

KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
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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.

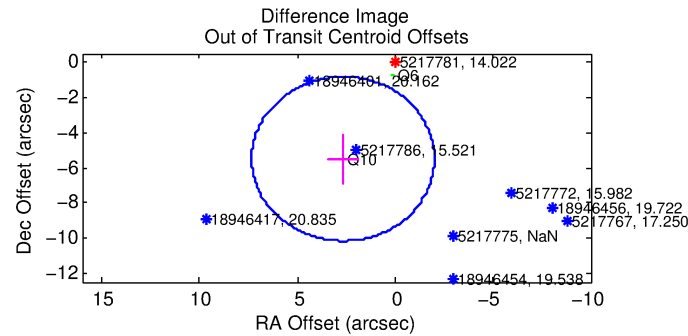
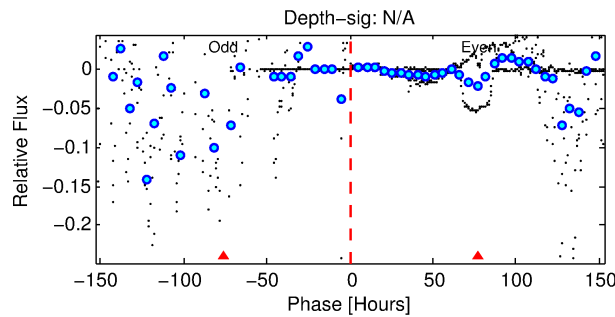
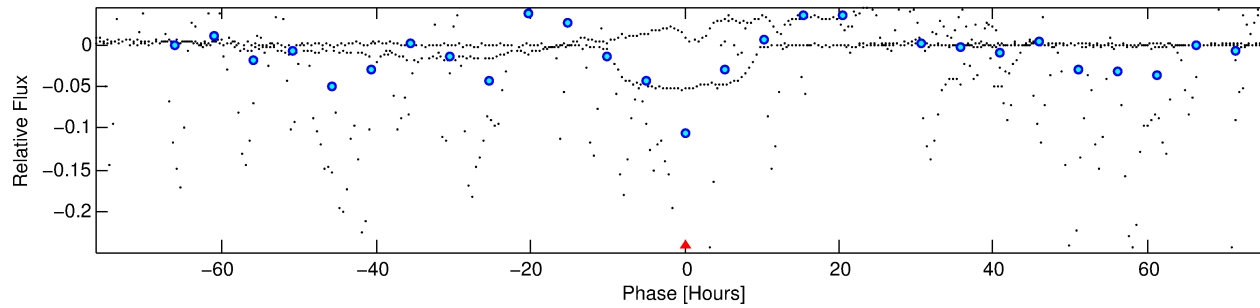
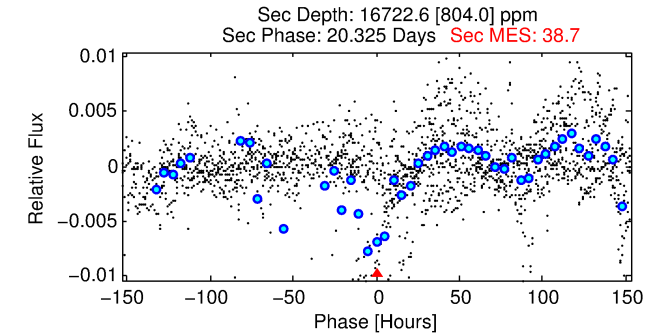
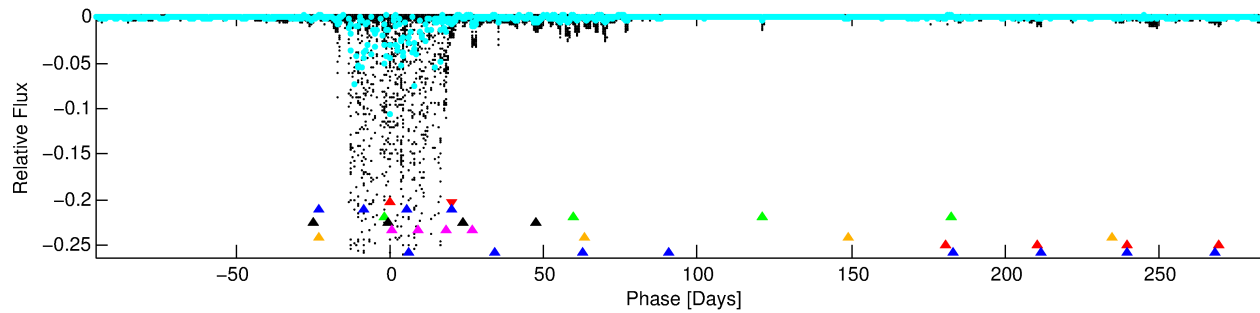
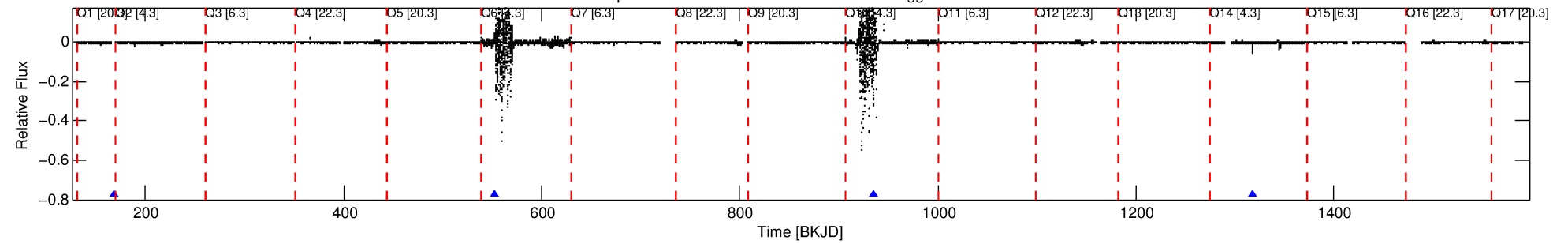
Ephemeris Match Information For 005217781-01

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 1 of 8 Period: 383.020 d

Kp: 14.02 R*: 0.88 Rs Teff: 5735.0 K Logg: 4.46 Fe/H: -0.420



TPS TCE Results:

Period = 383.02027 d
Epoch = 168.7818 BKJD

DV fit results are unavailable

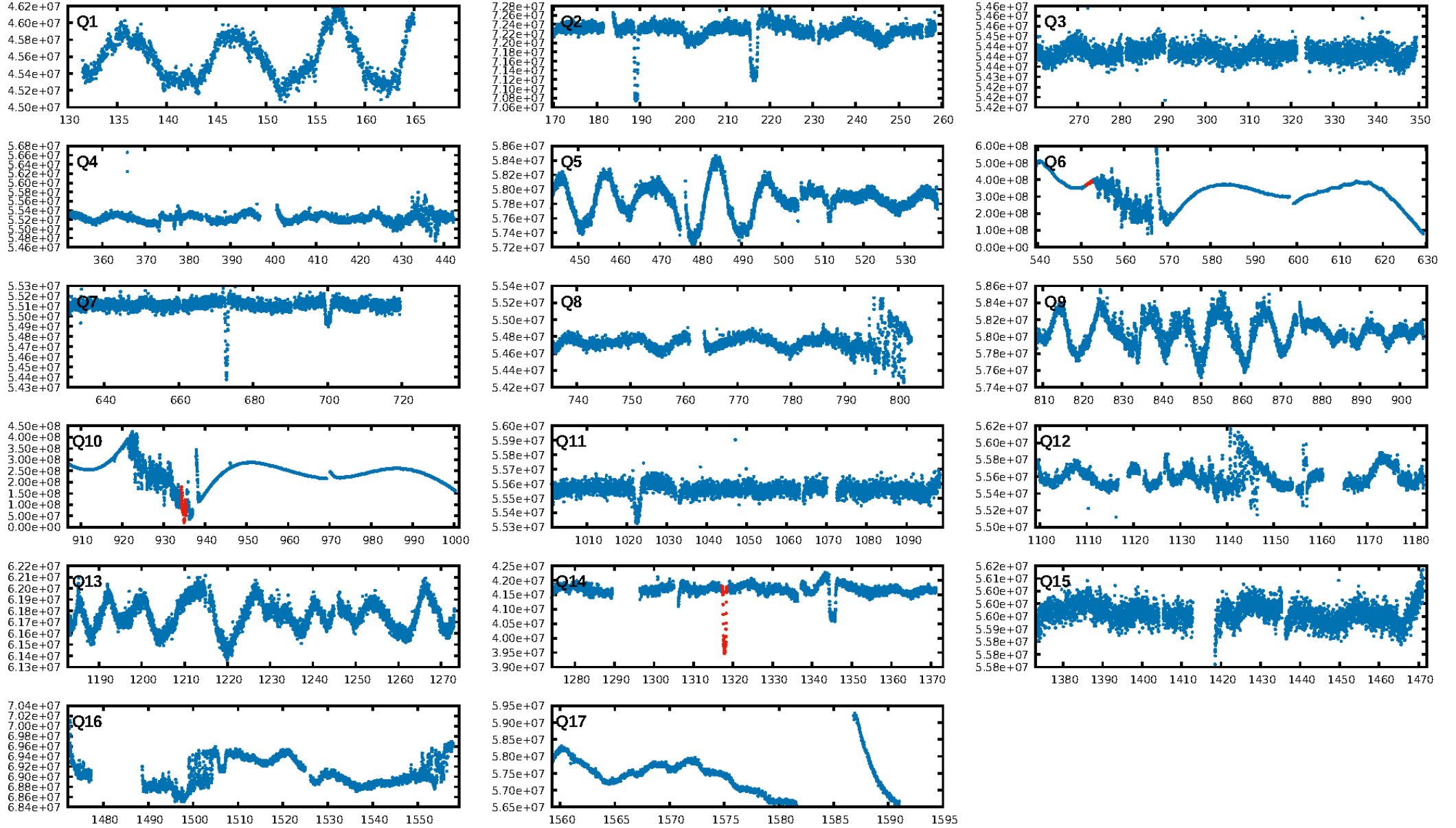
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.44σ]
LongPeriod-sig: 100.0% [7.43σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -16
Centroid-sig: N/A
Centroid-so: 1.346 arcsec [5.89σ]
OotOffset-rm: 6.109 arcsec [3.93σ]
KicOffset-rm: 7.842 arcsec [2.88σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

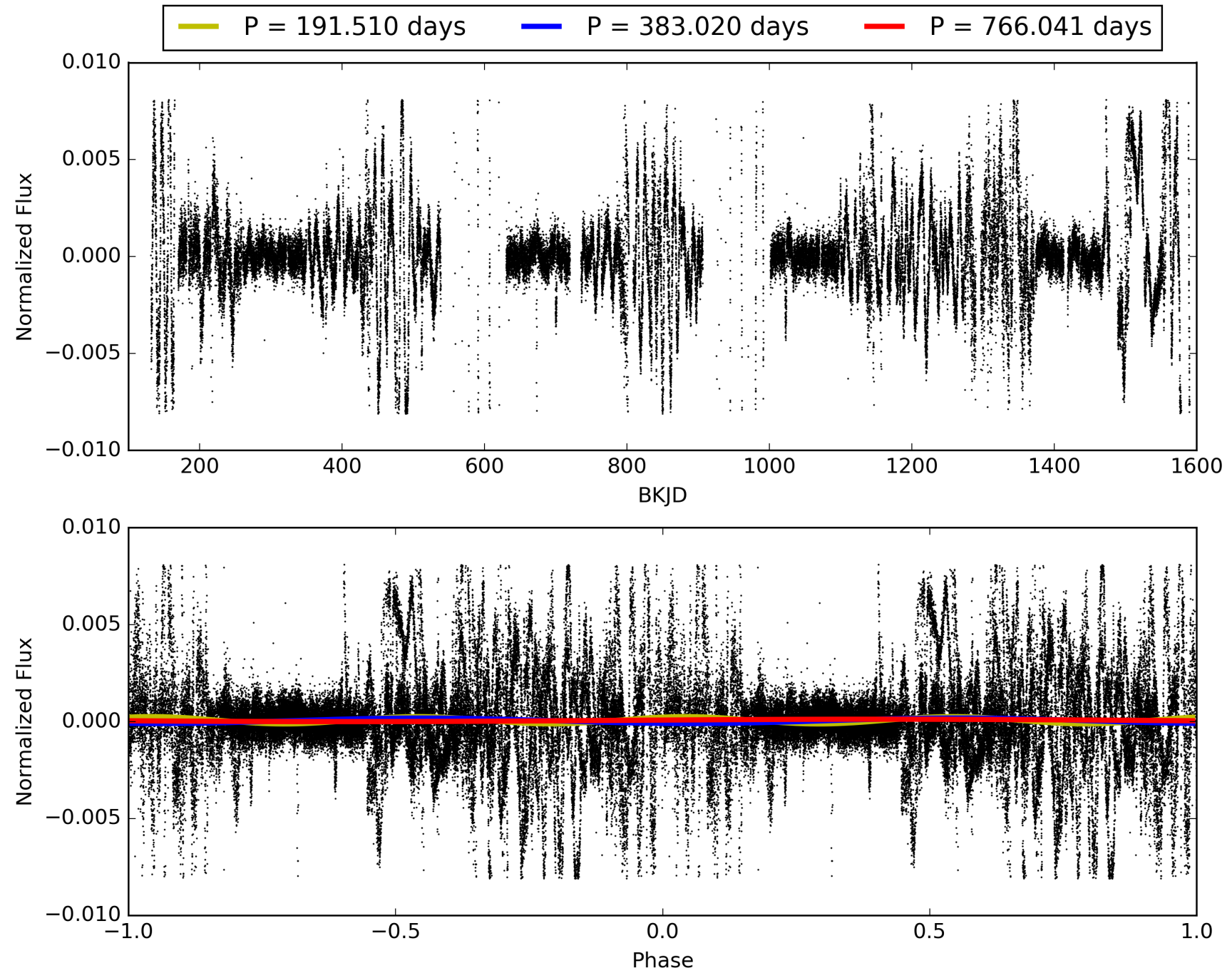
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:31:11 Z

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

TCE 005217781-01, PDC Light Curves

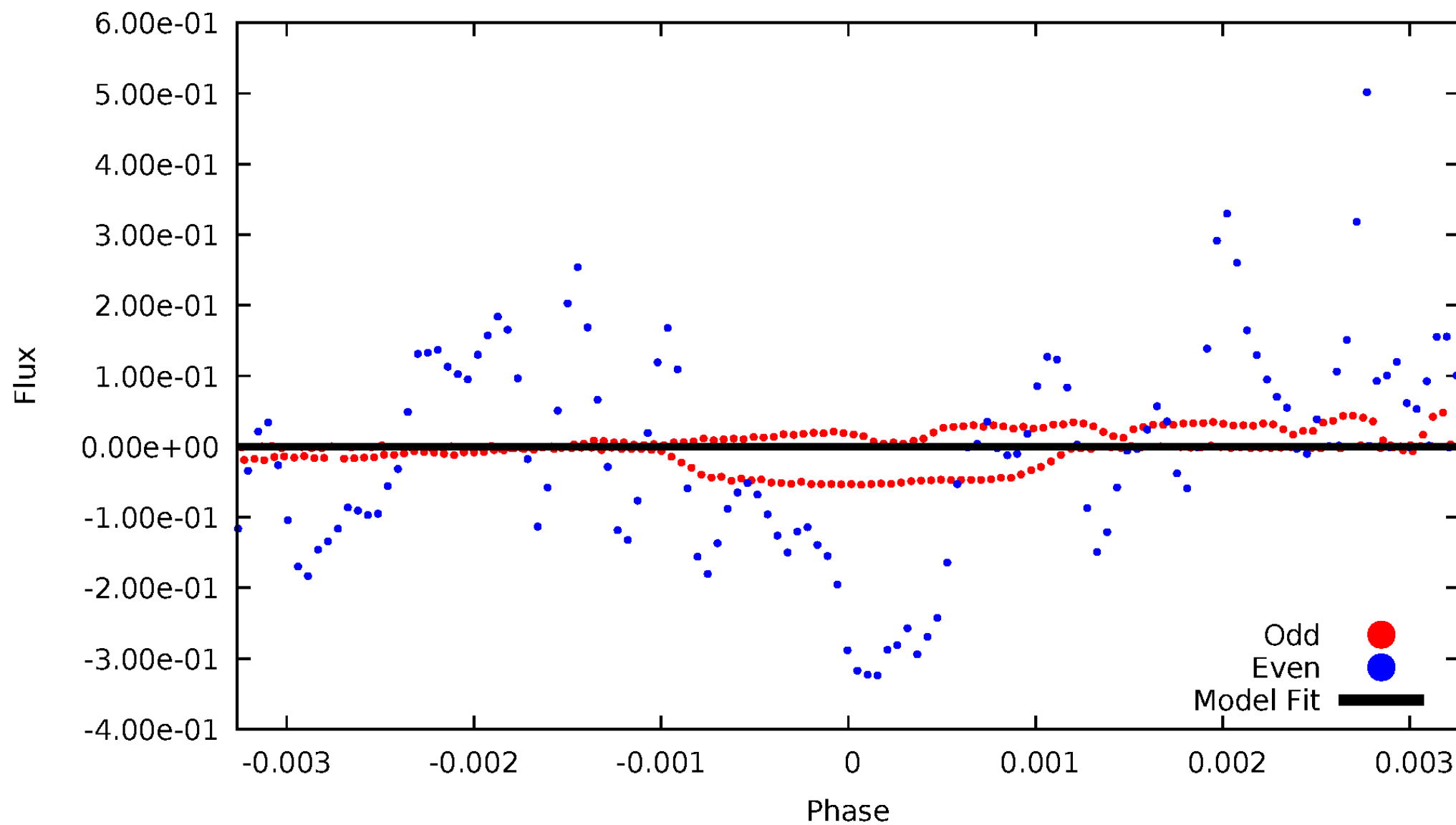


TCE 005217781-01



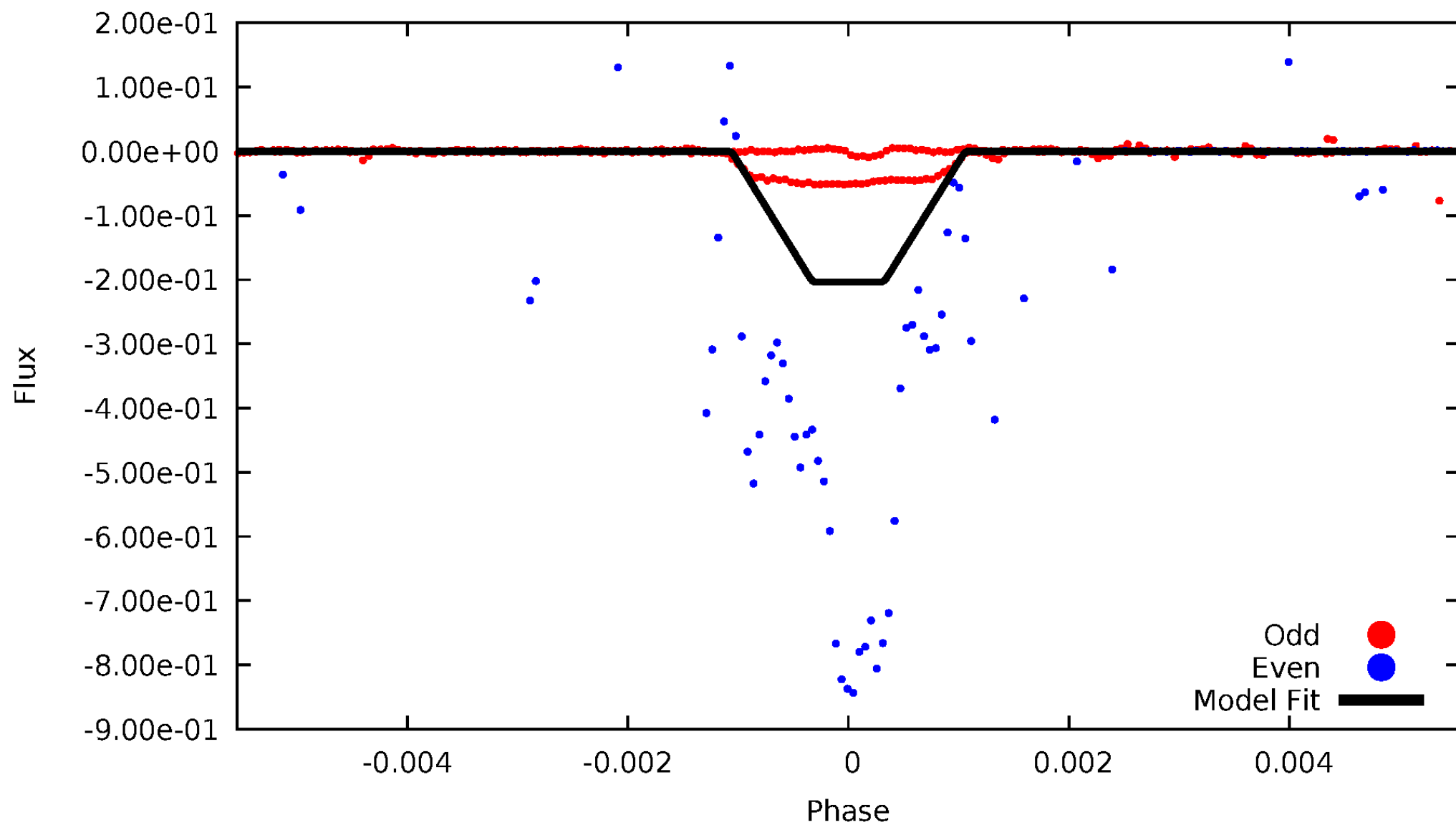
DV Odd/Even

TCE 005217781-01



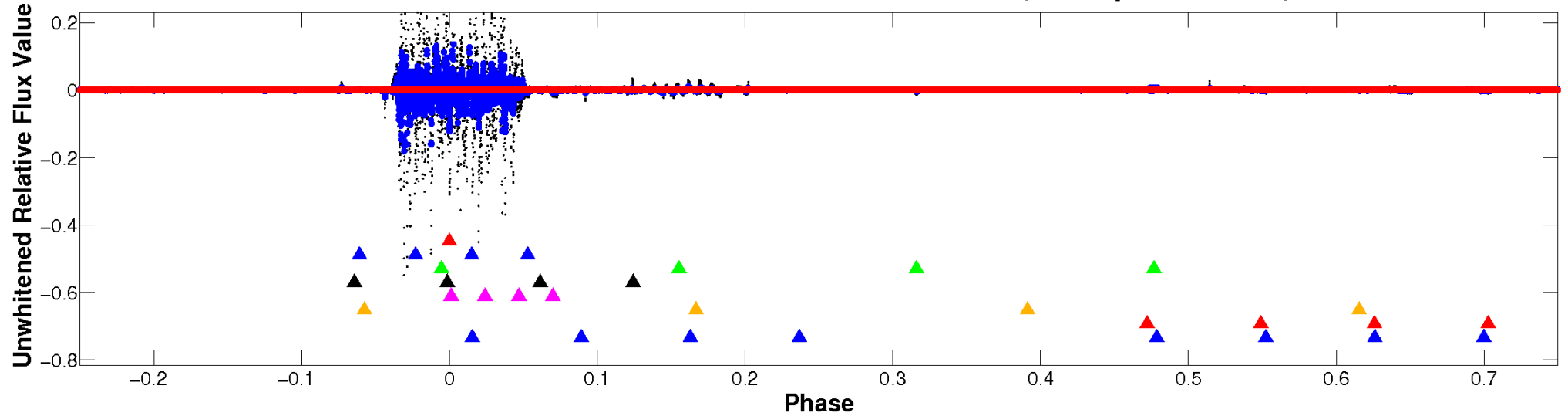
ALT Odd/Even

TCE 005217781-01

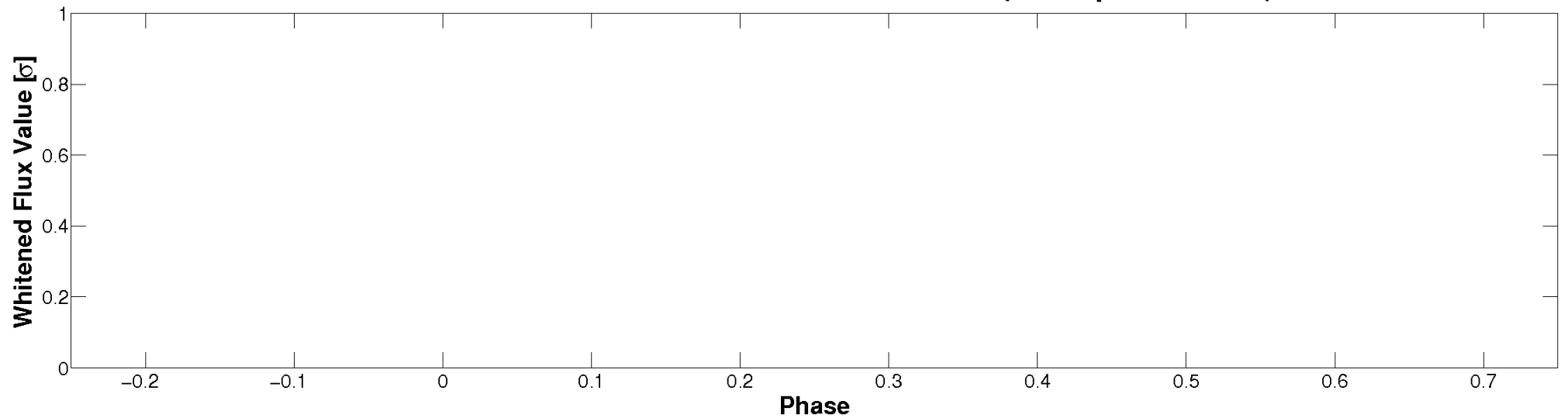


Non-Whitened Vs. Whitened Light Curve

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

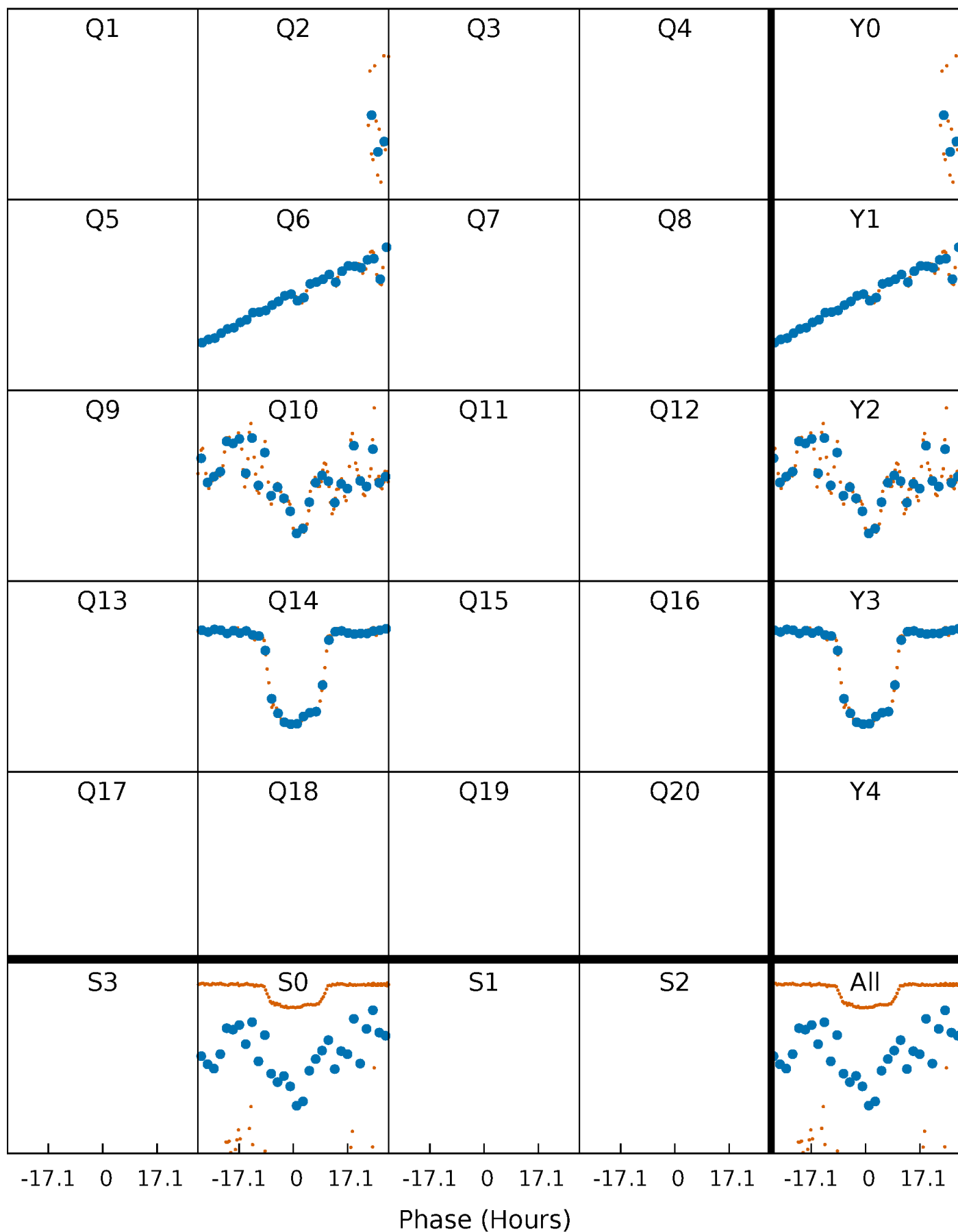


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



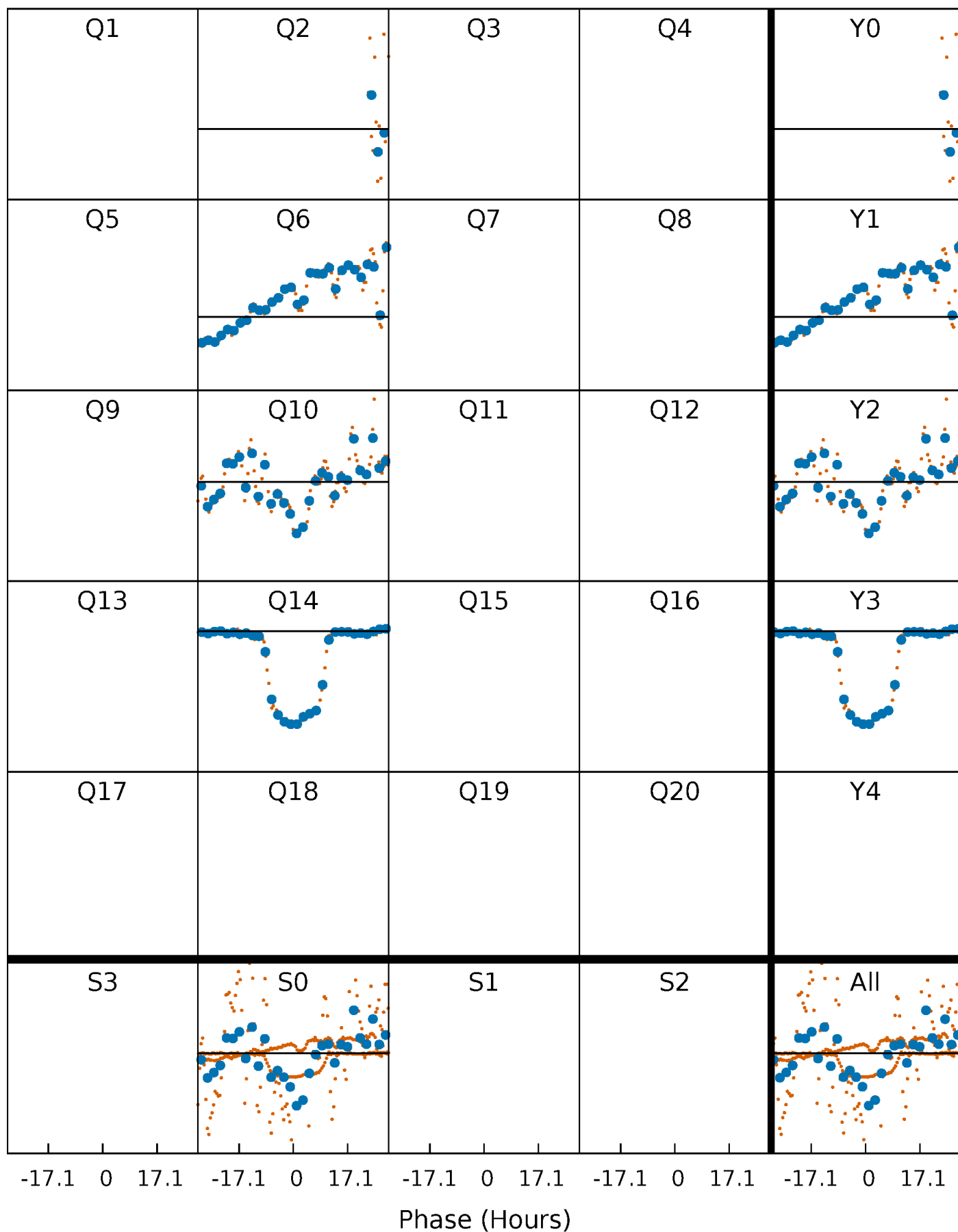
PDC Quarter-Phased Transit Curves

TCE 005217781-01 P=383.020271 Days $T_0=168.781807$ (BKJD)



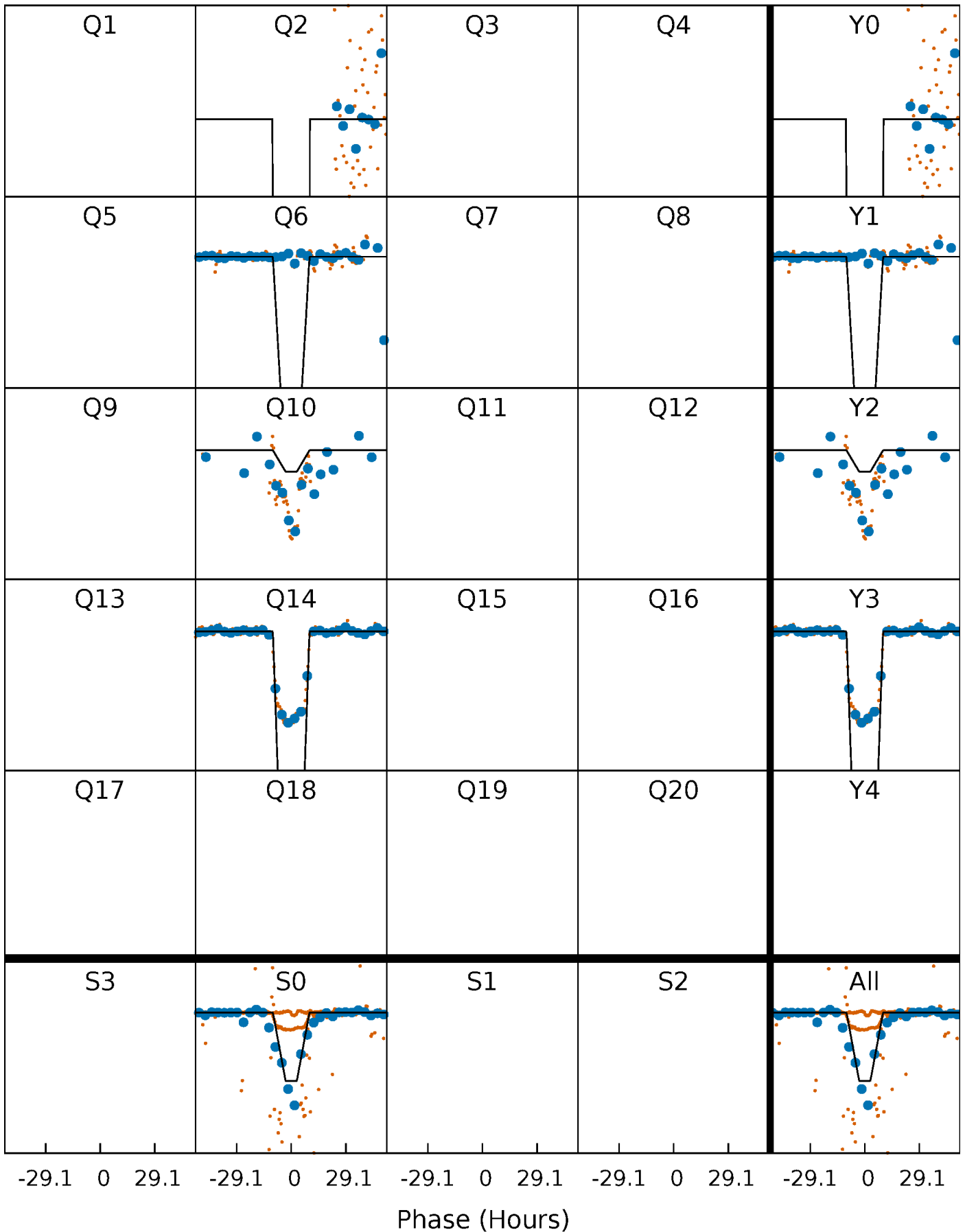
DV Quarter-Phased Transit Curves

TCE 005217781-01 P=383.020271 Days $T_0=168.781807$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

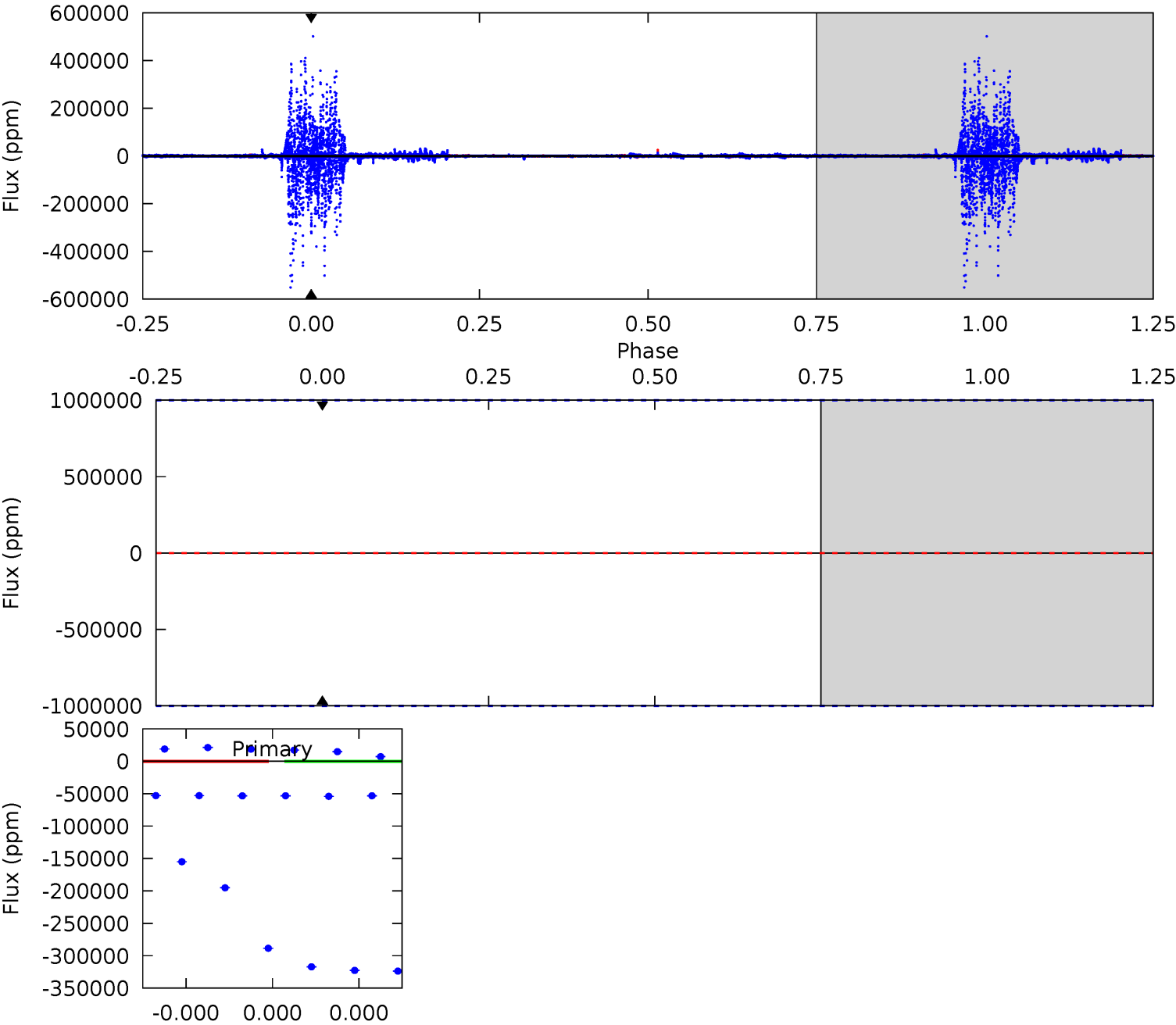
TCE 005217781-01 P=383.020271 Days $T_0=168.823541$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-01, P = 383.020271 Days, E = 168.781807 Days

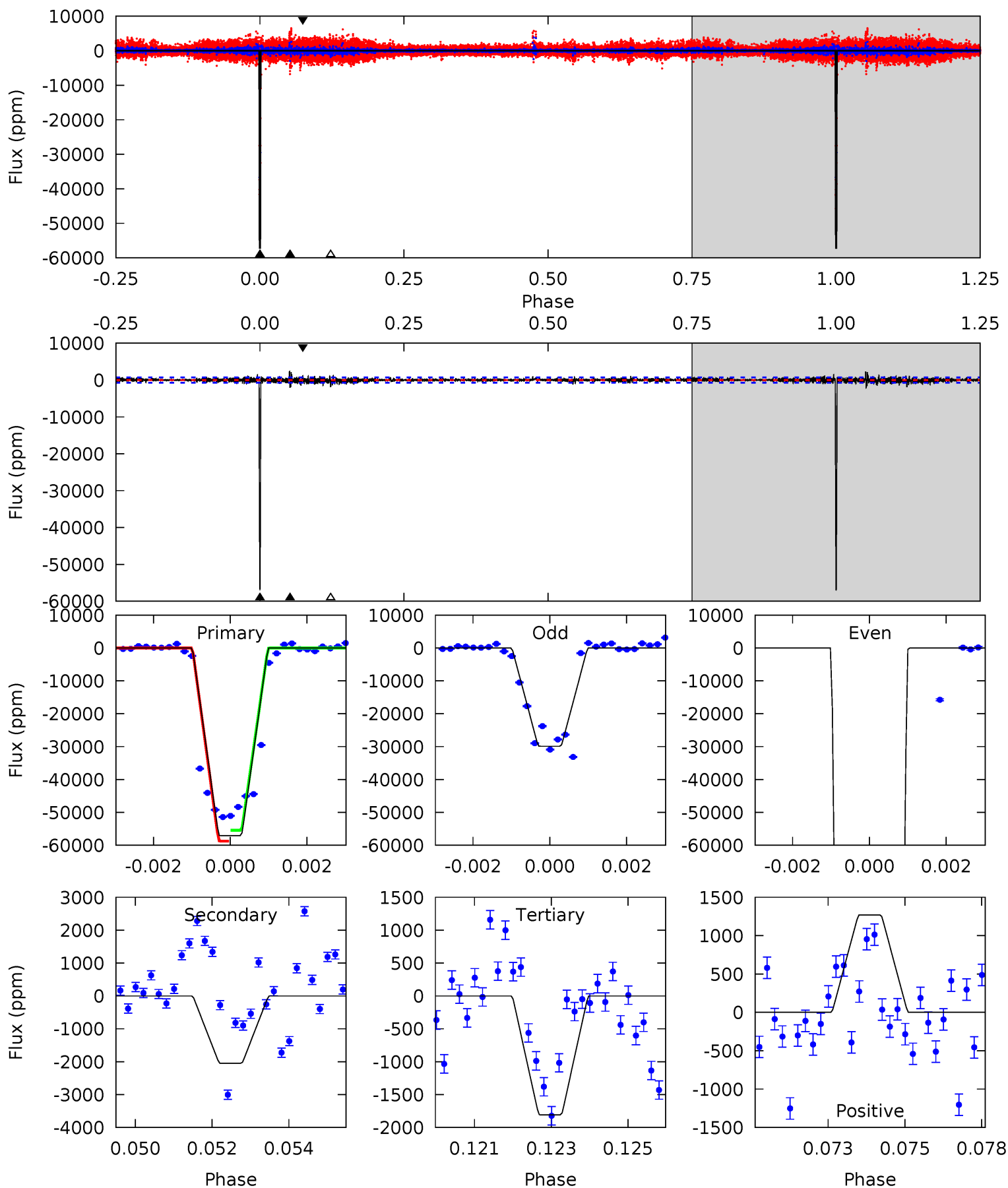
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005217781-01, P = 383.020271 Days, E = 168.823541 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
415.4	14.9	13.2	9.25	5.31	3.07	1.80	402.2	406.1	1.74	5.65	1715	4.20	0.04	0



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$11.79^{+8.86}_{-7.81}$	340^{+20}_{-18}	2448^{+10752}_{-15112}	$332^{+760417}_{-612205}$
Alt.	-2047 ± 137	$44.06^{+11.60}_{-10.35}$	339^{+23}_{-18}	2628^{+181}_{-134}	548^{+380}_{-203}

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

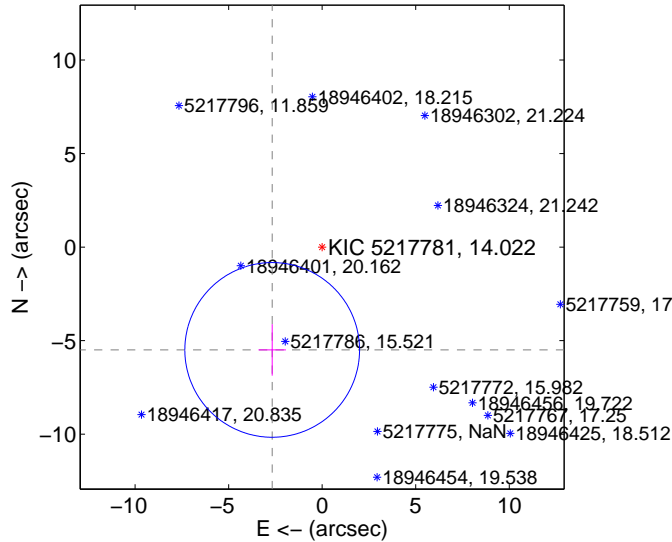
Supplemental centroid analysis for 005217781-01. Kepler magnitude: 14.02. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

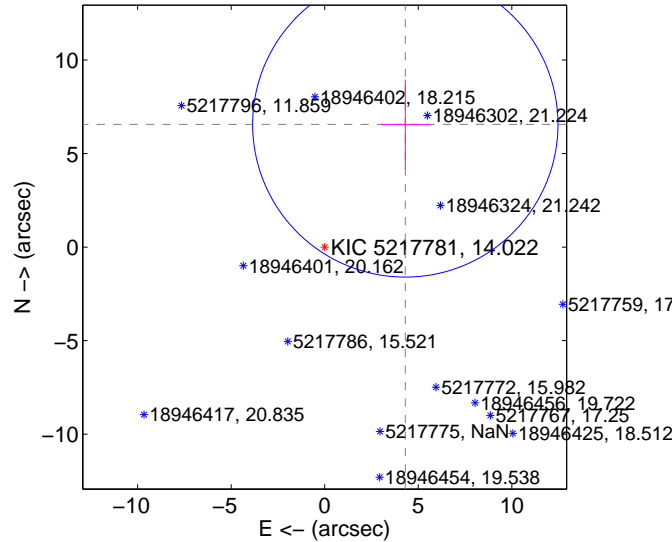
The OOT PRF centroid is offset from the target star catalog position by about 6.97 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.109 ± 1.556	3.93	2.671 ± 0.736	-5.494 ± 1.374
PRF-fit source offset from KIC position	7.842 ± 2.719	2.88	-4.305 ± 1.318	6.555 ± 2.389
photometric centroid source offset	1.35 ± 0.23	5.89	-1.20 ± 0.18	-0.62 ± 0.36

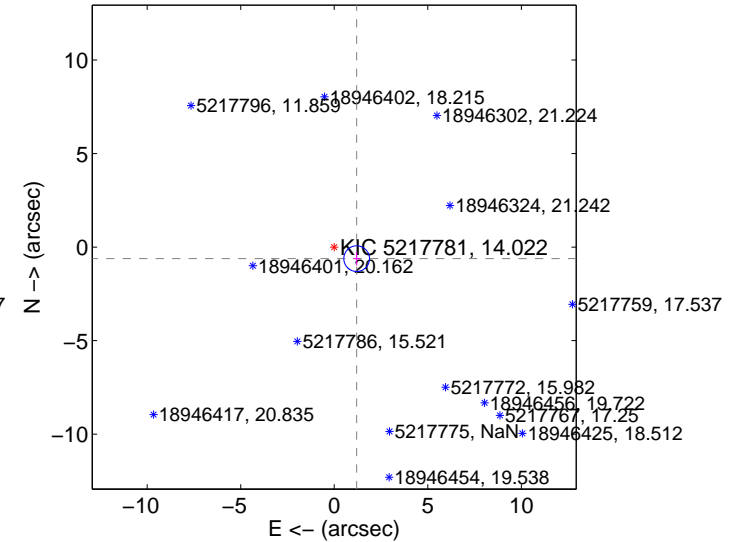
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

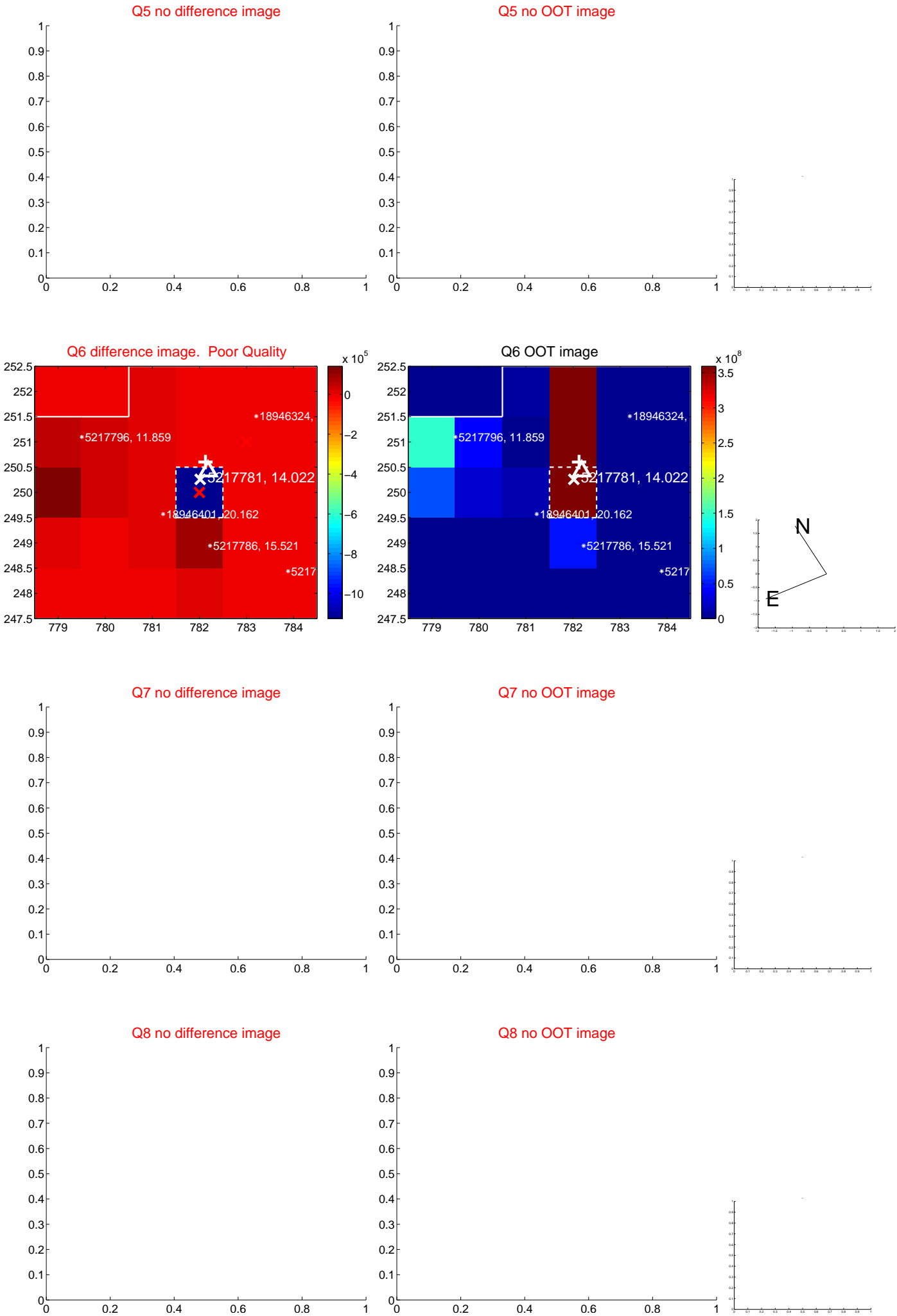


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

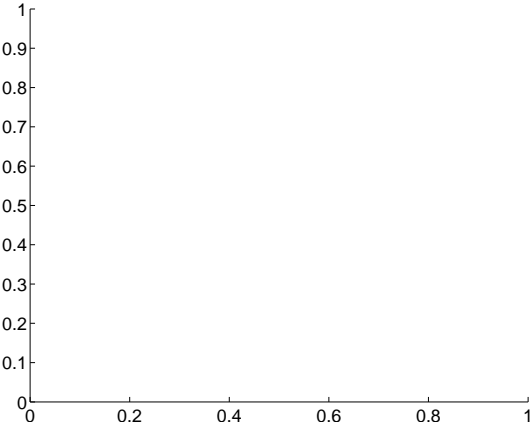


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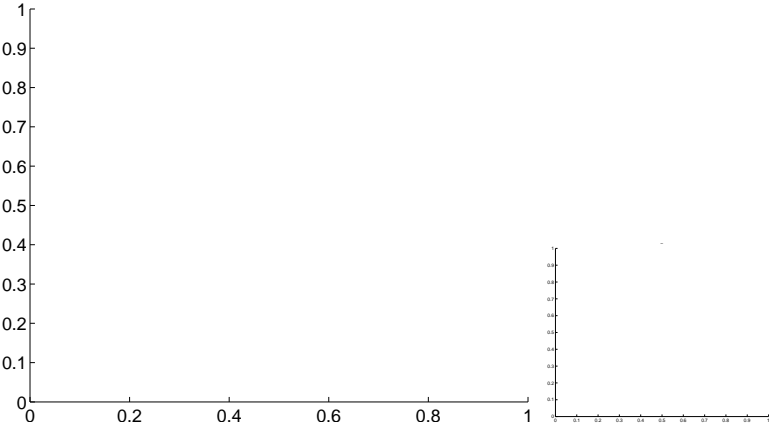


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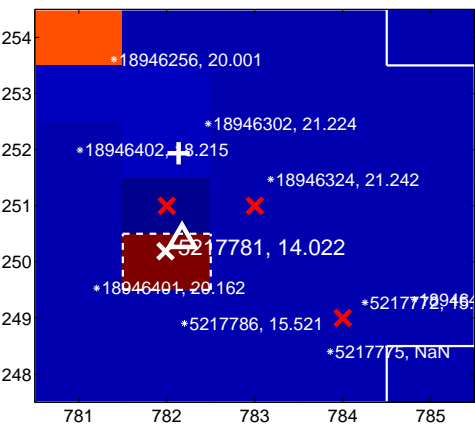
Q9 no difference image



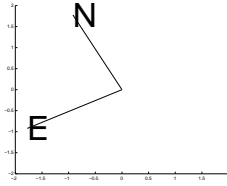
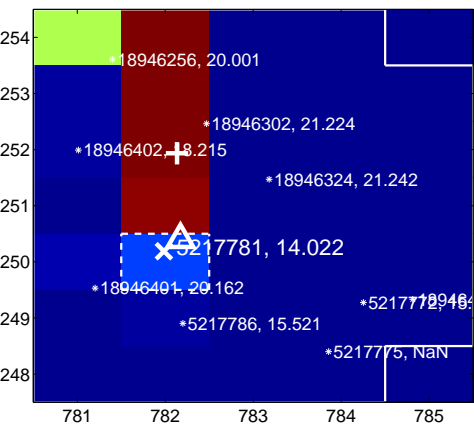
Q9 no OOT image



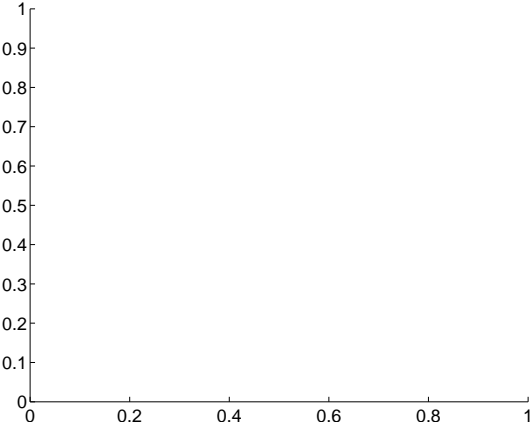
Q10 difference image



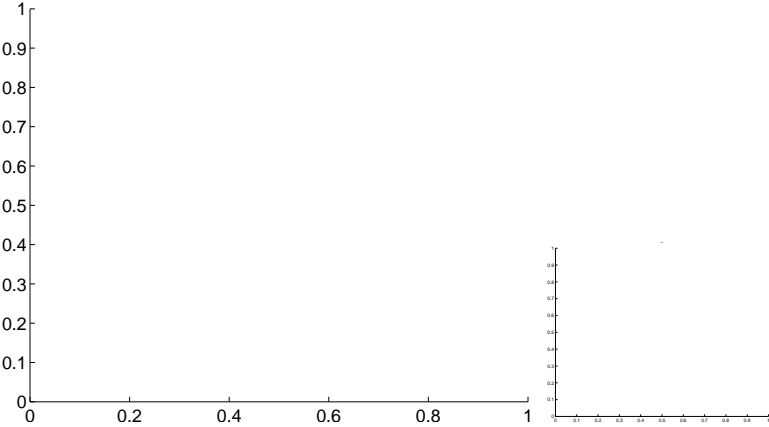
Q10 OOT image



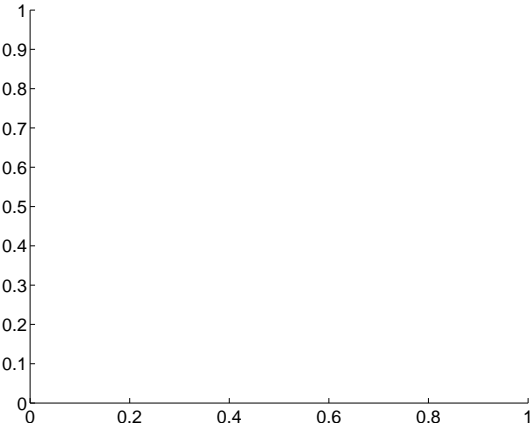
Q11 no difference image



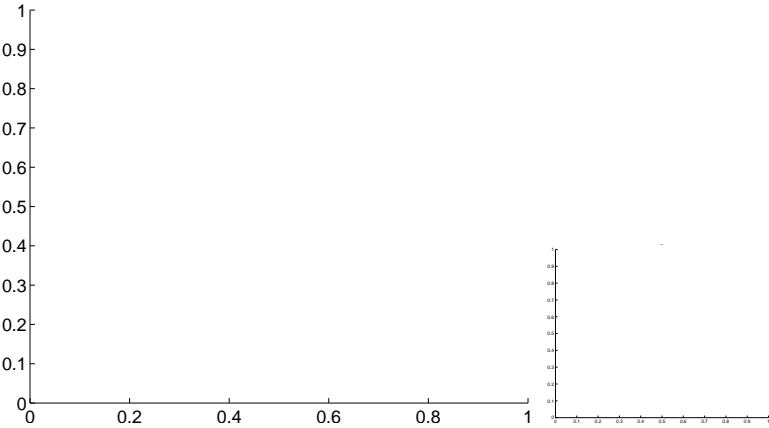
Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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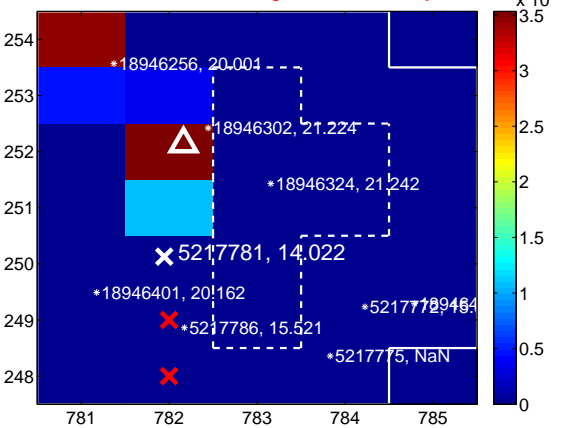
Q13 no difference image



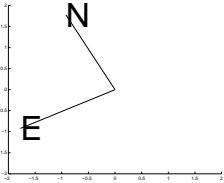
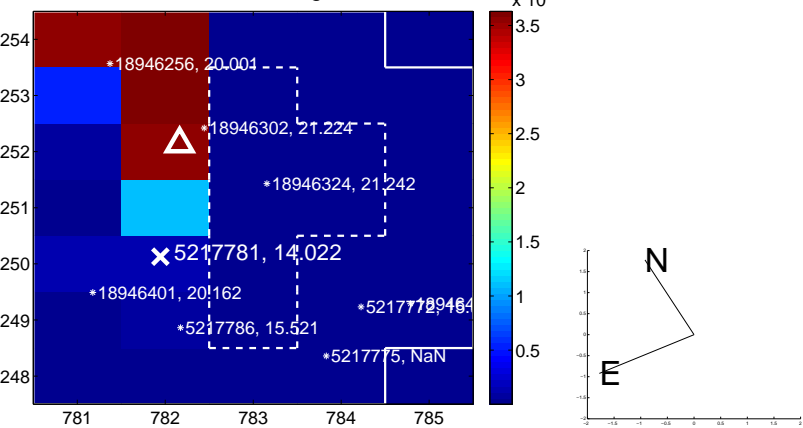
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



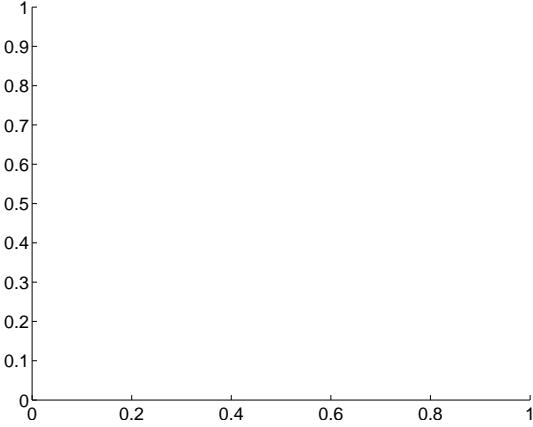
Q15 no difference image



Q15 no OOT image



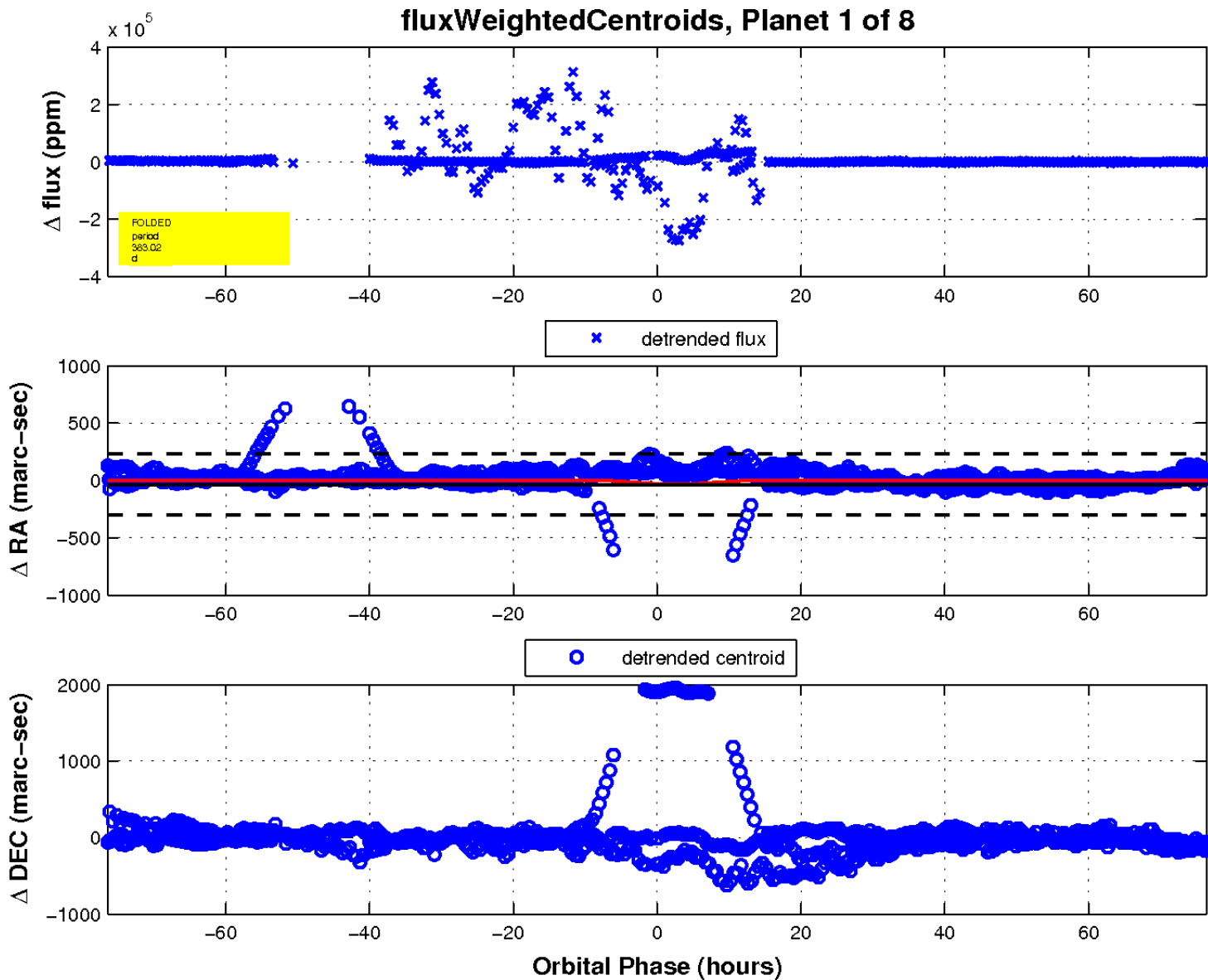
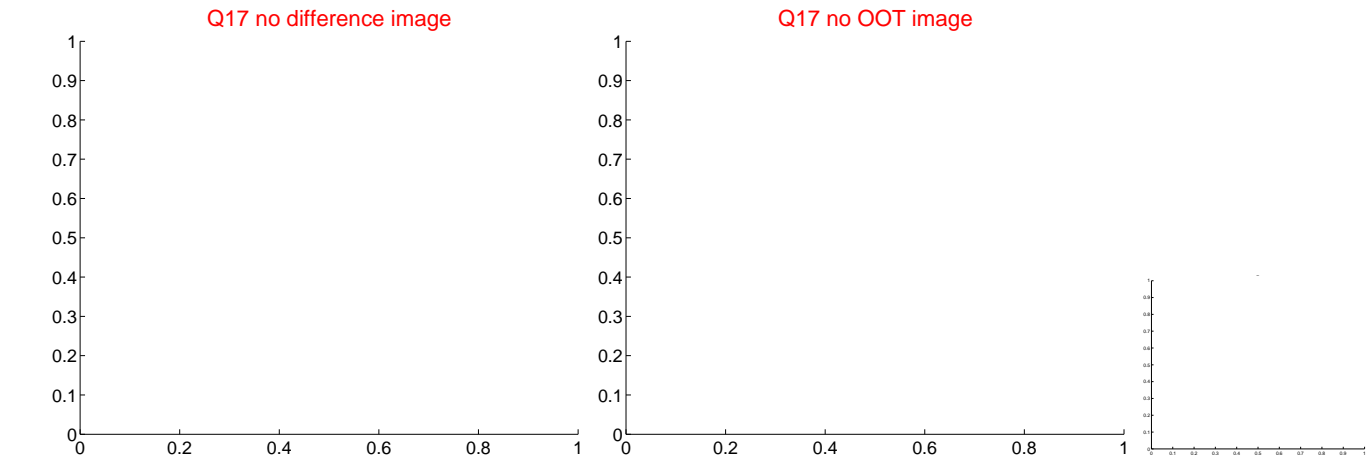
Q16 no difference image



Q16 no OOT image

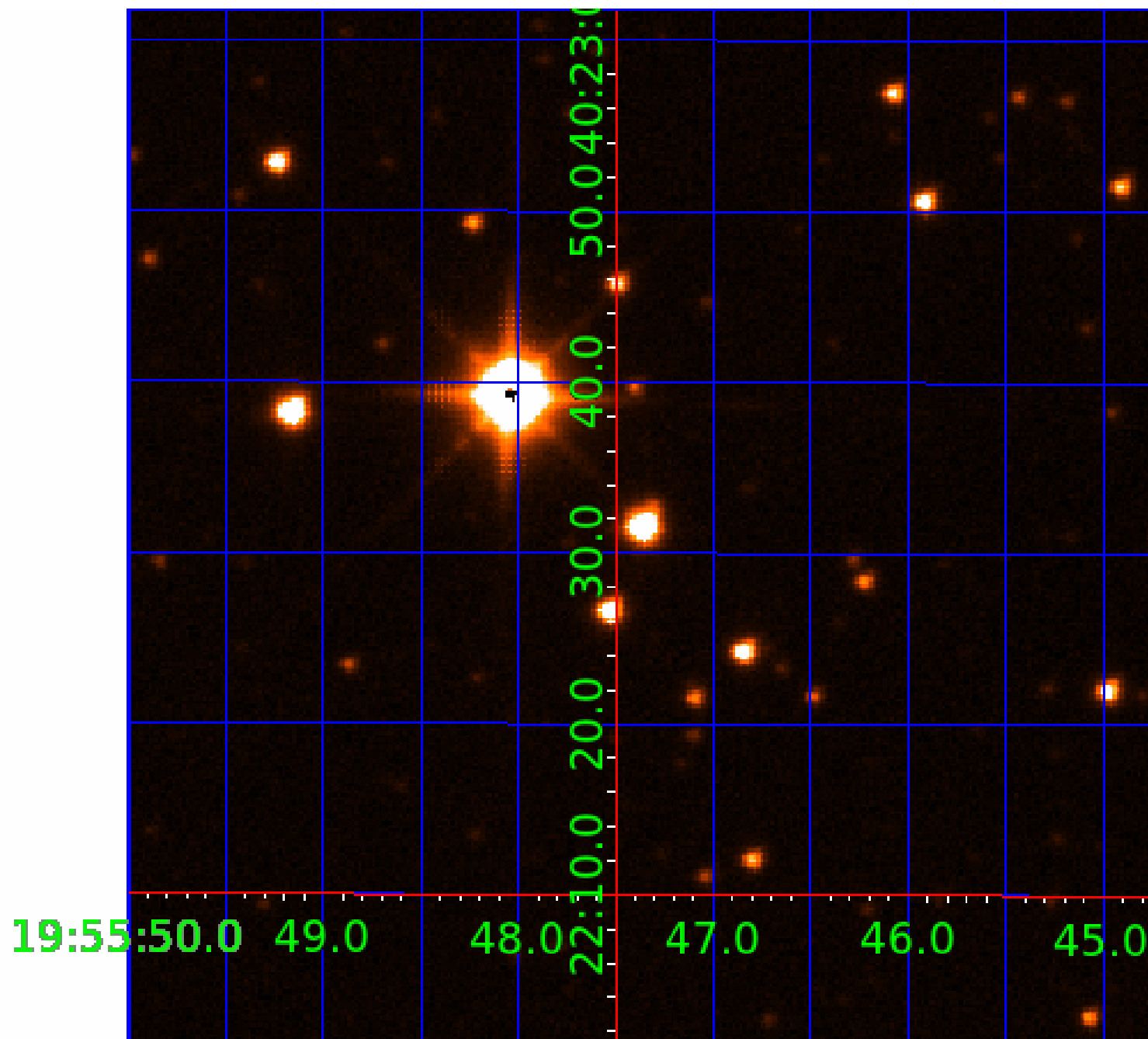


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UKIRT Image

Declination



KIC 005217781

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

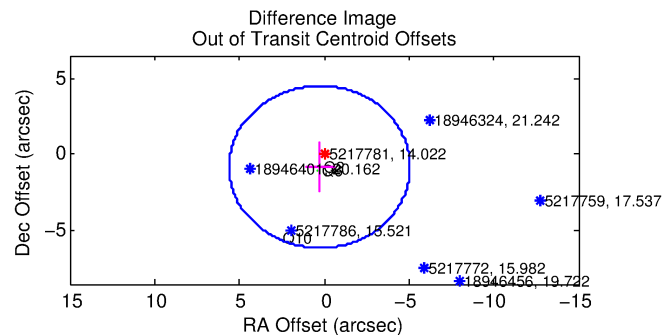
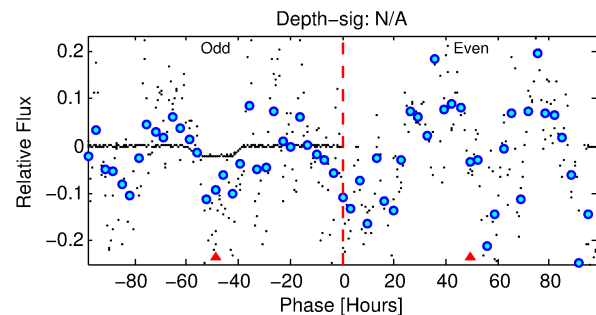
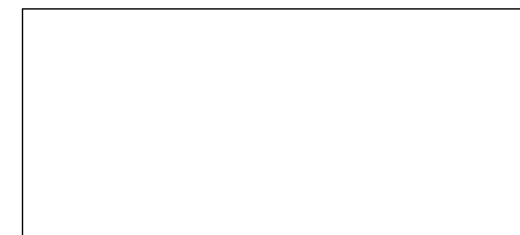
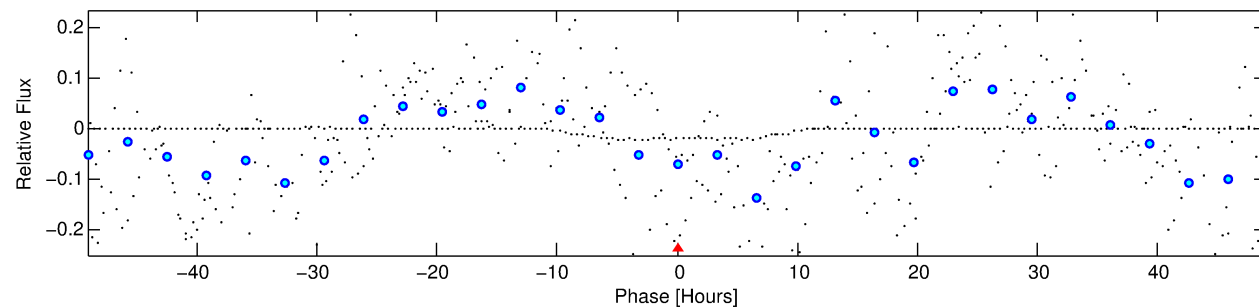
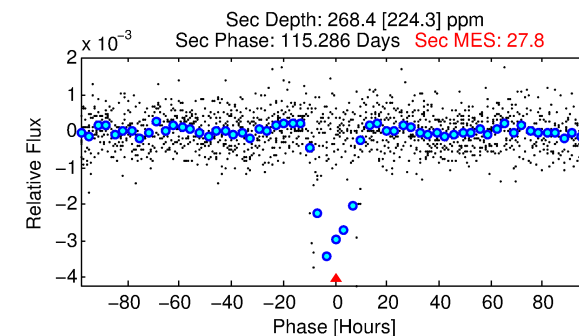
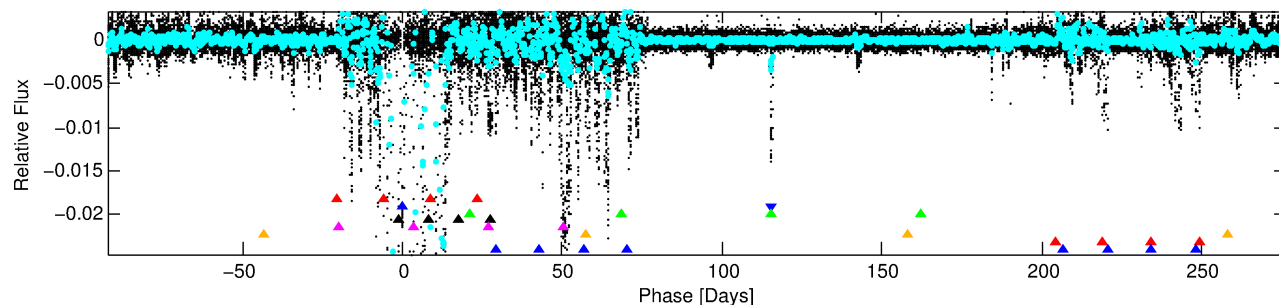
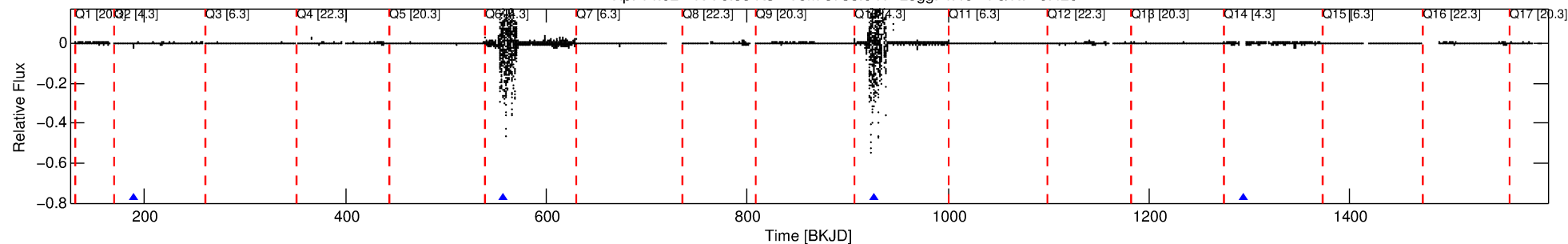
Ephemeris Match Information For 005217781-02

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 2 of 8 Period: 368.485 d

Kp: 14.02 R*: 0.88 Rs Teff: 5735.0 K Logg: 4.46 Fe/H: -0.420



TPS TCE Results:

Period = 368.48520 d
Epoch = 189.1064 BKJD

DV fit results are unavailable

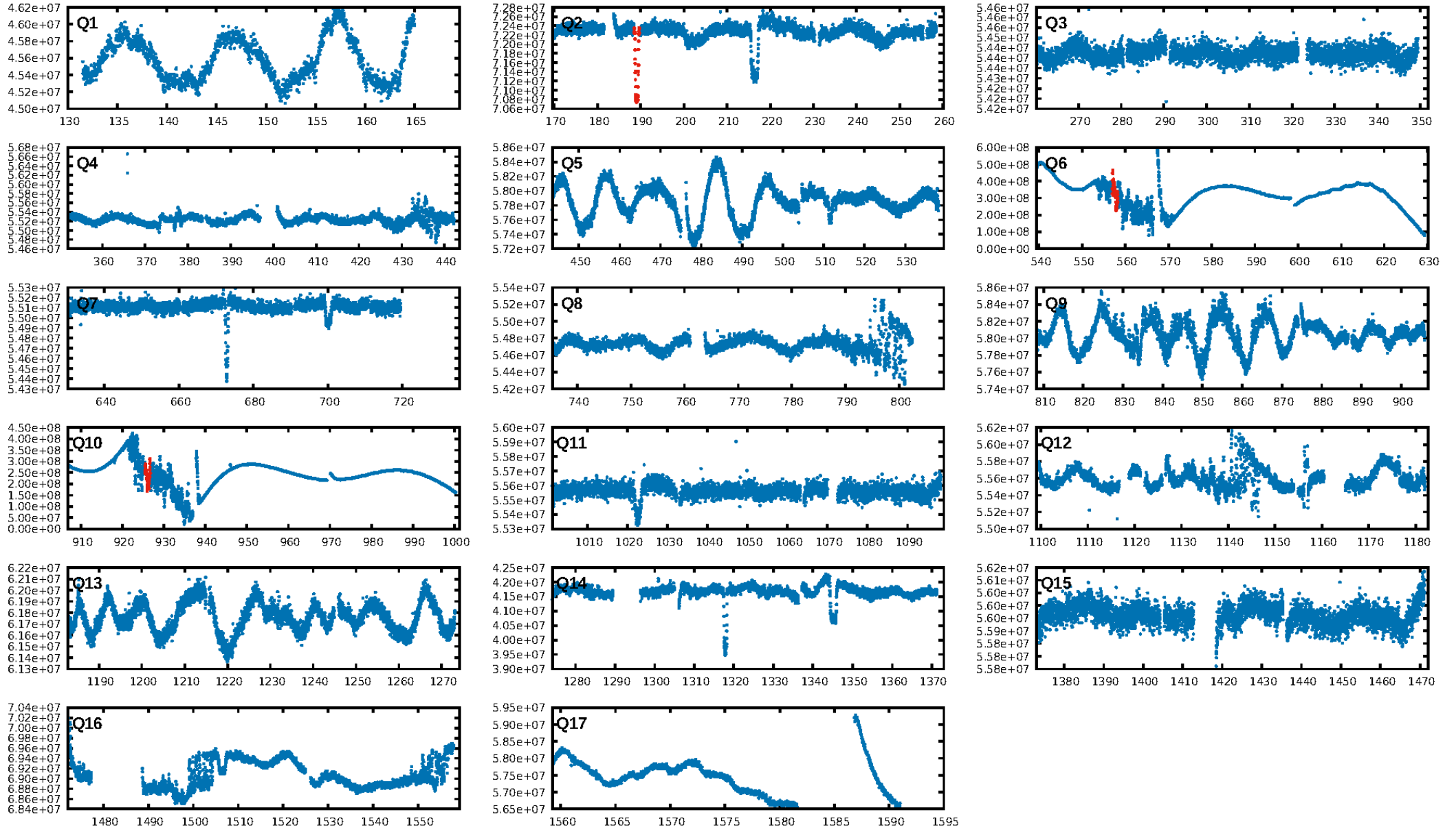
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.44 σ]
LongPeriod-sig: 100.0% [16.44 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 19.42
Centroid-sig: N/A
Centroid-so: 1.154 arcsec [0.35 σ]
OotOffset-rm: 0.858 arcsec [0.48 σ]
KicOffset-rm: 1.407 arcsec [3.67 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

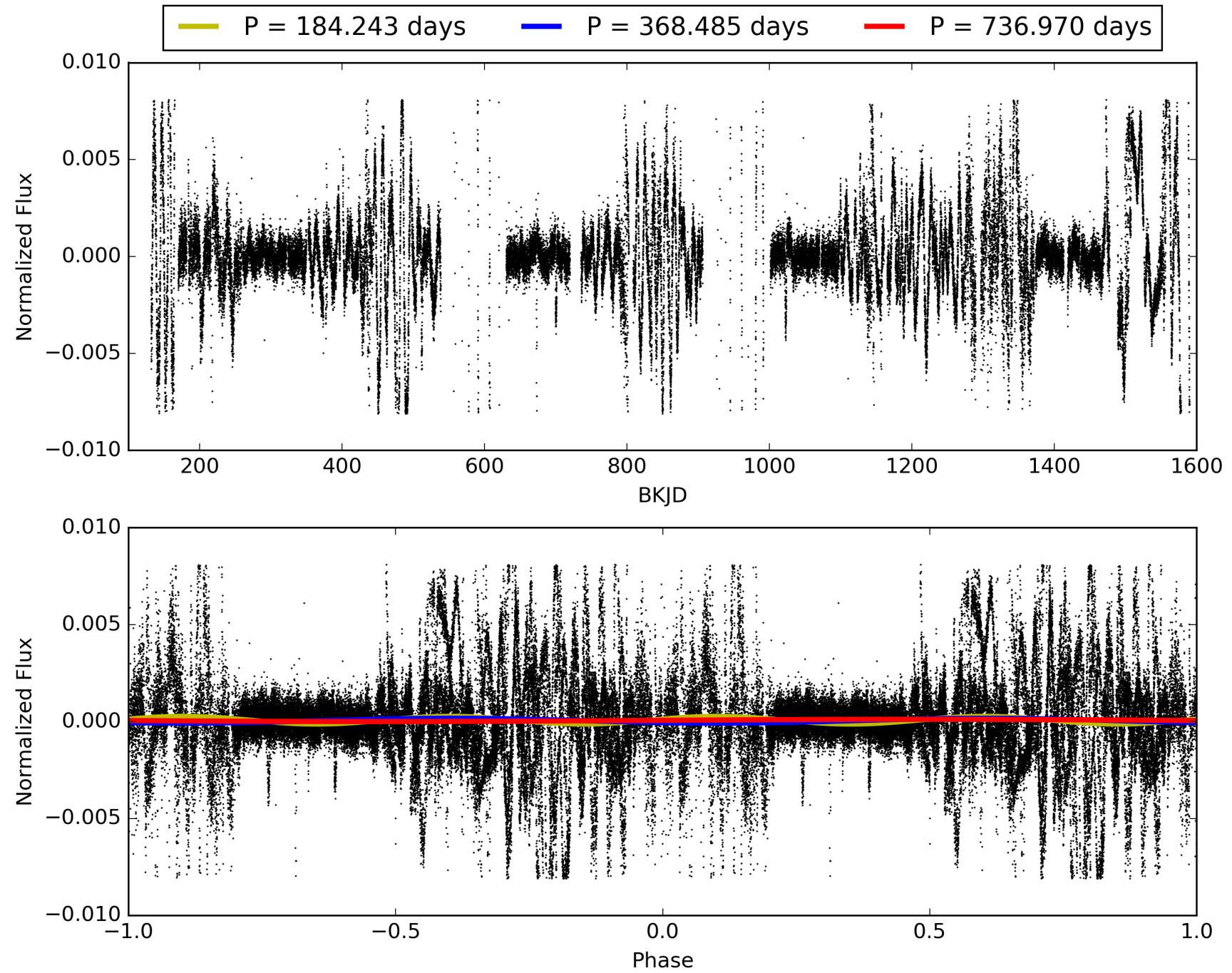
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:31:17 Z

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

TCE 005217781-02, PDC Light Curves

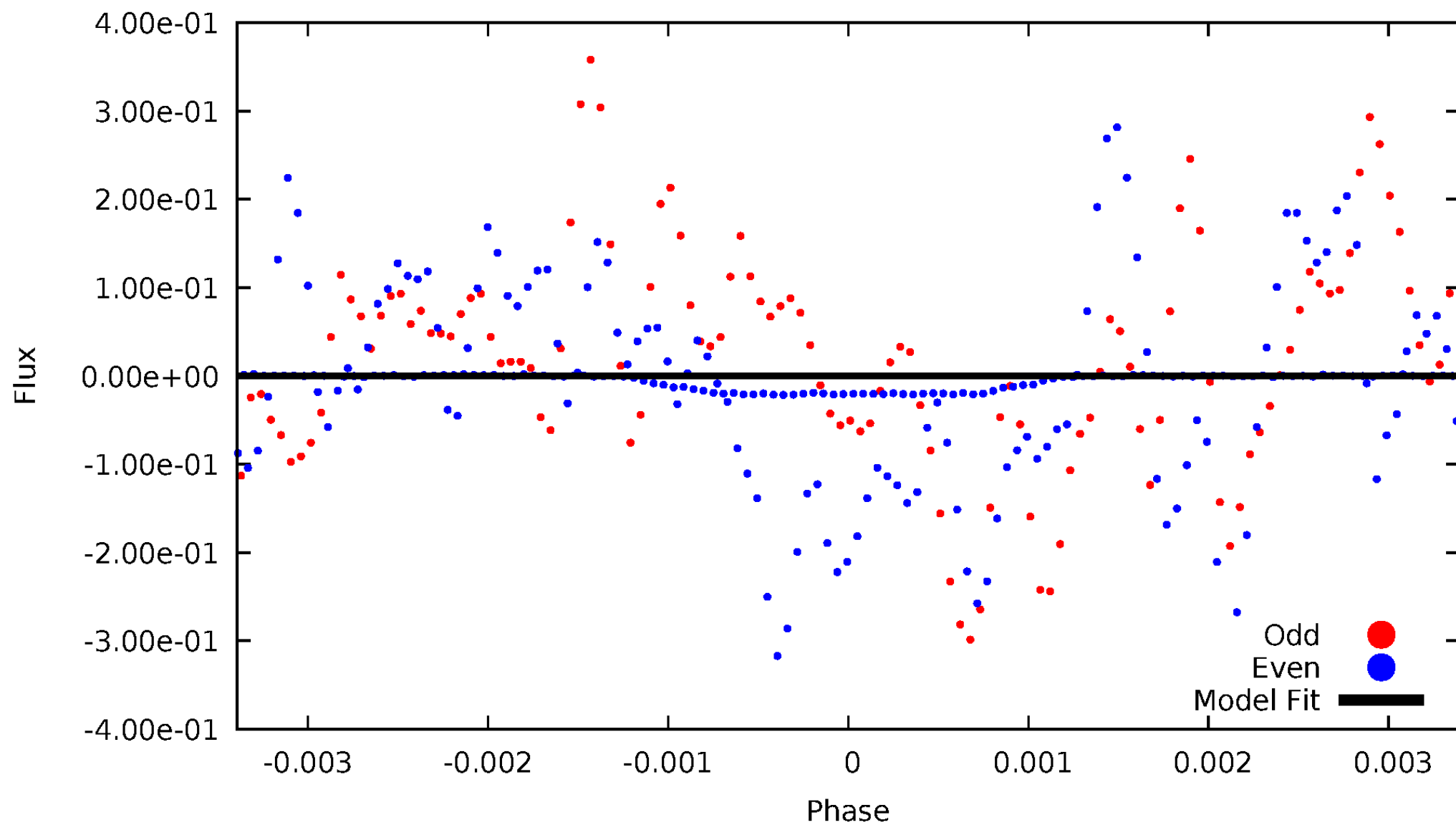


TCE 005217781-02



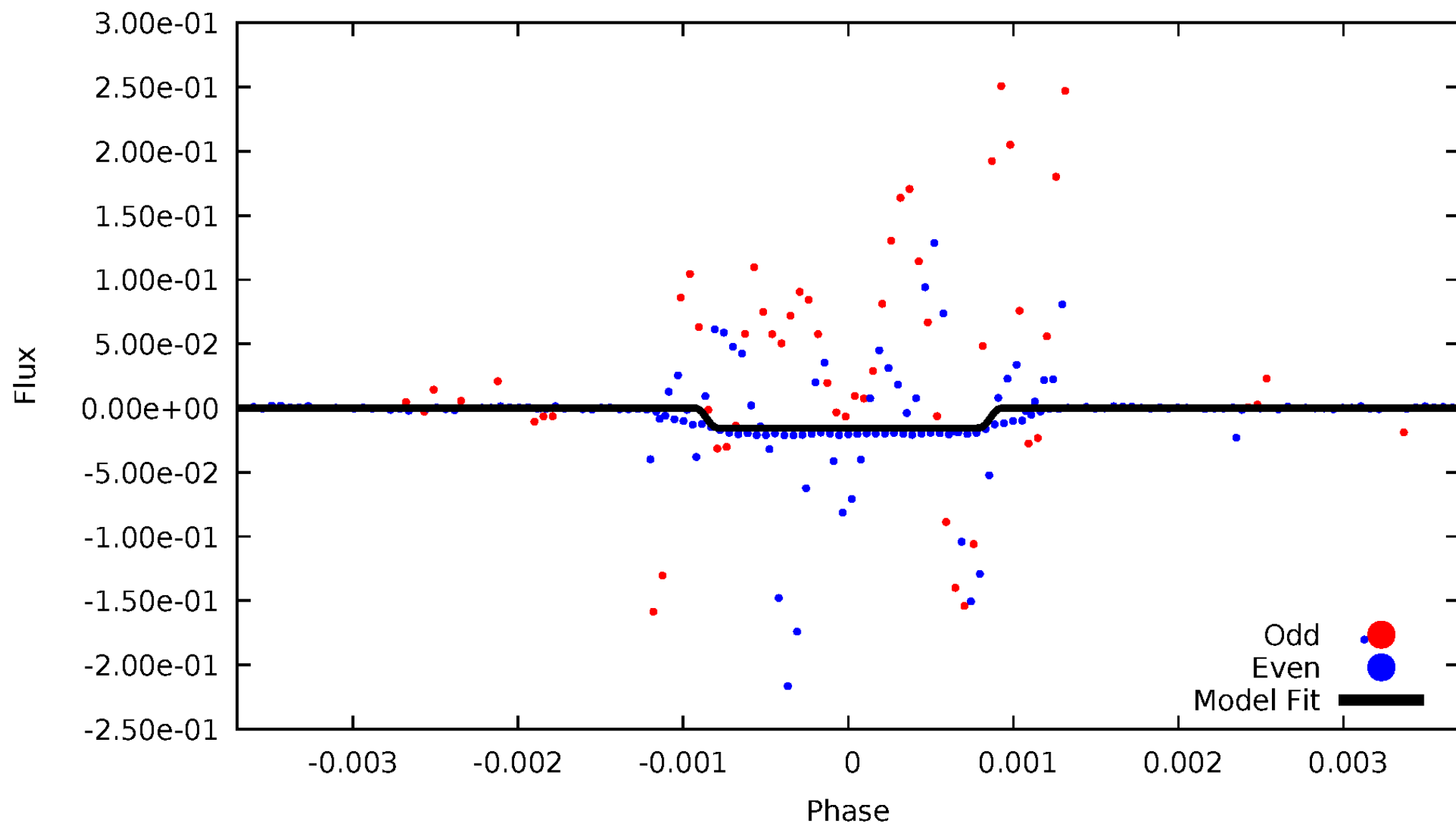
DV Odd/Even

TCE 005217781-02



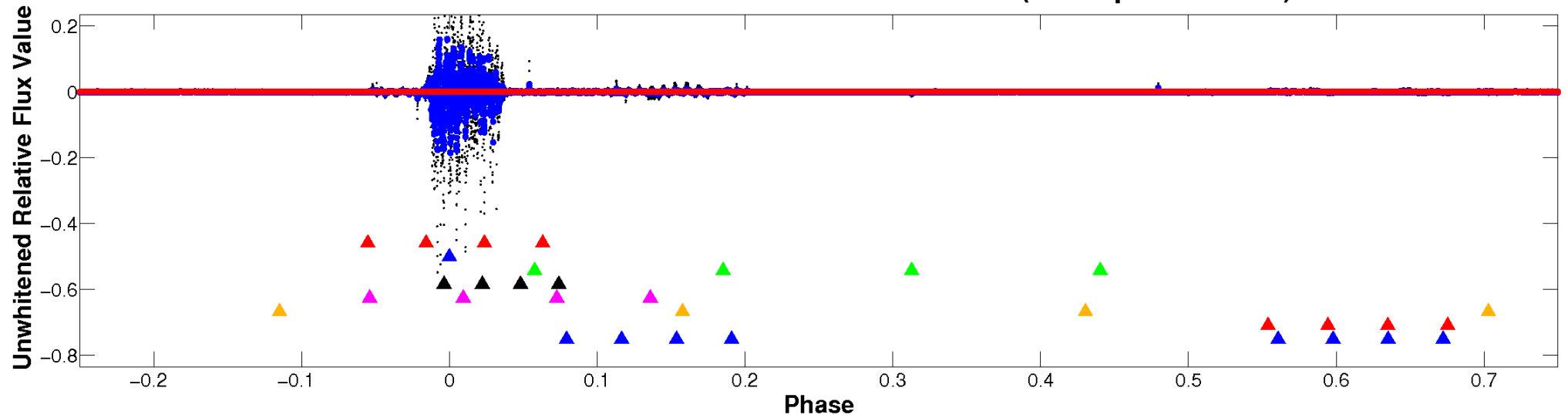
ALT Odd/Even

TCE 005217781-02

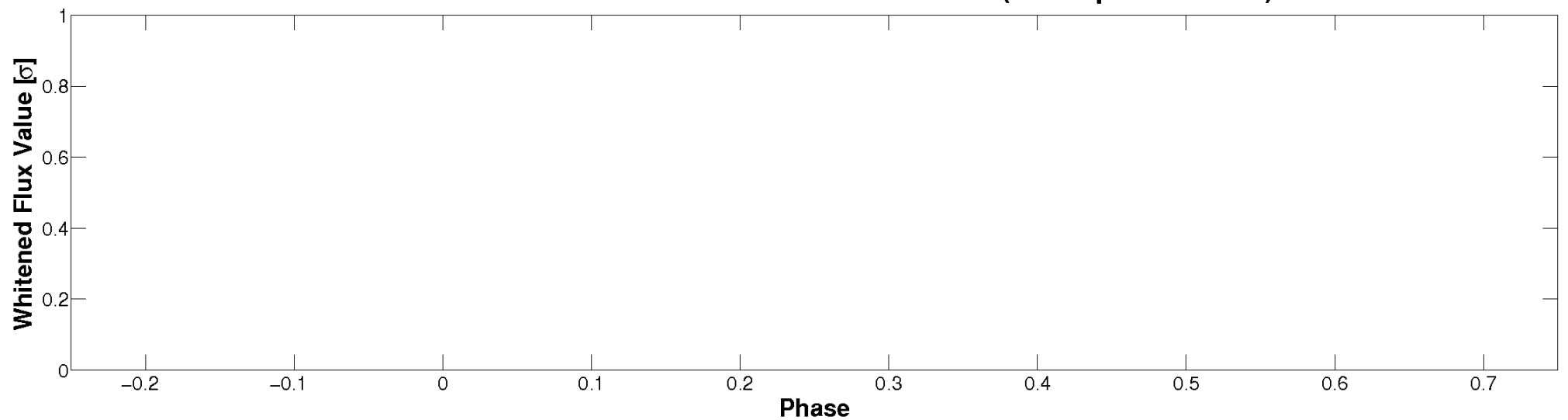


Non-Whitened Vs. Whitened Light Curve

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



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



PDC Quarter-Phased Transit Curves

TCE 005217781-02 $P=368.485199$ Days $T_0=189.106388$ (BKJD)



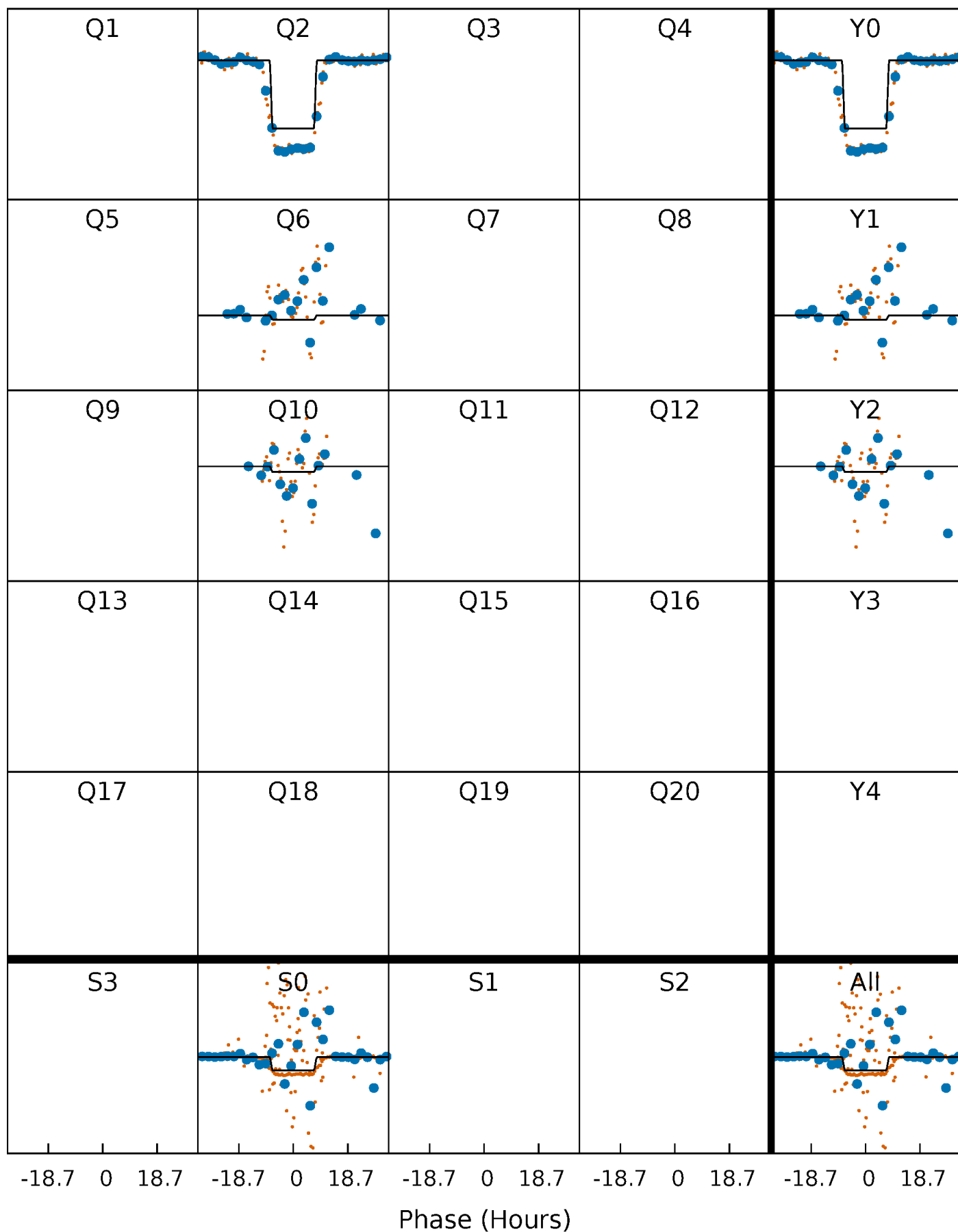
DV Quarter-Phased Transit Curves

TCE 005217781-02 P=368.485199 Days $T_0=189.106388$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

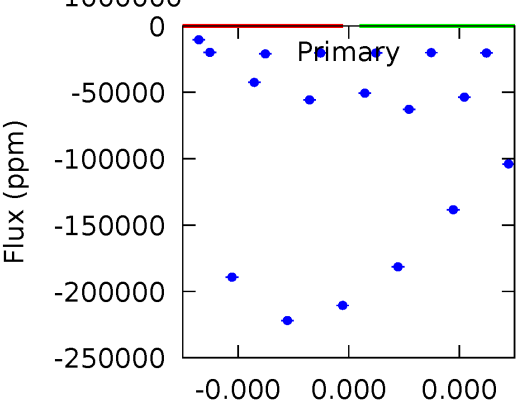
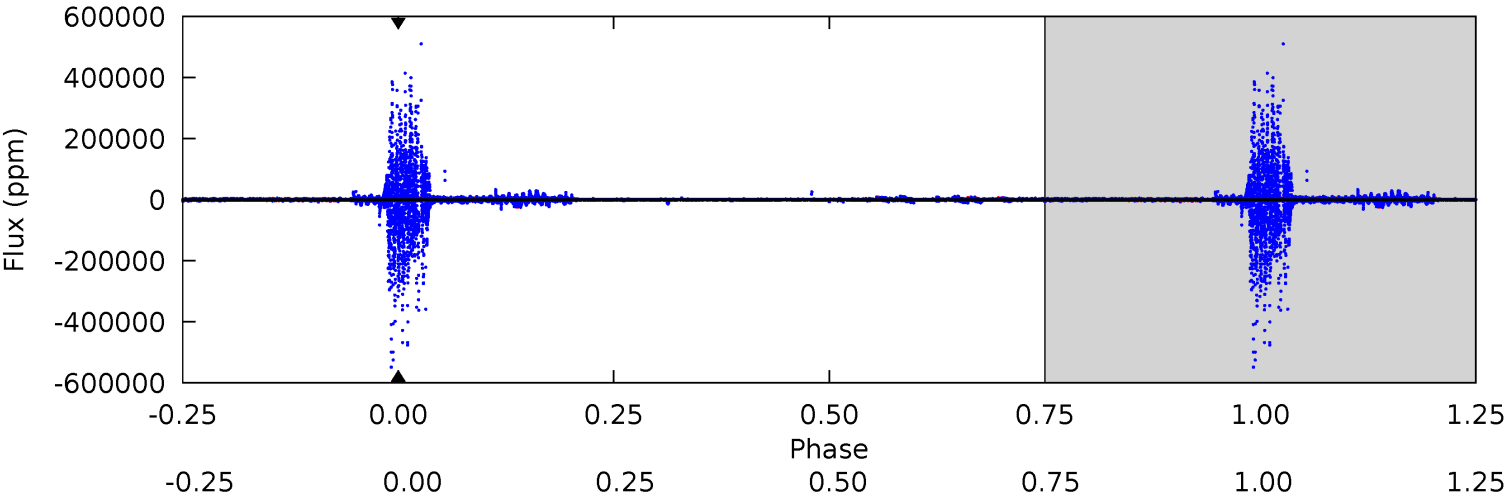
TCE 005217781-02 P=368.485199 Days $T_0=189.096335$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-02, P = 368.485199 Days, E = 189.106388 Days

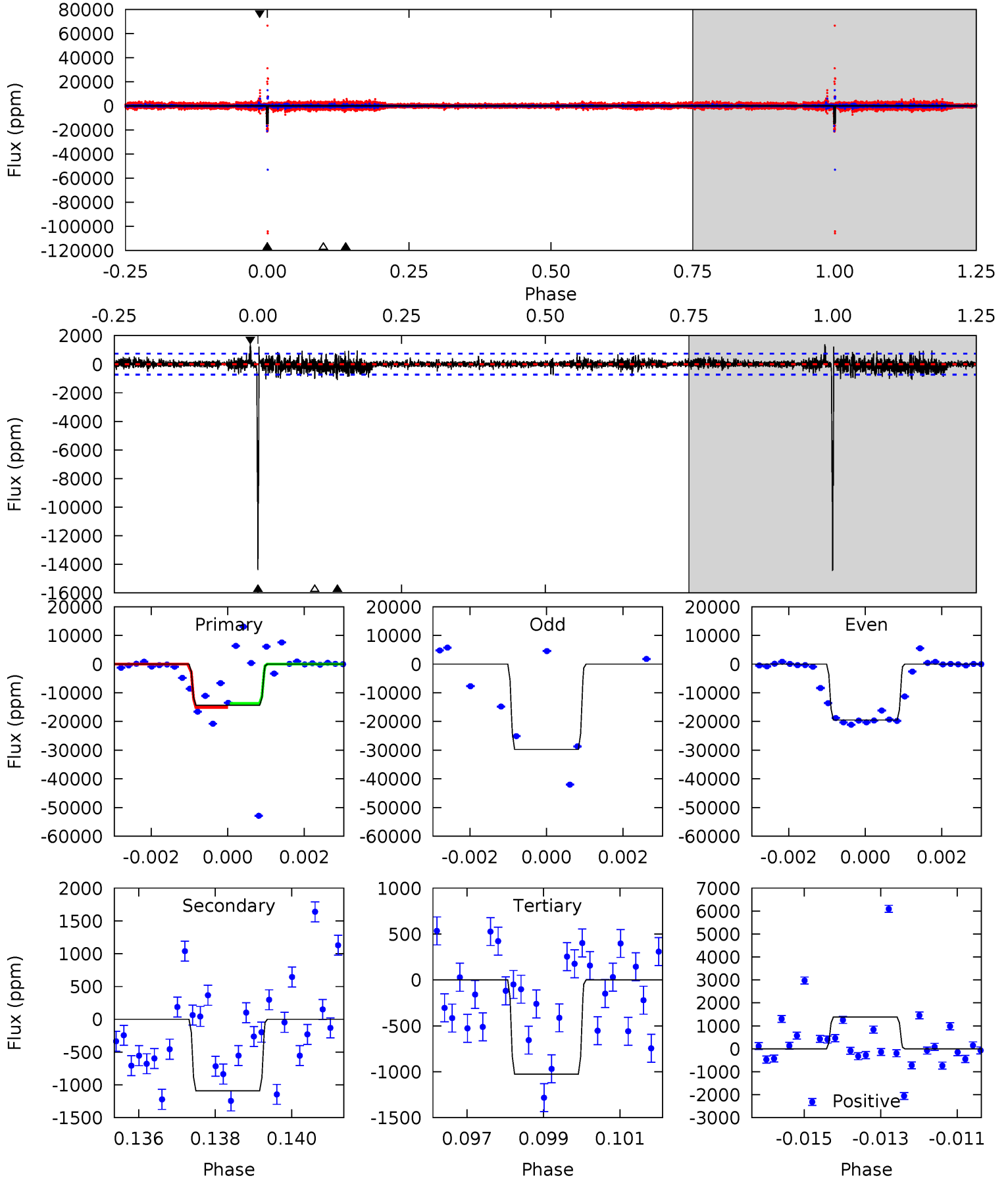
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005217781-02, P = 368.485199 Days, E = 189.096335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
104.4	7.91	7.45	10.0	5.34	3.11	1.34	96.9	94.3	0.46	-2.13	34.1	0.14	0.09	4.95



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$11.07^{+8.84}_{-7.24}$	343^{+23}_{-18}	4078^{+9456}_{-16028}	$11473^{+698596}_{-532372}$
Alt.	-1090 ± 138	$13.56^{+9.45}_{-7.85}$	343^{+23}_{-18}	3359^{+1132}_{-496}	2948^{+14094}_{-1942}

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

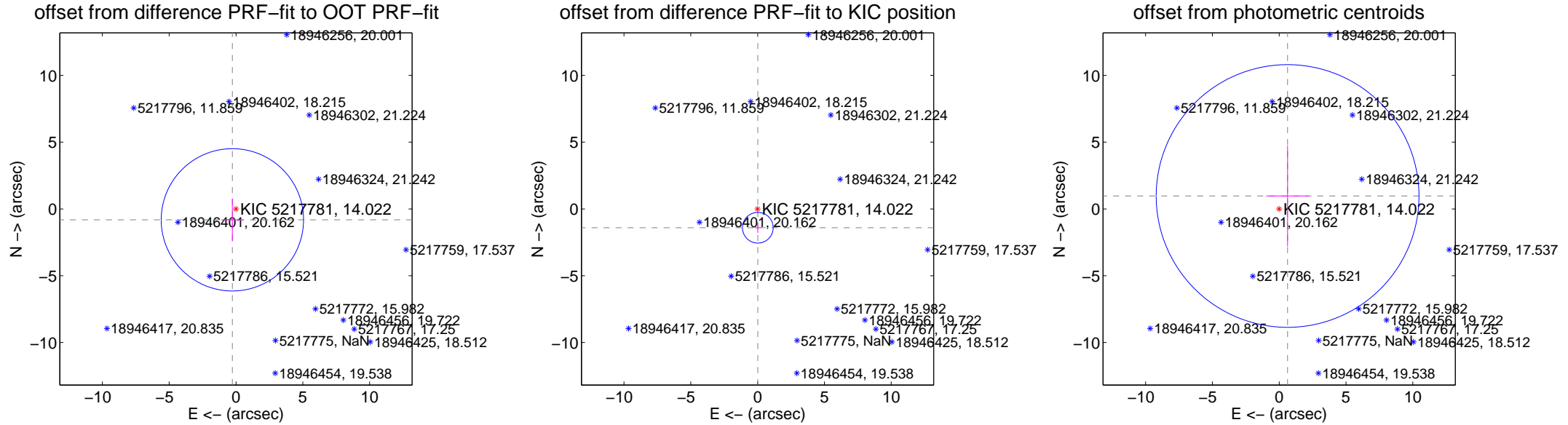
DV Centroid Data

Supplemental centroid analysis for 005217781-02. Kepler magnitude: 14.02. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

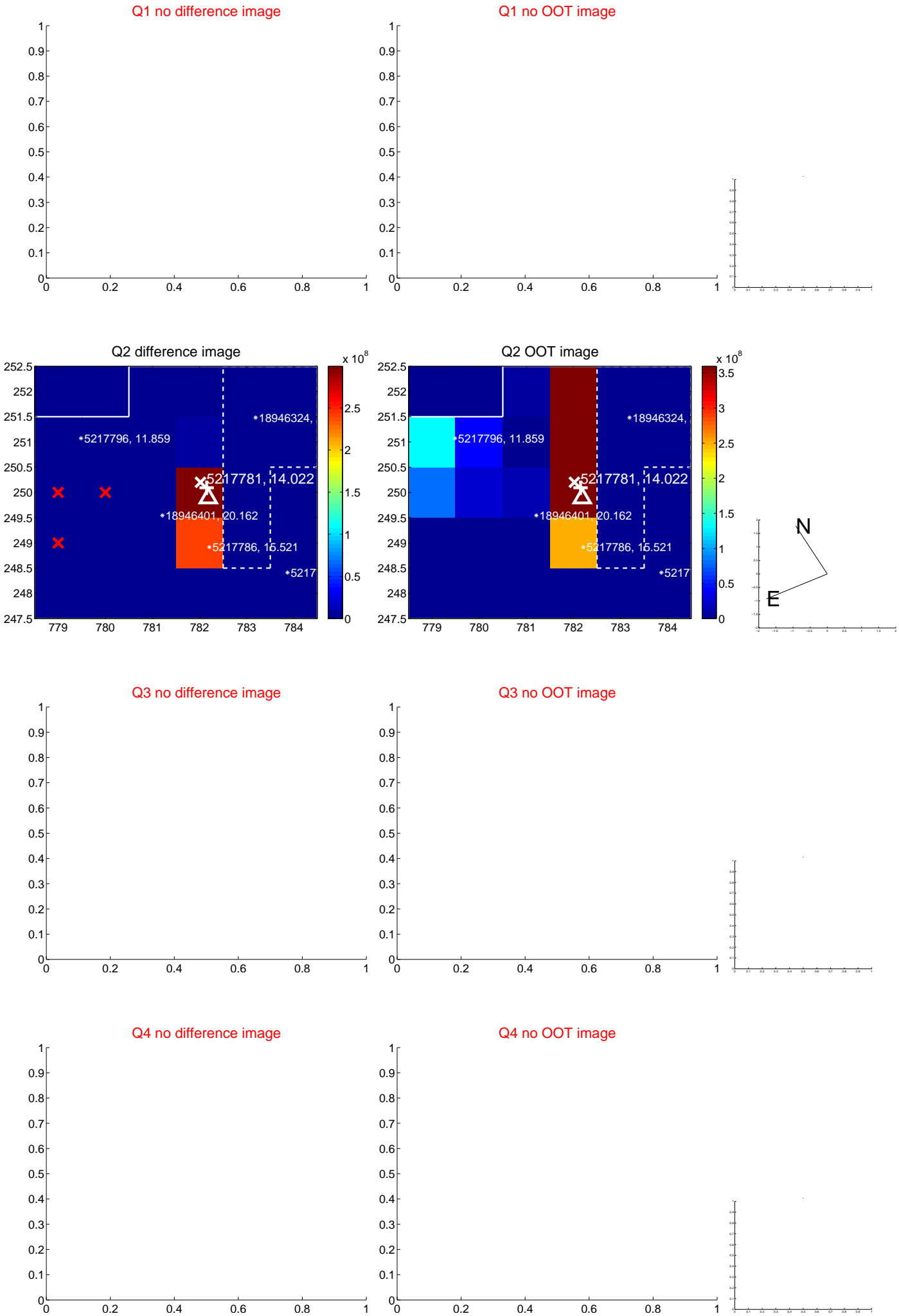
The OOT PRF centroid is offset from the target star catalog position by about 6.77 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.858 ± 1.776	0.48	0.271 ± 0.824	-0.815 ± 1.598
PRF-fit source offset from KIC position	1.407 ± 0.383	3.67	-0.017 ± 0.211	-1.407 ± 0.386
photometric centroid source offset	1.15 ± 3.28	0.35	-0.63 ± 1.59	0.97 ± 3.77

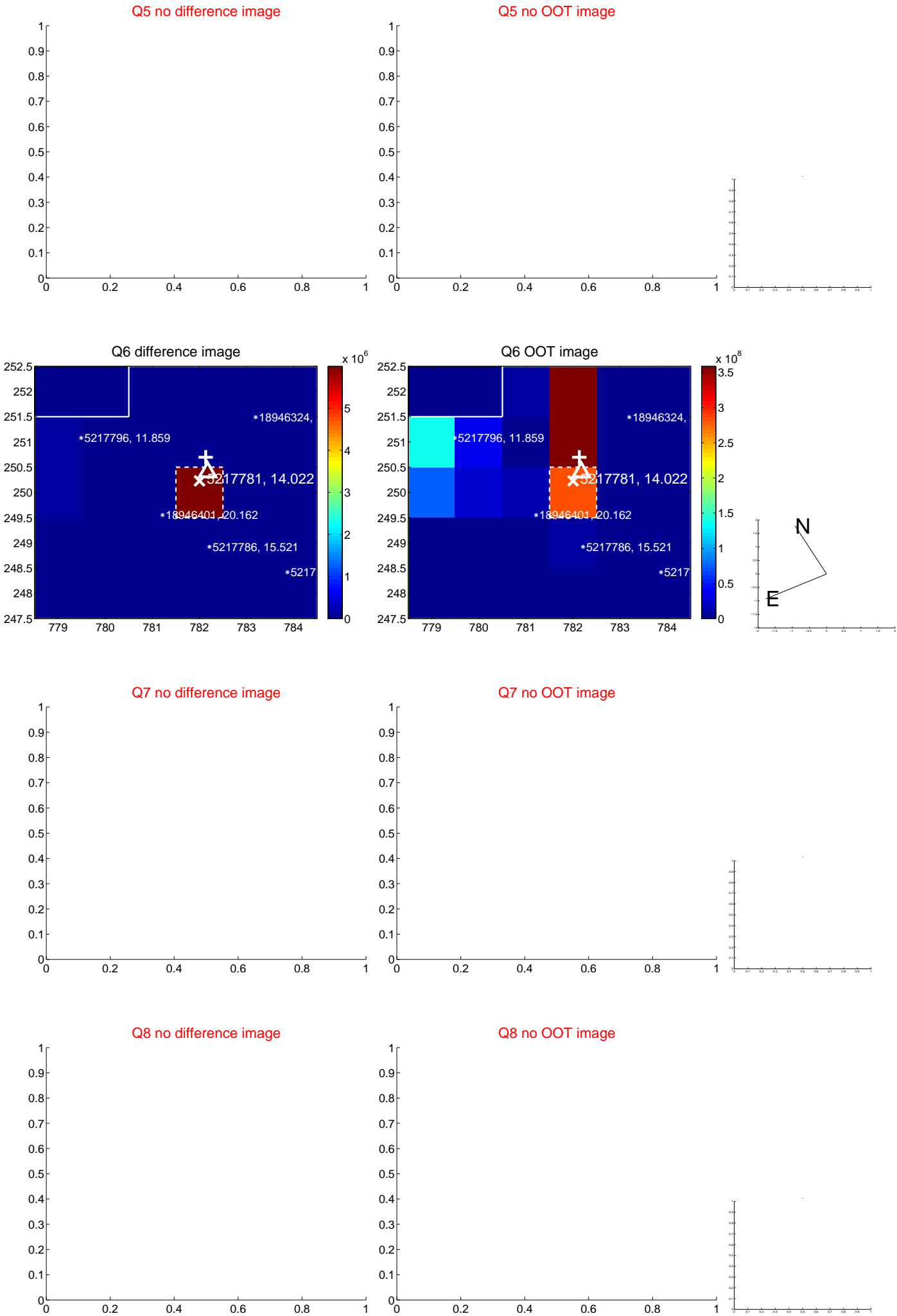


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



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

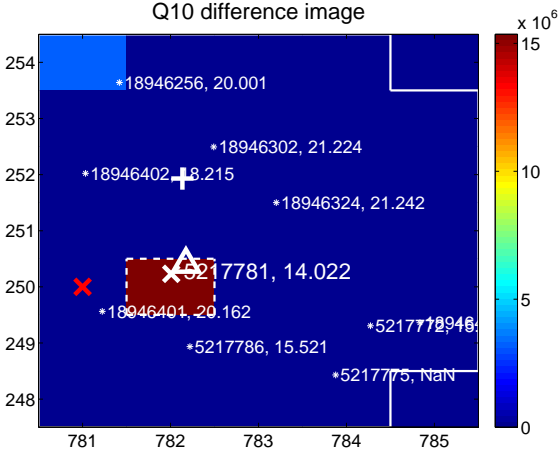
Q9 no difference image



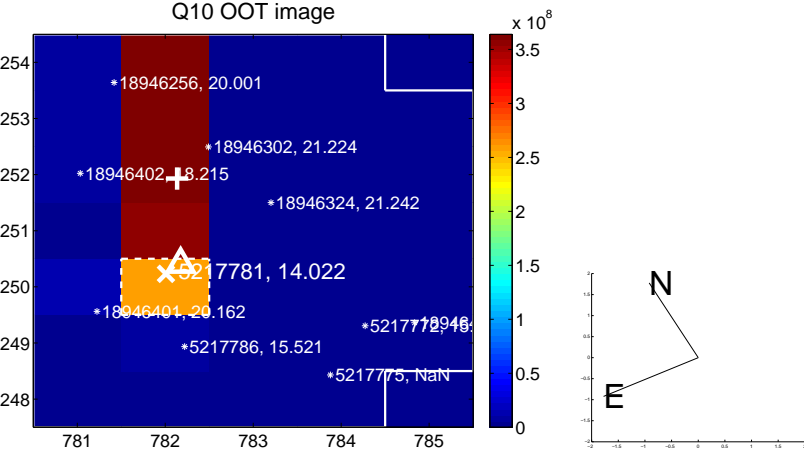
Q9 no OOT image



Q10 difference image



Q10 OOT image



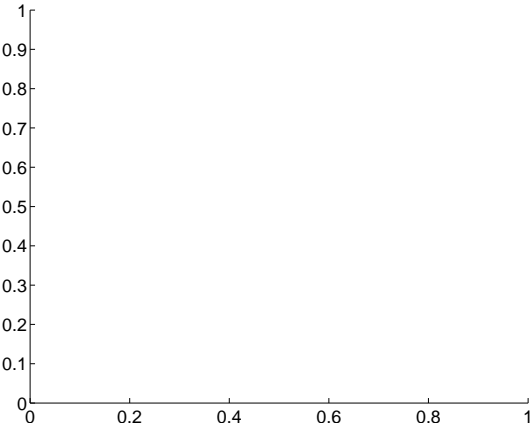
Q11 no difference image



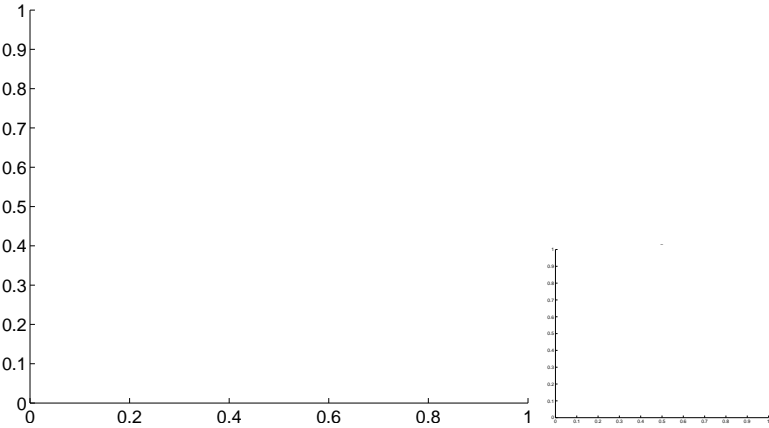
Q11 no OOT image



Q12 no difference image



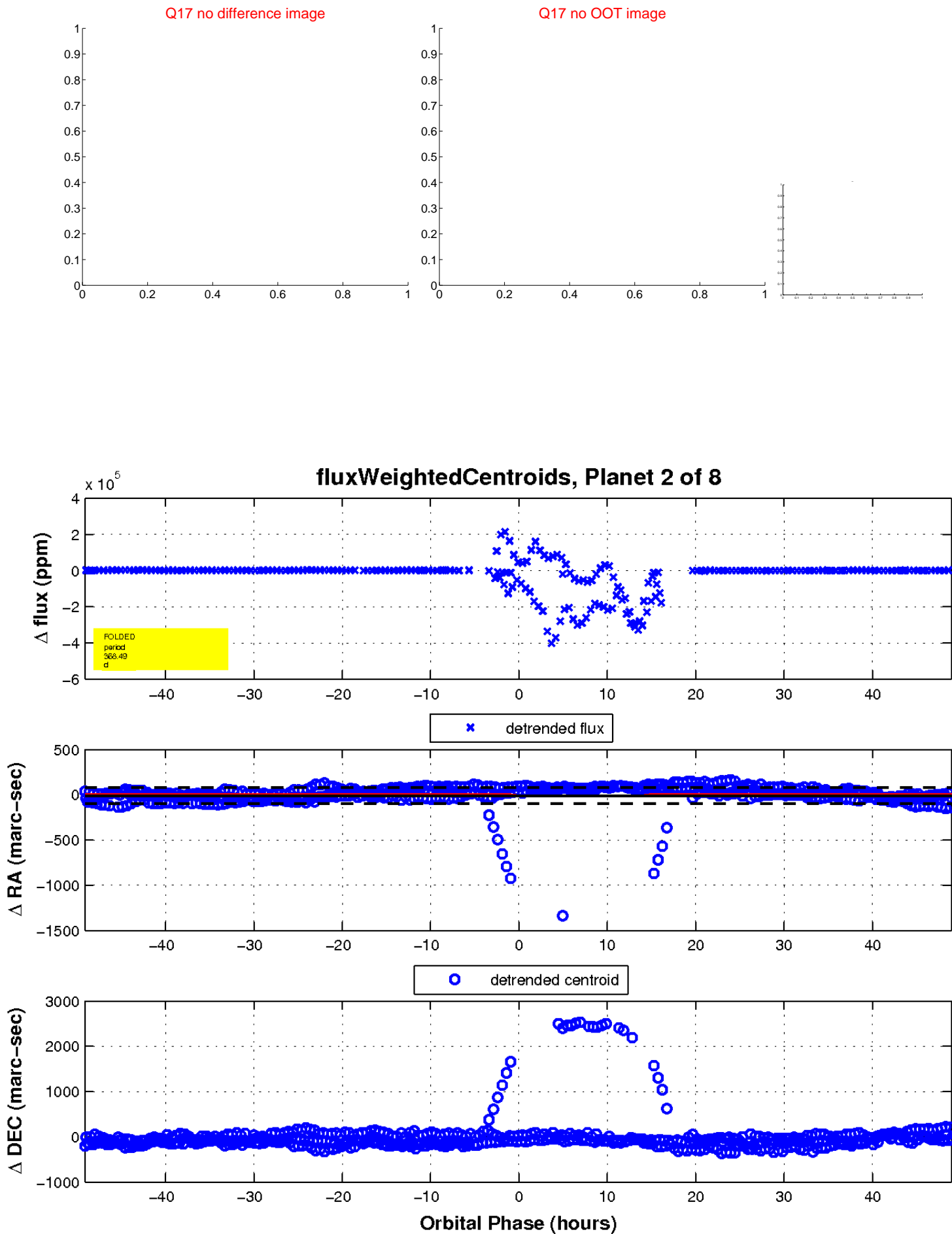
Q12 no OOT image



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

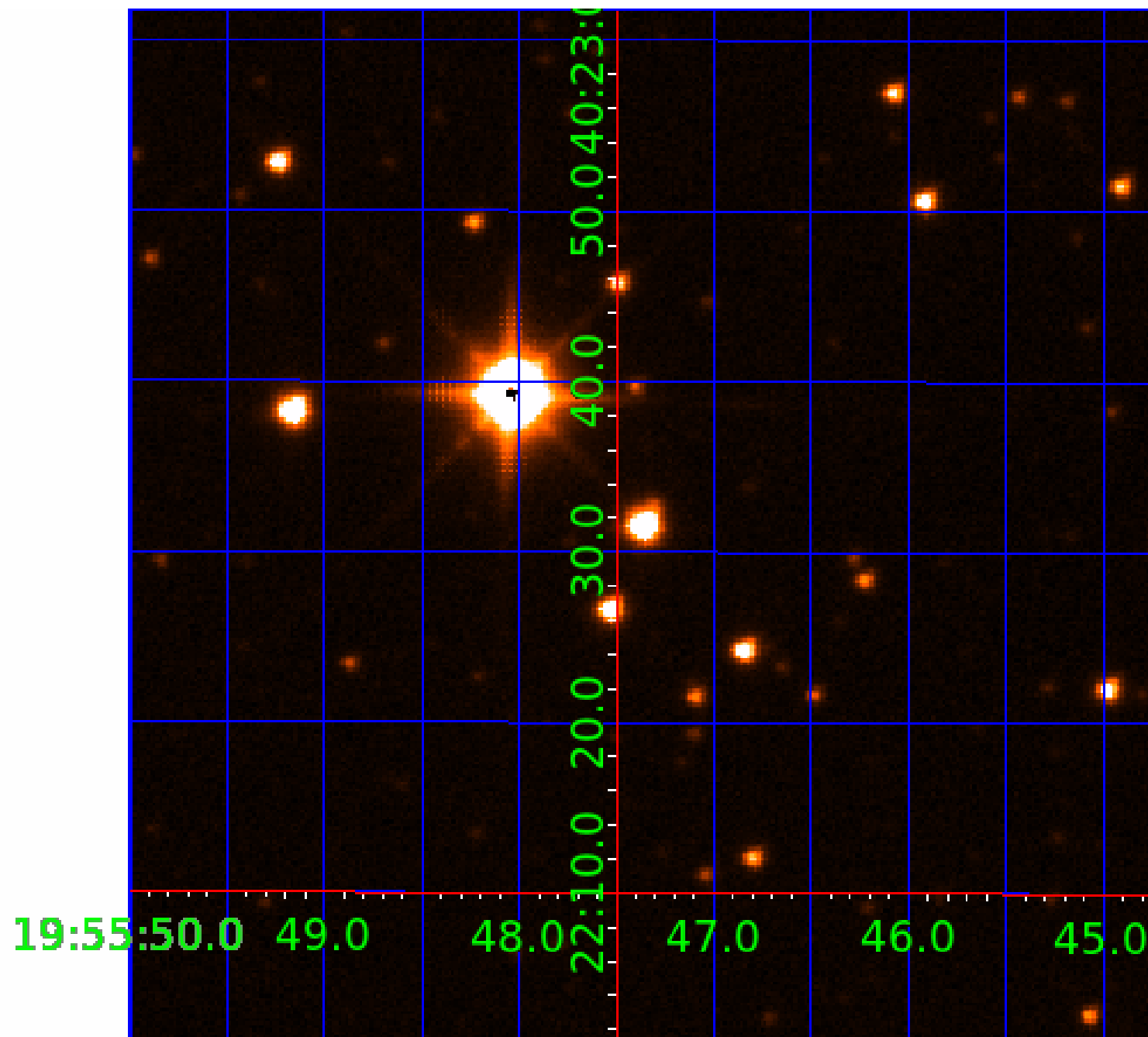


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
005217781-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

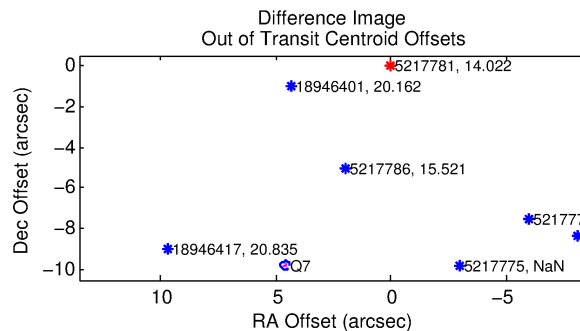
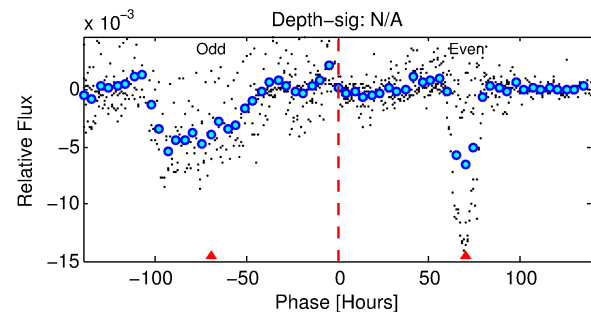
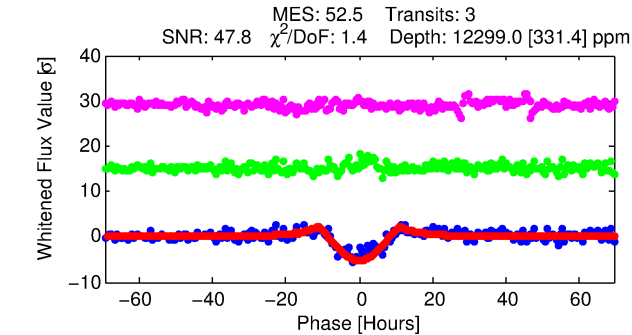
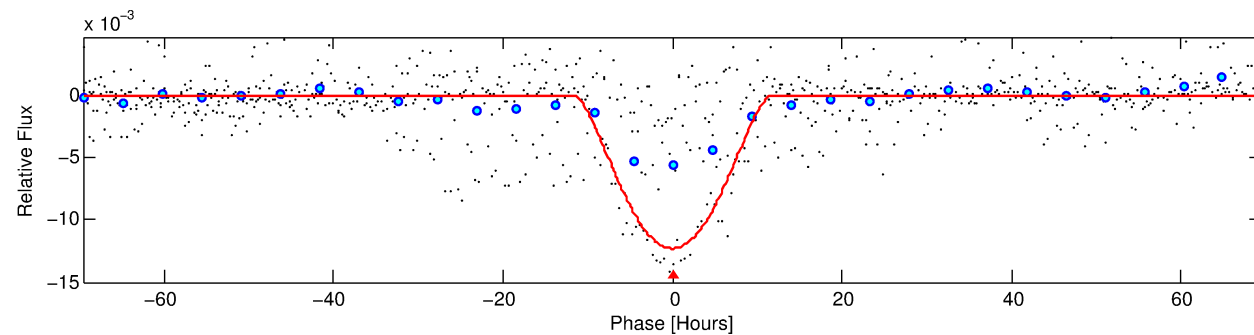
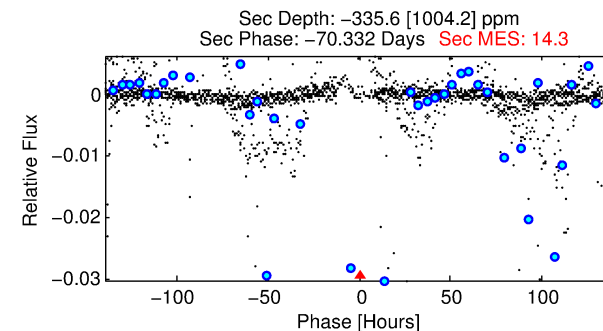
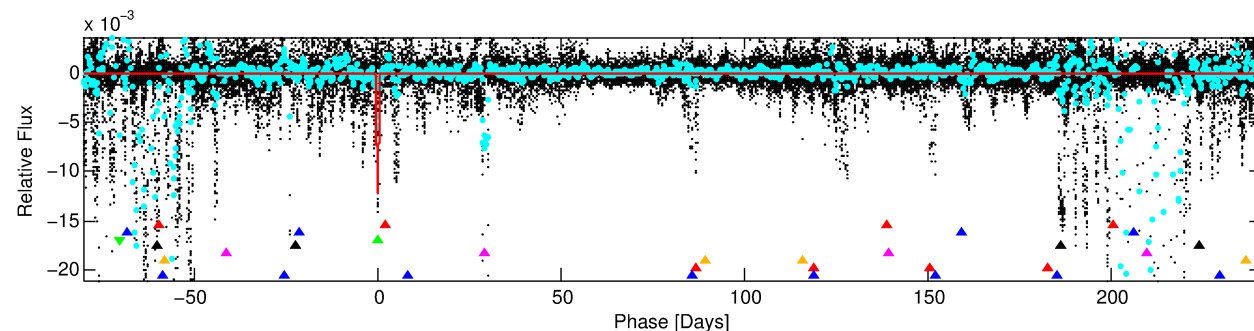
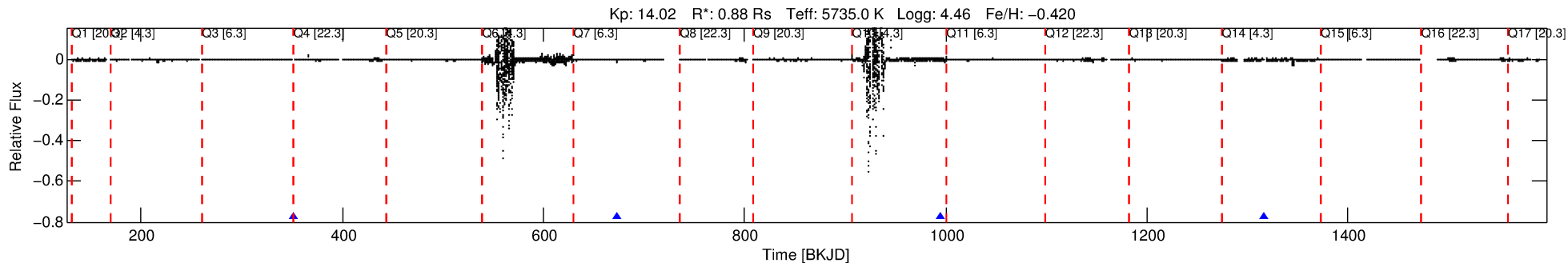
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005217781-03

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 3 of 8 Period: 321.477 d



DV Fit Results:

Period = 321.47690 [0.00915] d
Epoch = 351.3802 [0.0121] BKJD
Rp/R* = 0.1499 [0.0470]
a/R* = 68.28 [4.89]
b = 0.95 [0.08]
Seff = 1.01 [0.33]
Teq = 256 [21] K
Rp = 14.33 [5.68] Re
a = 0.8586 [0.1773] AU
Ag = N/A
Teff = N/A

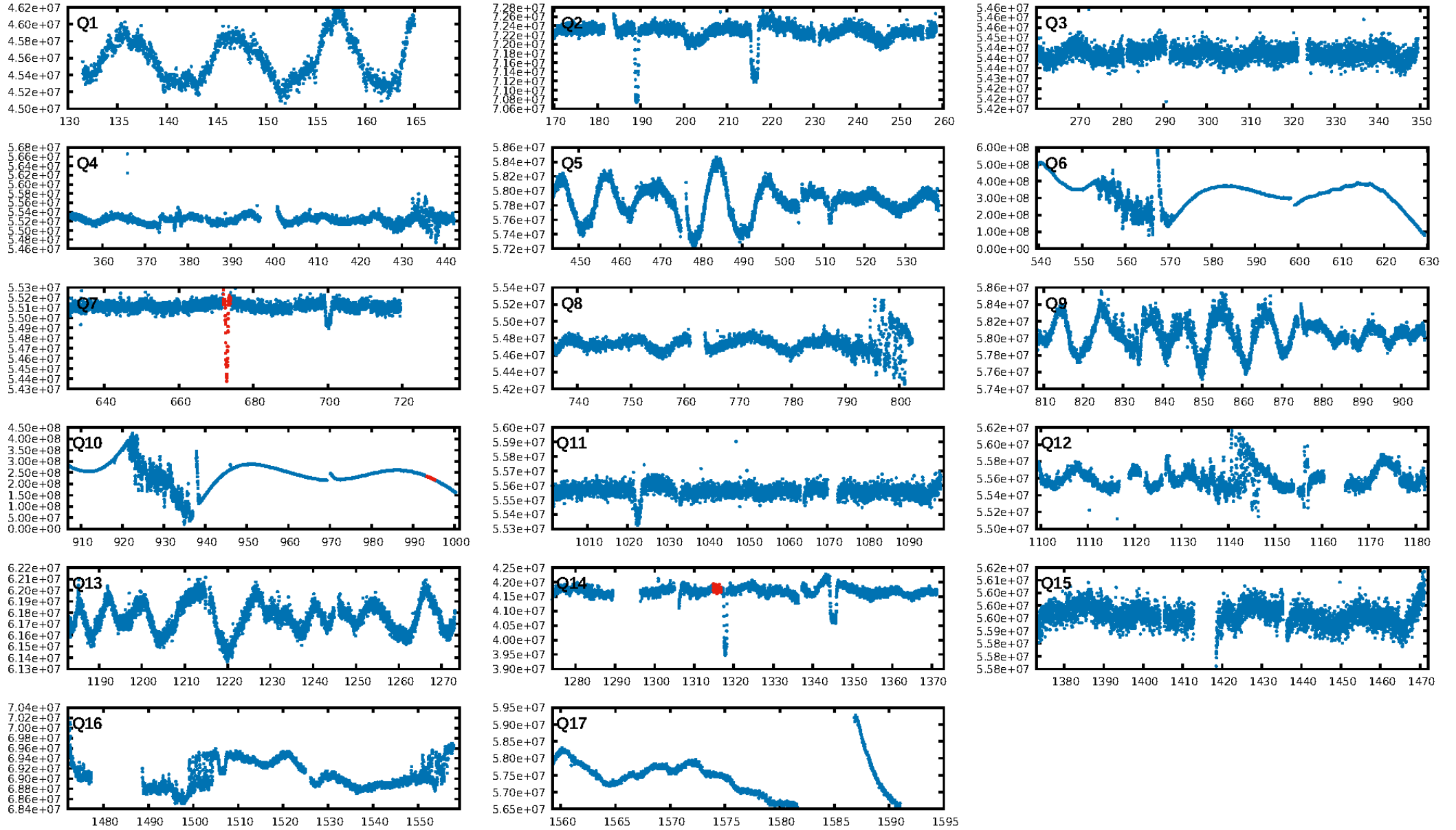
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [148.20σ]
LongPeriod-sig: 100.0% [32.91σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 3.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.033
Centroid-sig: N/A
Centroid-so: 161.293 arcsec [69.08σ]
OotOffset-rm: 10.801 arcsec [161.93σ]
KicOffset-rm: 6.573 arcsec [98.55σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.67 [2/3]

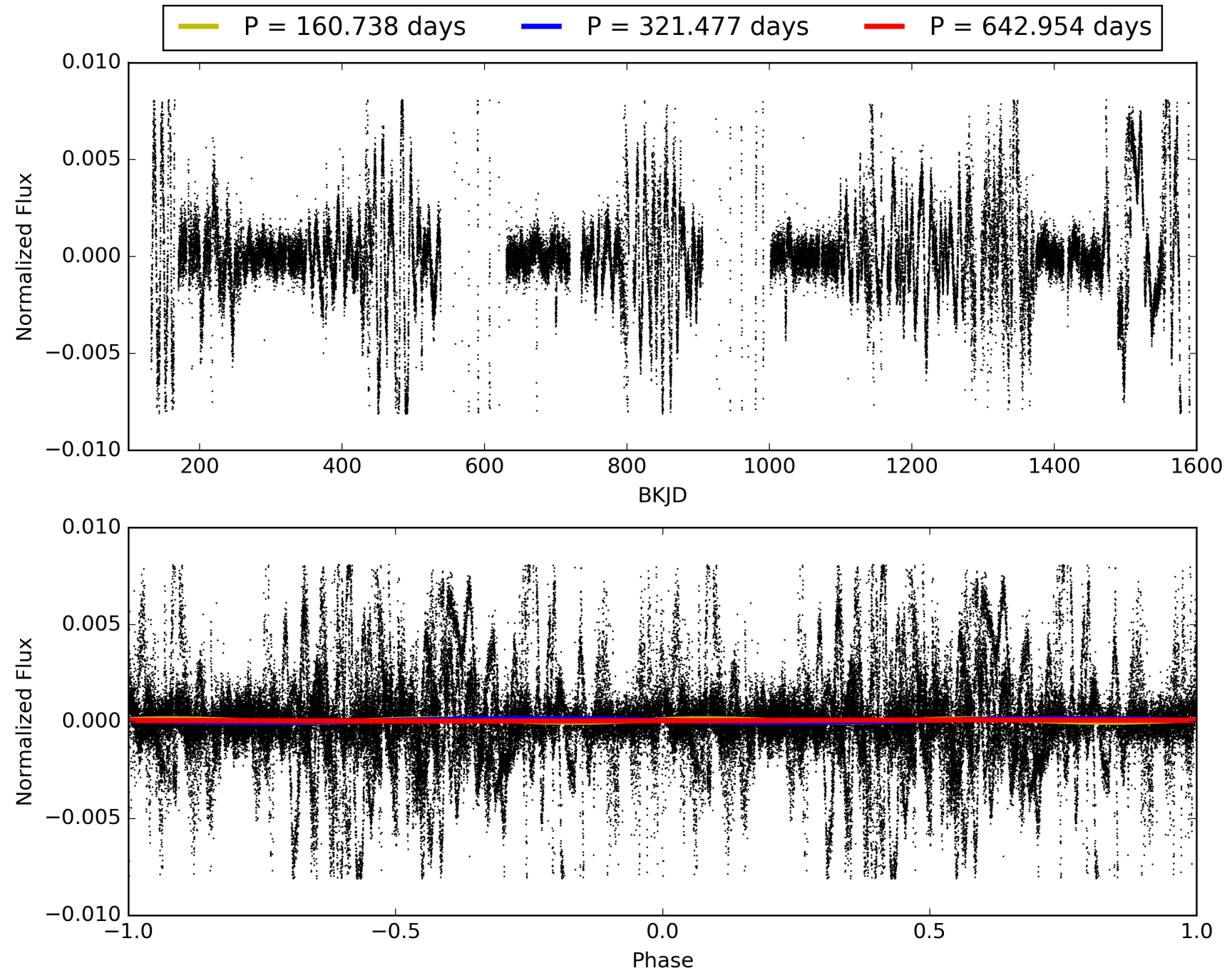
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:31:23 Z

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

TCE 005217781-03, PDC Light Curves

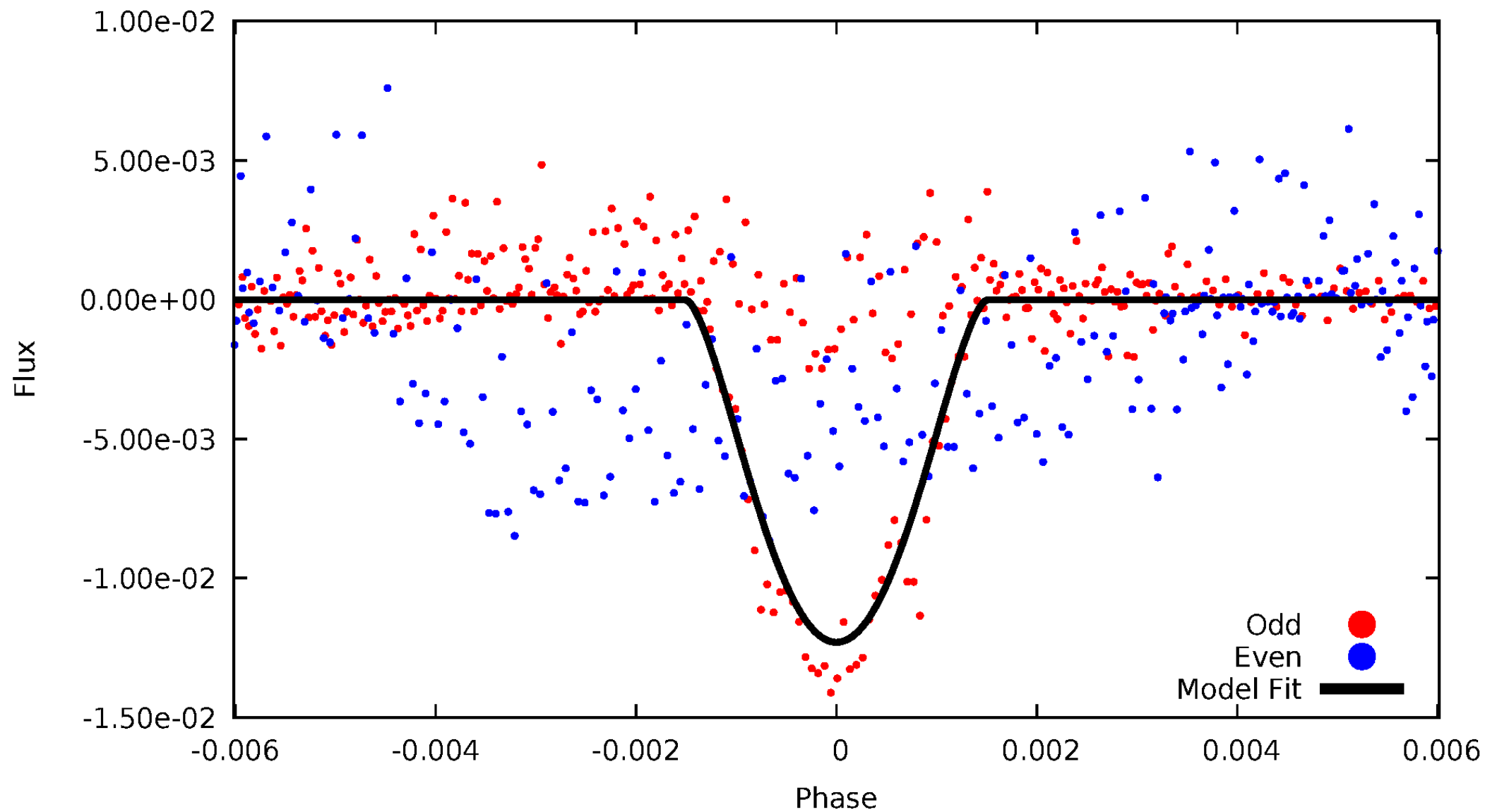


TCE 005217781-03



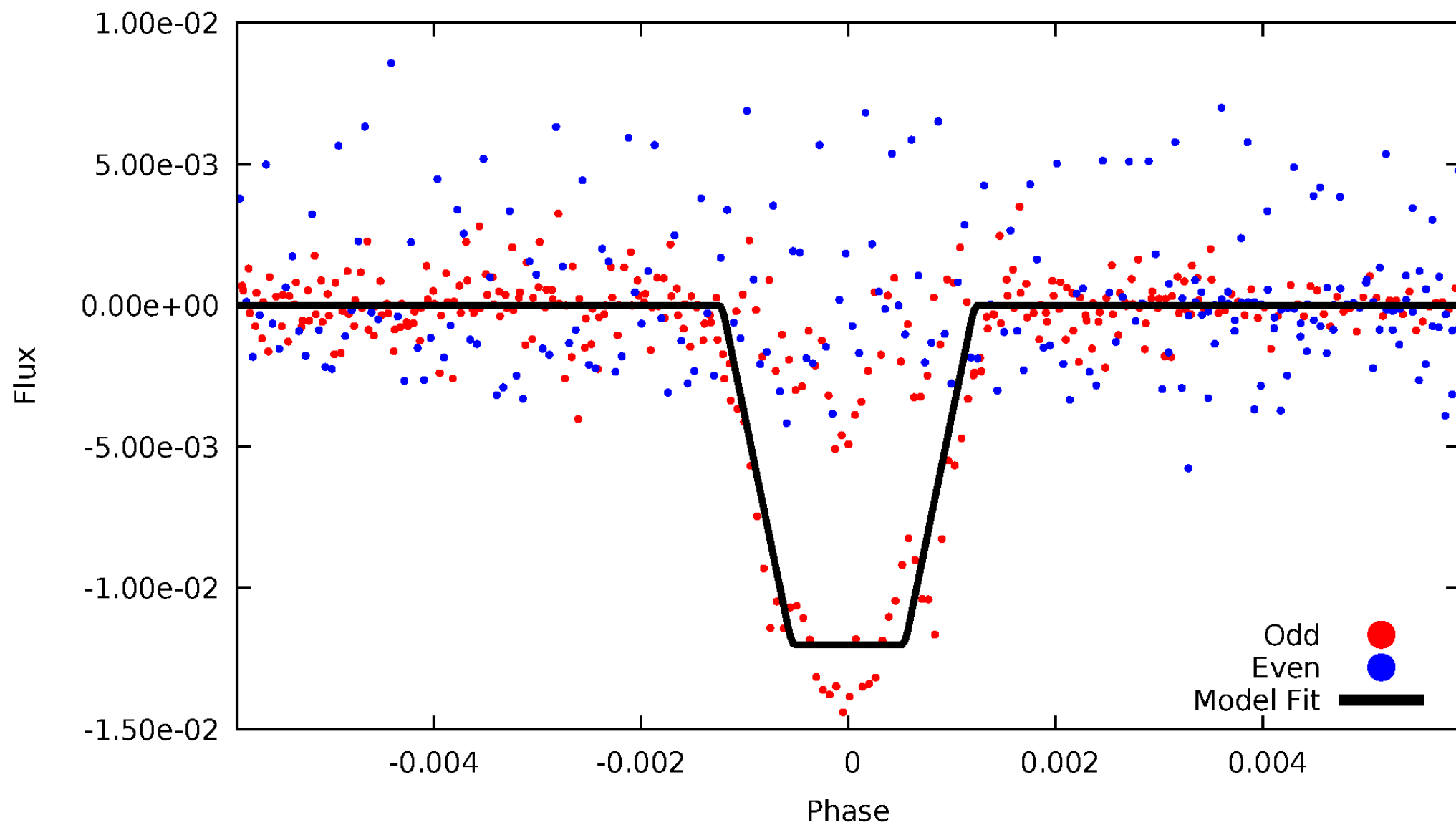
DV Odd/Even

TCE 005217781-03



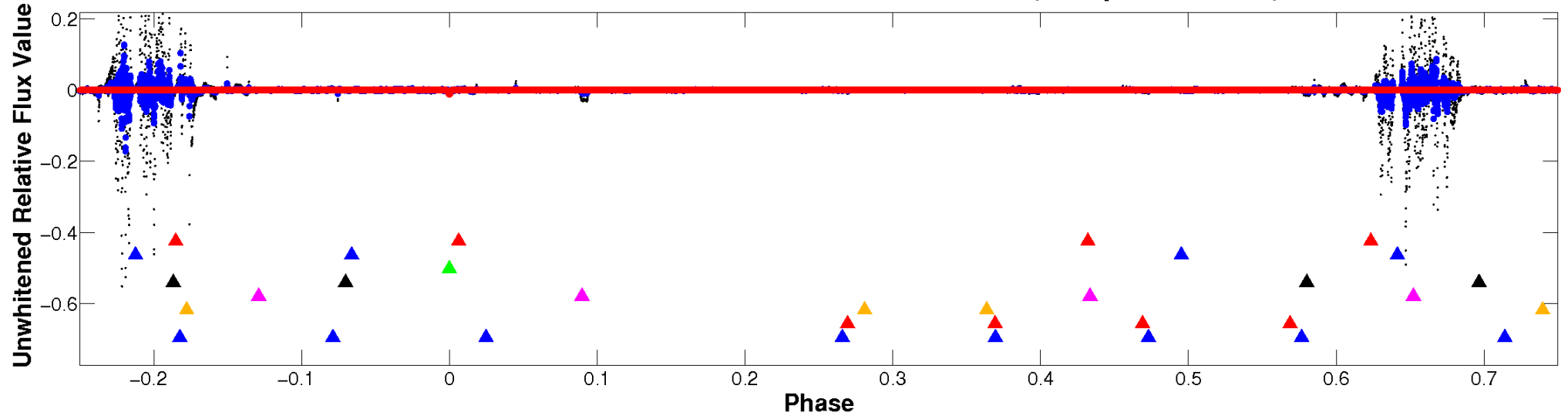
ALT Odd/Even

TCE 005217781-03

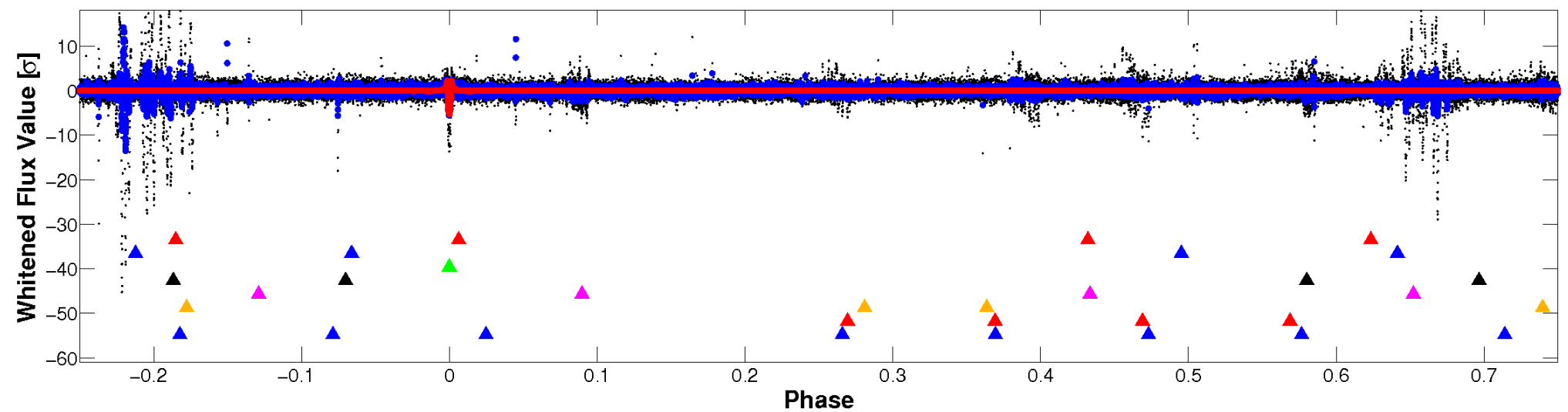


Non-Whitened Vs. Whitened Light Curve

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

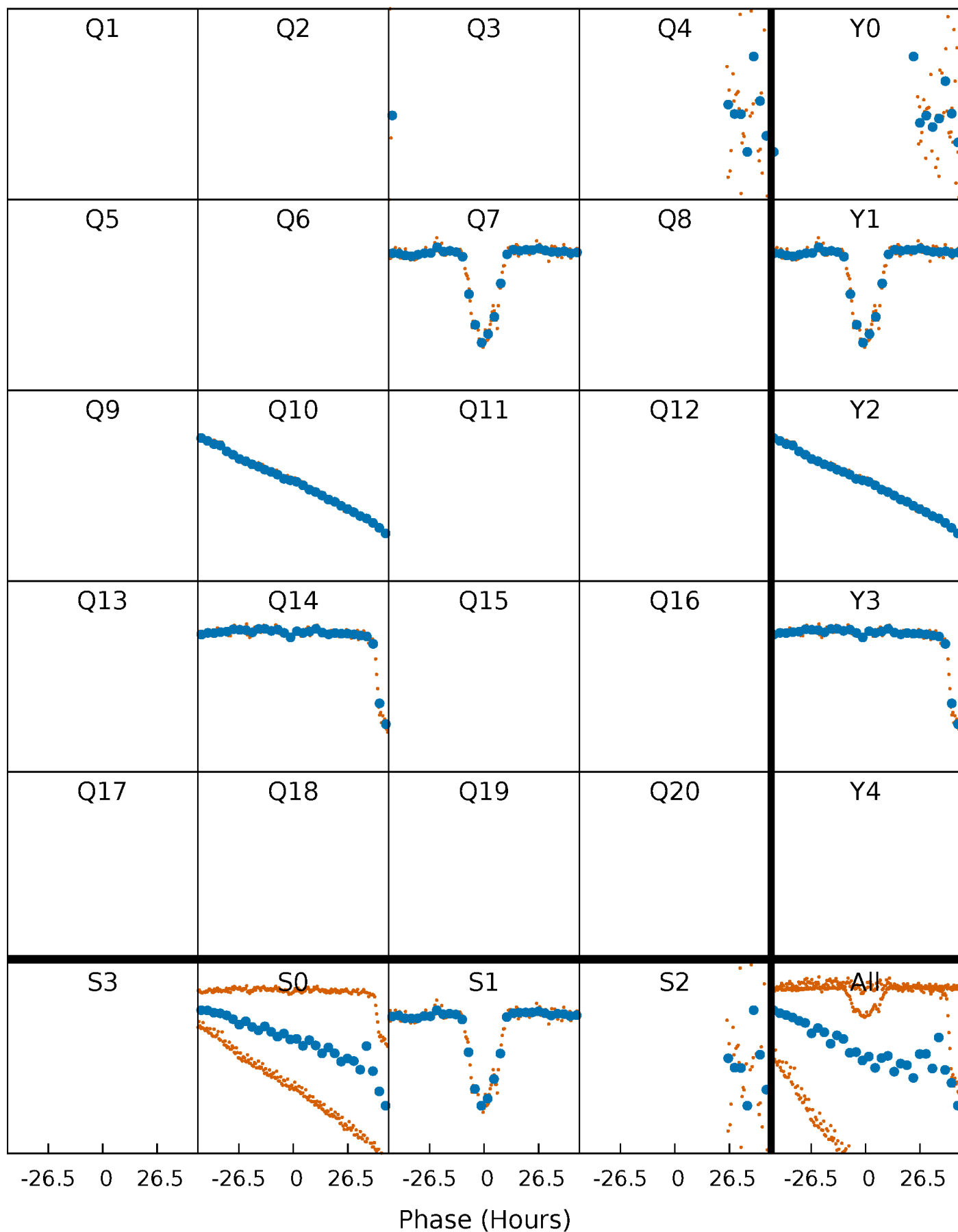


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



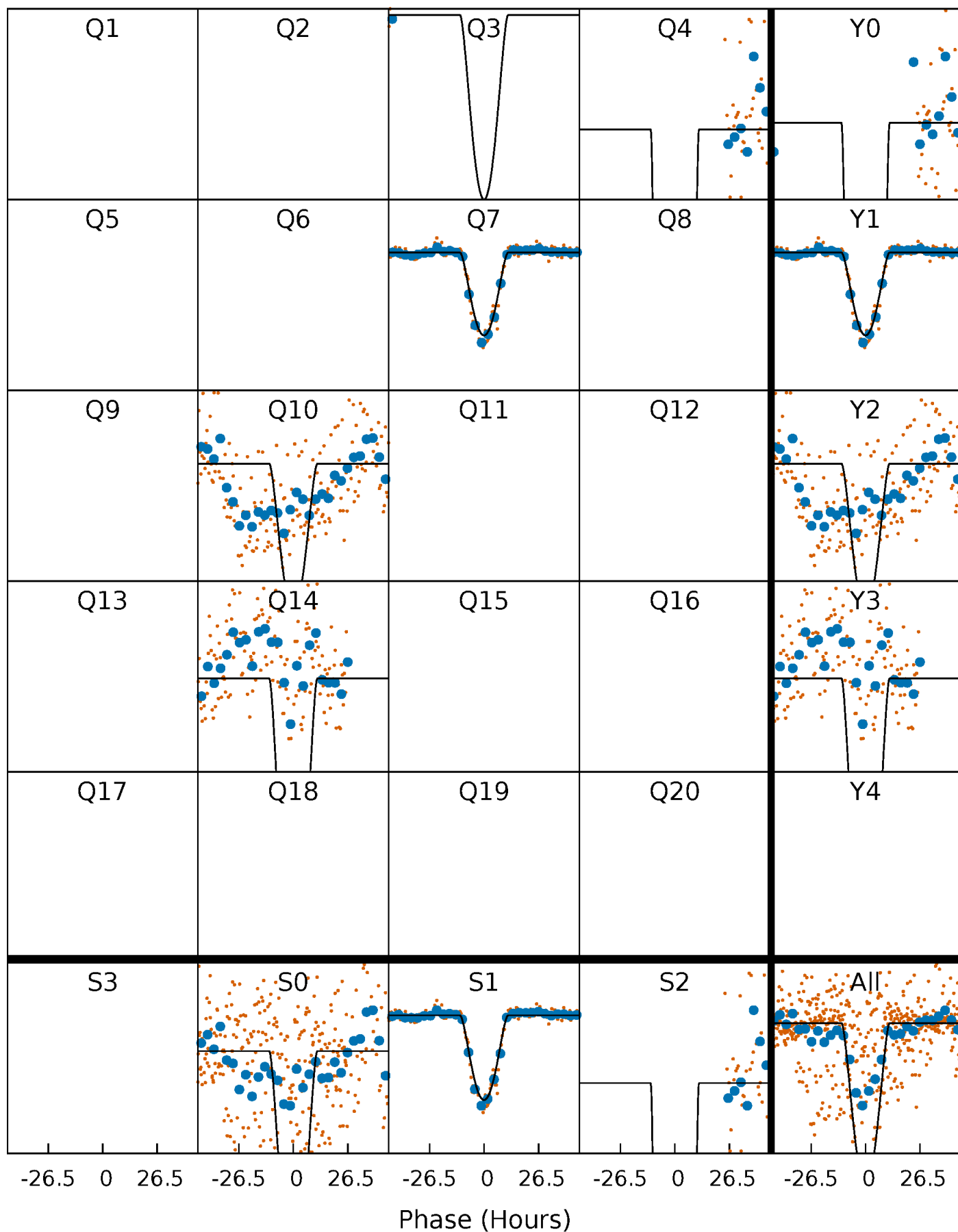
PDC Quarter-Phased Transit Curves

TCE 005217781-03 $P=321.476904$ Days $T_0=351.380232$ (BKJD)



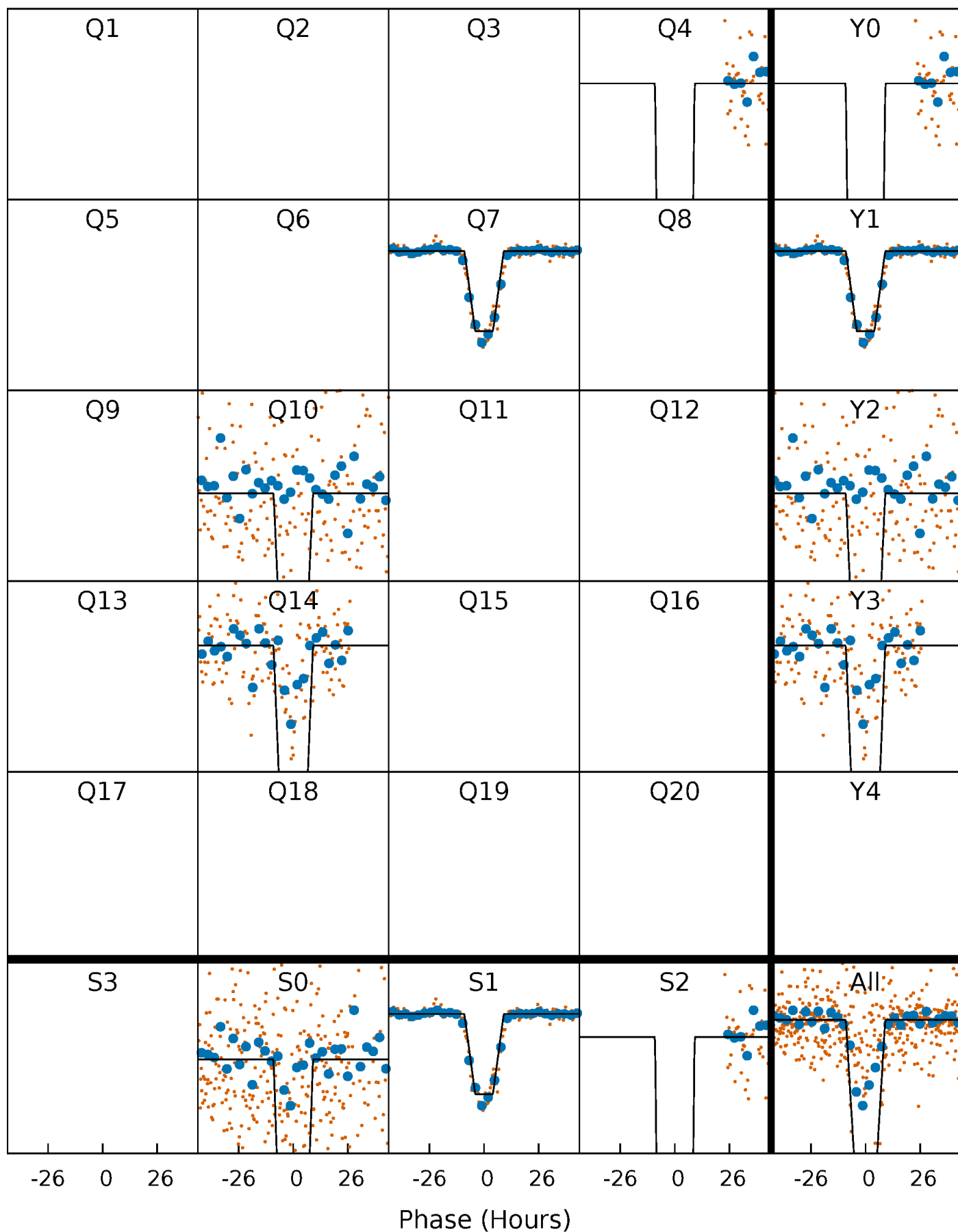
DV Quarter-Phased Transit Curves

TCE 005217781-03 P=321.476904 Days $T_0=351.380232$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

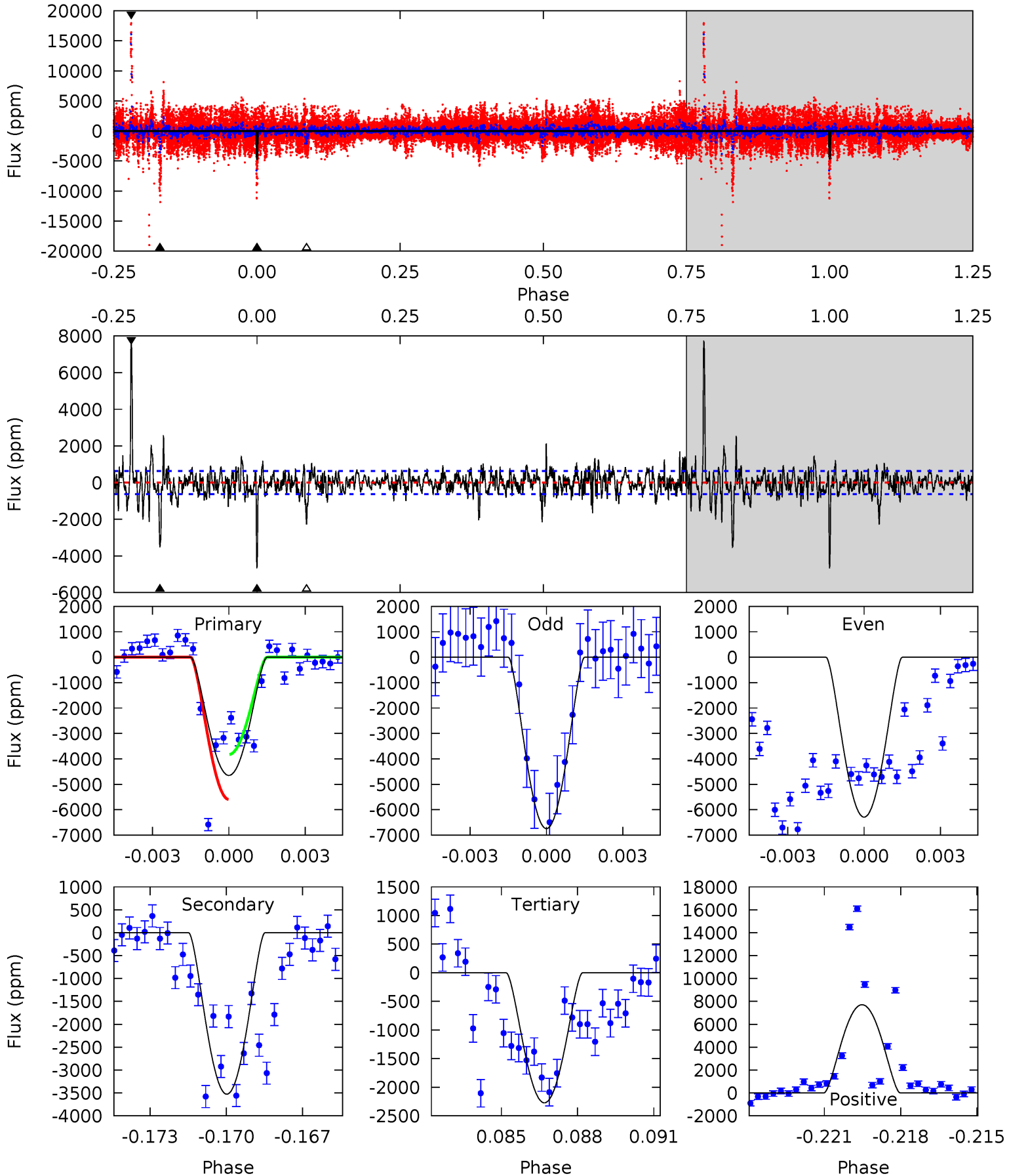
TCE 005217781-03 $P=321.453955$ Days $T_0=351.402583$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-03, P = 321.476904 Days, E = 29.903328 Days

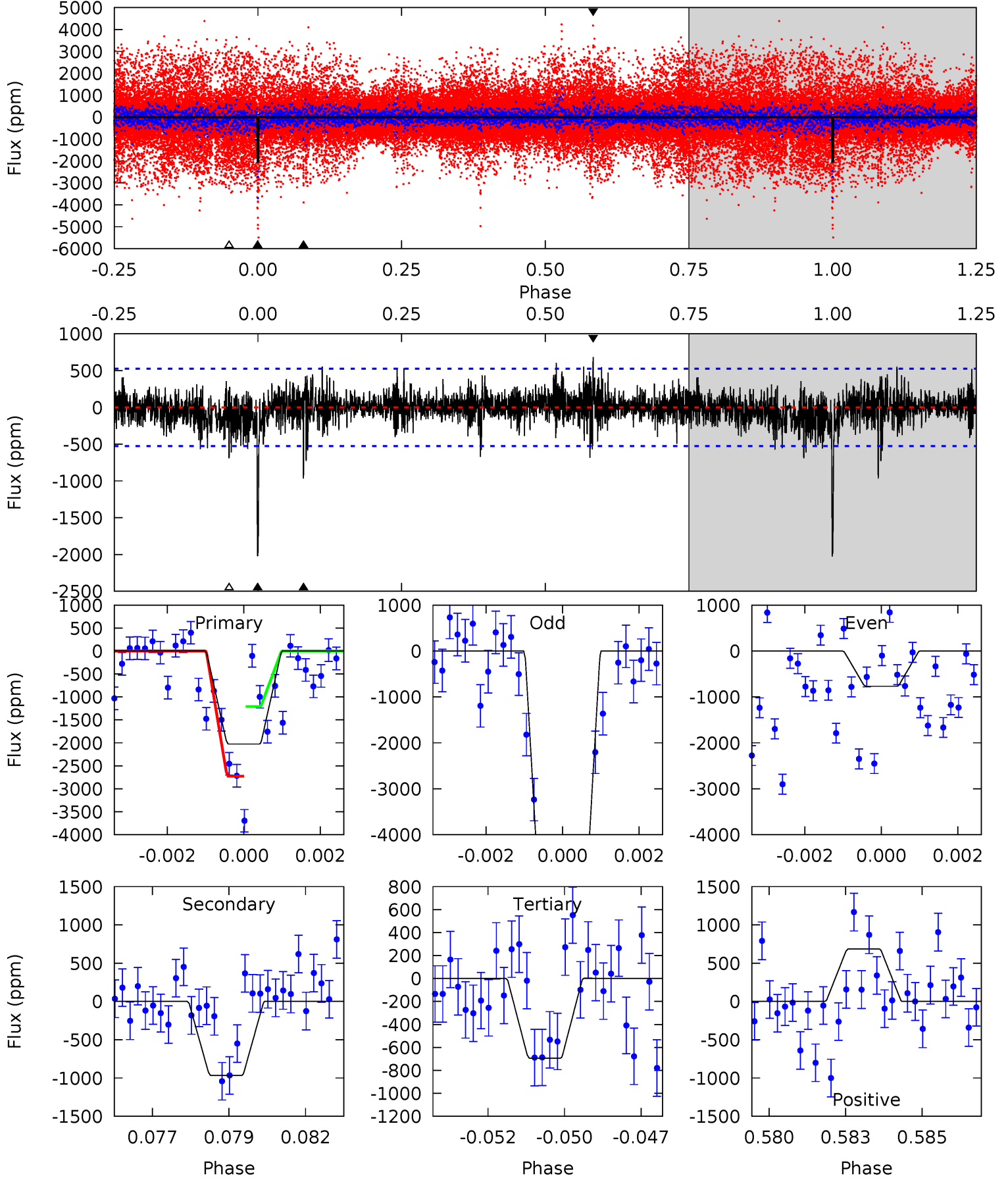
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.7	29.3	18.9	64.1	5.25	2.96	4.56	19.8	-25.4	10.4	-34.8	0.88	1.26	0.62	7.14



Alt Model-Shift Uniqueness Test

005217781-03, $P = 321.453955$ Days, $E = 29.948628$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	9.70	6.96	6.88	5.29	3.03	1.53	13.4	13.5	2.73	2.82	37.9	2.23	0.25	7.55



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3525 ± 120	$14.29^{+5.15}_{-4.55}$	359^{+22}_{-18}	3984^{+577}_{-386}	7079^{+8014}_{-3171}
Alt.	-965 ± 100	$10.67^{+5.08}_{-4.63}$	360^{+23}_{-20}	3504^{+792}_{-351}	3383^{+7469}_{-1801}

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 $A_{obs} \gg 1.0$

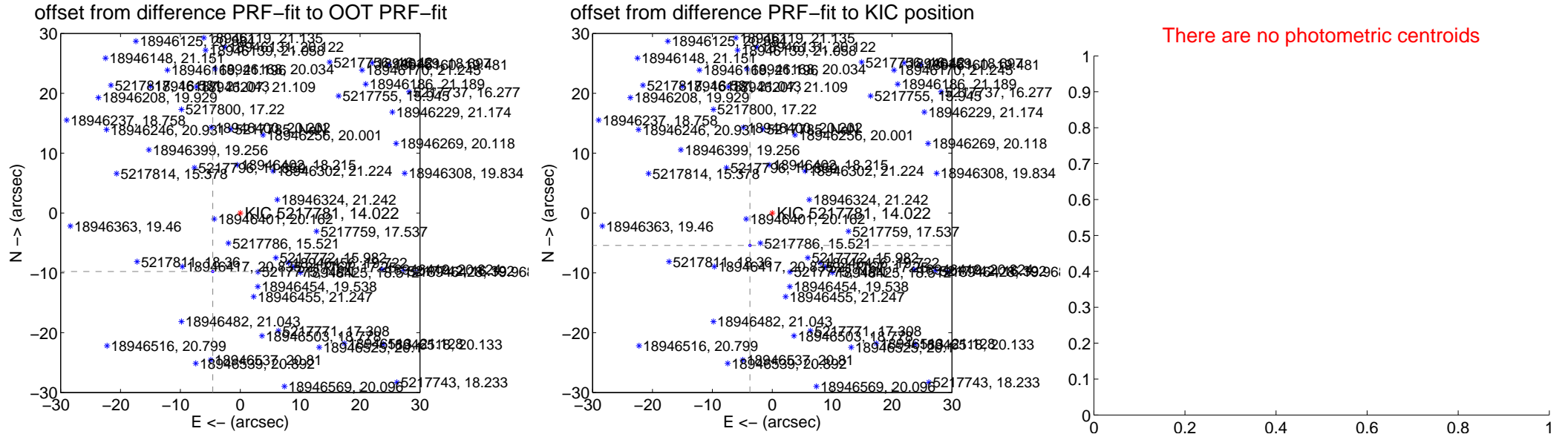
DV Centroid Data

Supplemental centroid analysis for 005217781-03. Kepler magnitude: 14.02. Transit SNR 47.75

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.44 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	10.801 \pm 0.067	161.93	4.599 \pm 0.067	-9.772 \pm 0.067
PRF-fit source offset from KIC position	6.573 \pm 0.067	98.55	3.722 \pm 0.067	-5.418 \pm 0.067
photometric centroid source offset	—	—	—	—

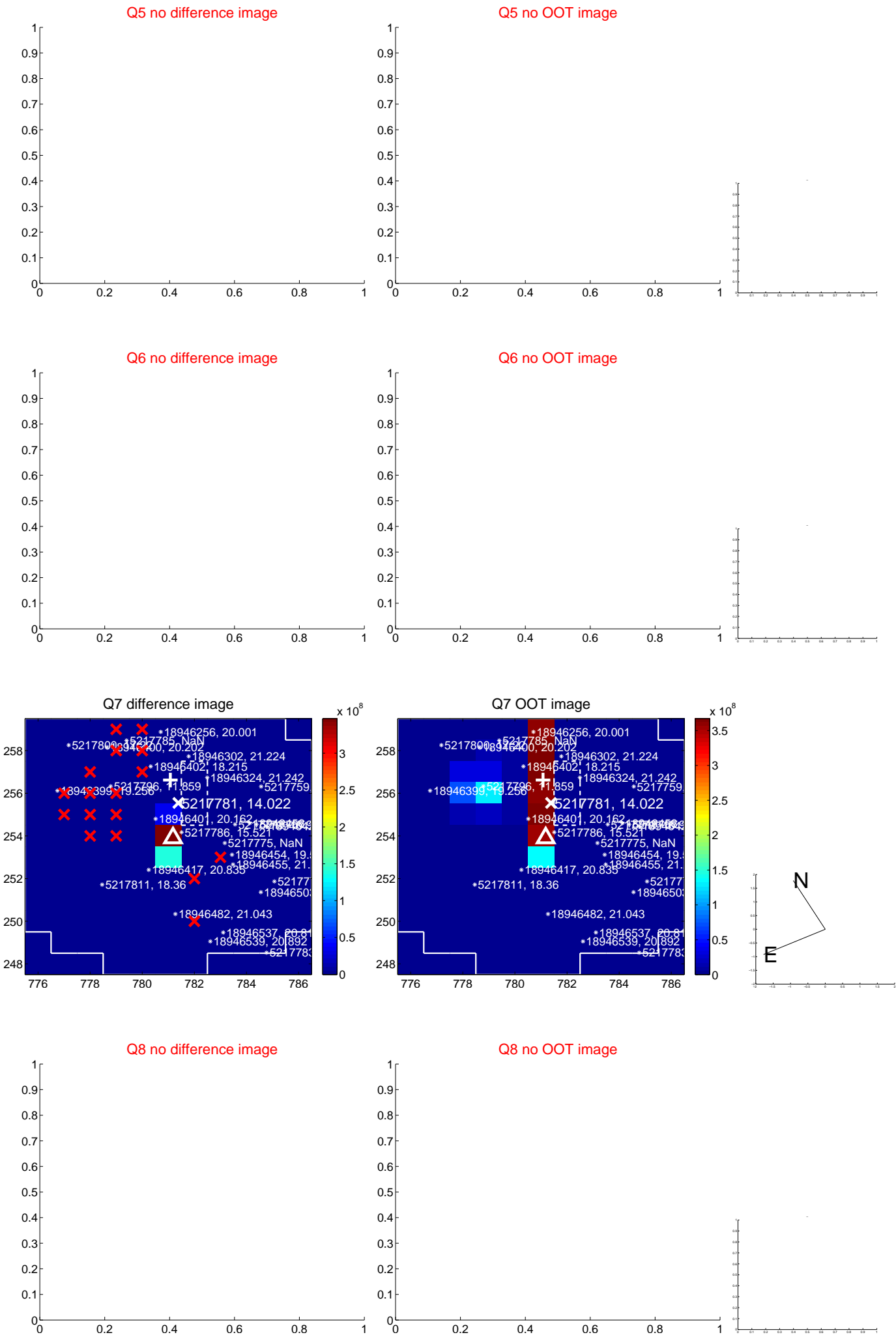


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

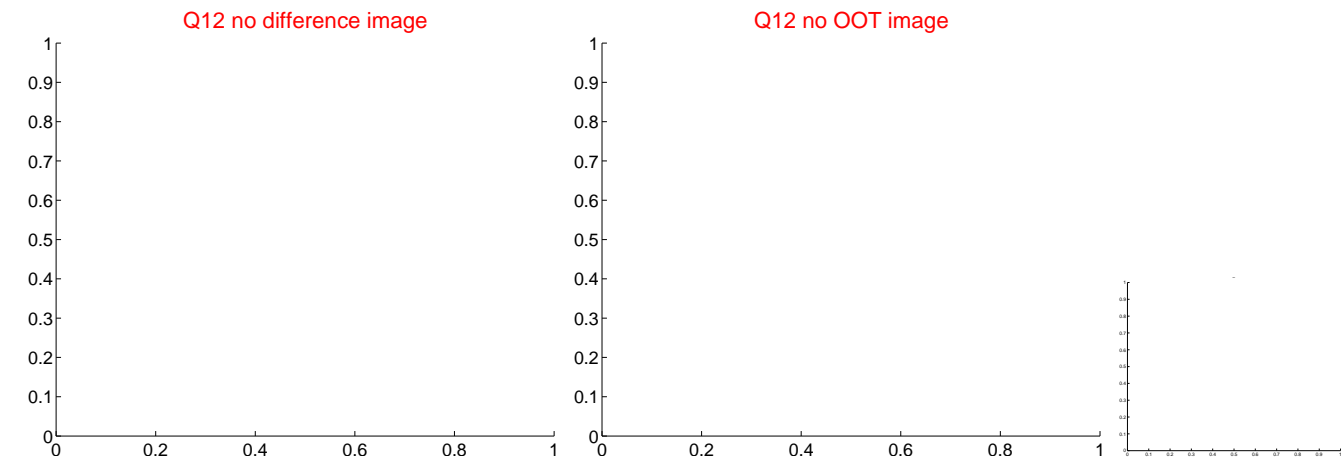
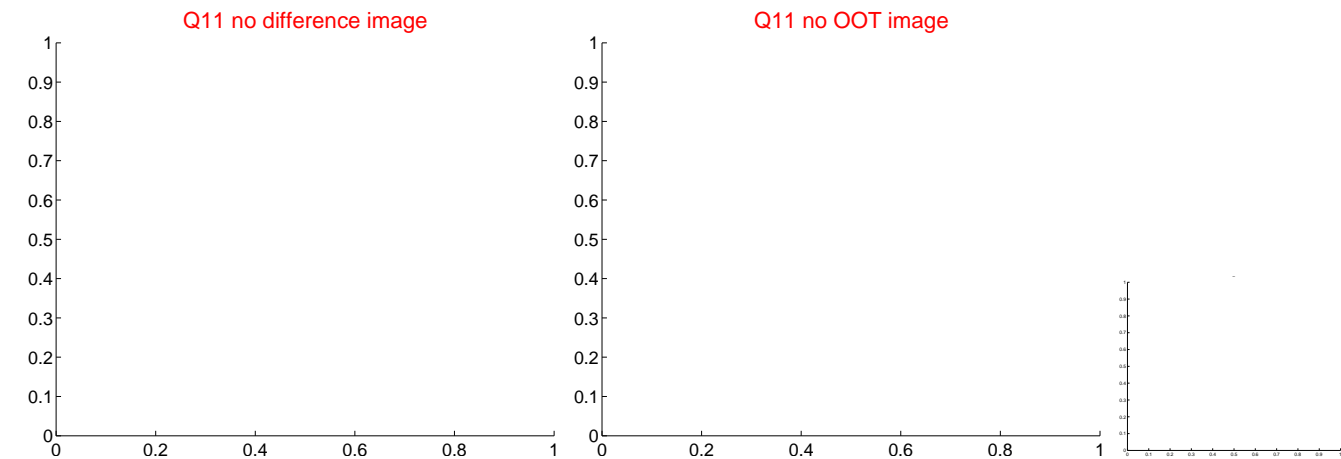
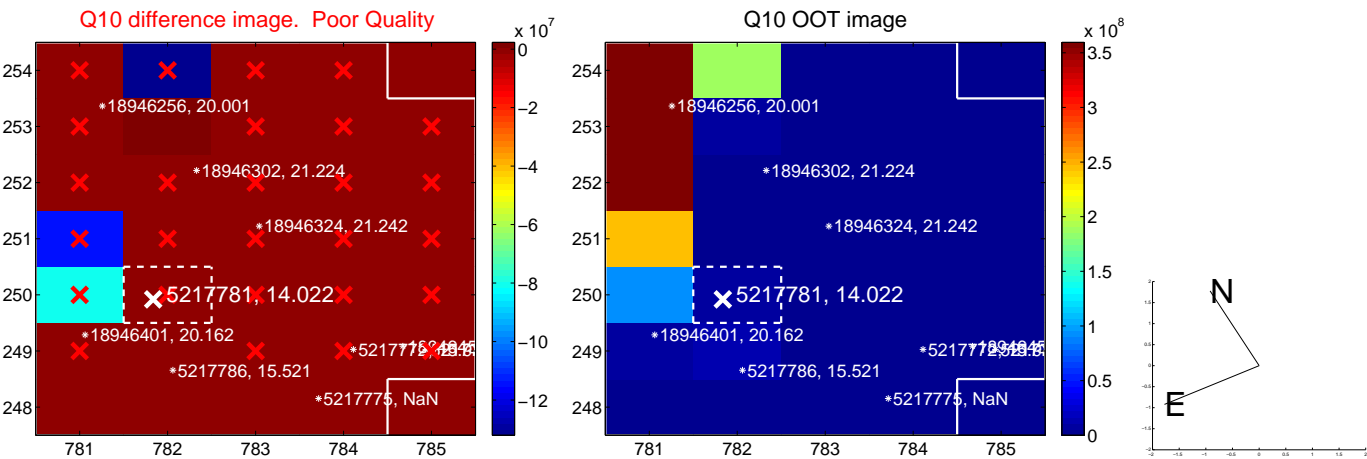
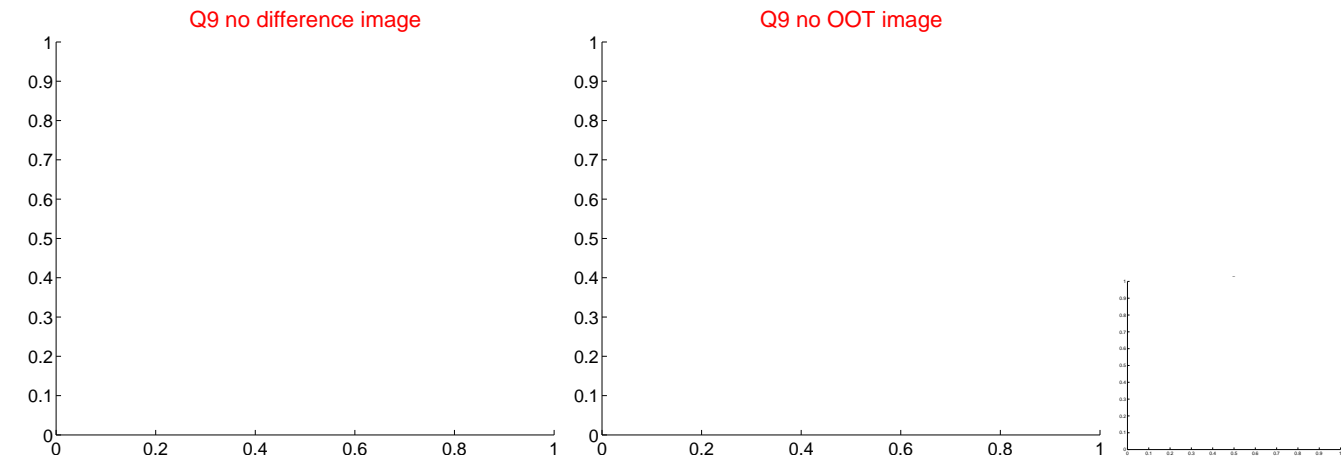
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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

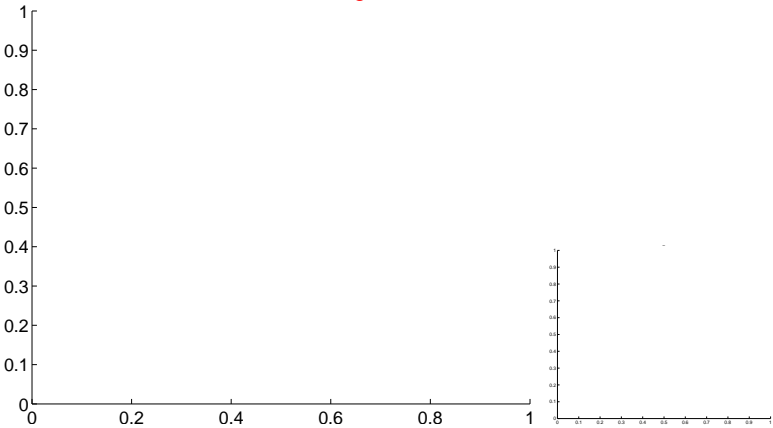


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

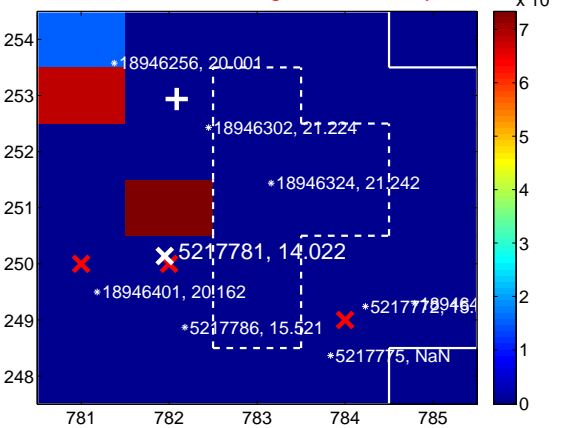
Q13 no difference image



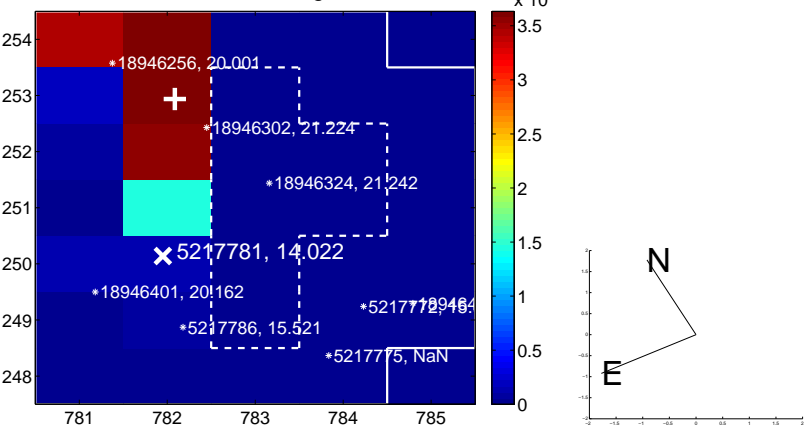
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



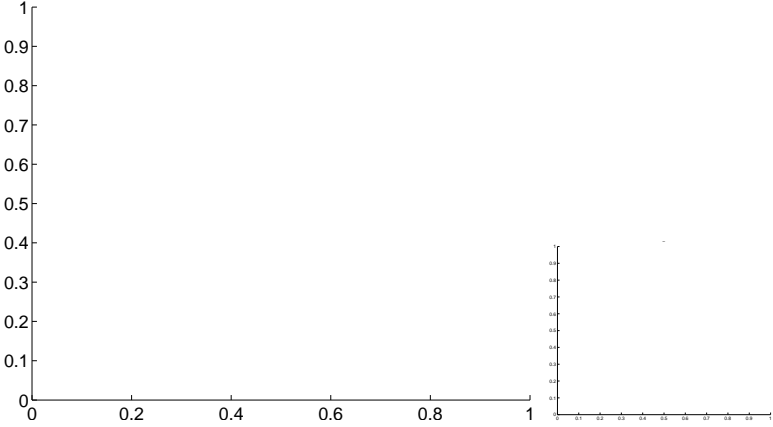
Q15 no OOT image



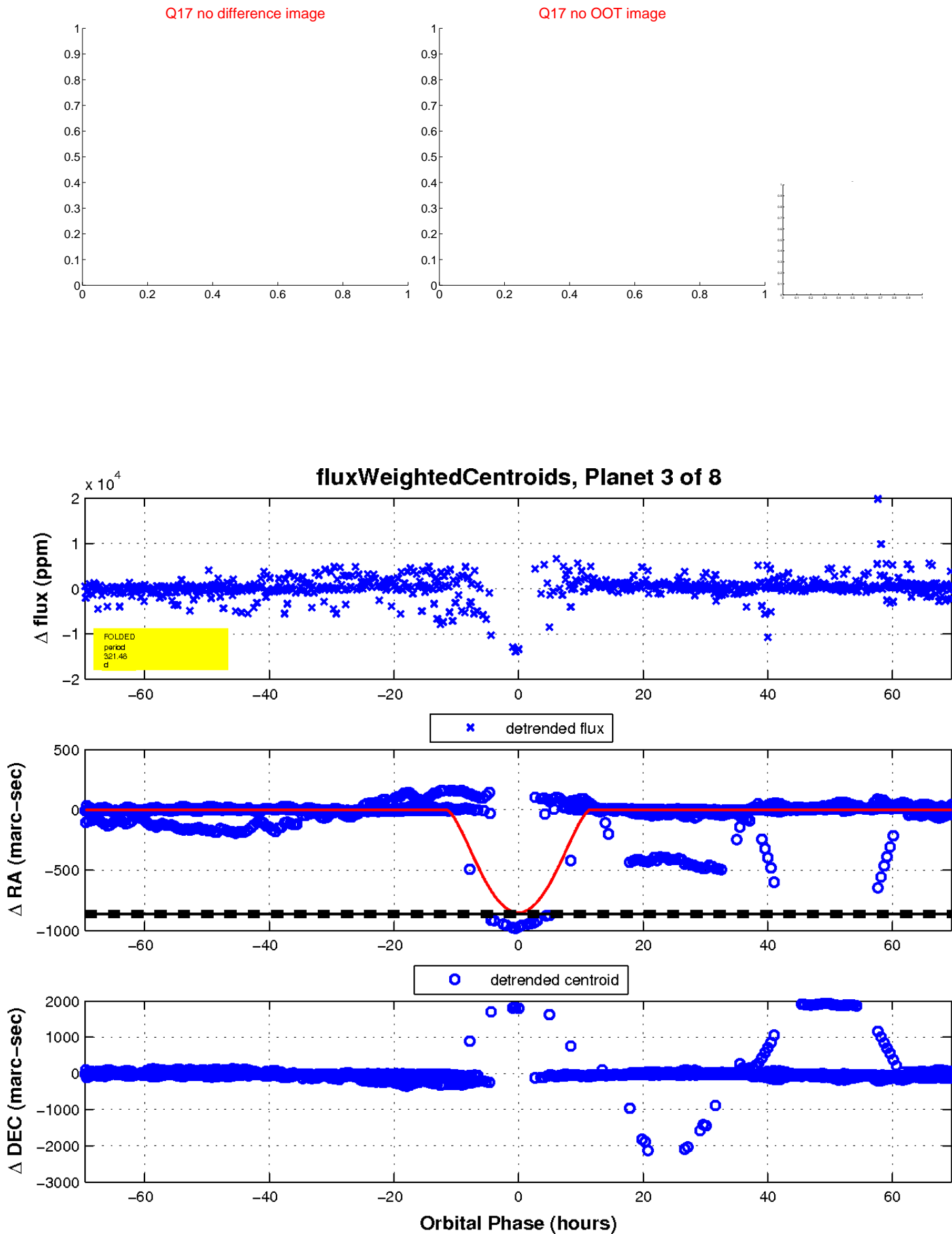
Q16 no difference image



Q16 no OOT image

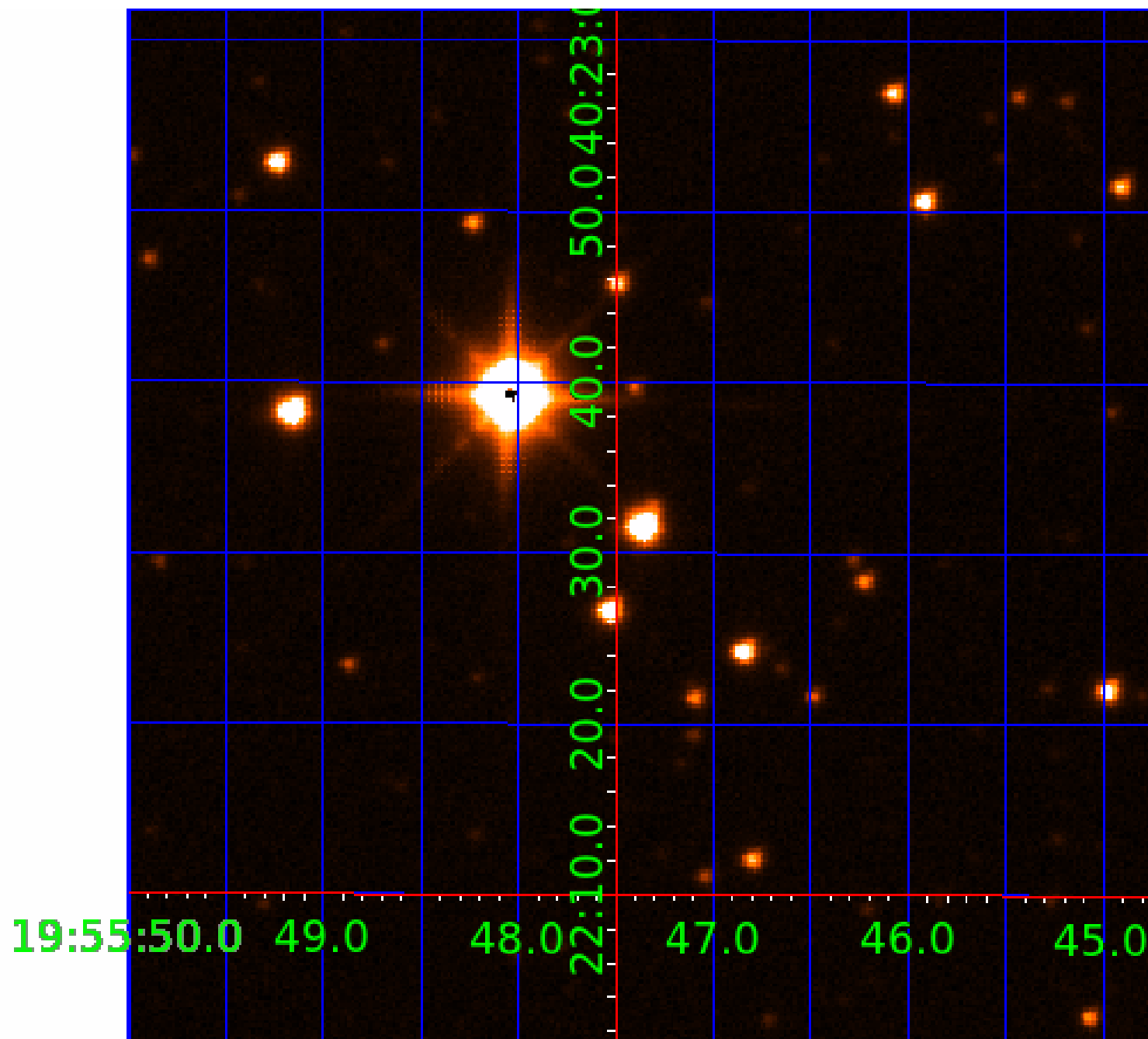


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
005217781-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

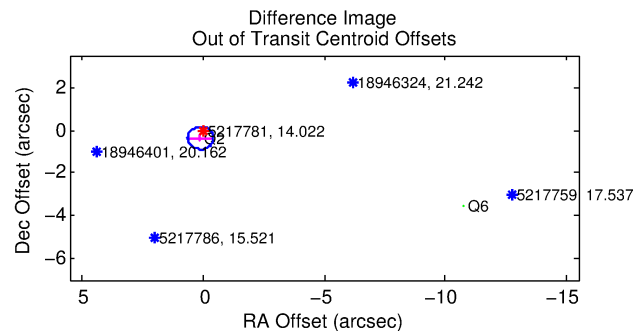
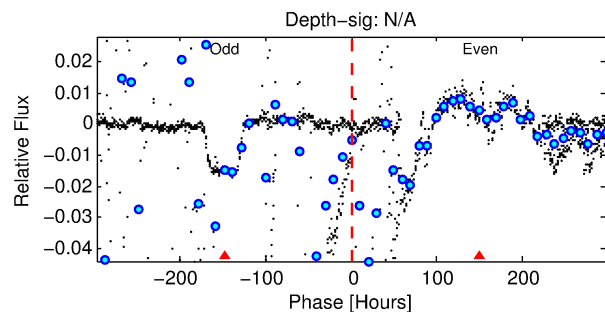
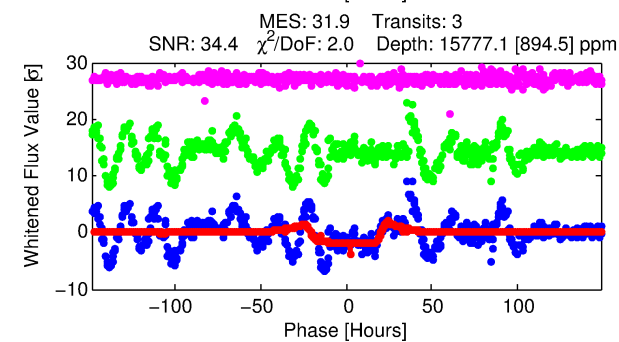
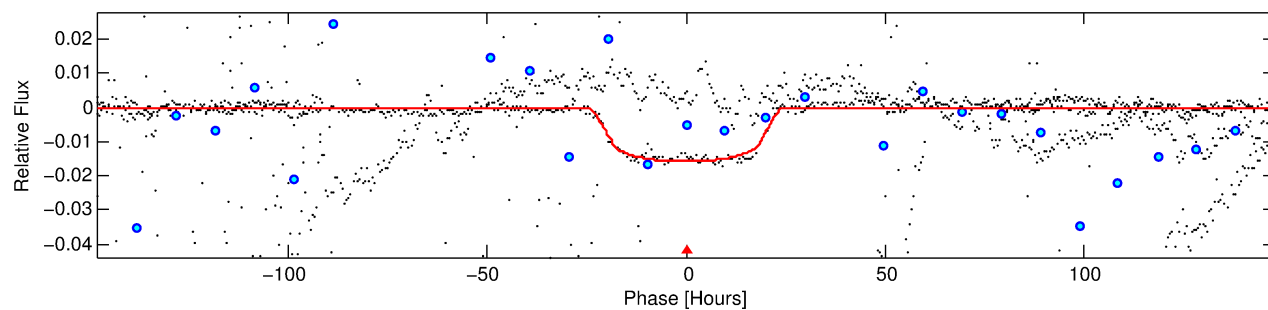
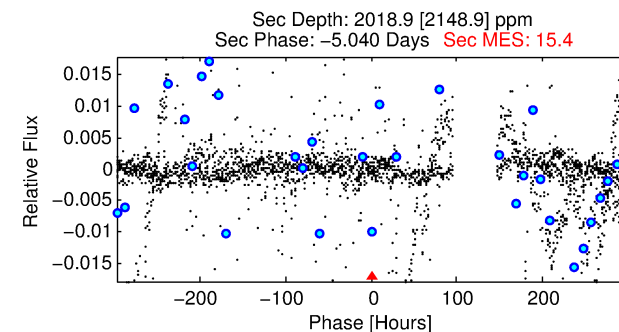
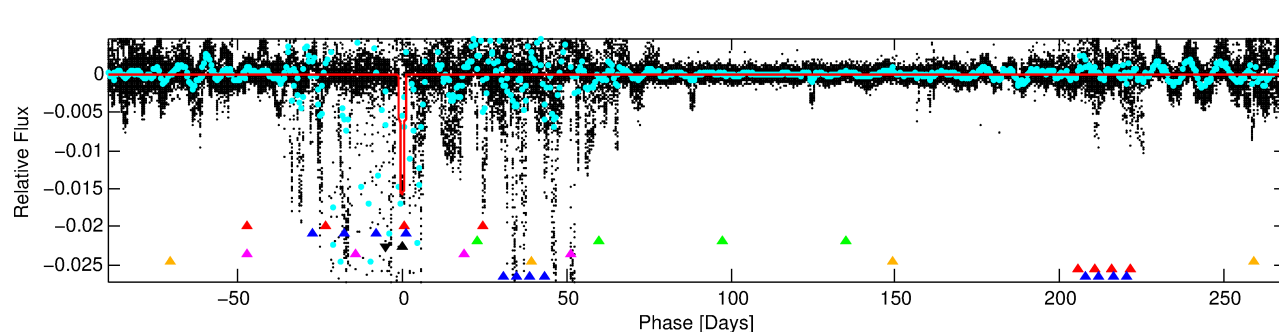
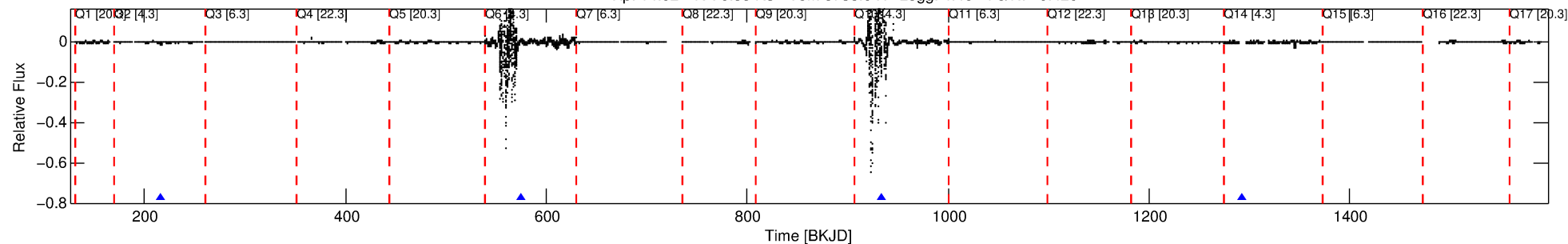
Ephemeris Match Information For 005217781-04

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 4 of 8 Period: 358.954 d

Kp: 14.02 R*: 0.88 Rs Teff: 5735.0 K Logg: 4.46 Fe/H: -0.420



DV Fit Results:

Period = 358.95406 [0.04366] d
Epoch = 216.3864 [0.0151] BKJD
Rp/R* = 0.1195 [0.0043]
a/R* = 53.54 [4.54]
b = 0.57 [0.10]
Seff = 0.87 [0.28]
Teq = 246 [20] K
Rp = 11.42 [2.80] Re
a = 0.9241 [0.1909] AU
Ag = 7268.67 [8063.61] [0.90σ]
Teffp = 3517 [943] K [3.47σ]

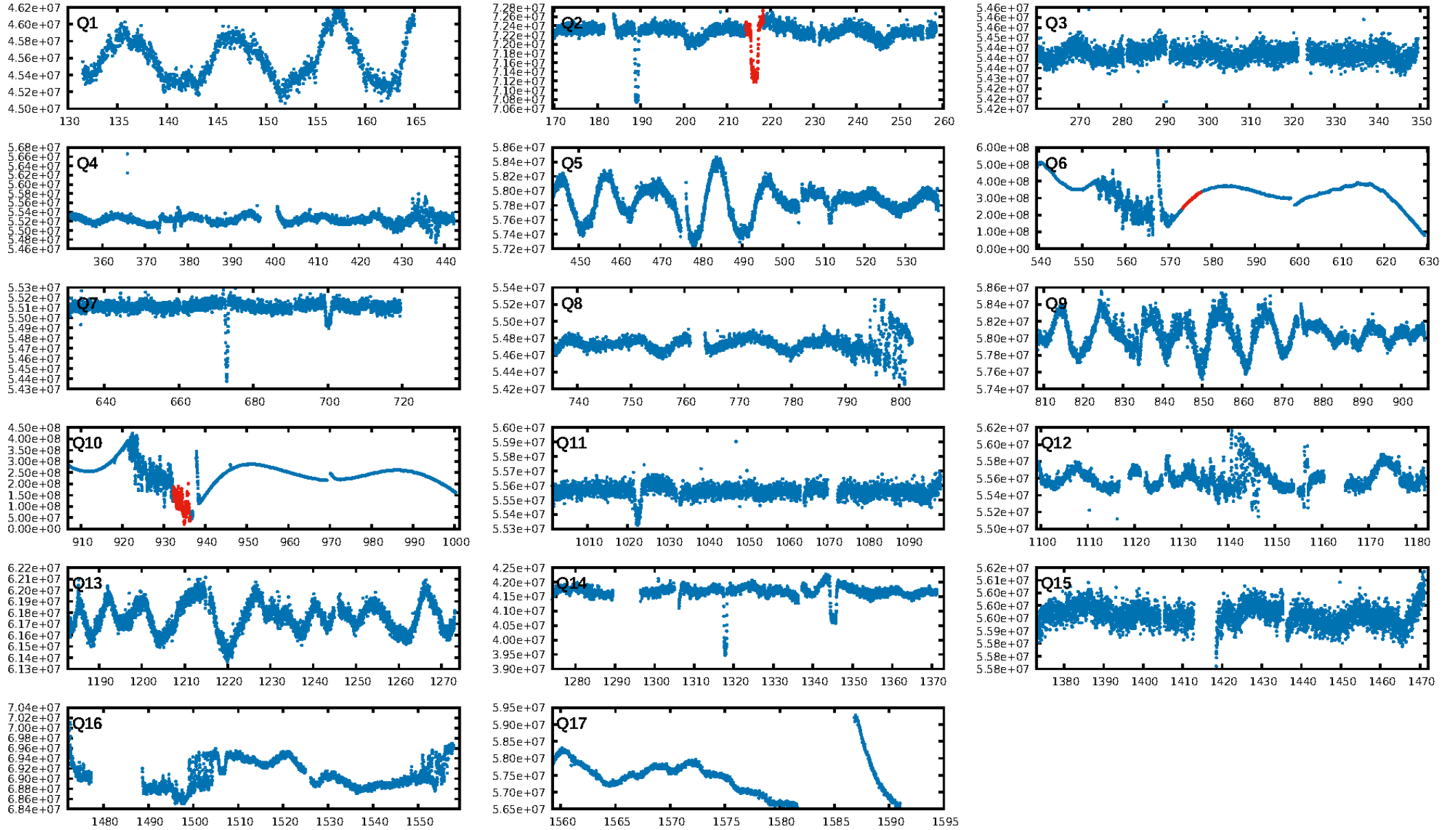
DV Diagnostic Results:

ShortPeriod-sig: 99.1% [2.62σ]
LongPeriod-sig: 100.0% [4.44σ]
ModelChiSquare2-sig: 3.3%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -15.02
Centroid-sig: N/A
Centroid-so: 4.284 arcsec [0.93σ]
OotOffset-rm: 0.384 arcsec [2.19σ]
KicOffset-rm: 3.706 arcsec [9.86σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

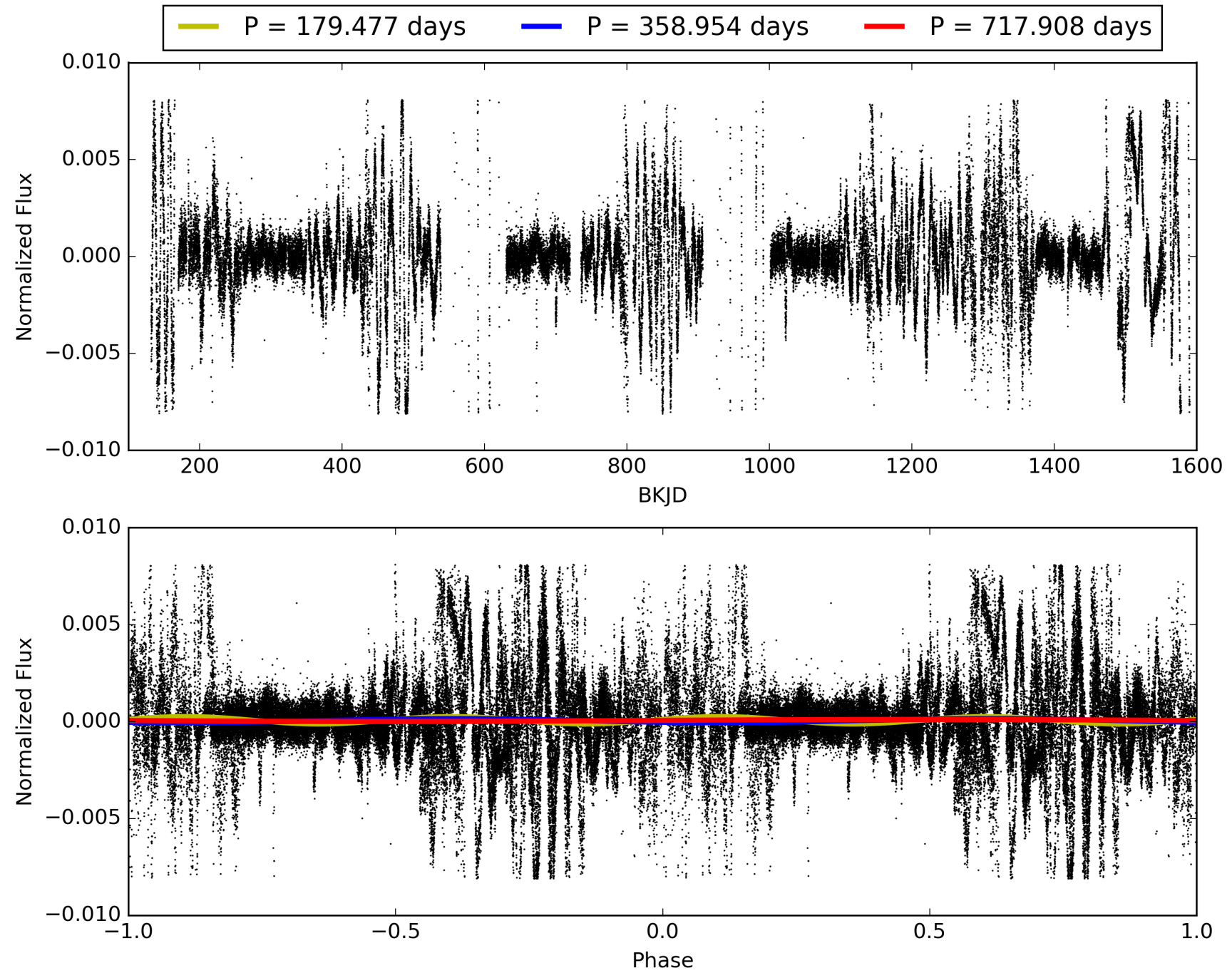
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:31:30 Z

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

TCE 005217781-04, PDC Light Curves

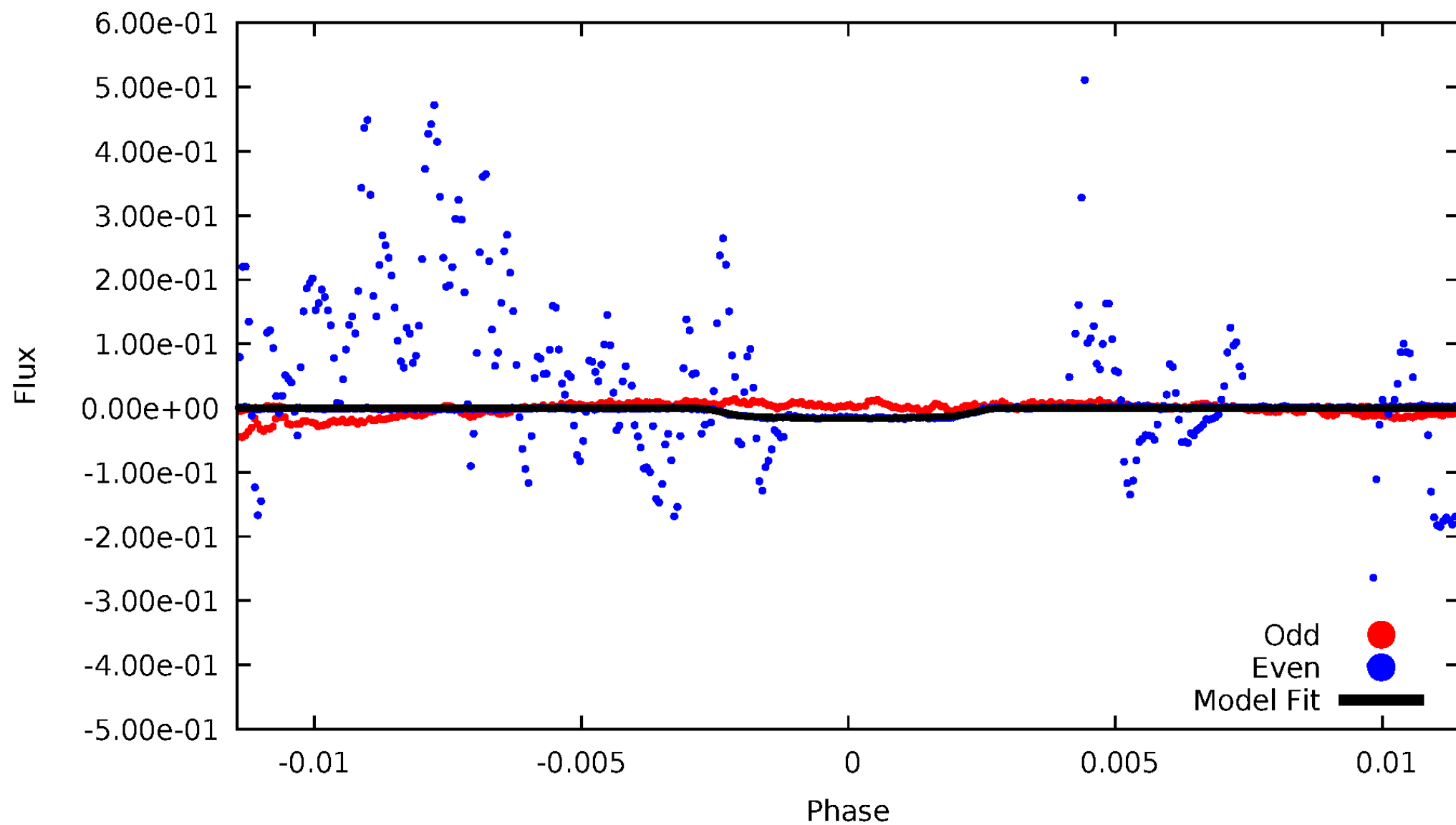


TCE 005217781-04



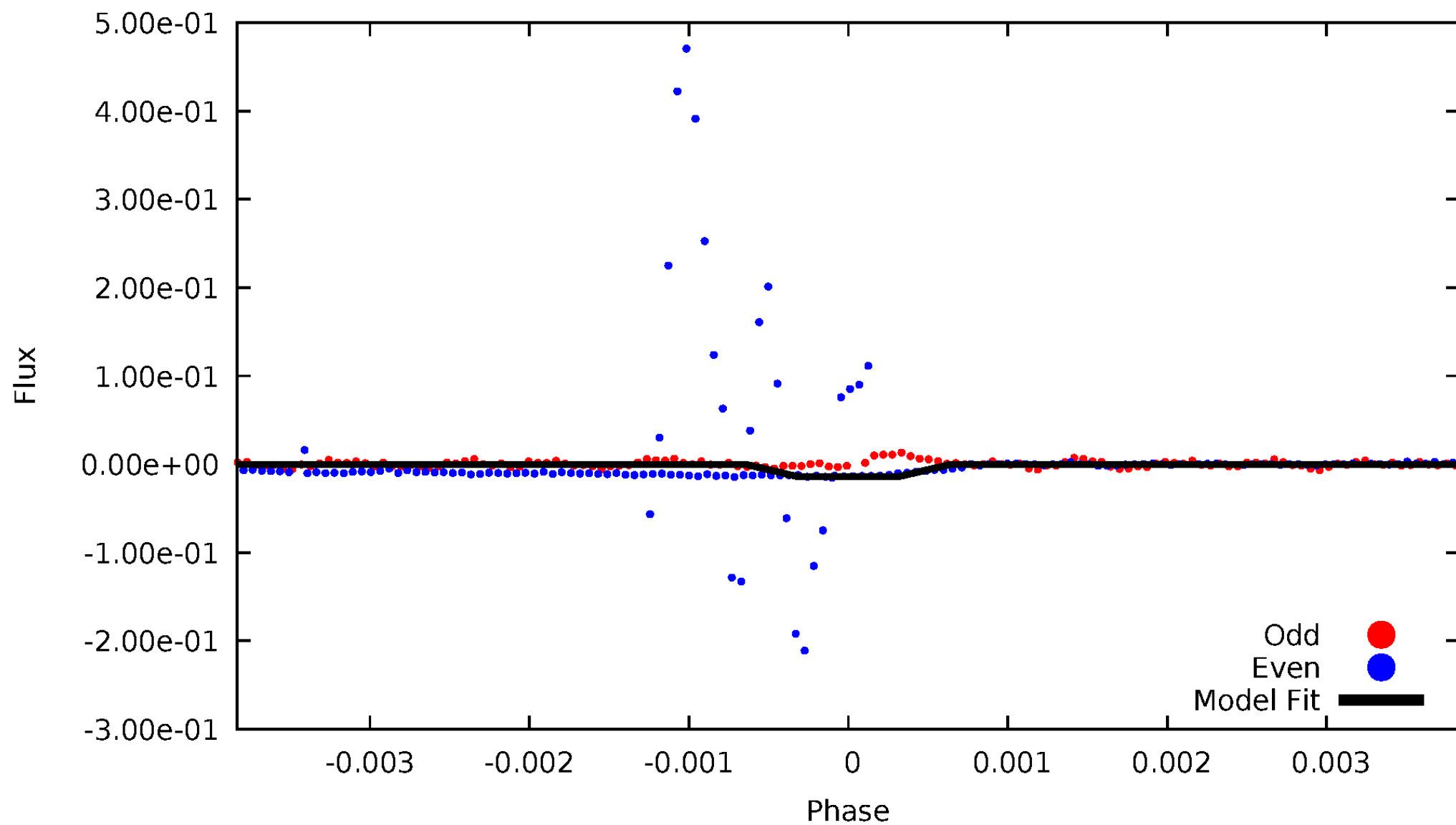
DV Odd/Even

TCE 005217781-04



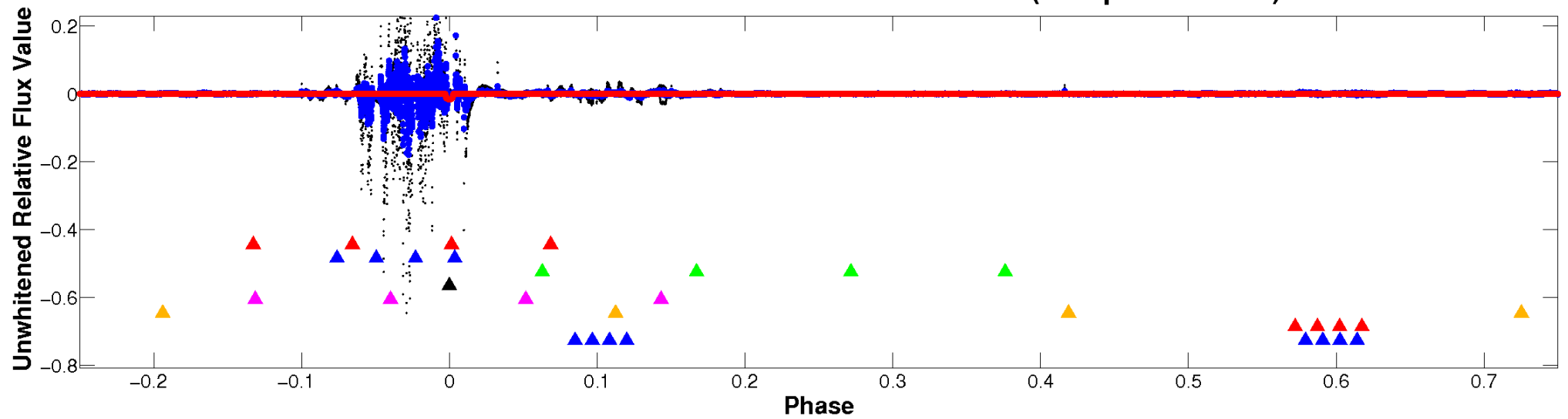
ALT Odd/Even

TCE 005217781-04

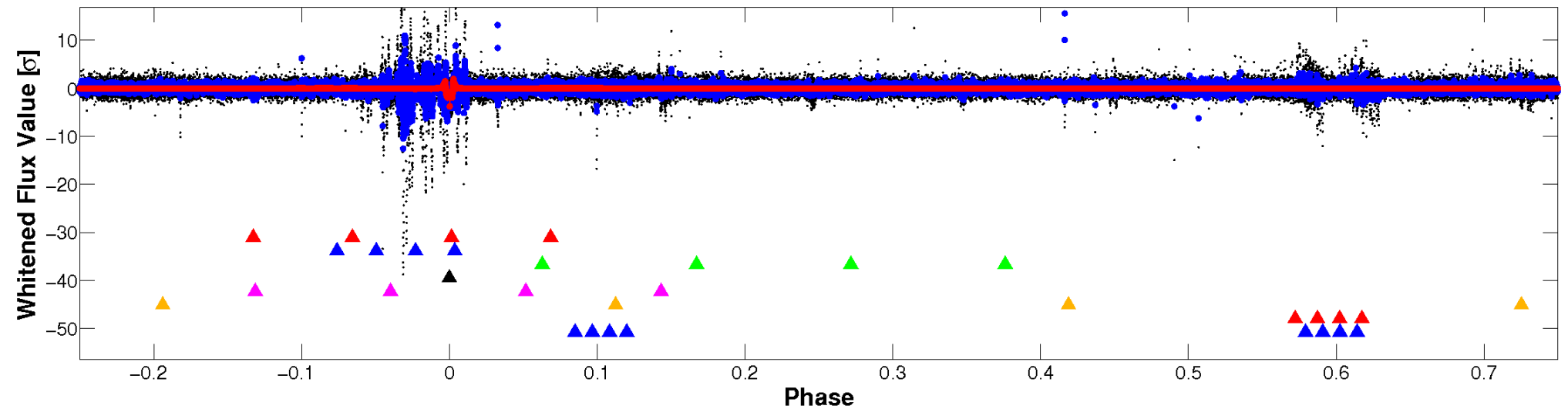


Non-Whitened Vs. Whitened Light Curve

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

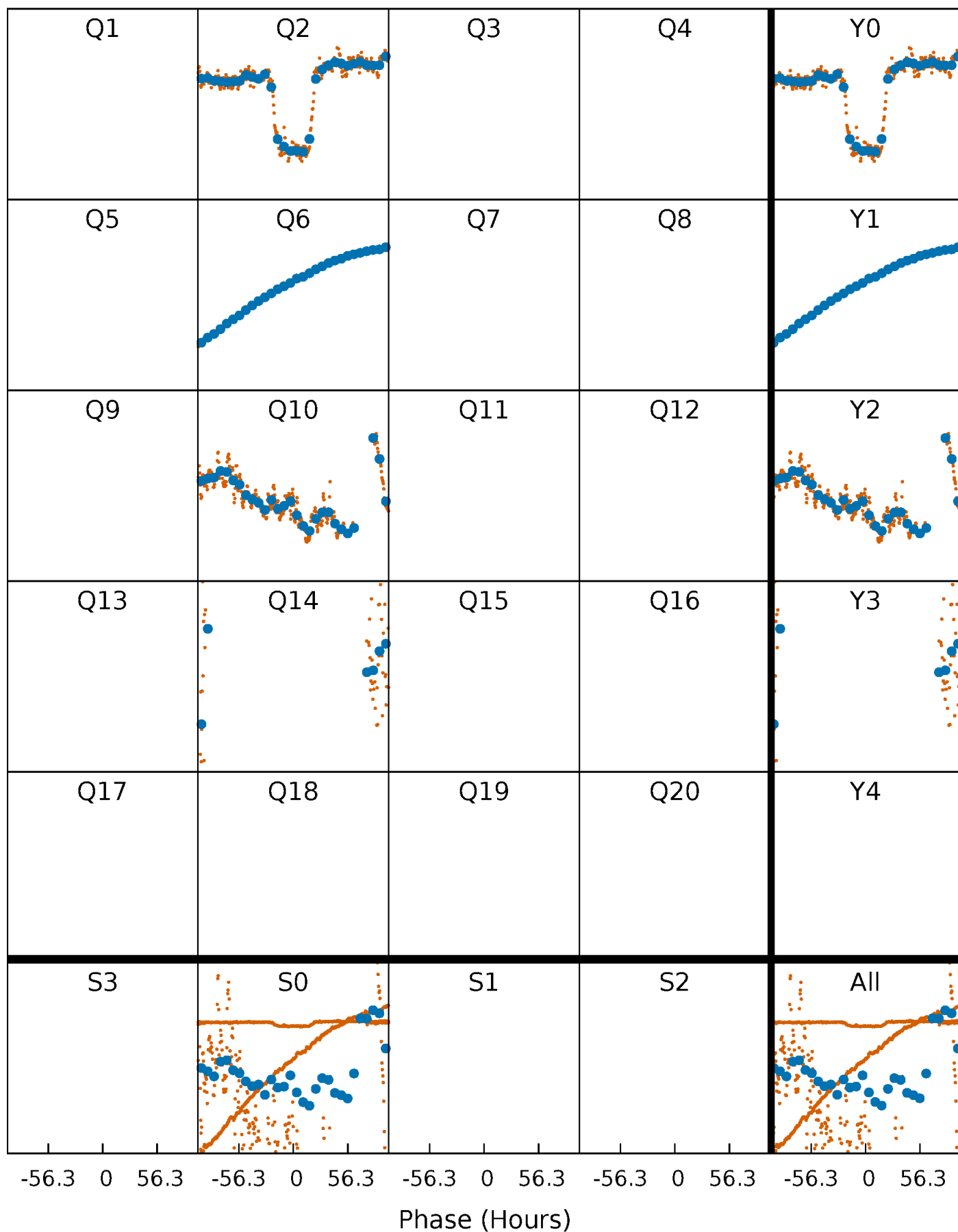


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



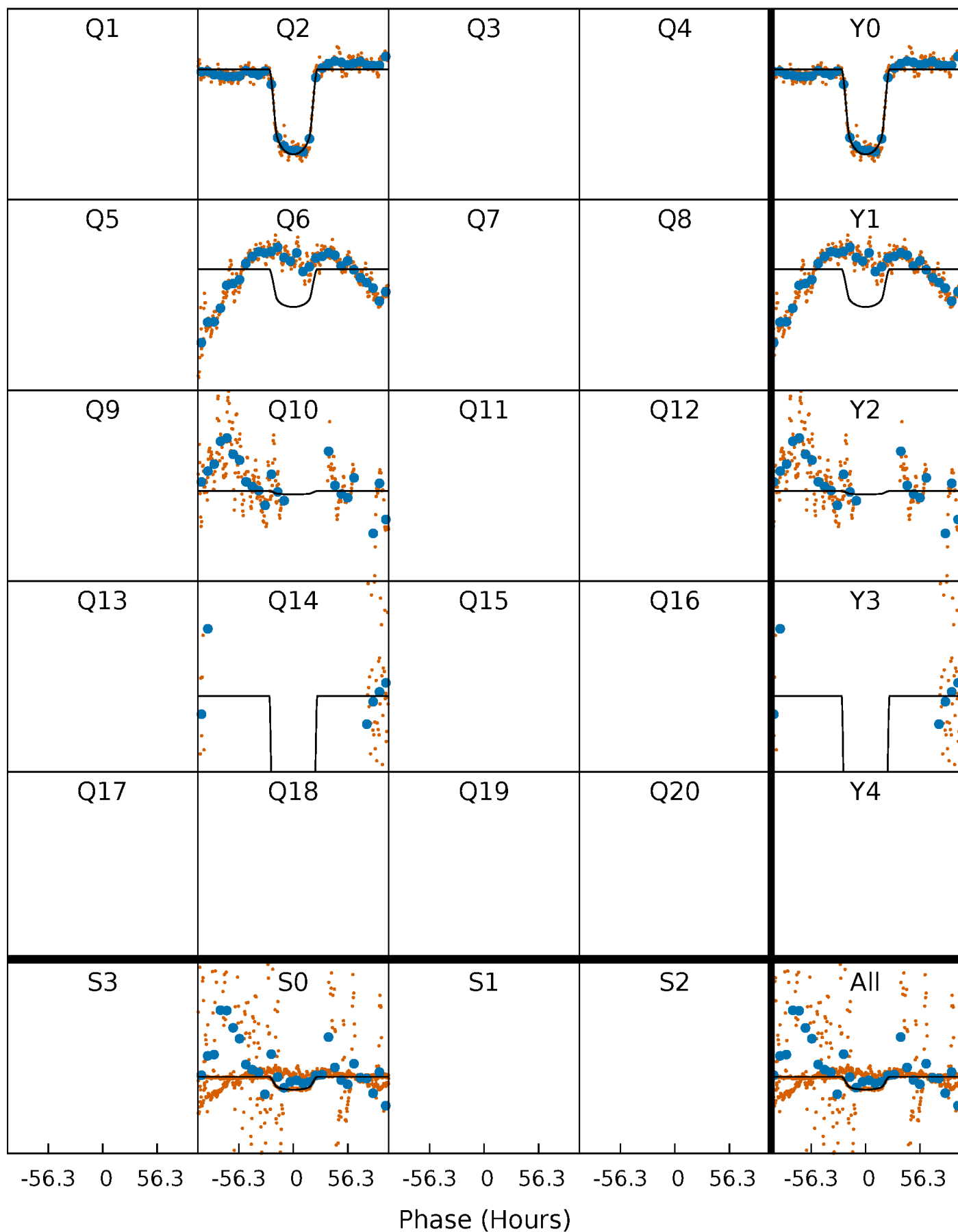
PDC Quarter-Phased Transit Curves

TCE 005217781-04 $P=358.954063$ Days $T_0=216.386407$ (BKJD)



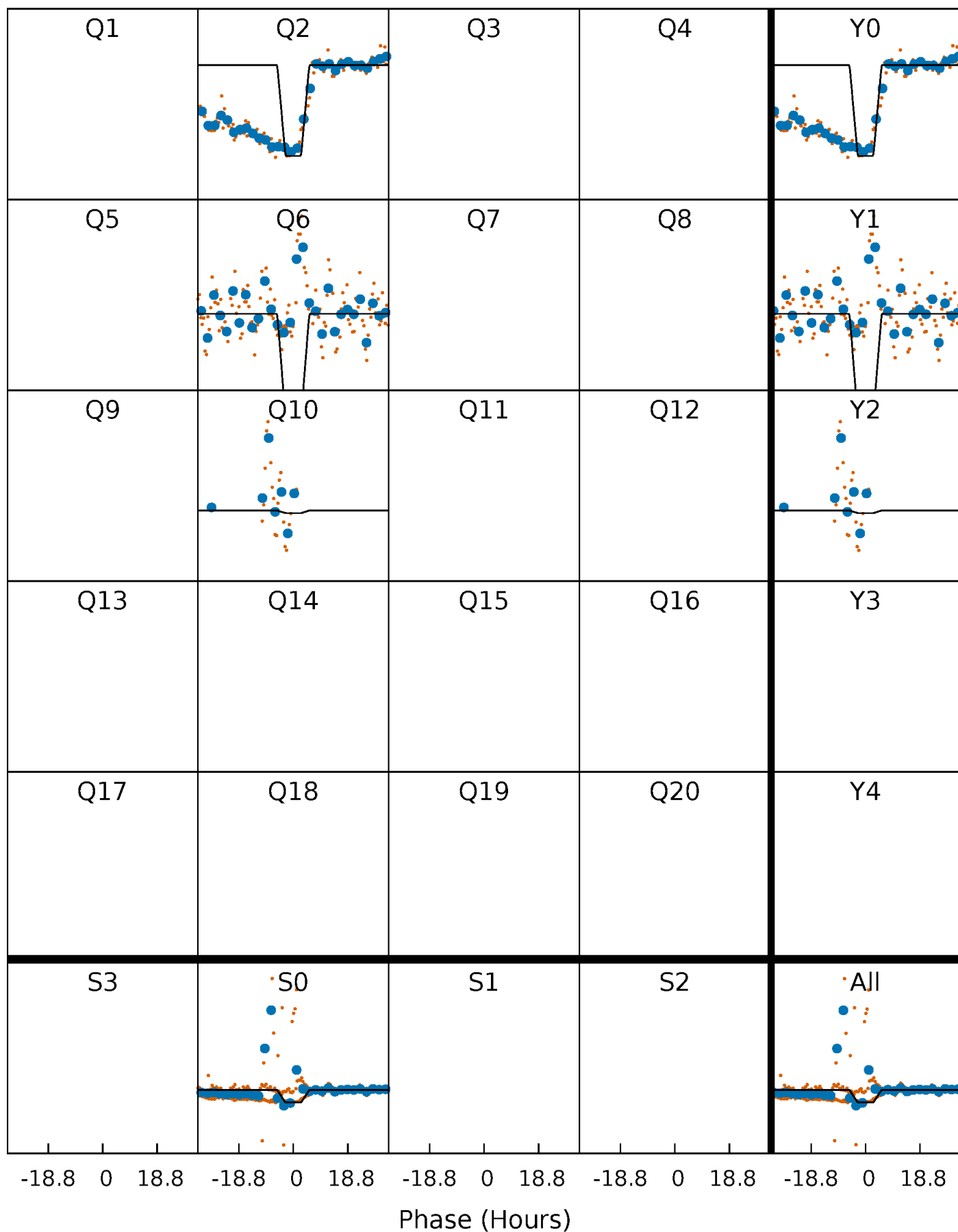
DV Quarter-Phased Transit Curves

TCE 005217781-04 P=358.954063 Days $T_0=216.386407$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

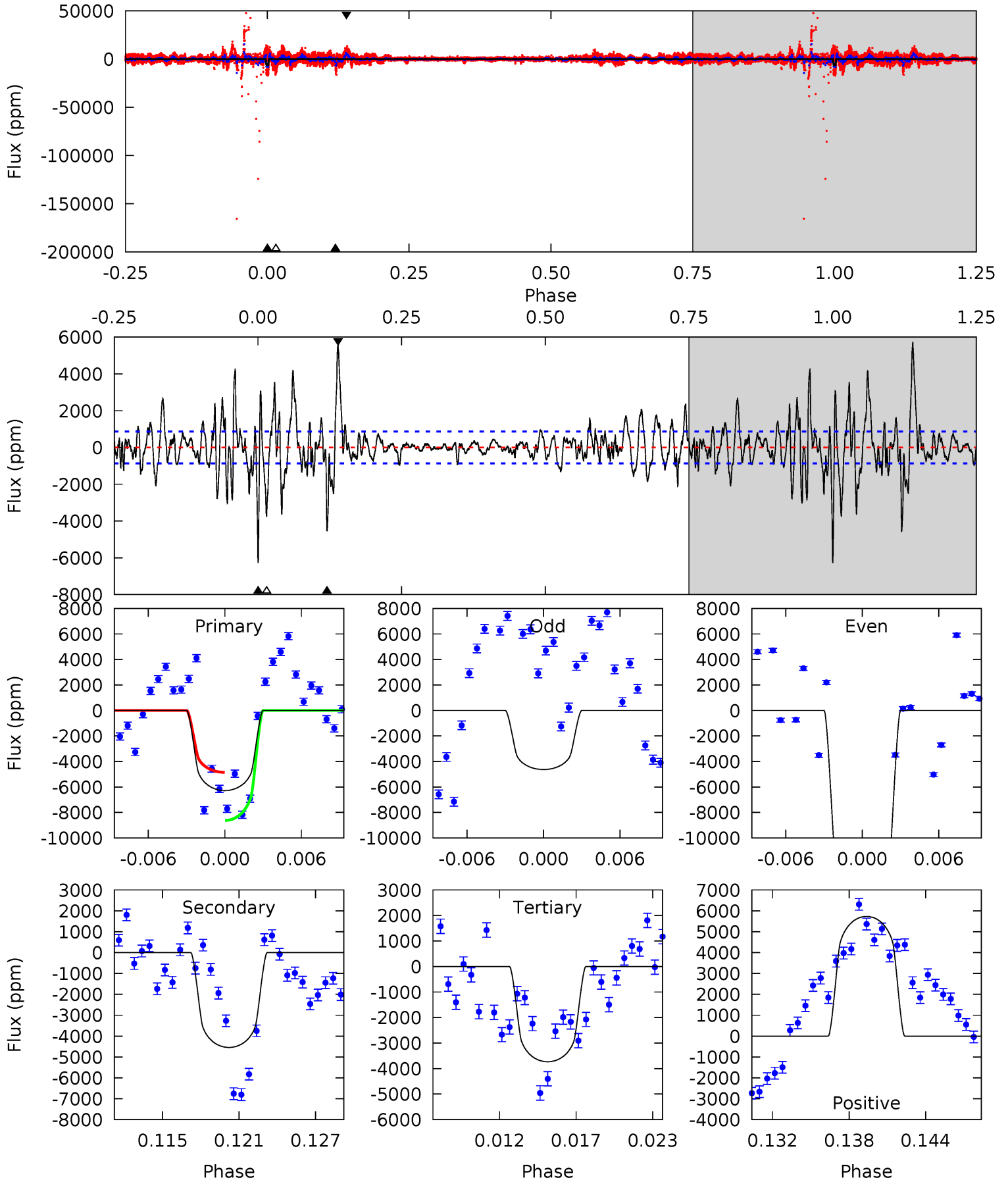
TCE 005217781-04 $P=358.397831$ Days $T_0=217.019523$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-04, P = 358.954063 Days, E = 216.386407 Days

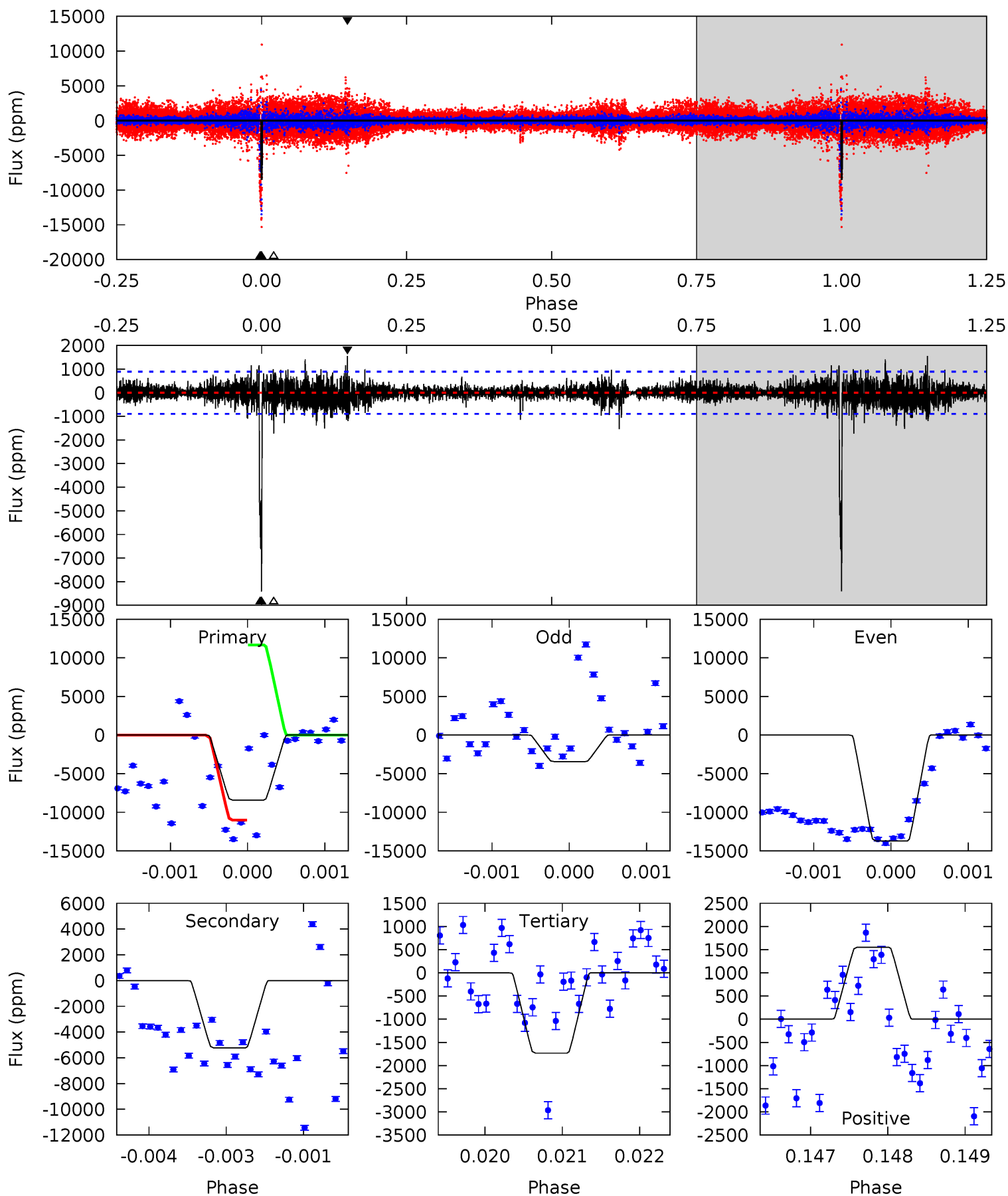
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.2	26.9	22.1	34.0	5.13	2.76	5.63	15.1	3.25	4.81	-7.04	13.2	17.3	0.48	11.2



Alt Model-Shift Uniqueness Test

005217781-04, P = 358.397831 Days, E = 217.019523 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.7	31.6	10.5	9.37	5.40	3.21	1.47	40.3	41.4	21.1	22.2	34.8	0.70	0.16	1.93



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4543 ± 169	$11.65^{+1.62}_{-1.13}$	348^{+22}_{-19}	4501^{+126}_{-120}	15985^{+3501}_{-3589}
Alt.	-5232 ± 166	$11.50^{+1.56}_{-1.01}$	348^{+22}_{-18}	4648^{+124}_{-137}	18662^{+3910}_{-3761}

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

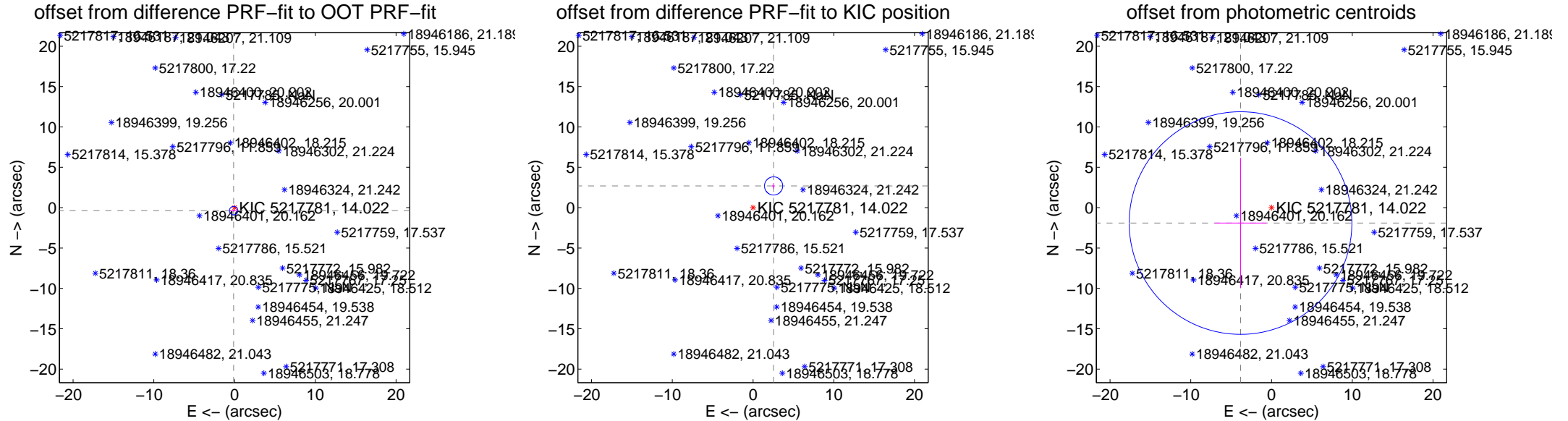
DV Centroid Data

Supplemental centroid analysis for 005217781-04. Kepler magnitude: 14.02. Transit SNR 34.38

There are 2 quarters with good PRF difference image offsets

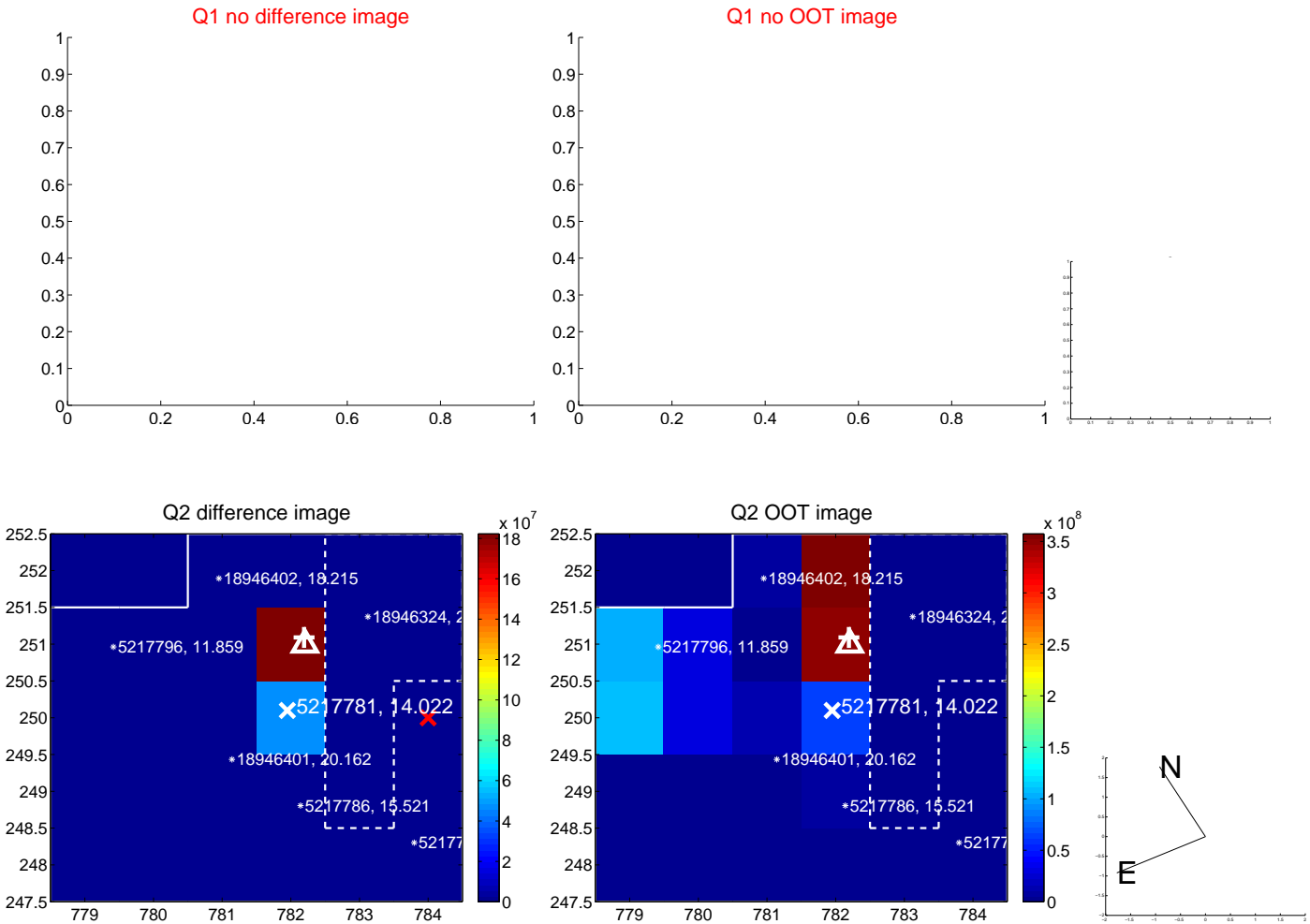
The OOT PRF centroid is offset from the target star catalog position by about 10.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.384 ± 0.175	2.19	0.113 ± 0.468	-0.367 ± 0.112
PRF-fit source offset from KIC position	3.706 ± 0.376	9.86	-2.545 ± 0.184	2.694 ± 0.353
photometric centroid source offset	4.28 ± 4.60	0.93	3.84 ± 3.21	-1.90 ± 8.07

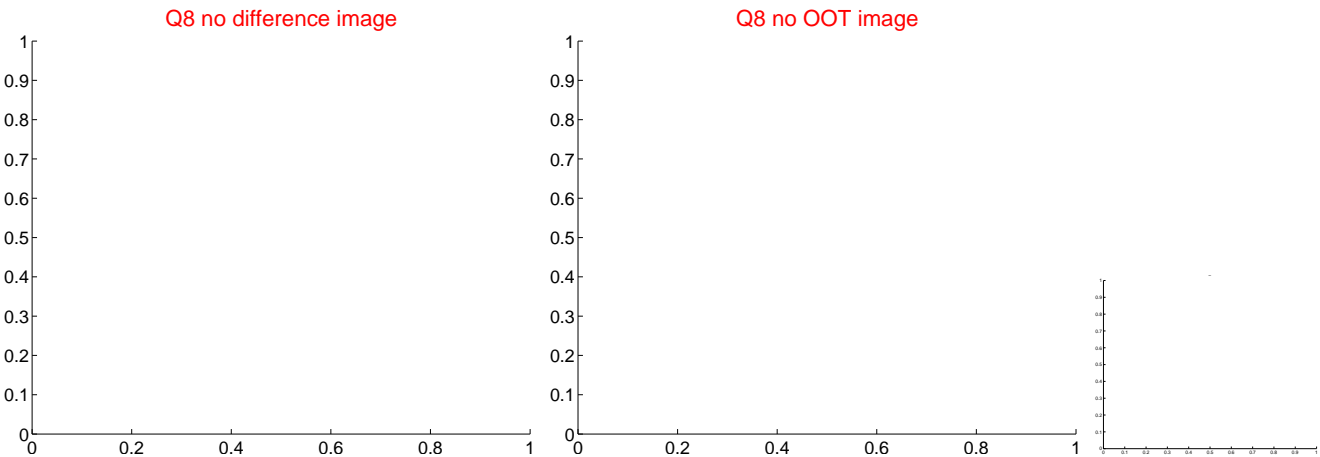
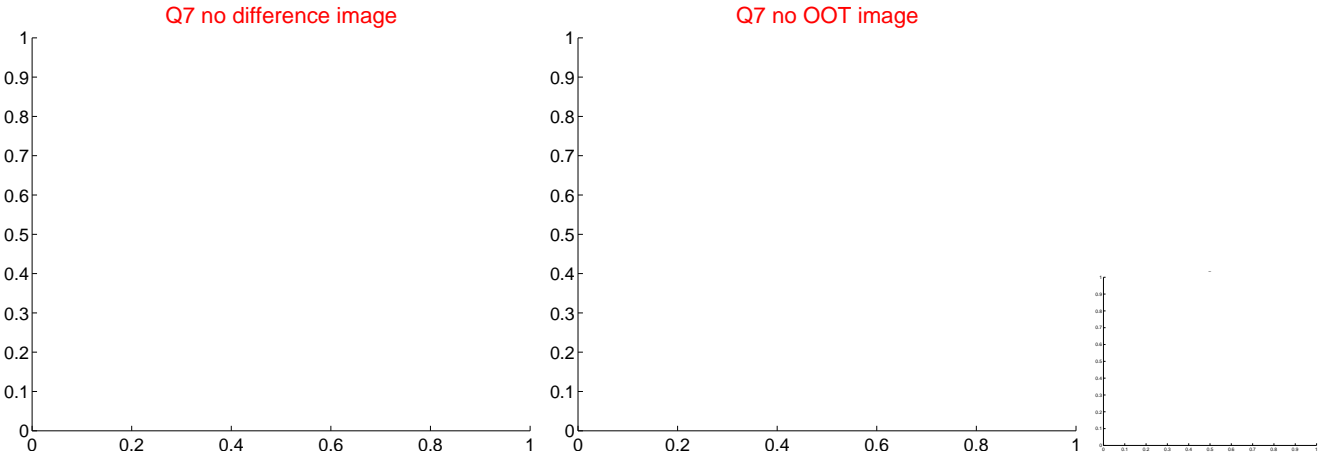
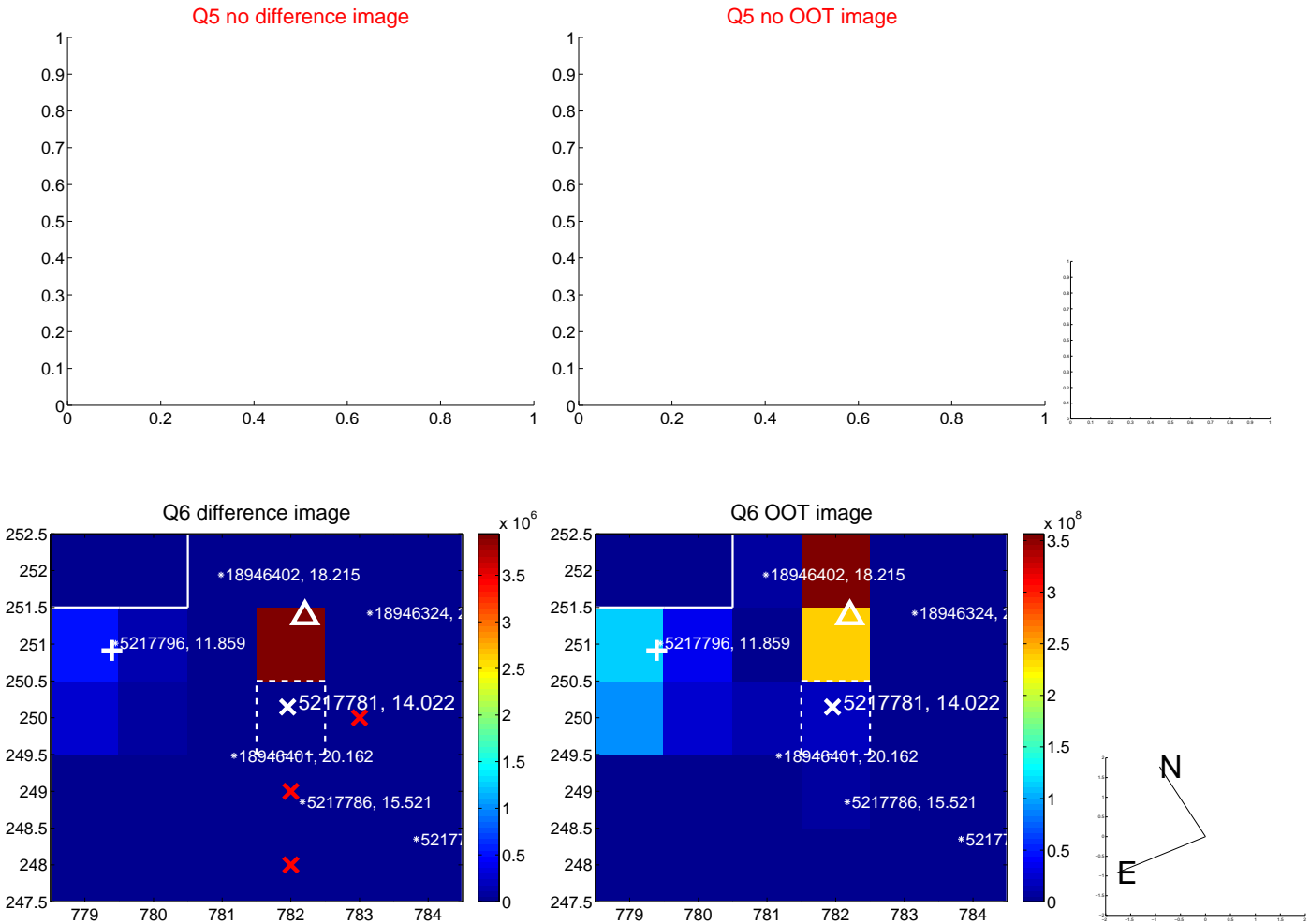


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



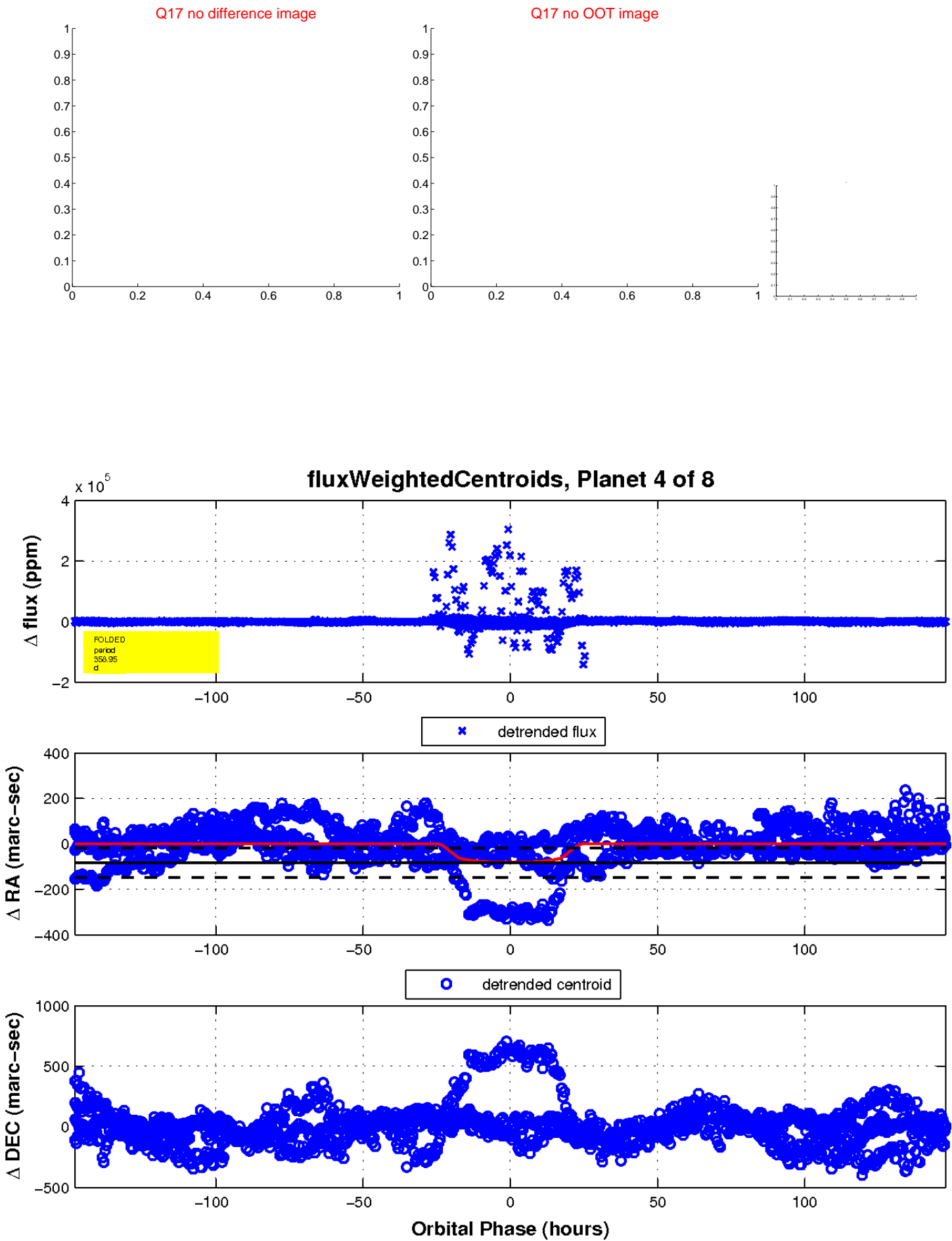
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

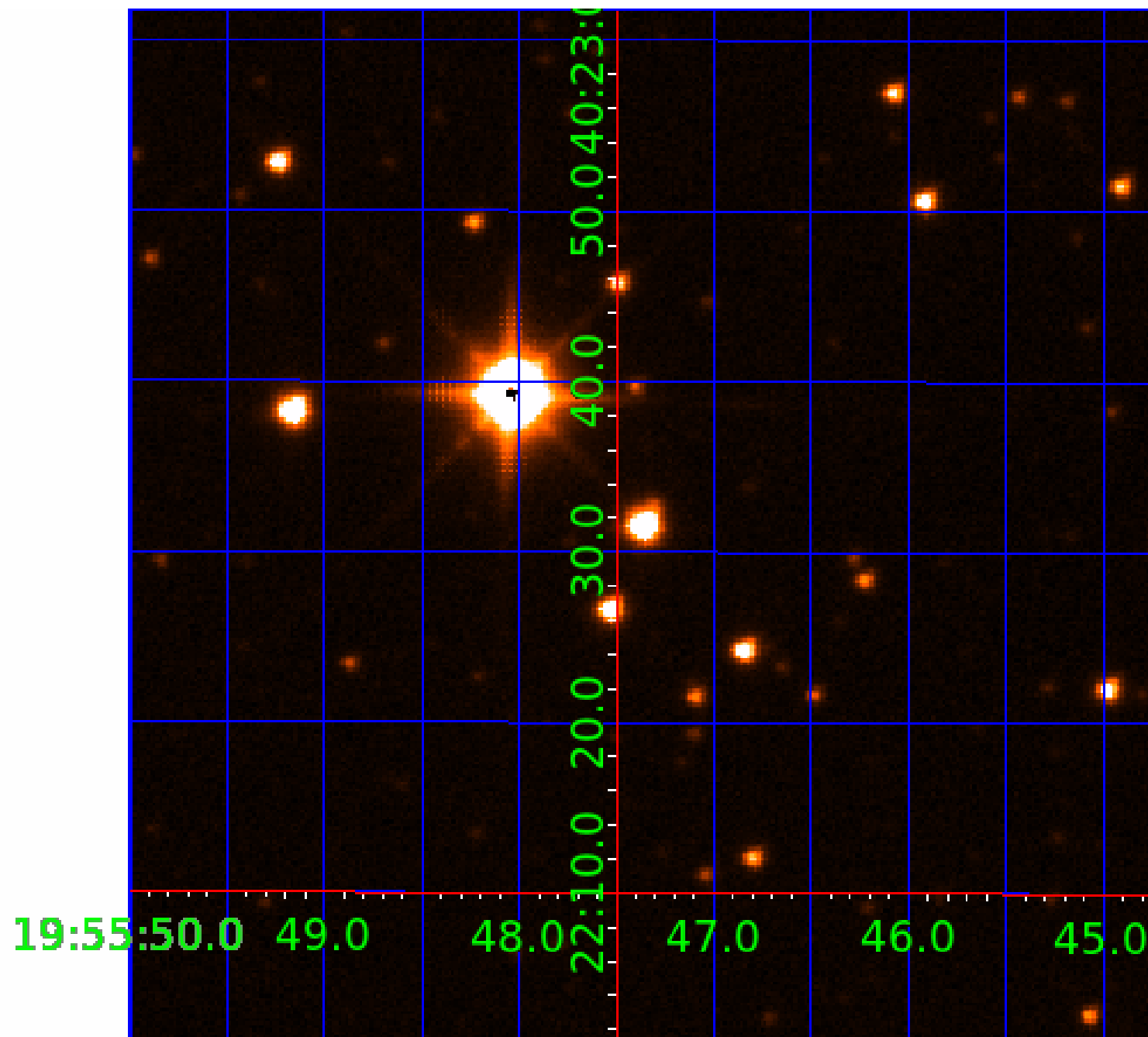


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
005217781-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

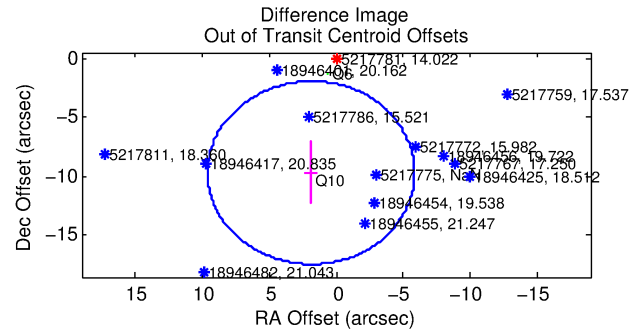
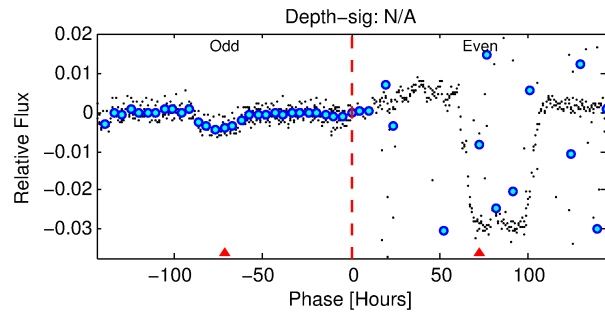
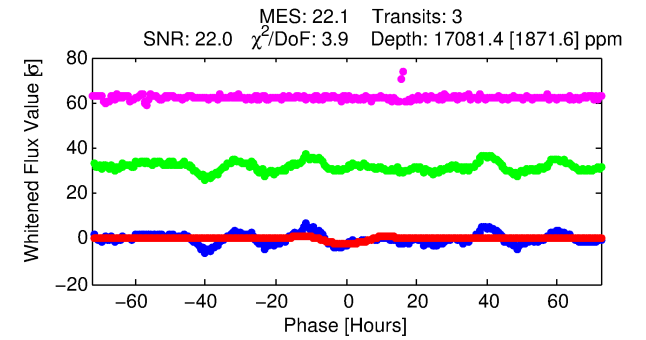
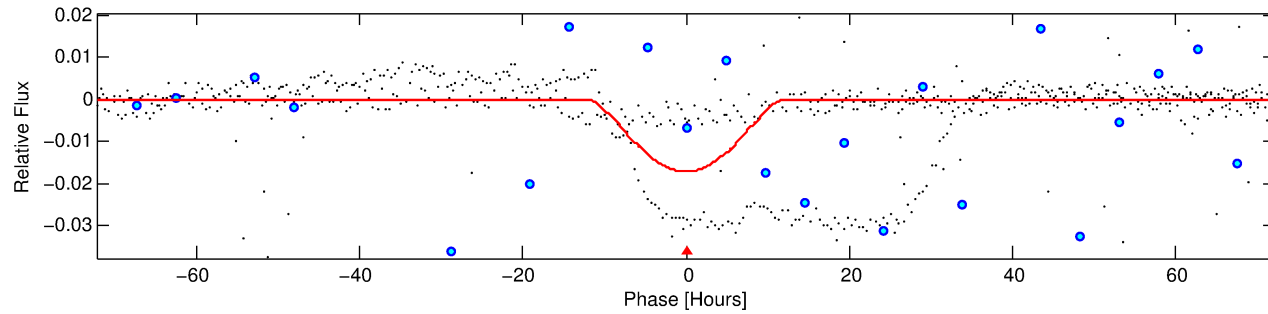
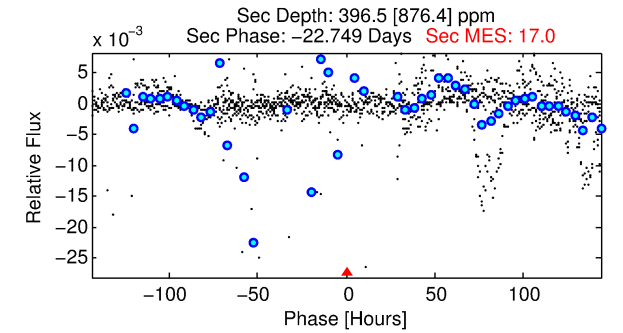
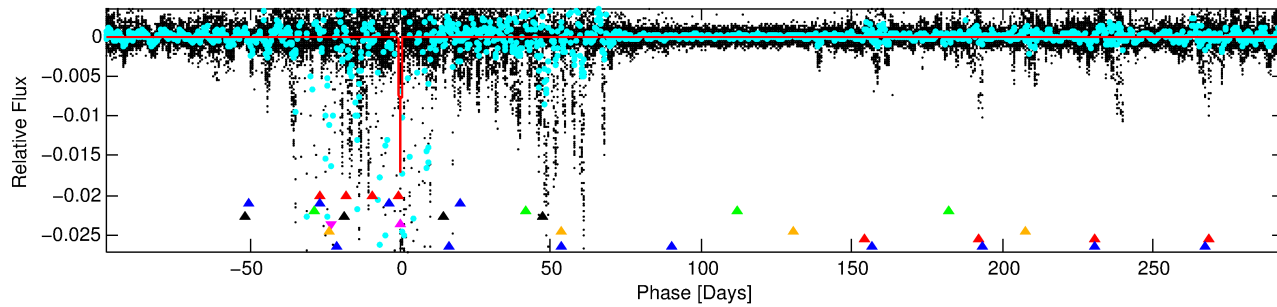
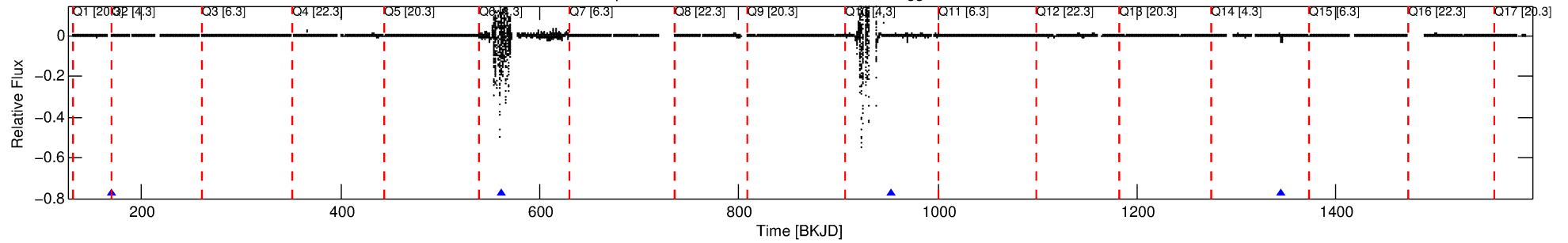
Ephemeris Match Information For 005217781-05

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 5 of 8 Period: 391.806 d

Kp: 14.02 R*: 0.88 Rs Teff: 5735.0 K Logg: 4.46 Fe/H: -0.420



DV Fit Results:

Period = 391.80570 [0.03760] d
Epoch = 169.2549 [0.1035] BKJD
Rp/R* = 0.1873 [0.2749]
a/R* = 86.03 [20.30]
b = 0.96 [0.42]
Seff = 0.77 [0.25]
Teq = 239 [19] K
Rp = 17.91 [26.63] Re
a = 0.9797 [0.2023] AU
Ag = 652.88 [2406.73] [0.27σ]
Teff = 1870 [1718] K [0.95σ]

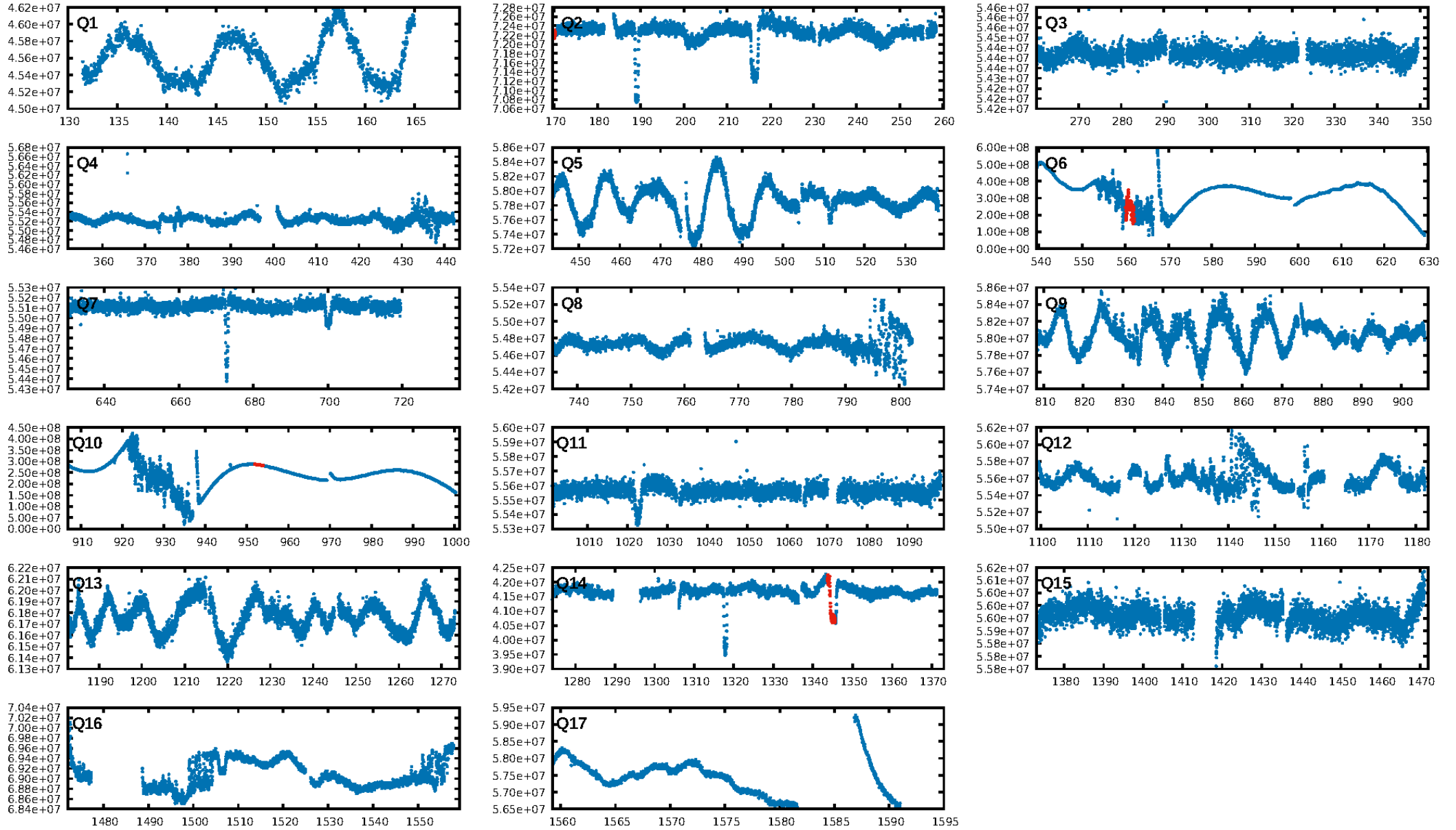
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.43σ]
LongPeriod-sig: 100.0% [65.24σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.7768
Centroid-sig: N/A
Centroid-so: 5.523 arcsec [2.21σ]
OotOffset-rm: 9.867 arcsec [3.83σ]
KicOffset-rm: 4.915 arcsec [2.81σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

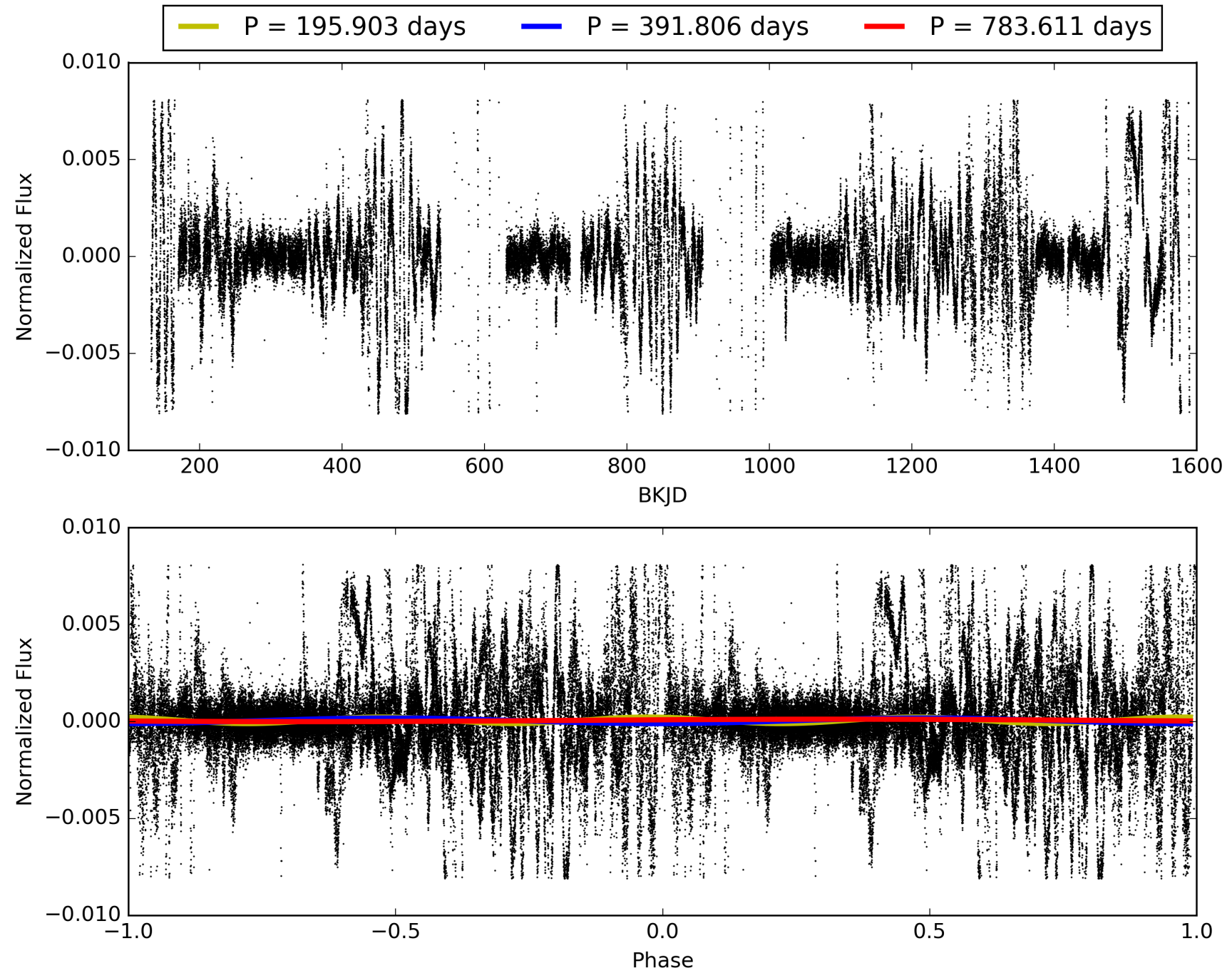
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:31:36 Z

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

TCE 005217781-05, PDC Light Curves

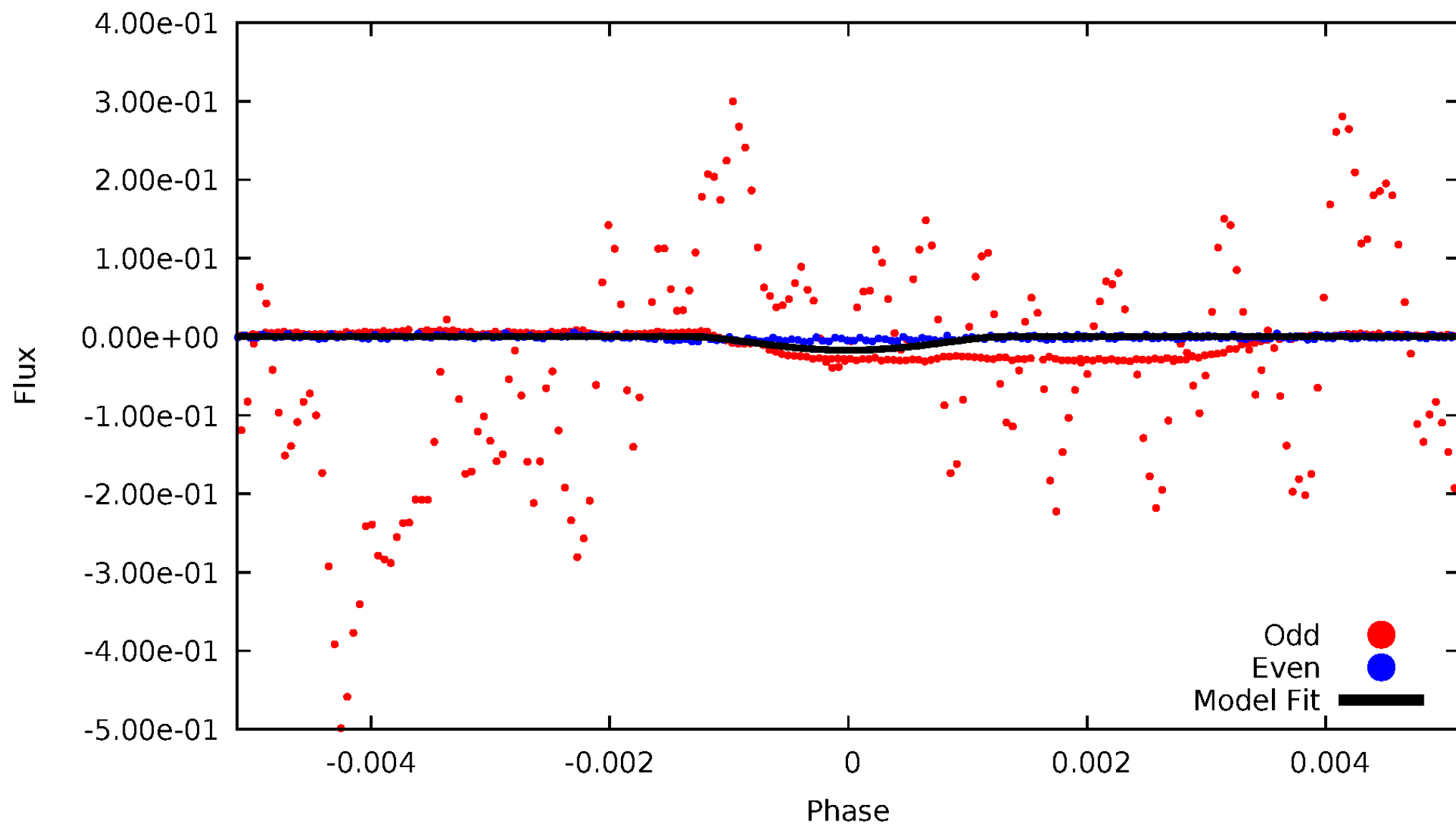


TCE 005217781-05



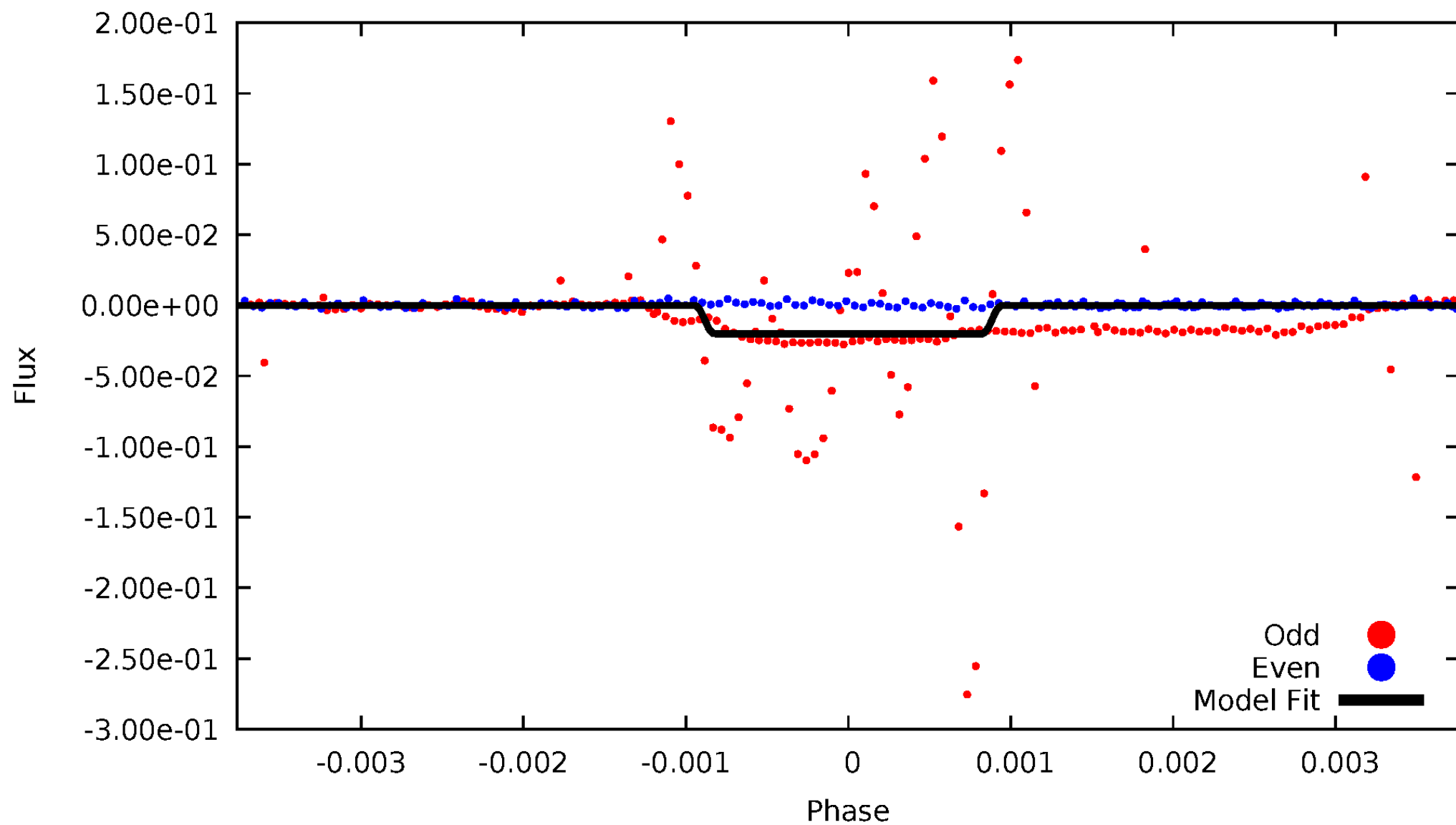
DV Odd/Even

TCE 005217781-05



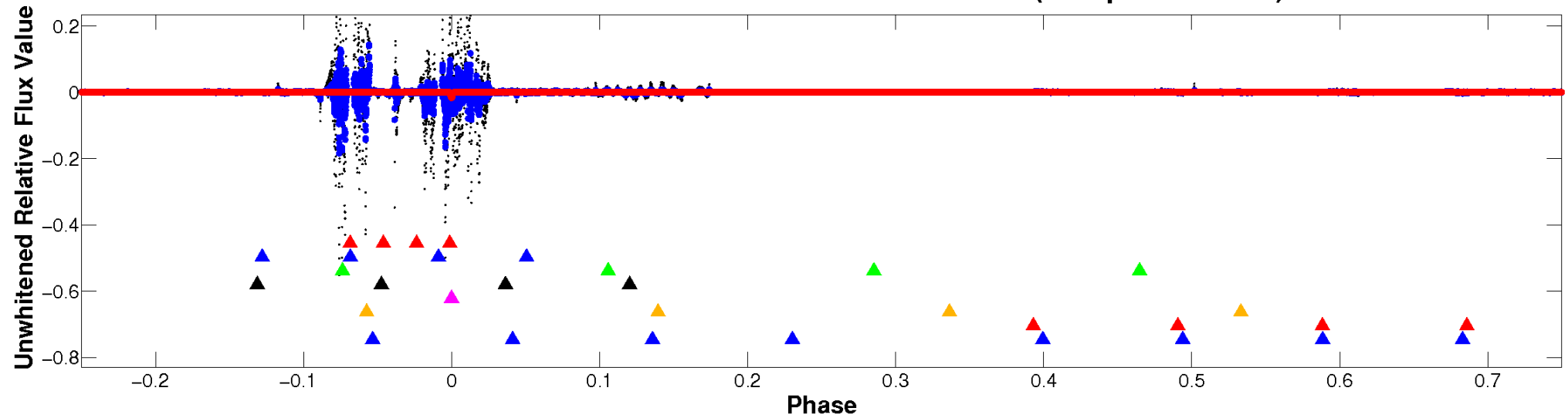
ALT Odd/Even

TCE 005217781-05

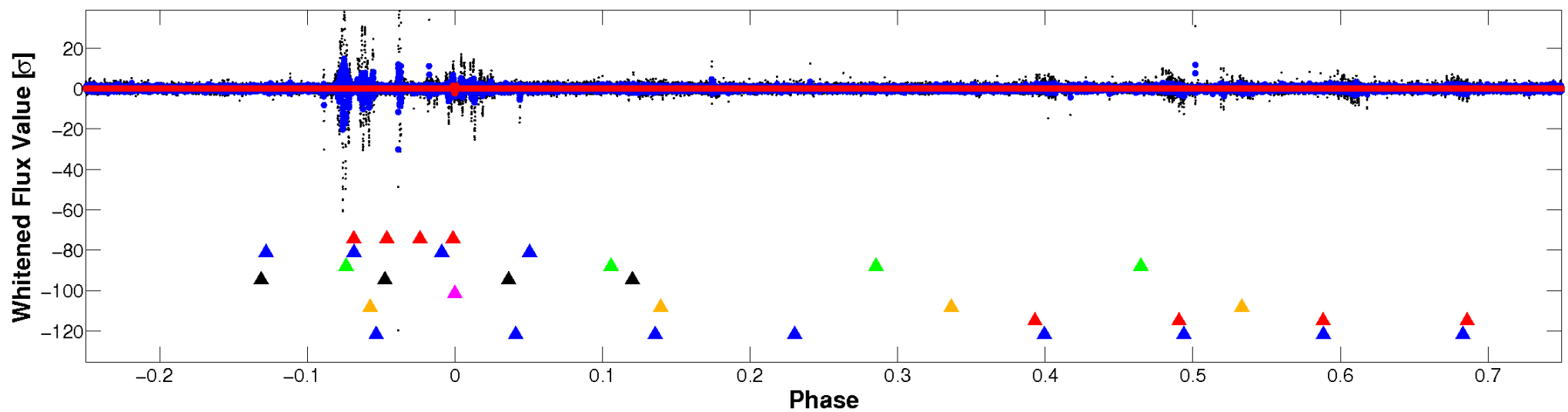


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

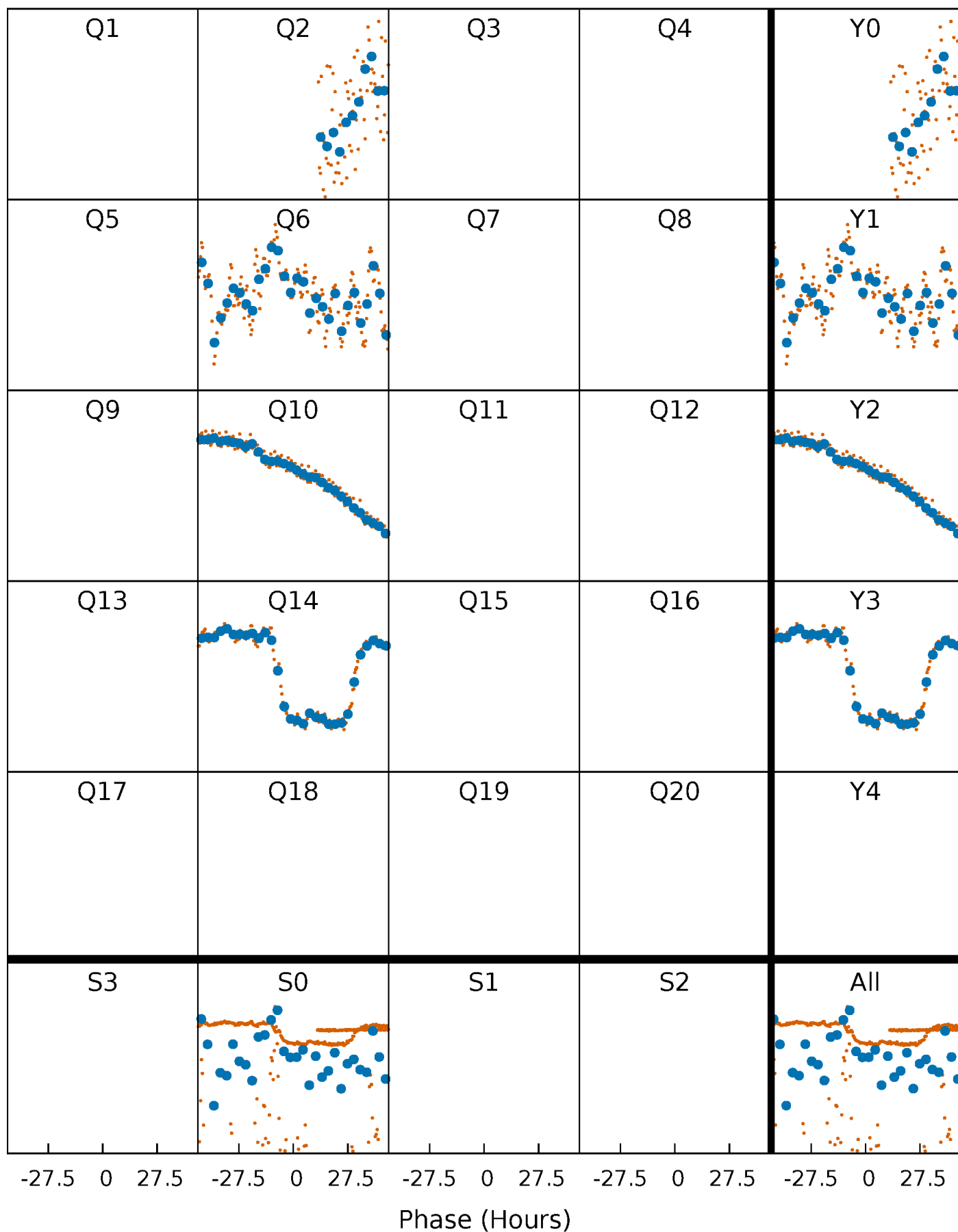


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



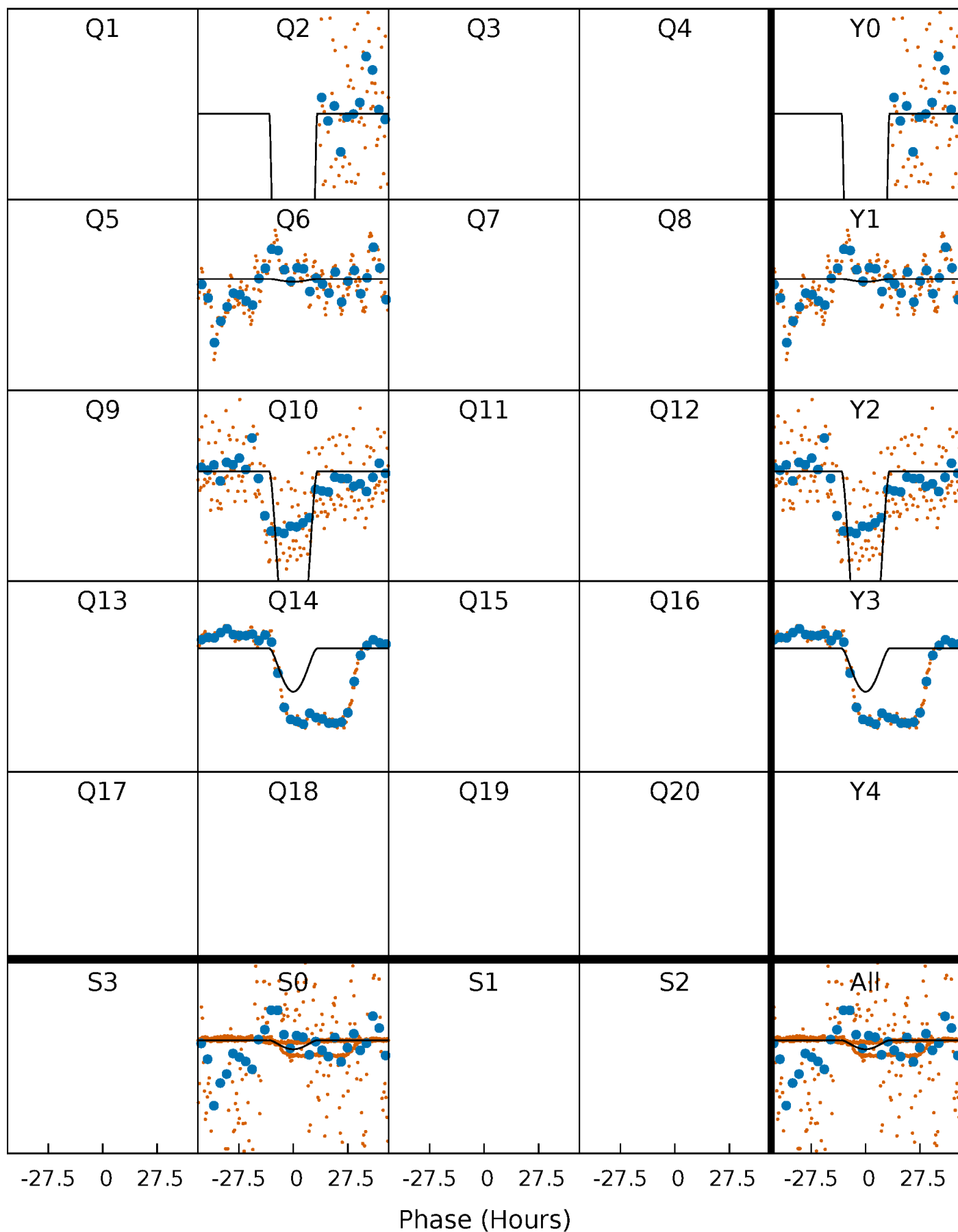
PDC Quarter-Phased Transit Curves

TCE 005217781-05 $P=391.805702$ Days $T_0=169.254860$ (BKJD)



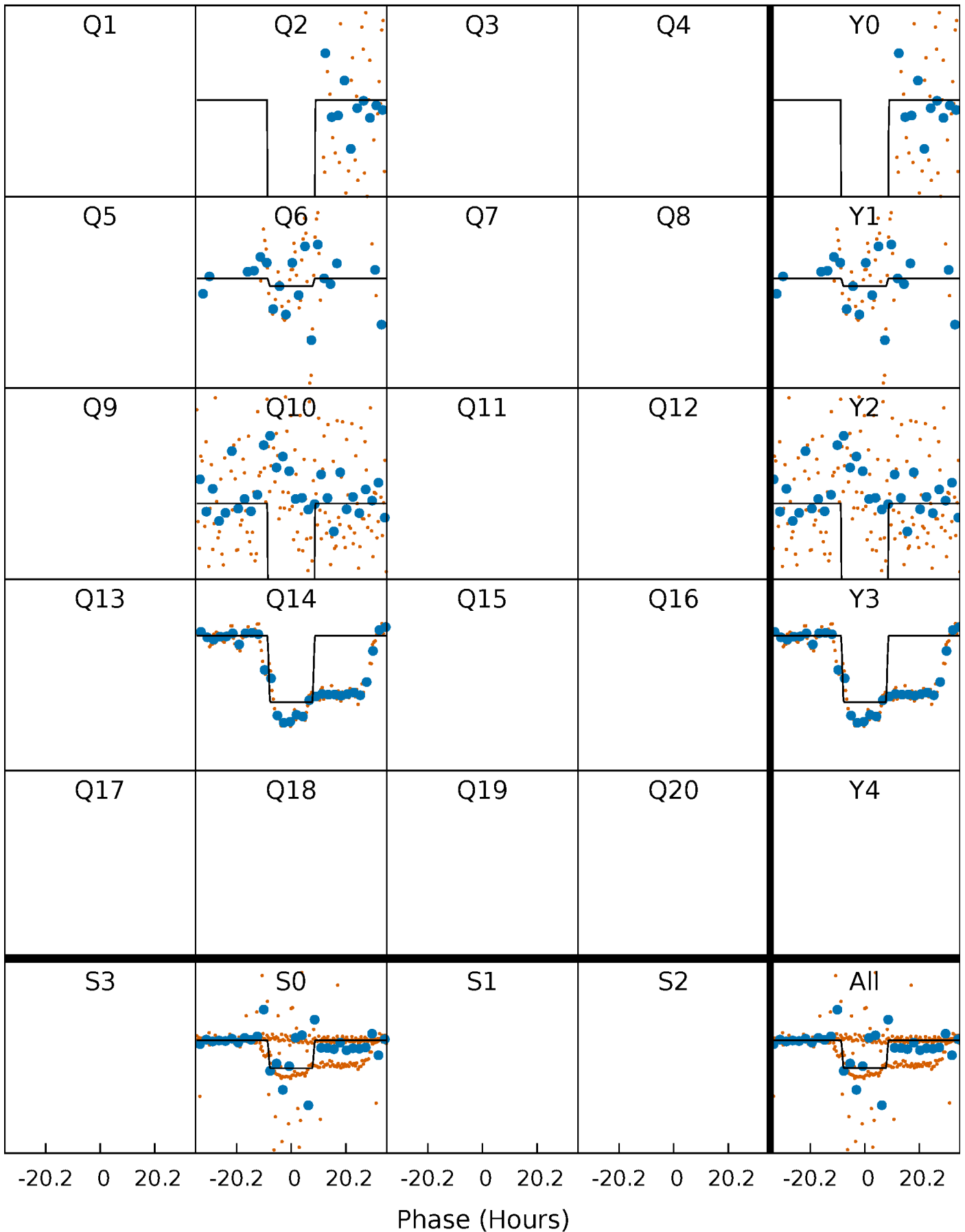
DV Quarter-Phased Transit Curves

TCE 005217781-05 $P=391.805702$ Days $T_0=169.254860$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

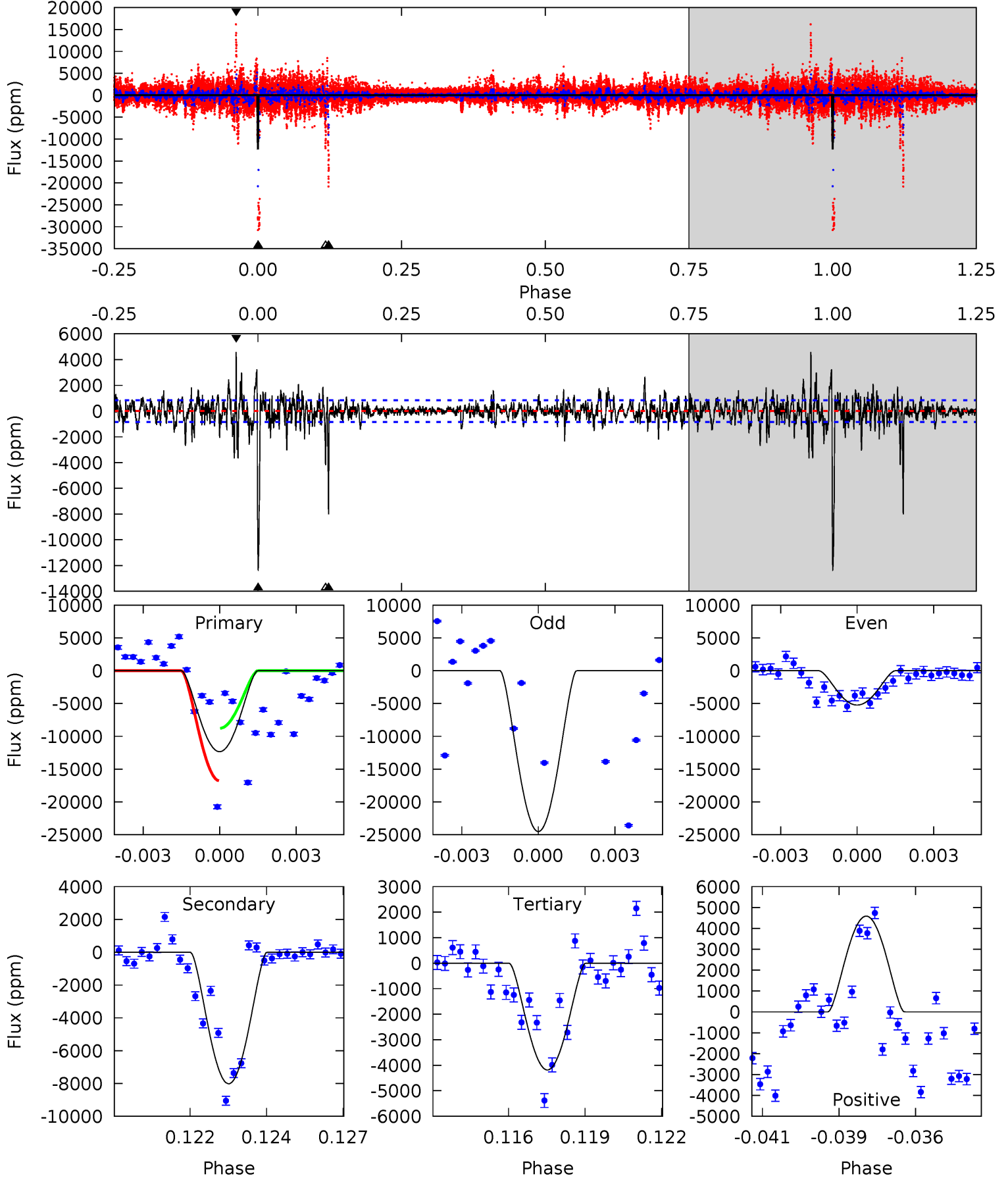
TCE 005217781-05 P=391.799891 Days $T_0=169.309728$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-05, P = 391.805702 Days, E = 169.254860 Days

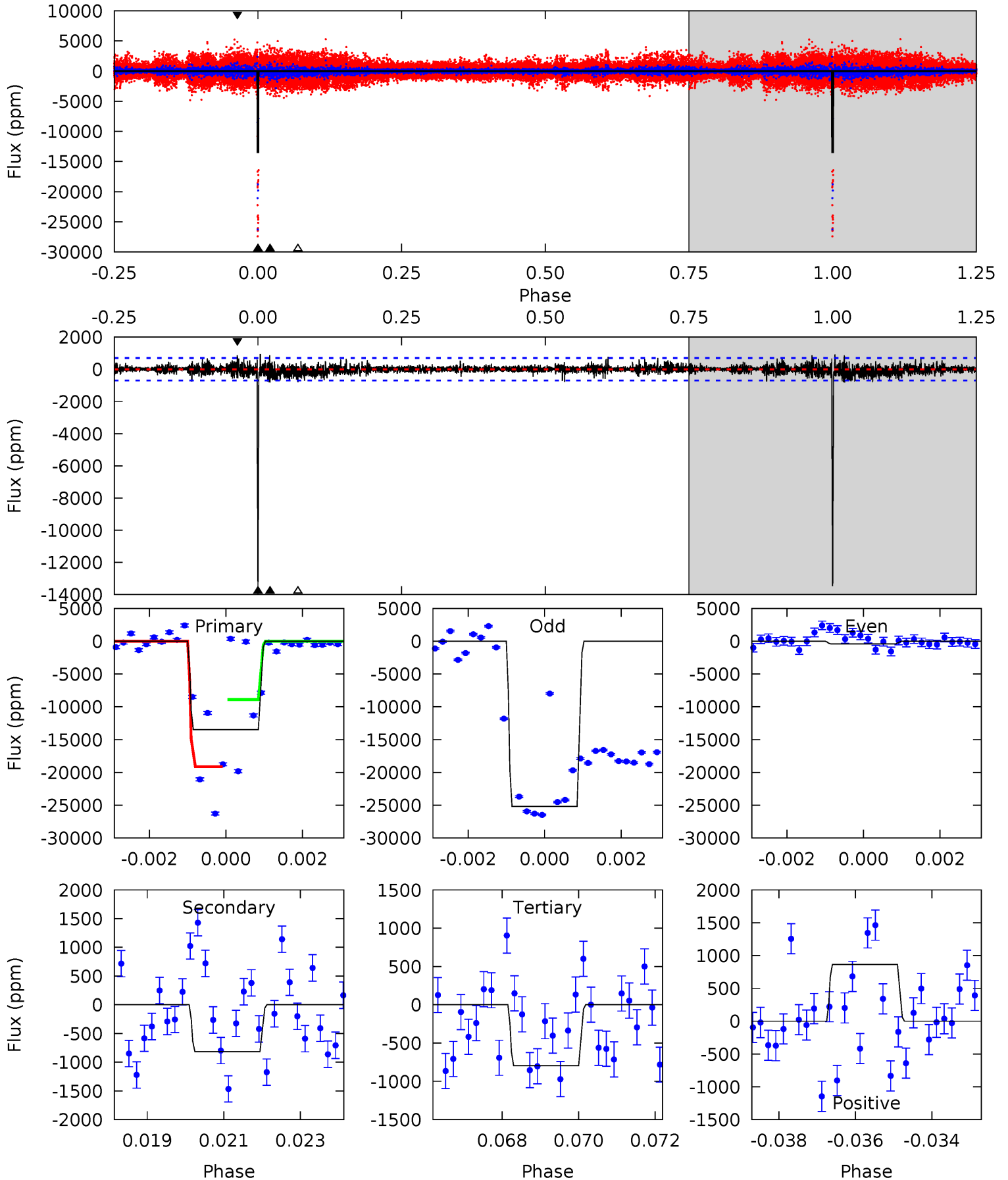
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.2	50.1	26.1	28.7	5.28	3.01	3.97	51.0	48.5	23.9	21.4	26.9	-1.33	0.27	0



Alt Model-Shift Uniqueness Test

005217781-05, P = 391.799891 Days, E = 169.309728 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
102.7	6.22	6.06	6.58	5.34	3.11	1.24	96.6	96.1	0.16	-0.35	100.8	0.90	0.06	0



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8016 ± 160	$26.57^{+23.47}_{-16.94}$	337^{+21}_{-19}	3705^{+1762}_{-647}	6117^{+39228}_{-4373}
Alt.	-816 ± 131	$22.66^{+23.48}_{-14.99}$	338^{+21}_{-19}	2762^{+1088}_{-436}	842^{+6317}_{-639}

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 $A_{obs} \gg 1.0$

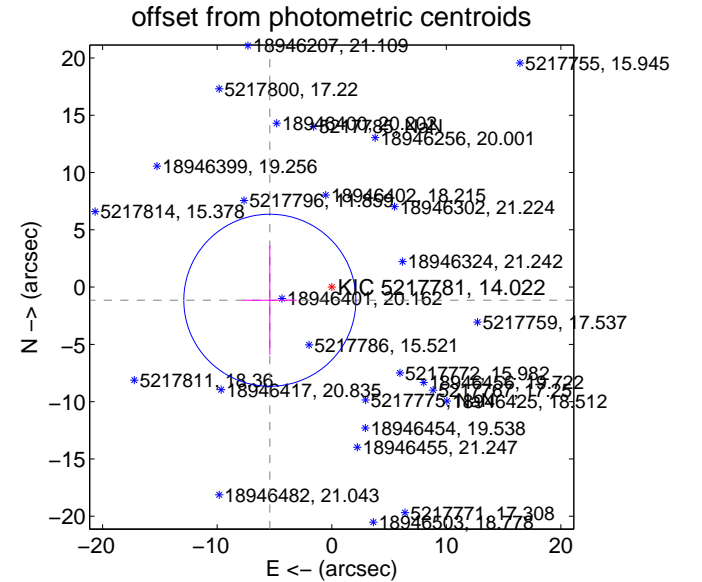
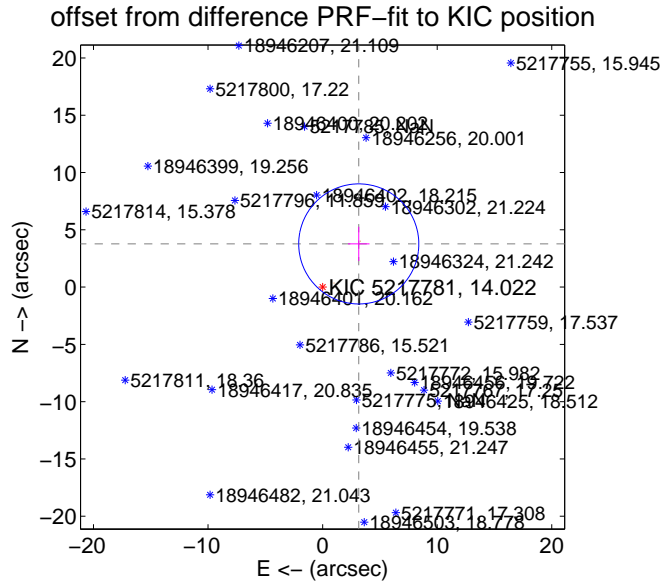
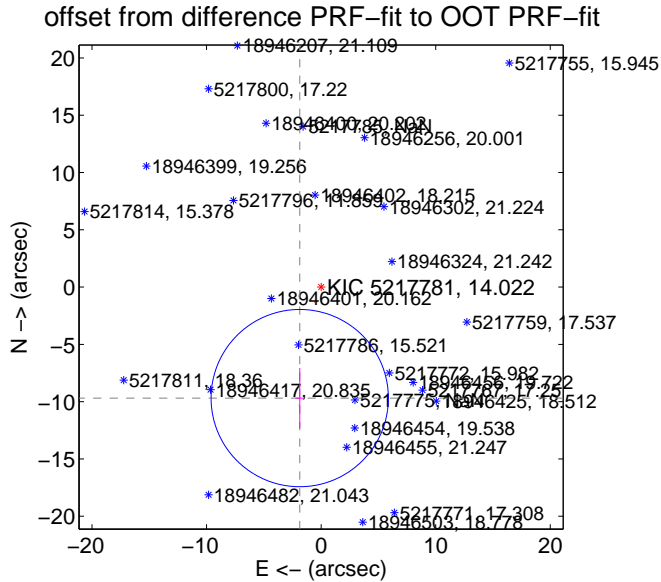
DV Centroid Data

Supplemental centroid analysis for 005217781-05. Kepler magnitude: 14.02. Transit SNR 21.97

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 15.23 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	9.867 ± 2.579	3.83	1.869 ± 0.382	-9.688 ± 2.625
PRF-fit source offset from KIC position	4.915 ± 1.747	2.81	-3.154 ± 0.937	3.769 ± 1.495
photometric centroid source offset	5.52 ± 2.50	2.21	5.40 ± 2.35	-1.15 ± 4.76

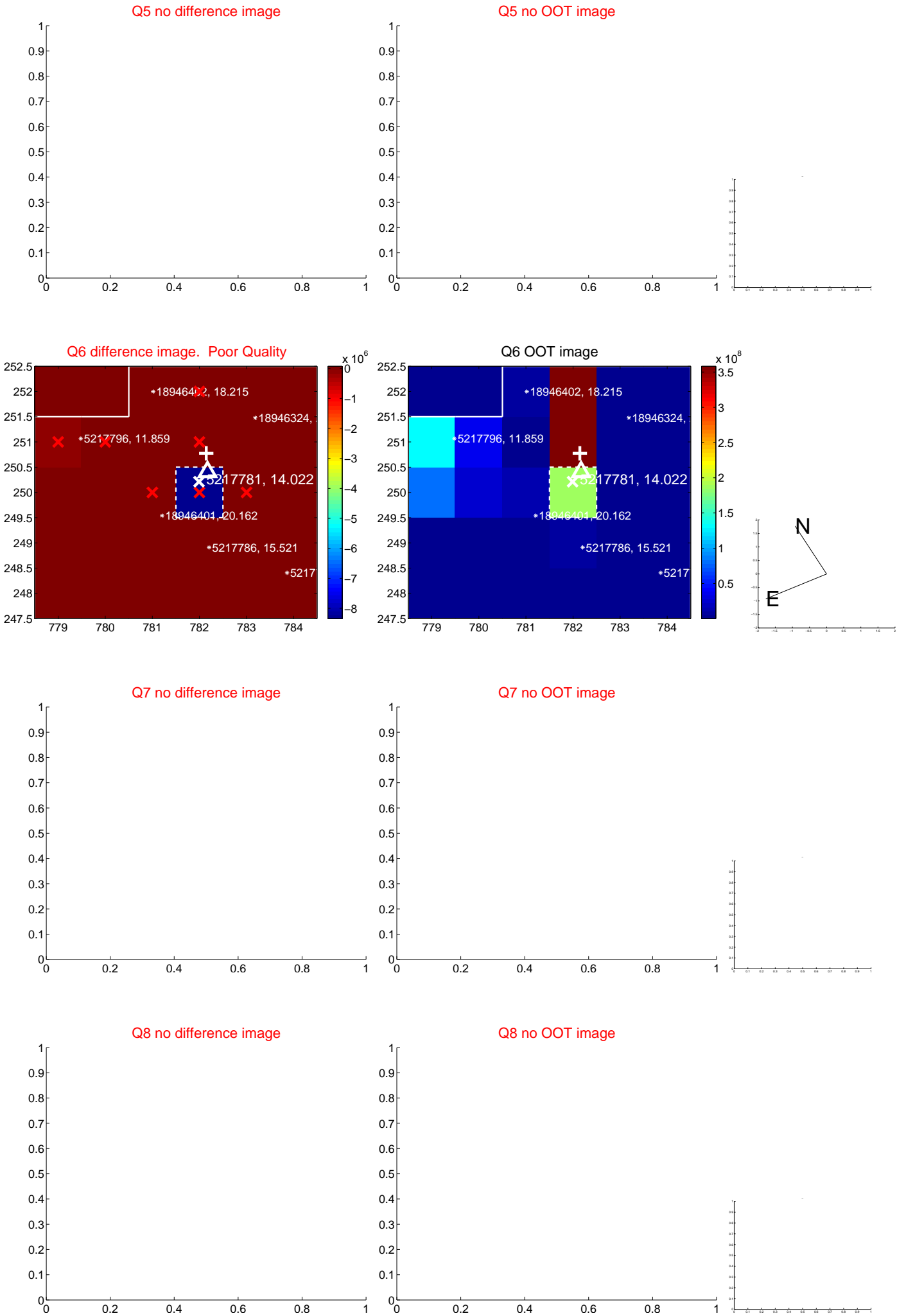


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

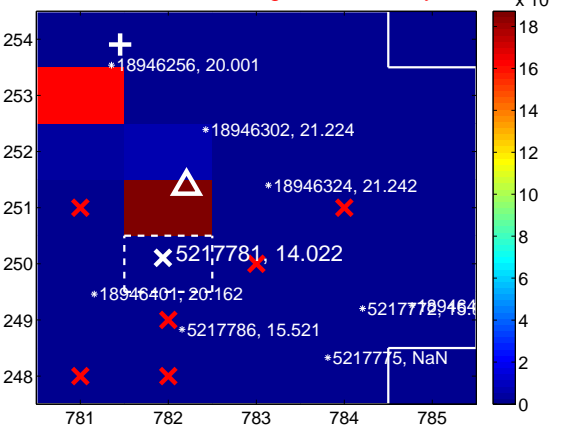
Q9 no difference image



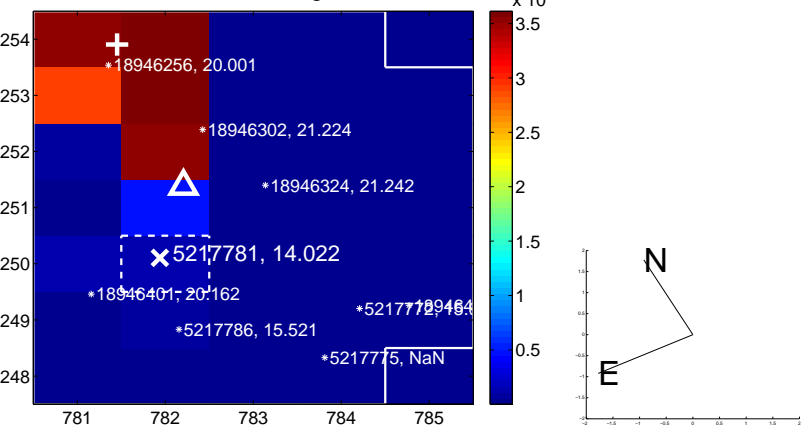
Q9 no OOT image



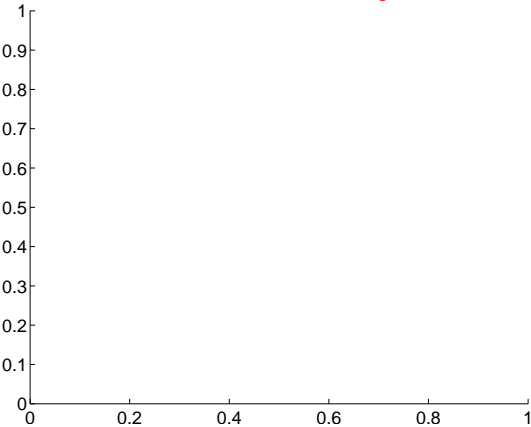
Q10 difference image. Poor Quality



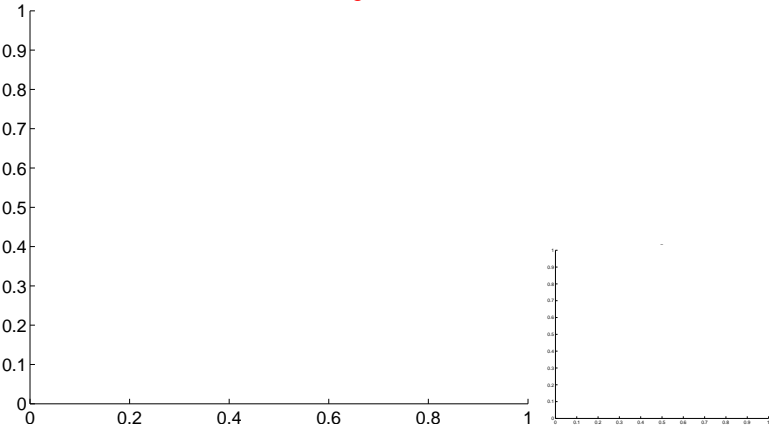
Q10 OOT image



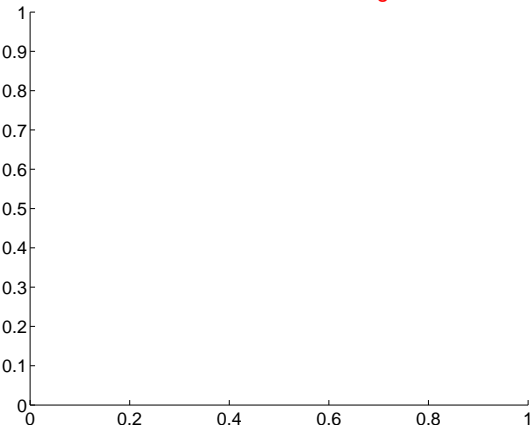
Q11 no difference image



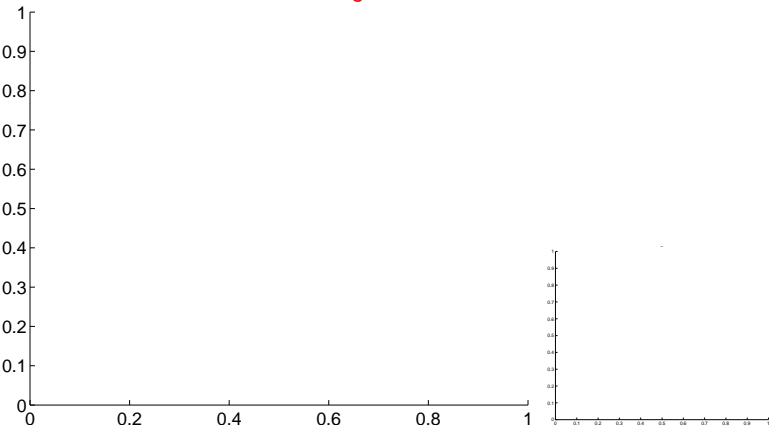
Q11 no OOT image



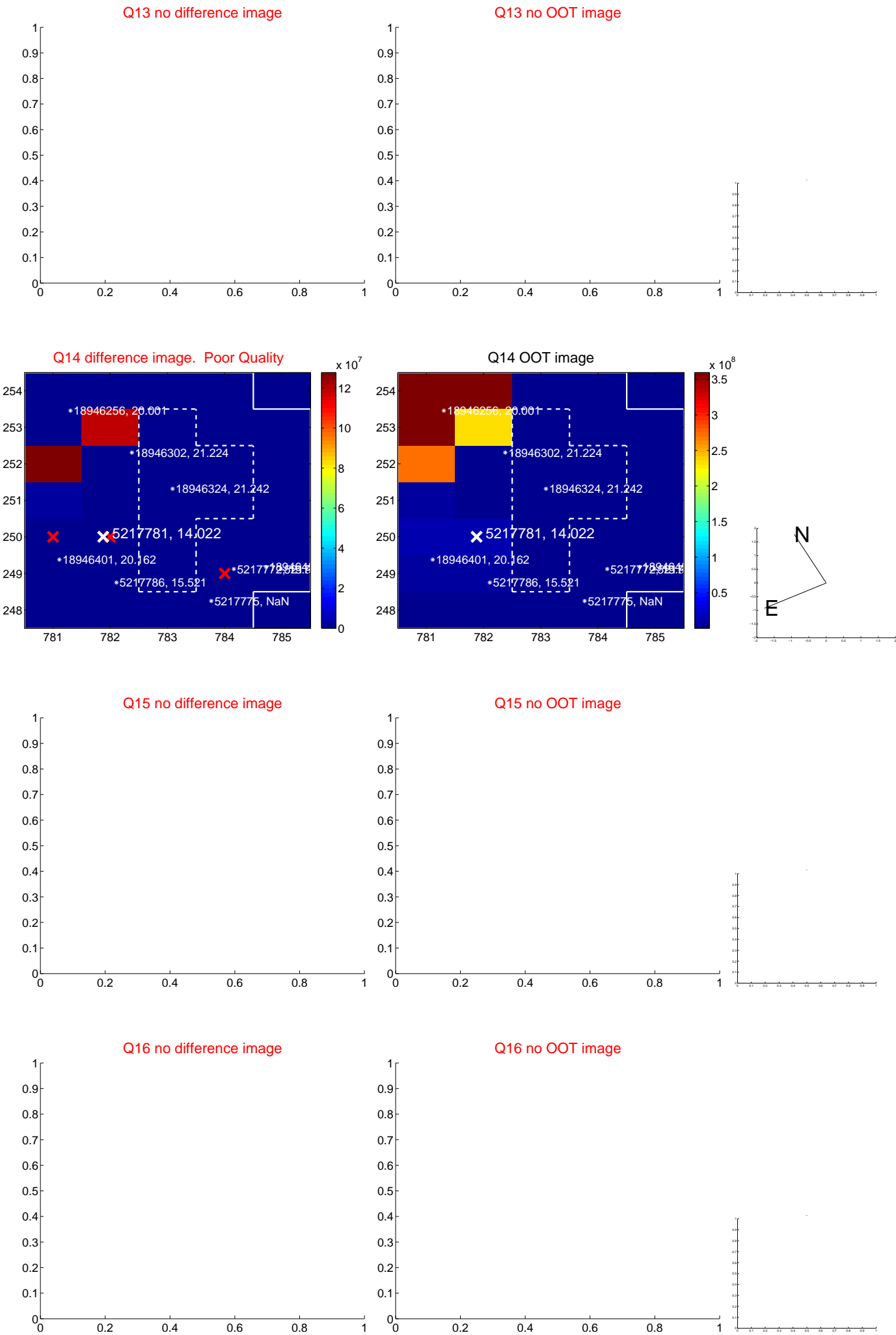
Q12 no difference image



Q12 no OOT image



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



Q14 difference image. Poor Quality

x 10⁷

Q14 OOT image

x 10⁸

N

E

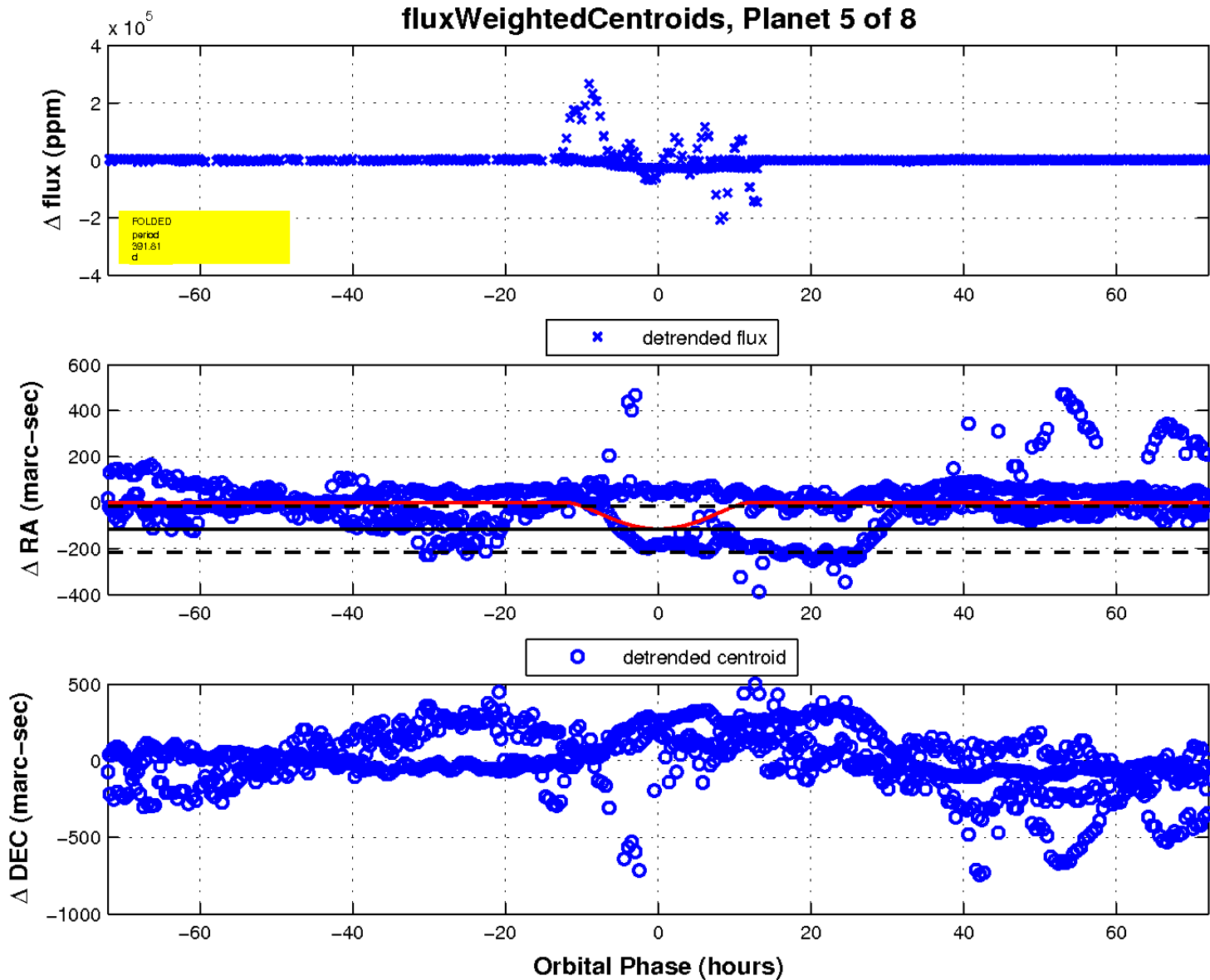
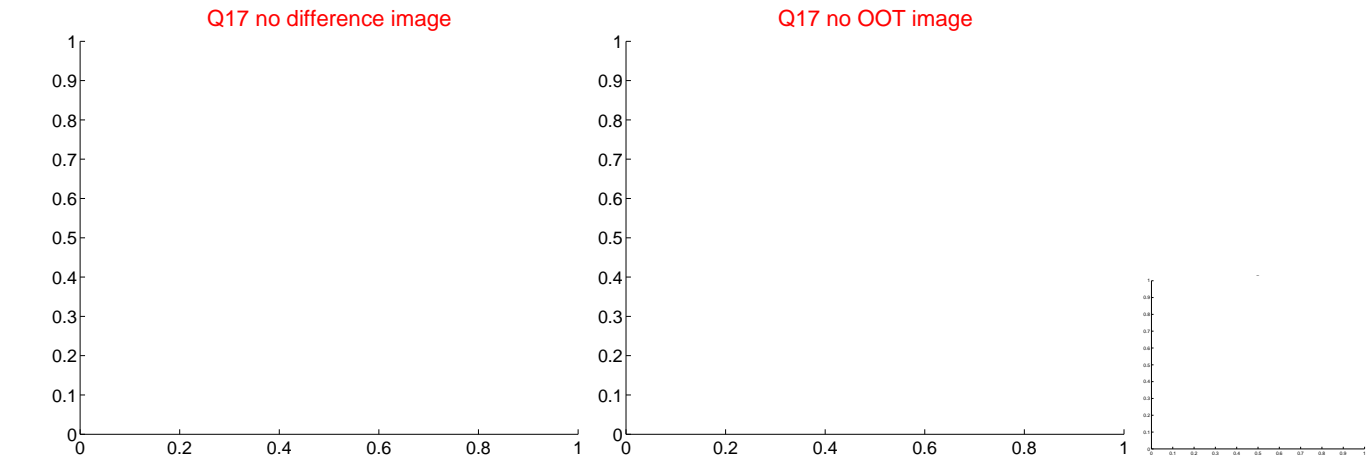
Q15 no difference image

Q15 no OOT image

Q16 no difference image

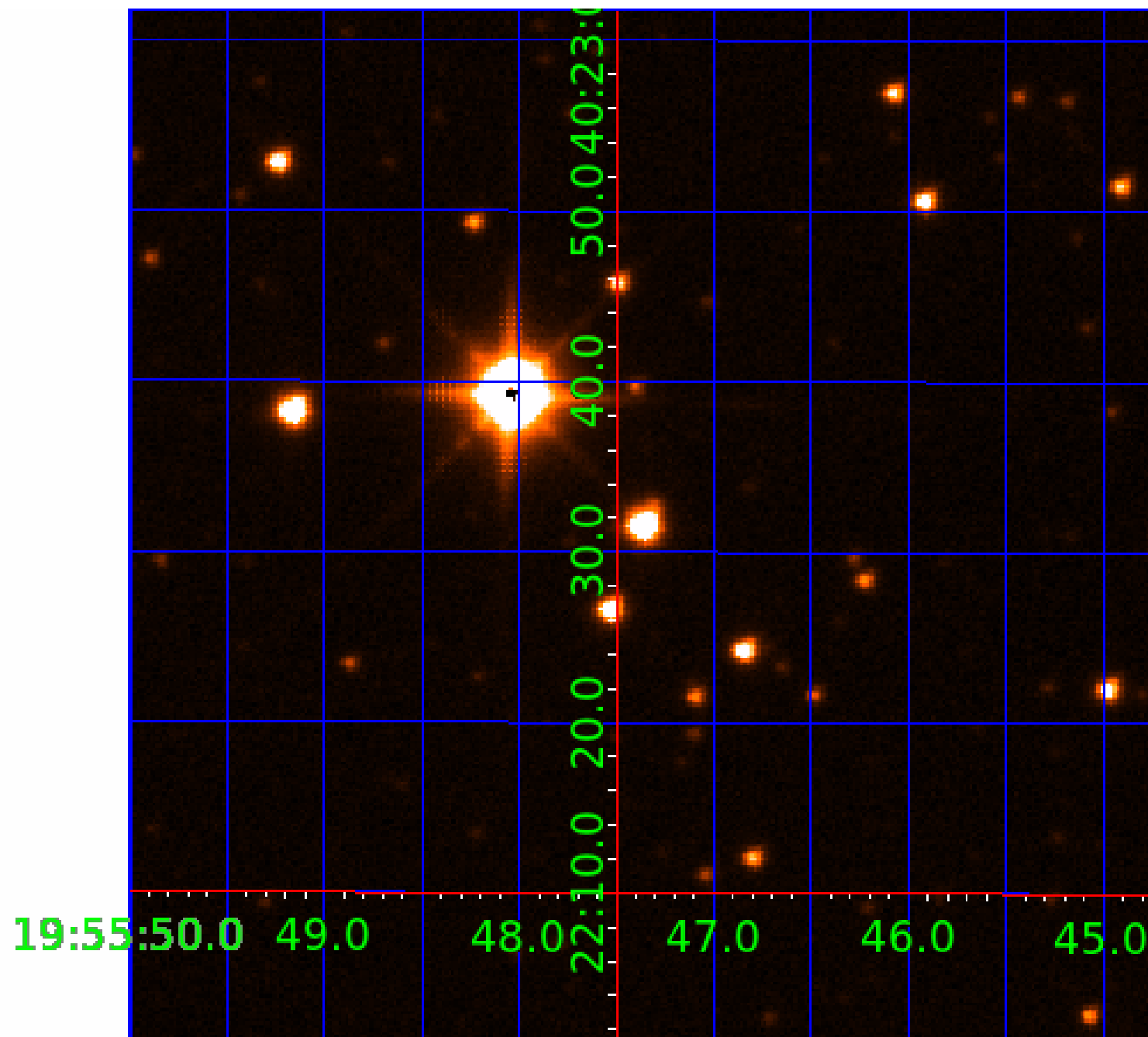
Q16 no OOT image

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



UKIRT Image

Declination



KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
005217781-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

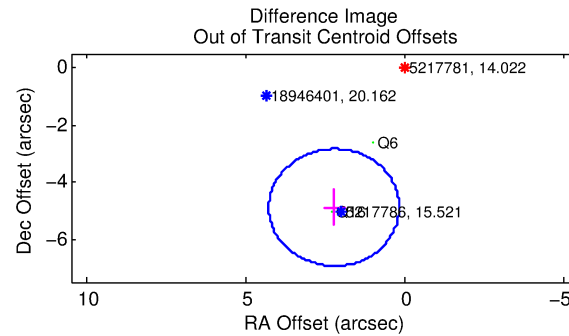
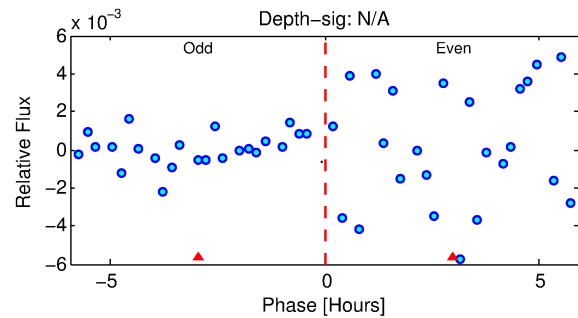
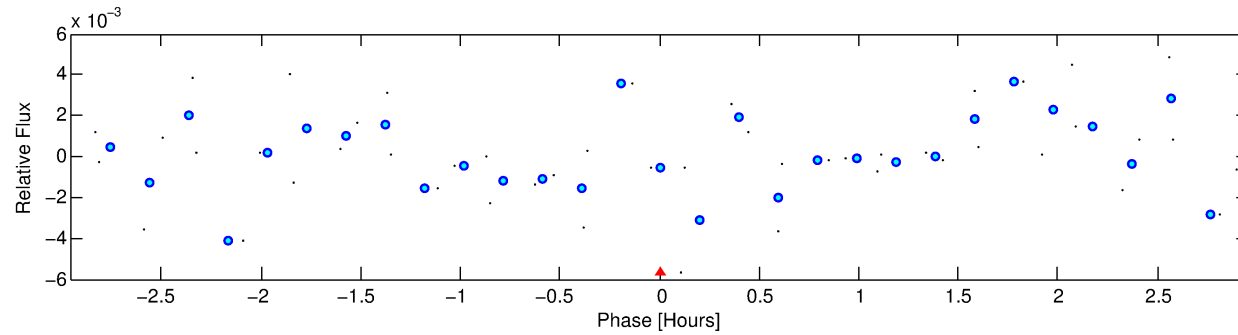
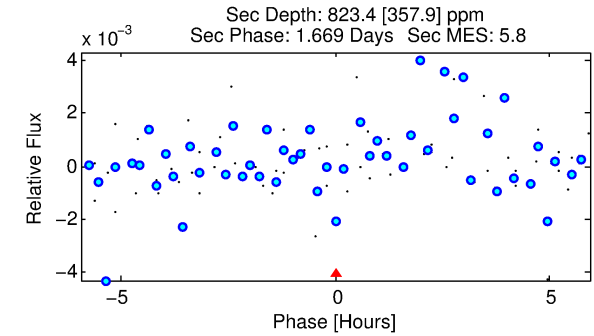
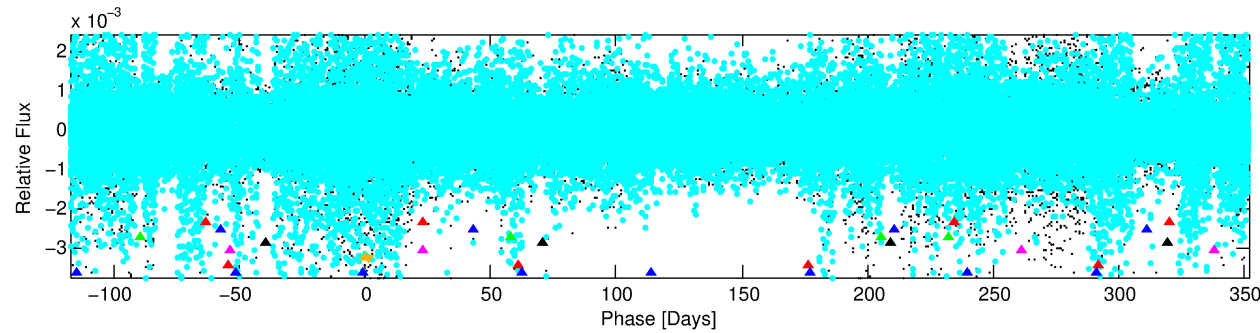
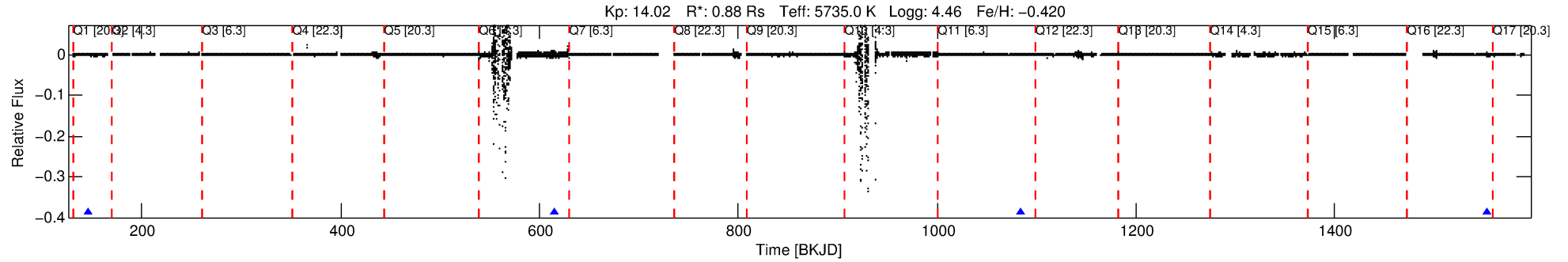
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005217781-06

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 6 of 8 Period: 468.943 d



TPS TCE Results:

Period = 468.94339 d
Epoch = 146.7749 BKJD

DV fit results are unavailable

DV Diagnostic Results:

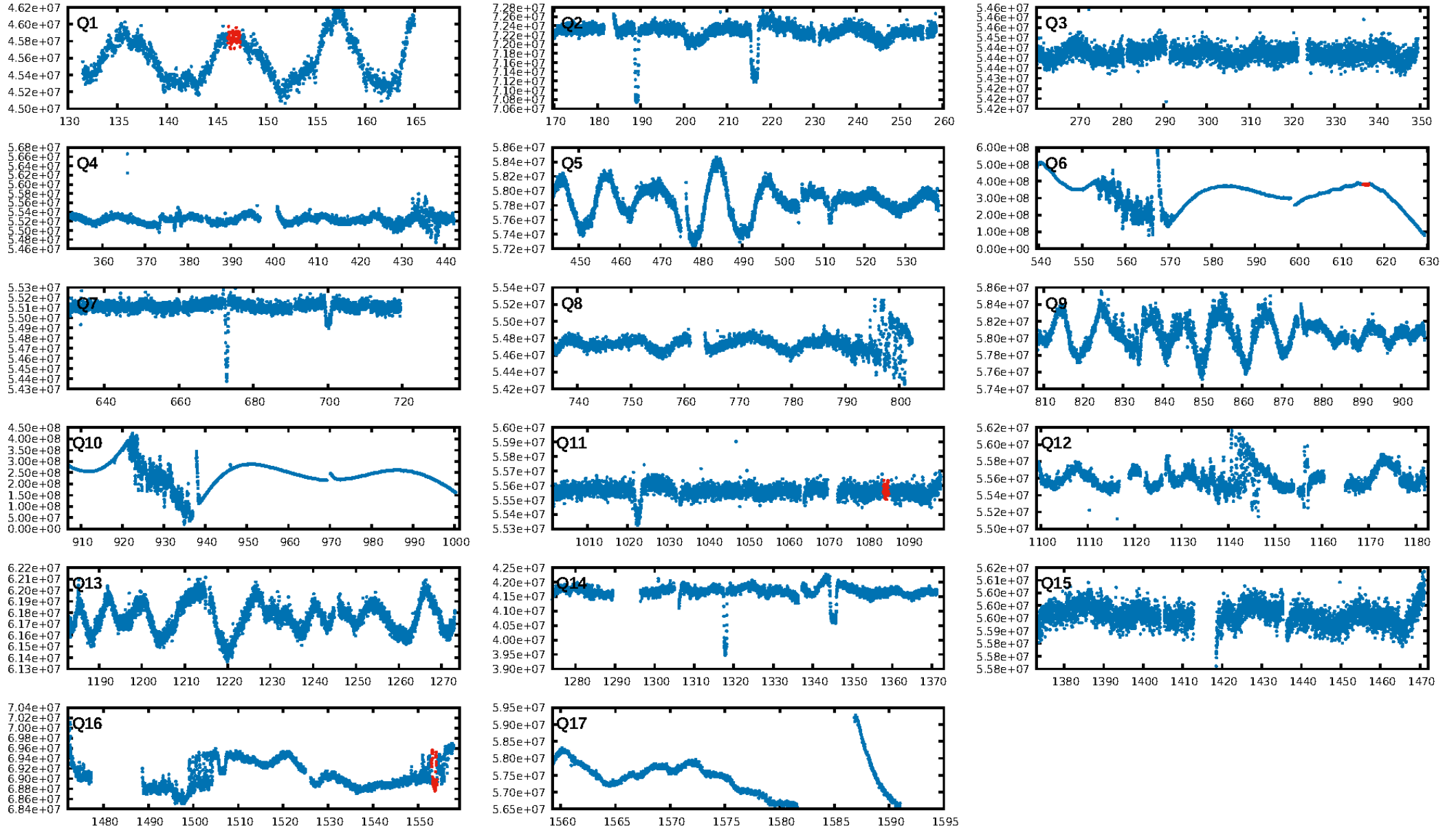
ShortPeriod-sig: 100.0% [65.24σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.817

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 5.373 arcsec [7.86σ]
KicOffset-rm: 1.680 arcsec [2.18σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [4/4]

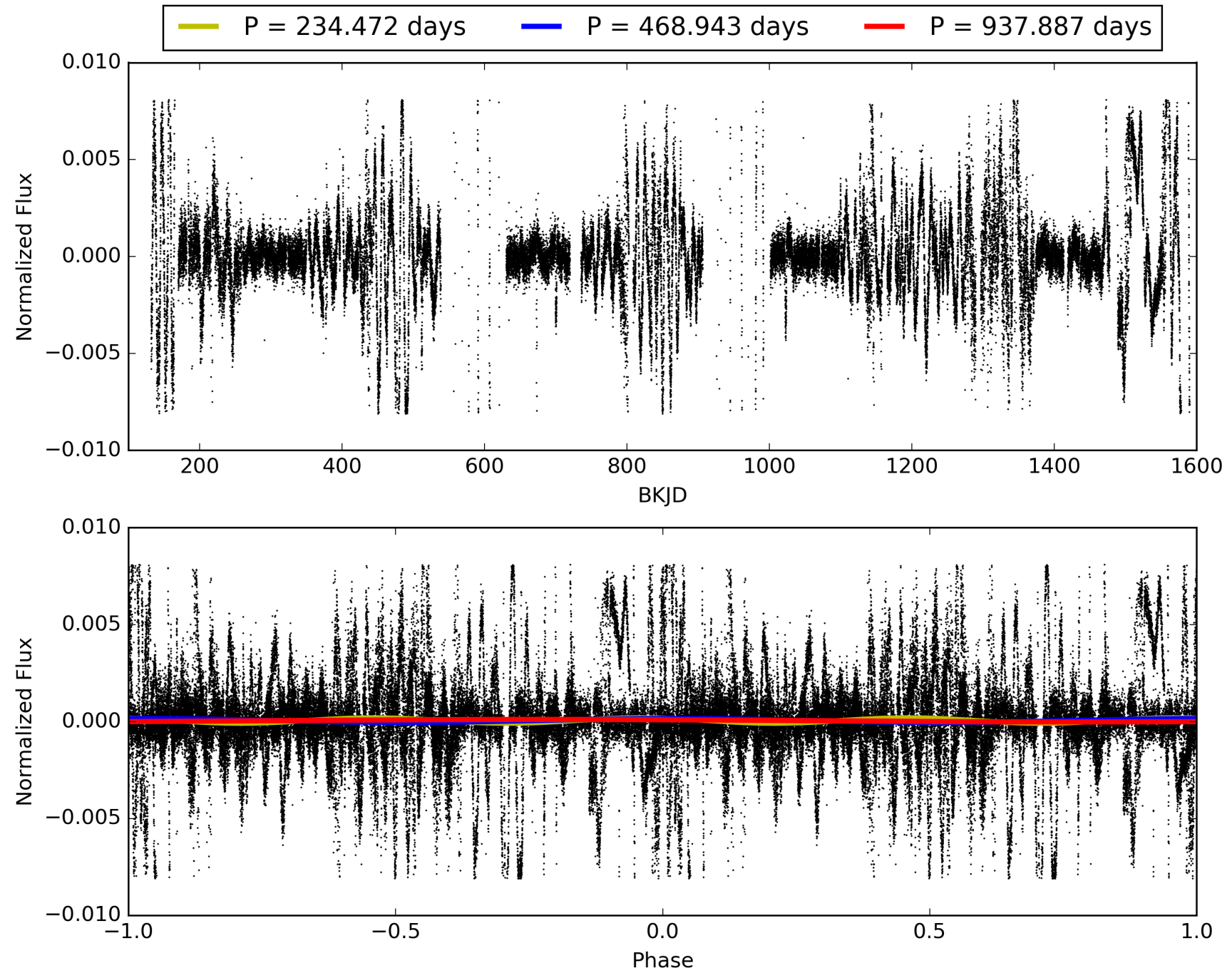
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:26 Z

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

TCE 005217781-06, PDC Light Curves

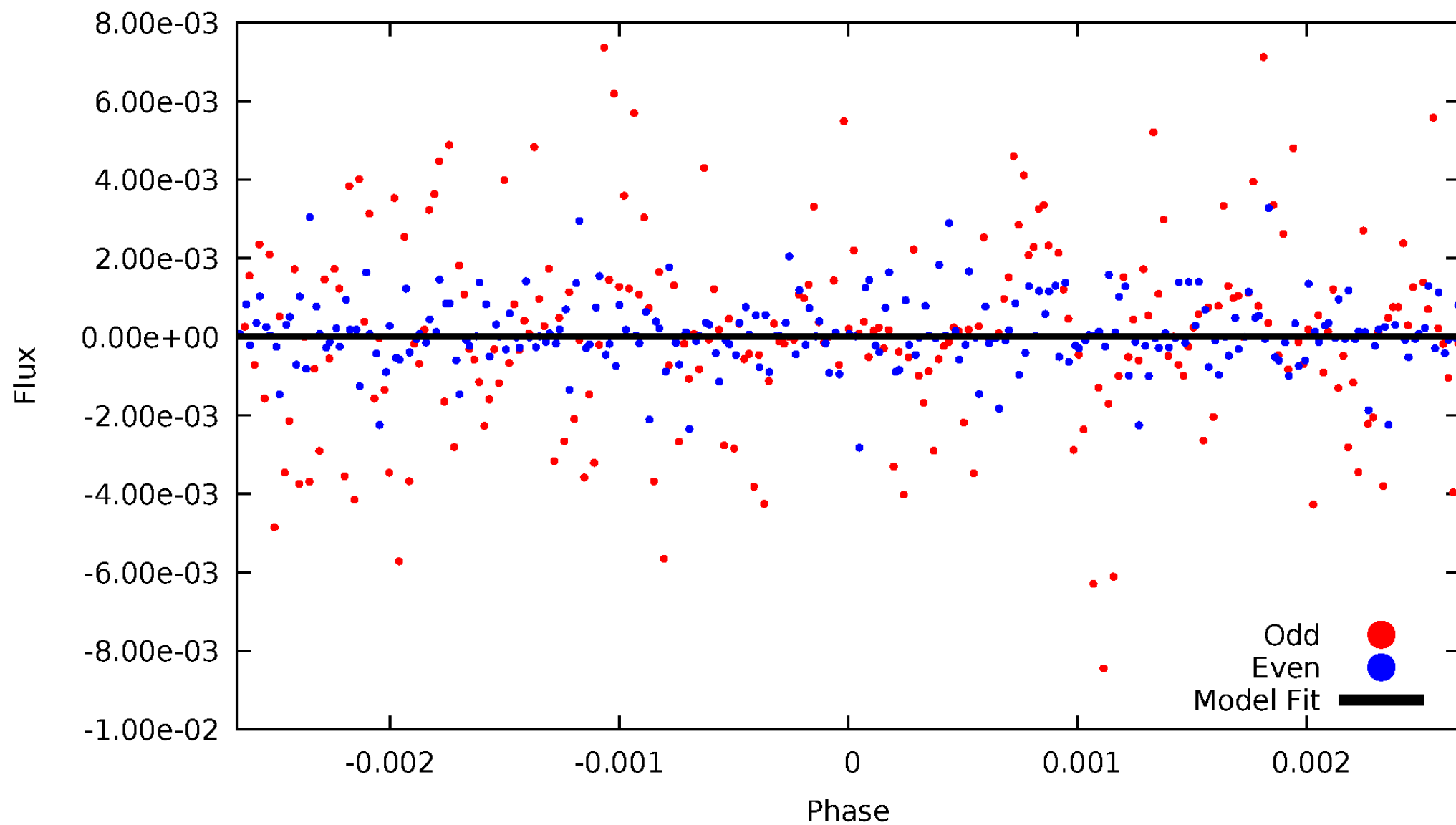


TCE 005217781-06



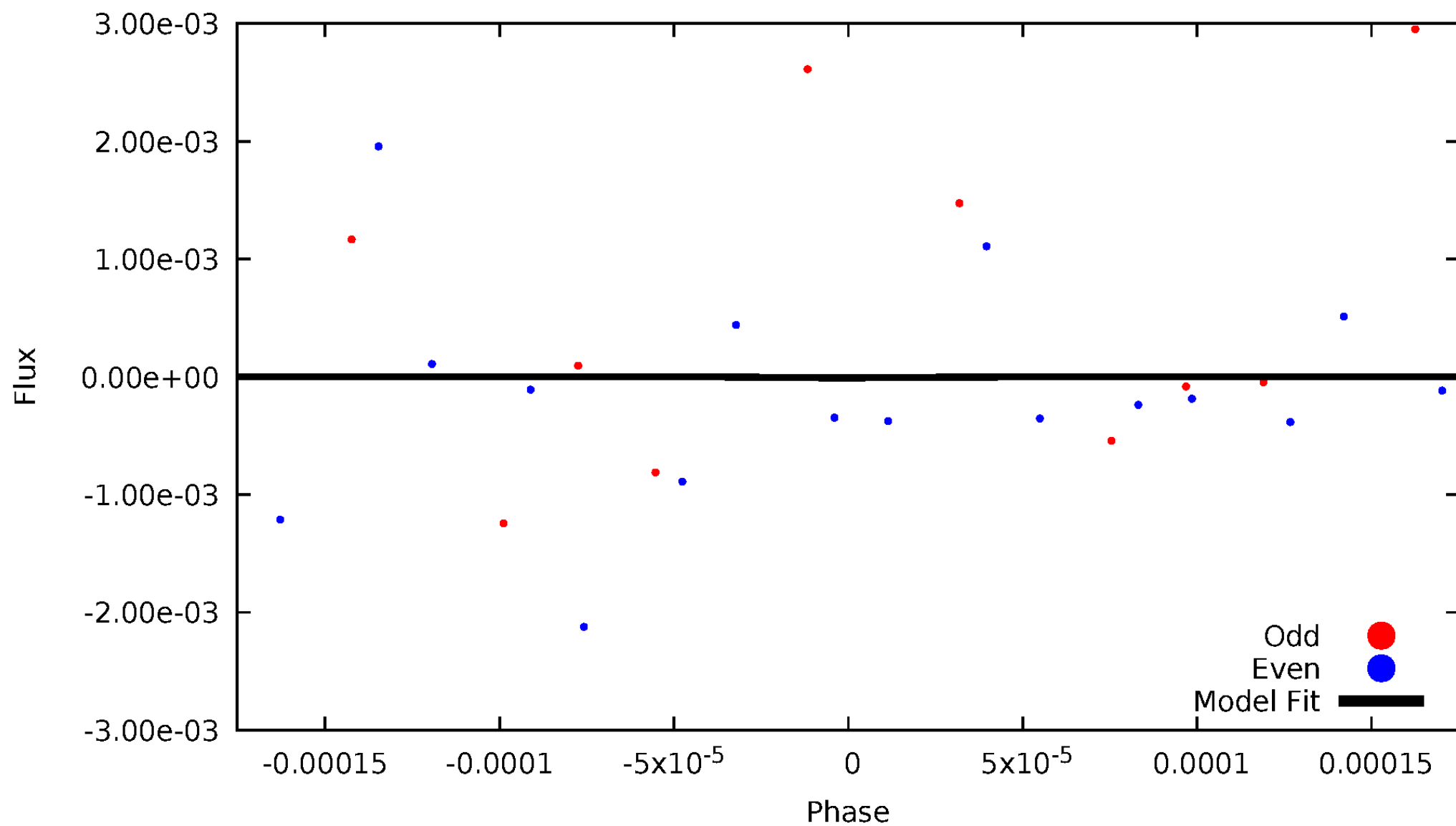
DV Odd/Even

TCE 005217781-06



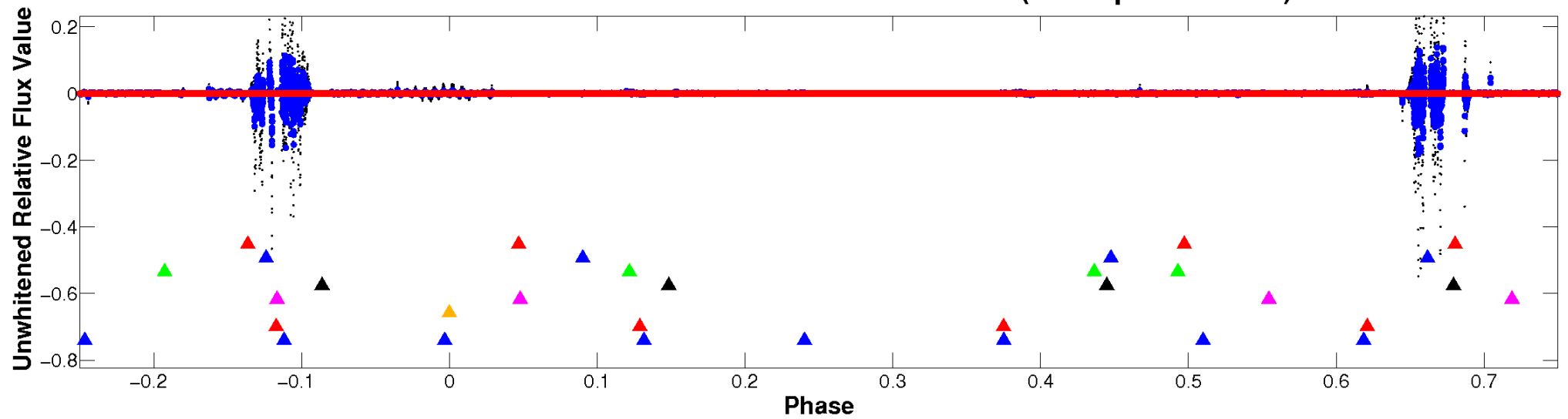
ALT Odd/Even

TCE 005217781-06

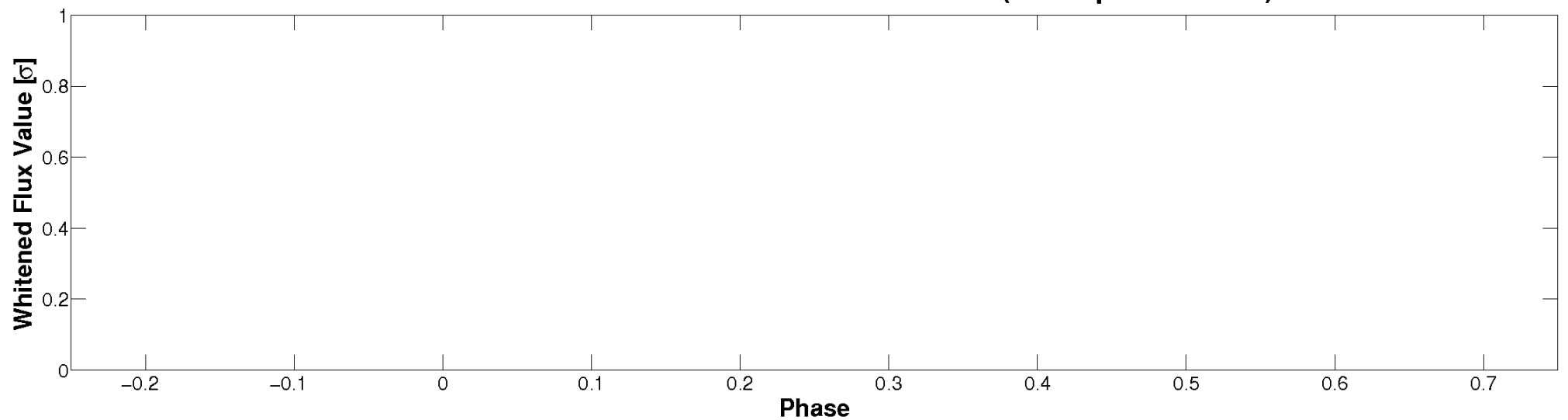


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

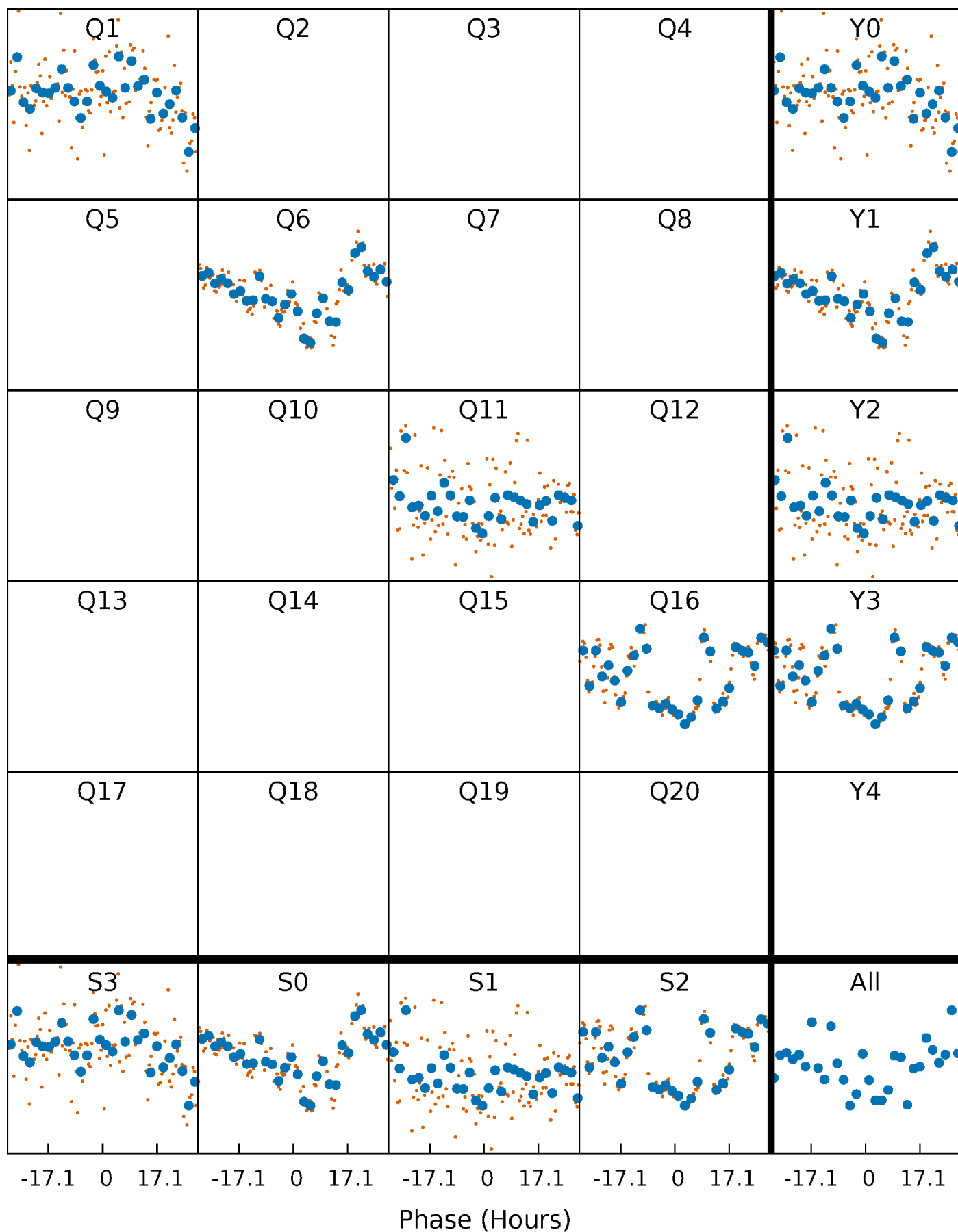


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



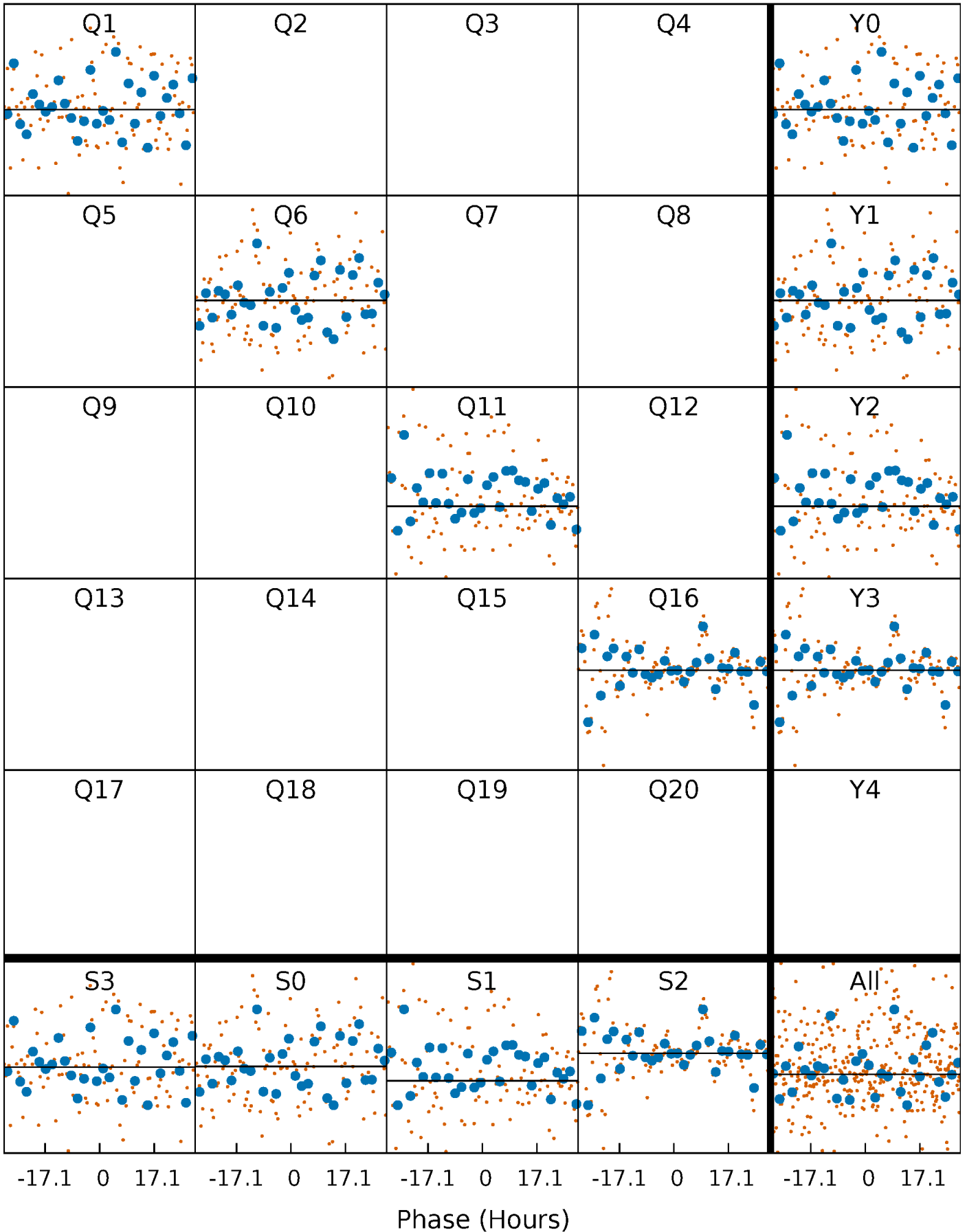
PDC Quarter-Phased Transit Curves

TCE 005217781-06 P=468.943391 Days $T_0=146.774863$ (BKJD)



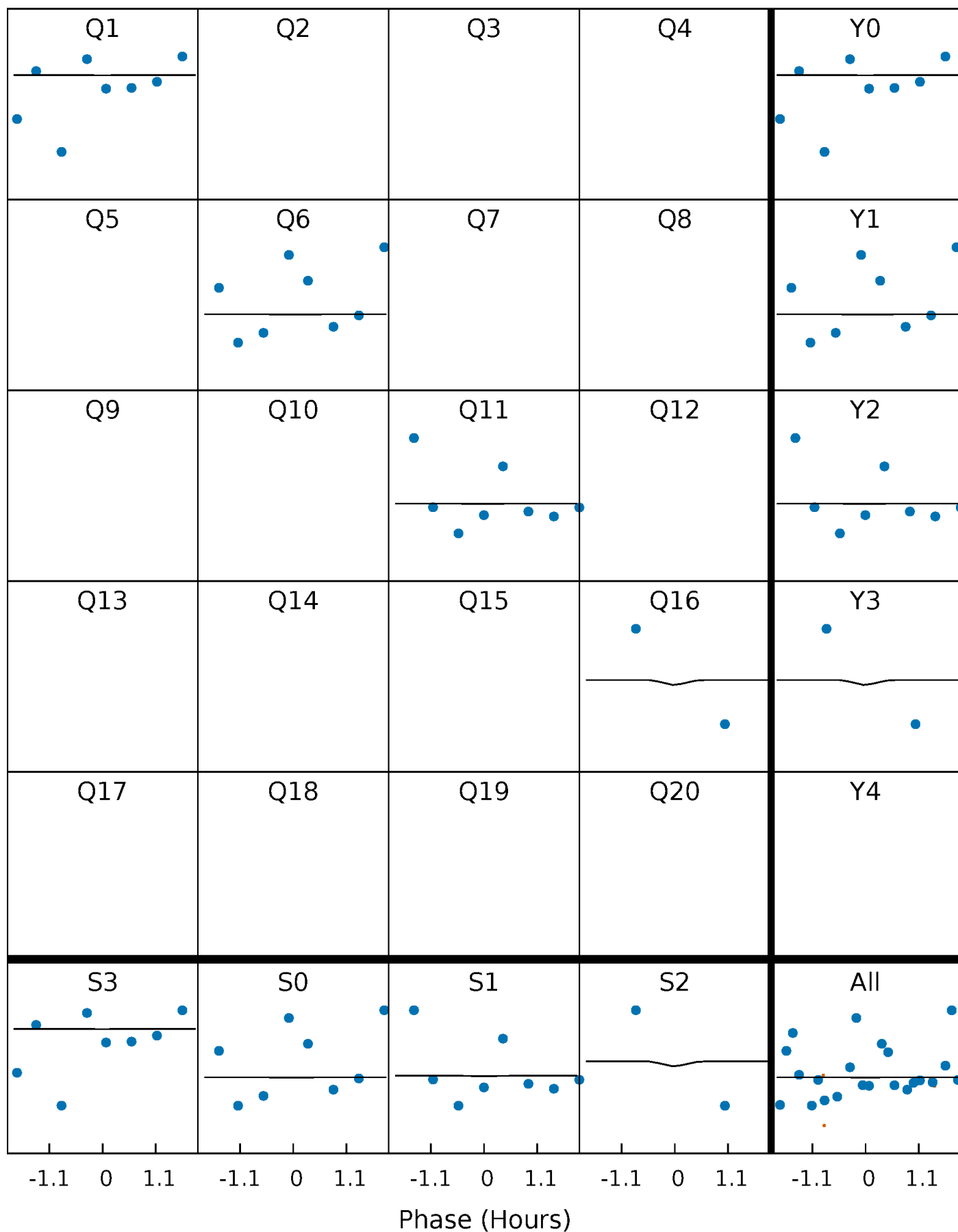
DV Quarter-Phased Transit Curves

TCE 005217781-06 $P=468.943391$ Days $T_0=146.774863$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

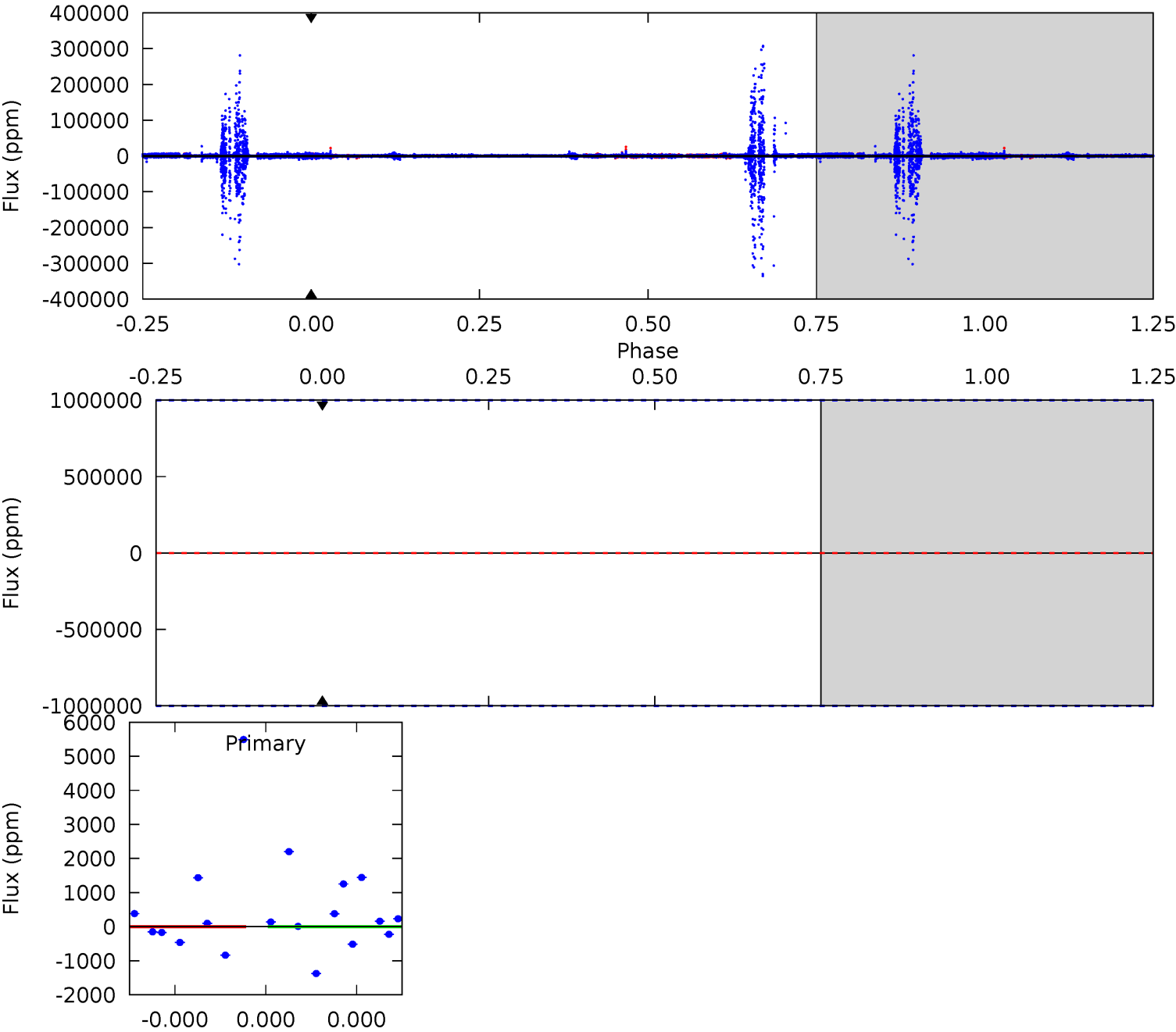
TCE 005217781-06 P=468.943391 Days $T_0=145.851734$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-06, P = 468.943391 Days, E = 146.774863 Days

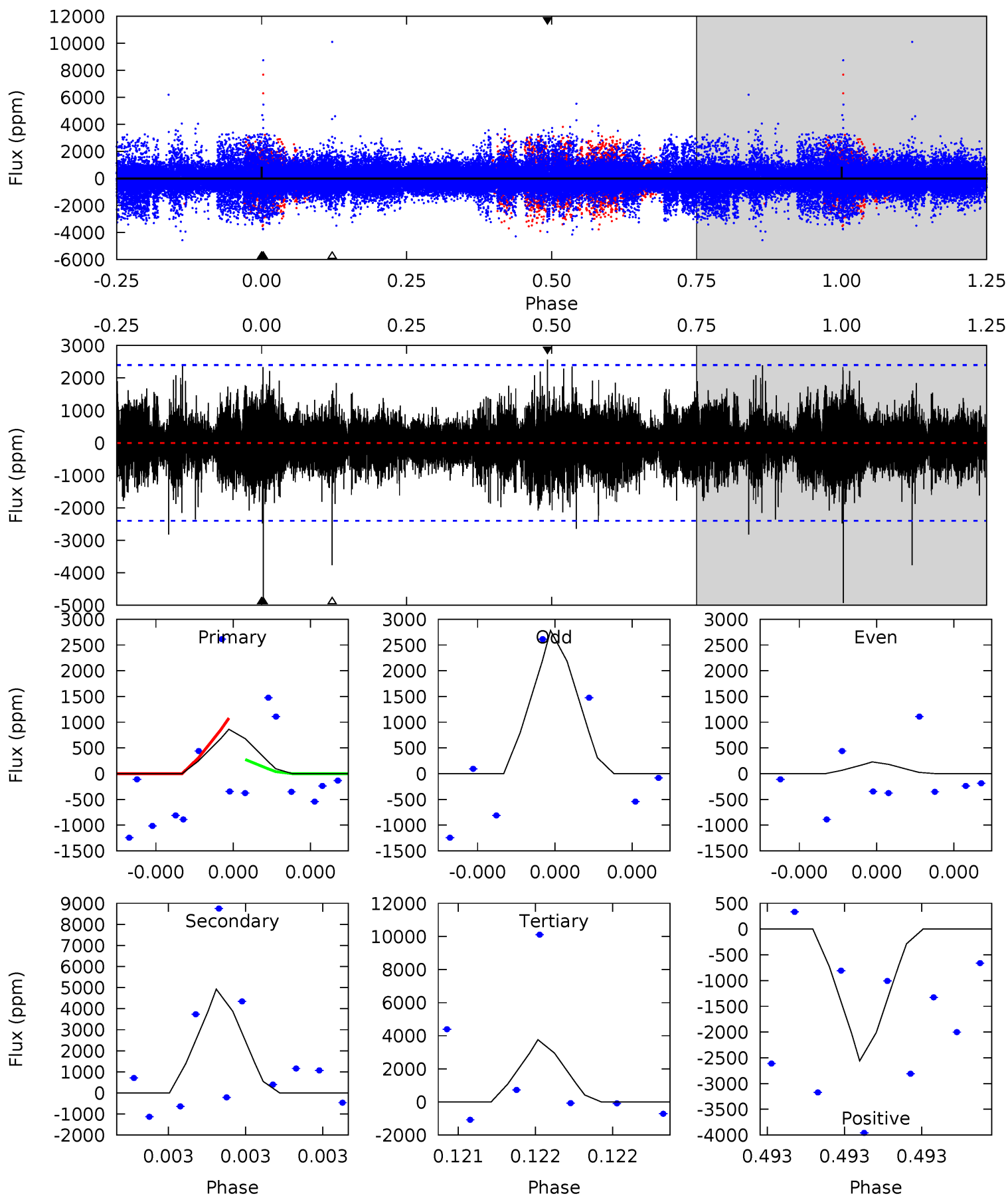
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005217781-06, P = 468.943391 Days, E = 145.851734 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.12	12.1	9.25	6.30	5.90	3.97	1.20	-7.13	-4.18	2.87	5.82	1.36	-4.66	0.34	0.99



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$8.63^{+8.61}_{-5.56}$	317^{+20}_{-16}	3348^{+12849}_{-19570}	$4468^{+1506237}_{-1464963}$
Alt.	-4926 ± 406	$6.60^{+7.46}_{-4.72}$	316^{+21}_{-16}	6005^{+7442}_{-1747}	$78386^{+915885}_{-61705}$

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 $A_{obs} \gg 1.0$

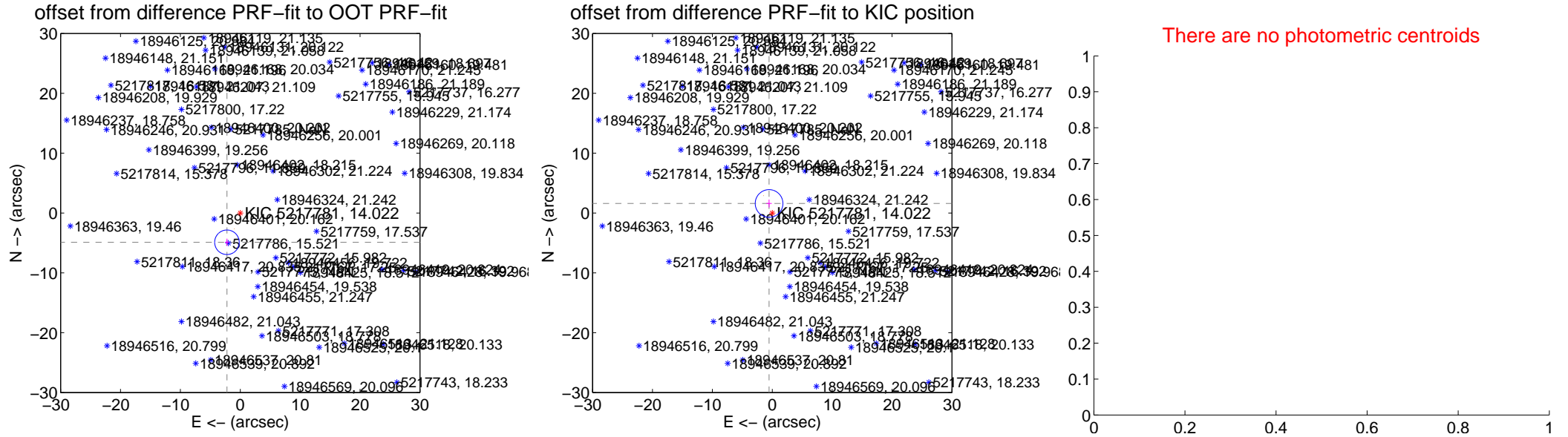
DV Centroid Data

Supplemental centroid analysis for 005217781-06. Kepler magnitude: 14.02. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

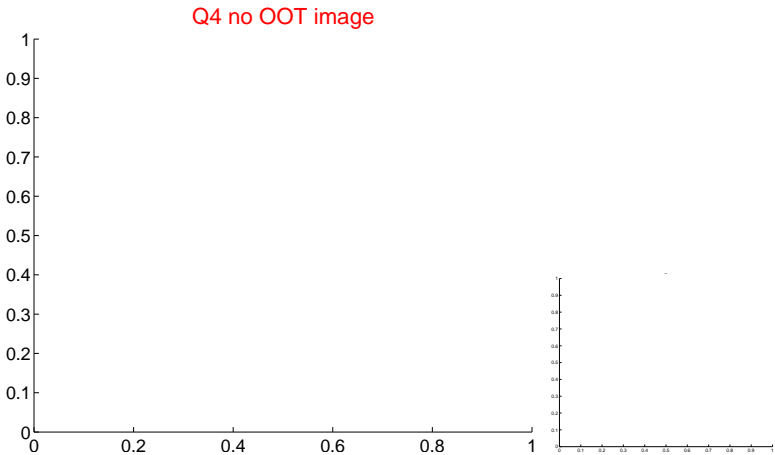
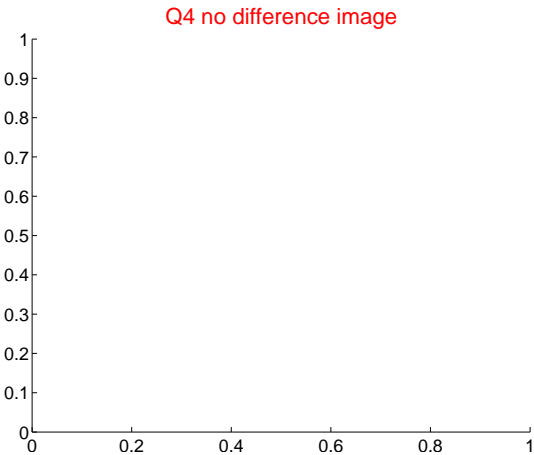
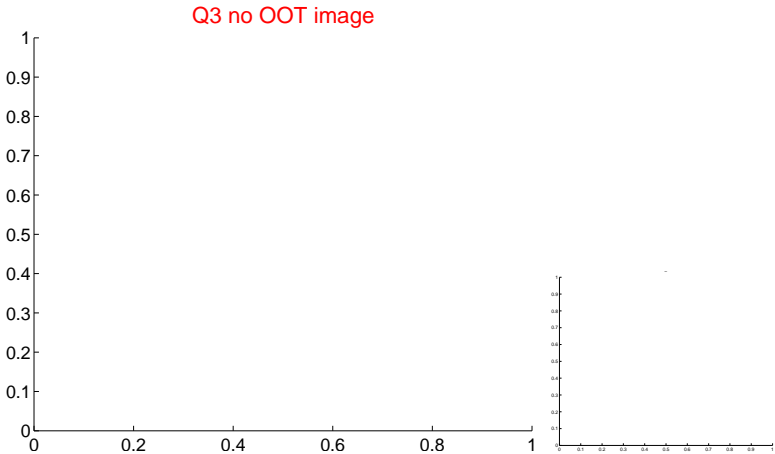
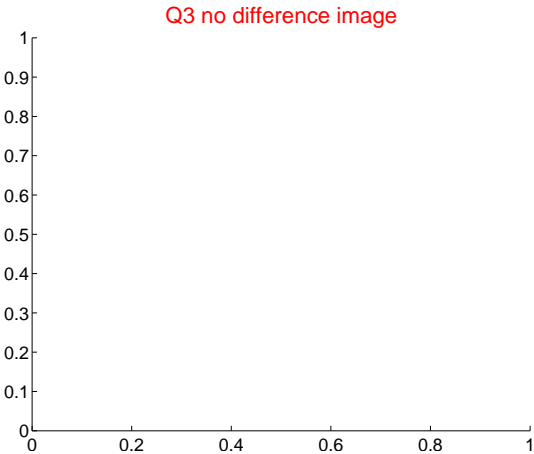
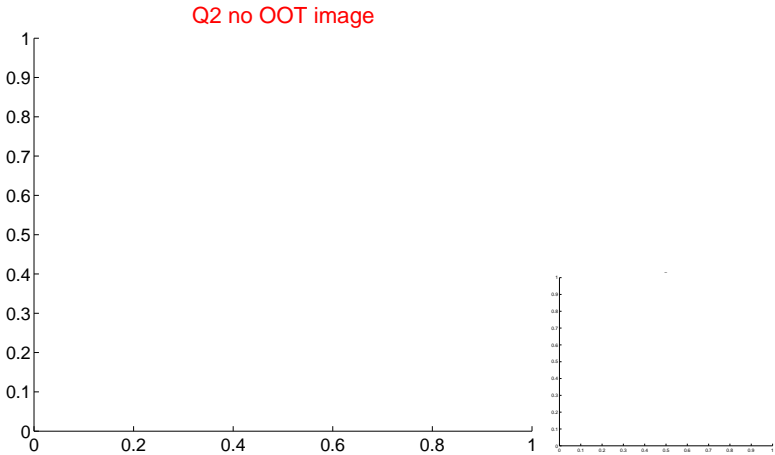
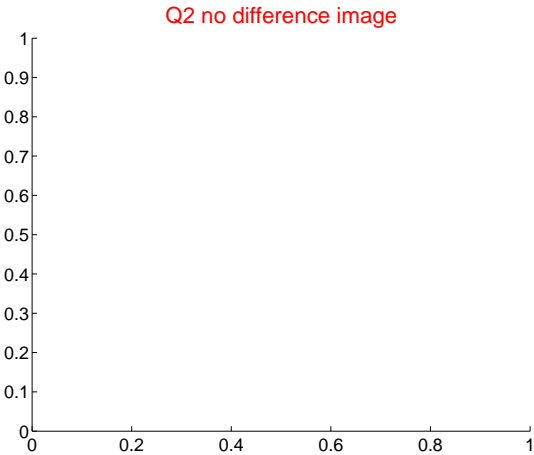
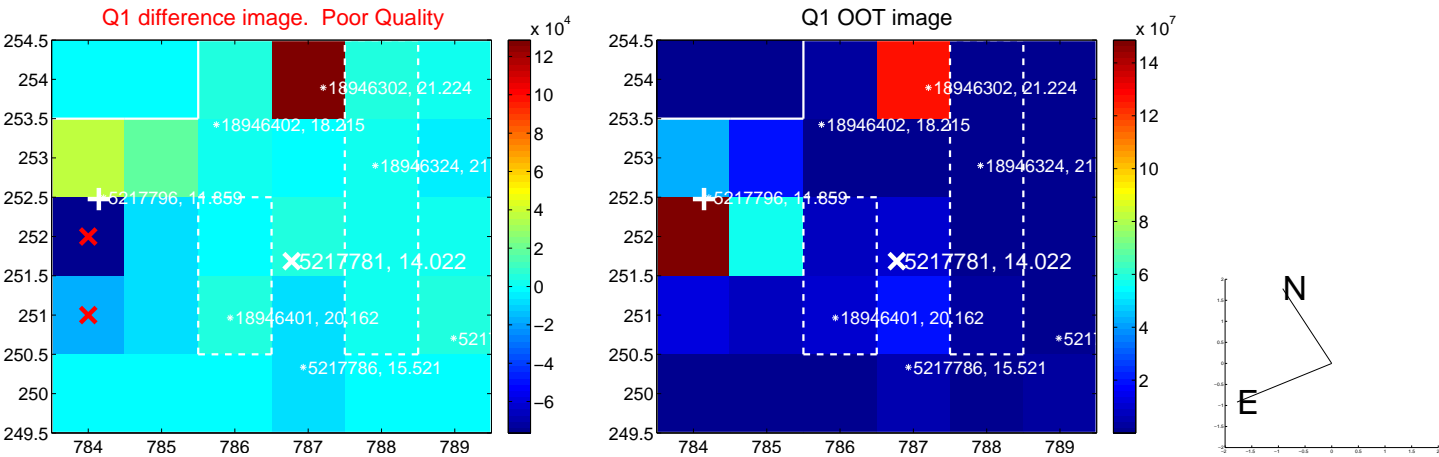
The OOT PRF centroid is offset from the target star catalog position by about 6.78 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.373 \pm 0.683	7.86	2.228 \pm 0.328	-4.890 \pm 0.605
PRF-fit source offset from KIC position	1.680 \pm 0.771	2.18	0.532 \pm 0.461	1.593 \pm 0.661
photometric centroid source offset	—	—	—	—

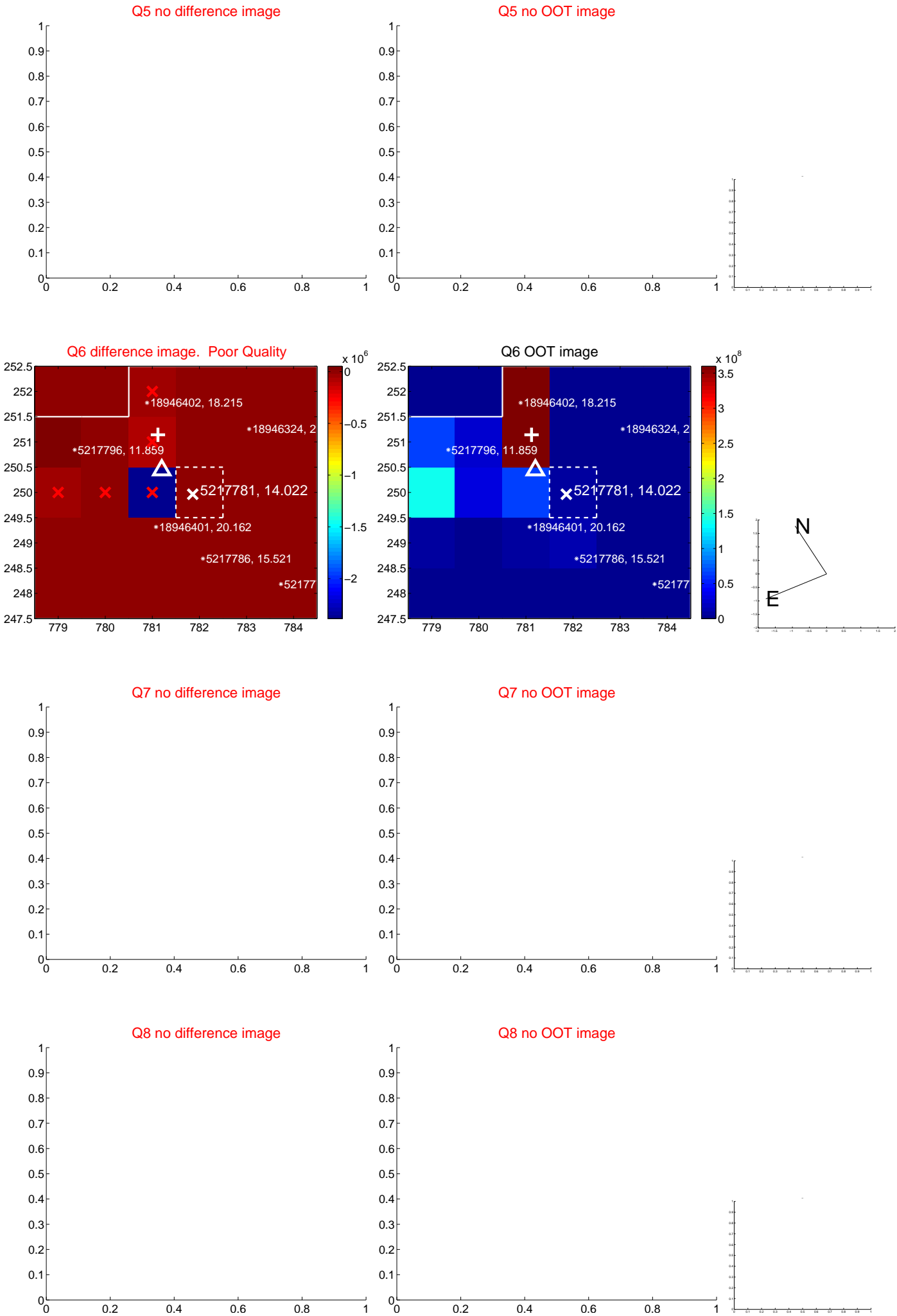


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

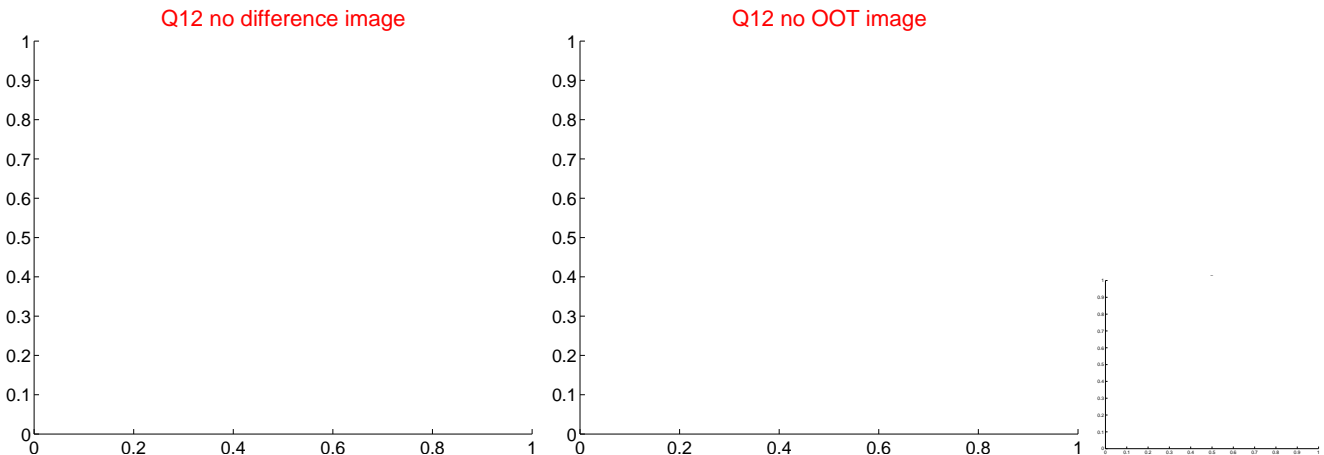
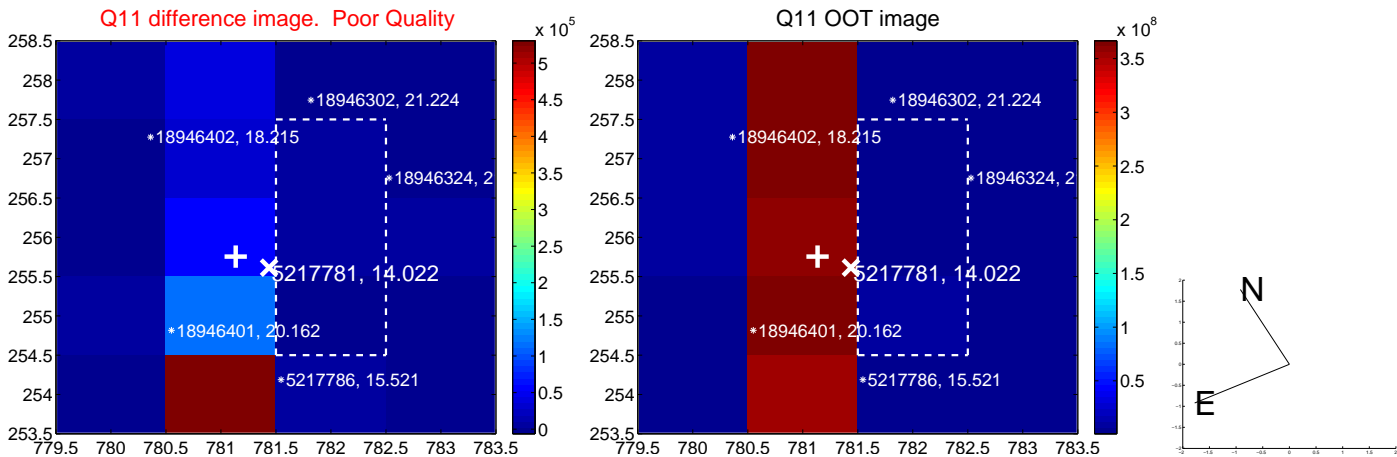
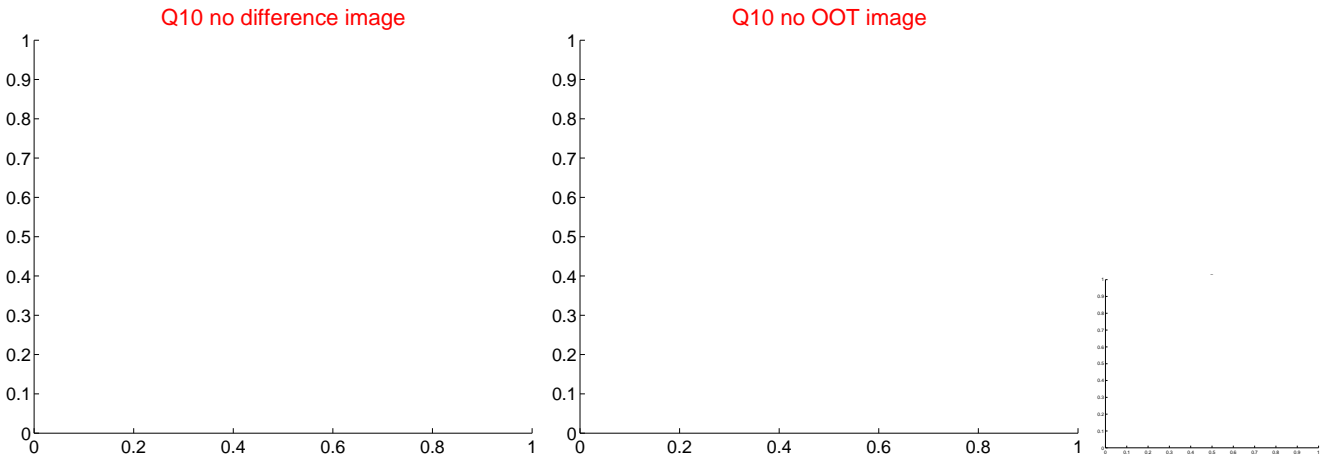
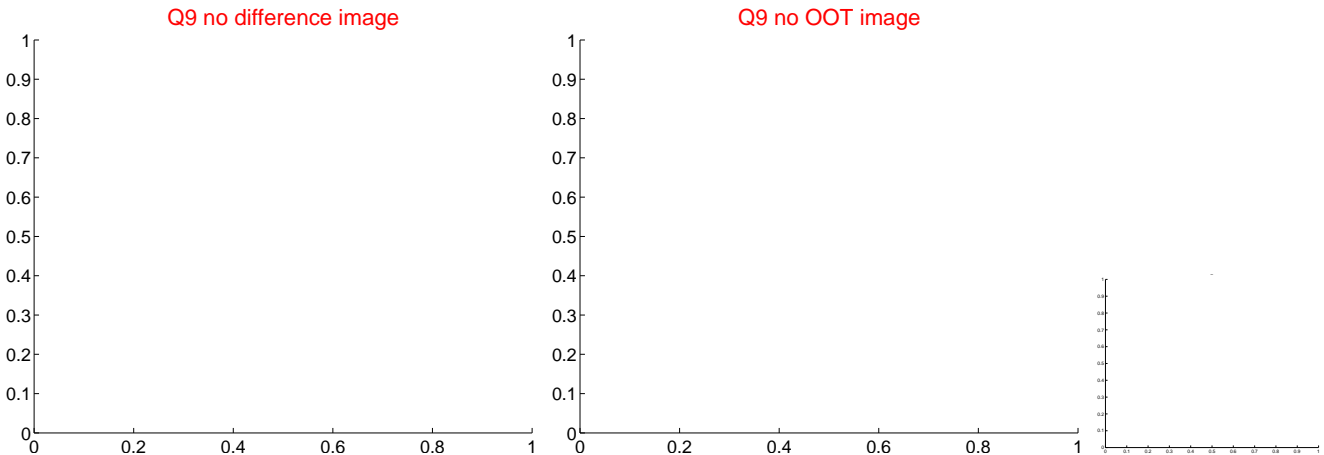
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



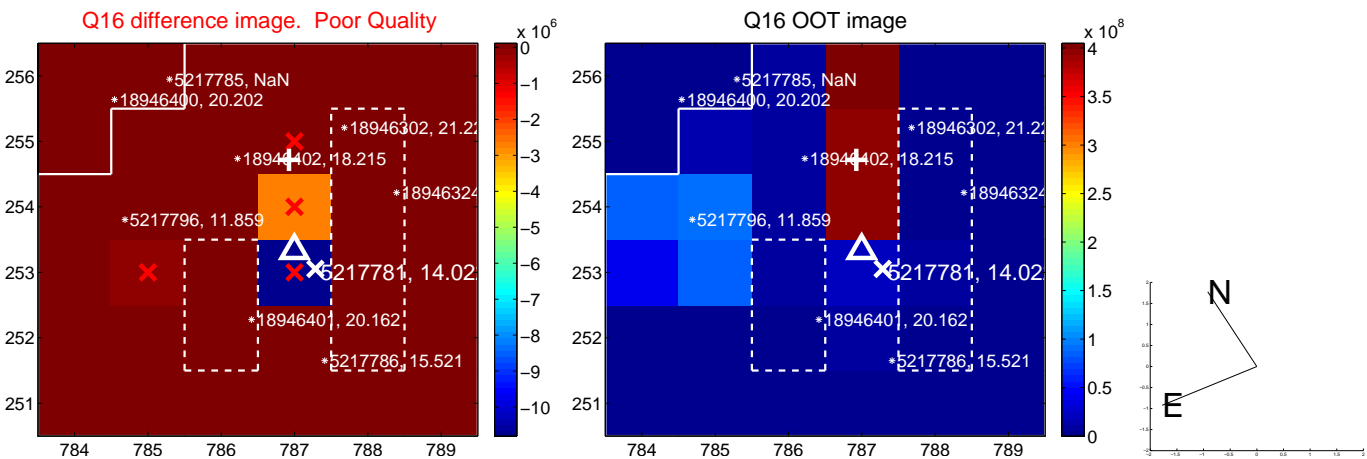
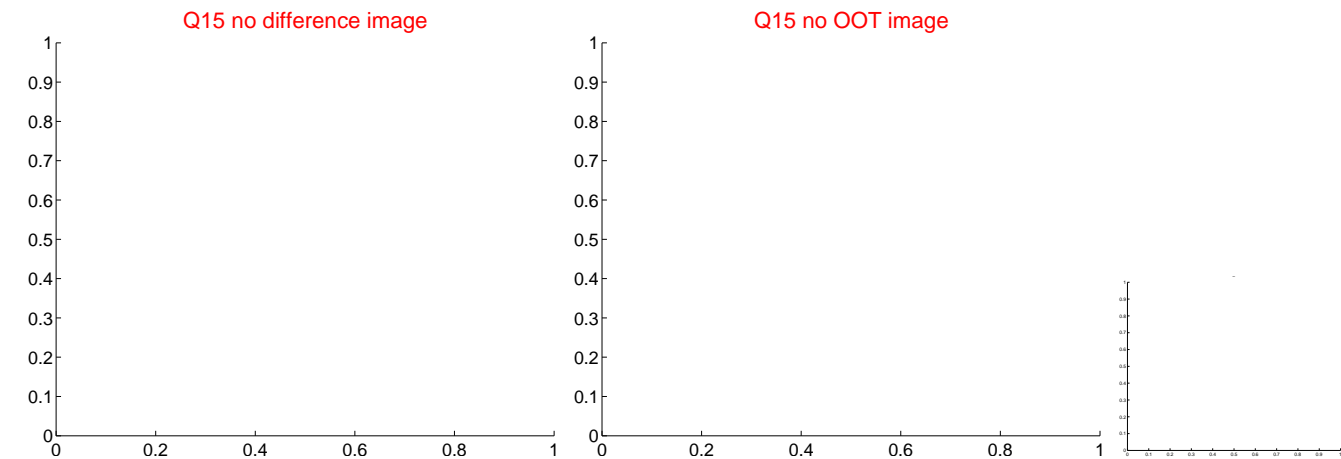
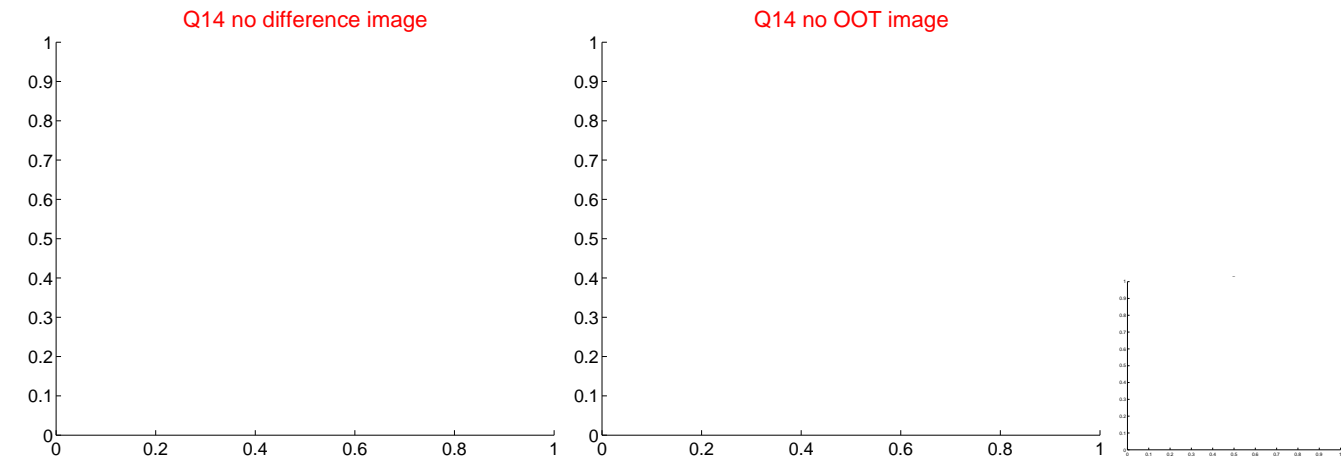
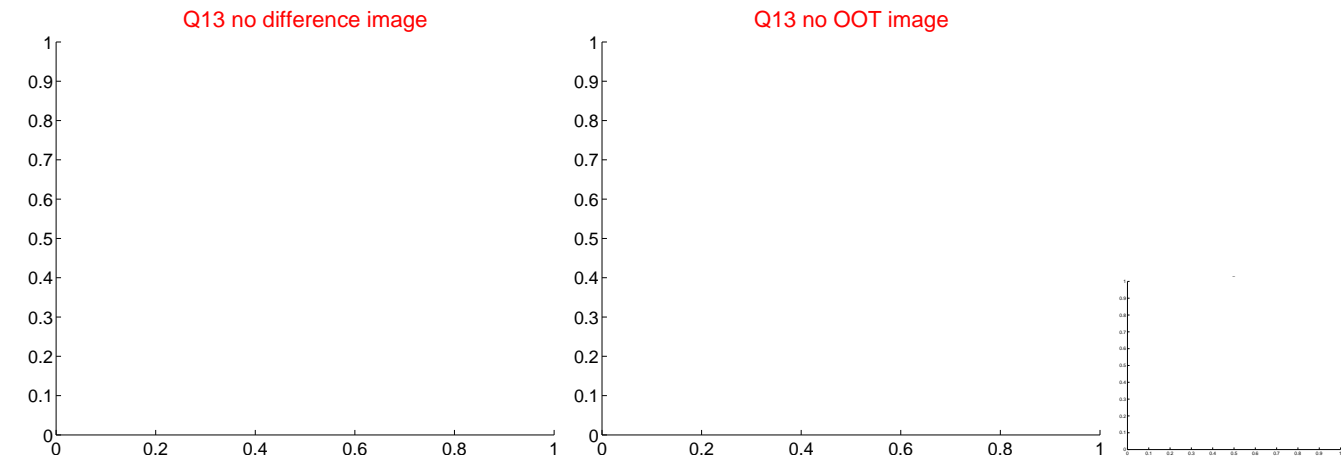
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



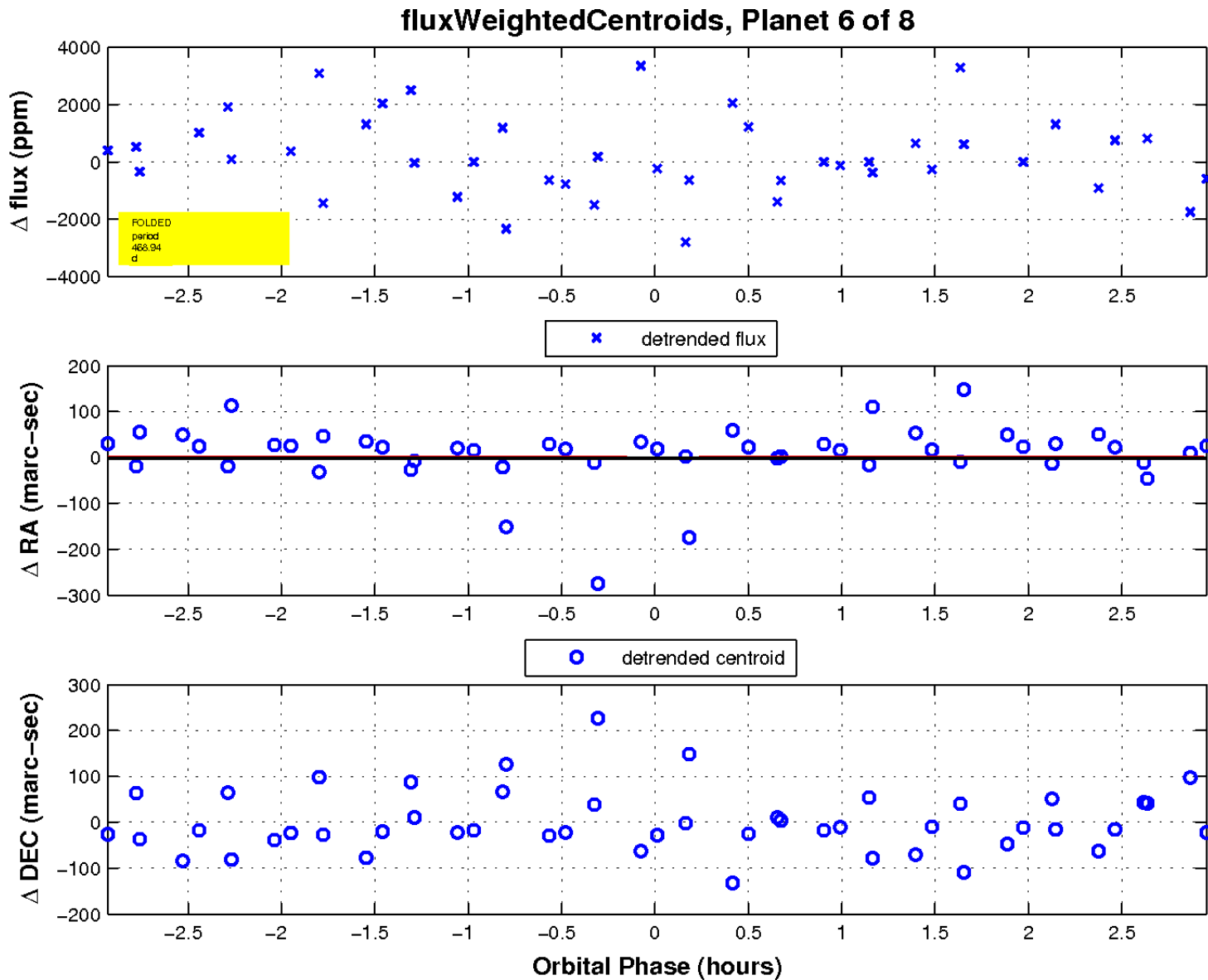
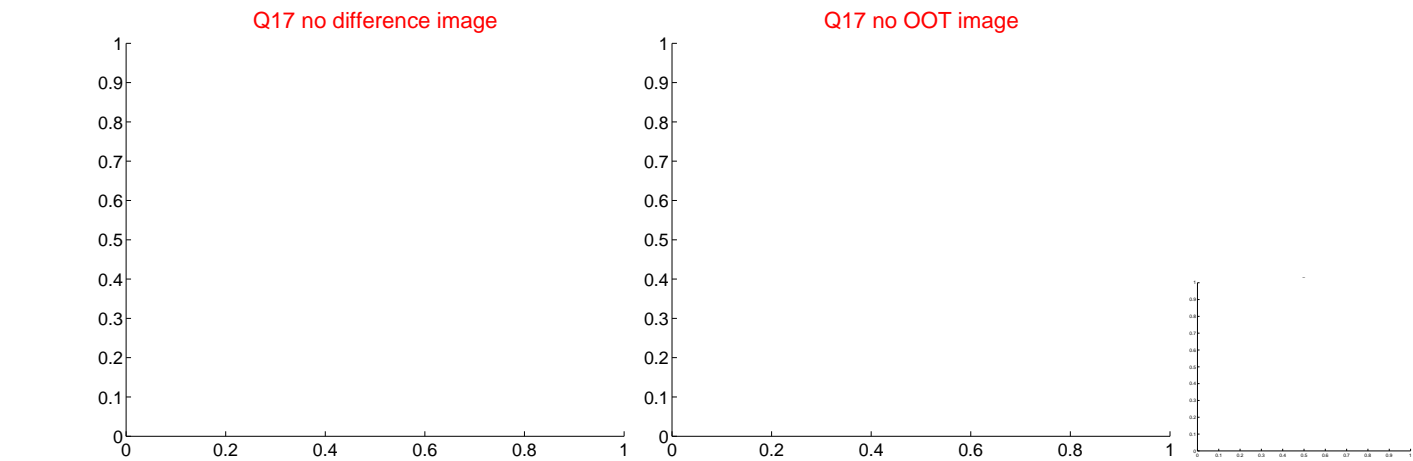
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

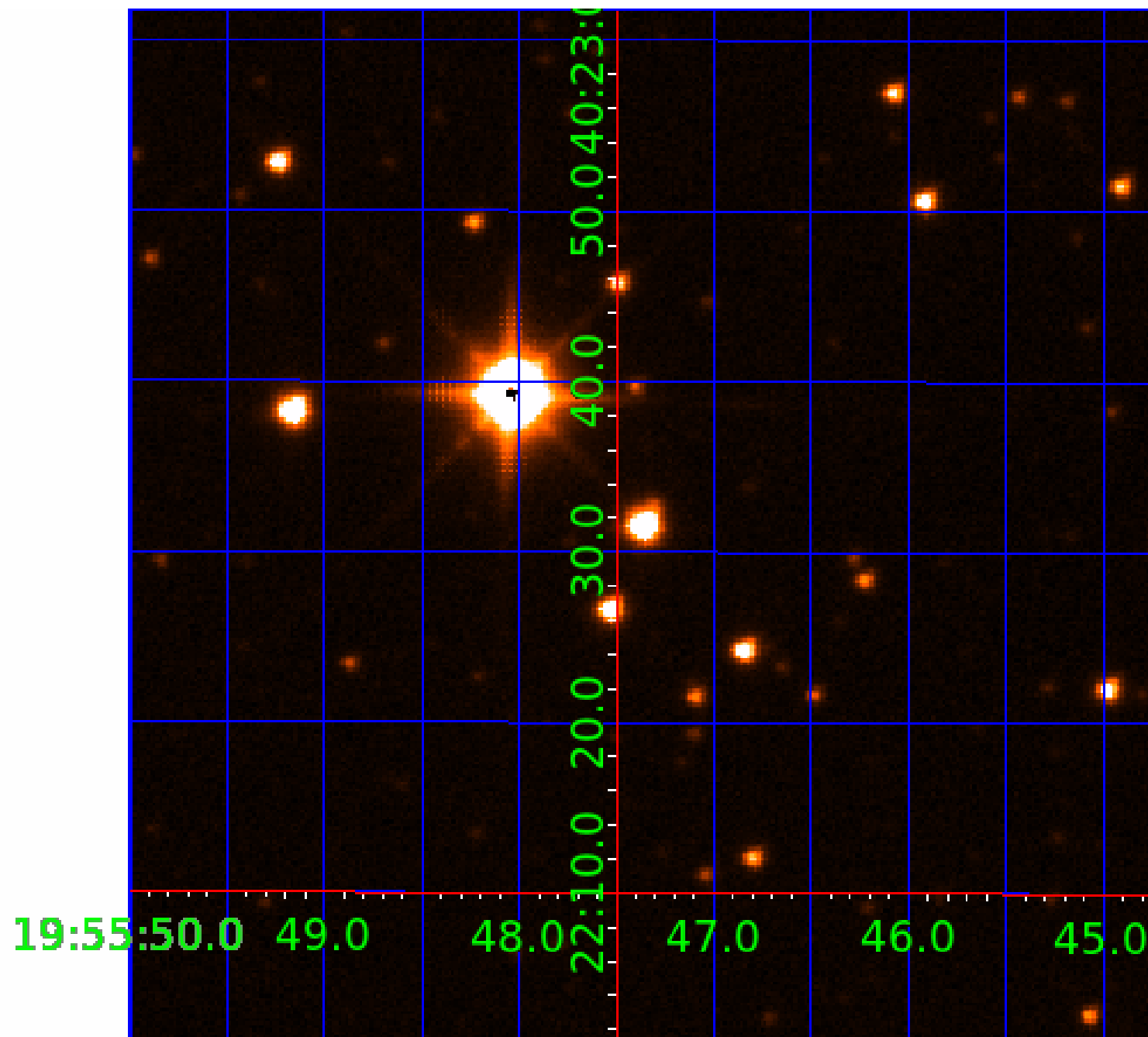


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



UKIRT Image

Declination



KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
005217781-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

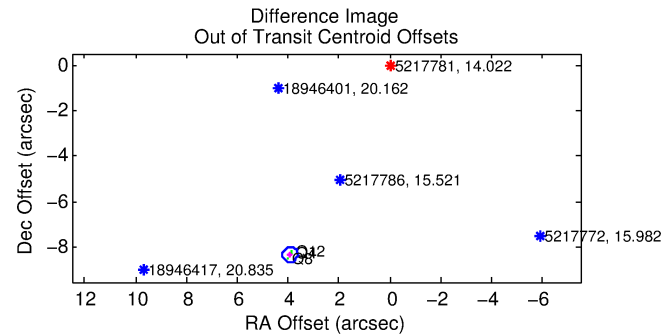
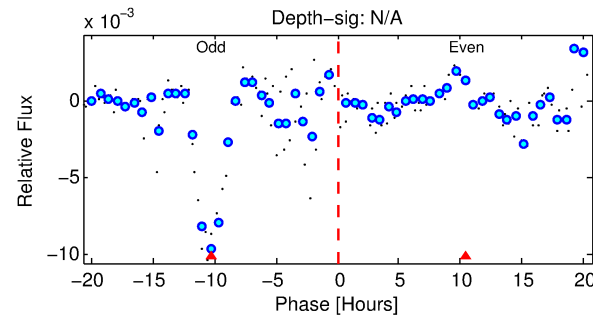
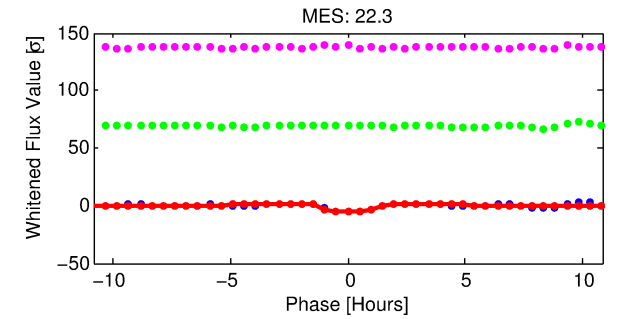
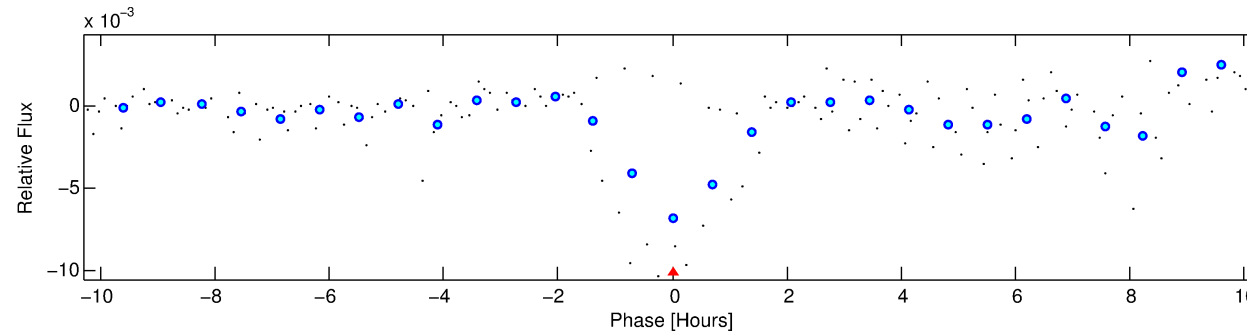
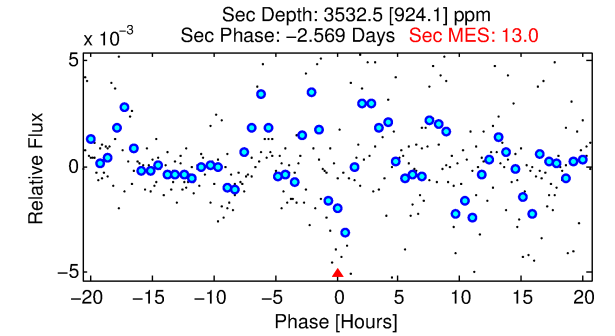
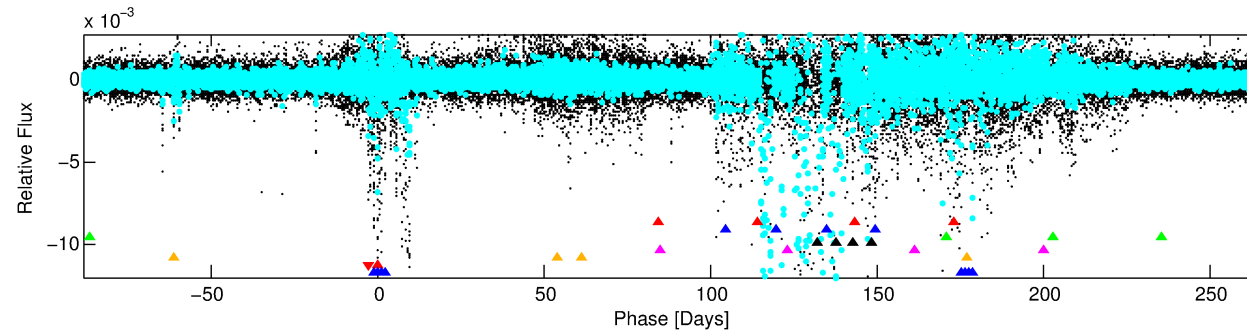
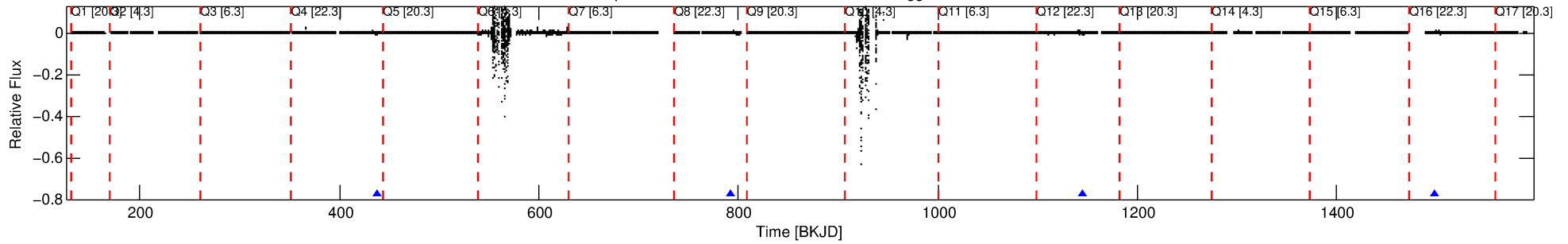
Ephemeris Match Information For 005217781-07

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 7 of 8 Period: 353.558 d

Kp: 14.02 R*: 0.88 Rs Teff: 5735.0 K Logg: 4.46 Fe/H: -0.420



TPS TCE Results:

Period = 353.55818 d
Epoch = 437.9946 BKJD

DV fit results are unavailable

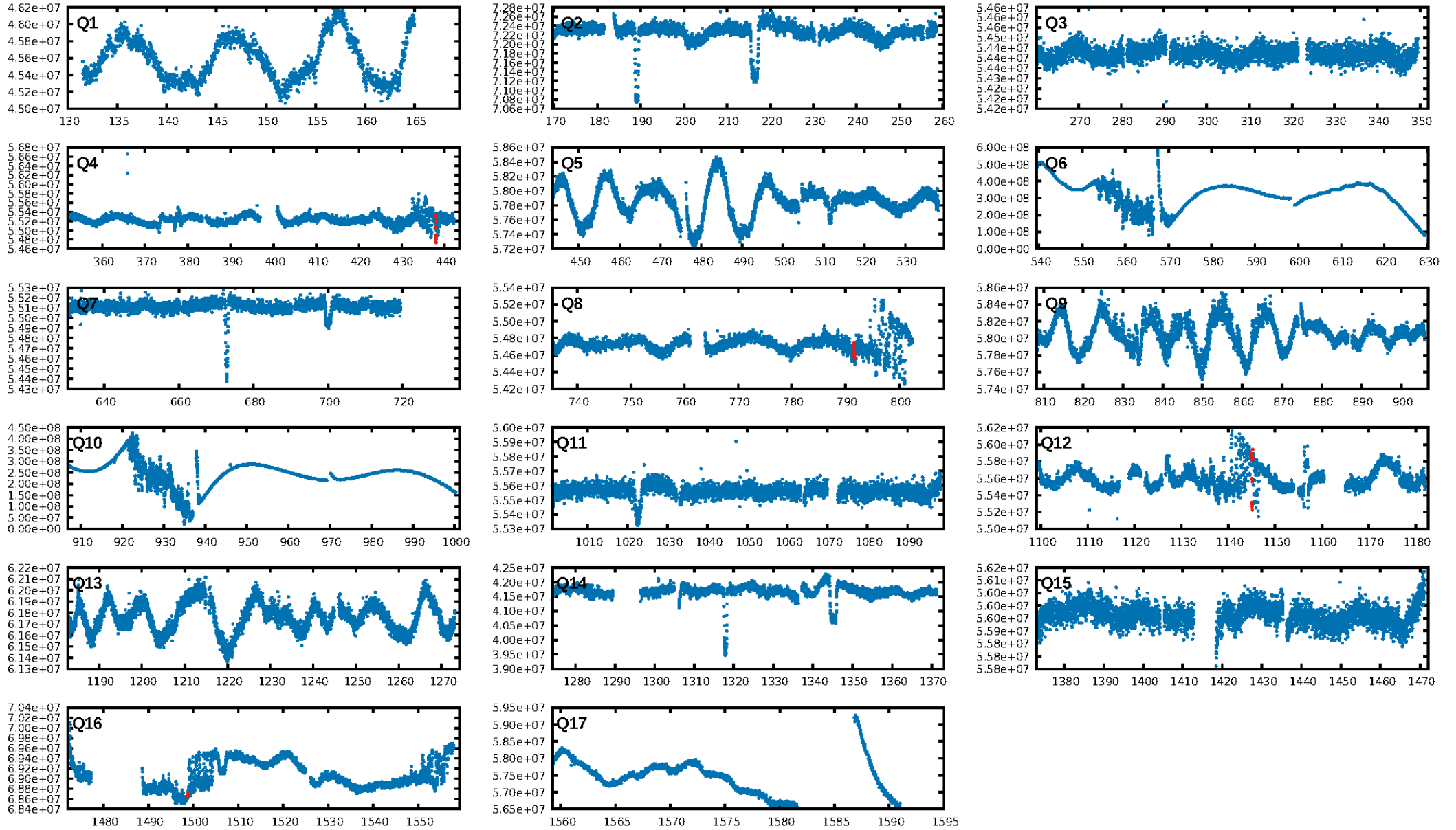
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.91 σ]
LongPeriod-sig: 99.1% [2.62 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.925
Centroid-sig: N/A
Centroid-so: 6.674 arcsec [1.79 σ]
OotOffset-rm: 9.183 arcsec [85.57 σ]
KicOffset-rm: 2.329 arcsec [14.89 σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

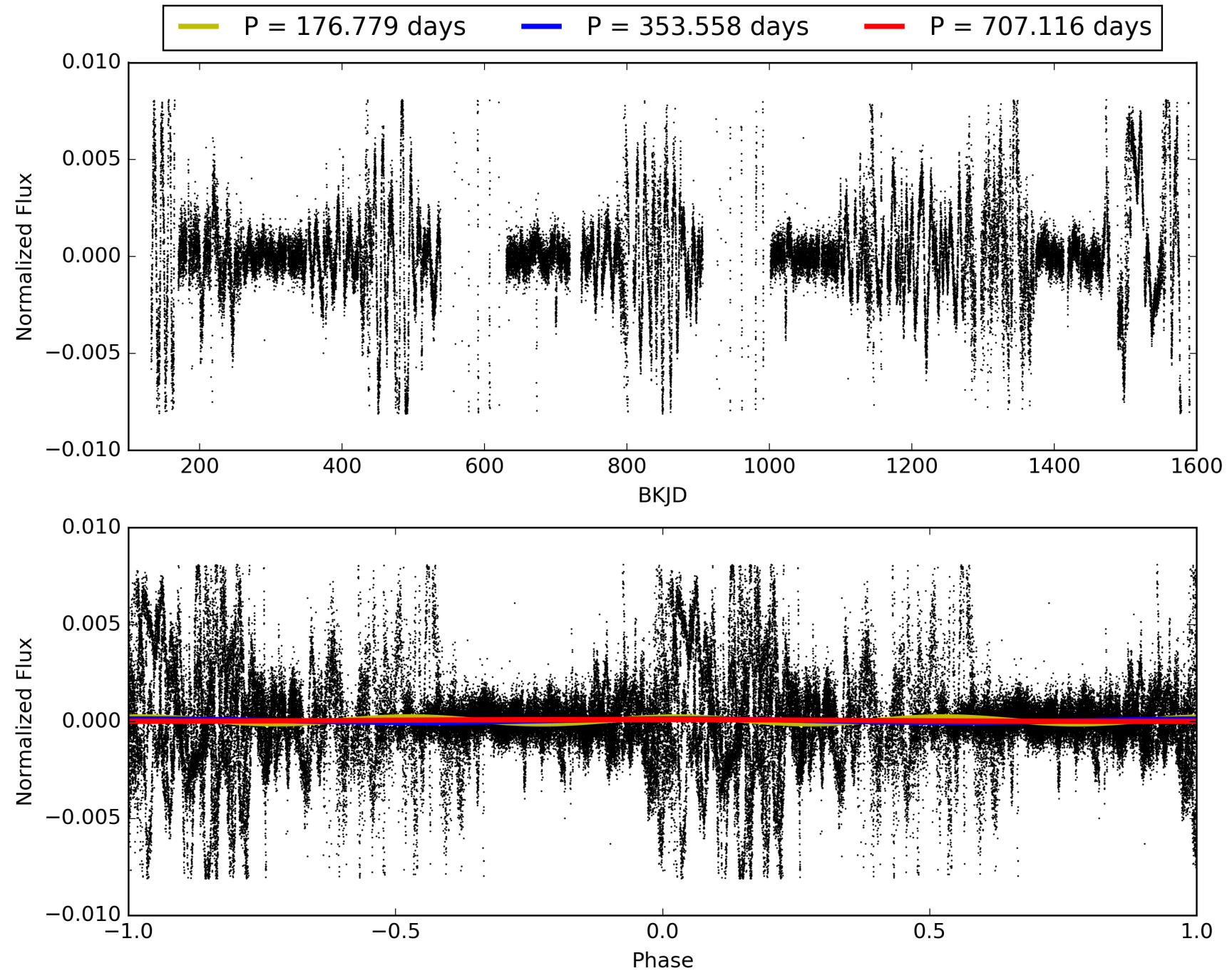
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:42 Z

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

TCE 005217781-07, PDC Light Curves

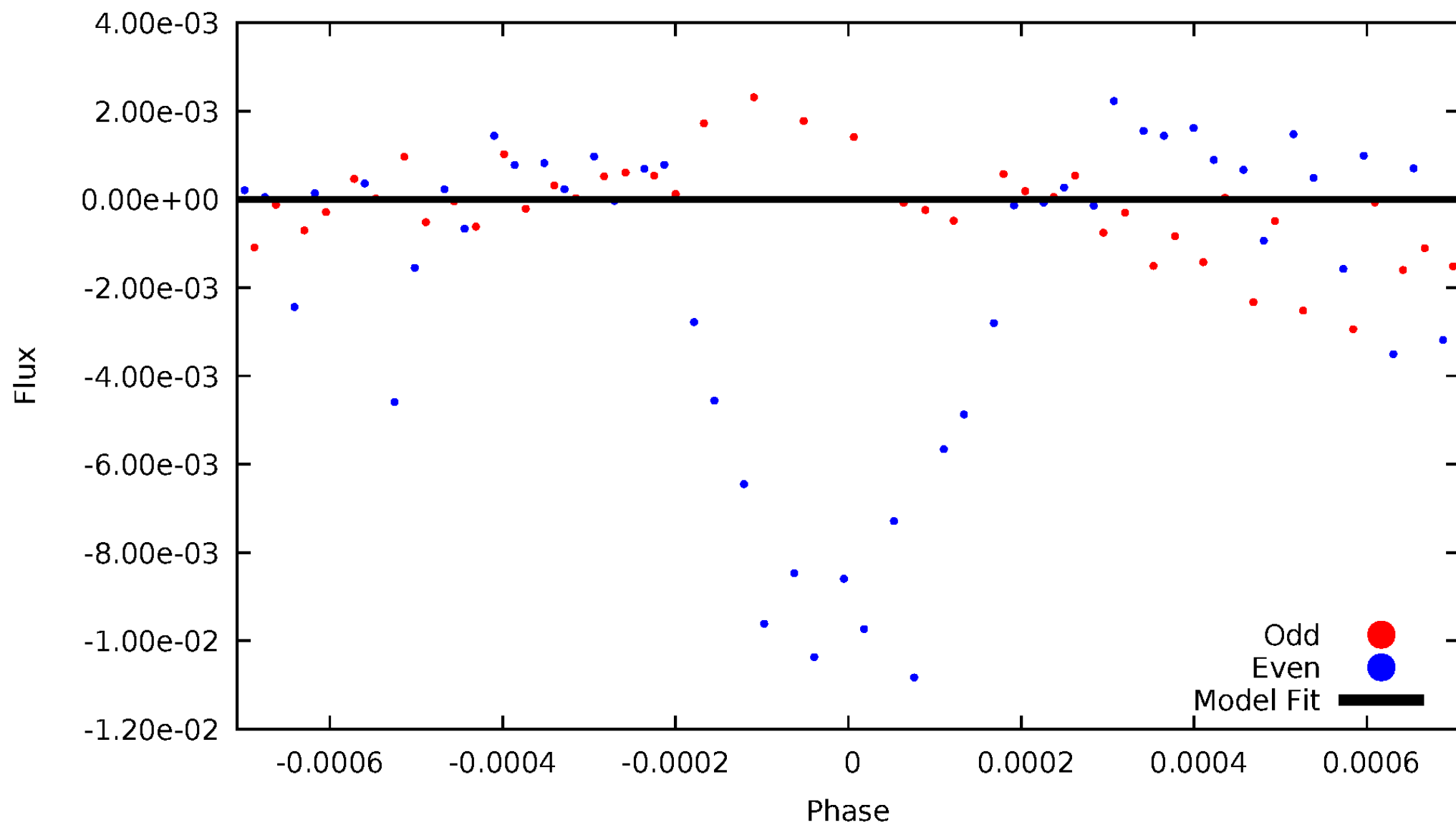


TCE 005217781-07



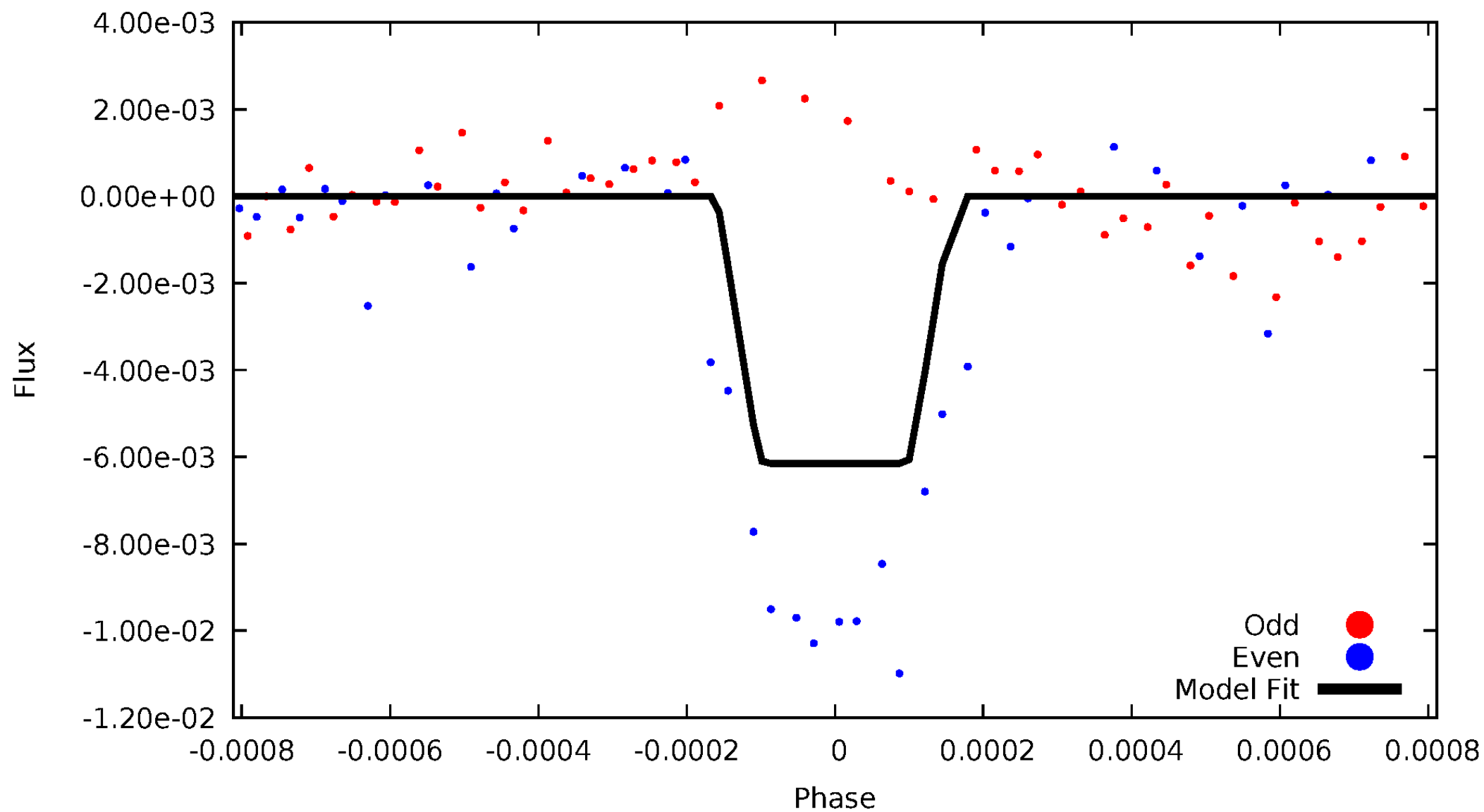
DV Odd/Even

TCE 005217781-07



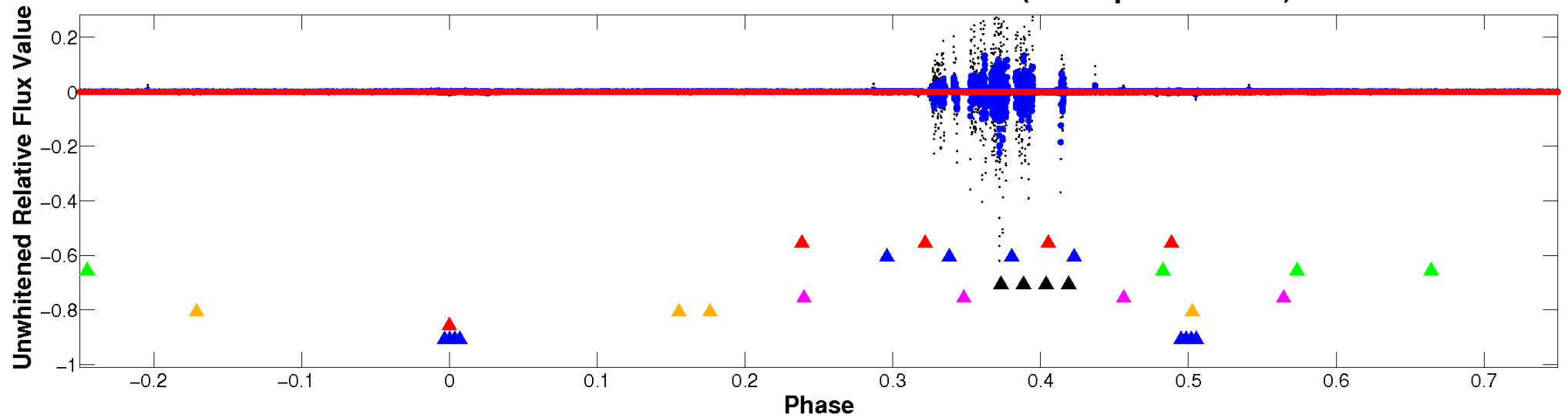
ALT Odd/Even

TCE 005217781-07

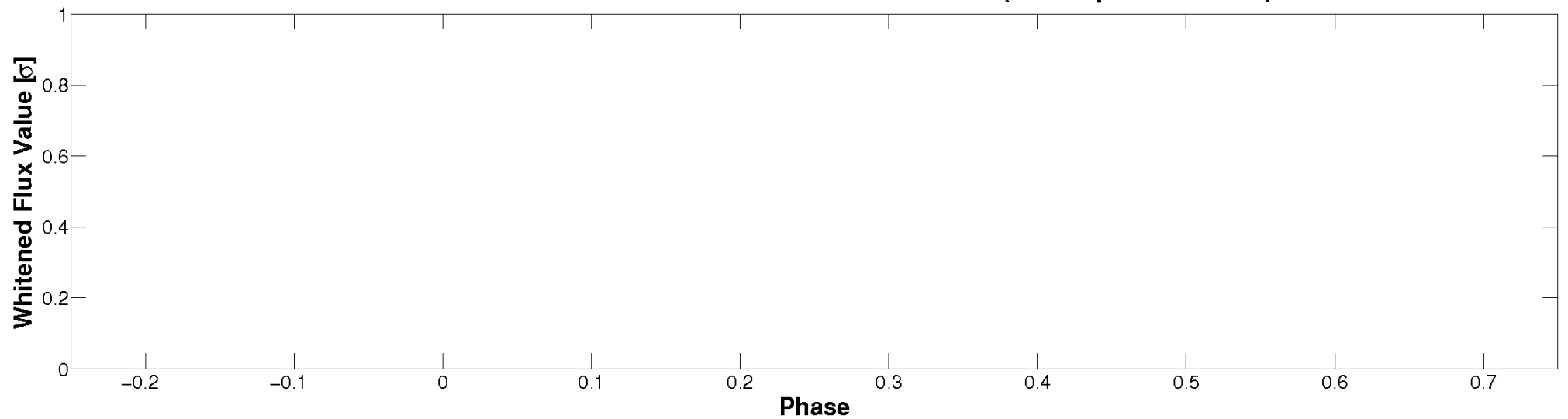


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)



Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005217781-07 P=353.558184 Days $T_0=437.994600$ (BKJD)



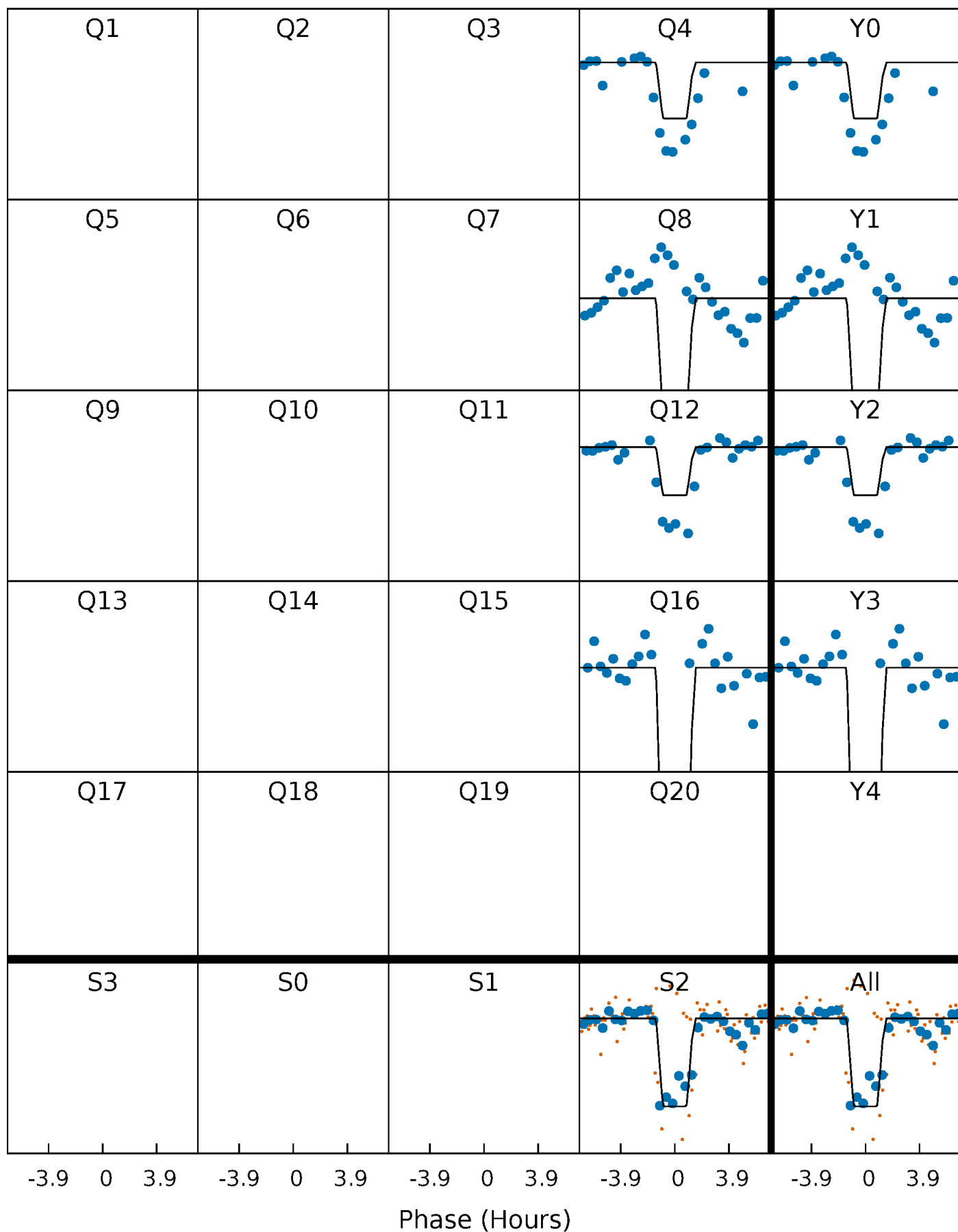
DV Quarter-Phased Transit Curves

TCE 005217781-07 $P=353.558184$ Days $T_0=437.994600$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

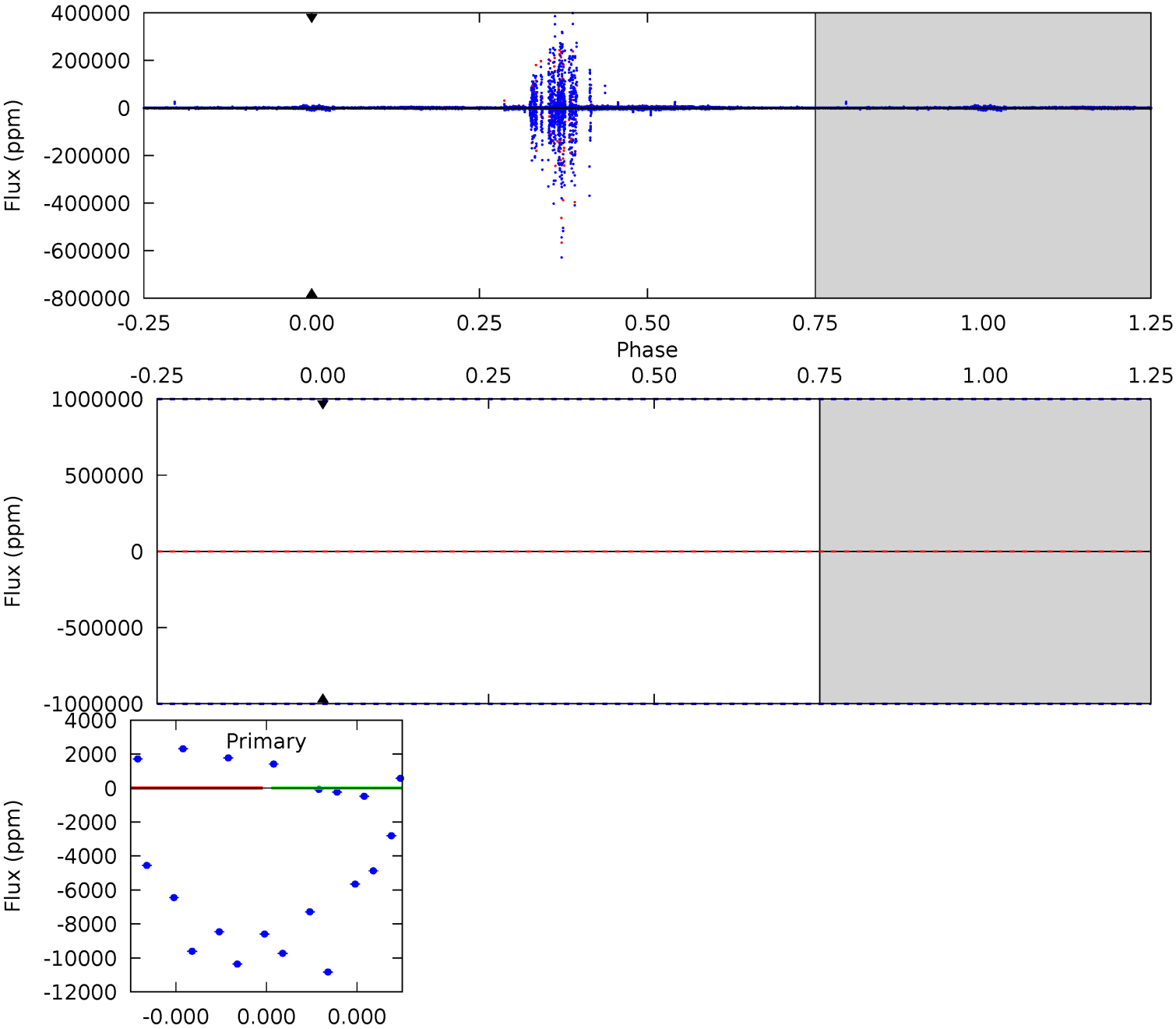
TCE 005217781-07 P=353.558184 Days $T_0=437.990791$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-07, P = 353.558184 Days, E = 84.436416 Days

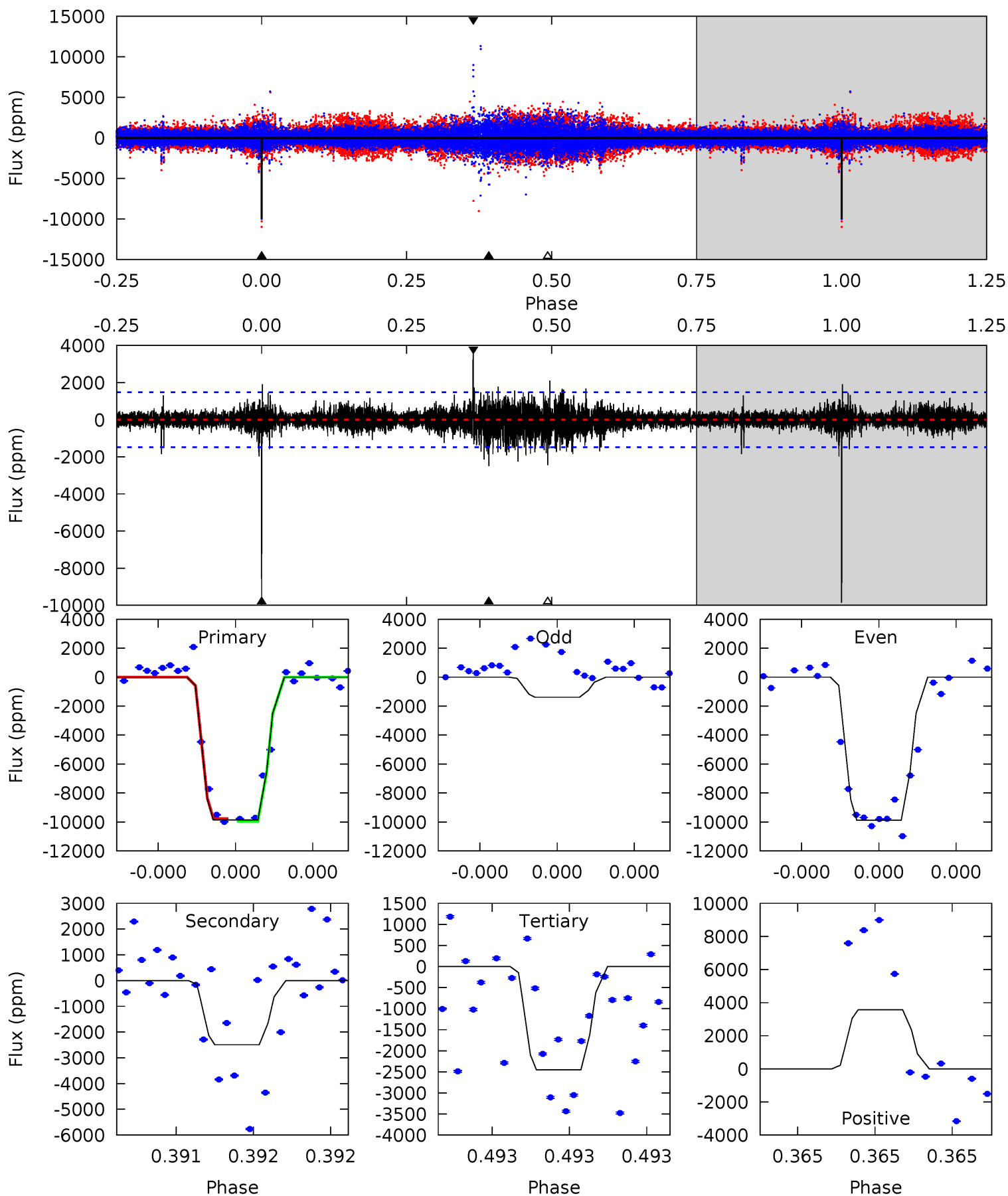
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005217781-07, P = 353.558184 Days, E = 84.432607 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.7	9.53	9.38	13.6	5.66	3.61	1.34	28.4	24.1	0.15	-4.12	8.23	0.64	0.27	0.35



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$8.94^{+9.17}_{-6.32}$	349^{+22}_{-18}	3962^{+14040}_{-19441}	$7930^{+1166167}_{-926603}$
Alt.	-2491 ± 261	$10.39^{+9.19}_{-6.64}$	348^{+22}_{-17}	4184^{+2385}_{-754}	10794^{+74909}_{-7647}

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 $A_{obs} \gg 1.0$

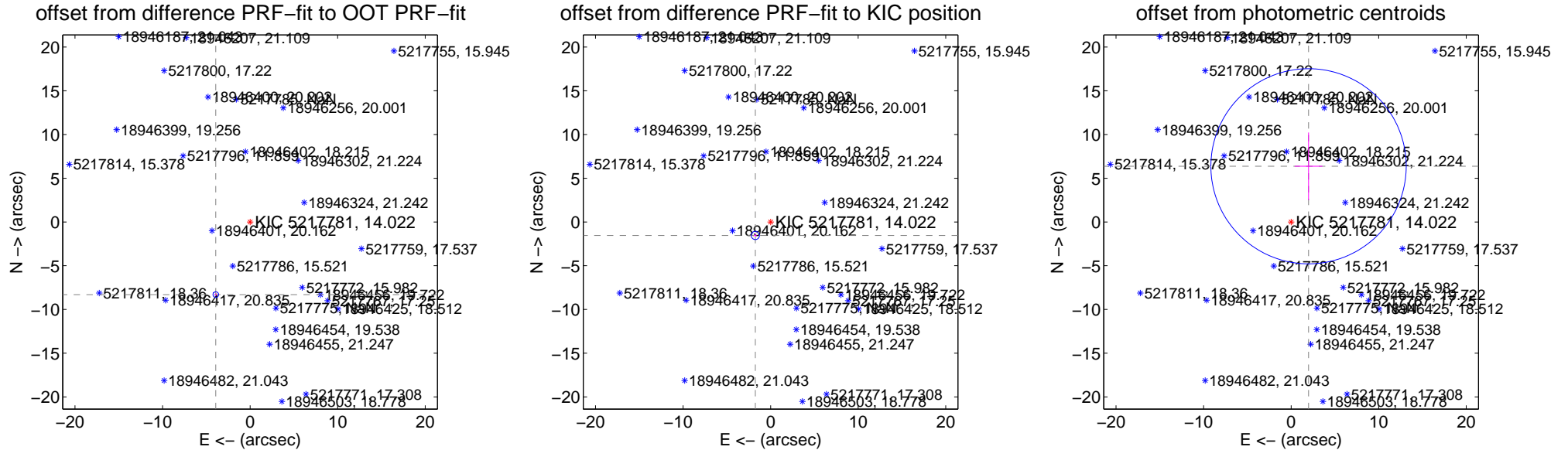
DV Centroid Data

Supplemental centroid analysis for 005217781-07. Kepler magnitude: 14.02. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

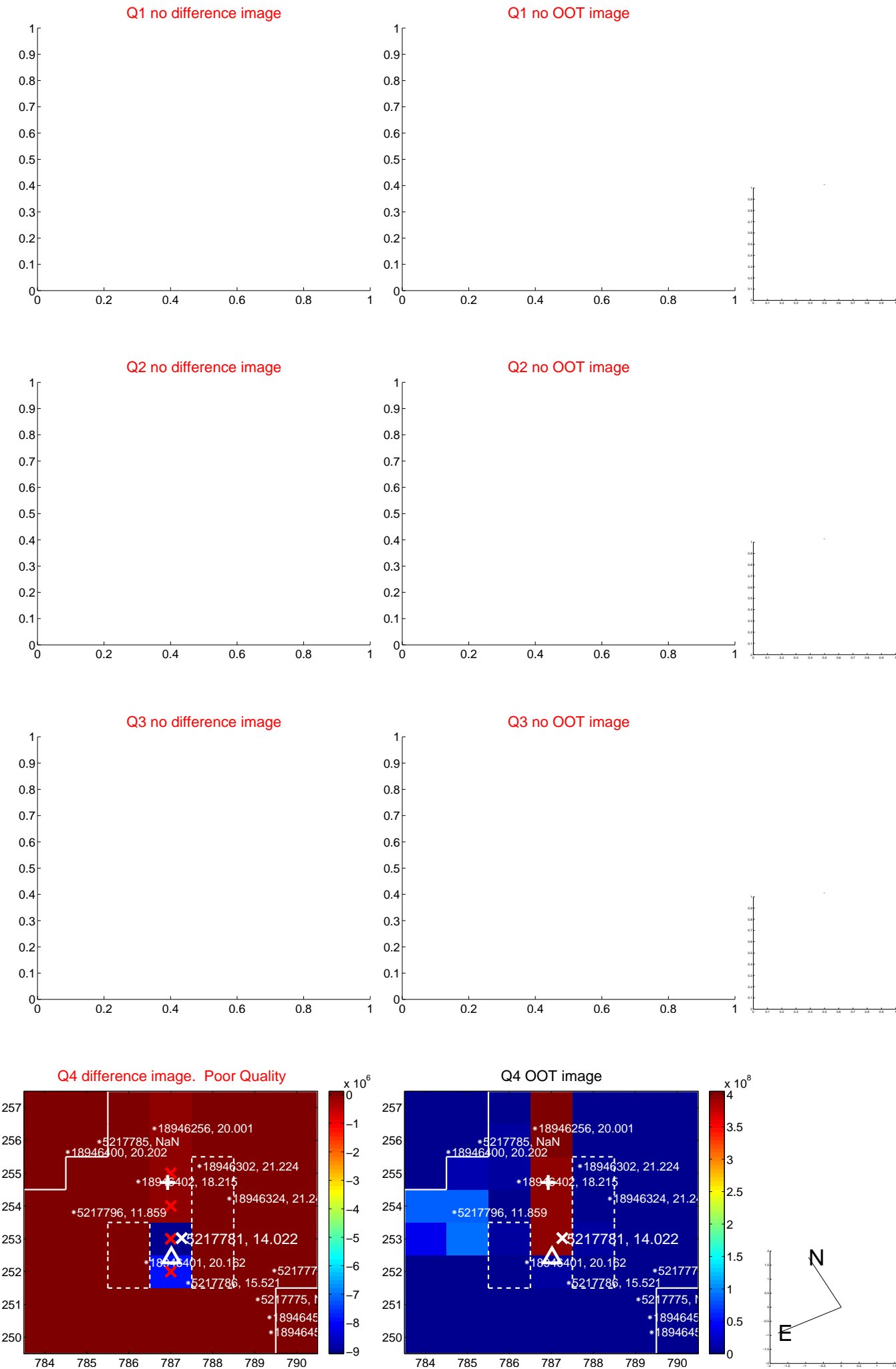
The OOT PRF centroid is offset from the target star catalog position by about 7.28 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.183 \pm 0.107	85.57	3.921 ± 0.079	-8.304 ± 0.113
PRF-fit source offset from KIC position	2.329 \pm 0.156	14.89	1.748 ± 0.141	-1.539 ± 0.174
photometric centroid source offset	6.67 ± 3.72	1.79	-1.99 ± 1.58	6.37 ± 3.86



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.

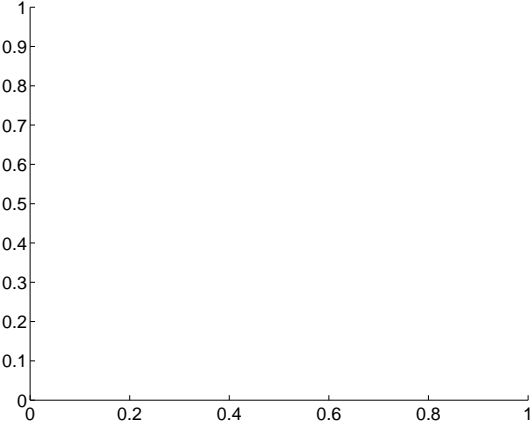
Q5 no difference image



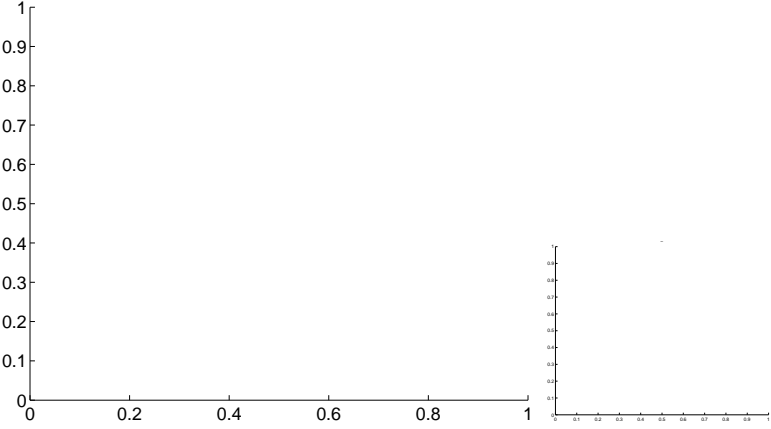
Q5 no OOT image



Q6 no difference image



Q6 no OOT image



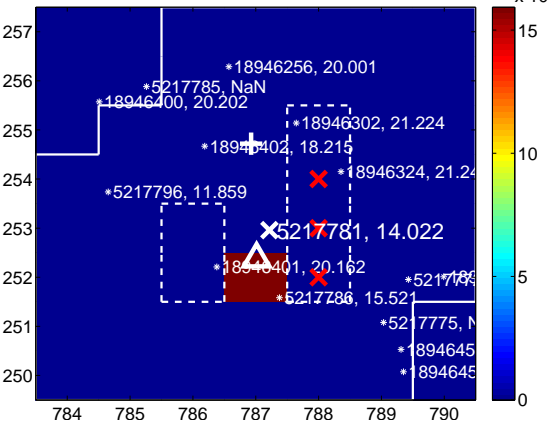
Q7 no difference image



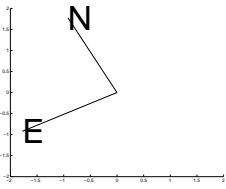
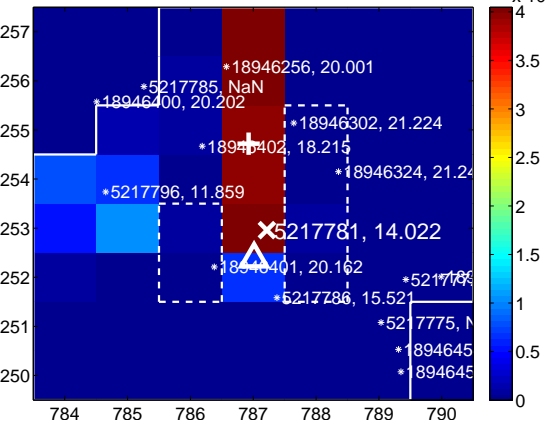
Q7 no OOT image



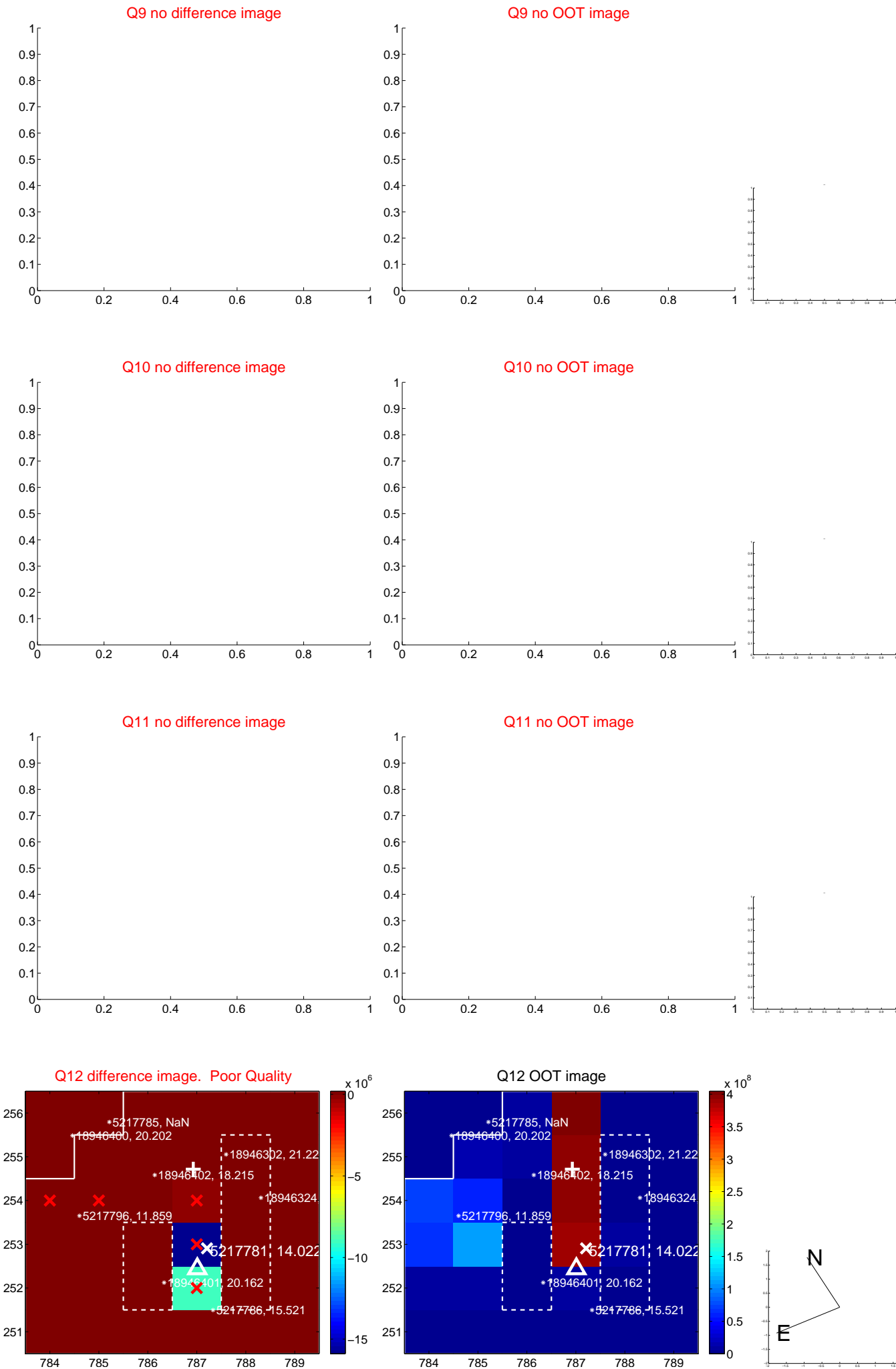
Q8 difference image



Q8 OOT image



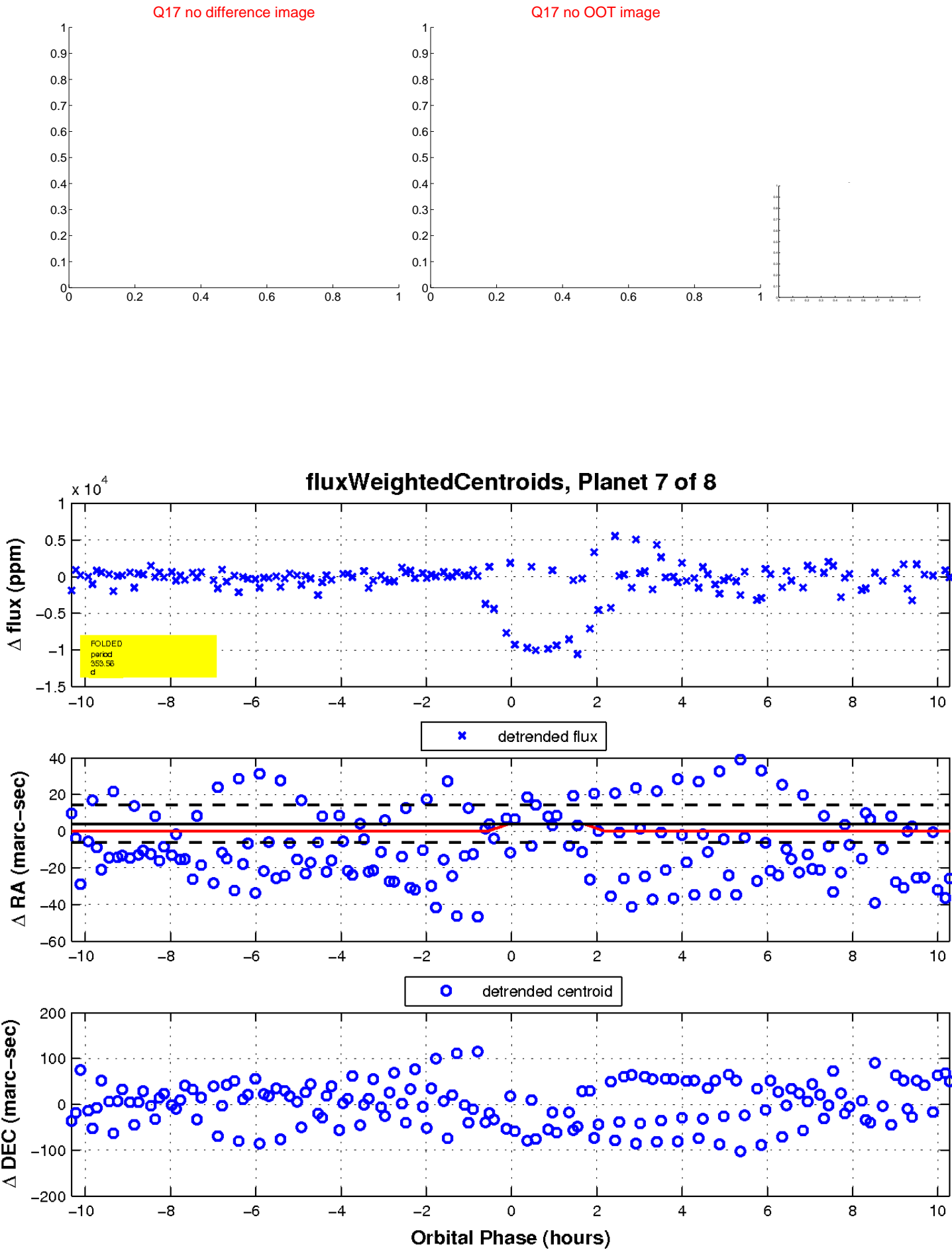
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

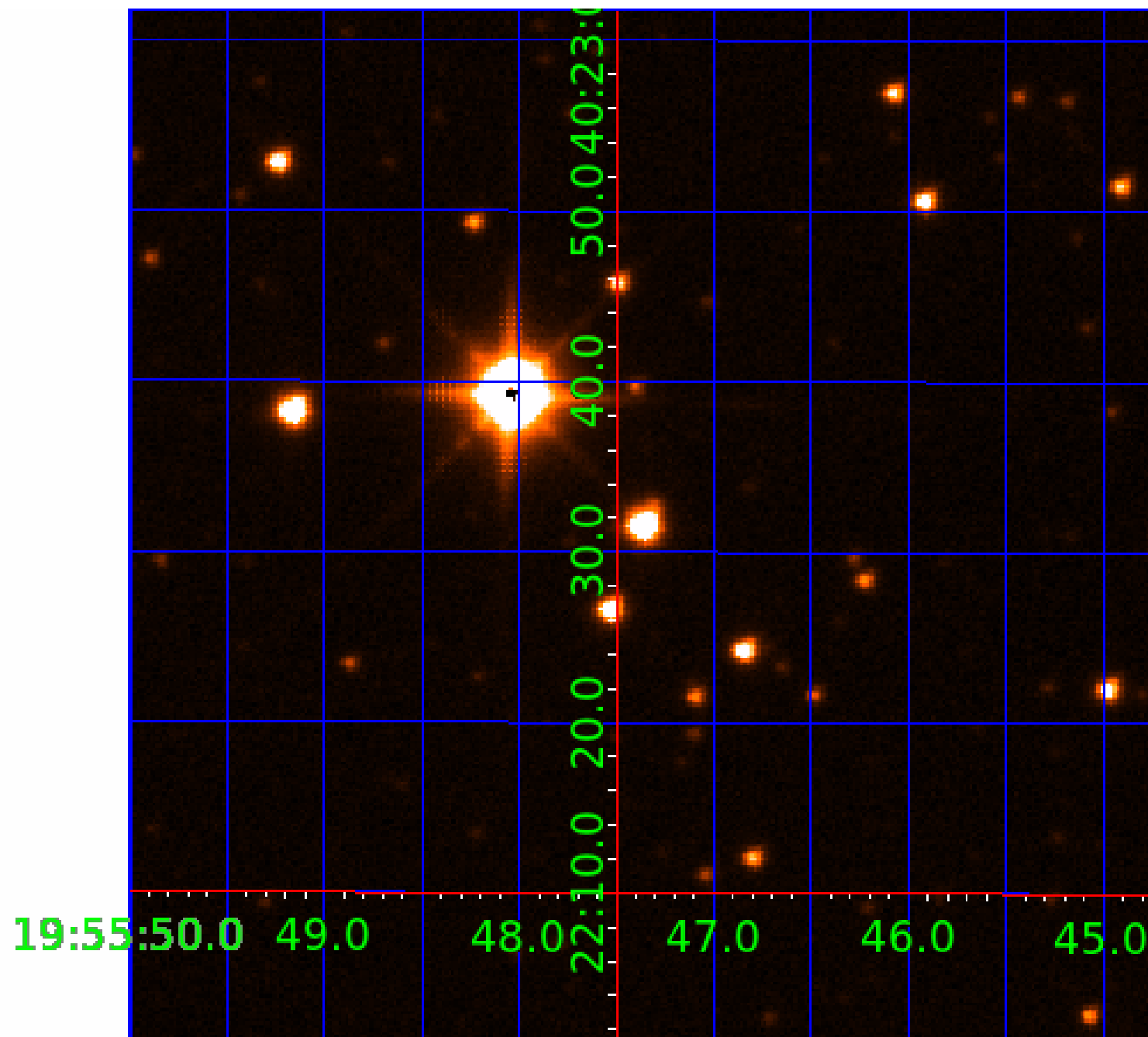


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005217781

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})
005217781-01	OBS	No	383.020271	168.781807	221325.4	15.000	89.3	-1.0	0.88	5735	9.02	0.80
005217781-02	OBS	No	368.485199	189.106388	306279.3	15.000	68.2	-1.0	0.88	5735	8.55	0.84
005217781-03	OBS	No	321.476904	351.380232	12299.0	23.200	52.5	47.8	0.88	5735	14.33	1.01
005217781-04	OBS	No	358.954063	216.386407	15777.1	49.302	31.9	34.4	0.88	5735	11.42	0.87
005217781-05	OBS	No	391.805702	169.254860	17081.4	24.086	22.1	22.0	0.88	5735	17.91	0.78
005217781-06	OBS	No	468.943391	146.774863	1618.8	15.000	17.7	-1.0	0.88	5735	3.51	0.61
005217781-07	OBS	No	353.558184	437.994600	4421.3	3.000	22.3	-1.0	0.88	5735	5.80	0.89
005217781-08	OBS	No	177.387183	259.469358	3377.1	2.500	19.7	-1.0	0.88	5735	5.07	2.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217781-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS
005217781-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005217781-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
005217781-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_NOFITS
005217781-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

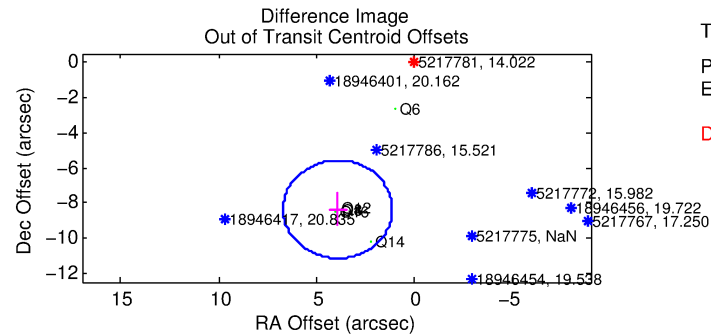
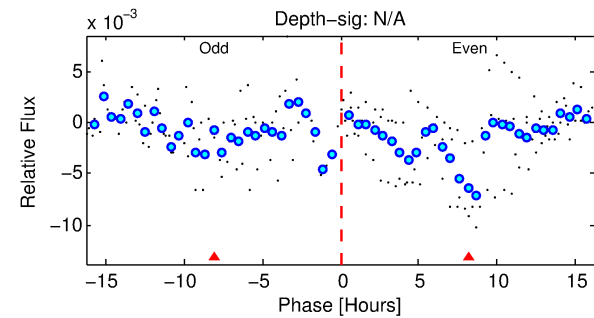
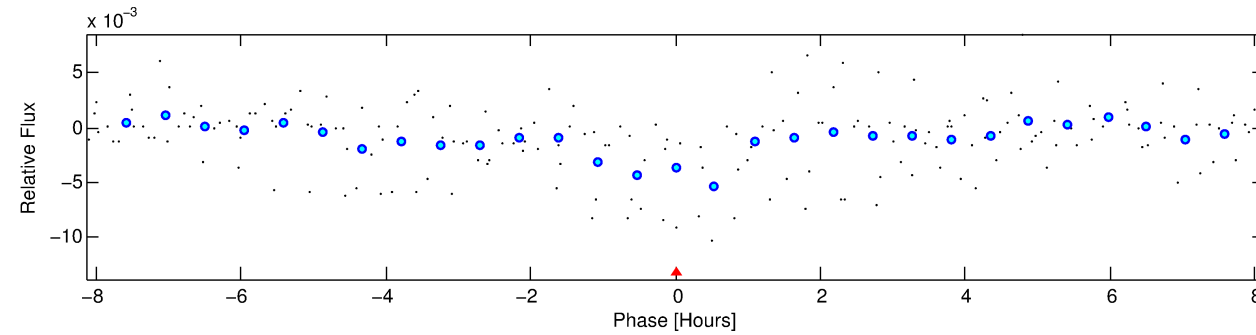
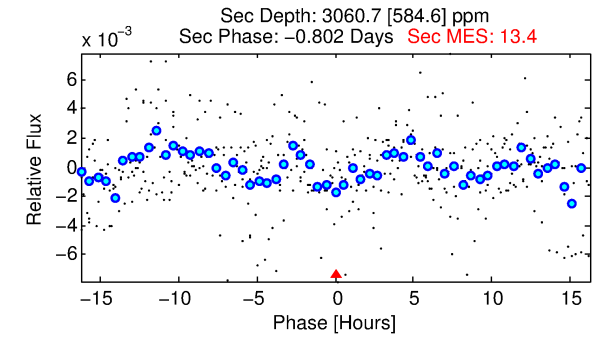
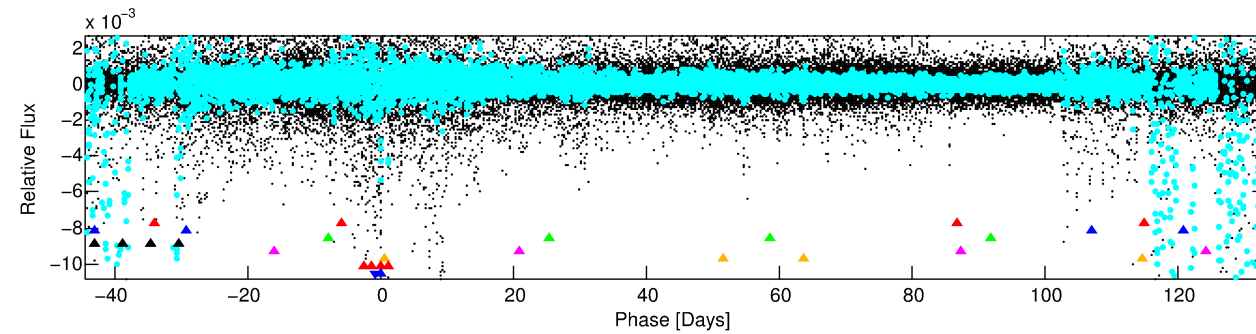
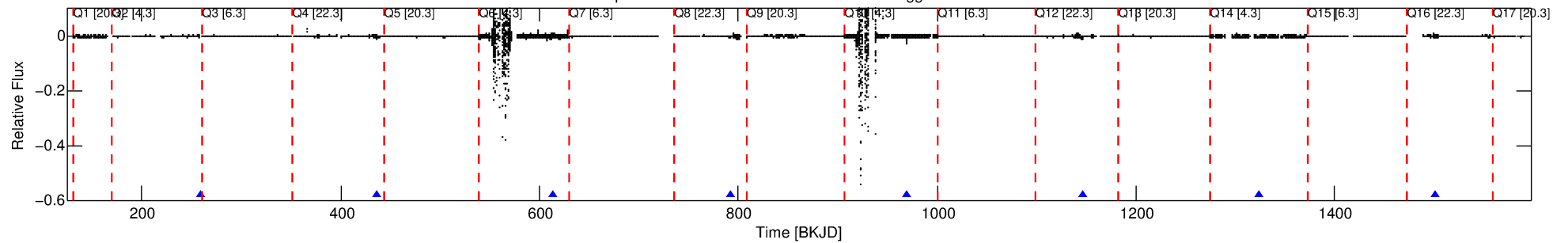
Ephemeris Match Information For 005217781-08

No Significant Match Found

DV One-Page Summary

KIC: 5217781 Candidate: 8 of 8 Period: 177.387 d

Kp: 14.02 R*: 0.88 Rs Teff: 5735.0 K Logg: 4.46 Fe/H: -0.420



TPS TCE Results:

Period = 177.38718 d
Epoch = 259.4694 BKJD

DV fit results are unavailable

DV Diagnostic Results:

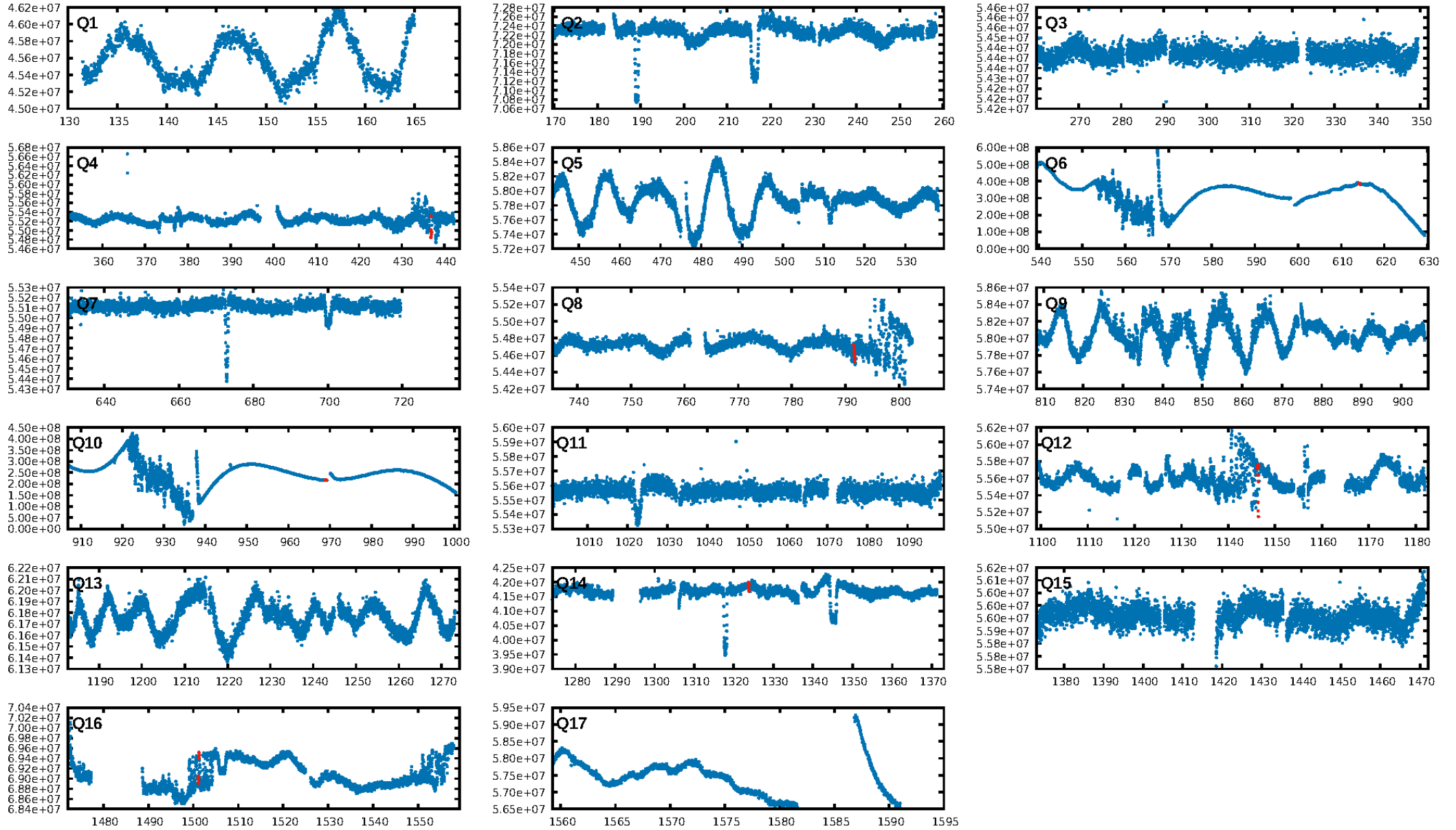
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [148.20σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 5.549

Centroid-sig: N/A
Centroid-so: 12.499 arcsec [3.45σ]
OotOffset-rm: 9.249 arcsec [9.96σ]
KicOffset-rm: 2.375 arcsec [1.94σ]
OotOffset-st: 2/0/4/0 [6]
KicOffset-st: 2/0/4/0 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.83 [5/6]

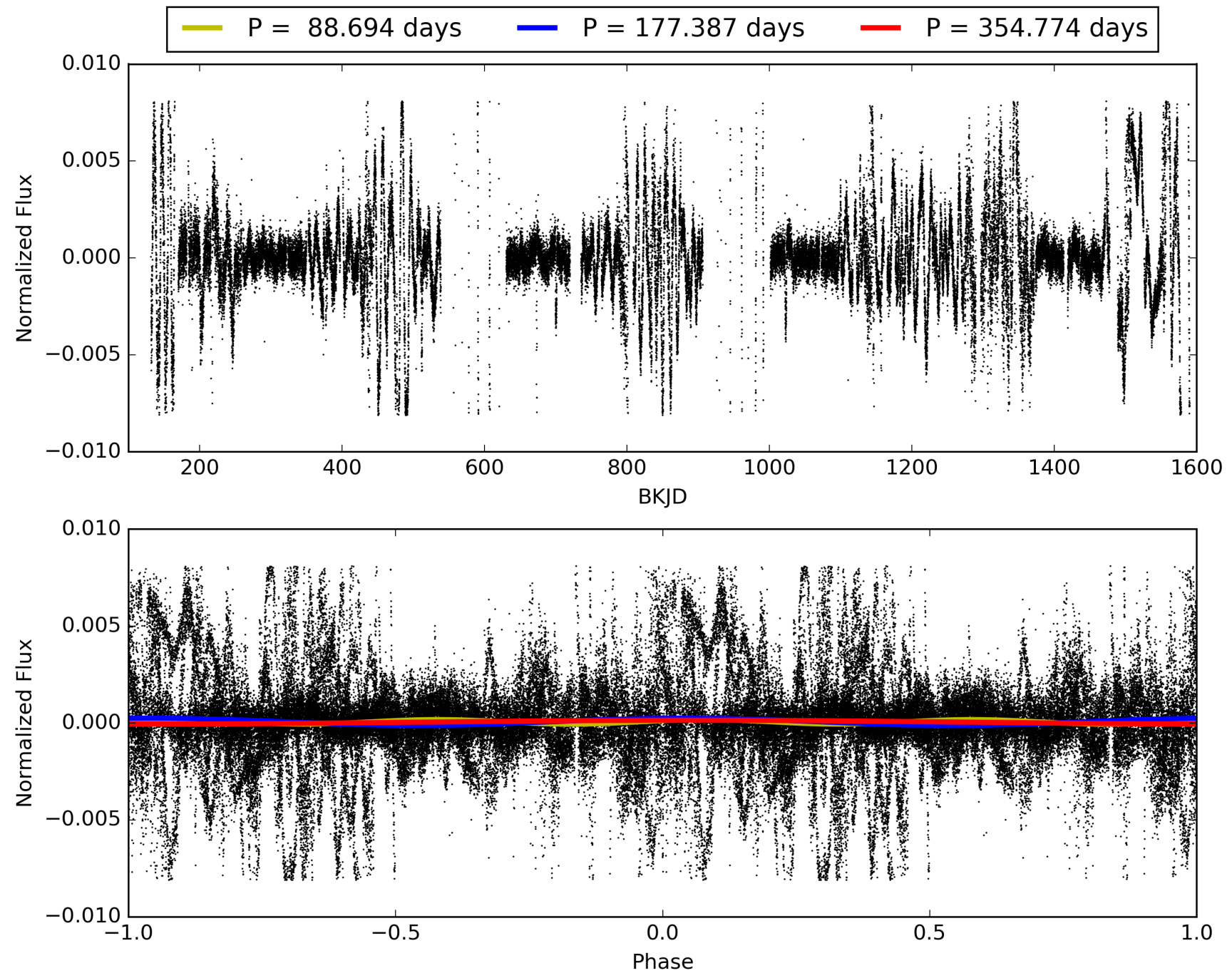
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:32:53 Z

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

TCE 005217781-08, PDC Light Curves

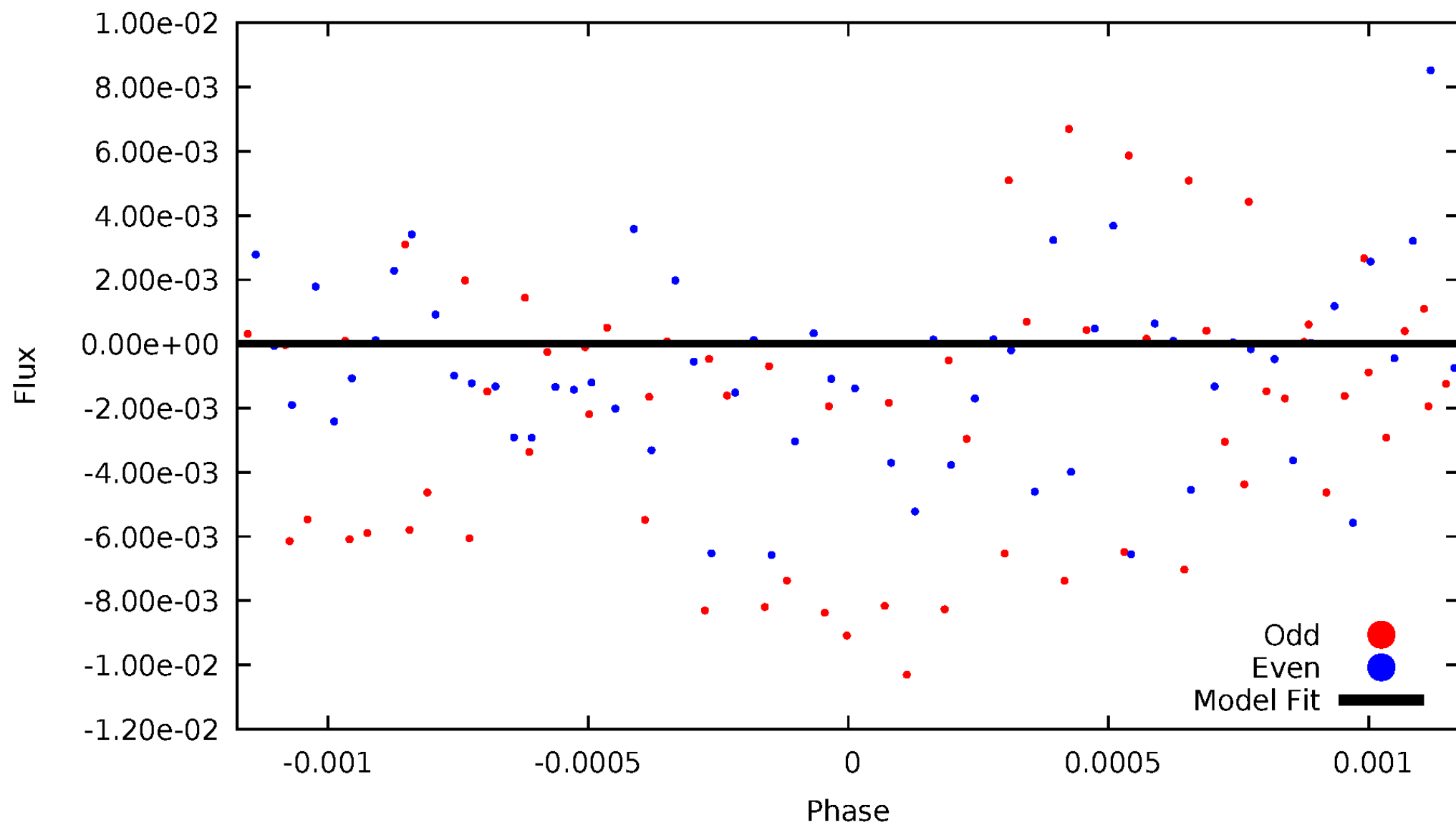


TCE 005217781-08



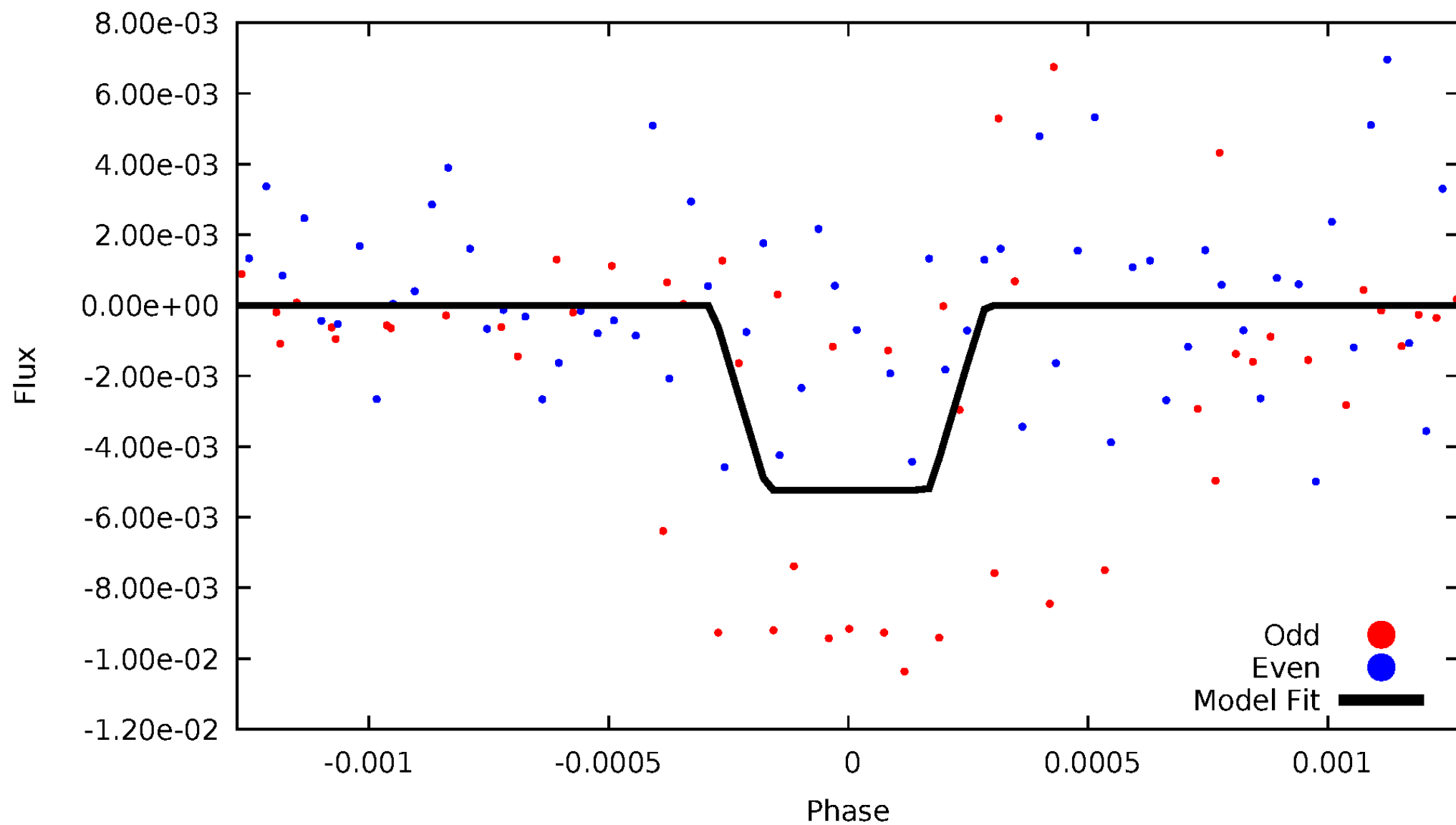
DV Odd/Even

TCE 005217781-08



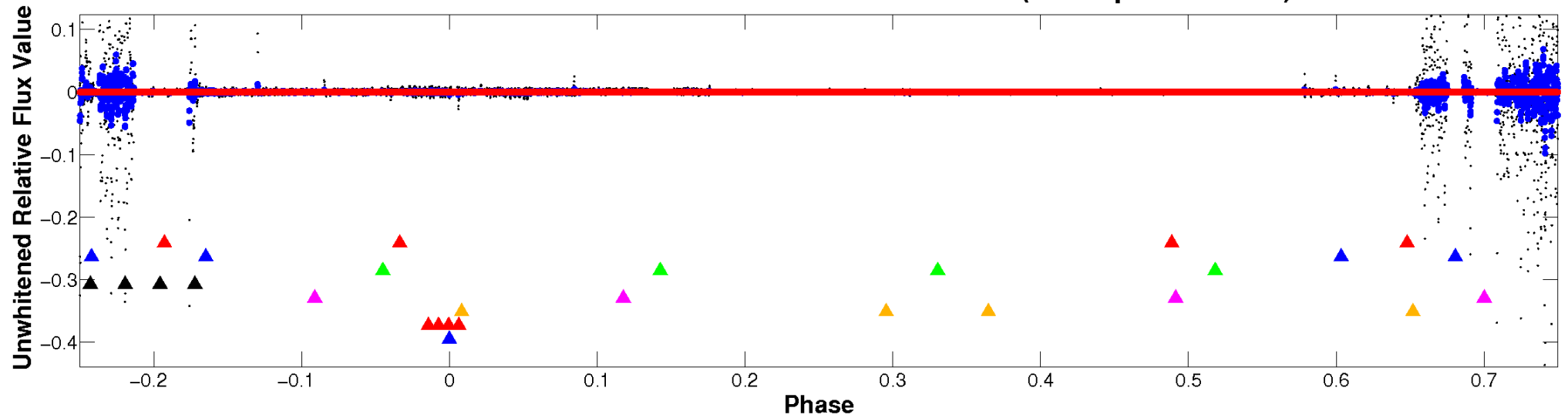
ALT Odd/Even

TCE 005217781-08

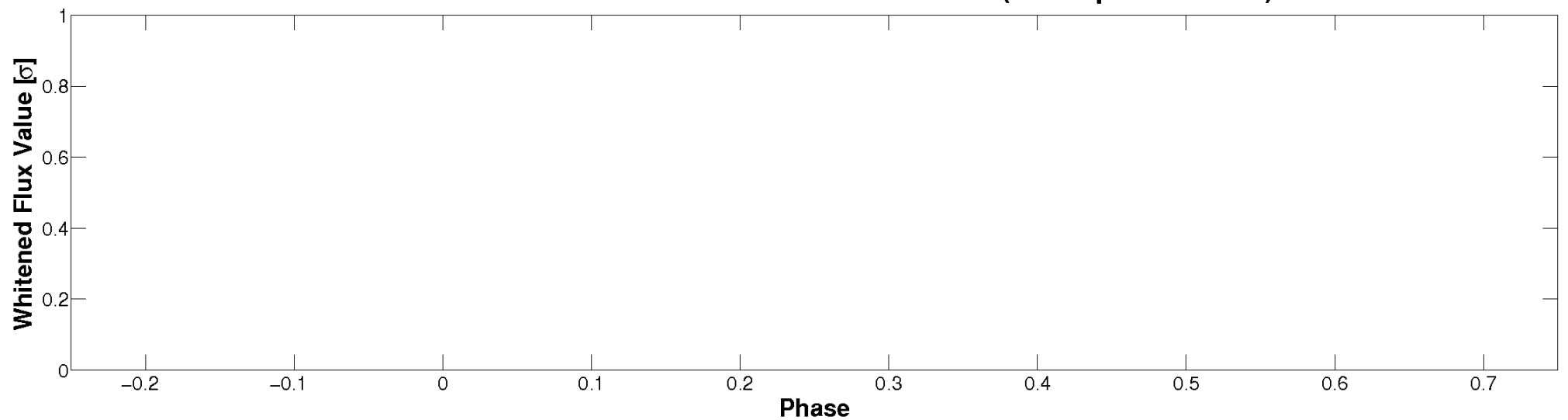


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

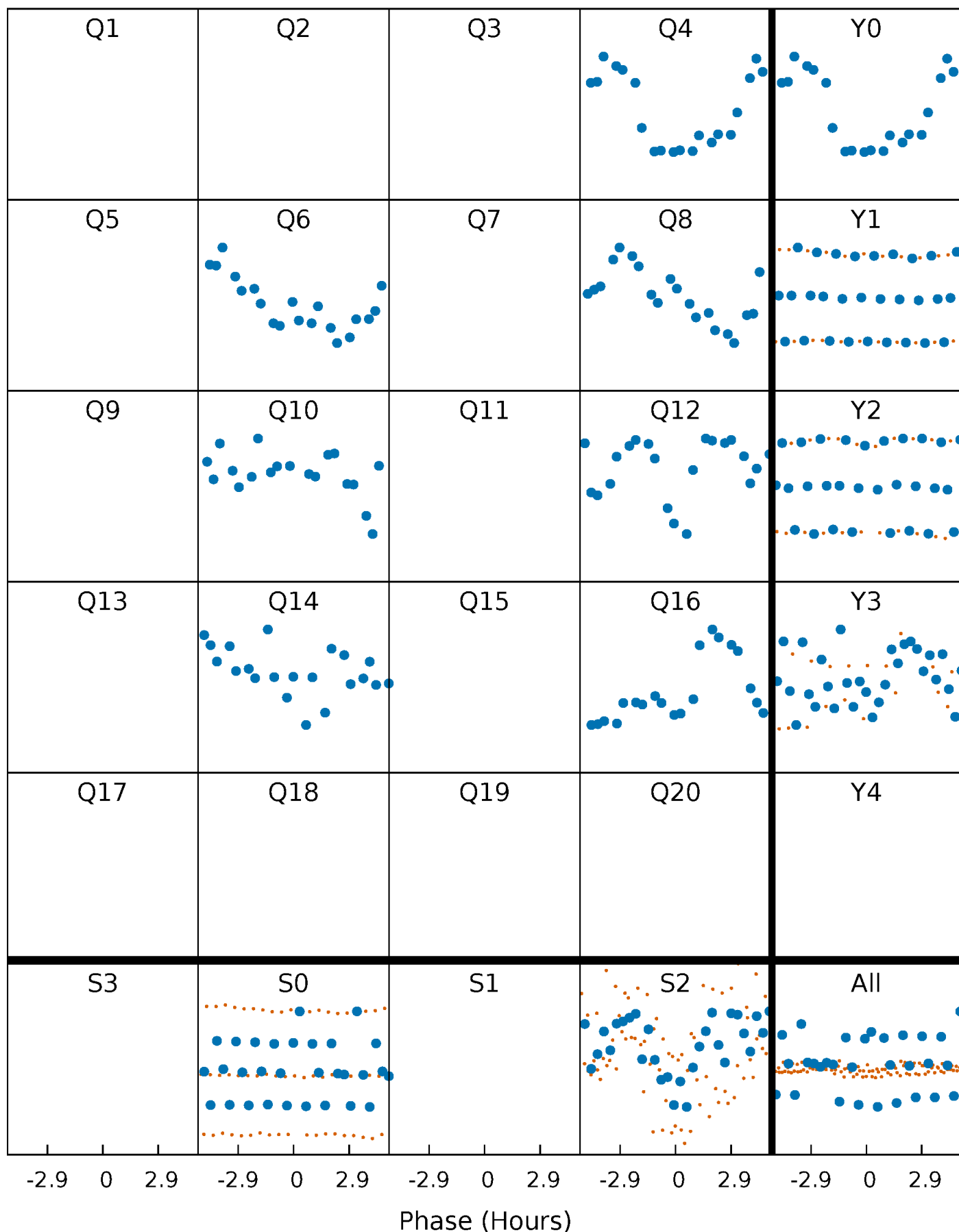


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



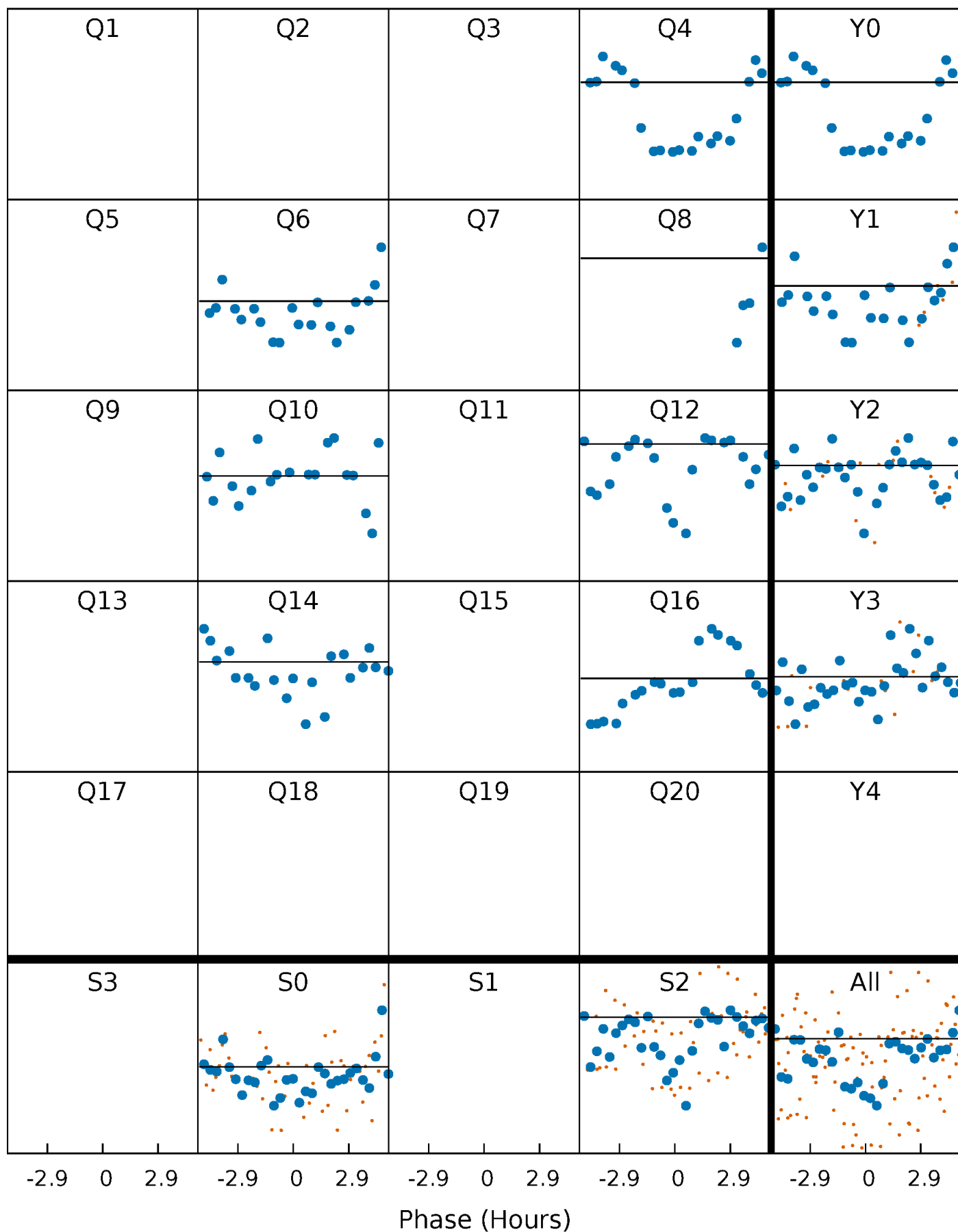
PDC Quarter-Phased Transit Curves

TCE 005217781-08 P=177.387183 Days $T_0=259.469358$ (BKJD)



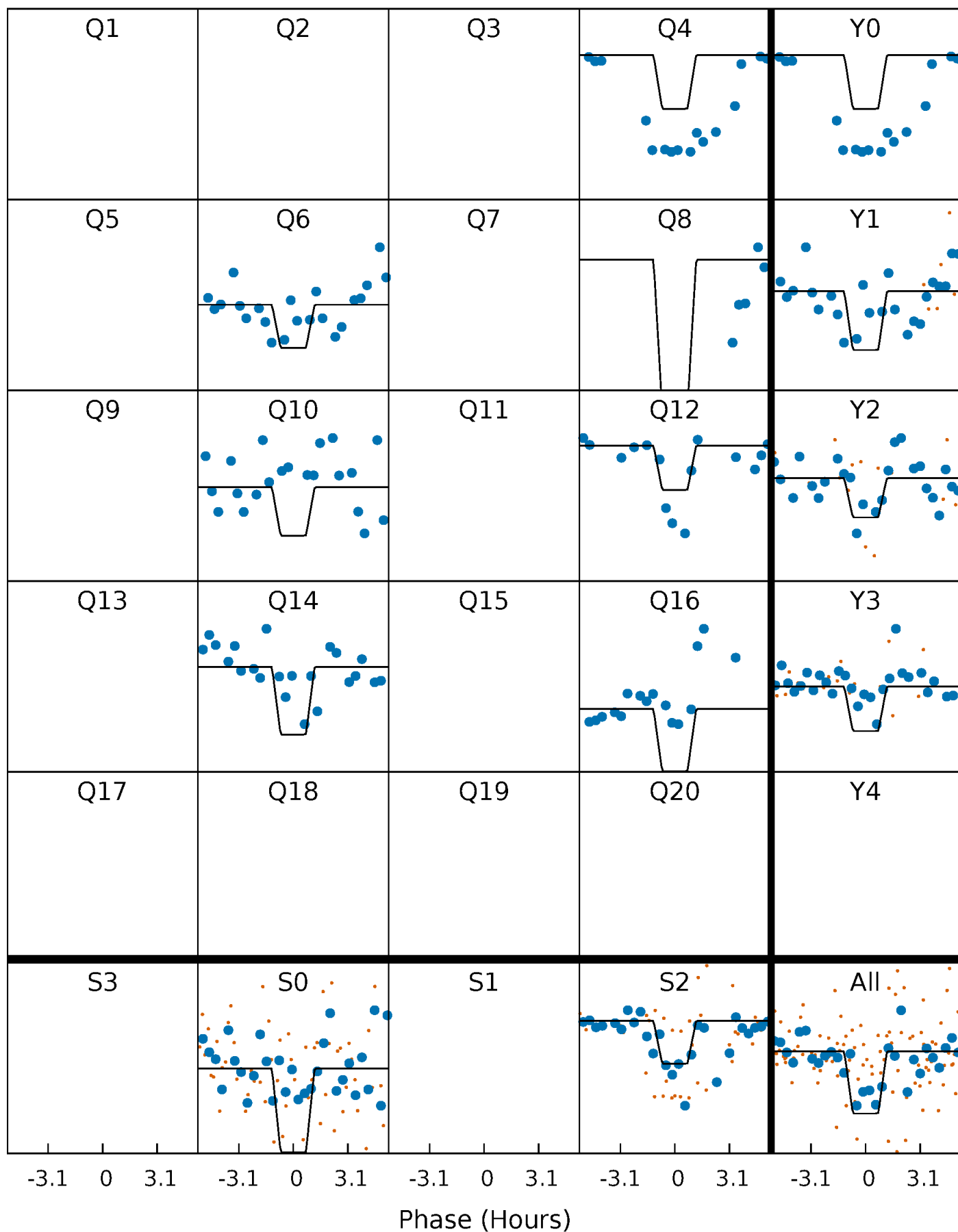
DV Quarter-Phased Transit Curves

TCE 005217781-08 P=177.387183 Days $T_0=259.469358$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

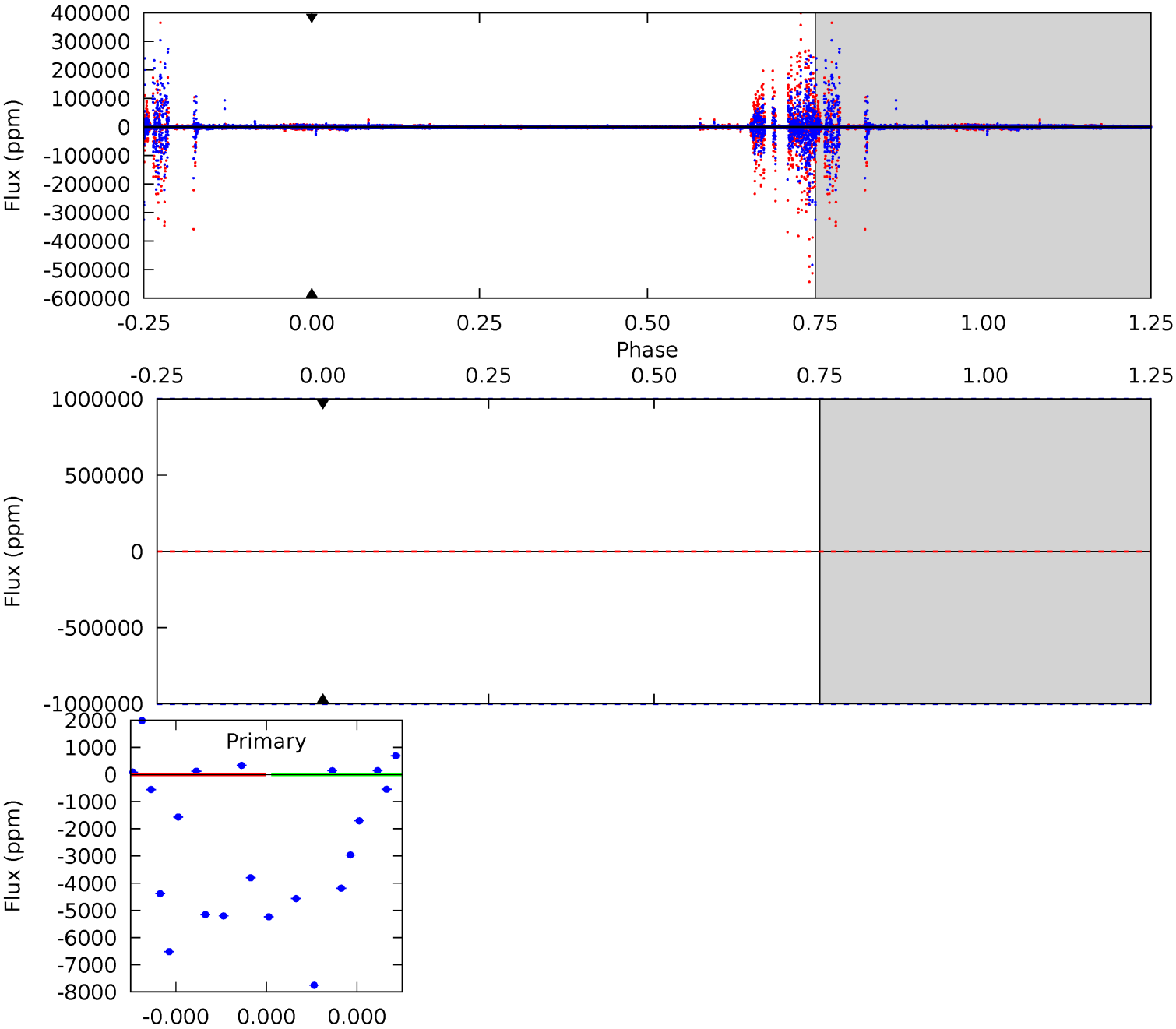
TCE 005217781-08 P=177.387183 Days $T_0=259.468546$ (BKJD)



DV Model-Shift Uniqueness Test

005217781-08, P = 177.387183 Days, E = 82.082175 Days

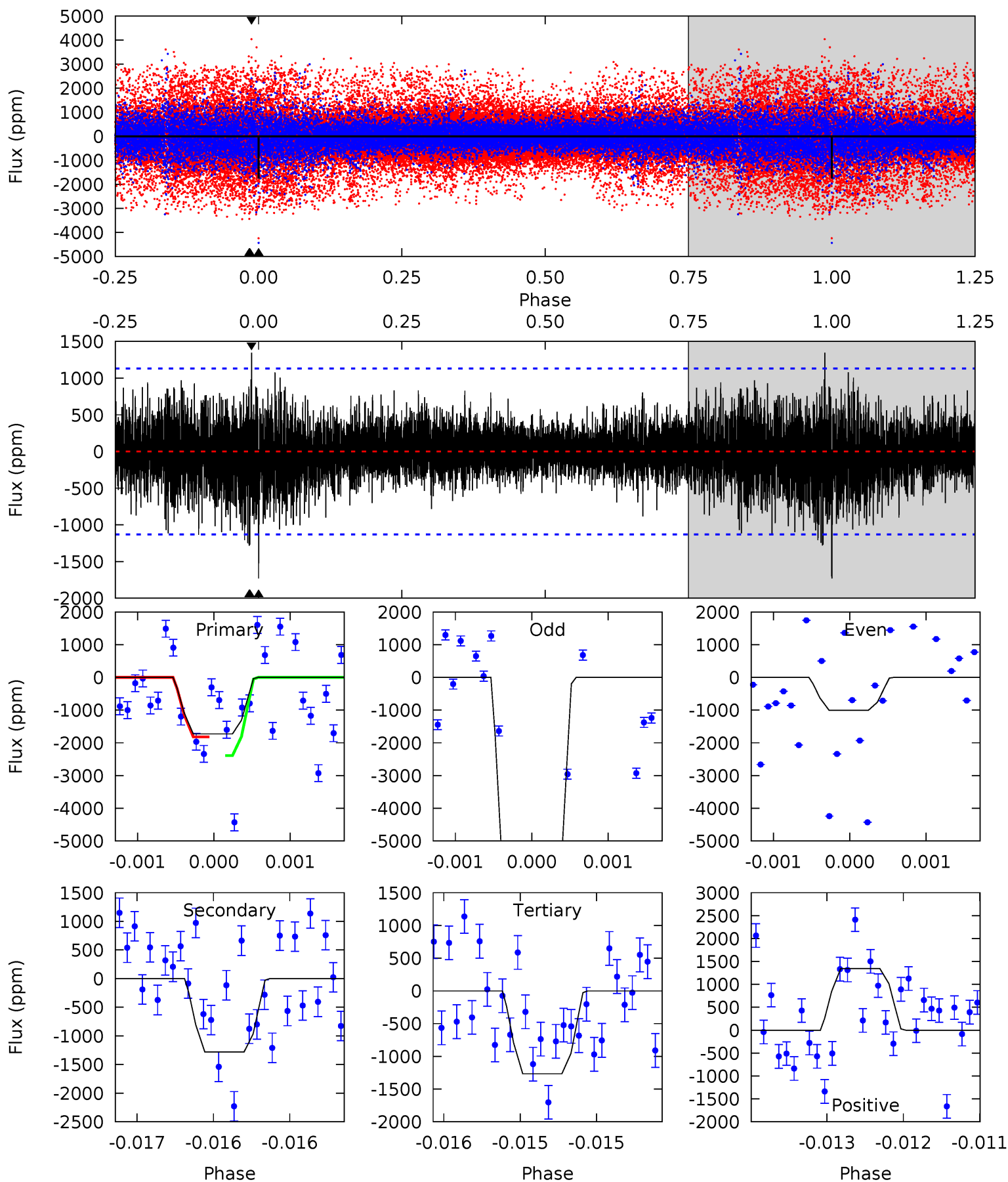
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005217781-08, P = 177.387183 Days, E = 82.081363 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.50	6.31	6.23	6.61	5.56	3.46	1.29	2.27	1.89	0.08	-0.30	21.4	1.58	0.44	0



Stellar Parameters For KIC 005217781

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5735^{+155}_{-155}	$4.465^{+0.112}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.876^{+0.212}_{-0.124}$	$0.816^{+0.114}_{-0.061}$	$1.710^{+0.822}_{-0.758}$
	+3%/-3%	+3%/-4%	+71%/-71%	+24%/-14%	+14%/-7%	+48%/-44%
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 005217781-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$8.64^{+8.49}_{-5.88}$	439^{+26}_{-24}	-4971^{+21698}_{-13243}	$-8191.087^{+450369.512}_{-447942.323}$
Alt.	-1282 ± 203	$10.12^{+9.07}_{-6.97}$	437^{+27}_{-22}	3780^{+2193}_{-706}	2317^{+22796}_{-1671}

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 $A_{obs} \gg 1.0$

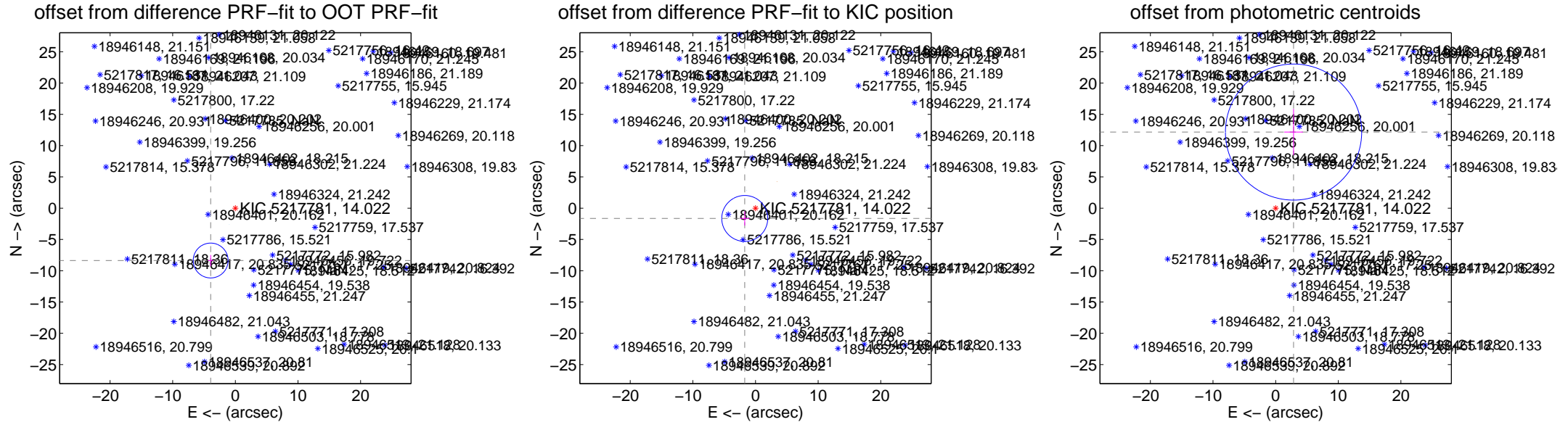
DV Centroid Data

Supplemental centroid analysis for 005217781-08. Kepler magnitude: 14.02. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

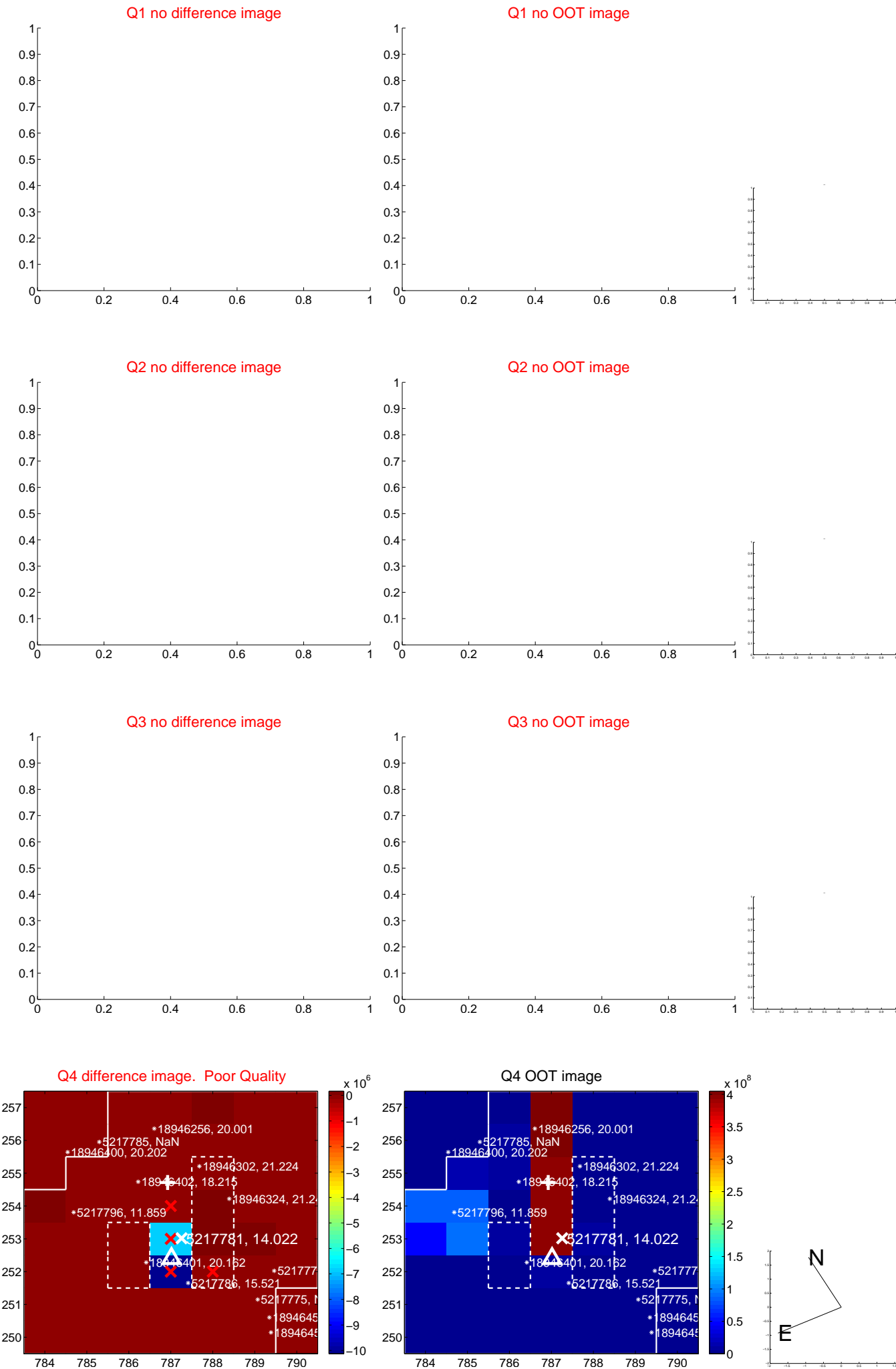
The OOT PRF centroid is offset from the target star catalog position by about 7.57 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.249 \pm 0.929	9.96	3.940 \pm 0.421	-8.368 \pm 0.887
PRF-fit source offset from KIC position	2.375 \pm 1.224	1.94	1.716 \pm 0.732	-1.641 \pm 1.130
photometric centroid source offset	12.50 \pm 3.63	3.45	-2.86 \pm 1.49	12.17 \pm 3.71



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.

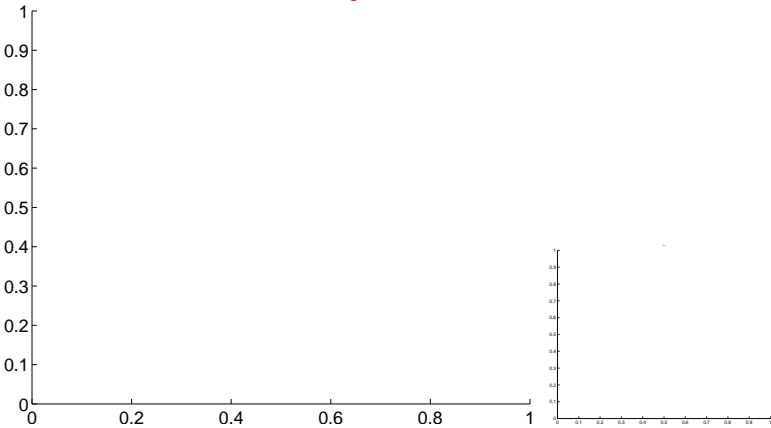


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

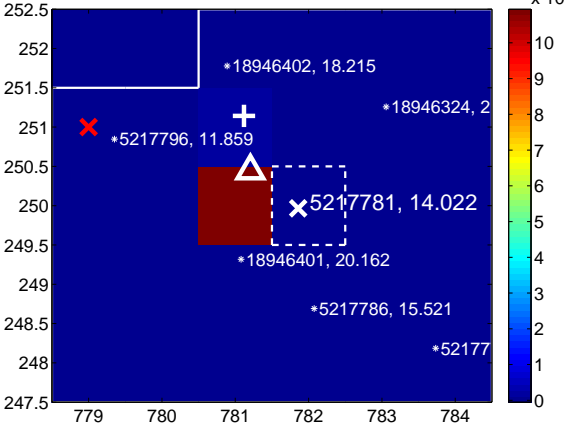
Q5 no difference image



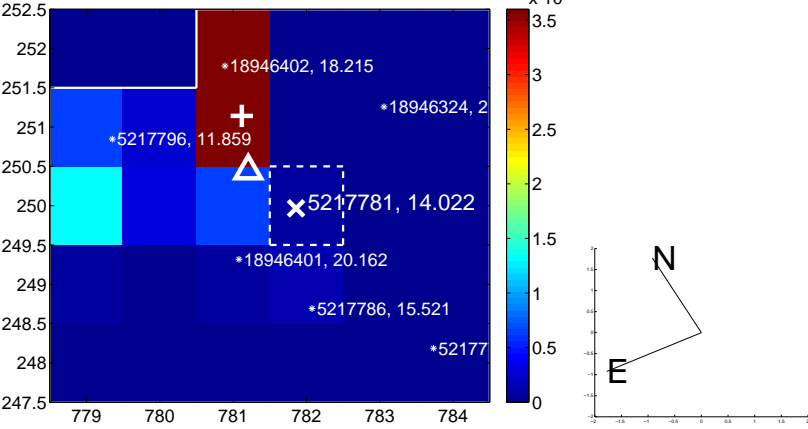
Q5 no OOT image



Q6 difference image



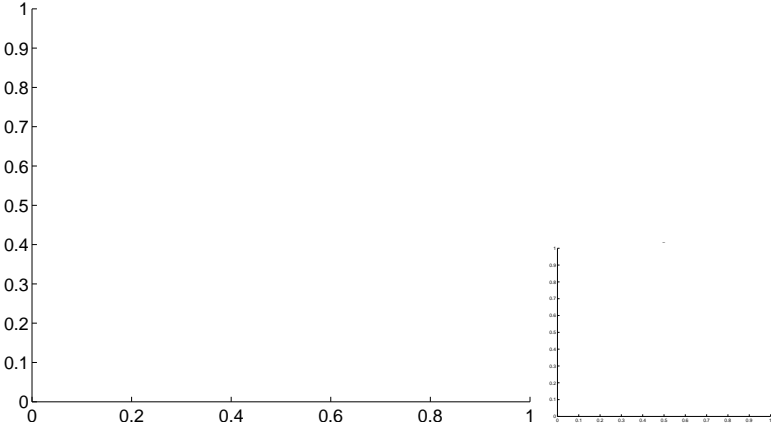
Q6 OOT image



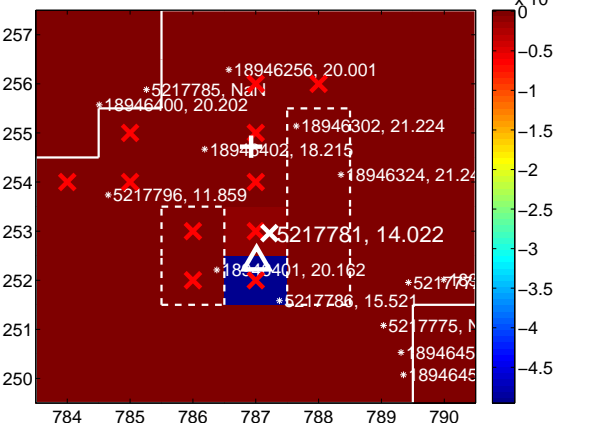
Q7 no difference image



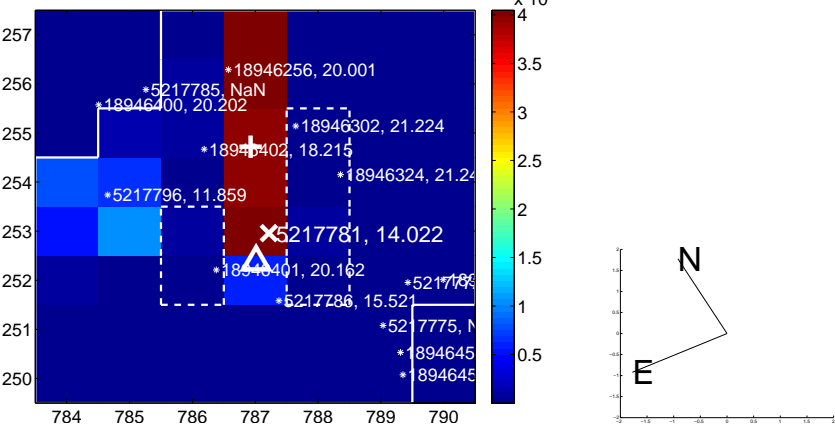
Q7 no OOT image



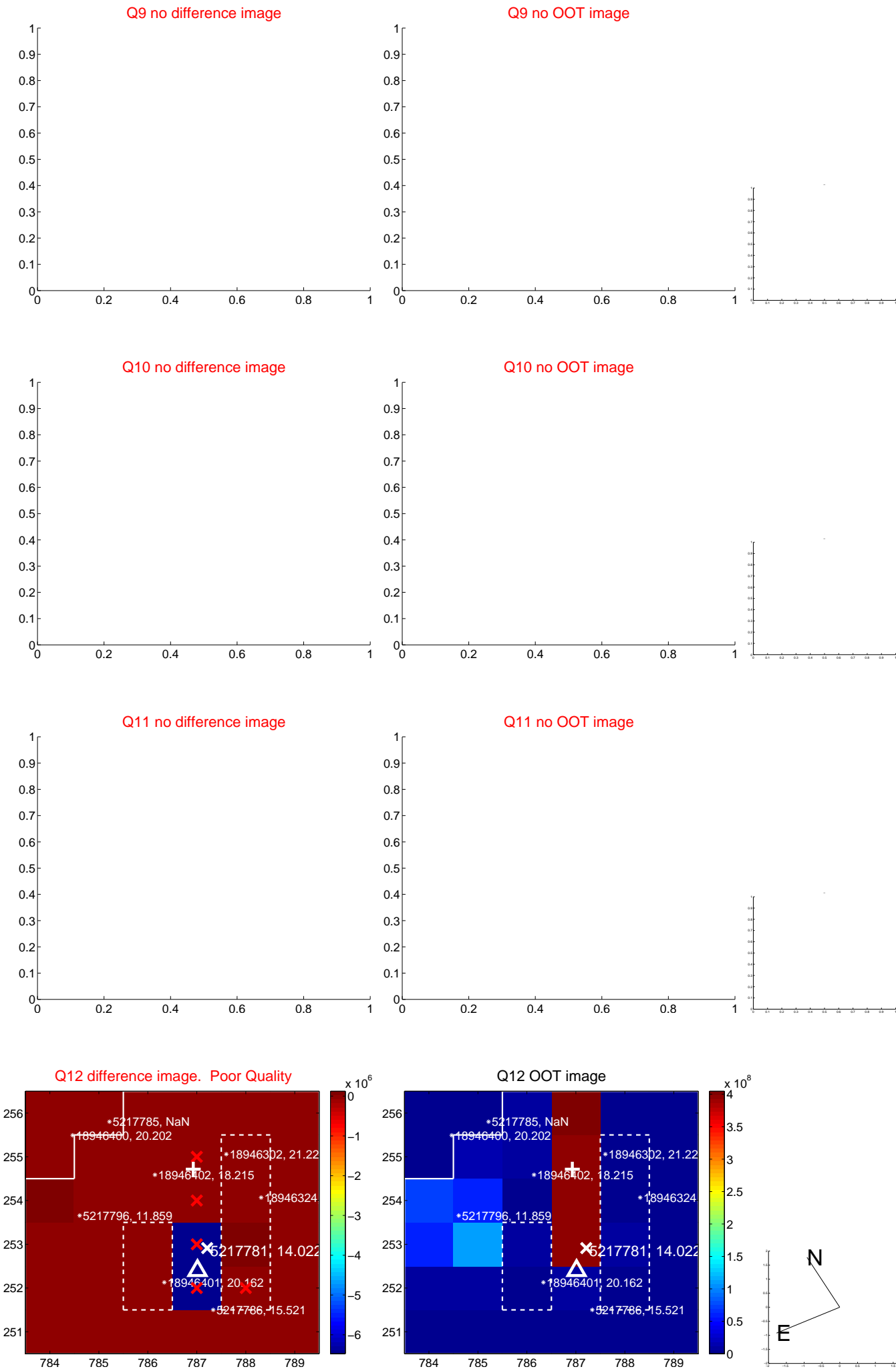
Q8 difference image. Poor Quality



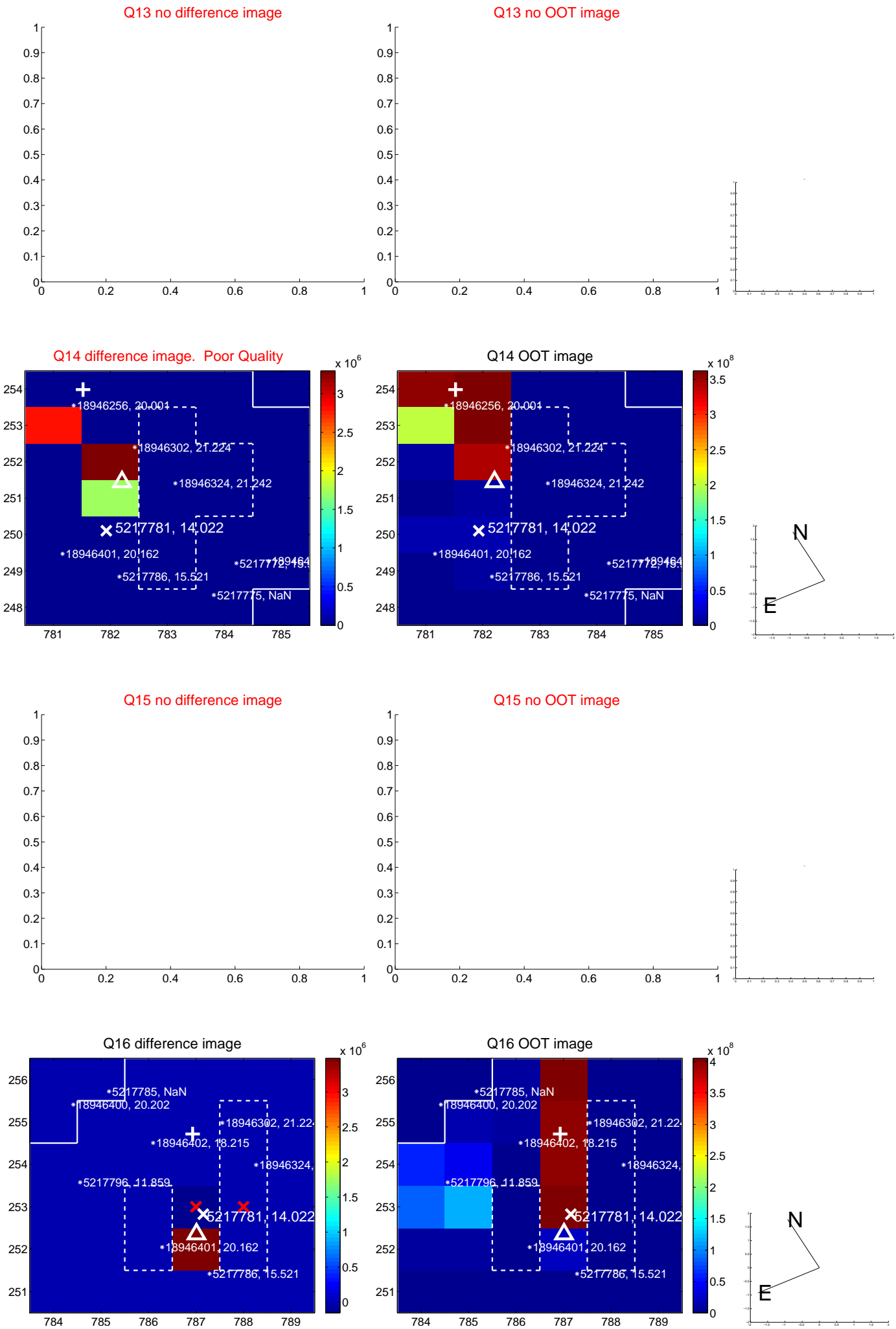
Q8 OOT image



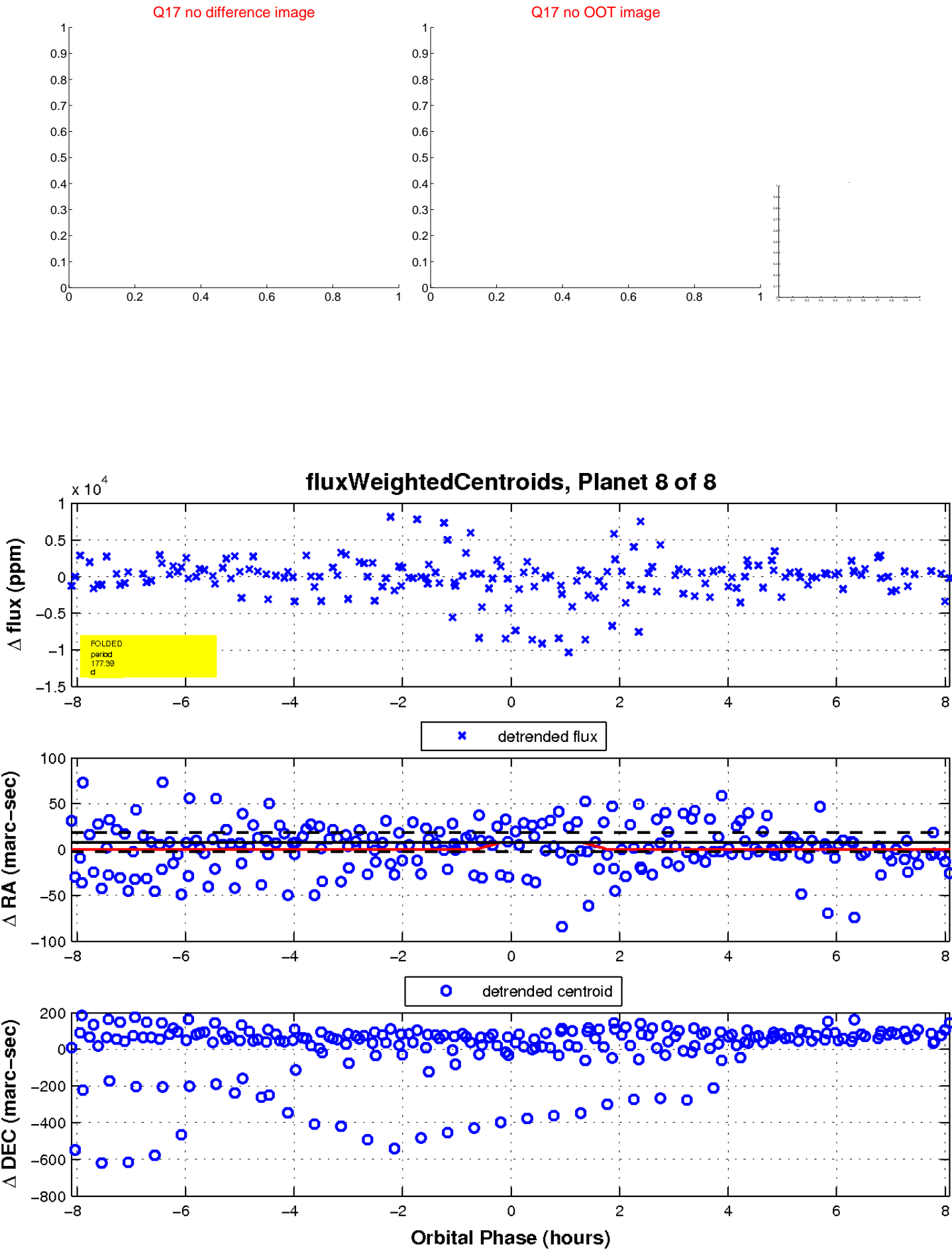
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

