

KIC 006118085

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})
006118085-01	OBS	No	391.493882	133.414830	541.0	5.410	12.7	4.3	0.79	5765	2.04	0.63
006118085-02	OBS	No	346.571224	305.988169	780.3	5.340	11.8	6.4	0.79	5765	2.21	0.74
006118085-03	OBS	No	547.304550	147.470336	1430.9	10.869	13.4	8.3	0.79	5765	3.01	0.40
006118085-04	OBS	No	532.930818	265.865148	792.3	4.430	13.4	5.5	0.79	5765	2.31	0.42
006118085-05	OBS	No	648.298489	149.570024	638.9	6.086	12.3	4.5	0.79	5765	2.03	0.32
006118085-06	OBS	No	528.792452	333.685519	892.4	4.373	14.1	6.9	0.79	5765	2.49	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006118085-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006118085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
006118085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

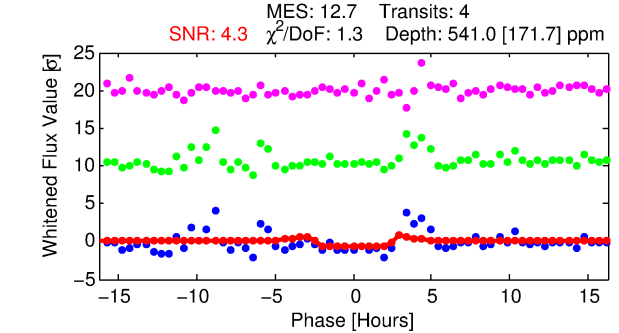
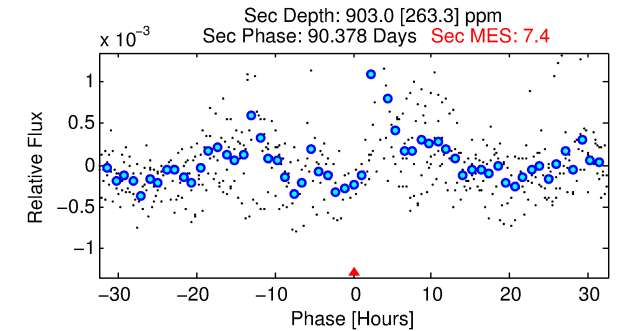
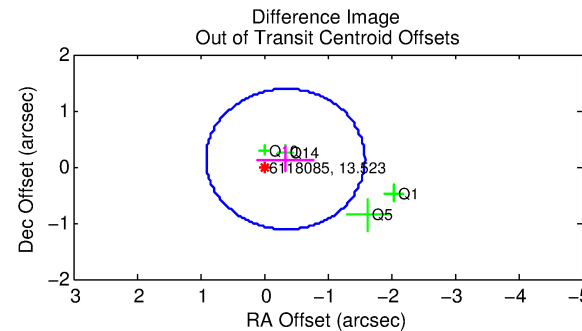
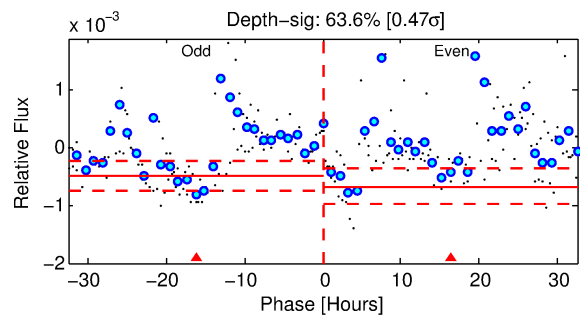
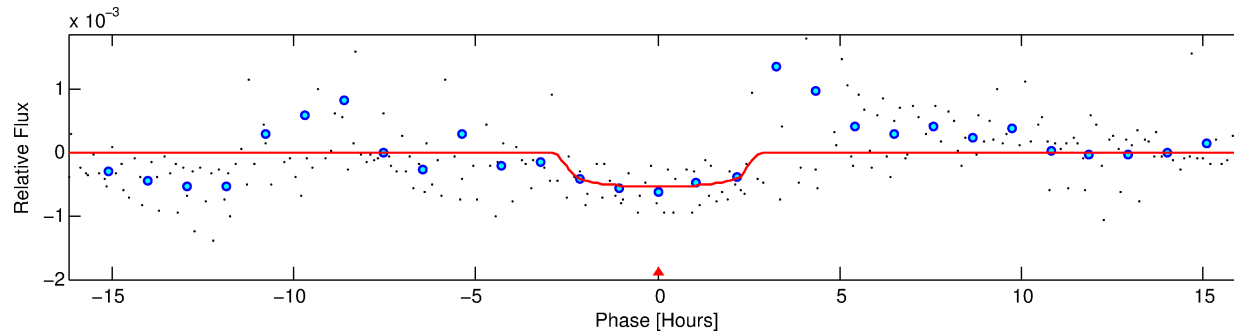
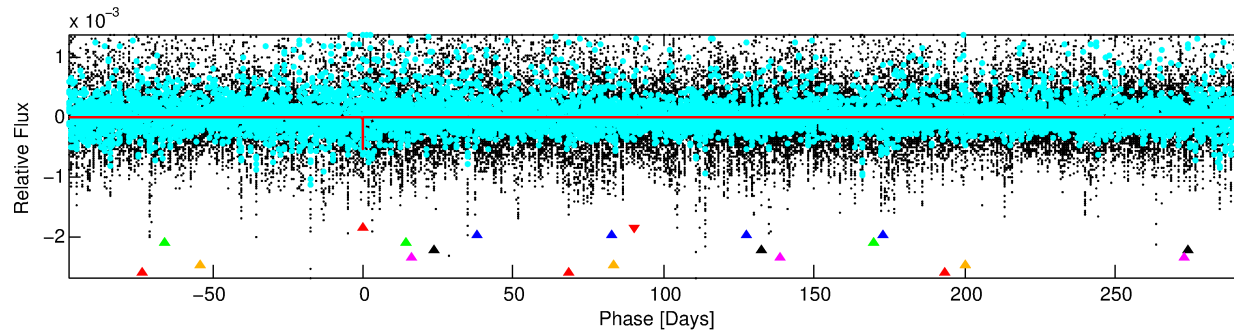
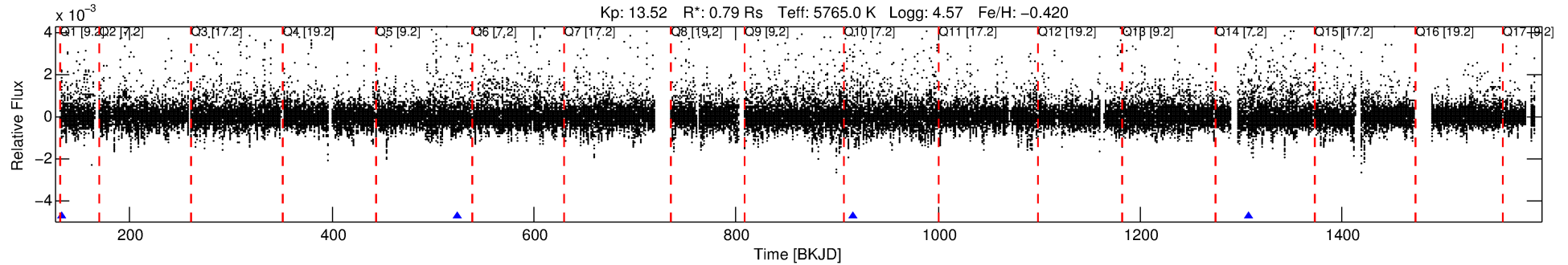
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006118085-01

No Significant Match Found

DV One-Page Summary

KIC: 6118085 Candidate: 1 of 7 Period: 391.494 d



DV Fit Results:

Period = 391.49388 [0.00669] d
Epoch = 133.4148 [0.0114] BKJD
Rp/R* = 0.0236 [0.0147]
a/R* = 356.62 [975.93]
b = 0.79 [1.28]
Seff = 0.63 [0.21]
Teq = 227 [19] K
Rp = 2.04 [1.38] Re
a = 0.9963 [0.2143] AU
Ag = 118368.44 [156131.22] [0.76 σ]
Teffp = 6511 [2094] K [3.00 σ]

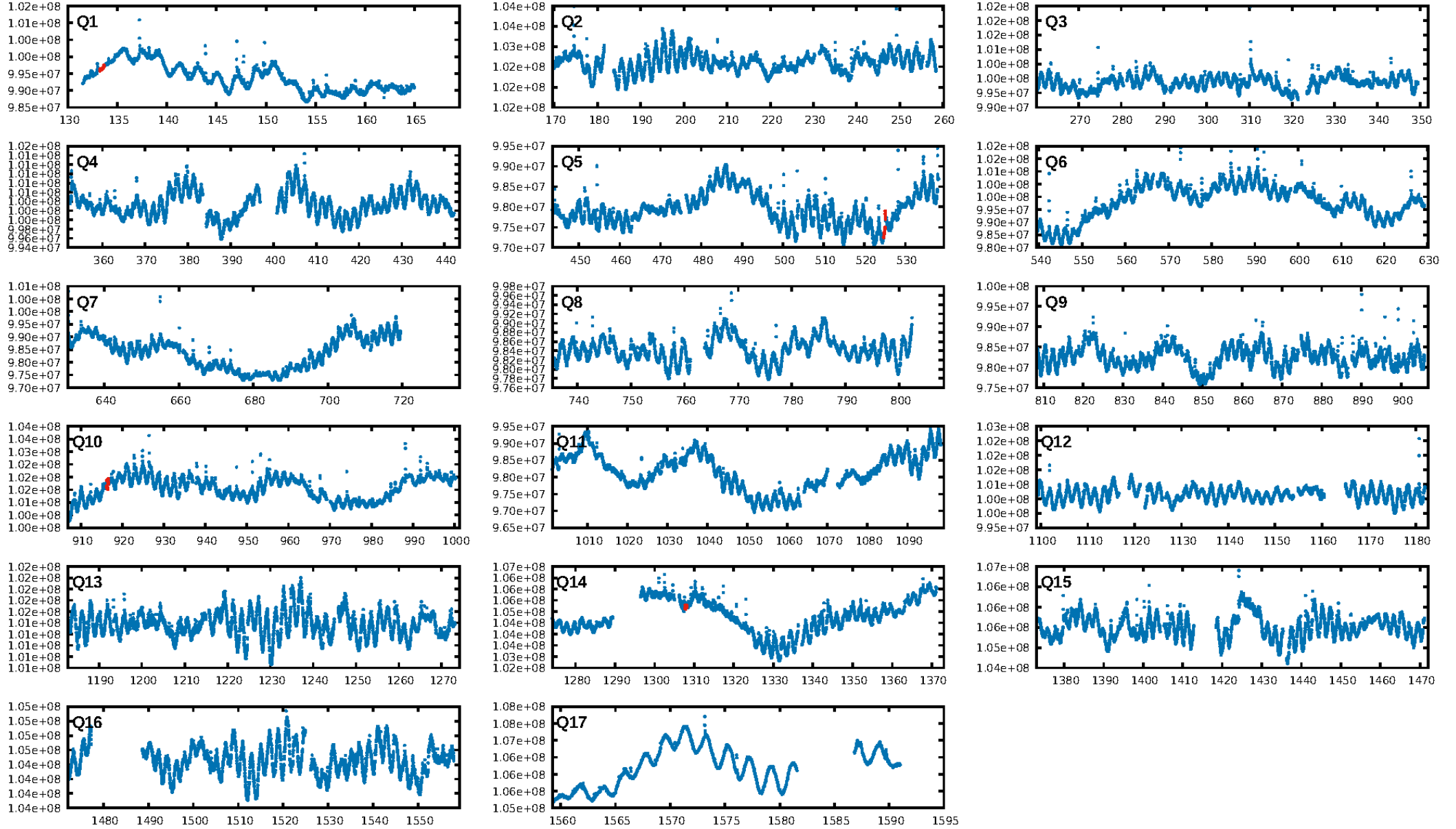
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [141.83 σ]
LongPeriod-sig: 100.0% [446.51 σ]
ModelChiSquare2-sig: 65.4%
ModelChiSquareGof-sig: 95.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4486
Centroid-sig: 6.3%
Centroid-so: 3.574 arcsec [2.24 σ]
OotOffset-rm: 0.364 arcsec [0.87 σ]
OotOffset-st: 2/0/0/2 [4]
KicOffset-rm: 0.458 arcsec [0.85 σ]
KicOffset-st: 2/0/0/2 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

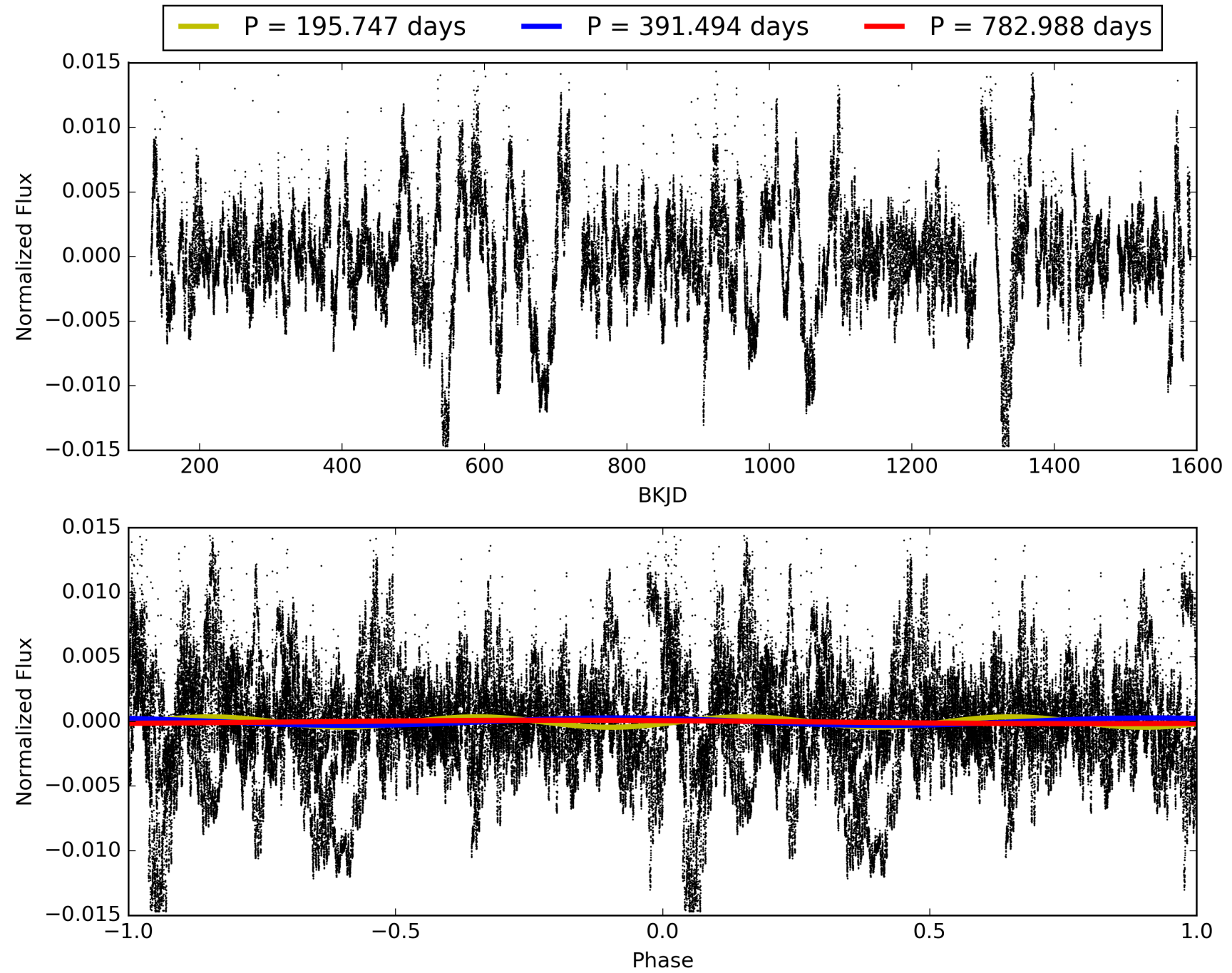
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:17:10 Z

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

TCE 006118085-01, PDC Light Curves

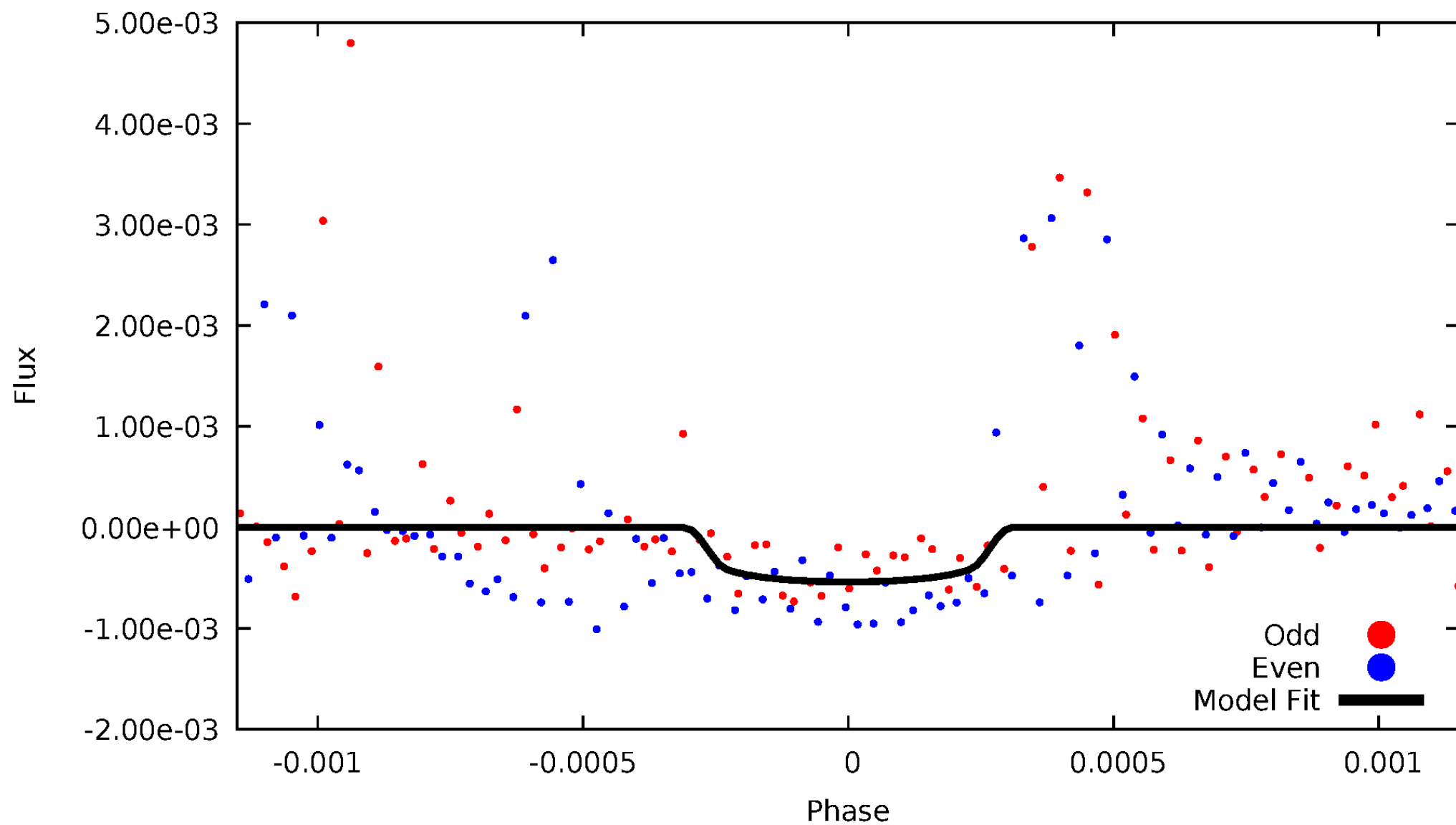


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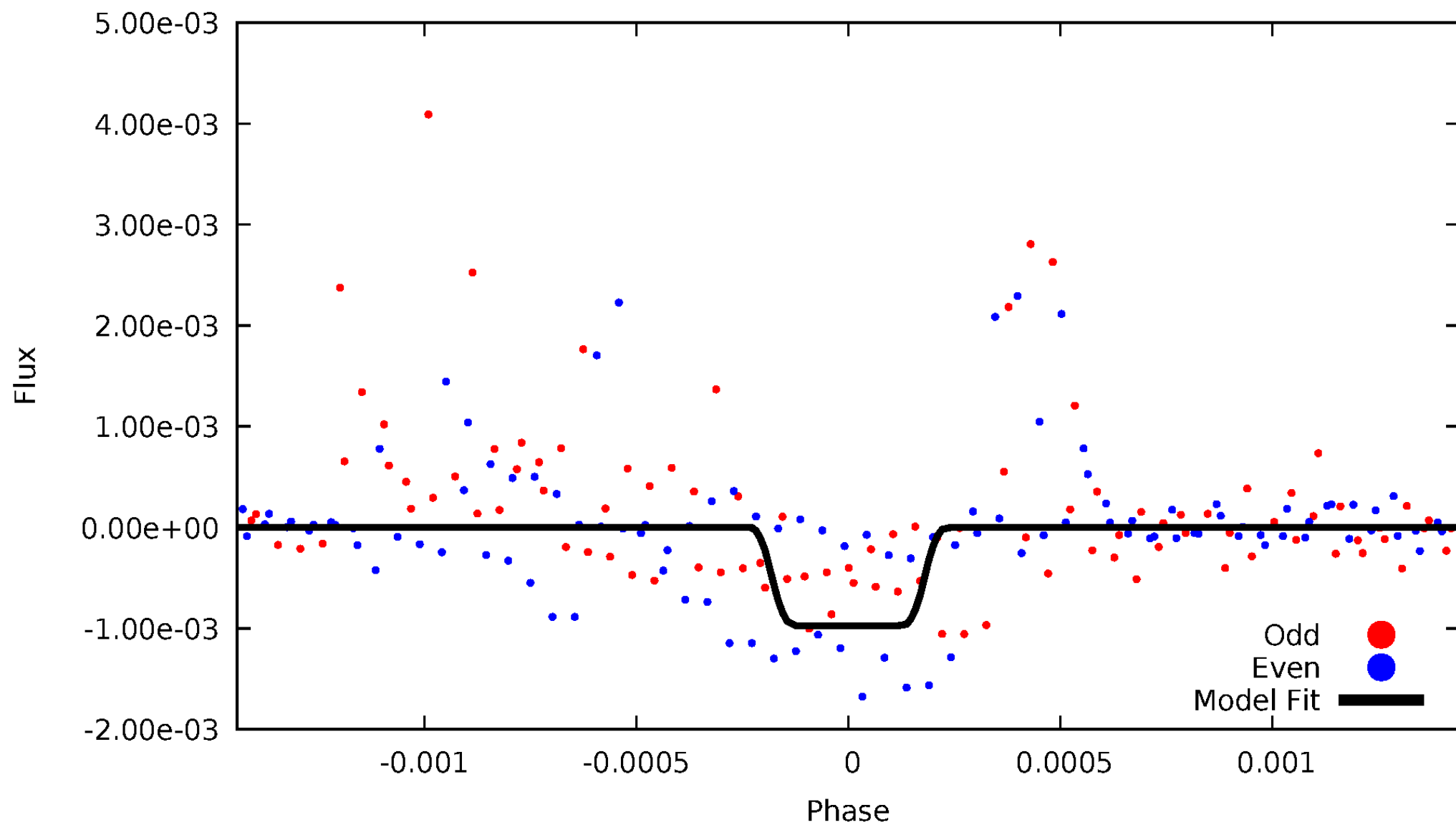
DV Odd/Even

TCE 006118085-01



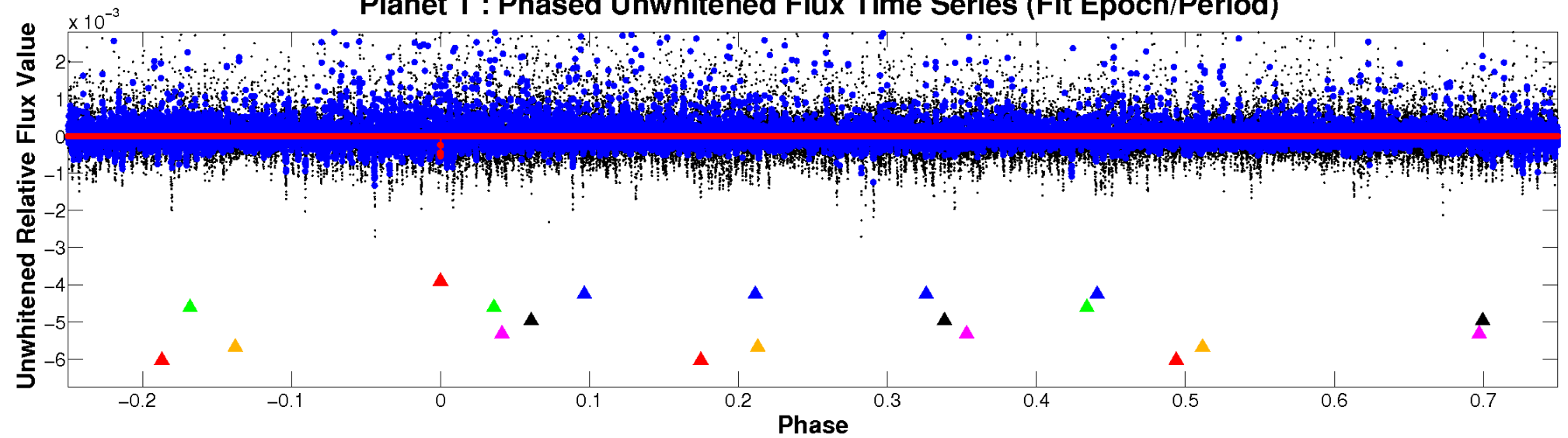
ALT Odd/Even

TCE 006118085-01

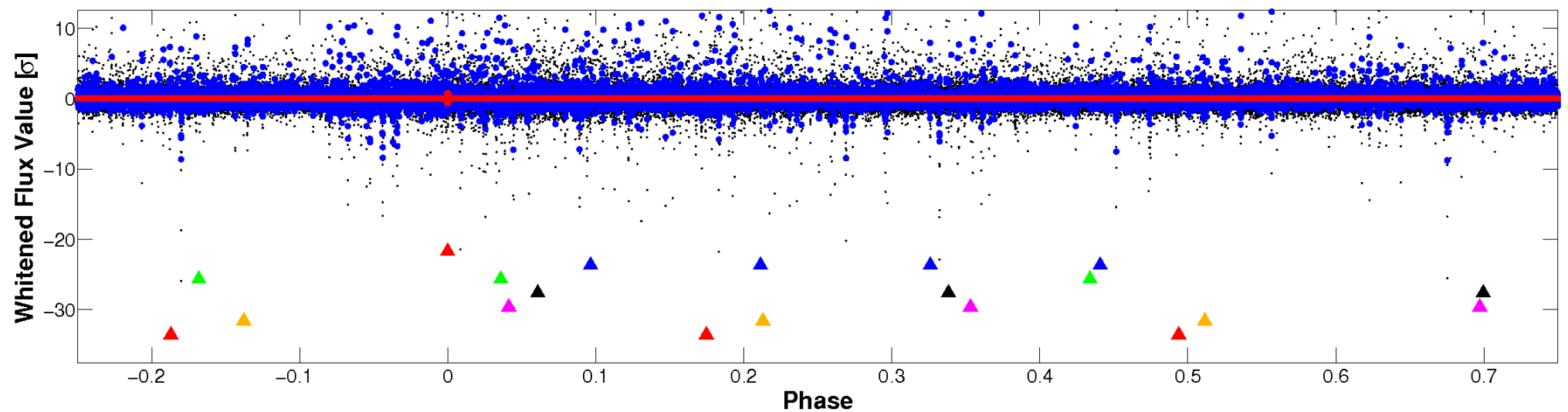


Non-Whitened Vs. Whitened Light Curve

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

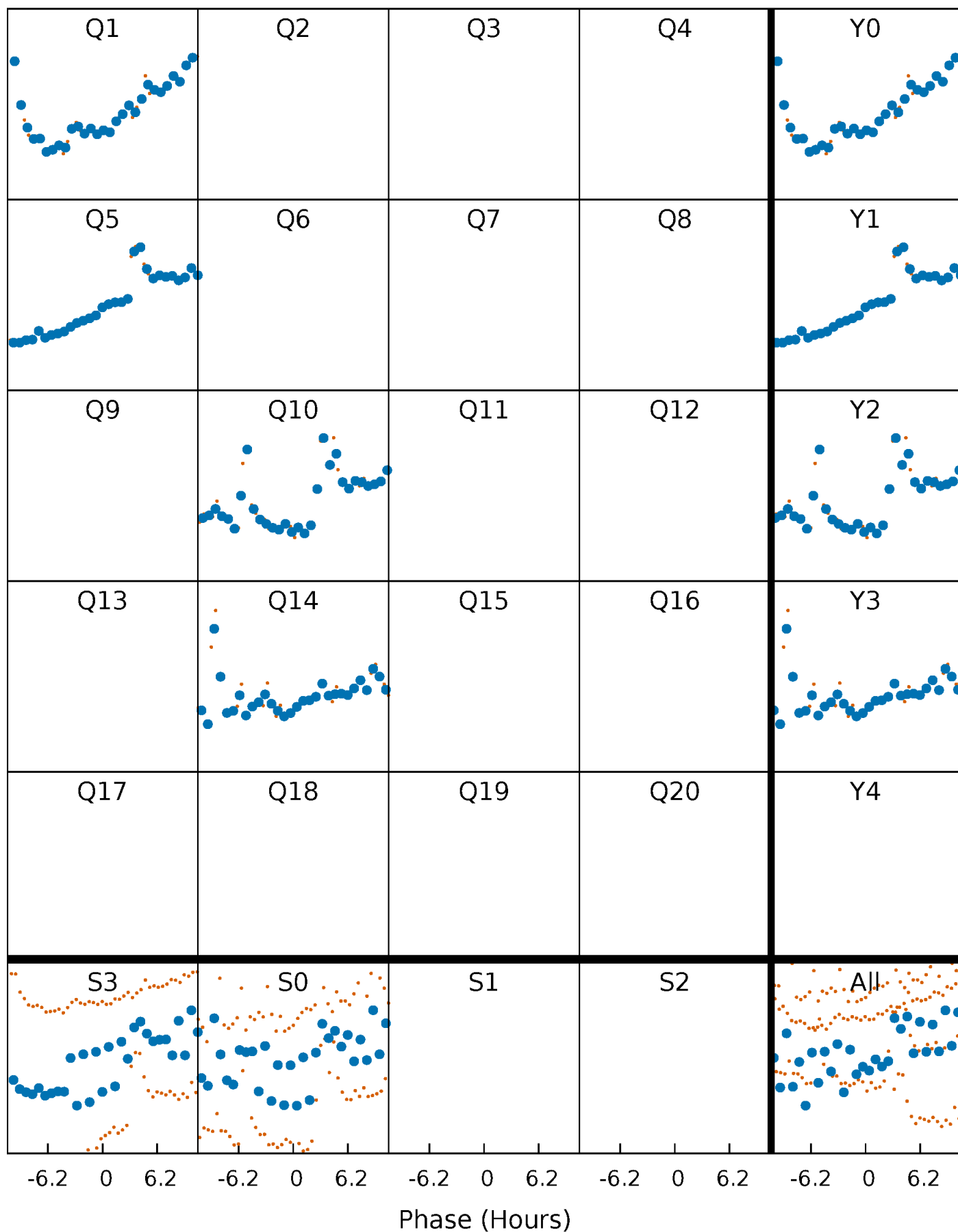


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



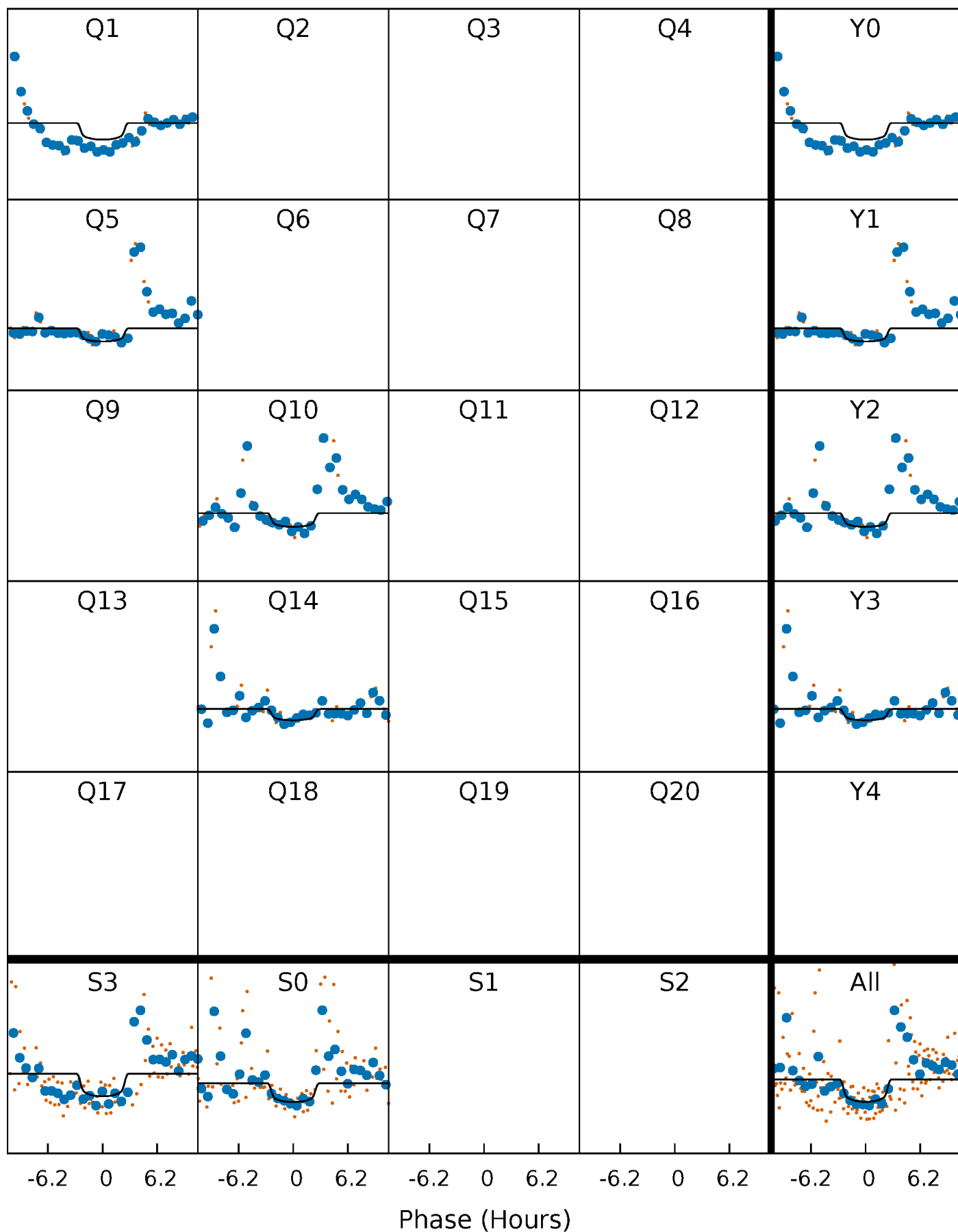
PDC Quarter-Phased Transit Curves

TCE 006118085-01 P=391.493882 Days $T_0=133.414829$ (BKJD)



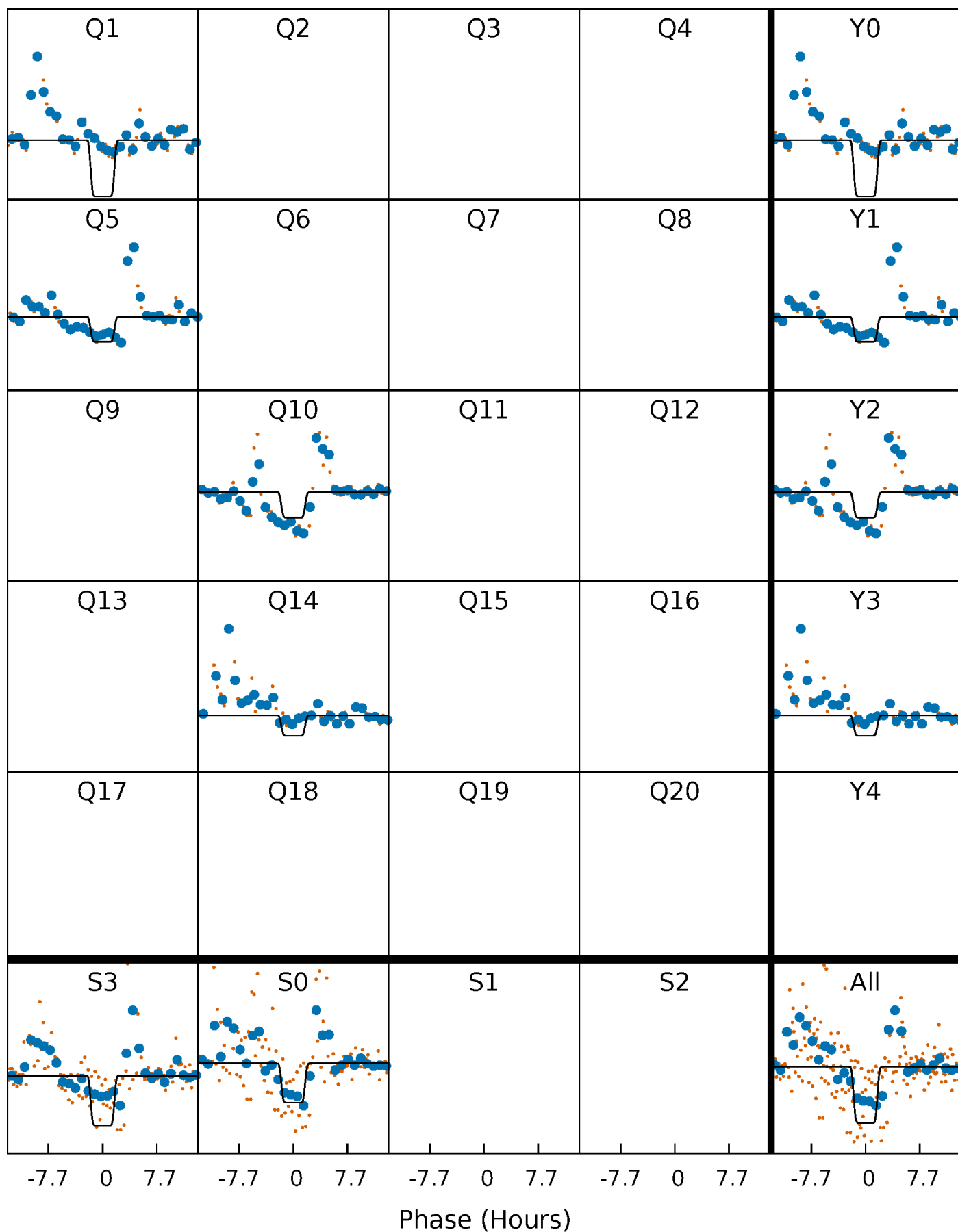
DV Quarter-Phased Transit Curves

TCE 006118085-01 P=391.493882 Days $T_0=133.414829$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

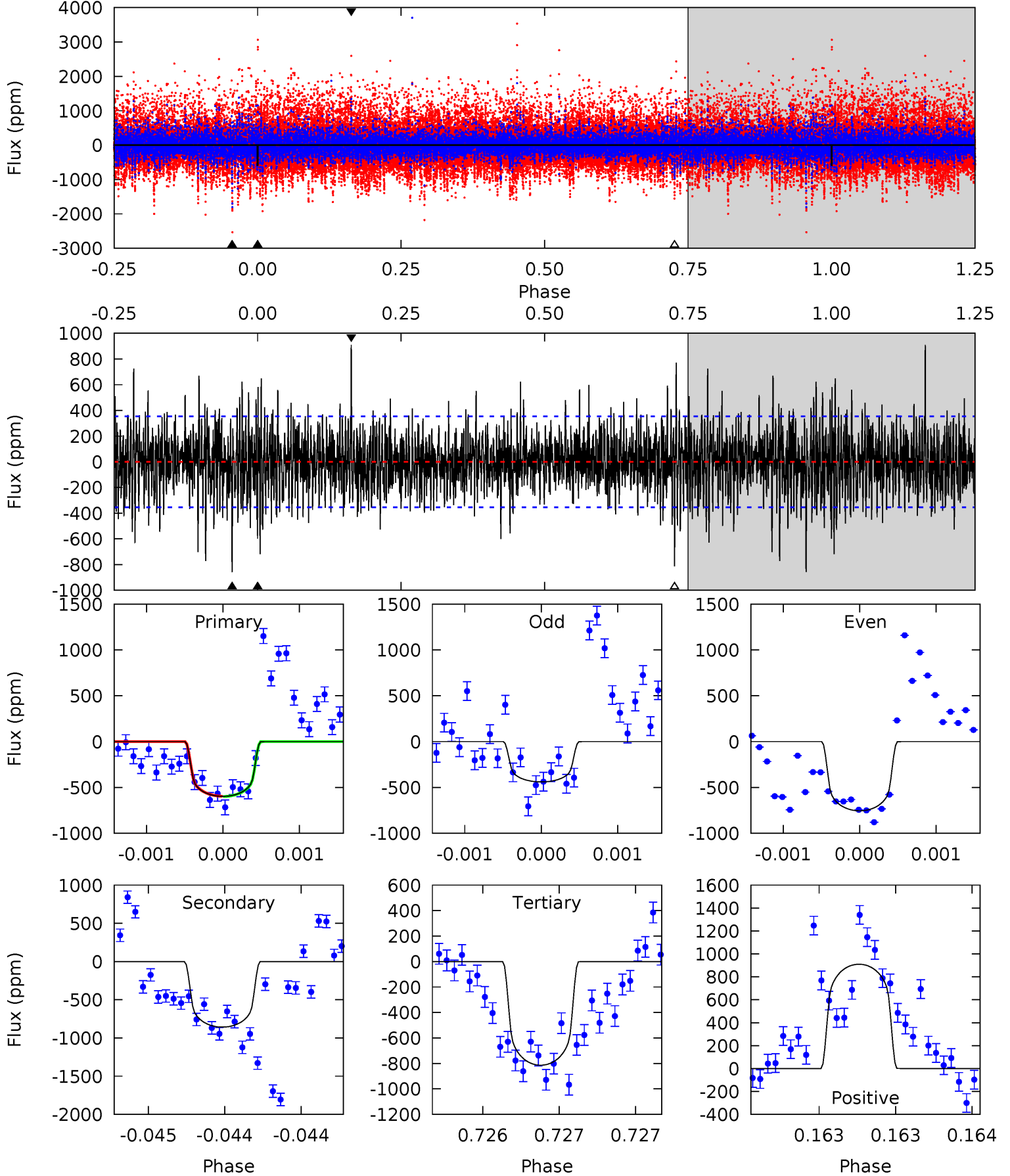
TCE 006118085-01 P=391.500198 Days $T_0=133.396081$ (BKJD)



DV Model-Shift Uniqueness Test

006118085-01, P = 391.493882 Days, E = 133.414829 Days

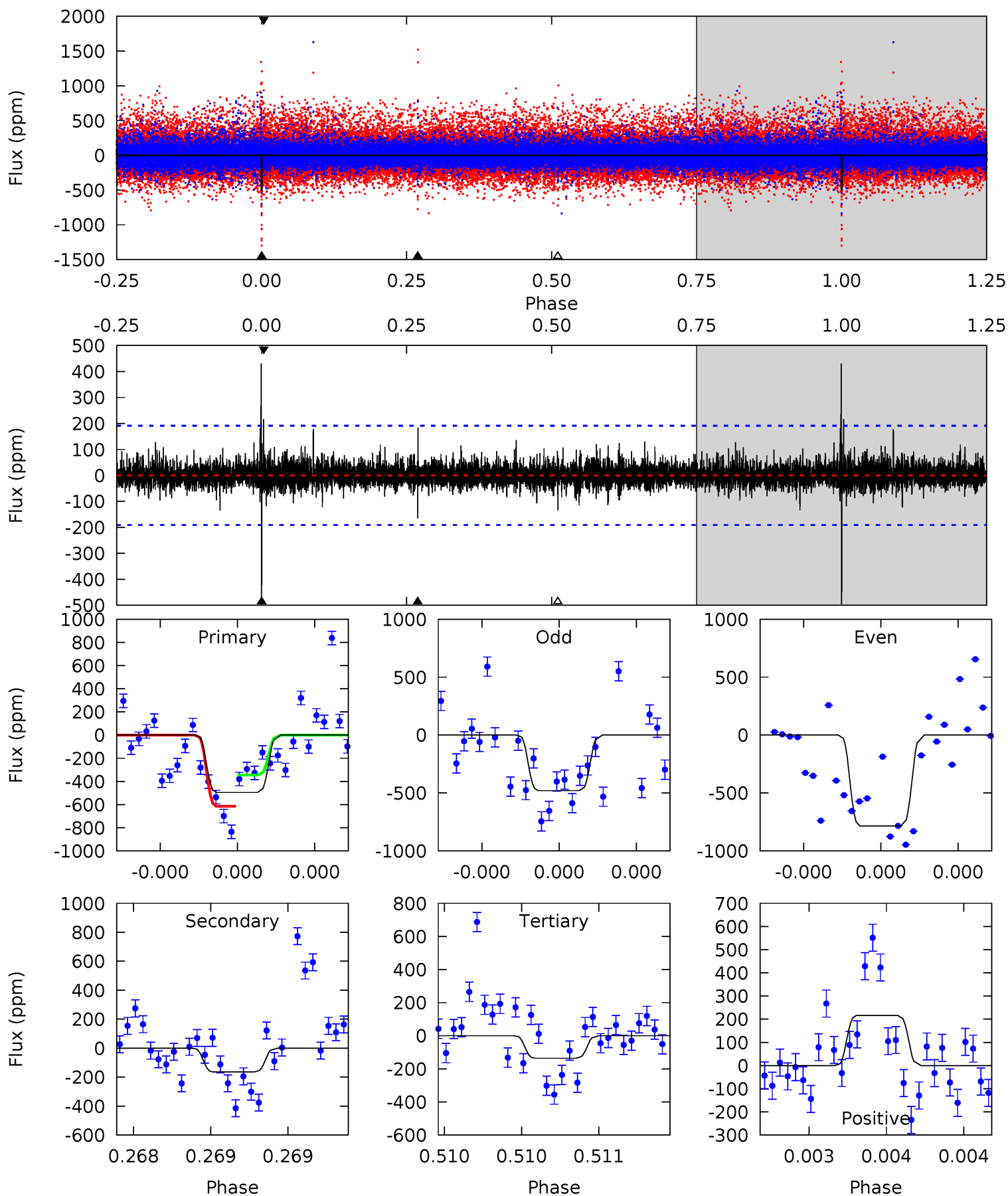
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.35	13.4	12.7	14.2	5.53	3.42	2.83	-3.39	-4.89	0.69	-0.82	2.19	1.11	0.51	0.03



Alt Model-Shift Uniqueness Test

006118085-01, P = 391.500198 Days, E = 133.396081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	4.82	3.98	6.33	5.59	3.51	0.89	10.5	8.17	0.84	-1.51	4.66	1.31	0.46	3.94



Stellar Parameters For KIC 006118085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+155}_{-155}	$4.573^{+0.042}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.794^{+0.205}_{-0.068}$	$0.860^{+0.096}_{-0.088}$	$2.425^{+0.533}_{-1.084}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+11%/-10%	+22%/-45%
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 006118085-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-858 ± 64	$2.24^{+1.19}_{-1.25}$	323^{+19}_{-14}	6193^{+4342}_{-1096}	$93401^{+392720}_{-54972}$
Alt.	-165 ± 34	$2.81^{+1.51}_{-1.19}$	323^{+20}_{-15}	3995^{+966}_{-531}	11026^{+23620}_{-6517}

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

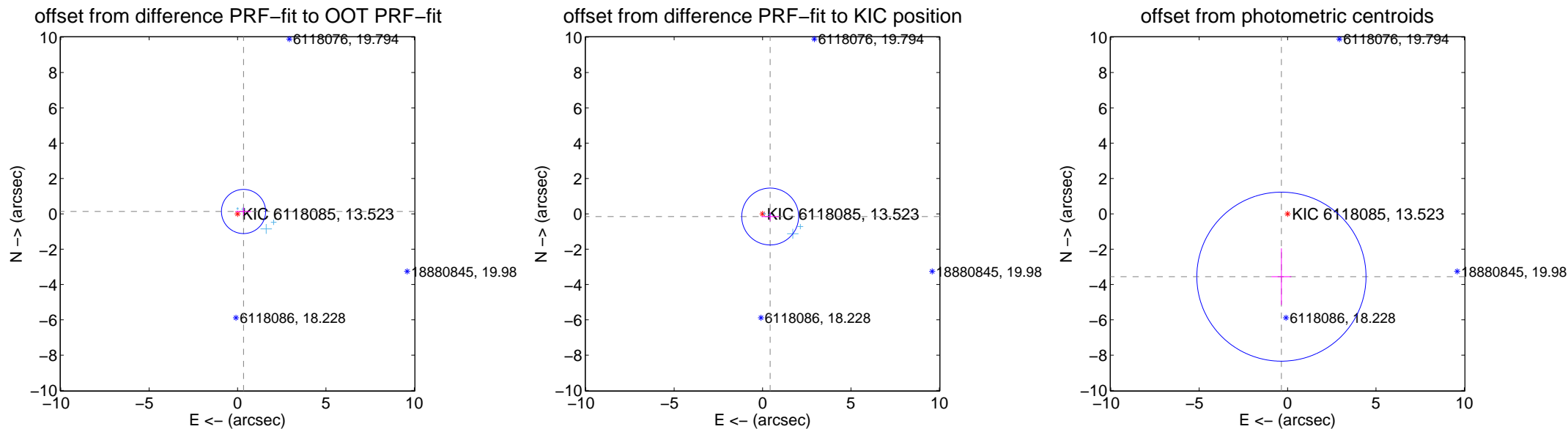
DV Centroid Data

Supplemental centroid analysis for 006118085-01. Kepler magnitude: 13.52. Transit SNR 4.29

There are 4 quarters with good PRF difference image offsets

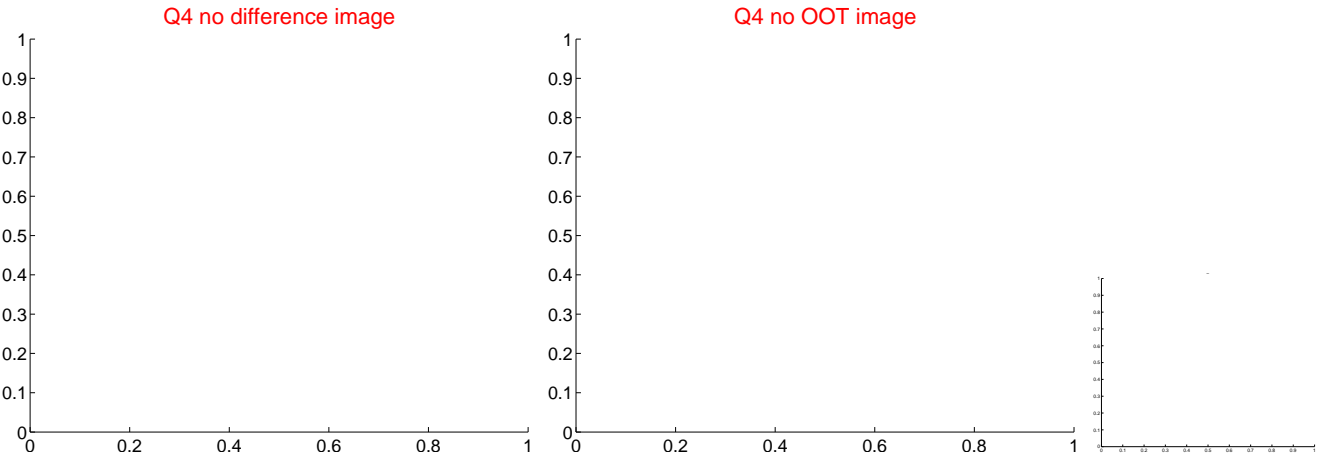
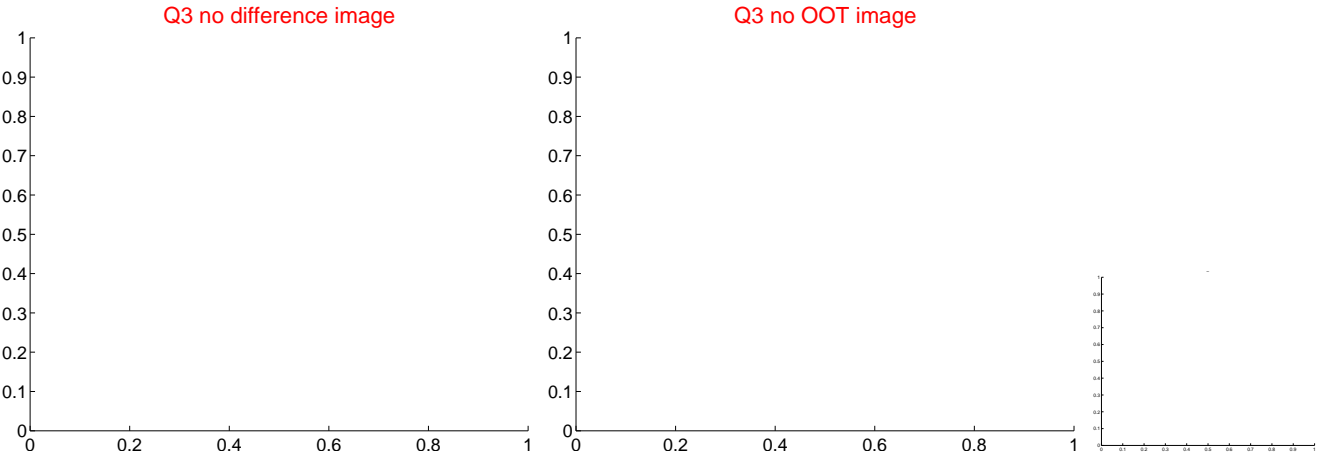
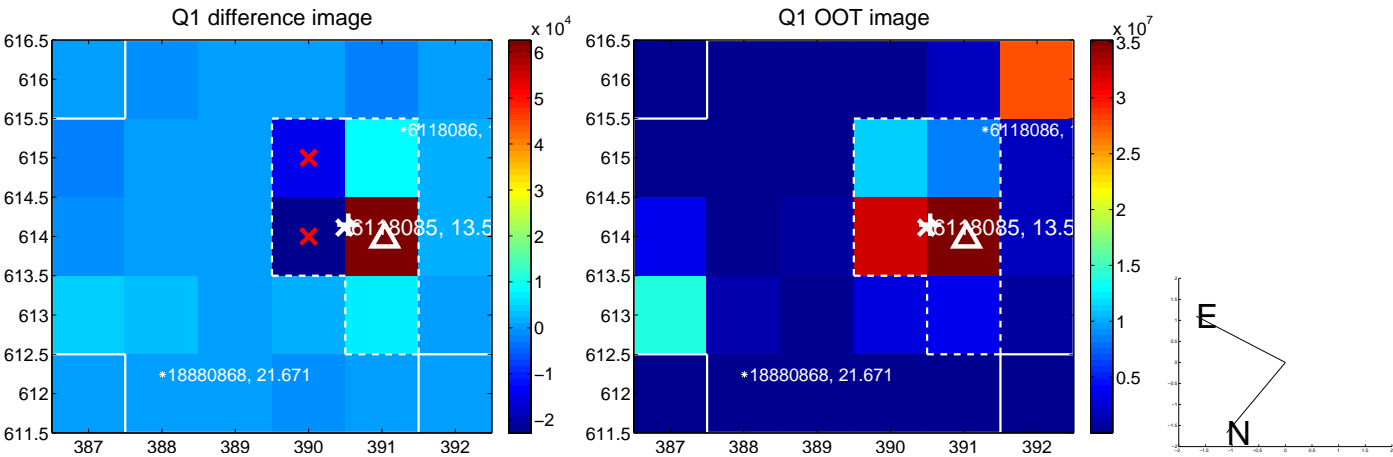
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.364 ± 0.417	0.87	-0.339 ± 0.439	0.133 ± 0.225
PRF-fit source offset from KIC position	0.458 ± 0.537	0.85	-0.432 ± 0.495	-0.152 ± 0.243
photometric centroid source offset	3.57 ± 1.60	2.24	0.35 ± 0.56	-3.56 ± 1.60

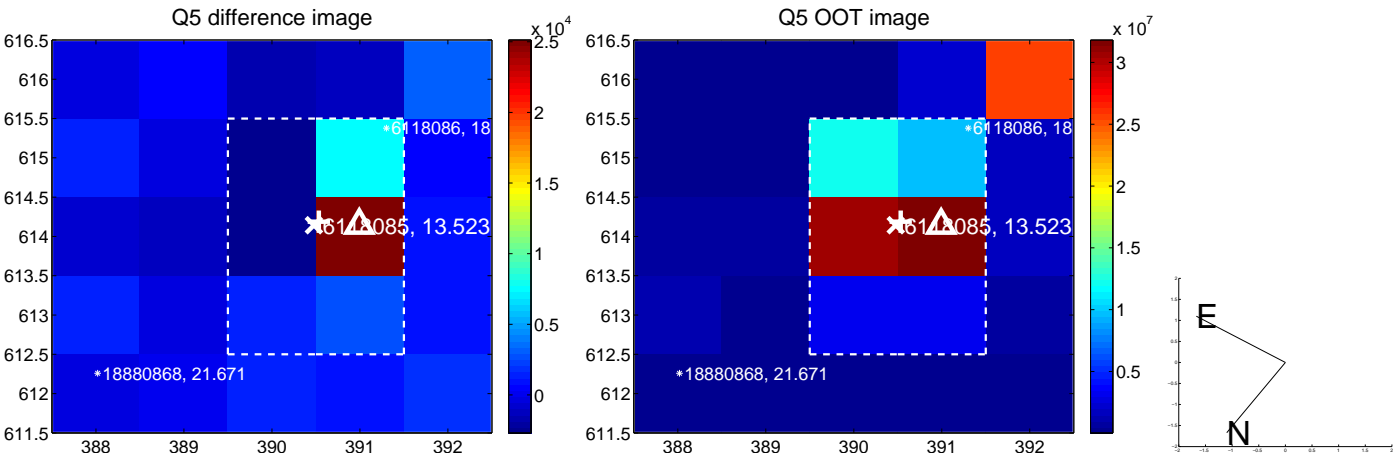


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

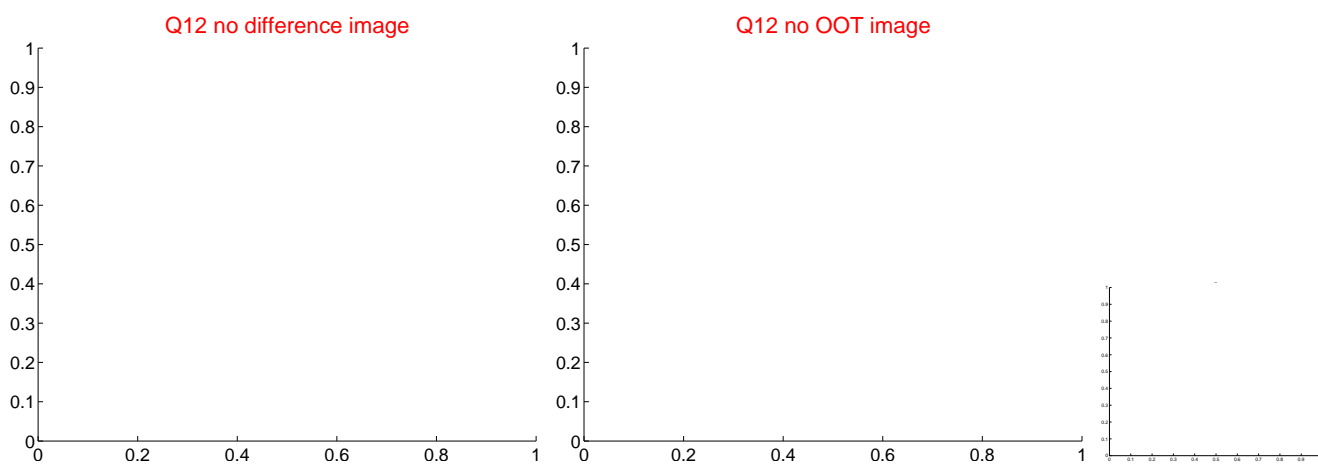
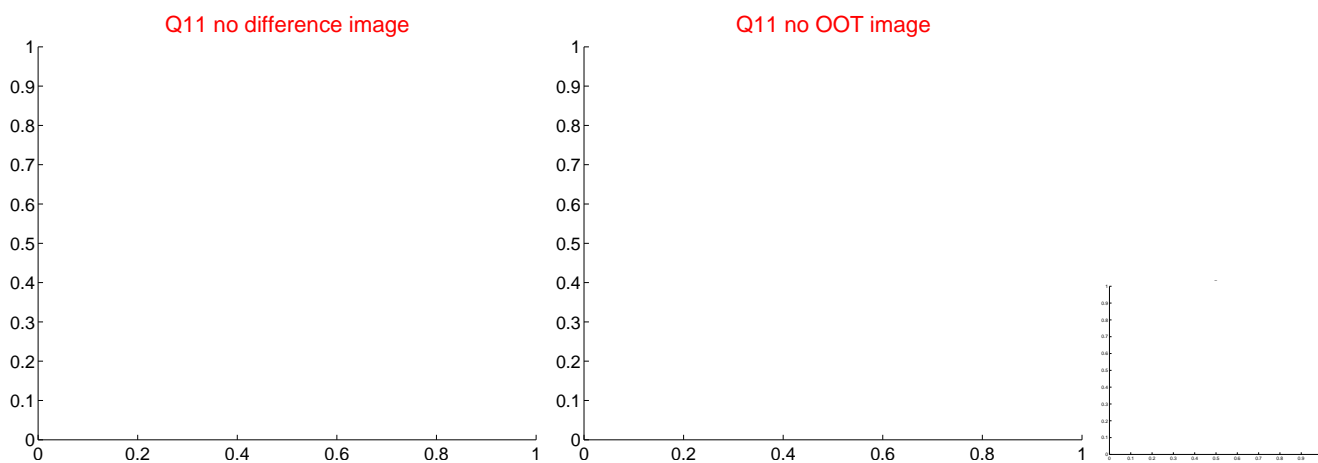
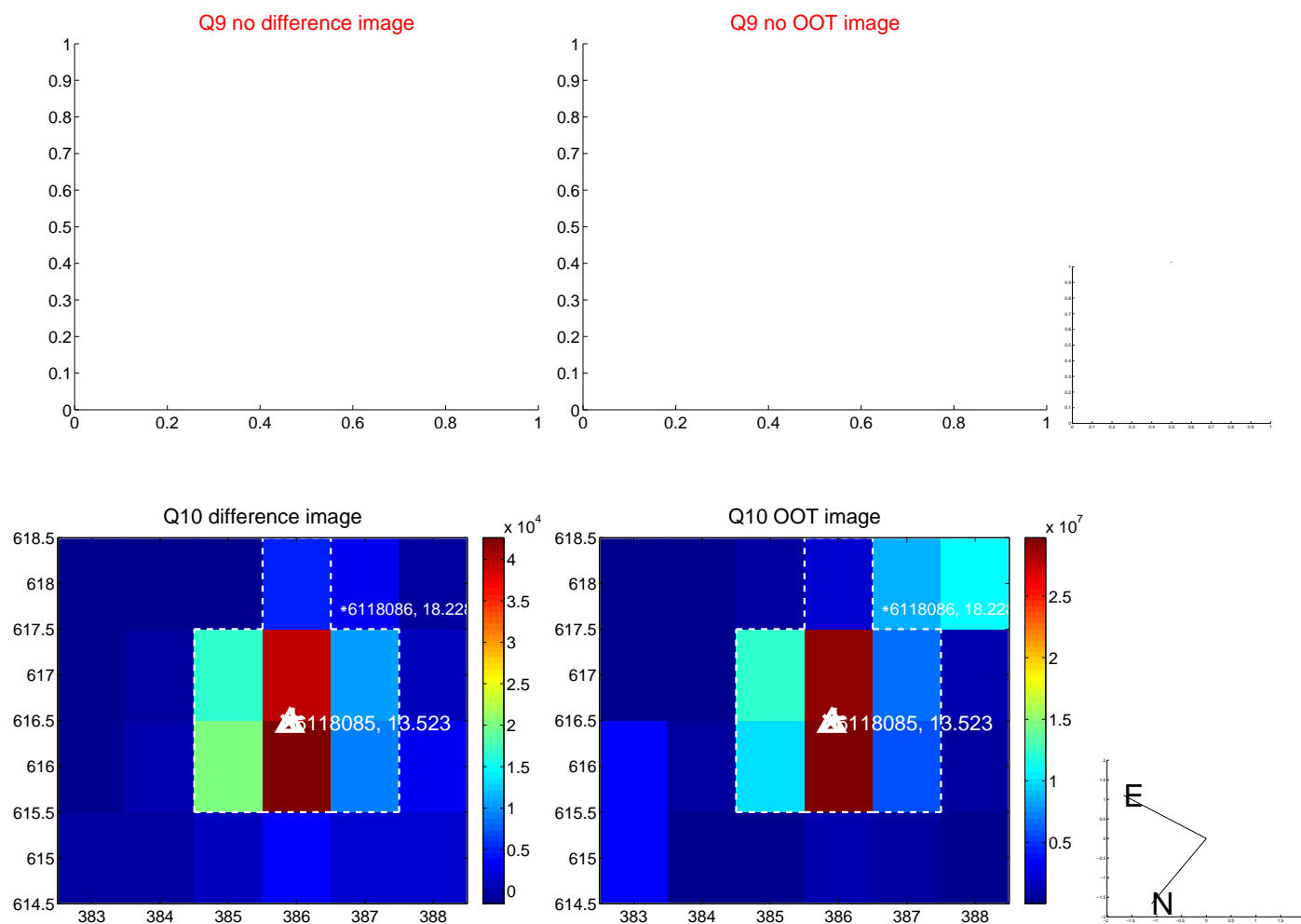
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



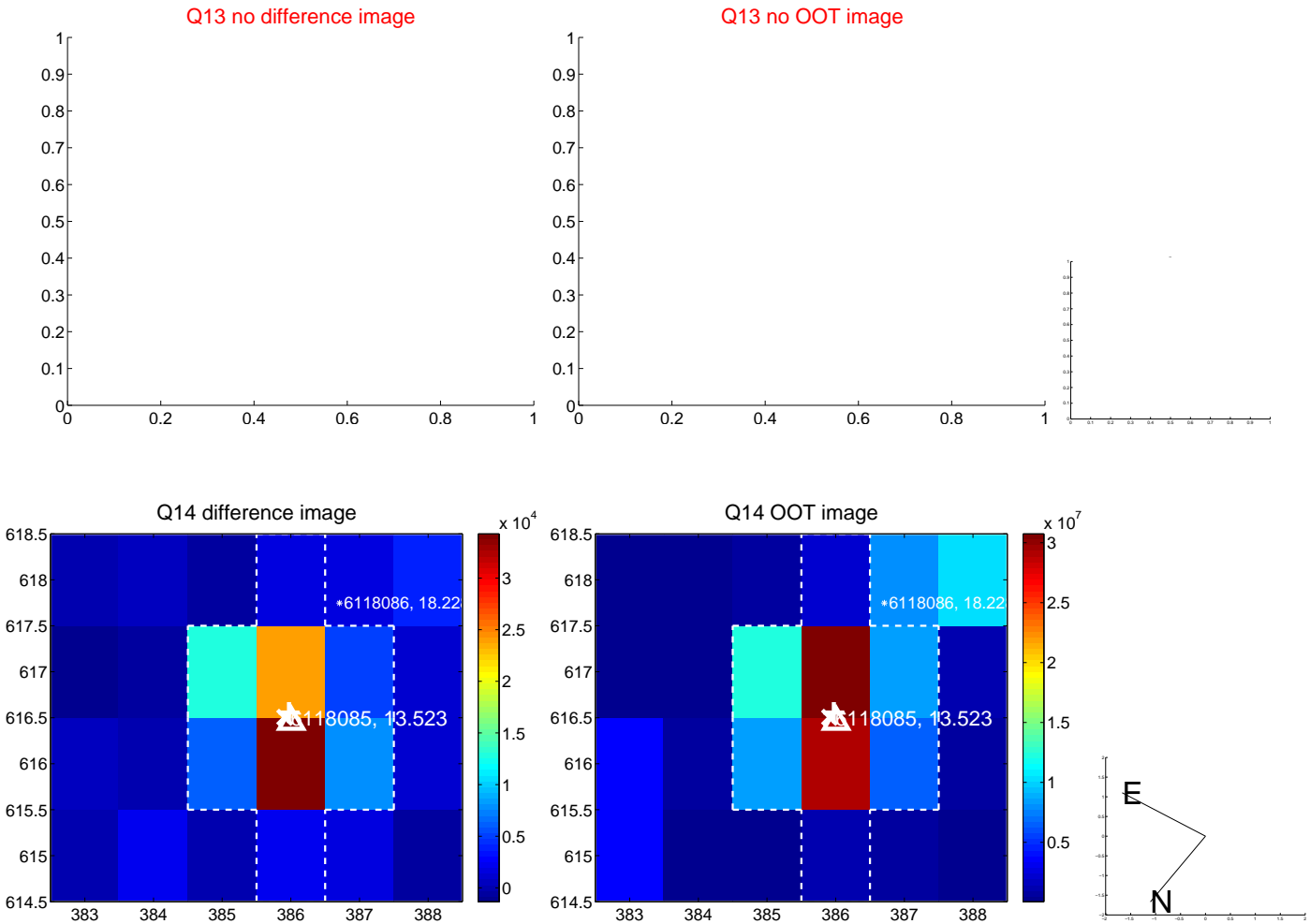
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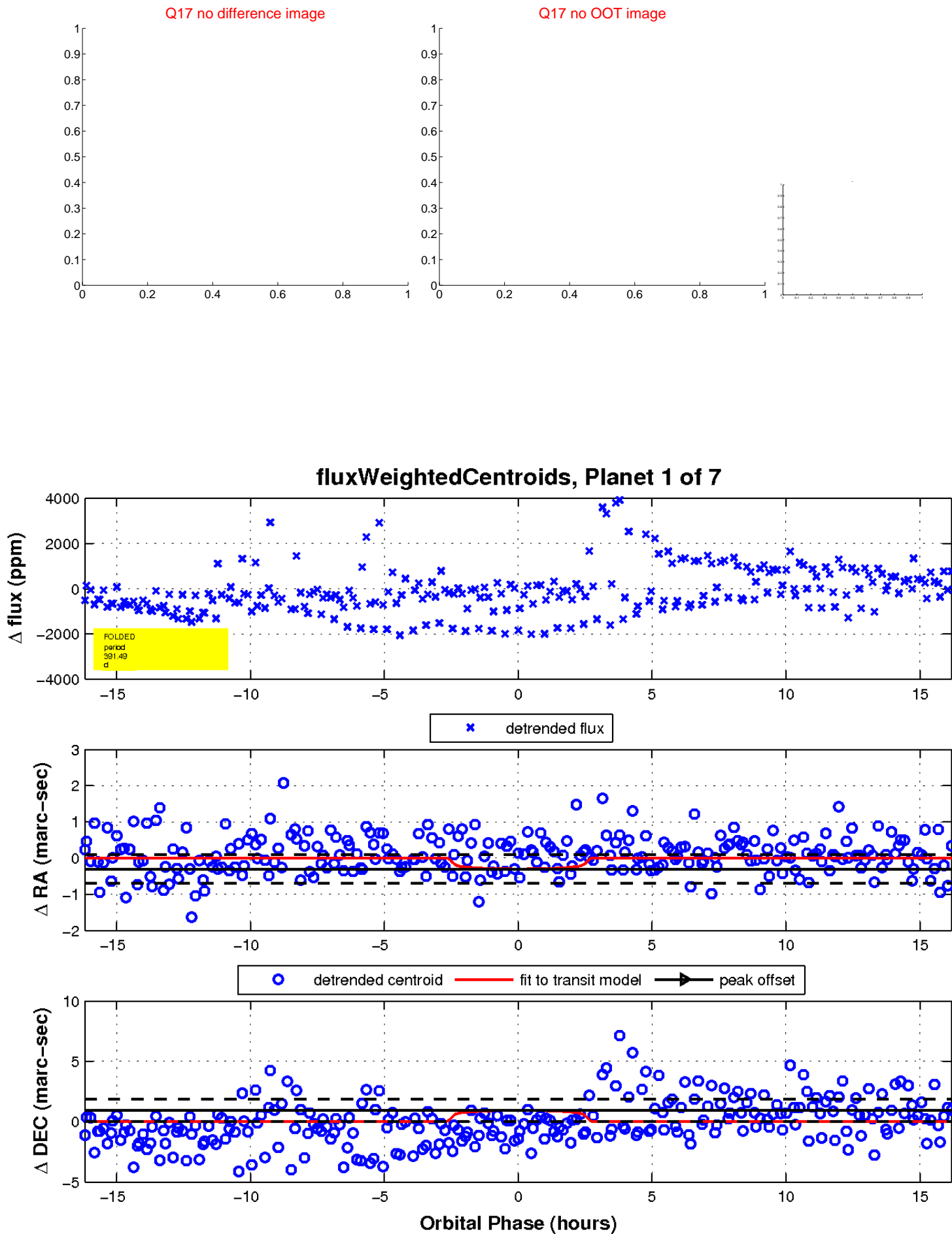
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



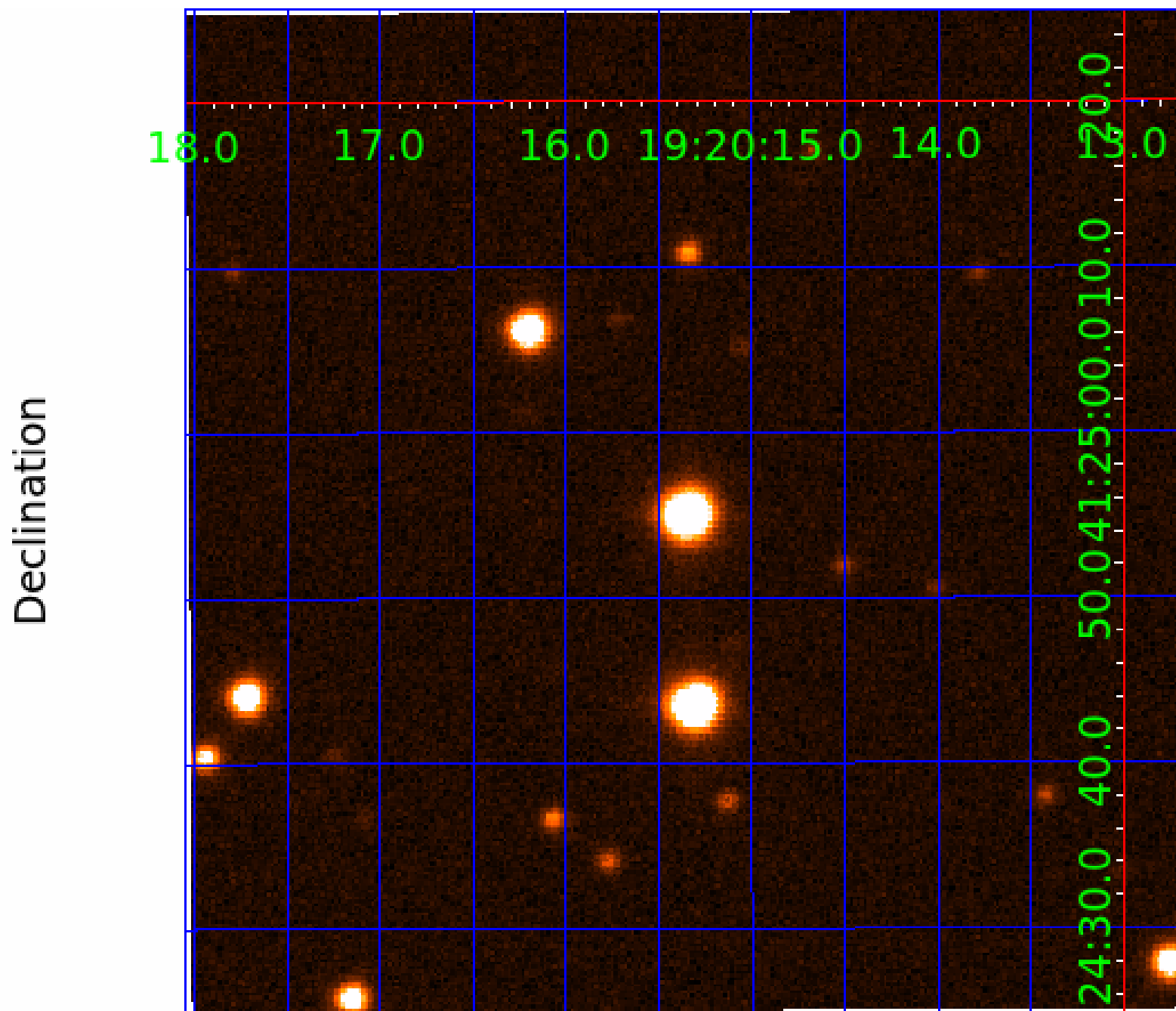
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006118085

Q1-17 DR25 TCE Parameters

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Robovetter Results

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006118085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
006118085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

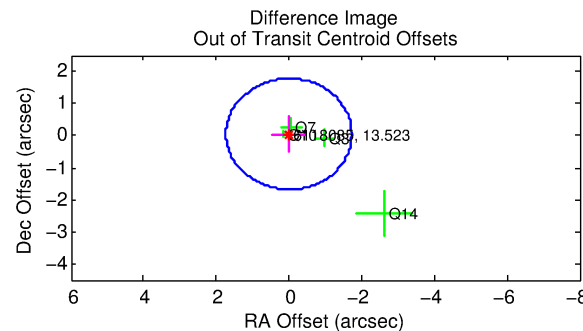
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 006118085-02

No Significant Match Found

KIC: 6118085 Candidate: 2 of 7 Period: 346.571 d

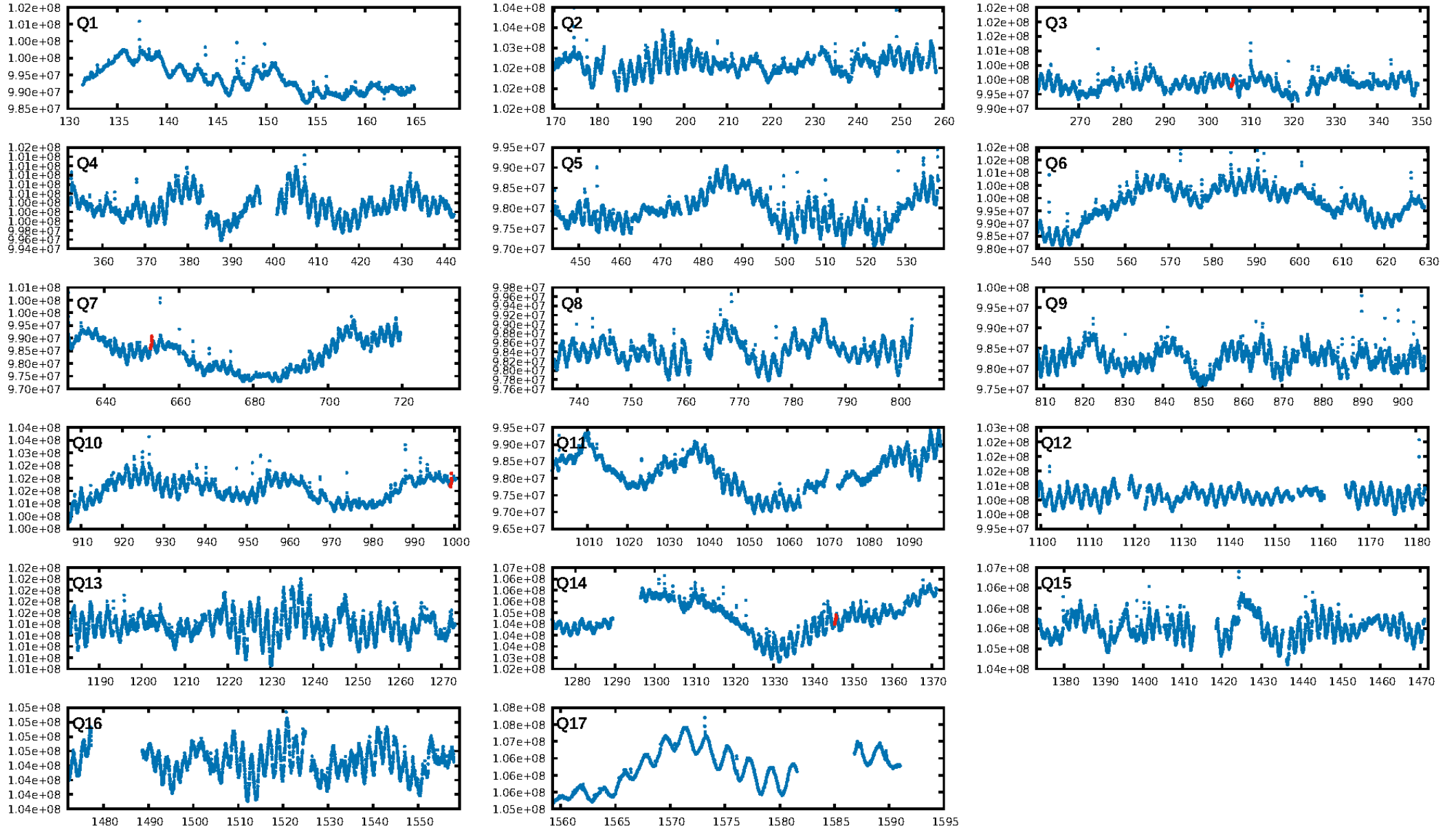


ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [141.83σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 91.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4503

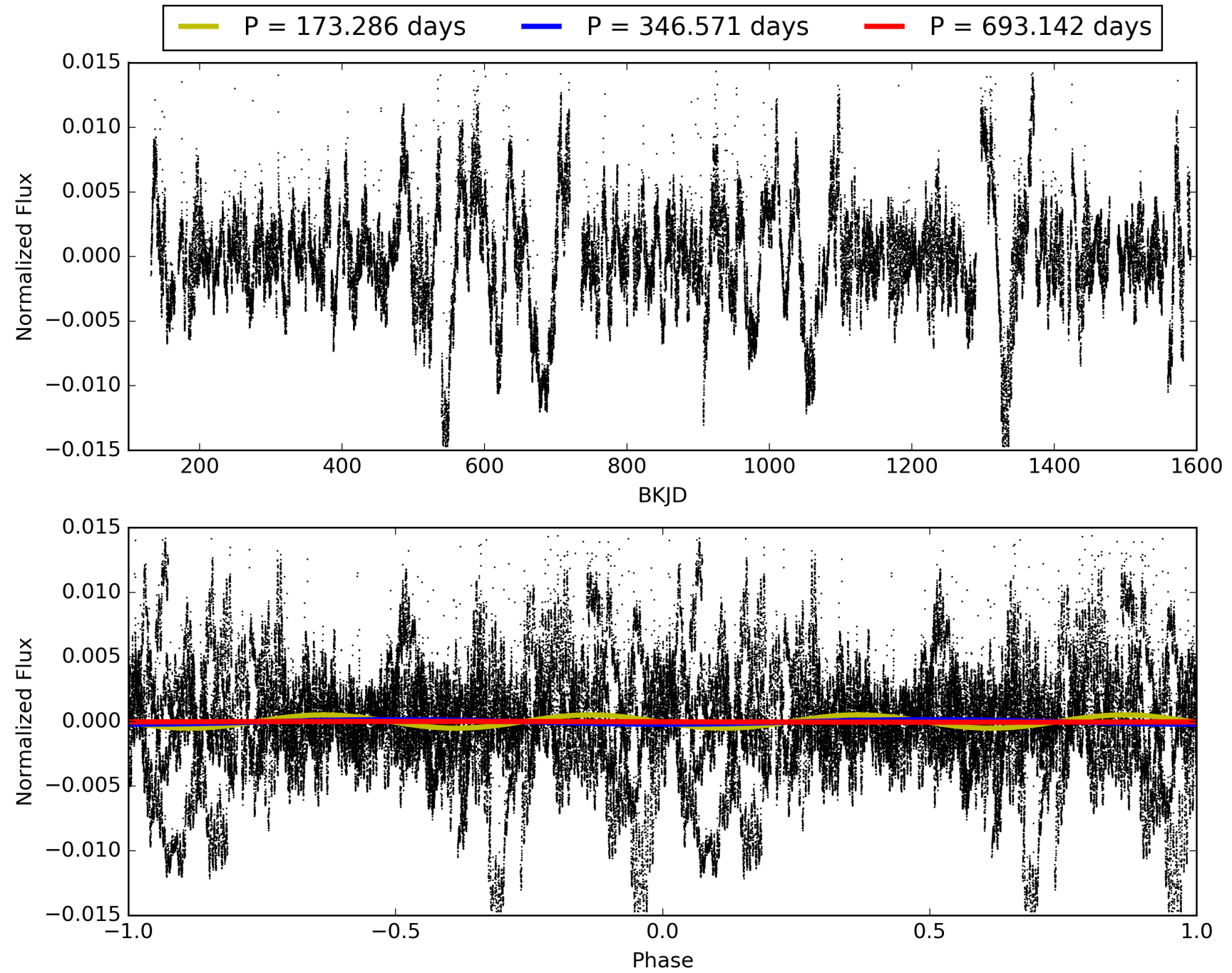
Centroid-sig: 5.6%
Centroid-so: 0.721 arcsec [0.74σ]
OotOffset-rm: 0.046 arcsec [0.08σ]
KicOffset-rm: 0.270 arcsec [0.36σ]
OotOffset-st: 2/2/0/0 [4]
KicOffset-st: 2/2/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

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

TCE 006118085-02, PDC Light Curves

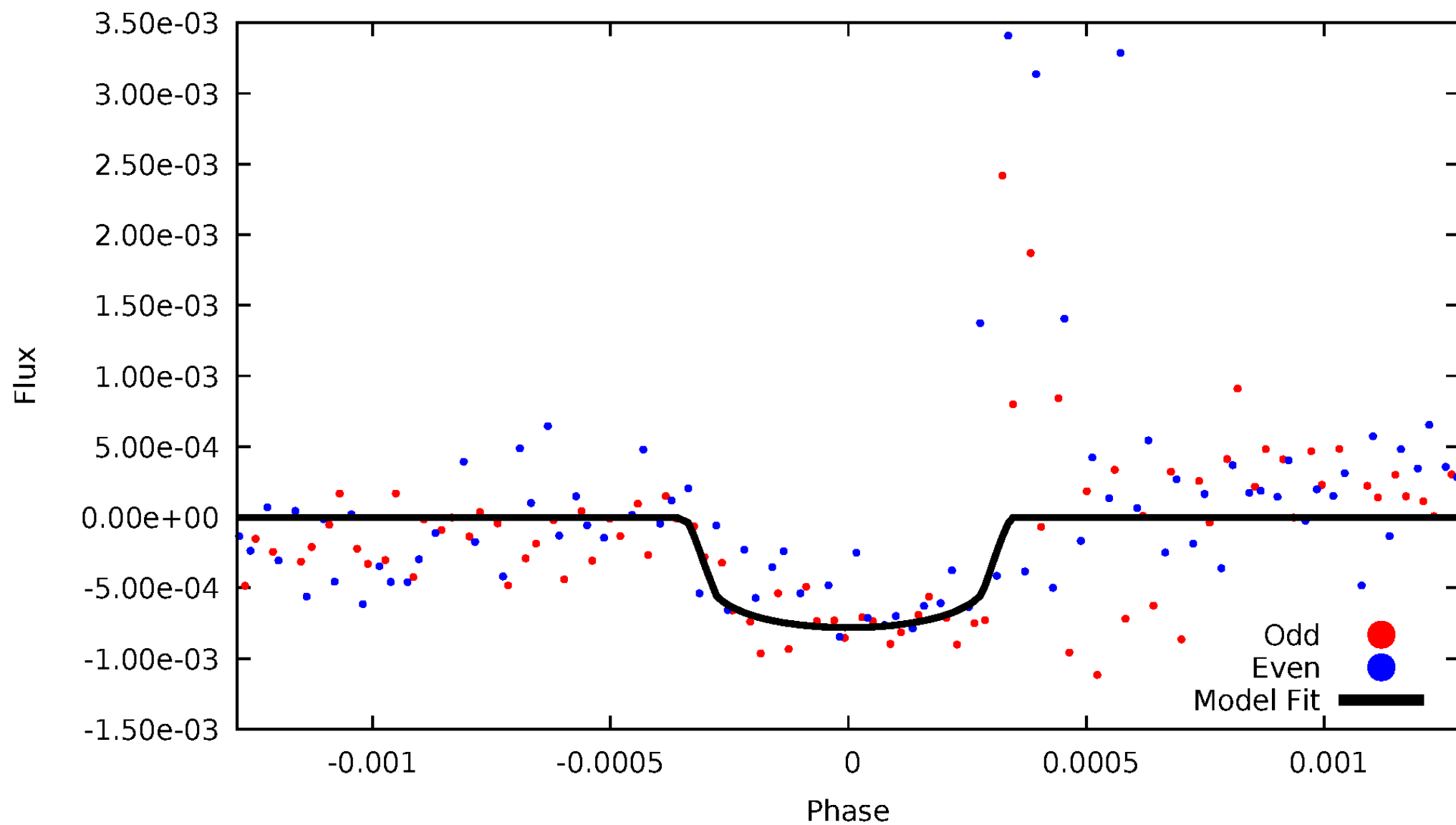


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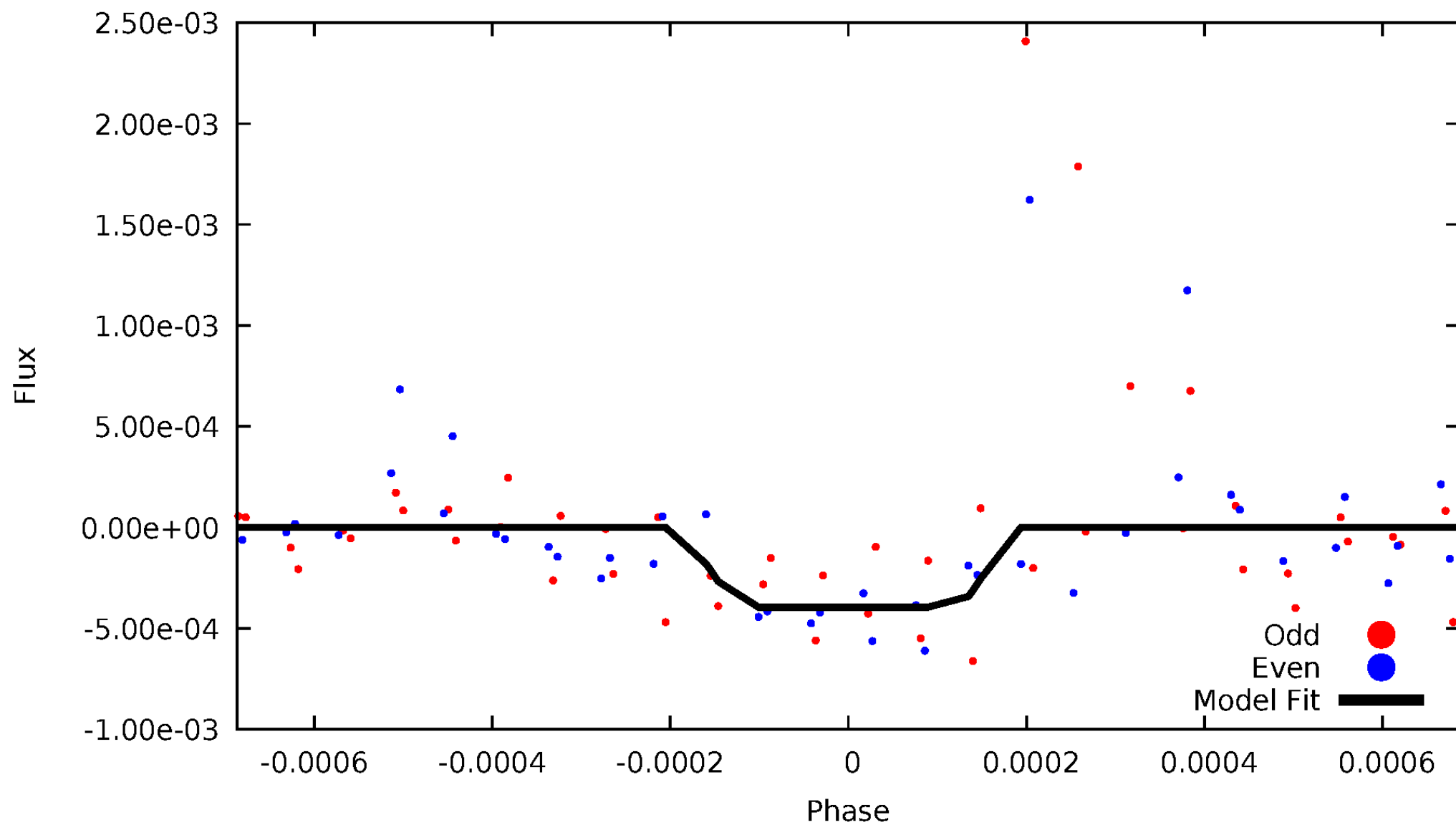
DV Odd/Even

TCE 006118085-02



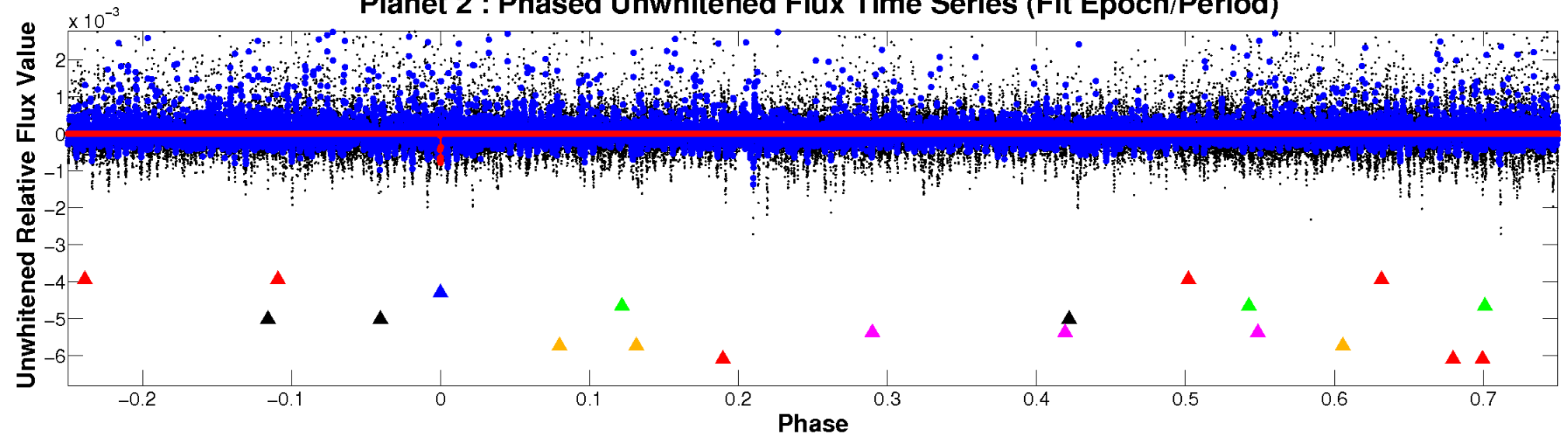
ALT Odd/Even

TCE 006118085-02

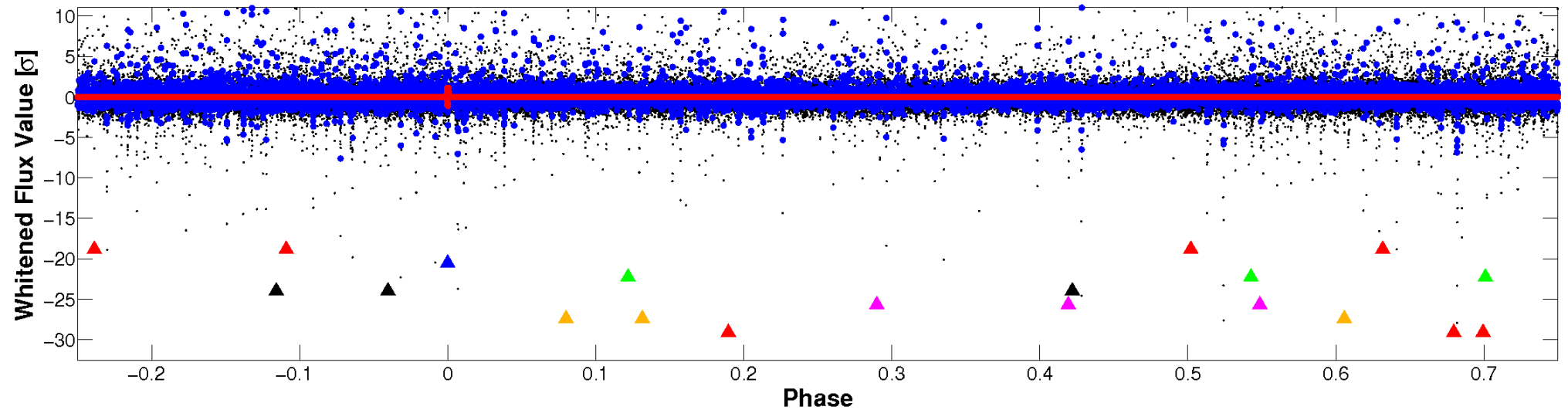


Non-Whitened Vs. Whitened Light Curve

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

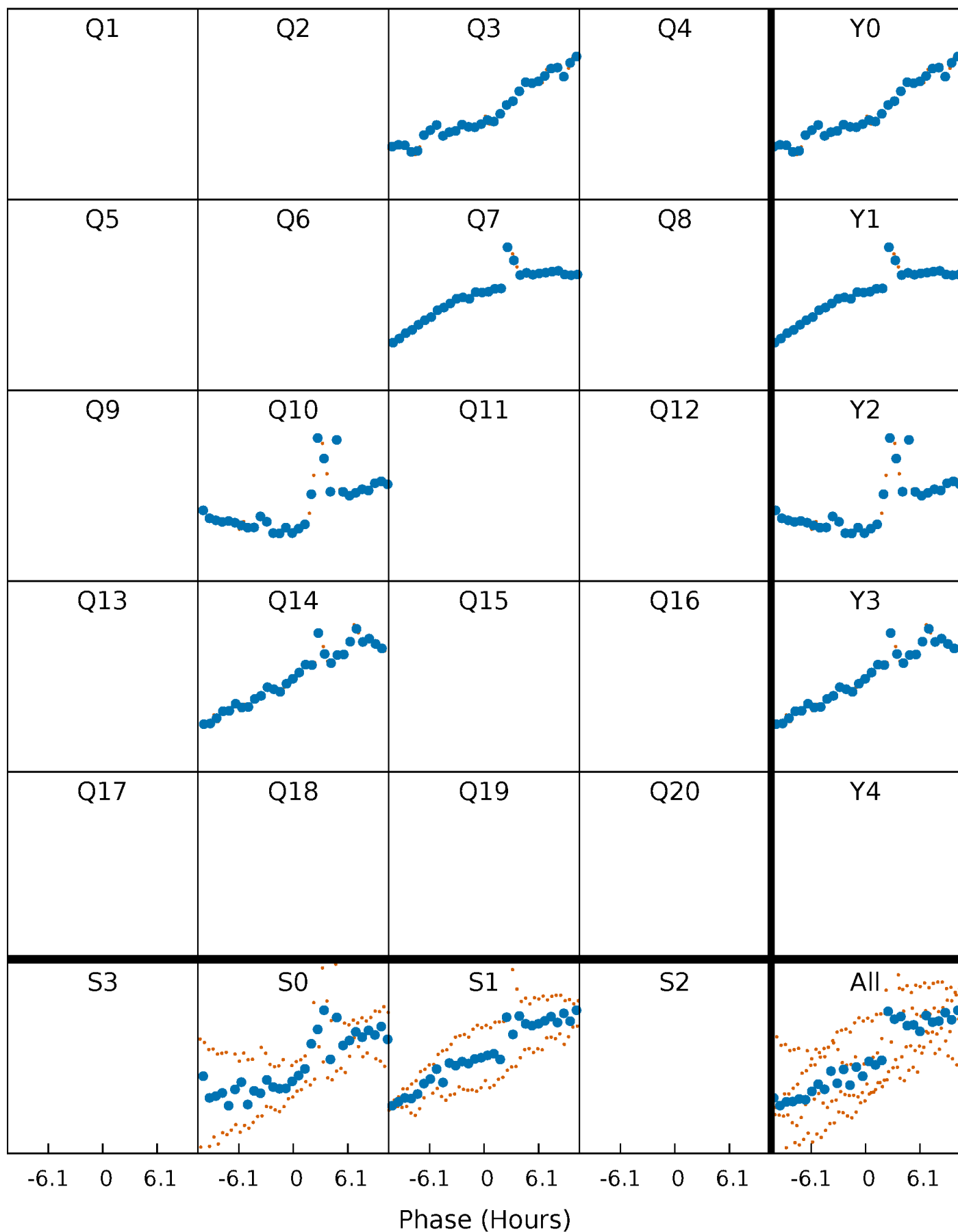


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



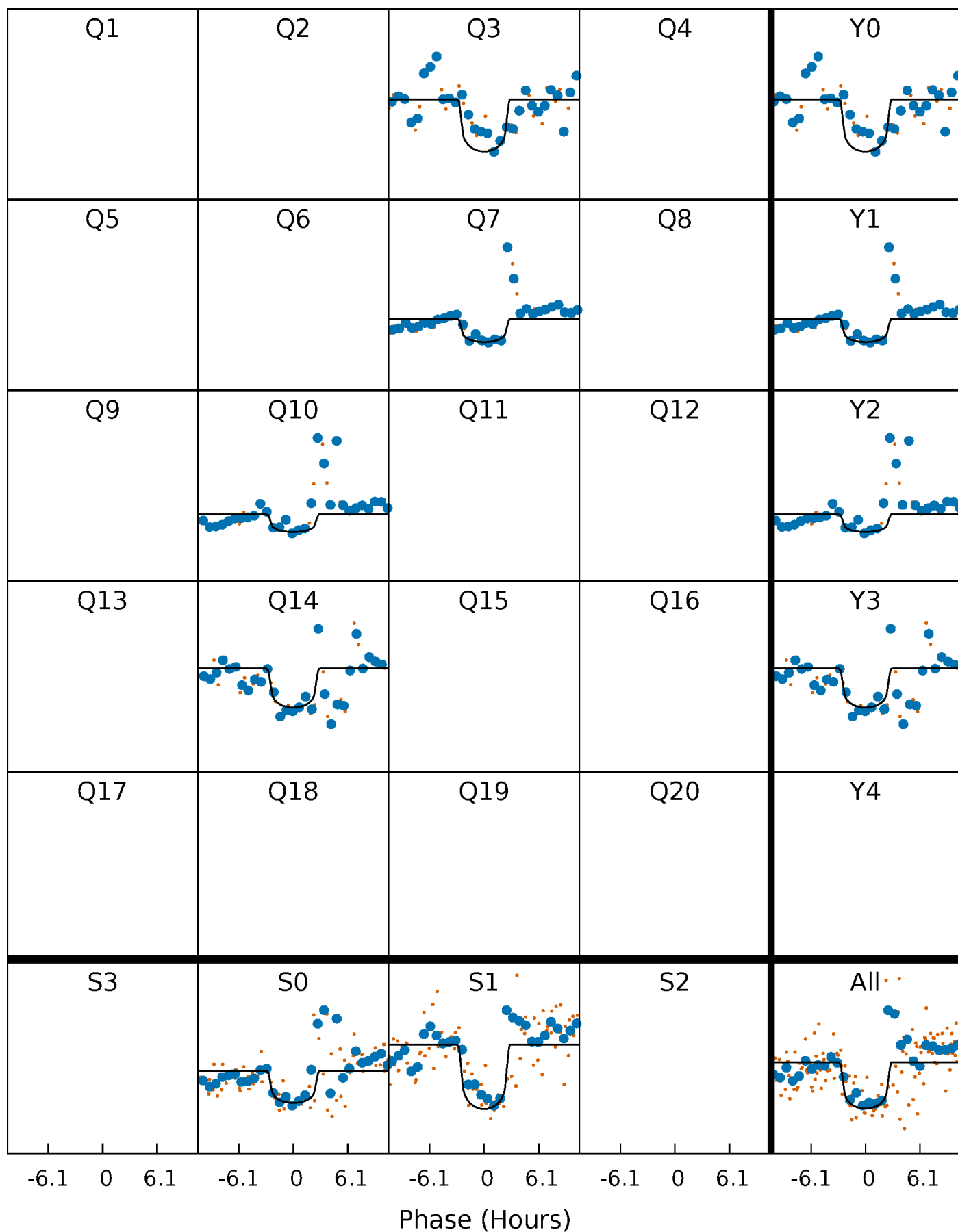
PDC Quarter-Phased Transit Curves

TCE 006118085-02 P=346.571224 Days $T_0=305.988169$ (BKJD)



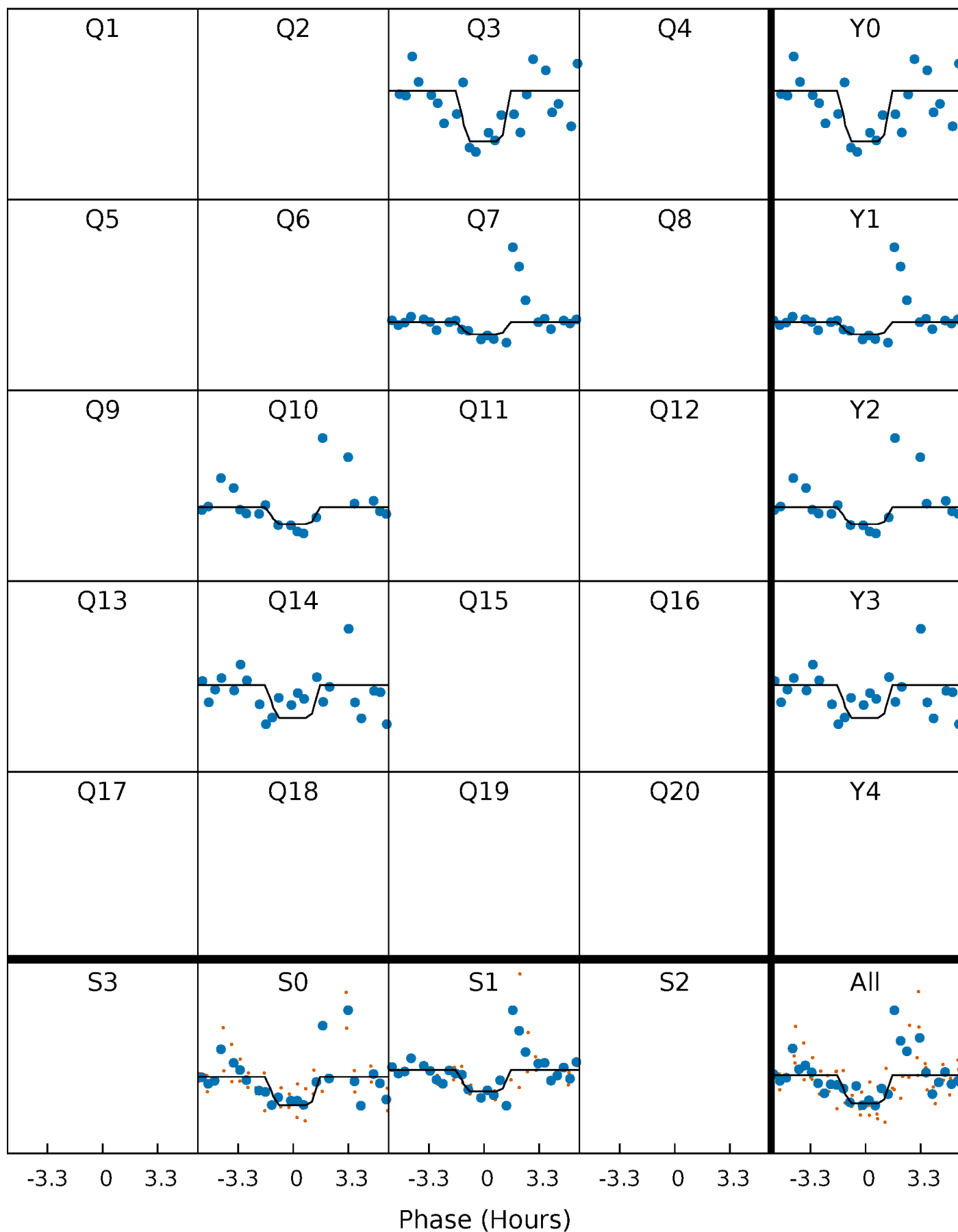
DV Quarter-Phased Transit Curves

TCE 006118085-02 P=346.571224 Days $T_0=305.988169$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

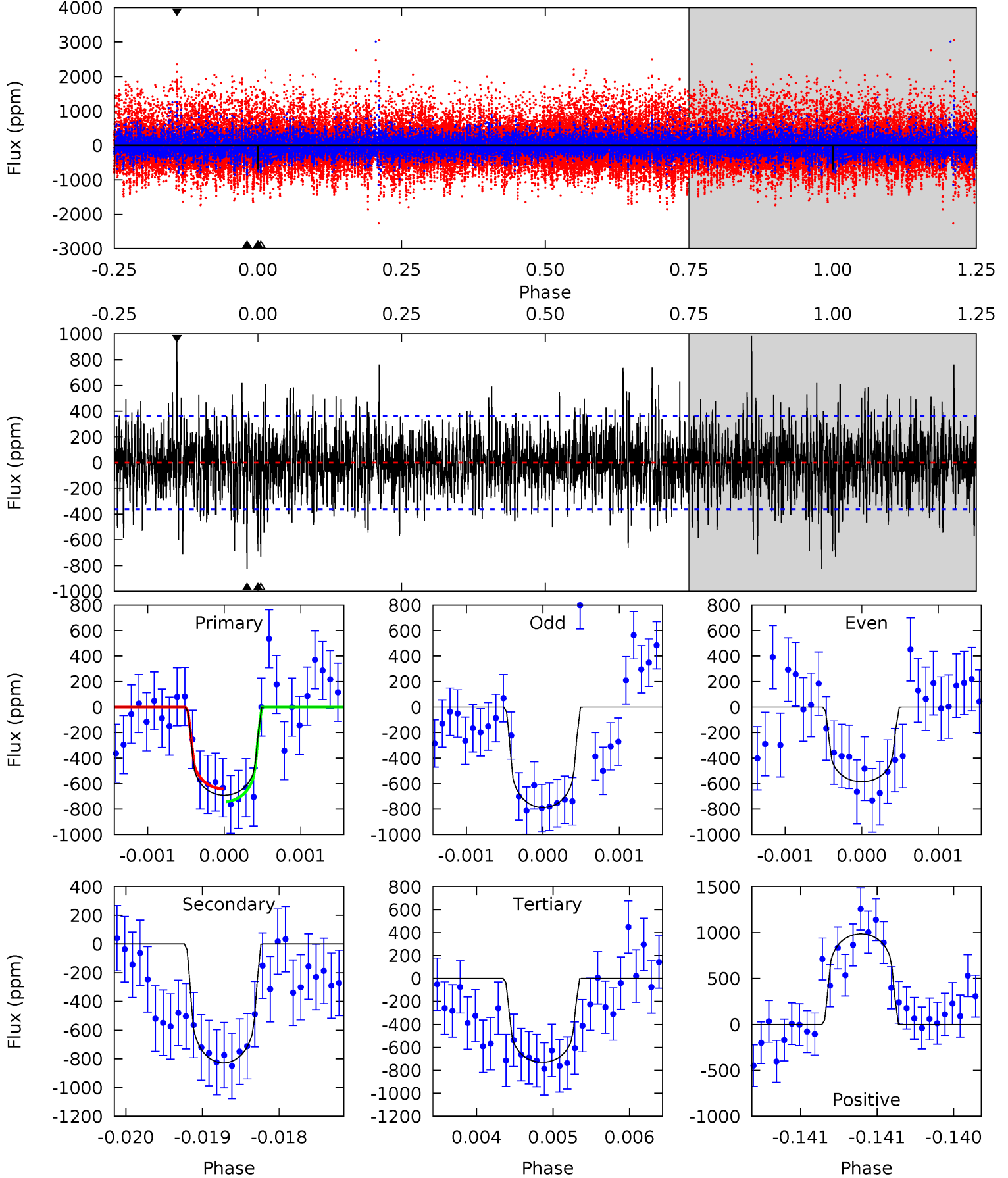
TCE 006118085-02 P=346.553182 Days $T_0=306.049516$ (BKJD)



DV Model-Shift Uniqueness Test

006118085-02, P = 346.571224 Days, E = 305.988169 Days

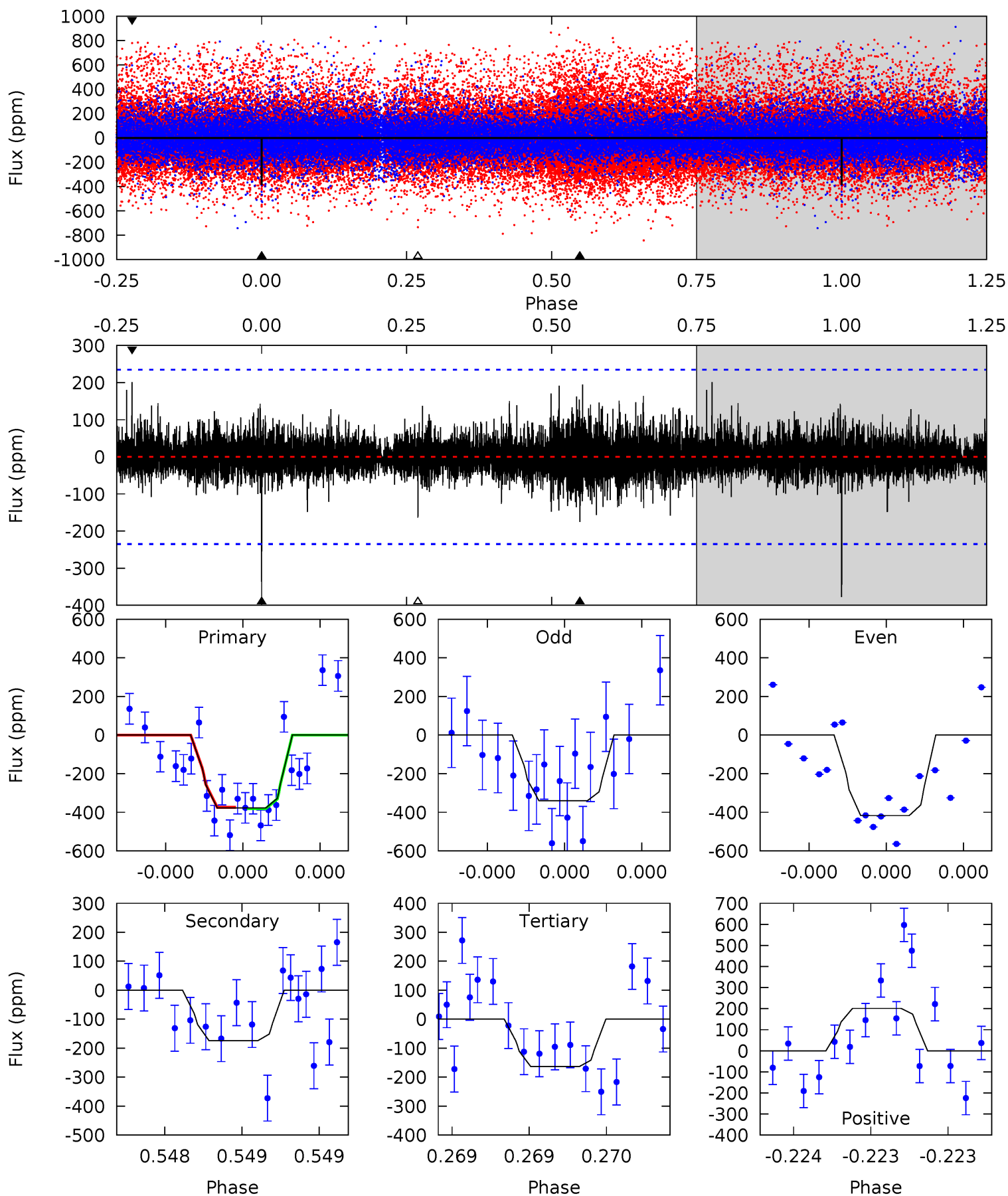
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	12.6	11.1	15.0	5.51	3.39	2.83	-0.59	-4.49	1.49	-2.41	1.43	1.05	0.54	0.77



Alt Model-Shift Uniqueness Test

006118085-02, P = 346.553182 Days, E = 306.049516 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.10	4.21	3.94	4.84	5.66	3.61	0.88	5.17	4.26	0.27	-0.63	0.91	0.90	0.35	0.08



Stellar Parameters For KIC 006118085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+155}_{-155}	$4.573^{+0.042}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.794^{+0.205}_{-0.068}$	$0.860^{+0.096}_{-0.088}$	$2.425^{+0.533}_{-1.084}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+11%/-10%	+22%/-45%
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 006118085-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-828 ± 66	$4.82^{+4.46}_{-3.27}$	337^{+20}_{-14}	4443^{+3215}_{-908}	$16347^{+142207}_{-11946}$
Alt.	-175 ± 42	$4.09^{+4.08}_{-2.88}$	337^{+21}_{-15}	3522^{+2206}_{-651}	4459^{+46564}_{-3371}

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 $A_{obs} \gg 1.0$

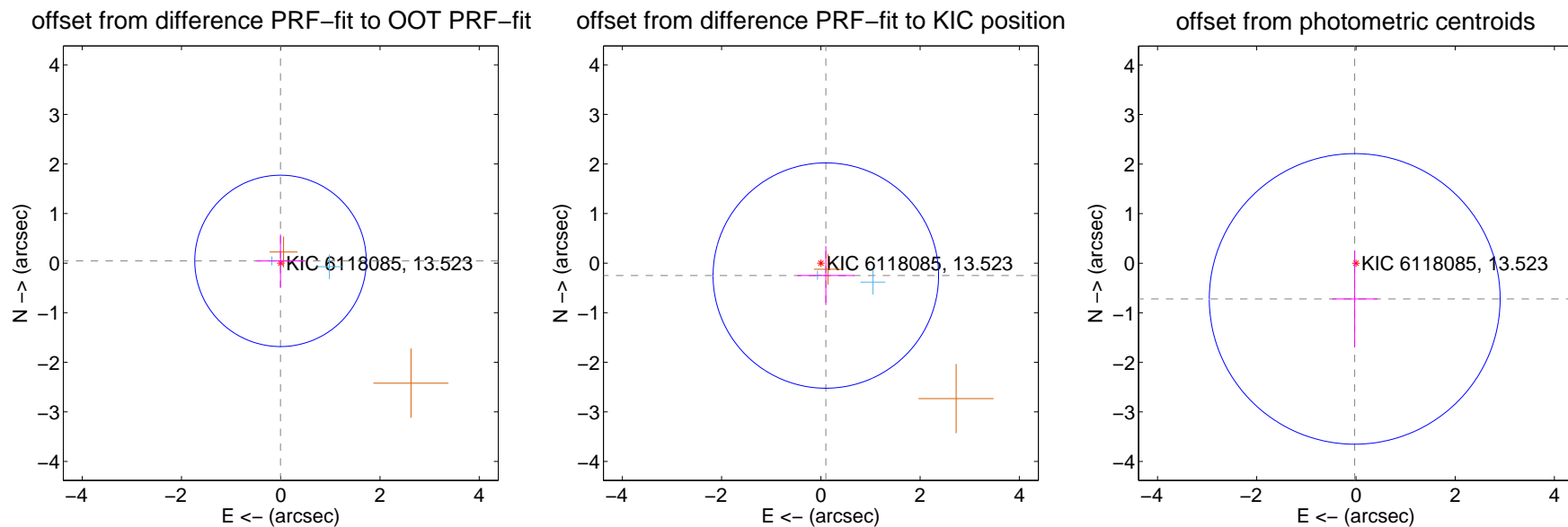
DV Centroid Data

Supplemental centroid analysis for 006118085-02. Kepler magnitude: 13.52. Transit SNR 6.40

There are 2 quarters with good PRF difference image offsets

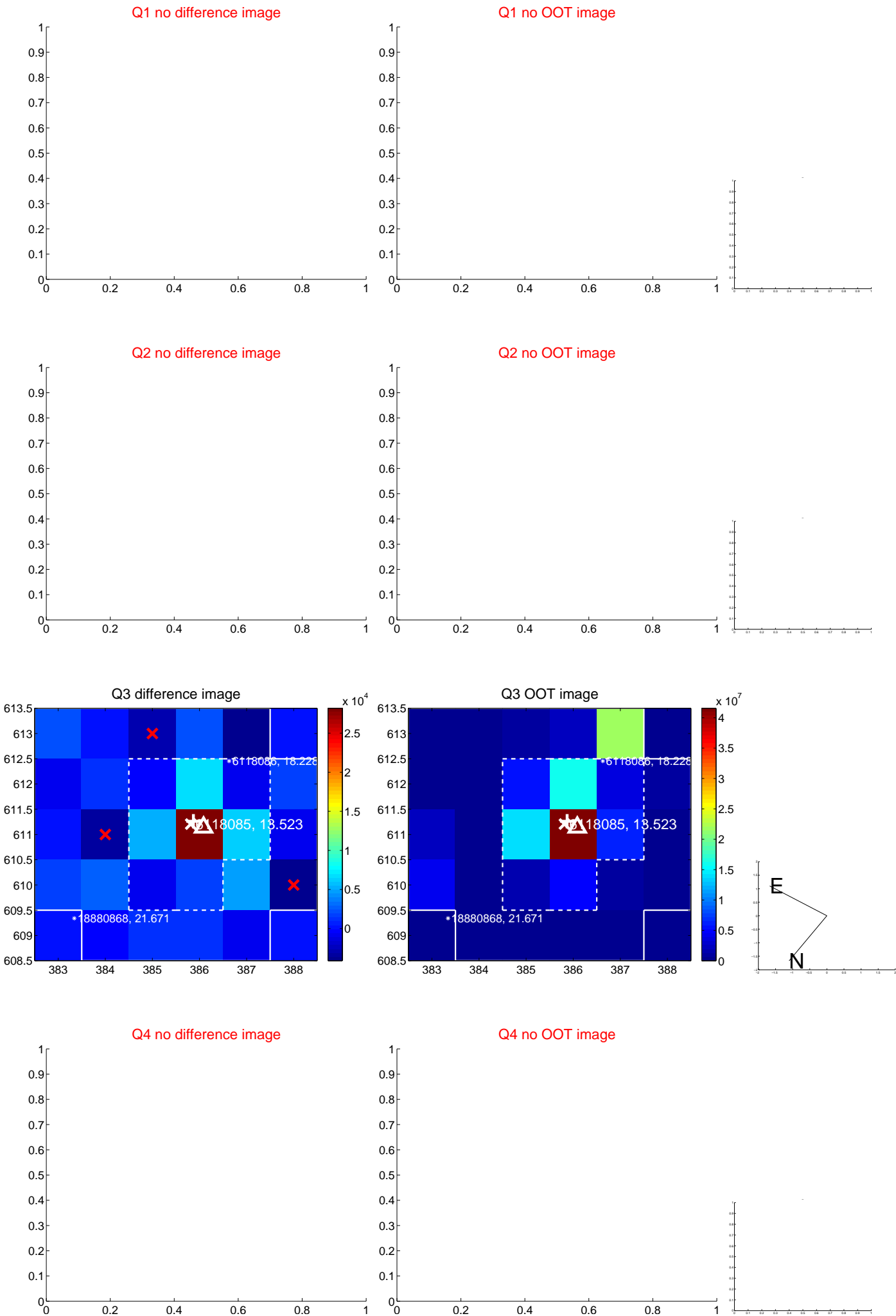
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.046 ± 0.576	0.08	0.005 ± 0.487	0.045 ± 0.535
PRF-fit source offset from KIC position	0.270 ± 0.757	0.36	-0.100 ± 0.576	-0.251 ± 0.594
photometric centroid source offset	0.72 ± 0.98	0.74	0.02 ± 0.46	-0.72 ± 0.98

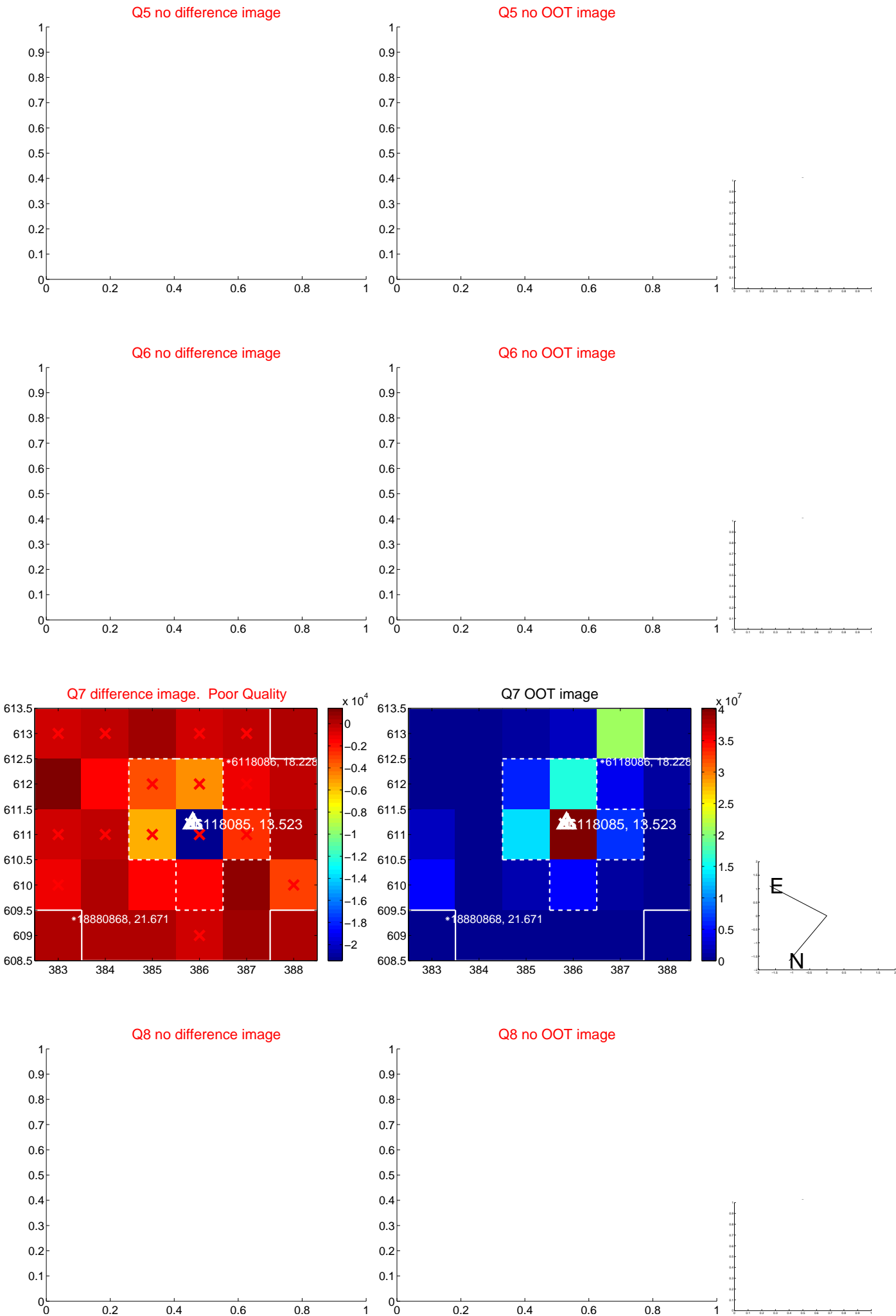


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

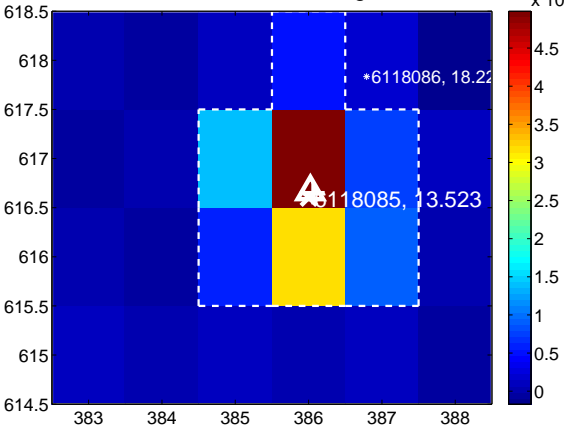
Q9 no difference image



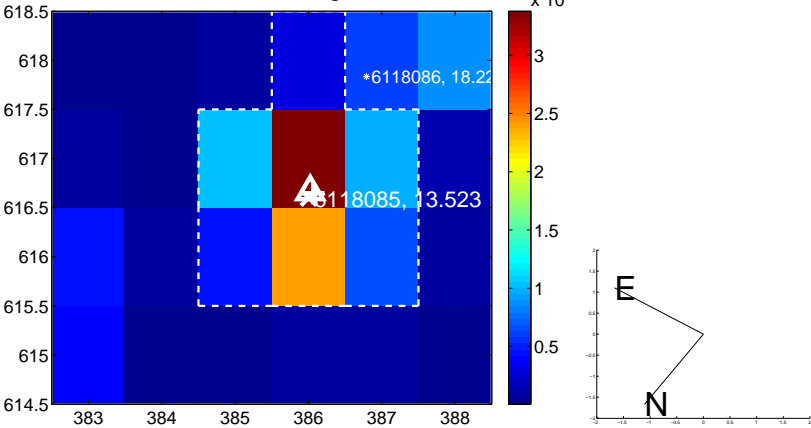
Q9 no OOT image



Q10 difference image



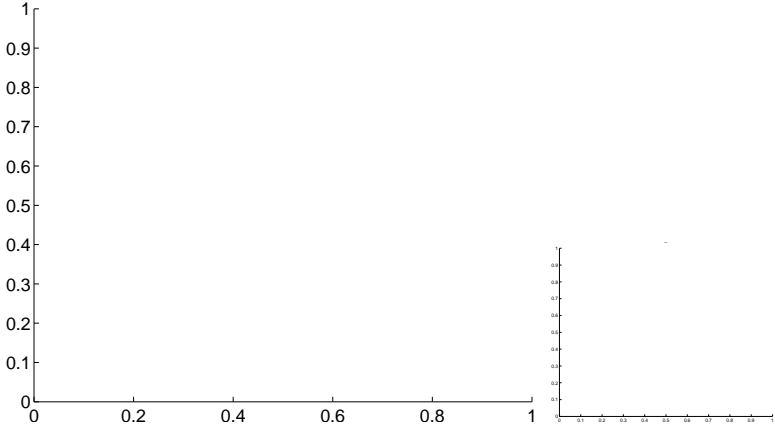
Q10 OOT image



Q11 no difference image



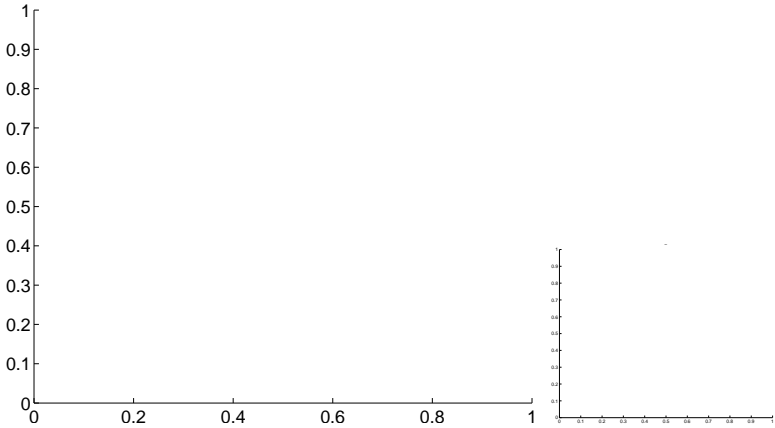
Q11 no OOT image



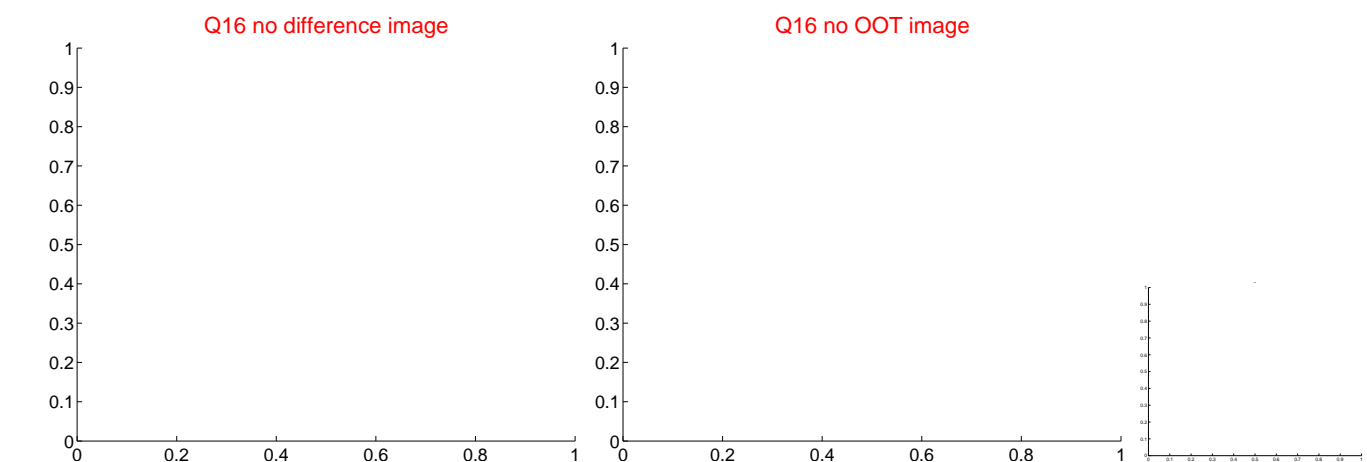
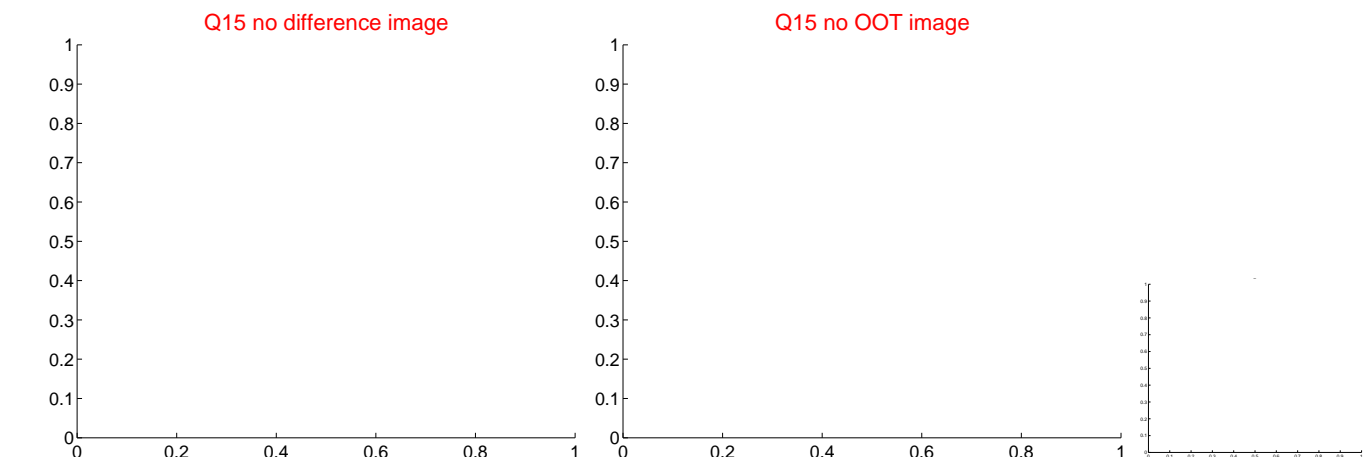
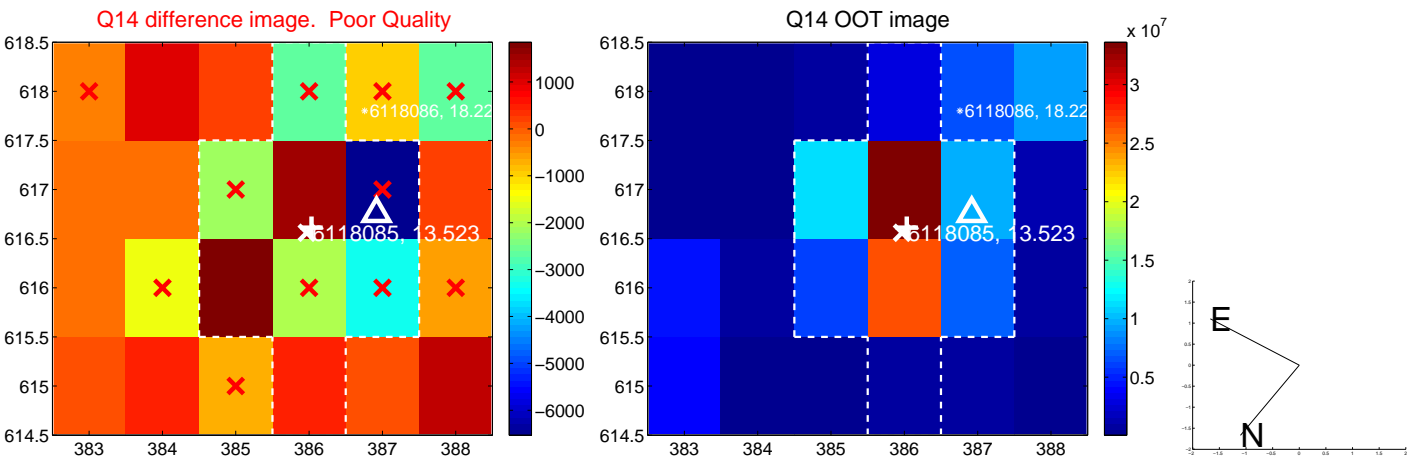
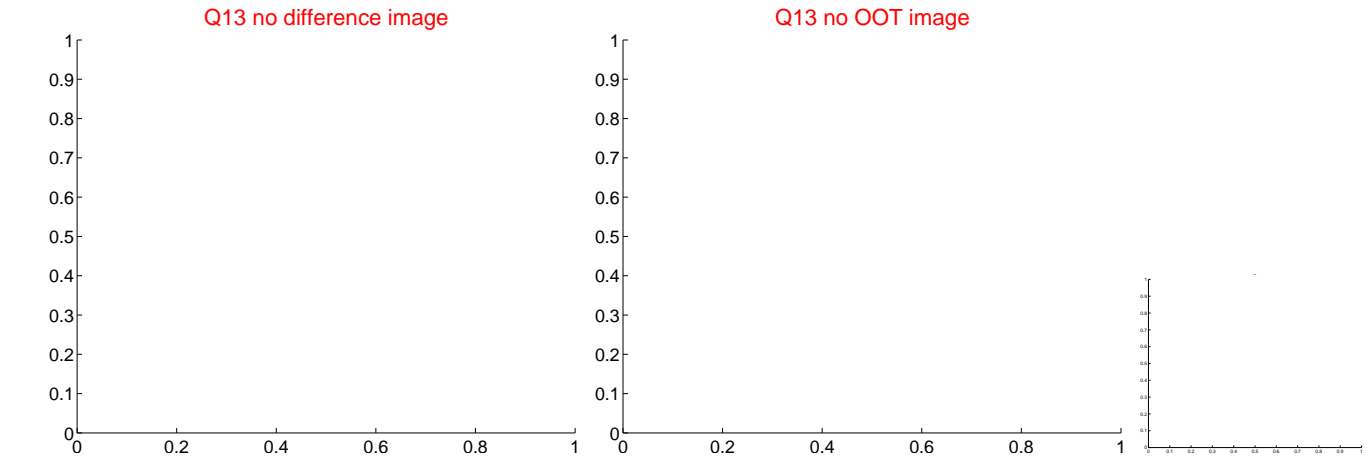
Q12 no difference image



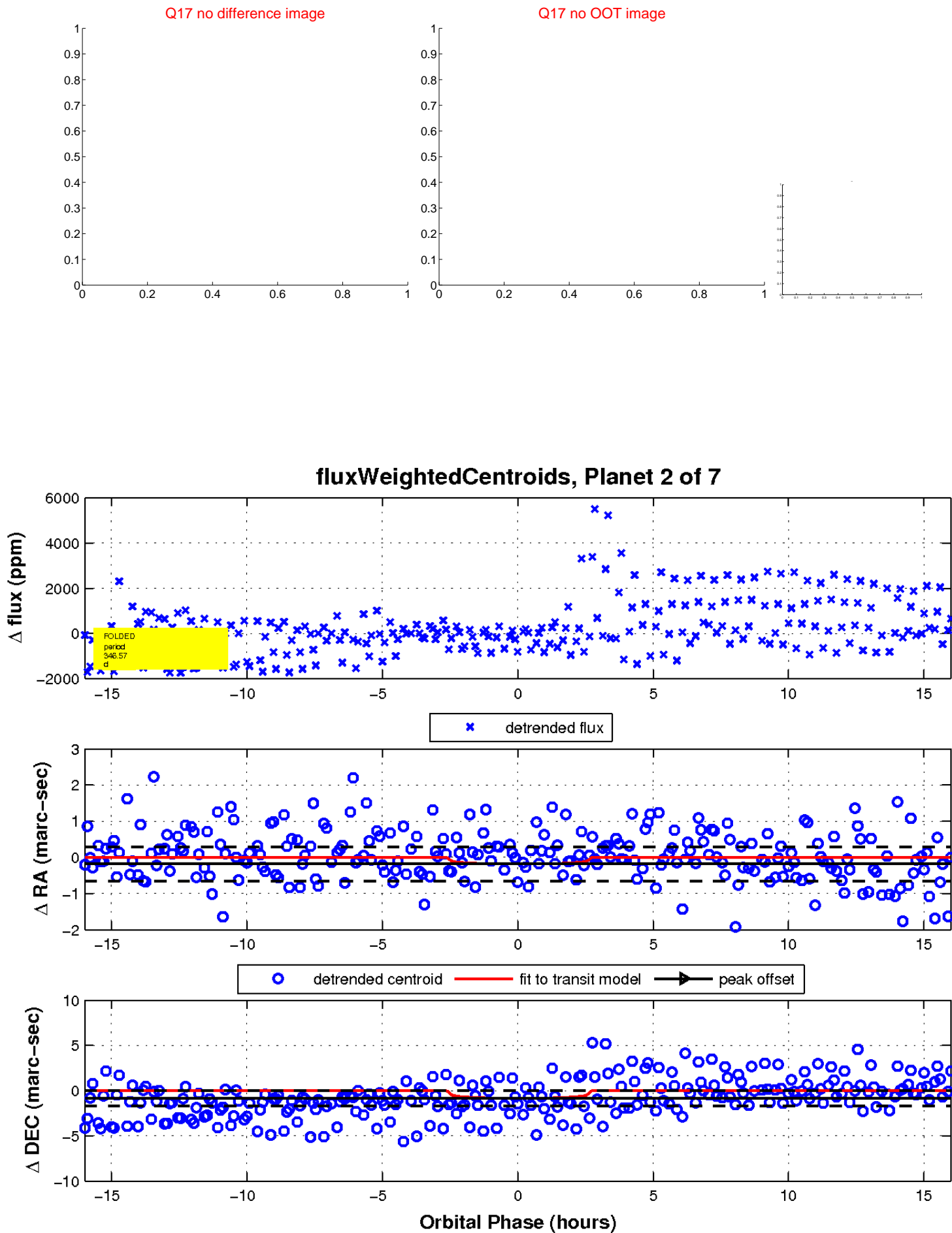
Q12 no OOT image



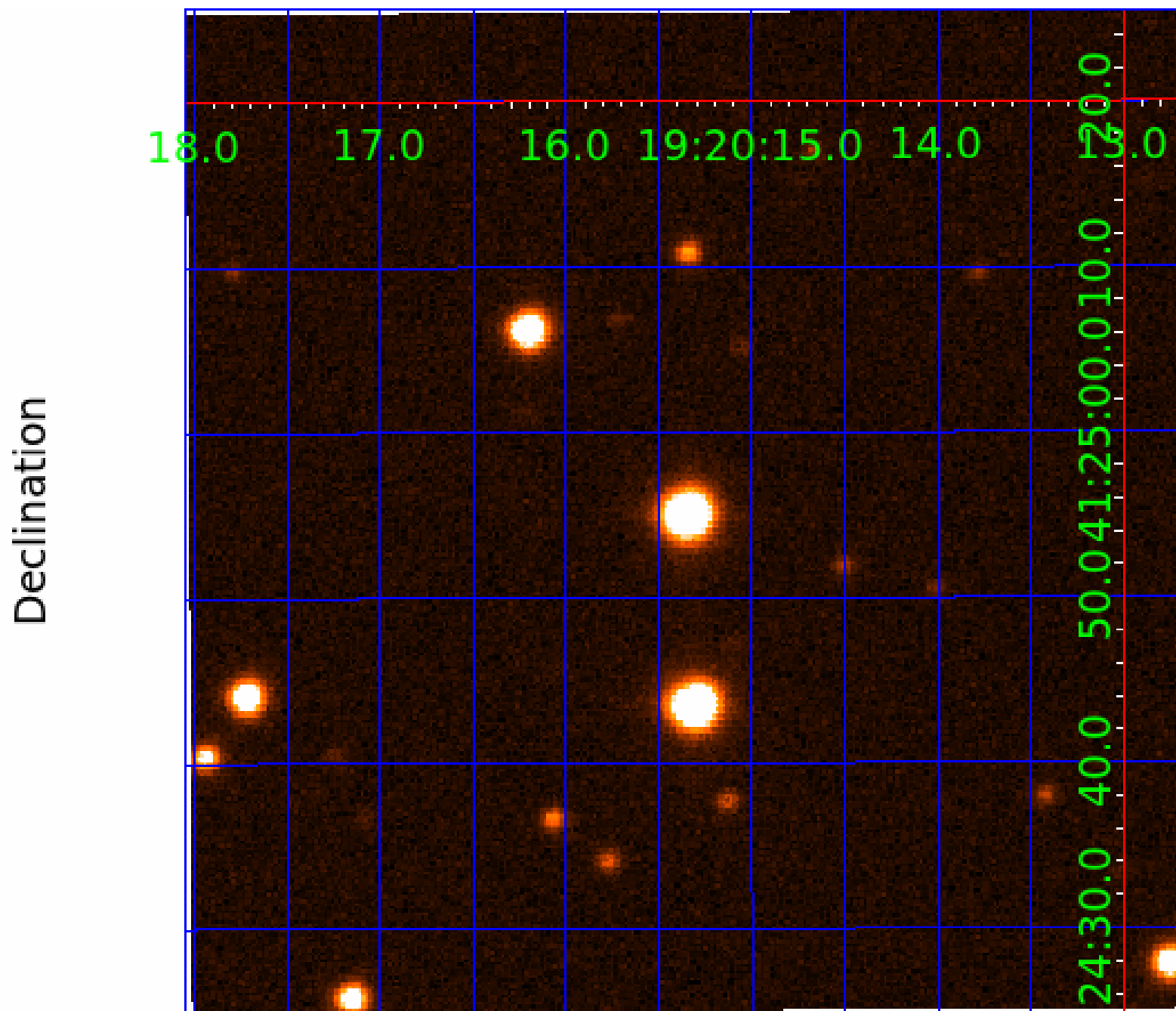
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 006118085

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})
006118085-01	OBS	No	391.493882	133.414830	541.0	5.410	12.7	4.3	0.79	5765	2.04	0.63
006118085-02	OBS	No	346.571224	305.988169	780.3	5.340	11.8	6.4	0.79	5765	2.21	0.74
006118085-03	OBS	No	547.304550	147.470336	1430.9	10.869	13.4	8.3	0.79	5765	3.01	0.40
006118085-04	OBS	No	532.930818	265.865148	792.3	4.430	13.4	5.5	0.79	5765	2.31	0.42
006118085-05	OBS	No	648.298489	149.570024	638.9	6.086	12.3	4.5	0.79	5765	2.03	0.32
006118085-06	OBS	No	528.792452	333.685519	892.4	4.373	14.1	6.9	0.79	5765	2.49	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006118085-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006118085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
006118085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

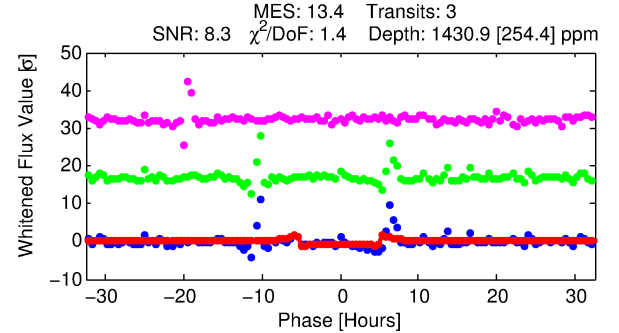
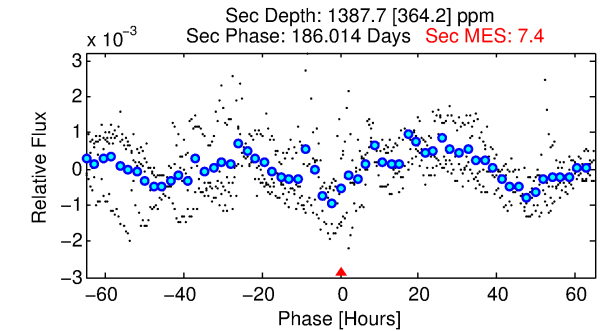
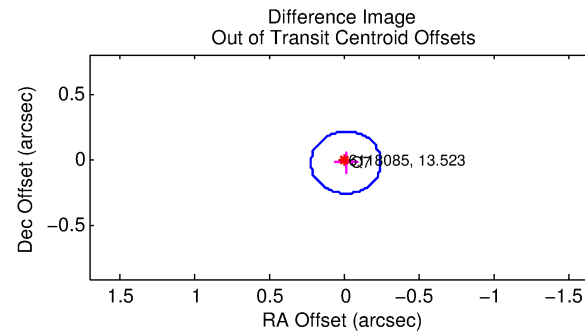
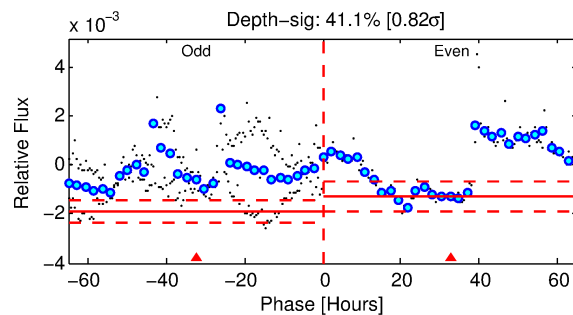
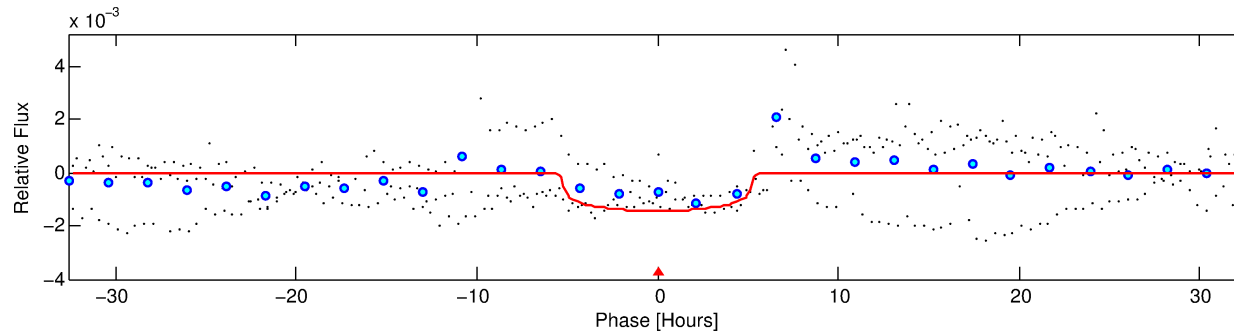
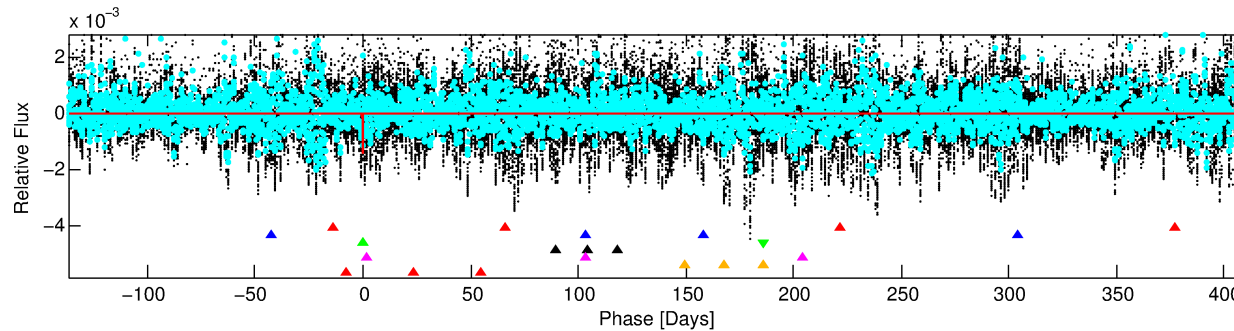
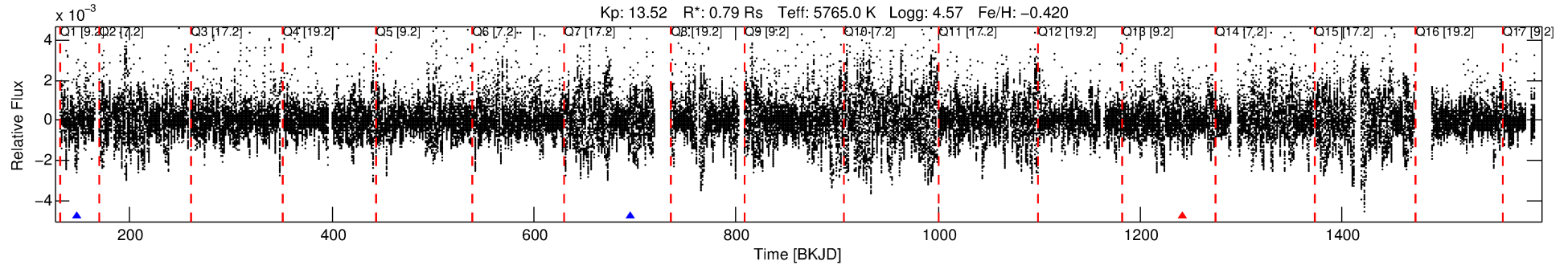
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006118085-03

No Significant Match Found

DV One-Page Summary

KIC: 6118085 Candidate: 3 of 7 Period: 547.305 d



DV Fit Results:

Period = 547.30455 [0.00710] d
Epoch = 147.4703 [0.0086] BKJD
Rp/R* = 0.0347 [0.0106]
a/R* = 384.14 [480.46]
b = 0.27 [4.30]
Seff = 0.40 [0.13]
Teq = 203 [17] K
Rp = 3.01 [1.20] Re
a = 1.2457 [0.2679] AU
Ag = 130685.96 [95839.15] [1.36 σ]
Teffp = 5969 [1005] K [5.74 σ]

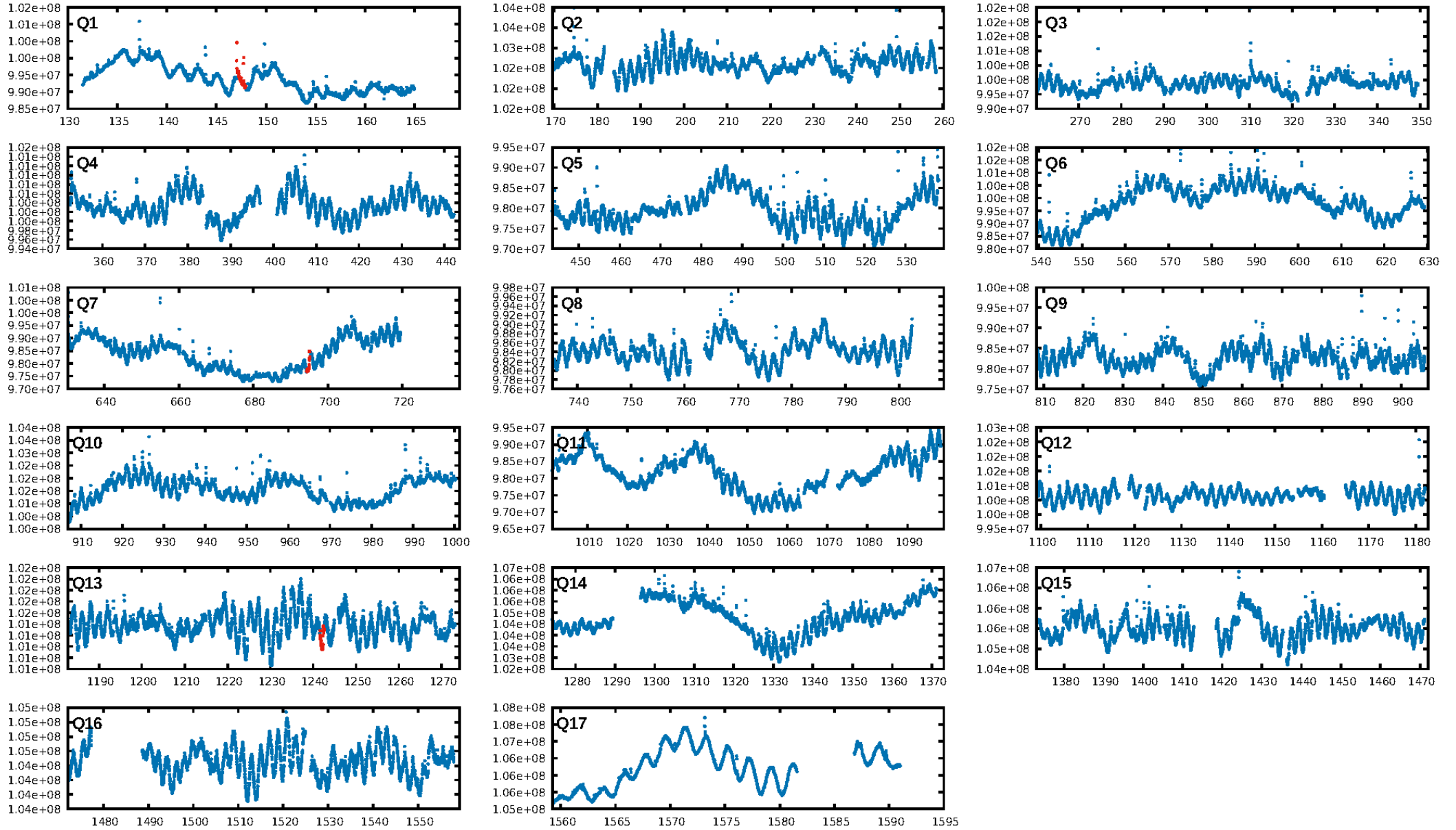
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.39 σ]
LongPeriod-sig: 100.0% [194.58 σ]
ModelChiSquare2-sig: 6.5%
ModelChiSquareGof-sig: 95.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.50 [1/2]
GhostDiagnostic-chr: -120.4
Centroid-sig: 0.2%
Centroid-so: 0.559 arcsec [0.73 σ]
OotOffset-rm: 0.025 arcsec [0.31 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-rm: **0.370 arcsec [4.72 σ]**
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

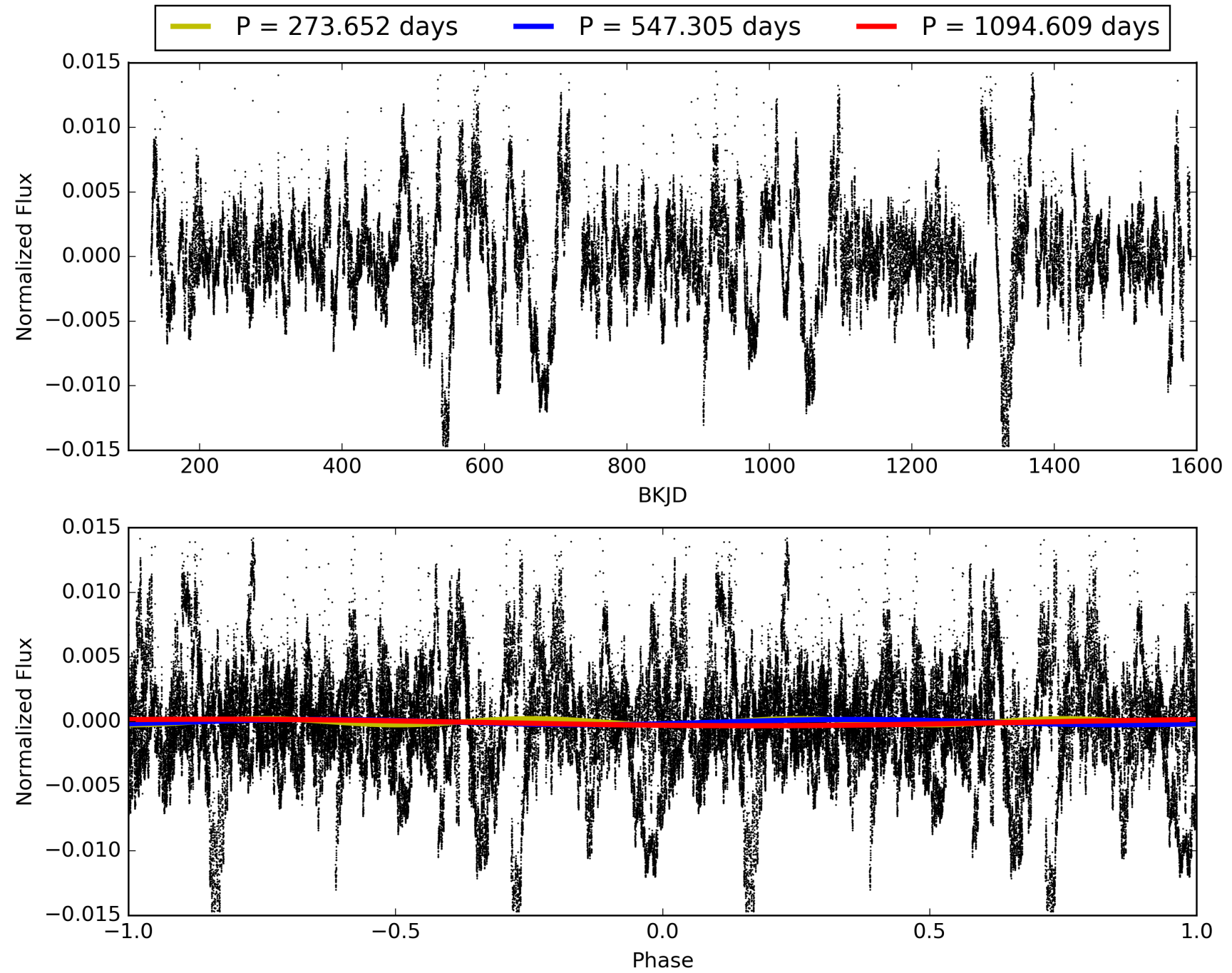
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:17:33 Z

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

TCE 006118085-03, PDC Light Curves

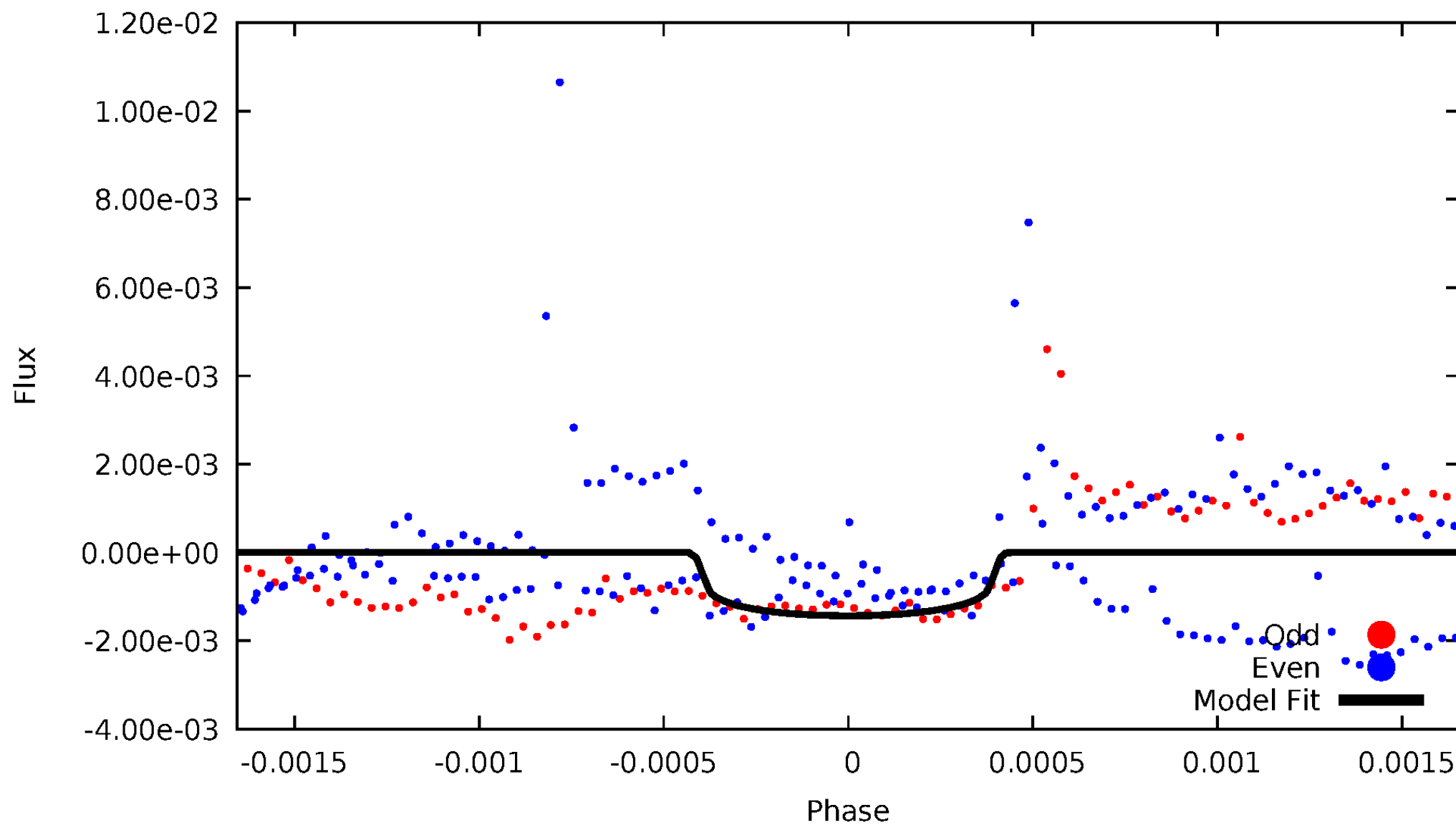


TCE 006118085-03



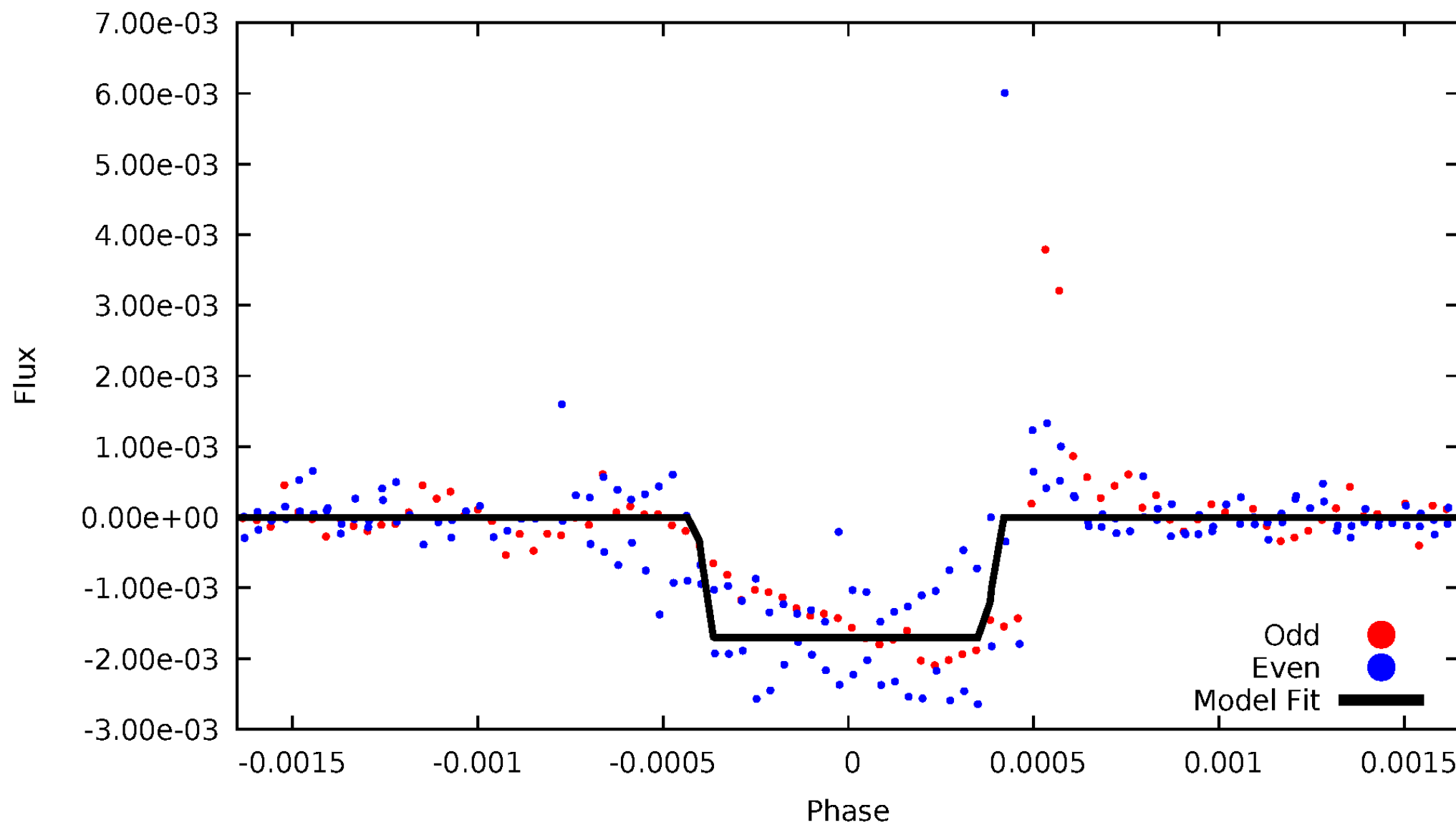
DV Odd/Even

TCE 006118085-03



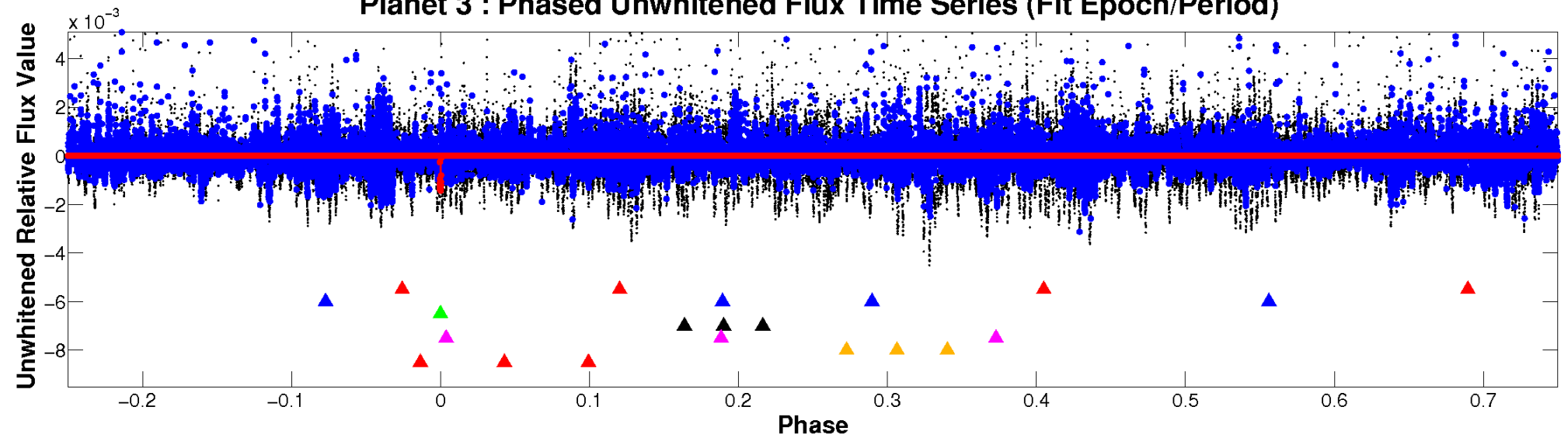
ALT Odd/Even

TCE 006118085-03

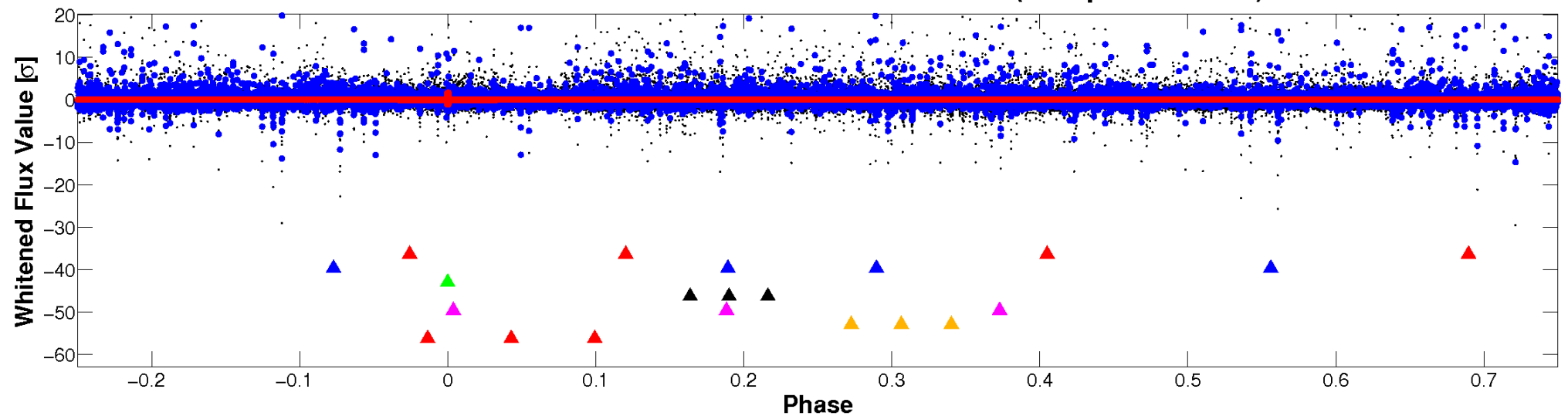


Non-Whitened Vs. Whitened Light Curve

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

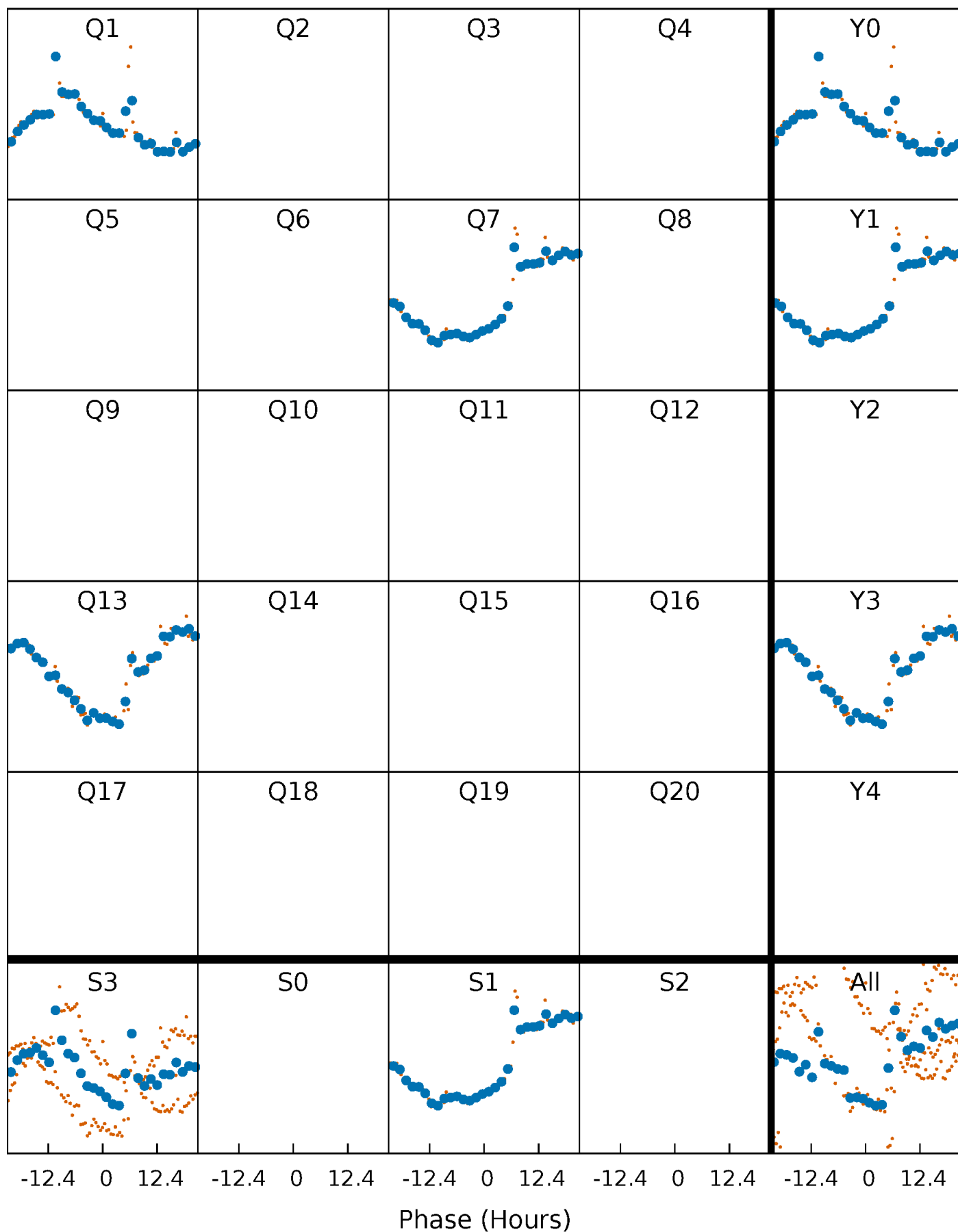


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



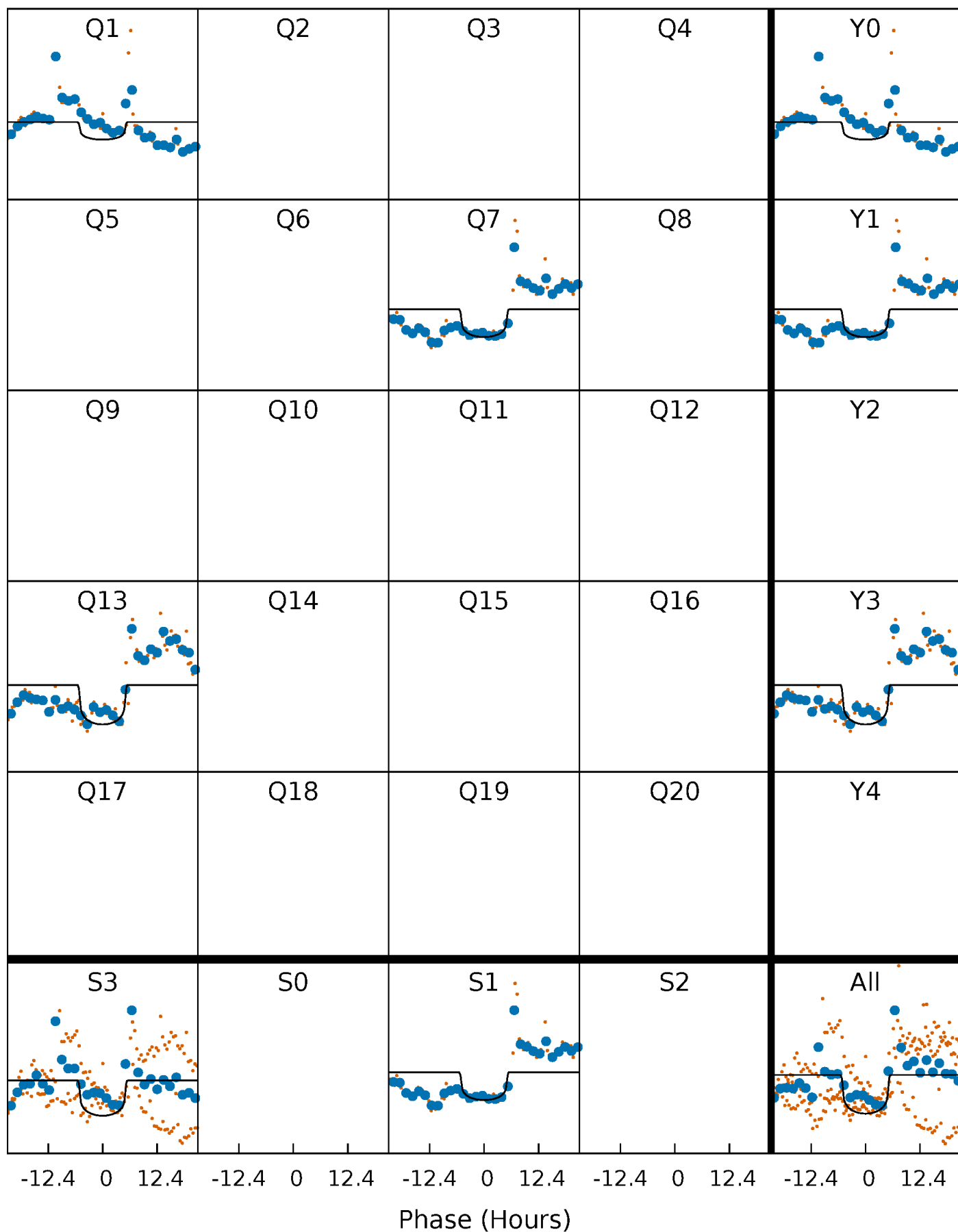
PDC Quarter-Phased Transit Curves

TCE 006118085-03 $P=547.304550$ Days $T_0=147.470336$ (BKJD)



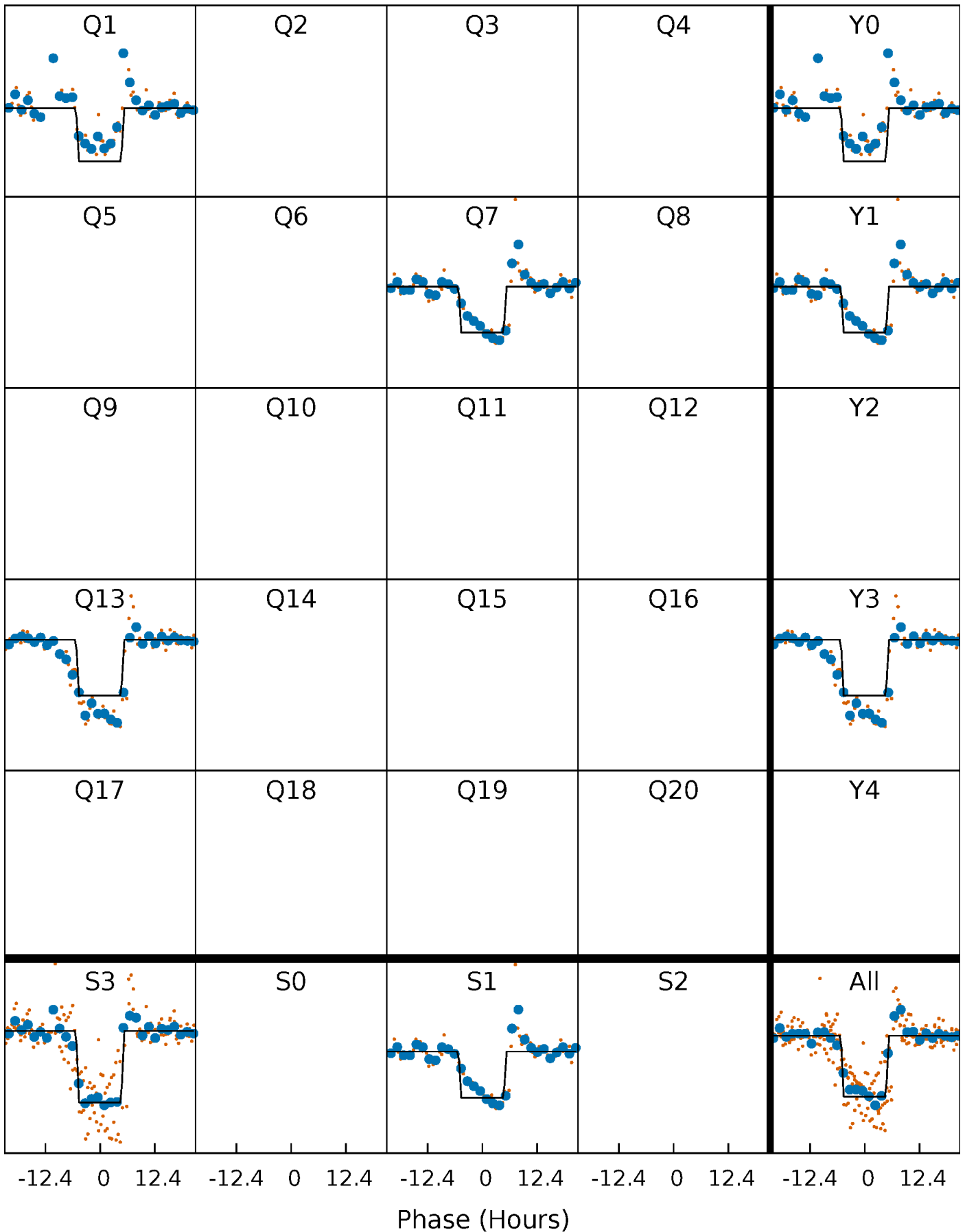
DV Quarter-Phased Transit Curves

TCE 006118085-03 $P=547.304550$ Days $T_0=147.470336$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

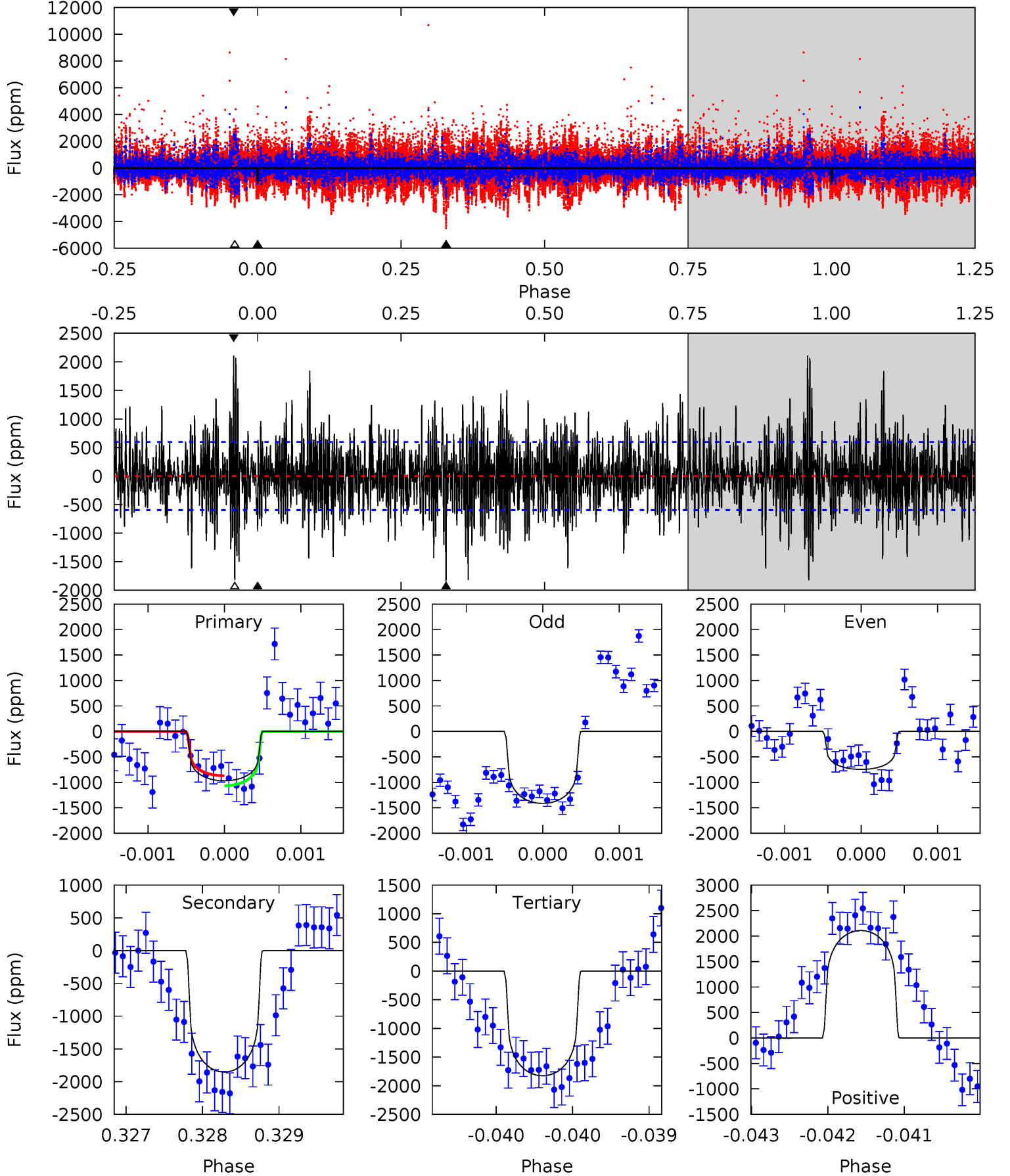
TCE 006118085-03 P=547.292471 Days $T_0=147.486001$ (BKJD)



DV Model-Shift Uniqueness Test

006118085-03, P = 547.304550 Days, E = 147.470336 Days

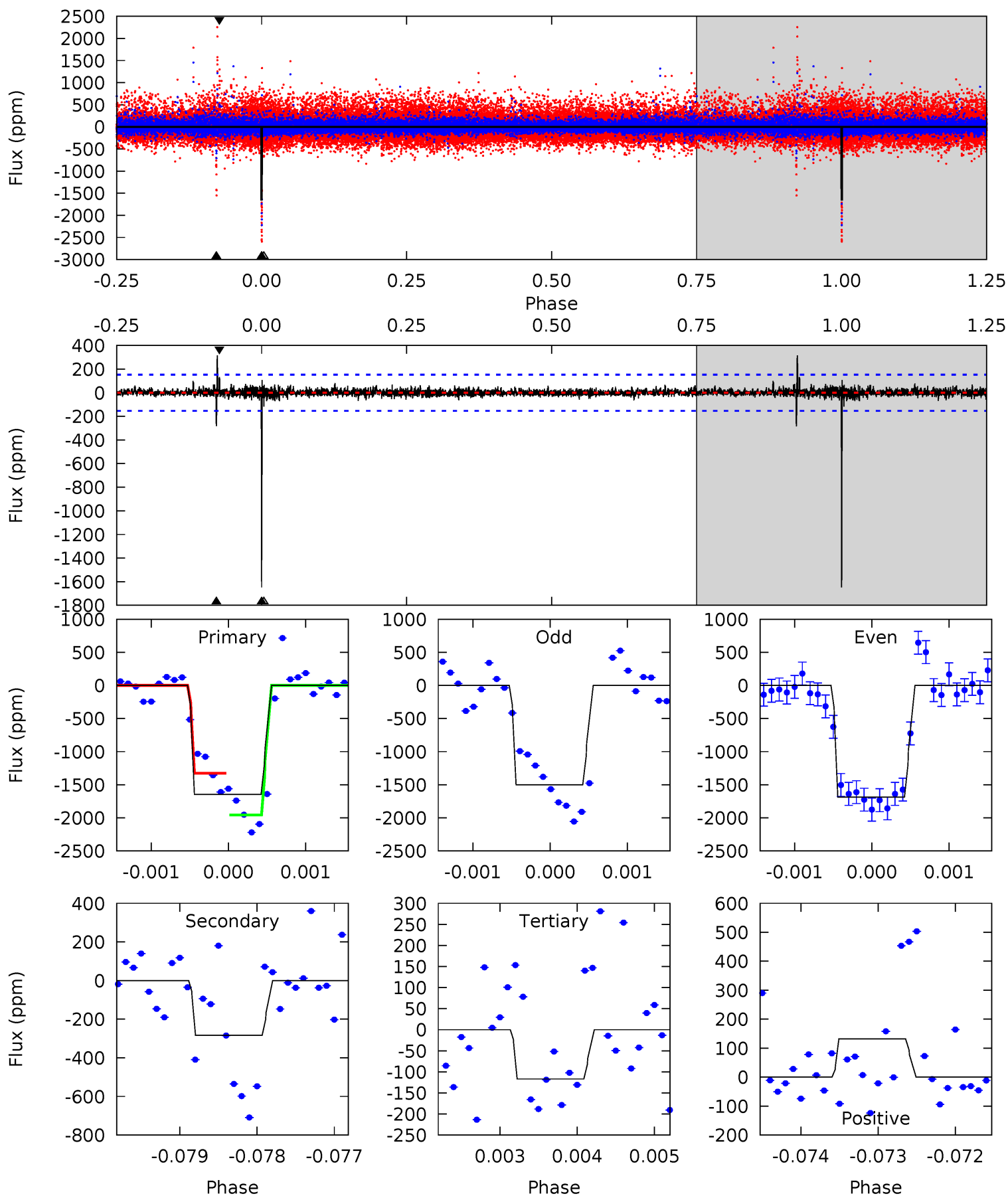
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.90	17.0	16.8	19.4	5.48	3.33	4.50	-7.87	-10.5	0.25	-2.35	2.62	0.82	0.53	0.91



Alt Model-Shift Uniqueness Test

006118085-03, P = 547.292471 Days, E = 147.486001 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.0	10.2	4.19	4.73	5.49	3.35	0.65	54.8	54.3	5.97	5.42	3.38	1.07	0.16	11.4



Stellar Parameters For KIC 006118085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+155}_{-155}	$4.573^{+0.042}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.794^{+0.205}_{-0.068}$	$0.860^{+0.096}_{-0.088}$	$2.425^{+0.533}_{-1.084}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+11%/-10%	+22%/-45%
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 006118085-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1853 ± 109	$3.04^{+1.21}_{-0.90}$	289^{+16}_{-12}	6469^{+1385}_{-883}	$168171^{+165279}_{-82009}$
Alt.	-283 ± 28	$3.73^{+1.06}_{-1.01}$	289^{+18}_{-12}	3998^{+472}_{-325}	17481^{+13864}_{-7215}

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

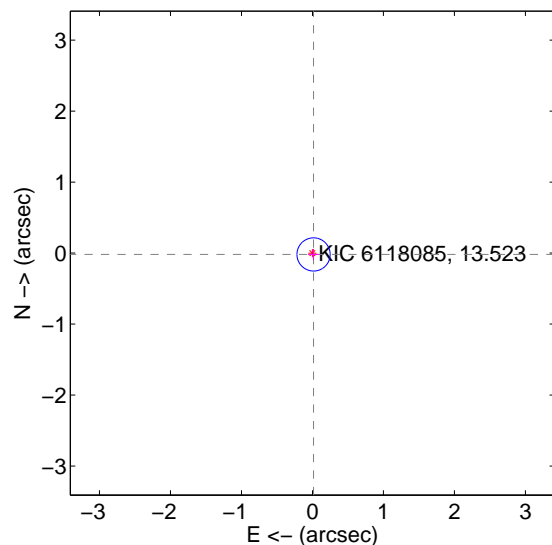
Supplemental centroid analysis for 006118085-03. Kepler magnitude: 13.52. Transit SNR 8.25

There are 1 quarters with good PRF difference image offsets

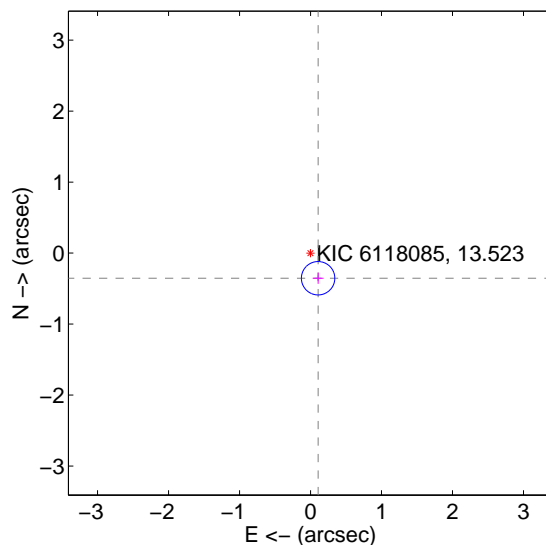
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 0.078	0.31	-0.016 ± 0.077	-0.019 ± 0.079
PRF-fit source offset from KIC position	0.370 ± 0.078	4.72	-0.107 ± 0.077	-0.354 ± 0.079
photometric centroid source offset	0.56 ± 0.76	0.73	0.10 ± 0.20	-0.55 ± 0.77

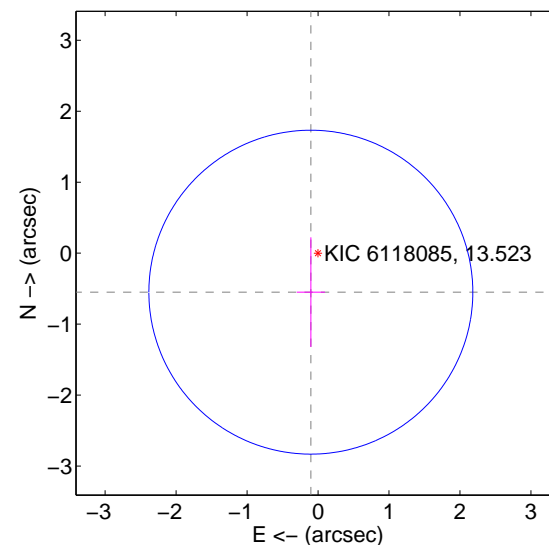
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

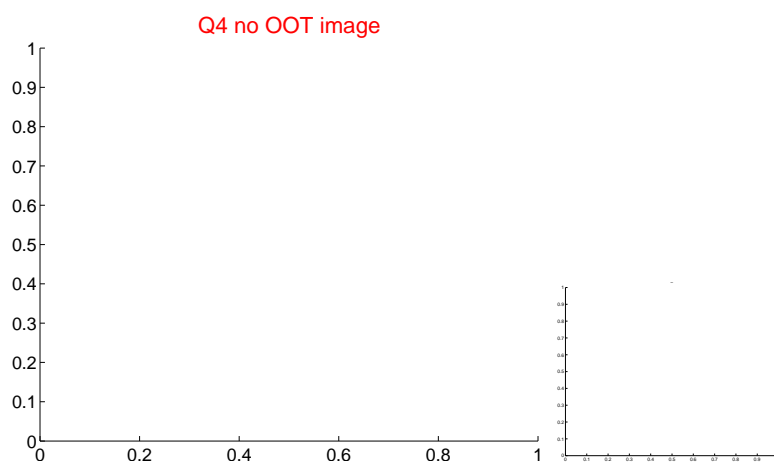
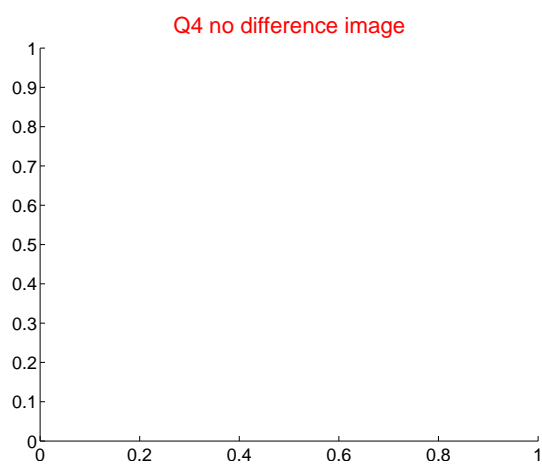
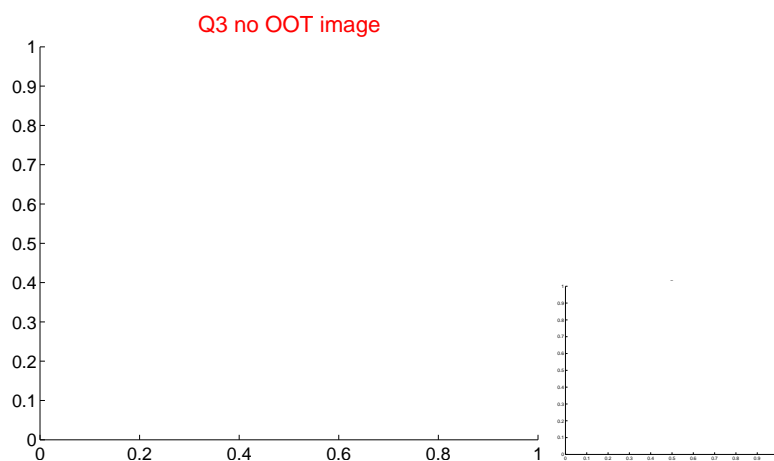
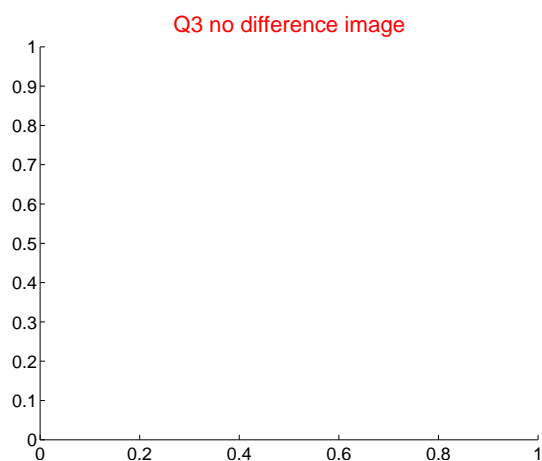
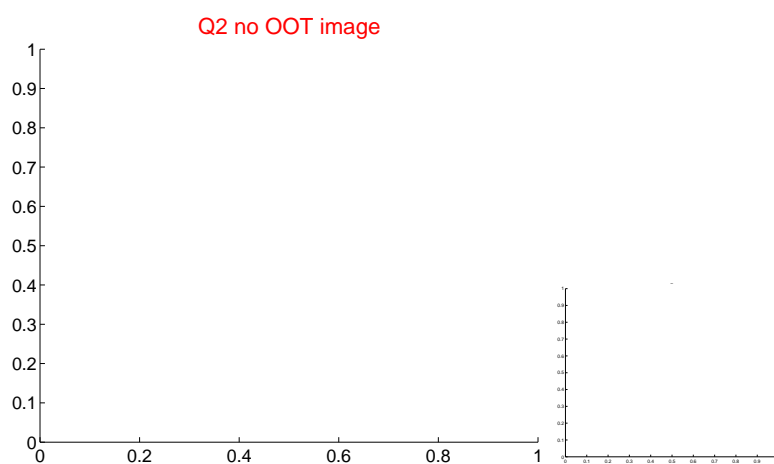
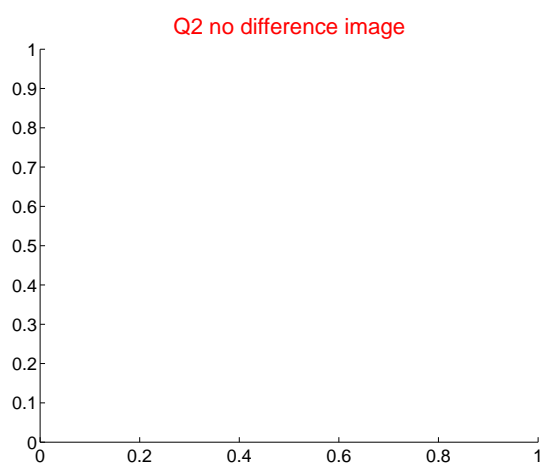
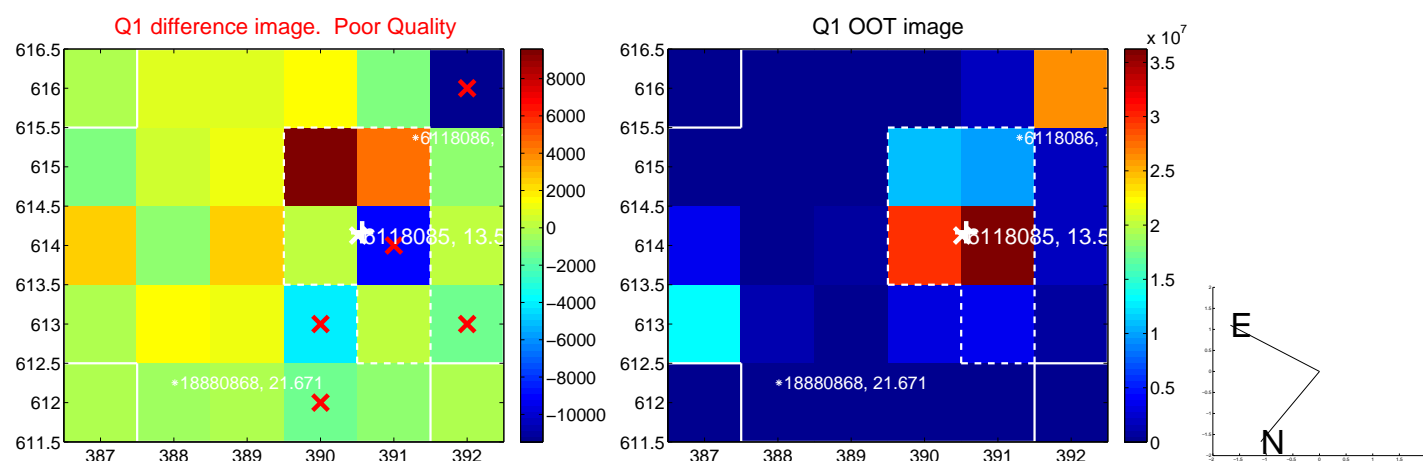


offset from photometric centroids

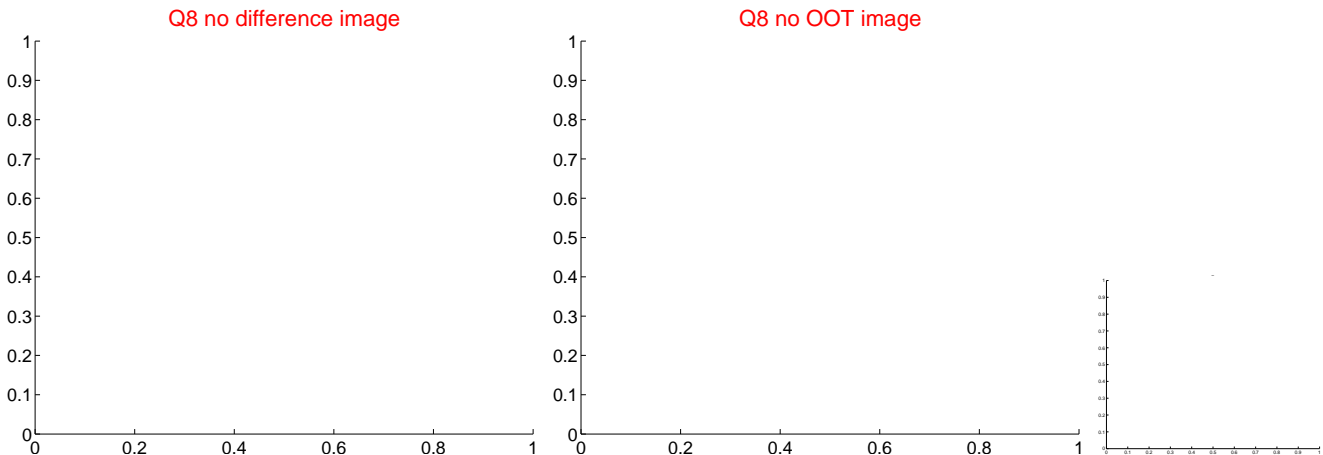
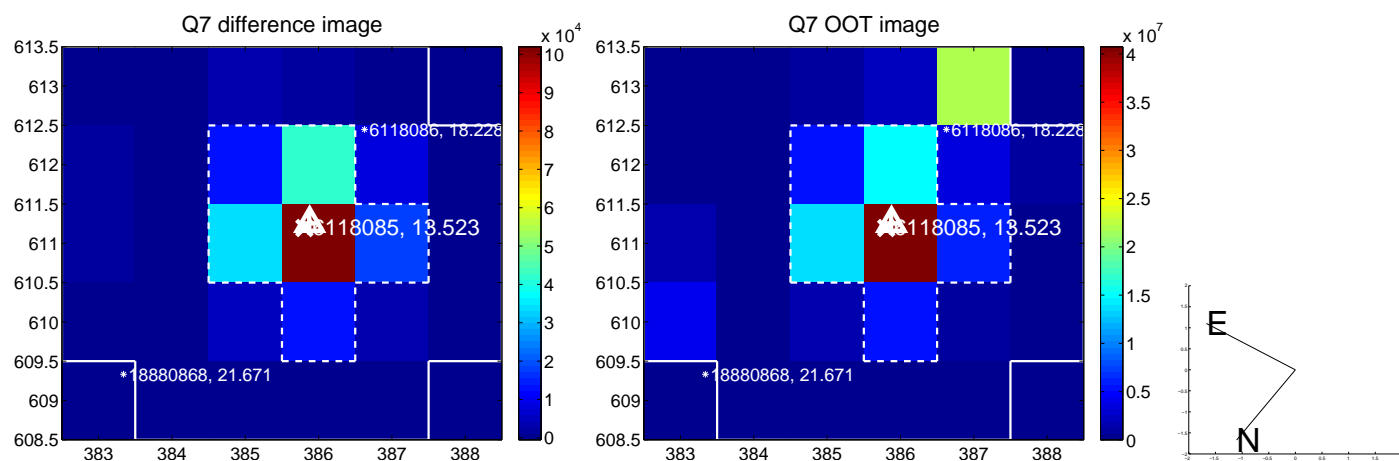


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



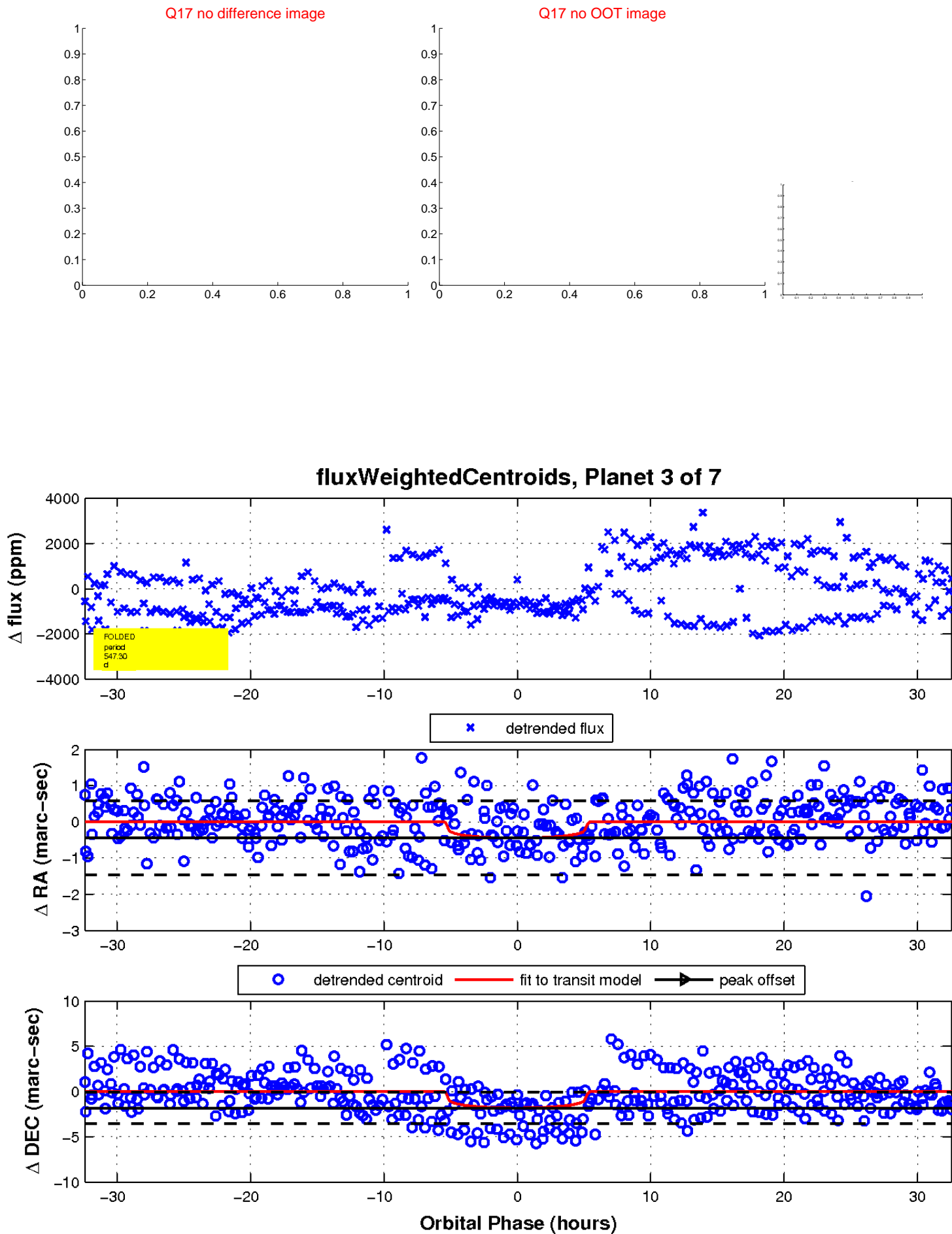
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



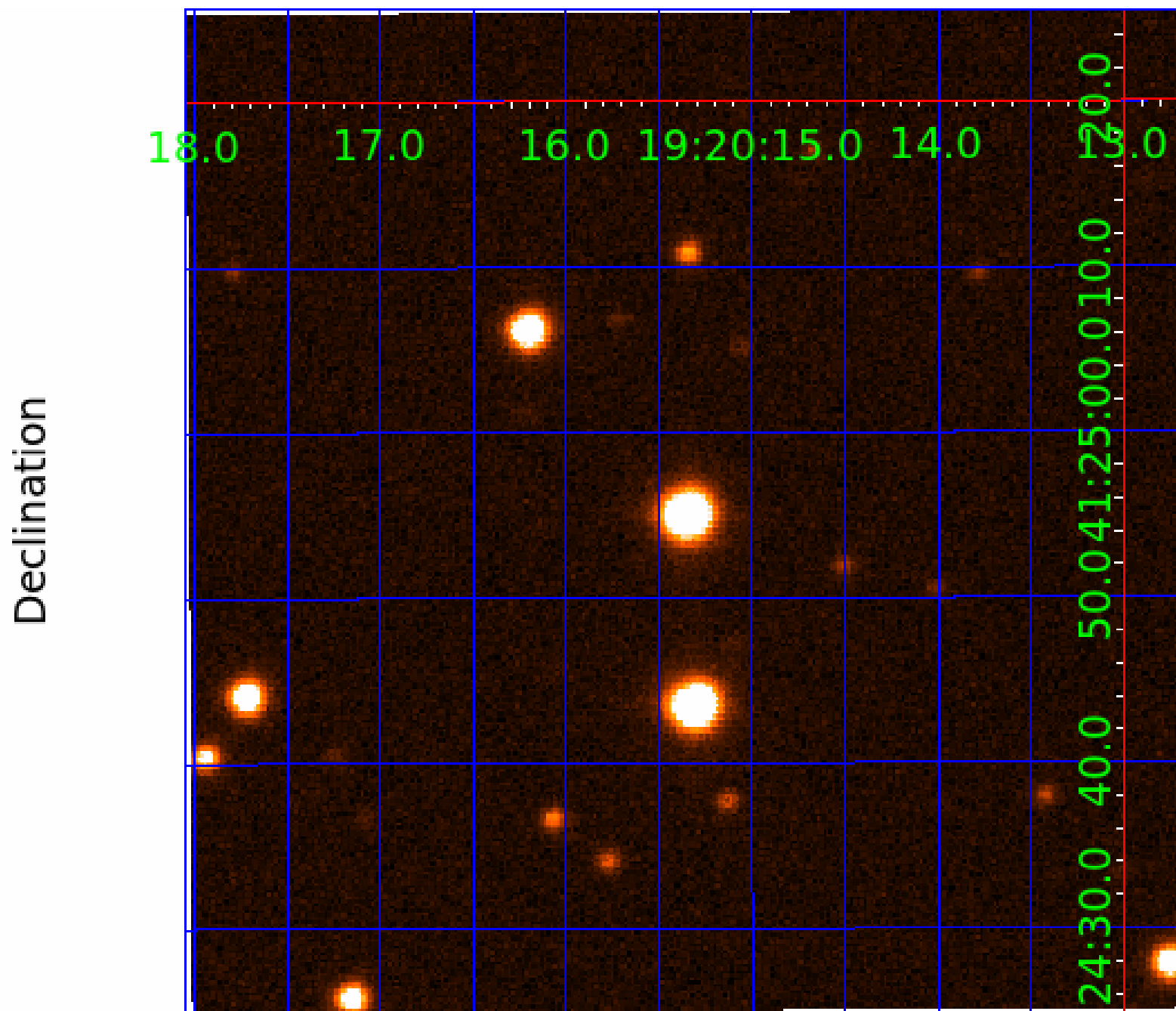
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006118085

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})
006118085-01	OBS	No	391.493882	133.414830	541.0	5.410	12.7	4.3	0.79	5765	2.04	0.63
006118085-02	OBS	No	346.571224	305.988169	780.3	5.340	11.8	6.4	0.79	5765	2.21	0.74
006118085-03	OBS	No	547.304550	147.470336	1430.9	10.869	13.4	8.3	0.79	5765	3.01	0.40
006118085-04	OBS	No	532.930818	265.865148	792.3	4.430	13.4	5.5	0.79	5765	2.31	0.42
006118085-05	OBS	No	648.298489	149.570024	638.9	6.086	12.3	4.5	0.79	5765	2.03	0.32
006118085-06	OBS	No	528.792452	333.685519	892.4	4.373	14.1	6.9	0.79	5765	2.49	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006118085-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006118085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
006118085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

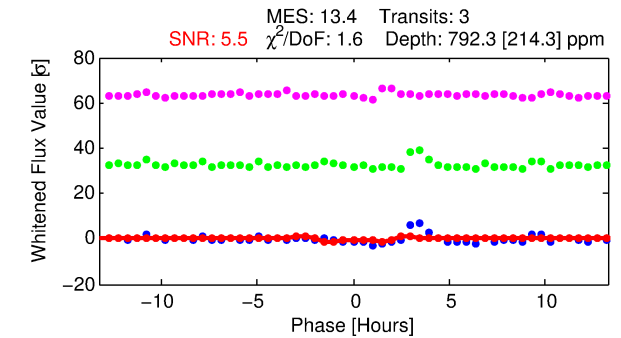
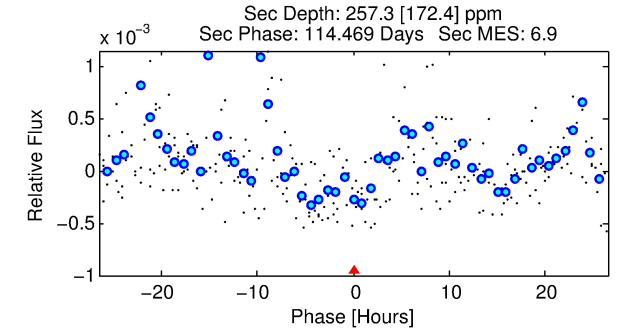
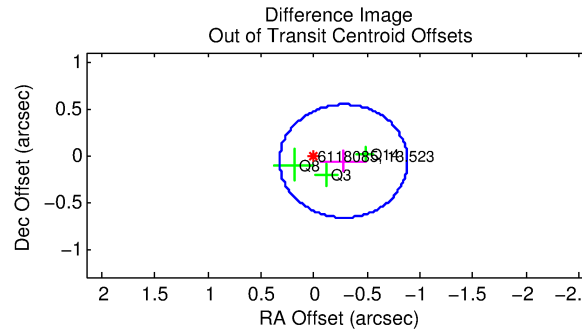
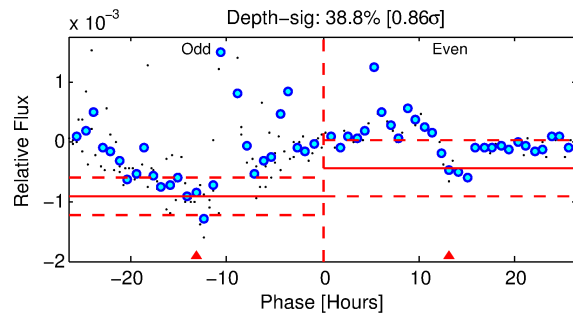
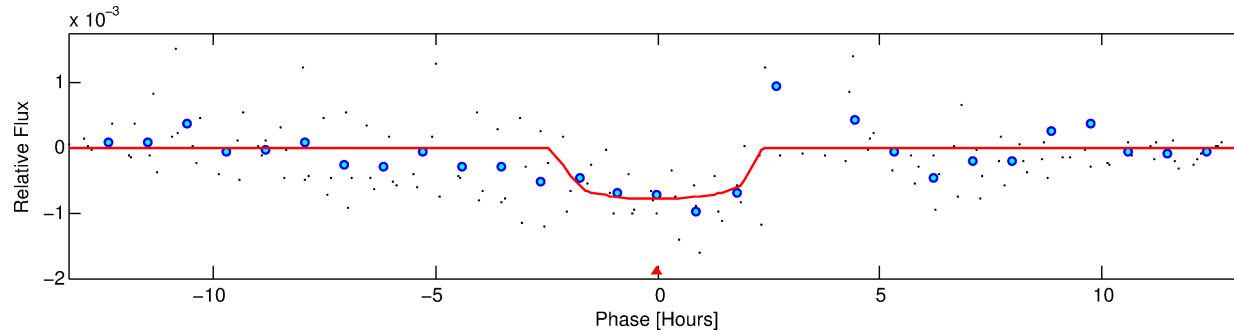
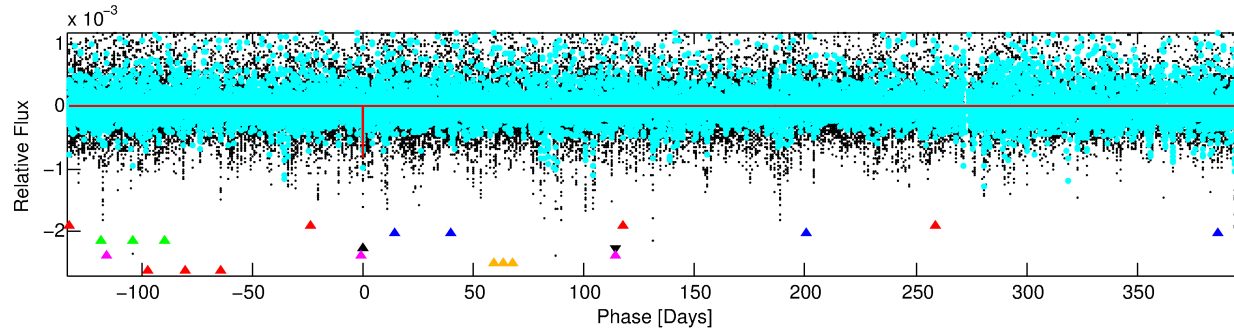
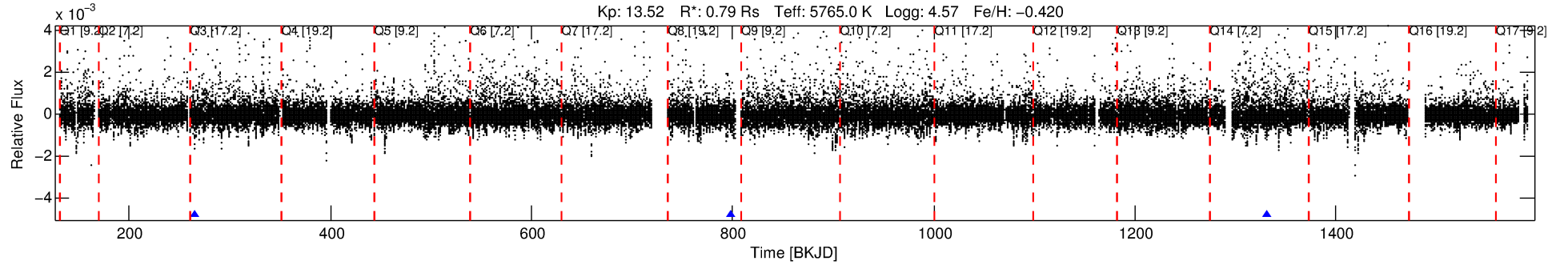
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006118085-04

No Significant Match Found

DV One-Page Summary

KIC: 6118085 Candidate: 4 of 7 Period: 532.931 d



DV Fit Results:

Period = 532.93082 [0.00828] d
Epoch = 265.8651 [0.0094] BKJD
Rp/R* = 0.0266 [0.0495]
a/R* = 798.13 [6818.50]
b = 0.55 [11.01]
Seff = 0.42 [0.14]
Teq = 205 [17] K
Rp = 2.31 [4.33] Re
a = 1.2237 [0.2632] AU
Ag = 39758.90 [150623.46] [0.26 σ]
Teffp = 4473 [4224] K [1.01 σ]

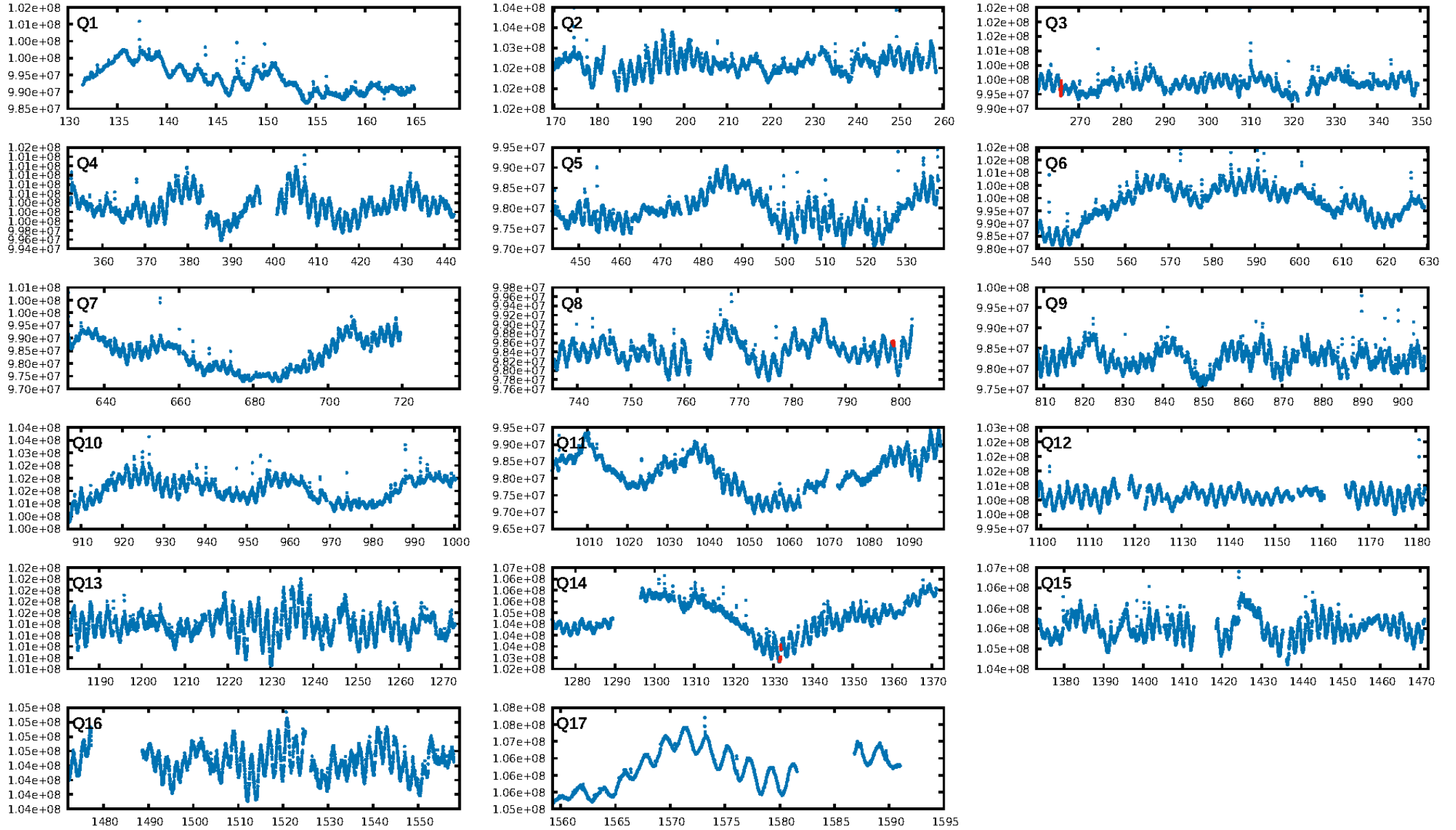
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.96 σ]
LongPeriod-sig: 100.0% [29.39 σ]
ModelChiSquare2-sig: 2.9%
ModelChiSquareGof-sig: 47.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.629
Centroid-sig: 0.2%
Centroid-so: 0.646 arcsec [0.52 σ]
OotOffset-rm: 0.285 arcsec [1.41 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.521 arcsec [3.14 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

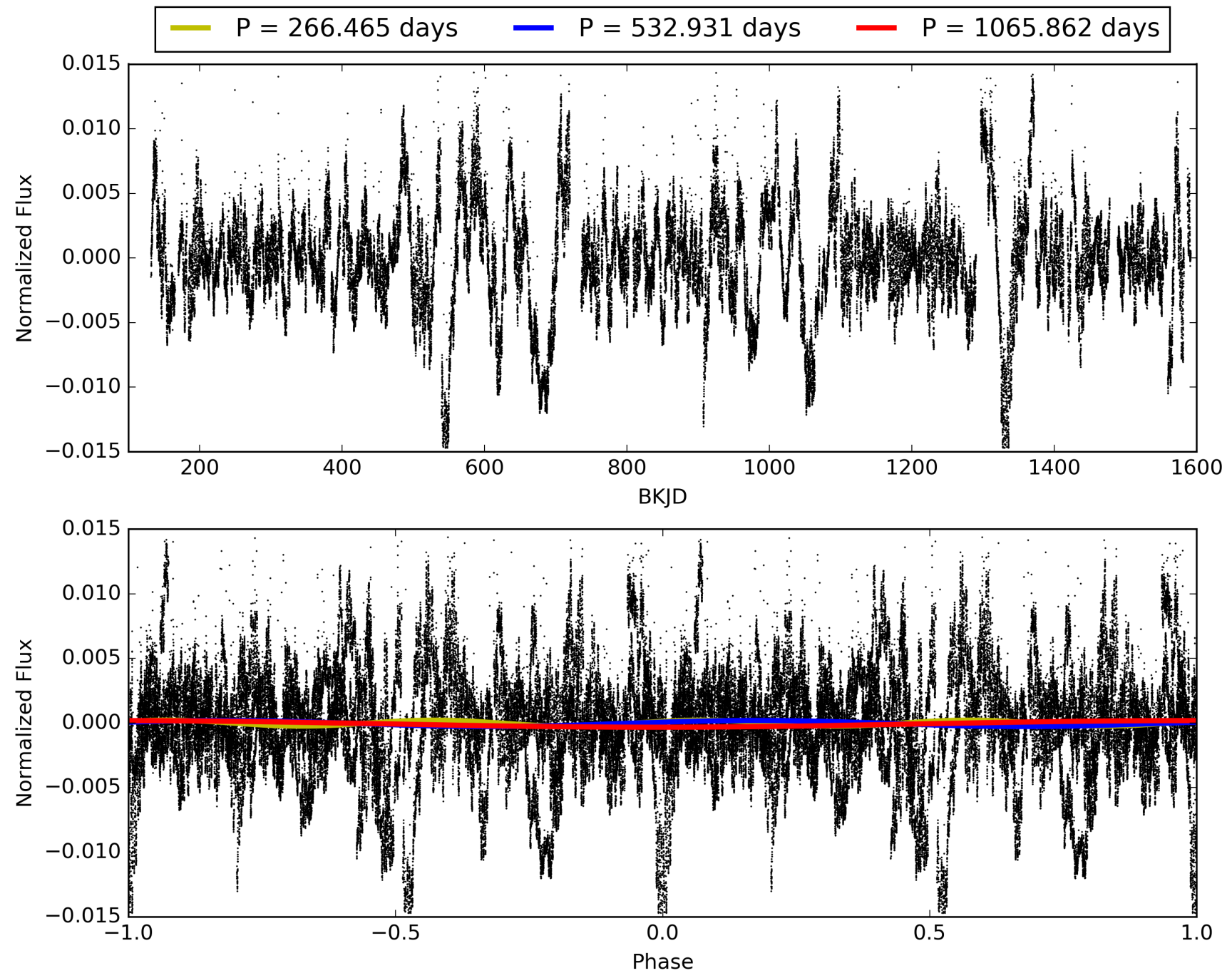
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:17:51 Z

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

TCE 006118085-04, PDC Light Curves

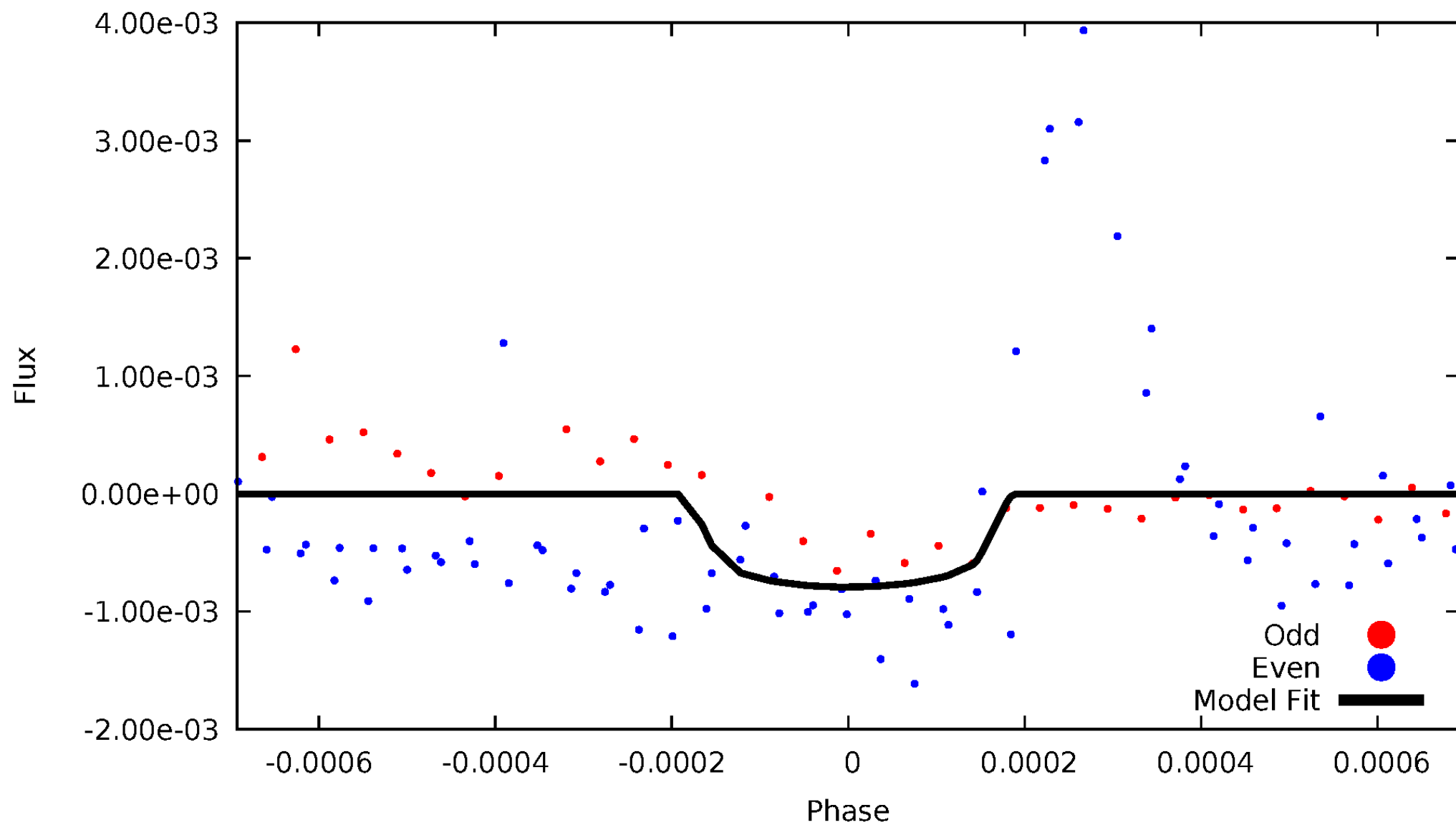


TCE 006118085-04



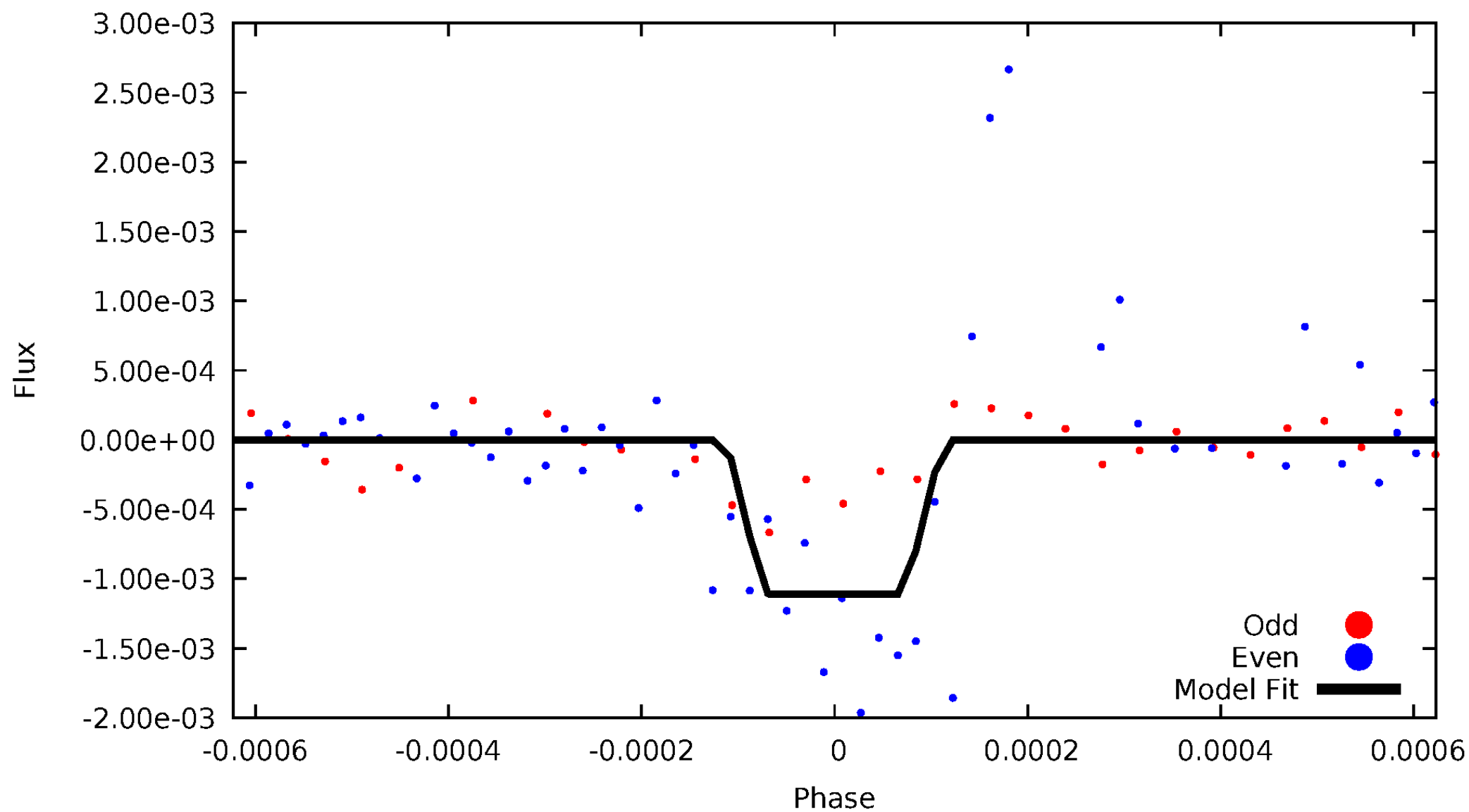
DV Odd/Even

TCE 006118085-04



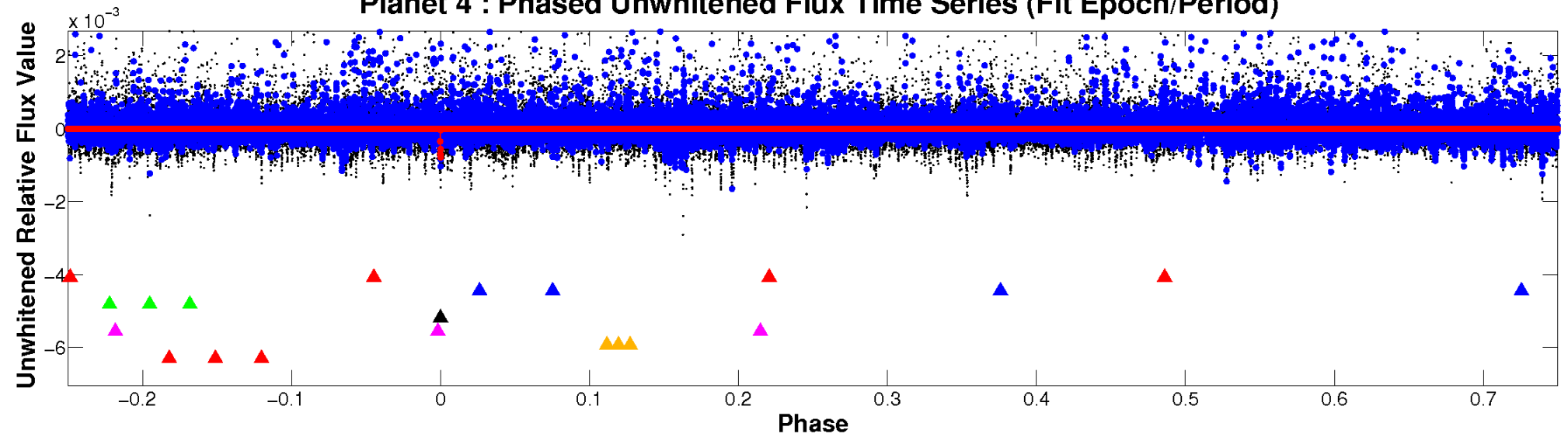
ALT Odd/Even

TCE 006118085-04

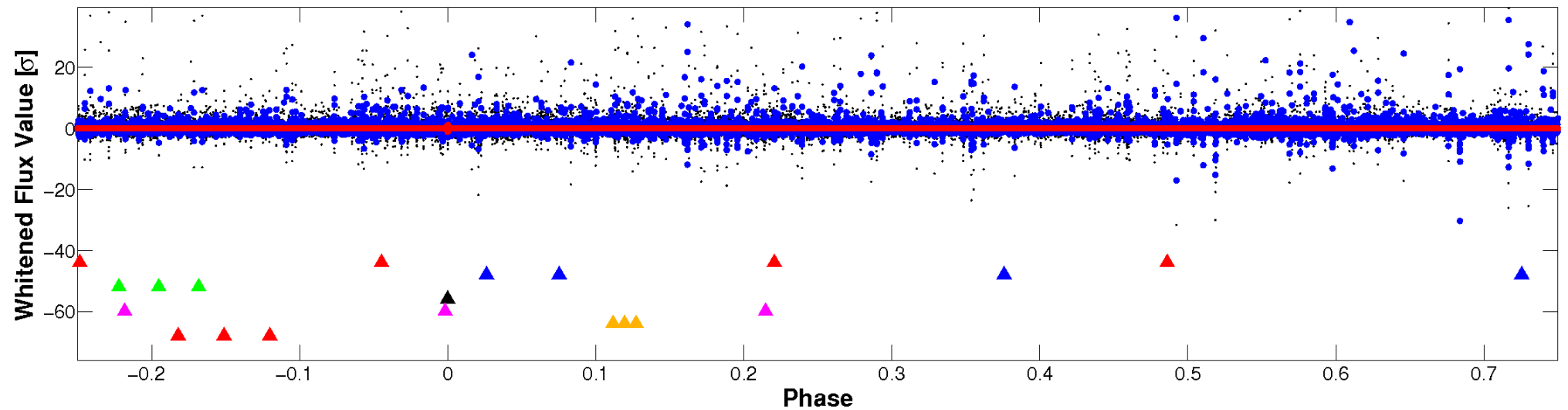


Non-Whitened Vs. Whitened Light Curve

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

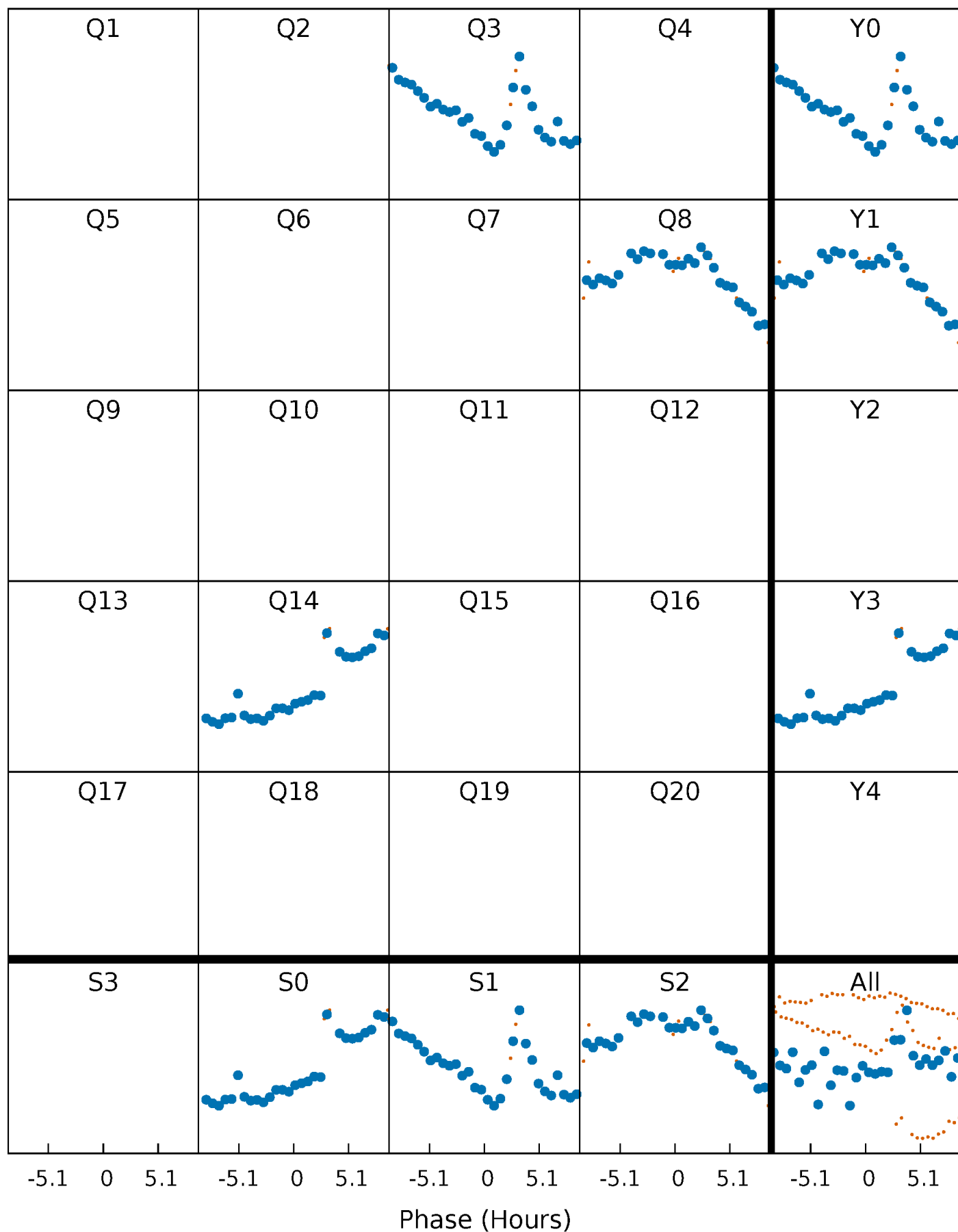


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



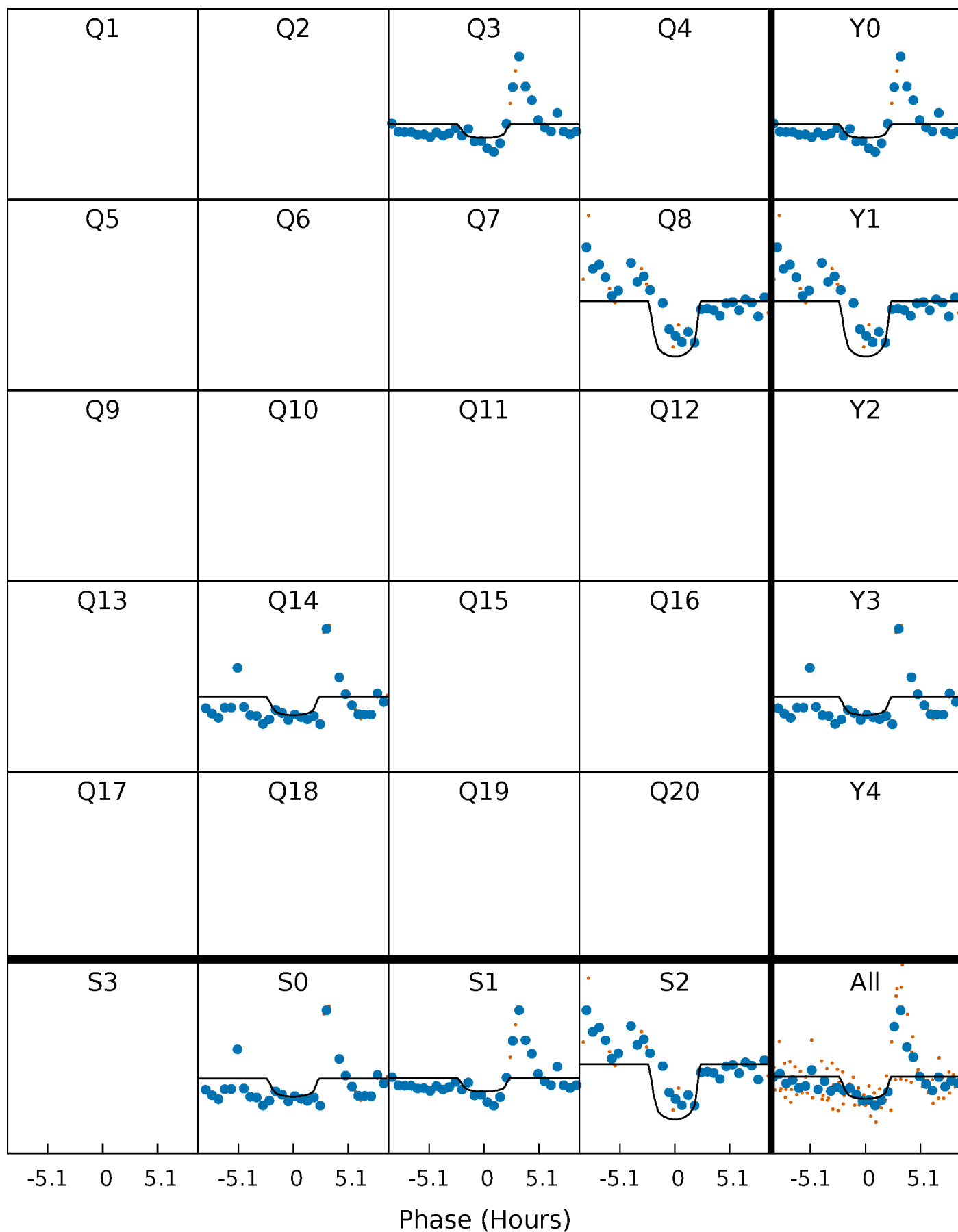
PDC Quarter-Phased Transit Curves

TCE 006118085-04 P=532.930818 Days $T_0=265.865148$ (BKJD)



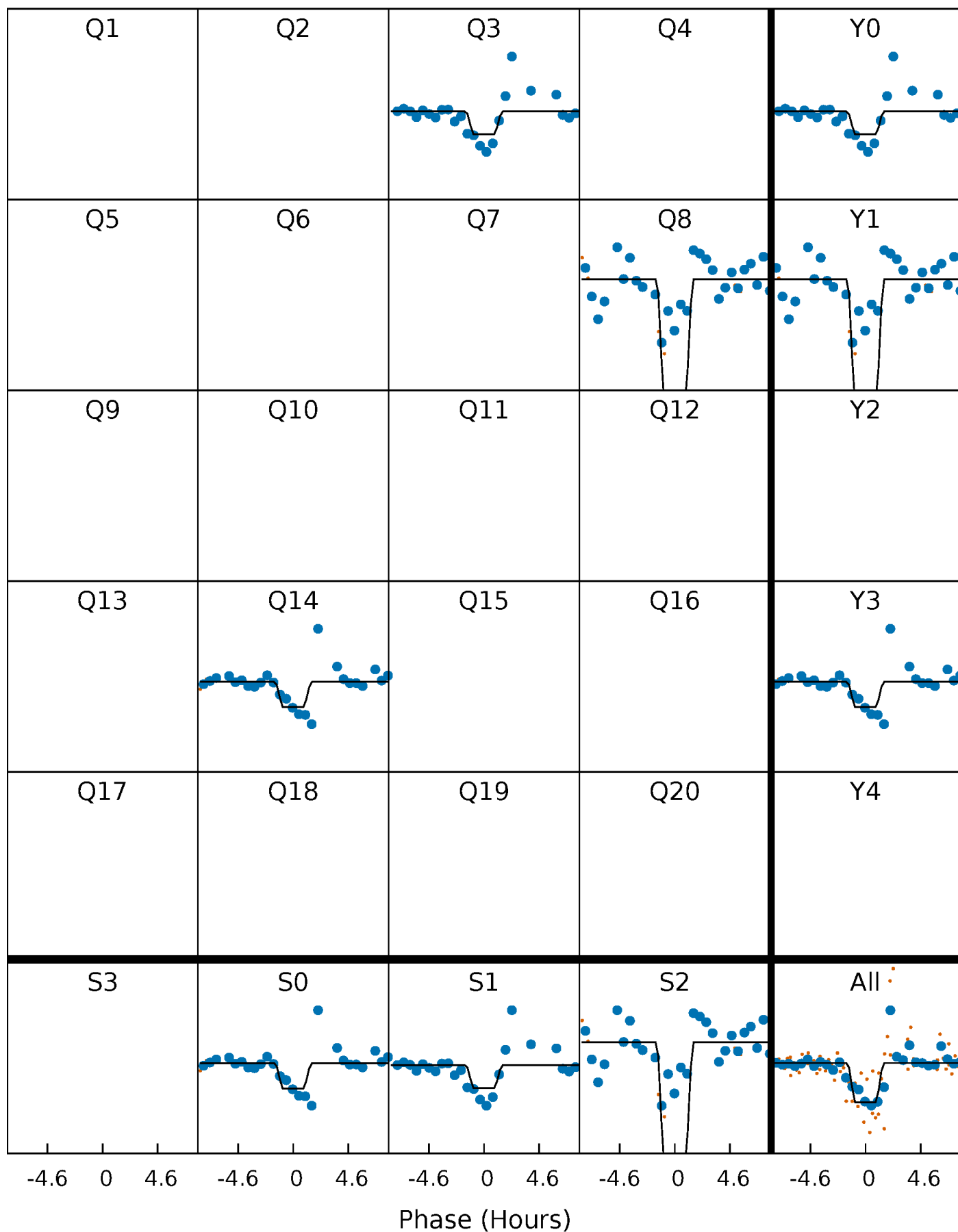
DV Quarter-Phased Transit Curves

TCE 006118085-04 P=532.930818 Days $T_0=265.865148$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

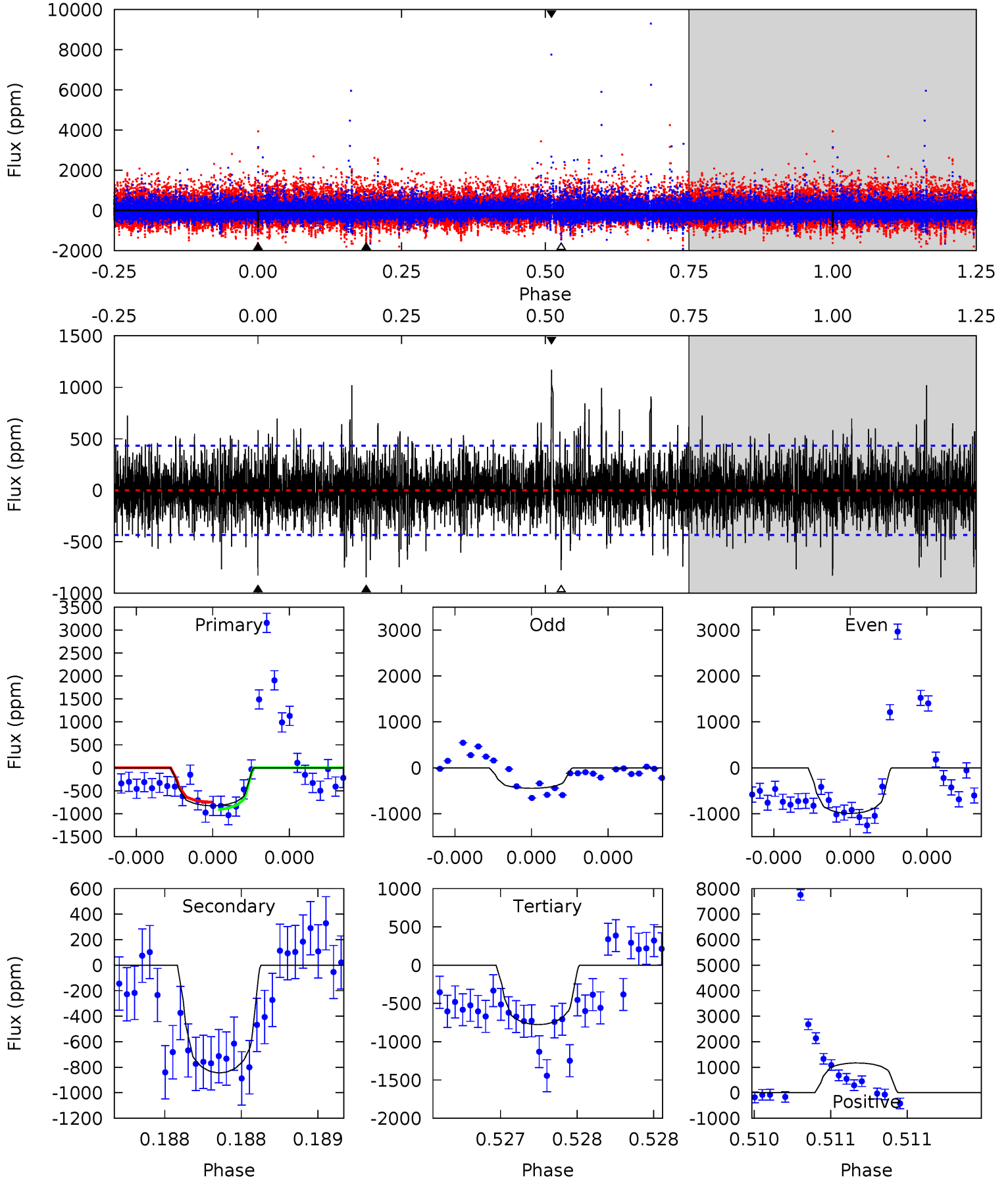
TCE 006118085-04 P=532.934490 Days $T_0=265.890688$ (BKJD)



DV Model-Shift Uniqueness Test

006118085-04, P = 532.930818 Days, E = 265.865148 Days

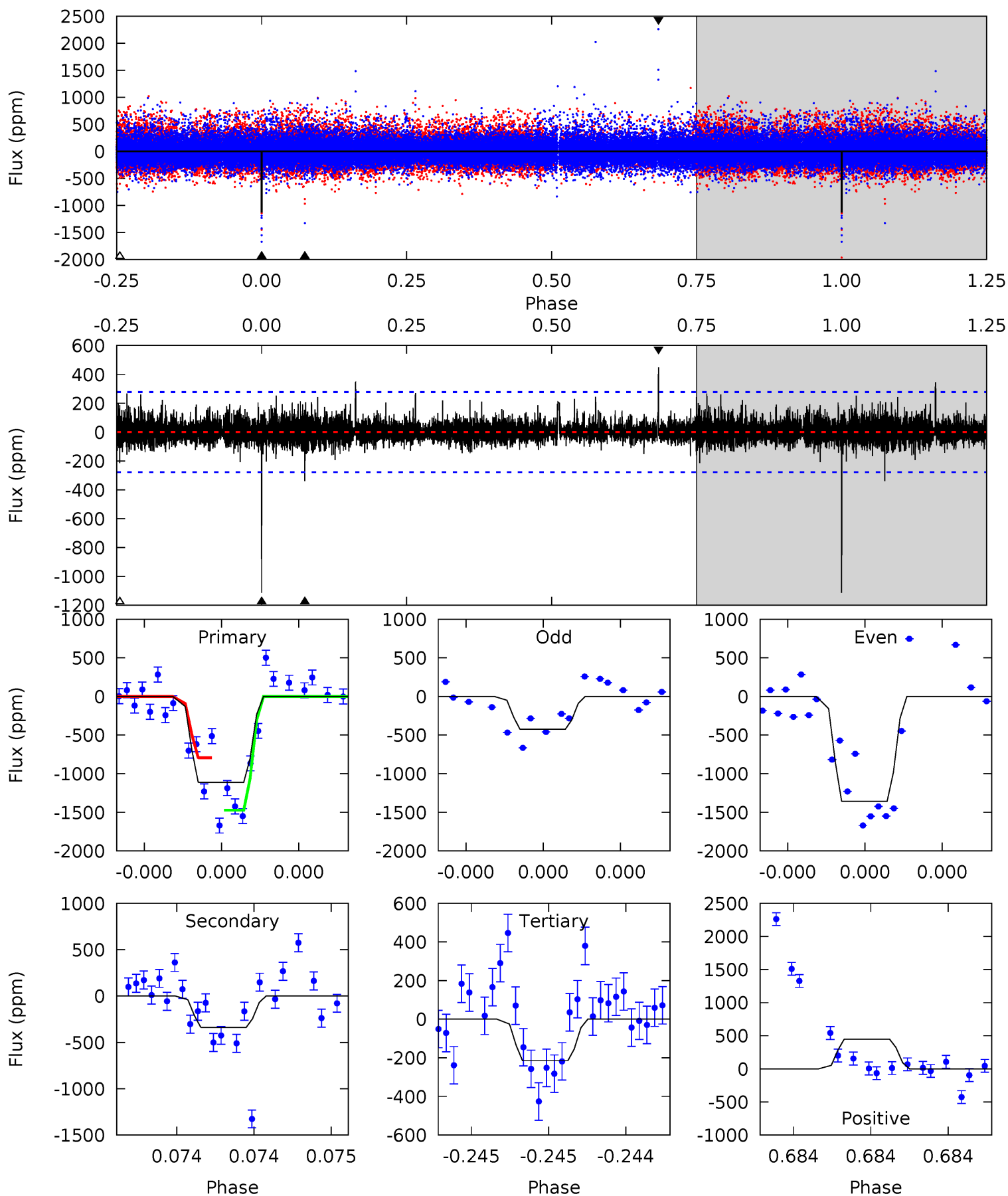
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	11.0	10.1	15.2	5.63	3.57	2.40	0.65	-4.45	0.89	-4.21	2.30	0.88	0.58	1.06



Alt Model-Shift Uniqueness Test

006118085-04, P = 532.934490 Days, E = 265.890688 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	6.96	4.41	9.22	5.71	3.69	0.97	18.5	13.7	2.55	-2.26	8.82	0.95	0.29	0



Stellar Parameters For KIC 006118085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+155}_{-155}	$4.573^{+0.042}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.794^{+0.205}_{-0.068}$	$0.860^{+0.096}_{-0.088}$	$2.425^{+0.533}_{-1.084}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+11%/-10%	+22%/-45%
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 006118085-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-844 ± 77	$4.17^{+3.96}_{-2.81}$	291^{+17}_{-11}	4720^{+3509}_{-1048}	$39892^{+322199}_{-29464}$
Alt.	-338 ± 49	$4.25^{+4.15}_{-2.73}$	292^{+16}_{-12}	3954^{+2158}_{-779}	$15052^{+107589}_{-11238}$

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

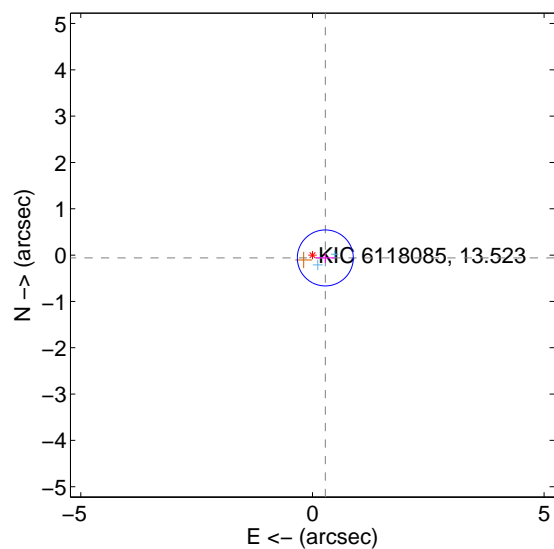
Supplemental centroid analysis for 006118085-04. Kepler magnitude: 13.52. Transit SNR 5.52

There are 2 quarters with good PRF difference image offsets

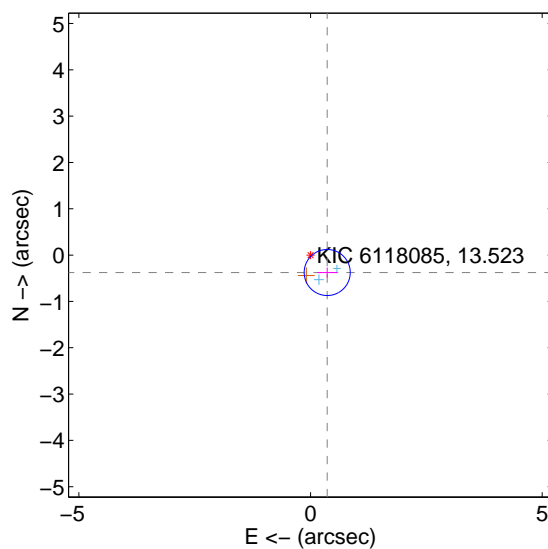
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.285 ± 0.201	1.41	-0.278 ± 0.205	-0.061 ± 0.103
PRF-fit source offset from KIC position	0.521 ± 0.166	3.14	-0.360 ± 0.212	-0.376 ± 0.107
photometric centroid source offset	0.65 ± 1.24	0.52	-0.18 ± 0.53	0.62 ± 1.28

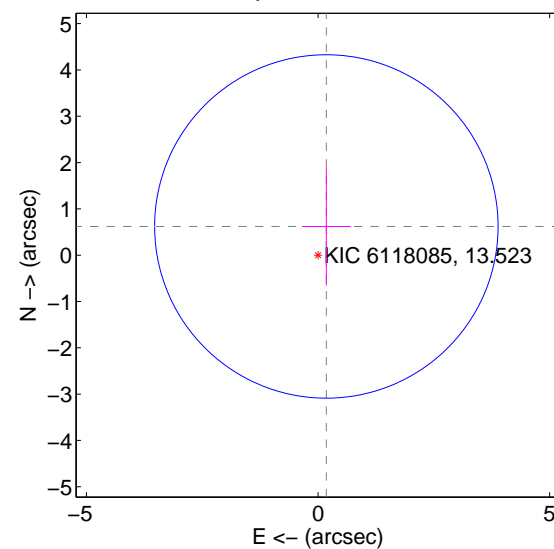
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



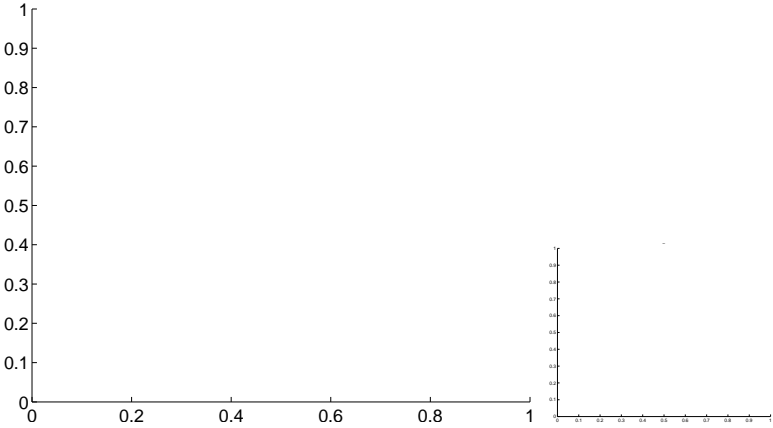
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q1 no difference image



Q1 no OOT image



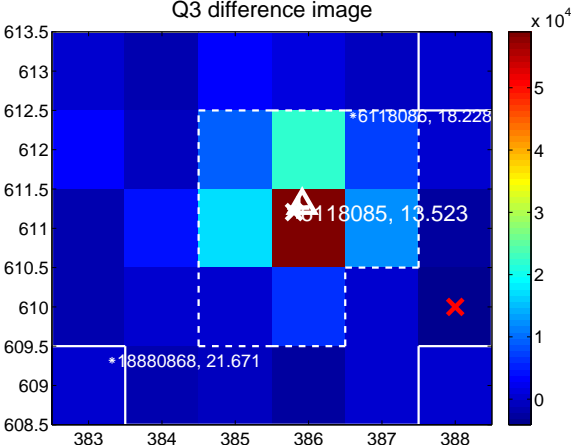
Q2 no difference image



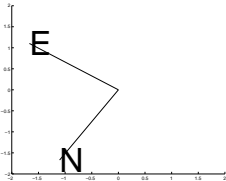
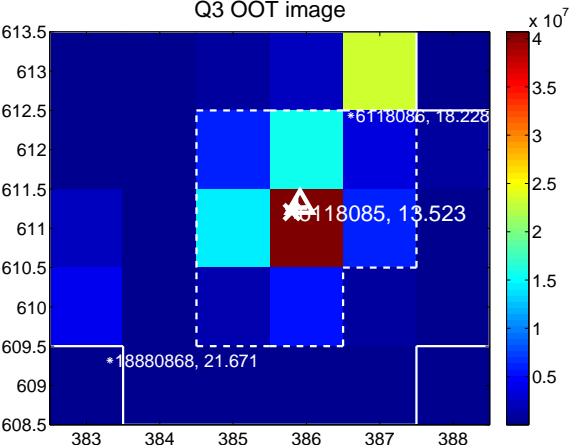
Q2 no OOT image



Q3 difference image



Q3 OOT image



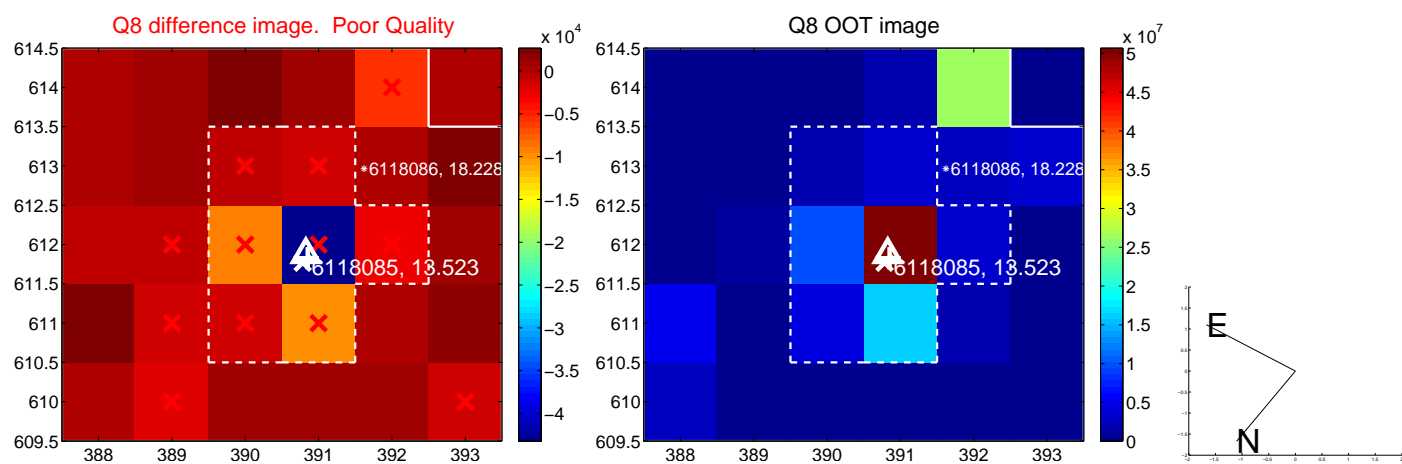
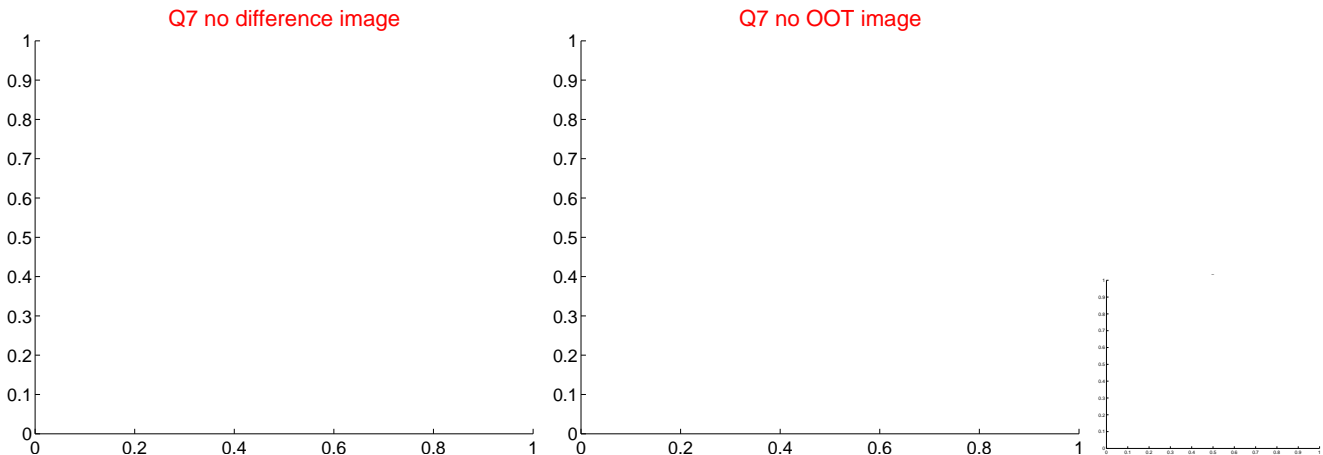
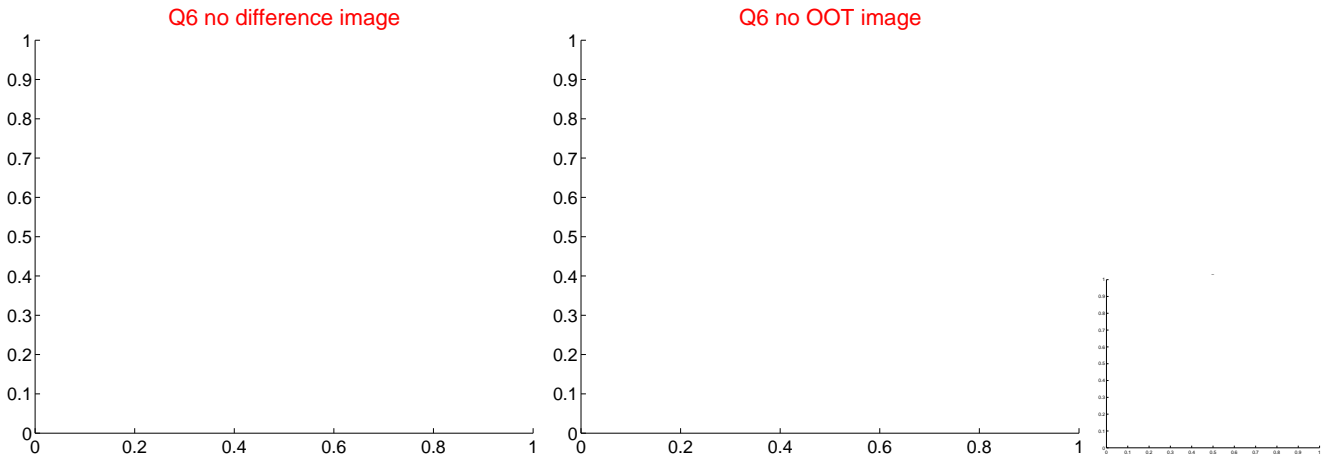
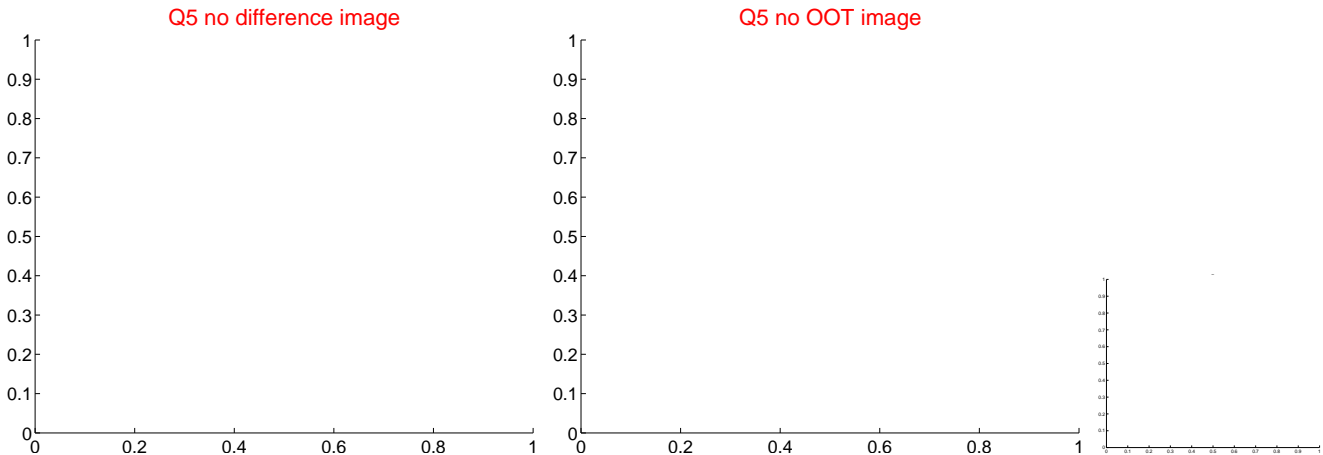
Q4 no difference image



Q4 no OOT image



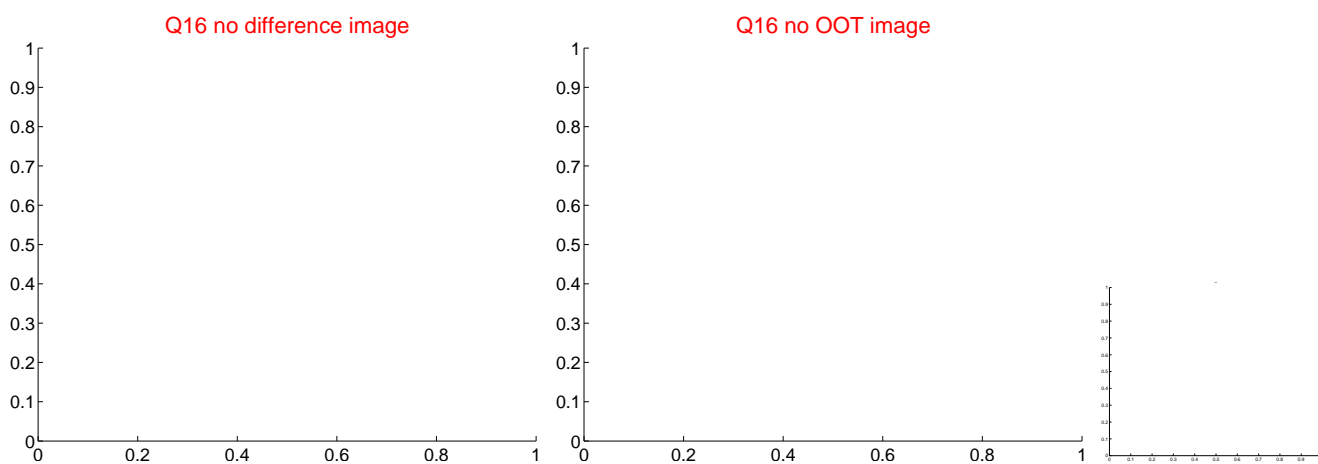
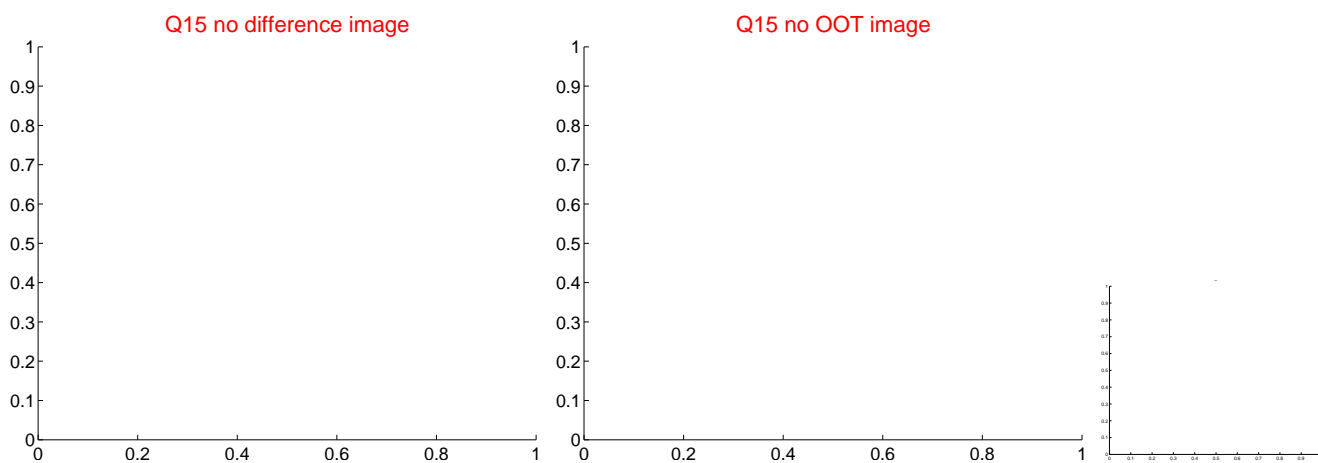
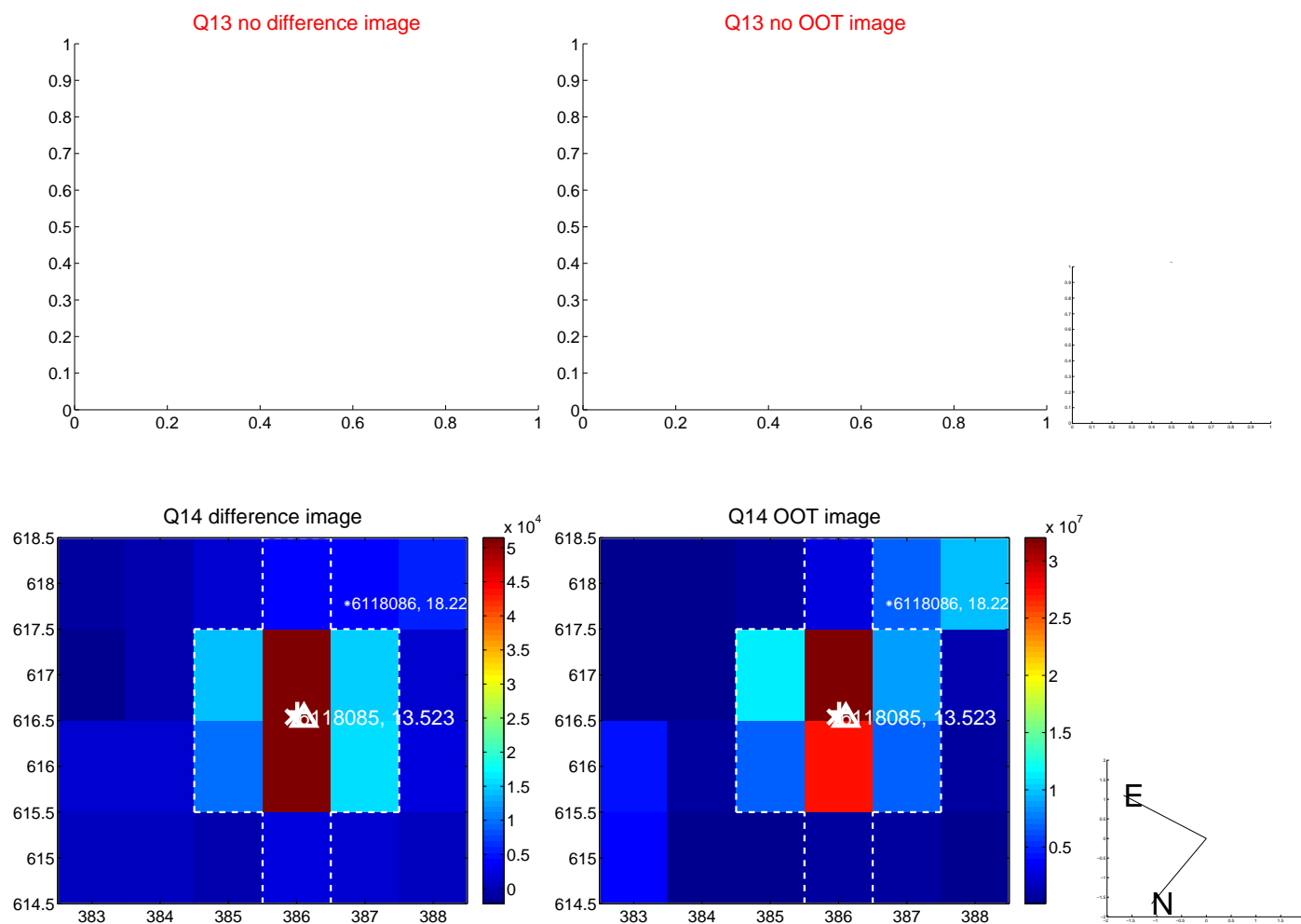
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



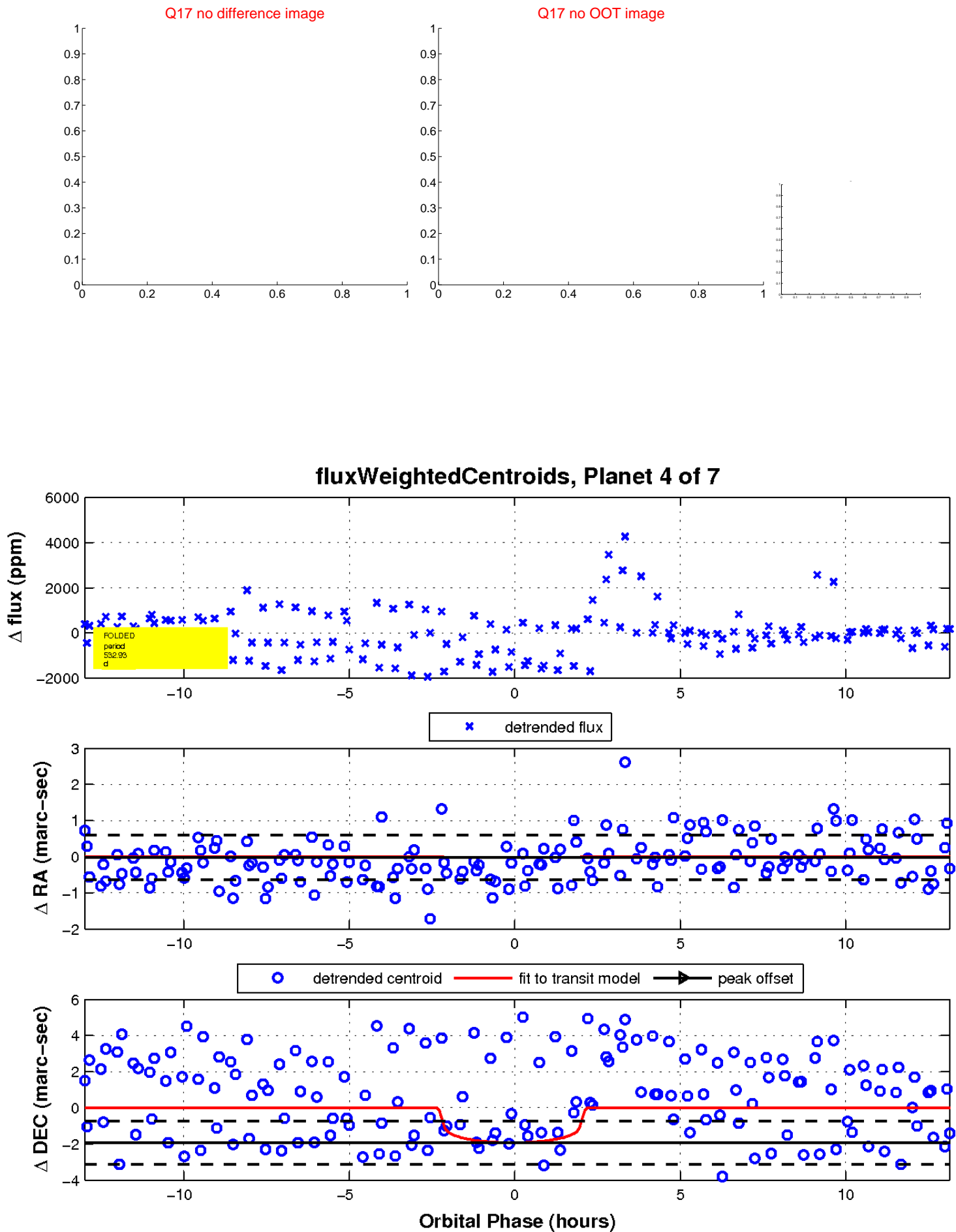
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



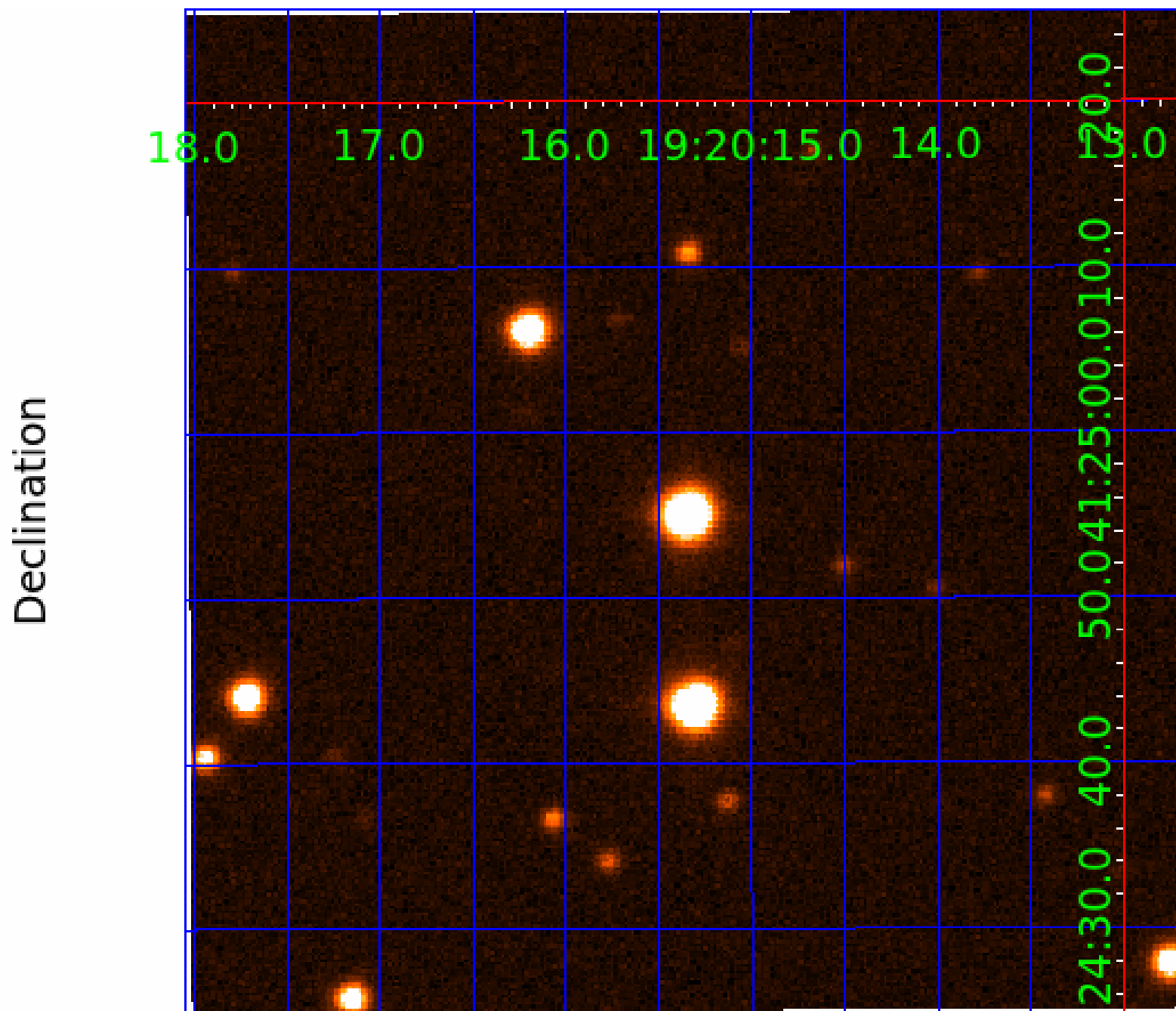
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 006118085

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})
006118085-01	OBS	No	391.493882	133.414830	541.0	5.410	12.7	4.3	0.79	5765	2.04	0.63
006118085-02	OBS	No	346.571224	305.988169	780.3	5.340	11.8	6.4	0.79	5765	2.21	0.74
006118085-03	OBS	No	547.304550	147.470336	1430.9	10.869	13.4	8.3	0.79	5765	3.01	0.40
006118085-04	OBS	No	532.930818	265.865148	792.3	4.430	13.4	5.5	0.79	5765	2.31	0.42
006118085-05	OBS	No	648.298489	149.570024	638.9	6.086	12.3	4.5	0.79	5765	2.03	0.32
006118085-06	OBS	No	528.792452	333.685519	892.4	4.373	14.1	6.9	0.79	5765	2.49	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006118085-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006118085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
006118085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

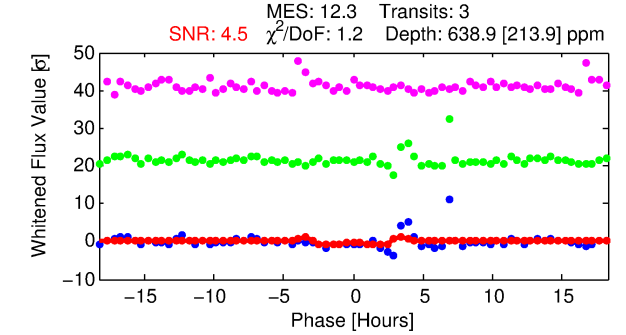
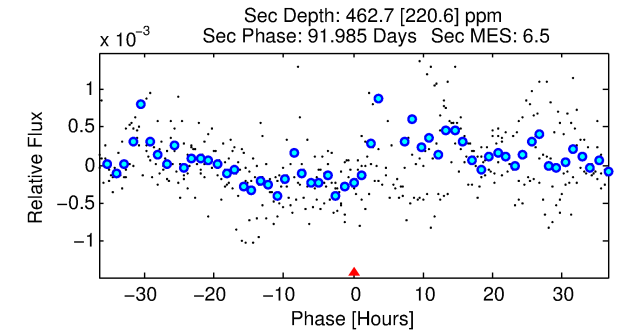
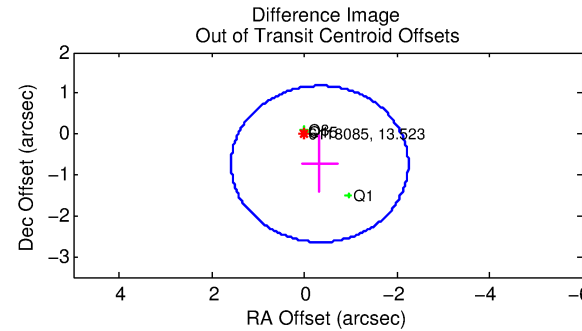
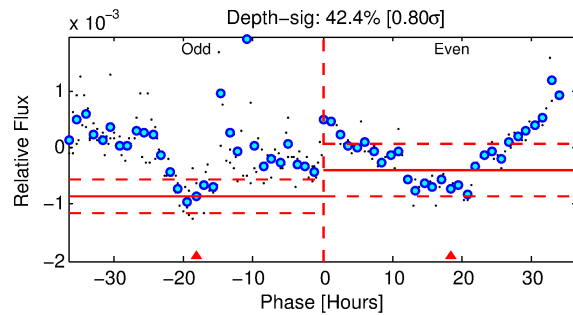
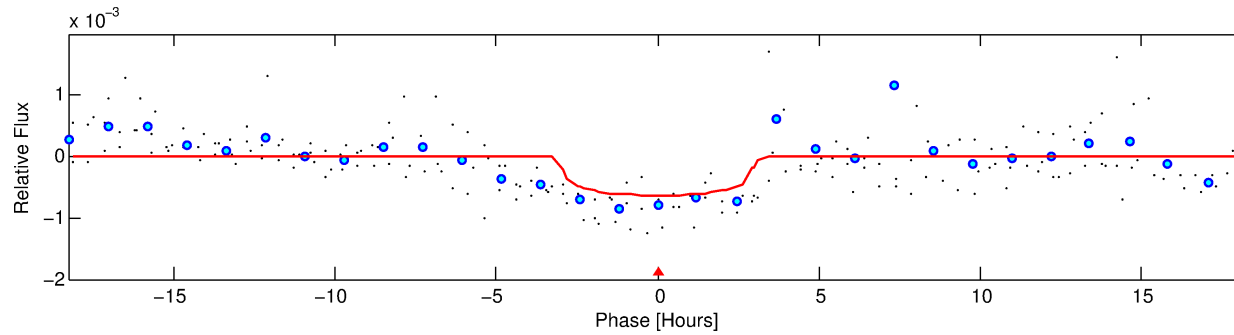
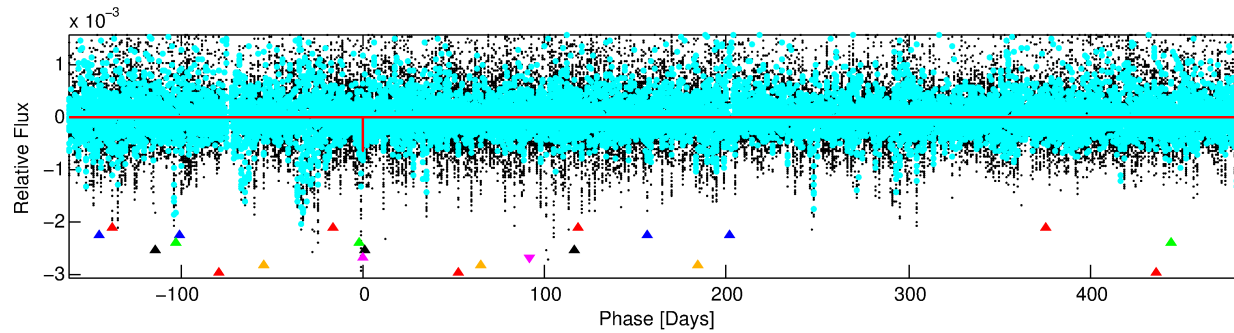
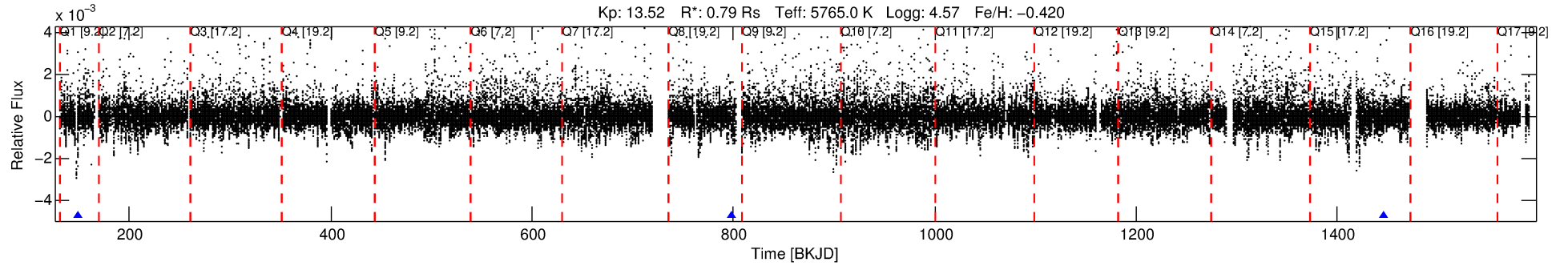
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006118085-05

No Significant Match Found

DV One-Page Summary

KIC: 6118085 Candidate: 5 of 7 Period: 648.298 d



DV Fit Results:

Period = 648.29849 [0.00803] d
Epoch = 149.5700 [0.0121] BKJD
Rp/R* = 0.0234 [0.1048]
a/R* = 770.89 [16286.27]
b = 0.39 [46.74]
Seff = 0.32 [0.11]
Teq = 192 [16] K
Rp = 2.03 [9.09] Re
a = 1.3945 [0.2999] AU
Ag = 120064.64 [1075584.49] [0.11]
Teffp = 5523 [12363] K [0.43]

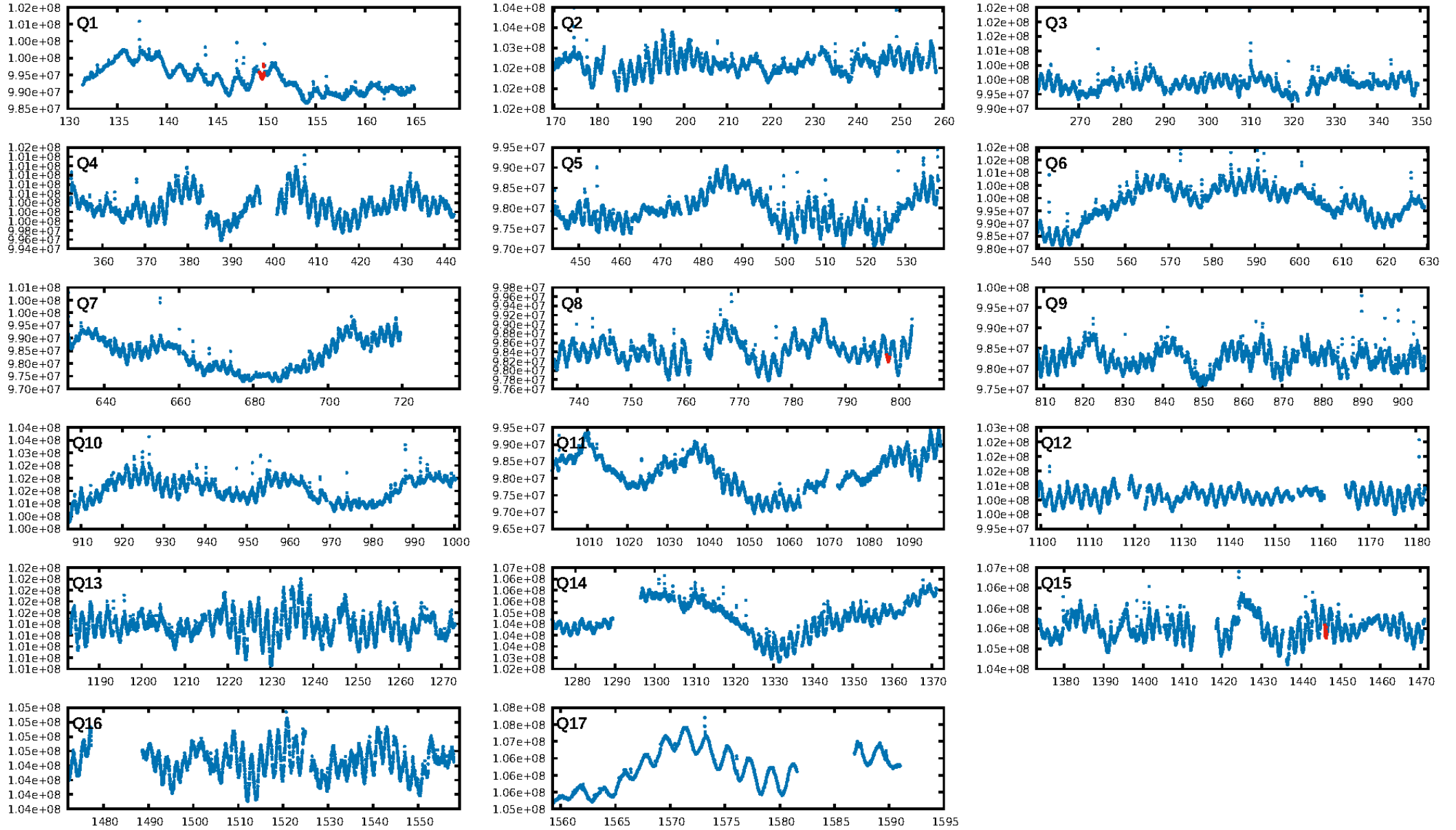
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [194.58 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.2%
ModelChiSquareGof-sig: 79.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.1933
Centroid-sig: 23.9%
Centroid-so: 1.805 arcsec [1.27 σ]
OotOffset-rm: 0.805 arcsec [1.26 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 1.121 arcsec [1.83 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

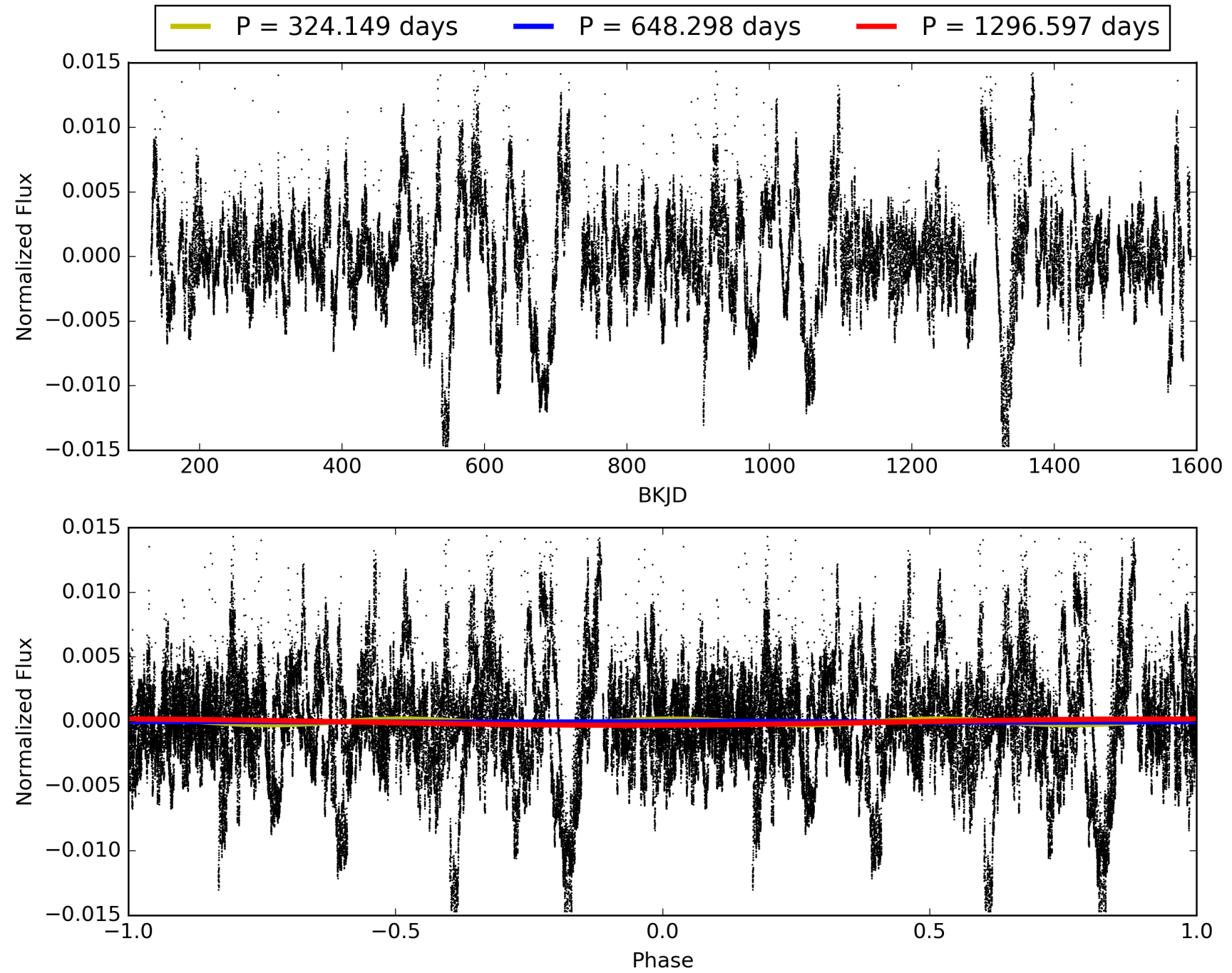
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:18:07 Z

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

TCE 006118085-05, PDC Light Curves

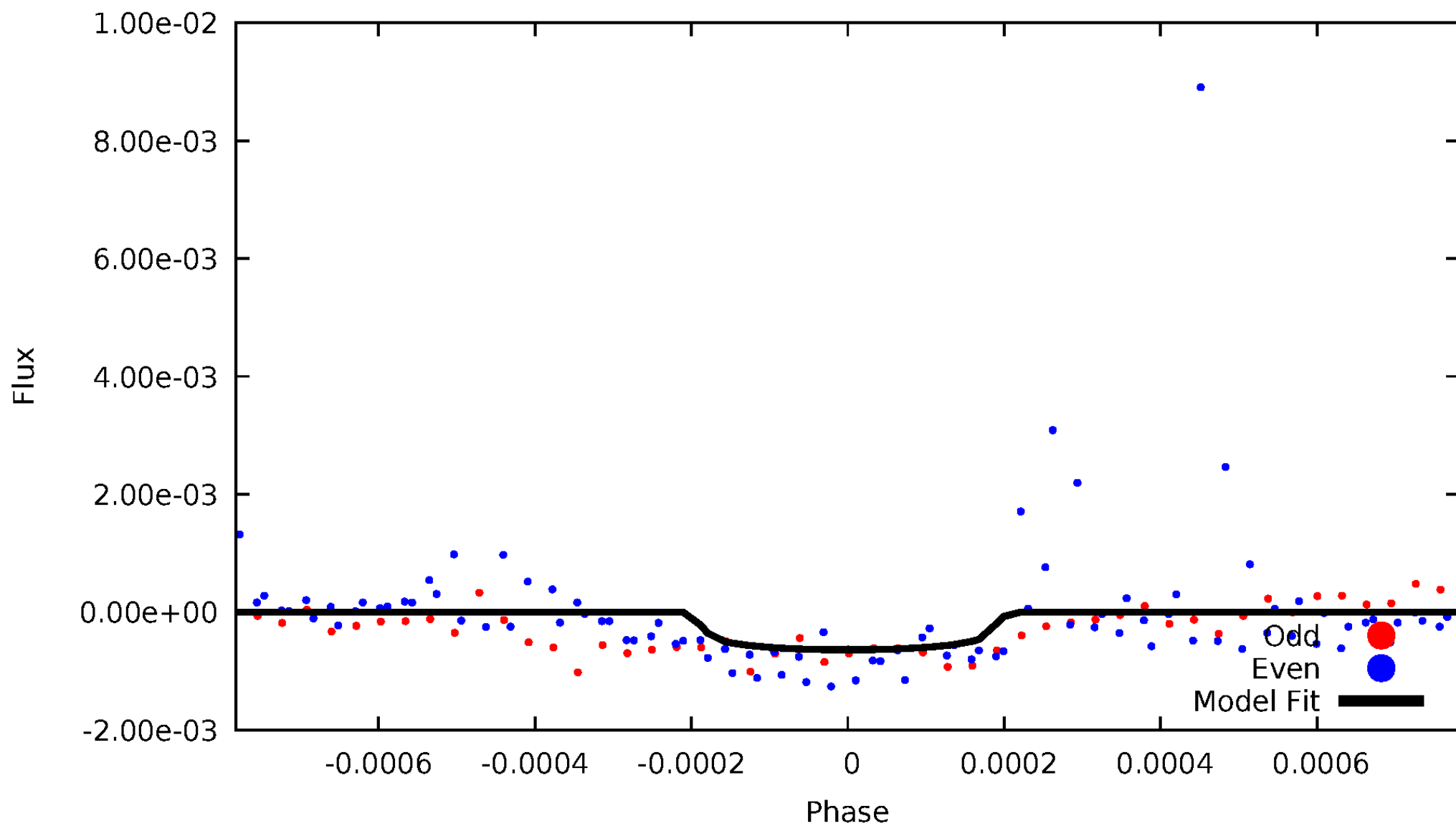


TCE 006118085-05



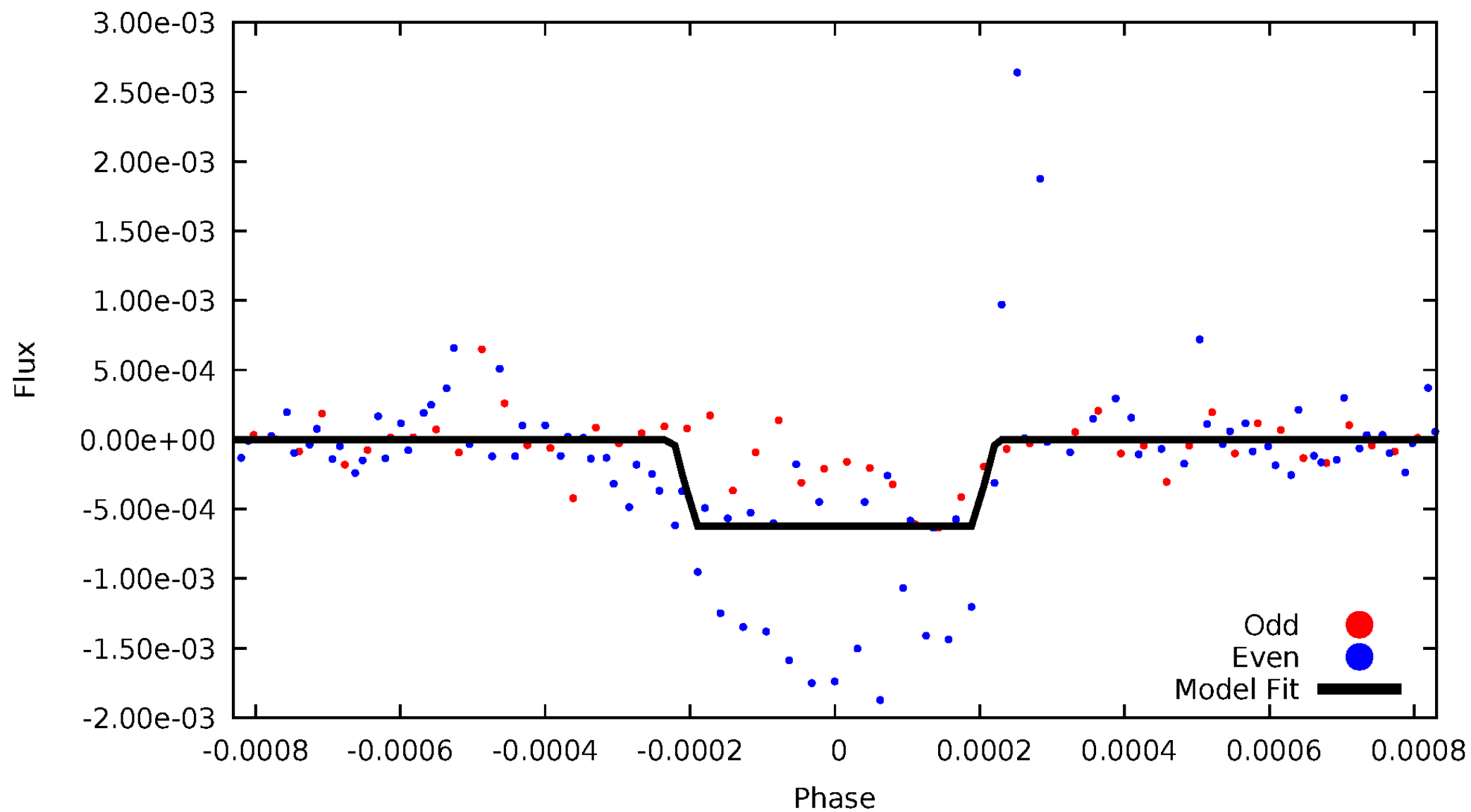
DV Odd/Even

TCE 006118085-05



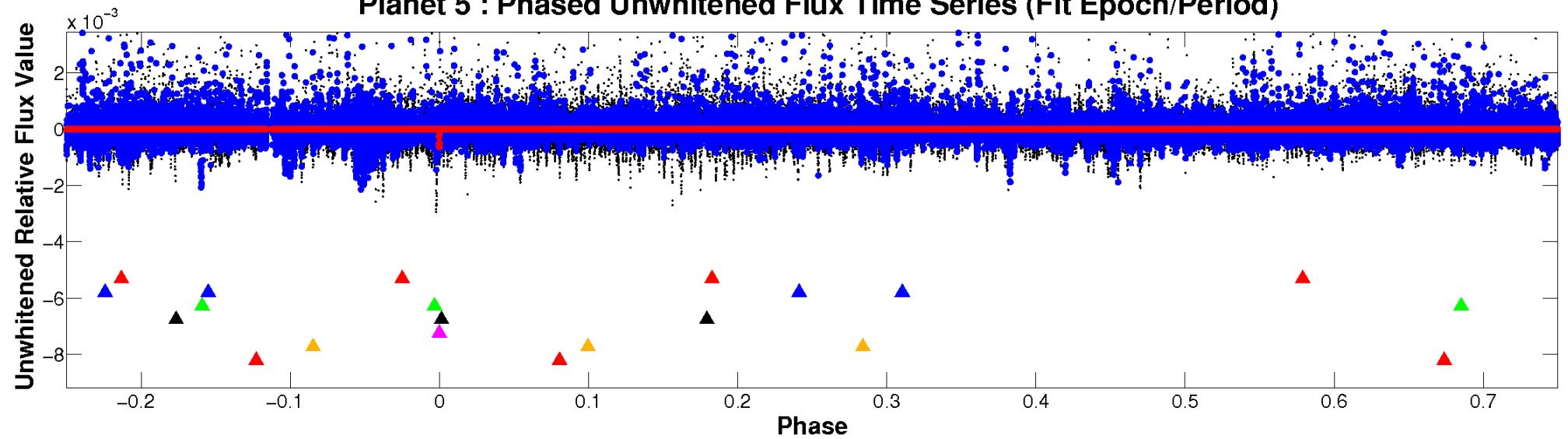
ALT Odd/Even

TCE 006118085-05

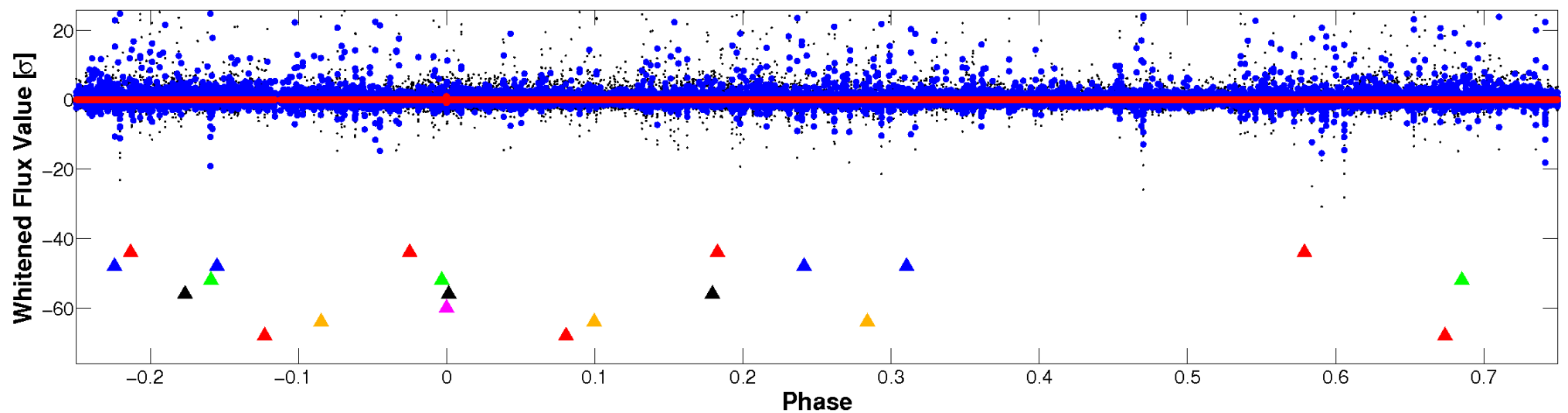


Non-Whitened Vs. Whitened Light Curve

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

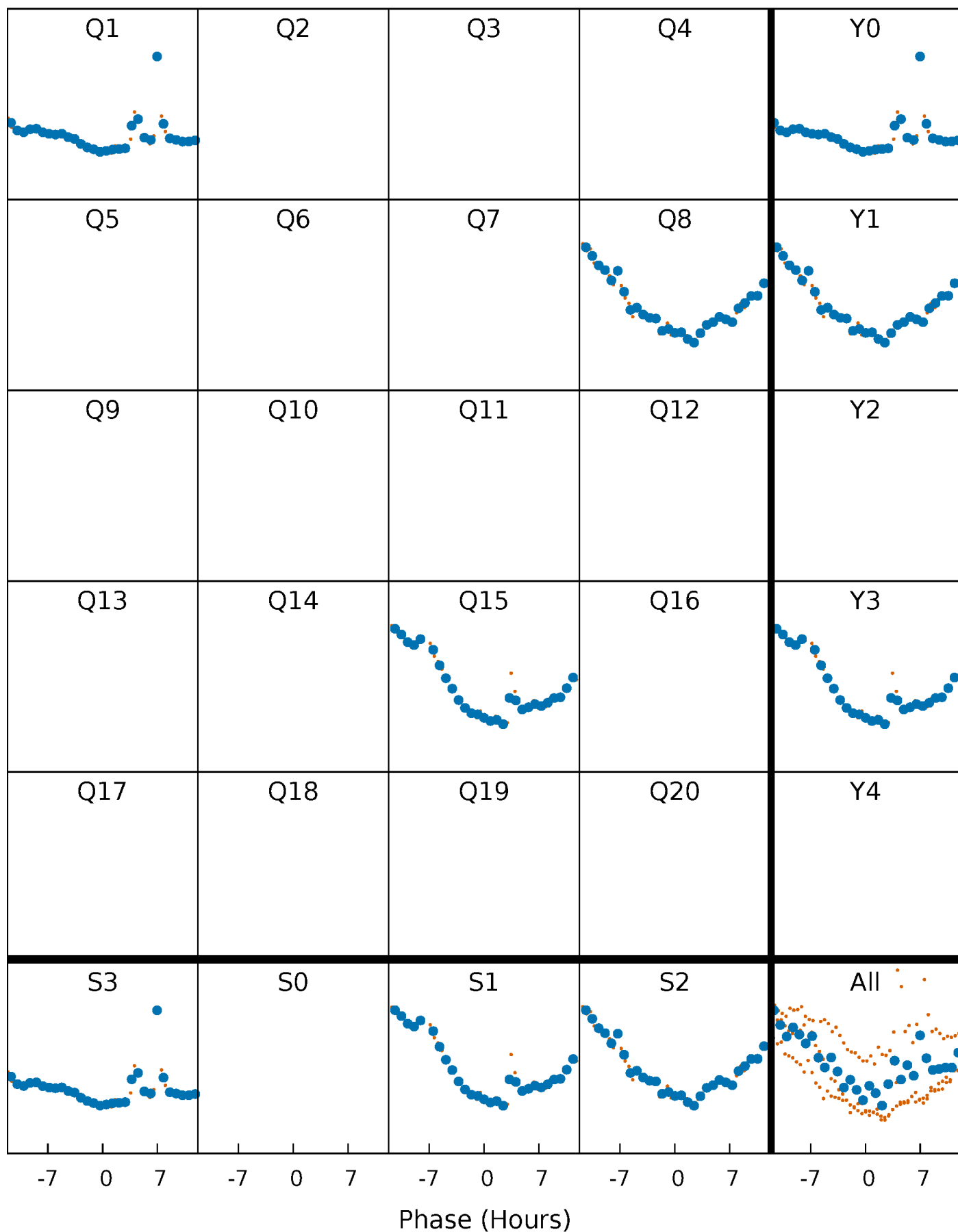


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



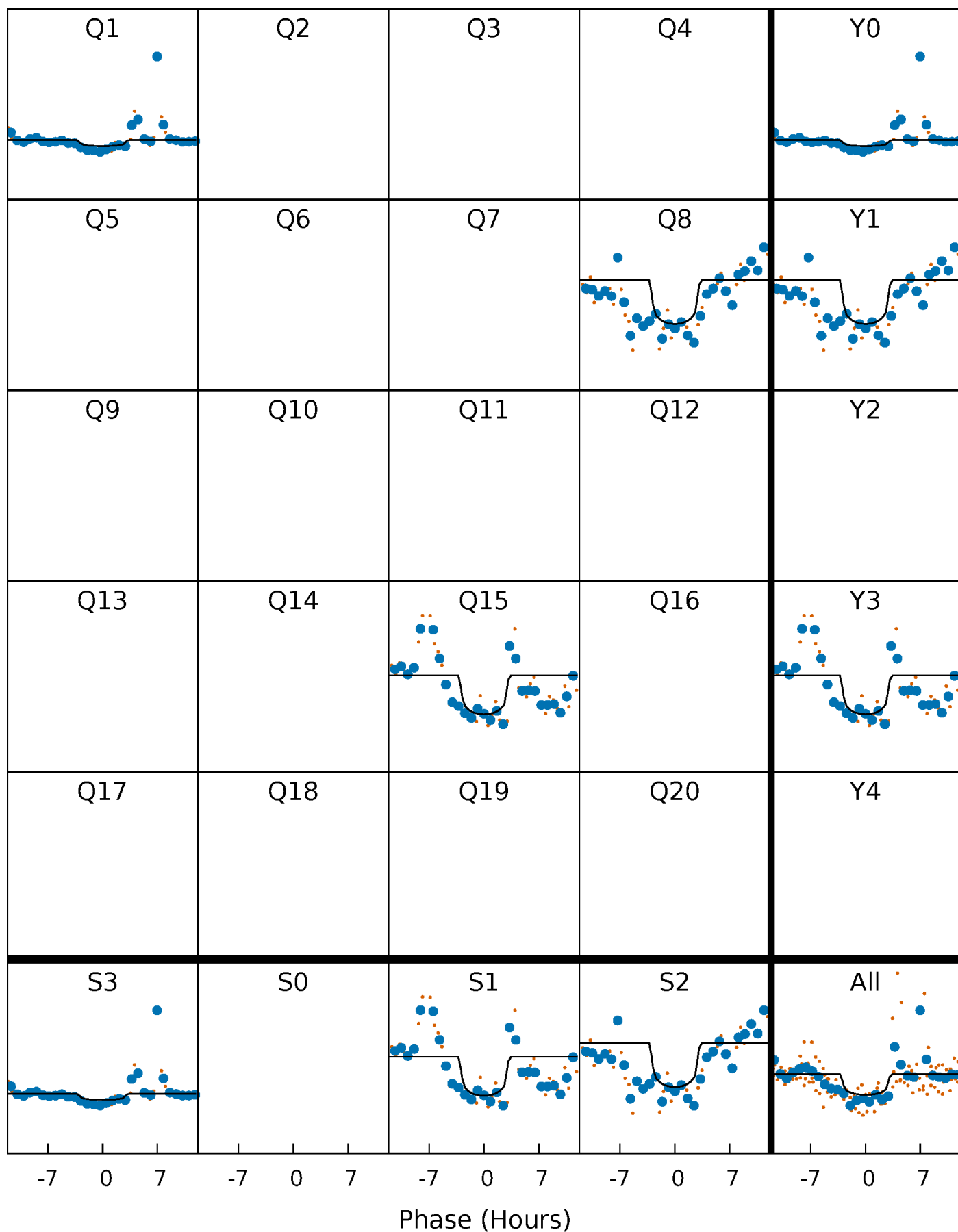
PDC Quarter-Phased Transit Curves

TCE 006118085-05 $P=648.298489$ Days $T_0=149.570024$ (BKJD)



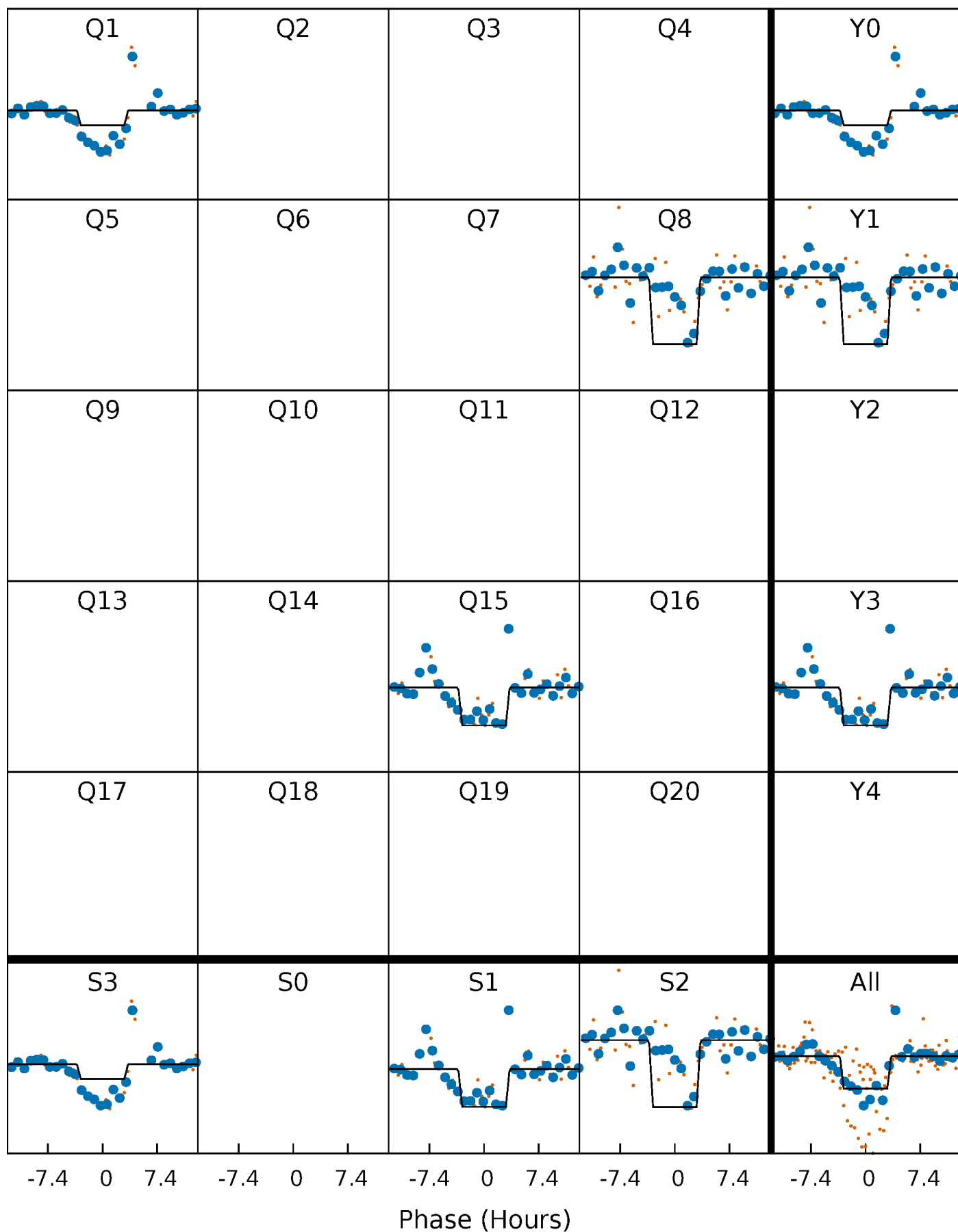
DV Quarter-Phased Transit Curves

TCE 006118085-05 $P=648.298489$ Days $T_0=149.570024$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

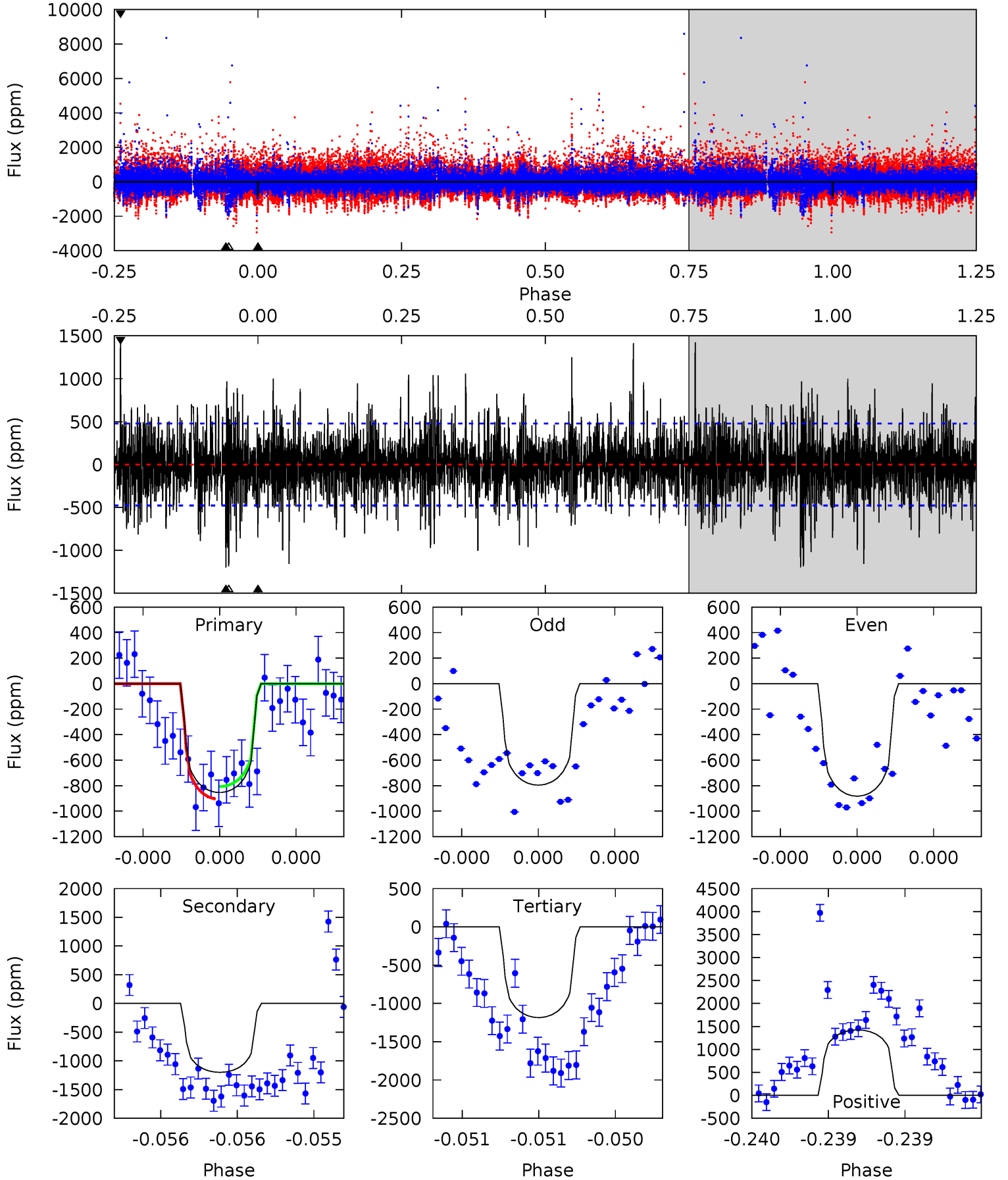
TCE 006118085-05 $P=648.302369$ Days $T_0=149.576836$ (BKJD)



DV Model-Shift Uniqueness Test

006118085-05, P = 648.298489 Days, E = 149.570024 Days

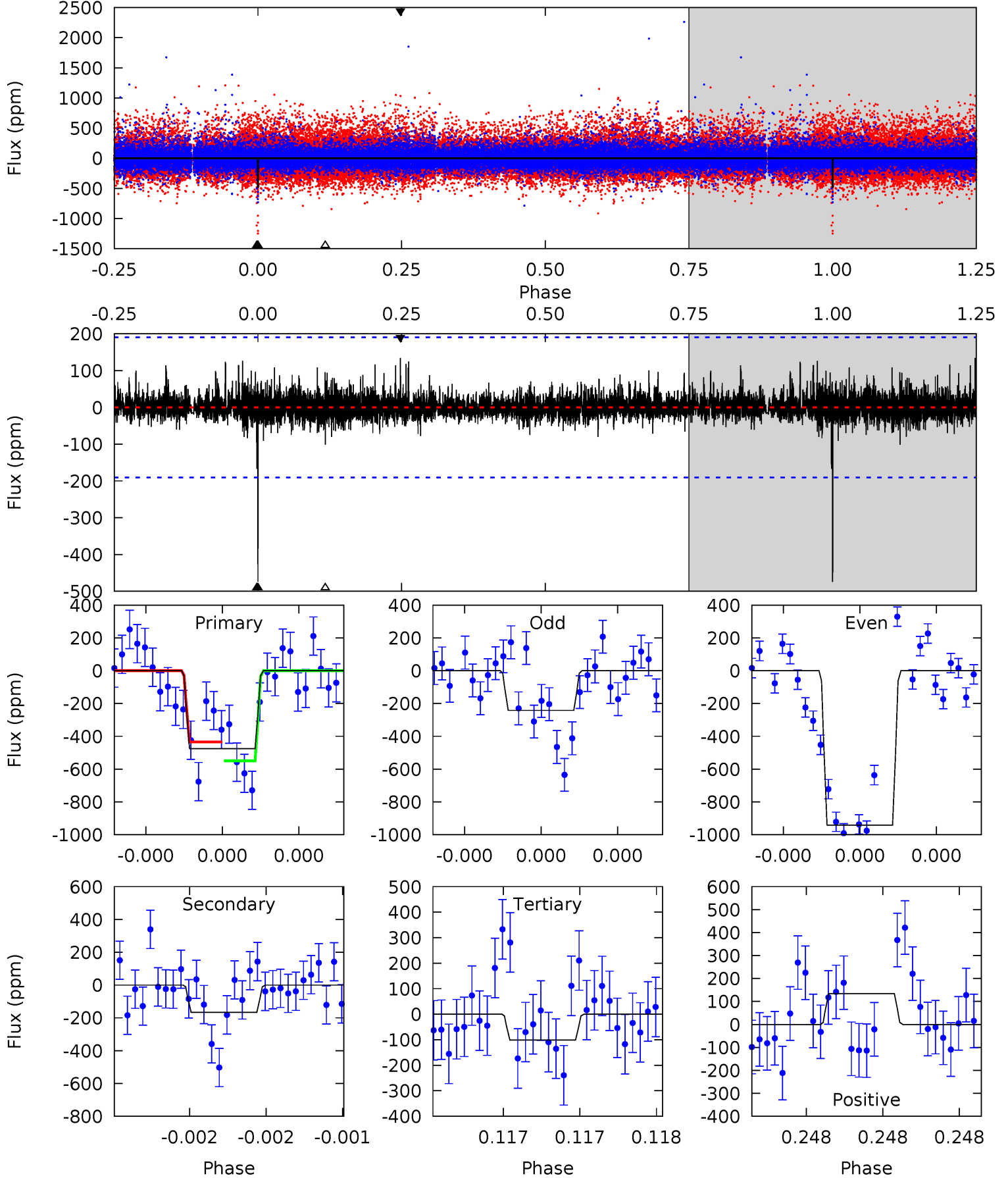
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	14.1	13.9	16.7	5.61	3.53	3.18	-3.88	-6.70	0.17	-2.65	0.38	1.07	0.54	0.57



Alt Model-Shift Uniqueness Test

006118085-05, P = 648.302369 Days, E = 149.576836 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	4.89	2.97	3.95	5.60	3.51	0.63	11.0	9.99	1.92	0.94	10.5	1.45	0.22	1.70



Stellar Parameters For KIC 006118085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+155}_{-155}	$4.573^{+0.042}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.794^{+0.205}_{-0.068}$	$0.860^{+0.096}_{-0.088}$	$2.425^{+0.533}_{-1.084}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+11%/-10%	+22%/-45%
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 006118085-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1199 ± 85	$7.06^{+7.63}_{-4.78}$	273^{+17}_{-11}	4112^{+2608}_{-882}	$25336^{+210187}_{-19406}$
Alt.	-167 ± 34	$6.92^{+7.80}_{-4.62}$	273^{+16}_{-11}	3000^{+1398}_{-520}	3527^{+28543}_{-2736}

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 $A_{obs} \gg 1.0$

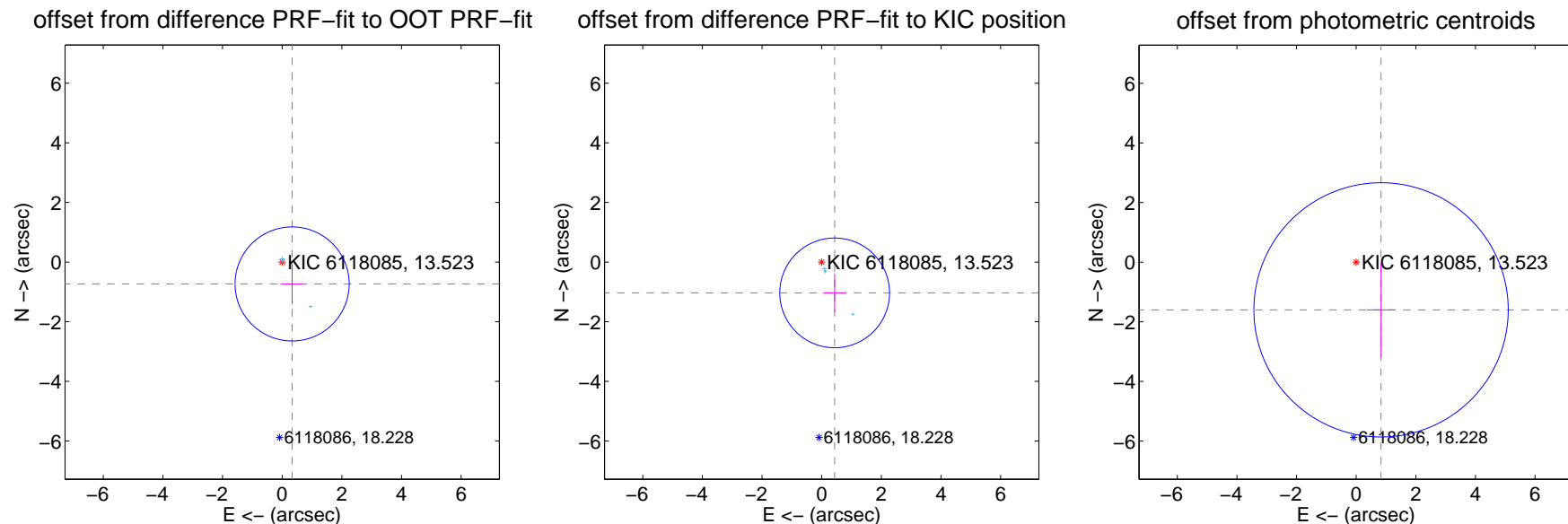
DV Centroid Data

Supplemental centroid analysis for 006118085-05. Kepler magnitude: 13.52. Transit SNR 4.54

There are 3 quarters with good PRF difference image offsets

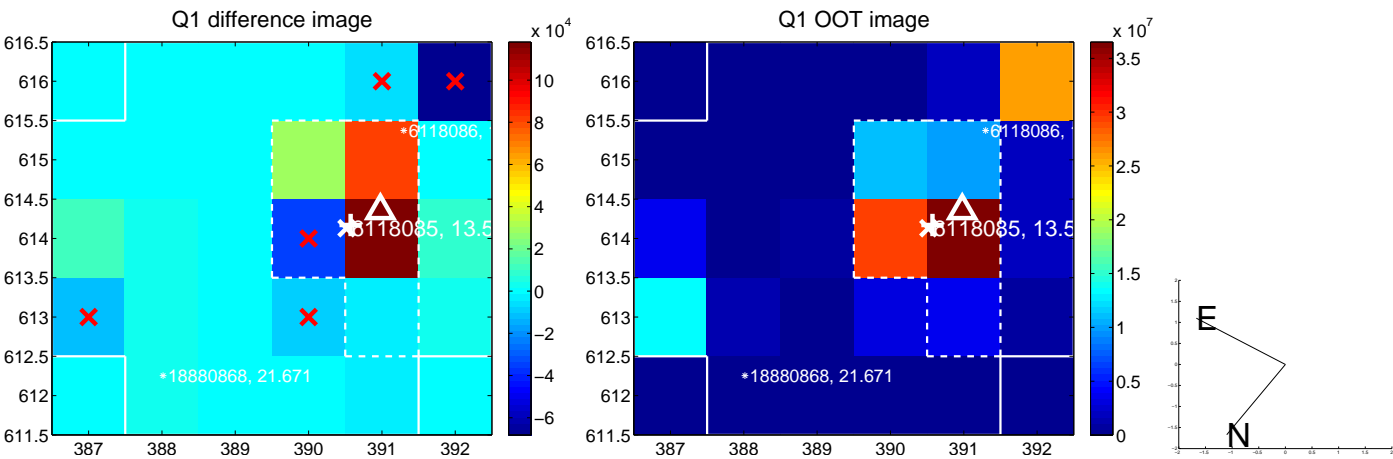
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.805 ± 0.638	1.26	-0.332 ± 0.384	-0.733 ± 0.678
PRF-fit source offset from KIC position	1.121 ± 0.614	1.83	-0.434 ± 0.380	-1.033 ± 0.646
photometric centroid source offset	1.80 ± 1.42	1.27	-0.83 ± 0.47	-1.60 ± 1.58

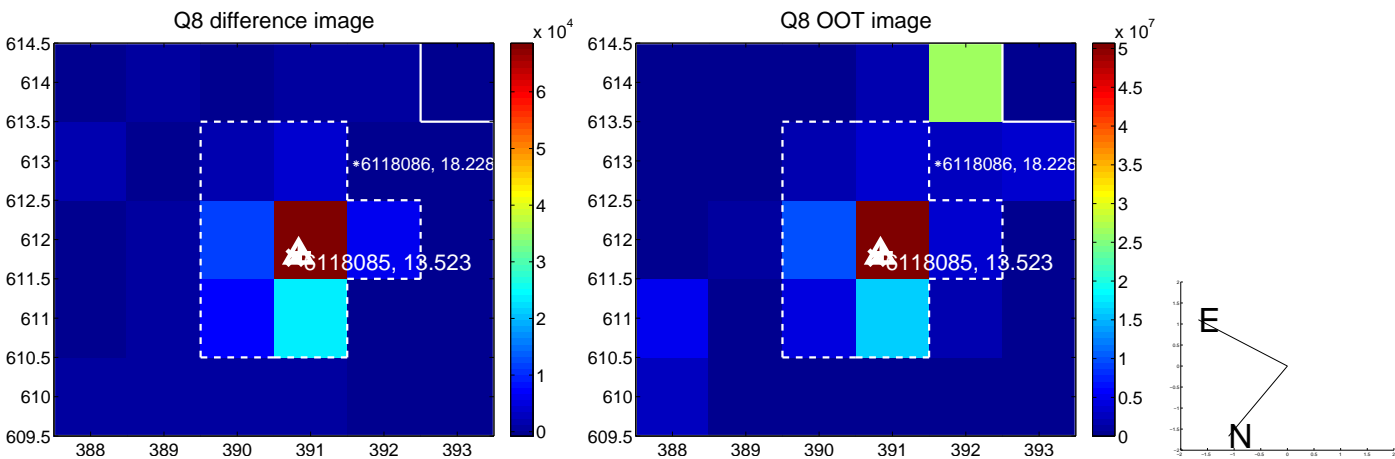
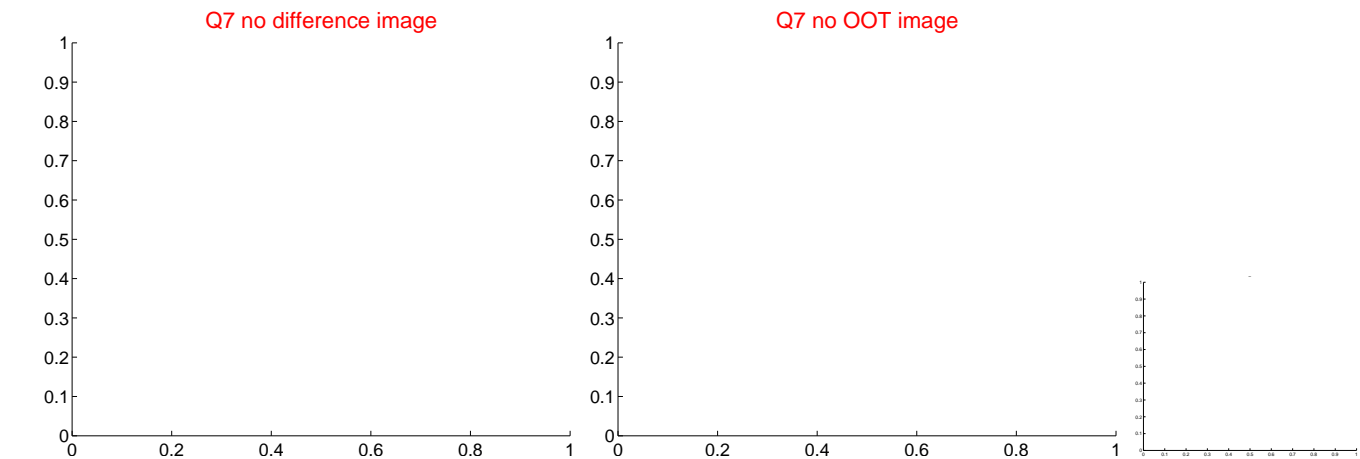
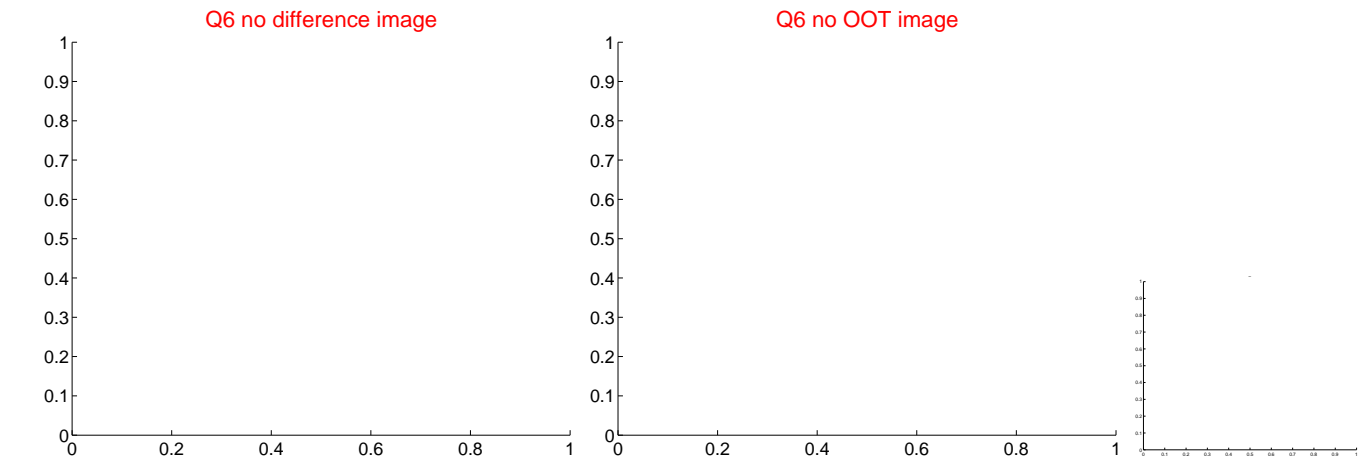
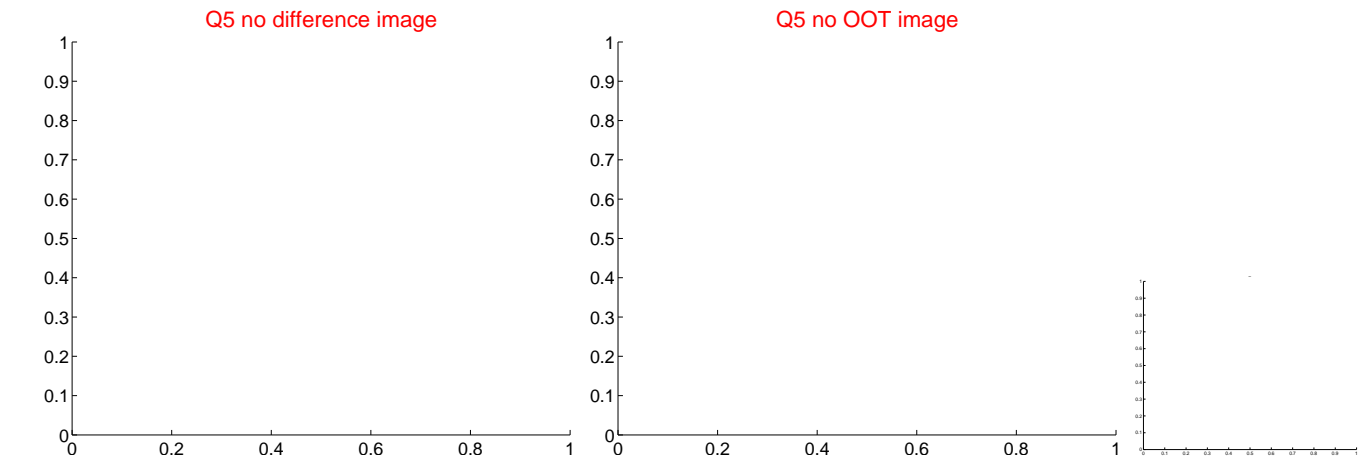


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



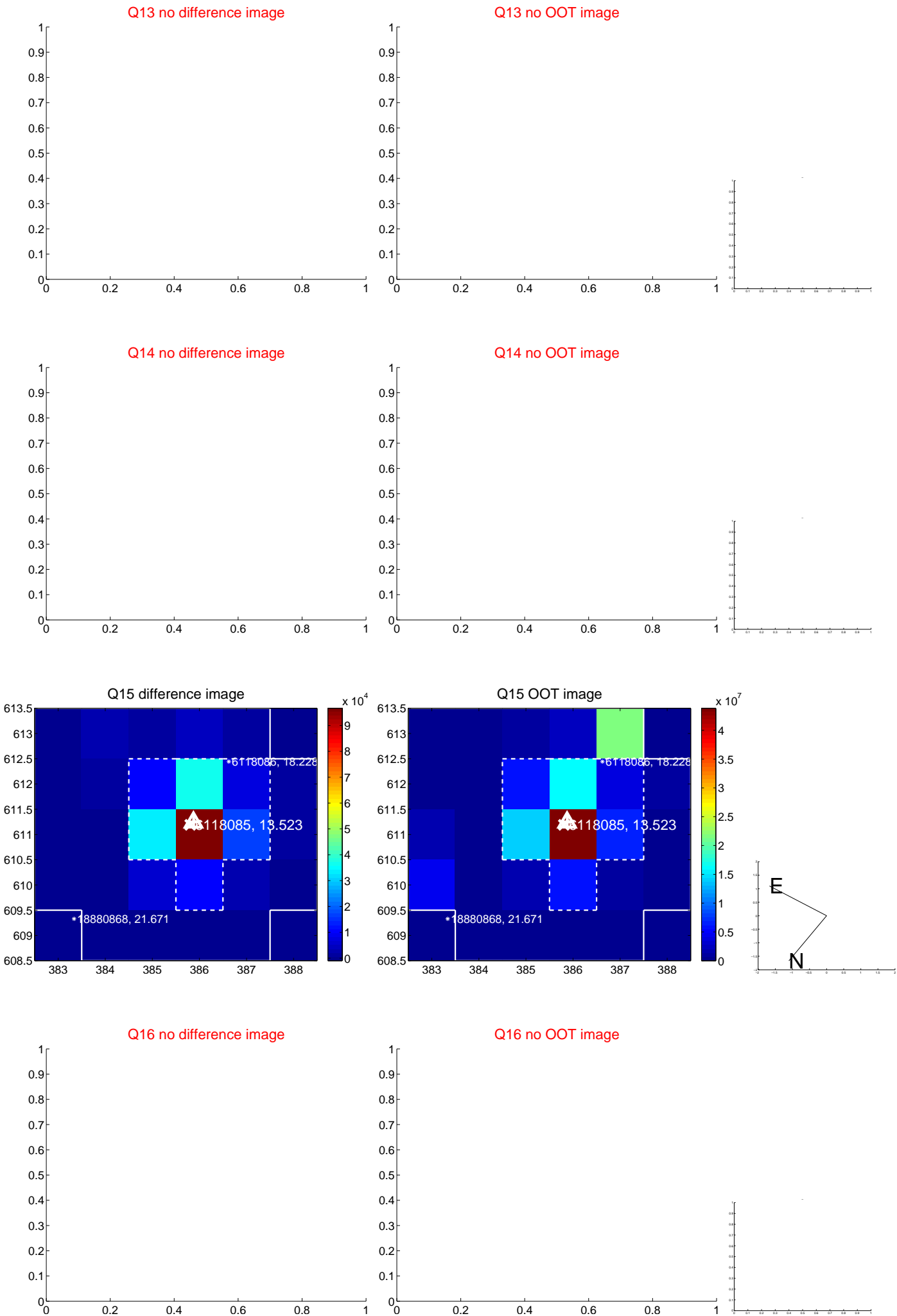
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



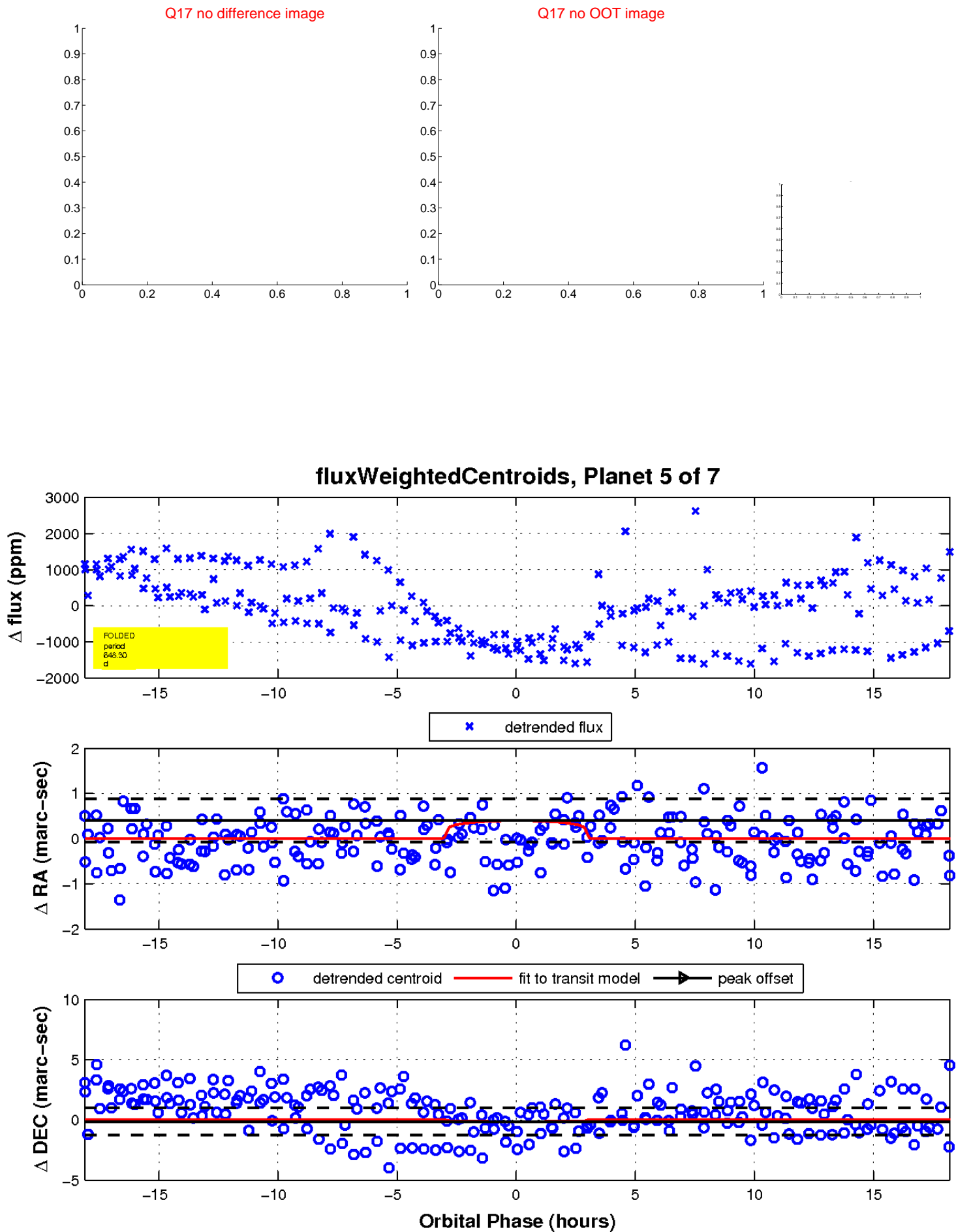
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



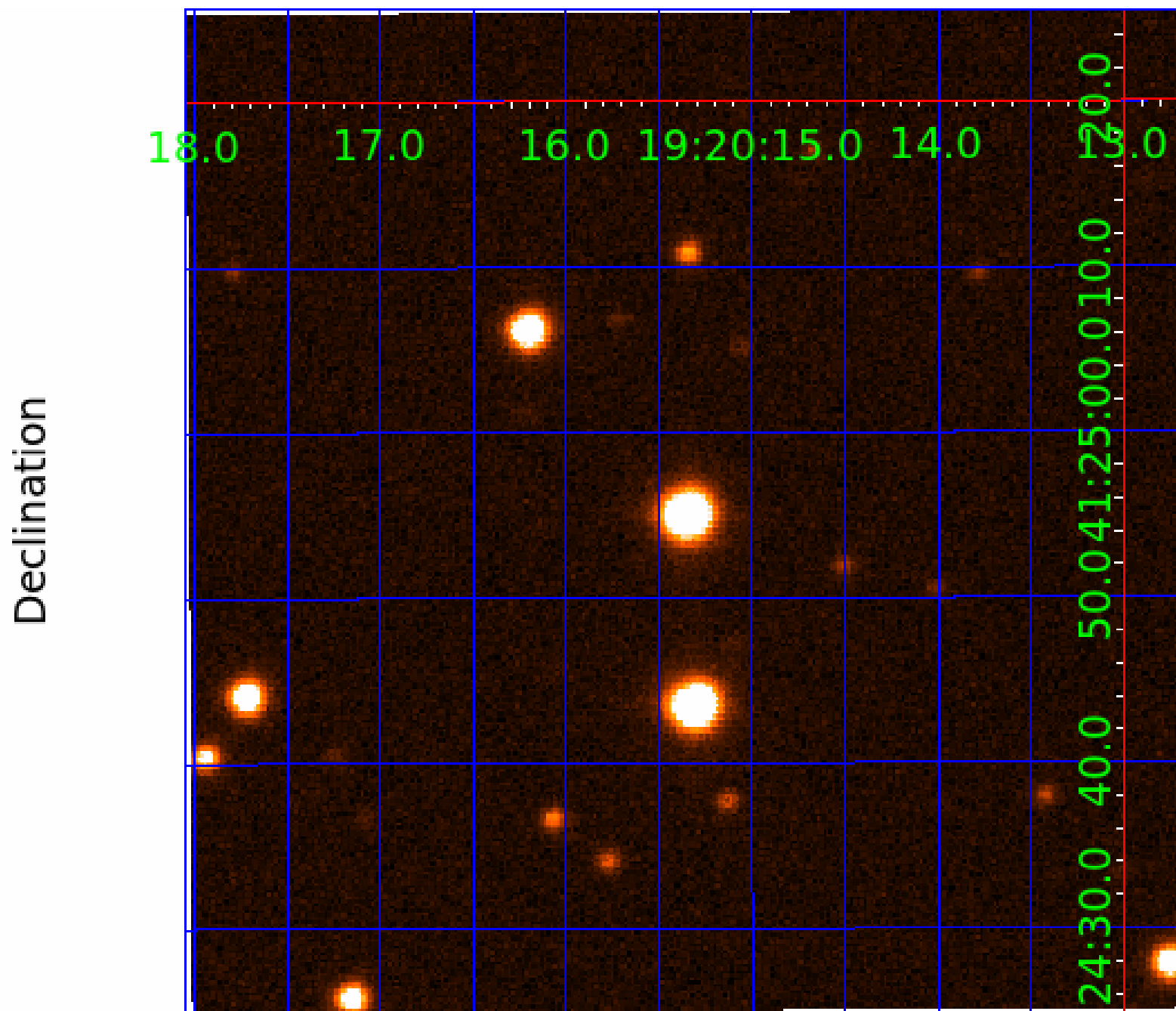
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006118085

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})
006118085-01	OBS	No	391.493882	133.414830	541.0	5.410	12.7	4.3	0.79	5765	2.04	0.63
006118085-02	OBS	No	346.571224	305.988169	780.3	5.340	11.8	6.4	0.79	5765	2.21	0.74
006118085-03	OBS	No	547.304550	147.470336	1430.9	10.869	13.4	8.3	0.79	5765	3.01	0.40
006118085-04	OBS	No	532.930818	265.865148	792.3	4.430	13.4	5.5	0.79	5765	2.31	0.42
006118085-05	OBS	No	648.298489	149.570024	638.9	6.086	12.3	4.5	0.79	5765	2.03	0.32
006118085-06	OBS	No	528.792452	333.685519	892.4	4.373	14.1	6.9	0.79	5765	2.49	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006118085-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
006118085-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006118085-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
006118085-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

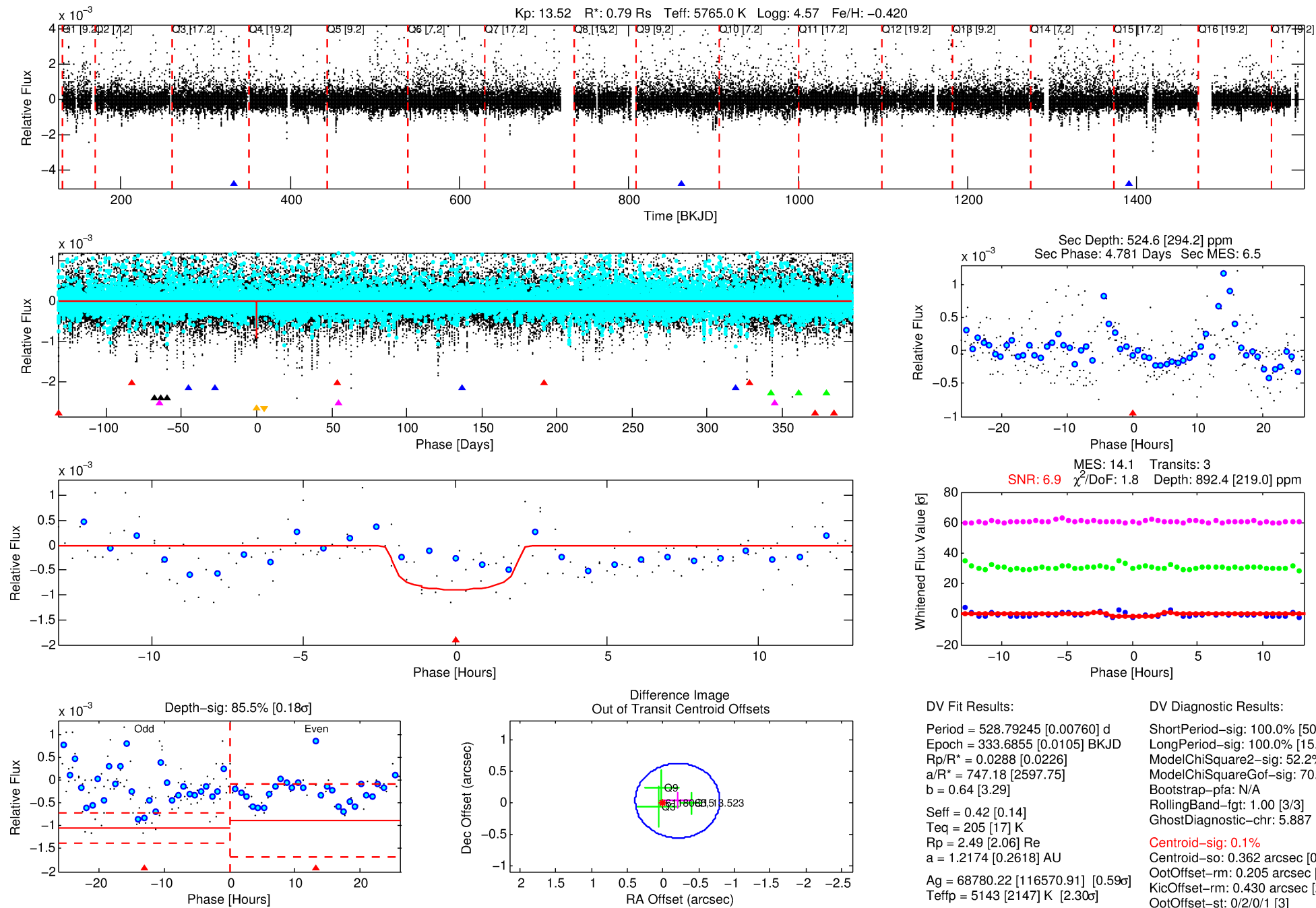
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006118085-06

No Significant Match Found

DV One-Page Summary

KIC: 6118085 Candidate: 6 of 7 Period: 528.792 d



DV Fit Results:

Period = 528.79245 [0.00760] d
Epoch = 333.6855 [0.0105] BKJD
Rp/R* = 0.0288 [0.0226]
a/R* = 747.18 [2597.75]
b = 0.64 [3.29]
Seff = 0.42 [0.14]
Teq = 205 [17] K
Rp = 2.49 [2.06] Re
a = 1.2174 [0.2618] AU
Ag = 68780.22 [116570.91] [0.59 σ]
Teffp = 5143 [2147] K [2.30 σ]

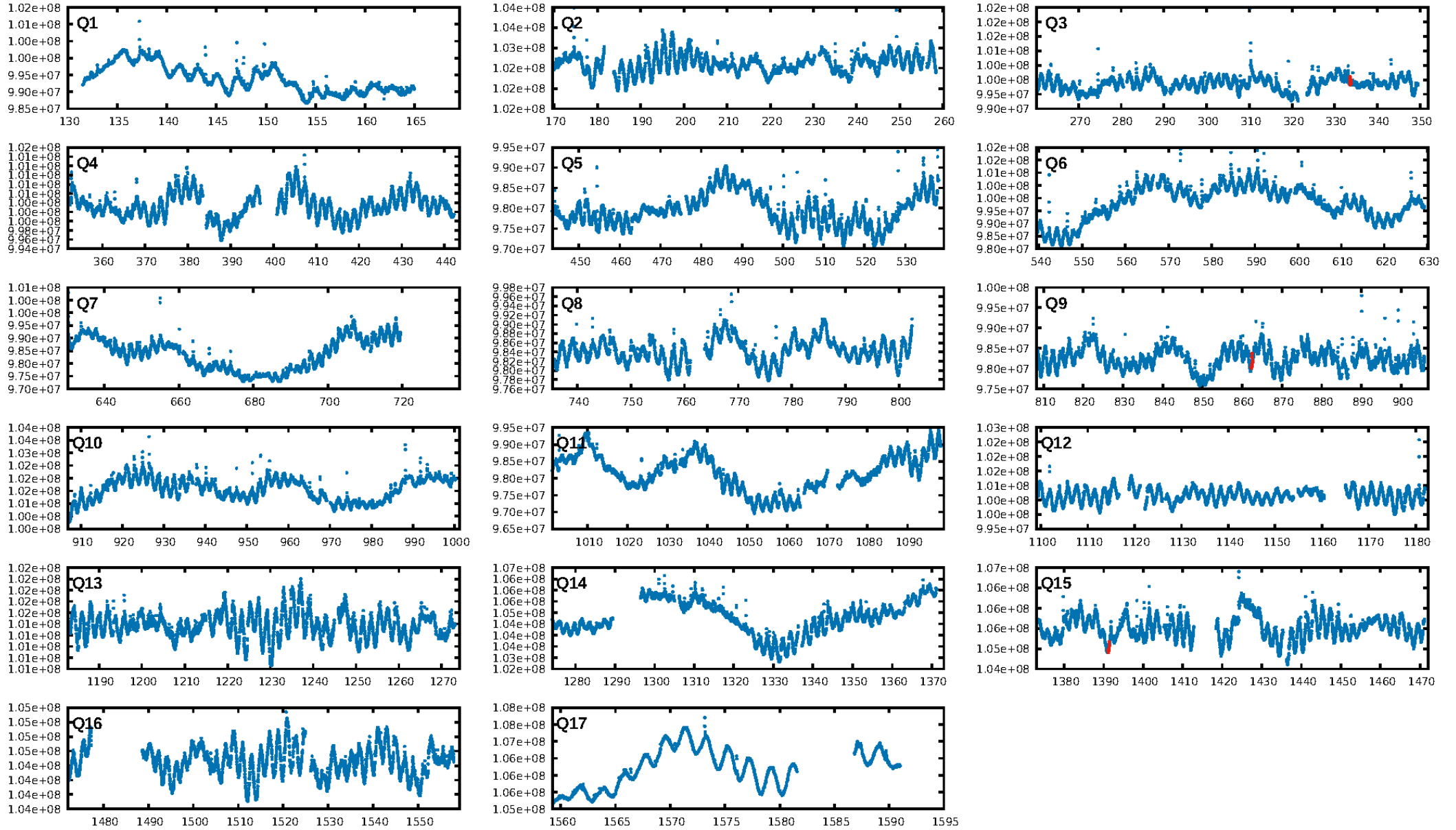
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.19 σ]
LongPeriod-sig: 100.0% [15.96 σ]
ModelChiSquare2-sig: 52.2%
ModelChiSquareGof-sig: 70.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 5.887
Centroid-sig: 0.1%
Centroid-so: 0.362 arcsec [0.66 σ]
OotOffset-rm: 0.205 arcsec [1.04 σ]
KicOffset-rm: 0.430 arcsec [2.40 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

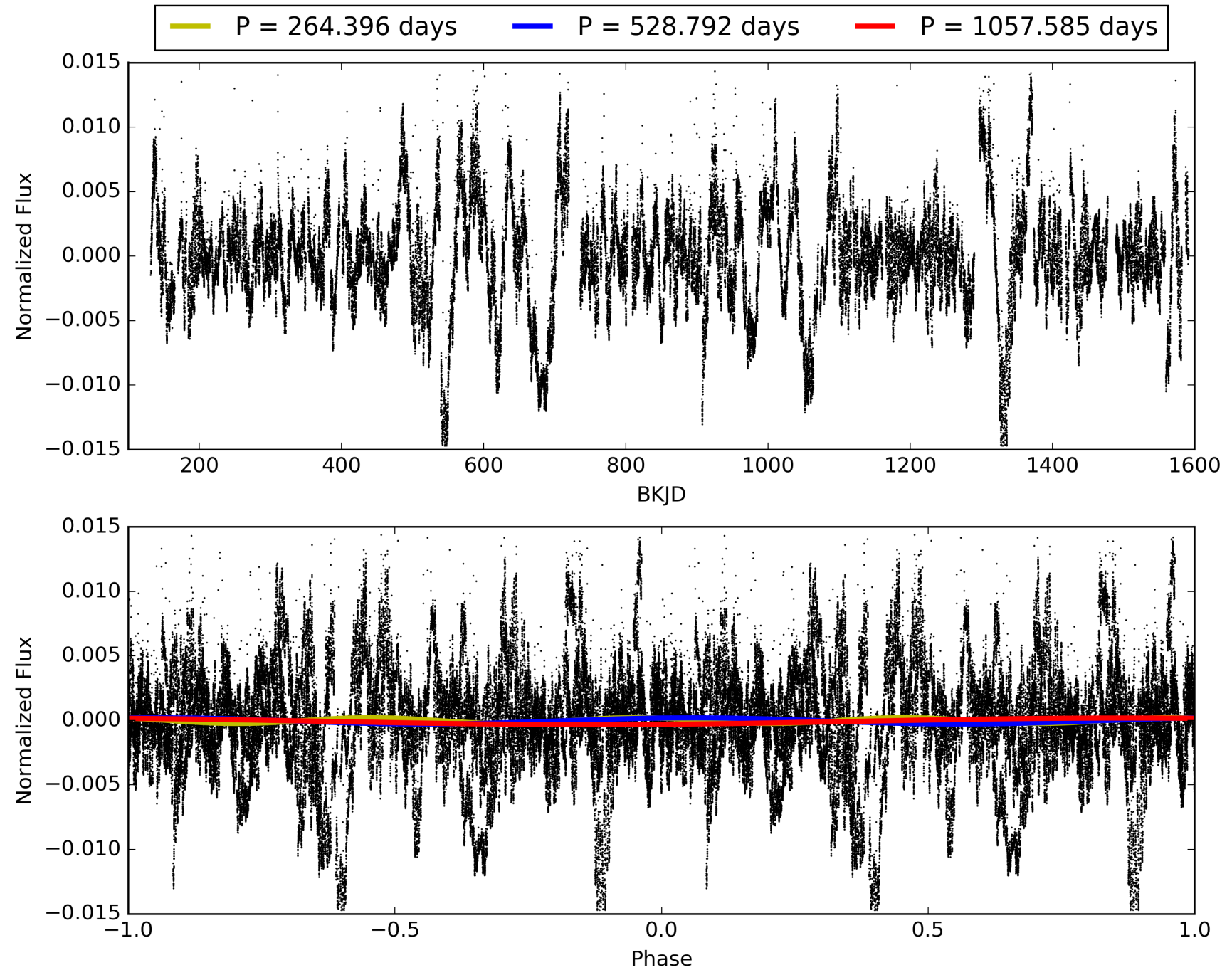
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:18:25 Z

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

TCE 006118085-06, PDC Light Curves

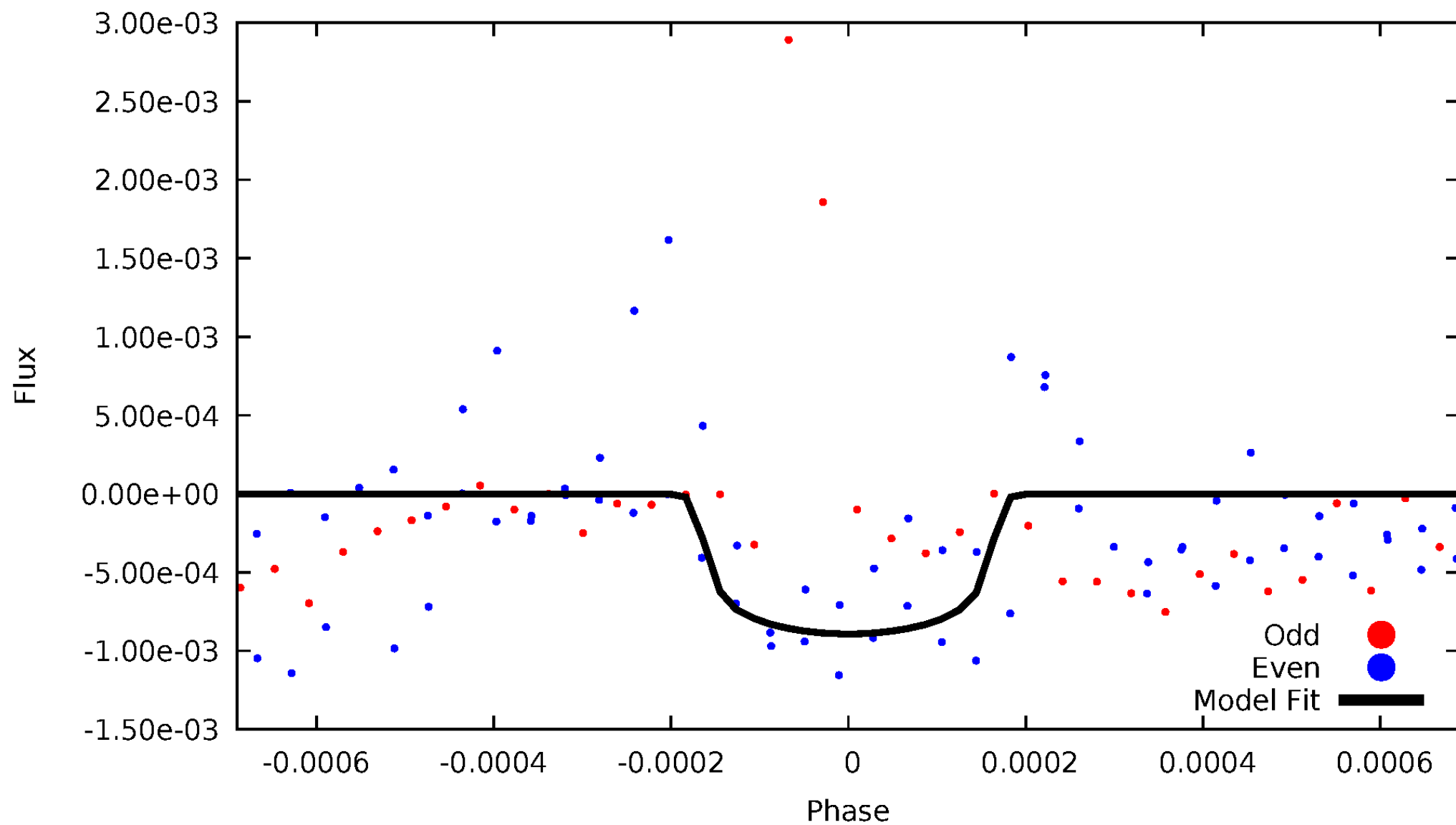


TCE 006118085-06



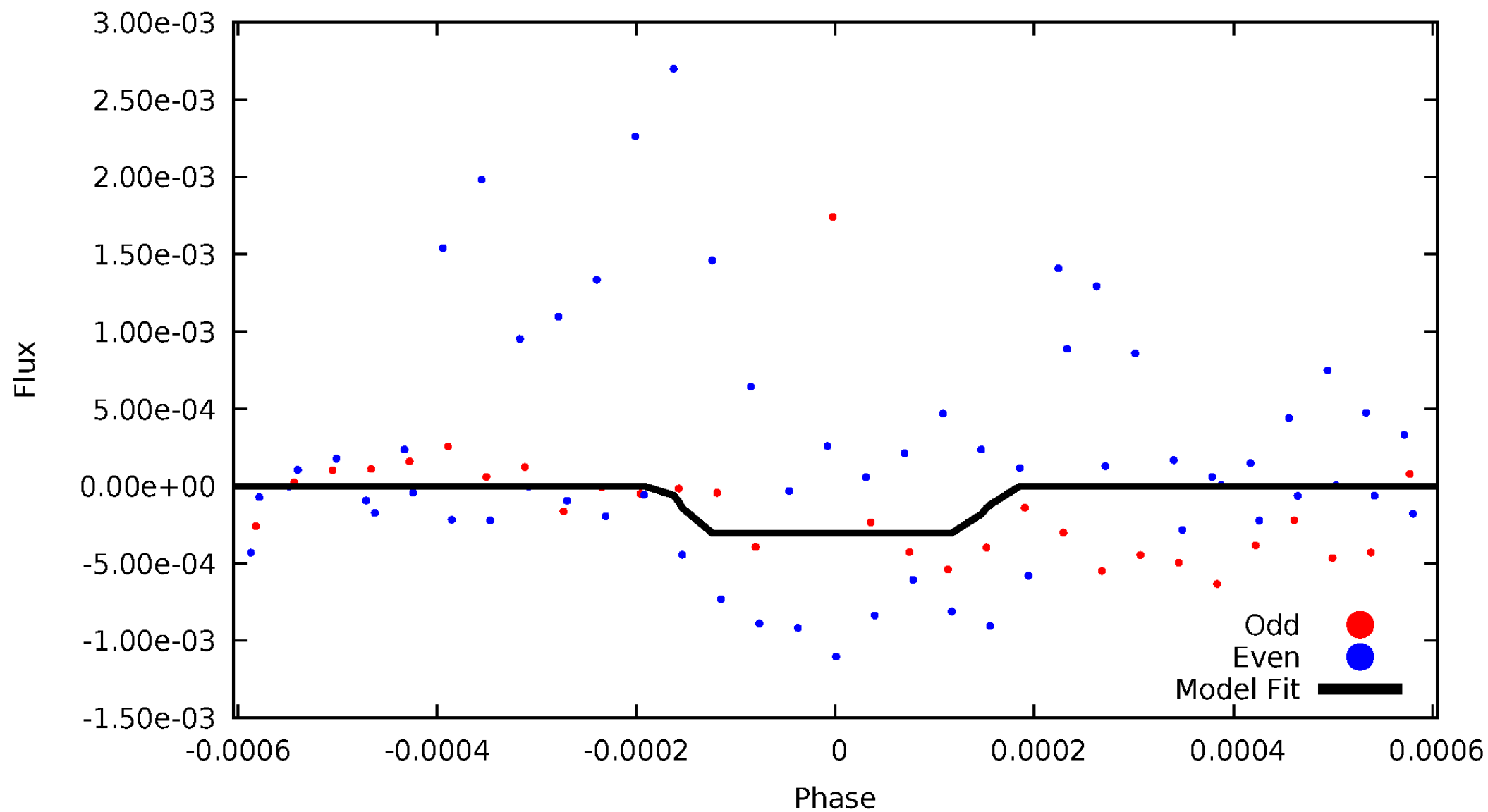
DV Odd/Even

TCE 006118085-06



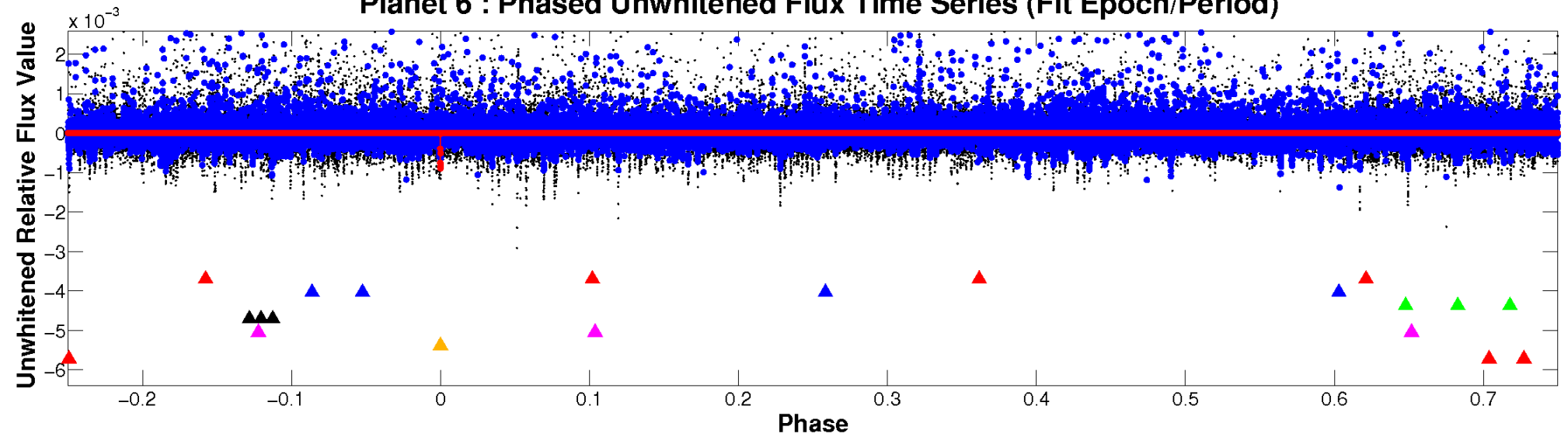
ALT Odd/Even

TCE 006118085-06

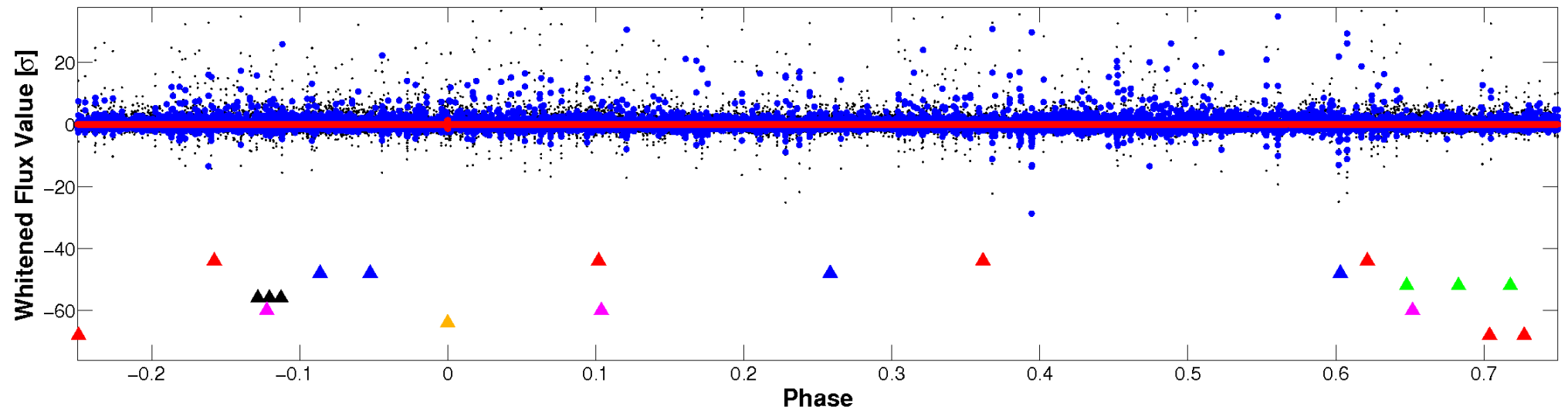


Non-Whitened Vs. Whitened Light Curve

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

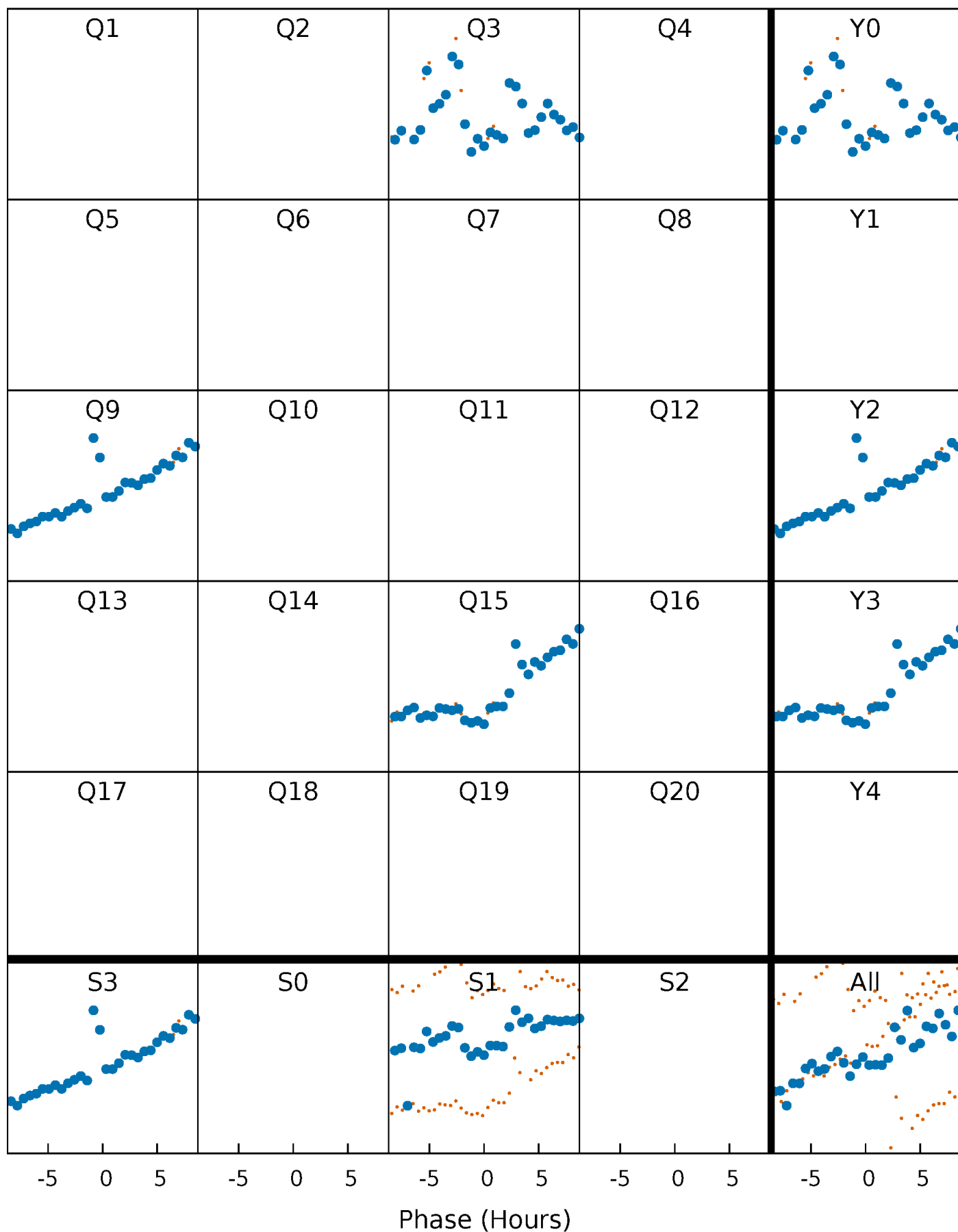


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



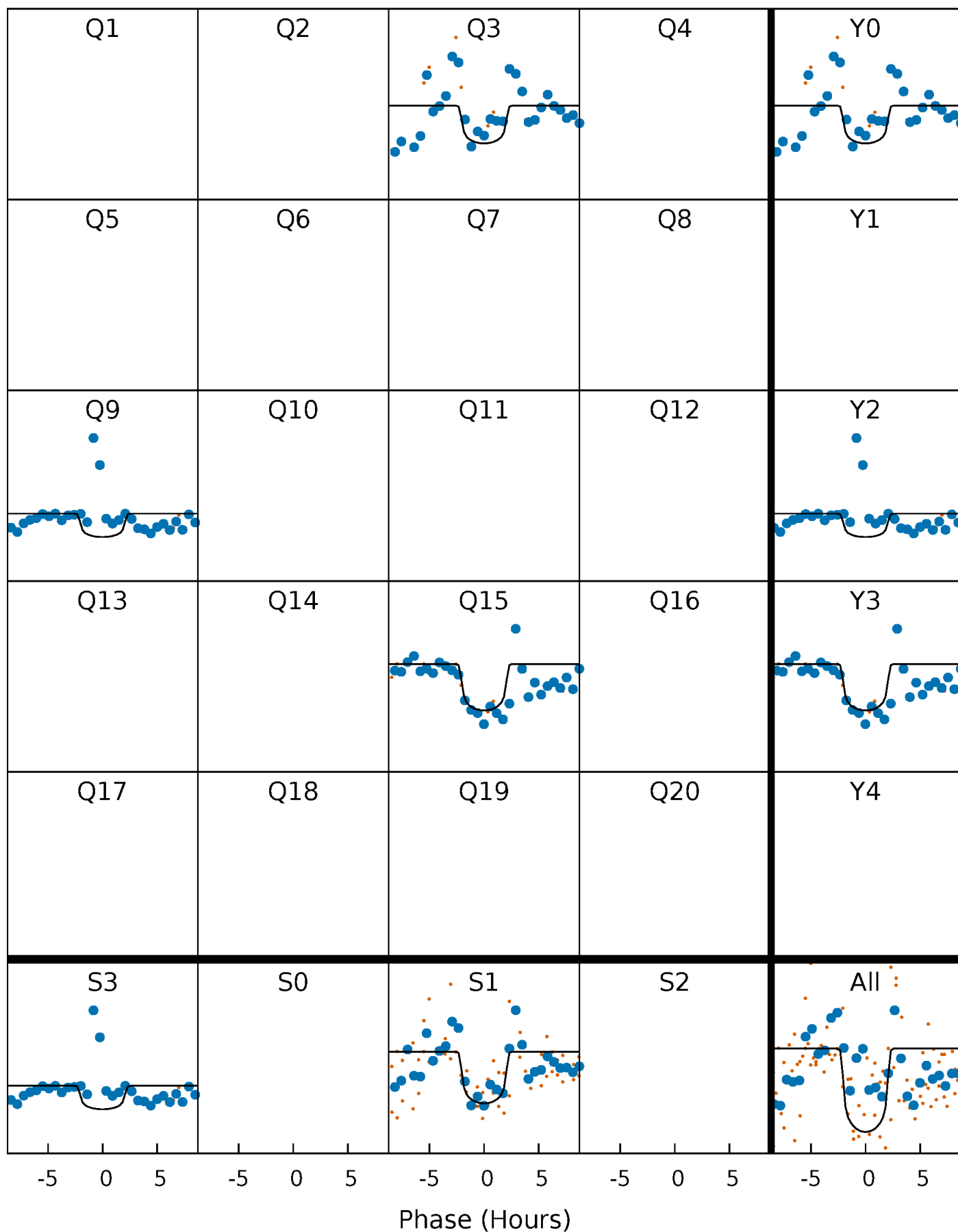
PDC Quarter-Phased Transit Curves

TCE 006118085-06 P=528.792452 Days $T_0=333.685519$ (BKJD)



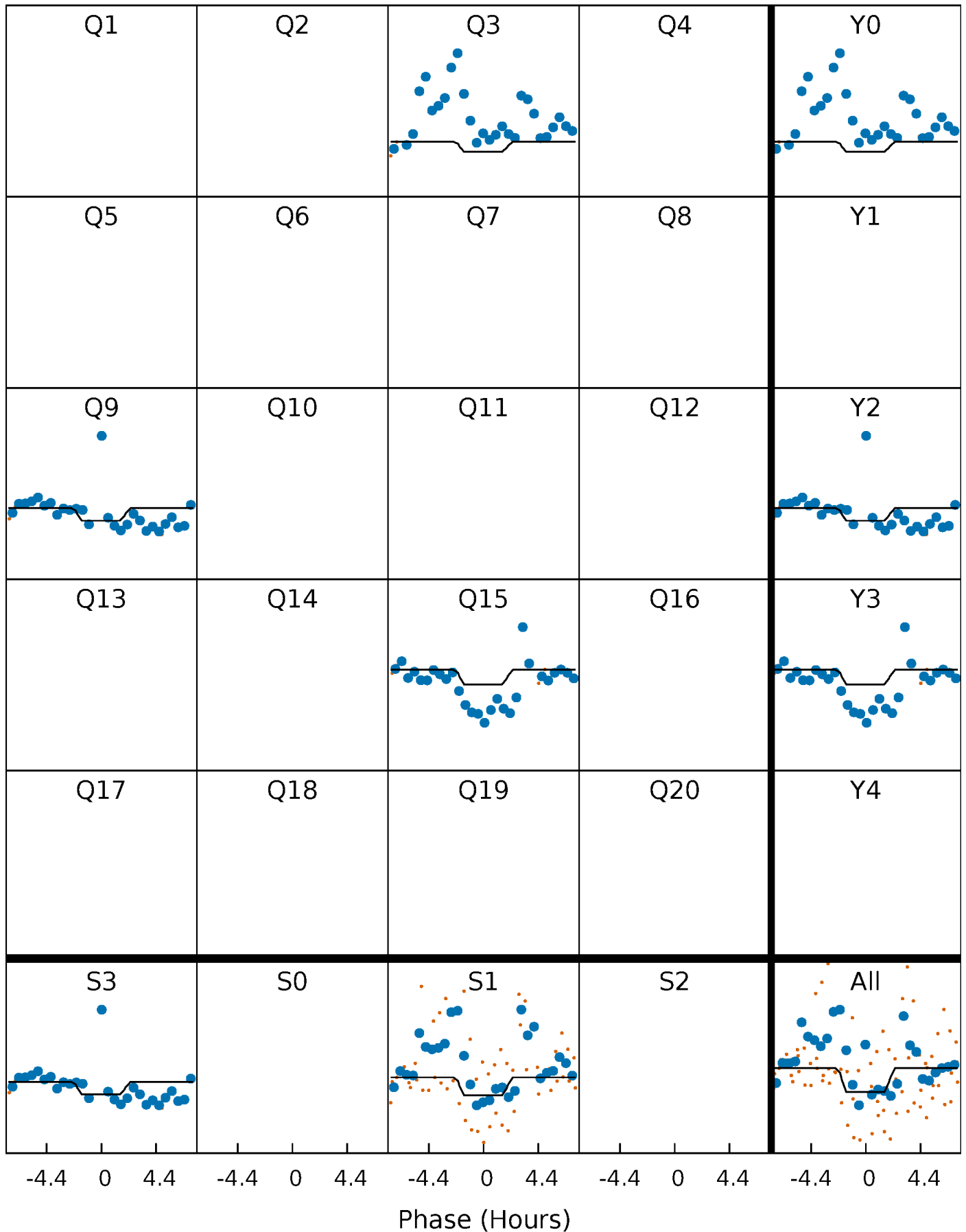
DV Quarter-Phased Transit Curves

TCE 006118085-06 $P=528.792452$ Days $T_0=333.685519$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

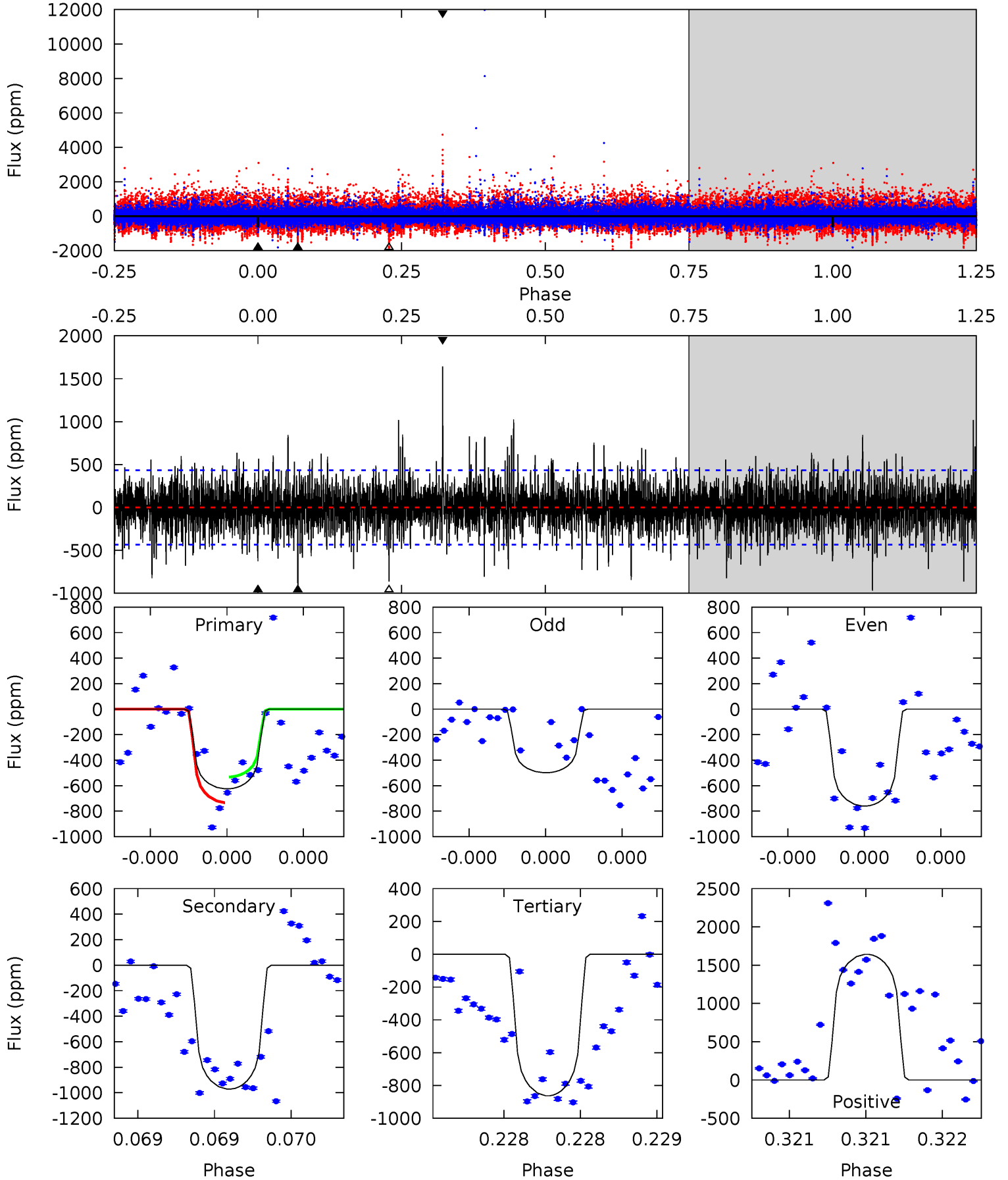
TCE 006118085-06 P=528.800099 Days $T_0=333.664124$ (BKJD)



DV Model-Shift Uniqueness Test

006118085-06, P = 528.792452 Days, E = 333.685519 Days

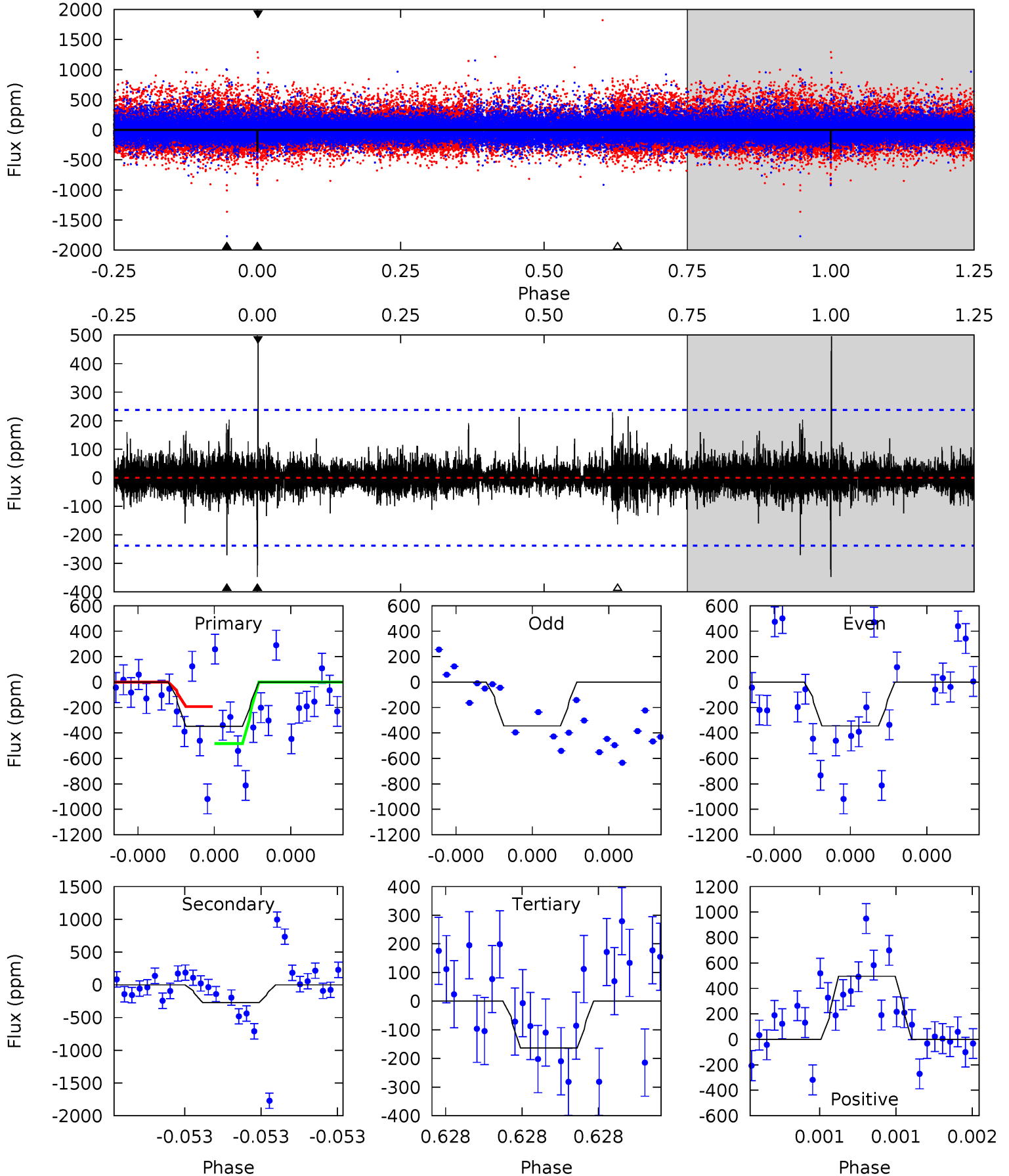
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.11	12.6	11.2	21.3	5.63	3.56	2.48	-3.08	-13.2	1.41	-8.70	1.24	0.66	0.63	1.31



Alt Model-Shift Uniqueness Test

006118085-06, P = 528.800099 Days, E = 333.664124 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.26	6.44	3.88	11.8	5.65	3.60	0.80	4.38	-3.52	2.55	-5.34	0.01	8.64	0.59	0



Stellar Parameters For KIC 006118085

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+155}_{-155}	$4.573^{+0.042}_{-0.168}$	$-0.420^{+0.300}_{-0.300}$	$0.794^{+0.205}_{-0.068}$	$0.860^{+0.096}_{-0.088}$	$2.425^{+0.533}_{-1.084}$
	+3%/-3%	+1%/-4%	+71%/-71%	+26%/-9%	+11%/-10%	+22%/-45%
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 006118085-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-971 ± 77	$2.77^{+2.04}_{-1.62}$	292^{+16}_{-11}	5833^{+3623}_{-1265}	$103639^{+471957}_{-68993}$
Alt.	-271 ± 42	$2.25^{+1.79}_{-1.41}$	292^{+17}_{-12}	4803^{+2949}_{-980}	$44057^{+264414}_{-30687}$

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

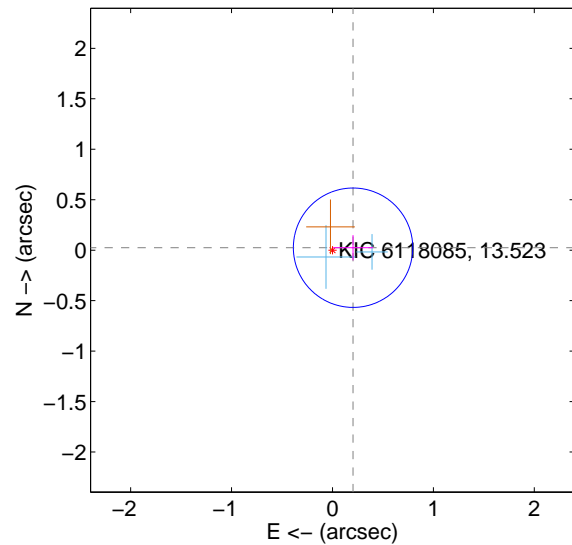
Supplemental centroid analysis for 006118085-06. Kepler magnitude: 13.52. Transit SNR 6.88

There are 2 quarters with good PRF difference image offsets

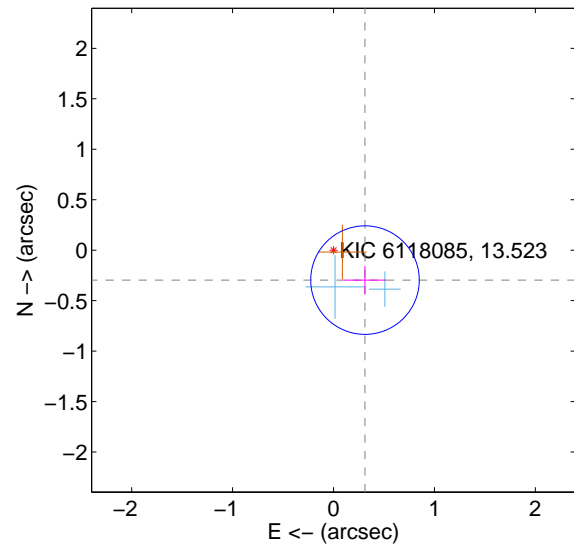
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.205 ± 0.197	1.04	-0.204 ± 0.198	0.024 ± 0.124
PRF-fit source offset from KIC position	0.430 ± 0.179	2.40	-0.312 ± 0.208	-0.297 ± 0.140
photometric centroid source offset	0.36 ± 0.55	0.66	0.36 ± 0.53	0.05 ± 1.12

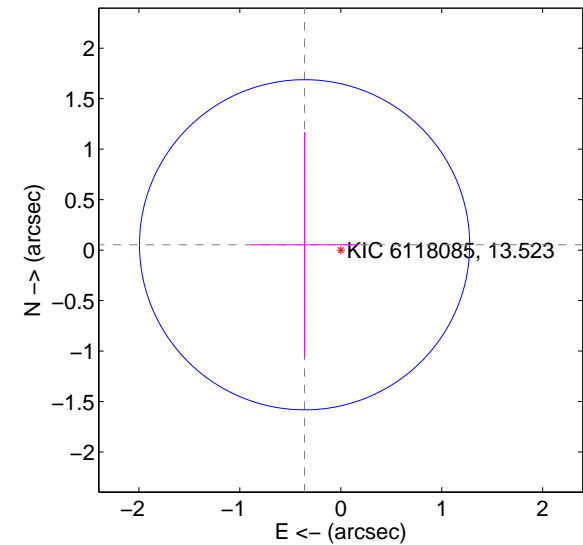
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

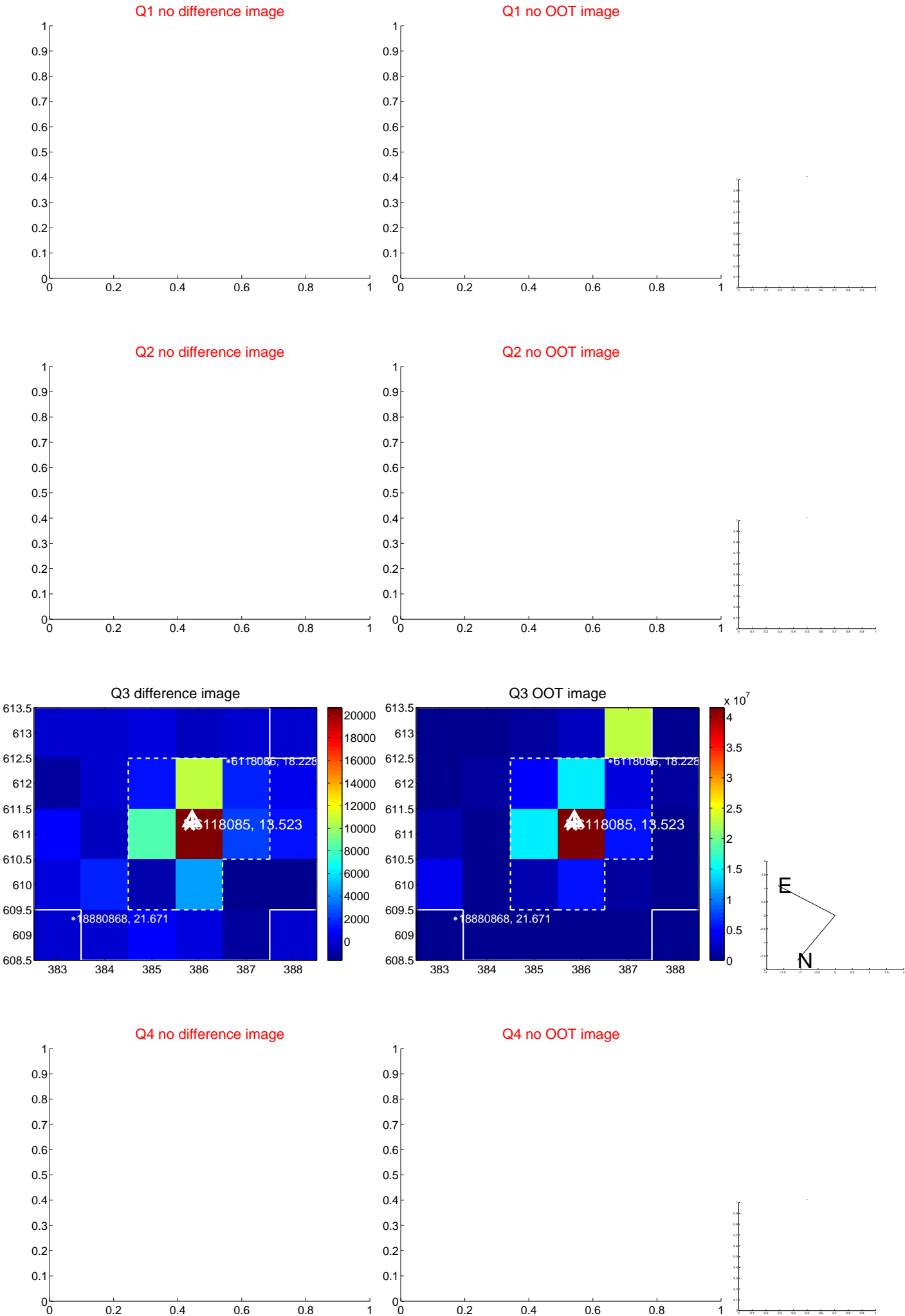


offset from photometric centroids



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.

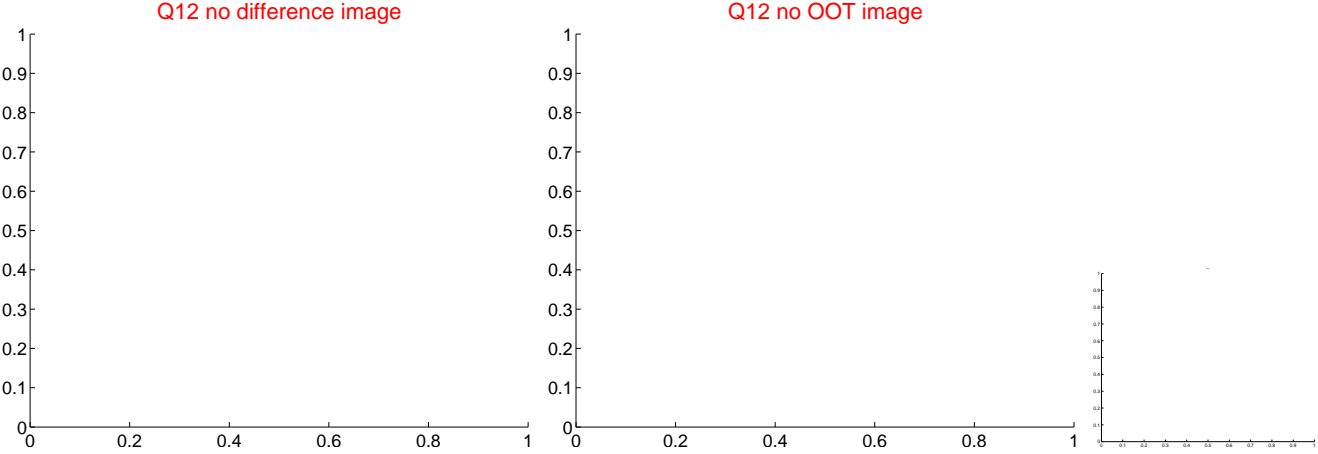
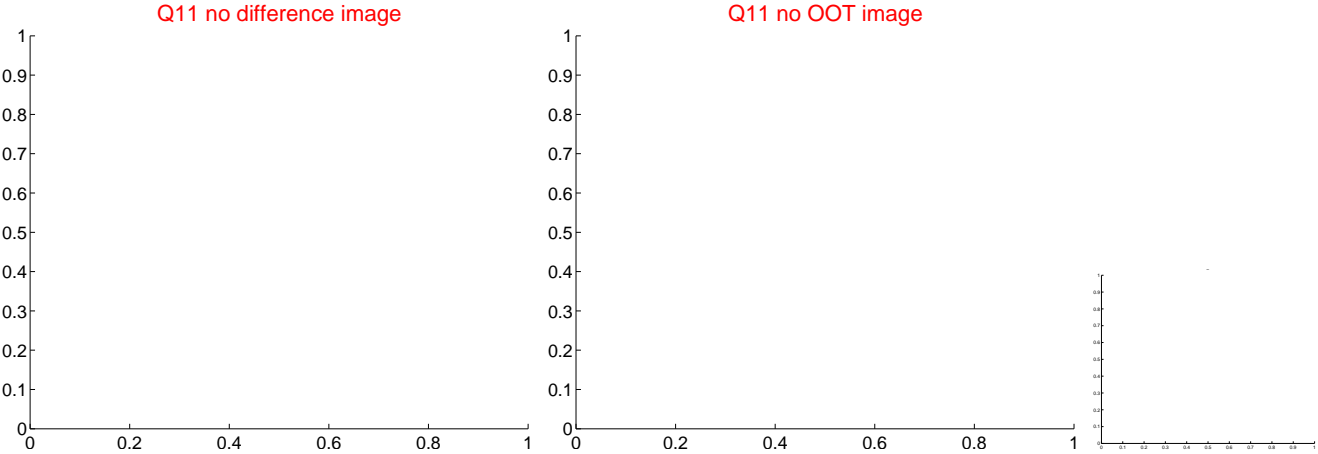
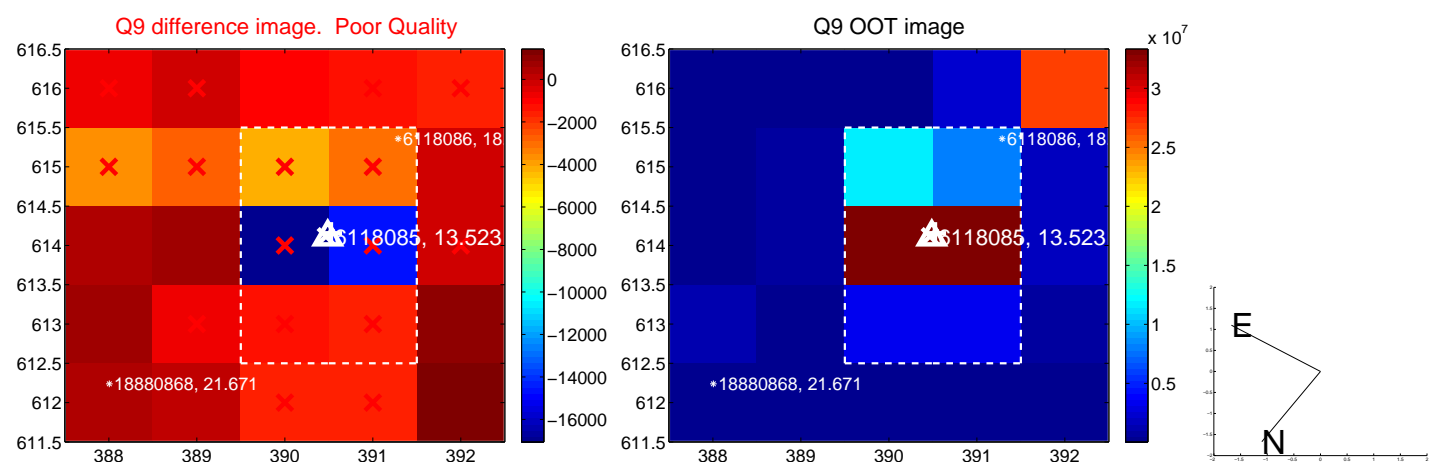
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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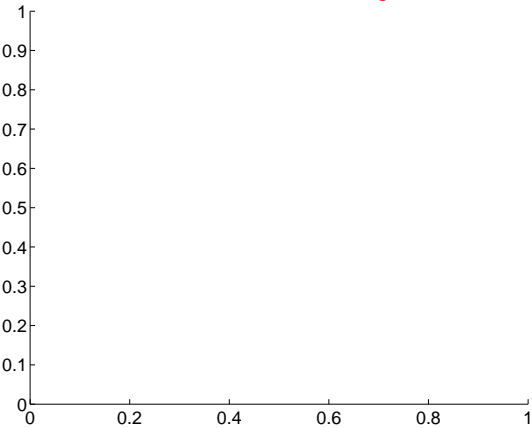
Q13 no difference image



Q13 no OOT image



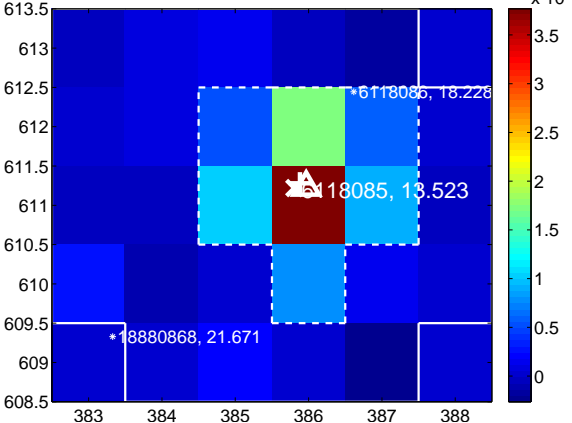
Q14 no difference image



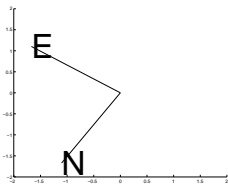
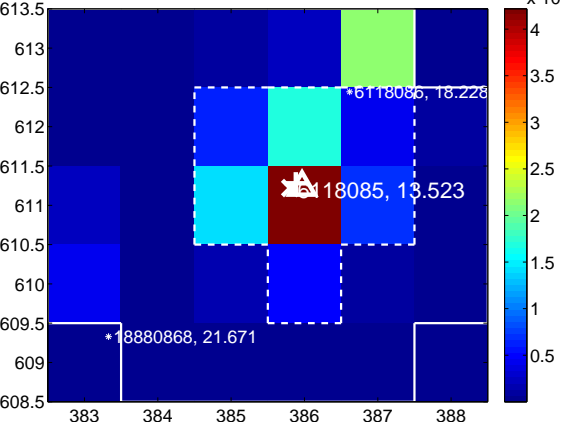
Q14 no OOT image



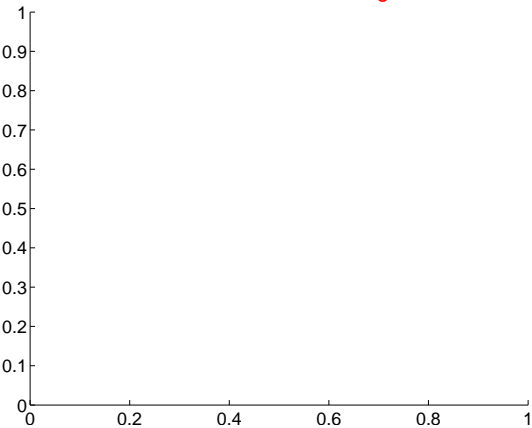
Q15 difference image



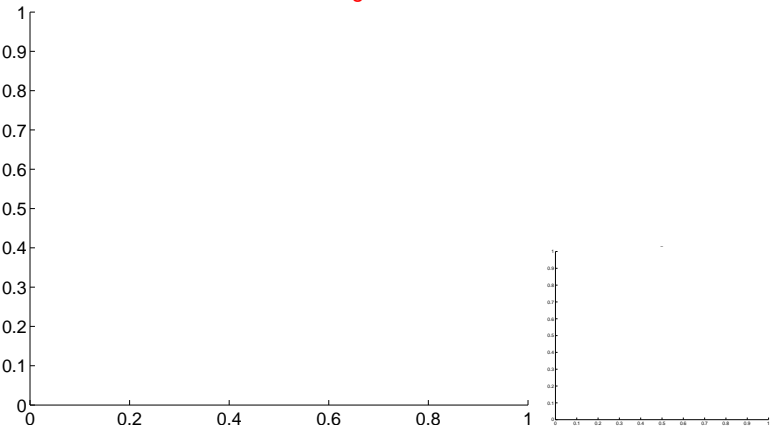
Q15 OOT image



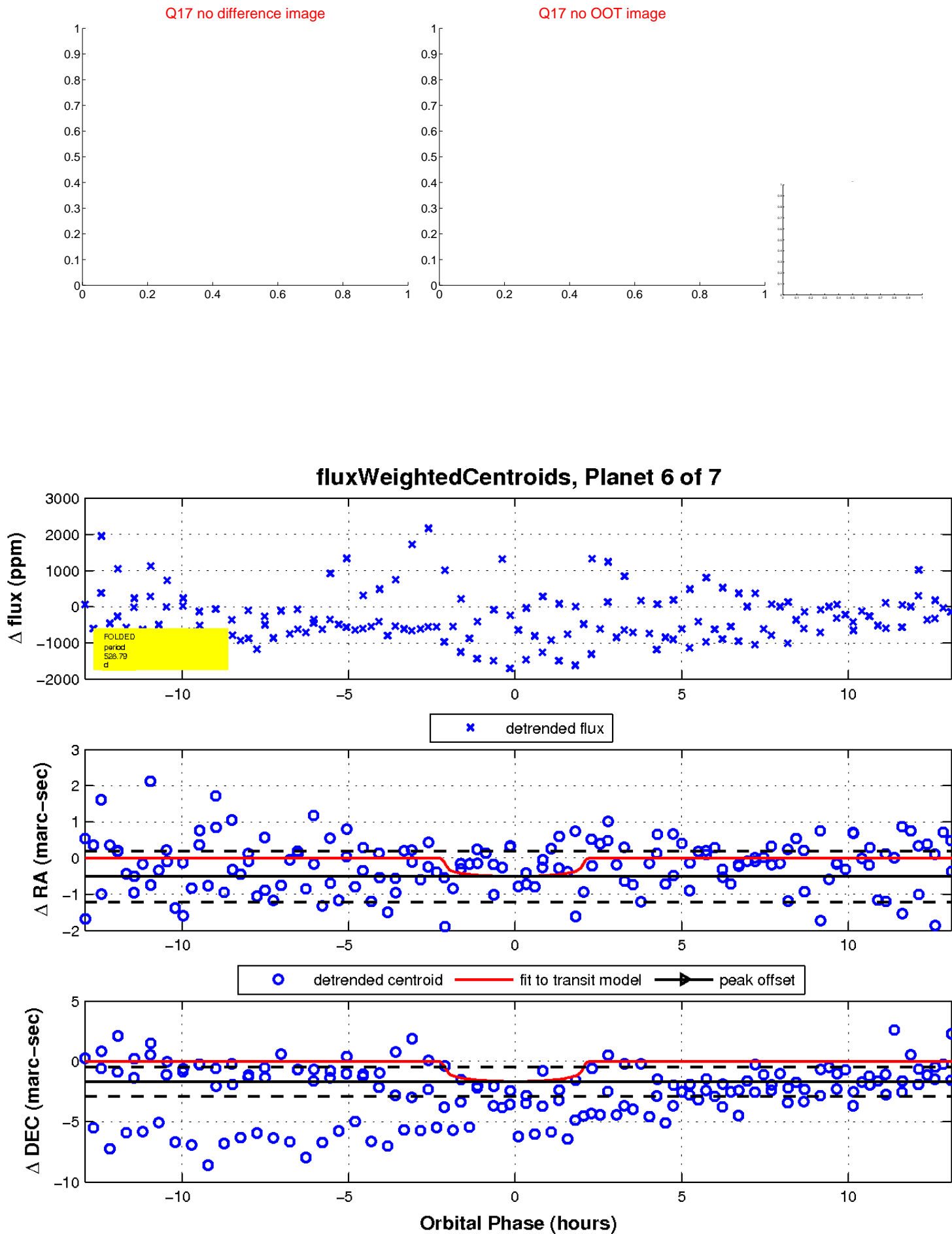
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

