

KIC 005552801

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})
005552801-01	OBS	No	355.548730	472.405896	114.3	2.747	11.4	1.9	0.84	5403	0.91	0.67
005552801-02	OBS	No	380.211992	448.526081	332.7	6.058	9.0	5.1	0.84	5403	1.59	0.61
005552801-03	OBS	No	410.829204	357.145508	161.1	4.099	11.3	2.6	0.84	5403	1.08	0.55
005552801-04	OBS	No	467.308275	301.051616	637.0	3.853	11.6	7.3	0.84	5403	2.81	0.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005552801-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
005552801-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

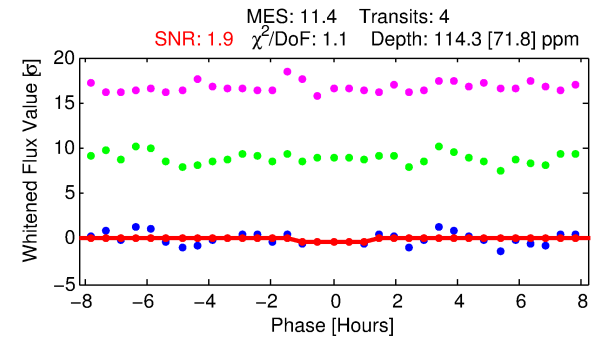
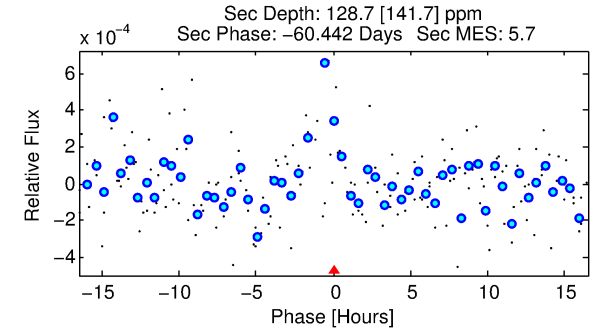
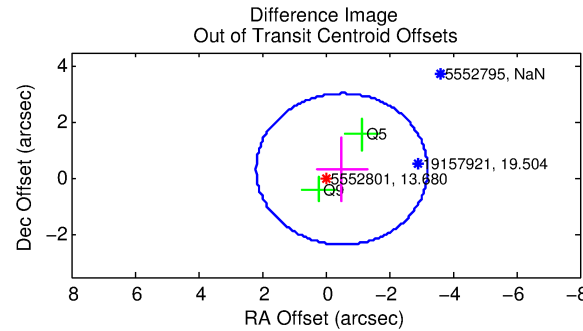
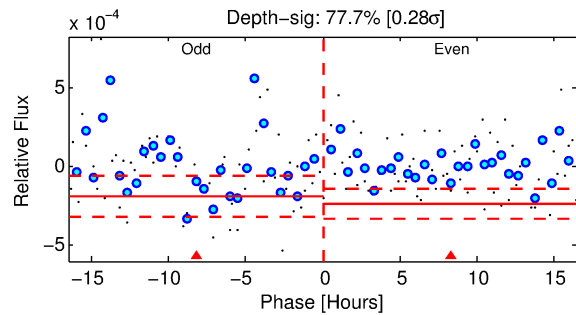
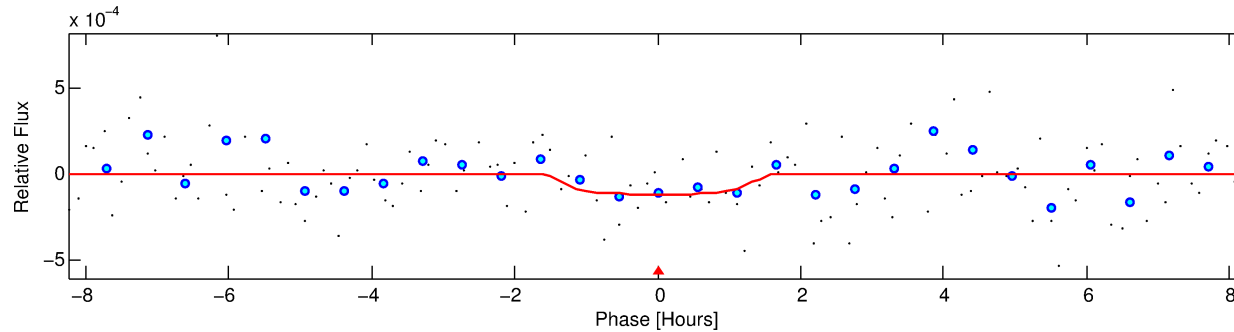
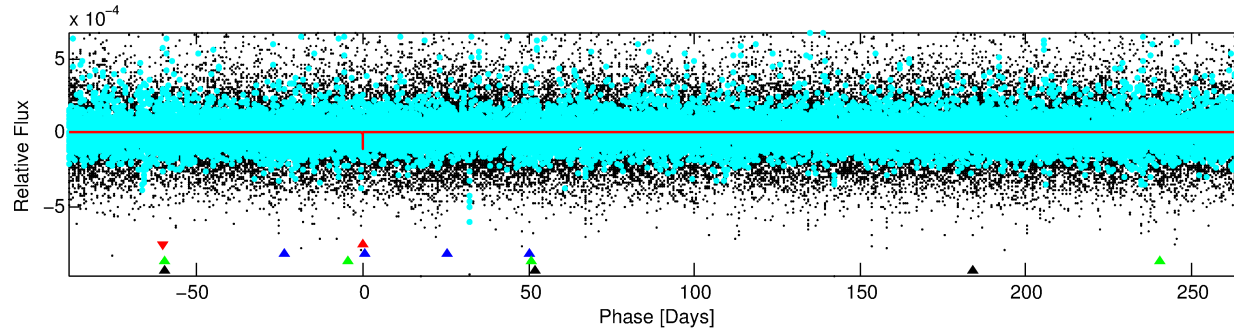
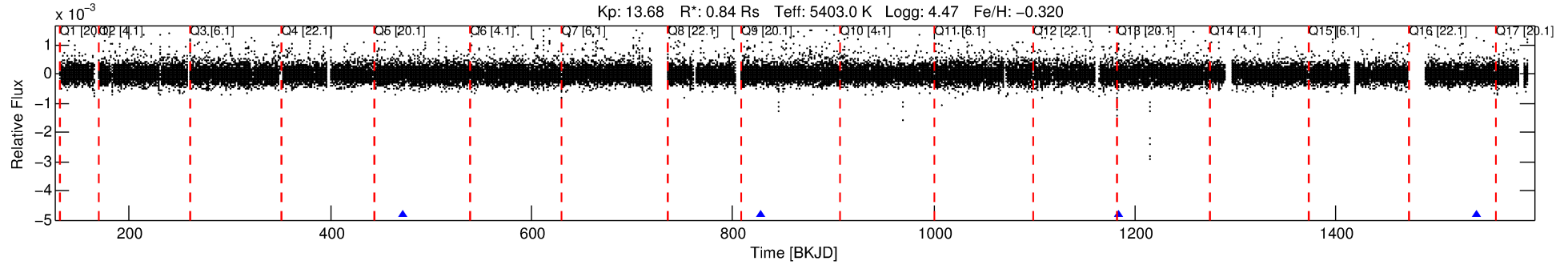
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005552801-01

No Significant Match Found

DV One-Page Summary

KIC: 5552801 Candidate: 1 of 4 Period: 355.549 d



DV Fit Results:

Period = 355.54873 [0.01629] d
Epoch = 472.4059 [0.0316] BKJD
Rp/R* = 0.0100 [0.0479]
a/R* = 862.07 [16573.60]
b = 0.51 [28.36]
Seff = 0.67 [0.17]
Teq = 230 [15] K
Rp = 0.91 [4.37] Re
a = 0.8942 [0.1338] AU
Ag = 68021.23 [656304.52] [0.10 σ]
Teffp = 5755 [13878] K [0.40 σ]

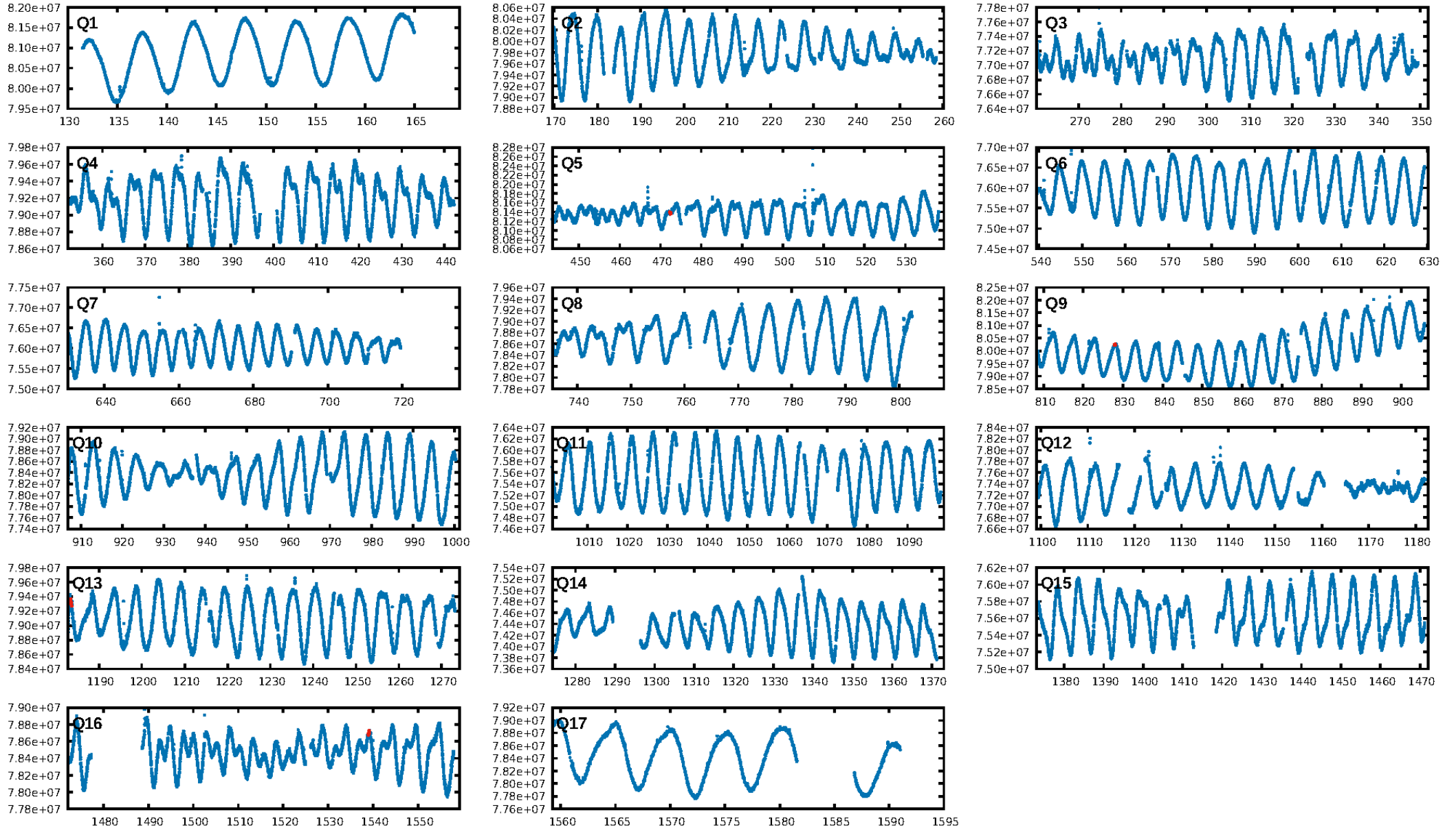
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [88.99 σ]
ModelChiSquare2-sig: 42.1%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: 1.55e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -6.267
Centroid-sig: 34.9%
Centroid-so: 4.137 arcsec [0.88 σ]
OotOffset-rm: 0.618 arcsec [0.69 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.709 arcsec [0.66 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

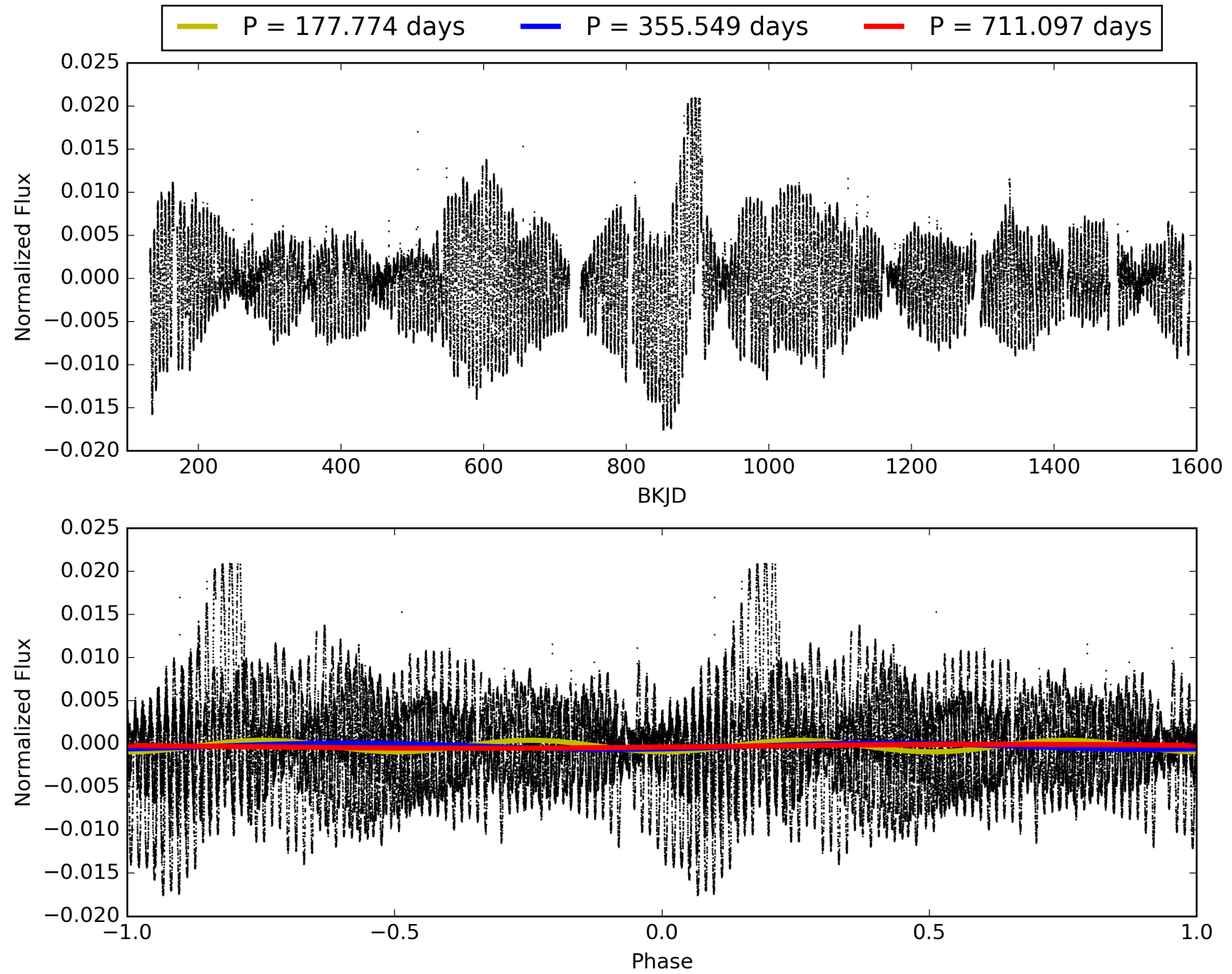
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005552801-01, PDC Light Curves

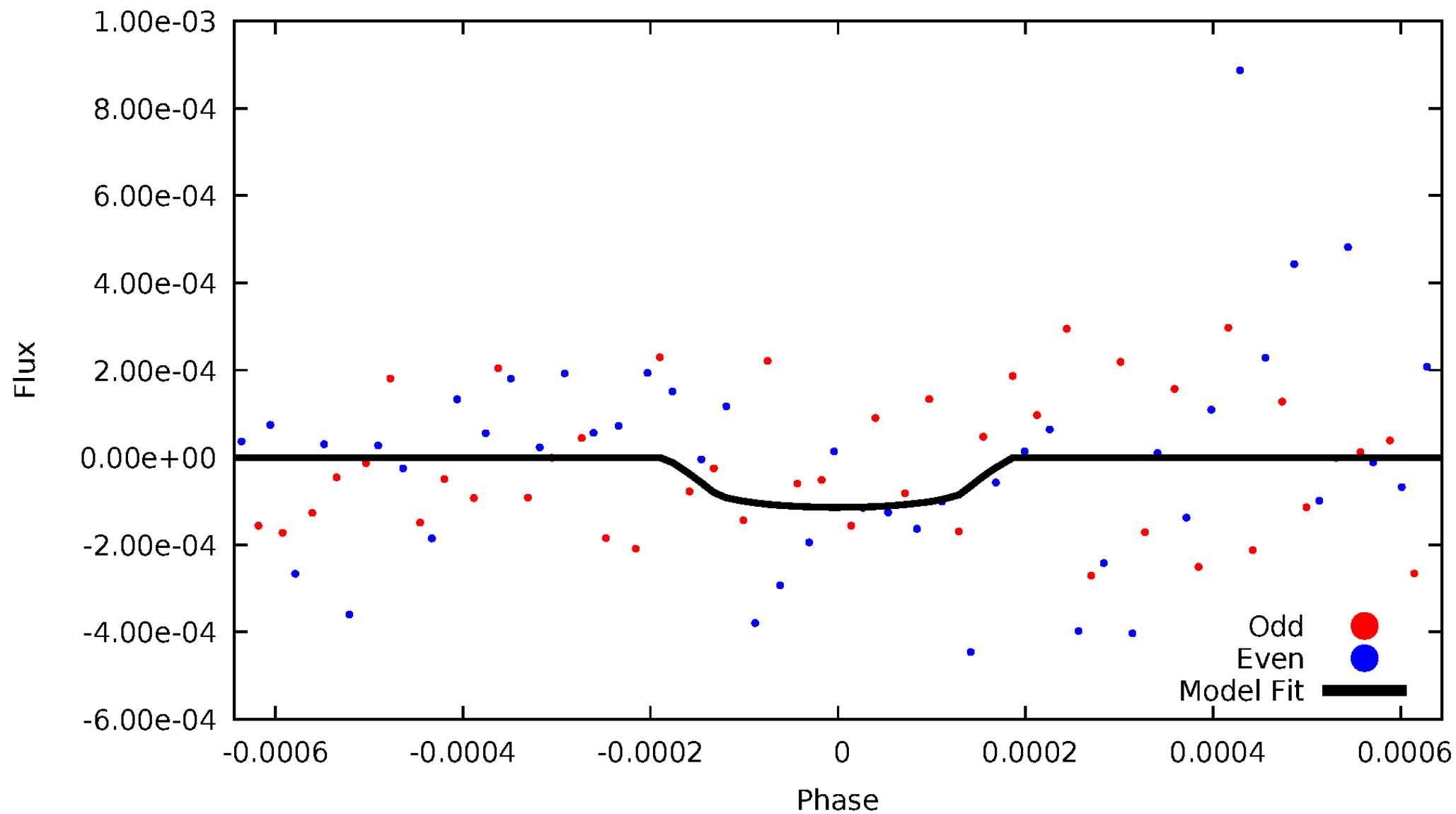


TCE 005552801-01



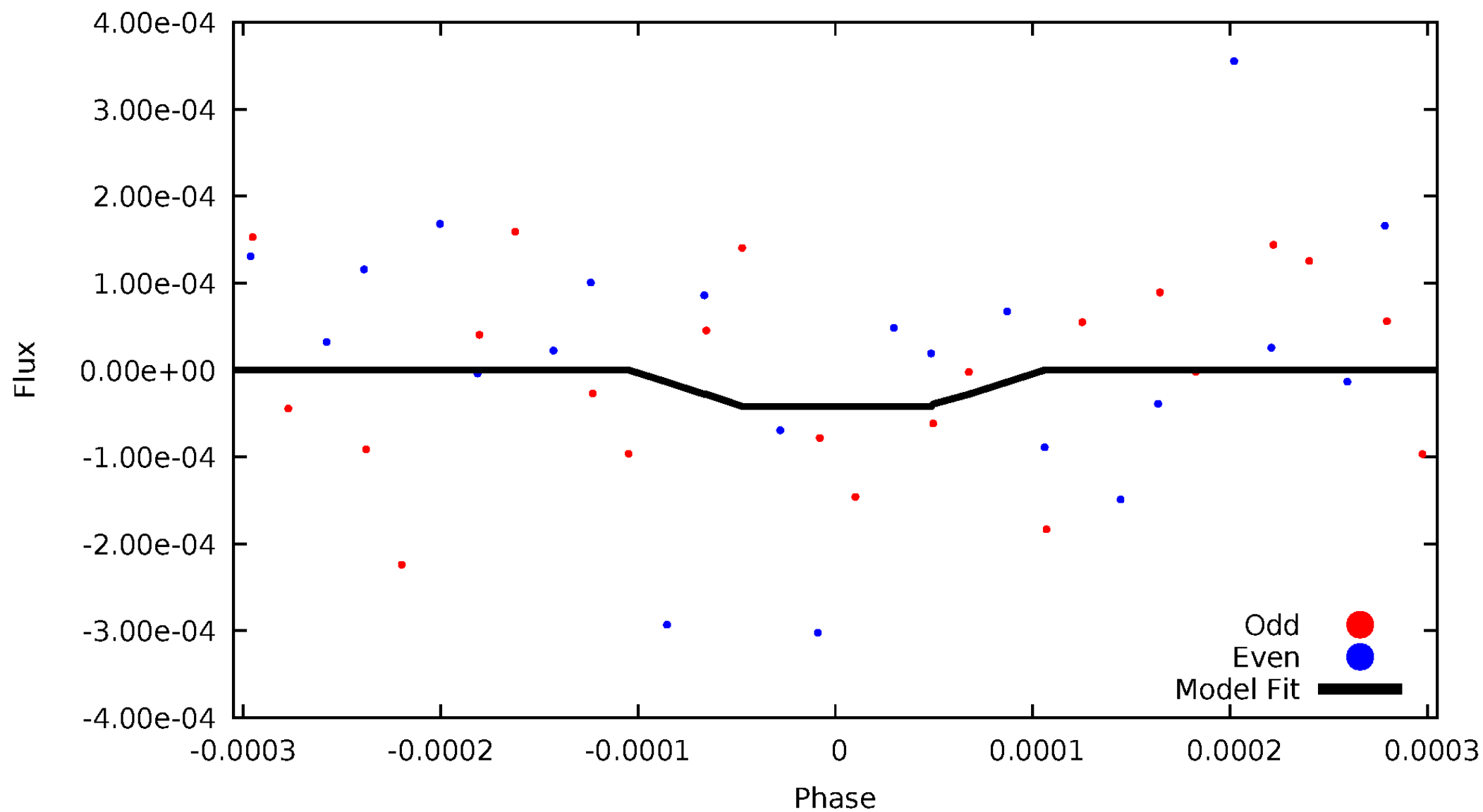
DV Odd/Even

TCE 005552801-01

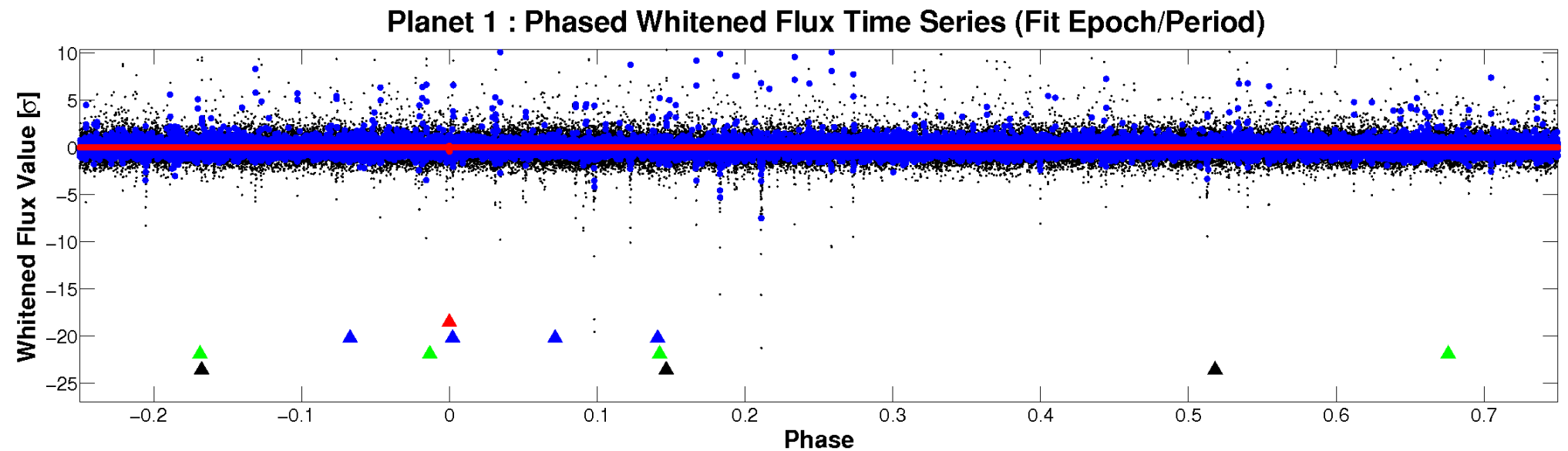
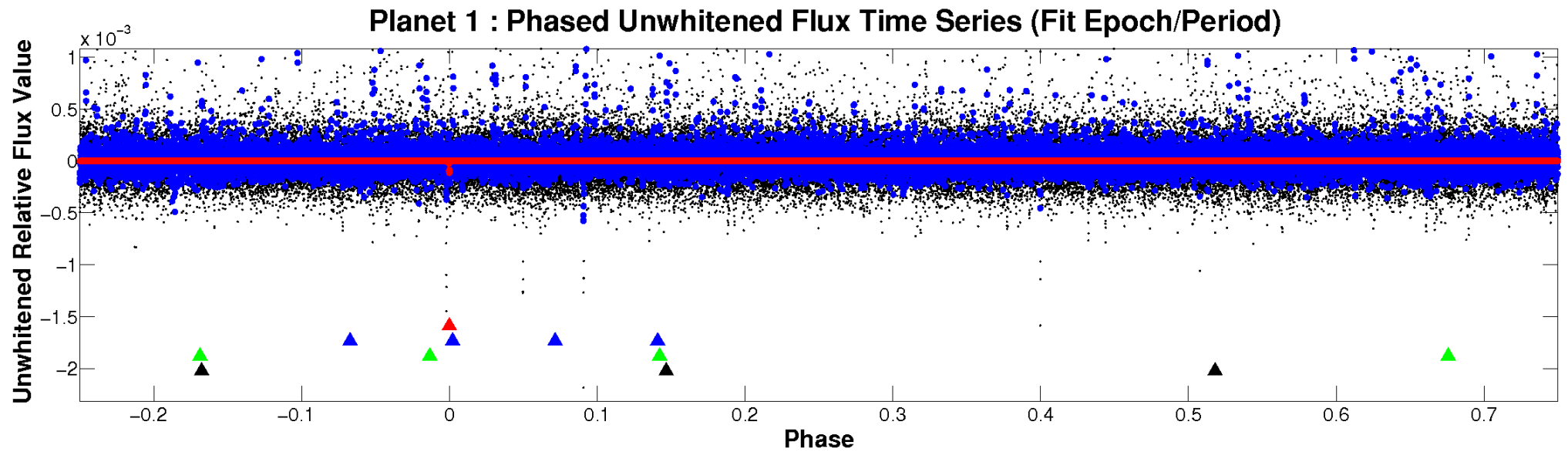


ALT Odd/Even

TCE 005552801-01

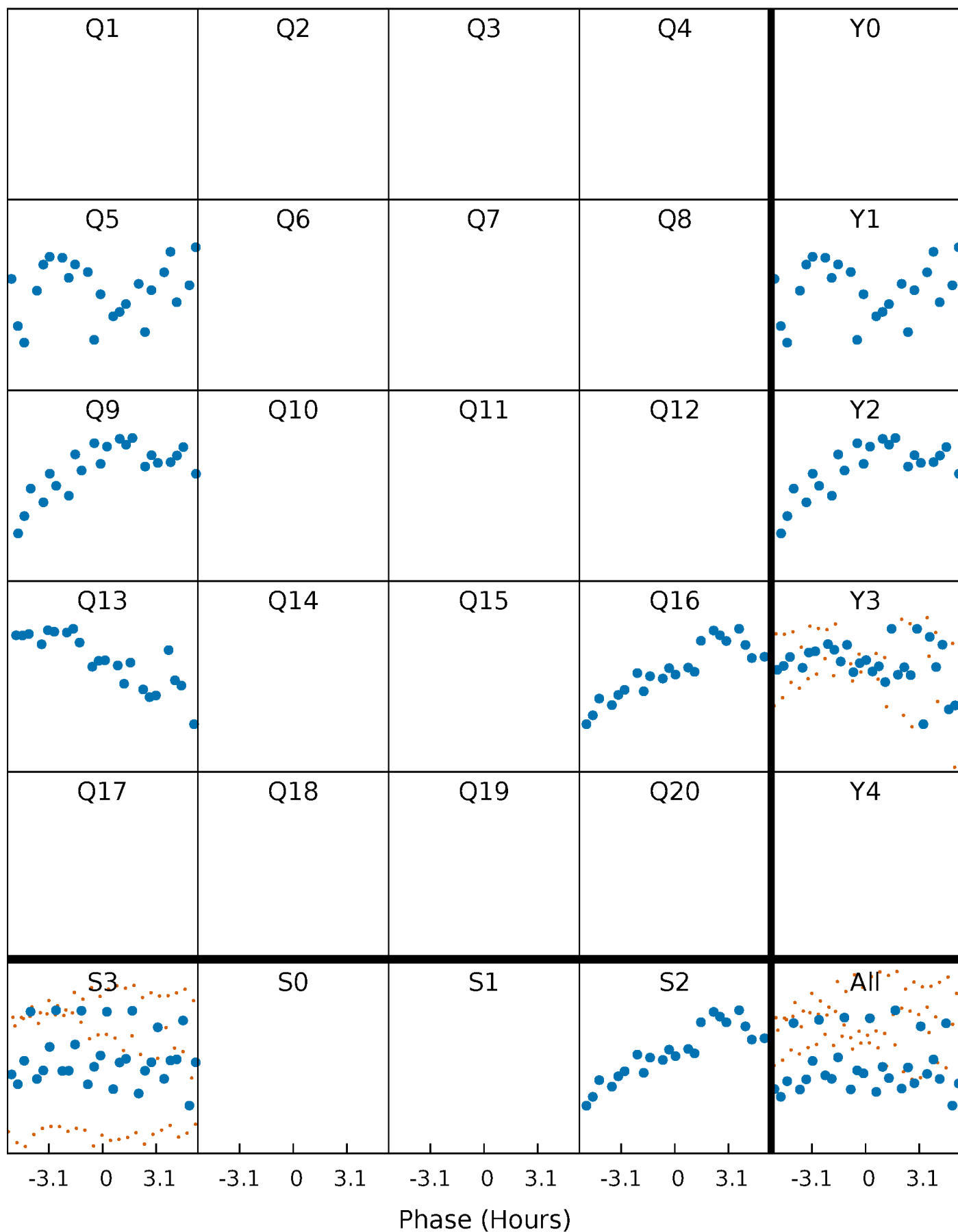


Non-Whitened Vs. Whitened Light Curve



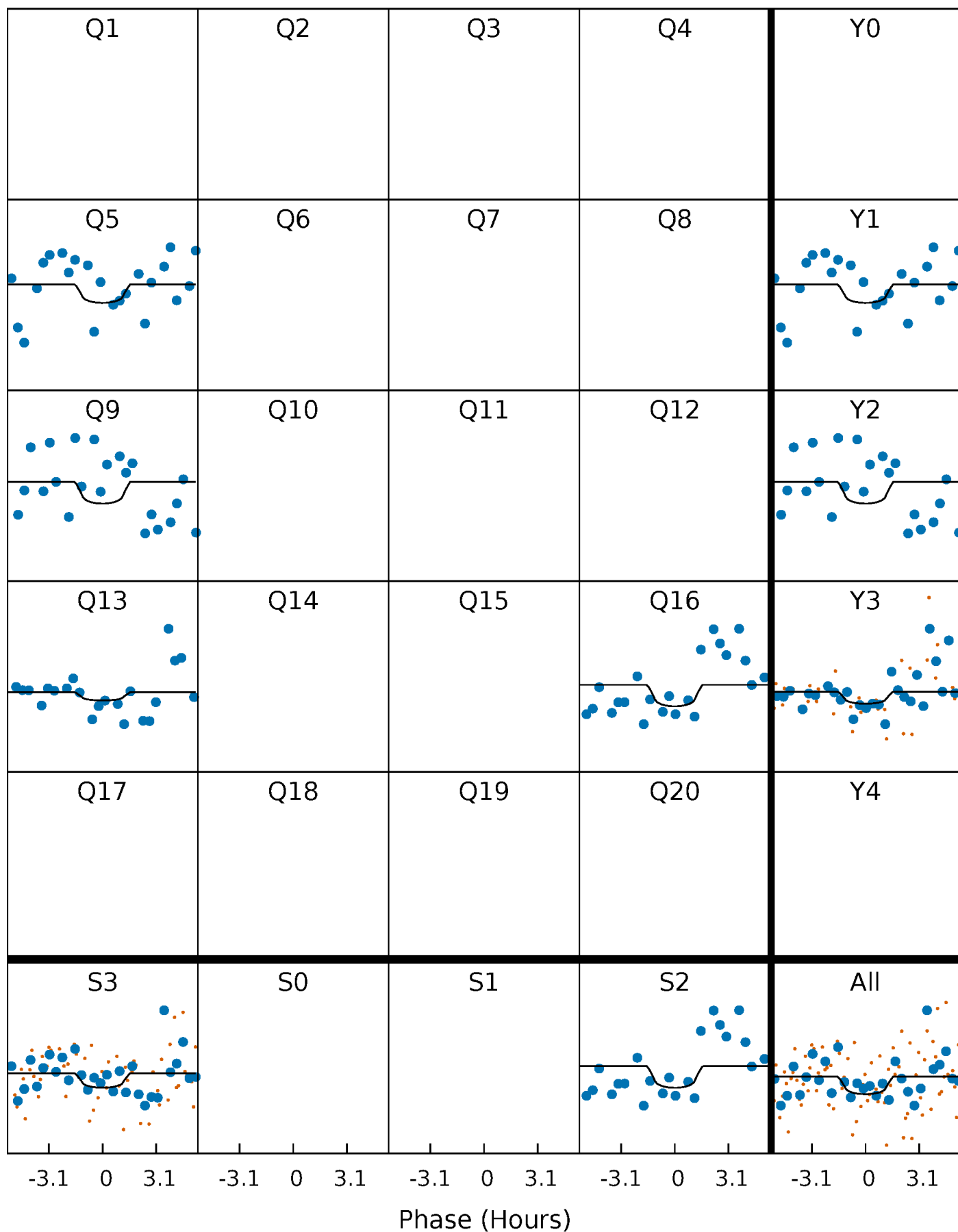
PDC Quarter-Phased Transit Curves

TCE 005552801-01 P=355.548730 Days $T_0=472.405896$ (BKJD)



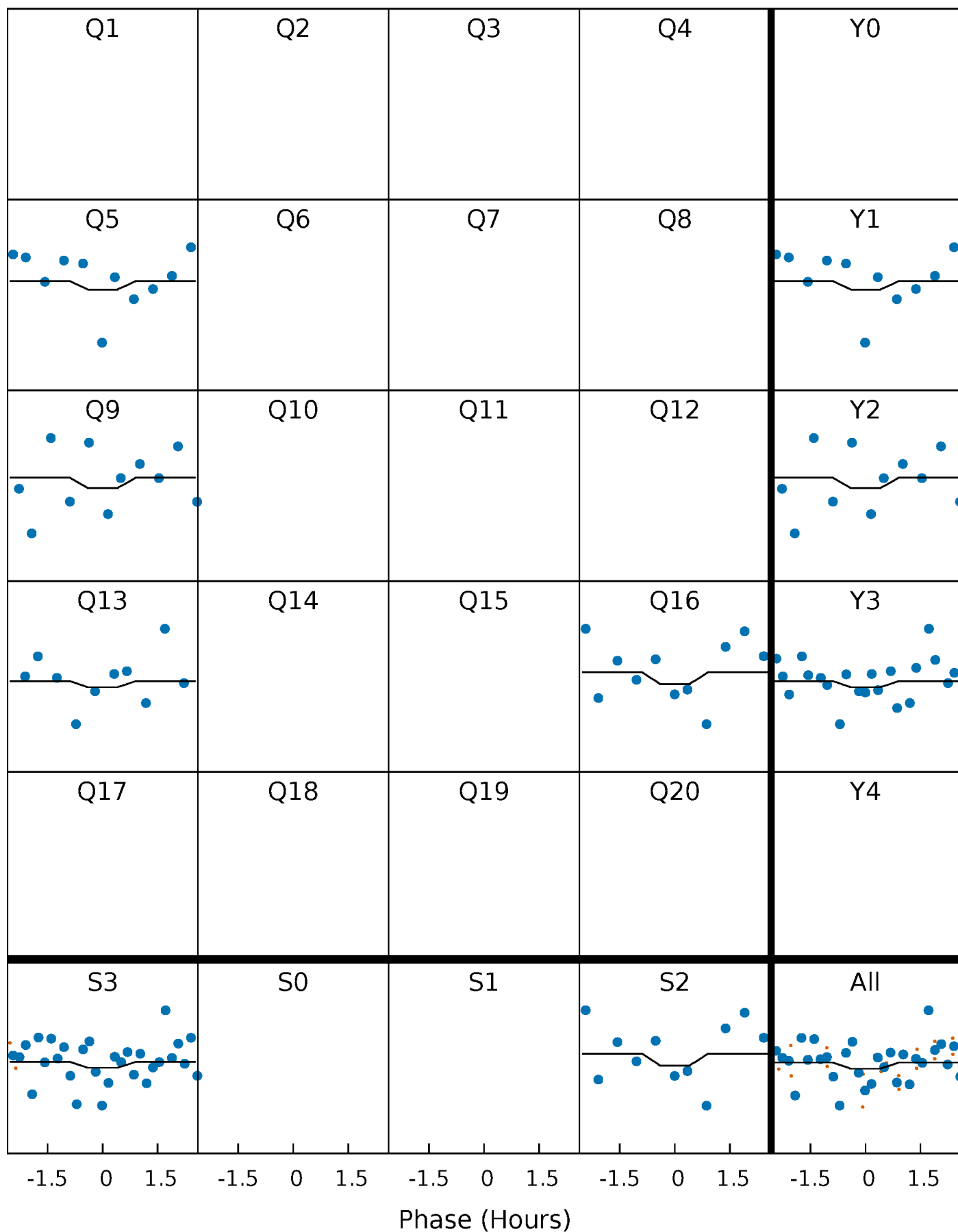
DV Quarter-Phased Transit Curves

TCE 005552801-01 $P=355.548730$ Days $T_0=472.405896$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

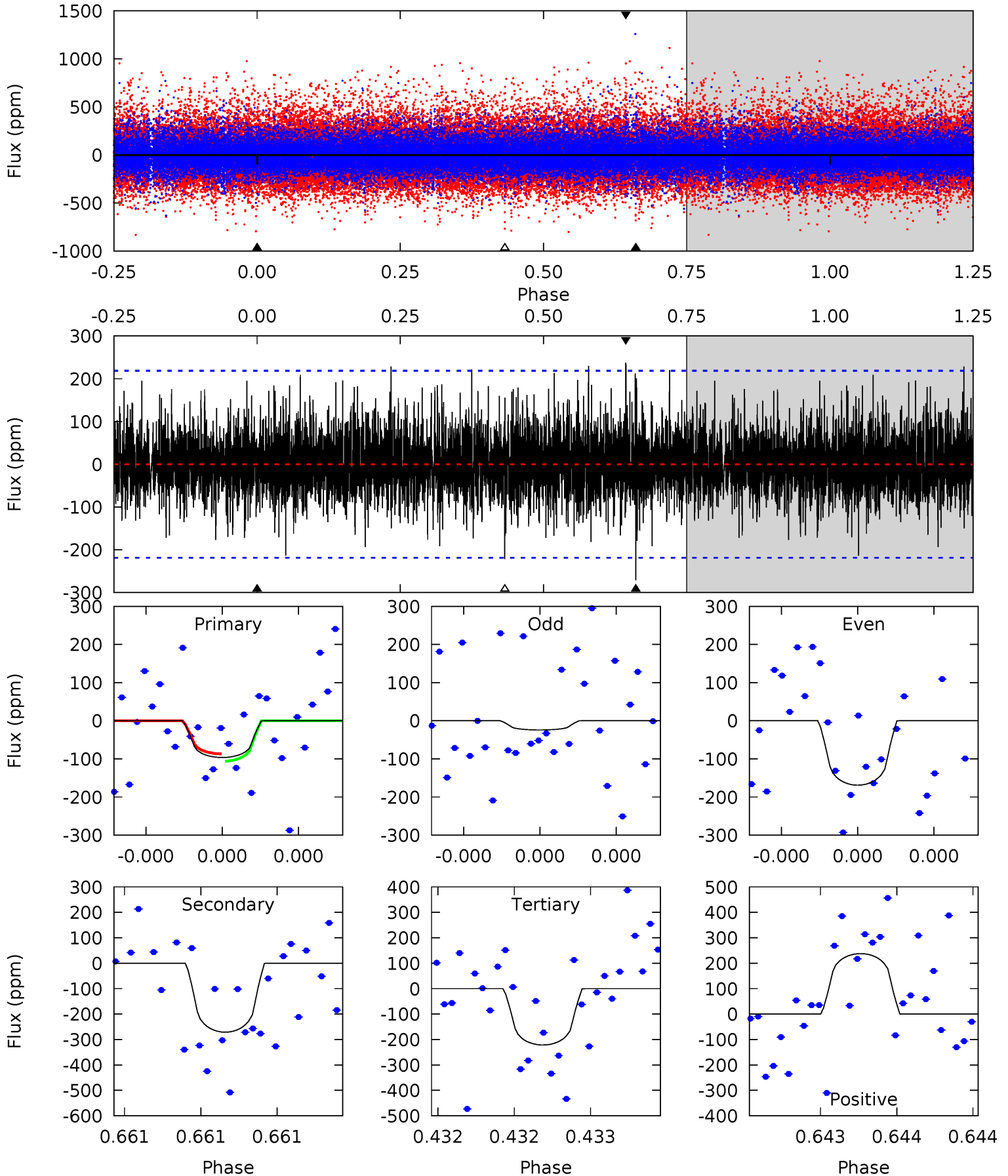
TCE 005552801-01 P=355.557566 Days $T_0=472.387168$ (BKJD)



DV Model-Shift Uniqueness Test

005552801-01, P = 355.548730 Days, E = 116.857166 Days

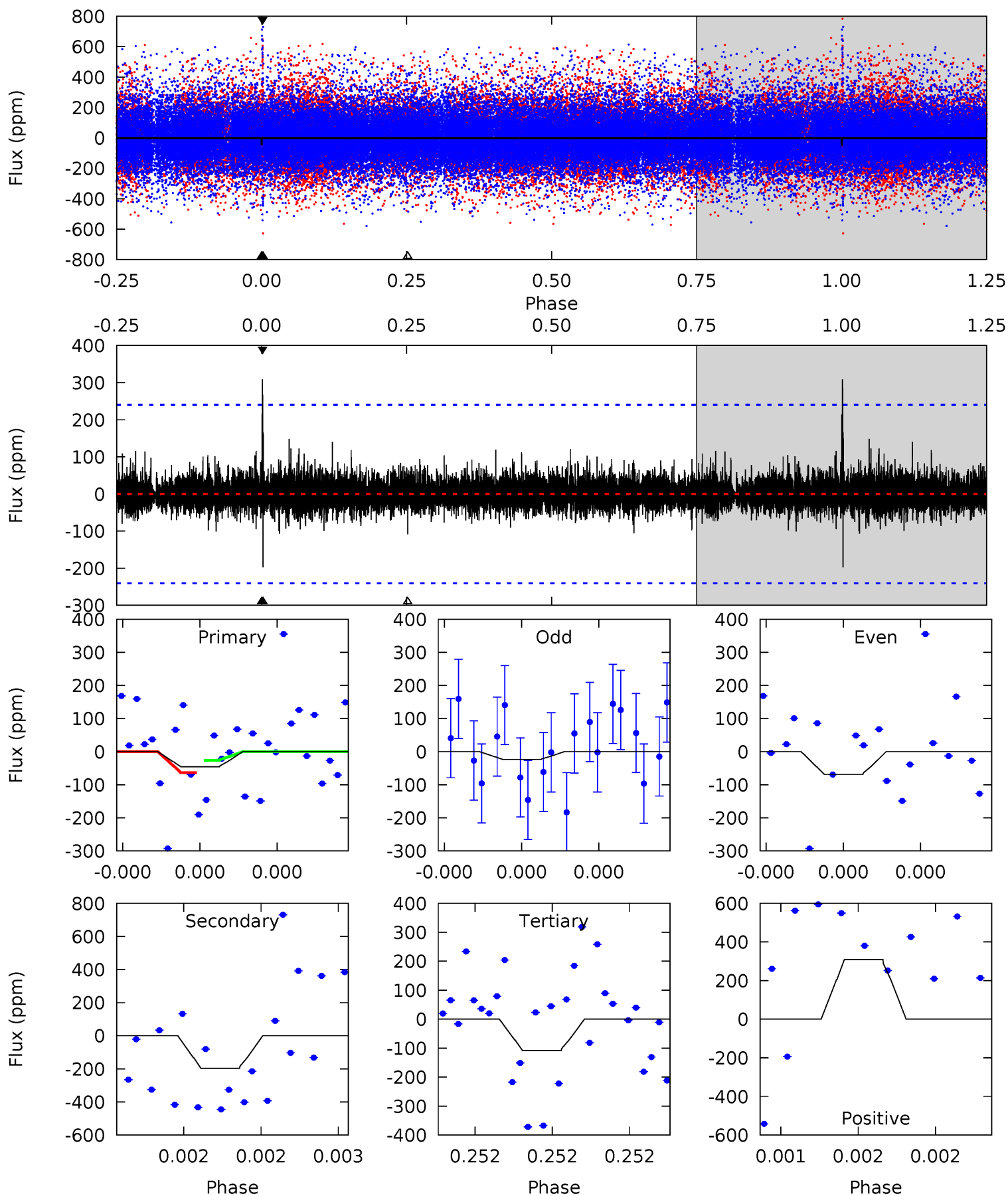
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.48	6.98	5.70	6.12	5.63	3.57	1.44	-3.22	-3.64	1.28	0.86	1.74	0.87	0.47	0.25



Alt Model-Shift Uniqueness Test

005552801-01, P = 355.557566 Days, E = 116.829602 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.10	4.70	2.59	7.36	5.74	3.73	0.63	-1.49	-6.26	2.11	-2.66	0.54	1.04	0.61	0.45



Stellar Parameters For KIC 005552801

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+160}_{-144}	$4.471^{+0.125}_{-0.125}$	$-0.320^{+0.350}_{-0.300}$	$0.836^{+0.144}_{-0.118}$	$0.755^{+0.118}_{-0.050}$	$1.820^{+1.023}_{-0.653}$
	+3%/-3%	+3%/-3%	+109%/-94%	+17%/-14%	+16%/-7%	+56%/-36%
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 005552801-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-271 ± 39	$3.33^{+3.14}_{-2.31}$	322^{+16}_{-16}	3925^{+2766}_{-725}	$10746^{+107335}_{-7916}$
Alt.	-197 ± 42	$3.16^{+3.33}_{-2.25}$	322^{+18}_{-17}	3805^{+2518}_{-773}	8702^{+96631}_{-6757}

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

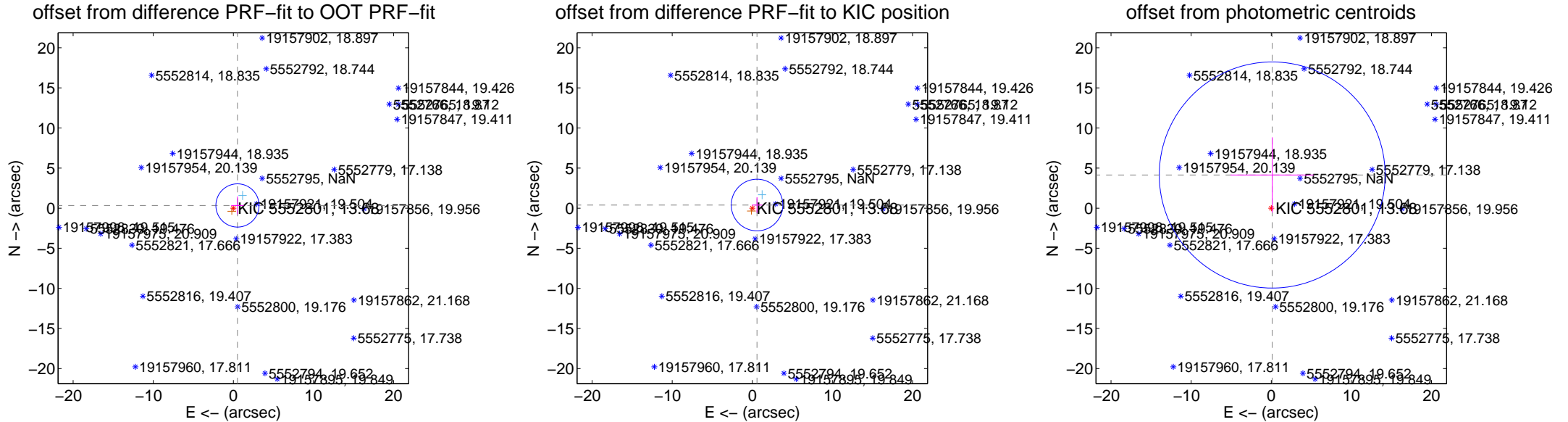
DV Centroid Data

Supplemental centroid analysis for 005552801-01. Kepler magnitude: 13.68. Transit SNR 1.85

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.618 ± 0.898	0.69	-0.516 ± 0.786	0.340 ± 1.115
PRF-fit source offset from KIC position	0.709 ± 1.073	0.66	-0.590 ± 0.643	0.393 ± 0.974
photometric centroid source offset	4.14 ± 4.70	0.88	-0.12 ± 5.18	4.13 ± 4.70

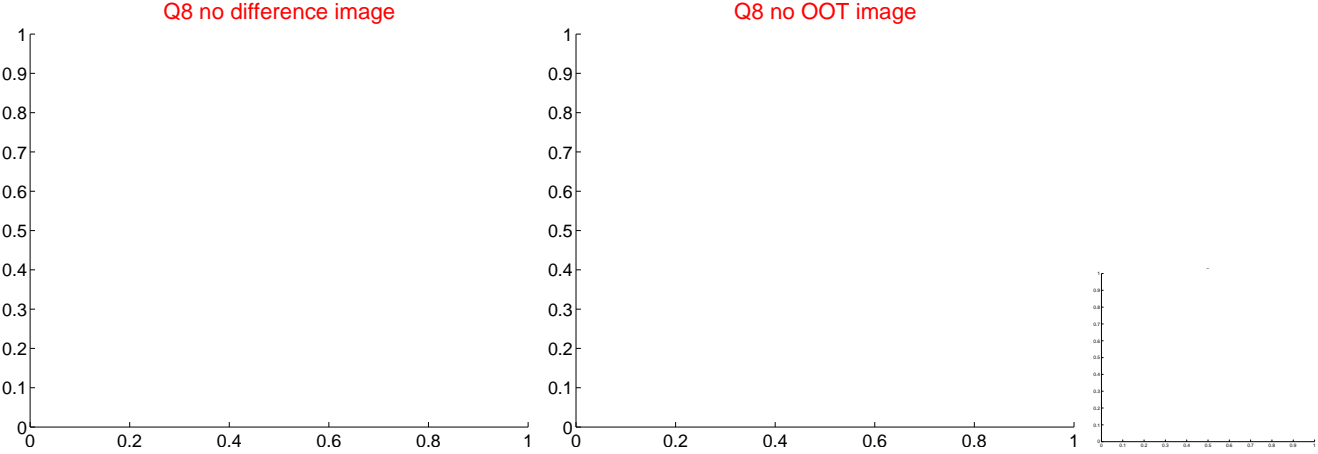
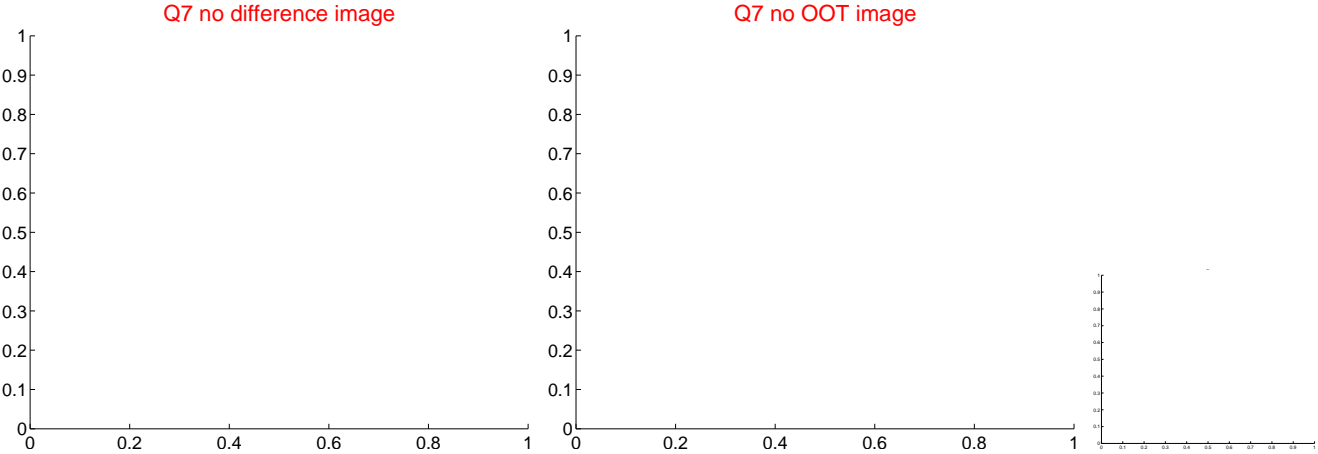
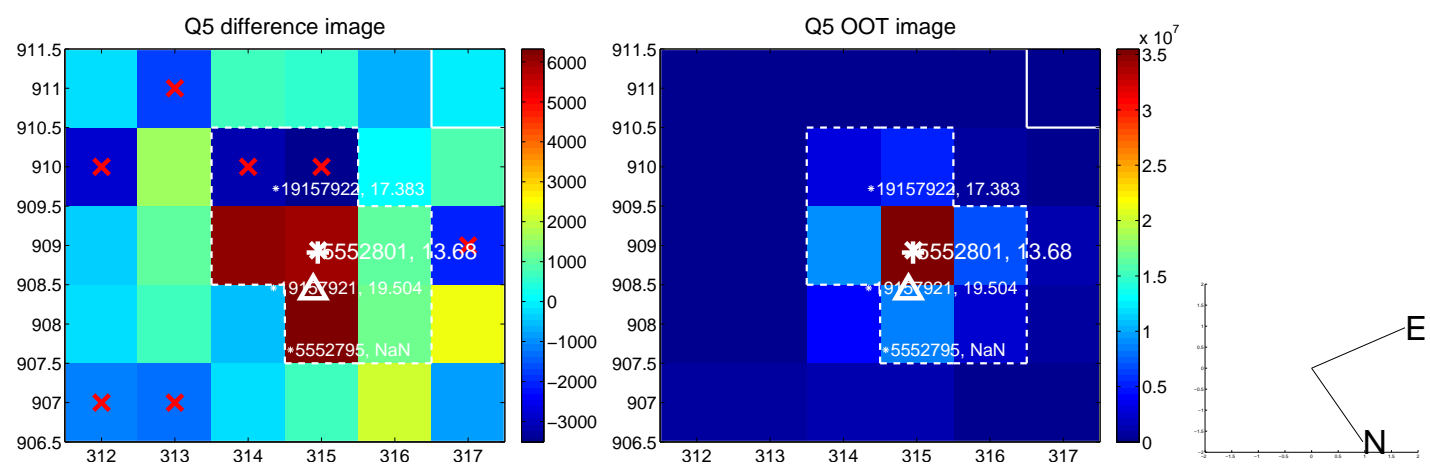


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

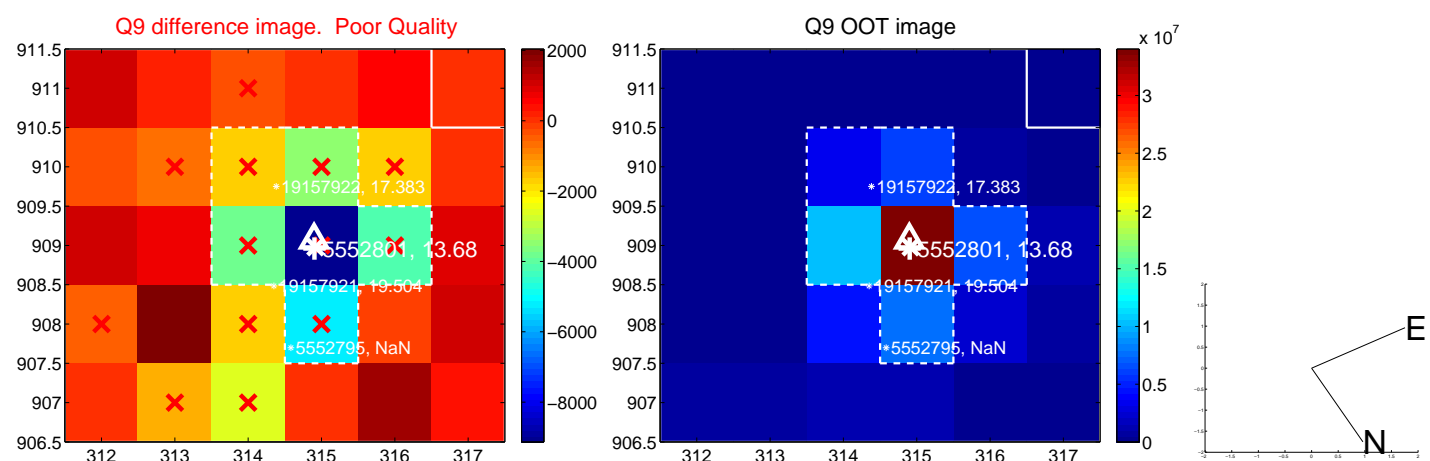
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



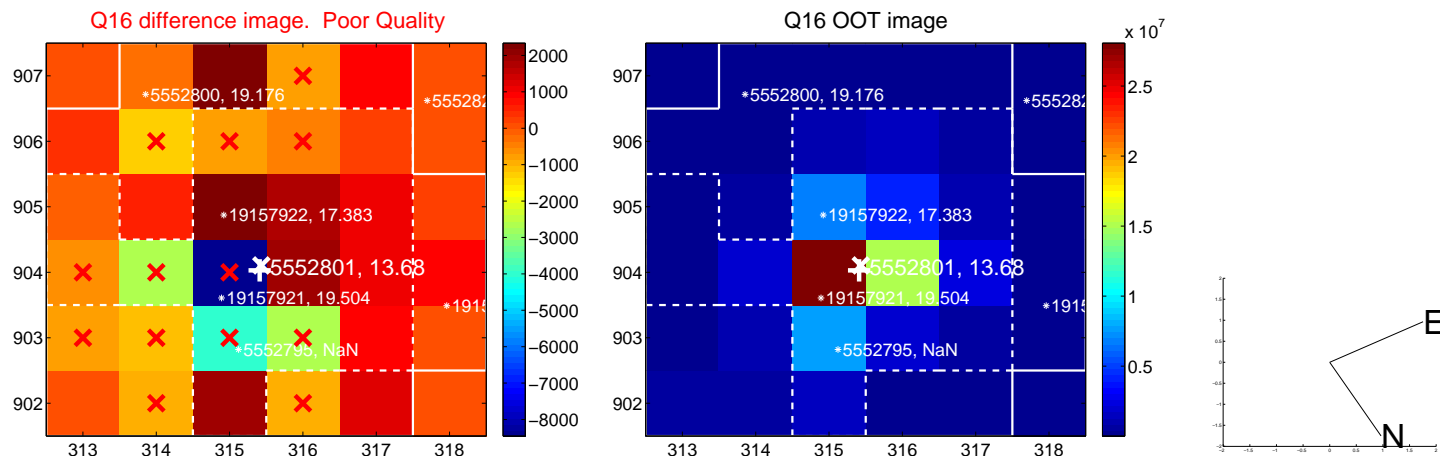
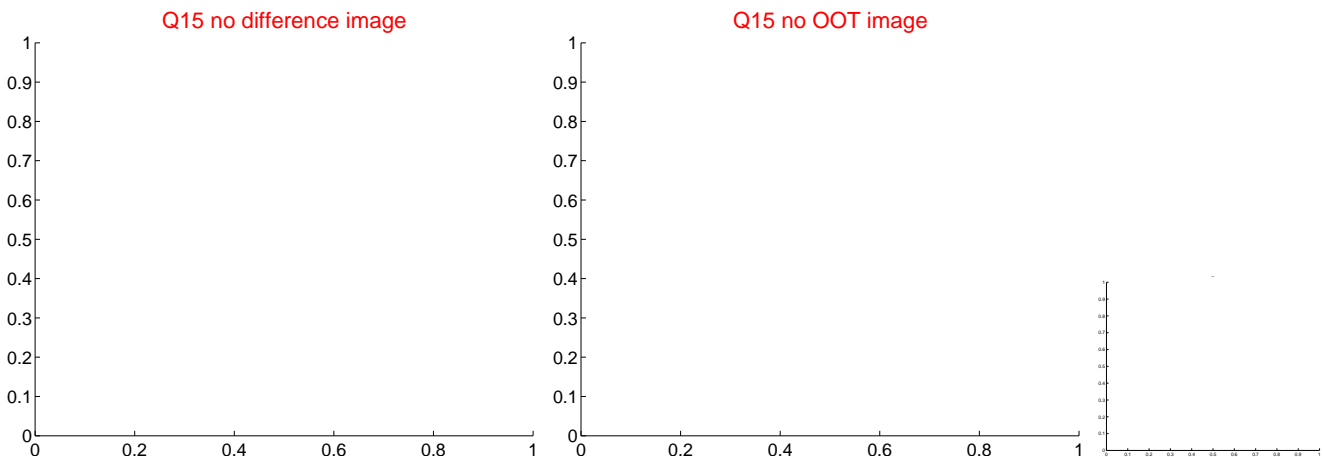
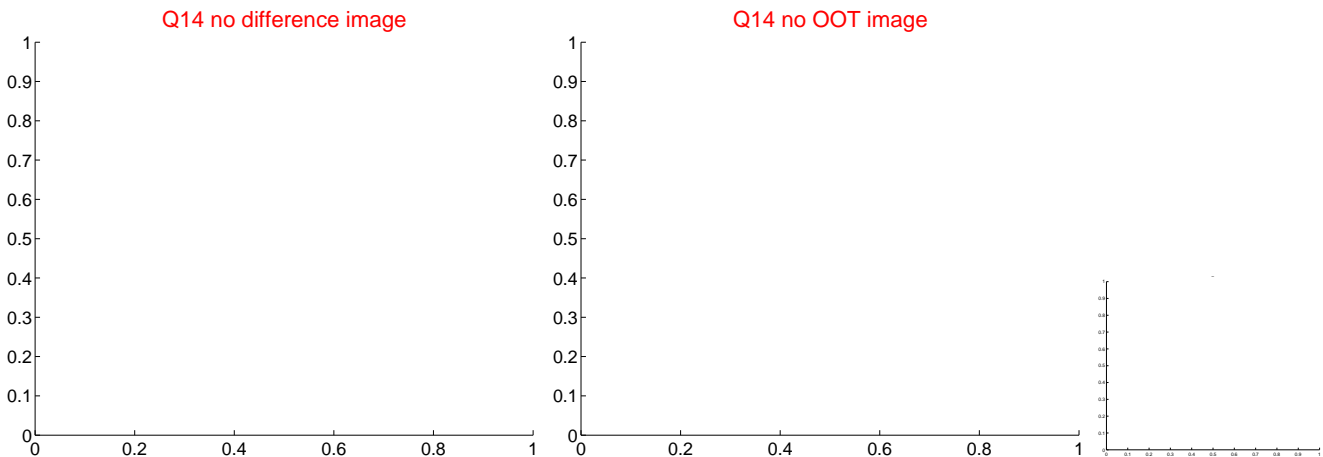
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



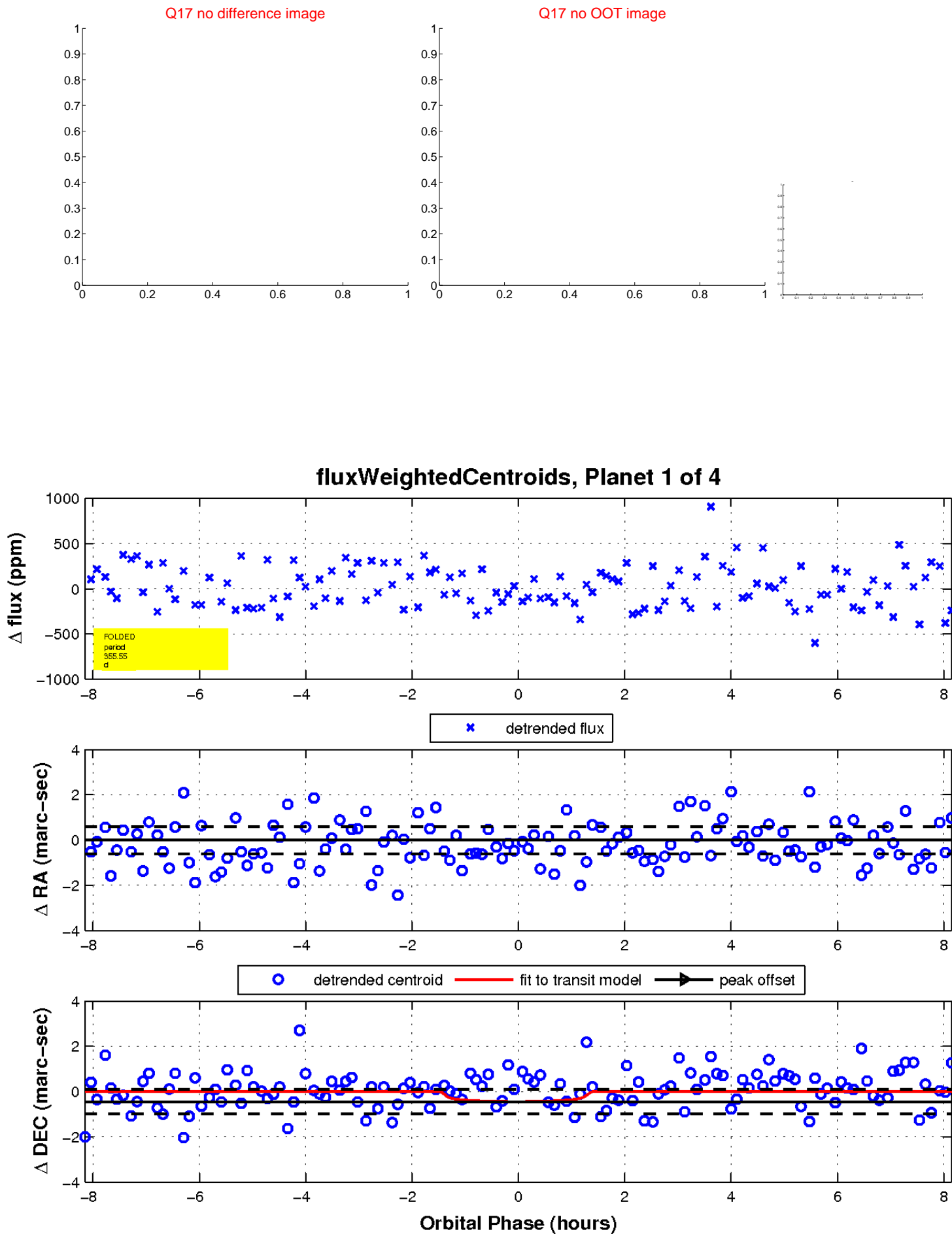
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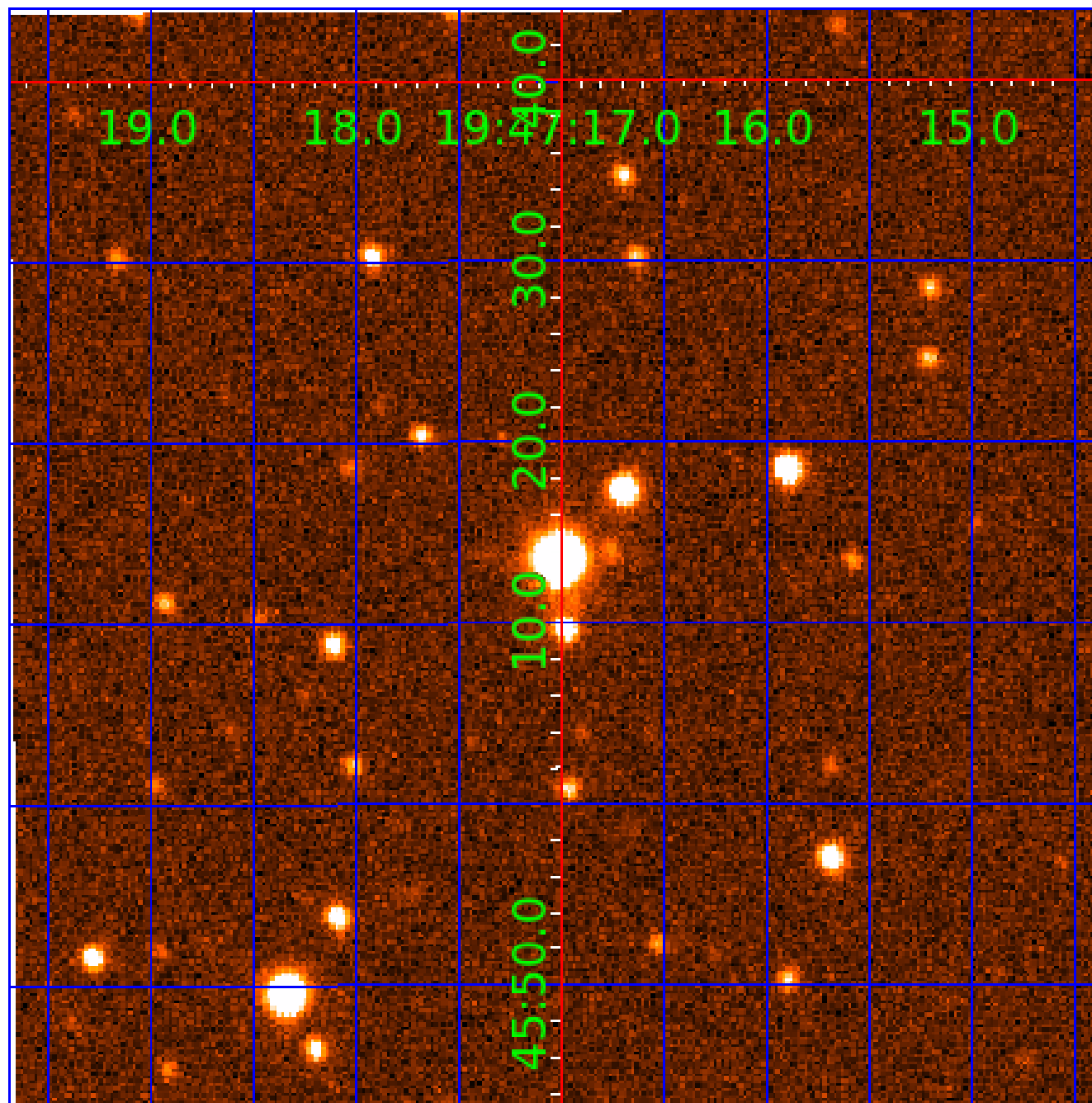


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005552801

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

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005552801-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
005552801-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

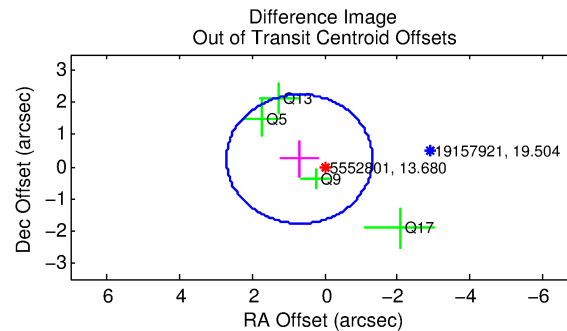
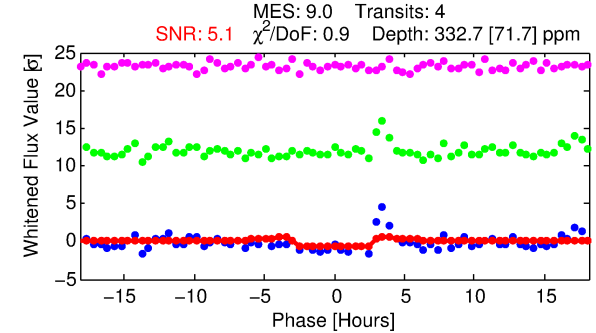
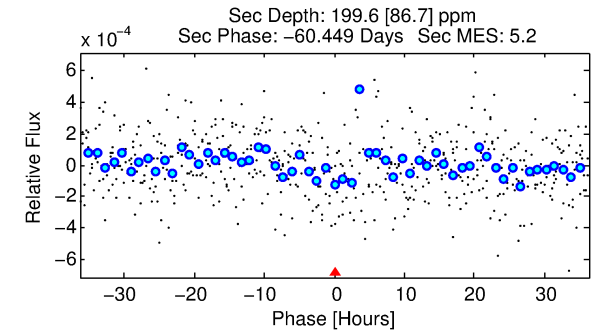
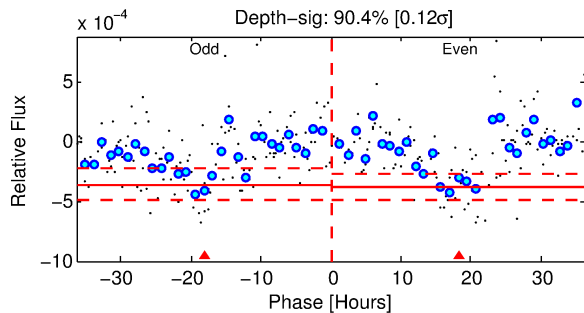
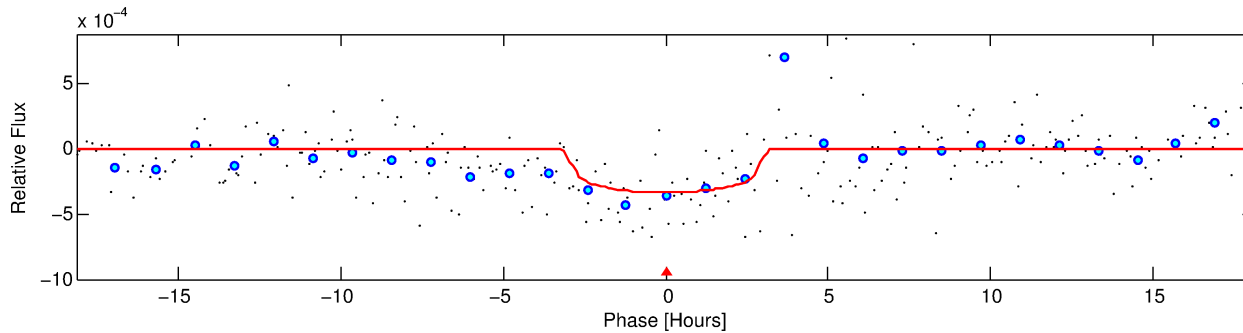
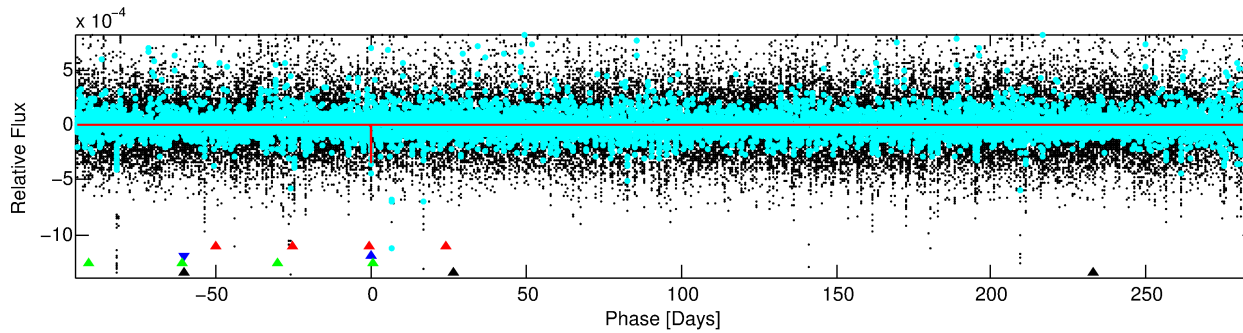
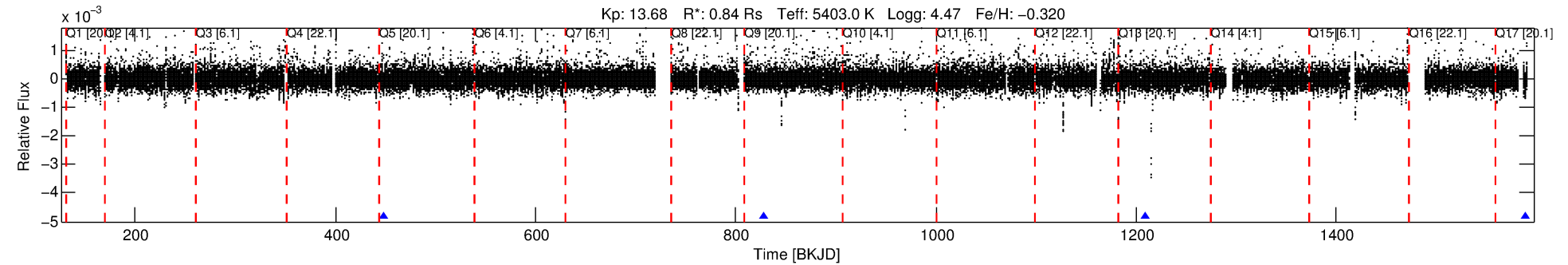
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005552801-02

No Significant Match Found

DV One-Page Summary

KIC: 5552801 Candidate: 2 of 4 Period: 380.212 d



DV Fit Results:

Period = 380.21199 [0.00734] d
Epoch = 448.5261 [0.0173] BKJD
Rp/R* = 0.0175 [0.0249]
a/R* = 383.57 [2221.02]
b = 0.63 [5.65]
Seff = 0.61 [0.15]
Teq = 225 [14] K
Rp = 1.59 [2.28] Re
a = 0.9351 [0.1399] AU
Ag = 37812.84 [109188.51] [0.35σ]
Teffp = 4859 [3500] K [1.32σ]

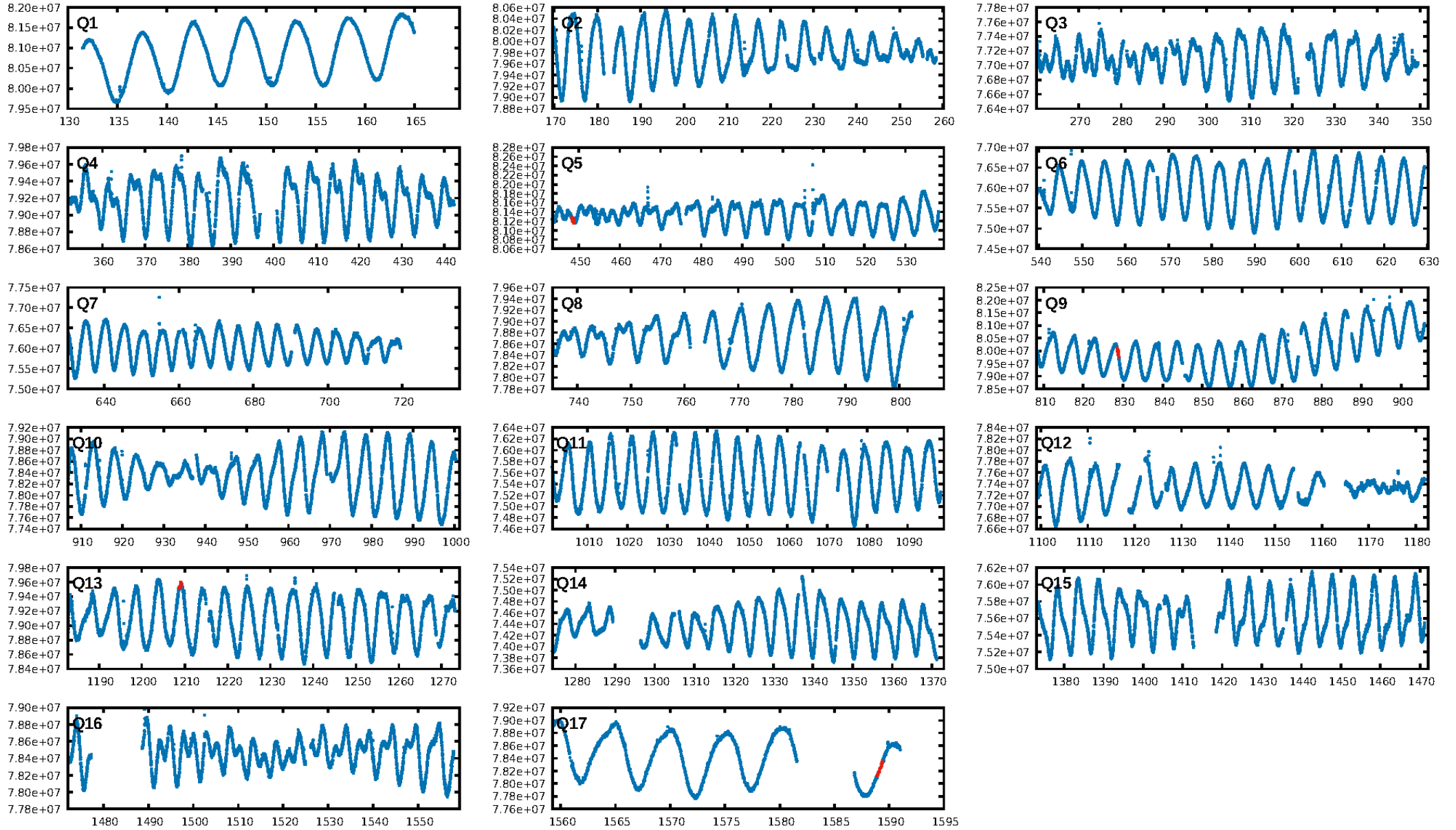
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [88.99σ]
LongPeriod-sig: 100.0% [100.46σ]
ModelChiSquare2-sig: 56.0%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 2.23e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7379
Centroid-sig: 63.8%
Centroid-so: 0.327 arcsec [0.29σ]
OotOffset-rm: 0.733 arcsec [1.09σ]
OotOffset-st: 0/0/0/4 [4]
KicOffset-rm: 0.685 arcsec [0.53σ]
KicOffset-st: 0/0/0/4 [4]
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DiffImageOverlap-fno: 0.75 [3/4]

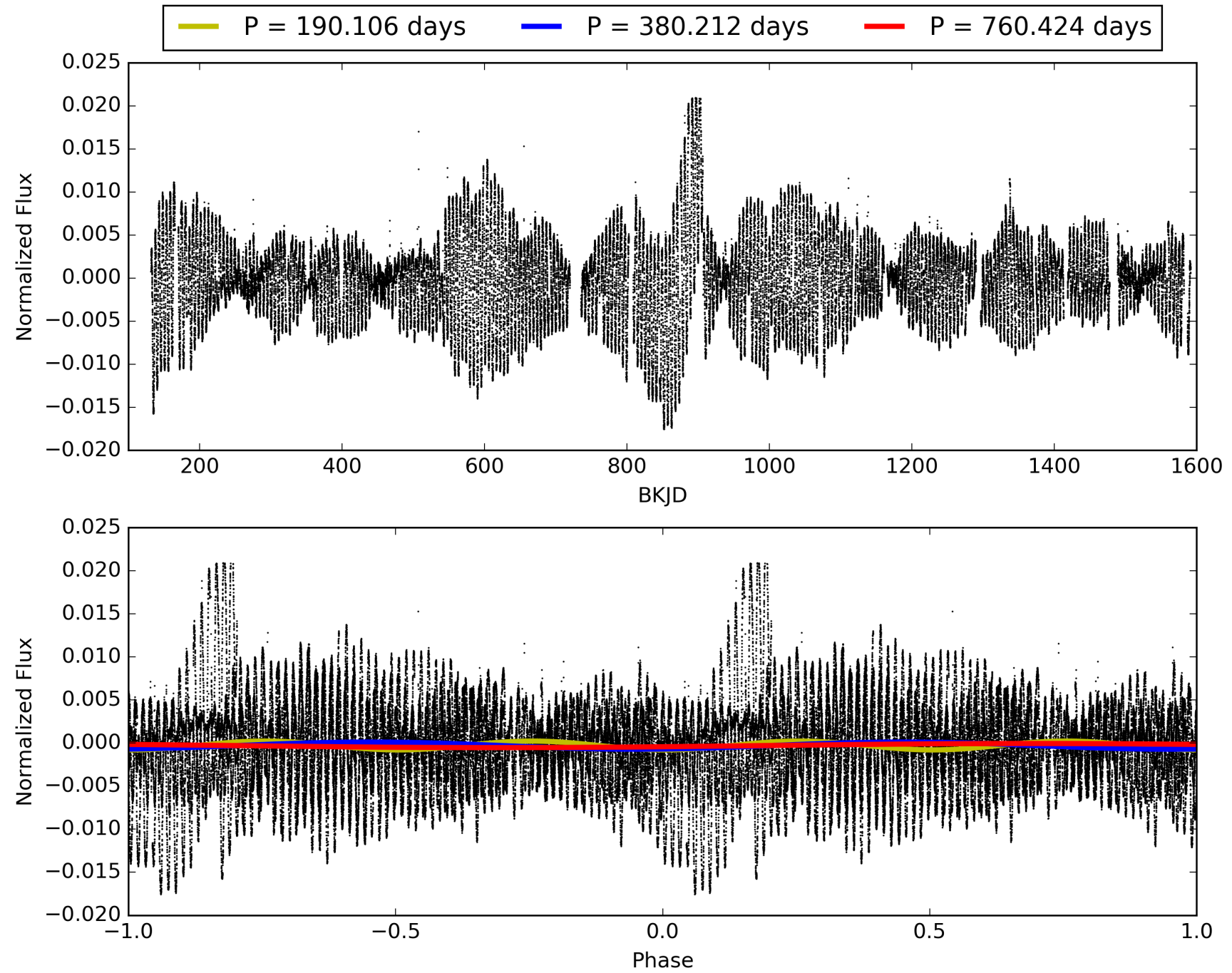
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:27:56 Z

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

TCE 005552801-02, PDC Light Curves

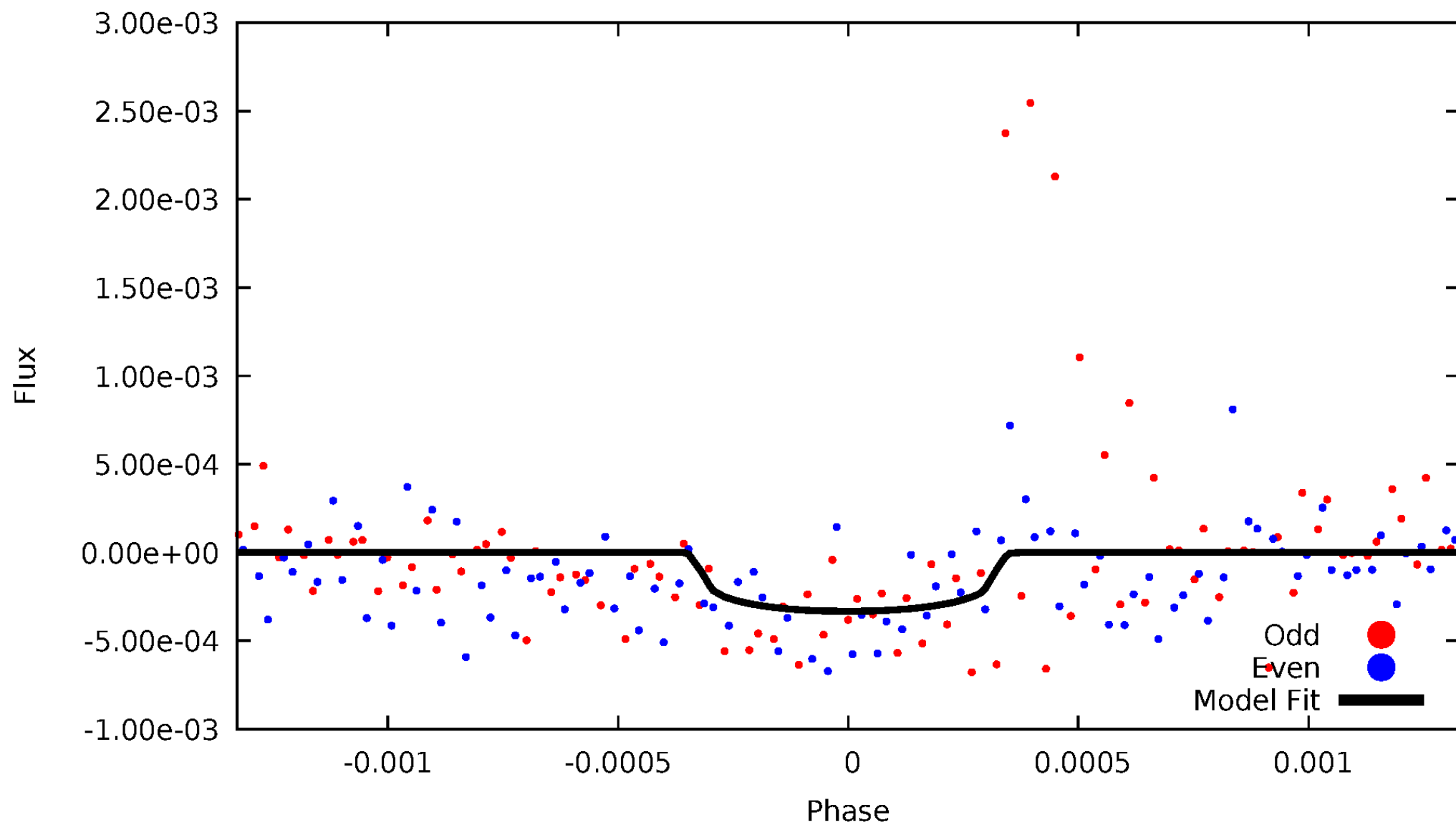


TCE 005552801-02



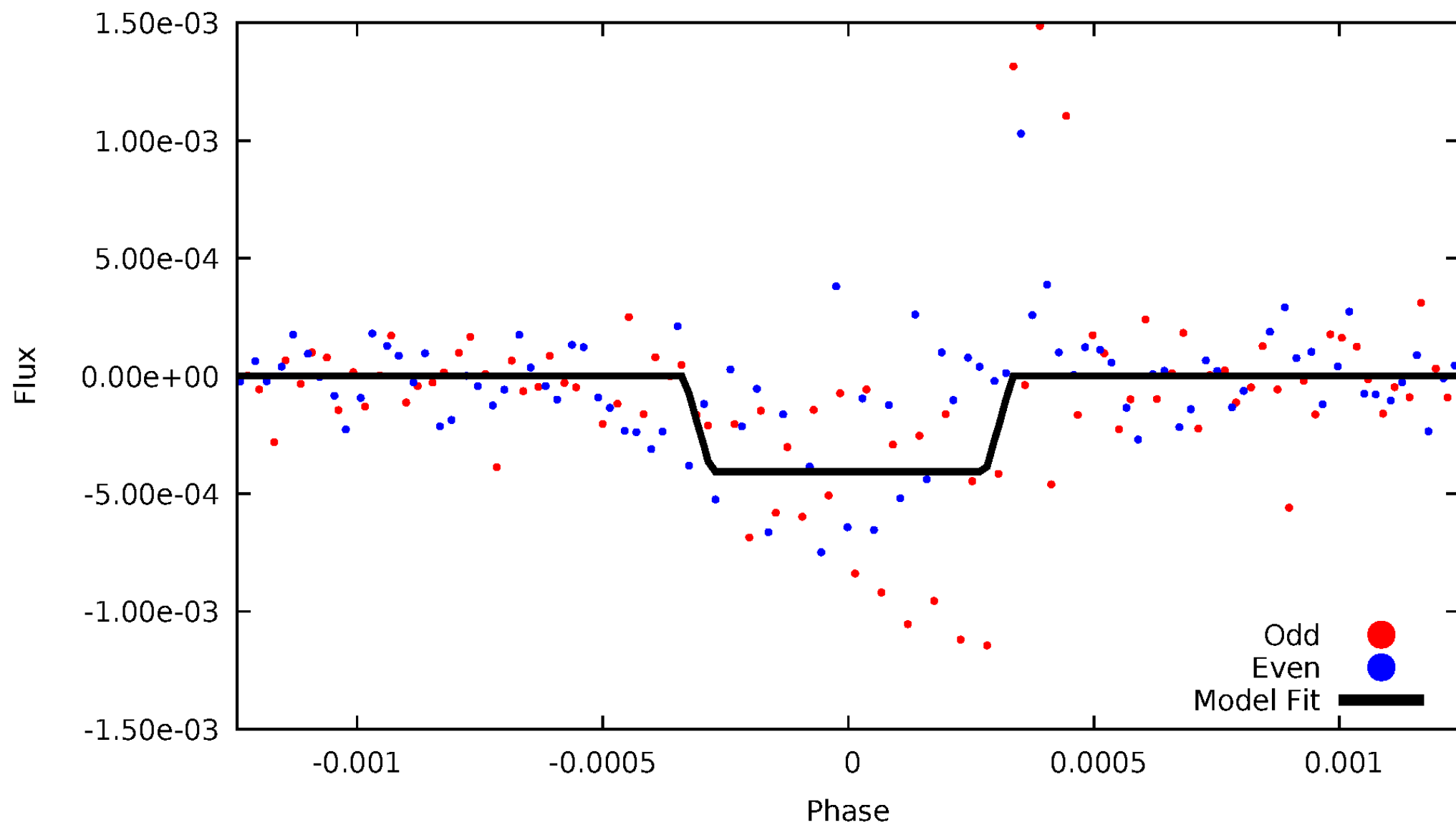
DV Odd/Even

TCE 005552801-02



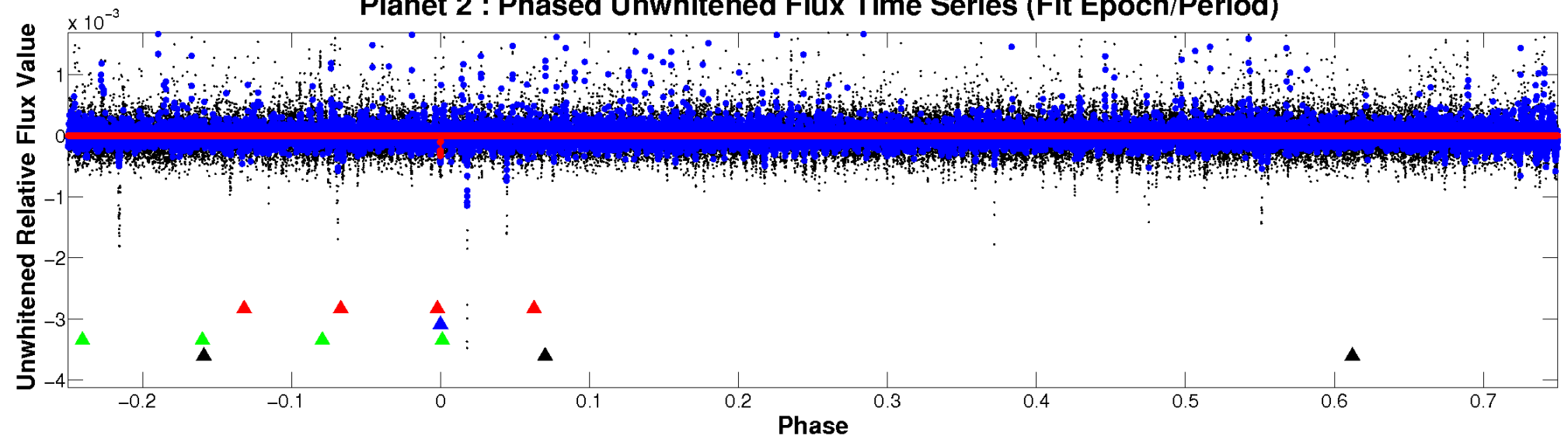
ALT Odd/Even

TCE 005552801-02

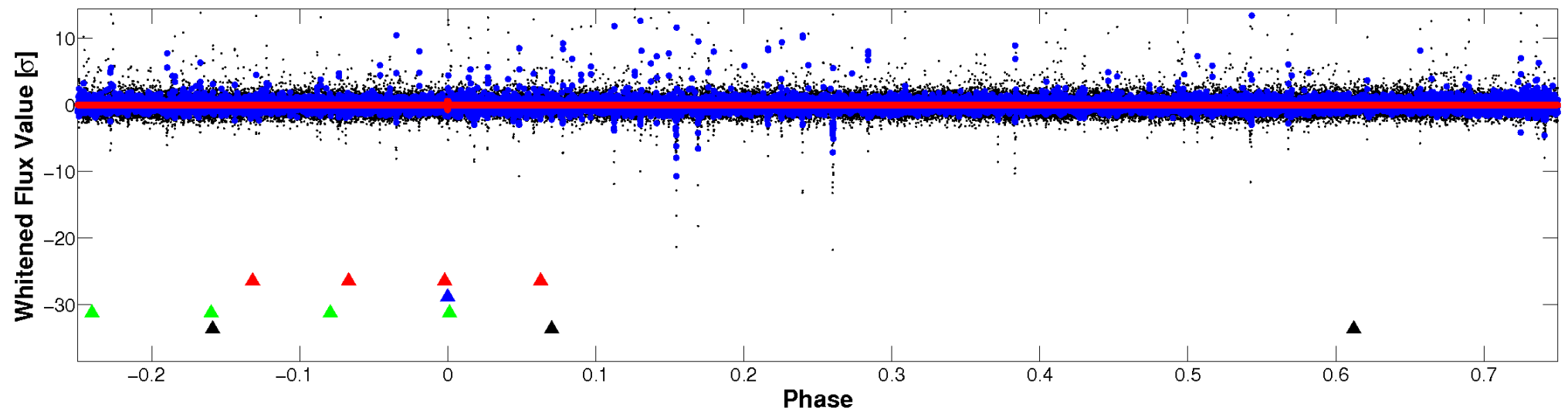


Non-Whitened Vs. Whitened Light Curve

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

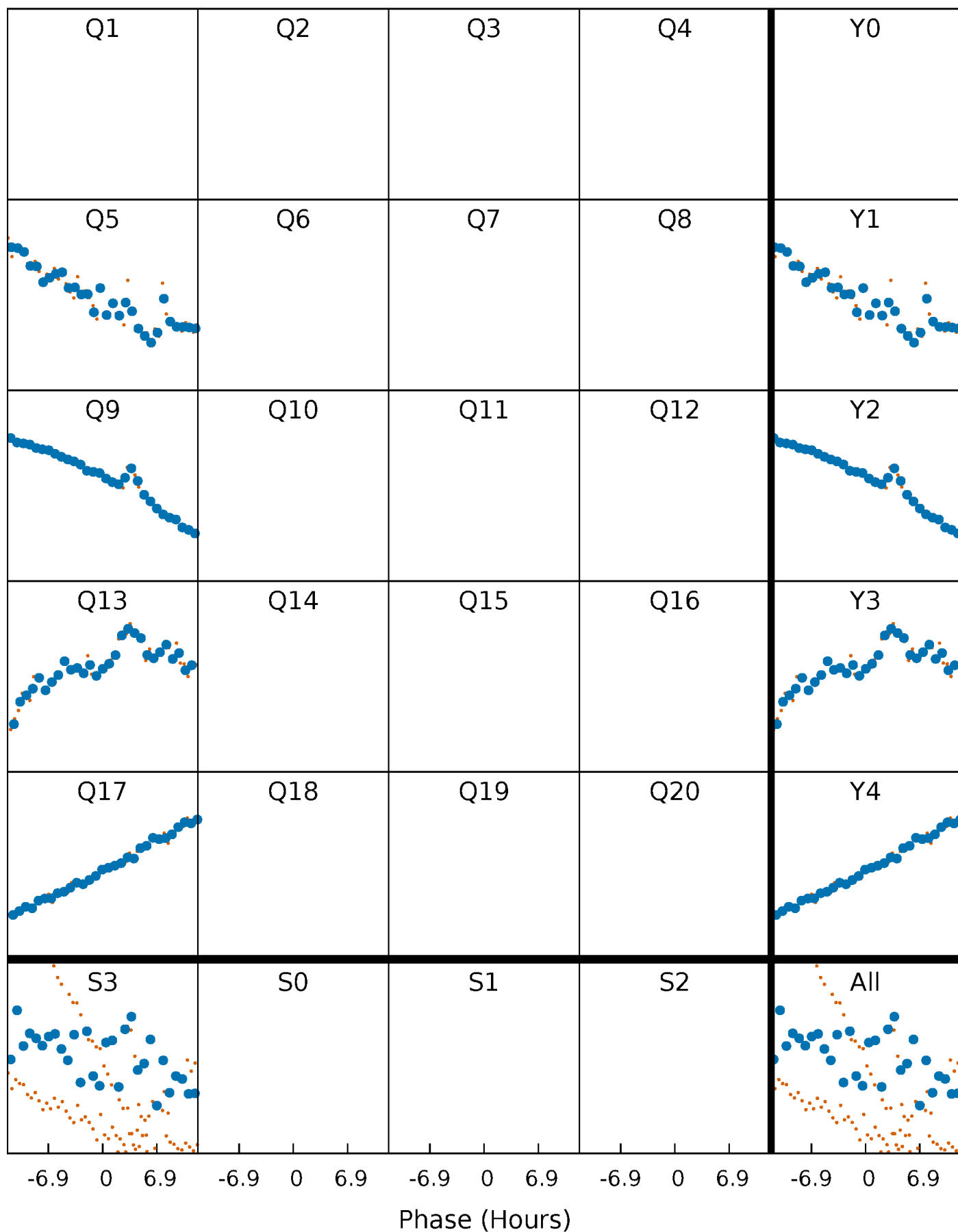


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



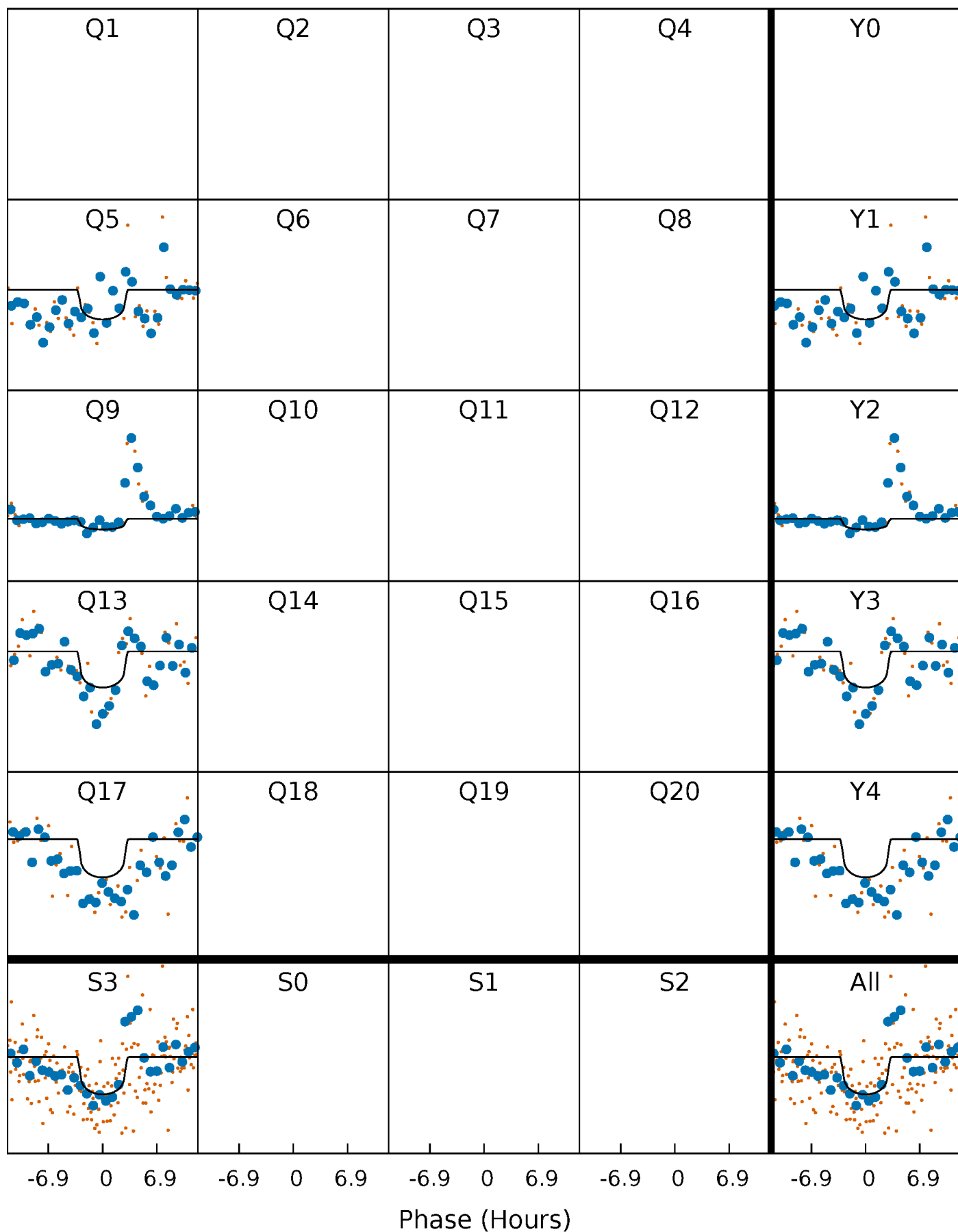
PDC Quarter-Phased Transit Curves

TCE 005552801-02 $P=380.211992$ Days $T_0=448.526081$ (BKJD)



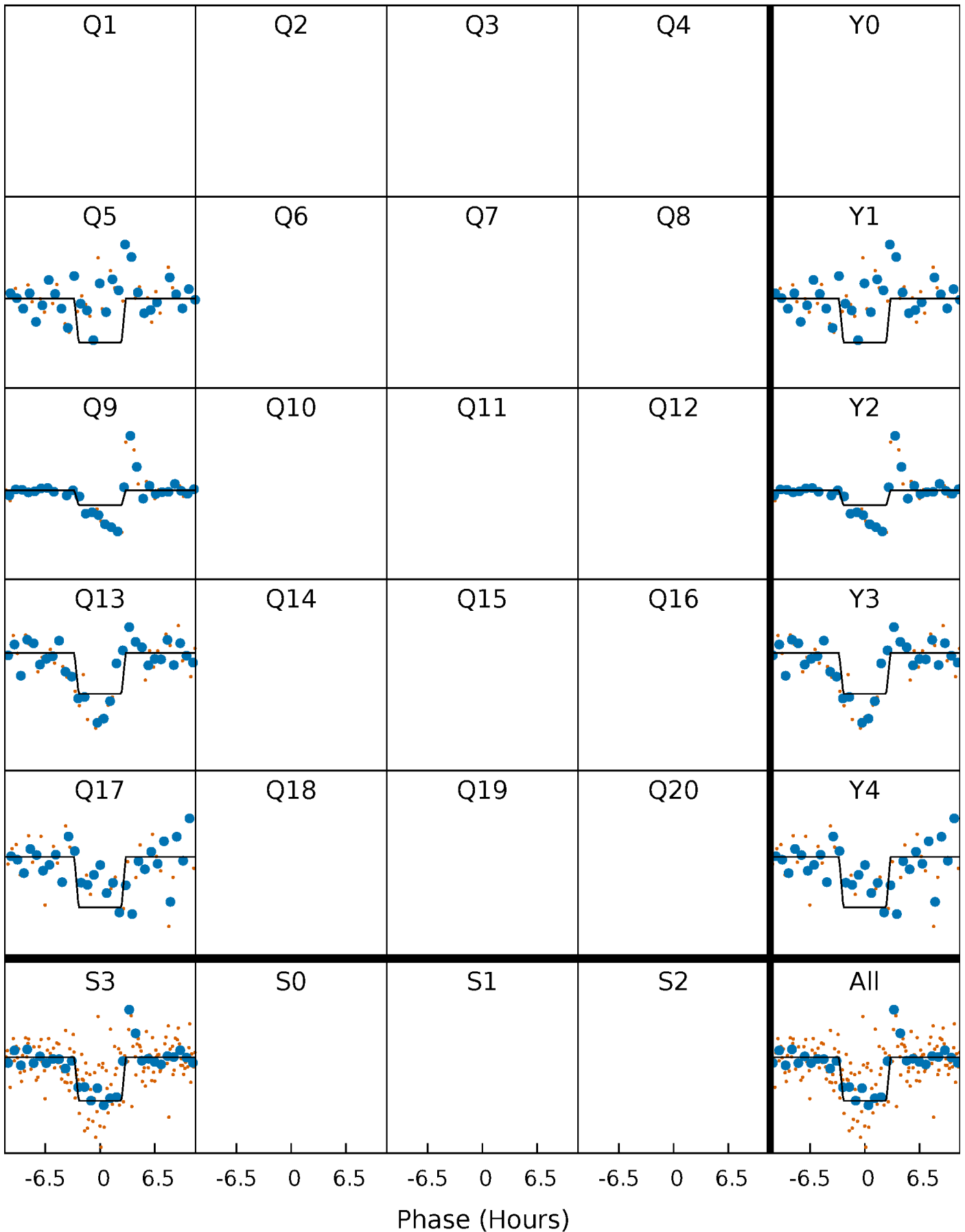
DV Quarter-Phased Transit Curves

TCE 005552801-02 $P=380.211992$ Days $T_0=448.526081$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

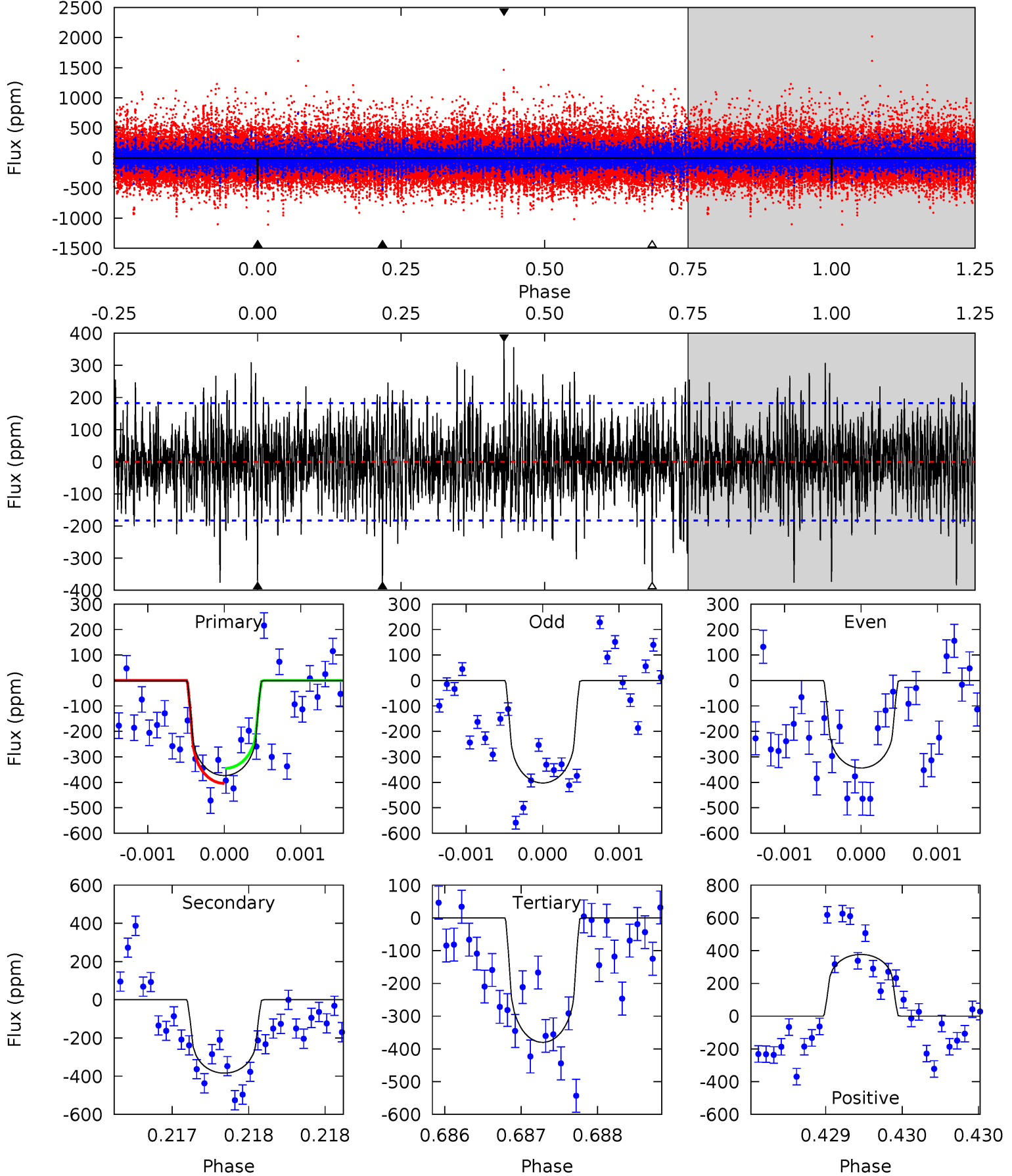
TCE 005552801-02 $P=380.214062$ Days $T_0=448.526093$ (BKJD)



DV Model-Shift Uniqueness Test

005552801-02, P = 380.211992 Days, E = 68.314089 Days

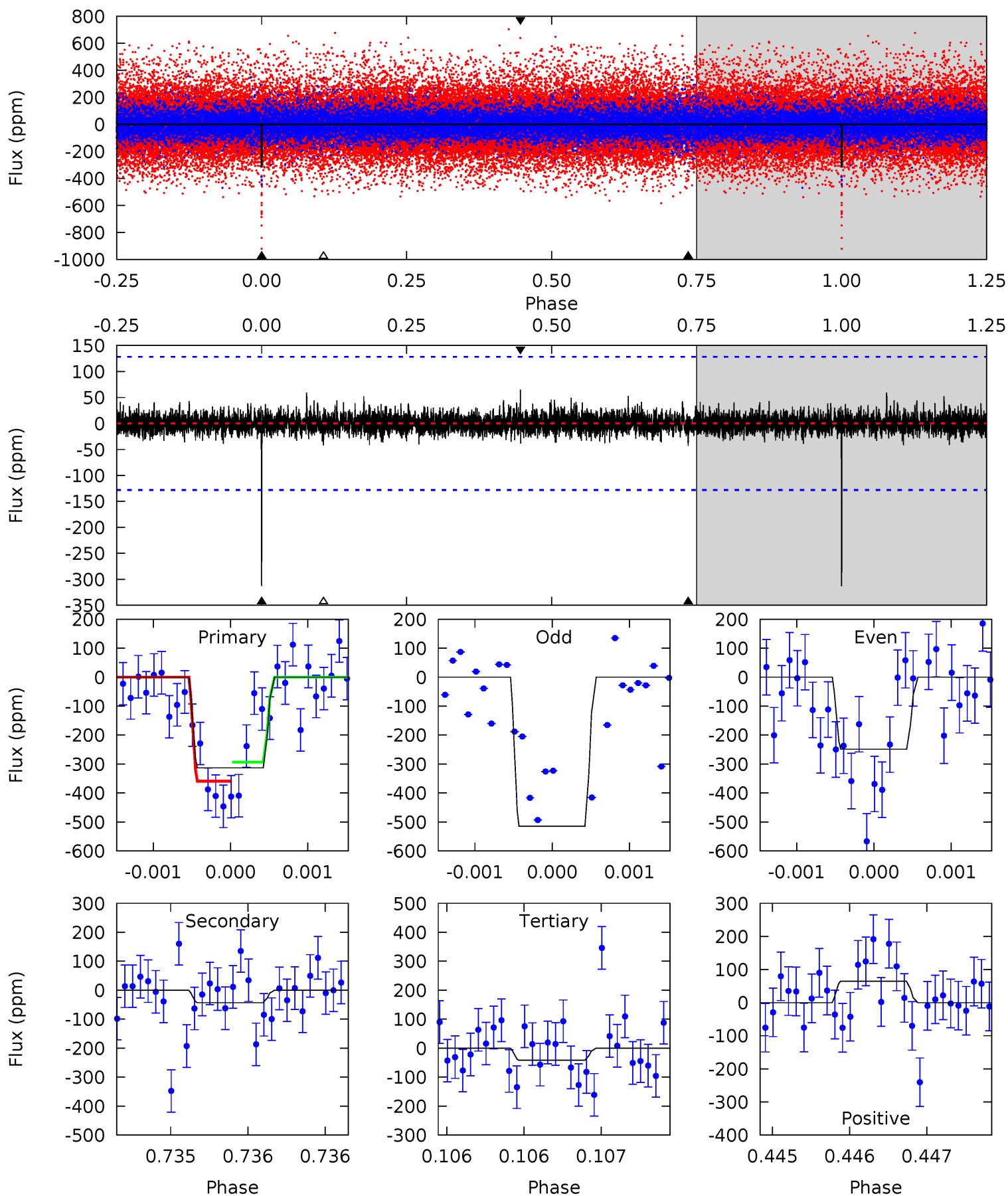
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	11.6	11.5	11.4	5.51	3.38	2.62	-0.20	-0.10	0.12	0.22	0.82	1.06	0.50	0.89



Alt Model-Shift Uniqueness Test

005552801-02, P = 380.214062 Days, E = 68.312031 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	1.86	1.82	2.80	5.53	3.42	0.49	11.7	10.7	0.04	-0.94	6.02	1.12	0.17	1.41



Stellar Parameters For KIC 005552801

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+160}_{-144}	$4.471^{+0.125}_{-0.125}$	$-0.320^{+0.350}_{-0.300}$	$0.836^{+0.144}_{-0.118}$	$0.755^{+0.118}_{-0.050}$	$1.820^{+1.023}_{-0.653}$
	+3%/-3%	+3%/-3%	+109%/-94%	+17%/-14%	+16%/-7%	+56%/-36%
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 005552801-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-384 ± 33	$2.33^{+1.98}_{-1.57}$	316^{+16}_{-16}	4848^{+3778}_{-1004}	$35503^{+288953}_{-25468}$
Alt.	-43 ± 23	$2.47^{+2.00}_{-1.49}$	315^{+17}_{-15}	3151^{+1276}_{-499}	2924^{+17391}_{-2132}

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

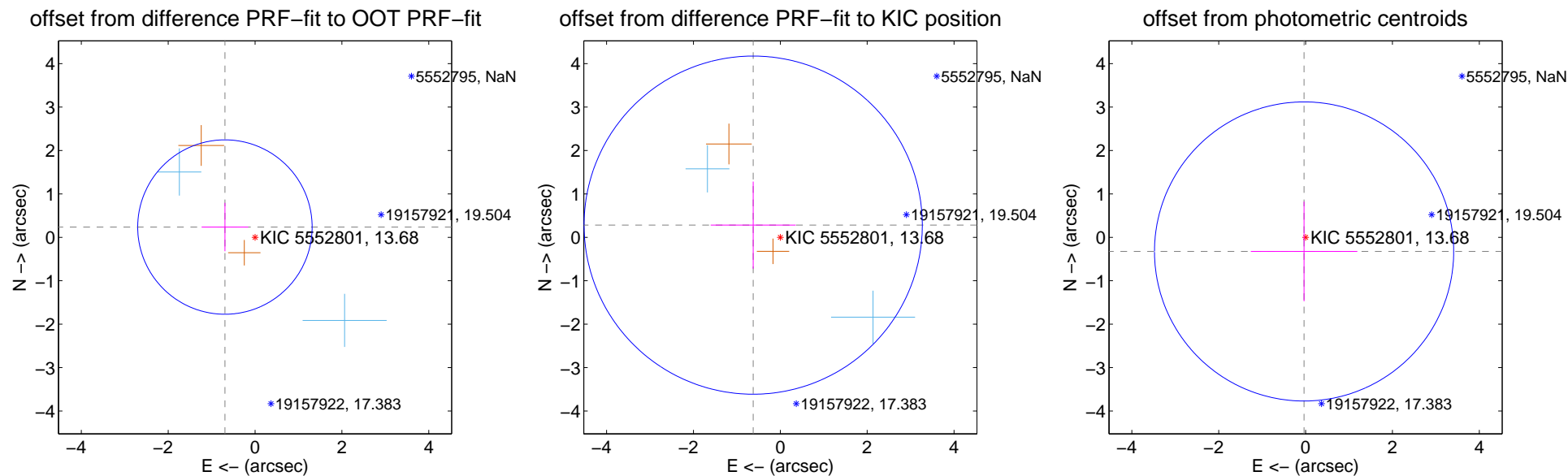
DV Centroid Data

Supplemental centroid analysis for 005552801-02. Kepler magnitude: 13.68. Transit SNR 5.08

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.733 ± 0.669	1.09	0.694 ± 0.536	0.237 ± 0.557
PRF-fit source offset from KIC position	0.685 ± 1.298	0.53	0.625 ± 0.978	0.281 ± 1.004
photometric centroid source offset	0.33 ± 1.15	0.29	0.03 ± 1.23	-0.33 ± 1.15

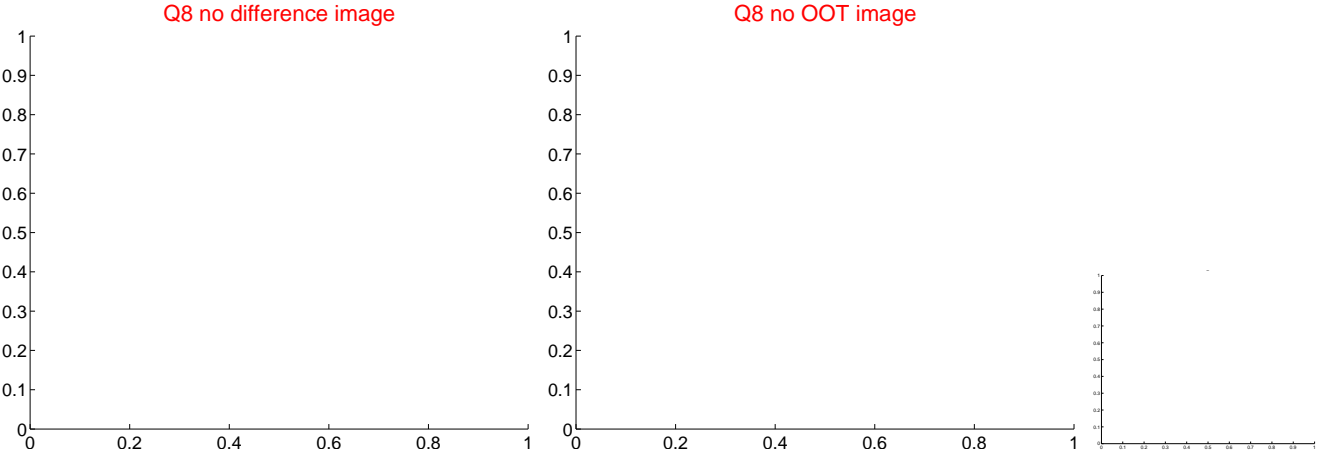
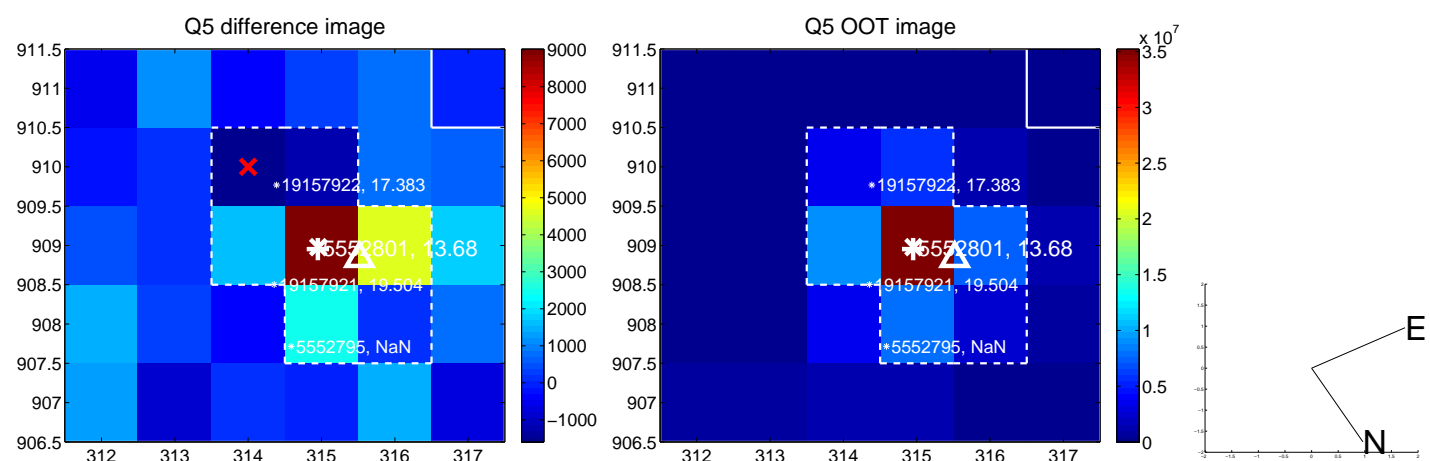


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

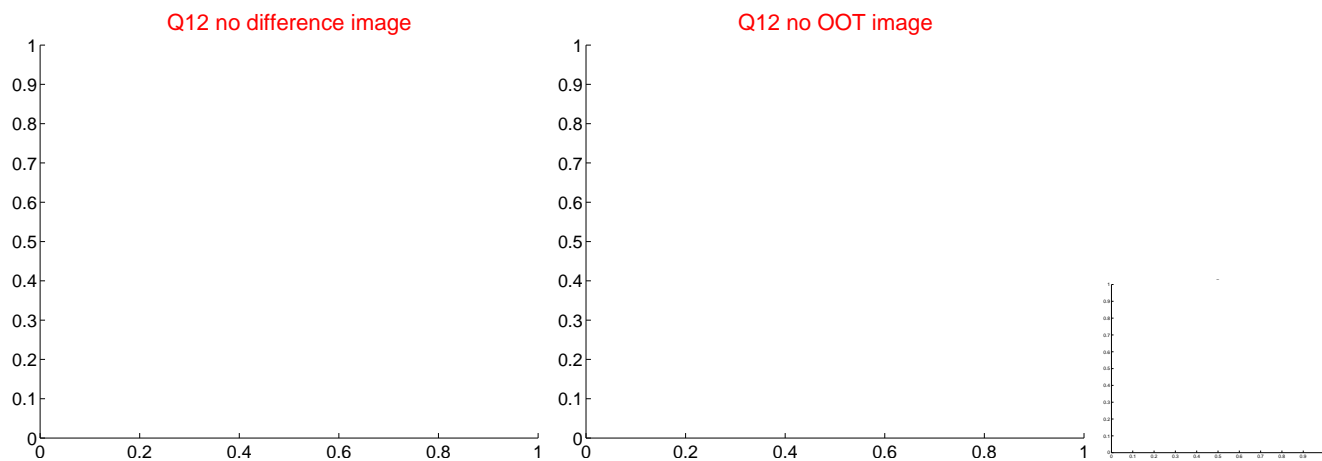
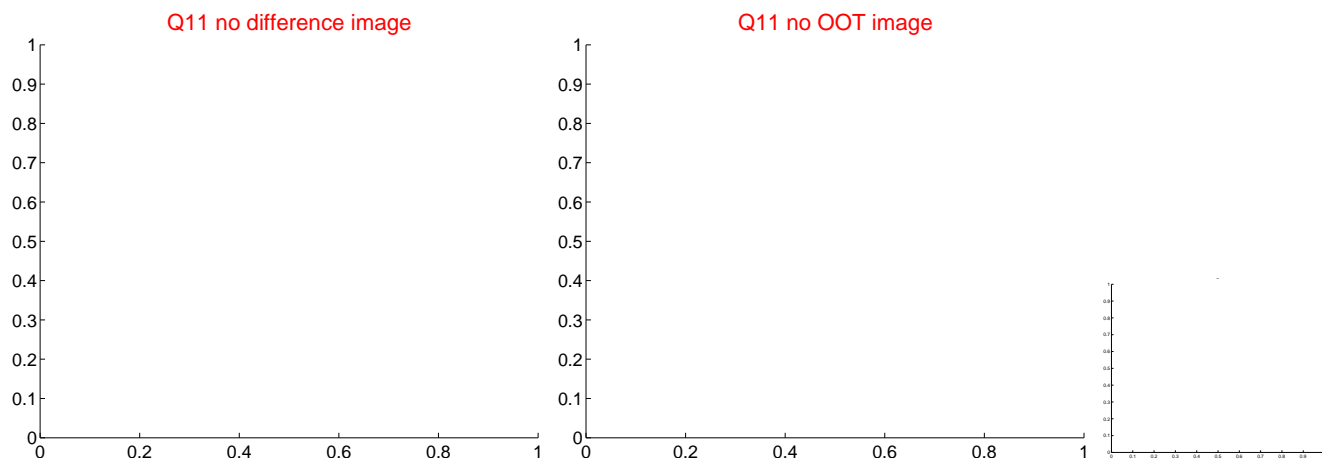
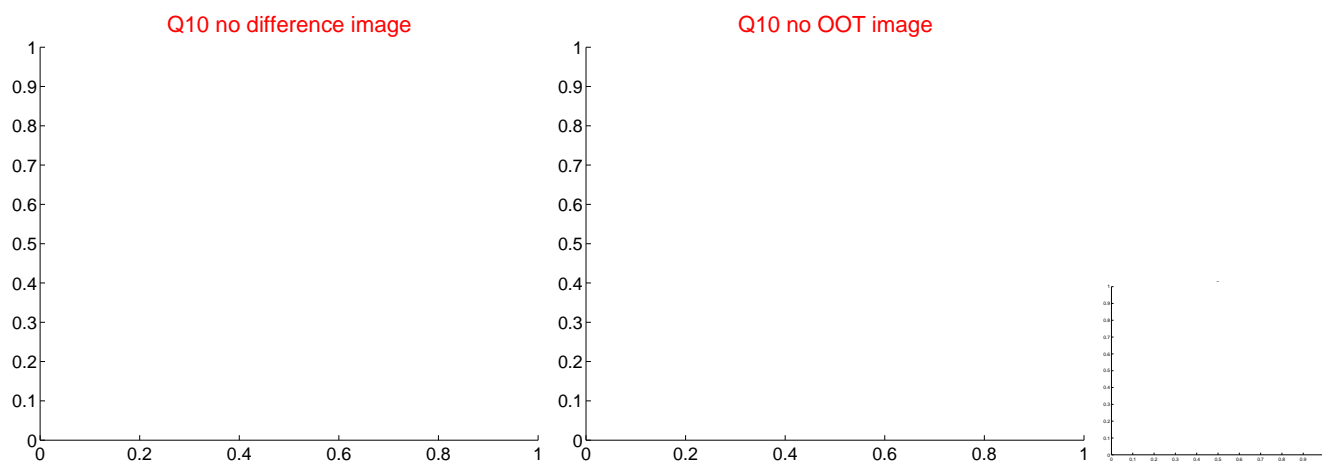
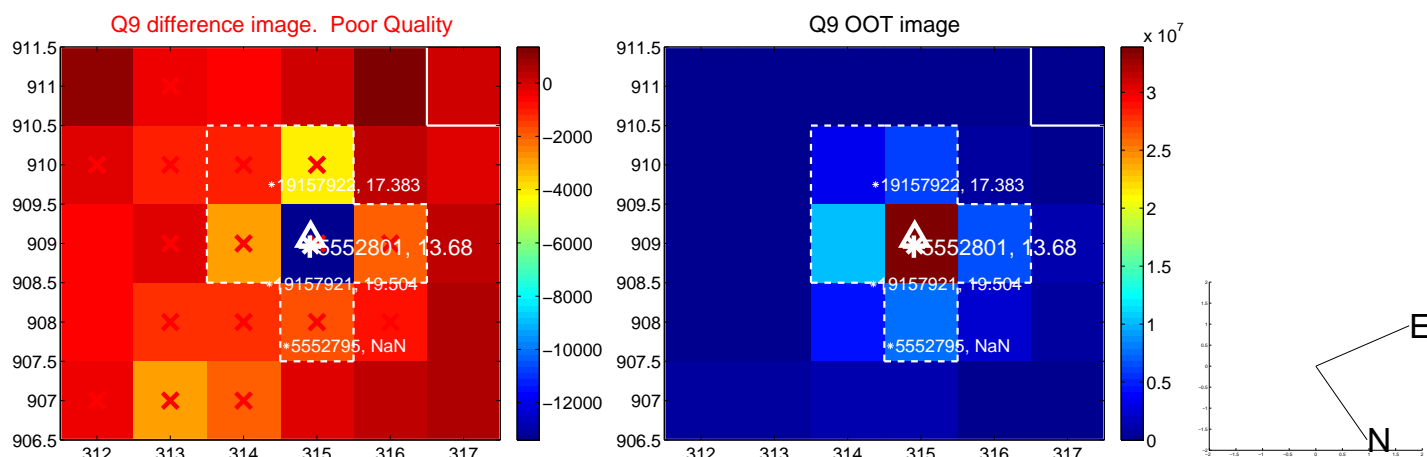
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



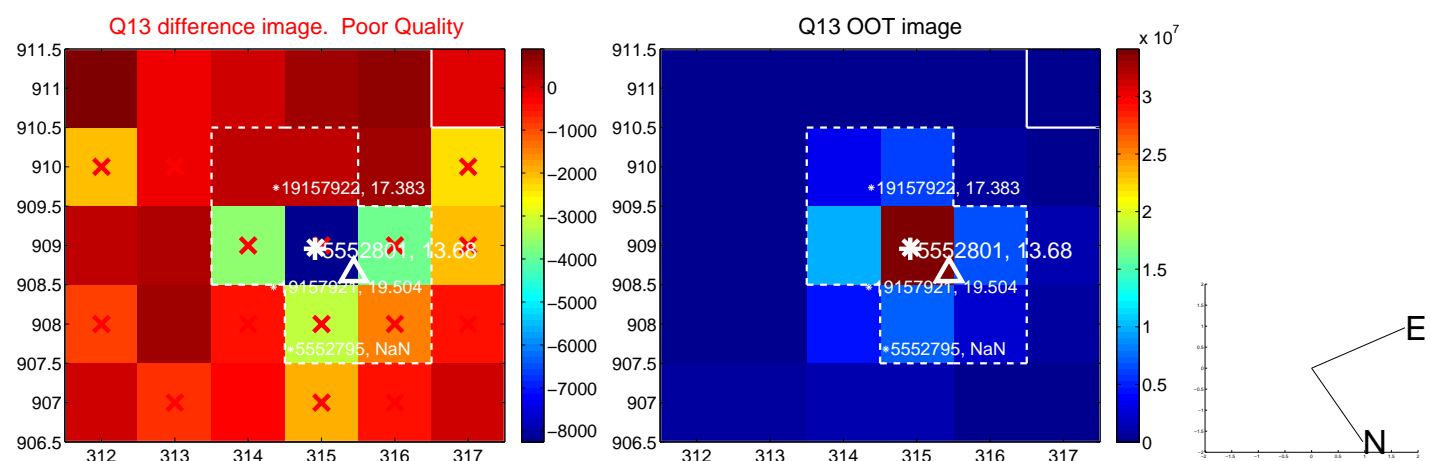
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



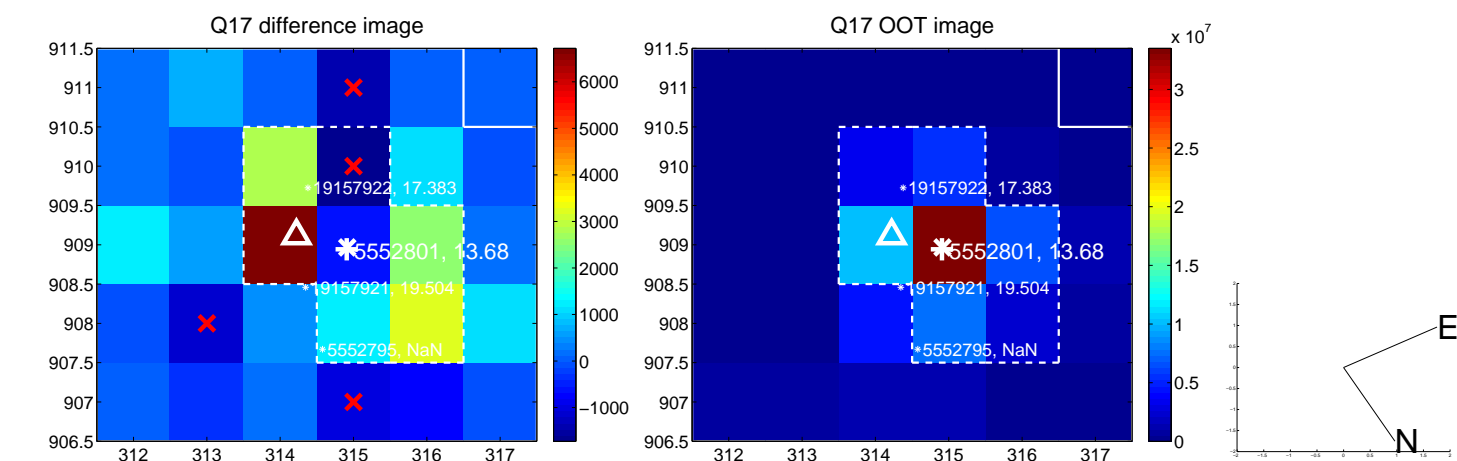
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



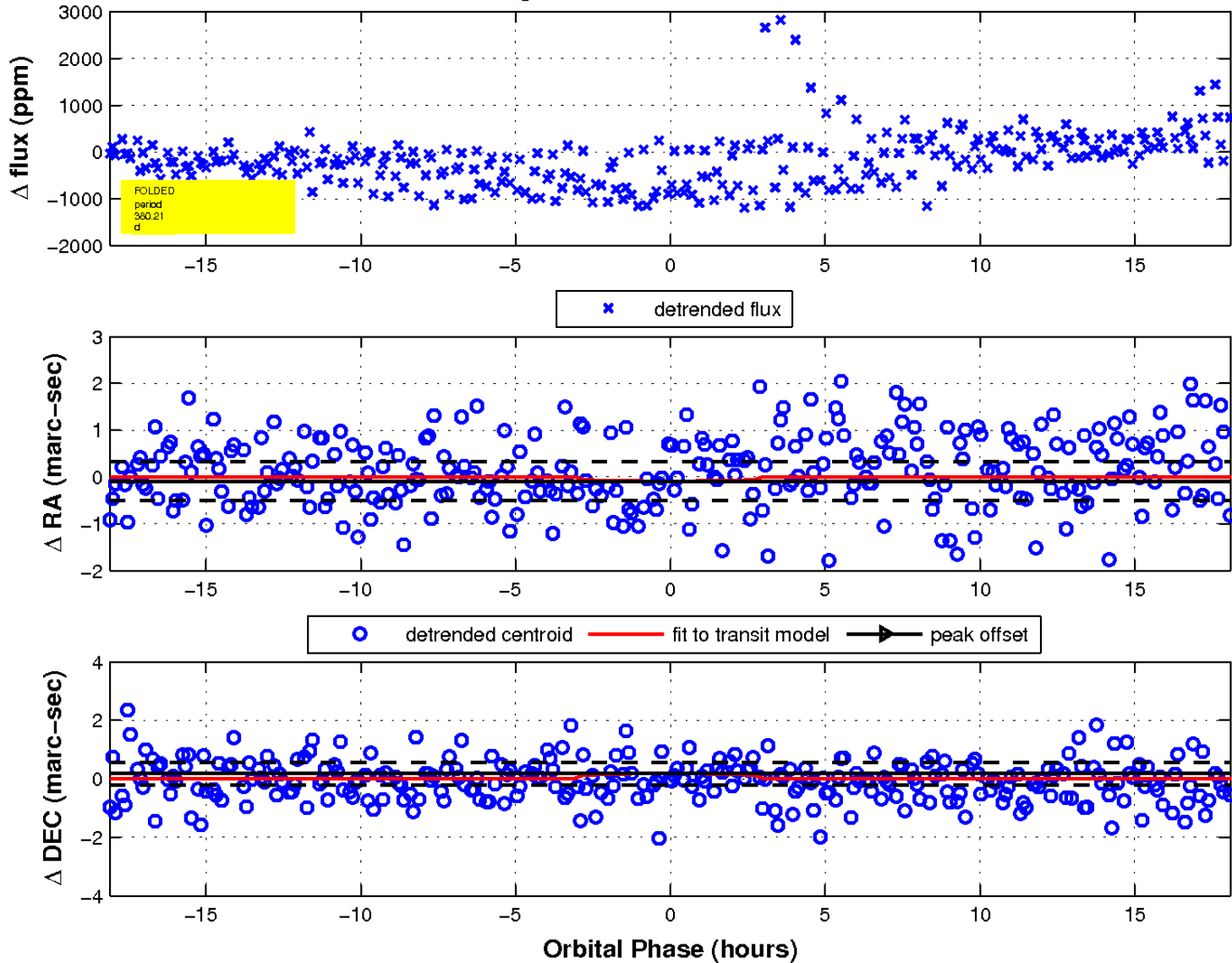
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

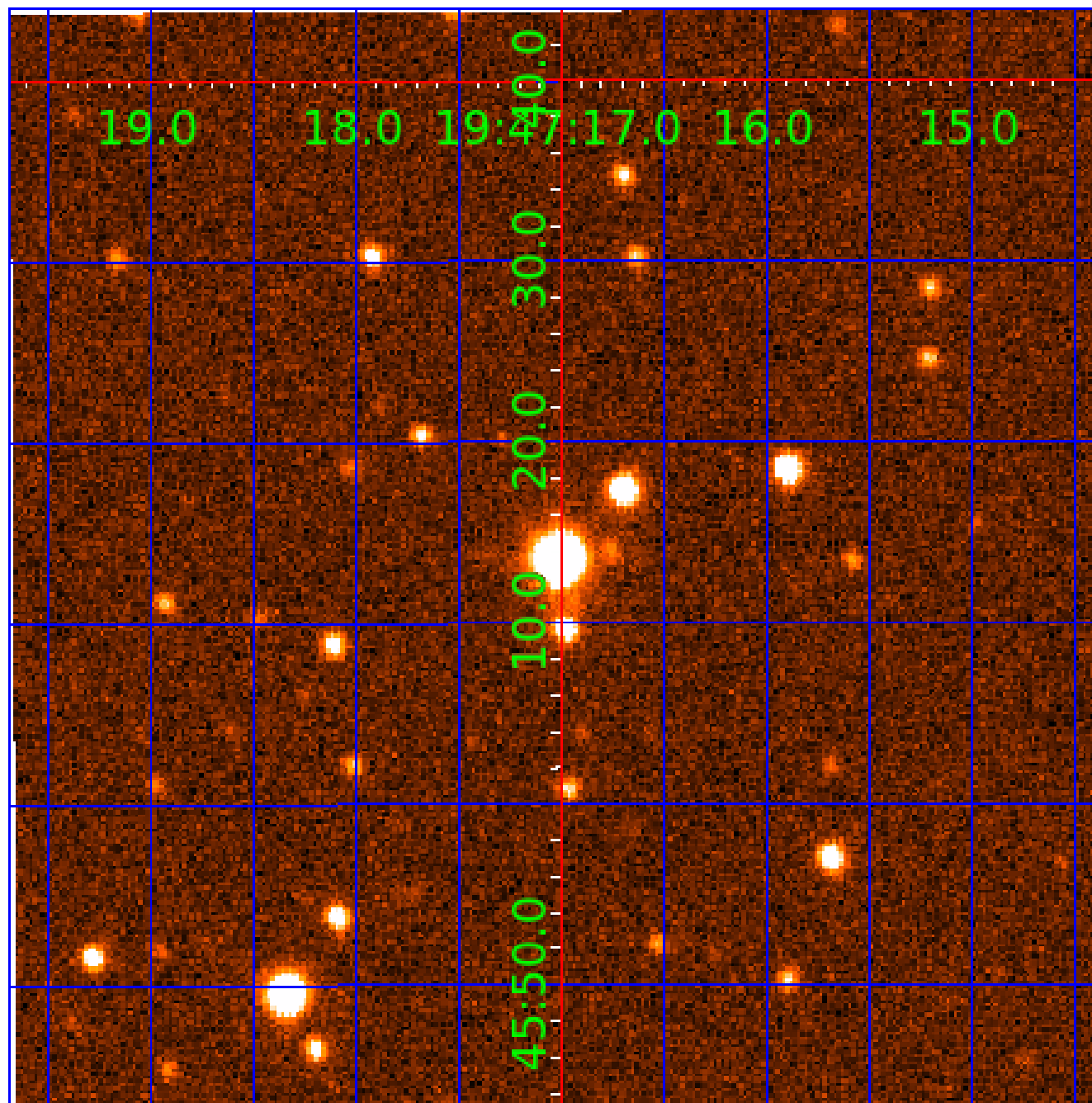


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 005552801

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})
005552801-01	OBS	No	355.548730	472.405896	114.3	2.747	11.4	1.9	0.84	5403	0.91	0.67
005552801-02	OBS	No	380.211992	448.526081	332.7	6.058	9.0	5.1	0.84	5403	1.59	0.61
005552801-03	OBS	No	410.829204	357.145508	161.1	4.099	11.3	2.6	0.84	5403	1.08	0.55
005552801-04	OBS	No	467.308275	301.051616	637.0	3.853	11.6	7.3	0.84	5403	2.81	0.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005552801-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
005552801-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

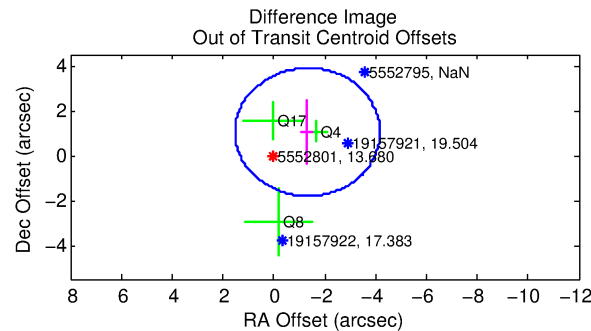
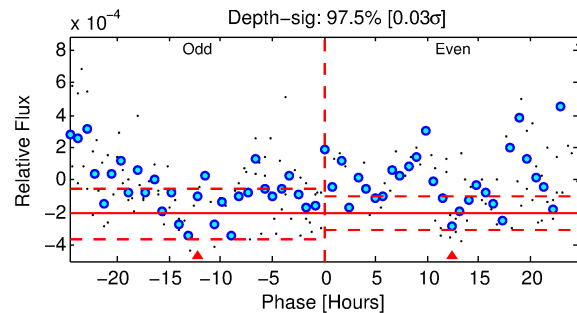
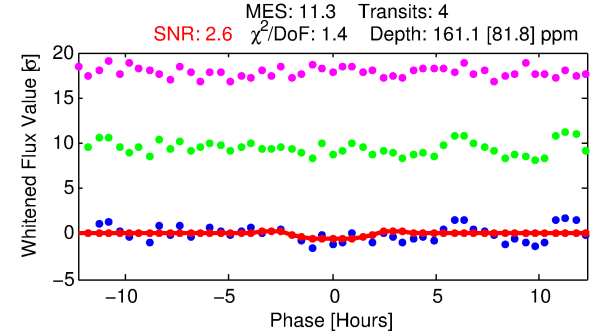
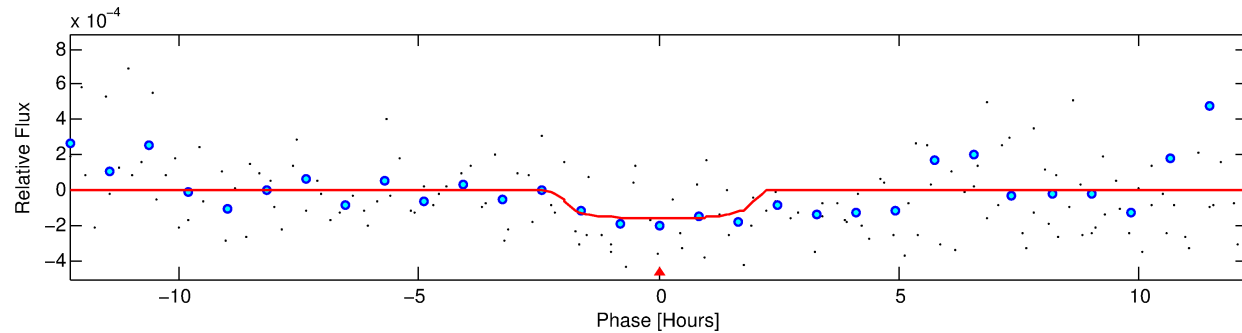
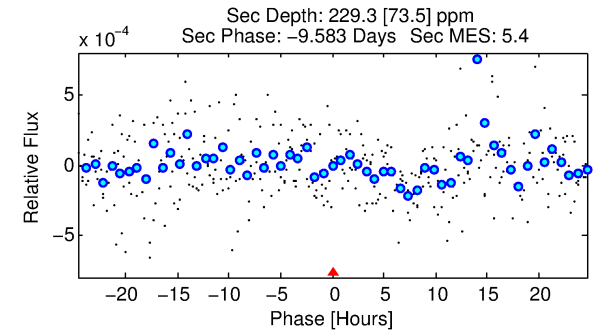
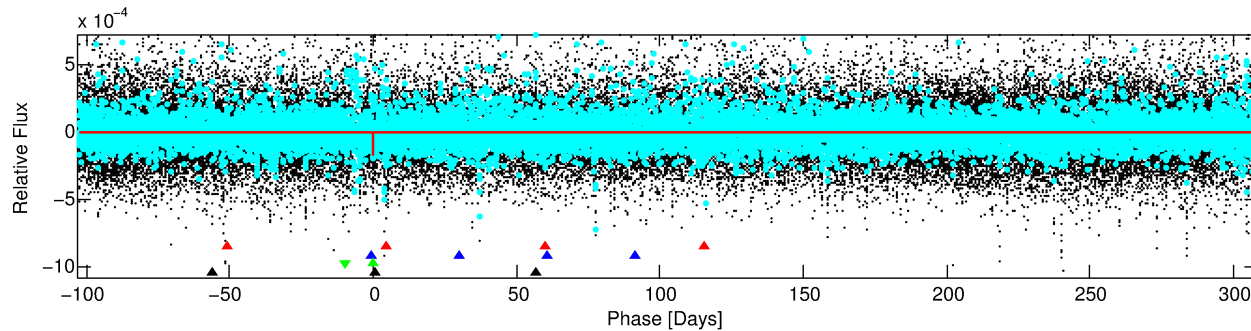
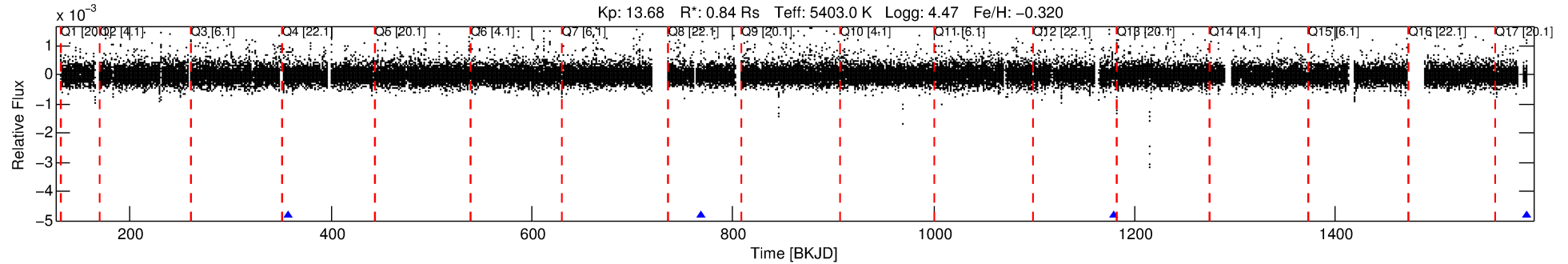
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005552801-03

No Significant Match Found

DV One-Page Summary

KIC: 5552801 Candidate: 3 of 4 Period: 410.829 d



DV Fit Results:

Period = 410.82920 [0.01756] d
Epoch = 357.1455 [0.0278] BKJD
Rp/R* = 0.0118 [0.0660]
a/R* = 681.08 [15541.26]
b = 0.48 [36.75]
Seff = 0.55 [0.14]
Teq = 220 [14] K
Rp = 1.08 [6.03] Re
a = 0.9846 [0.1473] AU
Ag = 105368.05 [1178713.31] [0.09σ]
Teffp = 6118 [17108] K [0.34σ]

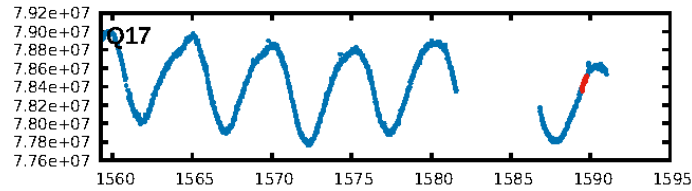
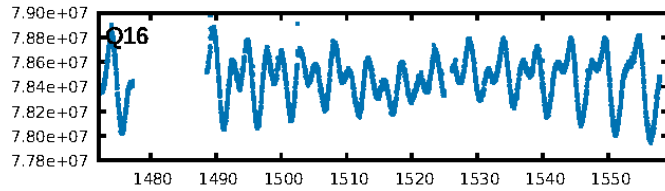
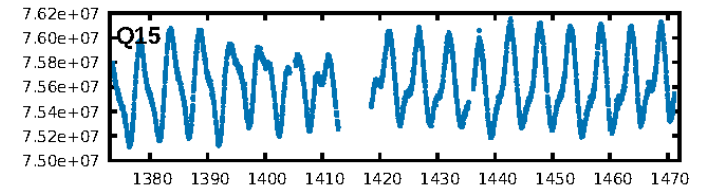
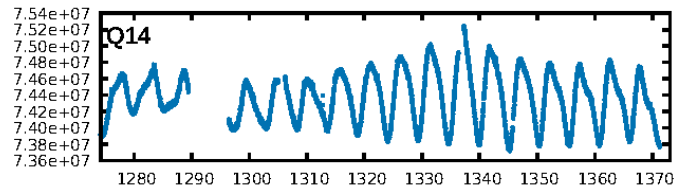
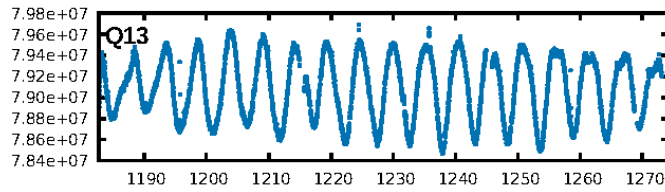
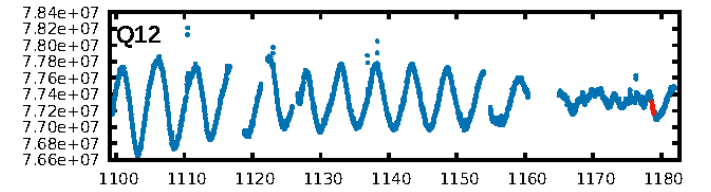
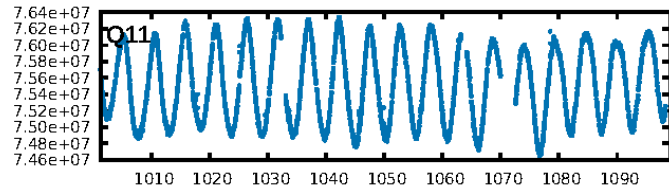
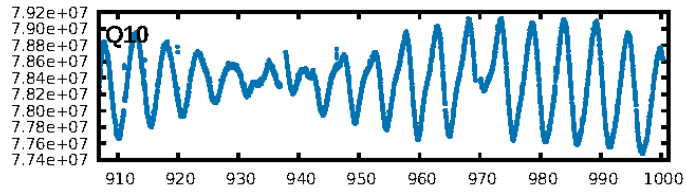
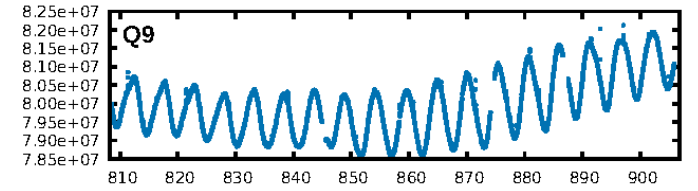
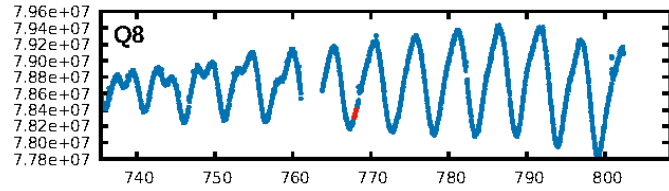
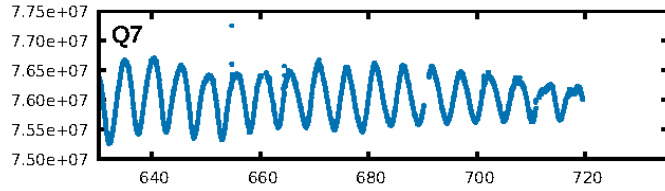
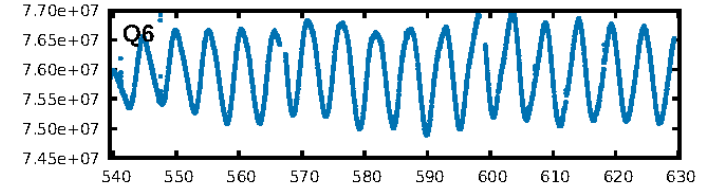
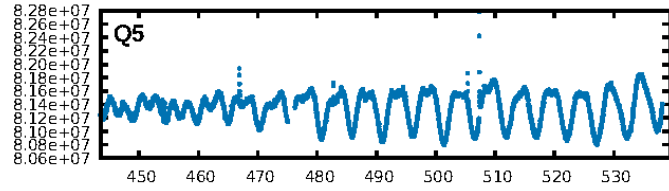
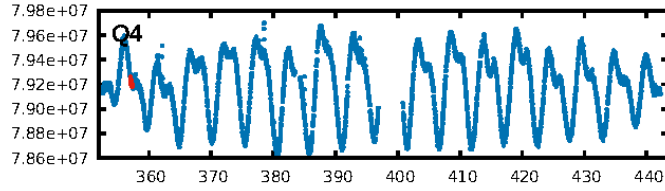
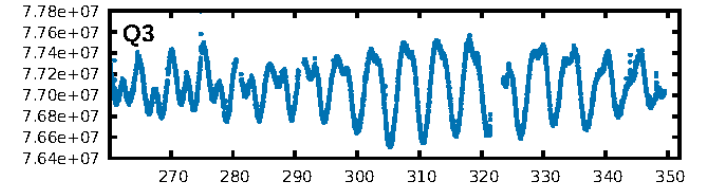
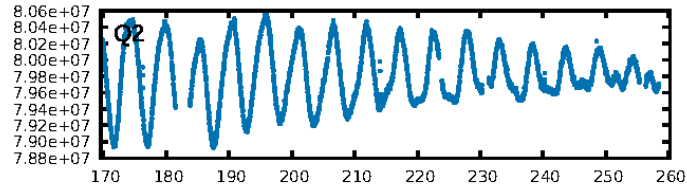
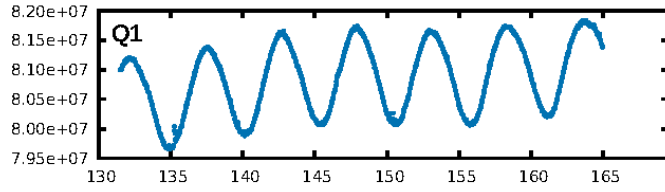
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [100.46σ]
LongPeriod-sig: 100.0% [240.94σ]
ModelChiSquare2-sig: 73.4%
ModelChiSquareGof-sig: 93.3%
Bootstrap-pfa: 9.82e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.294
Centroid-sig: 91.7%
Centroid-so: 0.761 arcsec [0.23σ]
OotOffset-rm: 1.687 arcsec [1.78σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: 1.856 arcsec [2.66σ]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.33 [1/3]

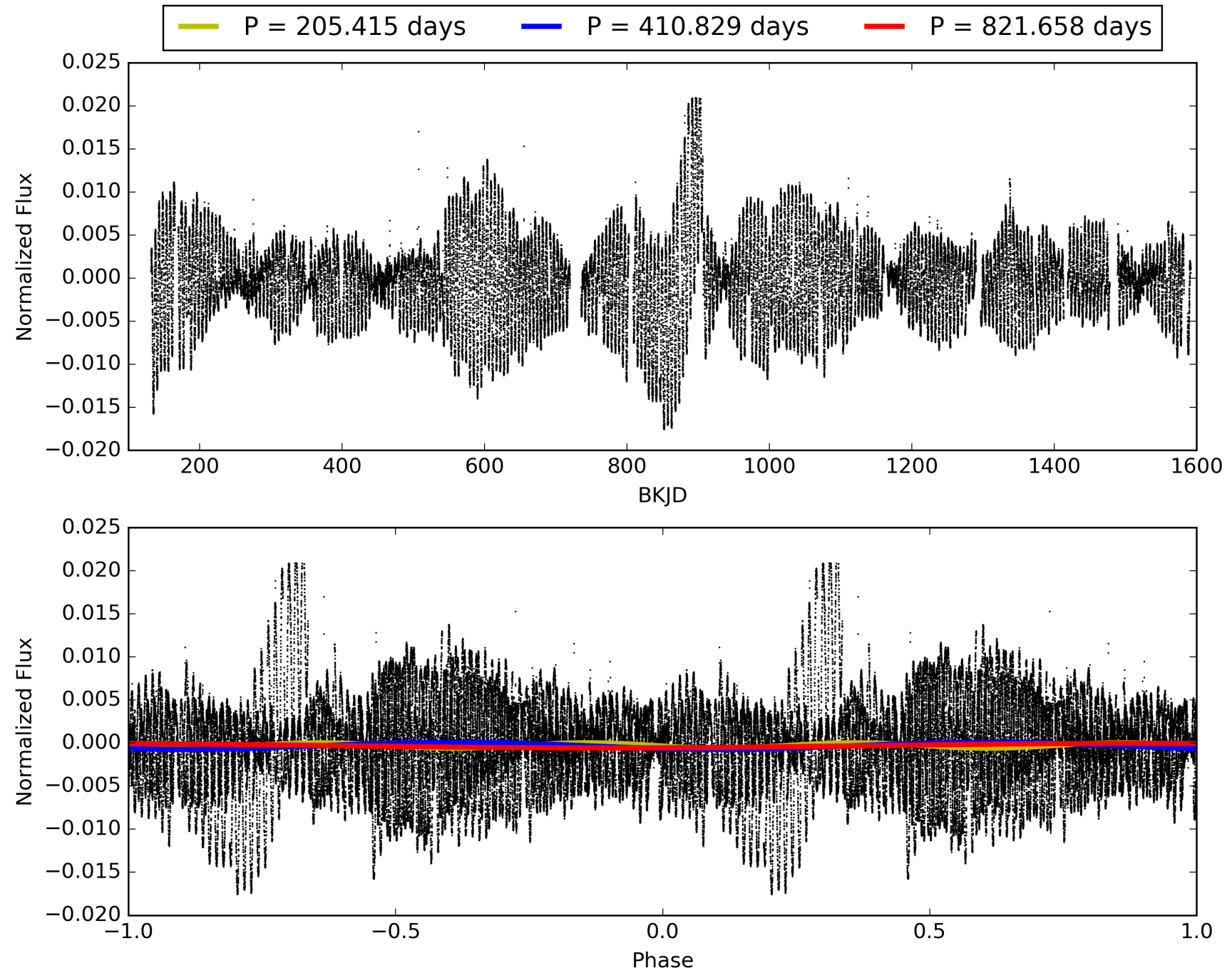
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:28:11 Z

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

TCE 005552801-03, PDC Light Curves

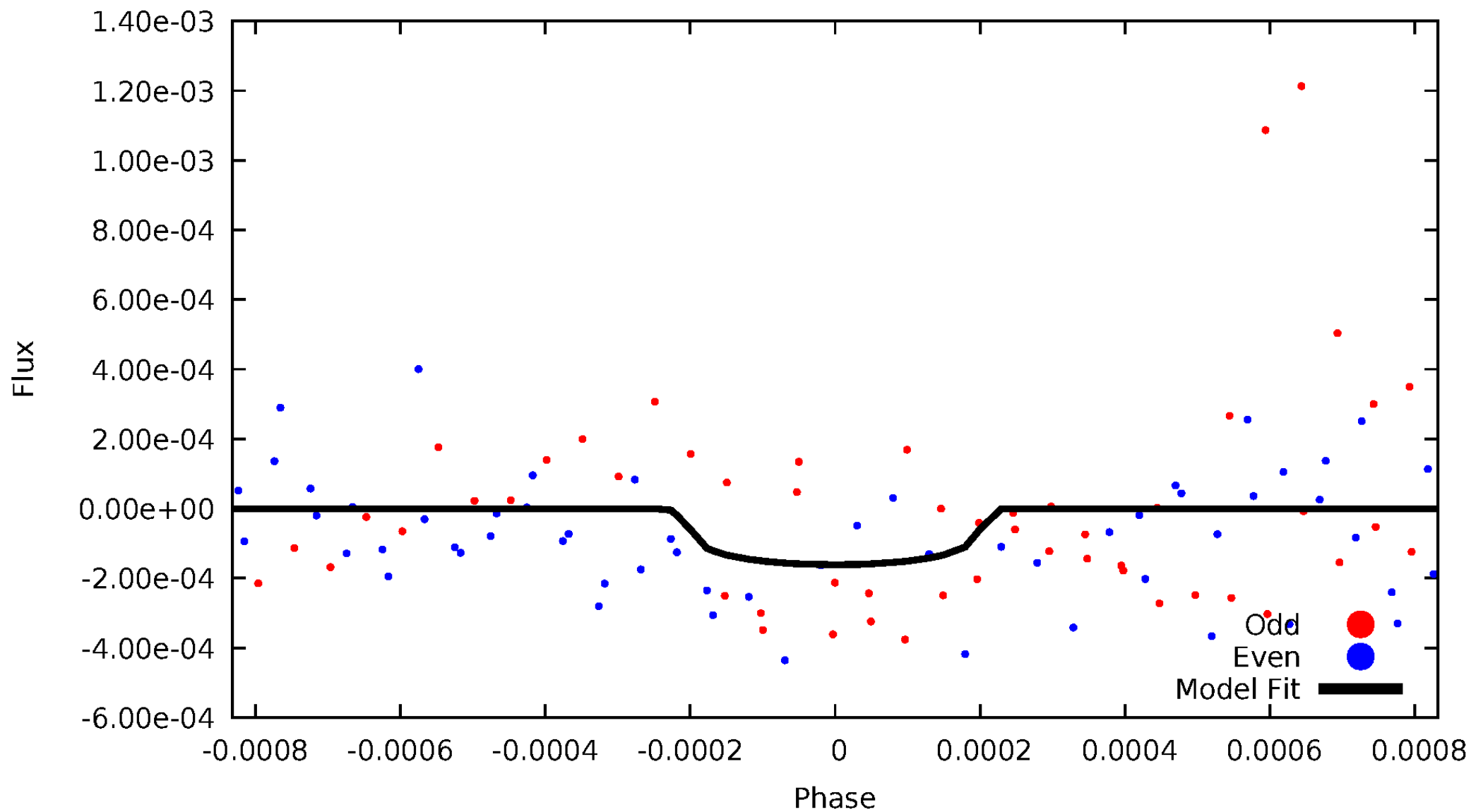


TCE 005552801-03



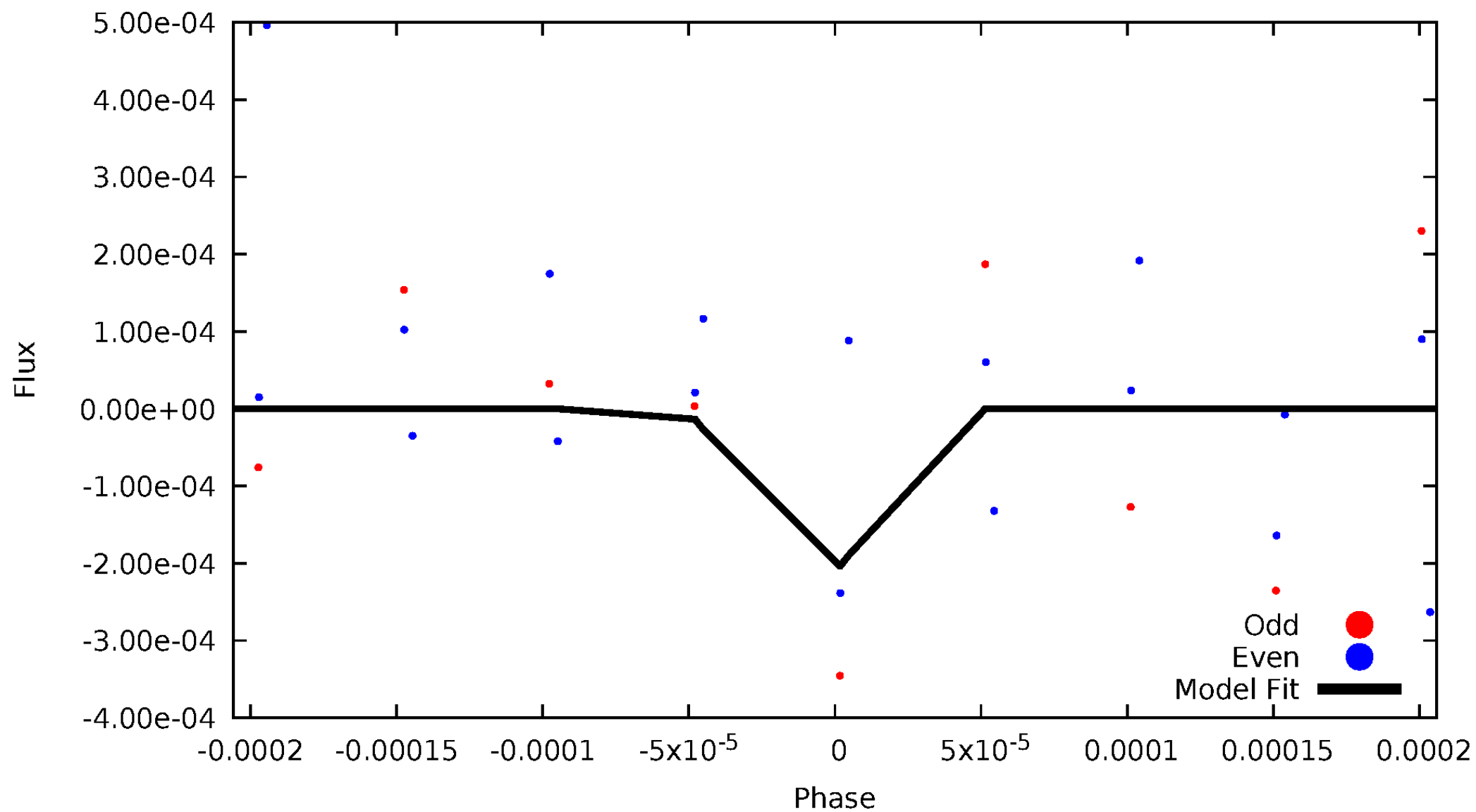
DV Odd/Even

TCE 005552801-03



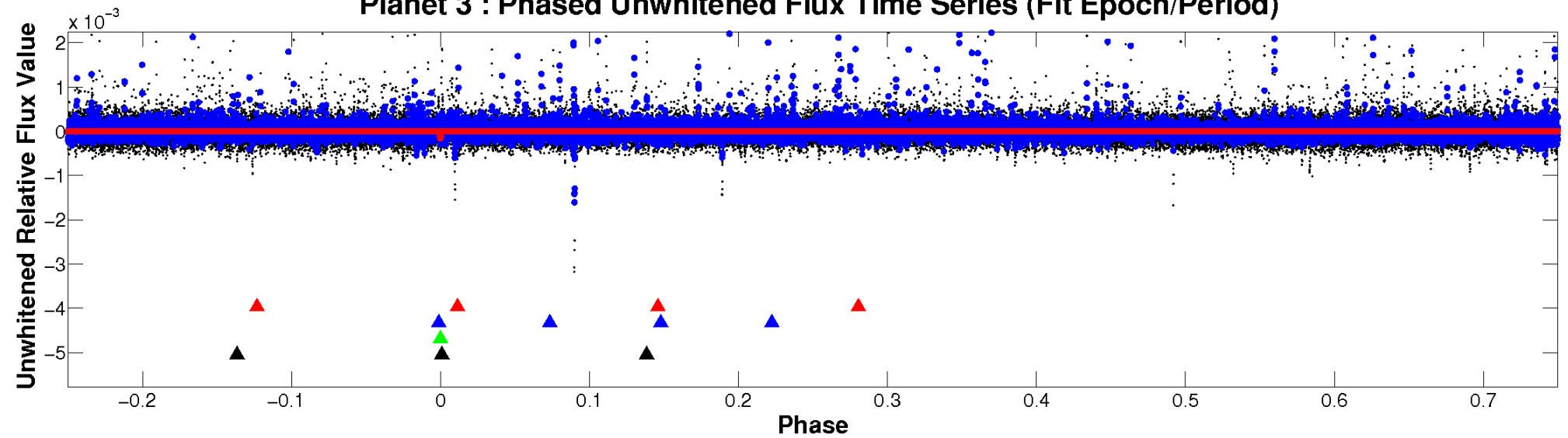
ALT Odd/Even

TCE 005552801-03

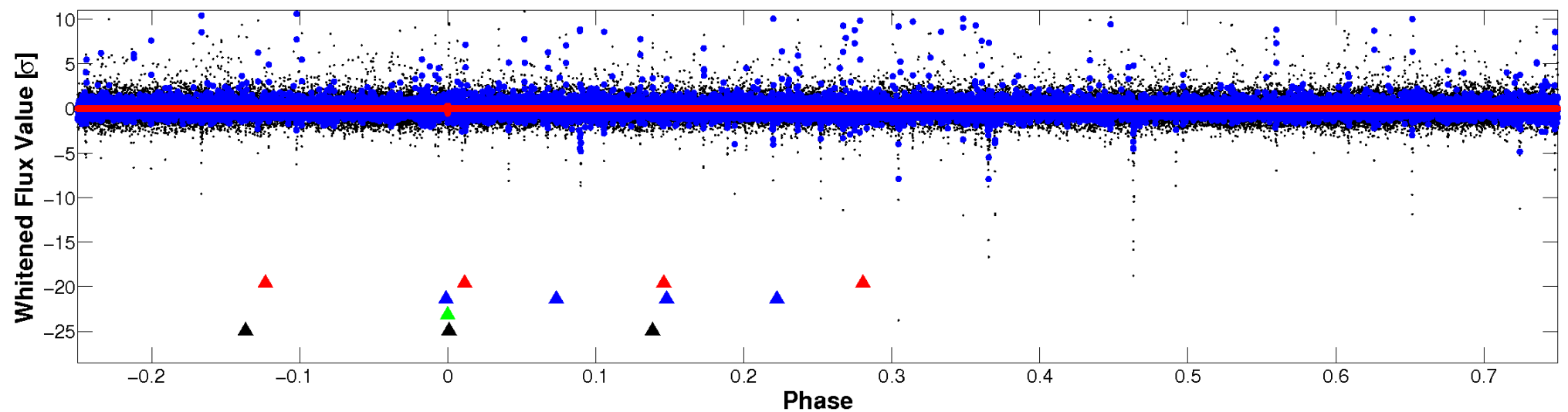


Non-Whitened Vs. Whitened Light Curve

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

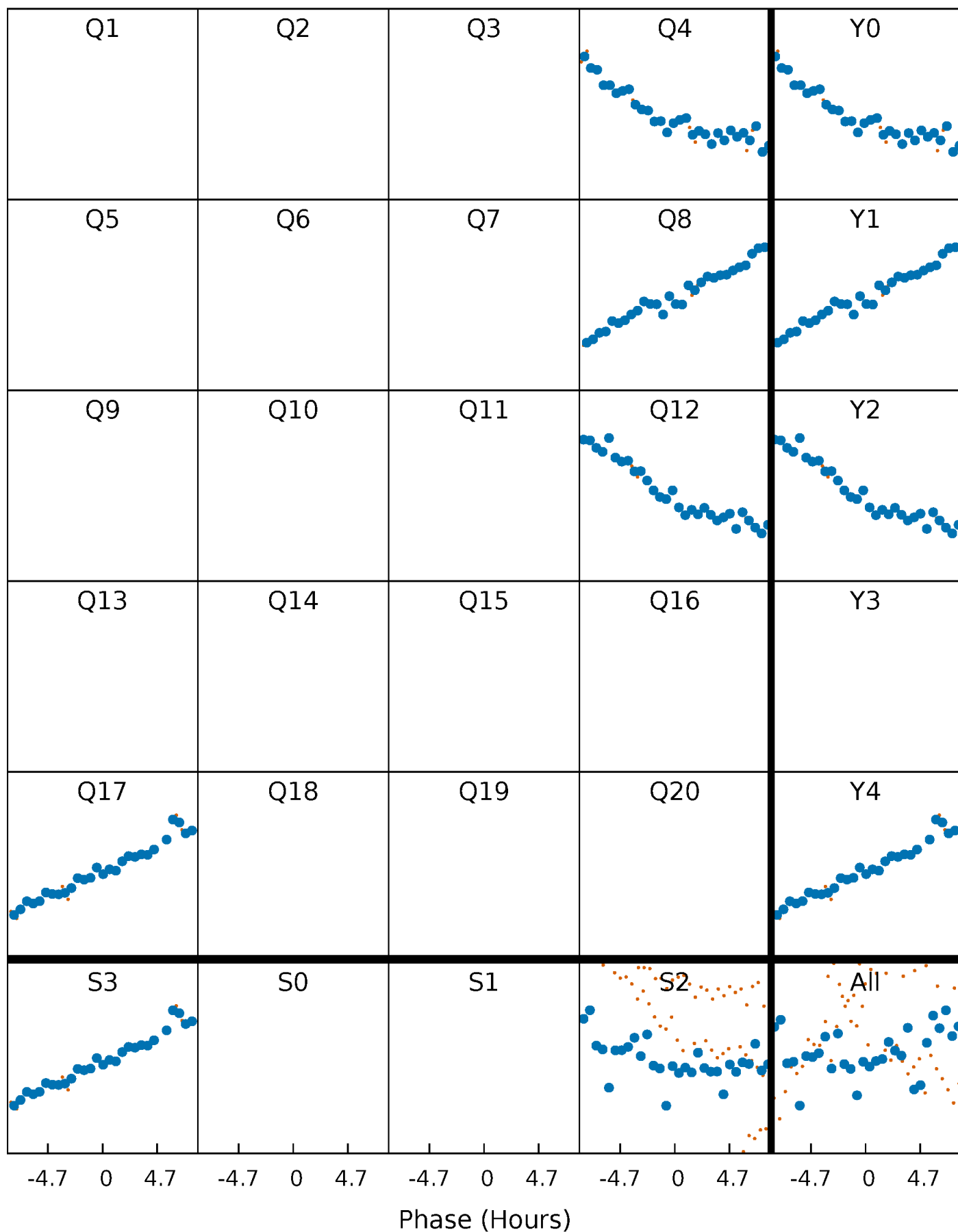


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



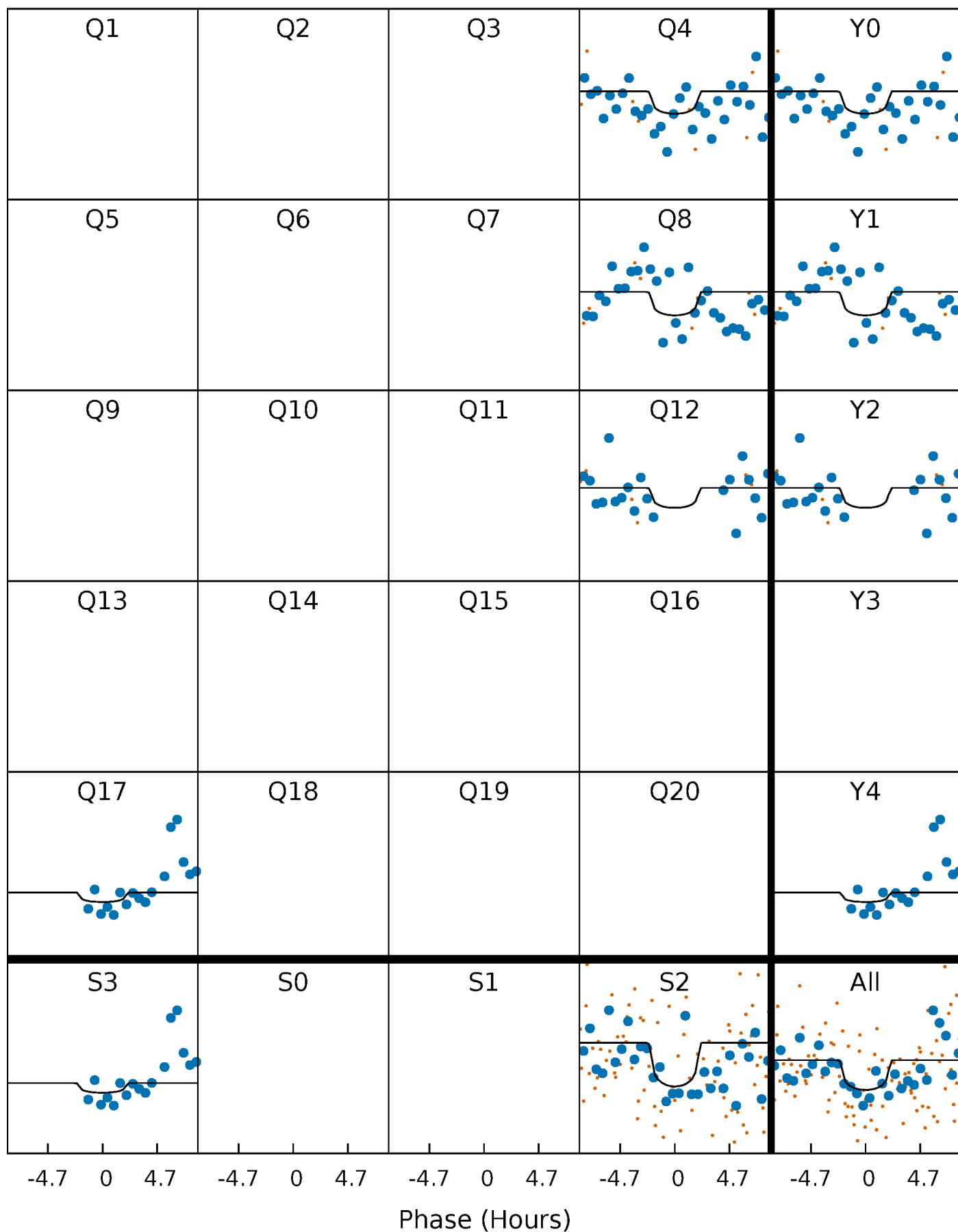
PDC Quarter-Phased Transit Curves

TCE 005552801-03 $P=410.829204$ Days $T_0=357.145509$ (BKJD)



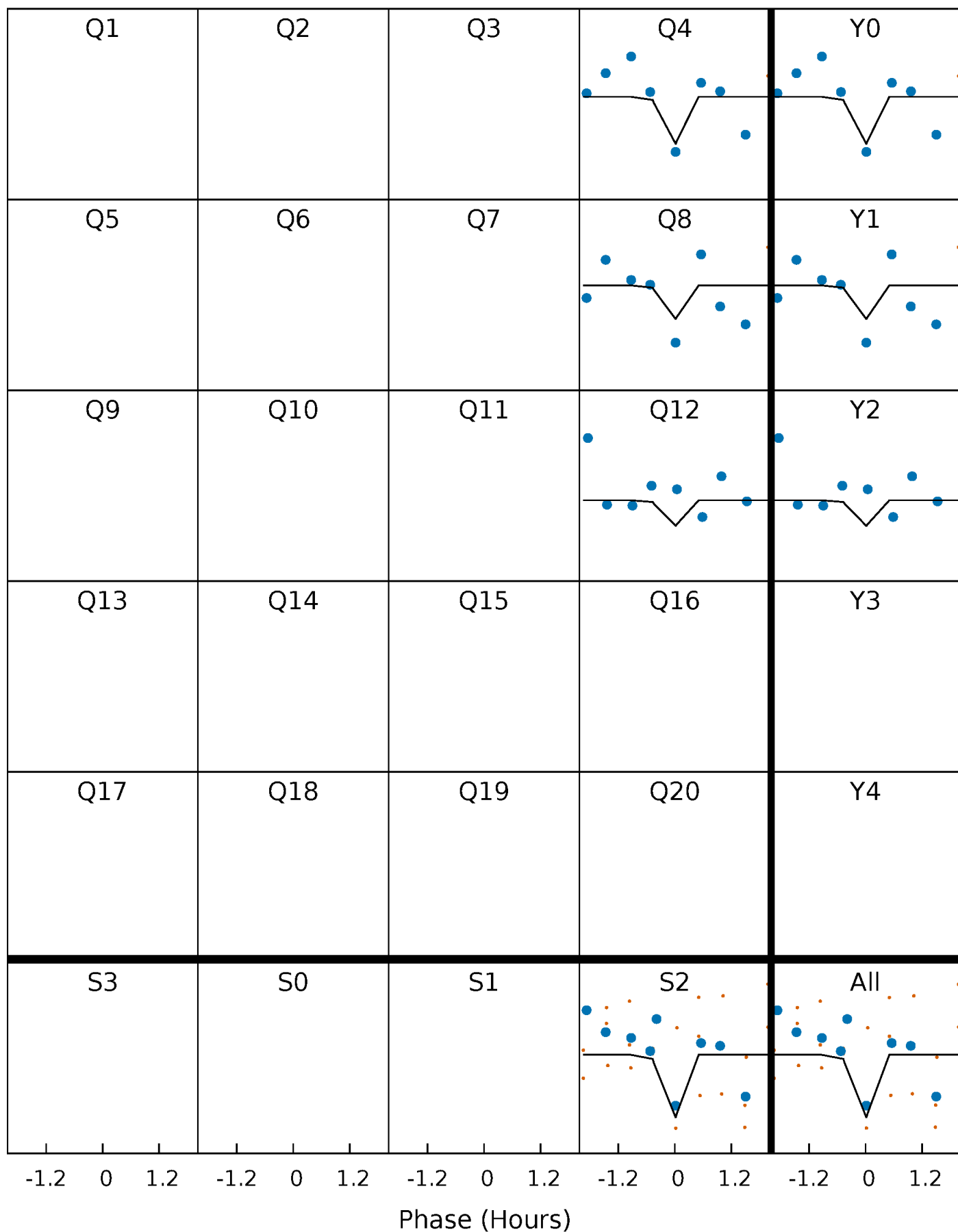
DV Quarter-Phased Transit Curves

TCE 005552801-03 $P=410.829204$ Days $T_0=357.145509$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

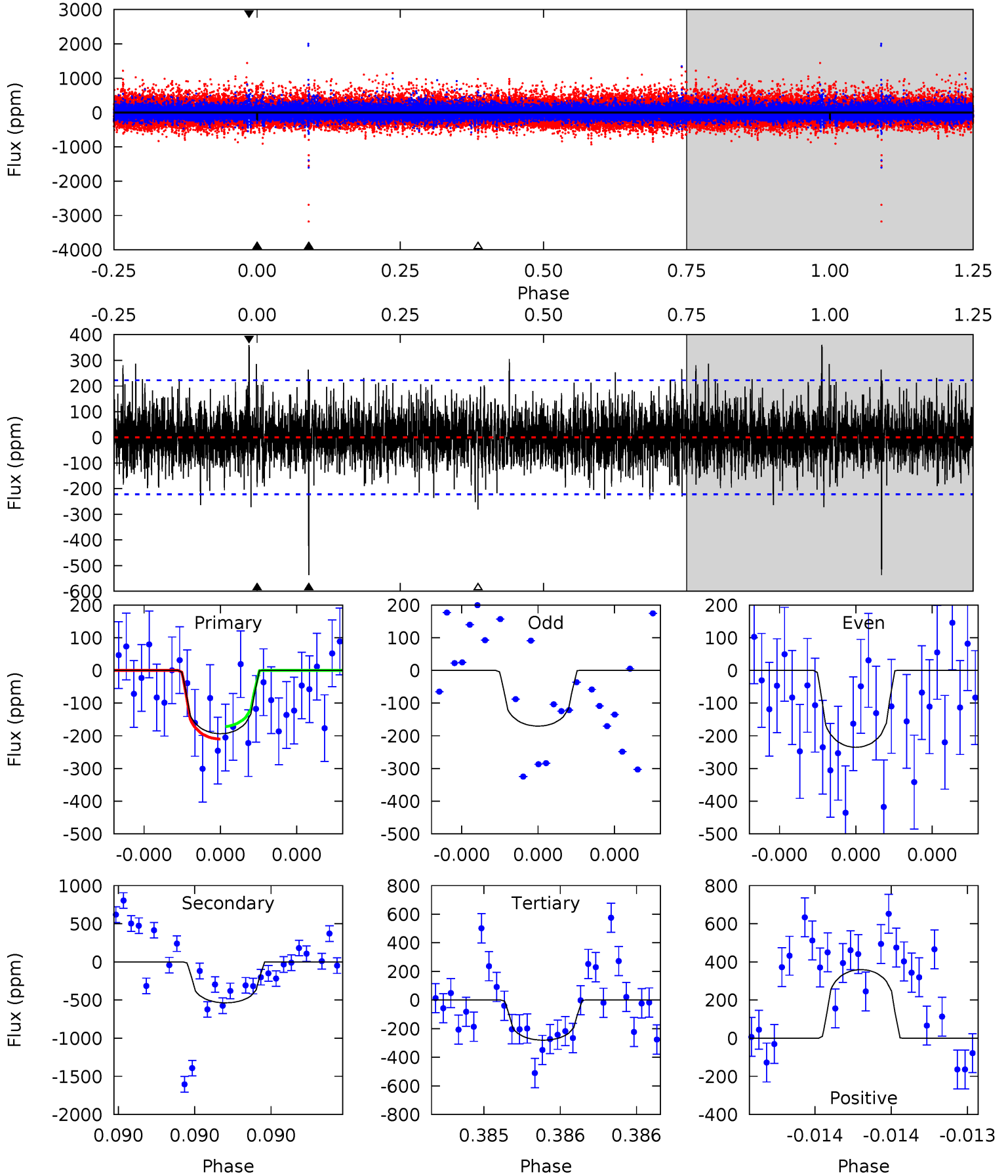
TCE 005552801-03 P=410.714556 Days $T_0=357.218491$ (BKJD)



DV Model-Shift Uniqueness Test

005552801-03, P = 410.829204 Days, E = 357.145509 Days

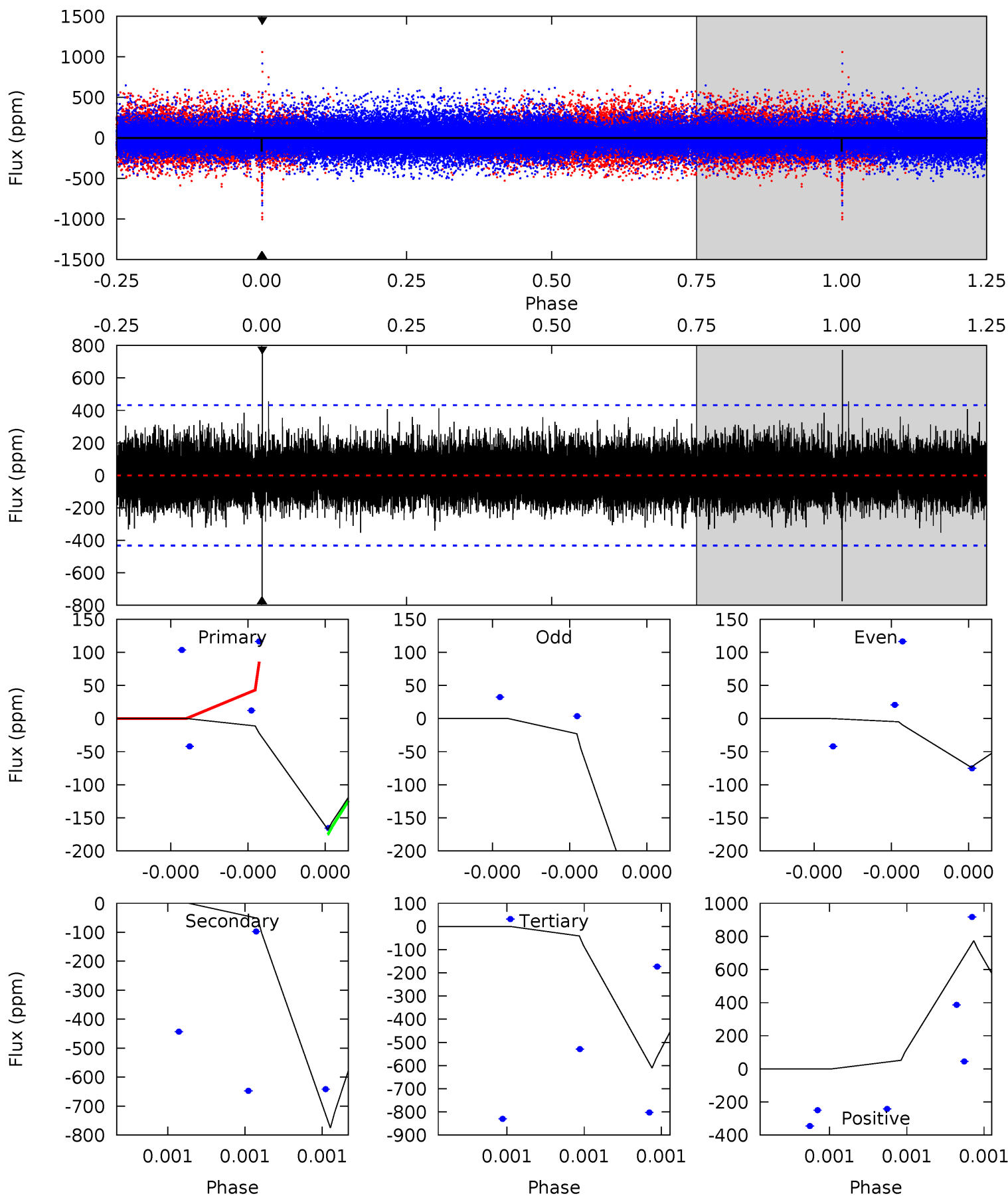
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.87	13.5	7.06	9.05	5.59	3.51	1.71	-2.19	-4.18	6.44	4.45	0.69	0.98	0.40	0.48



Alt Model-Shift Uniqueness Test

005552801-03, P = 410.714556 Days, E = 357.218491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.30	10.7	8.40	10.6	5.95	4.04	1.16	-6.09	-8.33	2.26	0.02	1.54	0.66	0.50	0.62



Stellar Parameters For KIC 005552801

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+160}_{-144}	$4.471^{+0.125}_{-0.125}$	$-0.320^{+0.350}_{-0.300}$	$0.836^{+0.144}_{-0.118}$	$0.755^{+0.118}_{-0.050}$	$1.820^{+1.023}_{-0.653}$
	+3%/-3%	+3%/-3%	+109%/-94%	+17%/-14%	+16%/-7%	+56%/-36%
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 005552801-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-537 ± 40	$4.54^{+4.77}_{-3.27}$	308^{+17}_{-16}	4008^{+3030}_{-808}	$13912^{+164562}_{-10427}$
Alt.	-774 ± 73	$4.55^{+4.85}_{-3.09}$	308^{+16}_{-16}	4282^{+3041}_{-940}	$20611^{+171876}_{-15974}$

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

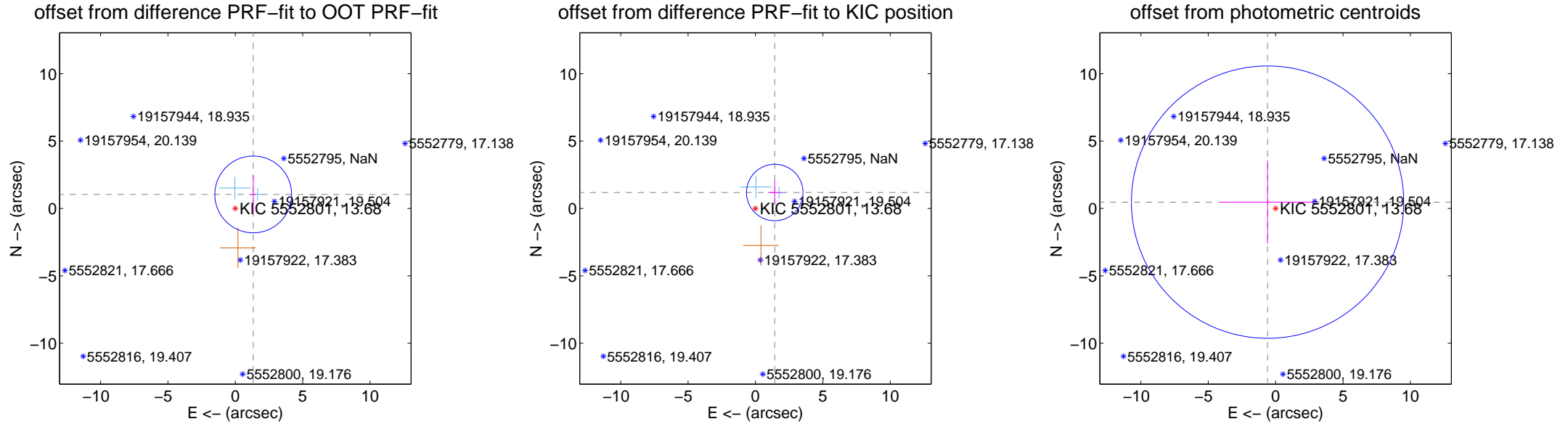
DV Centroid Data

Supplemental centroid analysis for 005552801-03. Kepler magnitude: 13.68. Transit SNR 2.62

There are 2 quarters with good PRF difference image offsets

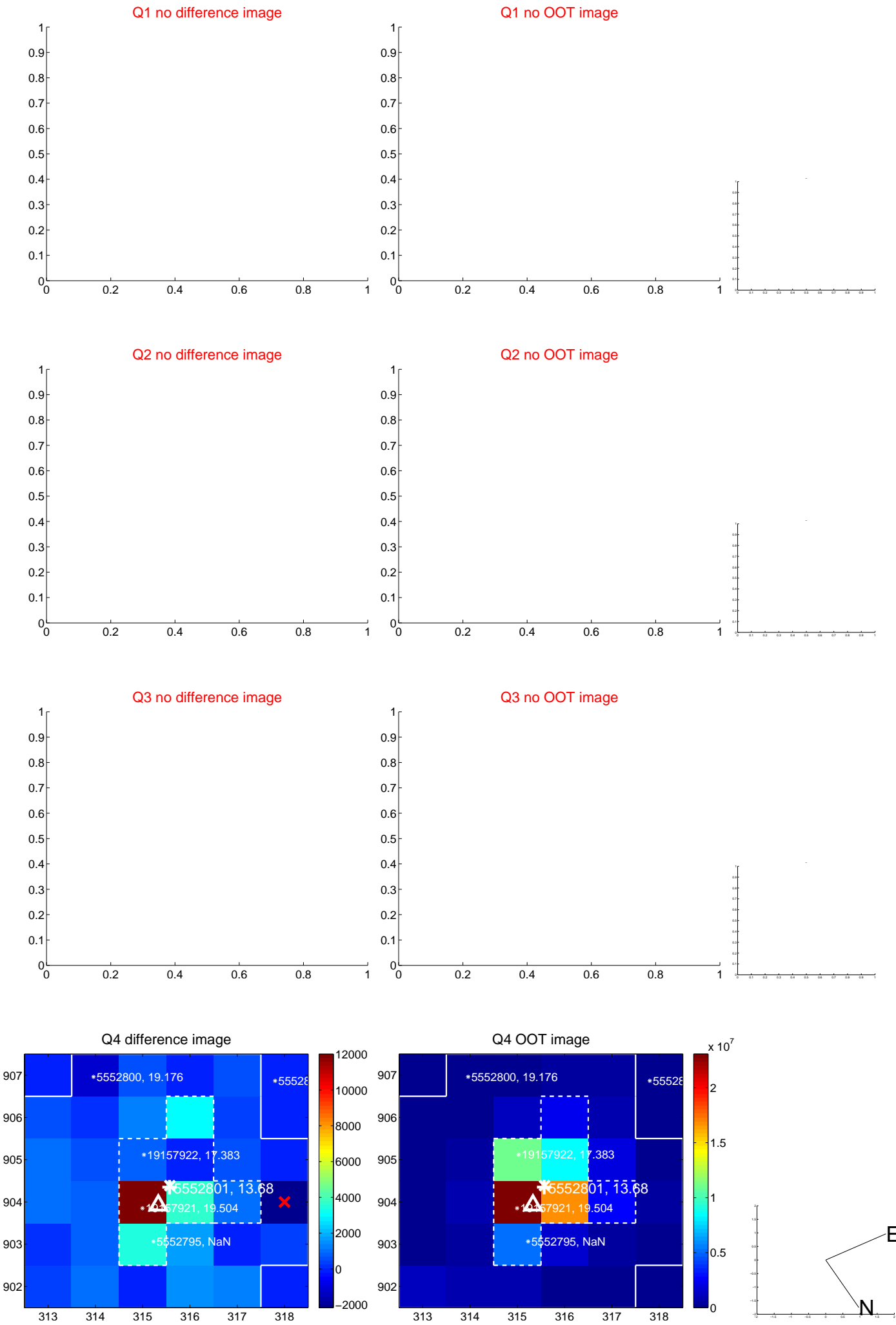
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.687 ± 0.950	1.78	-1.328 ± 0.224	1.040 ± 1.445
PRF-fit source offset from KIC position	1.856 ± 0.699	2.66	-1.430 ± 0.507	1.183 ± 0.909
photometric centroid source offset	0.76 ± 3.37	0.23	0.60 ± 3.52	0.47 ± 3.11



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

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



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



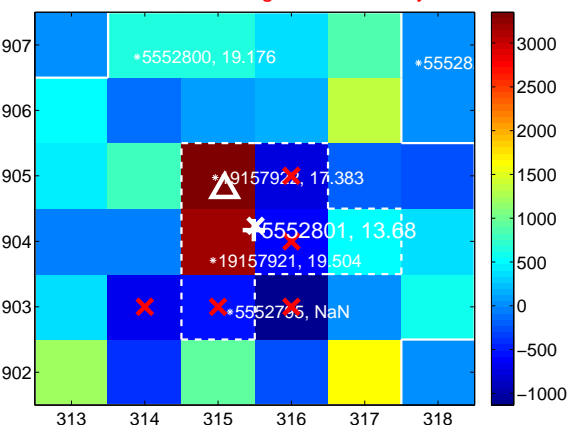
Q7 no difference image



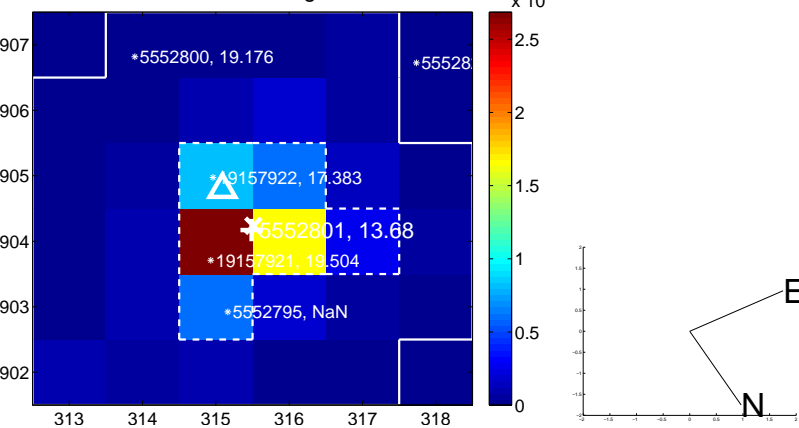
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image



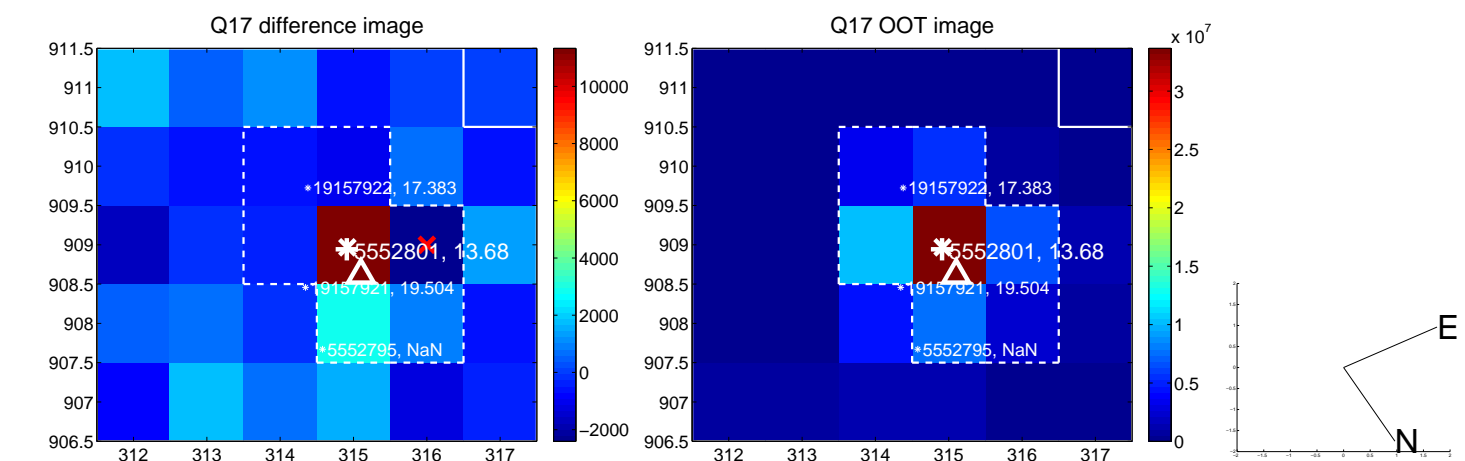
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



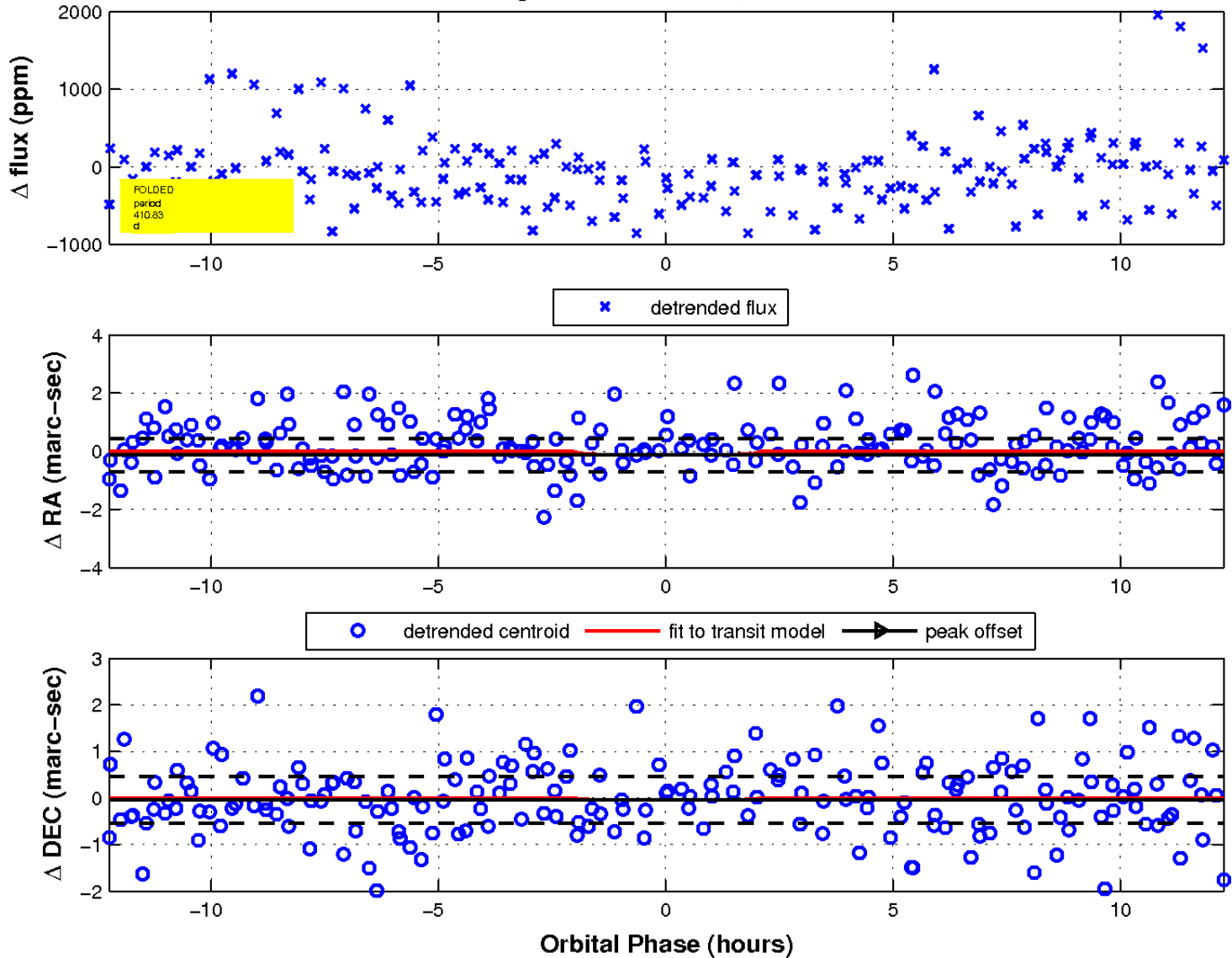
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

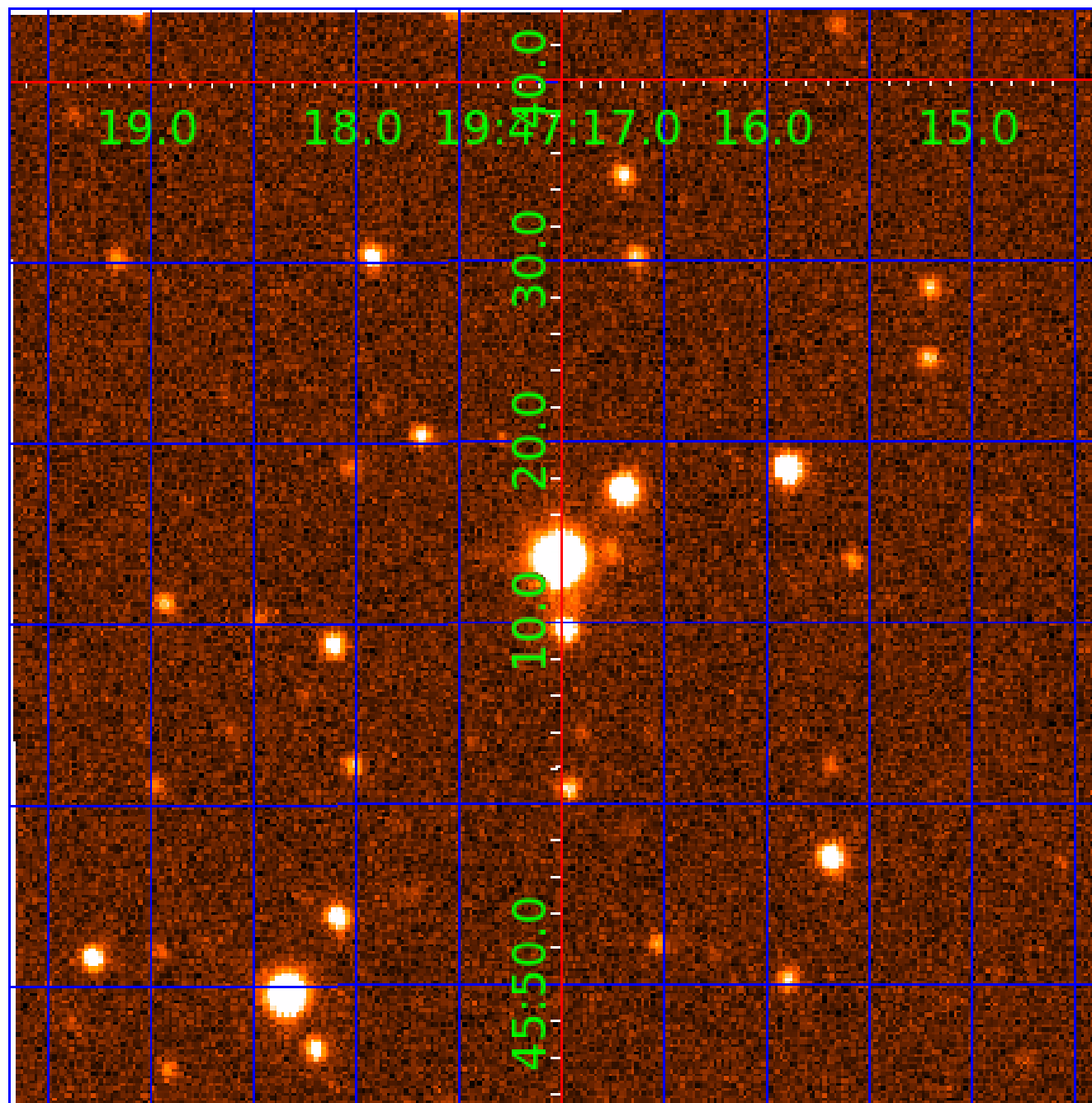


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 005552801

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})
005552801-01	OBS	No	355.548730	472.405896	114.3	2.747	11.4	1.9	0.84	5403	0.91	0.67
005552801-02	OBS	No	380.211992	448.526081	332.7	6.058	9.0	5.1	0.84	5403	1.59	0.61
005552801-03	OBS	No	410.829204	357.145508	161.1	4.099	11.3	2.6	0.84	5403	1.08	0.55
005552801-04	OBS	No	467.308275	301.051616	637.0	3.853	11.6	7.3	0.84	5403	2.81	0.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005552801-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005552801-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
005552801-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

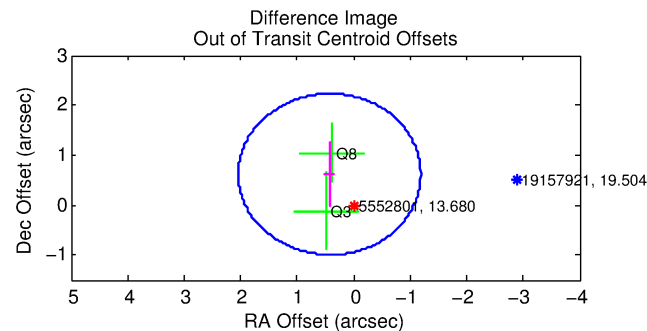
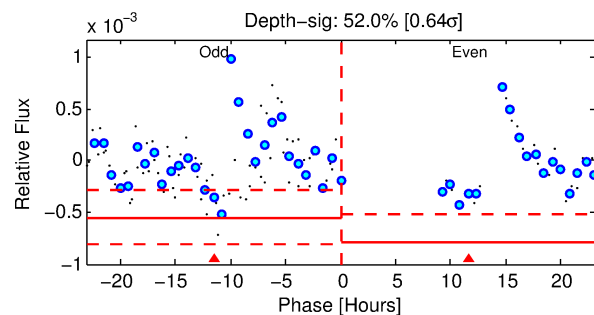
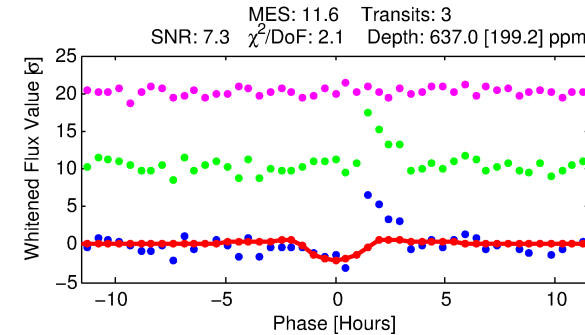
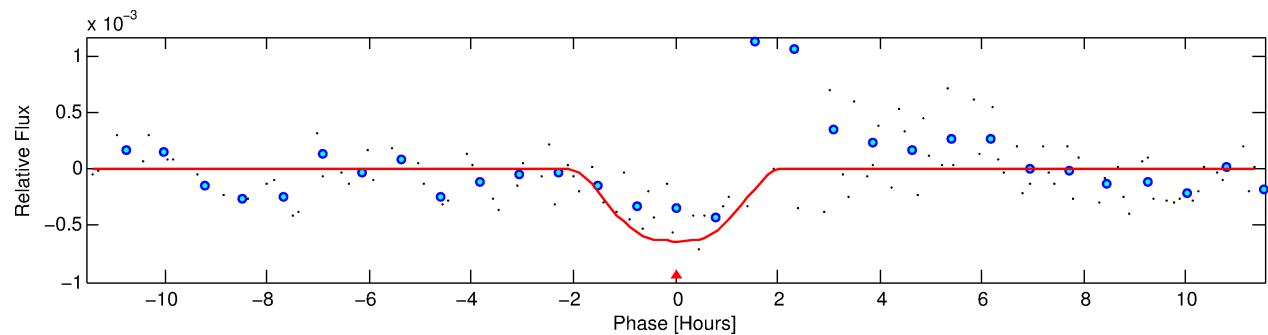
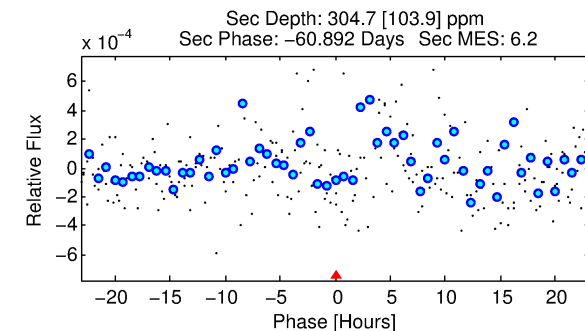
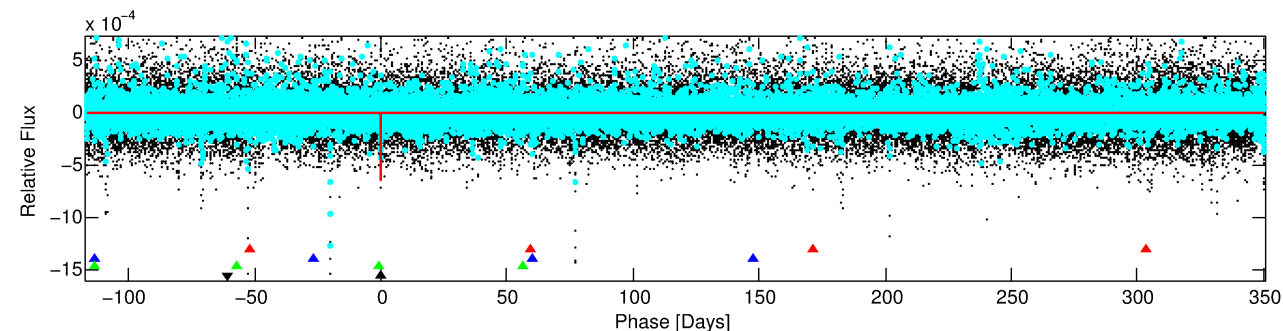
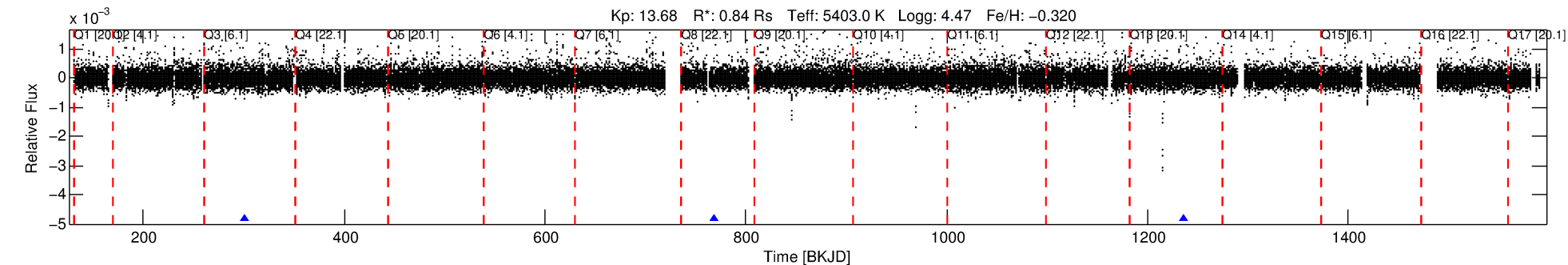
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005552801-04

No Significant Match Found

DV One-Page Summary

KIC: 5552801 Candidate: 4 of 4 Period: 467.308 d



DV Fit Results:

Period = 467.30828 [0.01256] d
Epoch = 301.0516 [0.0164] BKJD
Rp/R* = 0.0308 [0.0070]
a/R* = 336.89 [144.18]
b = 0.96 [0.04]
Seff = 0.46 [0.12]
Teff = 210 [13] K
Rp = 2.81 [0.80] Re
a = 1.0729 [0.1605] AU
Ag = 24380.45 [14841.04] [1.64 σ]
Teffp = 4065 [588] K [6.56 σ]

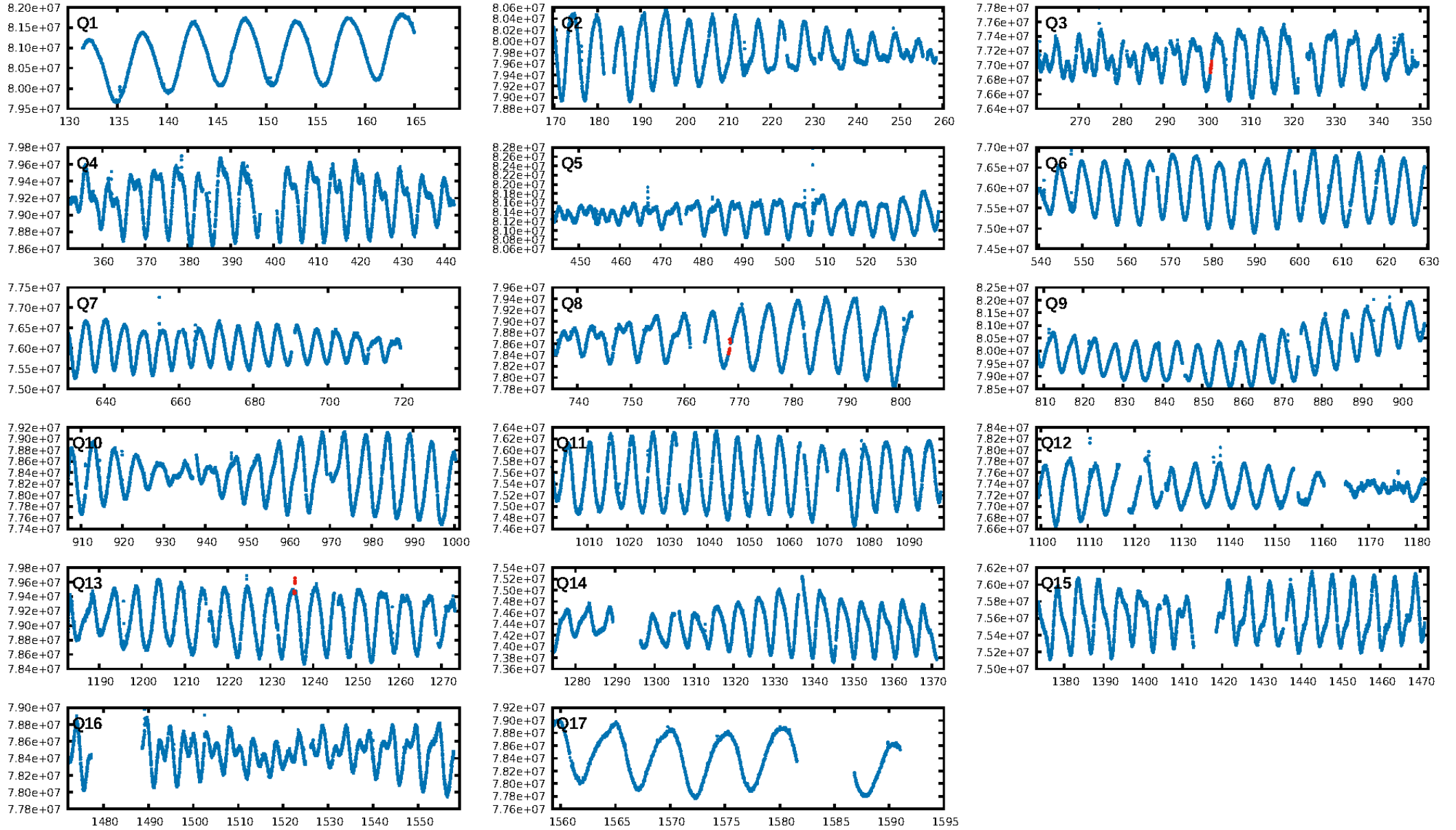
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [240.94 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.6%
ModelChiSquareGof-sig: 82.2%
Bootstrap-pfa: 3.64e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.497
Centroid-sig: 41.2%
Centroid-so: 1.157 arcsec [1.04 σ]
OotOffset-rm: 0.750 arcsec [1.39 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.867 arcsec [1.48 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.67 [2/3]

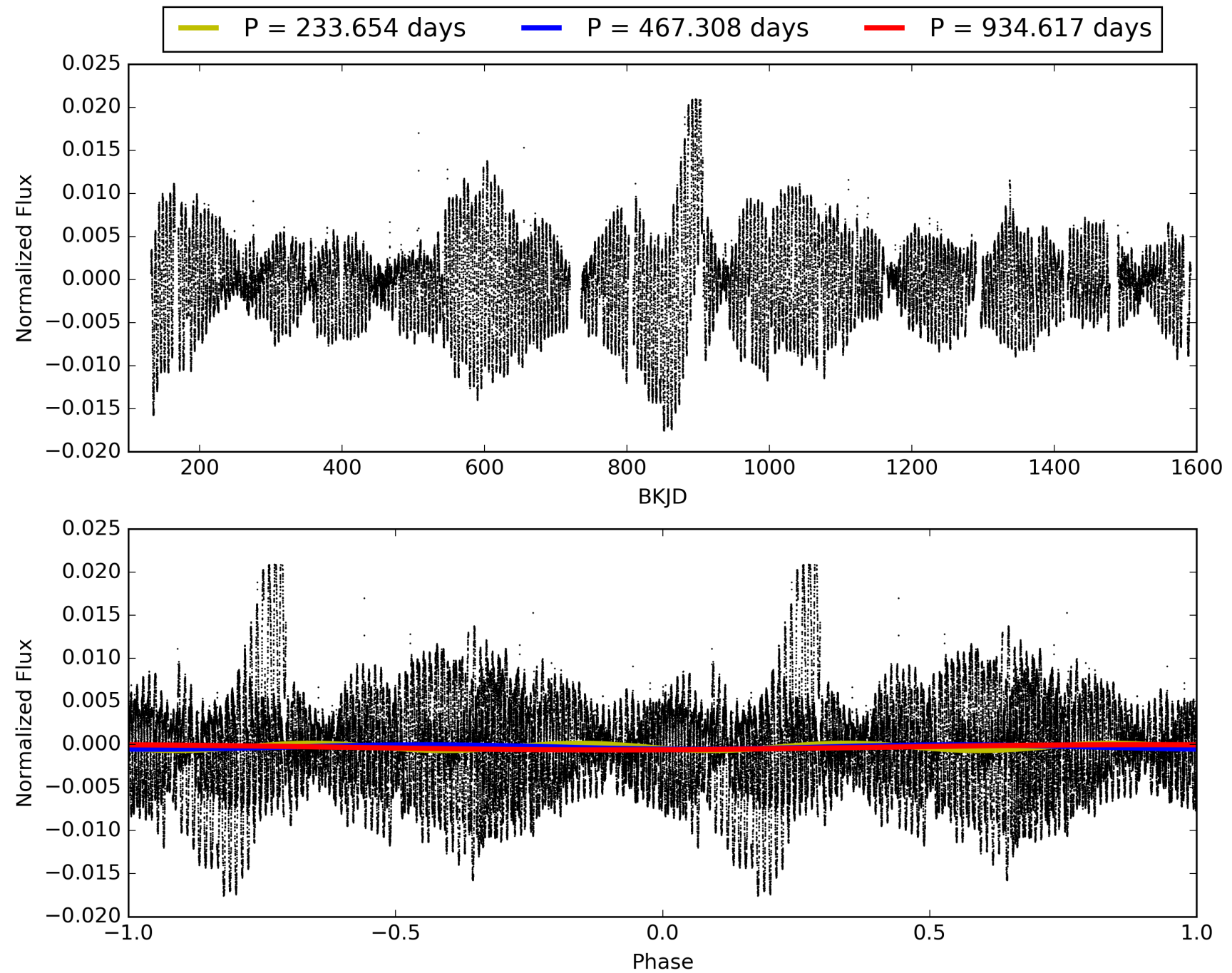
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:28:29 Z

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

TCE 005552801-04, PDC Light Curves

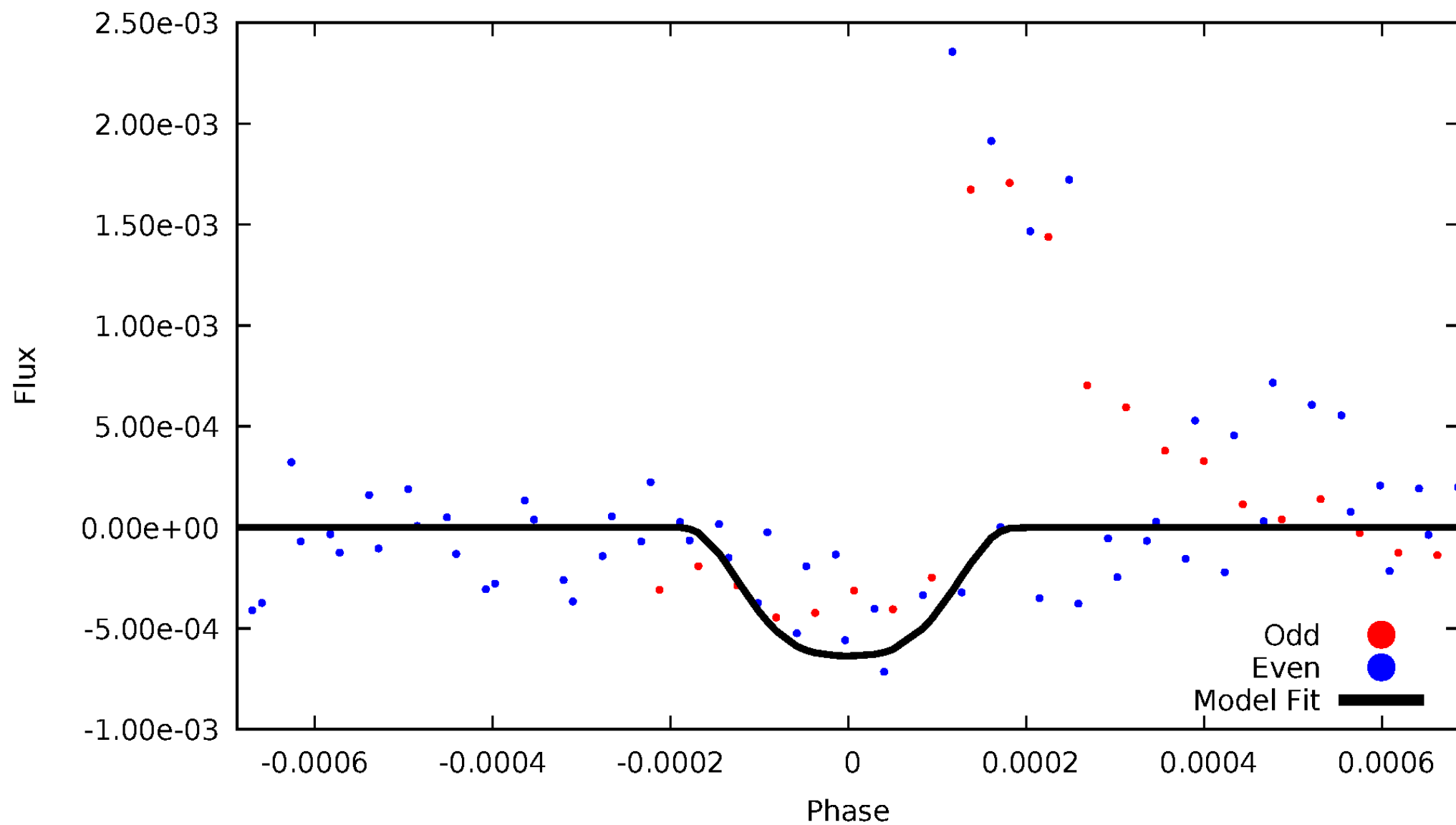


TCE 005552801-04



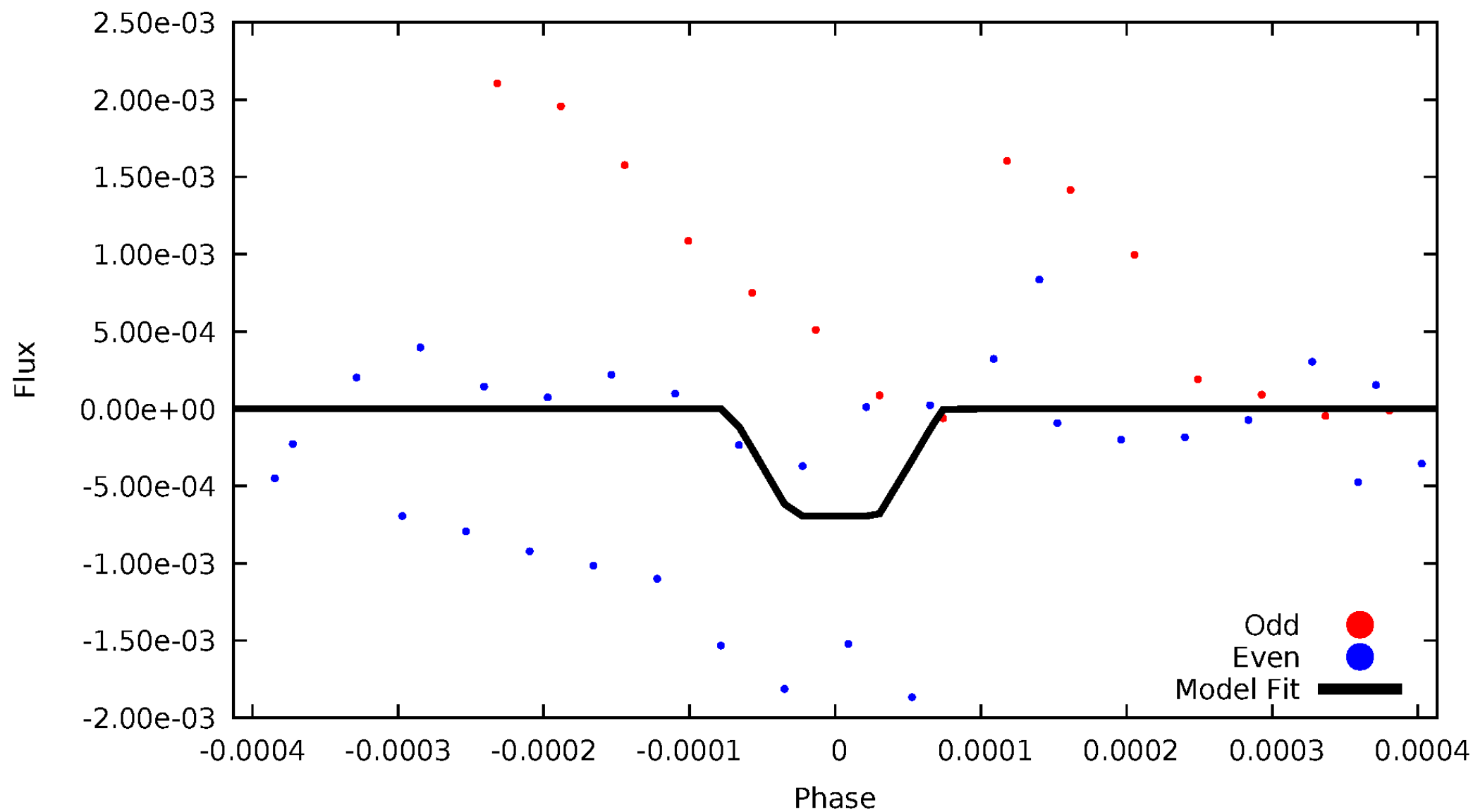
DV Odd/Even

TCE 005552801-04



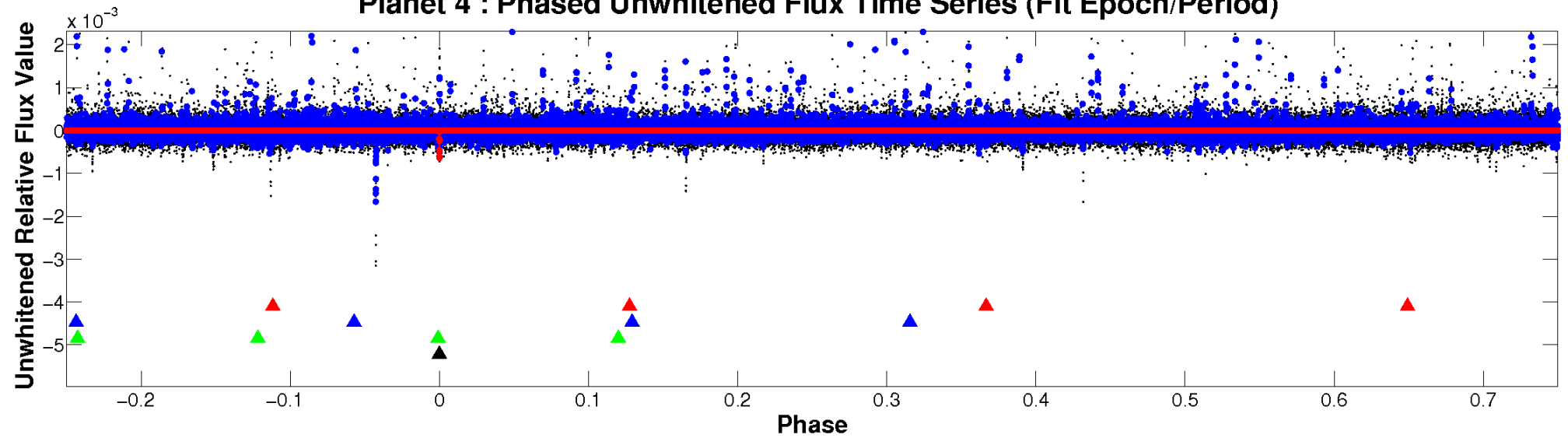
ALT Odd/Even

TCE 005552801-04

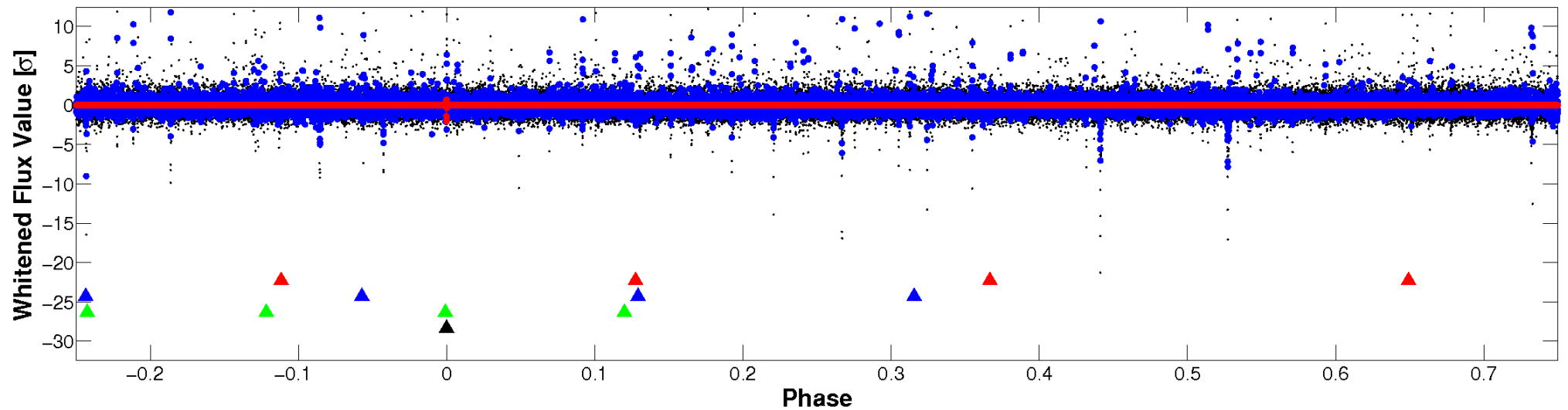


Non-Whitened Vs. Whitened Light Curve

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

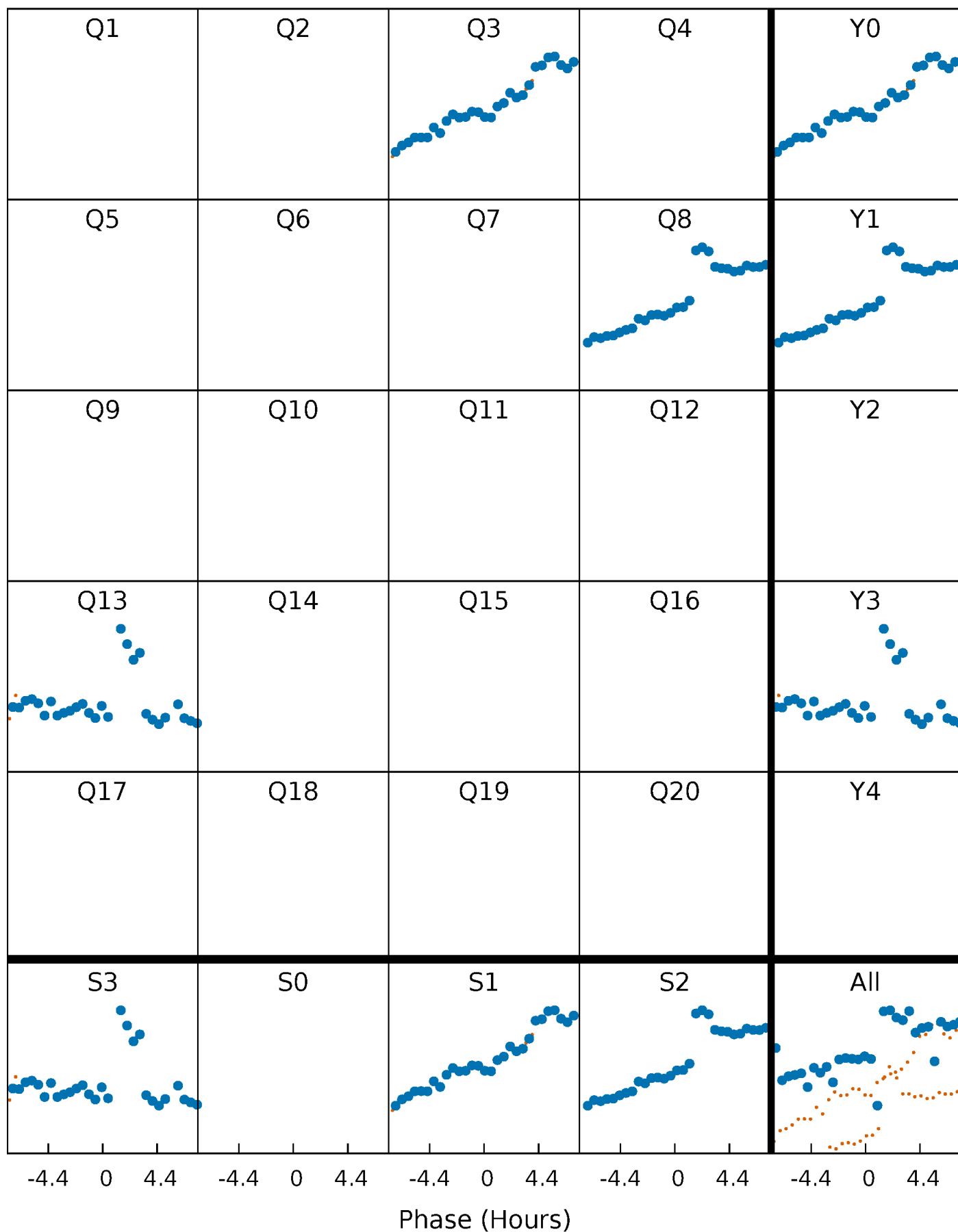


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



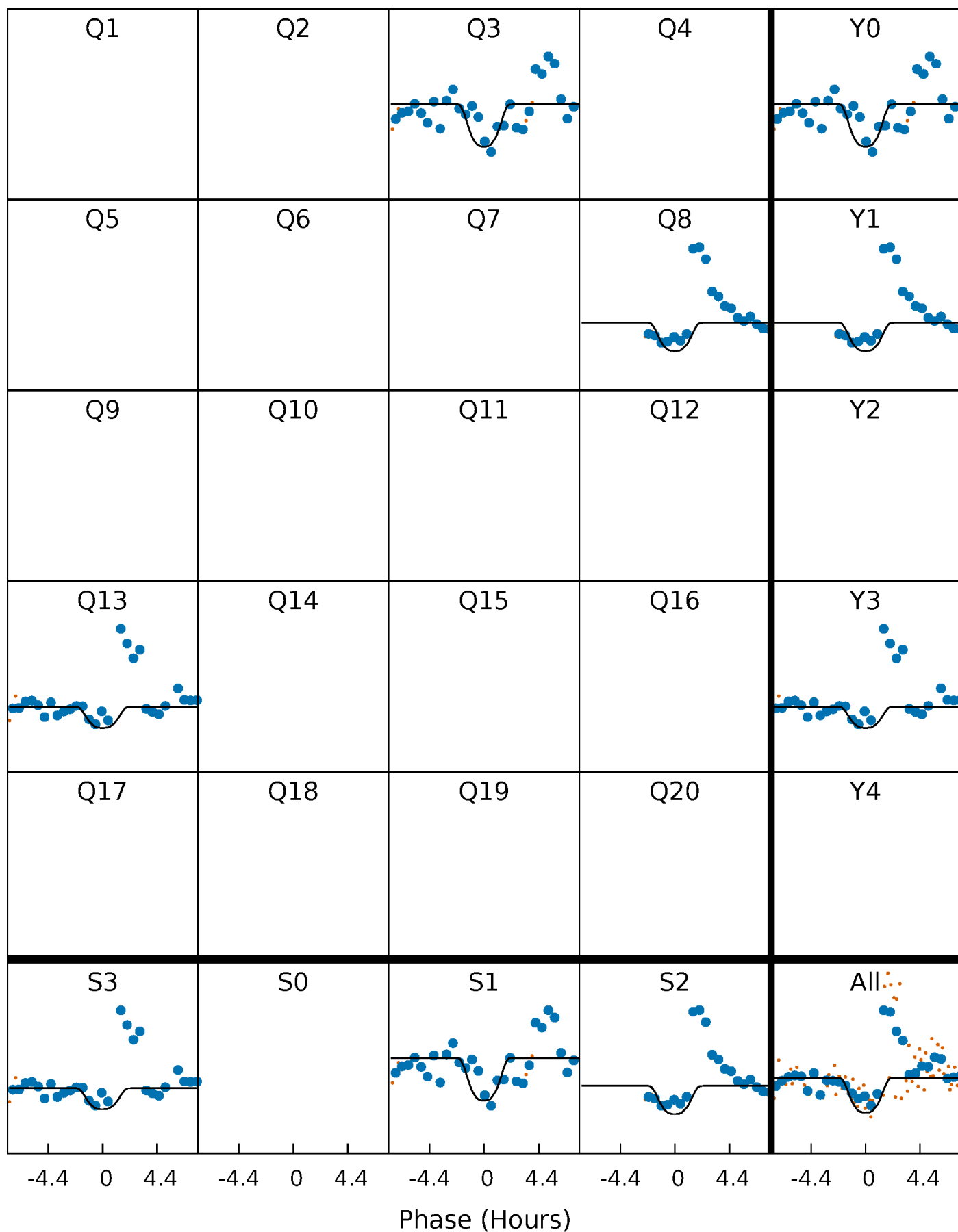
PDC Quarter-Phased Transit Curves

TCE 005552801-04 $P=467.308275$ Days $T_0=301.051616$ (BKJD)



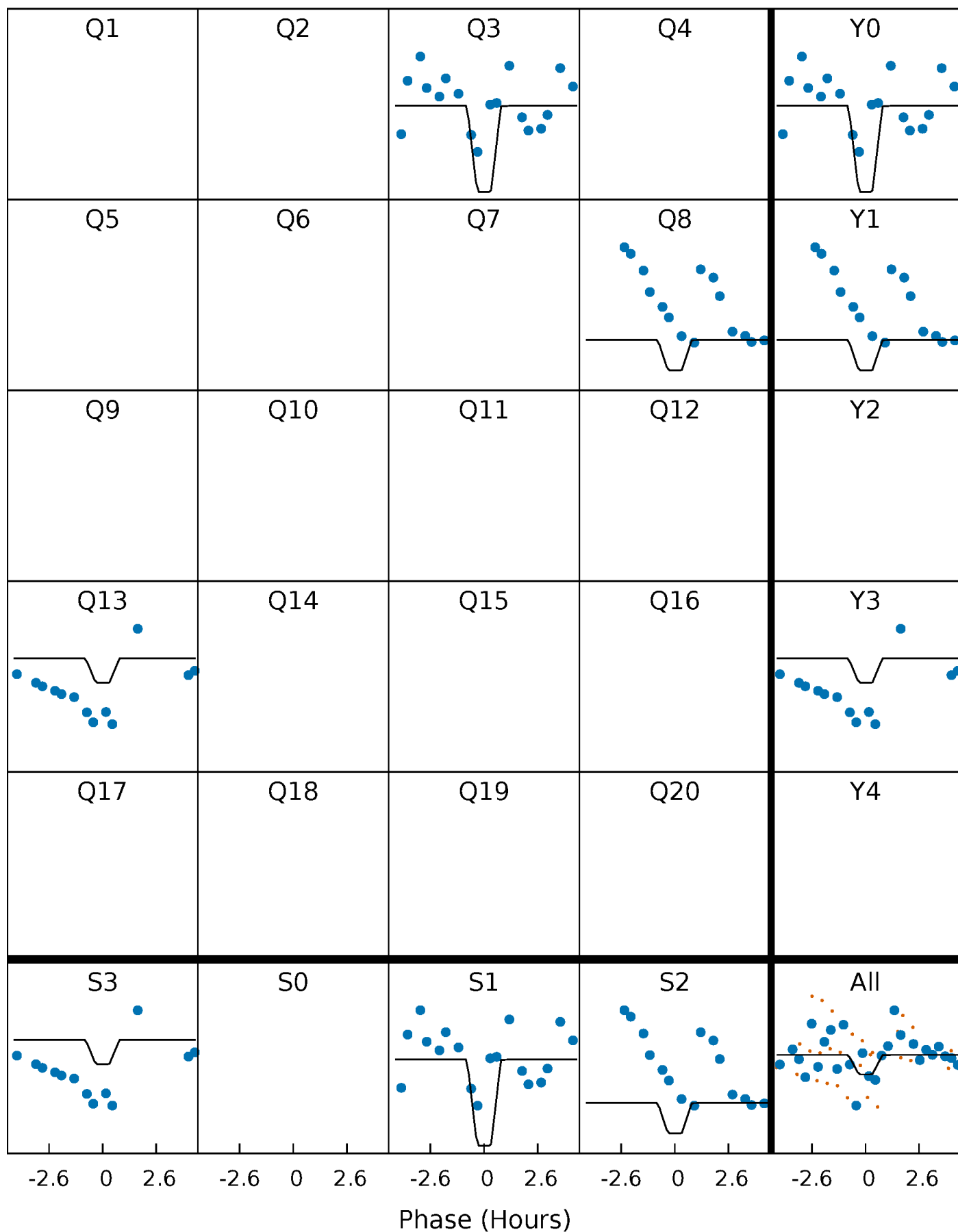
DV Quarter-Phased Transit Curves

TCE 005552801-04 $P=467.308275$ Days $T_0=301.051616$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

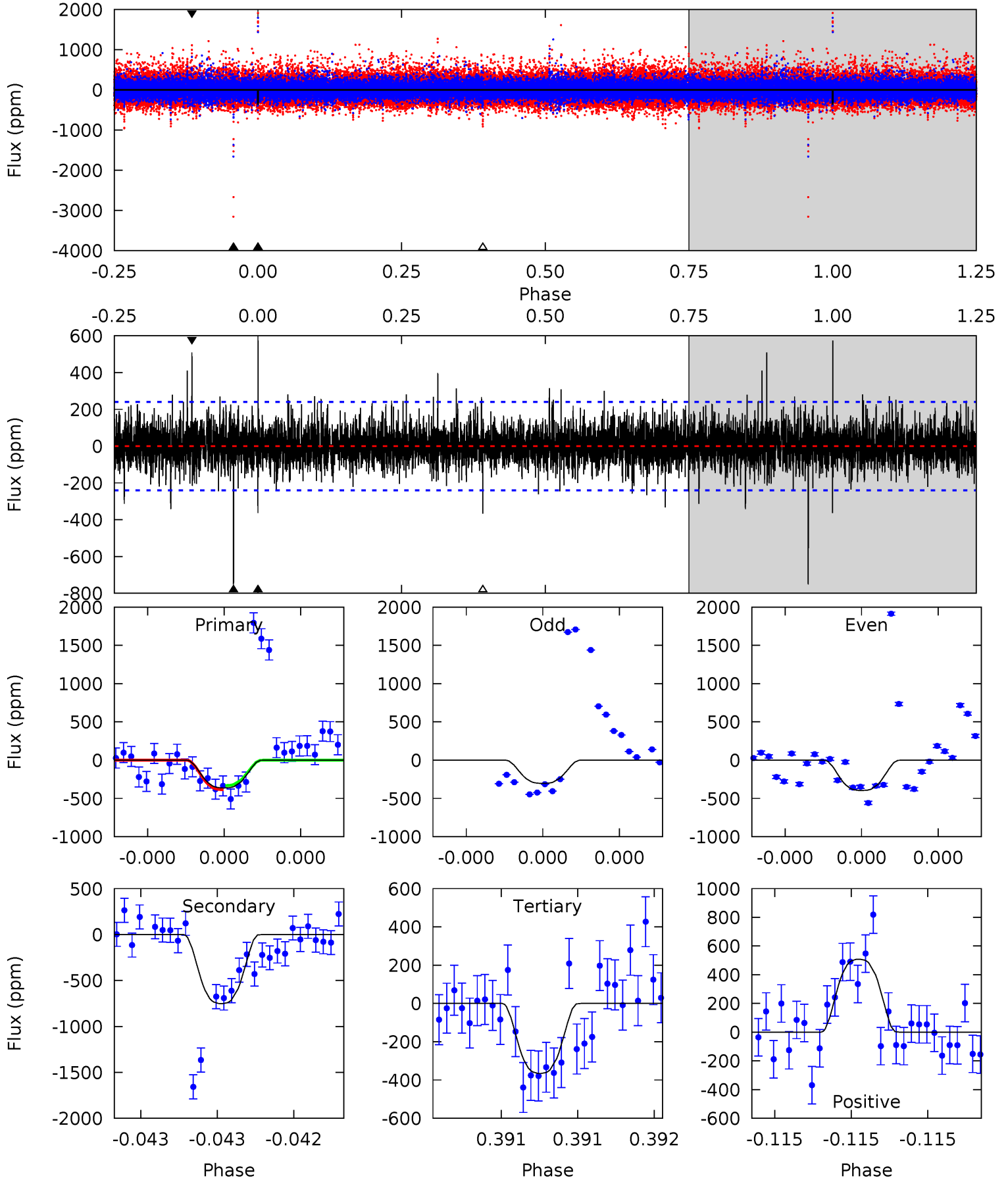
TCE 005552801-04 P=467.288272 Days $T_0=301.080829$ (BKJD)



DV Model-Shift Uniqueness Test

005552801-04, P = 467.308275 Days, E = 301.051616 Days

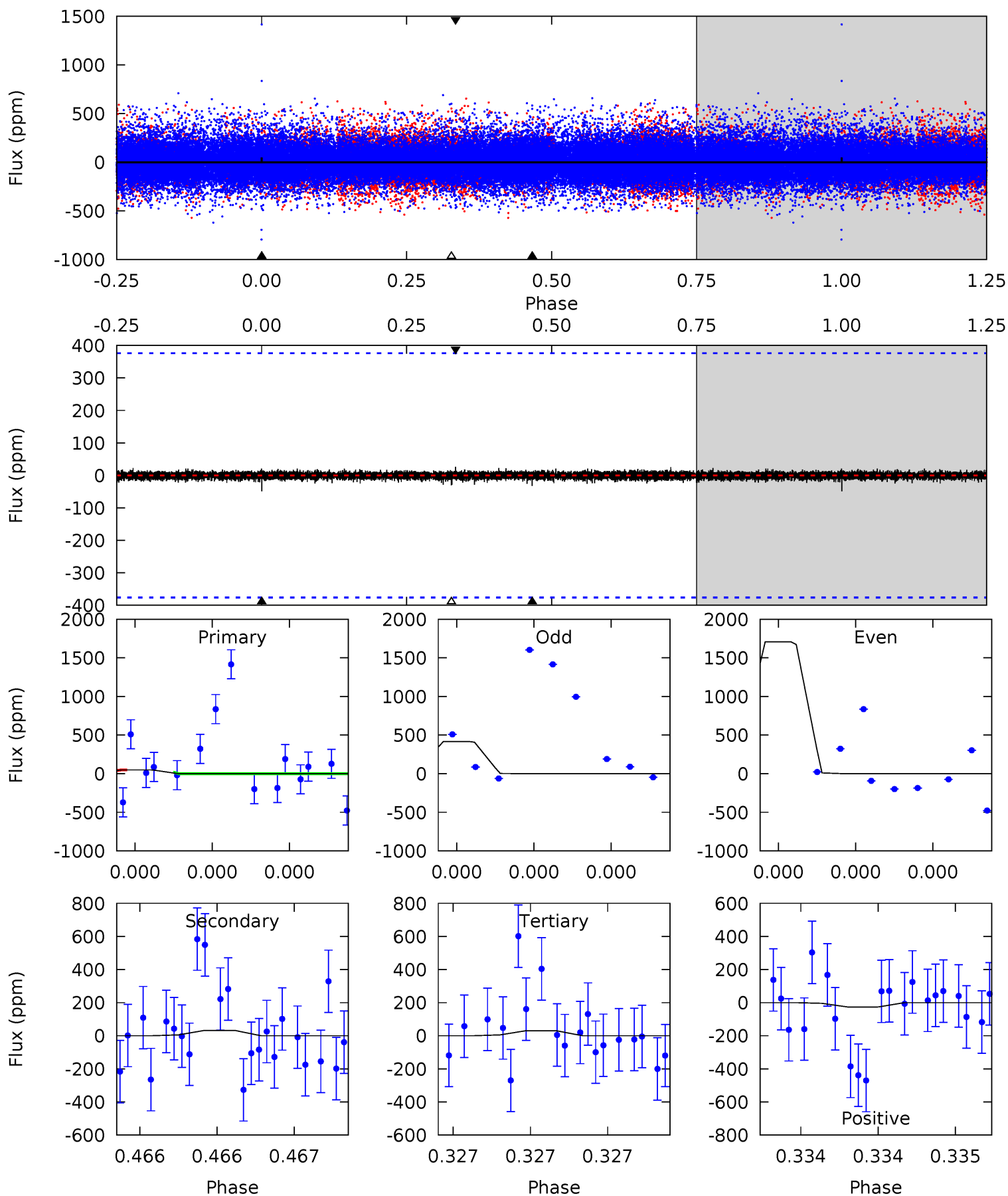
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.48	17.6	8.54	11.9	5.62	3.55	1.69	-0.05	-3.38	9.02	5.70	0.83	0.80	0.43	0.64



Alt Model-Shift Uniqueness Test

005552801-04, P = 467.288272 Days, E = 301.080829 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.75	0.49	0.47	0.41	5.80	3.82	0.08	0.29	0.35	0.03	0.09	9.68	3.07	0.35	0.16



Stellar Parameters For KIC 005552801

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+160}_{-144}	$4.471^{+0.125}_{-0.125}$	$-0.320^{+0.350}_{-0.300}$	$0.836^{+0.144}_{-0.118}$	$0.755^{+0.118}_{-0.050}$	$1.820^{+1.023}_{-0.653}$
	+3%/-3%	+3%/-3%	+109%/-94%	+17%/-14%	+16%/-7%	+56%/-36%
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 005552801-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-752 ± 43	$2.87^{+0.65}_{-0.70}$	295^{+16}_{-14}	5128^{+651}_{-412}	58721^{+45109}_{-19027}
Alt.	-32 ± 65	$2.43^{+0.73}_{-0.68}$	295^{+16}_{-16}	3075^{+728}_{-6235}	3131^{+9033}_{-6930}

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

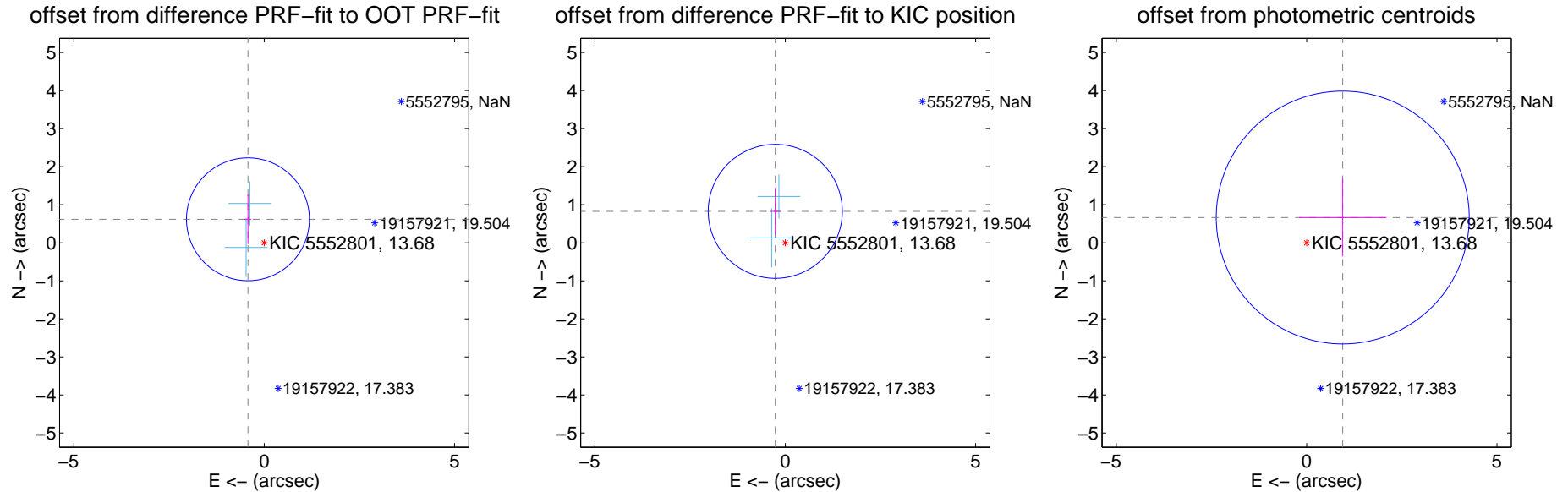
DV Centroid Data

Supplemental centroid analysis for 005552801-04. Kepler magnitude: 13.68. Transit SNR 7.29

There are 2 quarters with good PRF difference image offsets

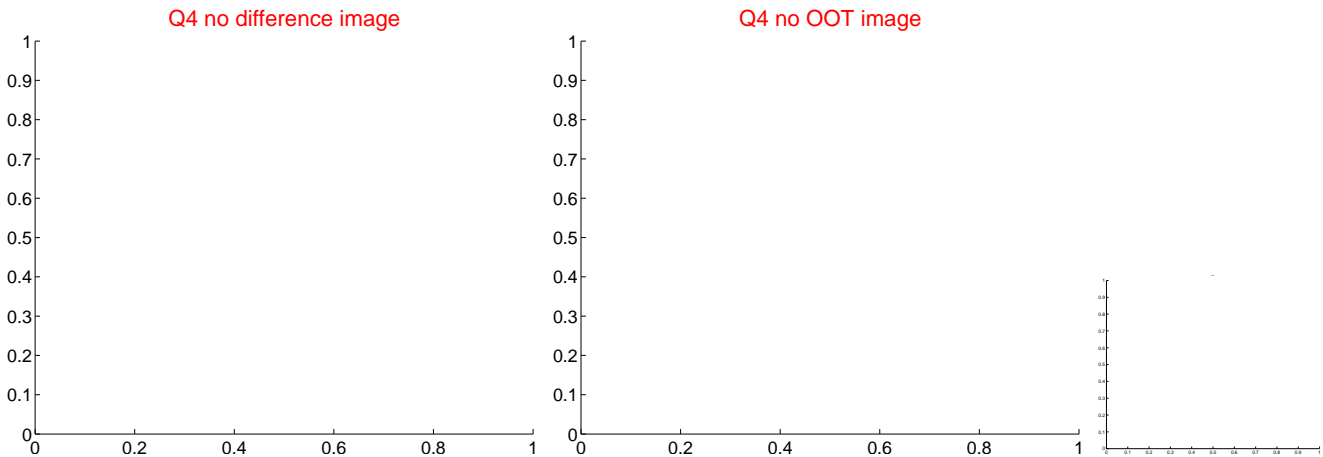
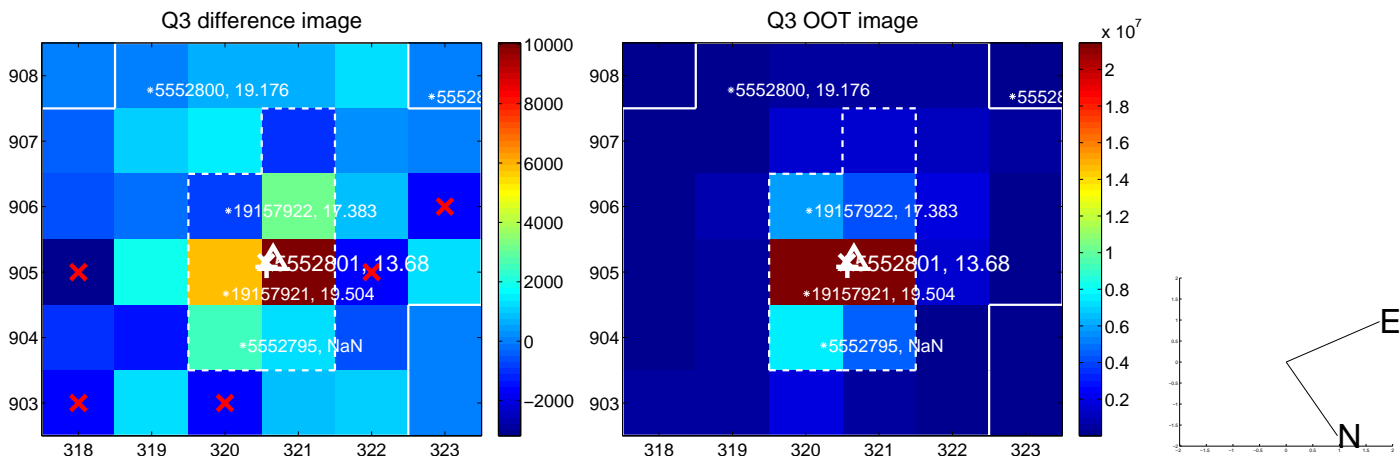
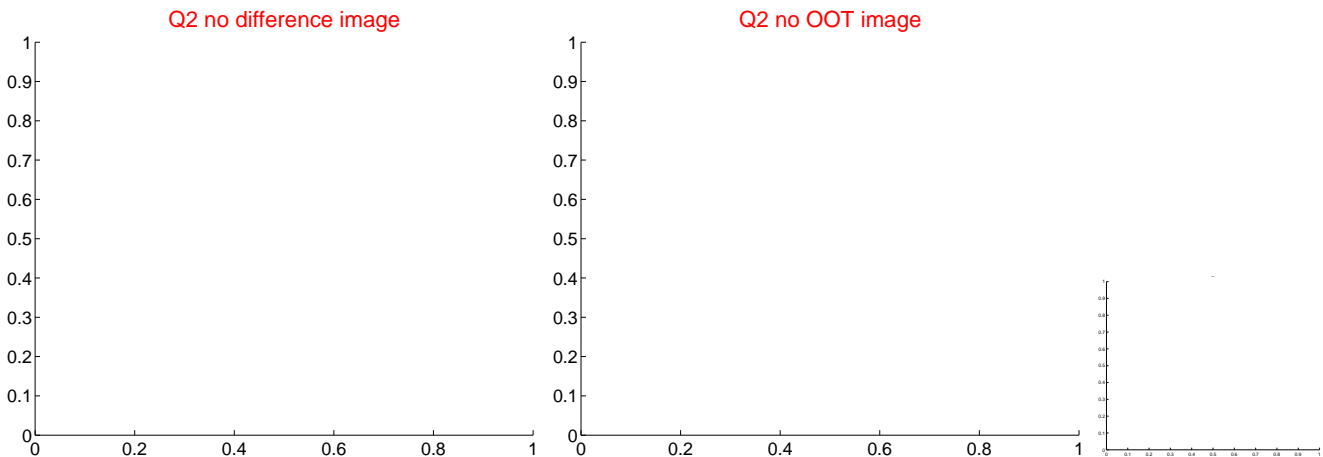
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.750 ± 0.538	1.39	0.427 ± 0.088	0.617 ± 0.651
PRF-fit source offset from KIC position	0.867 ± 0.587	1.48	0.262 ± 0.129	0.826 ± 0.614
photometric centroid source offset	1.16 ± 1.11	1.04	-0.95 ± 1.15	0.66 ± 1.02

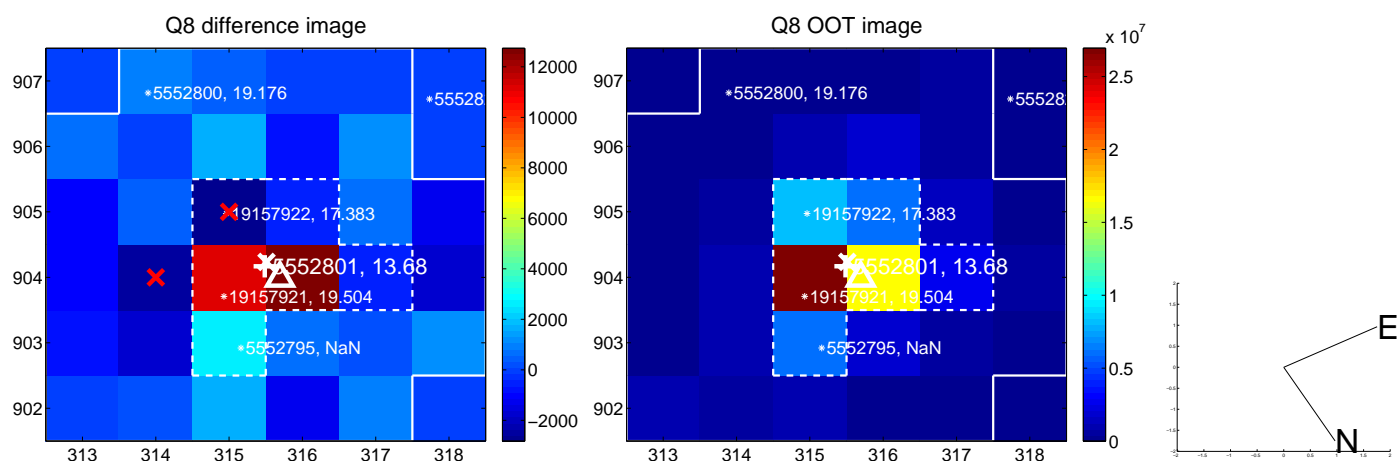
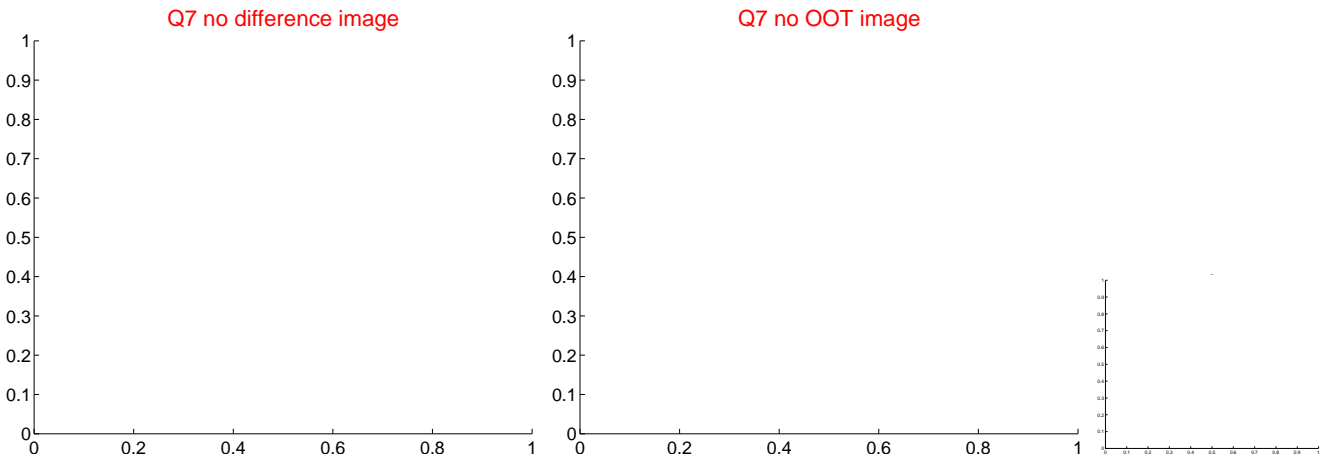
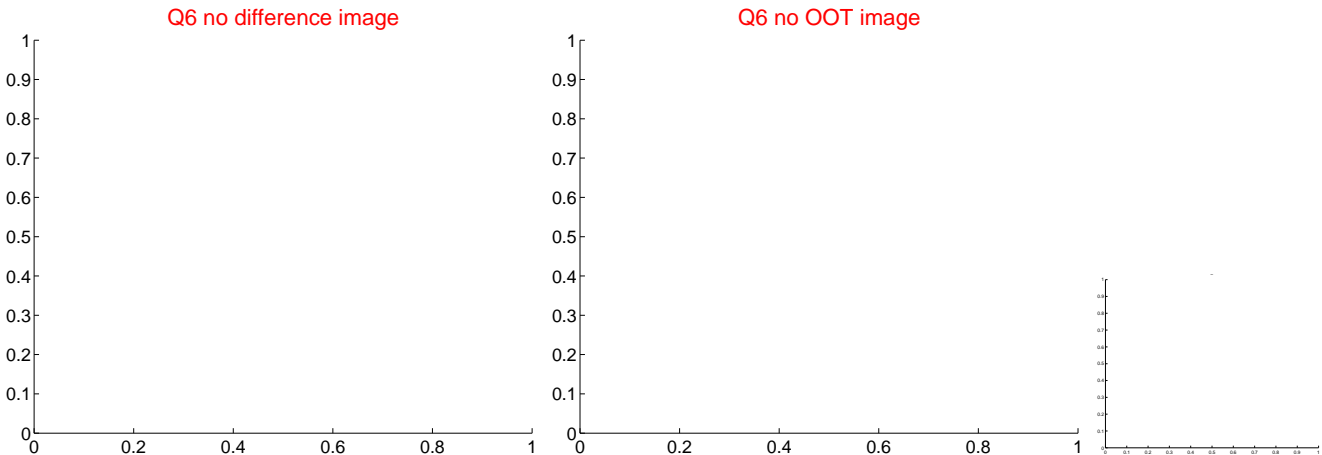
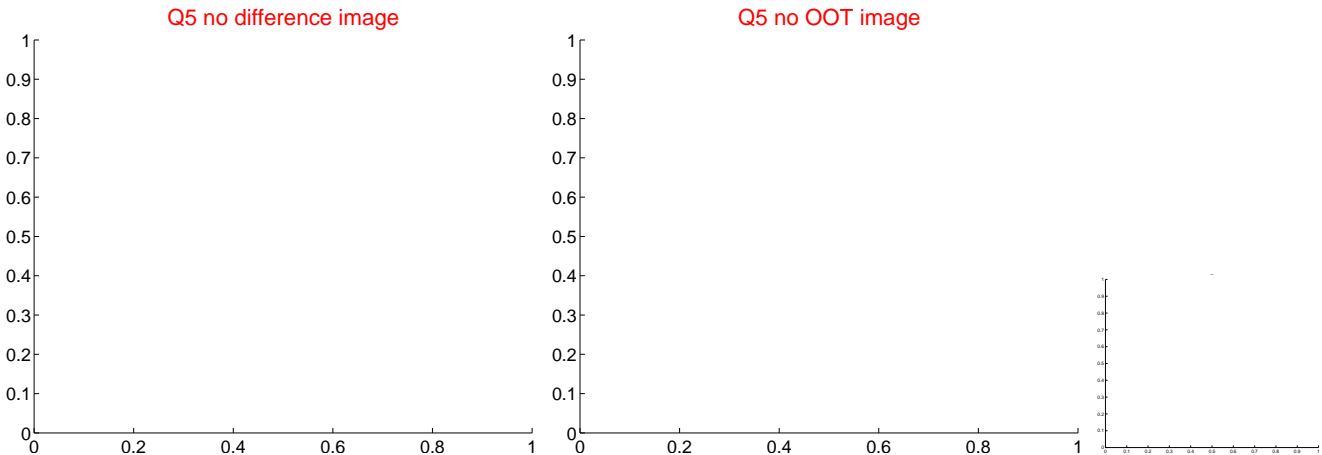


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



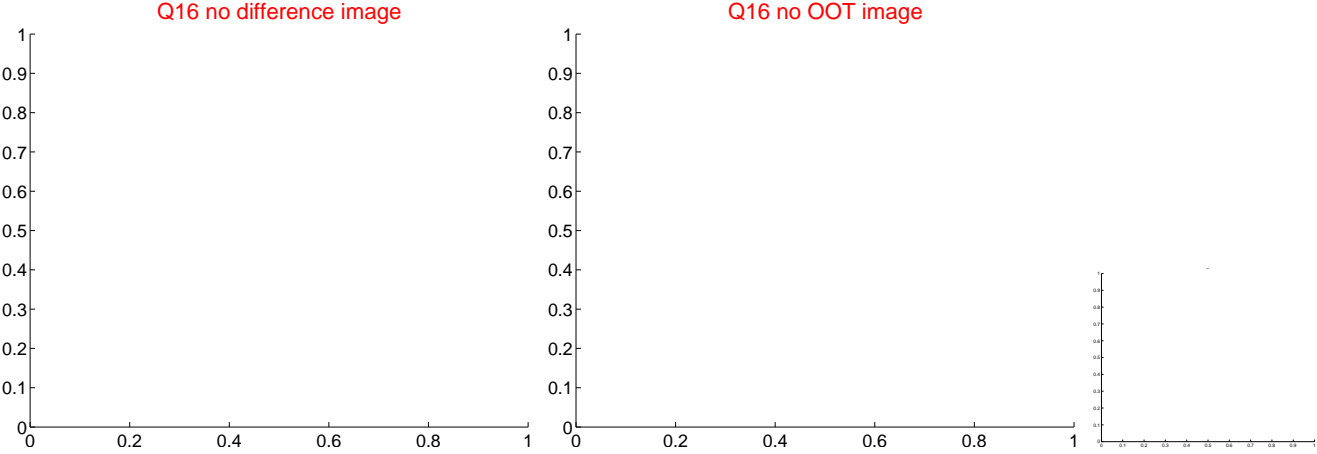
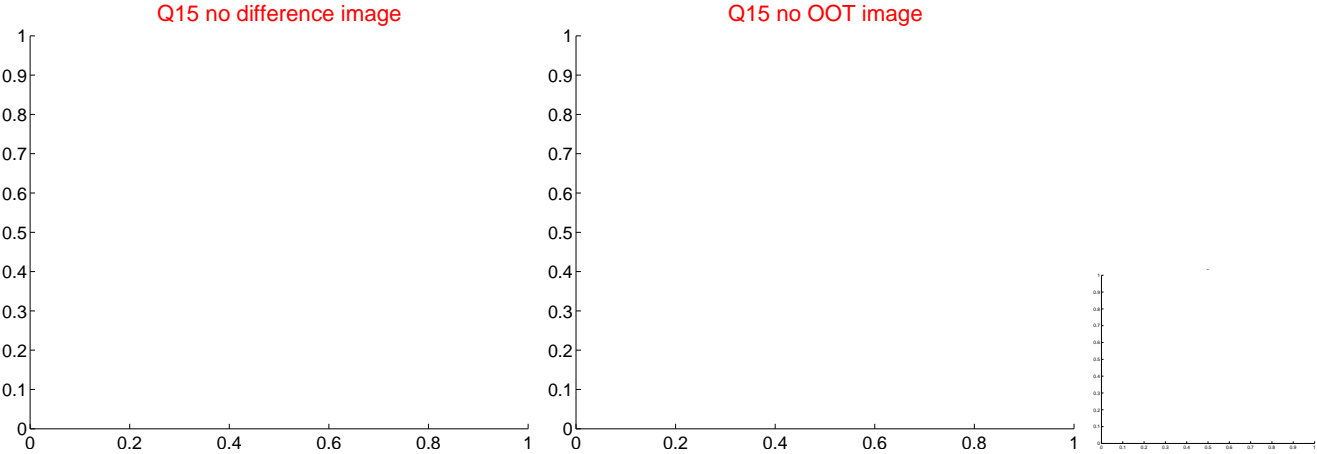
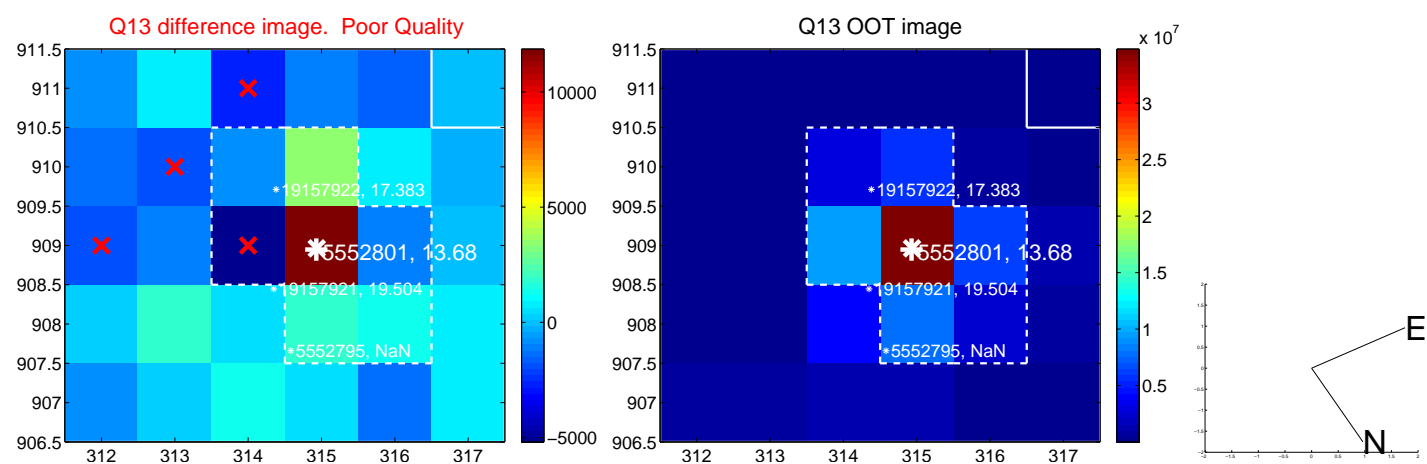
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



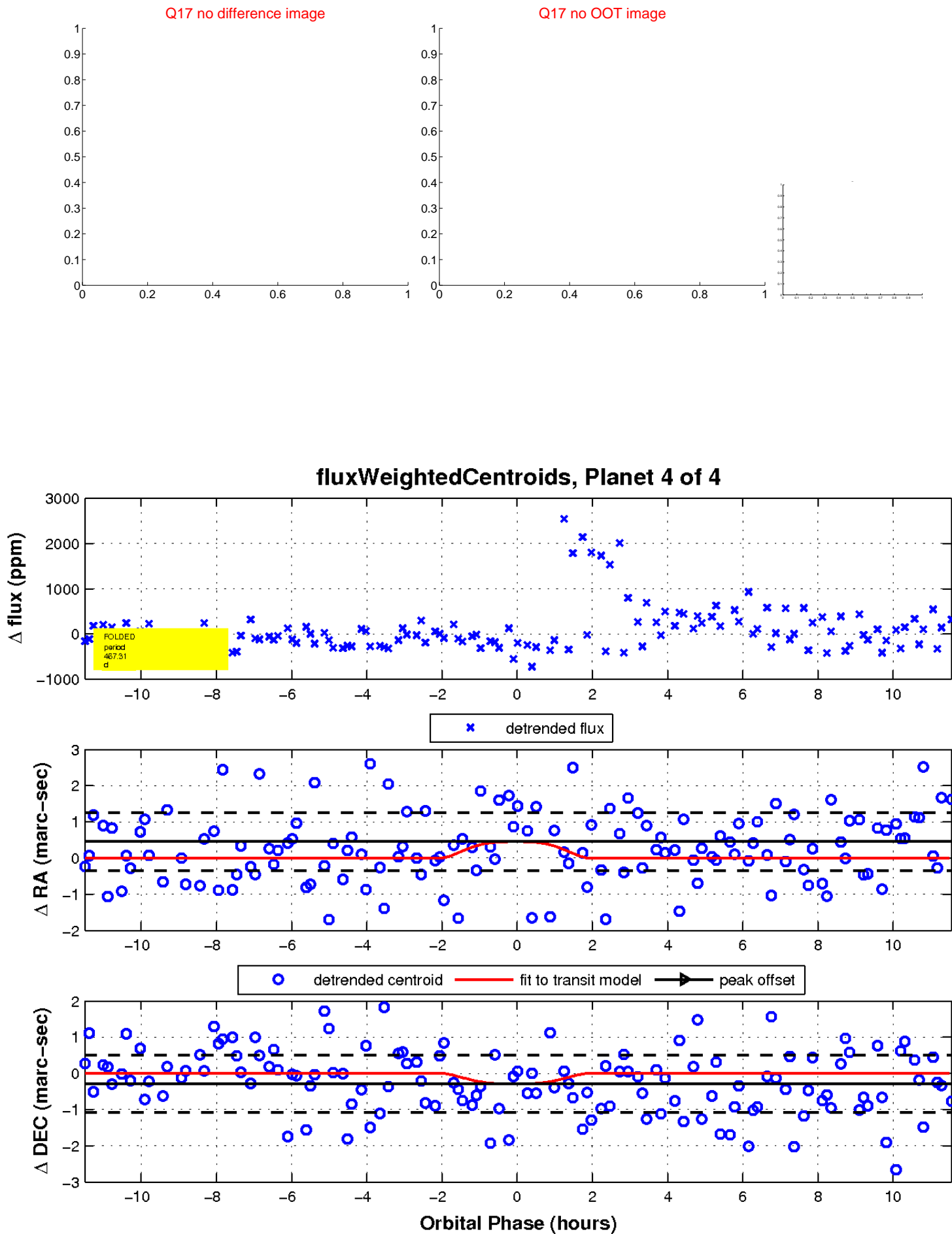
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

