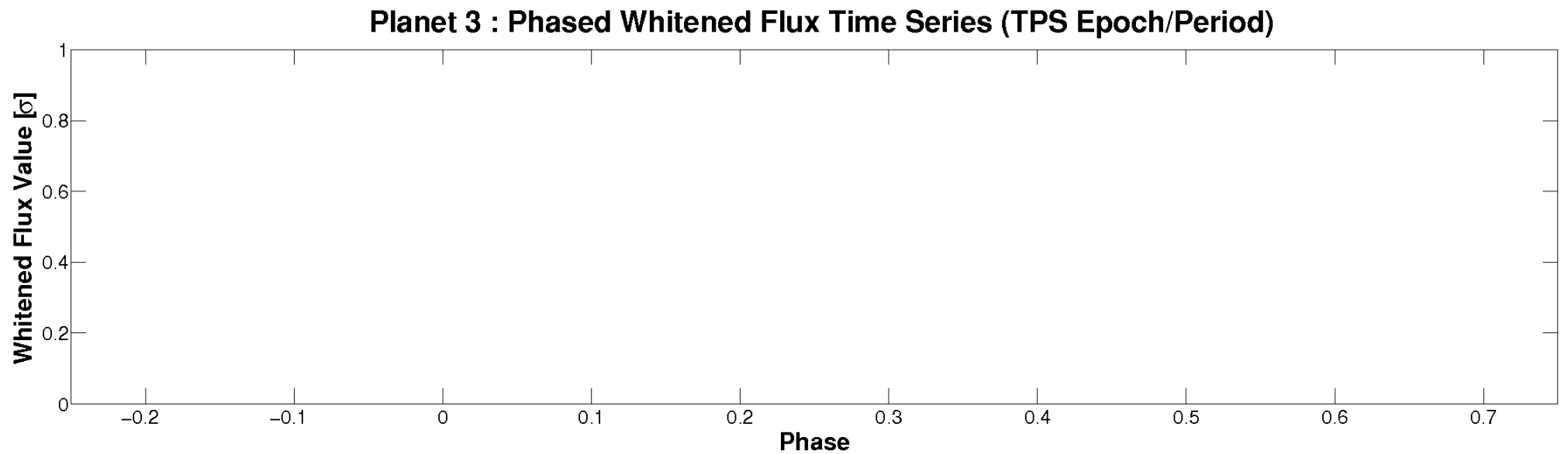
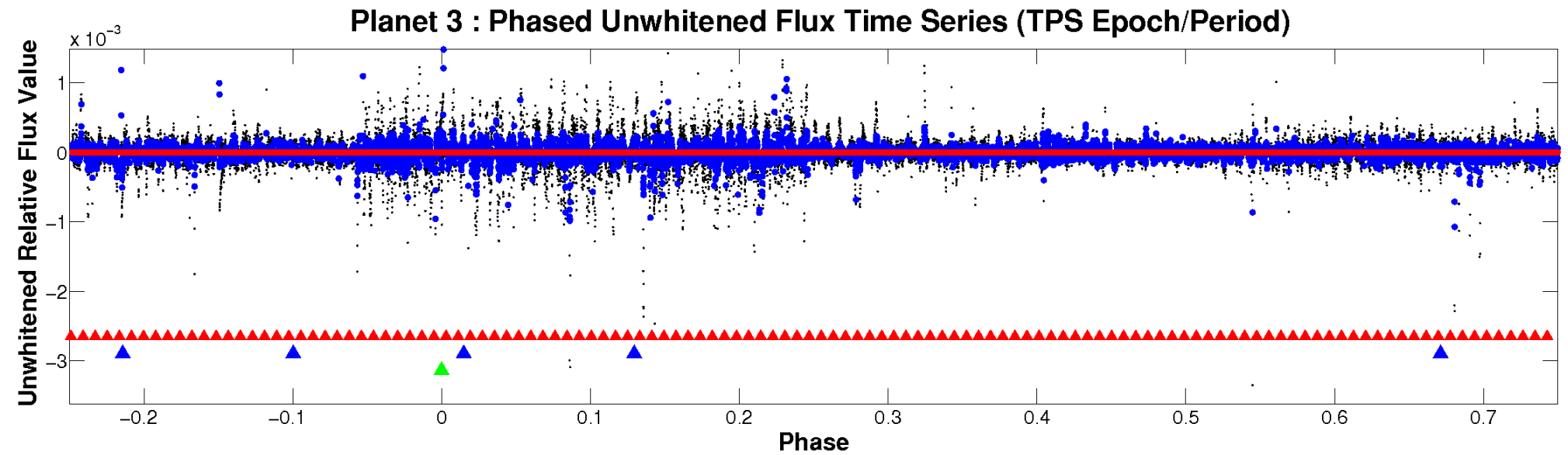


ALT Odd/Even

TCE 010156064-03

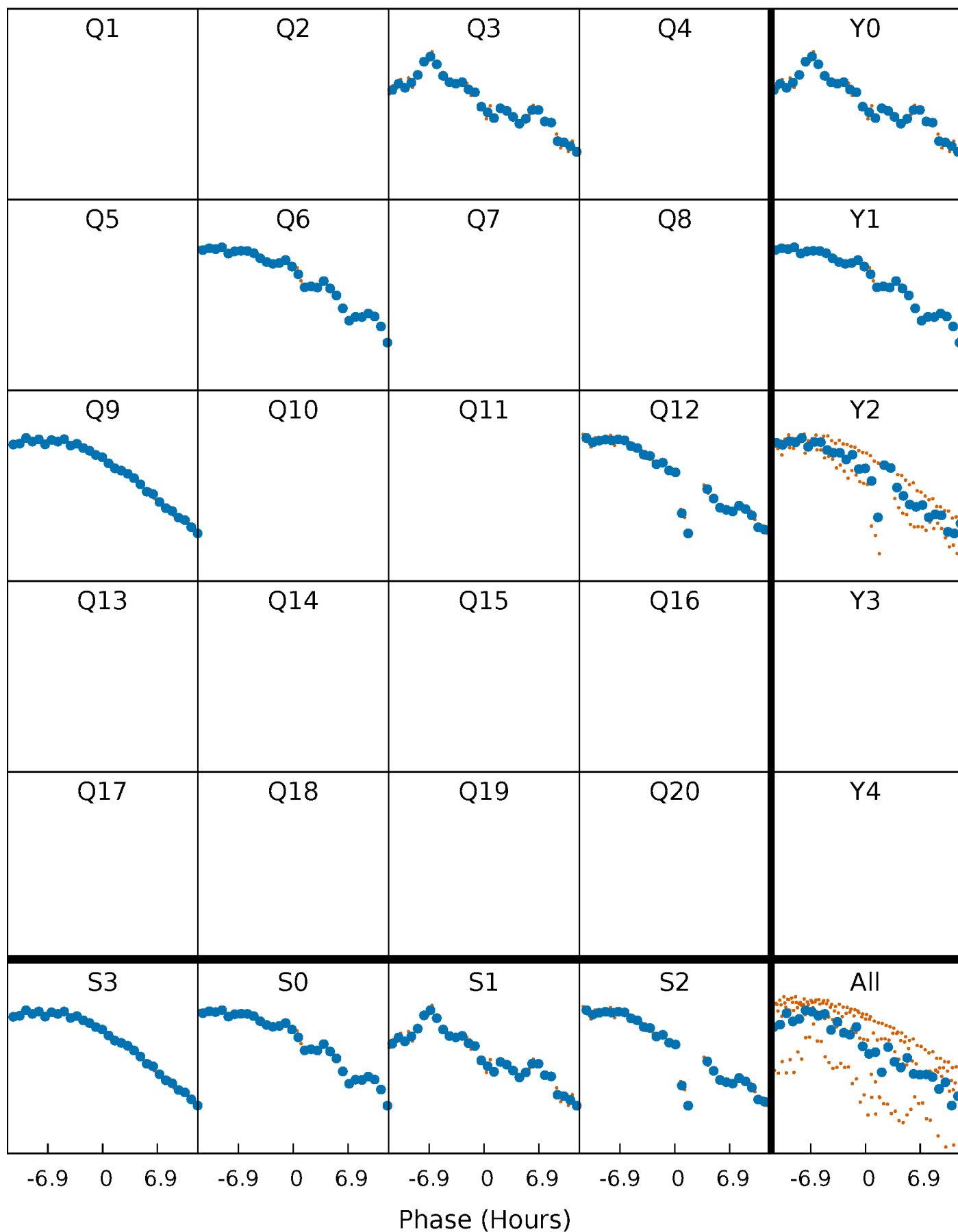


Non-Whitened Vs. Whitened Light Curve



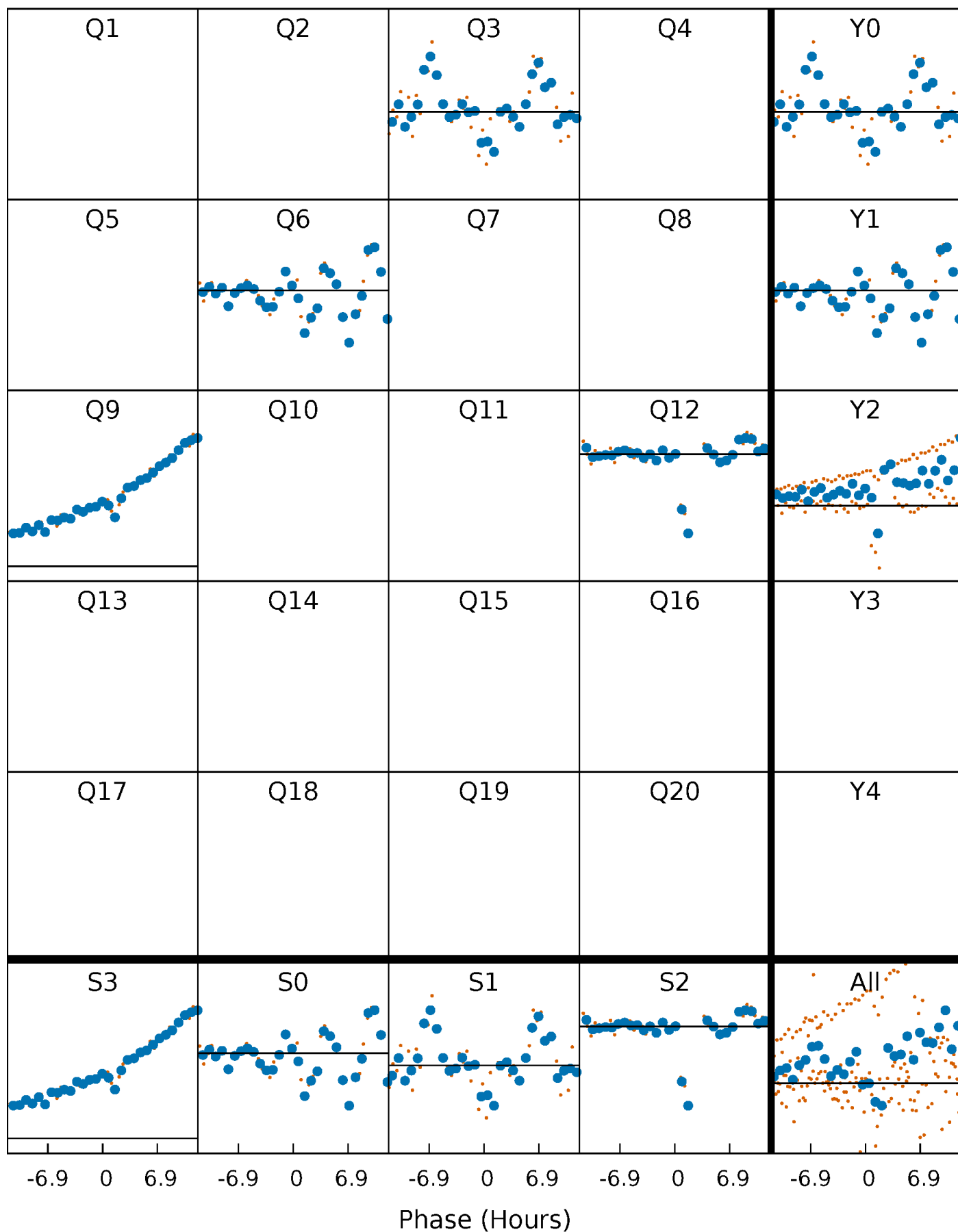
PDC Quarter-Phased Transit Curves

TCE 010156064-03 $P=298.609235$ Days $T_0=276.006913$ (BKJD)



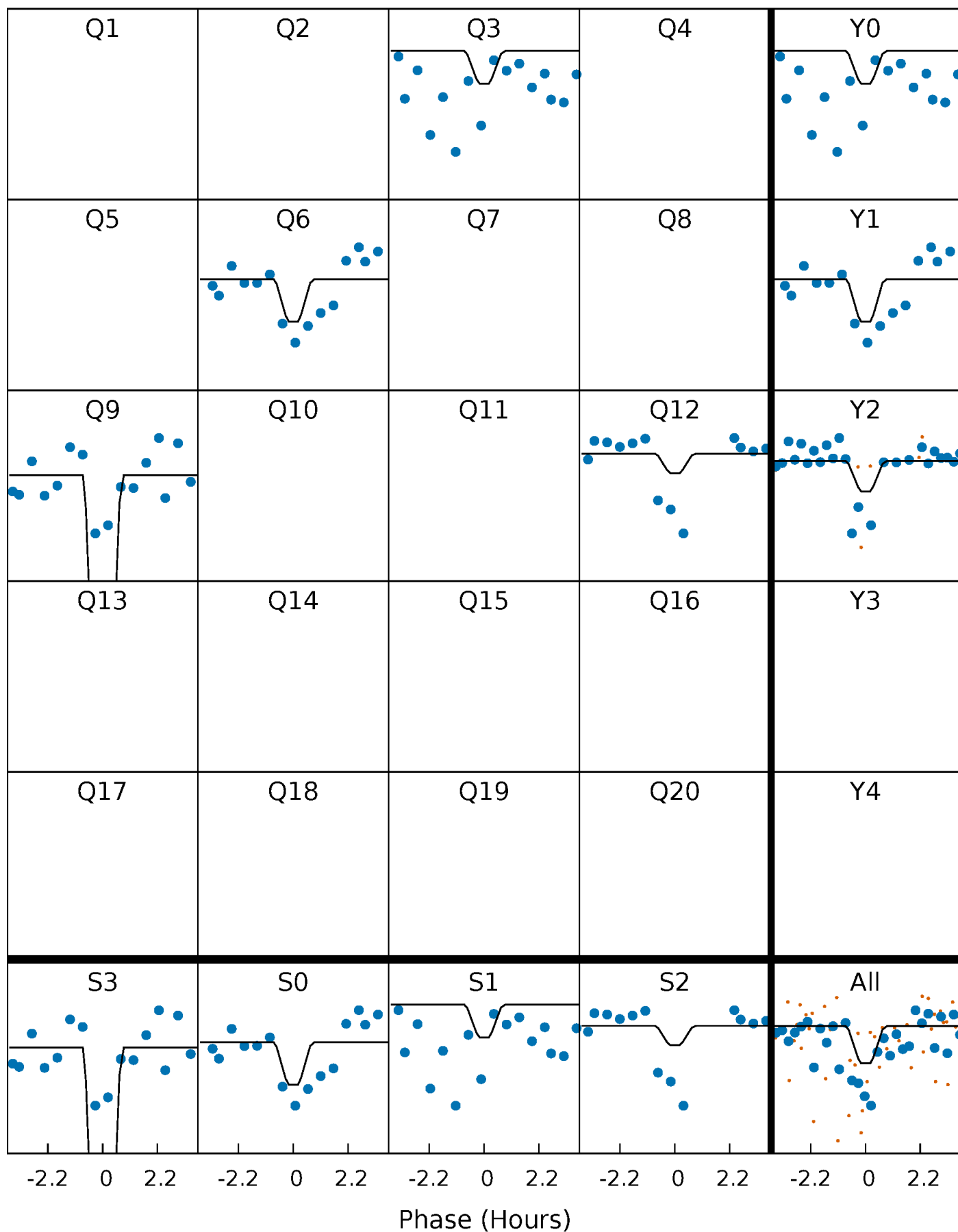
DV Quarter-Phased Transit Curves

TCE 010156064-03 $P=298.609235$ Days $T_0=276.006913$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

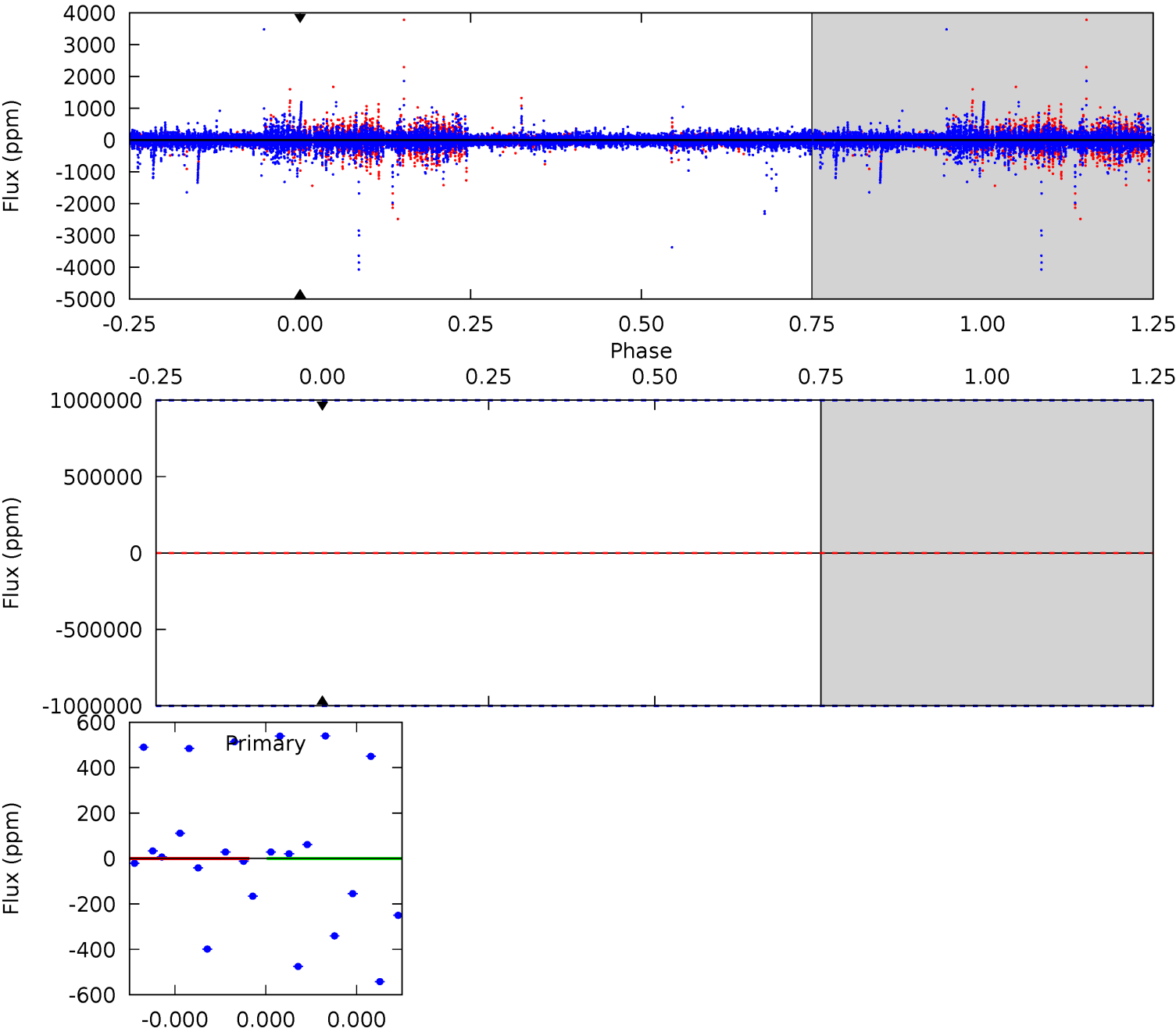
TCE 010156064-03 P=298.609235 Days $T_0=276.065927$ (BKJD)



DV Model-Shift Uniqueness Test

010156064-03, P = 298.609235 Days, E = 276.006913 Days

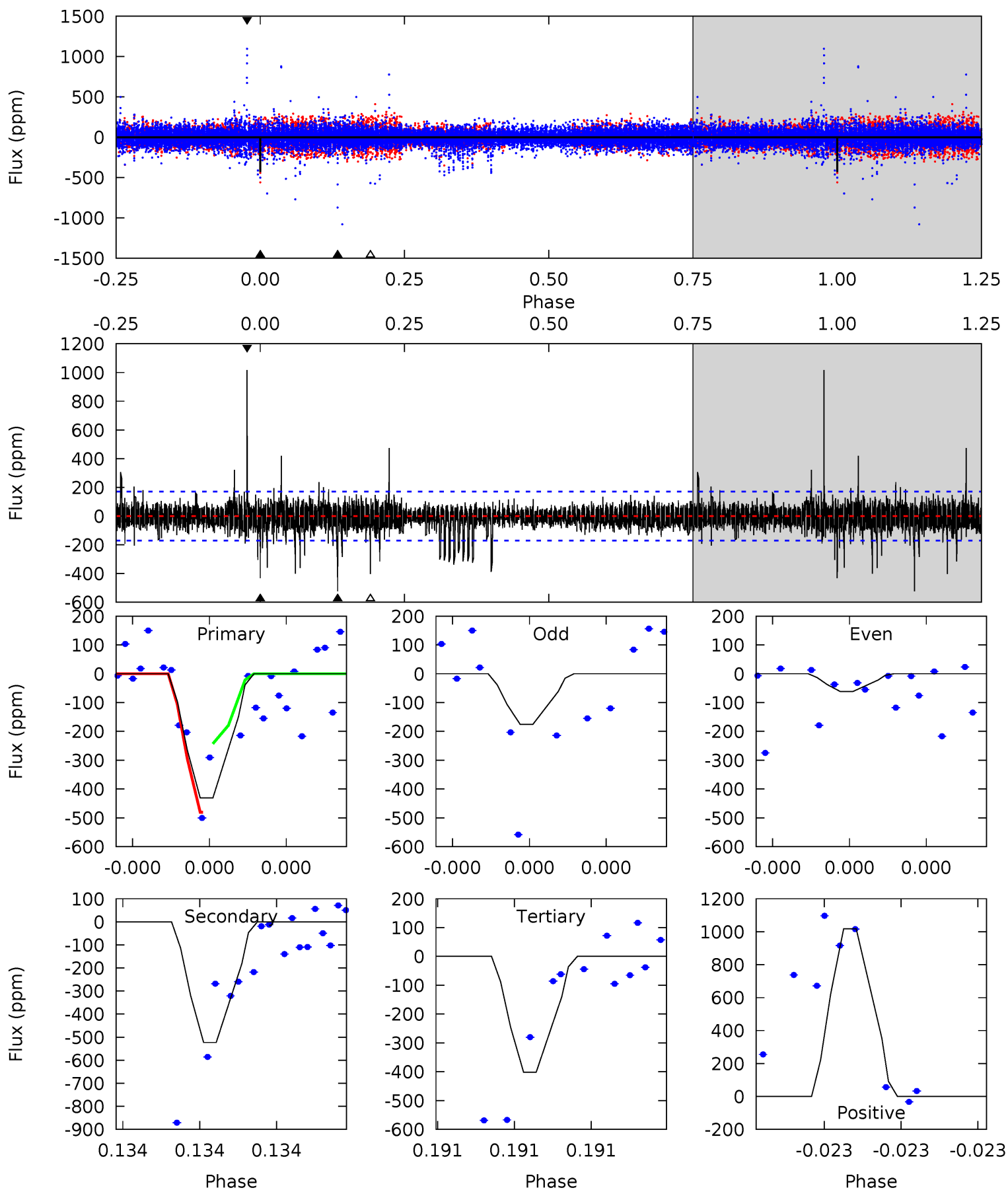
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010156064-03, P = 298.609235 Days, E = 276.065927 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	17.6	13.5	34.2	5.73	3.71	1.51	0.99	-19.7	4.08	-16.6	1.05	1.10	0.66	4.35



Stellar Parameters For KIC 010156064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7652^{+214}_{-322}	$4.104^{+0.135}_{-0.165}$	$0.040^{+0.200}_{-0.350}$	$1.921^{+0.540}_{-0.360}$	$1.707^{+0.194}_{-0.267}$	$0.339^{+0.230}_{-0.159}$
	+3%/-4%	+3%/-4%	+500%/-875%	+28%/-19%	+11%/-16%	+68%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010156064-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$15.10^{+15.52}_{-10.61}$	639^{+47}_{-39}	6311^{+38551}_{-46169}	$5640^{+525005}_{-406157}$
Alt.	-523 ± 30	$15.26^{+16.21}_{-10.58}$	638^{+44}_{-40}	4392^{+3443}_{-959}	1334^{+12974}_{-1030}

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 $A_{obs} \gg 1.0$

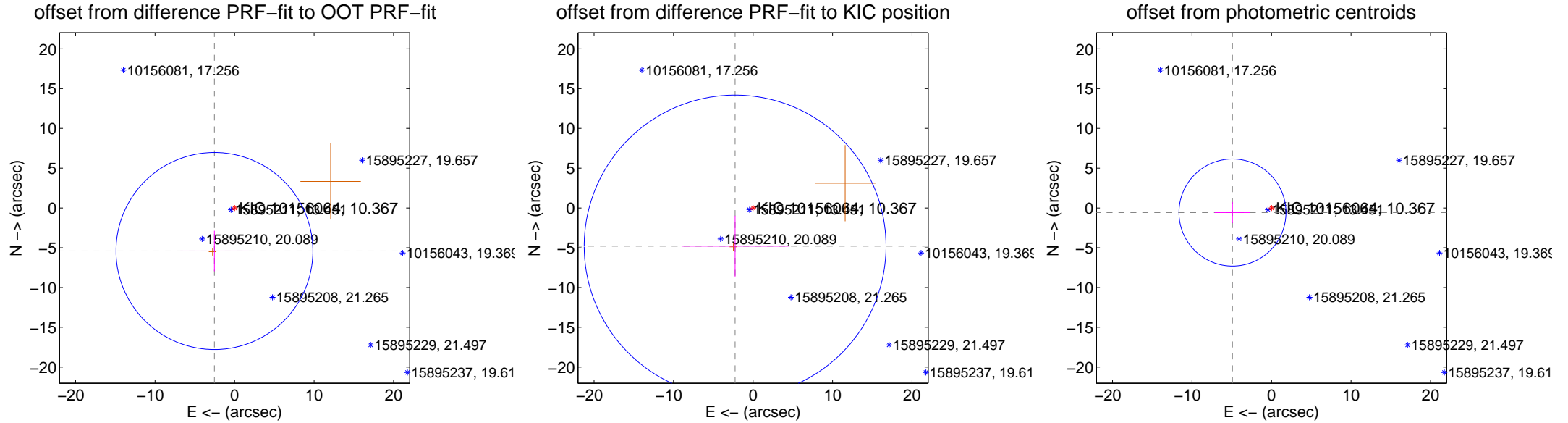
DV Centroid Data

Supplemental centroid analysis for 010156064-03. **Kepler magnitude: 10.37.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

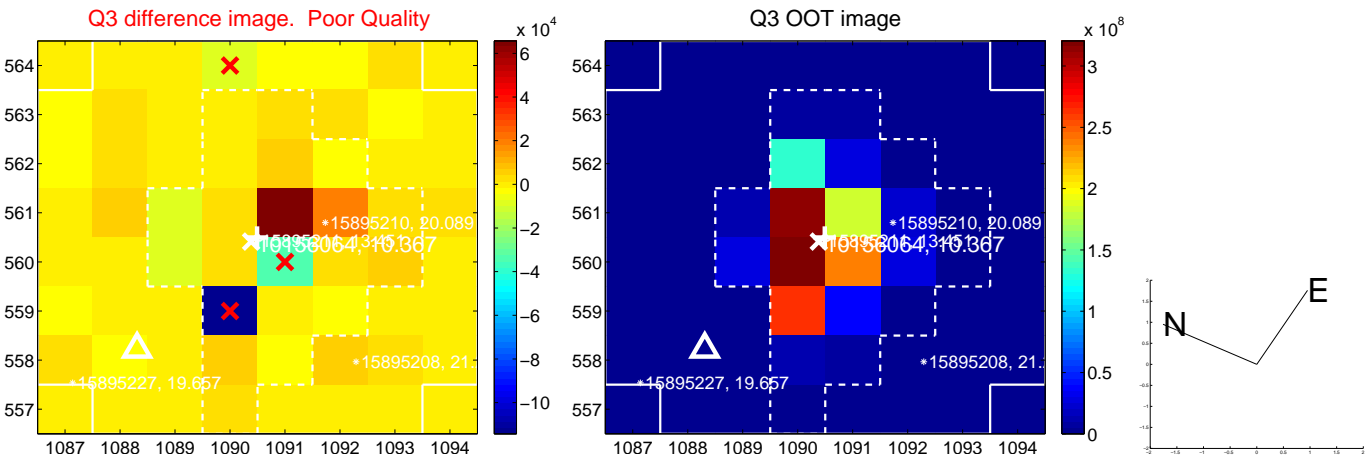
The direct PRF centroid is offset from the target star catalog position by about 0.68 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.975 ± 4.127	1.45	2.535 ± 4.288	-5.410 ± 2.550
PRF-fit source offset from KIC position	5.304 ± 6.328	0.84	2.257 ± 6.735	-4.799 ± 3.825
photometric centroid source offset	4.95 ± 2.24	2.21	4.91 ± 2.25	-0.57 ± 1.32

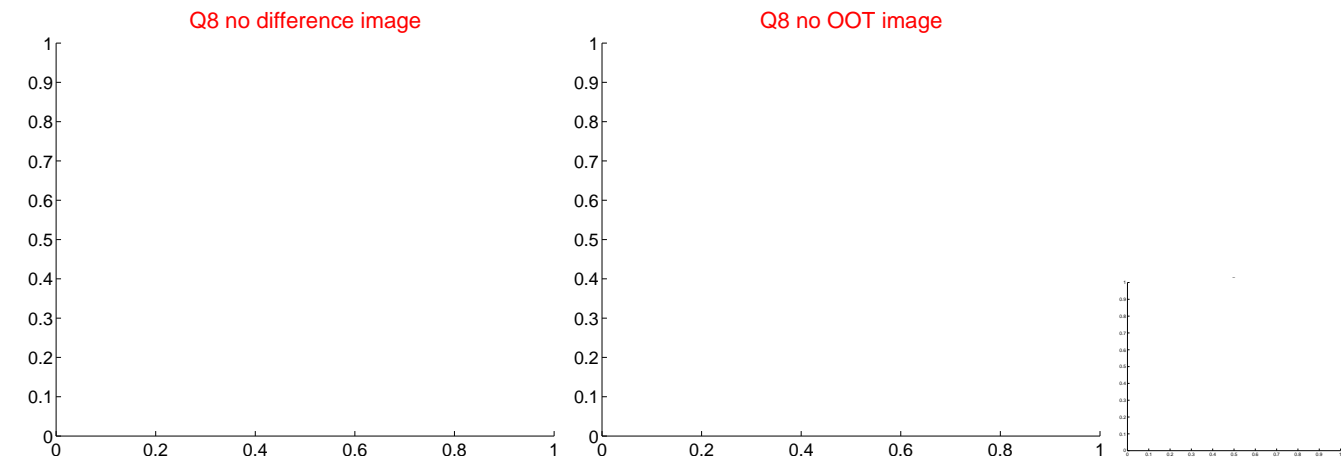
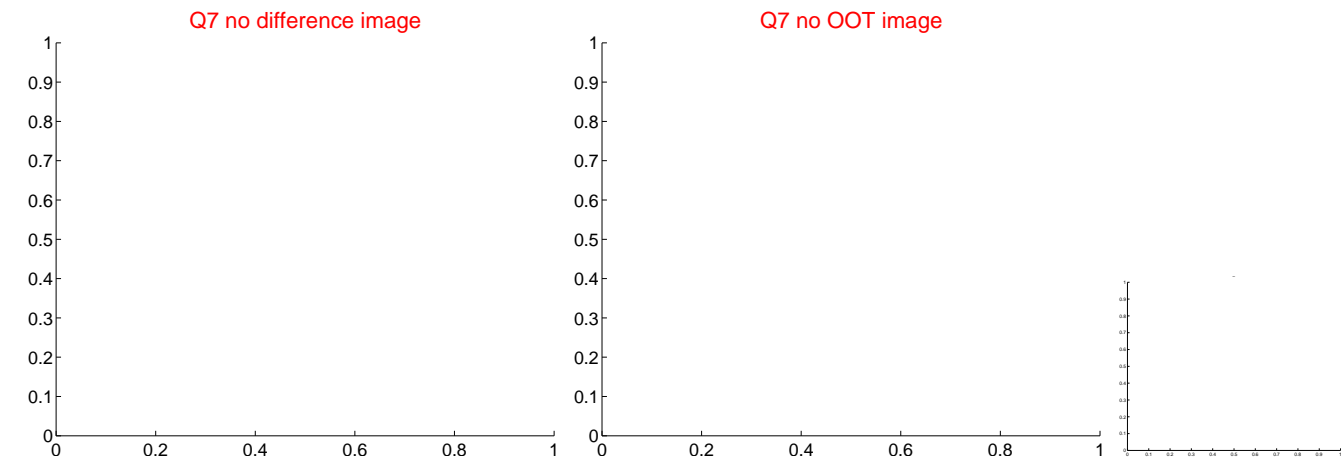
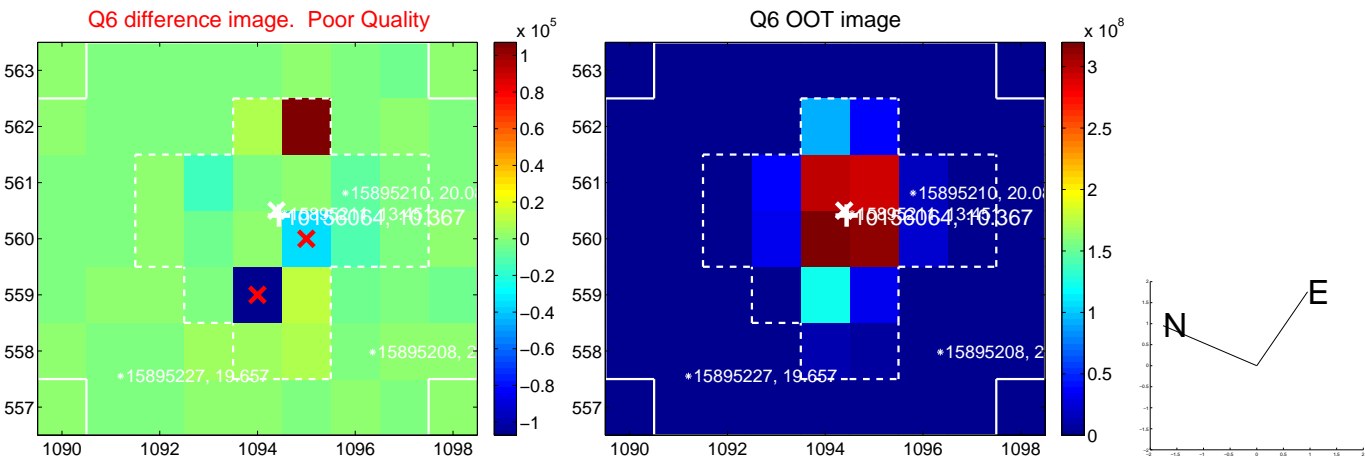


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

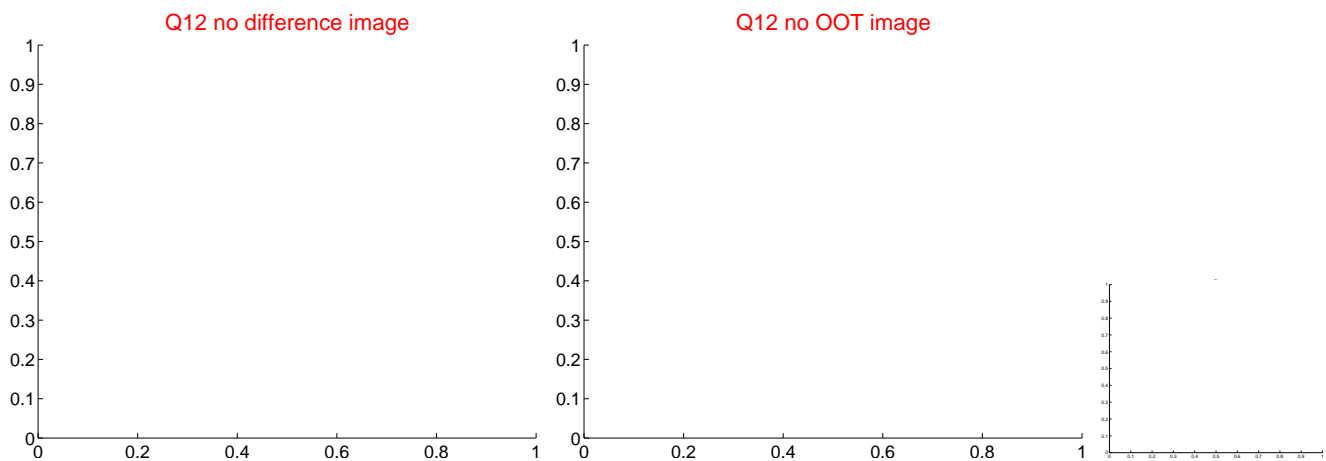
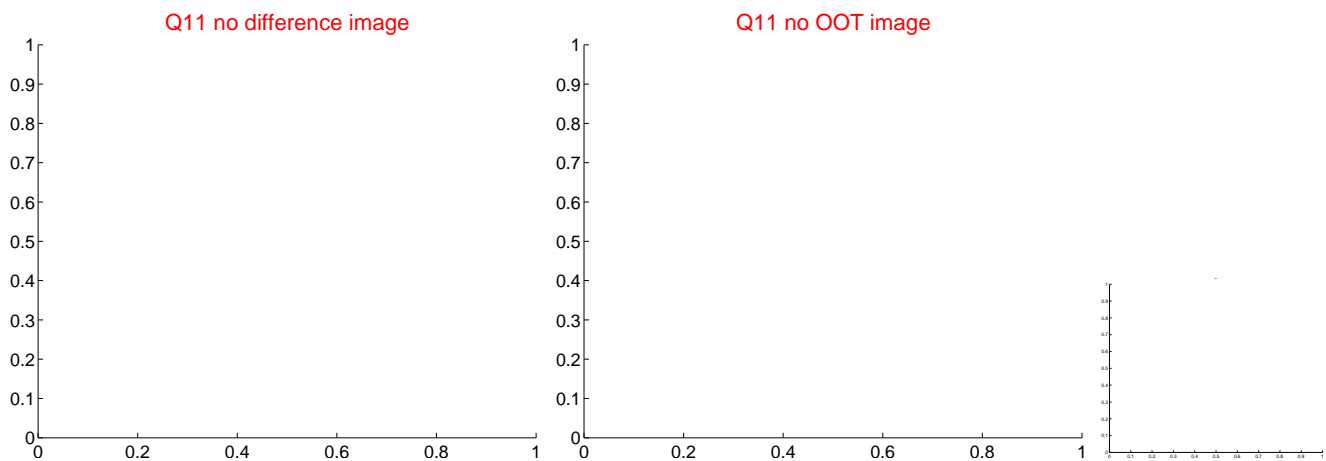
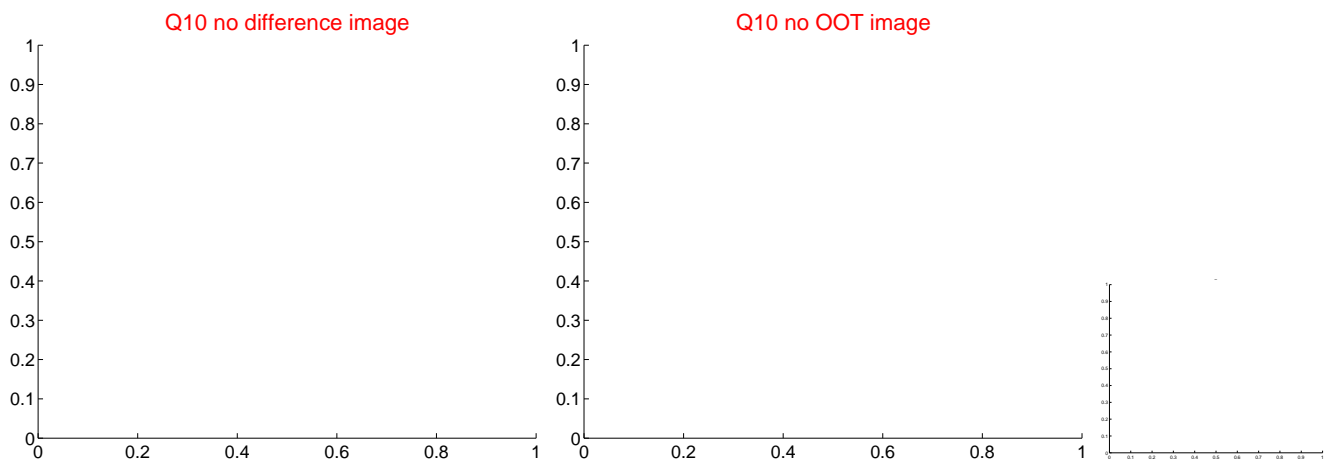
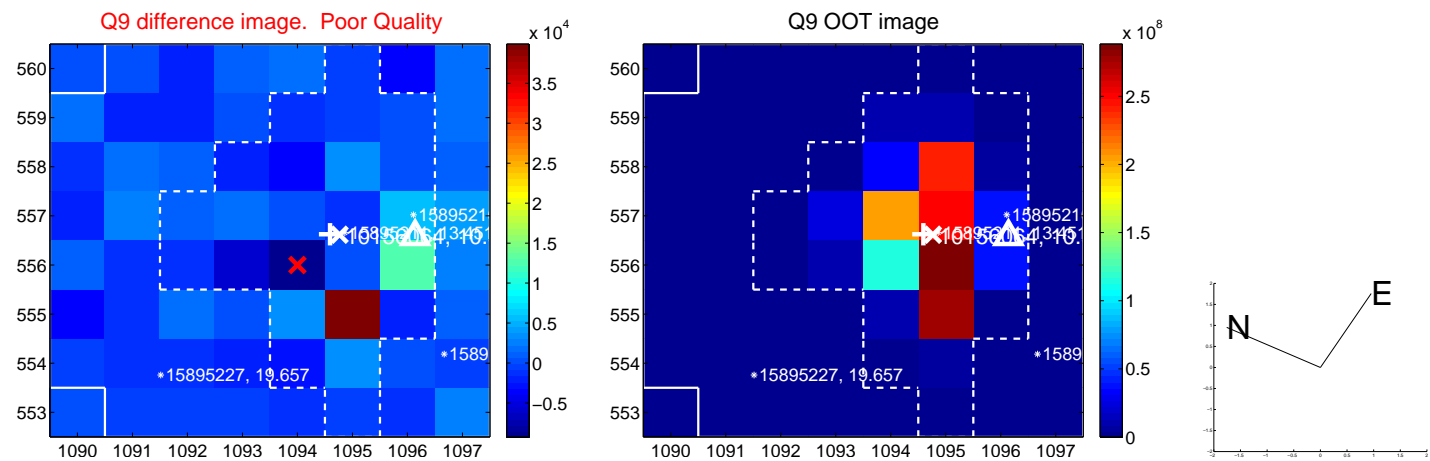
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



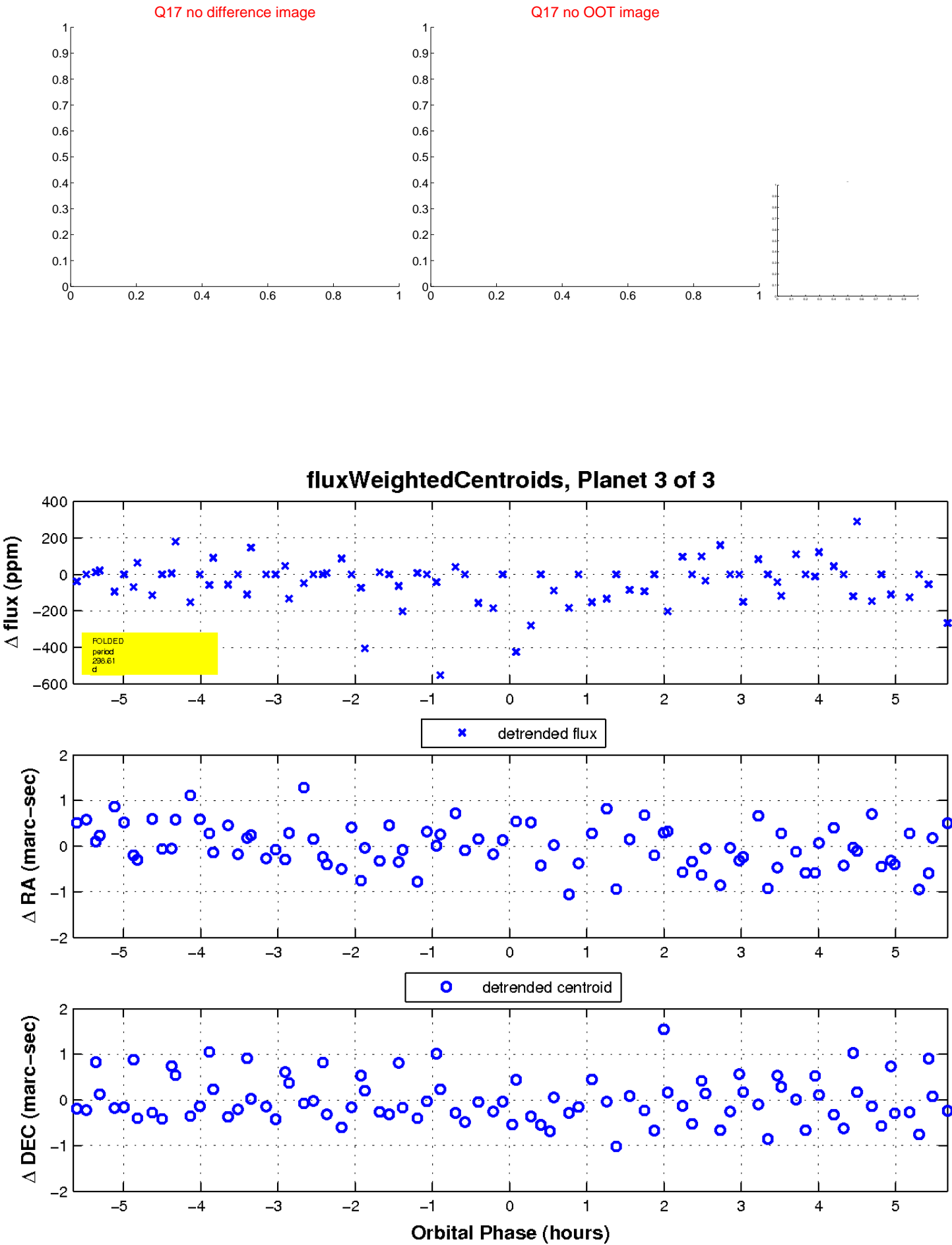
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

