

KIC 011357555

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})
011357555-01	OBS	No	462.790754	210.289027	391.1	8.033	7.9	7.7	1.02	6011	2.17	0.95
011357555-02	OBS	No	565.551626	150.283063	514.6	19.524	9.4	9.6	1.02	6011	2.72	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011357555-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011357555-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—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.

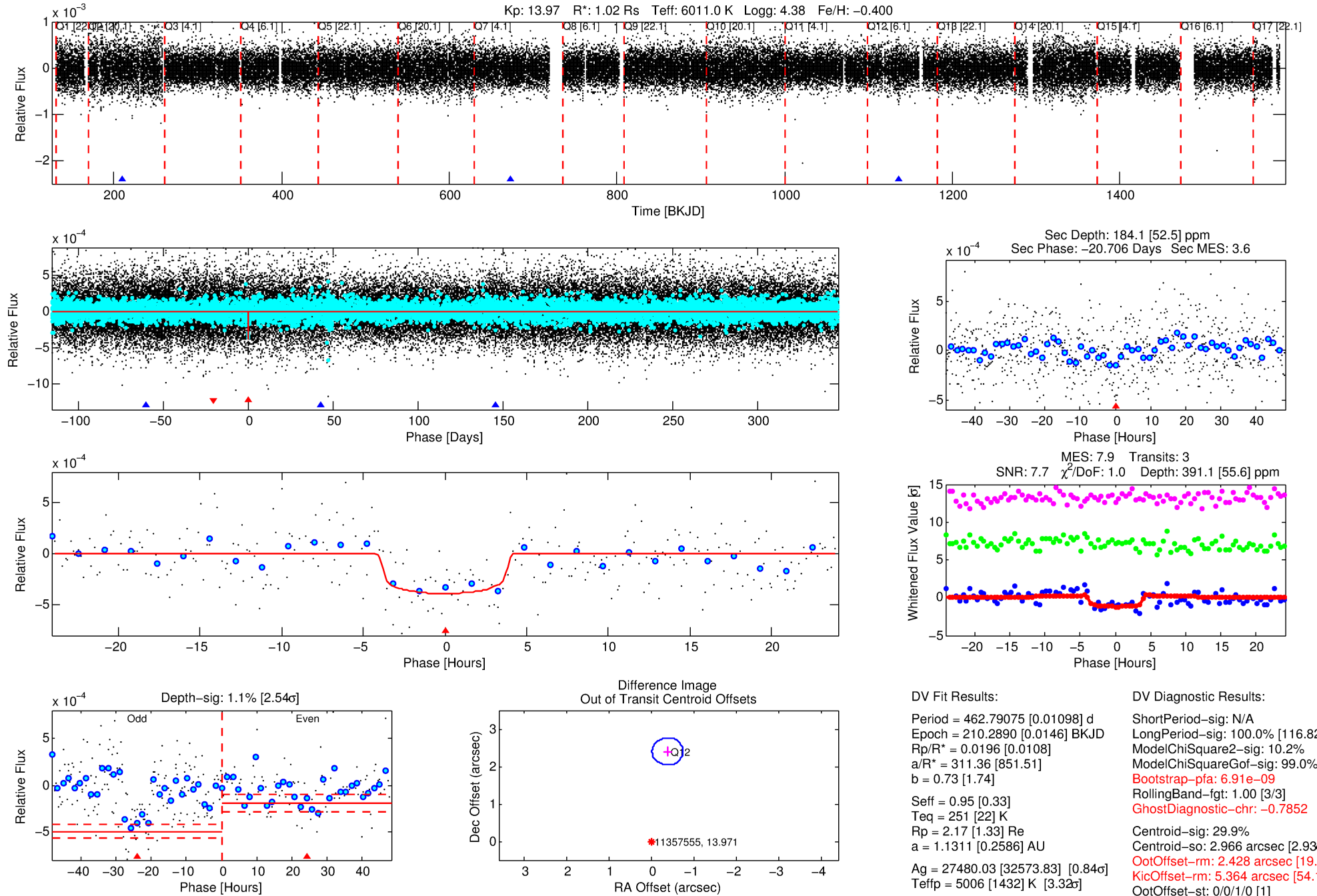
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011357555-01

No Significant Match Found

DV One-Page Summary

KIC: 11357555 Candidate: 1 of 2 Period: 462.791 d



DV Fit Results:

Period = 462.79075 [0.01098] d
Epoch = 210.2890 [0.0146] BKJD
Rp/R* = 0.0196 [0.0108]
a/R* = 311.36 [851.51]
b = 0.73 [1.74]
Seff = 0.95 [0.33]
Teq = 251 [22] K
Rp = 2.17 [1.33] Re
a = 1.1311 [0.2586] AU
Ag = 27480.03 [32573.83] [0.84σ]
Teffp = 5006 [1432] K [3.32σ]

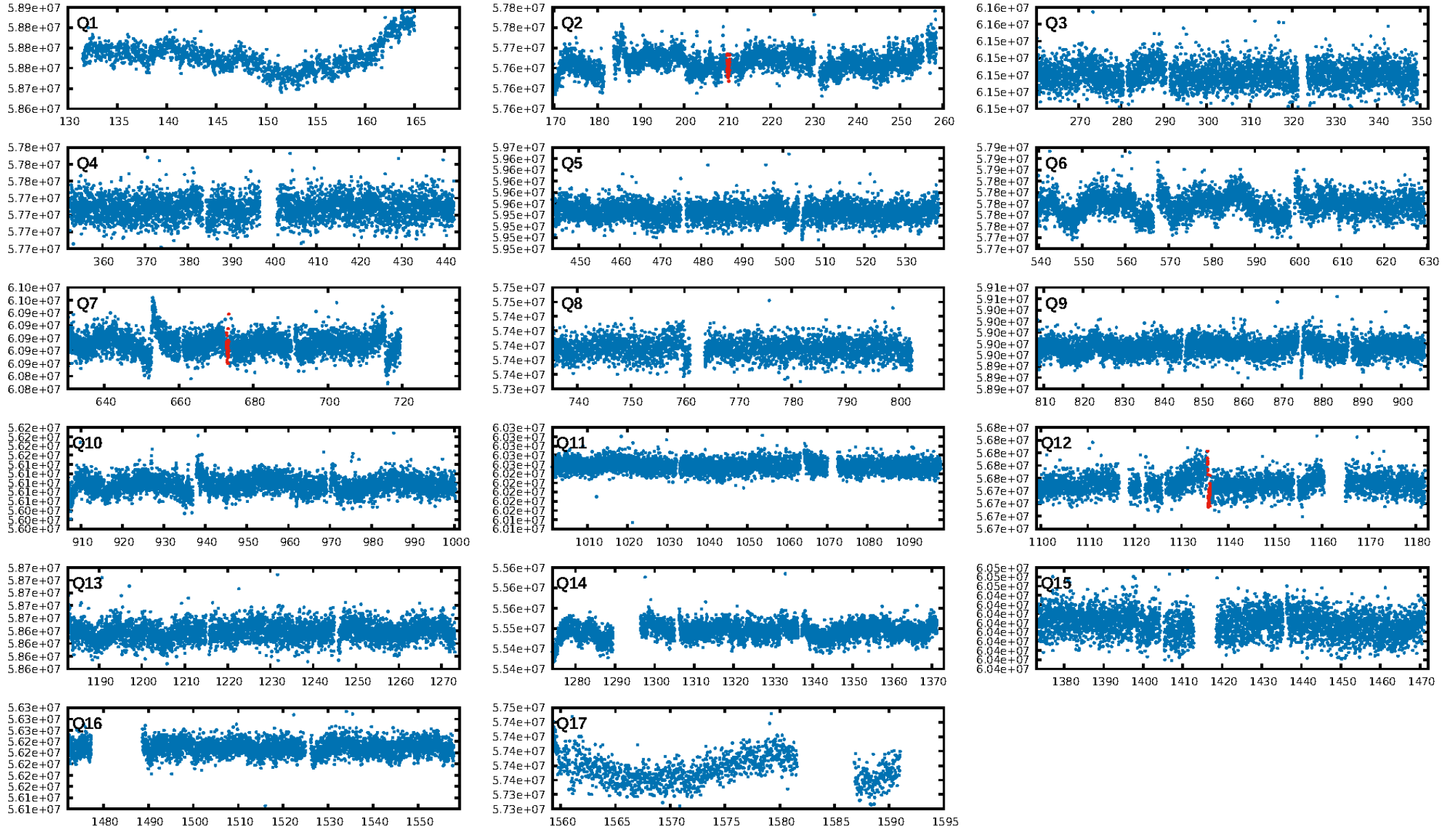
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [116.82σ]
ModelChiSquare2-sig: 10.2%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: 6.91e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.7852
Centroid-sig: 29.9%
Centroid-so: 2.966 arcsec [2.93σ]
OotOffset-rm: 2.428 arcsec [19.97σ]
KicOffset-rm: 5.364 arcsec [54.15σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

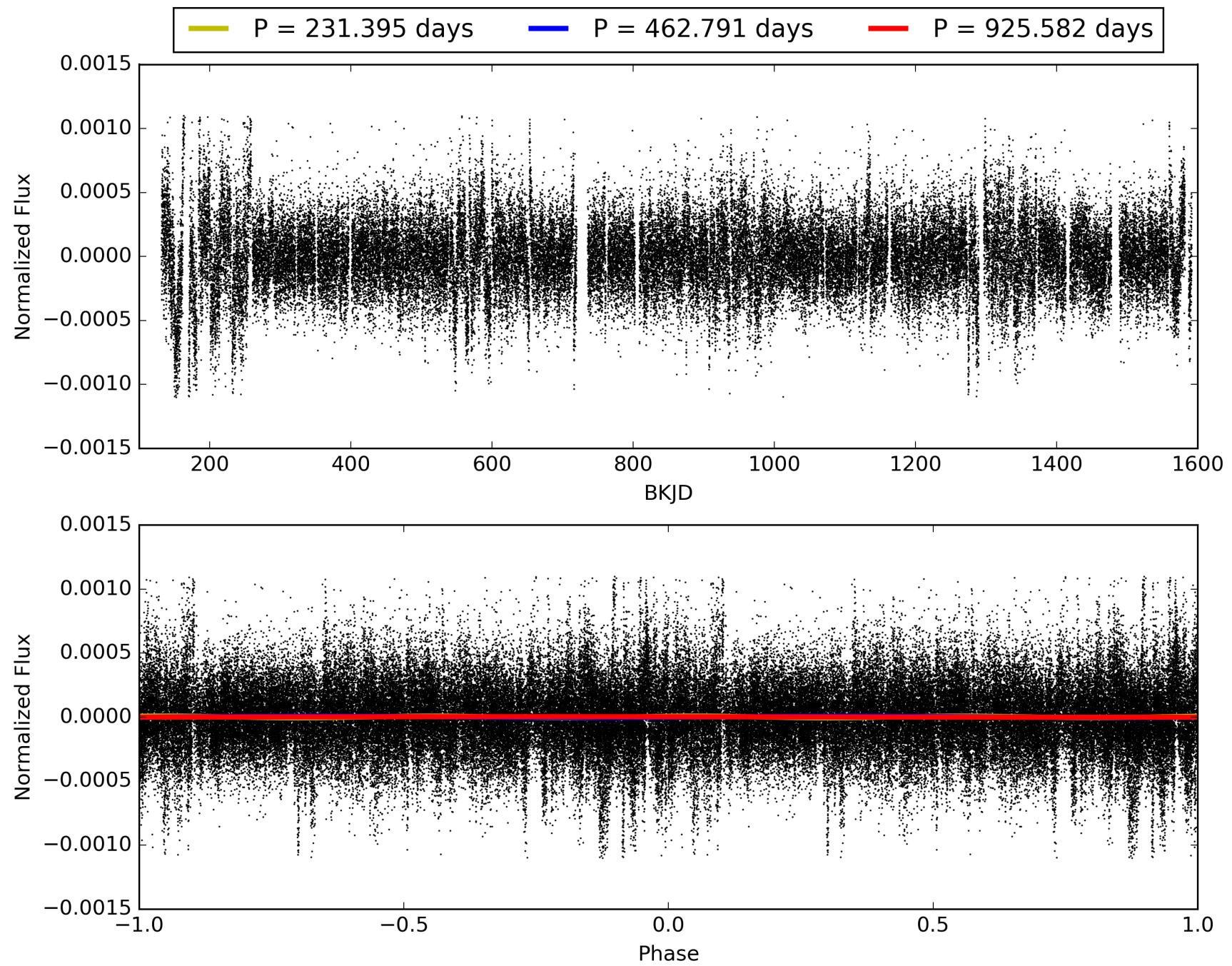
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:17:24 Z

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

TCE 011357555-01, PDC Light Curves

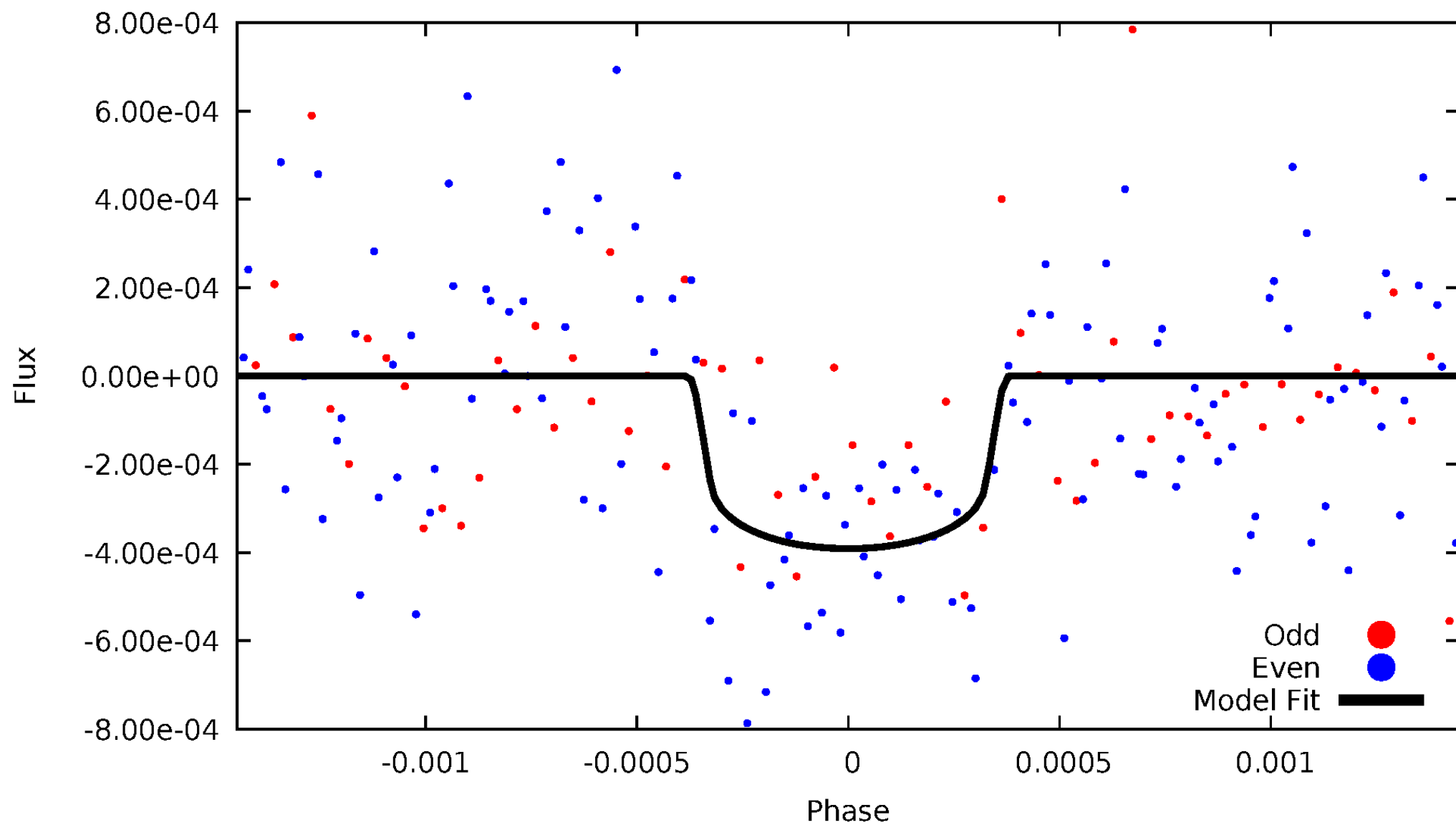


TCE 011357555-01



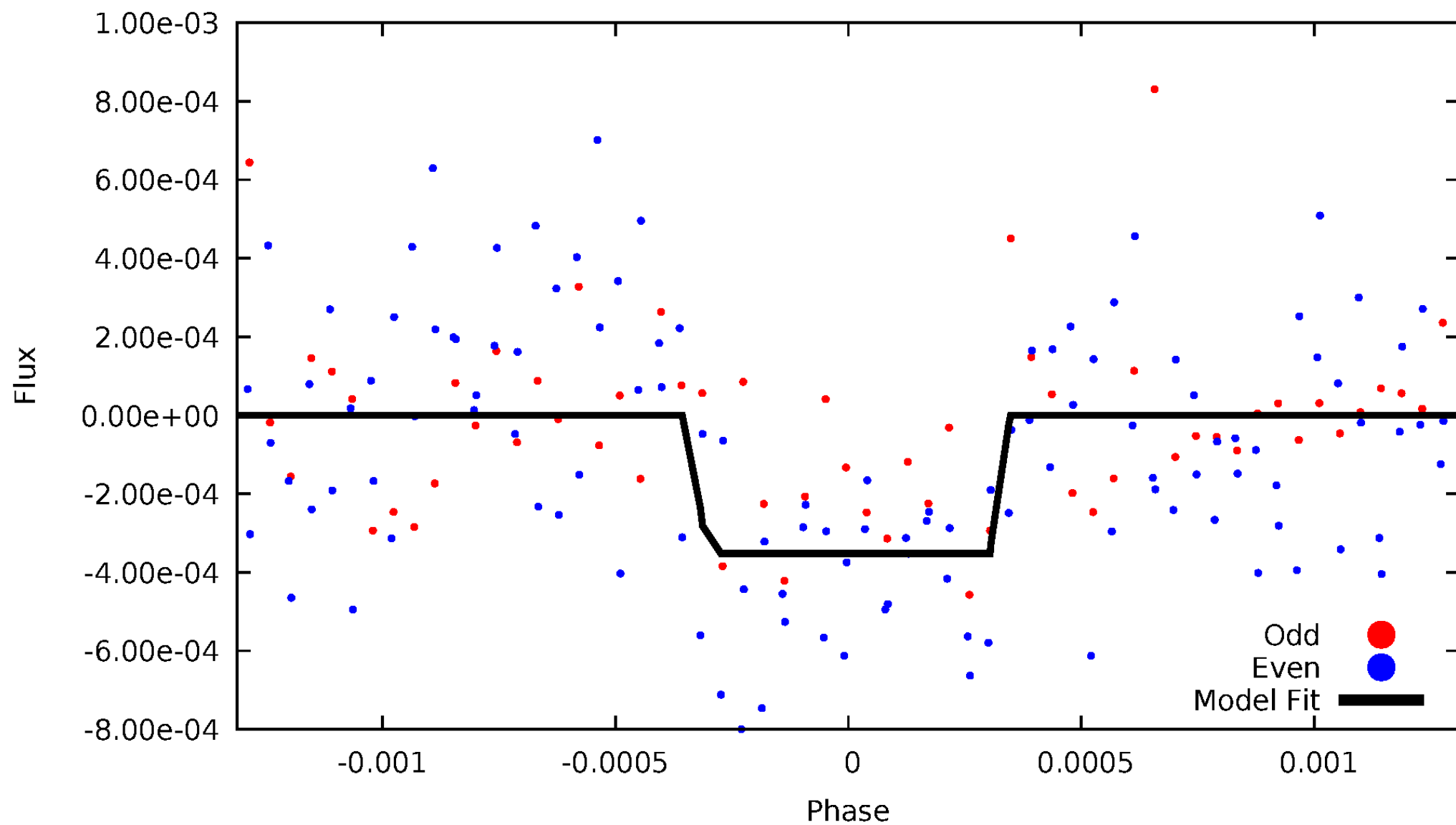
DV Odd/Even

TCE 011357555-01



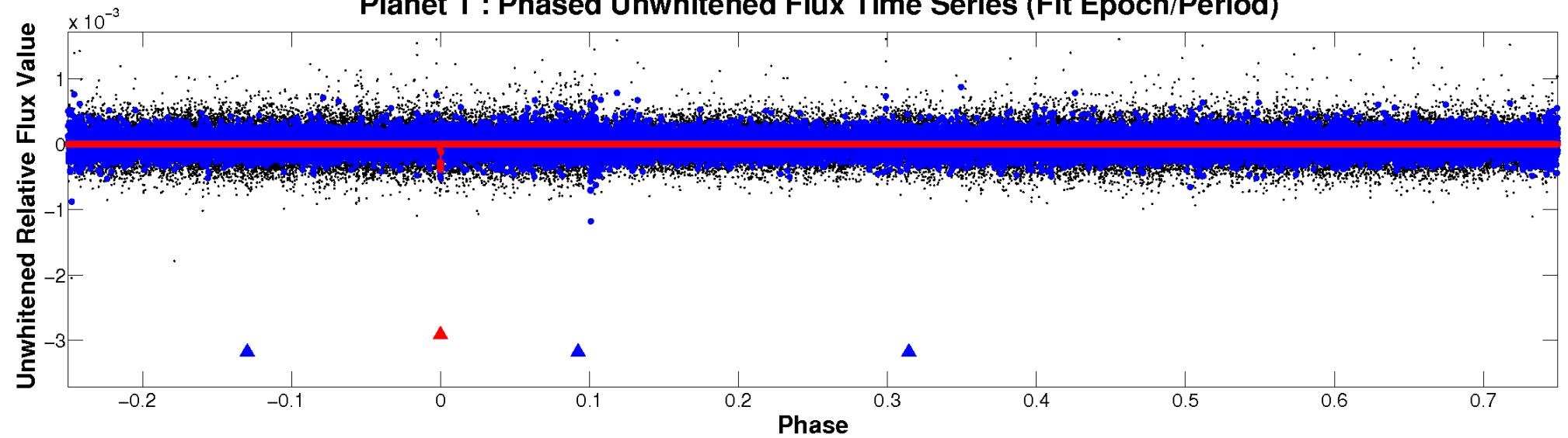
ALT Odd/Even

TCE 011357555-01

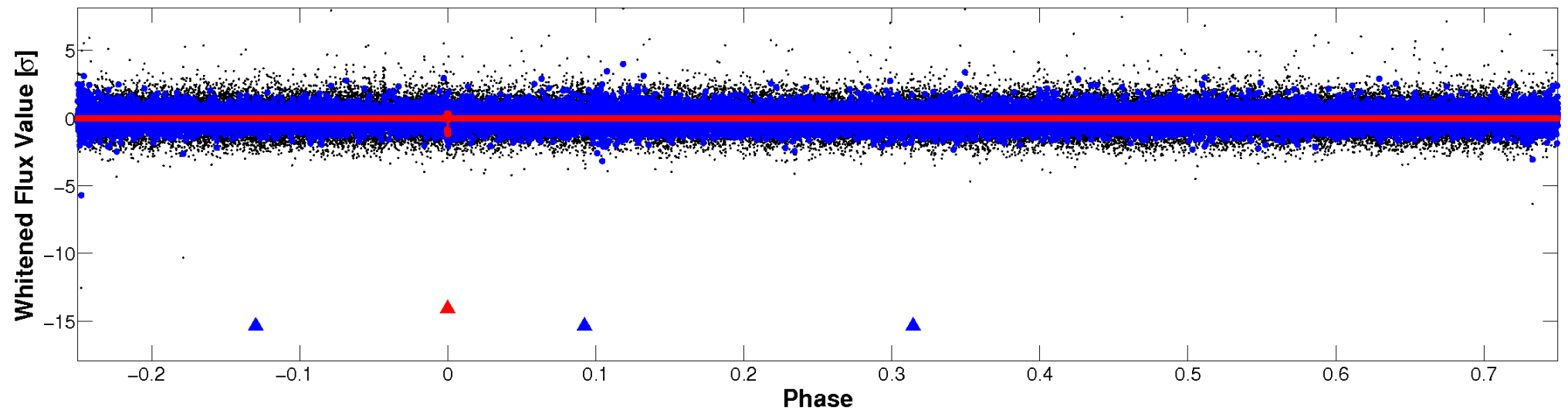


Non-Whitened Vs. Whitened Light Curve

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

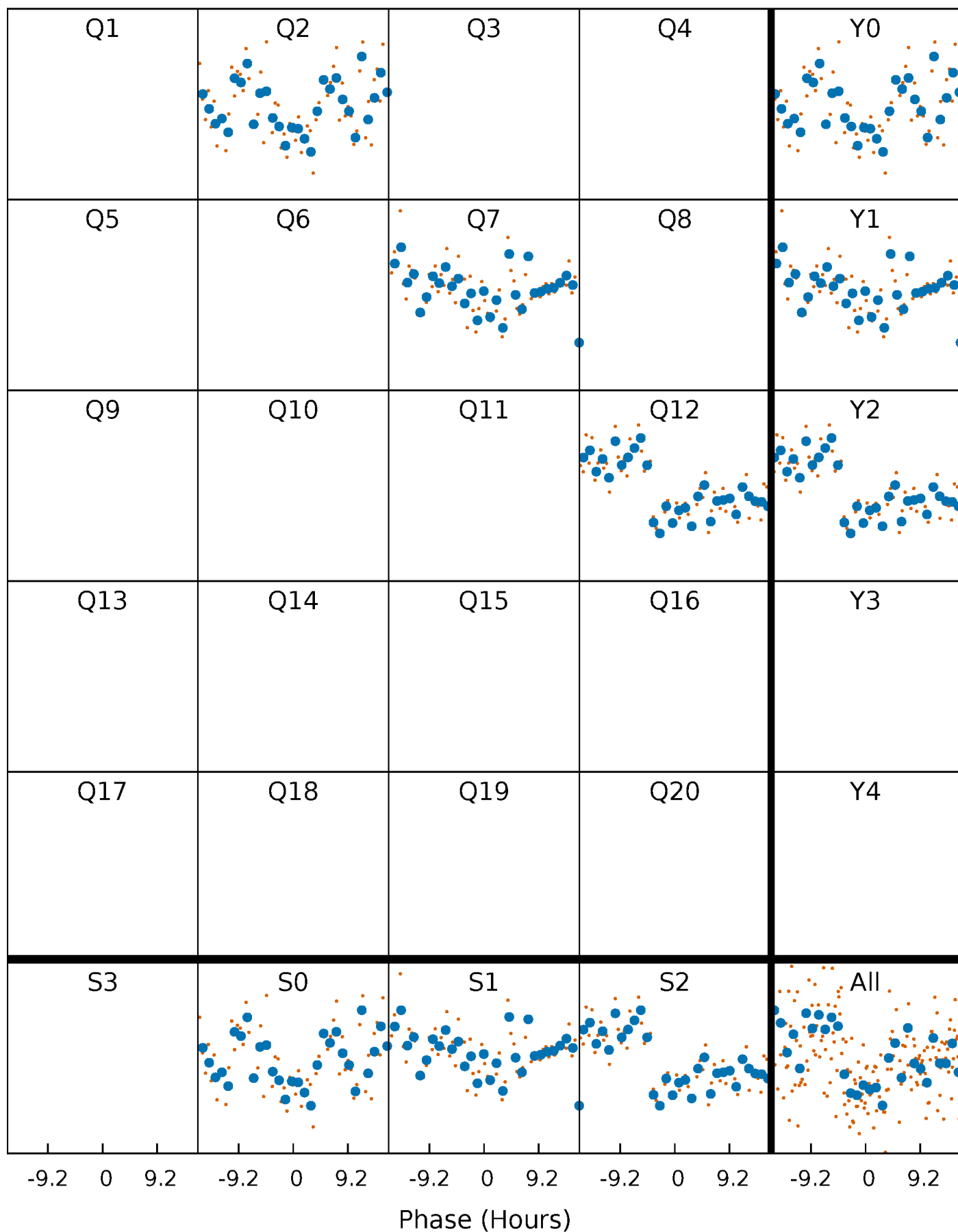


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



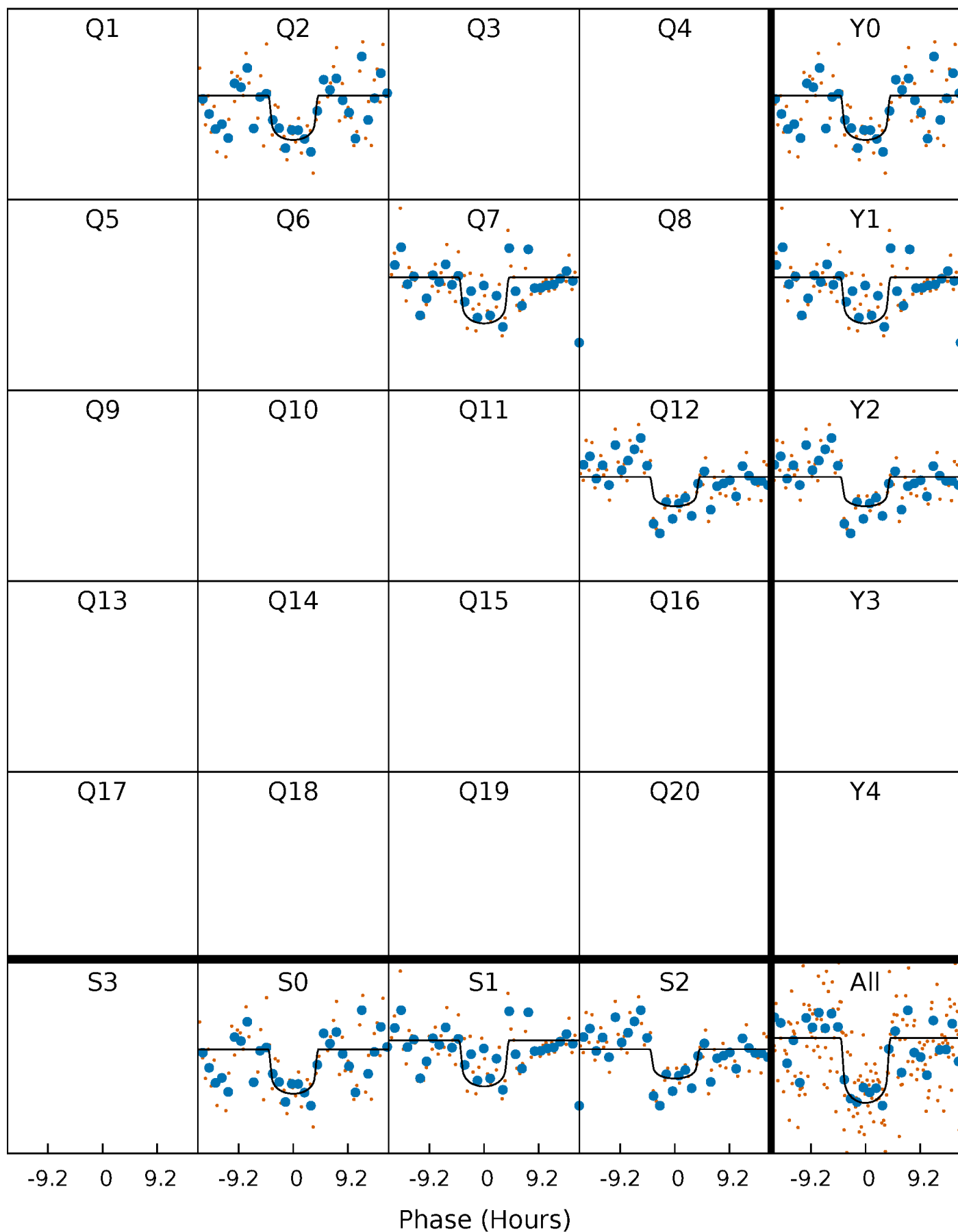
PDC Quarter-Phased Transit Curves

TCE 011357555-01 P=462.790754 Days $T_0=210.289027$ (BKJD)



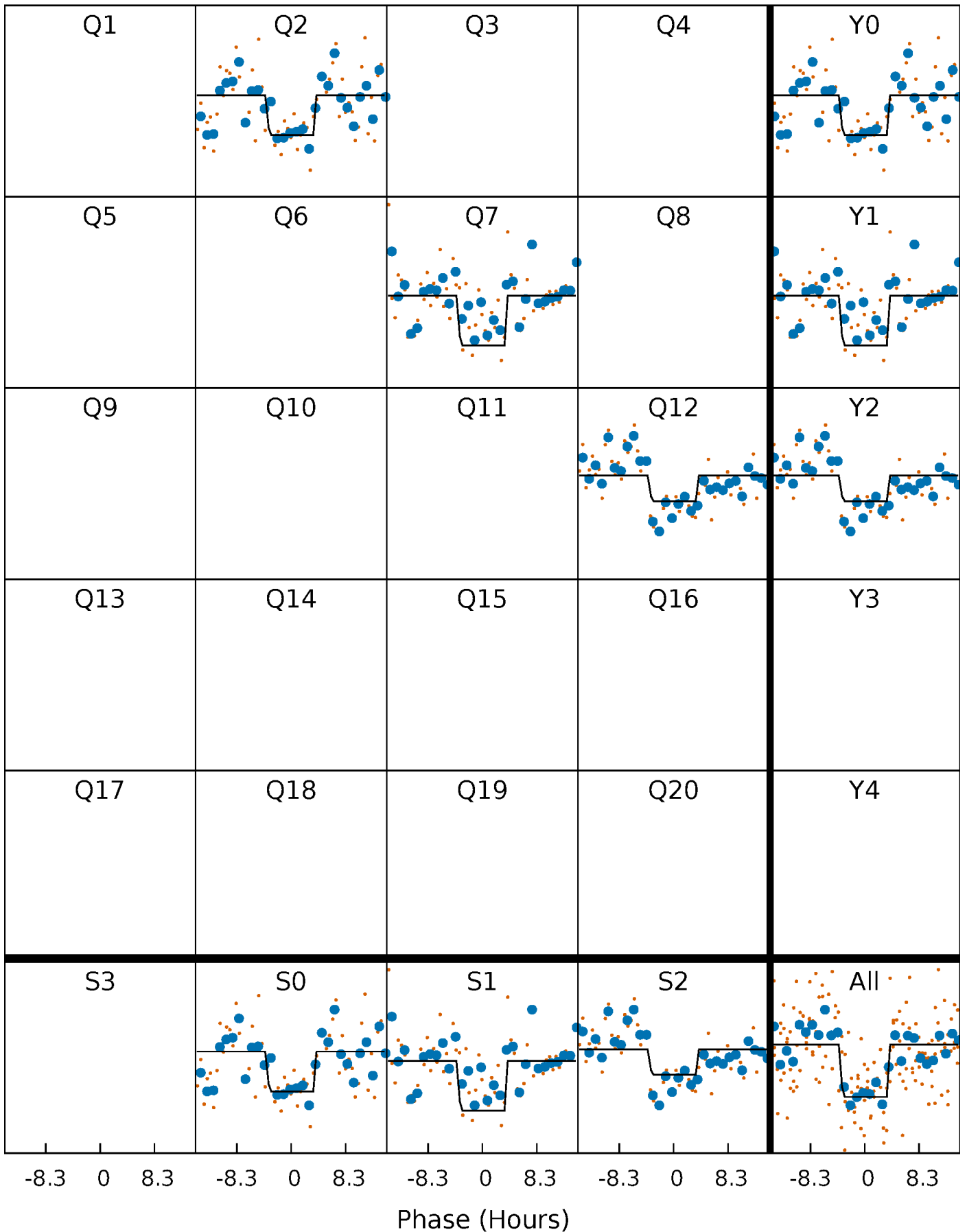
DV Quarter-Phased Transit Curves

TCE 011357555-01 P=462.790754 Days $T_0=210.289027$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

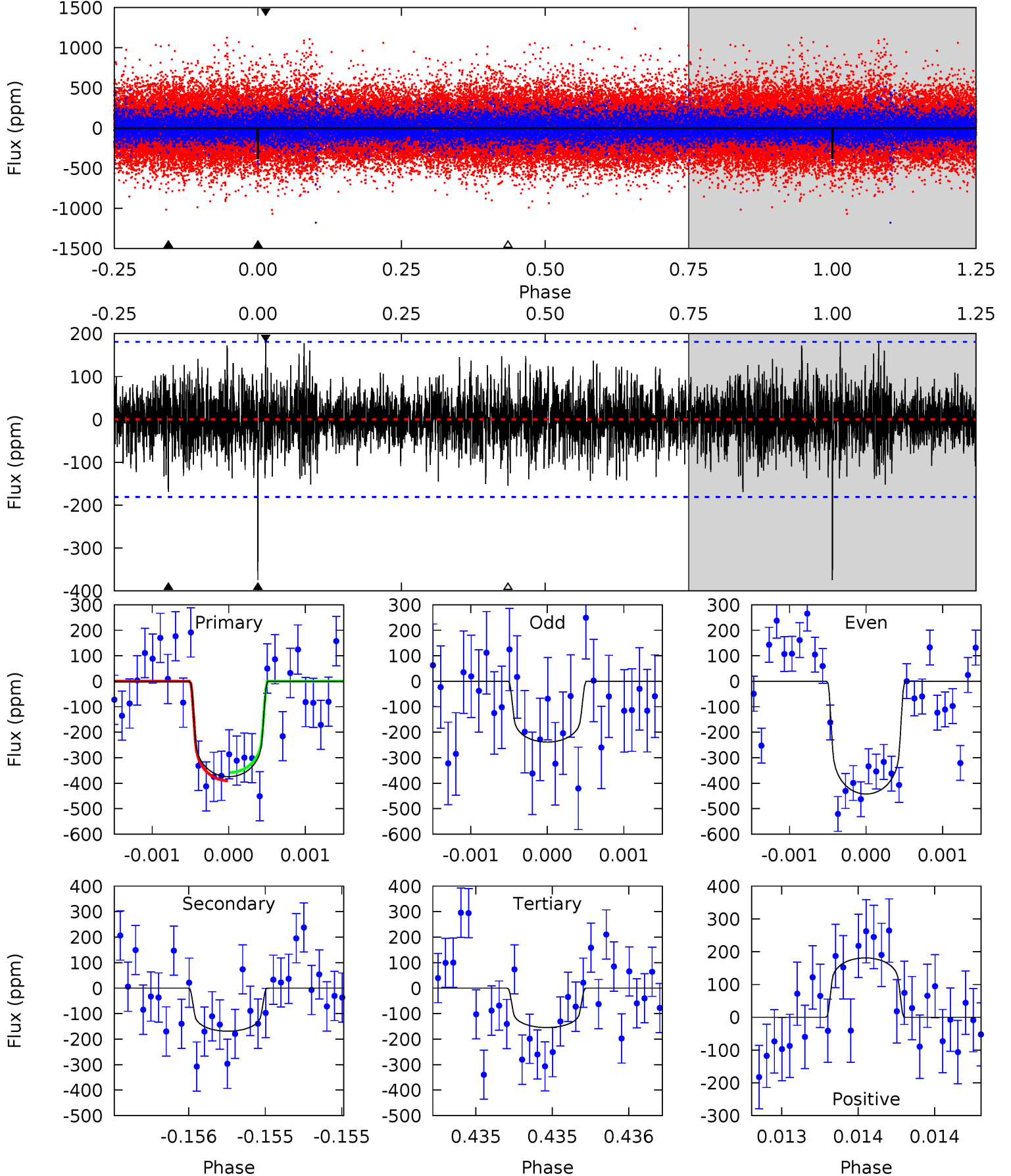
TCE 011357555-01 P=462.779267 Days $T_0=210.307402$ (BKJD)



DV Model-Shift Uniqueness Test

011357555-01, P = 462.790754 Days, E = 210.289027 Days

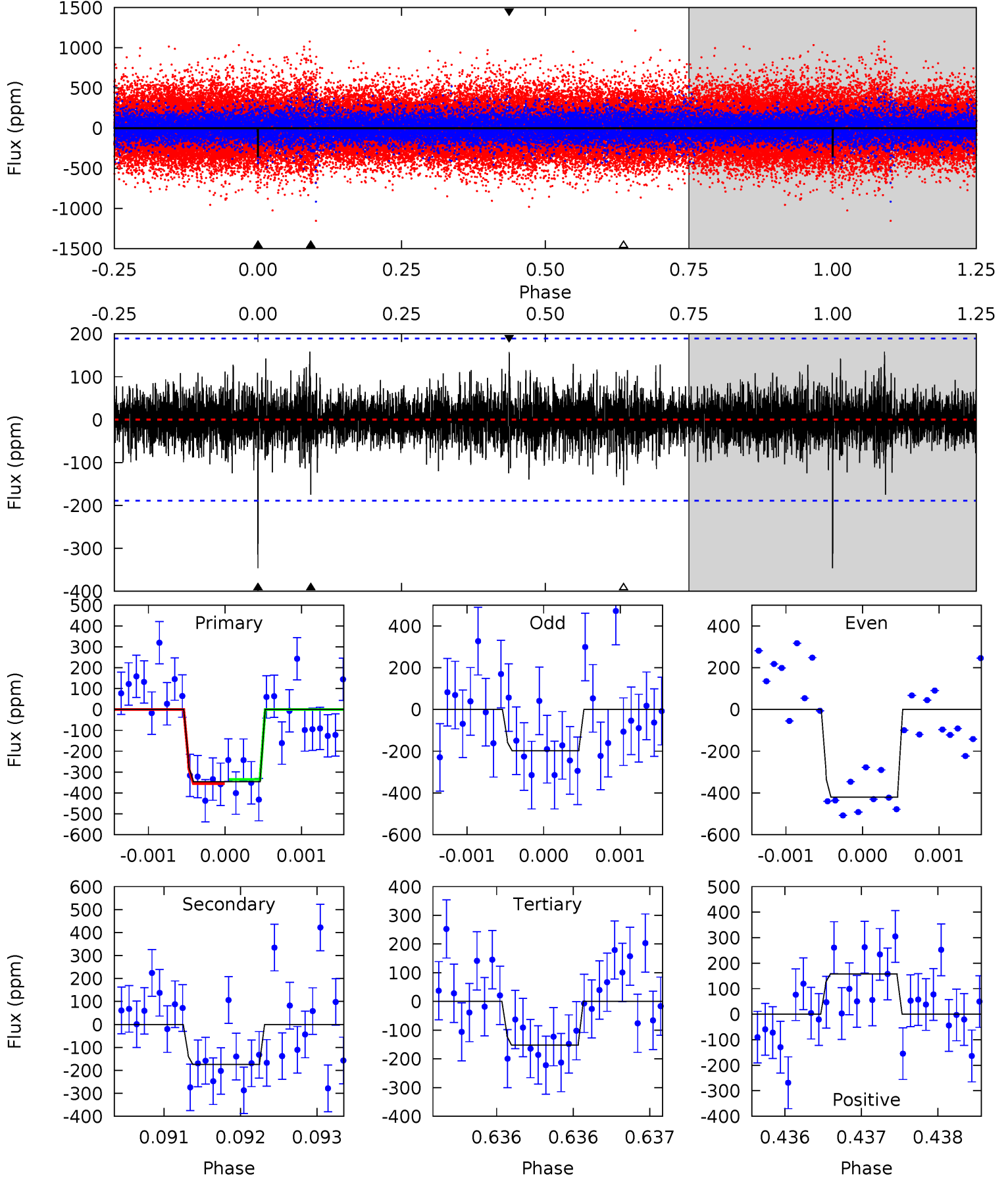
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	5.14	4.70	5.51	5.50	3.37	1.40	6.69	5.88	0.44	-0.37	2.98	0.98	0.33	0.49



Alt Model-Shift Uniqueness Test

011357555-01, P = 462.779267 Days, E = 210.307402 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	5.09	4.45	4.61	5.52	3.40	1.05	5.65	5.49	0.65	0.49	3.12	1.08	0.31	0.28



Stellar Parameters For KIC 011357555

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6011^{+161}_{-179}	$4.378^{+0.148}_{-0.181}$	$-0.400^{+0.300}_{-0.300}$	$1.017^{+0.277}_{-0.185}$	$0.900^{+0.120}_{-0.087}$	$1.205^{+0.812}_{-0.596}$
	+3%/-3%	+3%/-4%	+75%/-75%	+27%/-18%	+13%/-10%	+67%/-49%
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 011357555-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-169 ± 33	$2.20^{+1.25}_{-1.14}$	351^{+26}_{-19}	5004^{+2115}_{-835}	24542^{+89430}_{-15019}
Alt.	-174 ± 34	$2.24^{+1.24}_{-1.17}$	353^{+24}_{-21}	4971^{+2121}_{-782}	24813^{+80105}_{-15150}

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

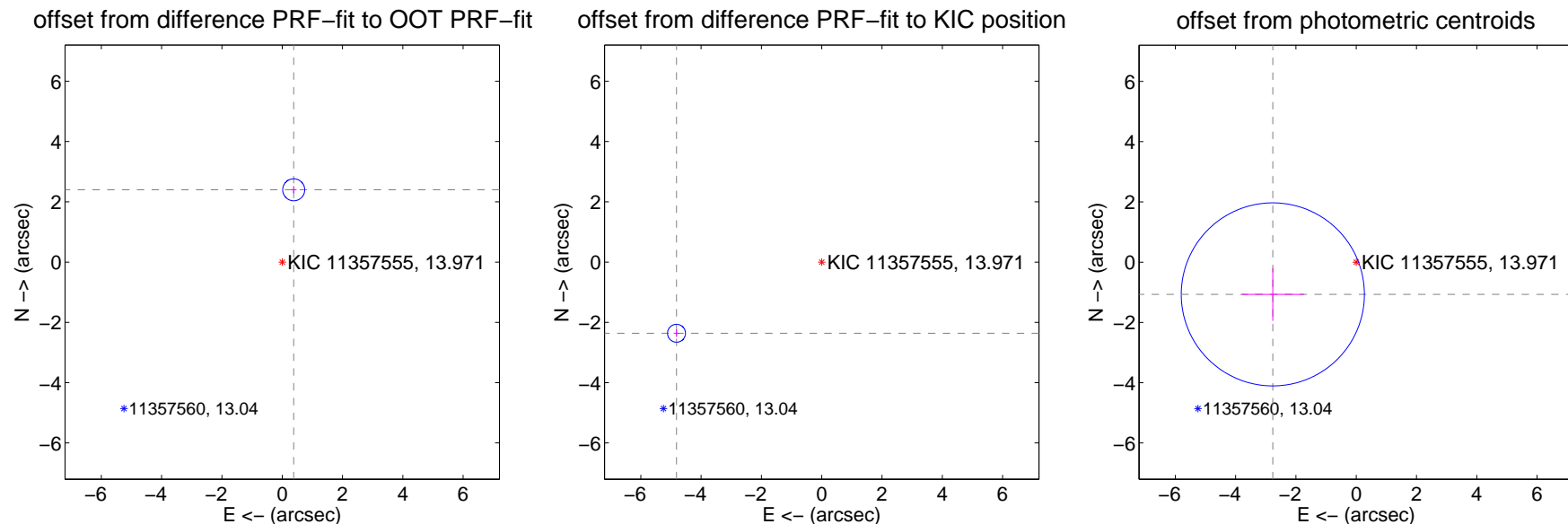
DV Centroid Data

Supplemental centroid analysis for 011357555-01. Kepler magnitude: 13.97. Transit SNR 7.66

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 7.05 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.428 ± 0.122	19.97	-0.381 ± 0.093	2.398 ± 0.122
PRF-fit source offset from KIC position	5.364 ± 0.099	54.15	4.816 ± 0.093	-2.362 ± 0.122
photometric centroid source offset	2.97 ± 1.01	2.93	2.77 ± 1.03	-1.07 ± 0.88



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

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

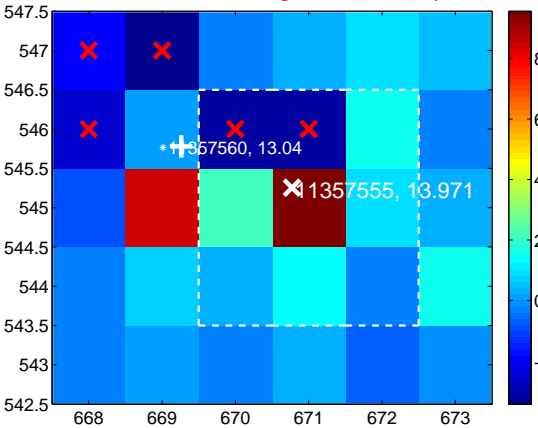
Q1 no difference image



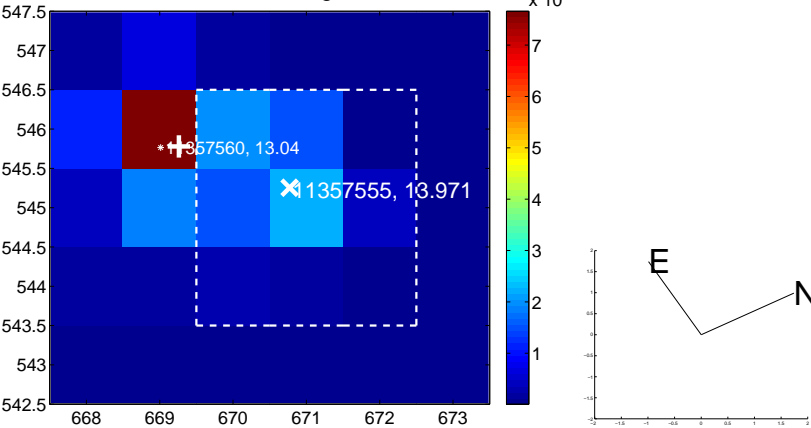
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



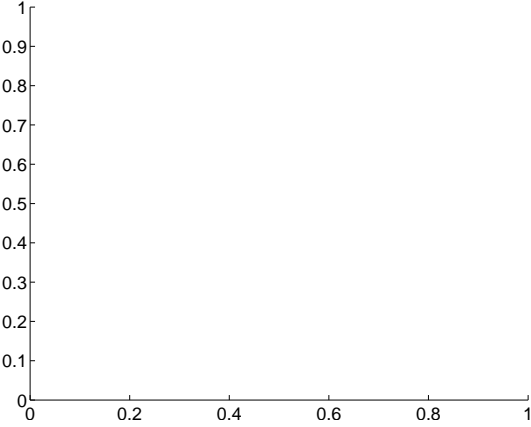
Q3 no difference image



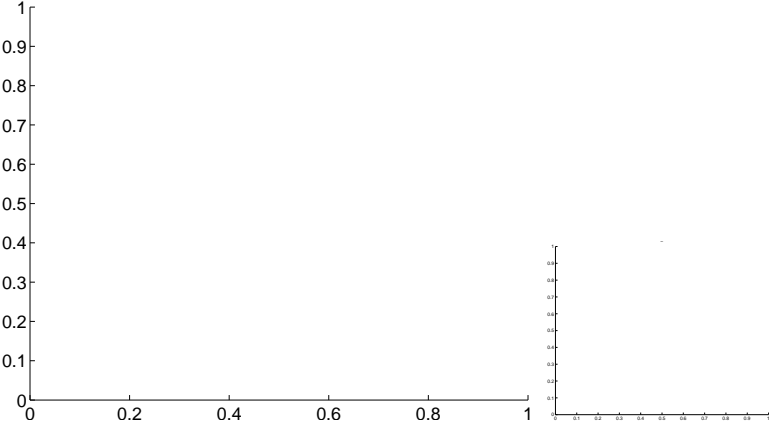
Q3 no OOT image



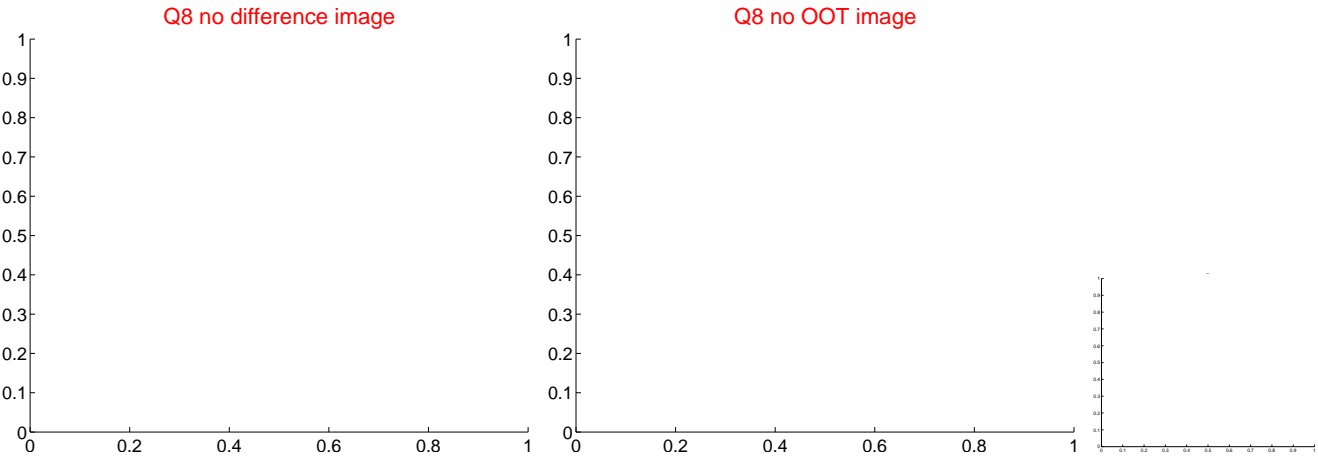
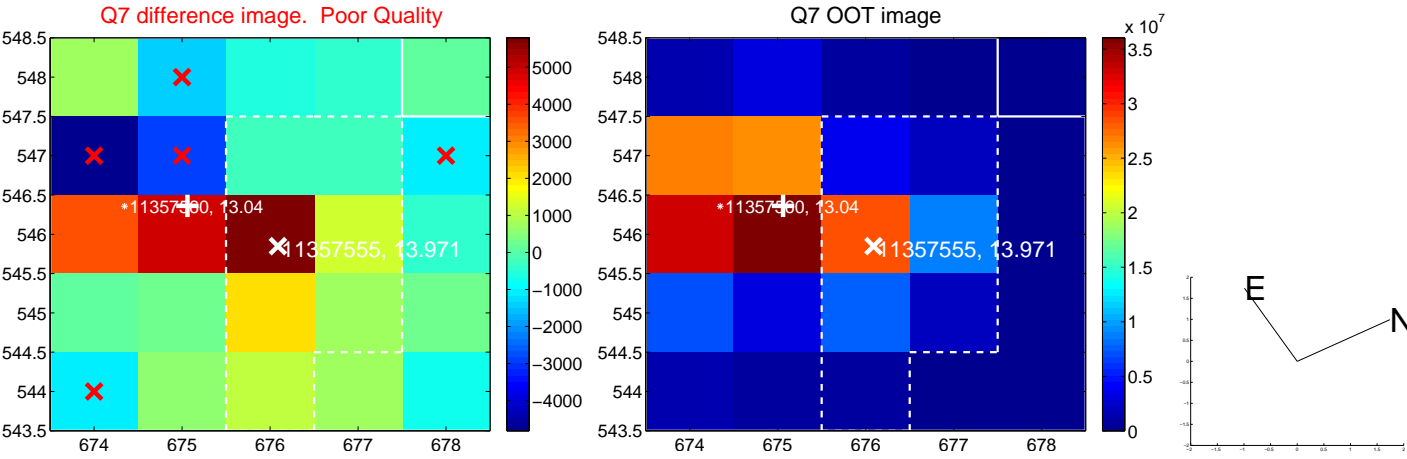
Q4 no difference image



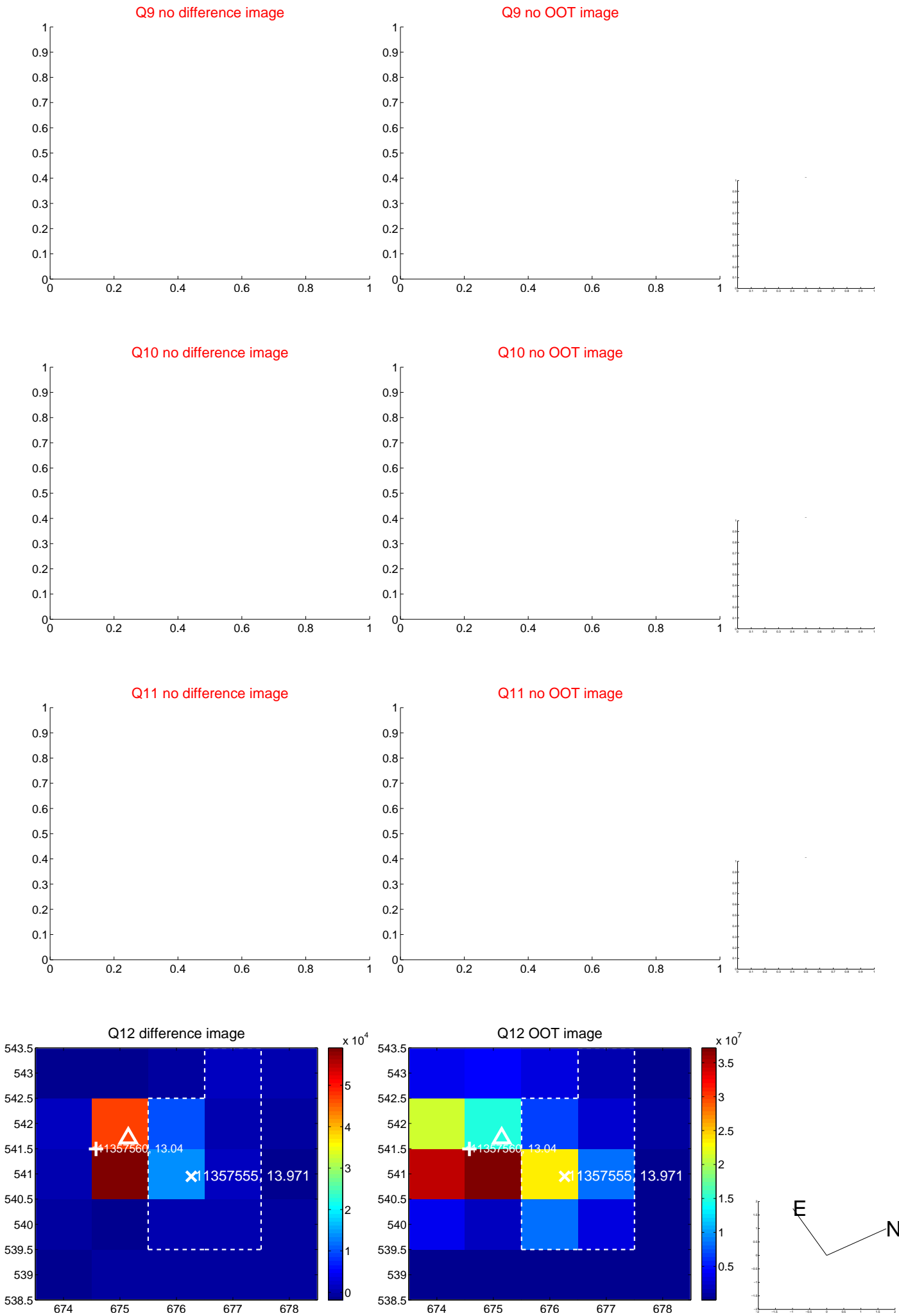
Q4 no OOT image



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



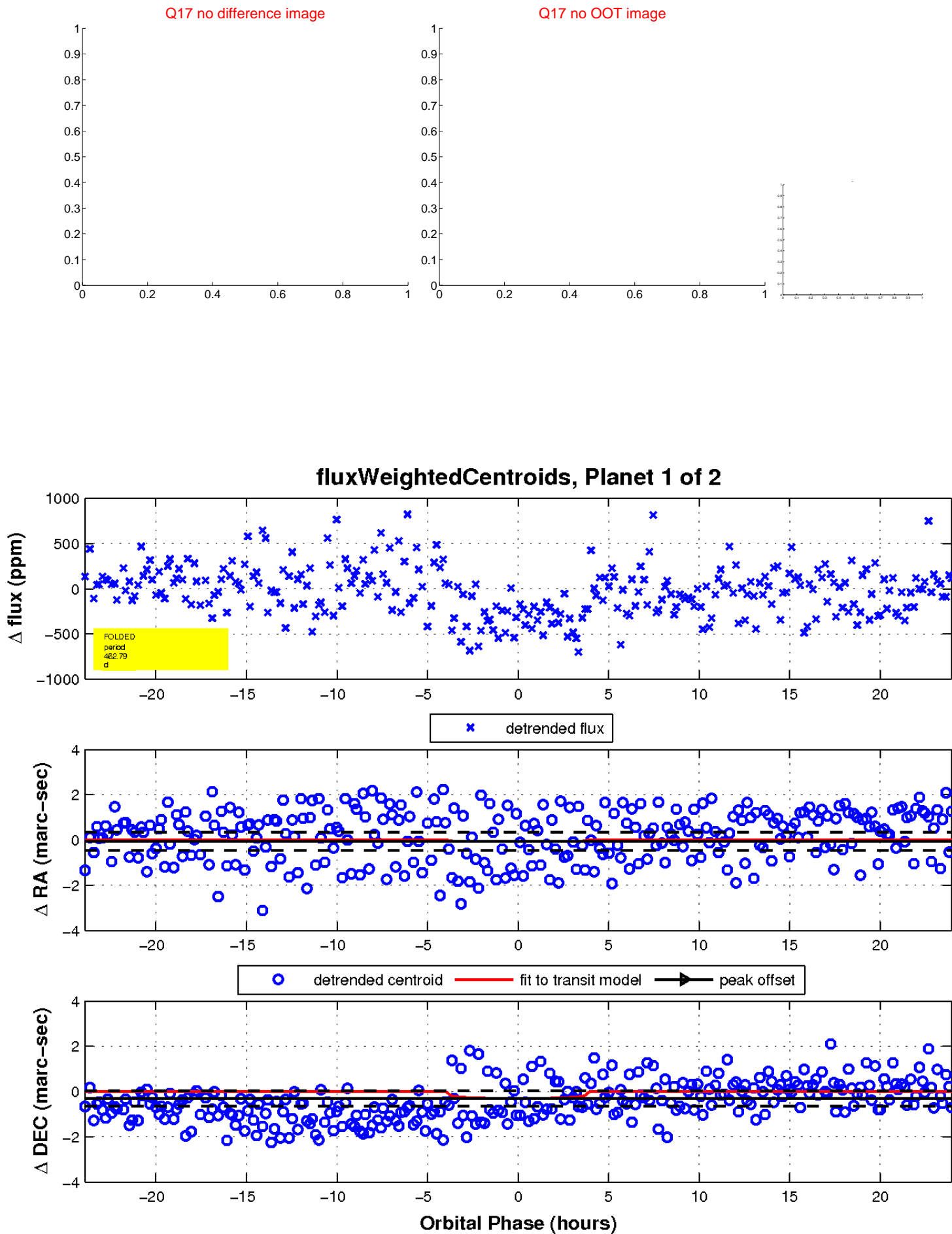
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

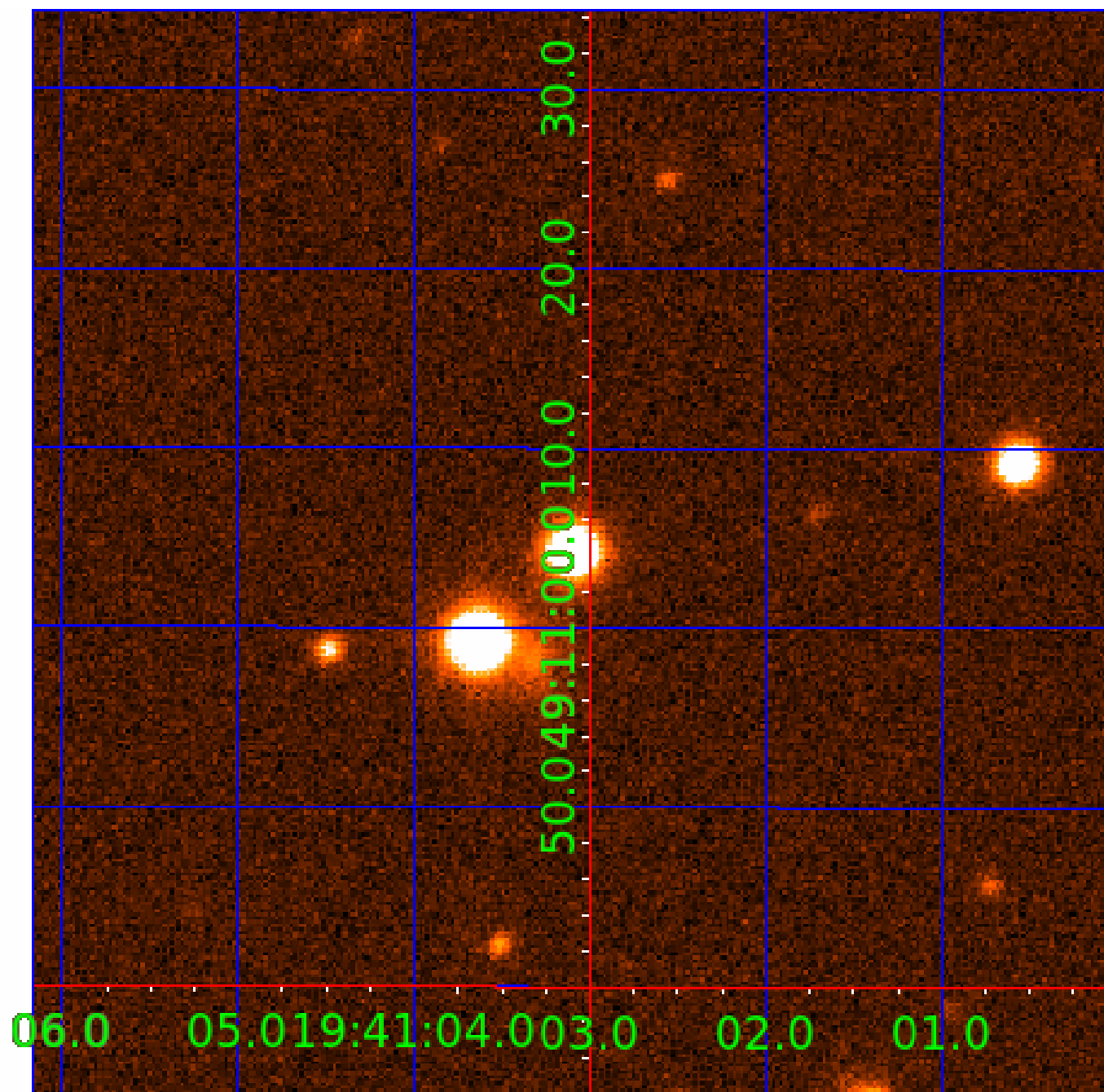


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011357555

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})
011357555-01	OBS	No	462.790754	210.289027	391.1	8.033	7.9	7.7	1.02	6011	2.17	0.95
011357555-02	OBS	No	565.551626	150.283063	514.6	19.524	9.4	9.6	1.02	6011	2.72	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011357555-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011357555-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—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.

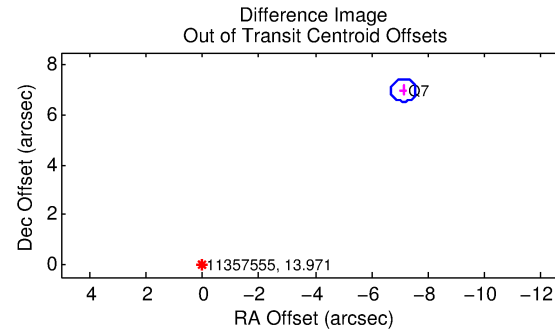
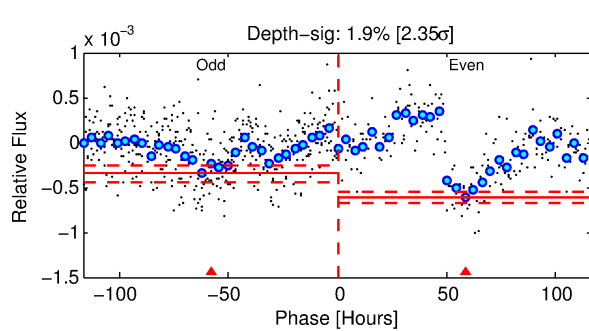
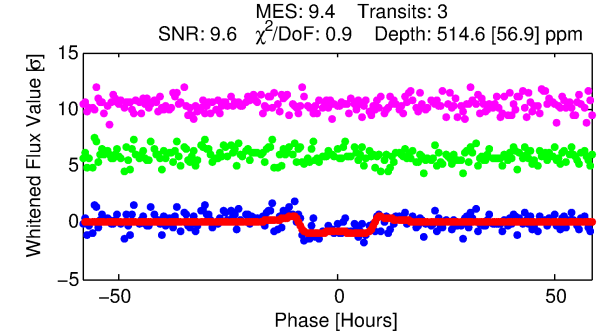
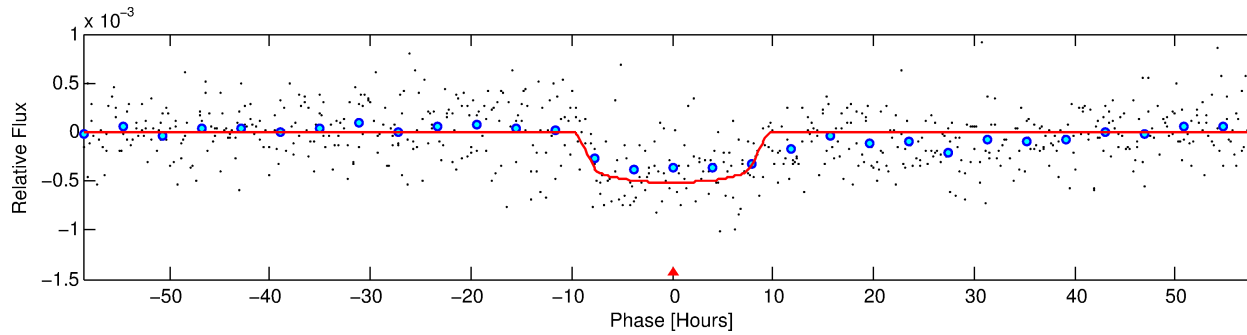
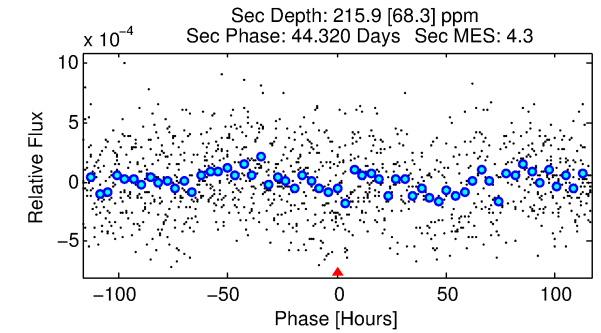
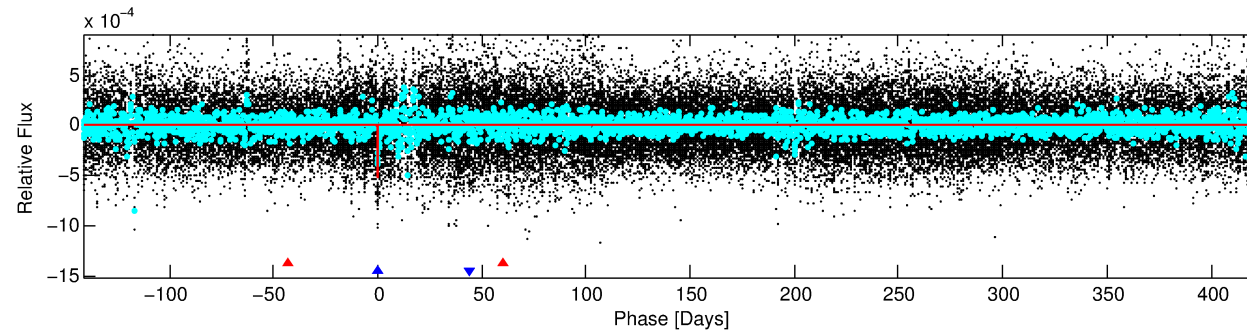
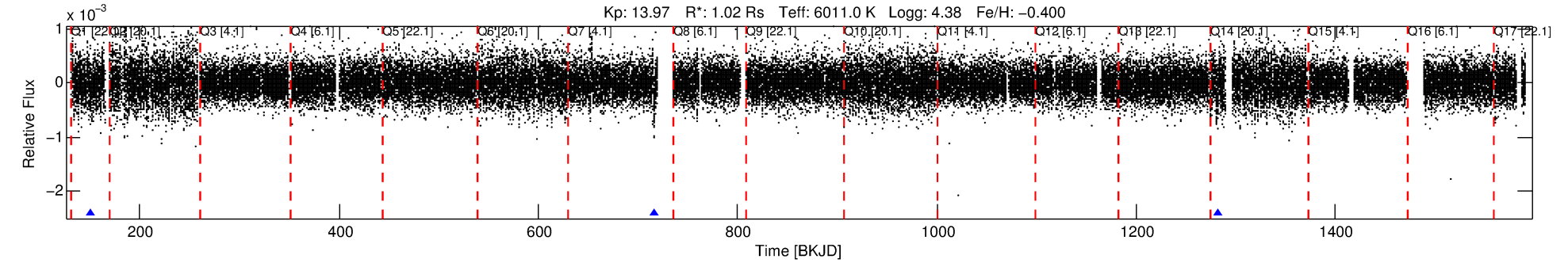
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011357555-02

No Significant Match Found

DV One-Page Summary

KIC: 11357555 Candidate: 2 of 2 Period: 565.552 d



DV Fit Results:

Period = 565.55163 [0.01786] d
Epoch = 150.2831 [0.0218] BKJD
Rp/R* = 0.0245 [0.0020]
a/R* = 106.97 [29.88]
b = 0.90 [0.06]
Seff = 0.72 [0.26]
Teff = 235 [21] K
Rp = 2.72 [0.77] Re
a = 1.2929 [0.2956] AU
Ag = 26842.71 [13072.91] [2.05sigma]
Teffp = 4654 [437] K [10.10sigma]

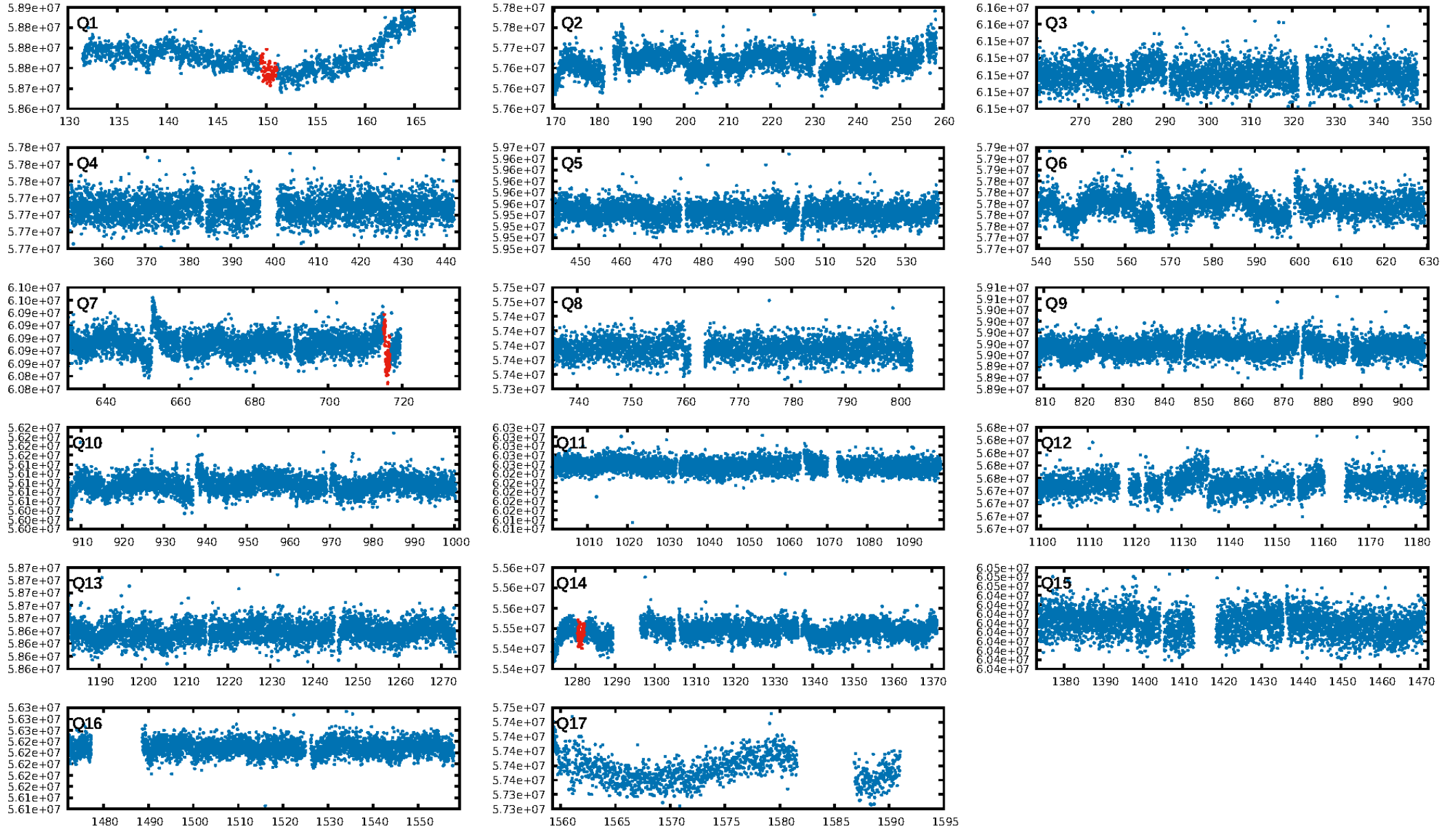
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [116.82sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.97e-18
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.3268
Centroid-sig: 56.6%
Centroid-so: 2.828 arcsec [5.40sigma]
OotOffset-rm: 9.972 arcsec [66.51sigma]
KicOffset-rm: 2.898 arcsec [18.58sigma]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

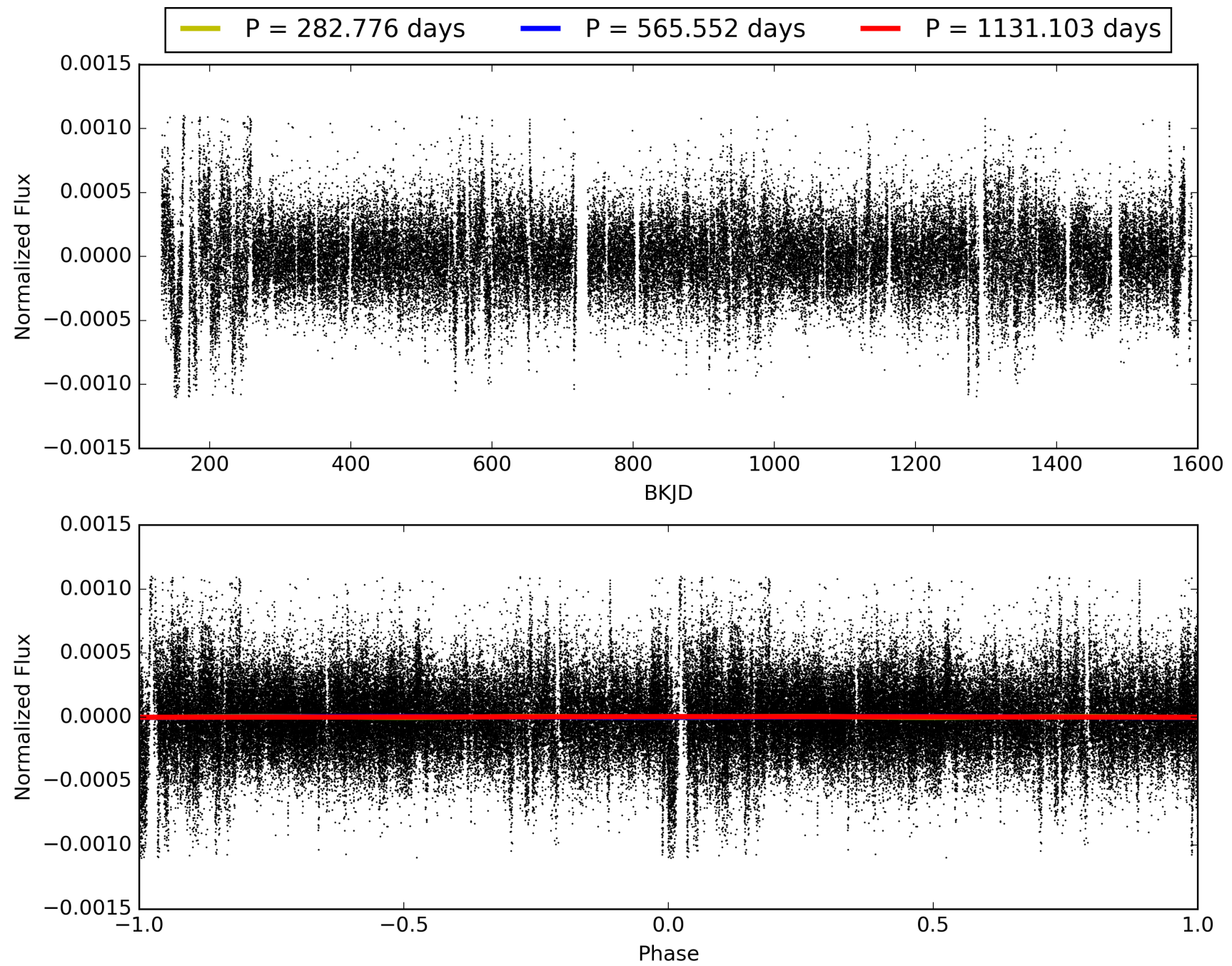
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:17:33 Z

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

TCE 011357555-02, PDC Light Curves

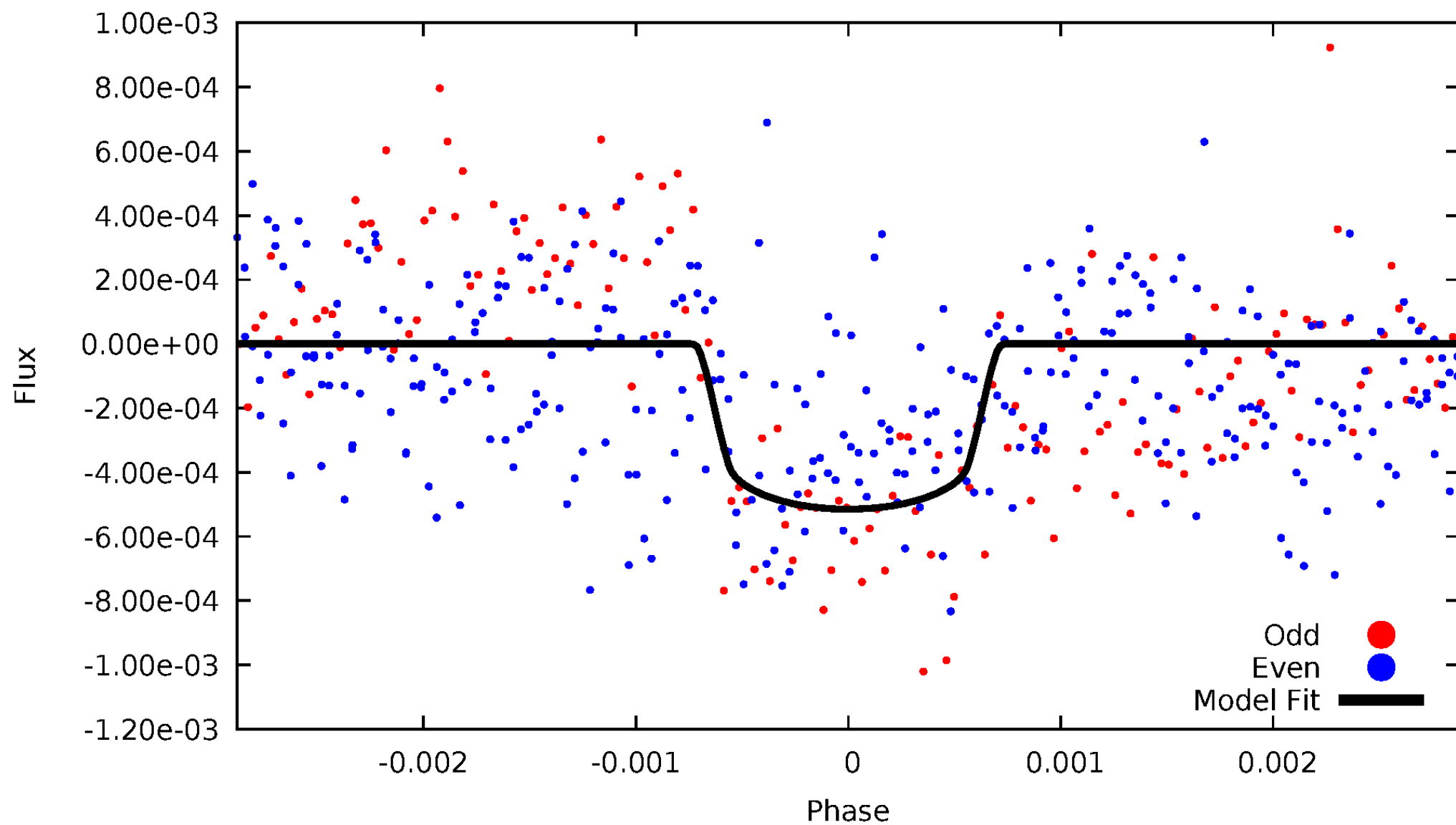


TCE 011357555-02



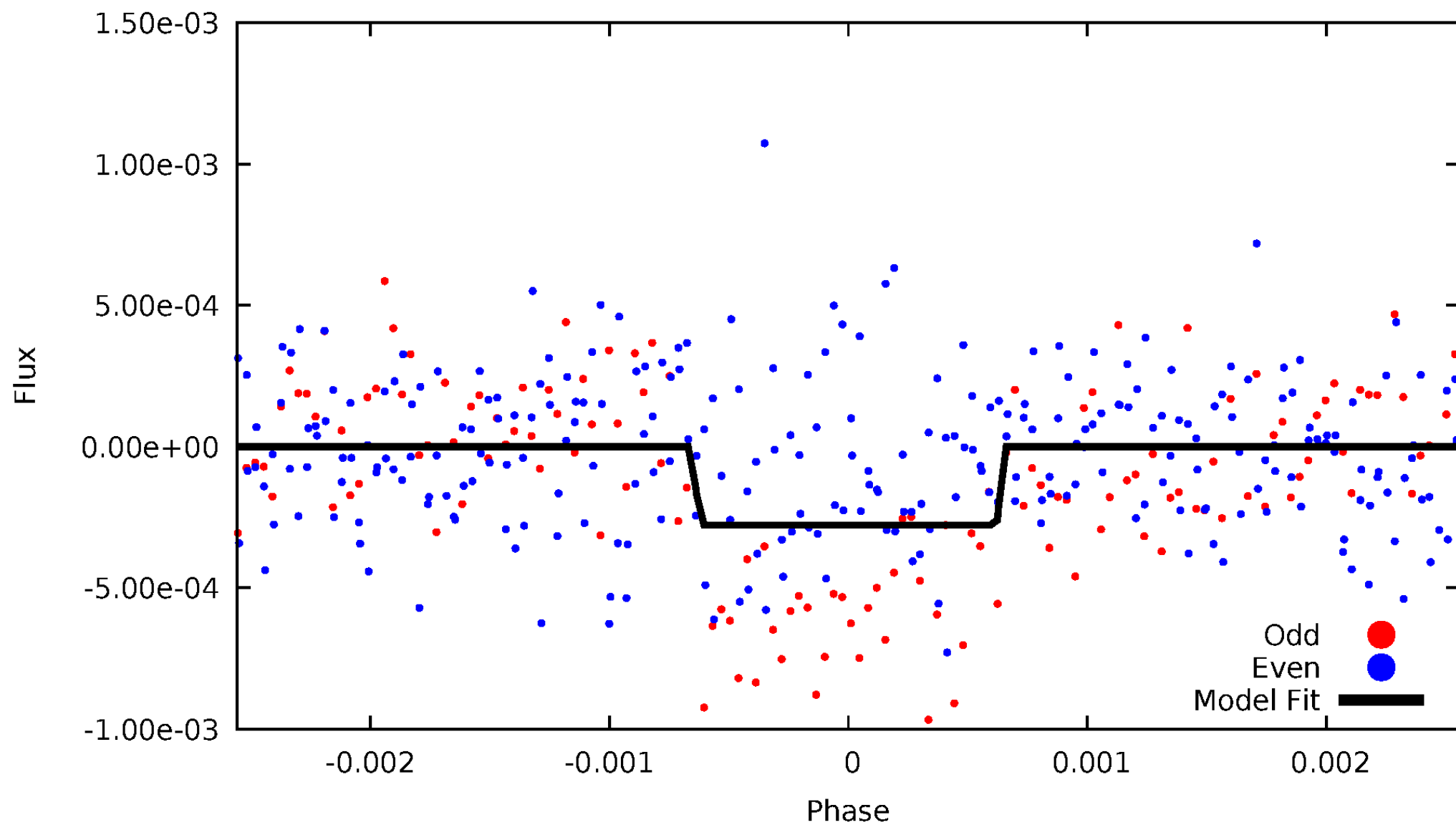
DV Odd/Even

TCE 011357555-02



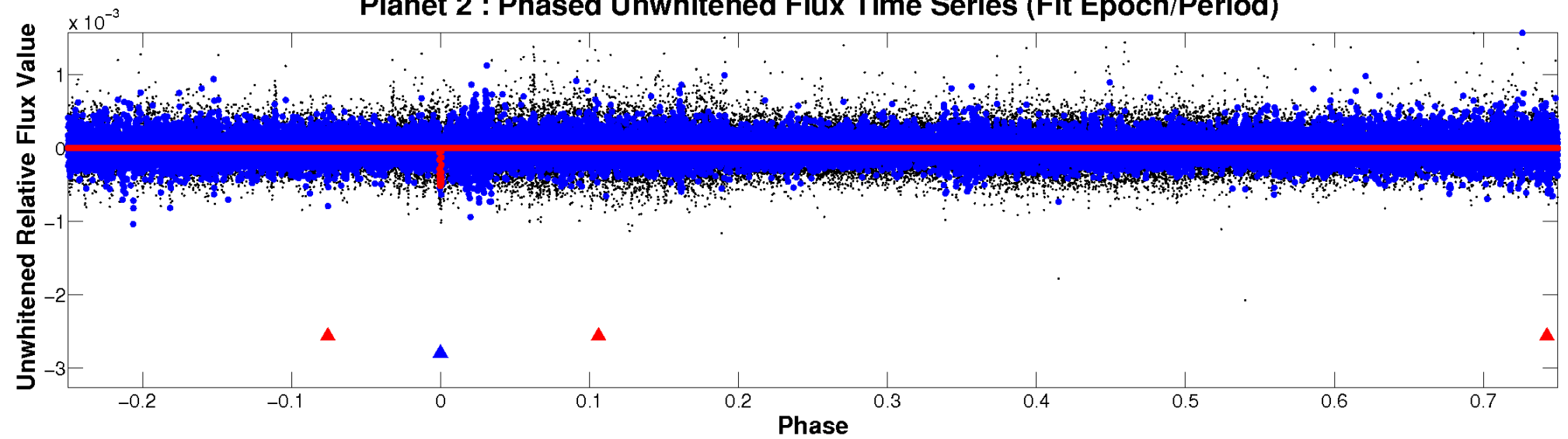
ALT Odd/Even

TCE 011357555-02

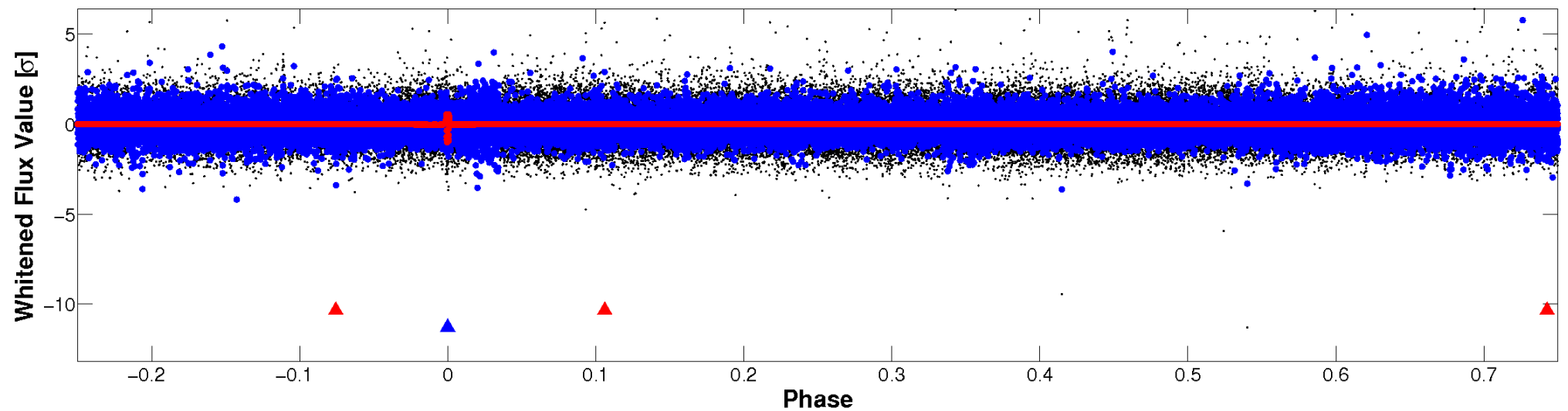


Non-Whitened Vs. Whitened Light Curve

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

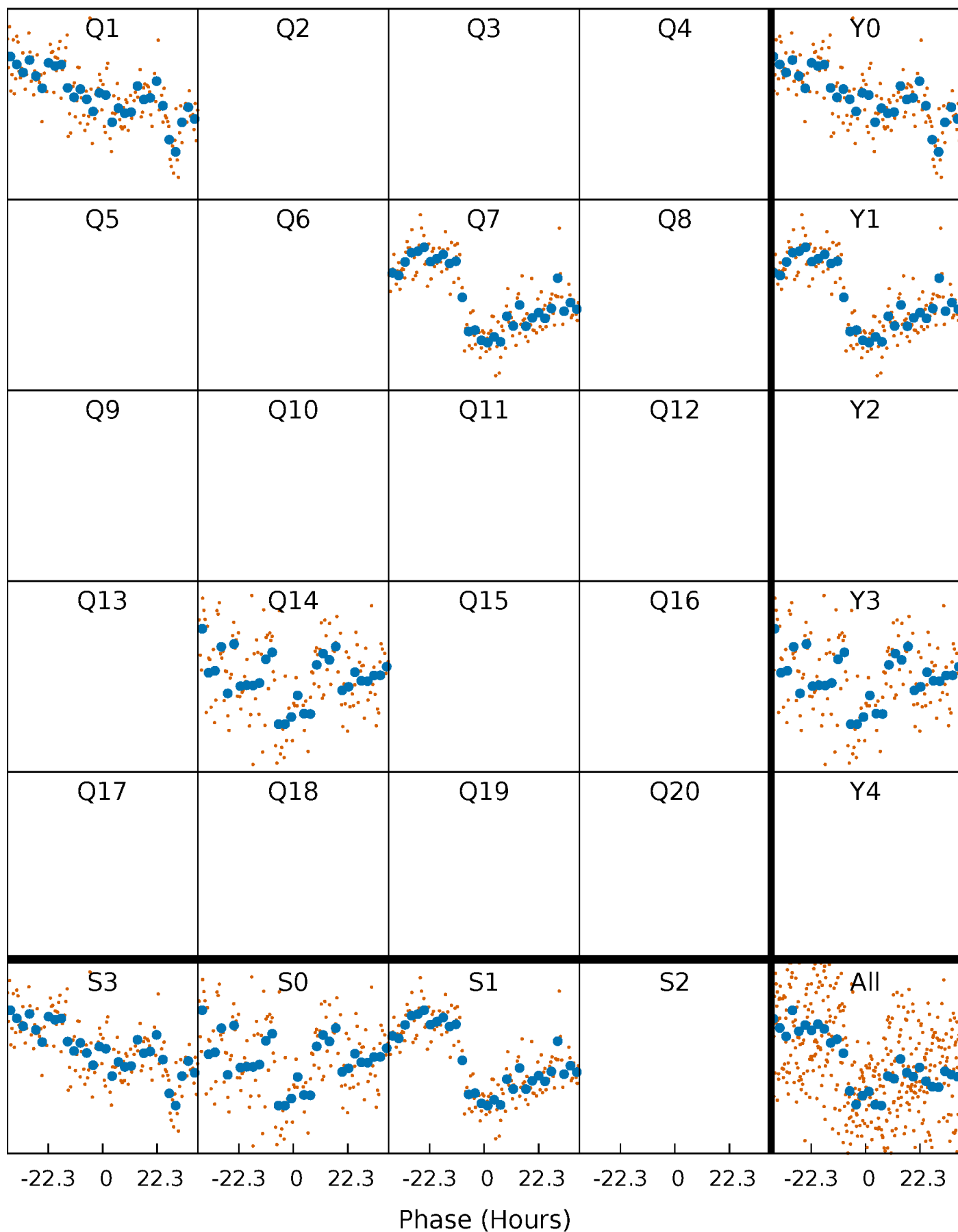


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



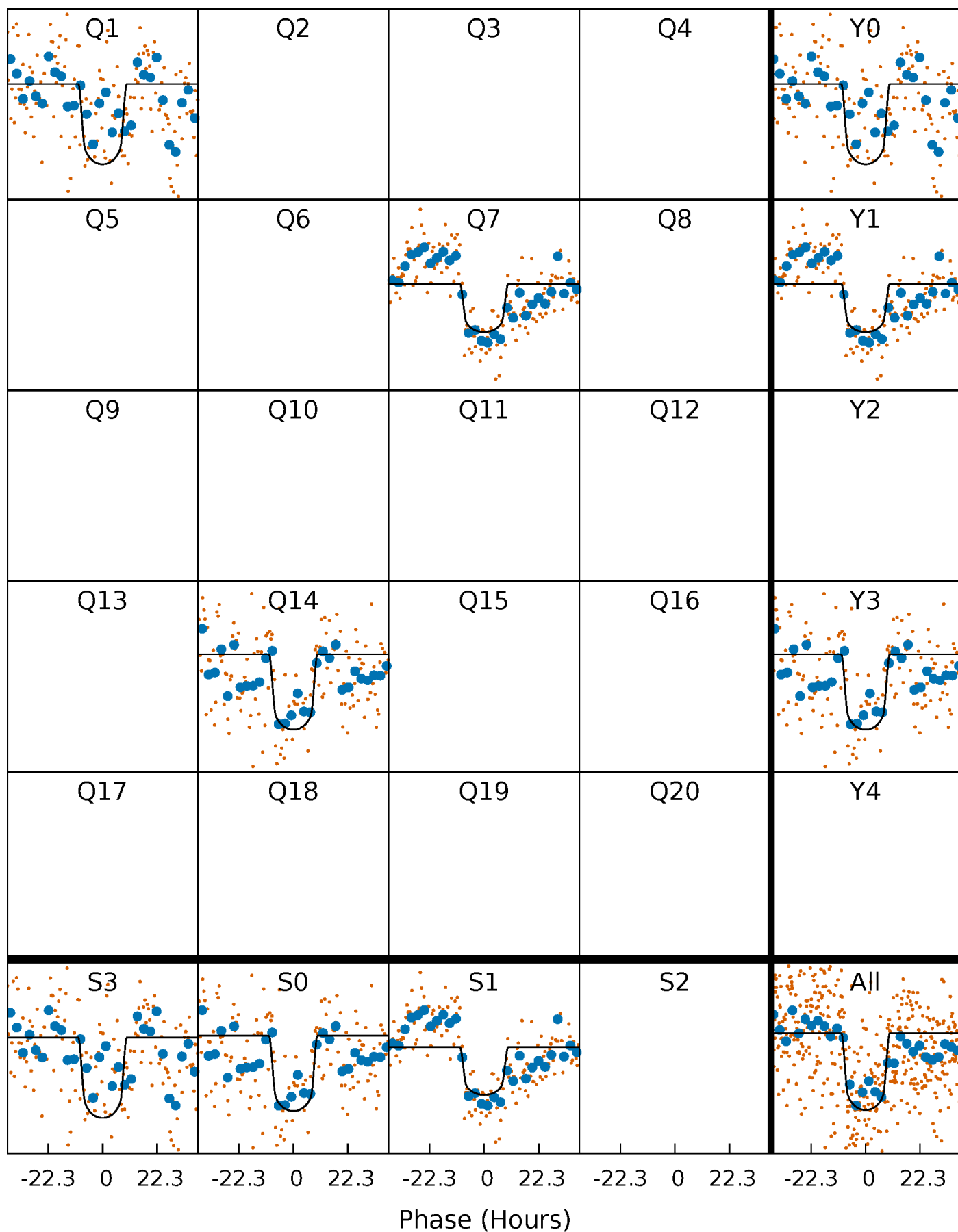
PDC Quarter-Phased Transit Curves

TCE 011357555-02 P=565.551626 Days $T_0=150.283063$ (BKJD)



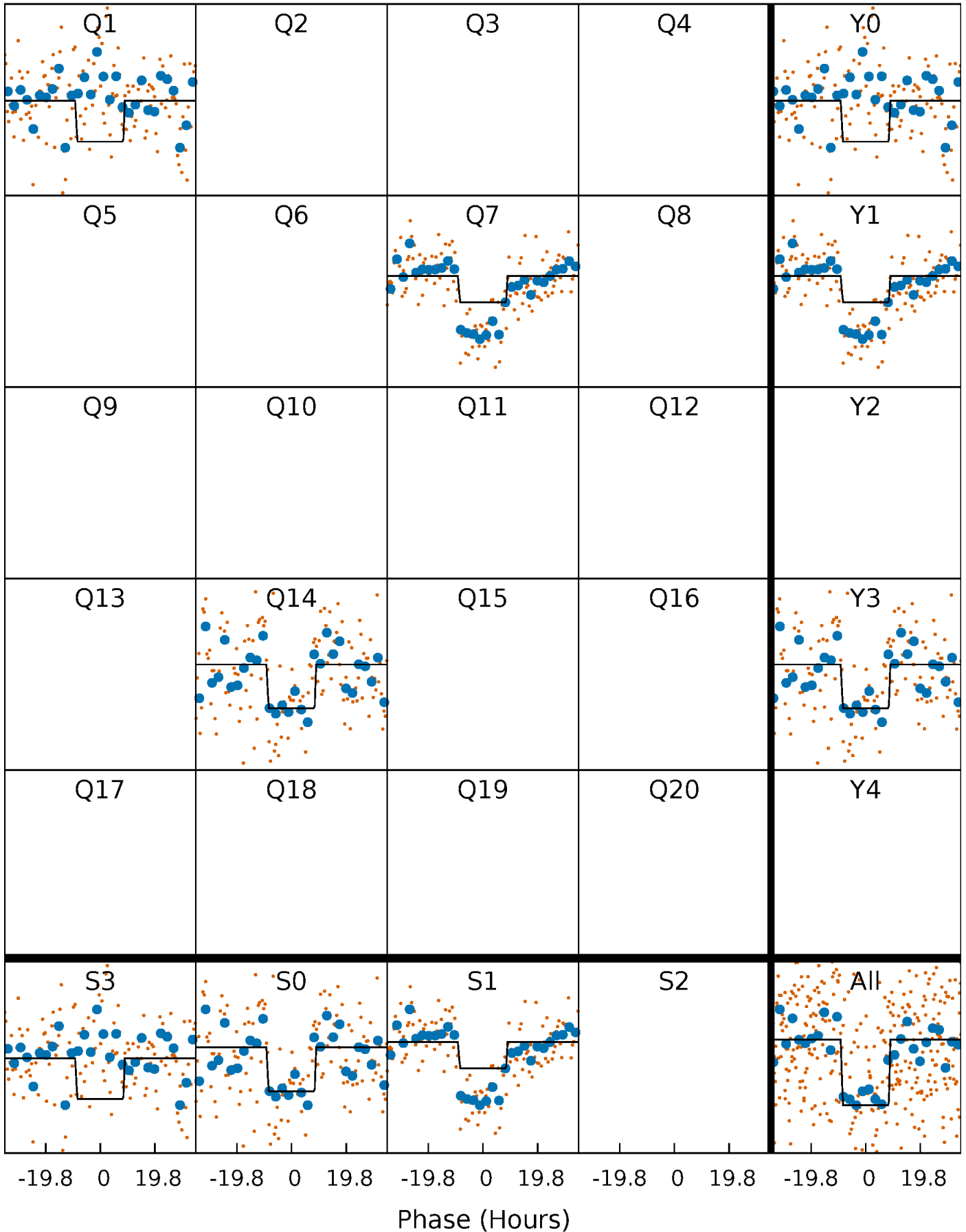
DV Quarter-Phased Transit Curves

TCE 011357555-02 P=565.551626 Days $T_0=150.283063$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

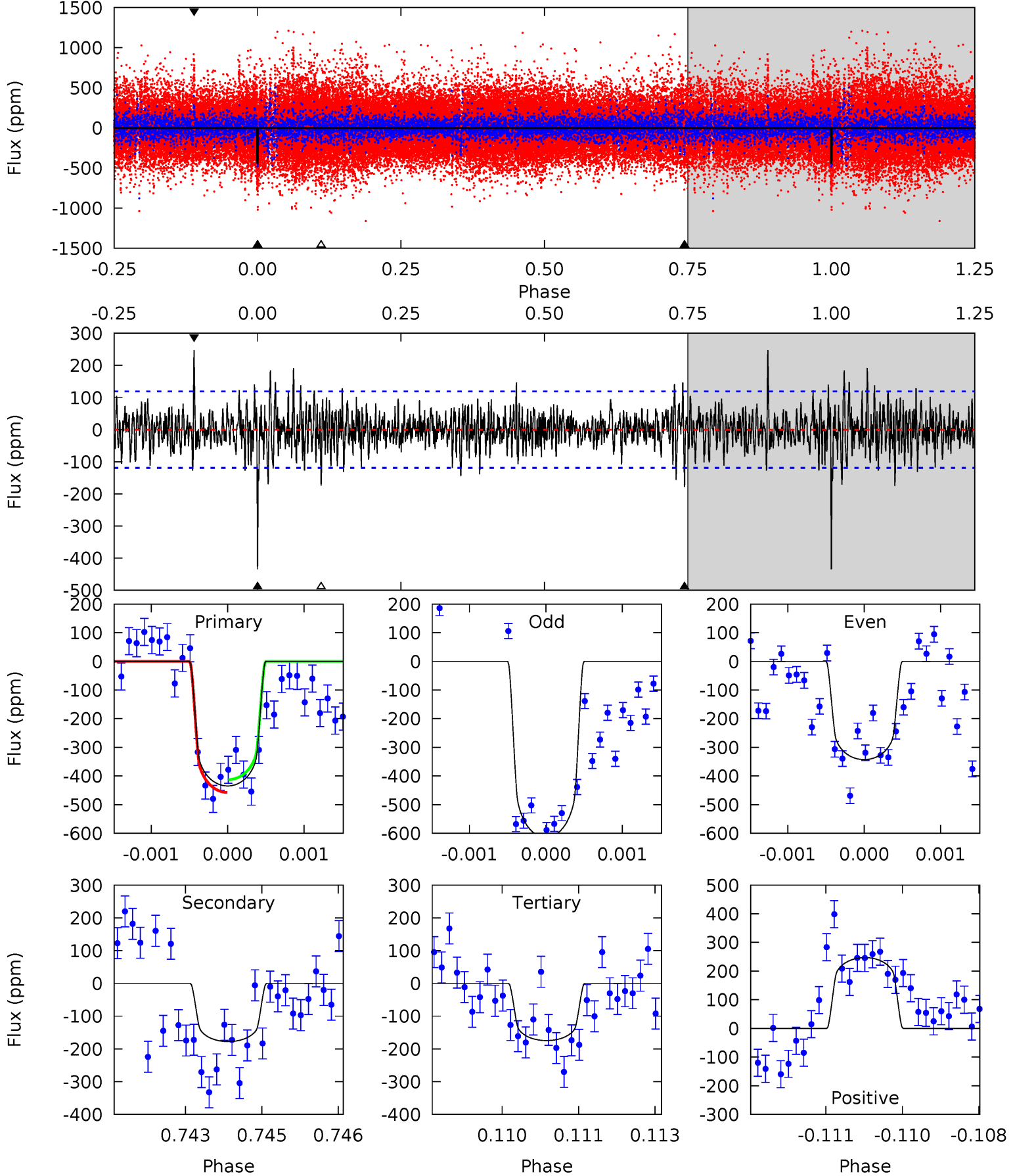
TCE 011357555-02 P=565.580507 Days $T_0=150.264126$ (BKJD)



DV Model-Shift Uniqueness Test

011357555-02, P = 565.551626 Days, E = 150.283063 Days

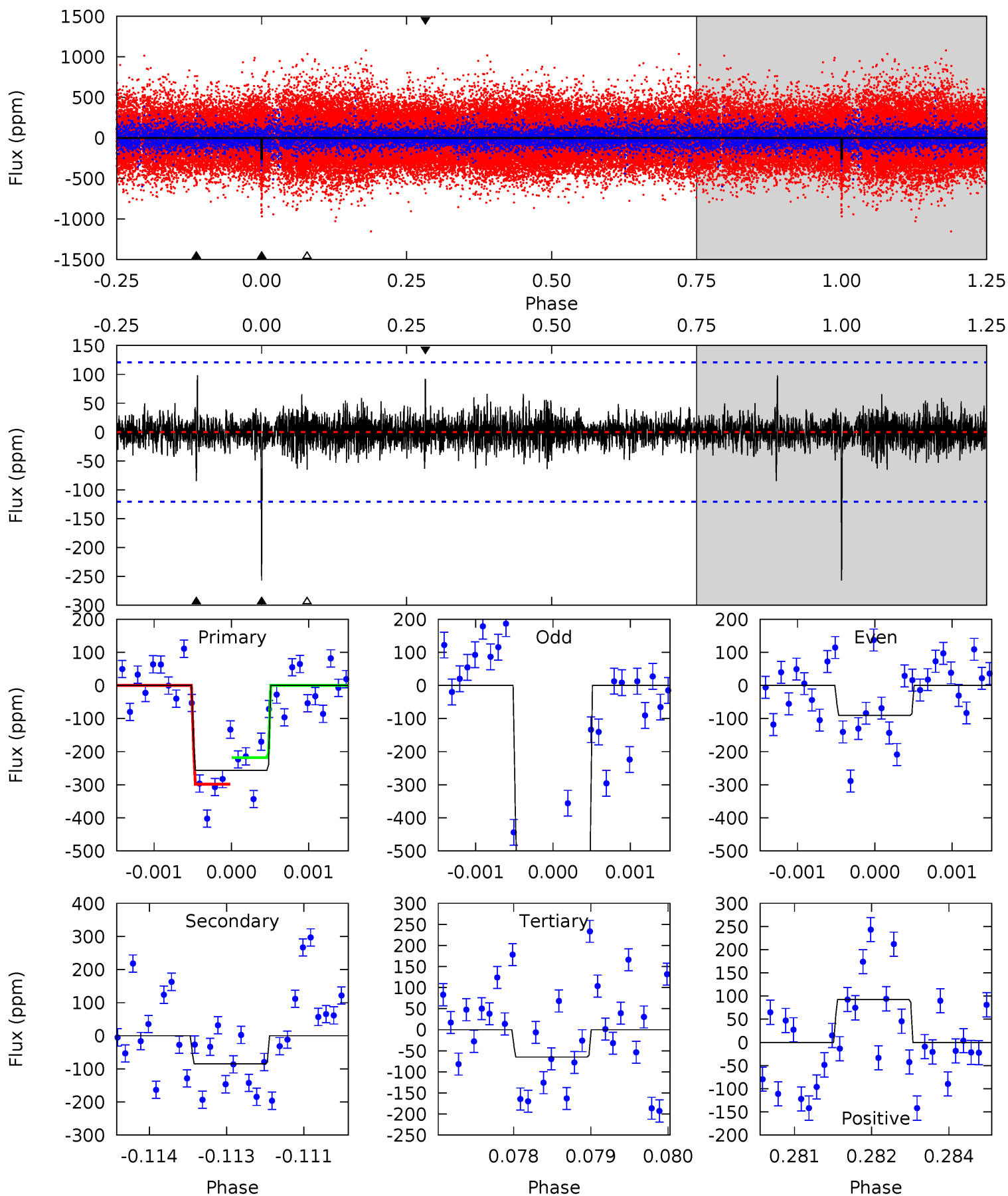
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	8.04	7.90	11.2	5.38	3.18	2.01	11.8	8.49	0.14	-3.14	5.79	1.01	0.36	1.01



Alt Model-Shift Uniqueness Test

011357555-02, P = 565.580507 Days, E = 150.264126 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.80	2.90	4.13	5.41	3.22	0.76	8.60	7.37	0.89	-0.34	10.4	0.95	0.28	1.80



Stellar Parameters For KIC 011357555

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6011^{+161}_{-179}	$4.378^{+0.148}_{-0.181}$	$-0.400^{+0.300}_{-0.300}$	$1.017^{+0.277}_{-0.185}$	$0.900^{+0.120}_{-0.087}$	$1.205^{+0.812}_{-0.596}$
	+3%/-3%	+3%/-4%	+75%/-75%	+27%/-18%	+13%/-10%	+67%/-49%
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 011357555-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-178 ± 22	$2.77^{+0.43}_{-0.38}$	331^{+22}_{-21}	4598^{+205}_{-213}	21179^{+7654}_{-5459}
Alt.	-85 ± 22	$1.89^{+0.36}_{-0.30}$	329^{+23}_{-19}	4610^{+358}_{-345}	21748^{+11745}_{-7984}

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

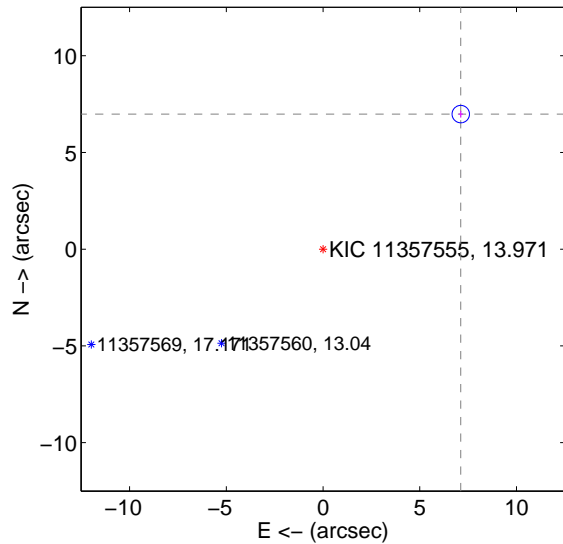
Supplemental centroid analysis for 011357555-02. Kepler magnitude: 13.97. Transit SNR 9.57

There are 1 quarters with good PRF difference image offsets

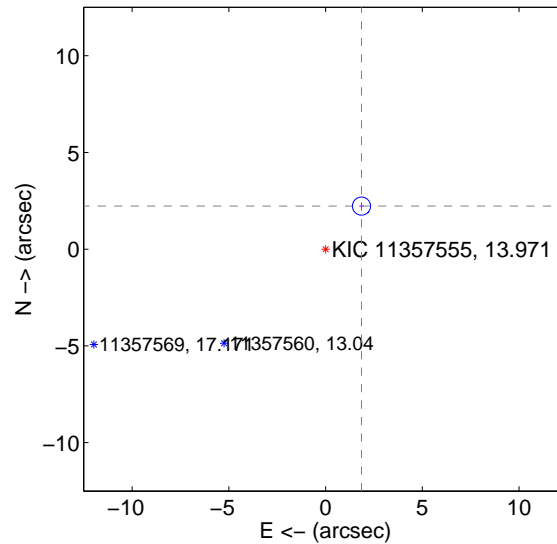
The OOT PRF centroid is offset from the target star catalog position by about 7.09 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.972 ± 0.150	66.51	-7.119 ± 0.116	6.982 ± 0.179
PRF-fit source offset from KIC position	2.898 ± 0.156	18.58	-1.856 ± 0.116	2.226 ± 0.179
photometric centroid source offset	2.83 ± 0.52	5.40	2.25 ± 0.45	-1.71 ± 0.63

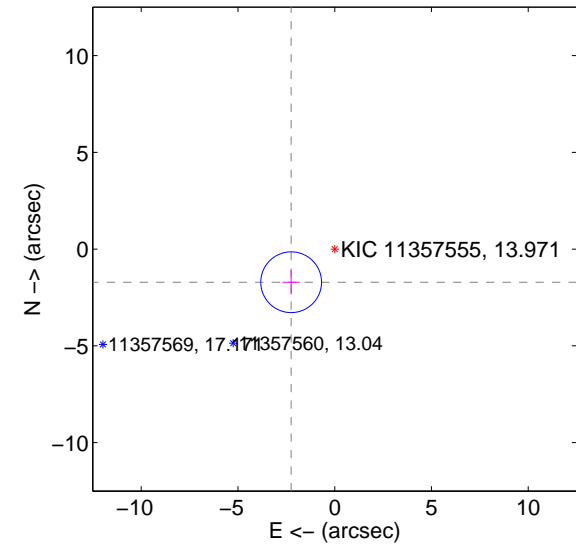
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

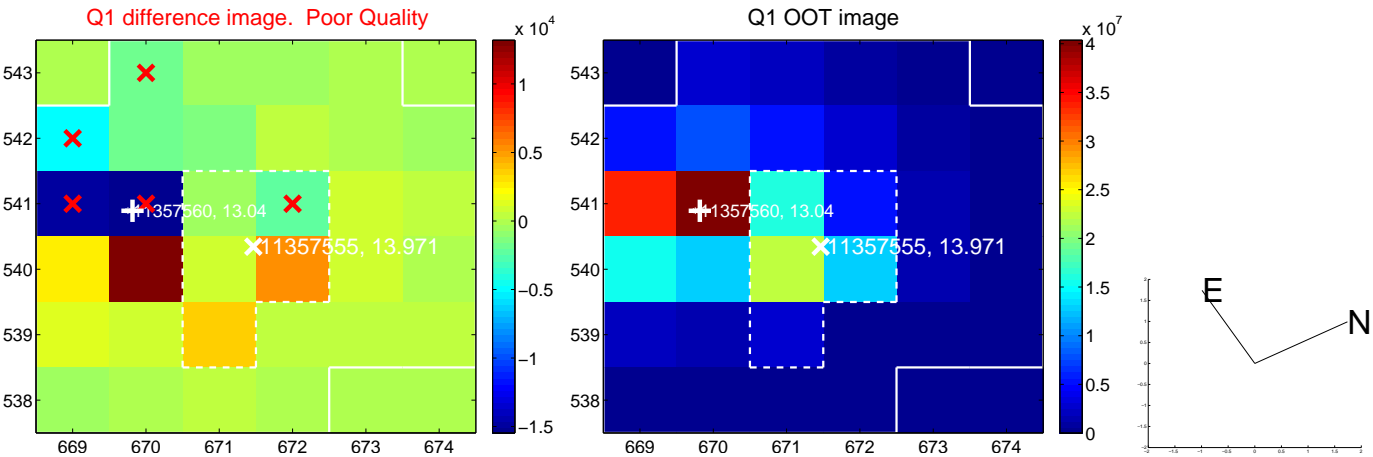


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



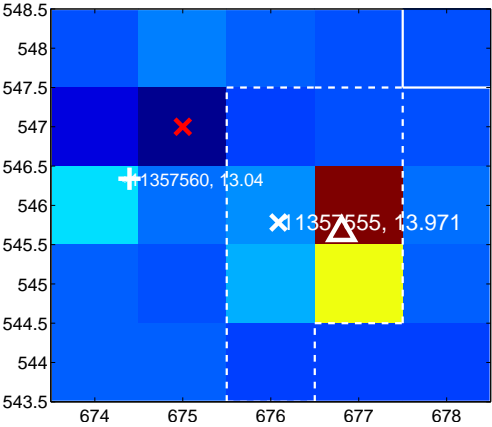
Q6 no difference image



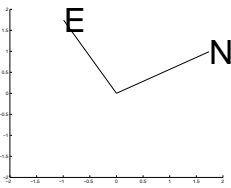
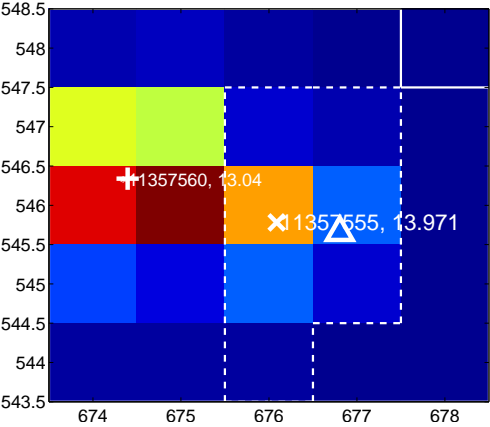
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



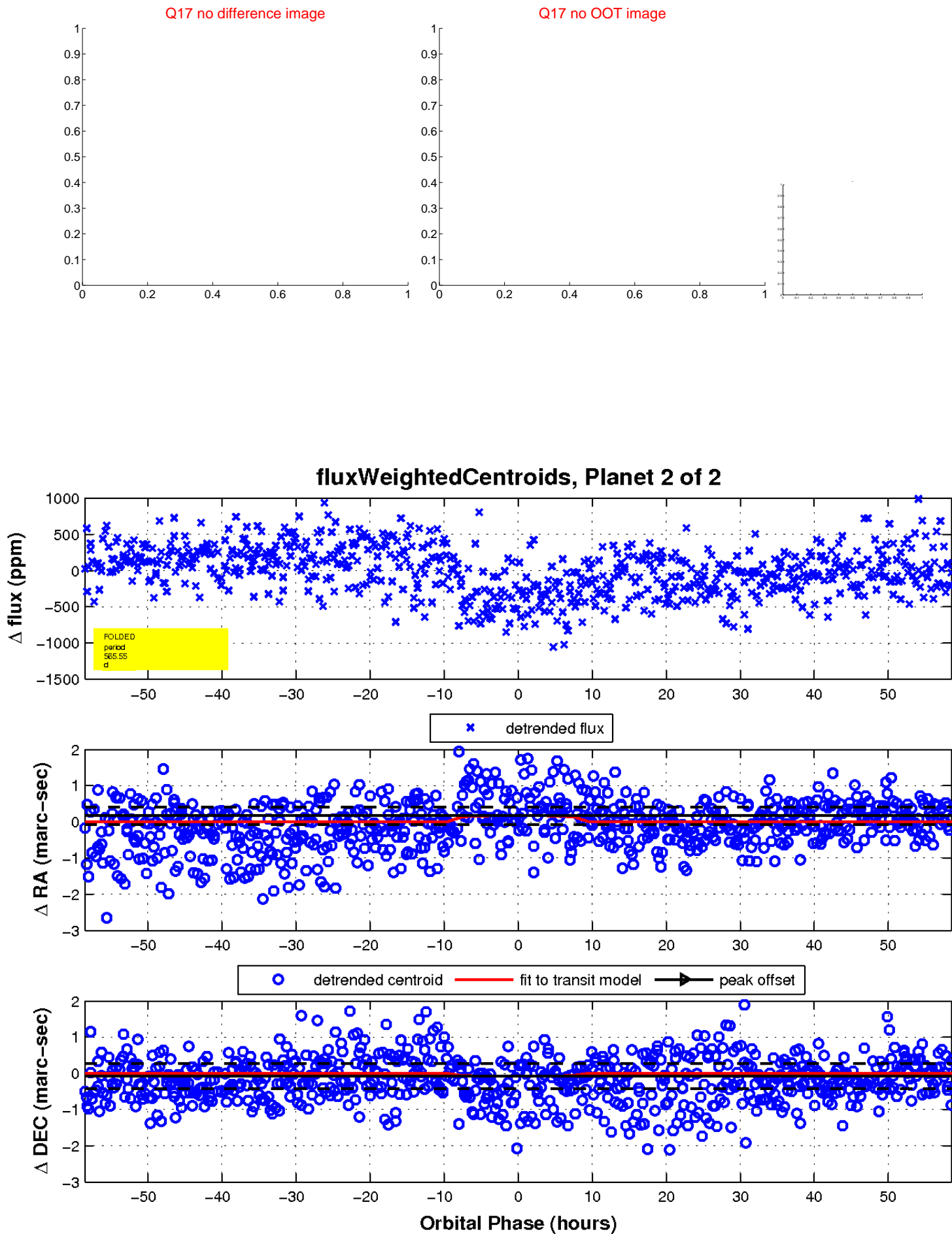
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

