

KIC 007953935

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})
007953935-01	OBS	No	373.561041	260.006101	998.7	32.742	8.5	9.3	1.08	6292	4.32	1.46
007953935-02	OBS	No	374.465276	263.562697	936.6	58.498	7.5	10.5	1.08	6292	4.20	1.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007953935-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007953935-02	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH

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.

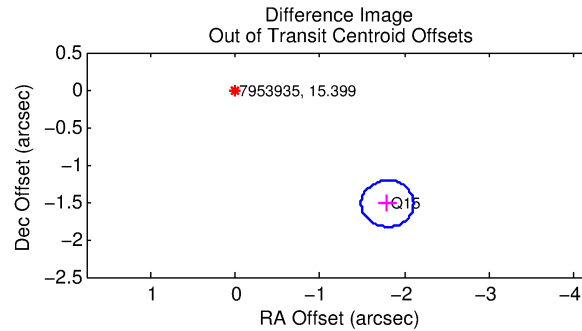
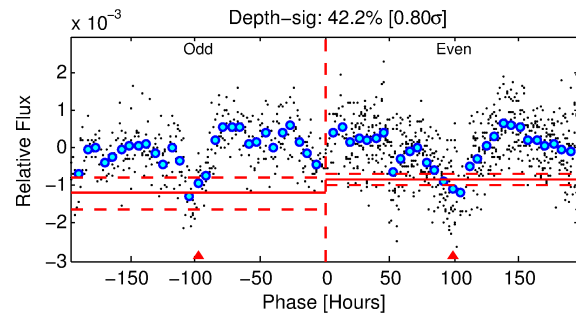
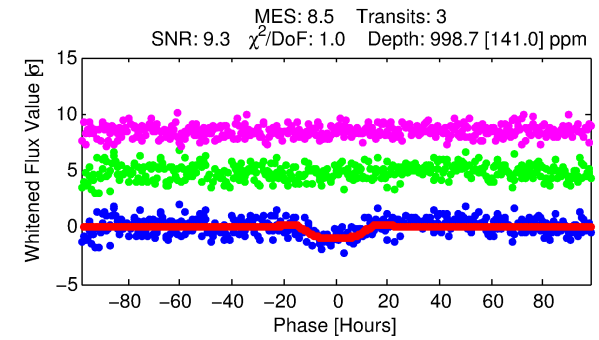
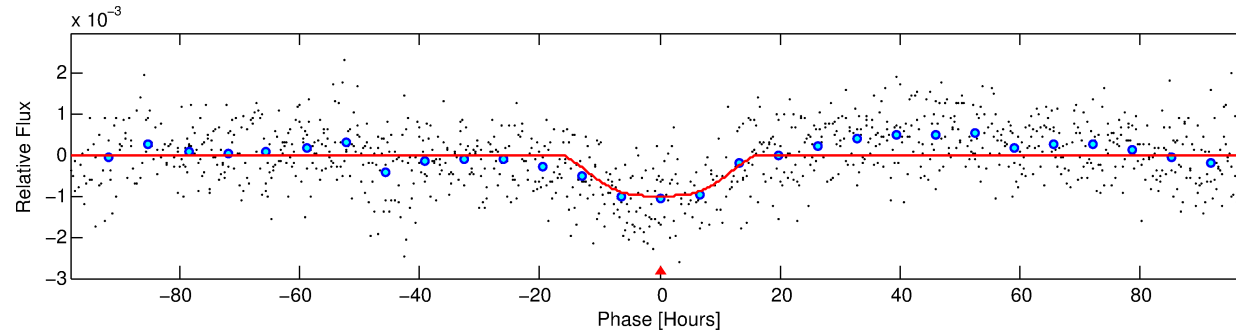
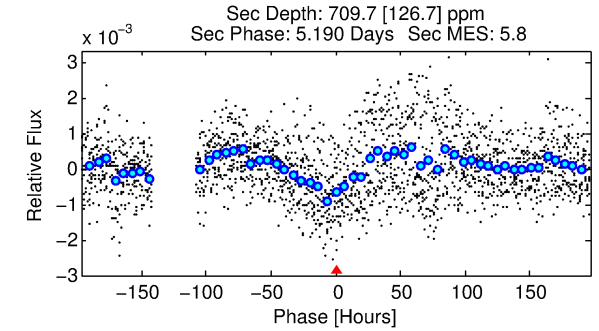
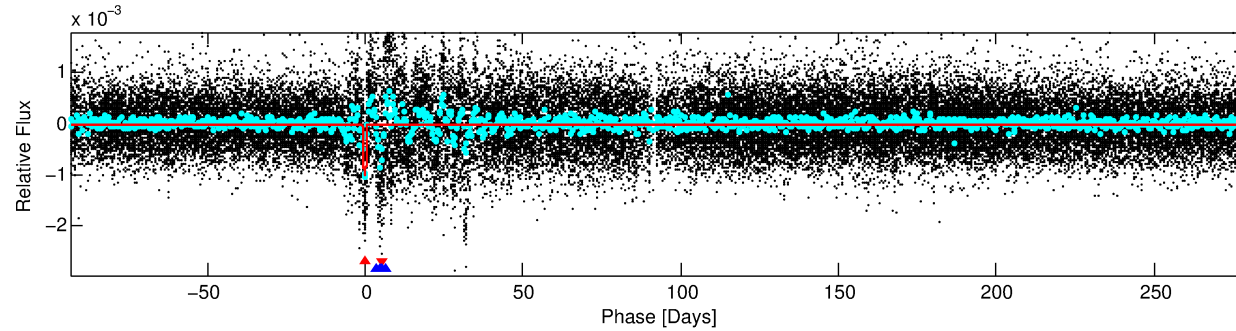
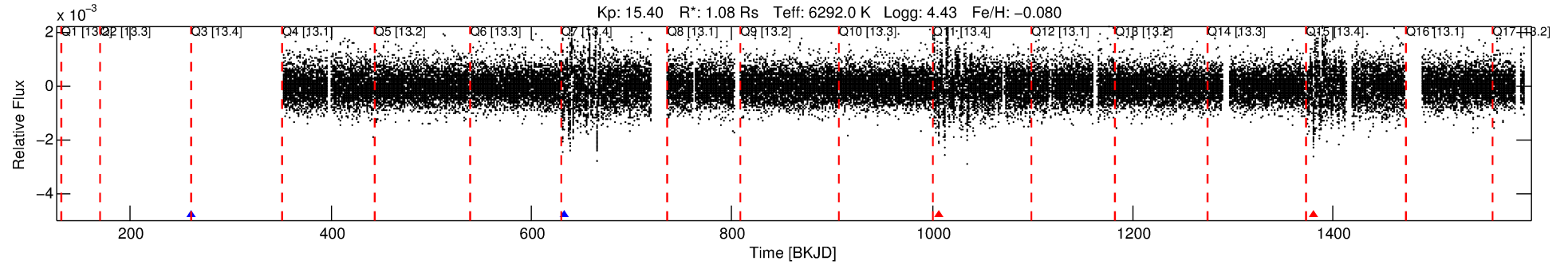
Ephemeris Match Information For 007953935-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007953935-01	7953935	007953895-01	7953895	1:1	52.8	13	3	15.14	15.40	0.70	Direct-PRF	1	3.96	1.82

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7953935 Candidate: 1 of 2 Period: 373.561 d



DV Fit Results:

Period = 373.56104 [0.05113] d
Epoch = 260.0061 [0.1176] BKJD
Rp/R* = 0.0367 [0.0035]
a/R* = 34.54 [5.74]
b = 0.96 [0.02]
Seff = 1.46 [0.58]
Teq = 280 [28] K
Rp = 4.32 [1.38] Re
a = 1.0577 [0.2671] AU
Ag = 23380.22 [10411.54] [2.25σ]
Teff = 5358 [412] K [12.28σ]

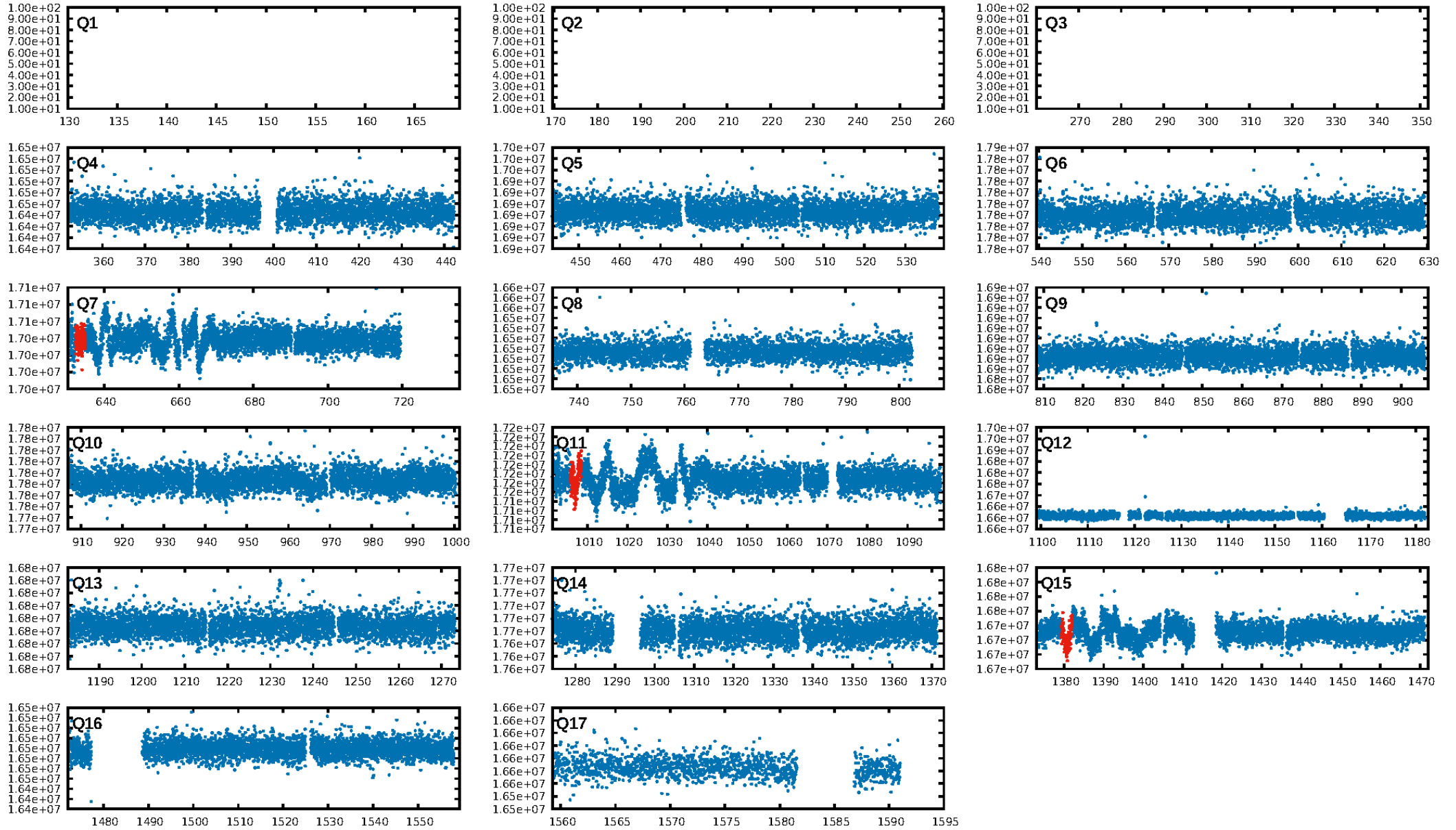
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 25.4% [0.32σ]
ModelChiSquare2-sig: 0.7%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 9.53e-13
RollingBand-fgt: 0.33 [1/3]
GhostDiagnostic-chr: 0.1035
Centroid-sig: 64.4%
Centroid-so: 0.585 arcsec [0.56σ]
OotOffset-rm: 2.357 arcsec [22.77σ]
KicOffset-rm: 2.380 arcsec [23.01σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

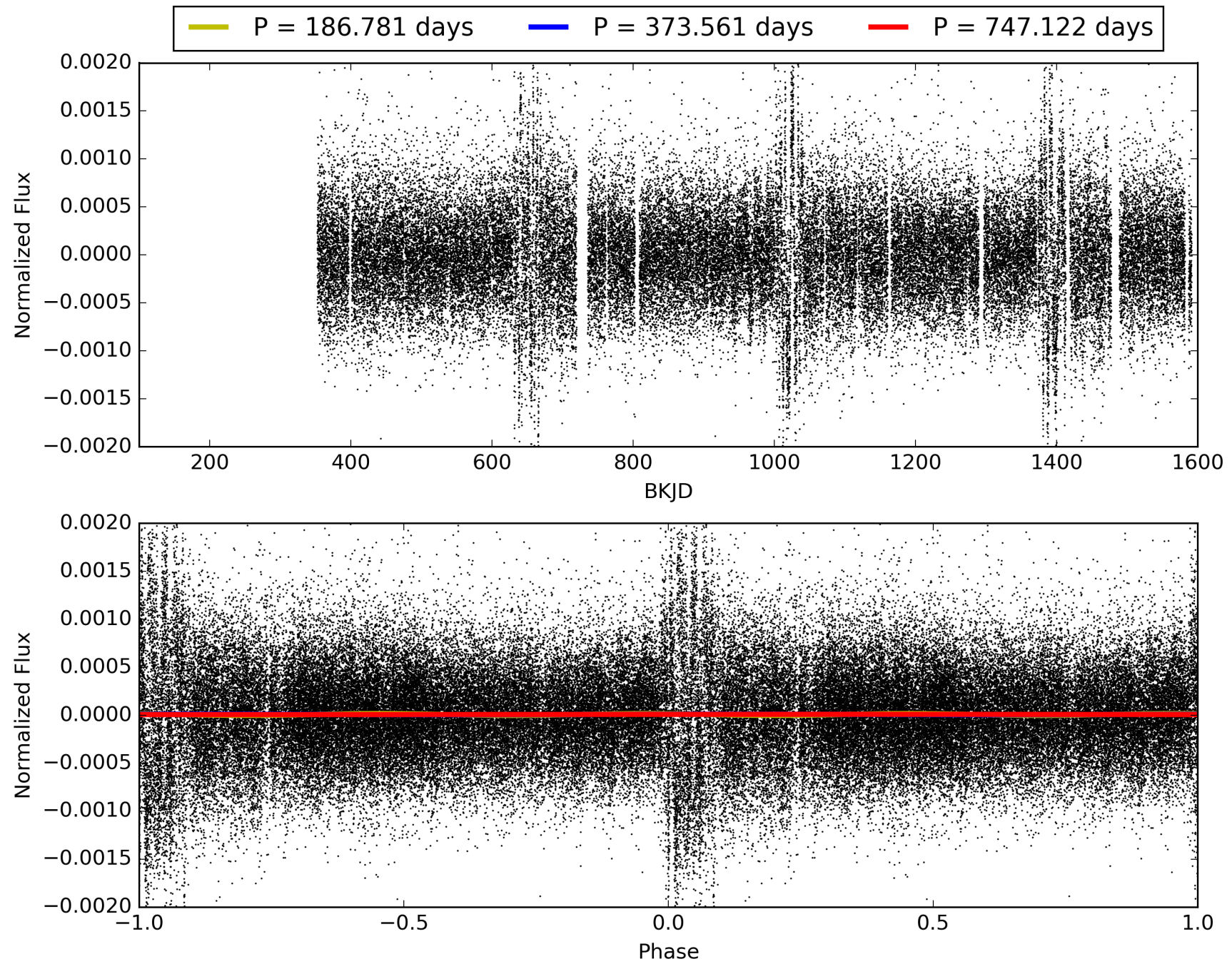
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:59:11 Z

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

TCE 007953935-01, PDC Light Curves

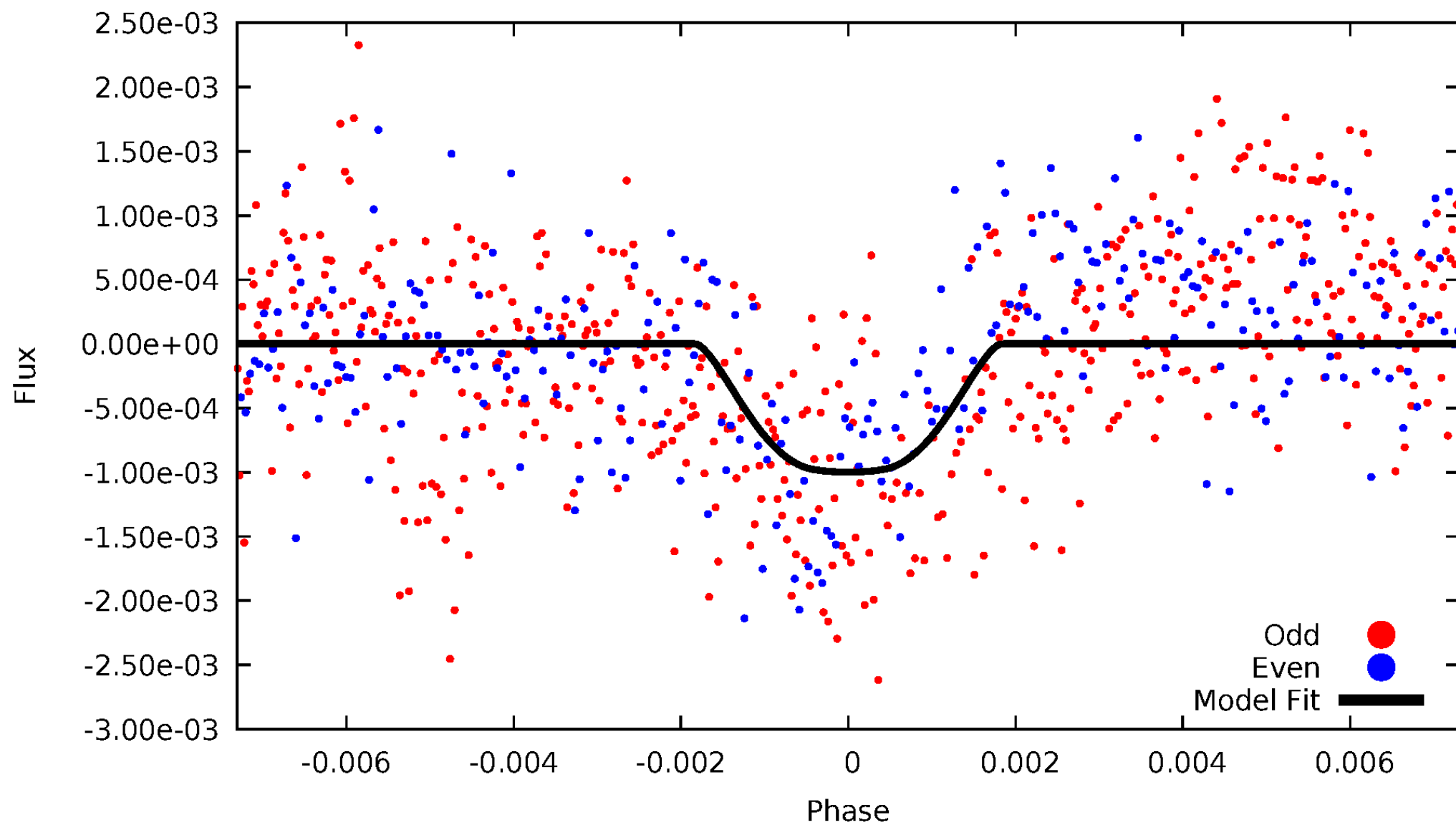


TCE 007953935-01



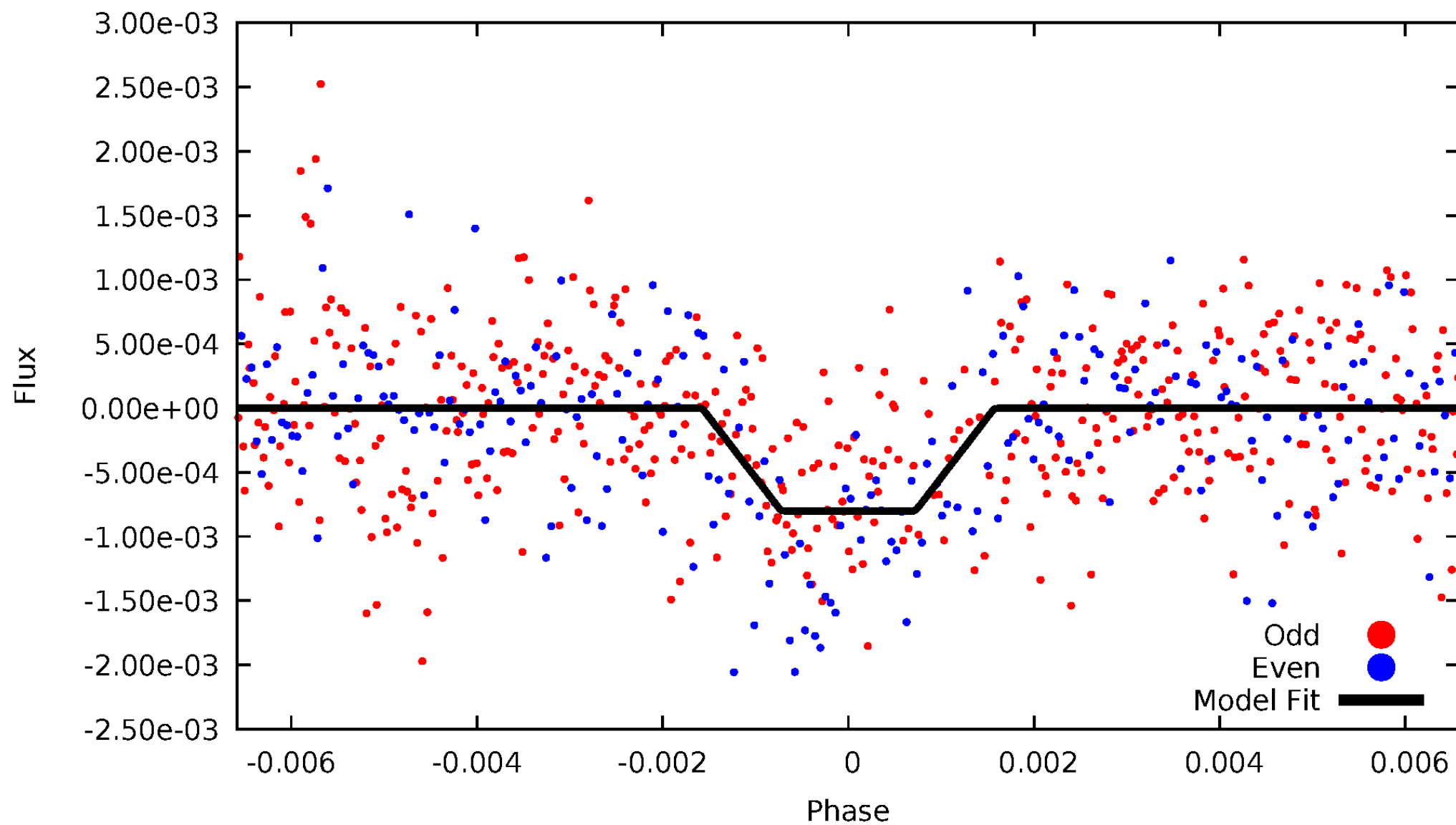
DV Odd/Even

TCE 007953935-01



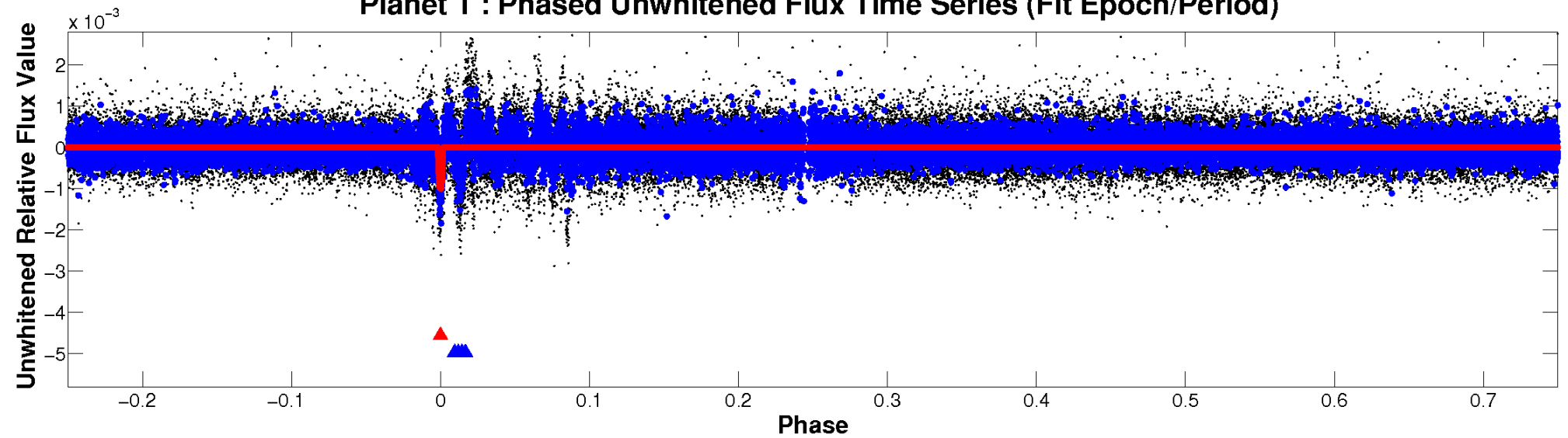
ALT Odd/Even

TCE 007953935-01

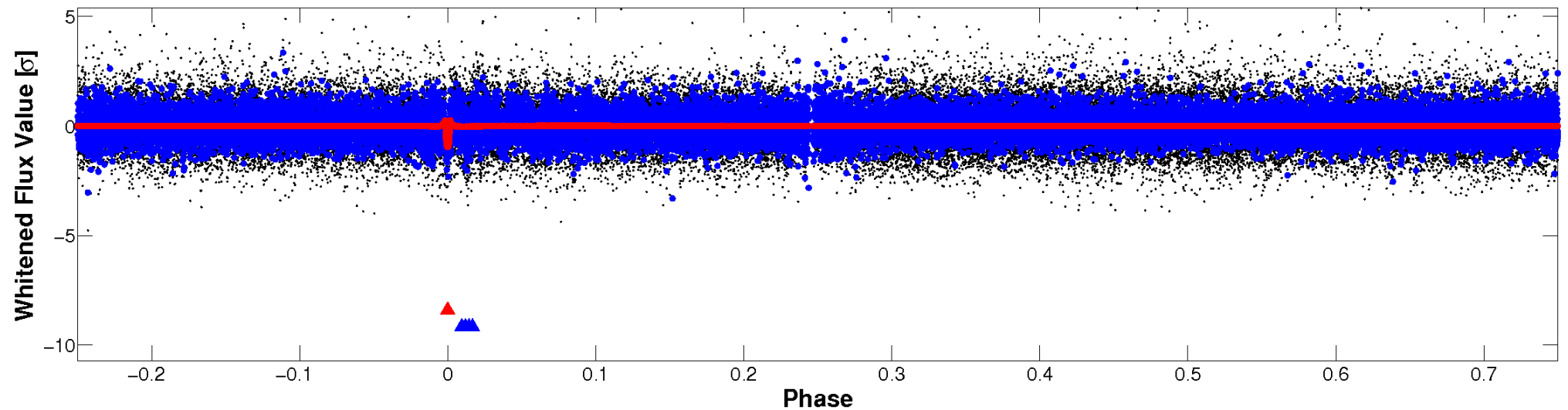


Non-Whitened Vs. Whitened Light Curve

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



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



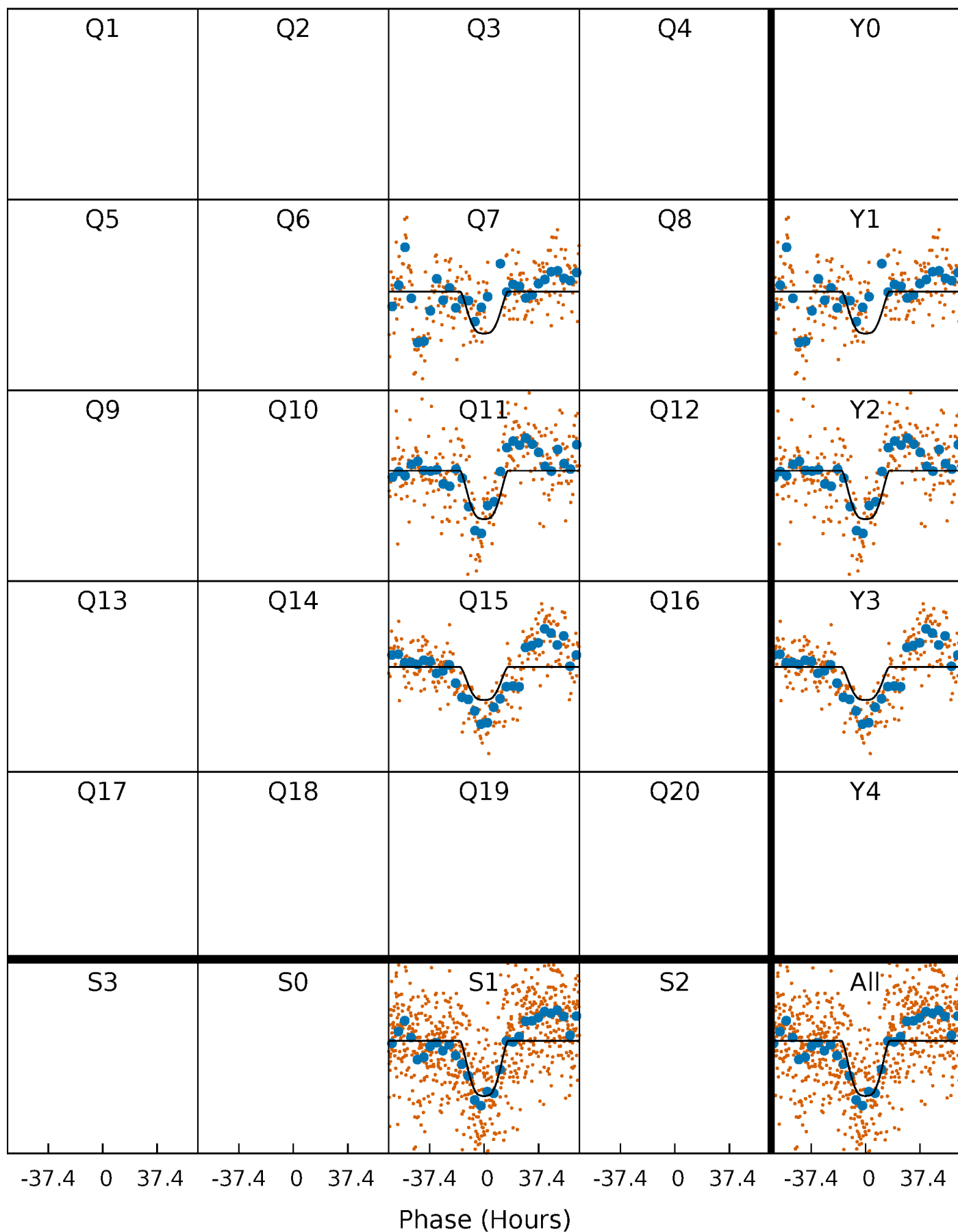
PDC Quarter-Phased Transit Curves

TCE 007953935-01 P=373.561041 Days $T_0=260.006101$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007953935-01 P=373.561041 Days $T_0=260.006101$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

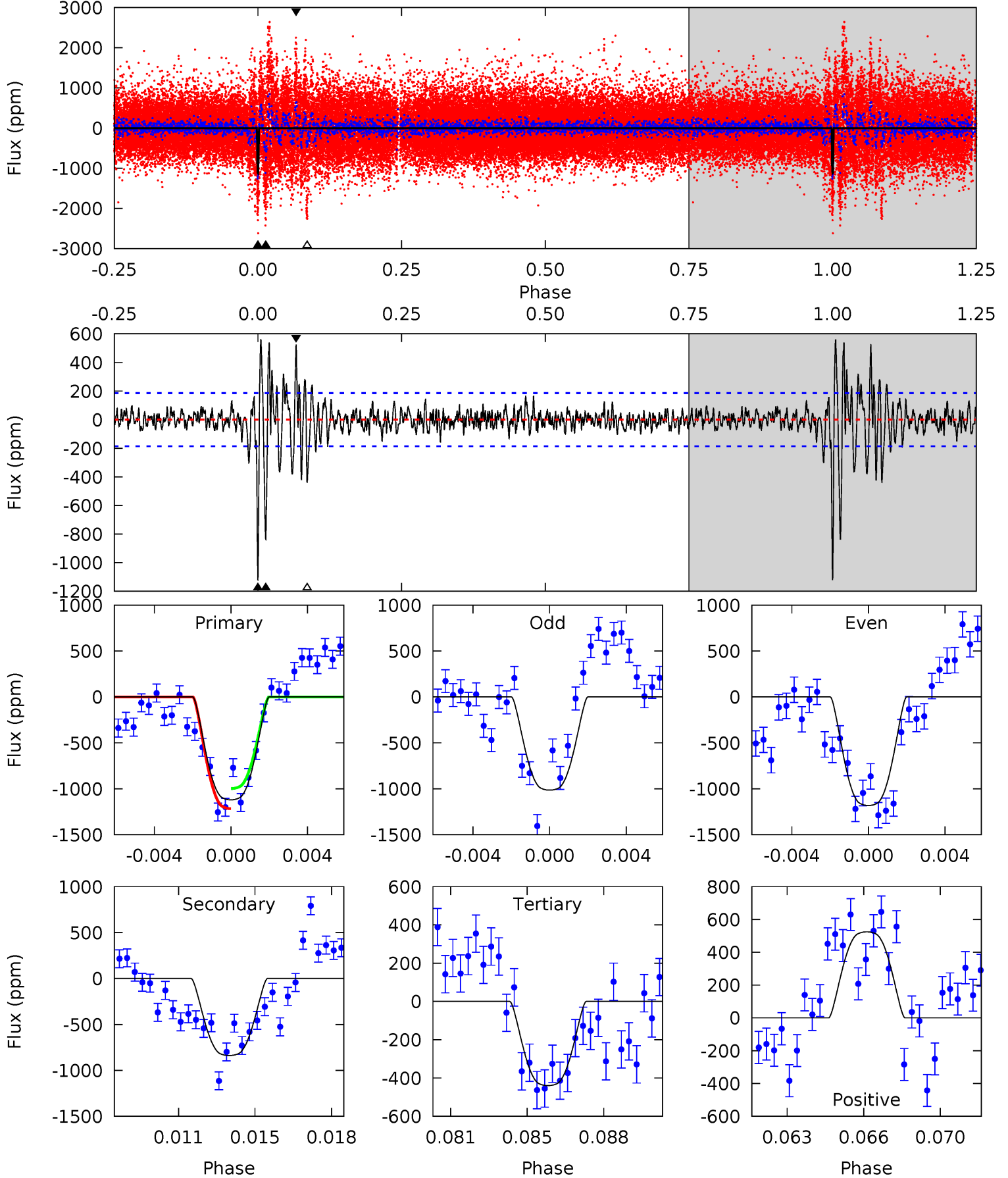
TCE 007953935-01 P=373.620833 Days $T_0=259.882576$ (BKJD)



DV Model-Shift Uniqueness Test

007953935-01, P = 373.561041 Days, E = 260.006101 Days

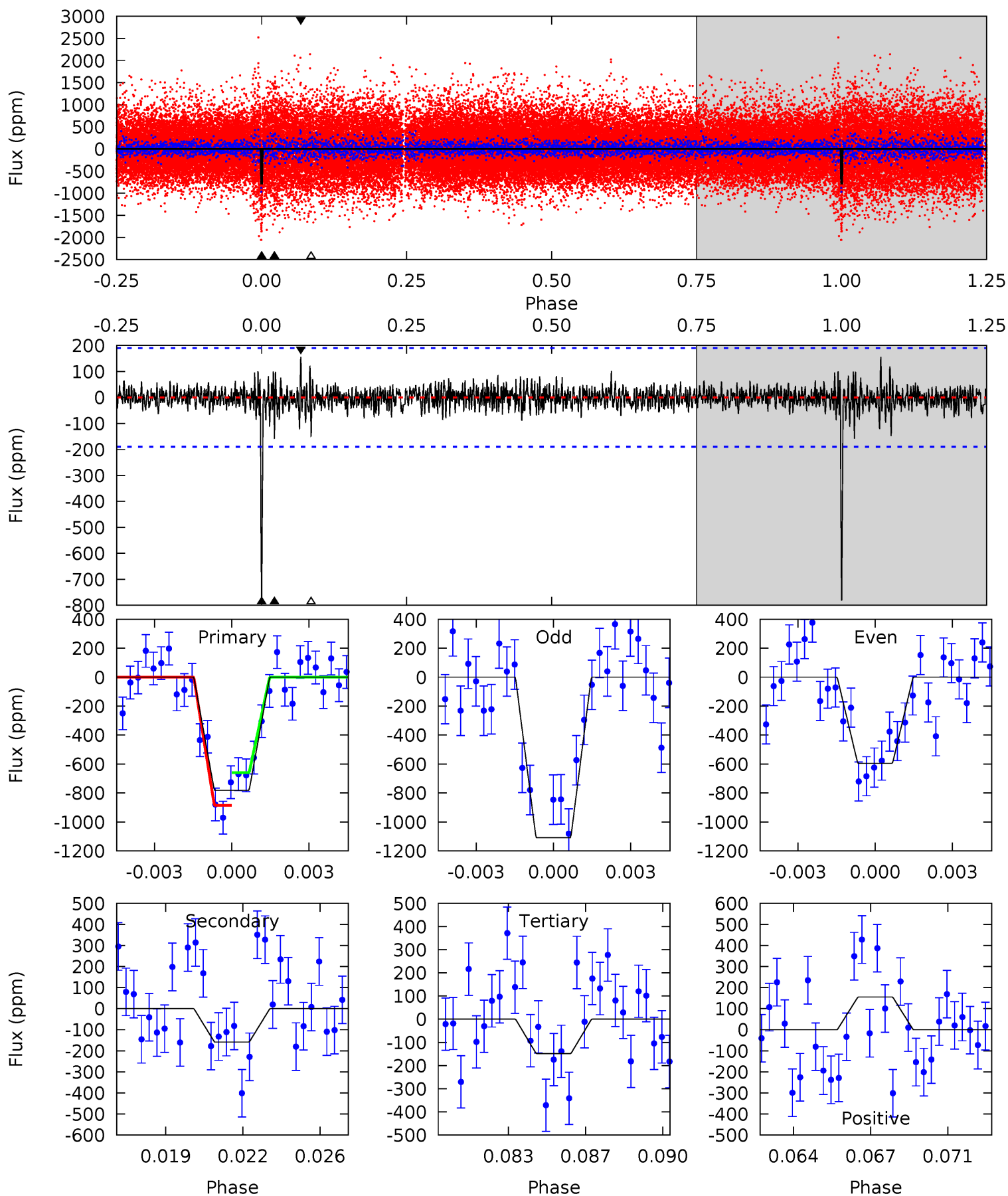
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.5	23.6	12.4	14.8	5.21	2.90	2.47	19.2	16.8	11.2	8.84	2.27	1.03	0.33	3.03



Alt Model-Shift Uniqueness Test

007953935-01, P = 373.620833 Days, E = 259.882576 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	4.37	4.09	4.28	5.24	2.95	0.82	17.5	17.3	0.28	0.09	6.90	0.95	0.17	3.04



Stellar Parameters For KIC 007953935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6292^{+174}_{-261}	$4.426^{+0.065}_{-0.195}$	$-0.080^{+0.250}_{-0.300}$	$1.078^{+0.329}_{-0.141}$	$1.129^{+0.157}_{-0.157}$	$1.269^{+0.435}_{-0.629}$
	+3%/-4%	+1%/-4%	+312%/-375%	+31%/-13%	+14%/-14%	+34%/-50%
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 007953935-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-838 ± 36	$4.44^{+0.74}_{-0.56}$	395^{+26}_{-21}	5559^{+321}_{-279}	25404^{+7252}_{-5986}
Alt.	-159 ± 36	$3.48^{+0.63}_{-0.53}$	399^{+26}_{-21}	4390^{+325}_{-298}	7802^{+3970}_{-2515}

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

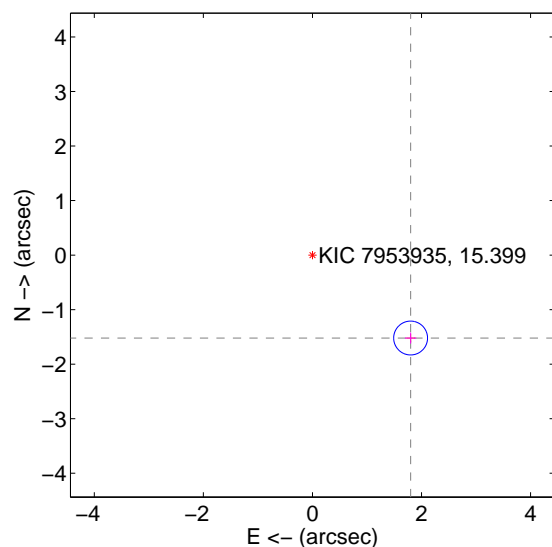
Supplemental centroid analysis for 007953935-01. Kepler magnitude: 15.40. Transit SNR 9.25

There are 0 quarters with good PRF difference image offsets

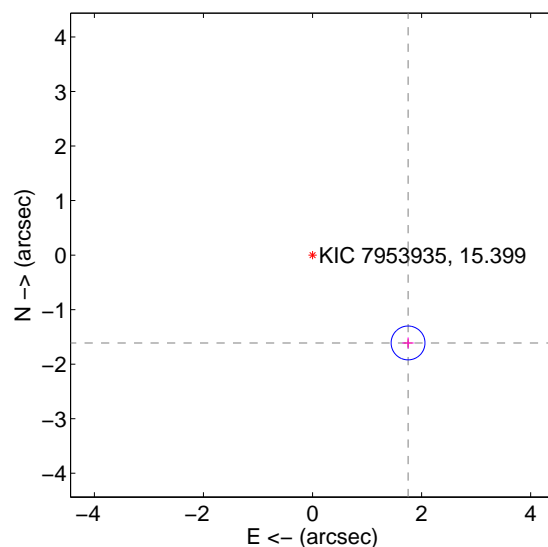
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.357 ± 0.104	22.77	-1.800 ± 0.104	-1.521 ± 0.103
PRF-fit source offset from KIC position	2.380 ± 0.103	23.01	-1.752 ± 0.104	-1.611 ± 0.103
photometric centroid source offset	0.58 ± 1.04	0.56	-0.49 ± 1.03	-0.31 ± 1.07

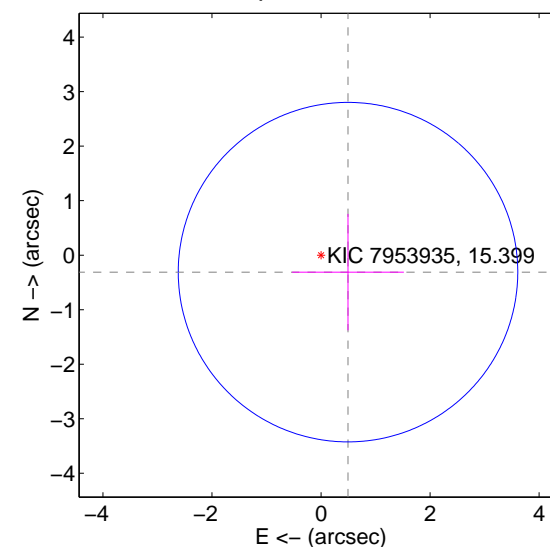
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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



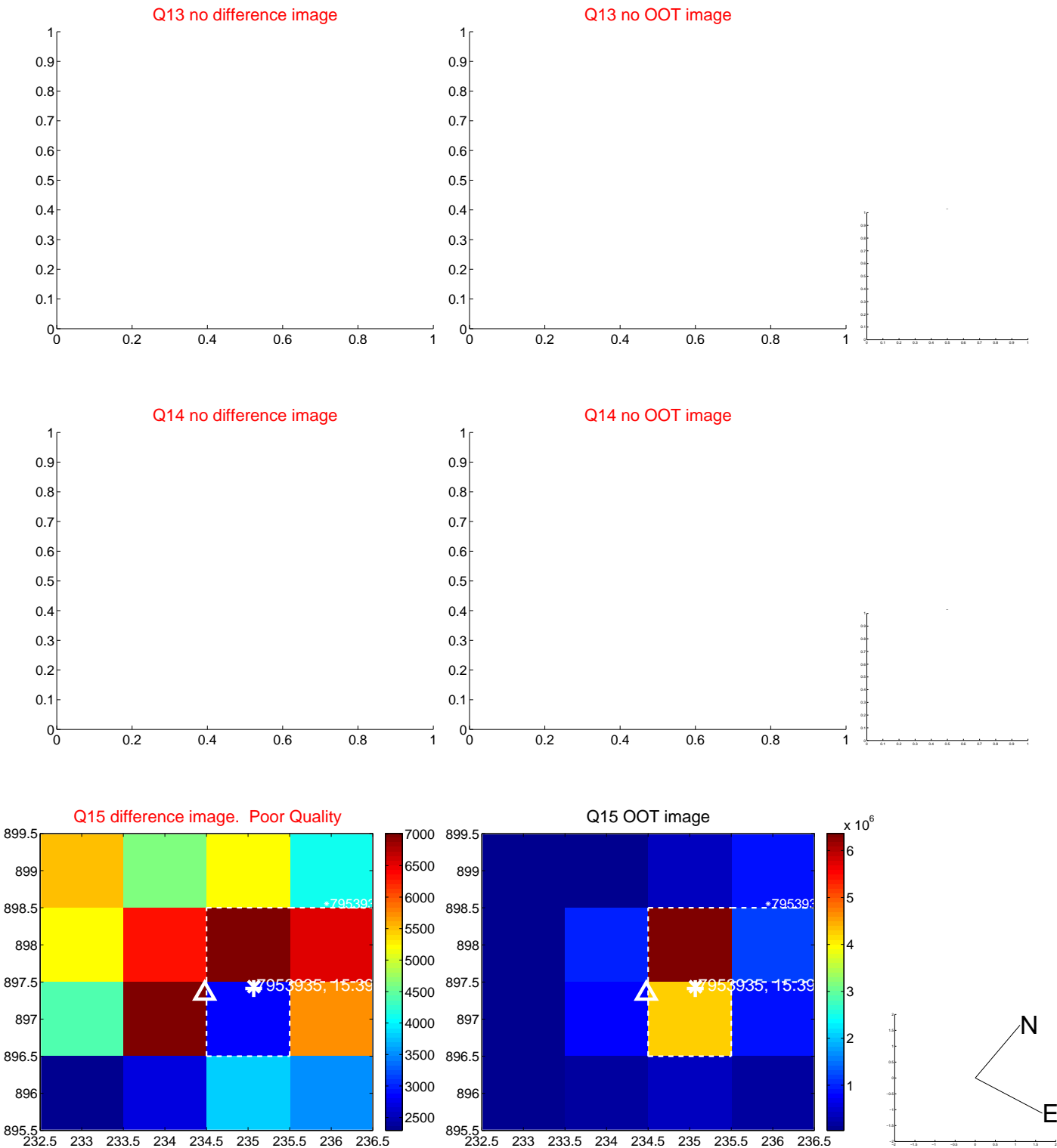
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



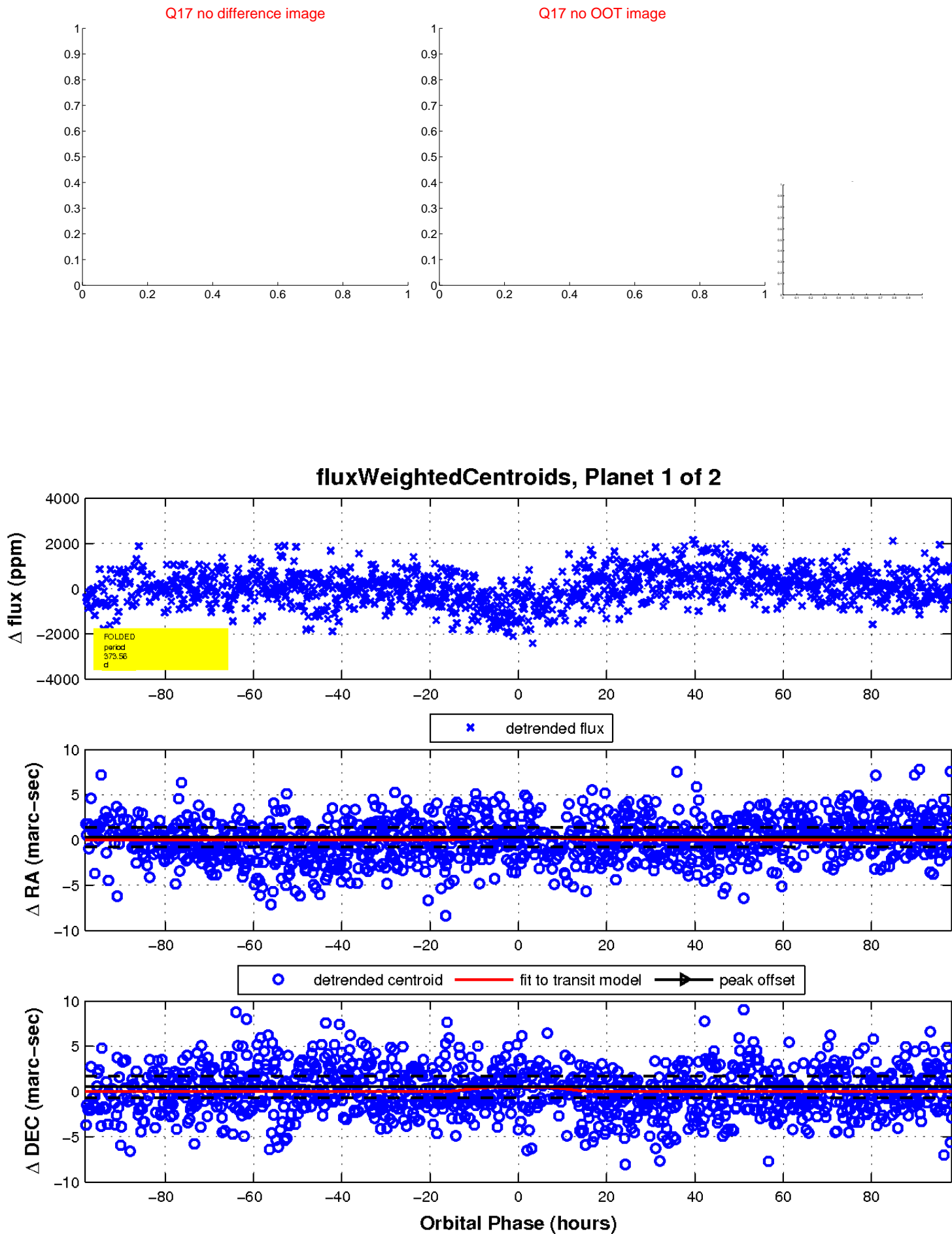
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

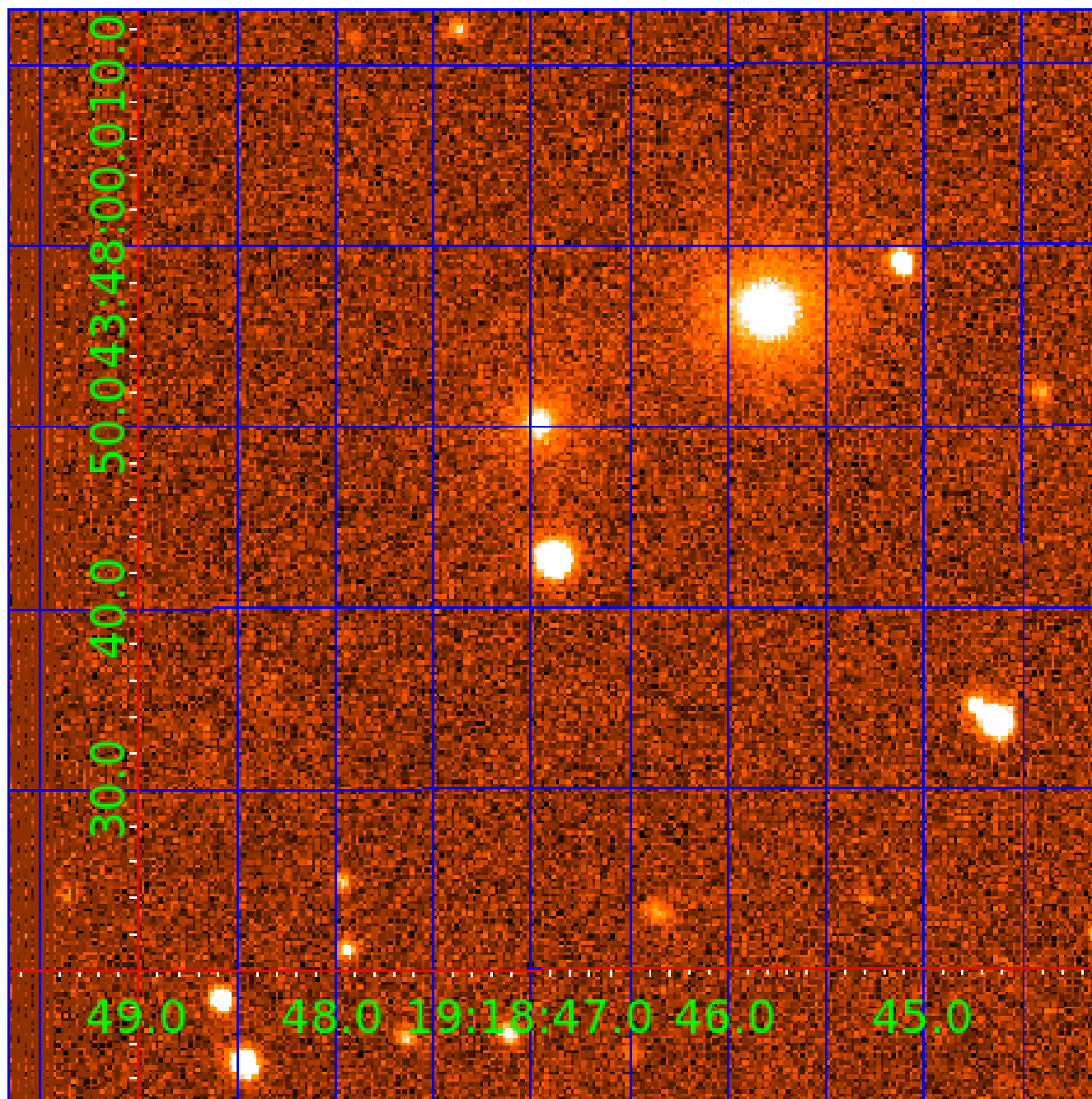


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007953935

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})
007953935-01	OBS	No	373.561041	260.006101	998.7	32.742	8.5	9.3	1.08	6292	4.32	1.46
007953935-02	OBS	No	374.465276	263.562697	936.6	58.498	7.5	10.5	1.08	6292	4.20	1.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007953935-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007953935-02	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH

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.

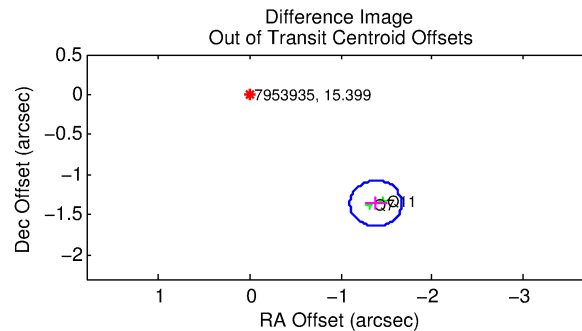
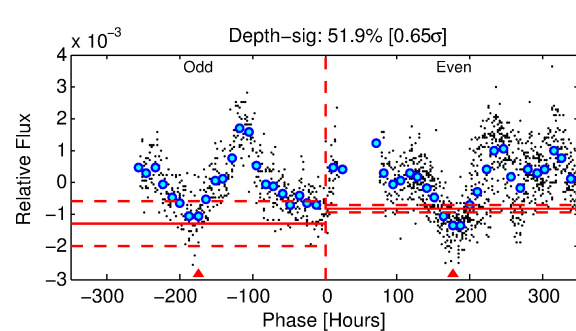
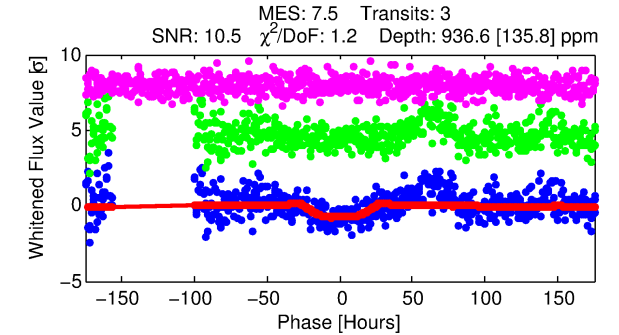
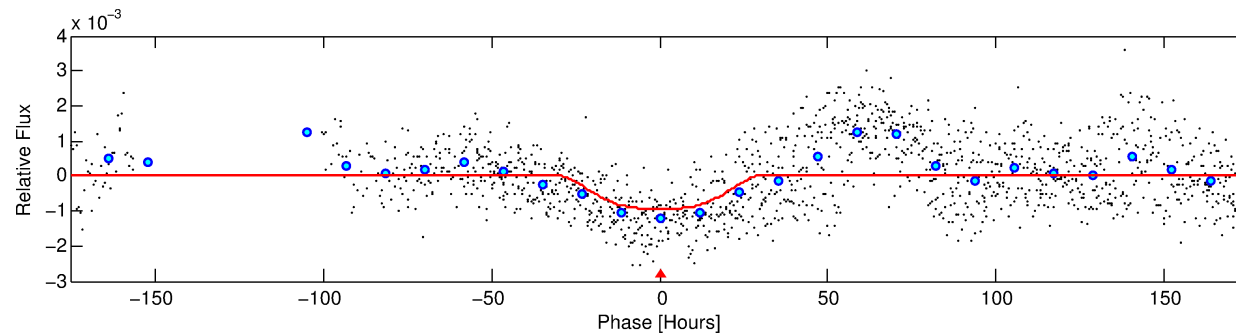
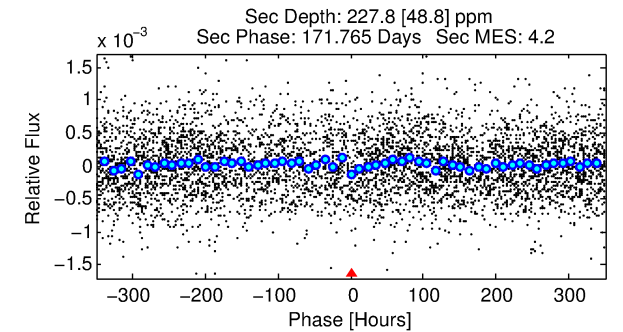
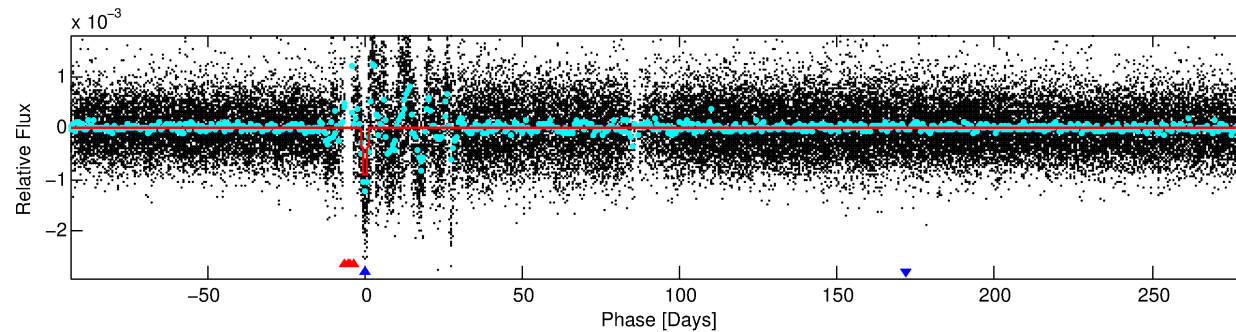
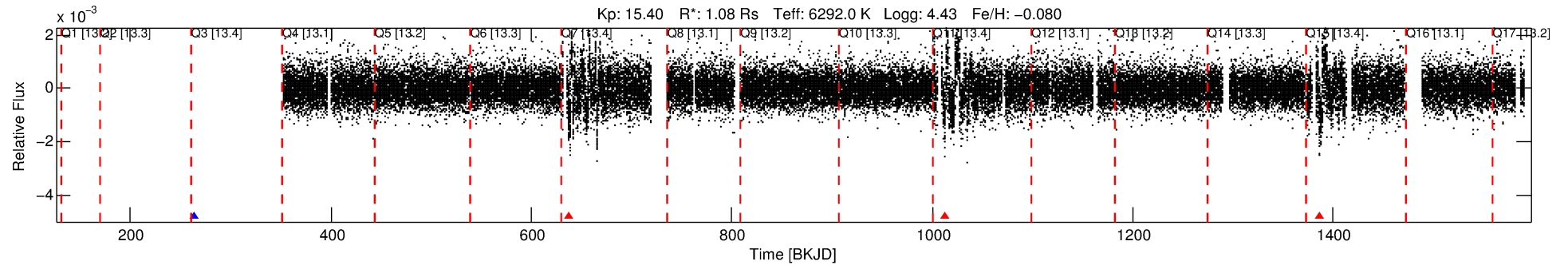
Ephemeris Match Information For 007953935-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007953935-02	7953935	008023034-01	8023034	1:1	517.5	-130	0	14.38	15.40	0.44	Col-Anomaly	1	0.30	0.46

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7953935 Candidate: 2 of 2 Period: 374.465 d



DV Fit Results:

Period = 374.46528 [0.08360] d
Epoch = 263.5627 [0.1852] BKJD
Rp/R* = 0.0357 [0.0034]
a/R* = 19.07 [2.95]
b = 0.96 [0.02]
Seff = 1.45 [0.58]
Teq = 280 [28] K
Rp = 4.20 [1.34] Re
a = 1.0594 [0.2676] AU
Ag = 7979.44 [3687.10] [2.16σ]
Teff = 4092 [339] K [11.20σ]

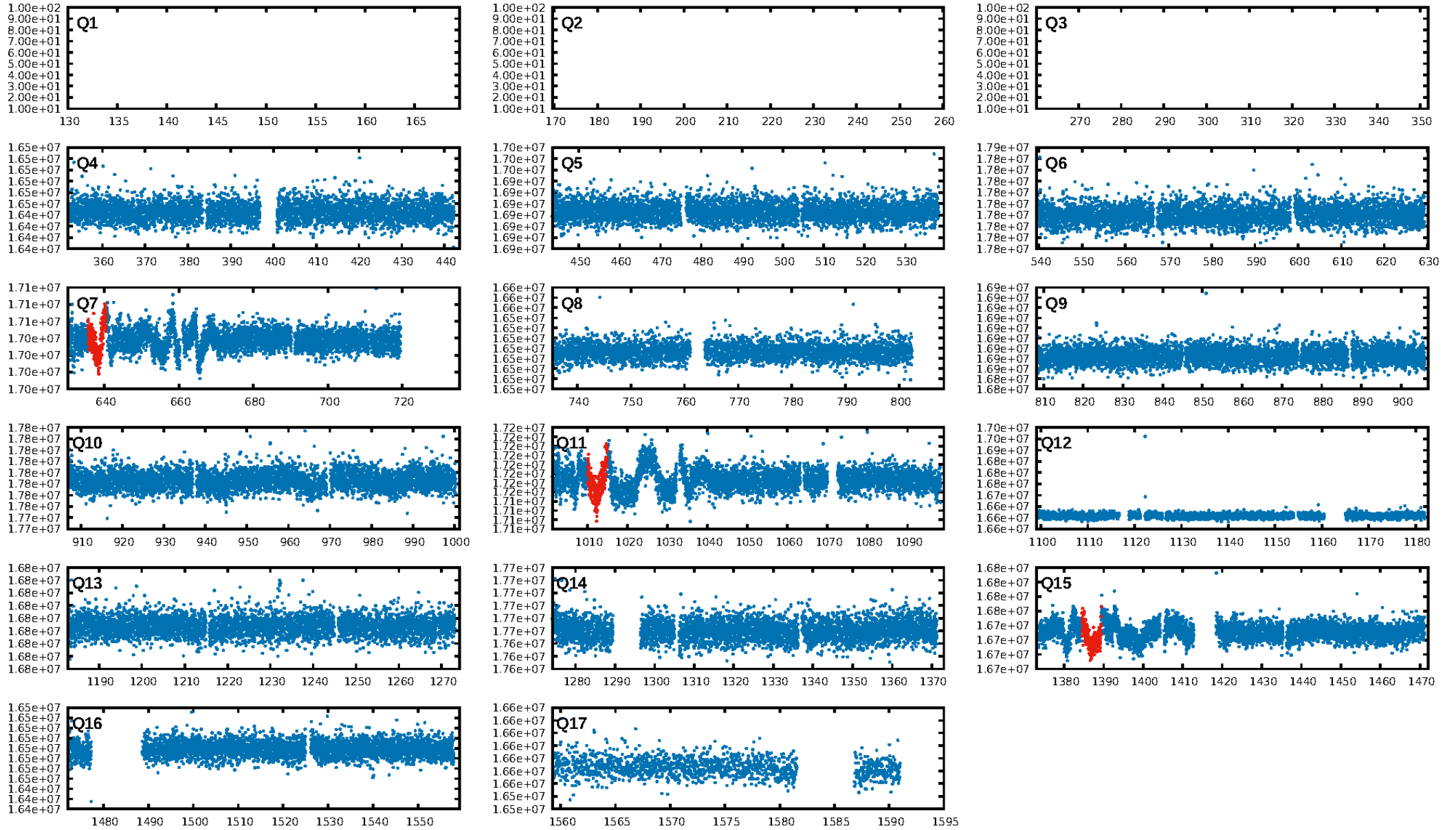
DV Diagnostic Results:

ShortPeriod-sig: 25.4% [0.32σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 58.7%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 3.15e-11
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: 3.147
Centroid-sig: 85.1%
Centroid-so: 0.458 arcsec [0.52σ]
OotOffset-rm: 1.940 arcsec [20.46σ]
KicOffset-rm: 1.944 arcsec [21.83σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.50 [1/2]

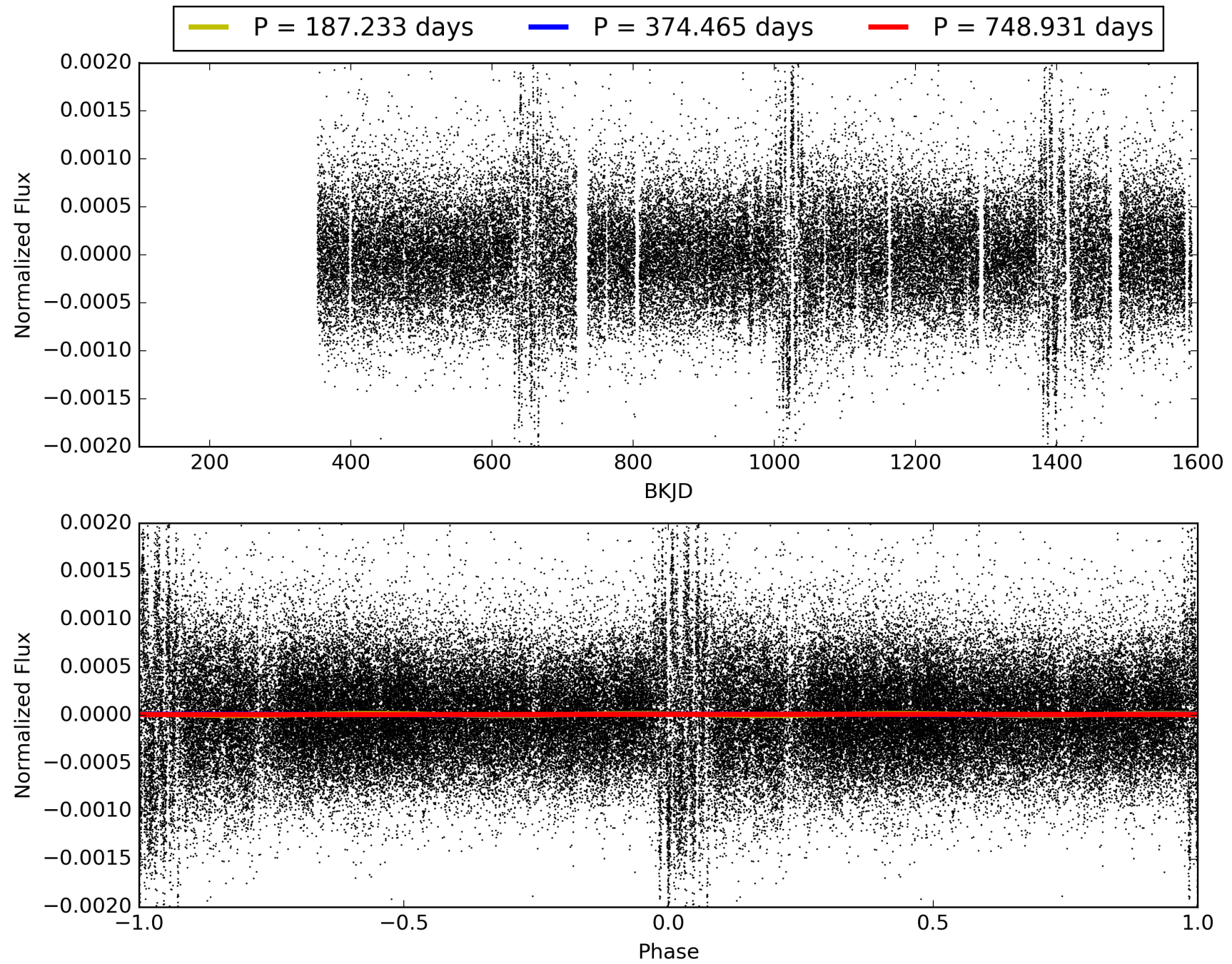
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:59:19 Z

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

TCE 007953935-02, PDC Light Curves

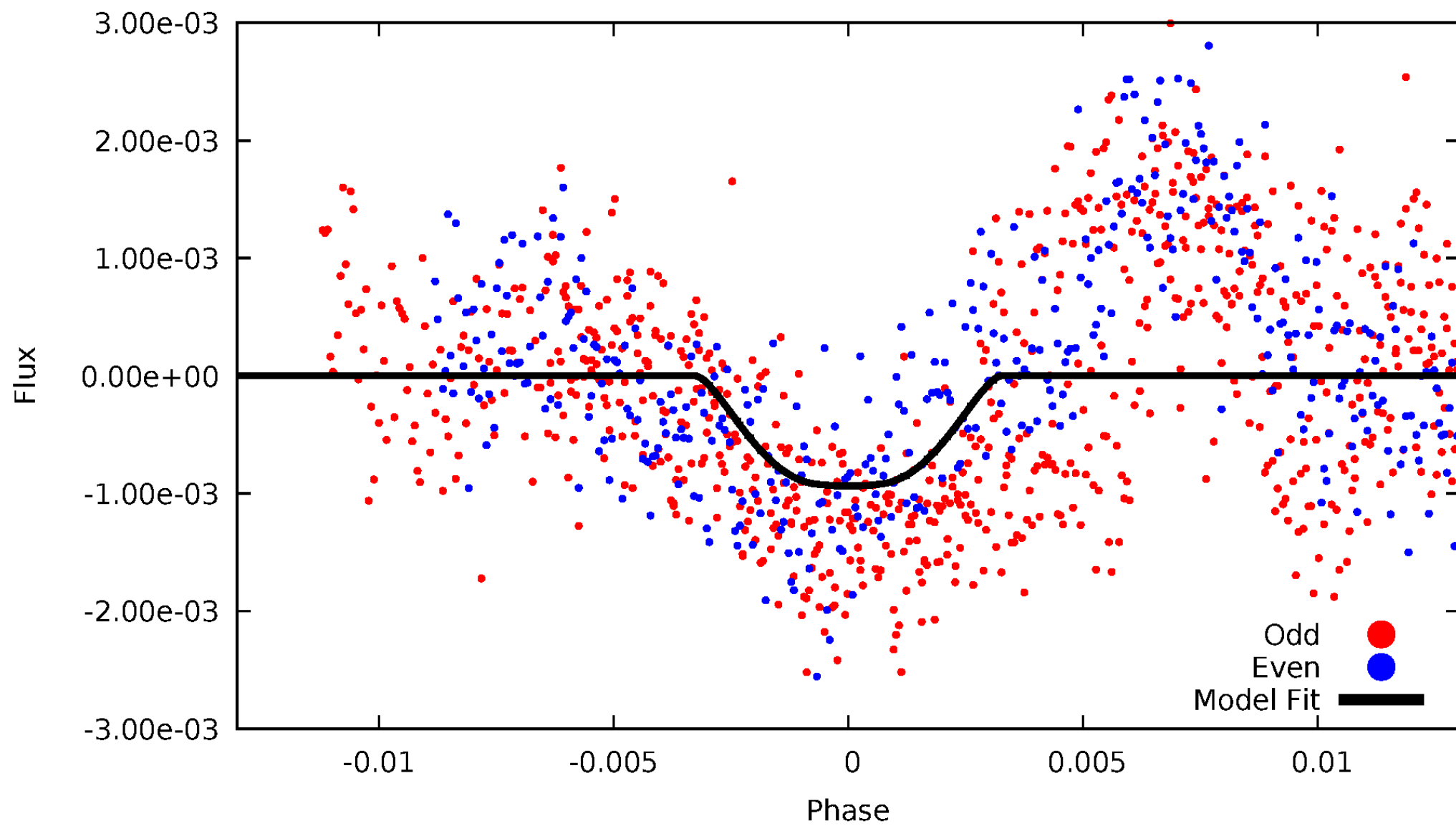


TCE 007953935-02



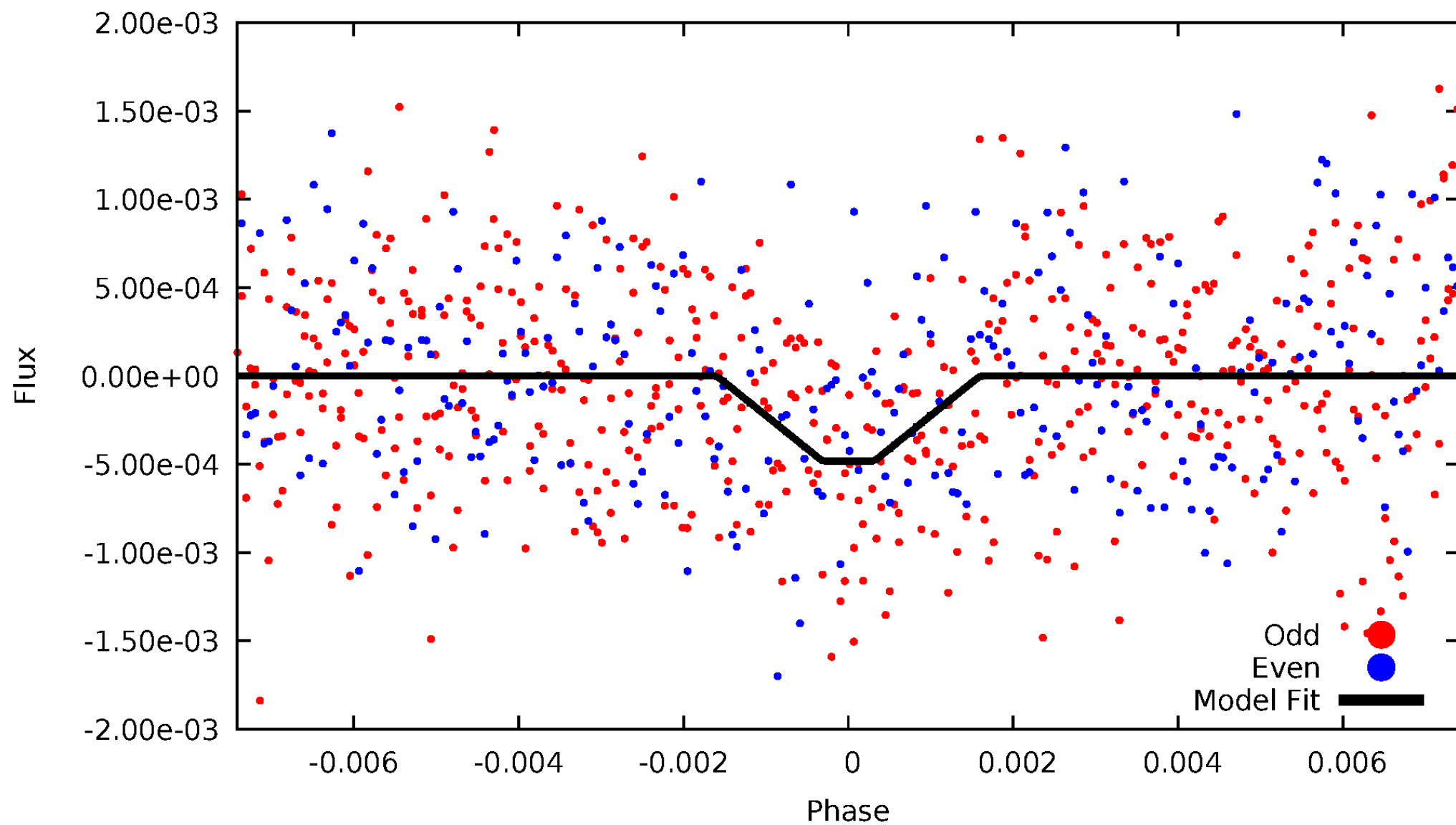
DV Odd/Even

TCE 007953935-02



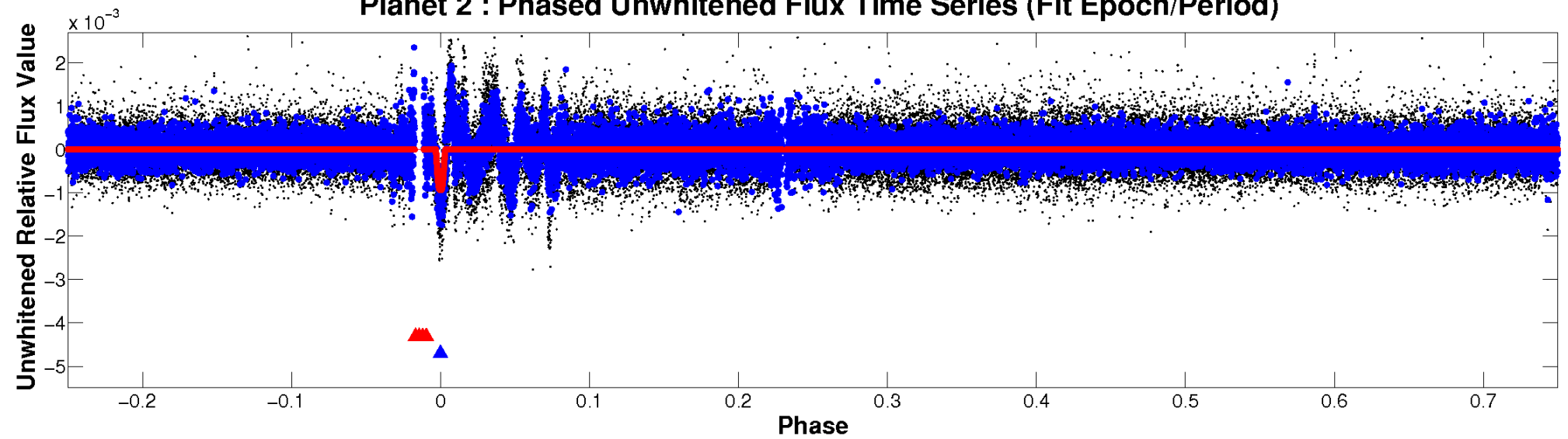
ALT Odd/Even

TCE 007953935-02

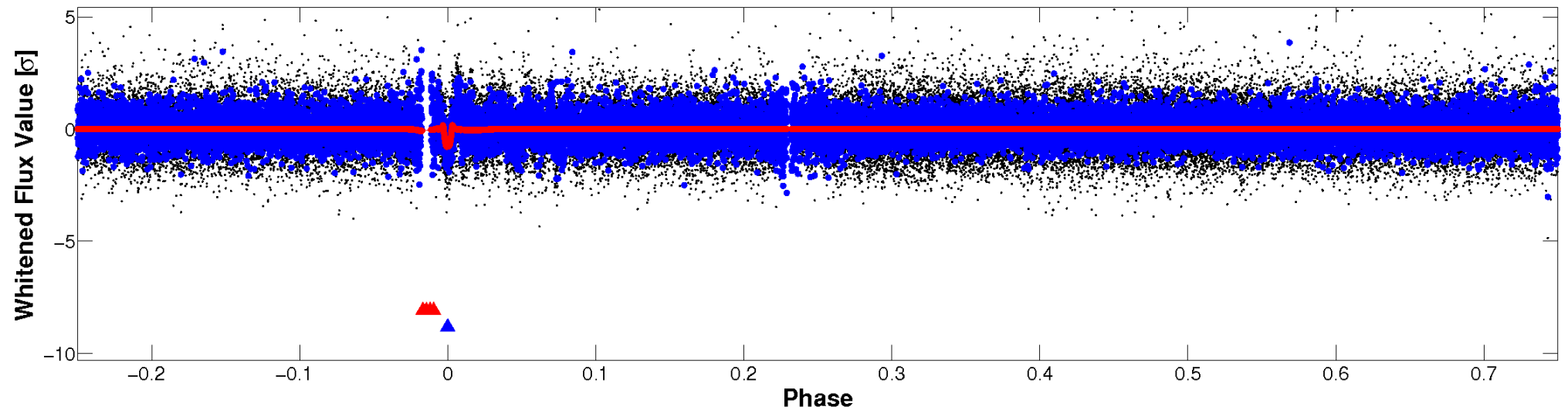


Non-Whitened Vs. Whitened Light Curve

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

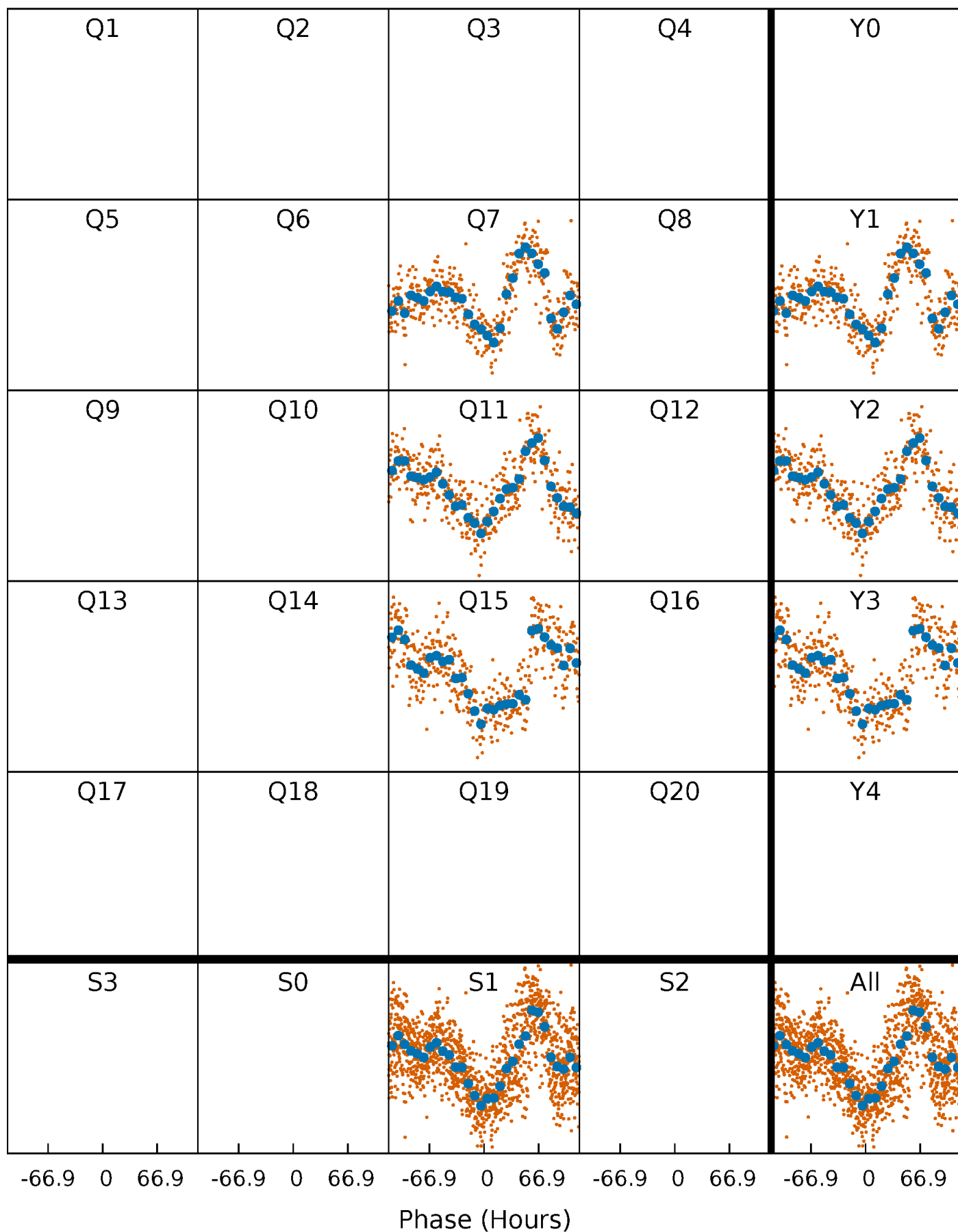


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



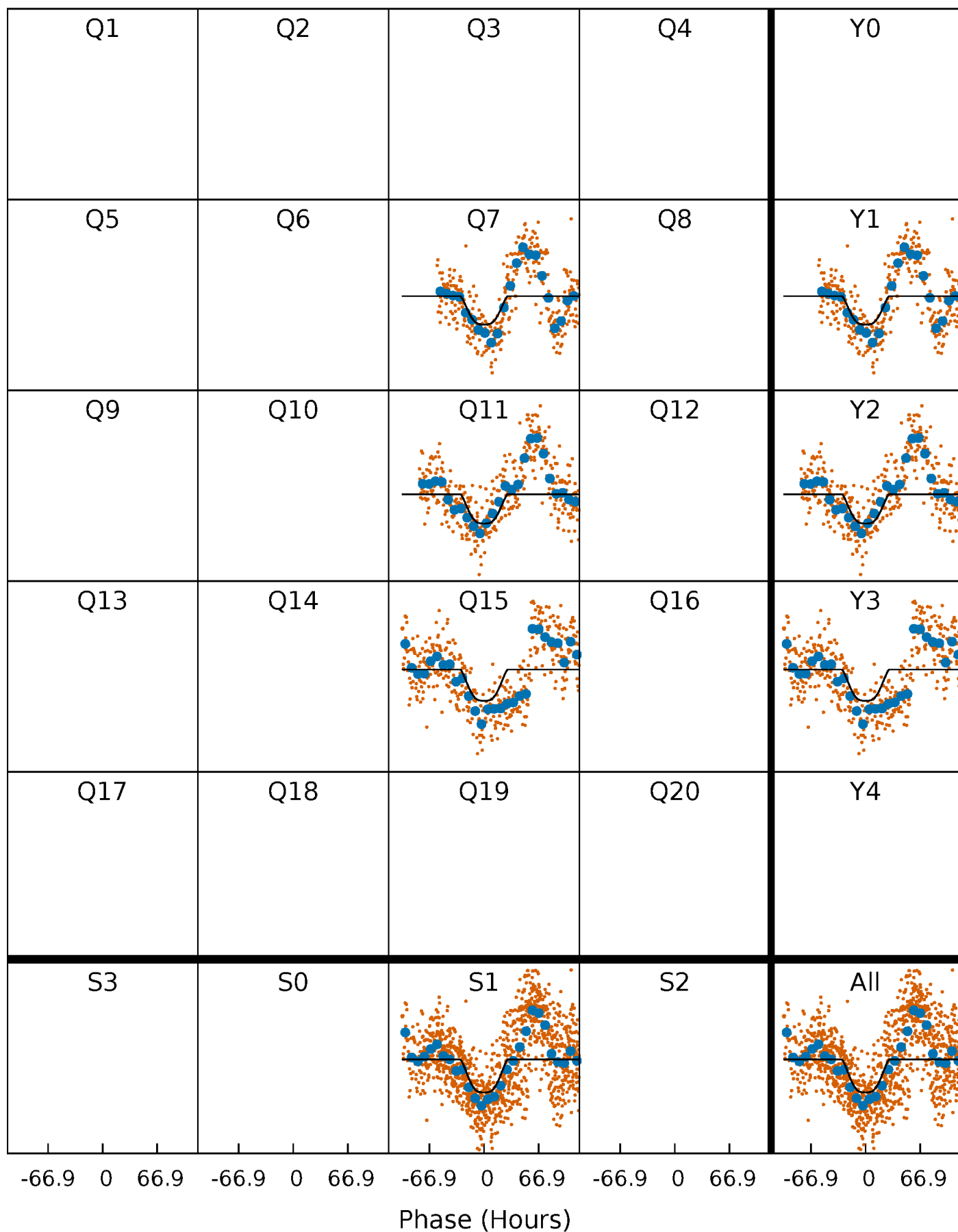
PDC Quarter-Phased Transit Curves

TCE 007953935-02 P=374.465277 Days $T_0=263.562697$ (BKJD)



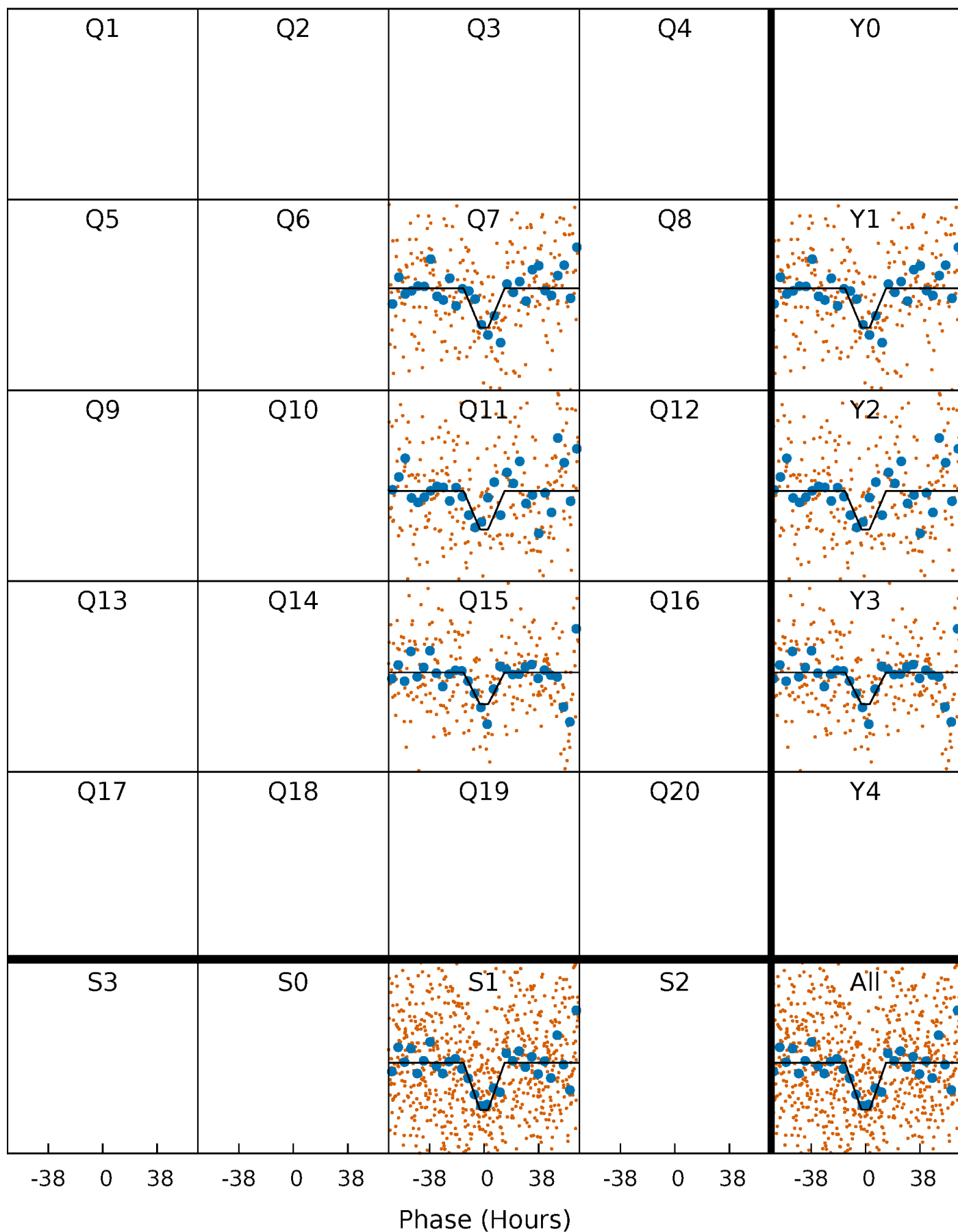
DV Quarter-Phased Transit Curves

TCE 007953935-02 P=374.465277 Days $T_0=263.562697$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

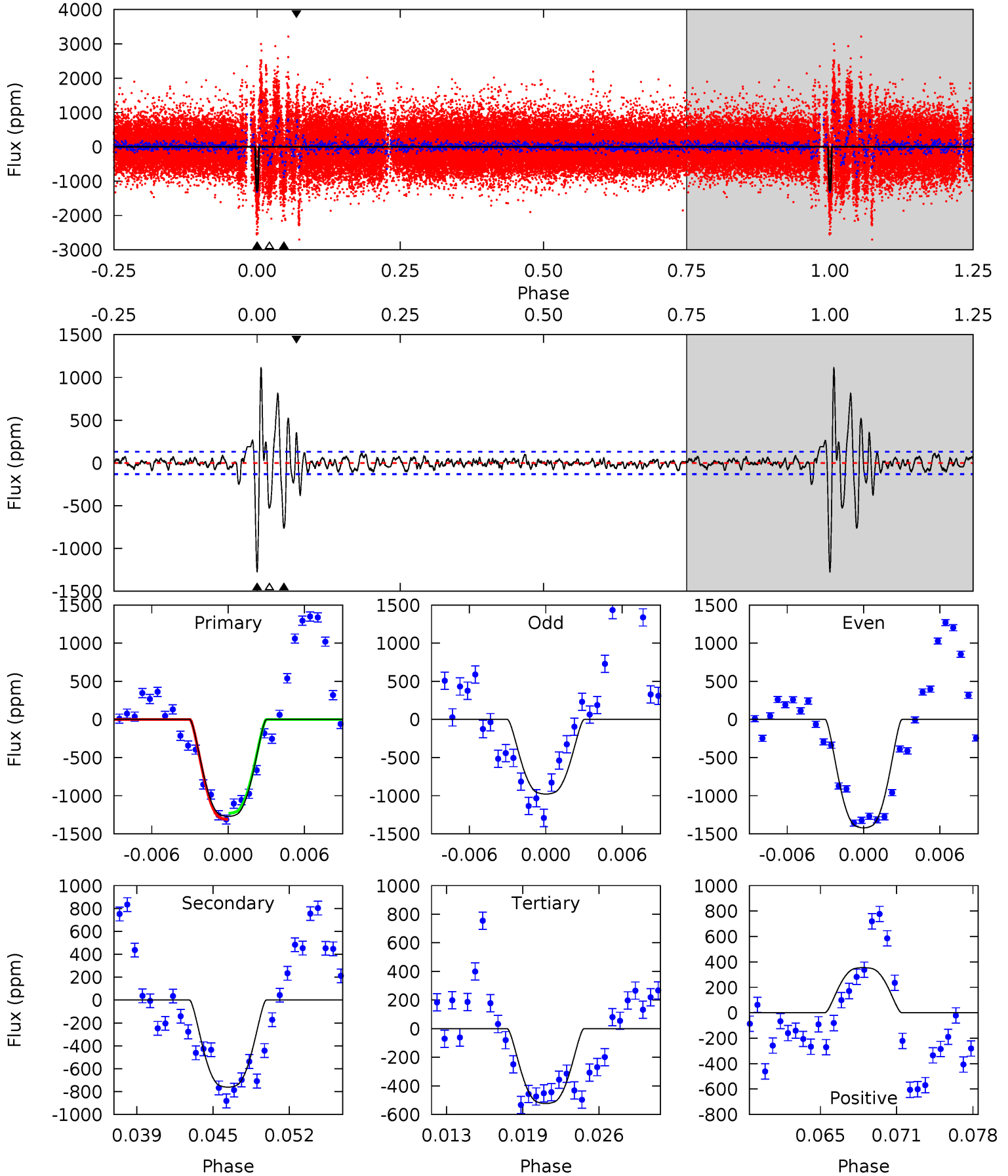
TCE 007953935-02 P=374.138484 Days $T_0=264.287203$ (BKJD)



DV Model-Shift Uniqueness Test

007953935-02, P = 374.465277 Days, E = 263.562697 Days

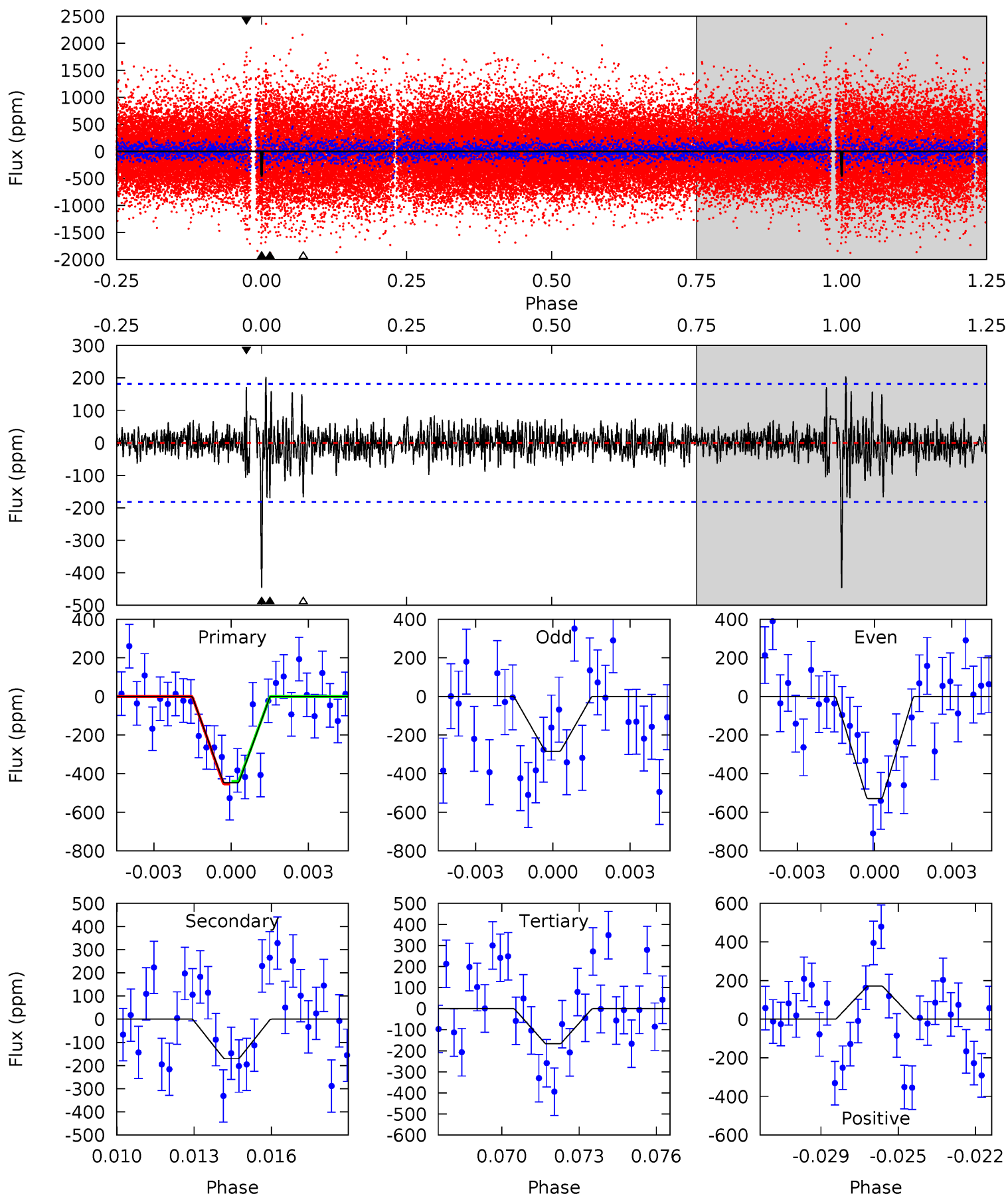
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.6	29.7	20.4	13.8	5.11	2.72	4.11	29.2	35.7	9.27	15.8	8.16	0.94	0.47	1.54



Alt Model-Shift Uniqueness Test

007953935-02, P = 374.138484 Days, E = 264.287203 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	4.91	4.82	4.95	5.24	2.95	0.98	8.10	7.98	0.09	-0.03	3.37	0.87	0.31	0.19



Stellar Parameters For KIC 007953935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6292^{+174}_{-261}	$4.426^{+0.065}_{-0.195}$	$-0.080^{+0.250}_{-0.300}$	$1.078^{+0.329}_{-0.141}$	$1.129^{+0.157}_{-0.157}$	$1.269^{+0.435}_{-0.629}$
	+3%/-4%	+1%/-4%	+312%/-375%	+31%/-13%	+14%/-14%	+34%/-50%
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 007953935-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-761 ± 26	$4.32^{+0.85}_{-0.56}$	398^{+28}_{-23}	5521^{+331}_{-287}	24497^{+7100}_{-6556}
Alt.	-170 ± 35	$2.64^{+0.56}_{-0.45}$	396^{+28}_{-22}	4930^{+457}_{-393}	14479^{+7128}_{-5082}

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

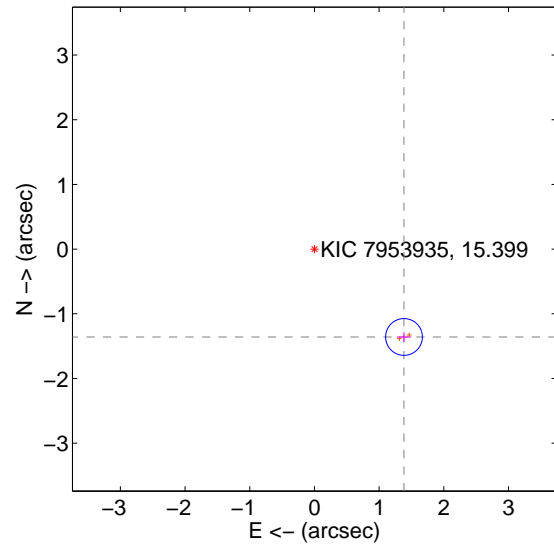
Supplemental centroid analysis for 007953935-02. Kepler magnitude: 15.40. Transit SNR 10.49

There are 0 quarters with good PRF difference image offsets

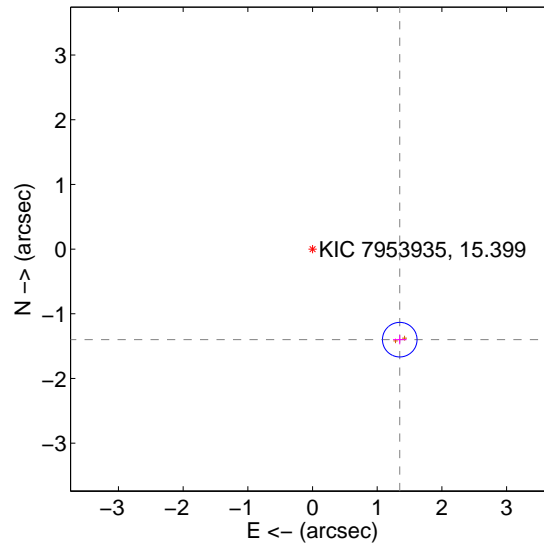
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.940 ± 0.095	20.46	-1.385 ± 0.111	-1.358 ± 0.075
PRF-fit source offset from KIC position	1.944 ± 0.089	21.83	-1.348 ± 0.105	-1.400 ± 0.071
photometric centroid source offset	0.46 ± 0.89	0.52	-0.46 ± 0.89	-0.02 ± 0.93

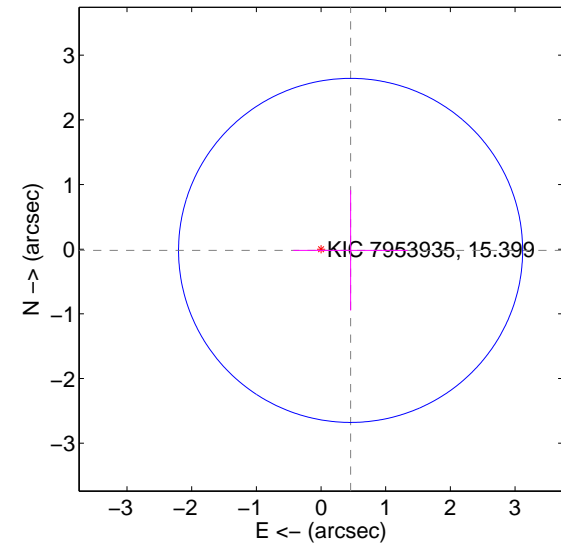
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

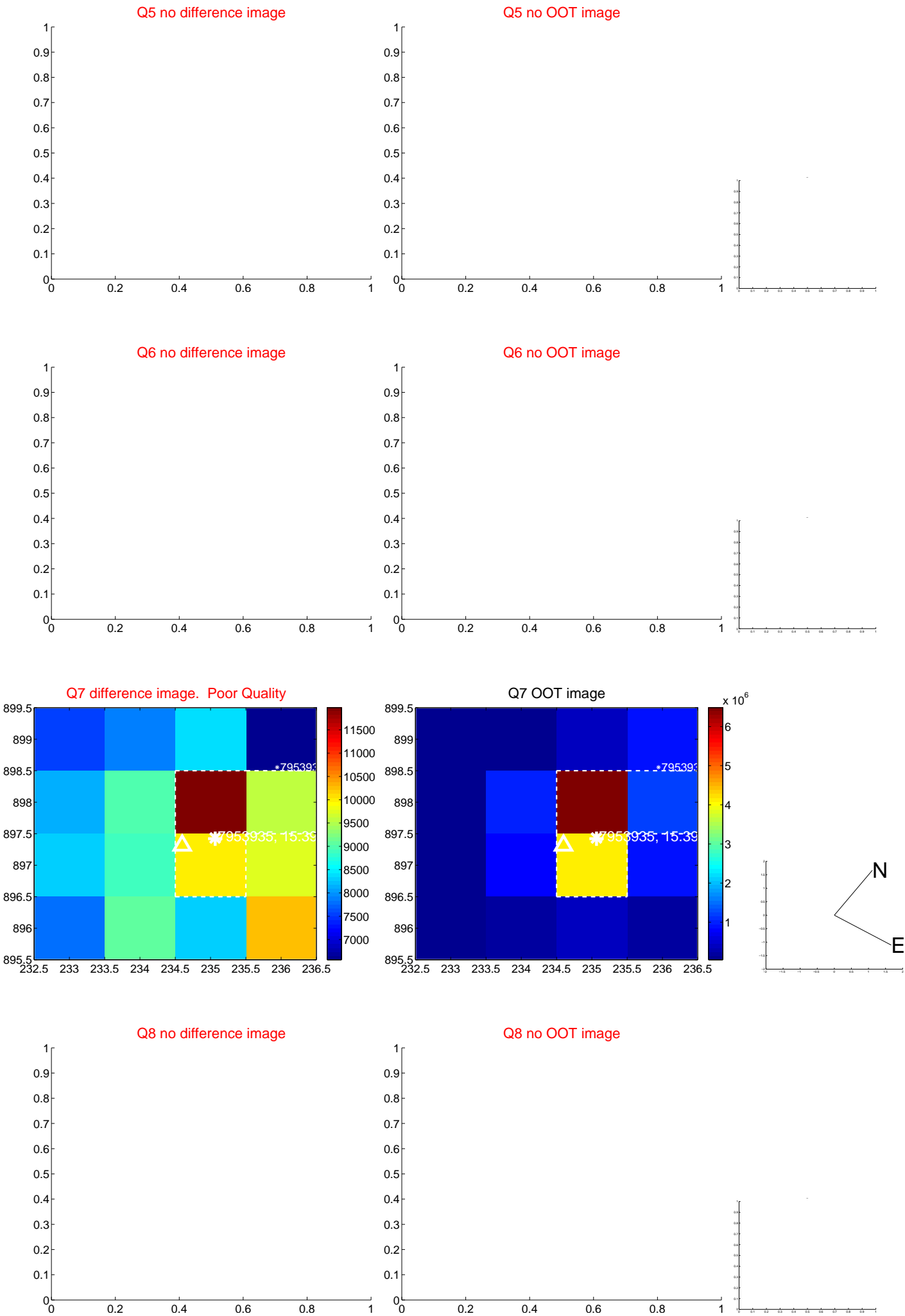


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

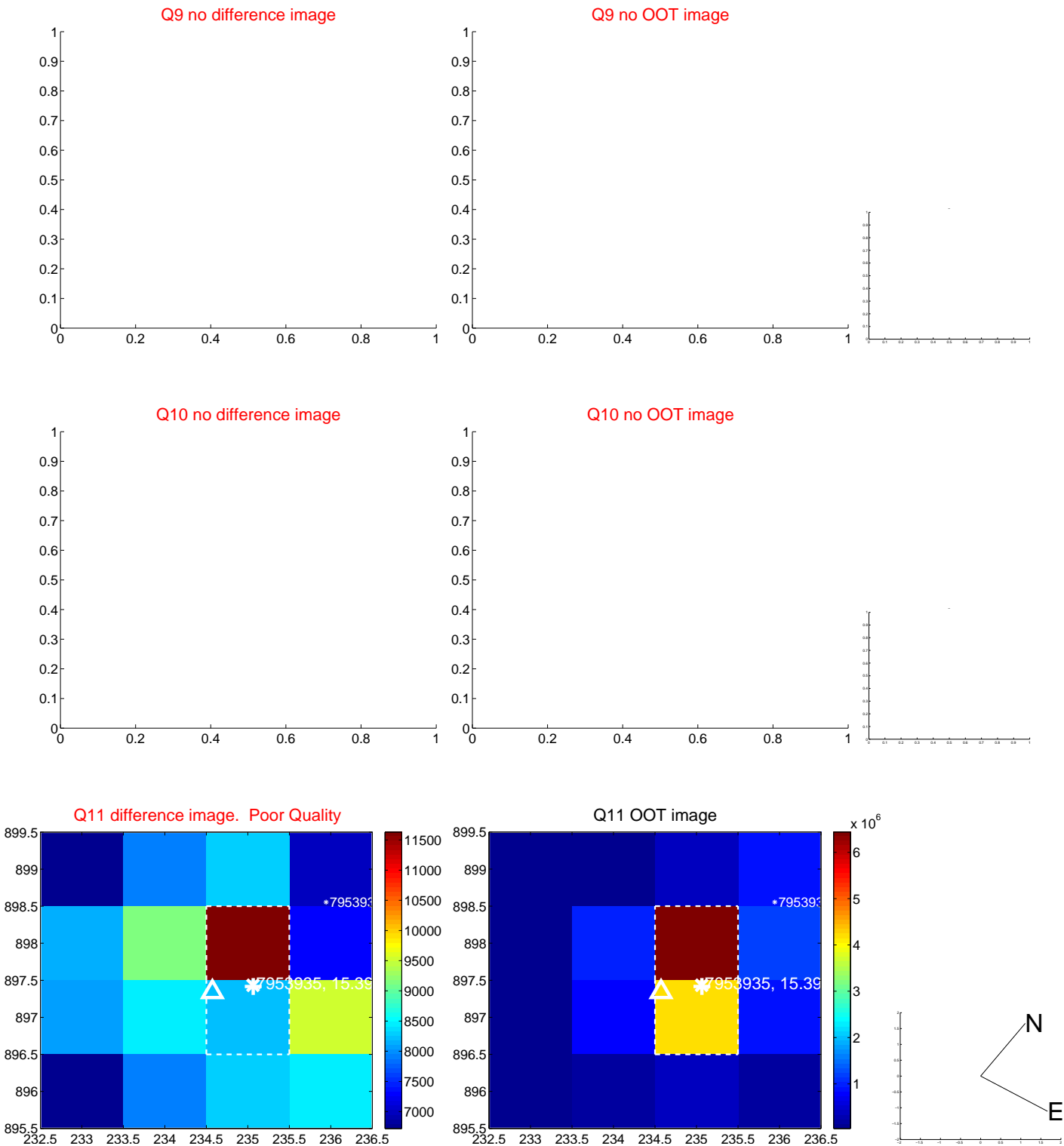
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



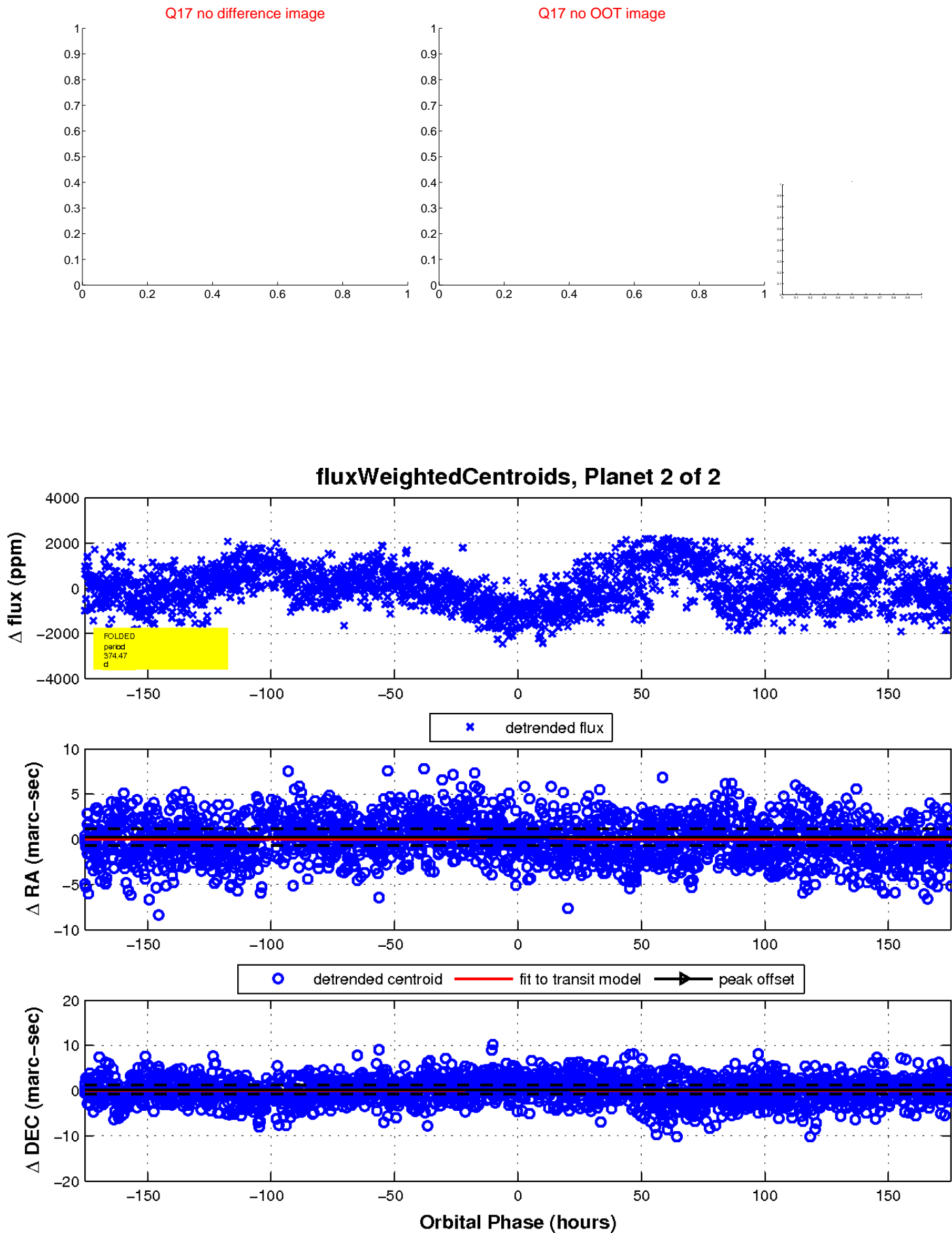
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

