

KIC 007018277

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})
007018277-01	OBS	No	1.567537	131.555267	984.4	6.000	9.6	-1.0	0.76	5244	2.33	694.55
007018277-02	OBS	No	326.633590	201.956636	2856.7	3.170	12.0	6.8	0.76	5244	4.15	0.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007018277-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
007018277-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— MOD_POS_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.

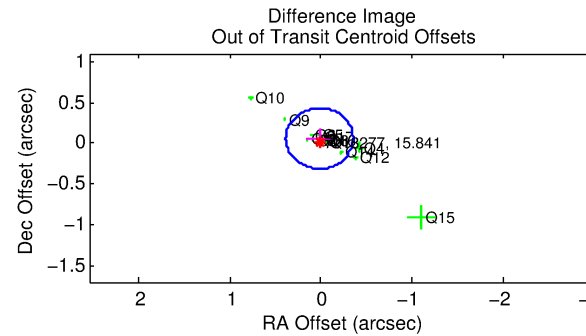
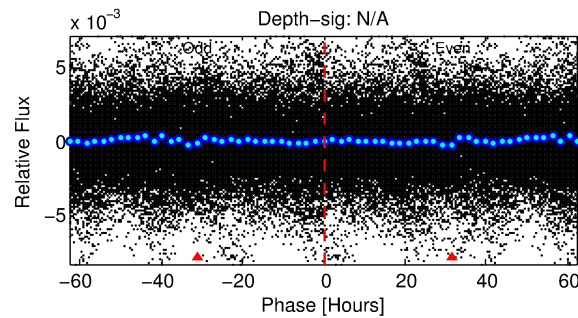
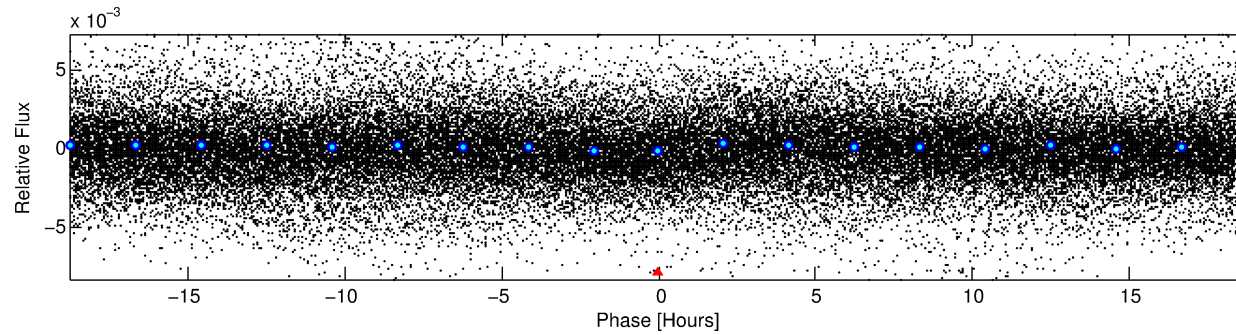
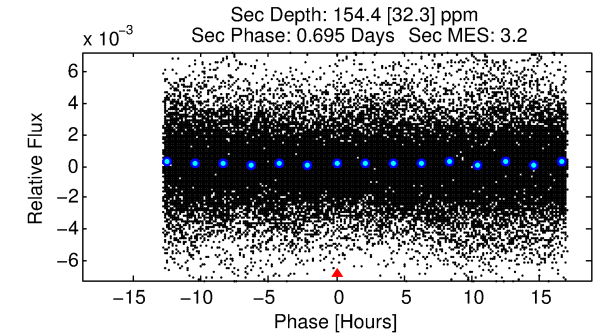
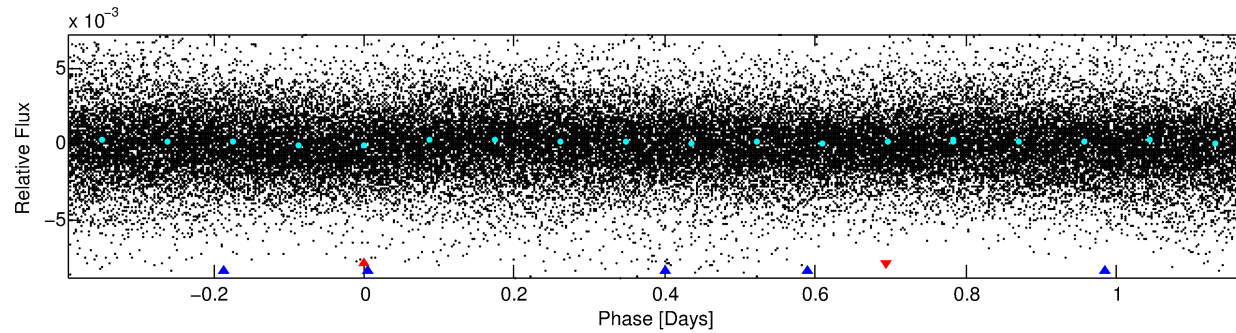
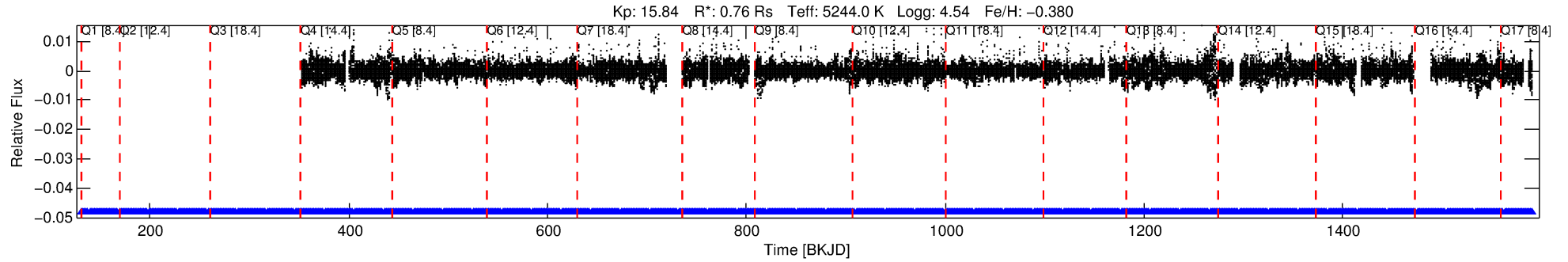
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007018277-01

No Significant Match Found

DV One-Page Summary

KIC: 7018277 Candidate: 1 of 2 Period: 1.568 d



TPS TCE Results:

Period = 1.56754 d
Epoch = 131.5553 BKJD

DV fit results are unavailable

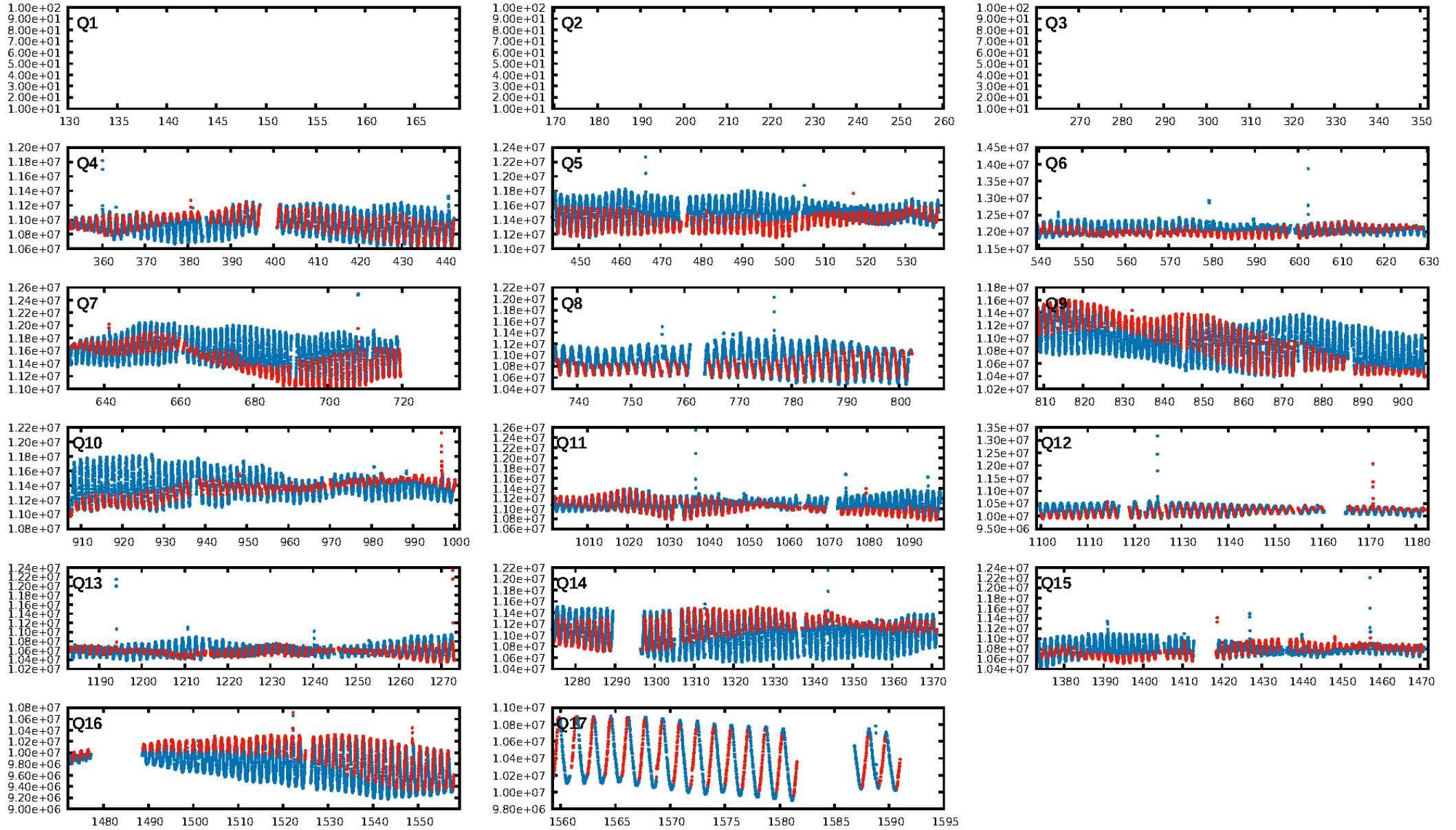
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1149.71 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.82e-15
RollingBand-fgt: 1.00 [720/720]
GhostDiagnostic-chr: 0.4772
Centroid-sig: 0.0%
Centroid-so: 0.310 arcsec [2.19 σ]
OotOffset-rm: 0.061 arcsec [0.50 σ]
KicOffset-rm: 0.090 arcsec [0.70 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 1.00 [14/14]

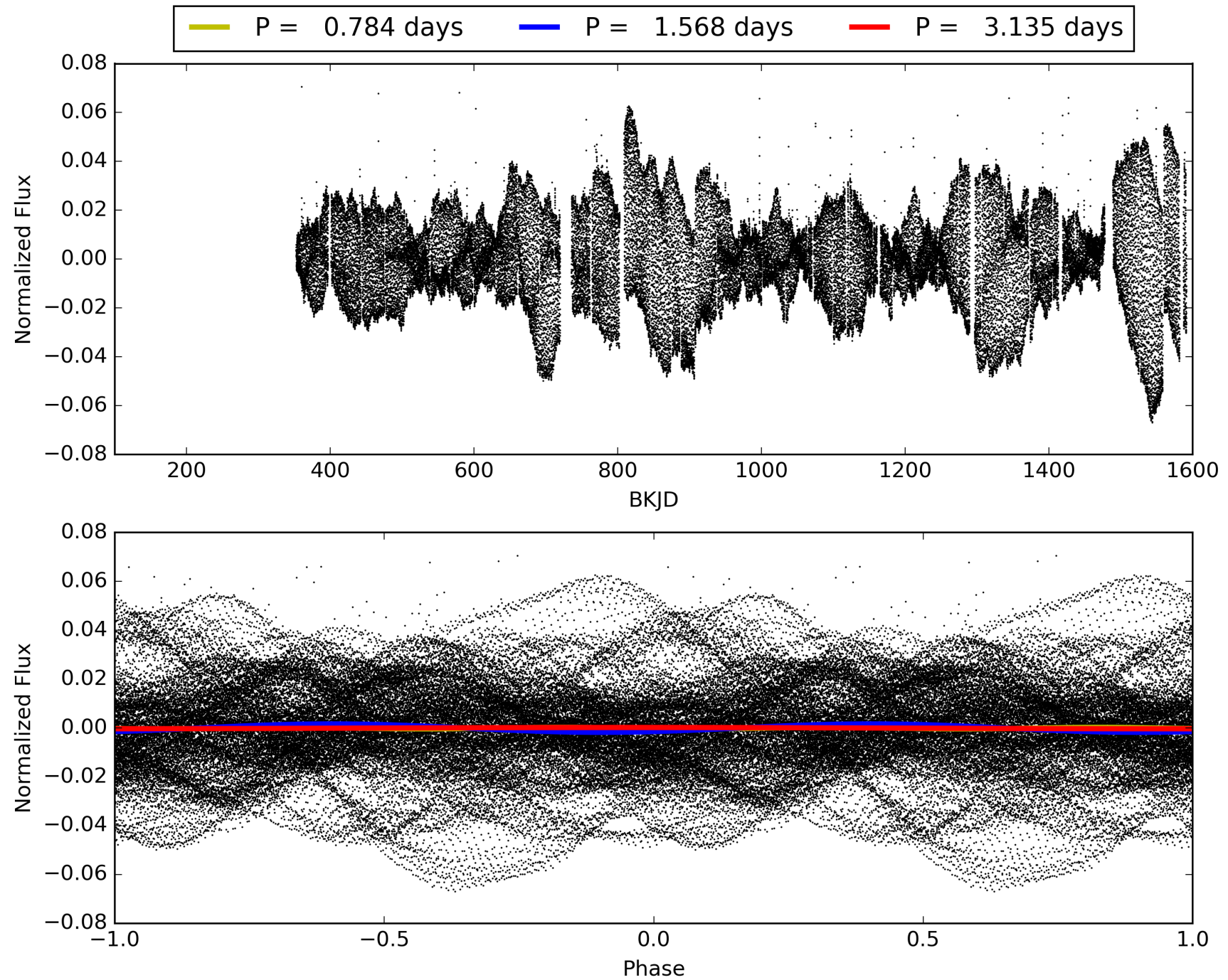
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:40:44 Z

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

TCE 007018277-01, PDC Light Curves

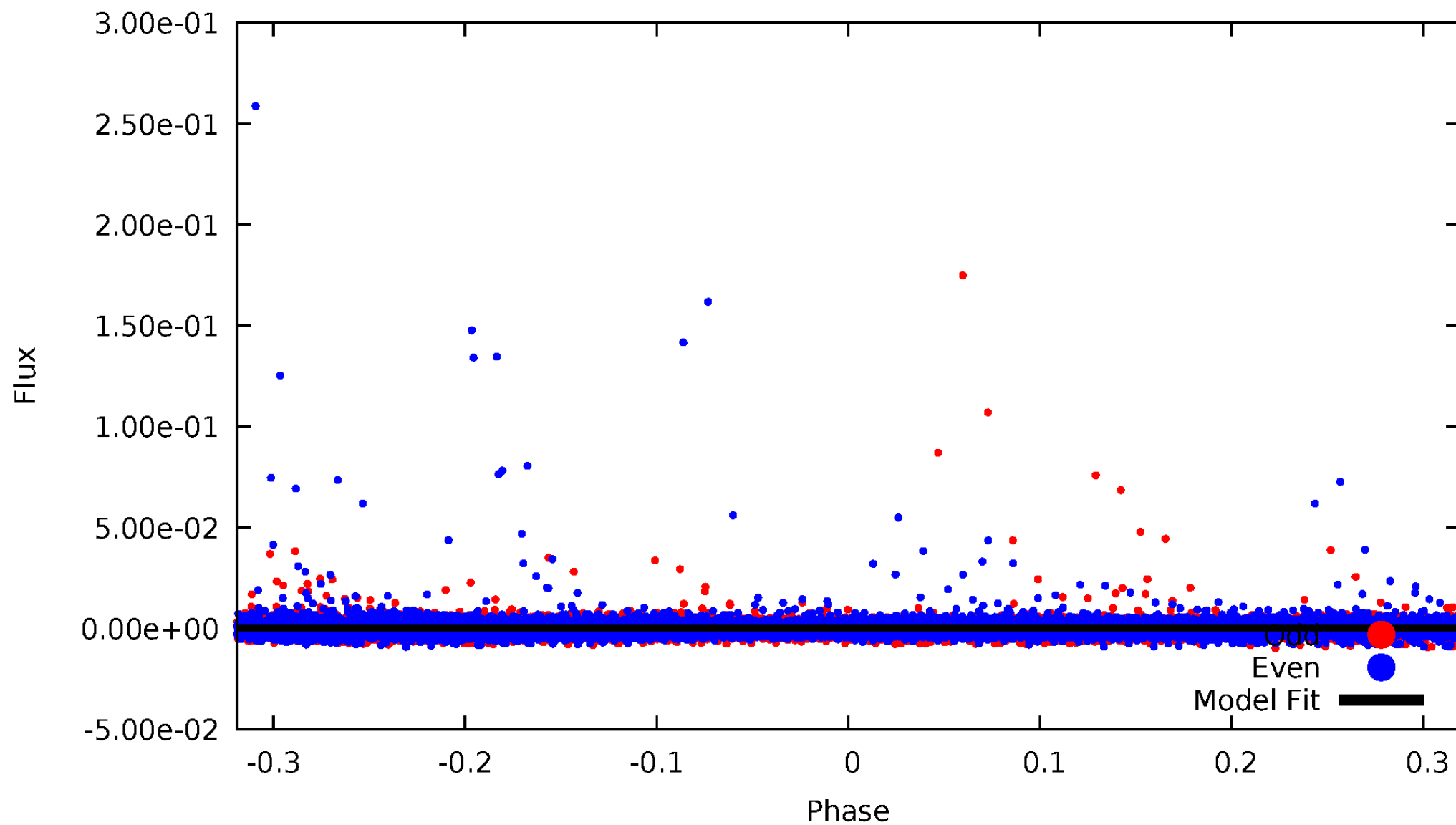


TCE 007018277-01



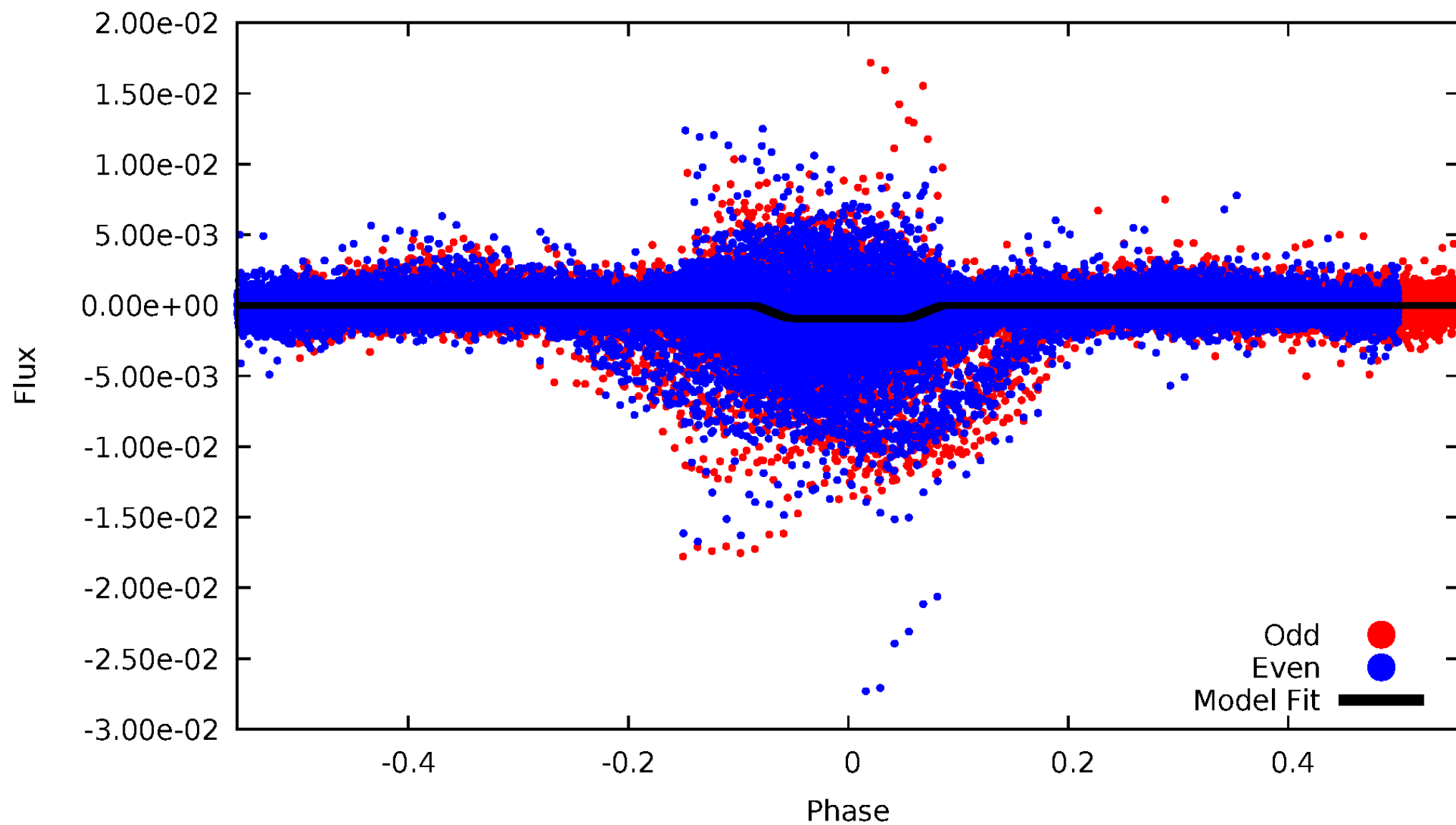
DV Odd/Even

TCE 007018277-01

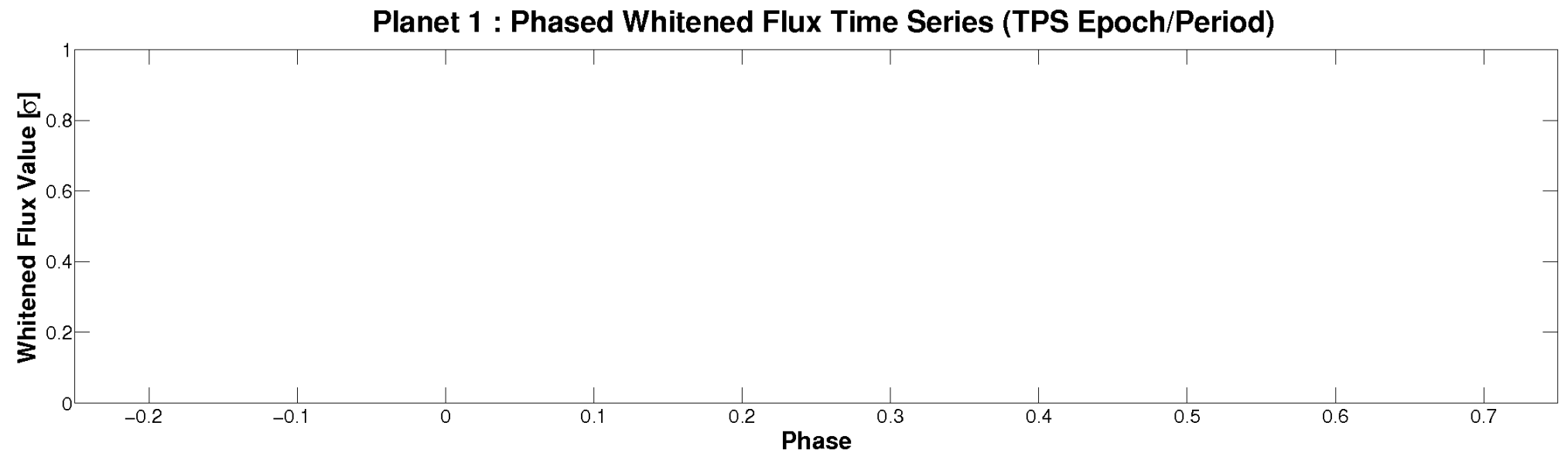
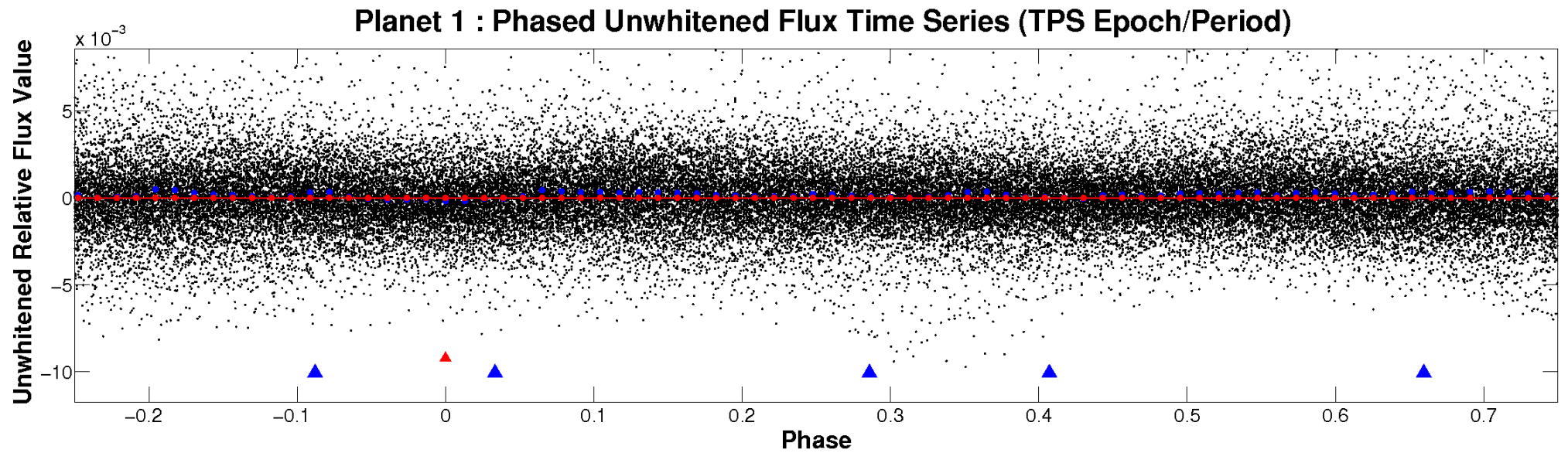


ALT Odd/Even

TCE 007018277-01

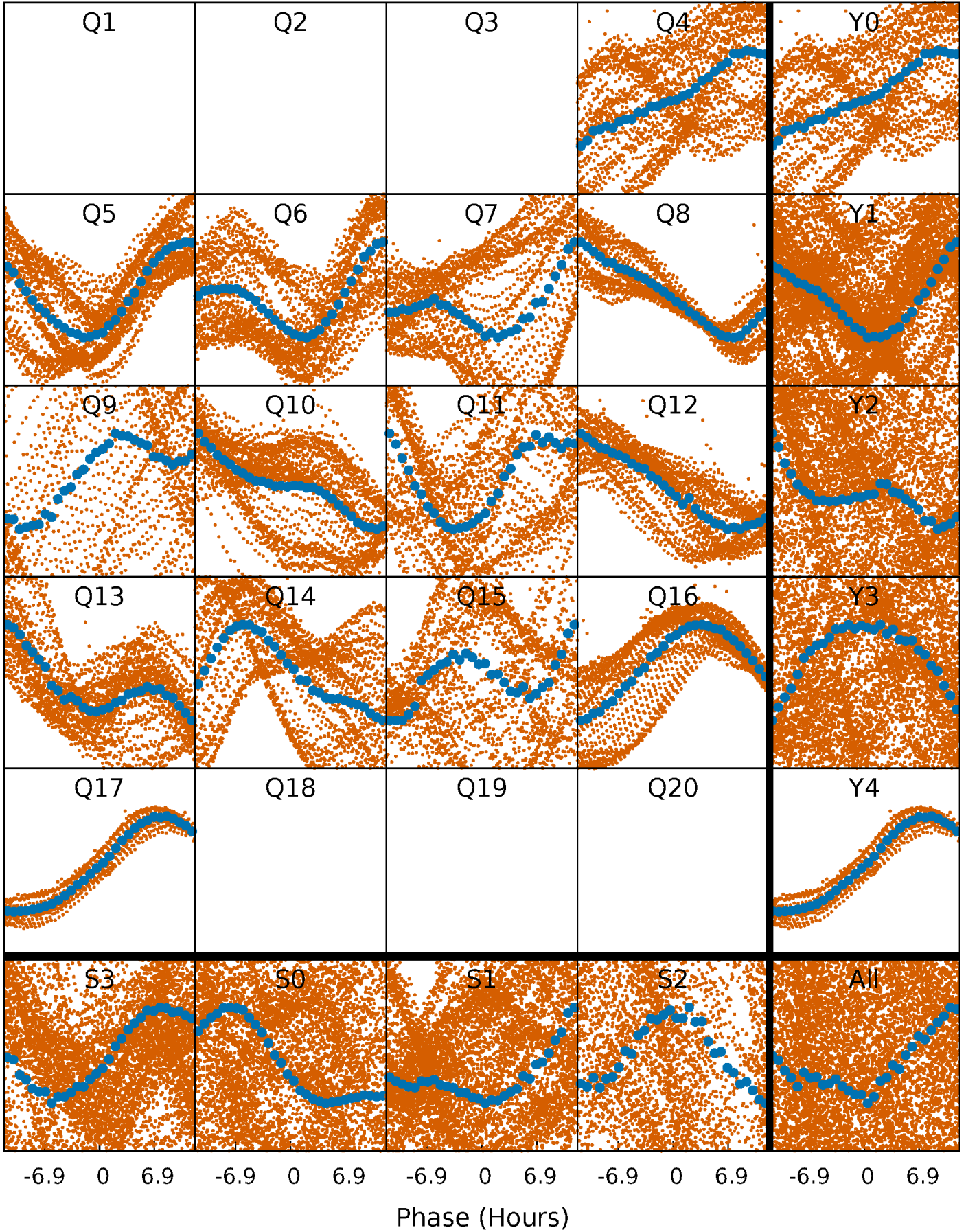


Non-Whitened Vs. Whitened Light Curve



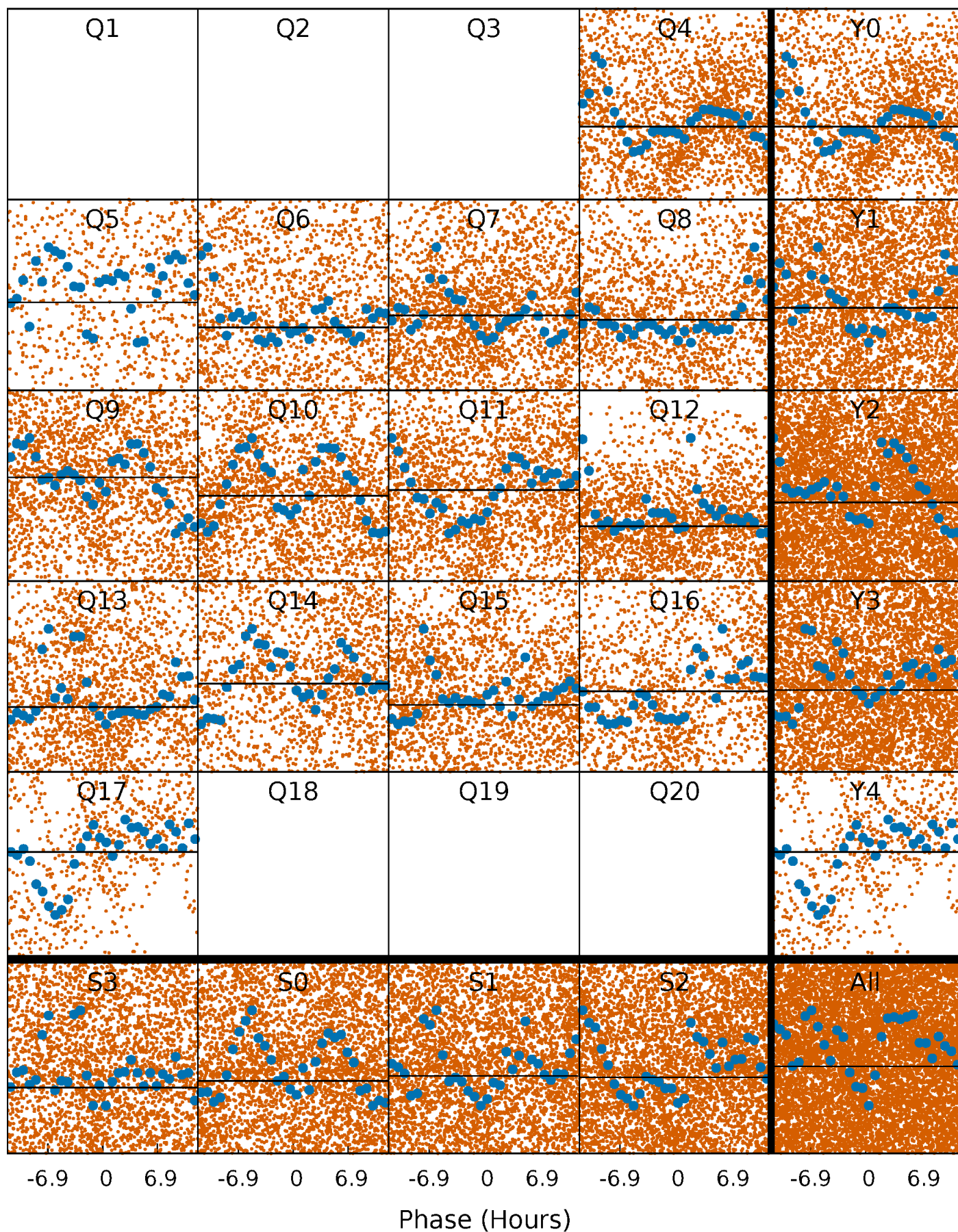
PDC Quarter-Phased Transit Curves

TCE 007018277-01 P= 1.567537 Days $T_0=131.555266$ (BKJD)



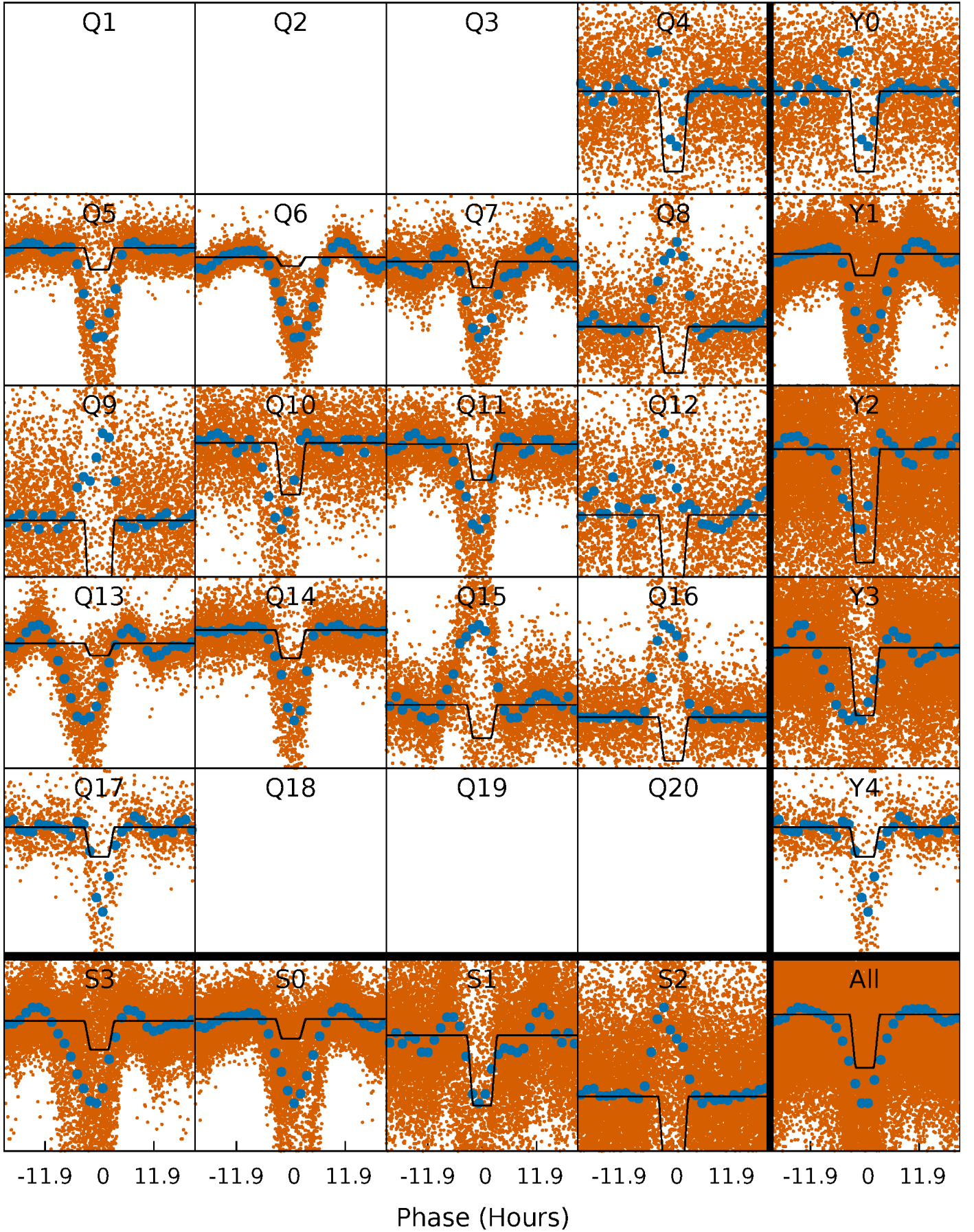
DV Quarter-Phased Transit Curves

TCE 007018277-01 P= 1.567537 Days $T_0=131.555266$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

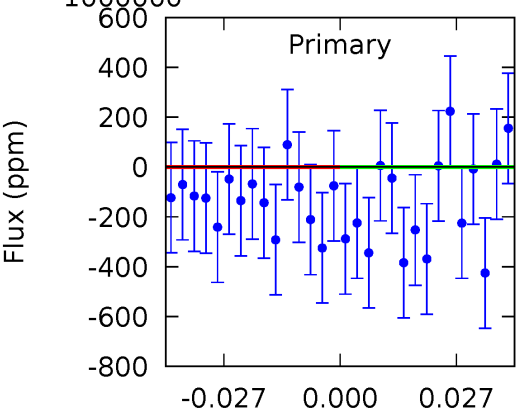
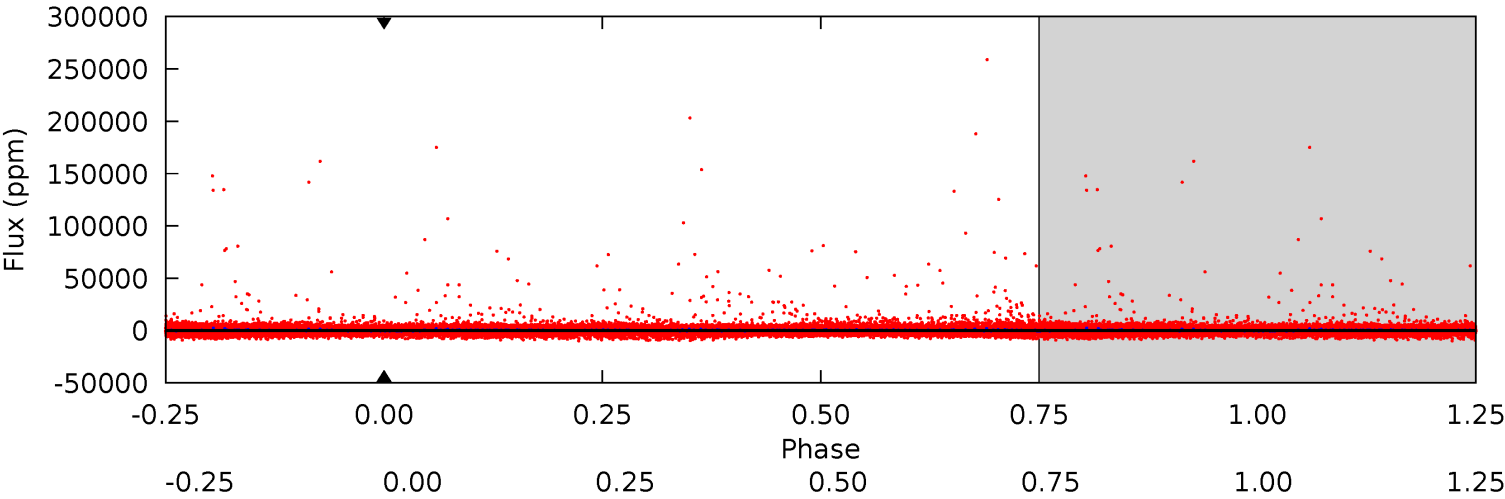
TCE 007018277-01 P= 1.567537 Days $T_0=131.603533$ (BKJD)



DV Model-Shift Uniqueness Test

007018277-01, P = 1.567537 Days, E = 131.555266 Days

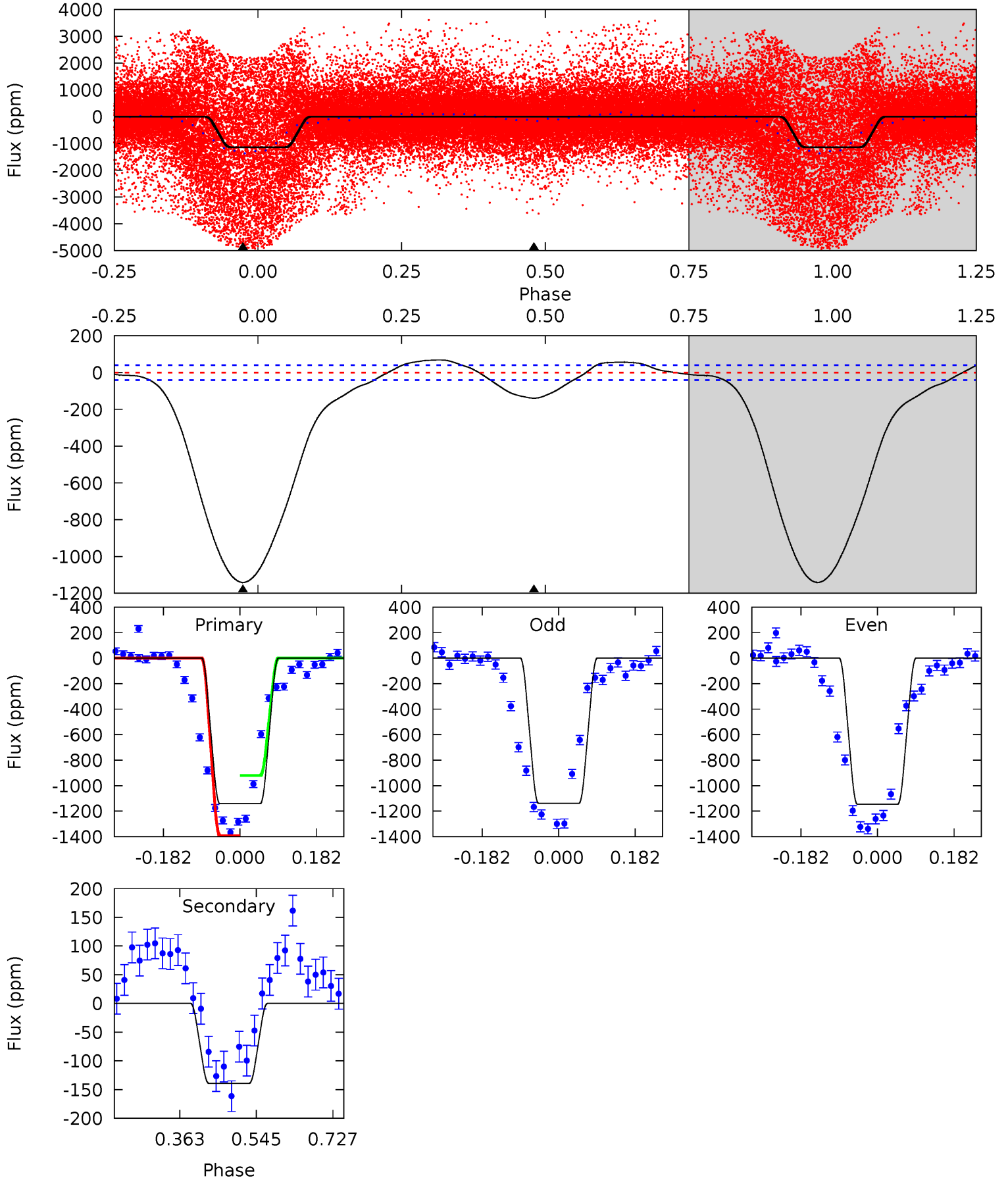
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007018277-01, P = 1.567537 Days, E = 131.603533 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
125.1	15.3	0	0	4.44	1.34	4.73	125.1	125.1	15.3	15.3	0.34	1.28	0.06	25.8



Stellar Parameters For KIC 007018277

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5244^{+202}_{-166}	$4.536^{+0.082}_{-0.075}$	$-0.380^{+0.350}_{-0.300}$	$0.758^{+0.095}_{-0.085}$	$0.720^{+0.107}_{-0.054}$	$2.328^{+0.823}_{-0.557}$
	+4%/-3%	+2%/-2%	+92%/-79%	+13%/-11%	+15%/-8%	+35%/-24%
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 007018277-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.69^{+6.59}_{-4.59}$	1824^{+89}_{-72}	3406^{+12854}_{-16839}	$3.783^{+1453.778}_{-864.153}$
Alt.	-139 ± 9	$6.33^{+7.09}_{-4.22}$	1832^{+84}_{-83}	2653^{+1237}_{-4644}	$1.069^{+8.426}_{-0.831}$

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 $A_{obs} \gg 1.0$

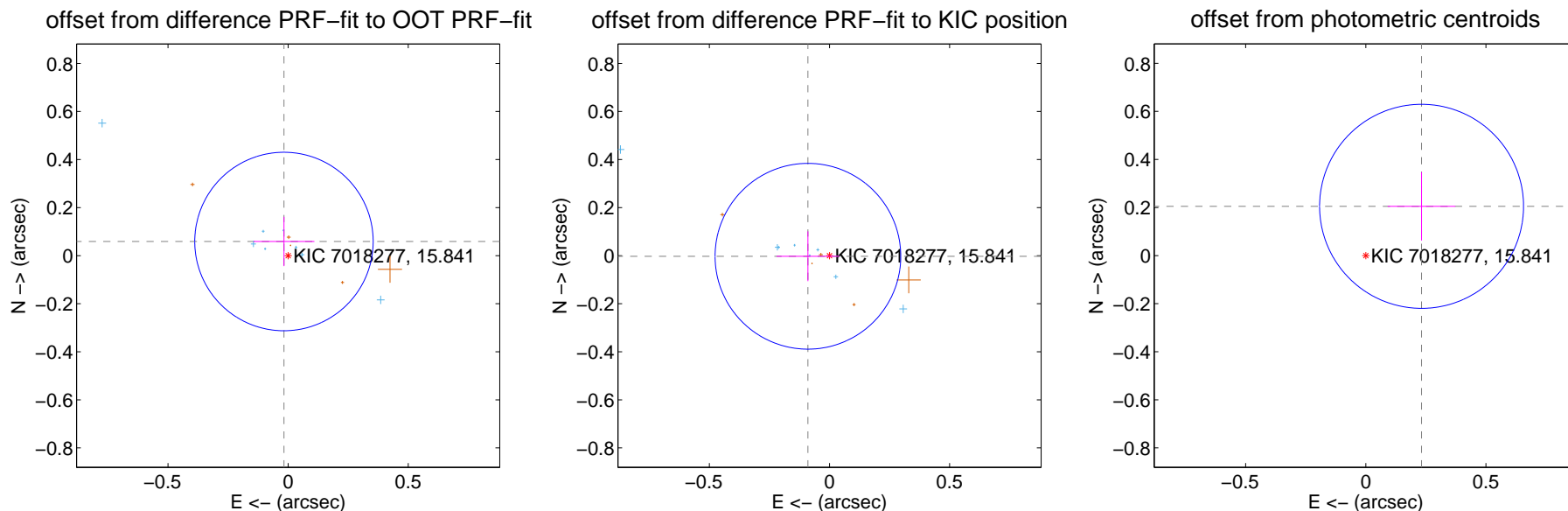
DV Centroid Data

Supplemental centroid analysis for 007018277-01. Kepler magnitude: 15.84. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.124	0.50	0.017 ± 0.127	0.059 ± 0.103
PRF-fit source offset from KIC position	0.090 ± 0.129	0.70	0.090 ± 0.131	-0.003 ± 0.103
photometric centroid source offset	0.31 ± 0.14	2.19	-0.23 ± 0.14	0.20 ± 0.14



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



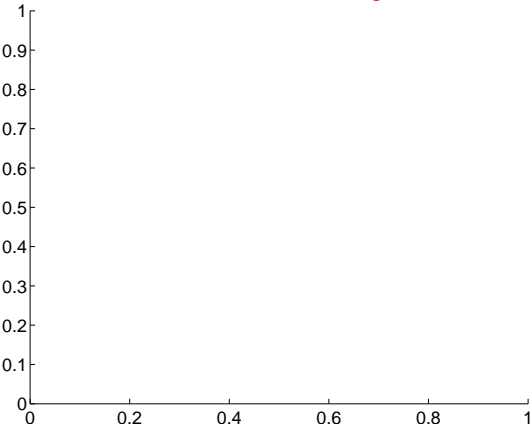
Q2 no difference image



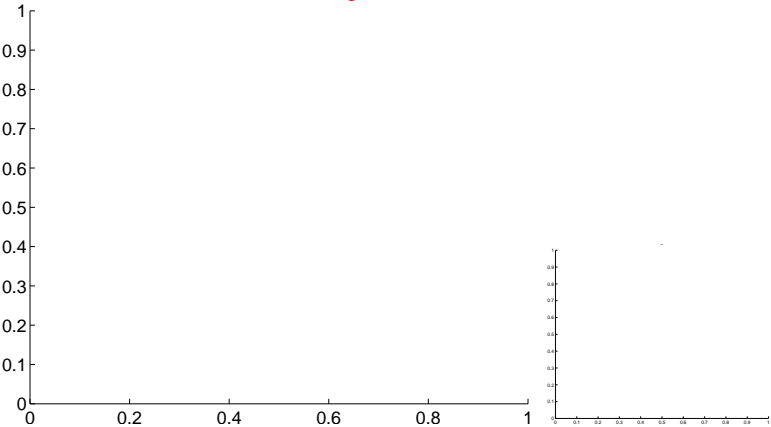
Q2 no OOT image



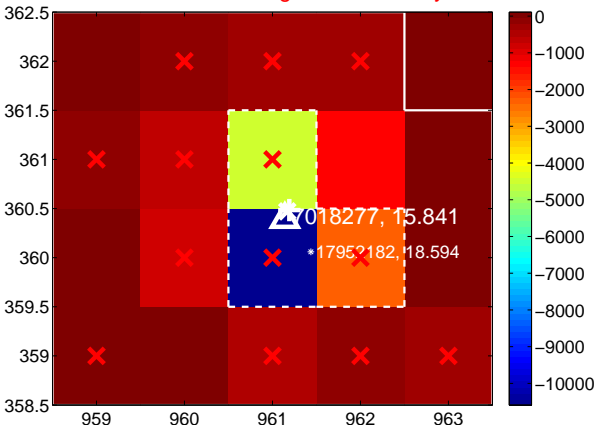
Q3 no difference image



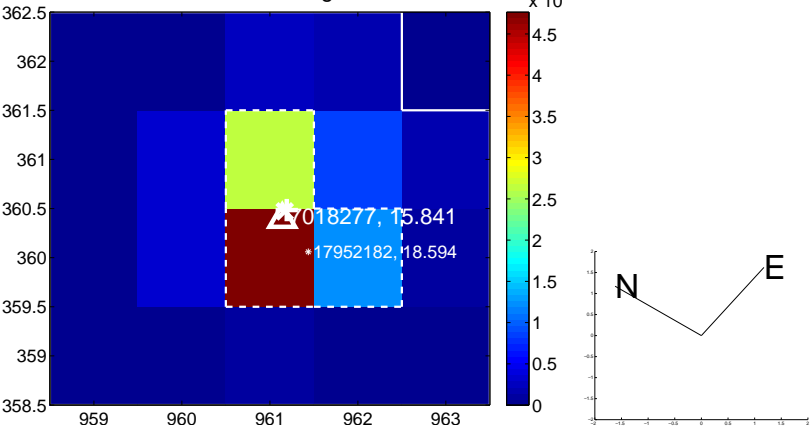
Q3 no OOT image



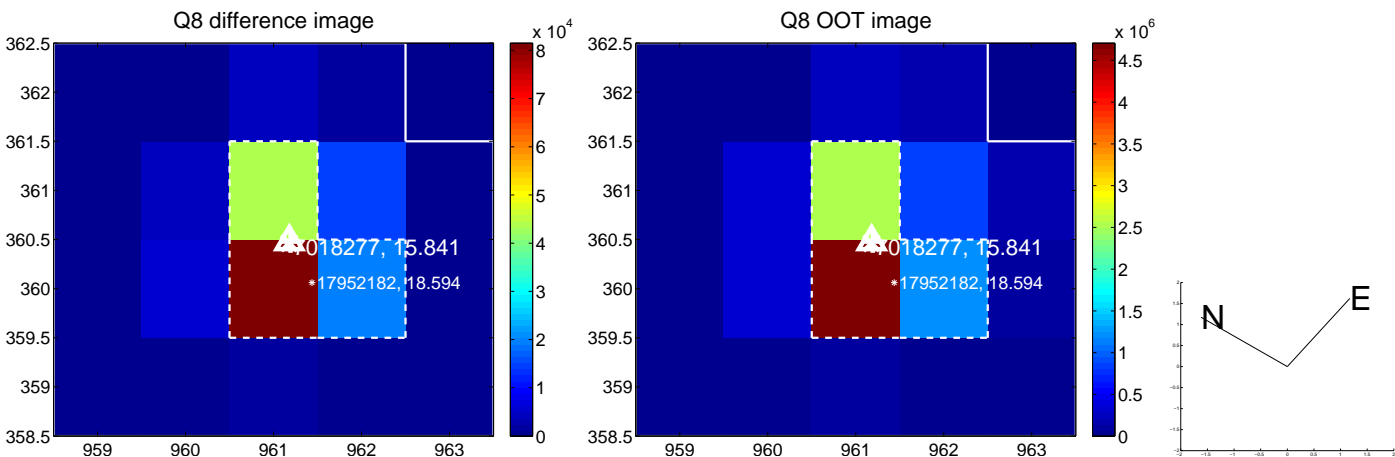
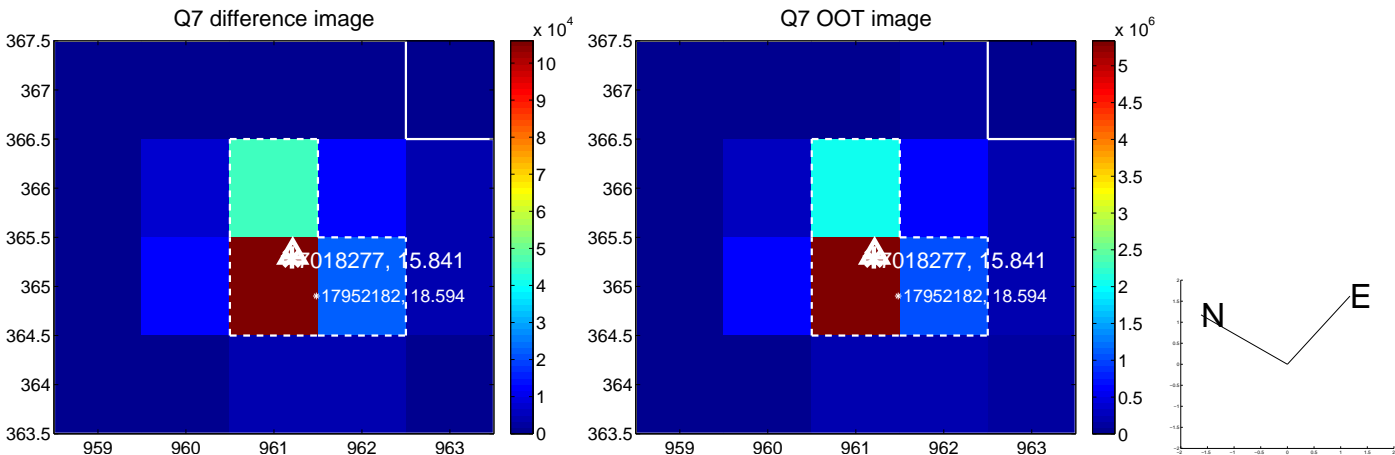
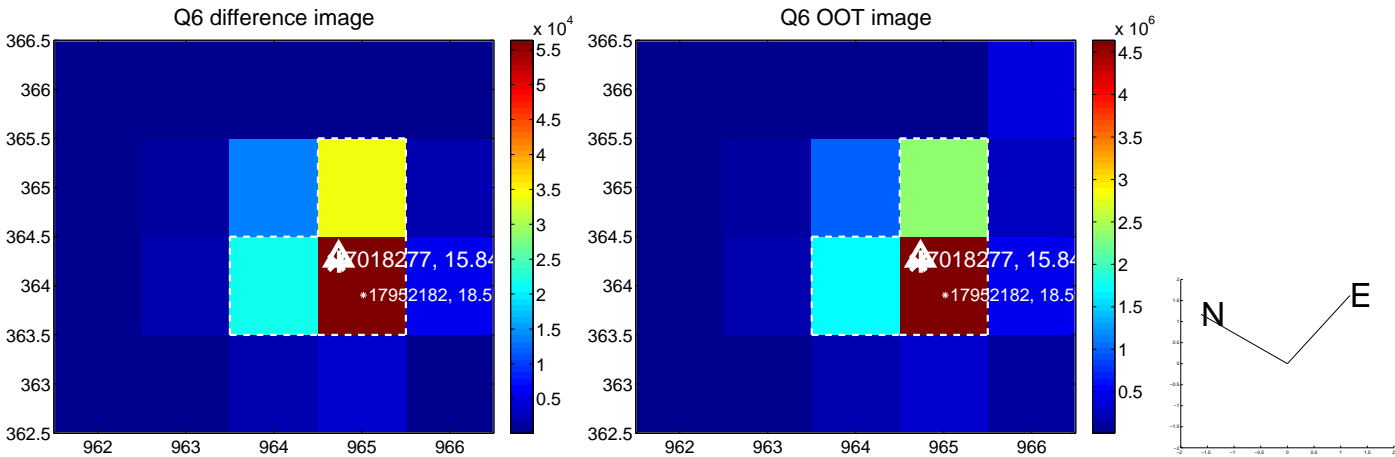
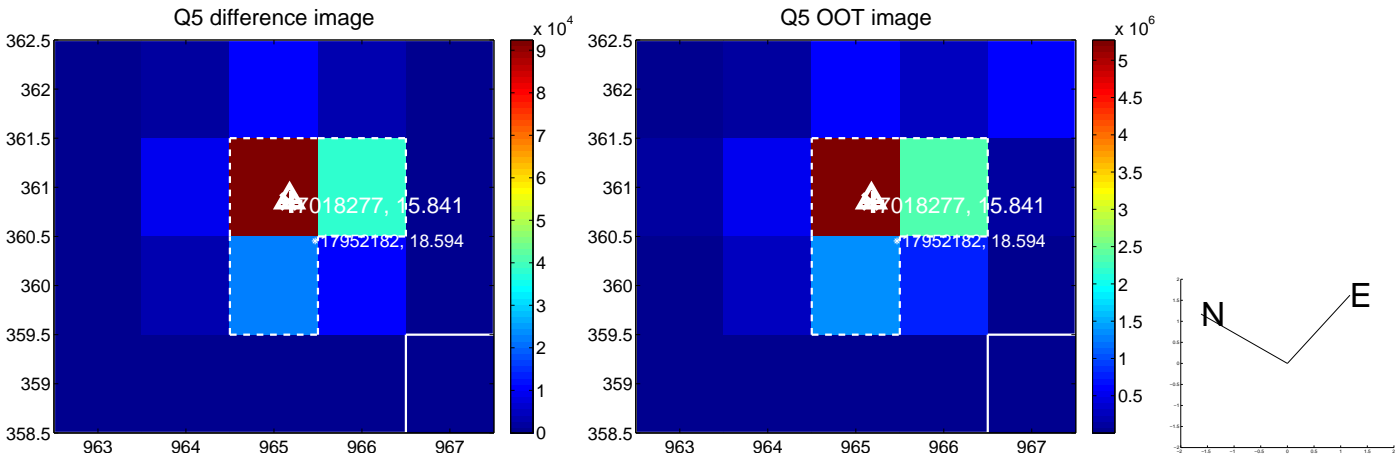
Q4 difference image. Poor Quality



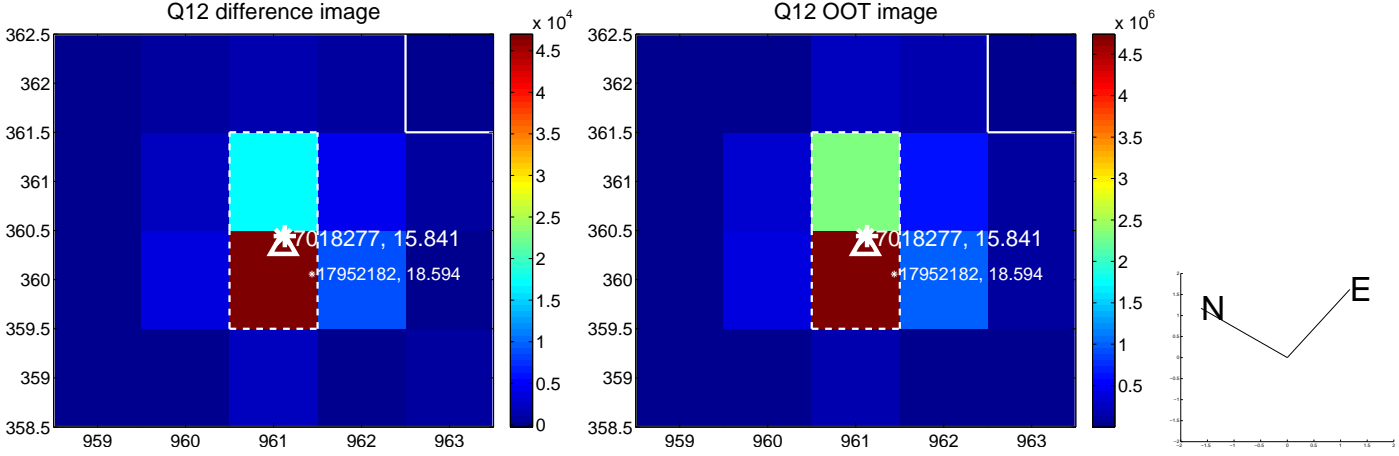
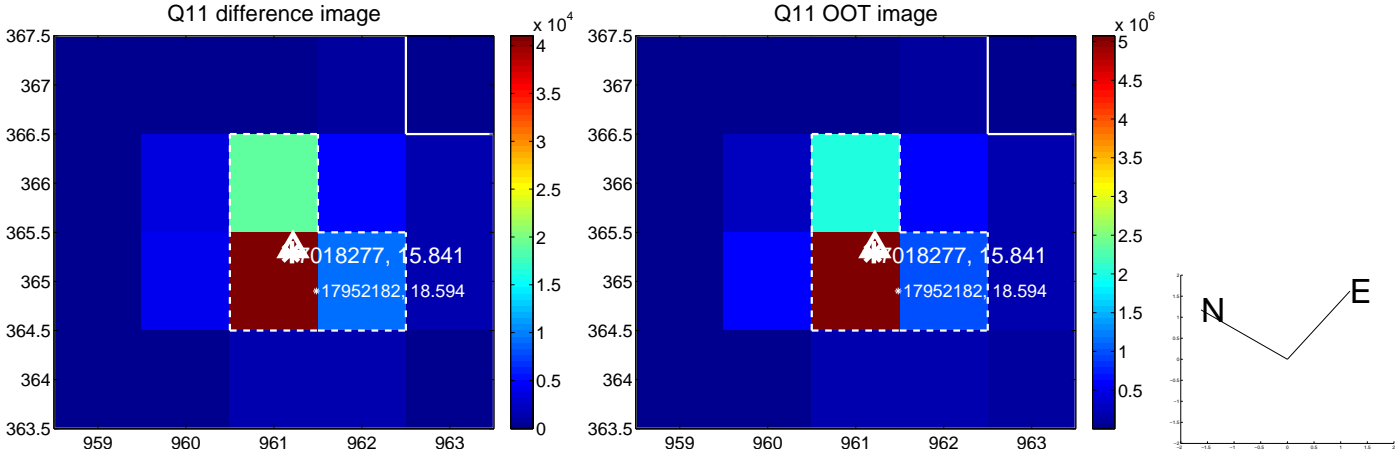
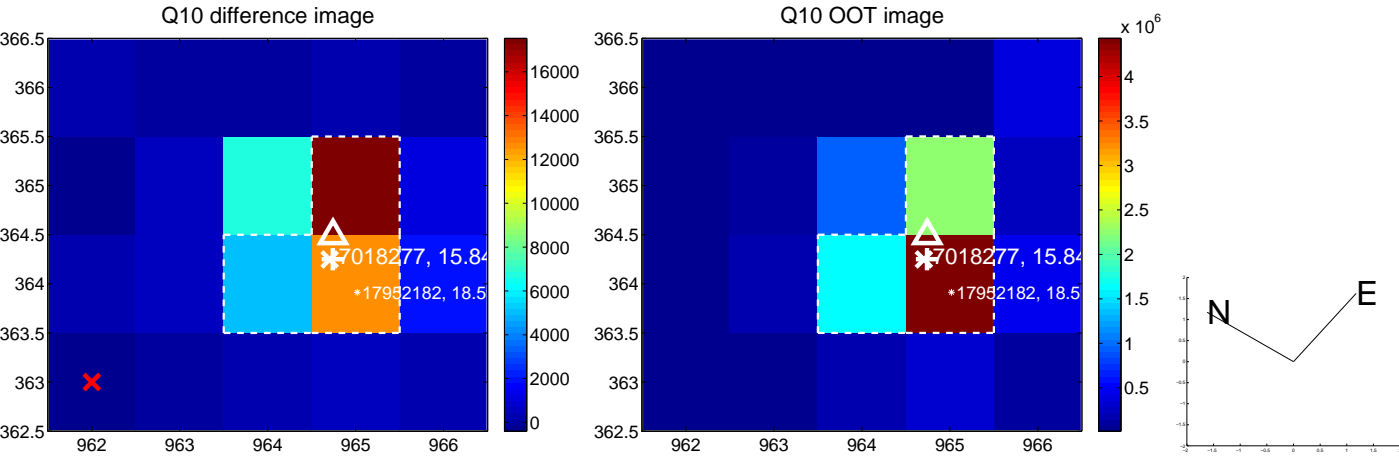
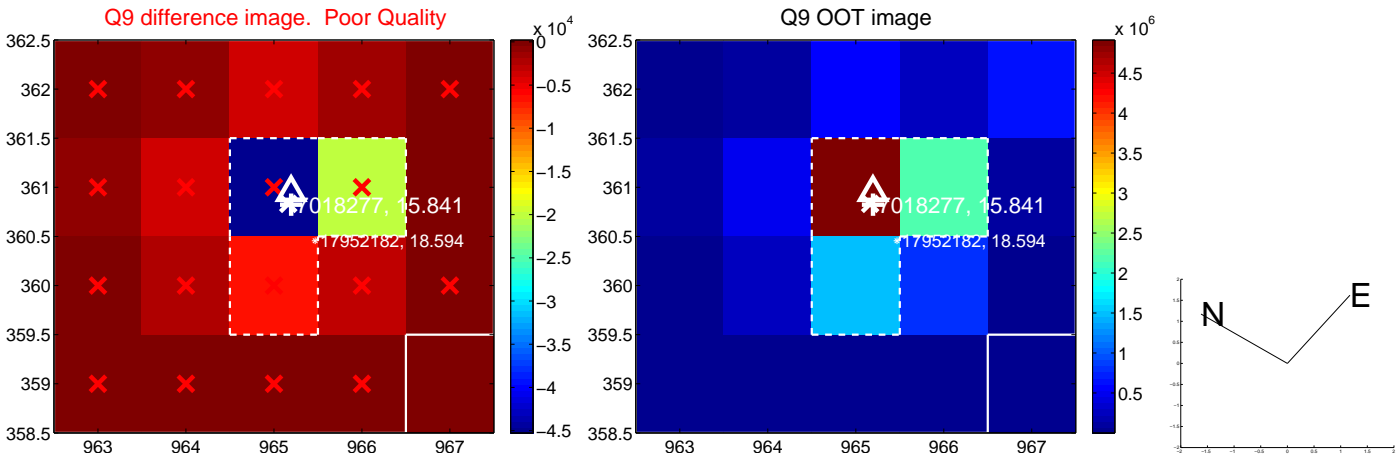
Q4 OOT image



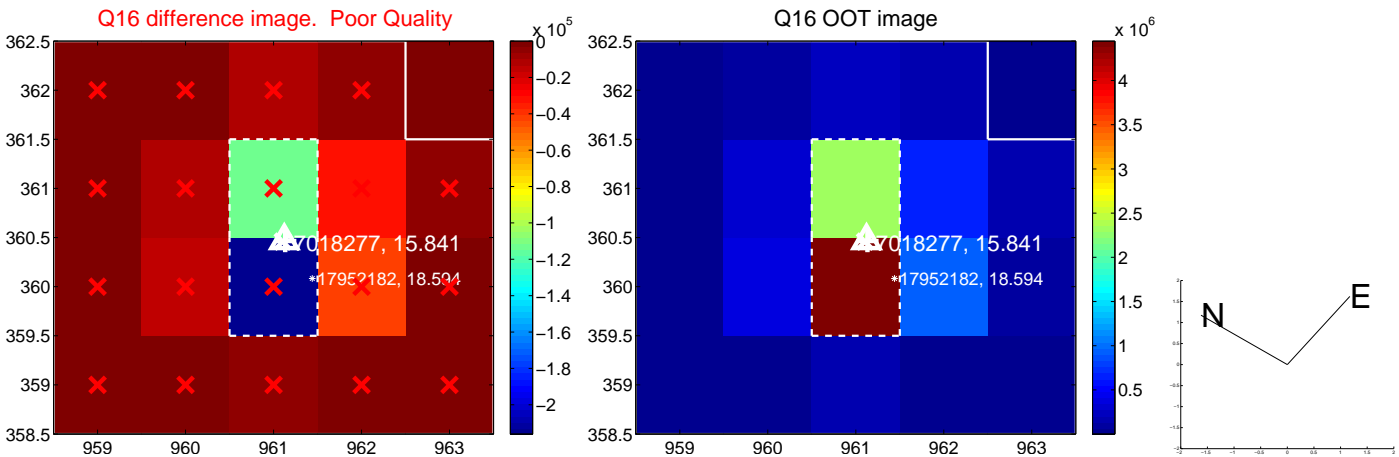
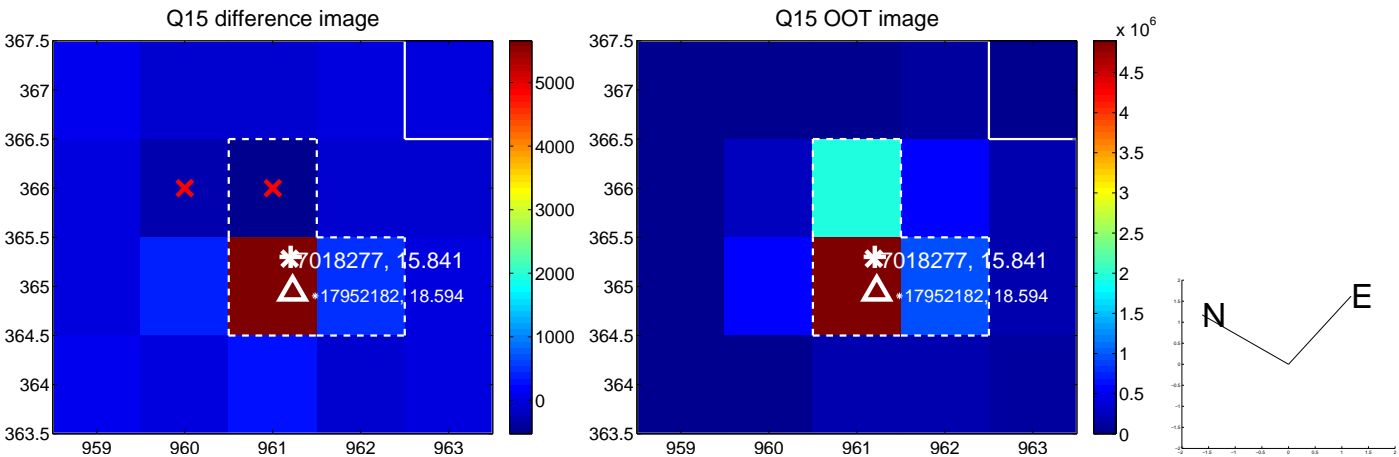
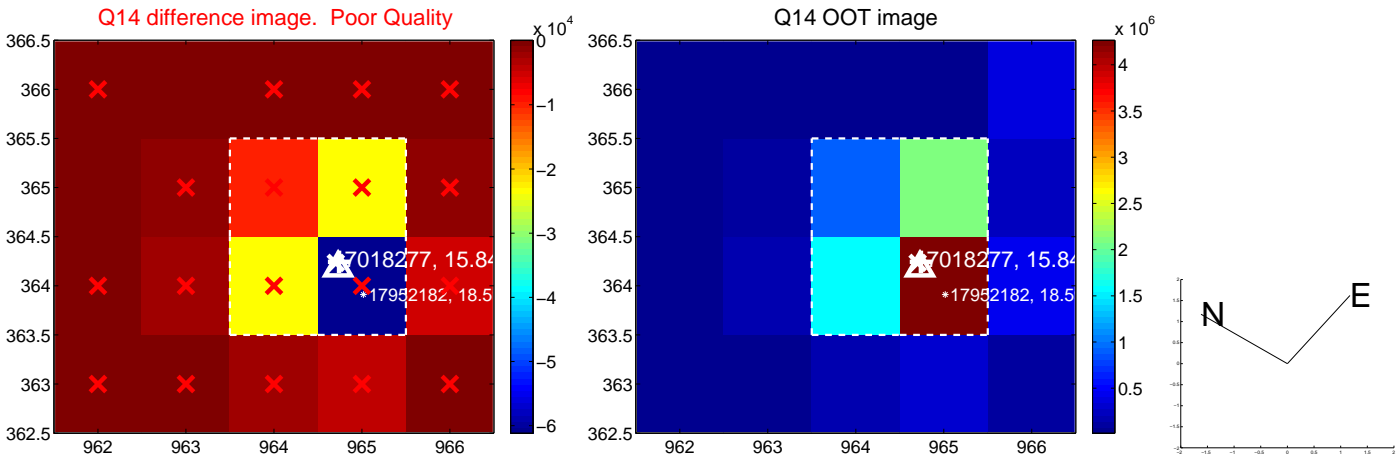
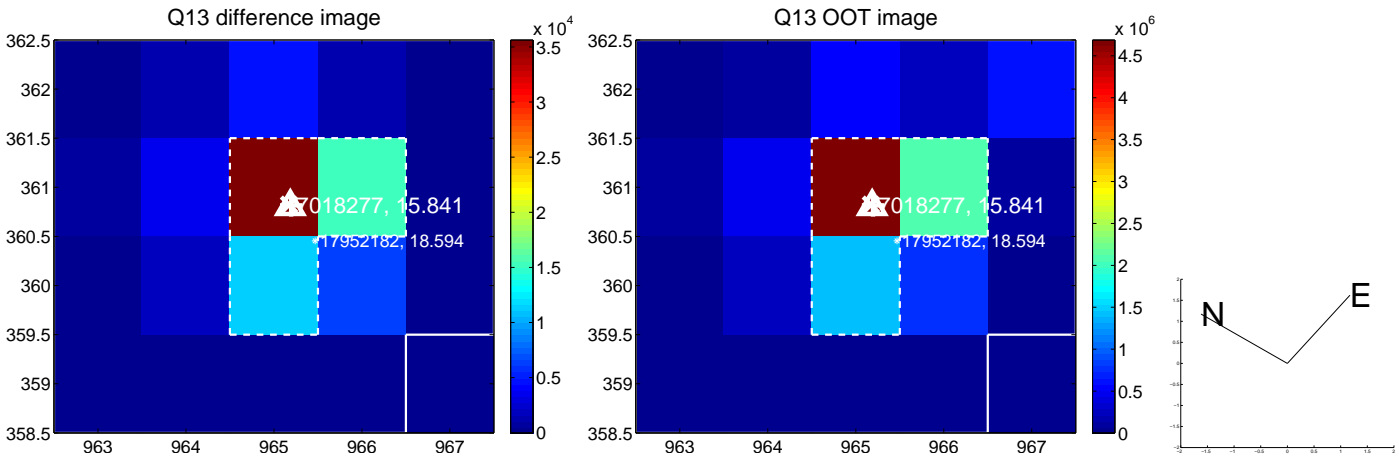
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



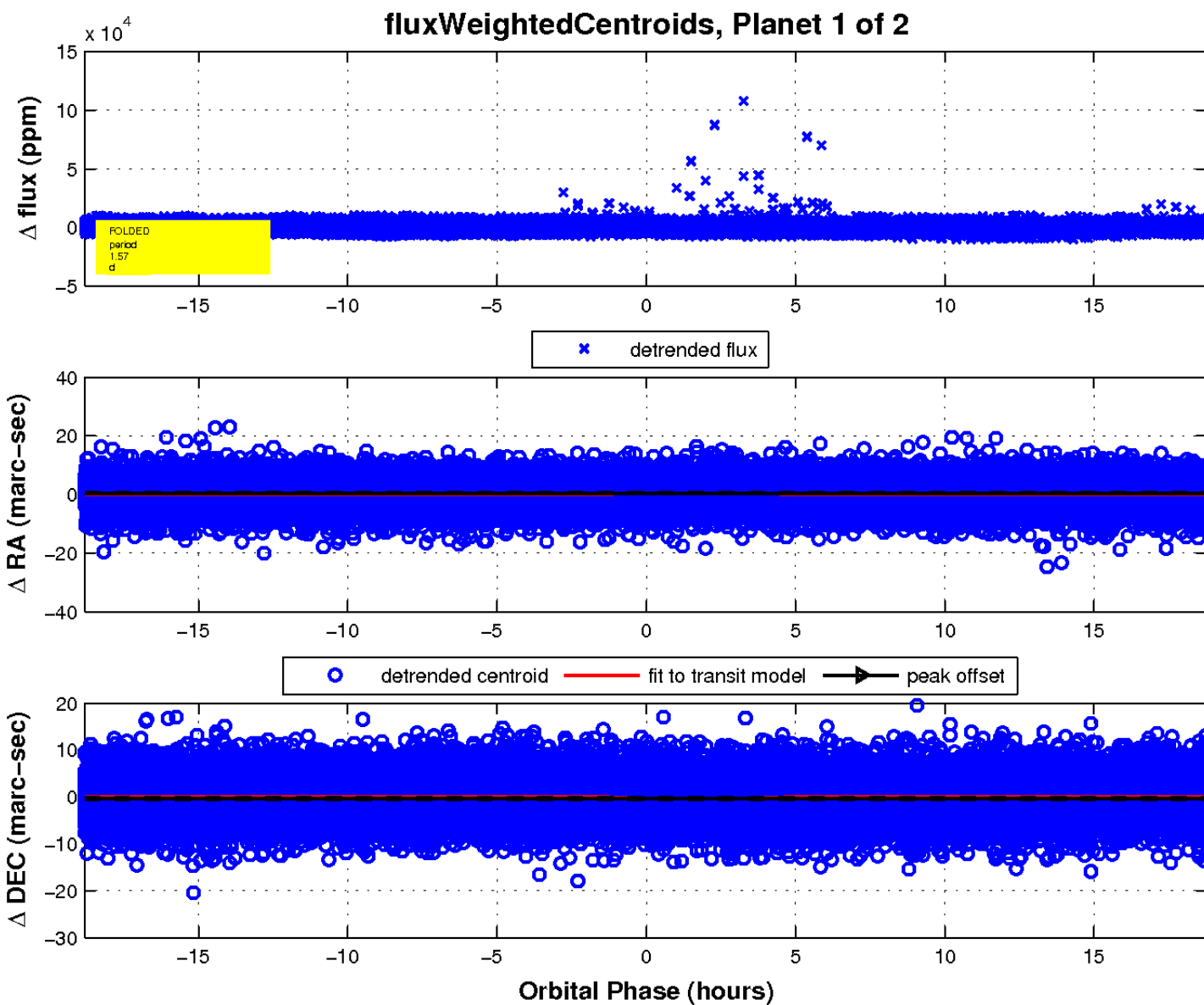
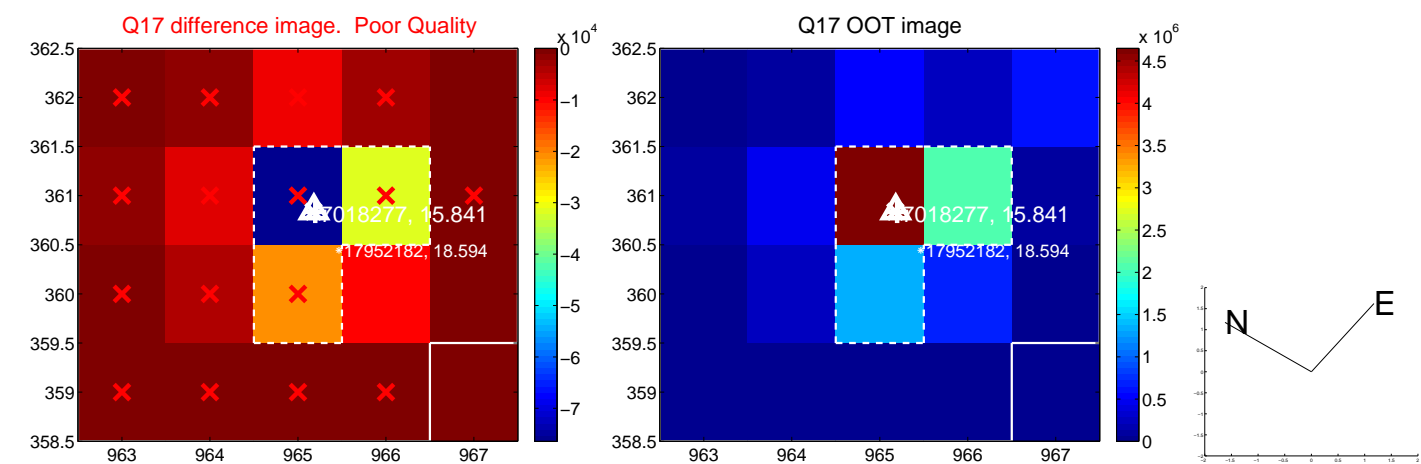
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

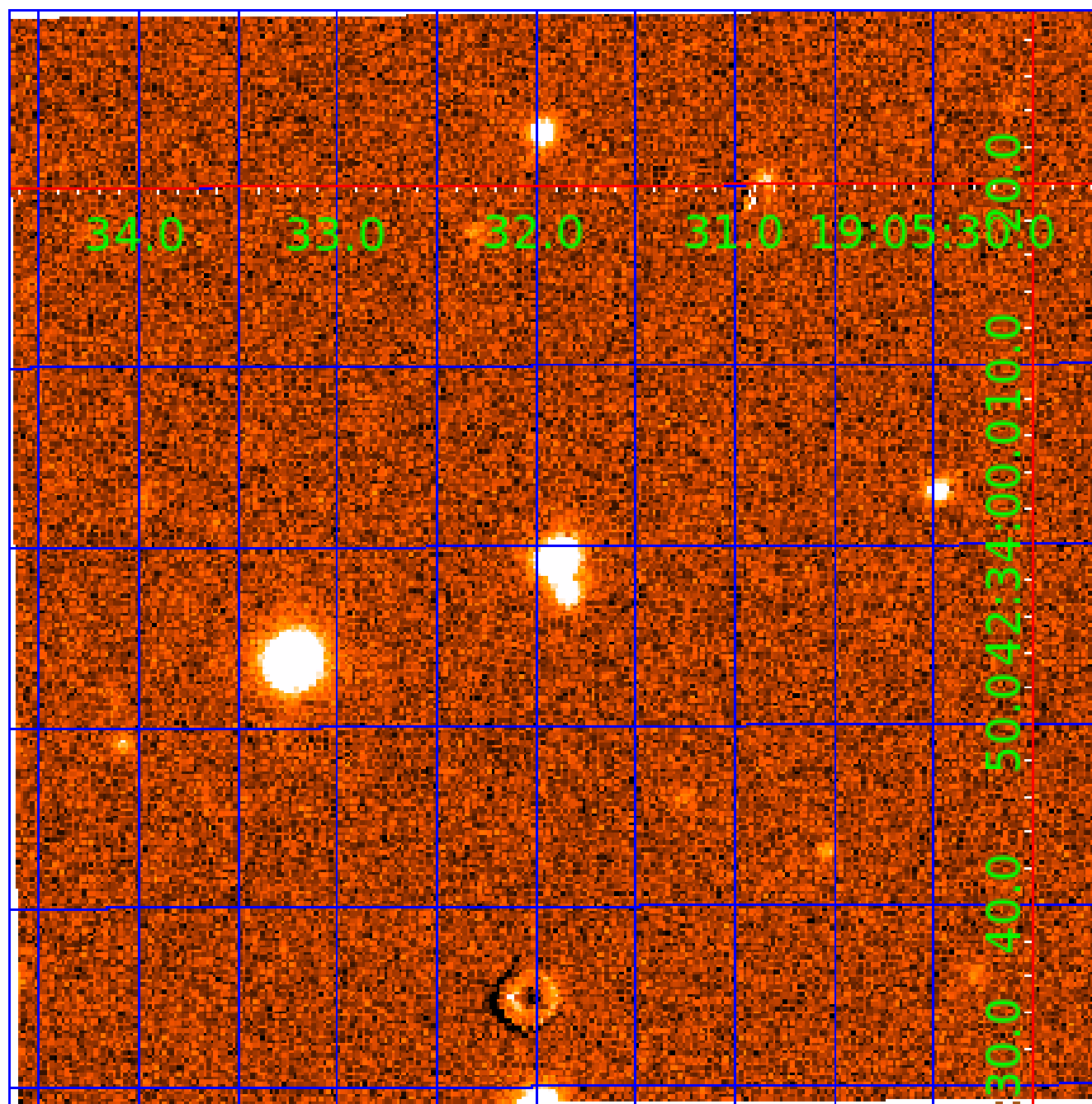


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007018277

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
007018277-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
007018277-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— MOD_POS_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.

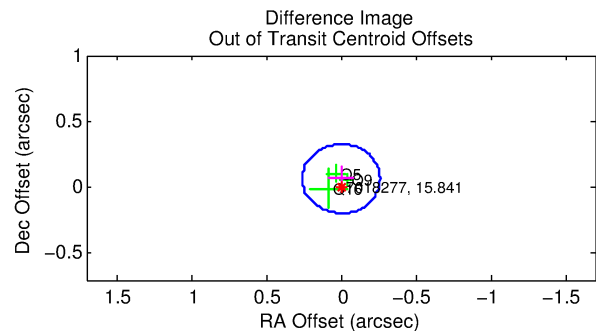
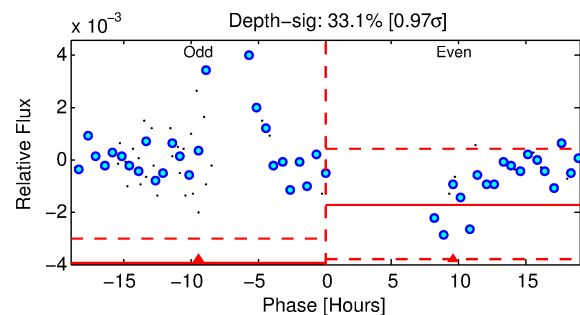
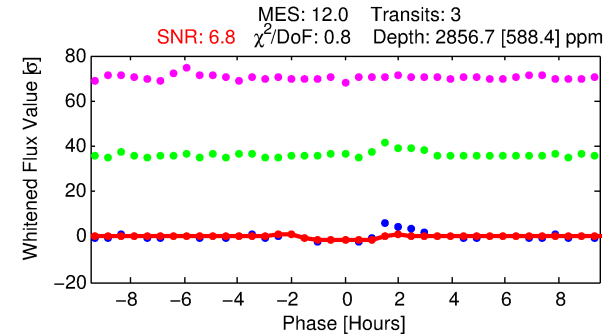
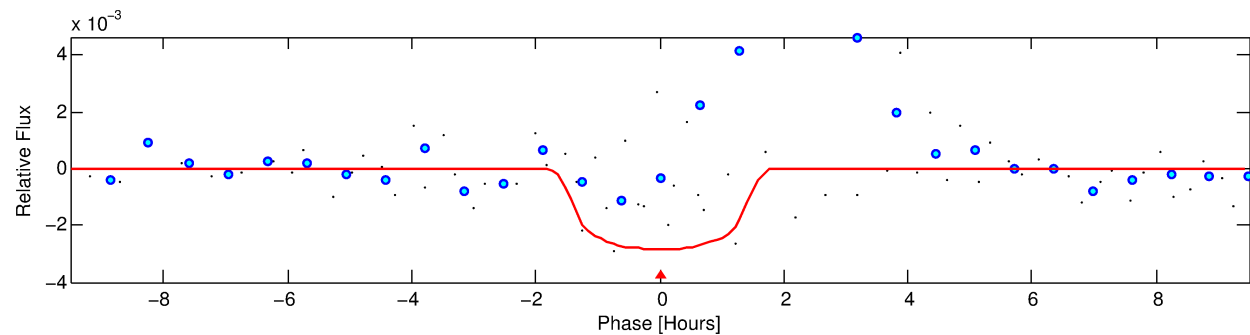
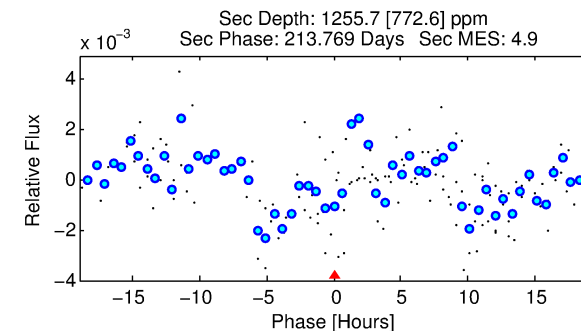
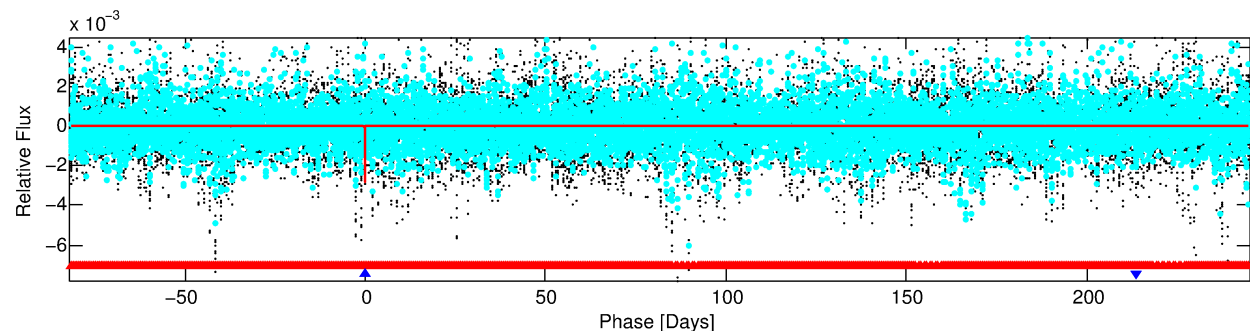
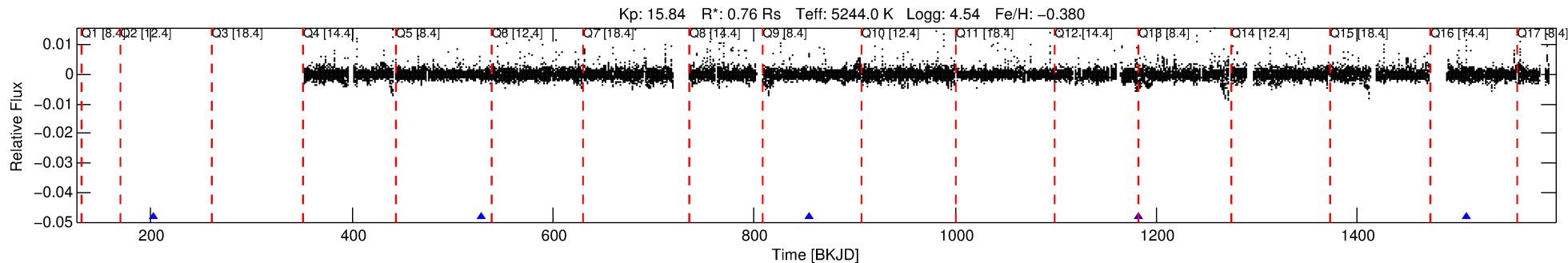
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007018277-02

No Significant Match Found

DV One-Page Summary

KIC: 7018277 Candidate: 2 of 2 Period: 326.634 d



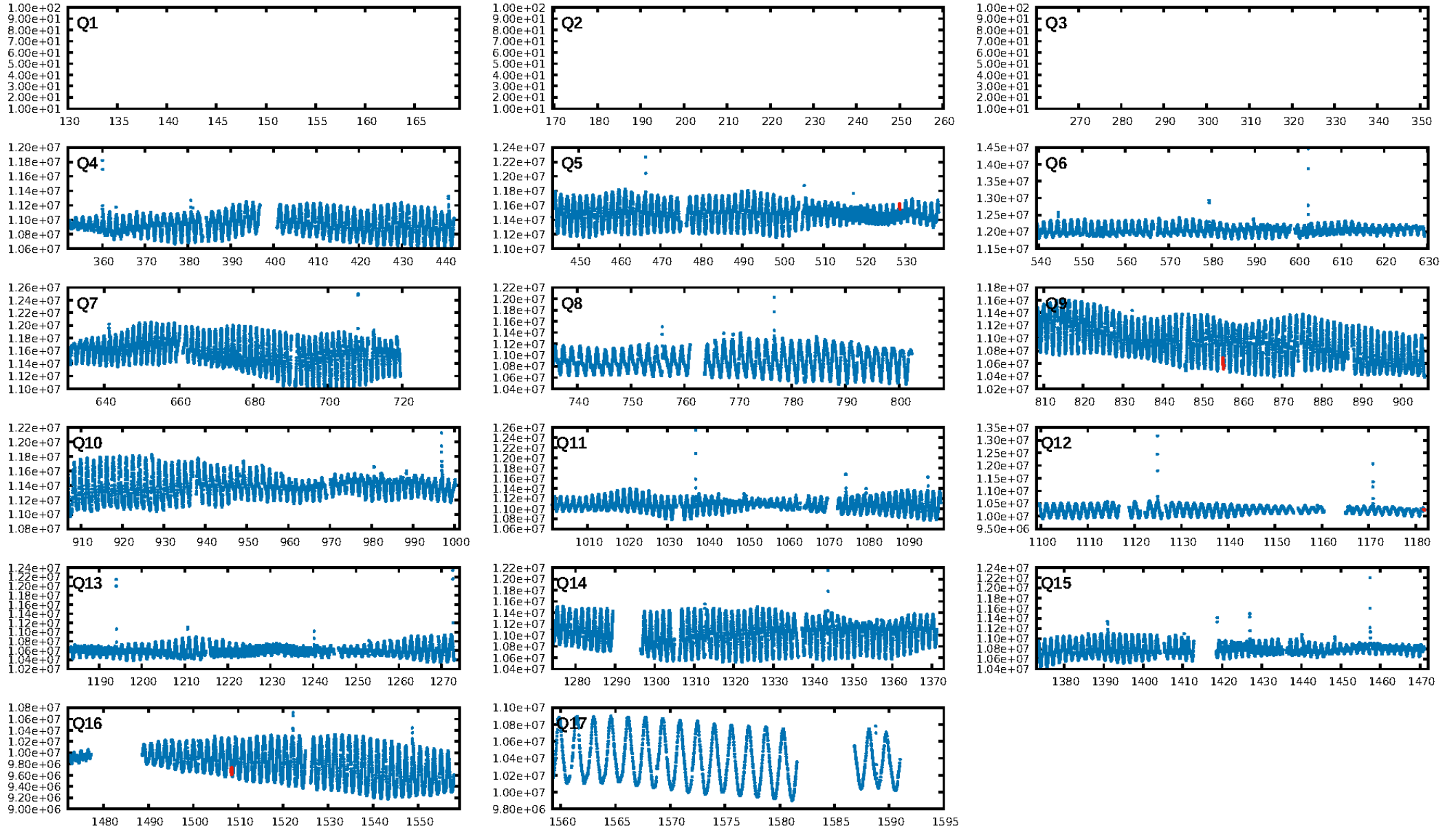
DV Fit Results:

Period = 326.63359 [0.00478] d
Epoch = 201.9566 [0.0125] BKJD
Rp/R* = 0.0502 [0.0702]
a/R* = 707.24 [3778.95]
b = 0.54 [7.01]
Seff = 0.56 [0.12]
Teq = 221 [12] K
Rp = 4.15 [5.83] Re
a = 0.8321 [0.0870] AU
Ag = 27741.71 [79538.34] [0.35σ]
Teffp = 4406 [3158] K [1.33σ]

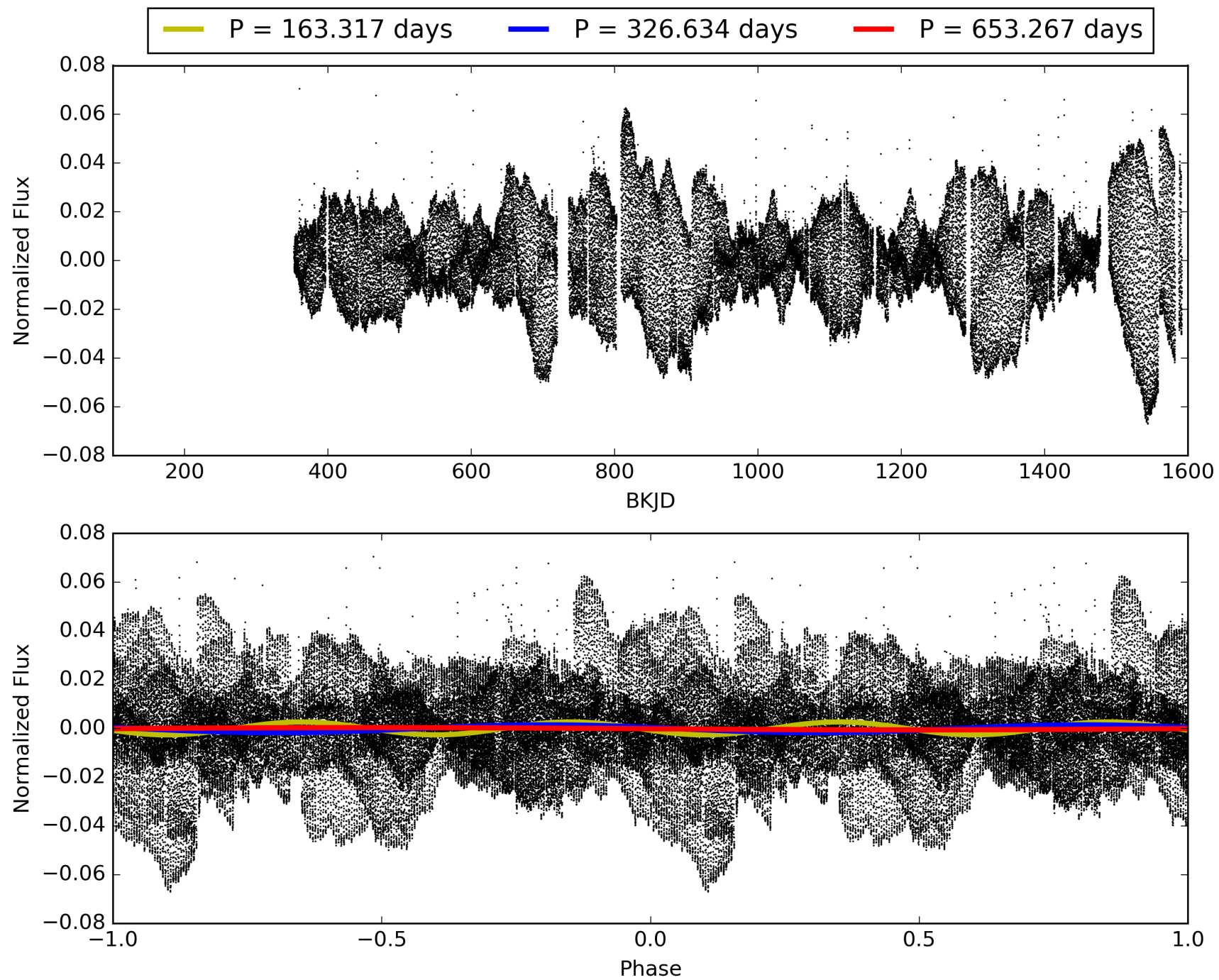
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1149.71σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 41.4%
ModelChiSquareGoF-sig: 95.8%
Bootstrap-pfa: 1.05e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.22
Centroid-sig: 94.4%
Centroid-so: 0.357 arcsec [0.41σ]
OotOffset-rm: 0.066 arcsec [0.76σ]
KicOffset-rm: 0.074 arcsec [0.87σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 007018277-02, PDC Light Curves

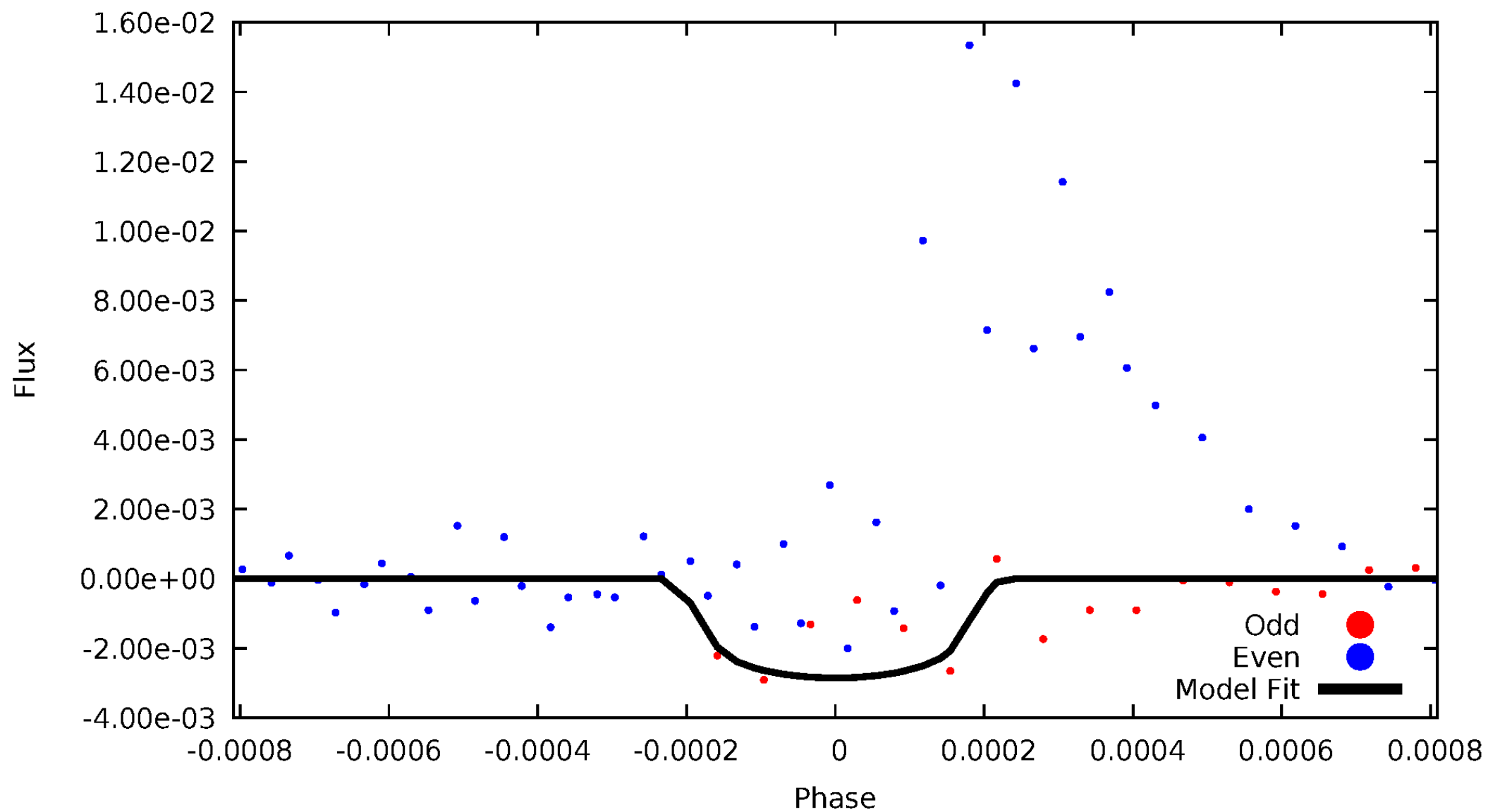


TCE 007018277-02



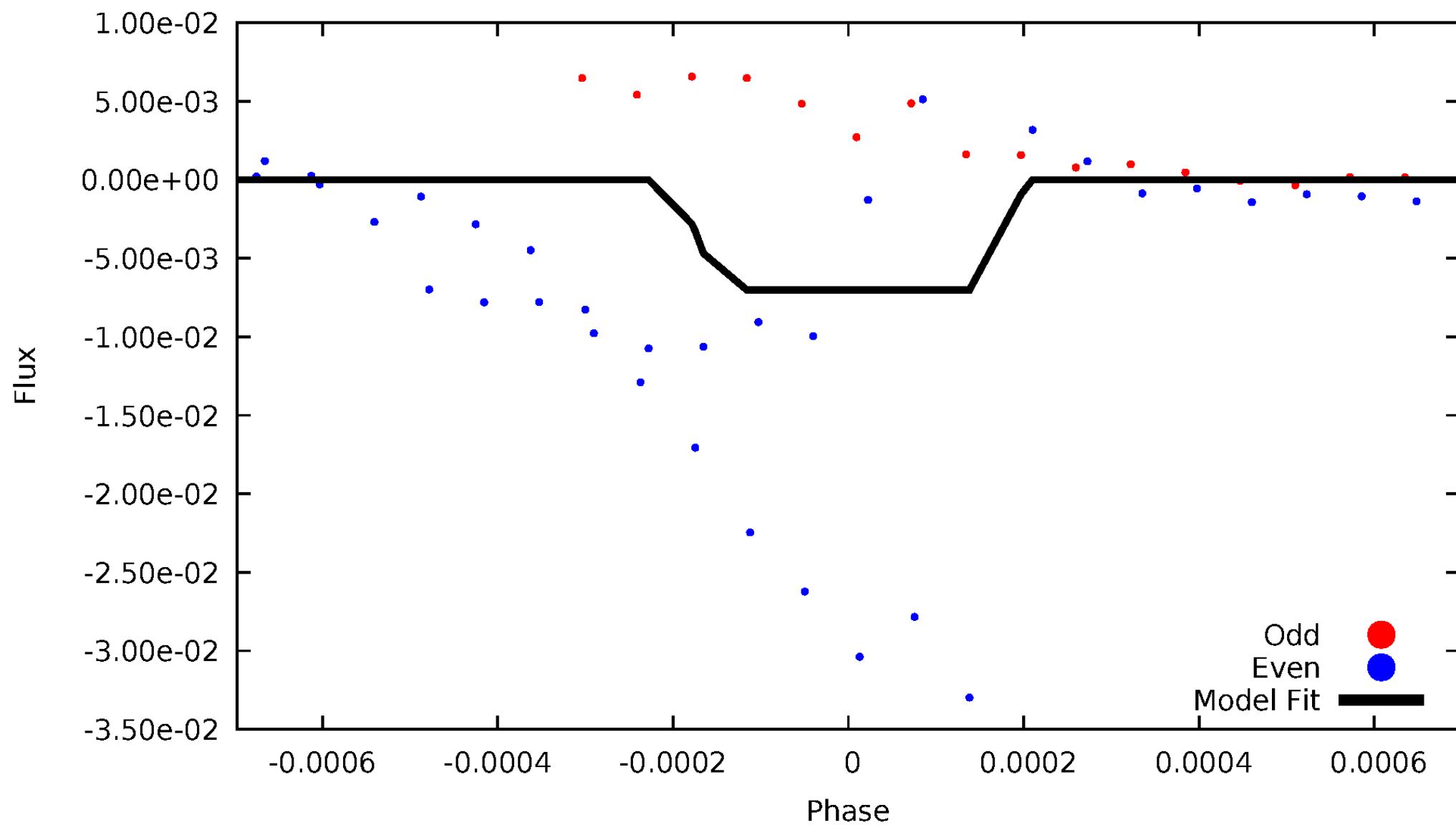
DV Odd/Even

TCE 007018277-02



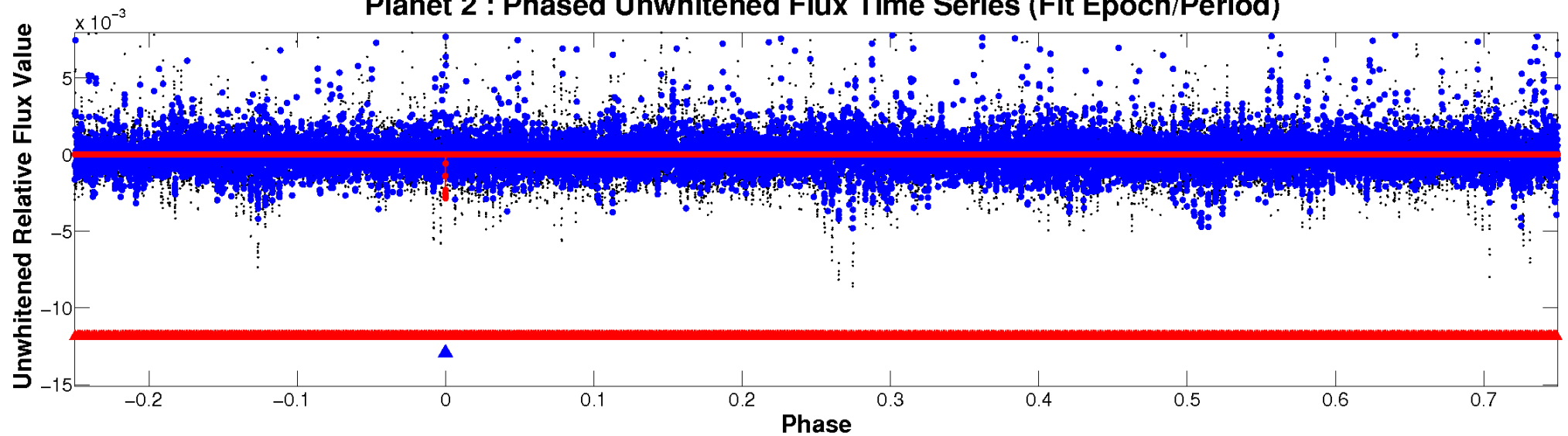
ALT Odd/Even

TCE 007018277-02

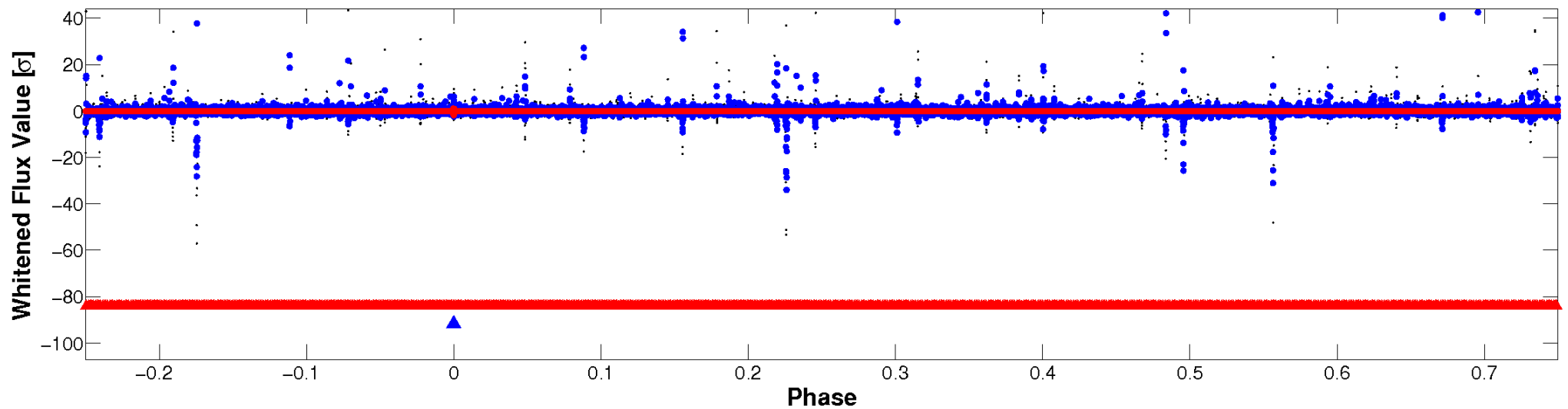


Non-Whitened Vs. Whitened Light Curve

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

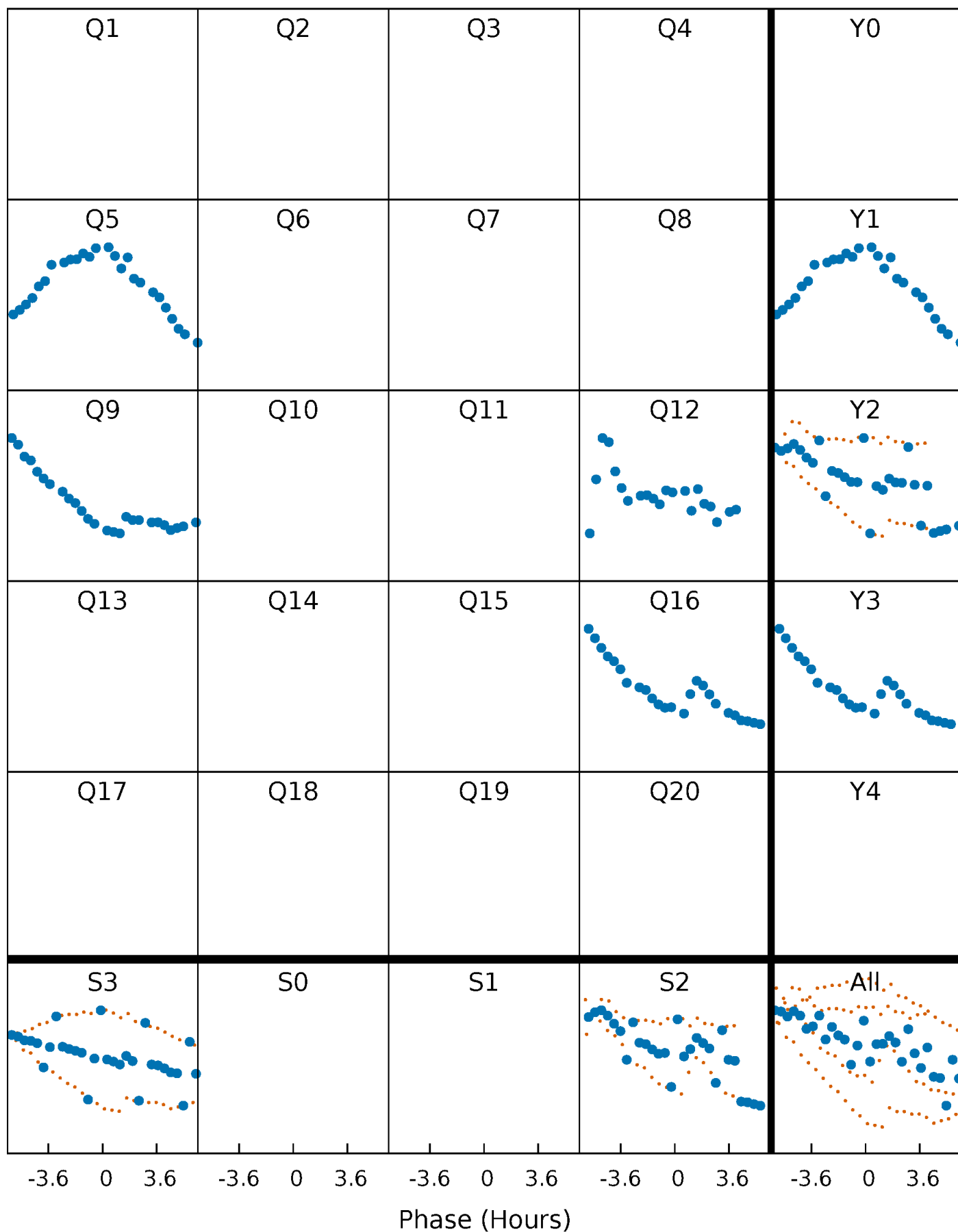


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



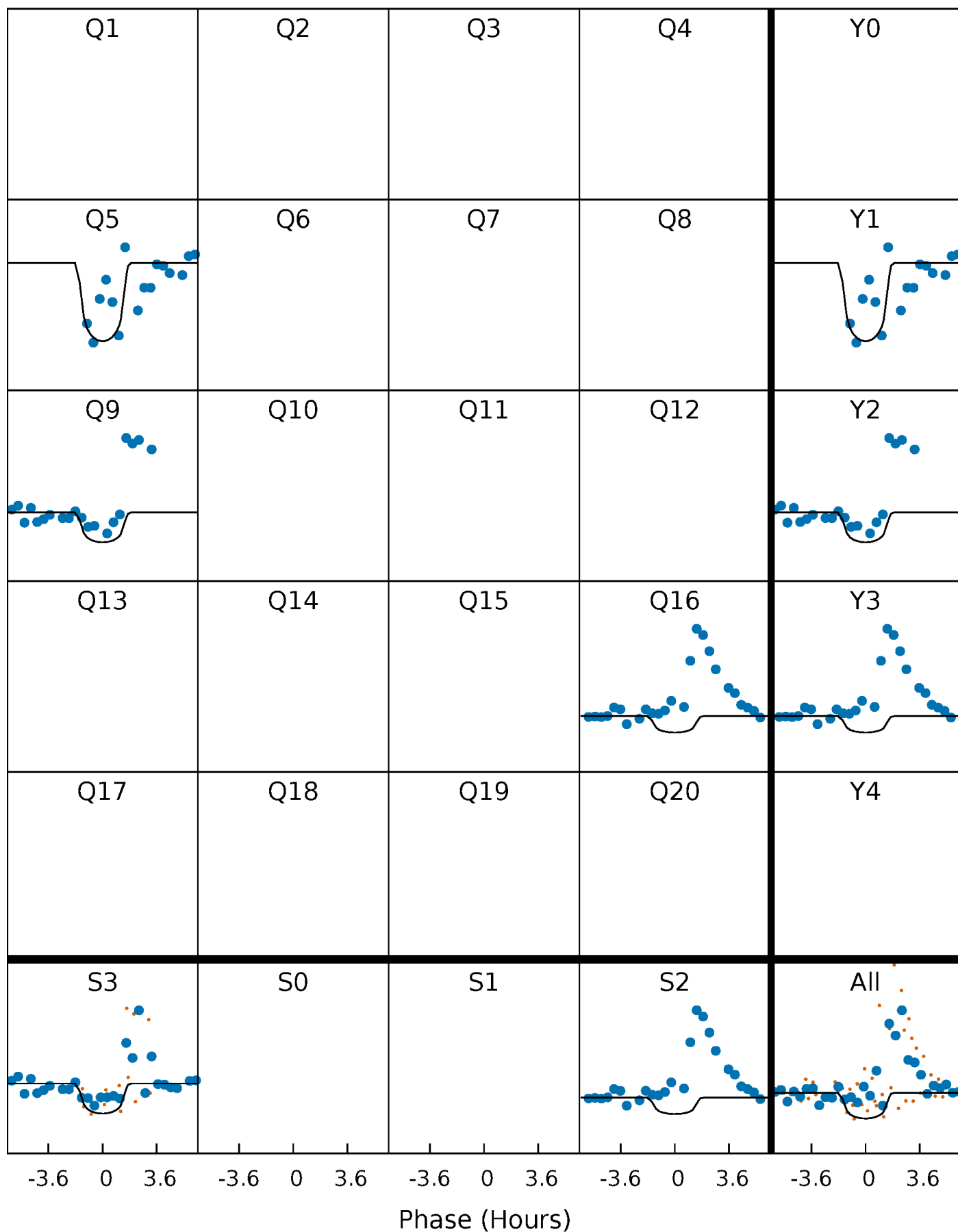
PDC Quarter-Phased Transit Curves

TCE 007018277-02 $P=326.633590$ Days $T_0=201.956636$ (BKJD)



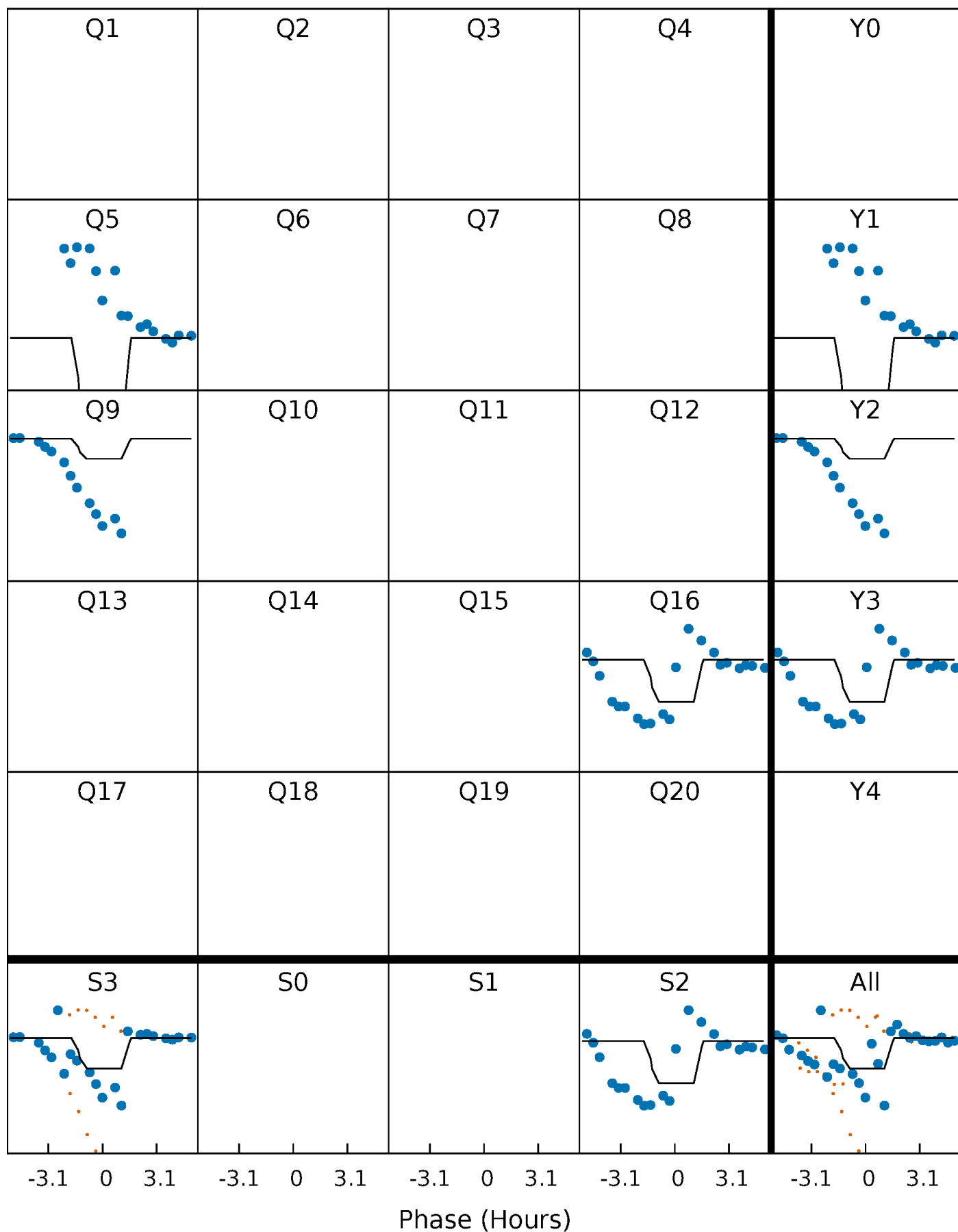
DV Quarter-Phased Transit Curves

TCE 007018277-02 $P=326.633590$ Days $T_0=201.956636$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

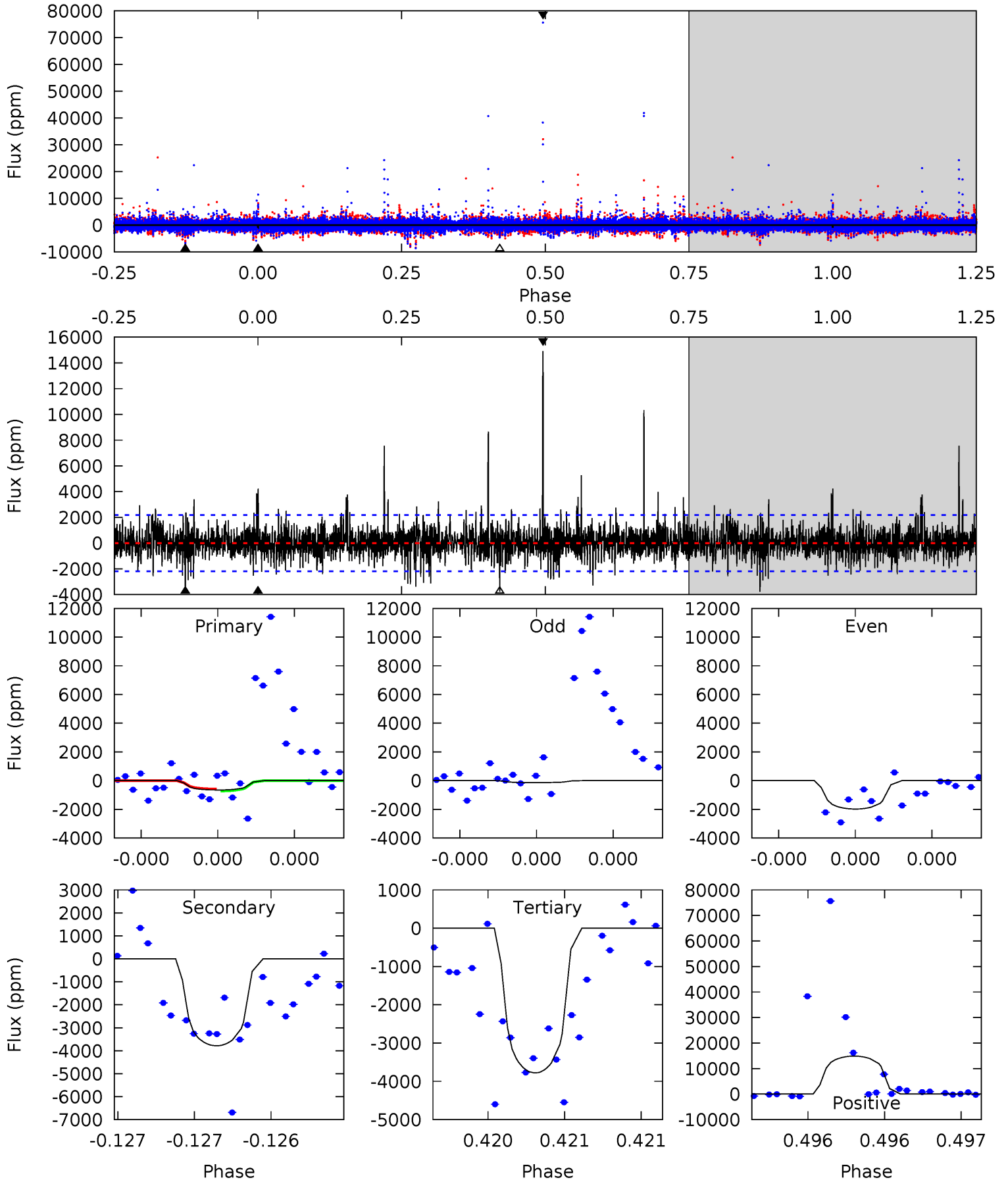
TCE 007018277-02 $P=326.628178$ Days $T_0=202.009427$ (BKJD)



DV Model-Shift Uniqueness Test

007018277-02, P = 326.633590 Days, E = 201.956636 Days

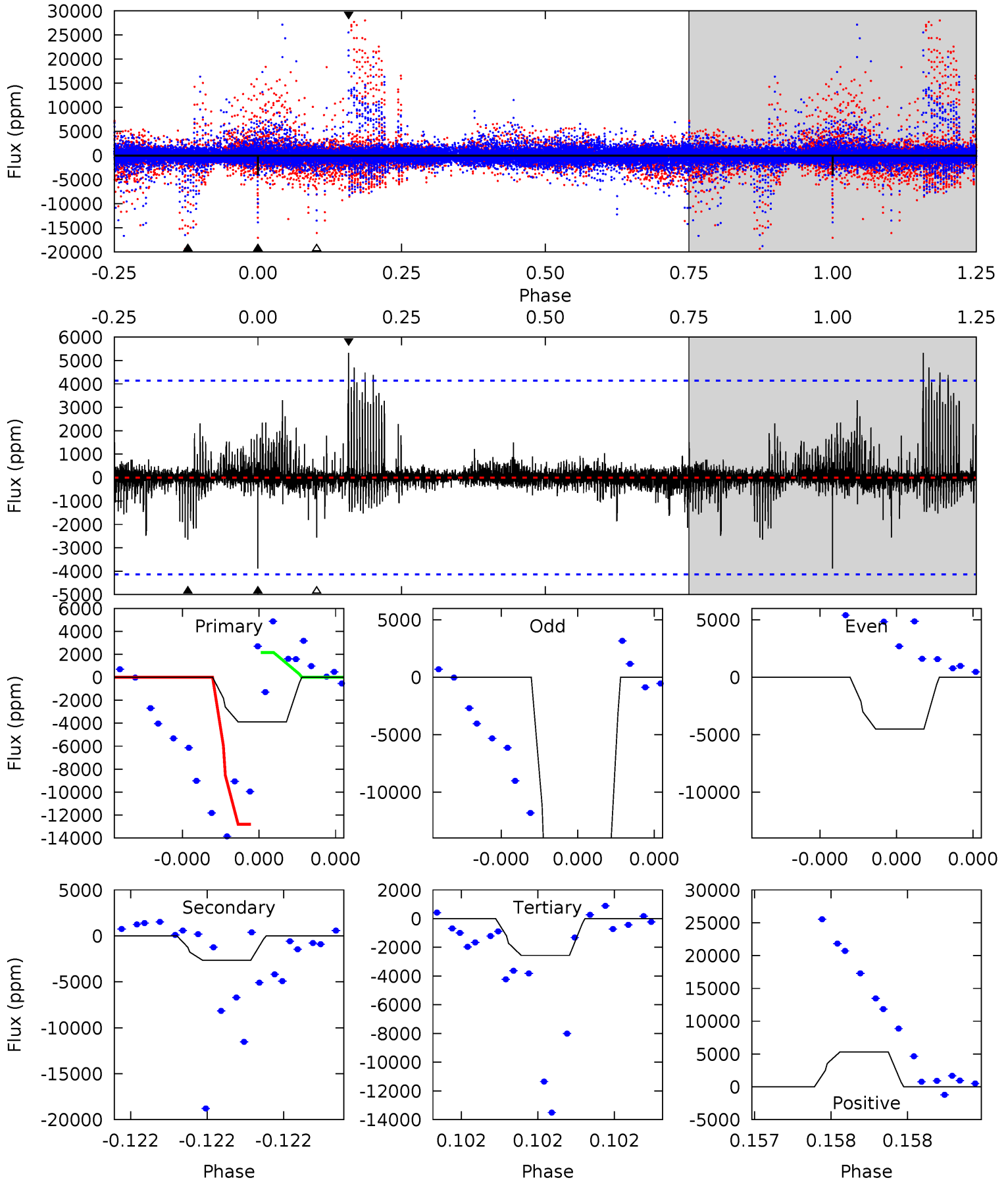
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.67	9.68	9.67	38.1	5.60	3.52	2.45	-8.00	-36.5	0.01	-28.5	1.43	-0.48	0.80	0.17



Alt Model-Shift Uniqueness Test

007018277-02, P = 326.628178 Days, E = 202.009427 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.29	3.60	3.49	7.24	5.62	3.56	0.57	1.80	-1.95	0.11	-3.64	13.2	1.92	0.58	6.63



Stellar Parameters For KIC 007018277

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5244^{+202}_{-166}	$4.536^{+0.082}_{-0.075}$	$-0.380^{+0.350}_{-0.300}$	$0.758^{+0.095}_{-0.085}$	$0.720^{+0.107}_{-0.054}$	$2.328^{+0.823}_{-0.557}$
	+4%/-3%	+2%/-2%	+92%/-79%	+13%/-11%	+15%/-8%	+35%/-24%
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 007018277-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3785 ± 391	$6.20^{+4.86}_{-4.12}$	309^{+14}_{-15}	4847^{+3552}_{-960}	$38291^{+288138}_{-25951}$
Alt.	-2645 ± 736	$8.16^{+5.73}_{-4.89}$	309^{+14}_{-14}	4074^{+1791}_{-723}	15664^{+76681}_{-10875}

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

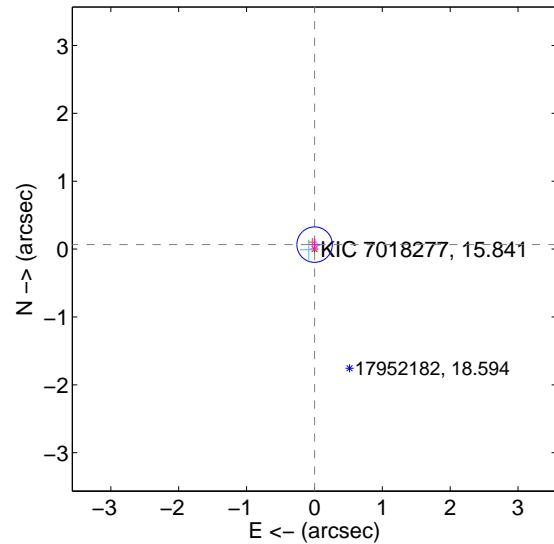
Supplemental centroid analysis for 007018277-02. Kepler magnitude: 15.84. Transit SNR 6.83

There are 2 quarters with good PRF difference image offsets

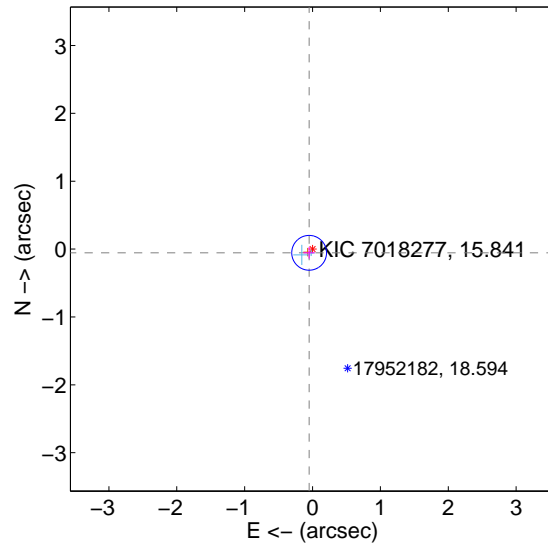
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.066 ± 0.087	0.76	-0.002 ± 0.084	0.066 ± 0.087
PRF-fit source offset from KIC position	0.074 ± 0.085	0.87	0.050 ± 0.084	-0.055 ± 0.087
photometric centroid source offset	0.36 ± 0.87	0.41	0.22 ± 0.96	-0.28 ± 0.82

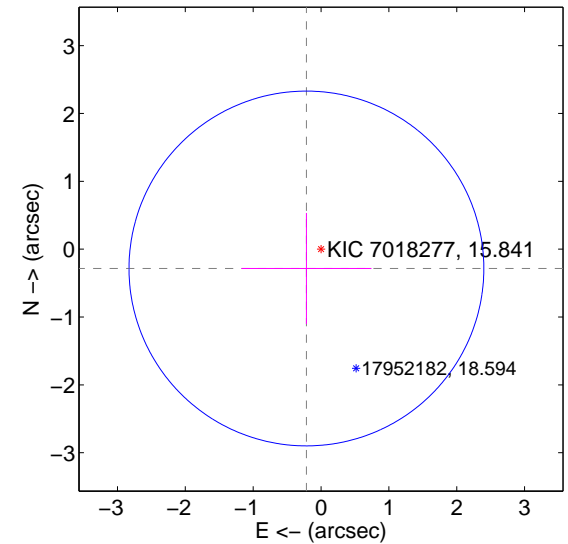
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

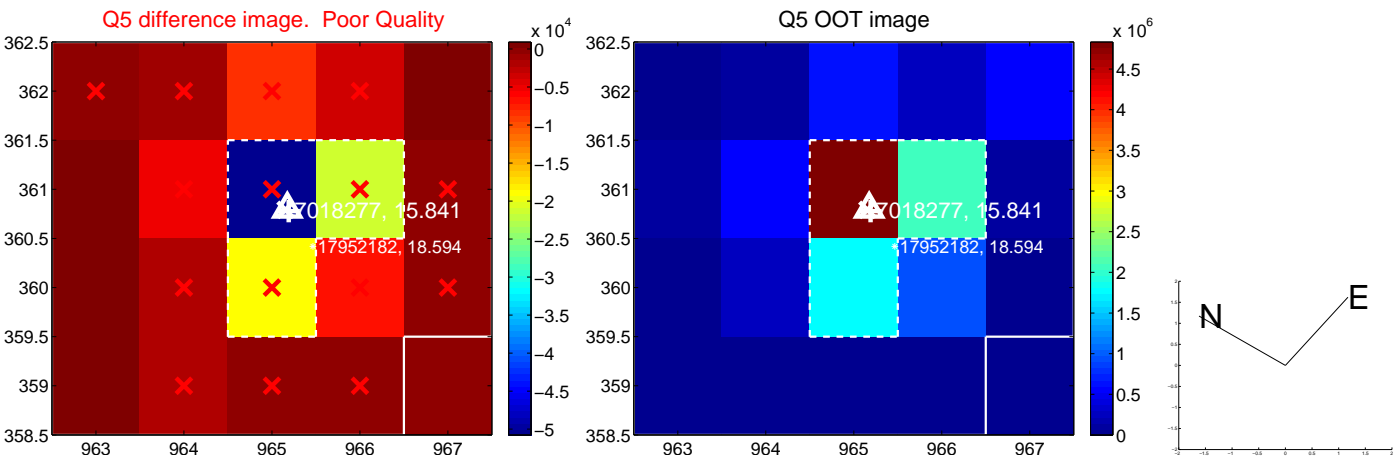


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

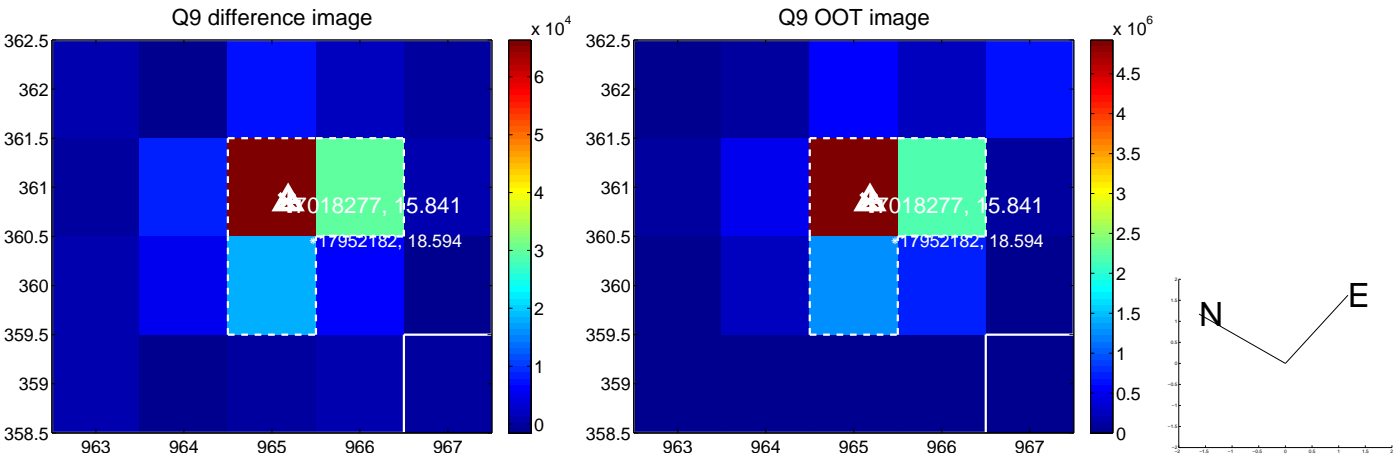
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



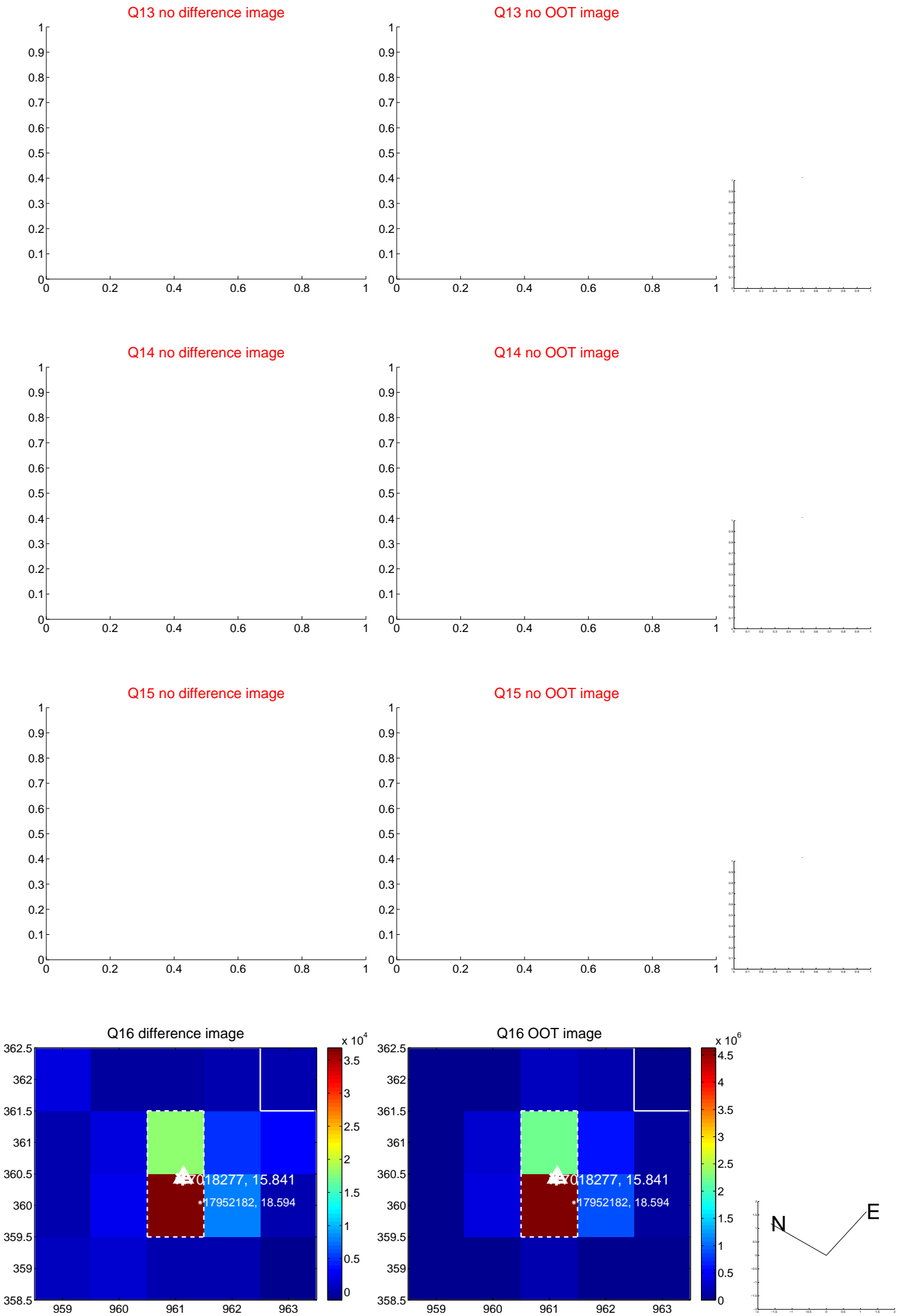
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



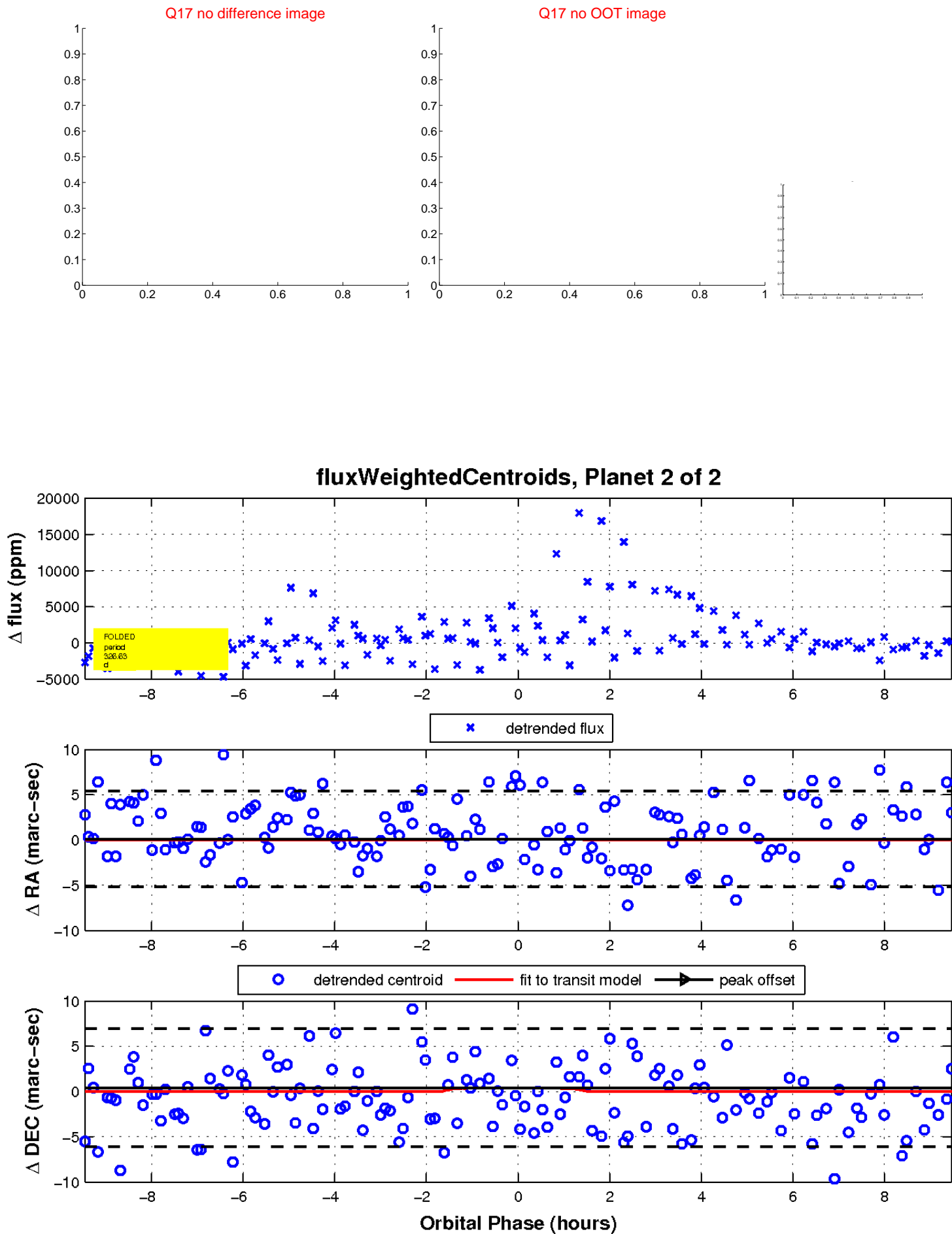
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

