

KIC 003128488

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})
003128488-01	OBS	No	324.958304	371.434562	651.6	9.680	18.7	5.5	0.55	4565	1.45	0.20
003128488-02	OBS	No	694.036941	176.112418	1238.2	10.944	17.1	9.0	0.55	4565	1.87	0.07
003128488-03	OBS	No	284.070980	322.353452	680.8	3.542	15.1	8.6	0.55	4565	1.61	0.24
003128488-04	OBS	No	510.726750	243.094415	438.4	19.867	13.3	2.9	0.55	4565	1.14	0.11
003128488-05	OBS	No	664.424496	134.457468	550.3	5.638	14.8	4.6	0.55	4565	1.26	0.08
003128488-06	OBS	No	601.989902	239.565807	838.8	9.891	12.1	7.2	0.55	4565	1.58	0.09
003128488-07	OBS	No	513.112903	197.205862	806.3	9.179	12.1	7.8	0.55	4565	1.62	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

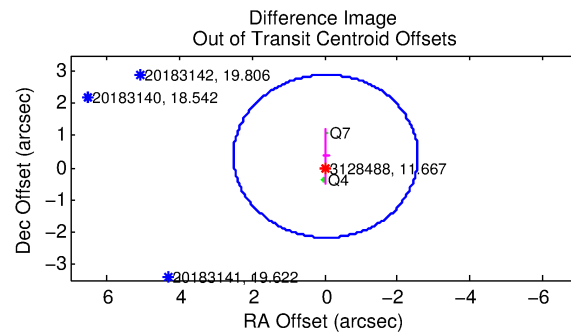
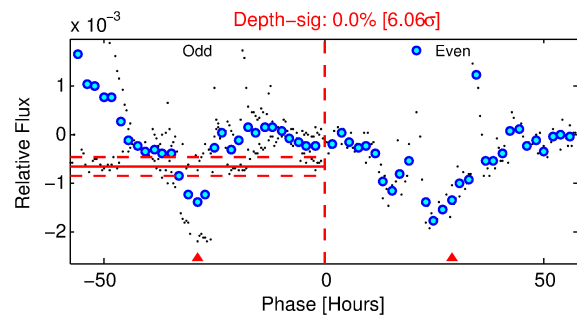
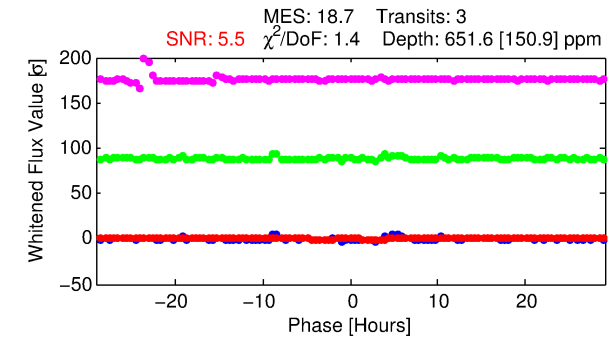
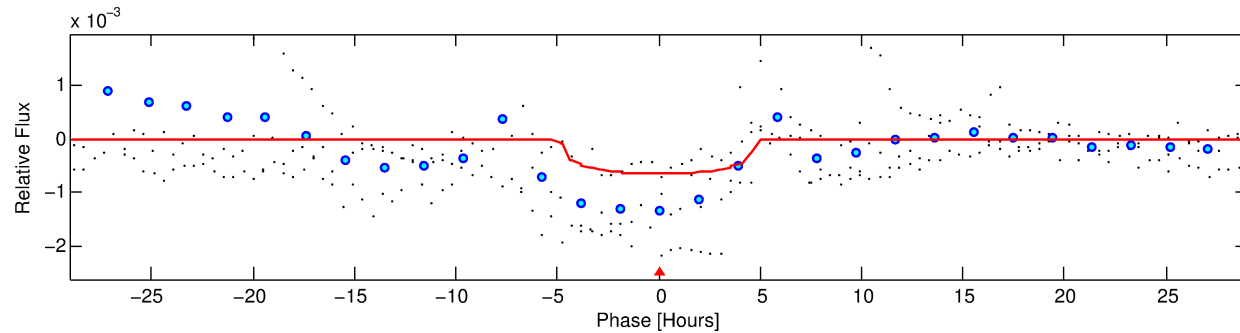
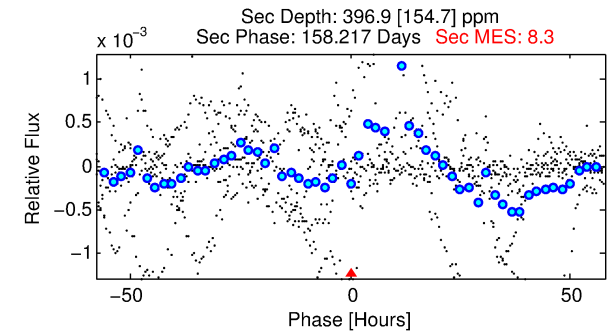
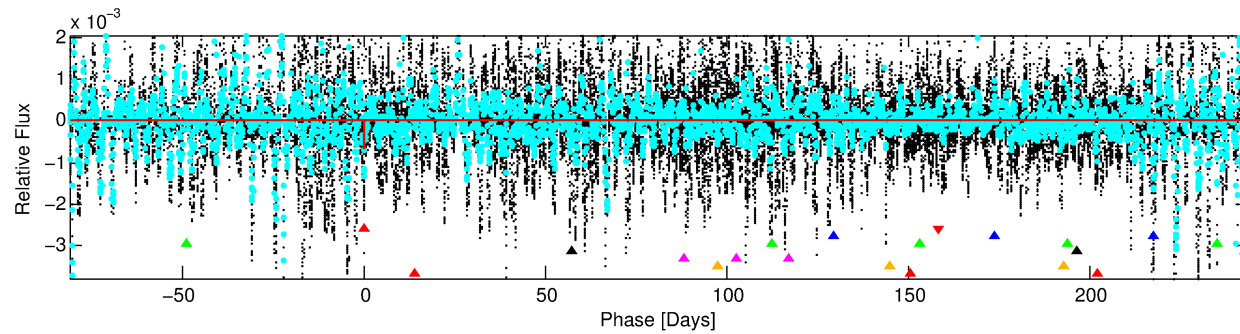
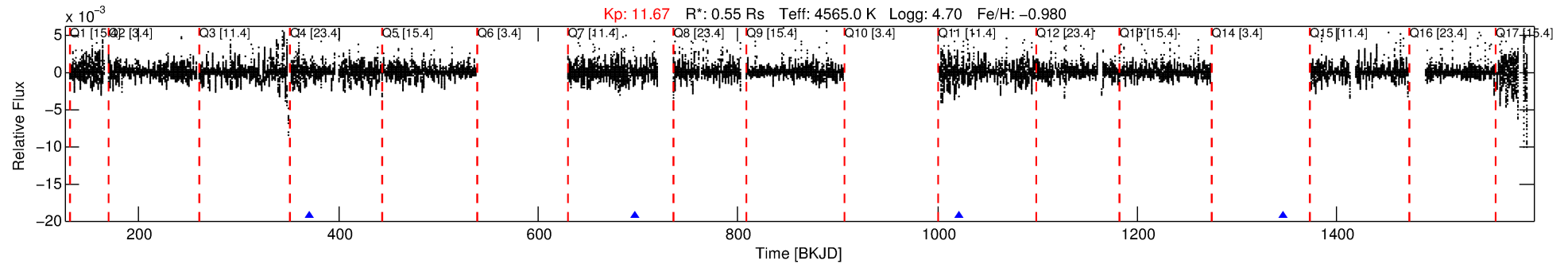
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-01

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 1 of 7 Period: 324.958 d



DV Fit Results:

Period = 324.95830 [0.00668] d
Epoch = 371.4346 [0.0105] BKJD
Rp/R* = 0.0244 [0.0175]
a/R* = 206.05 [526.59]
b = 0.64 [2.43]
Seff = 0.20 [0.03]
Teq = 171 [7] K
Rp = 1.45 [1.05] Re
a = 0.7546 [0.0505] AU
Ag = 58772.90 [87713.67] [0.67 σ]
Teffp = 4124 [1540] K [2.57 σ]

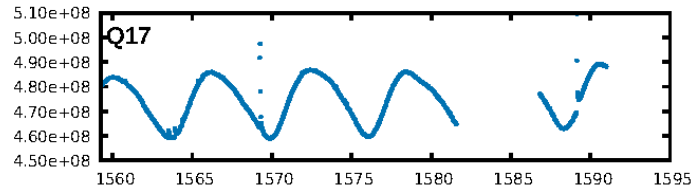
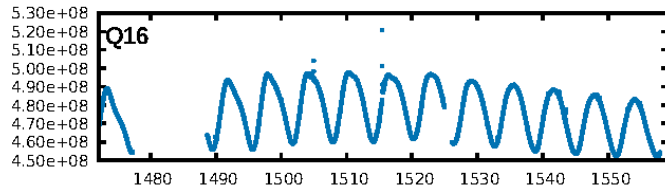
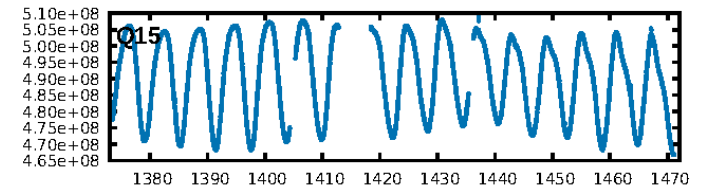
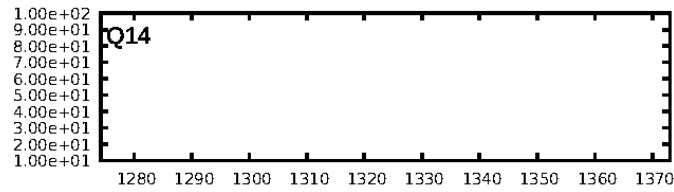
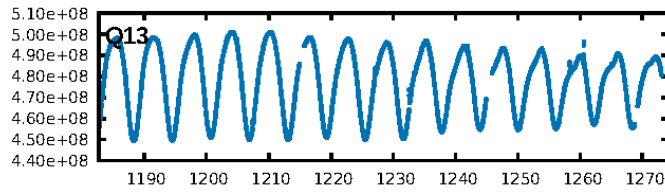
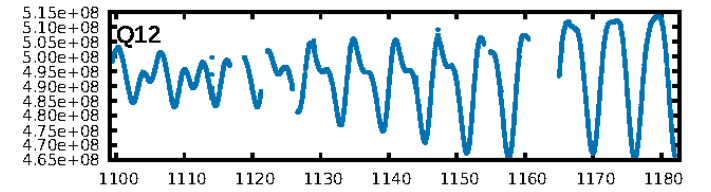
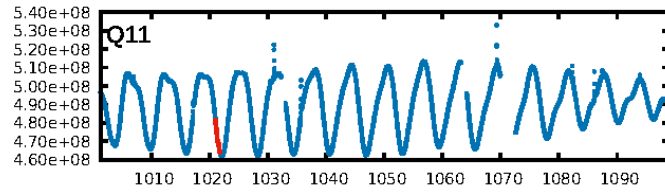
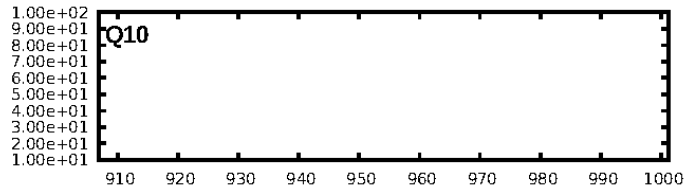
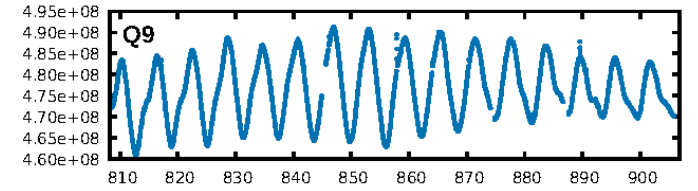
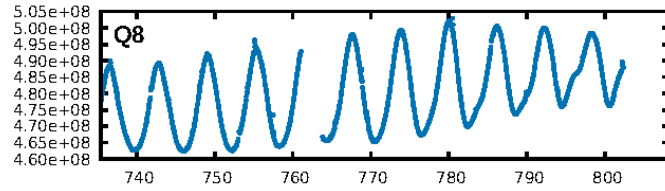
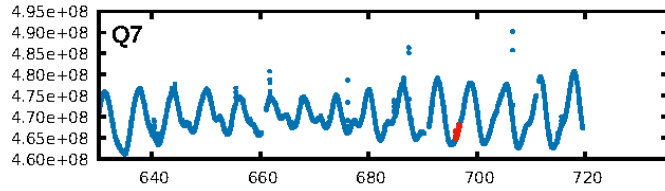
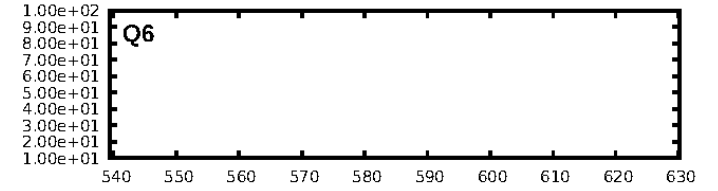
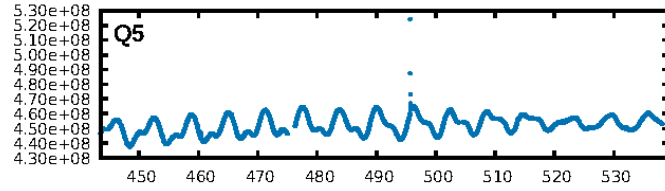
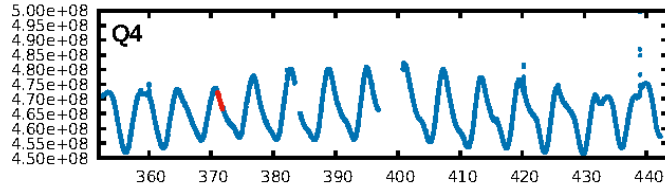
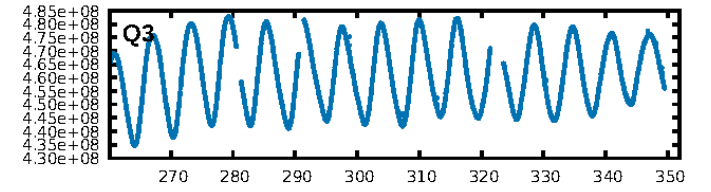
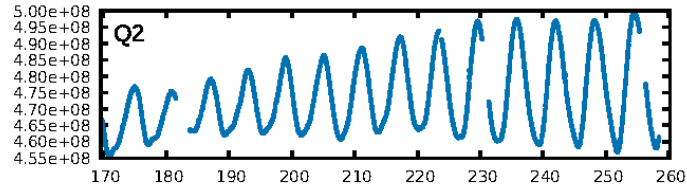
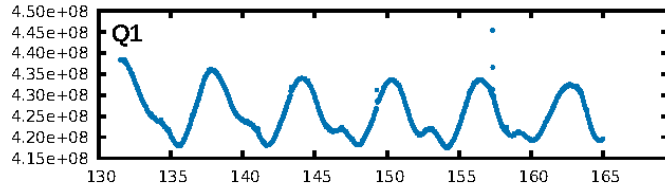
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [95.20 σ]
LongPeriod-sig: 100.0% [201.74 σ]
ModelChiSquare2-sig: 5.6%
ModelChiSquareGof-sig: 84.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -15.58
Centroid-sig: 39.1%
Centroid-so: 0.225 arcsec [0.62 σ]
OotOffset-rm: 0.359 arcsec [0.42 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.216 arcsec [0.27 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

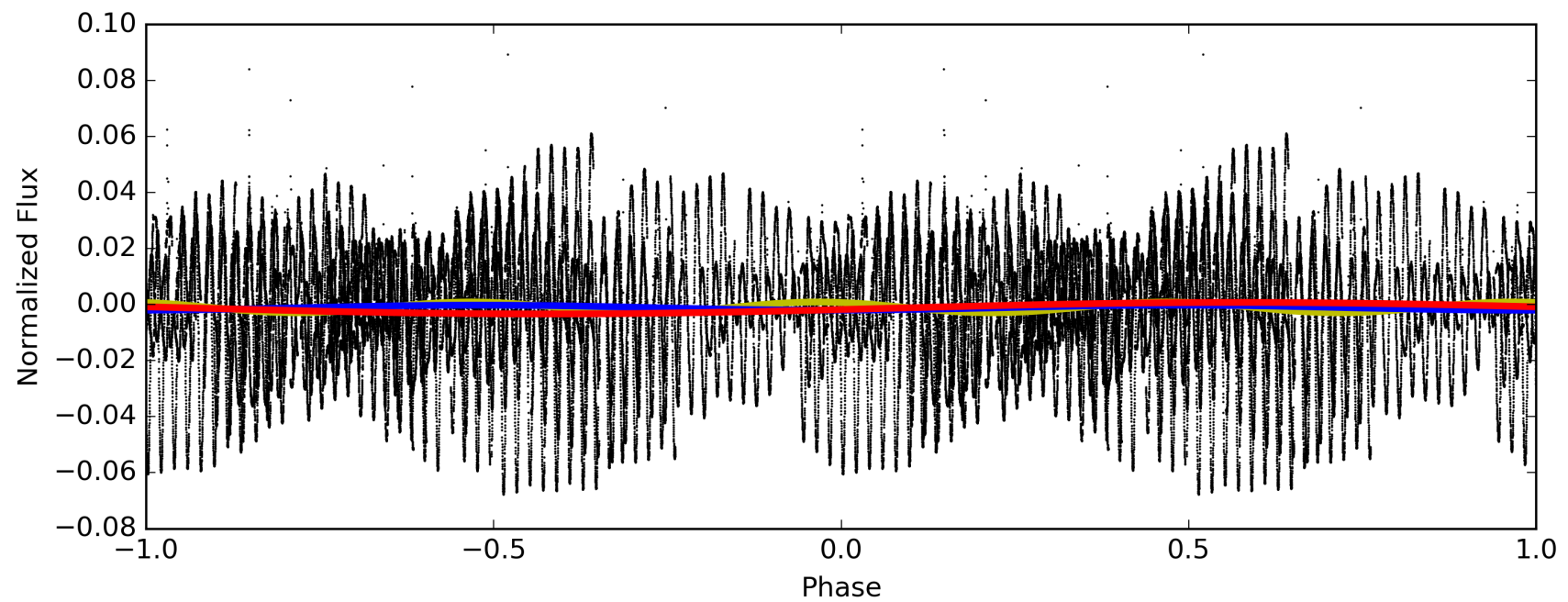
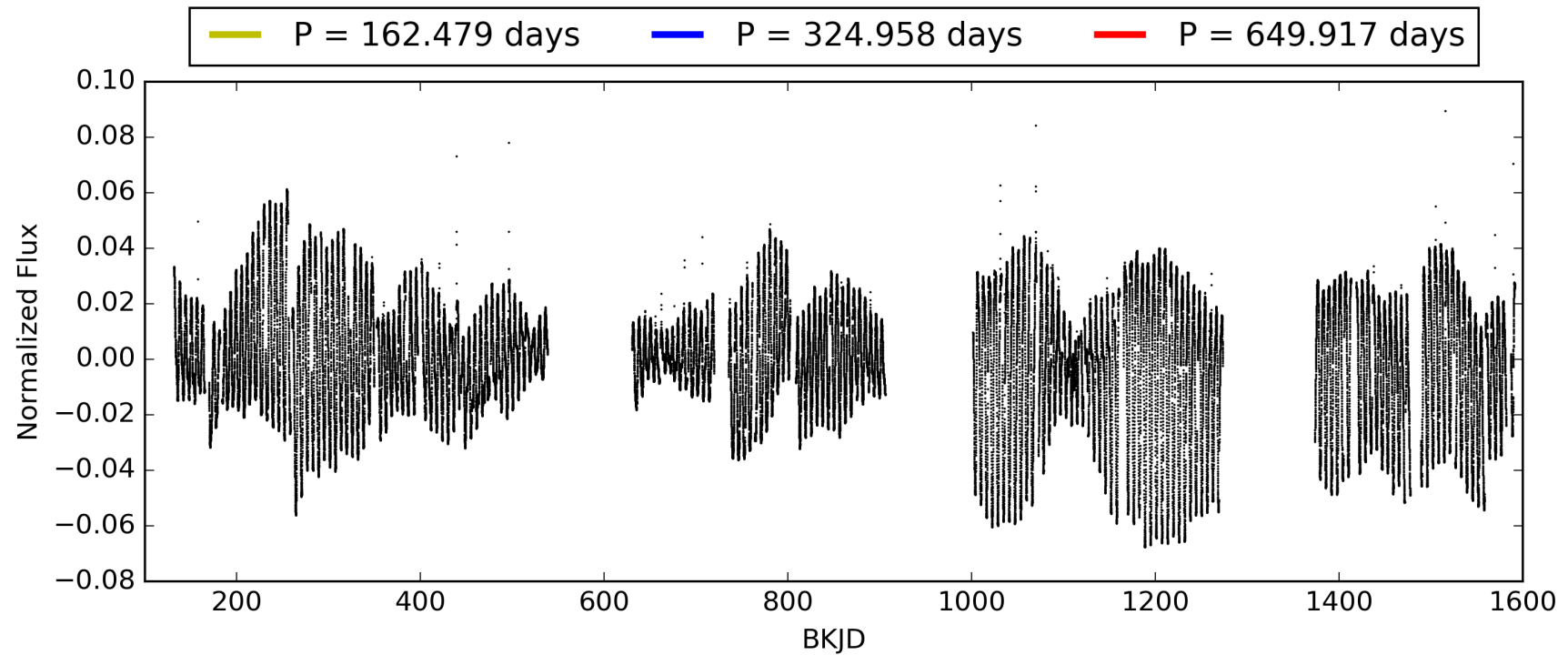
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:51:10 Z

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

TCE 003128488-01, PDC Light Curves

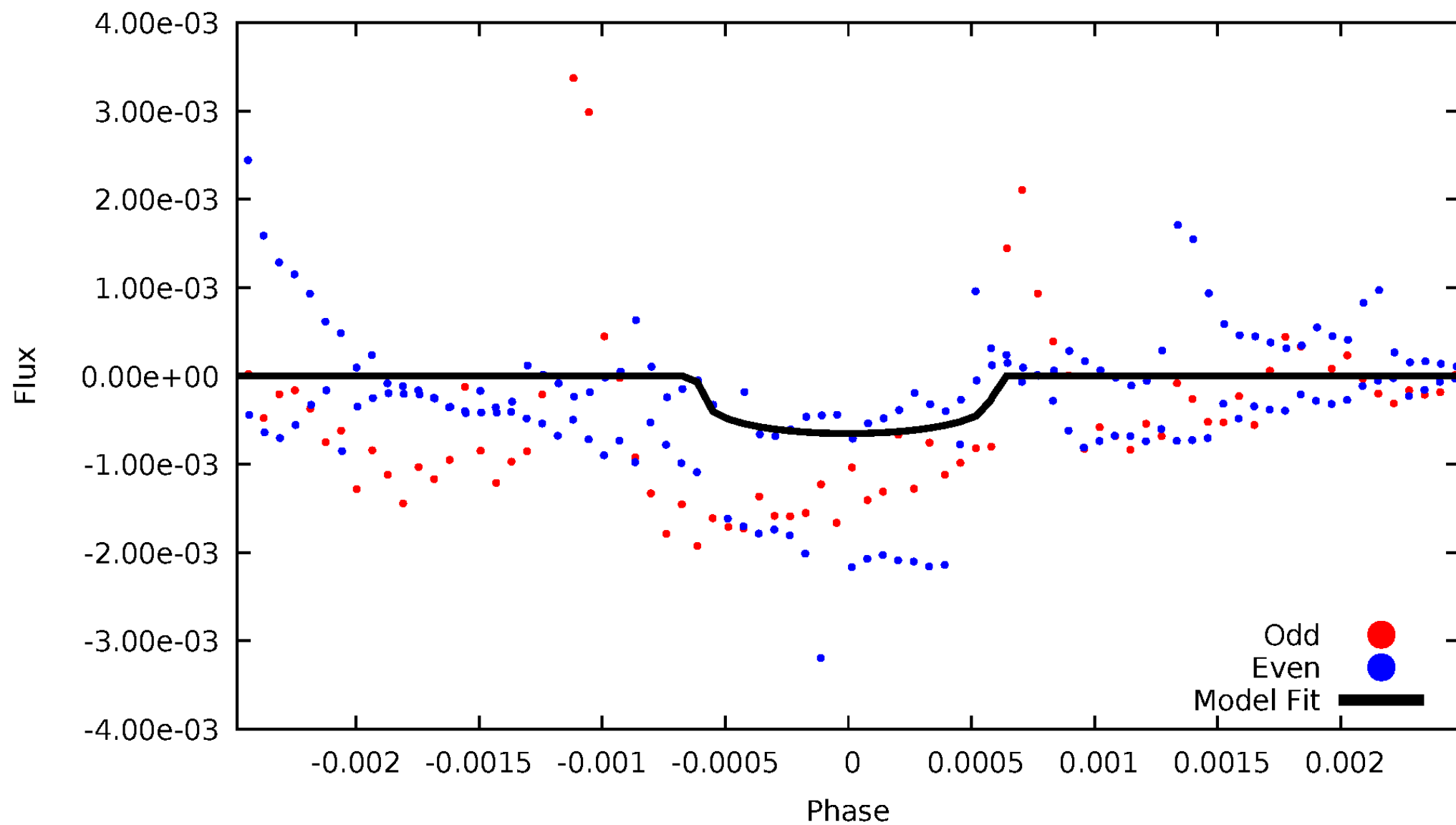


TCE 003128488-01



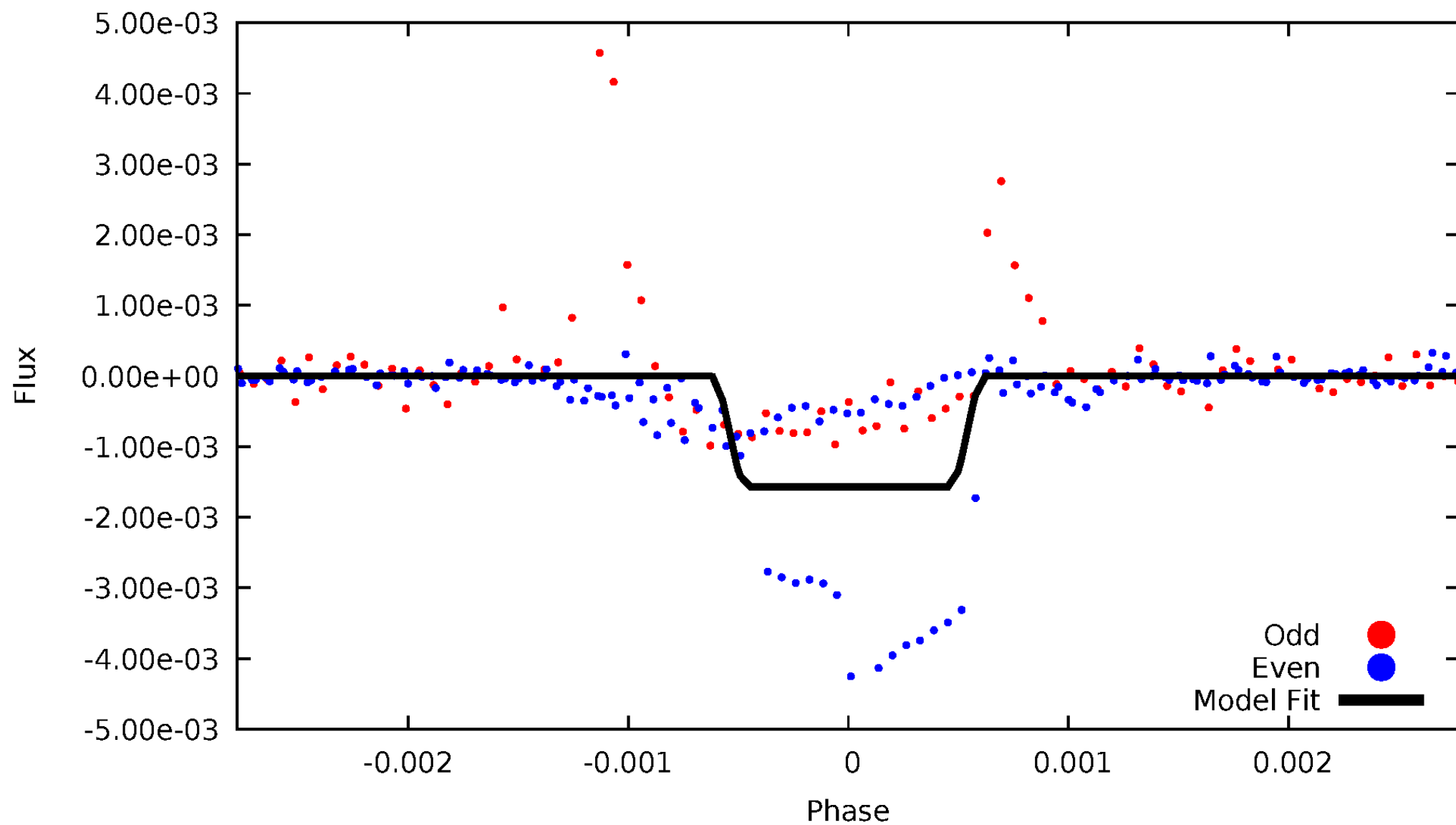
DV Odd/Even

TCE 003128488-01



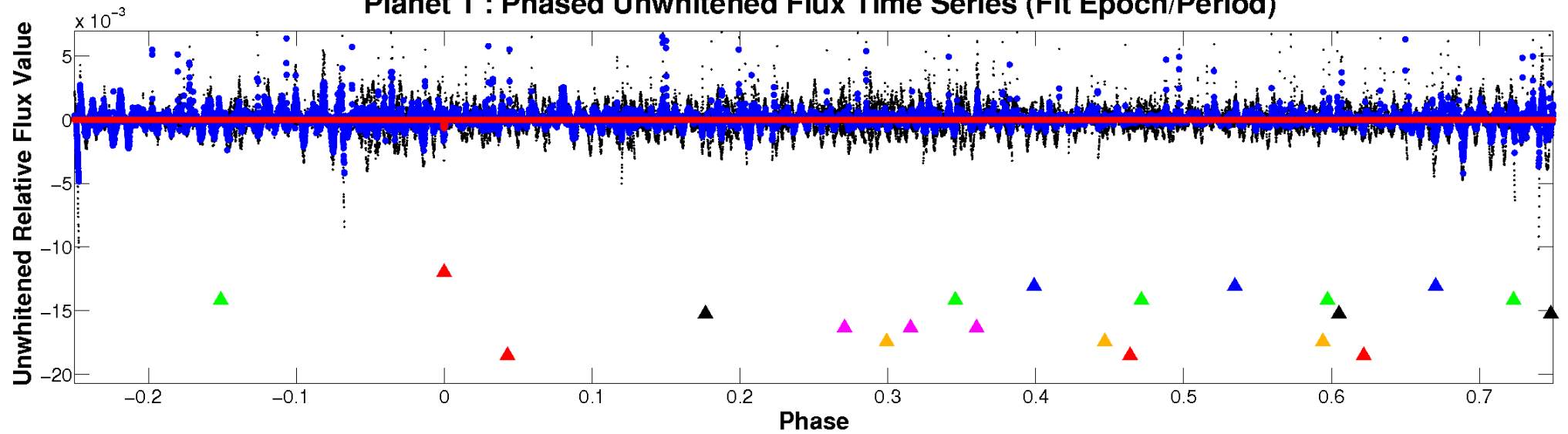
ALT Odd/Even

TCE 003128488-01

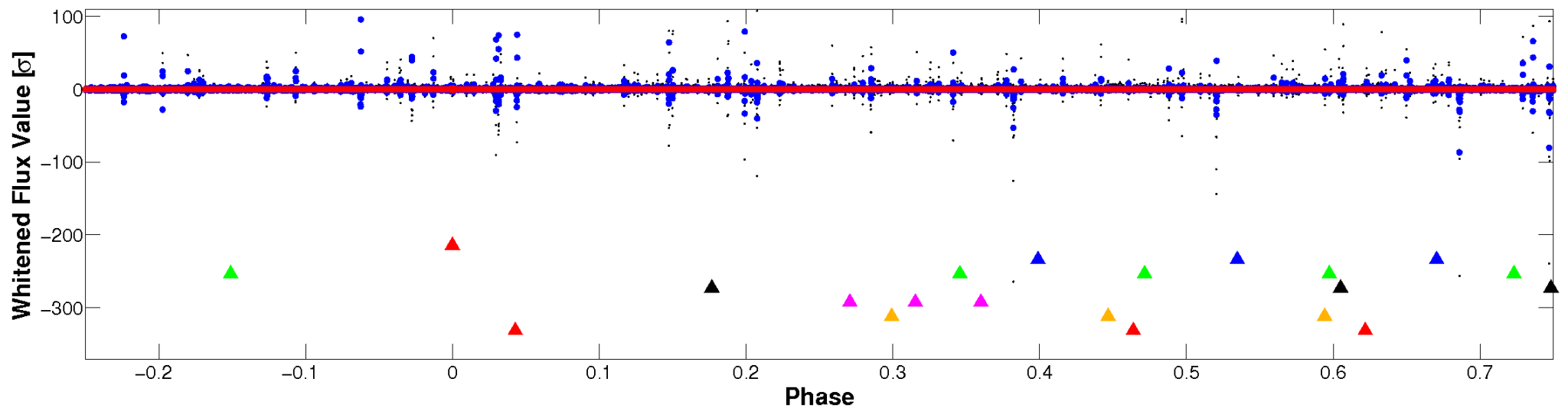


Non-Whitened Vs. Whitened Light Curve

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

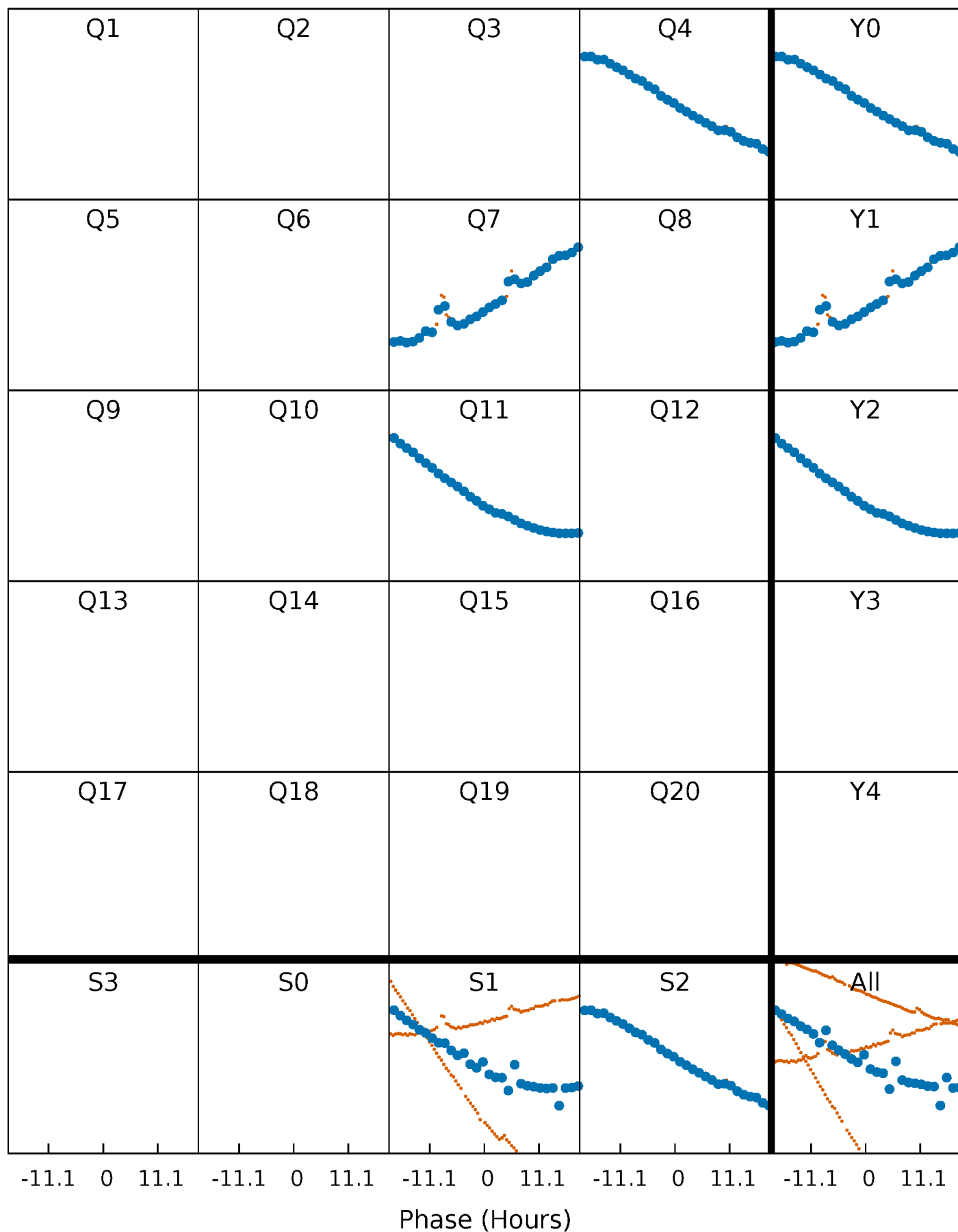


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



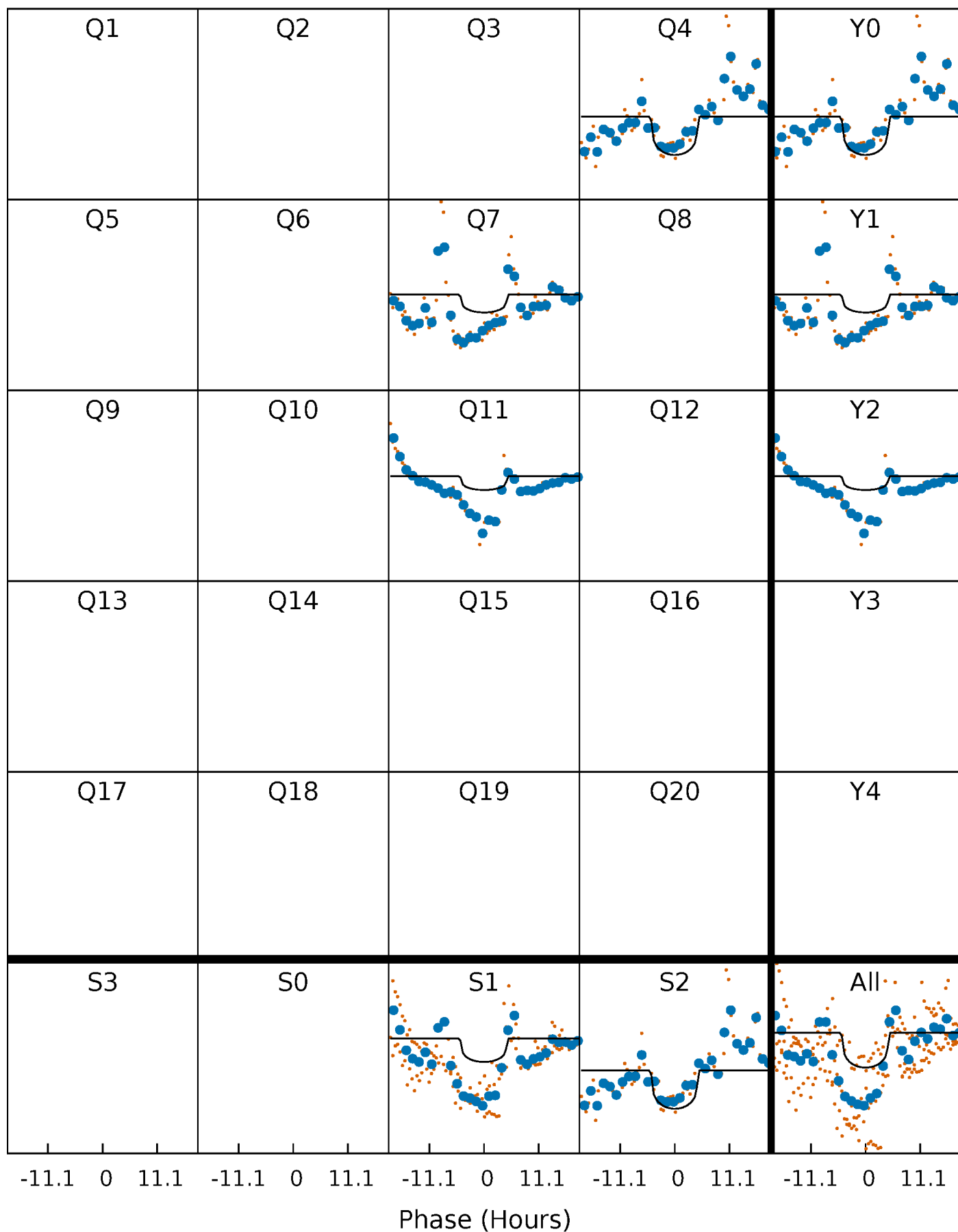
PDC Quarter-Phased Transit Curves

TCE 003128488-01 P=324.958304 Days $T_0=371.434562$ (BKJD)



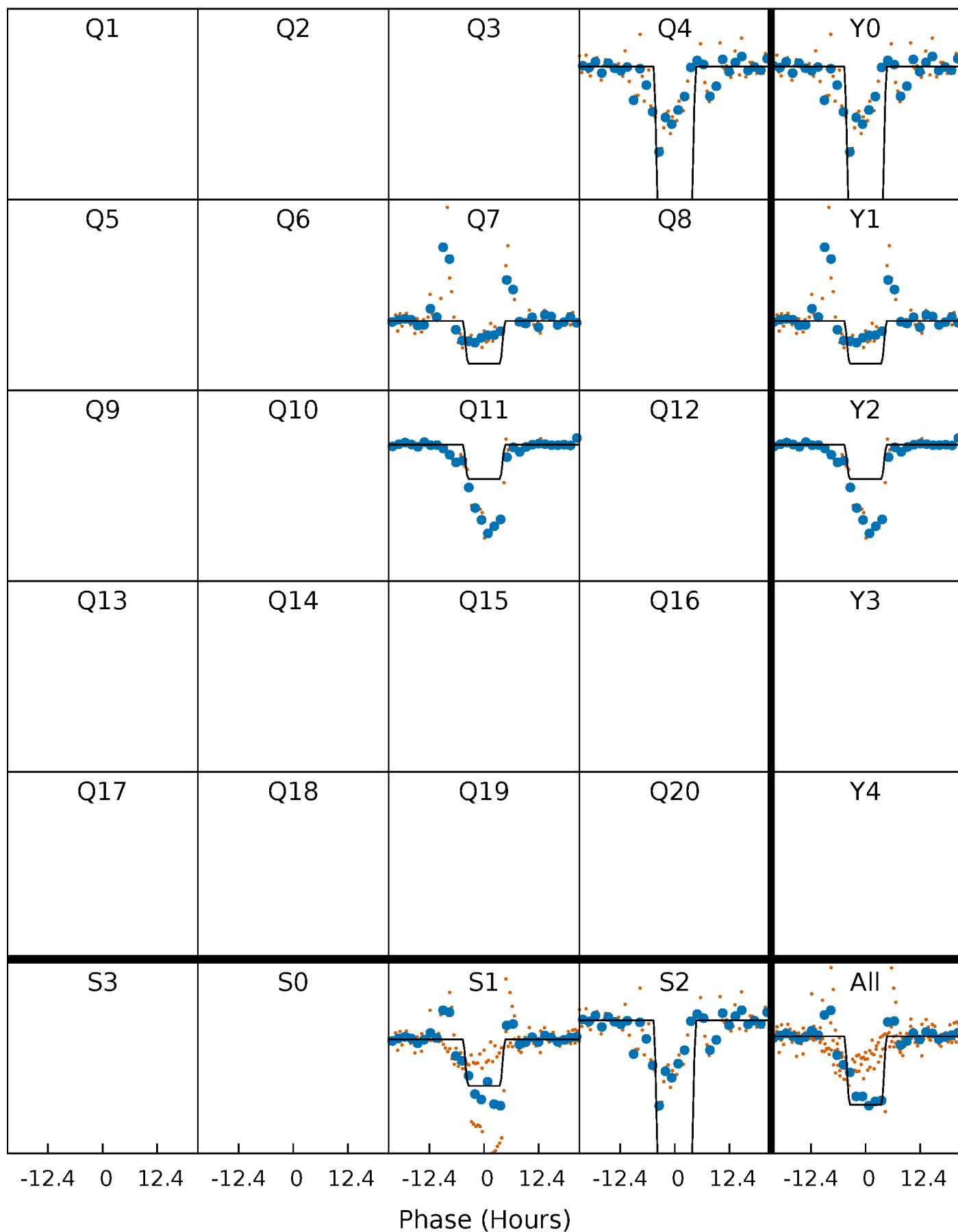
DV Quarter-Phased Transit Curves

TCE 003128488-01 P=324.958304 Days $T_0=371.434562$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

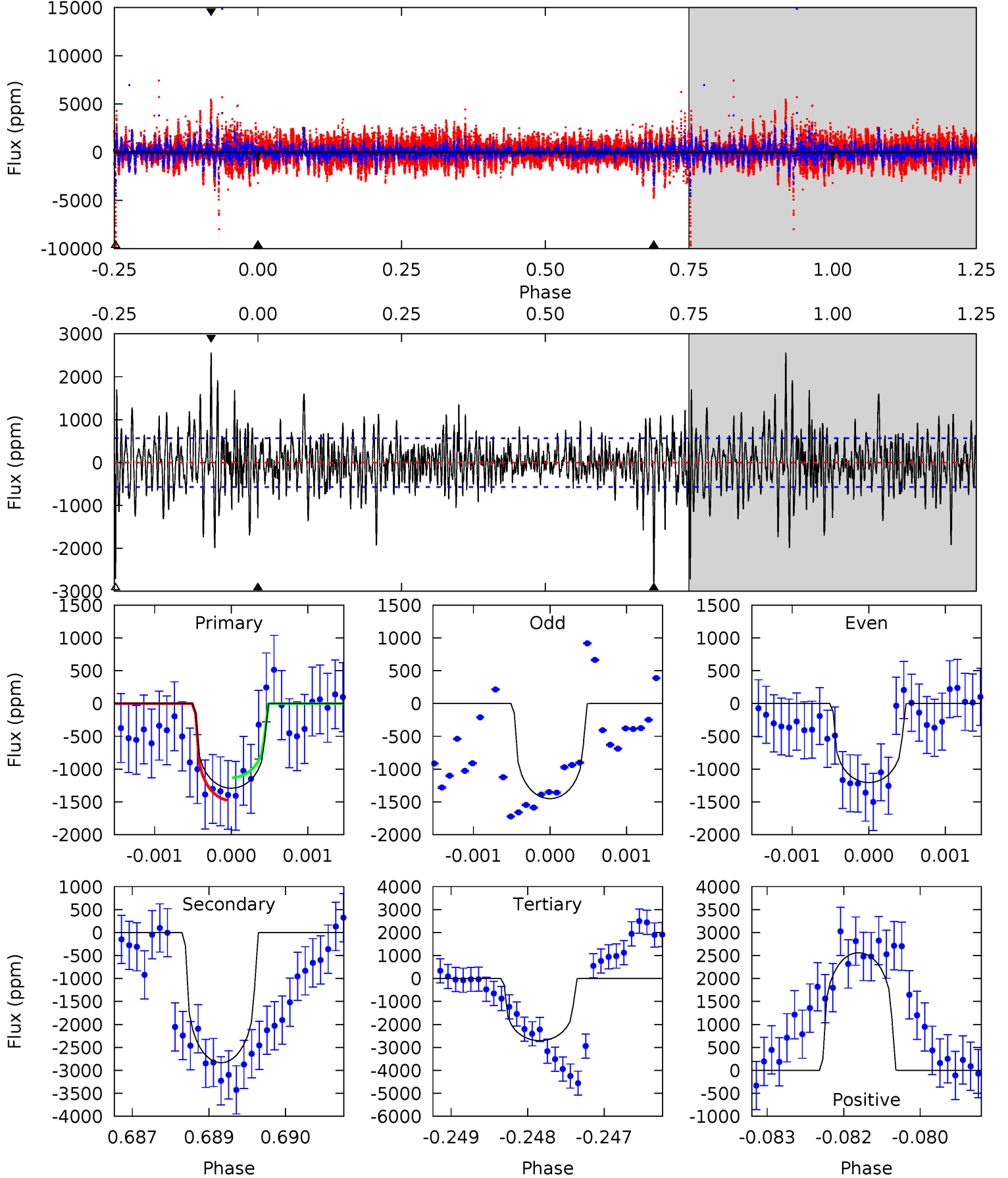
TCE 003128488-01 P=324.914038 Days $T_0=371.482905$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-01, P = 324.958304 Days, E = 46.476258 Days

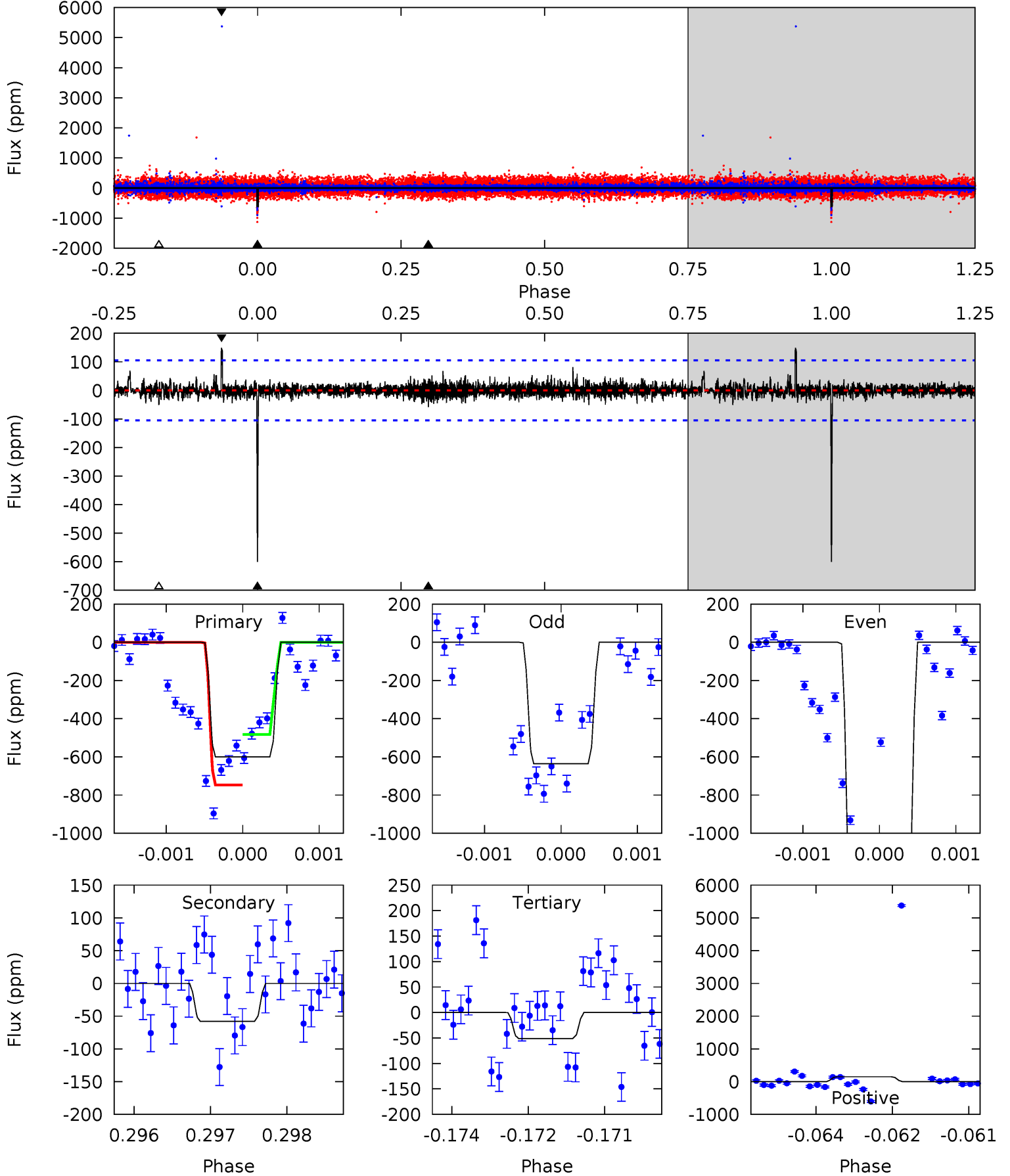
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	26.9	25.7	24.3	5.40	3.21	4.15	-13.4	-12.0	1.22	2.60	0.98	0.90	0.47	1.62



Alt Model-Shift Uniqueness Test

003128488-01, P = 324.914038 Days, E = 46.568867 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.0	2.98	2.63	7.66	5.41	3.23	0.71	28.3	23.3	0.35	-4.68	23.4	2.35	0.20	6.65



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2835 ± 105	$1.54^{+0.94}_{-0.86}$	238^{+8}_{-8}	6333^{+4258}_{-1323}	$392999^{+1593586}_{-246666}$
Alt.	-58 ± 19	$2.40^{+1.04}_{-0.97}$	238^{+8}_{-8}	2697^{+405}_{-294}	3121^{+5804}_{-1808}

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

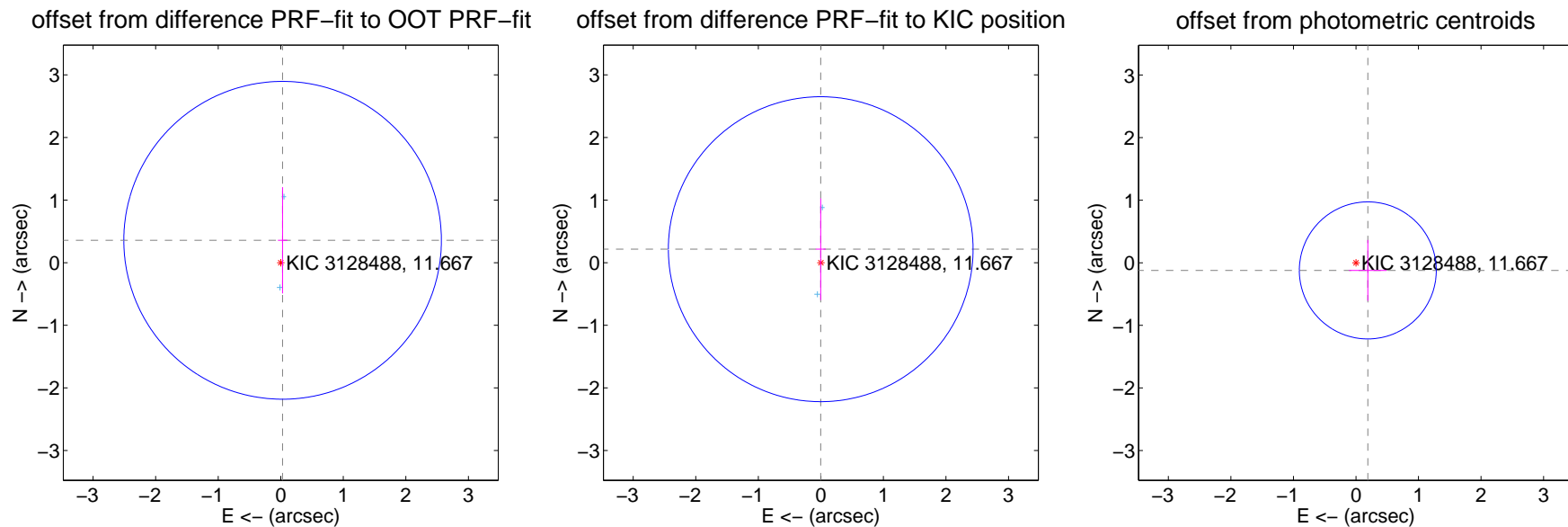
DV Centroid Data

Supplemental centroid analysis for 003128488-01. **Kepler magnitude: 11.67.** Transit SNR 5.51

There are 2 quarters with good PRF difference image offsets

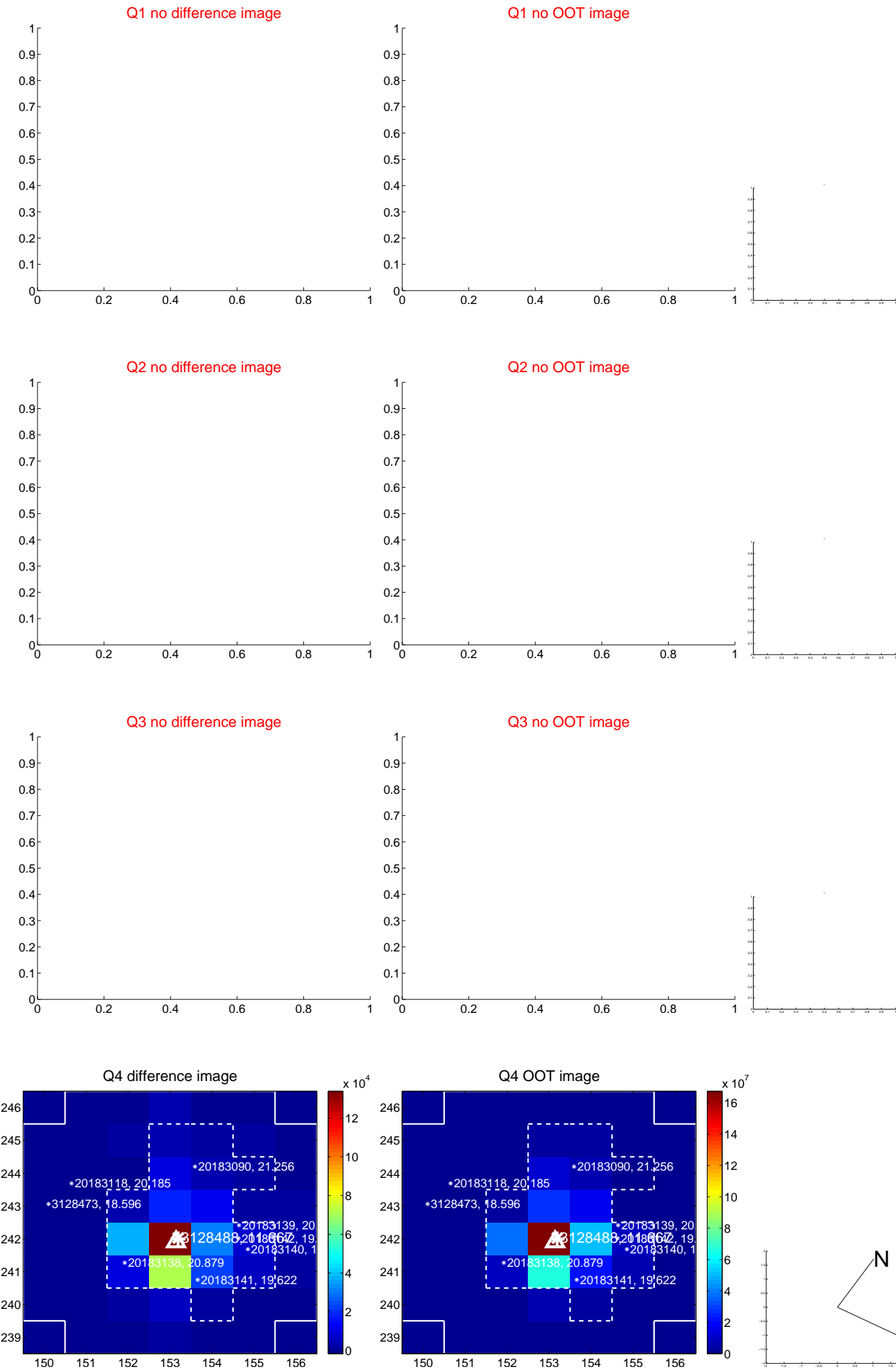
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.359 ± 0.846	0.42	-0.030 ± 0.075	0.357 ± 0.849
PRF-fit source offset from KIC position	0.216 ± 0.812	0.27	0.002 ± 0.080	0.216 ± 0.812
photometric centroid source offset	0.23 ± 0.36	0.62	-0.19 ± 0.30	-0.12 ± 0.49

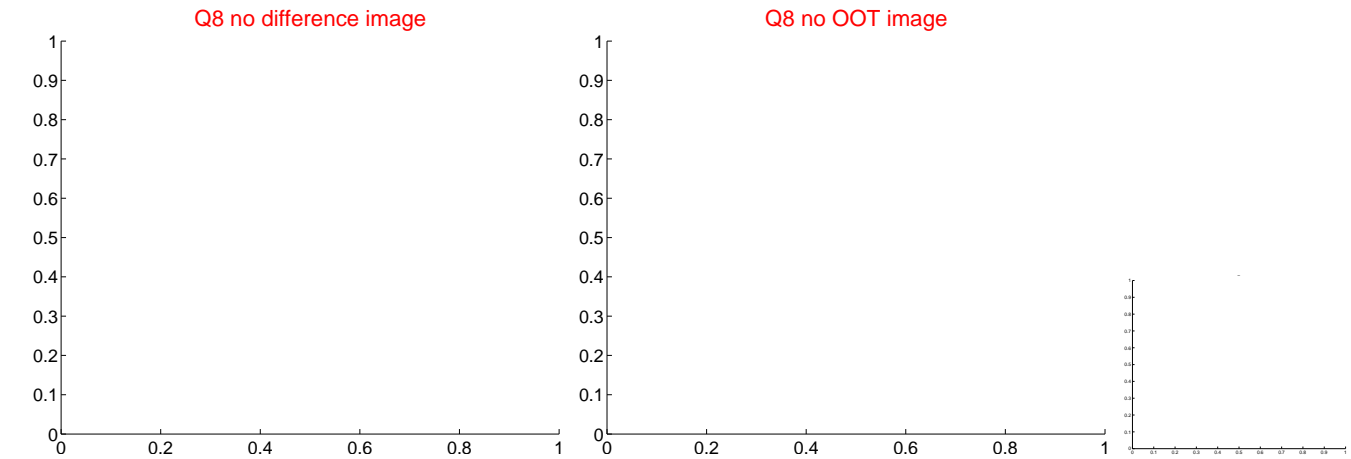
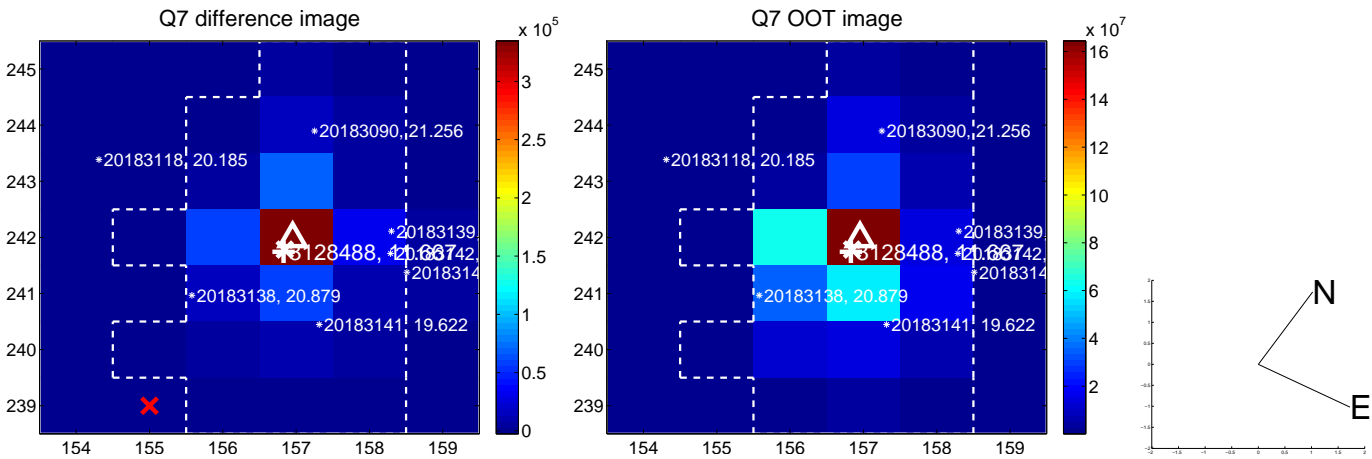
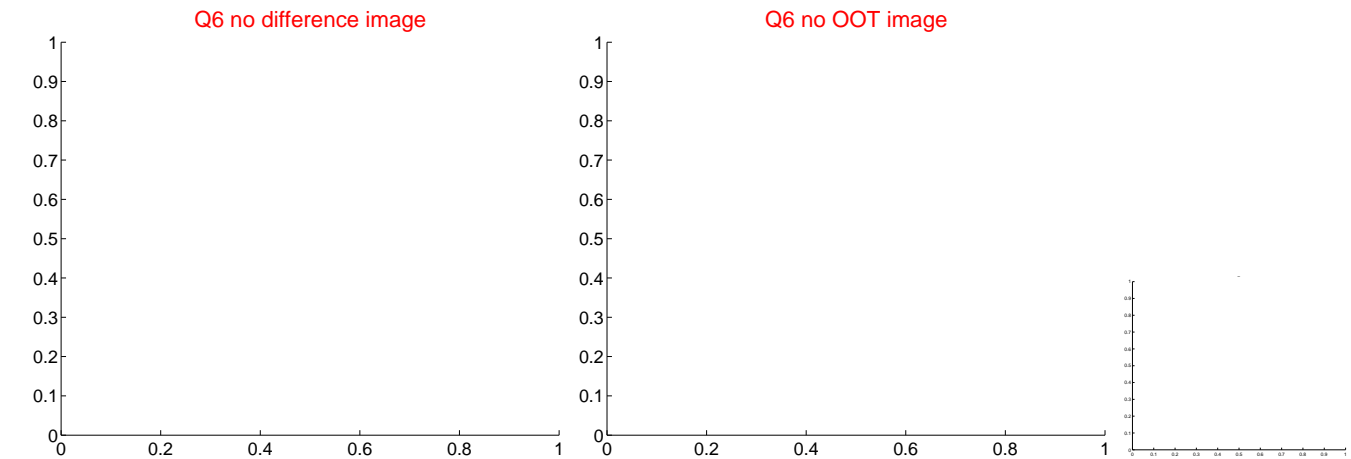
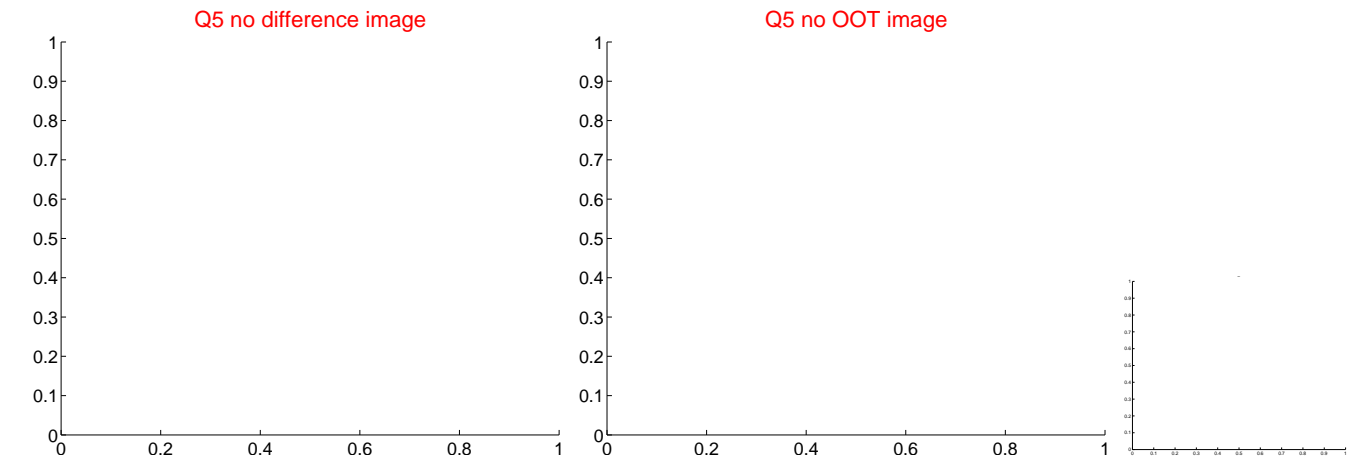


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

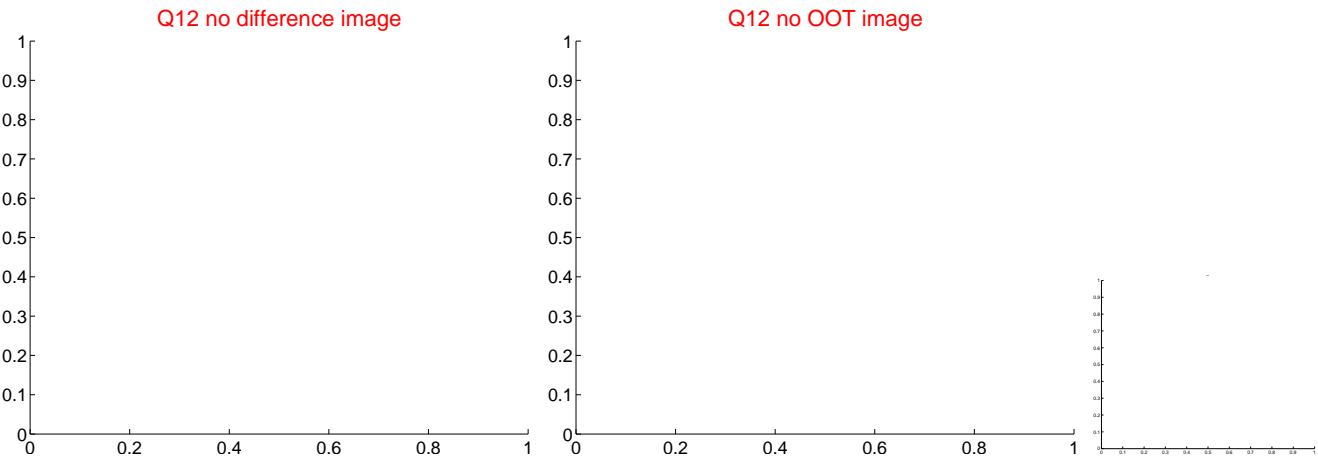
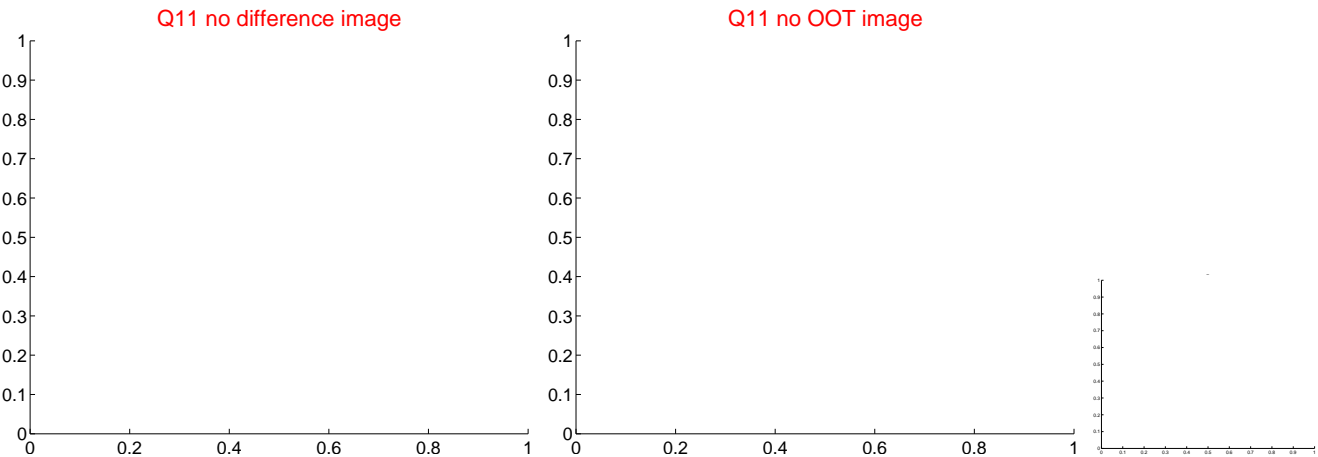
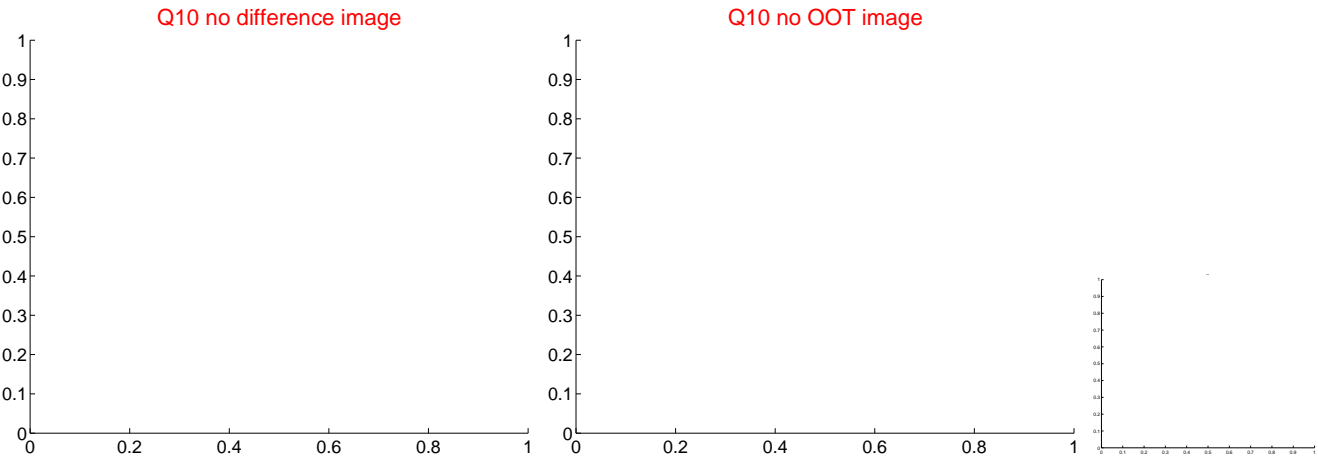
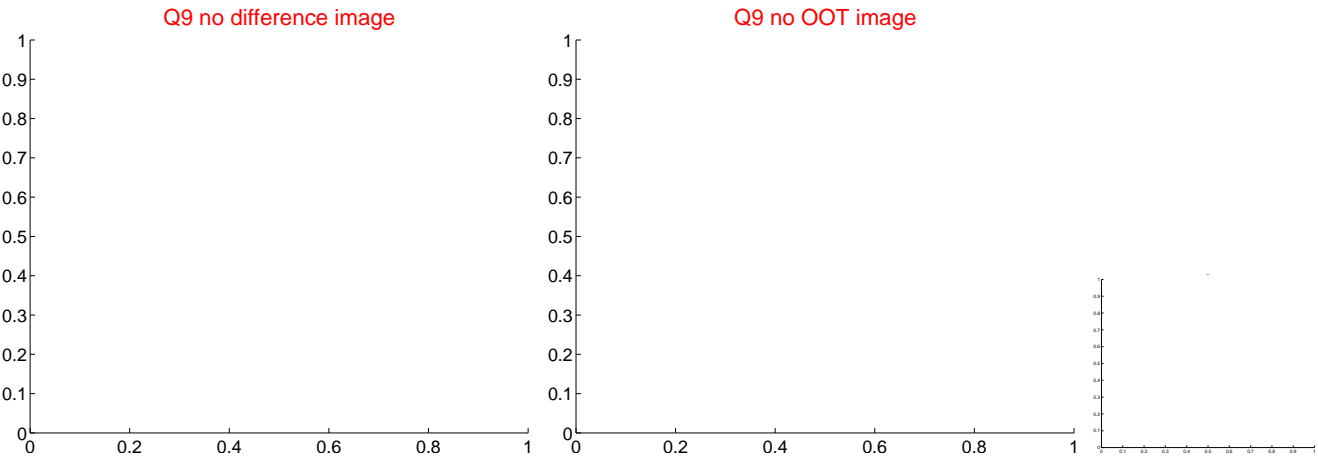
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



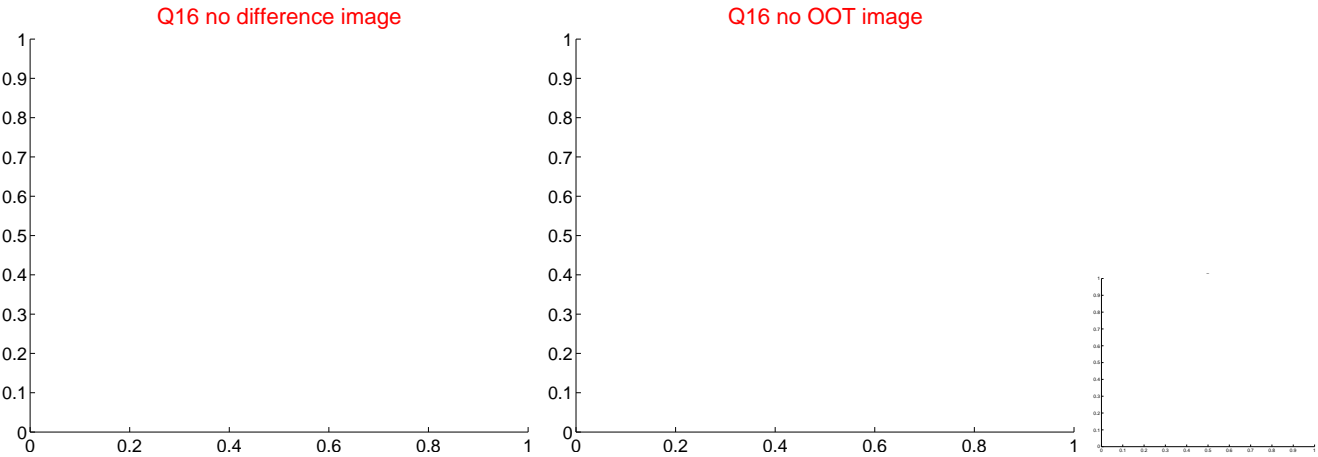
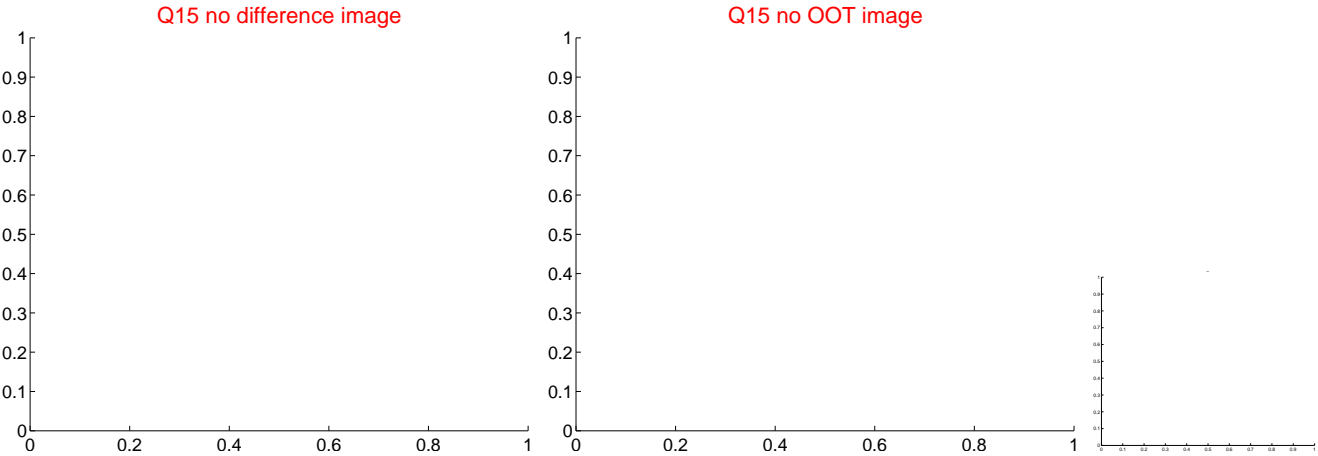
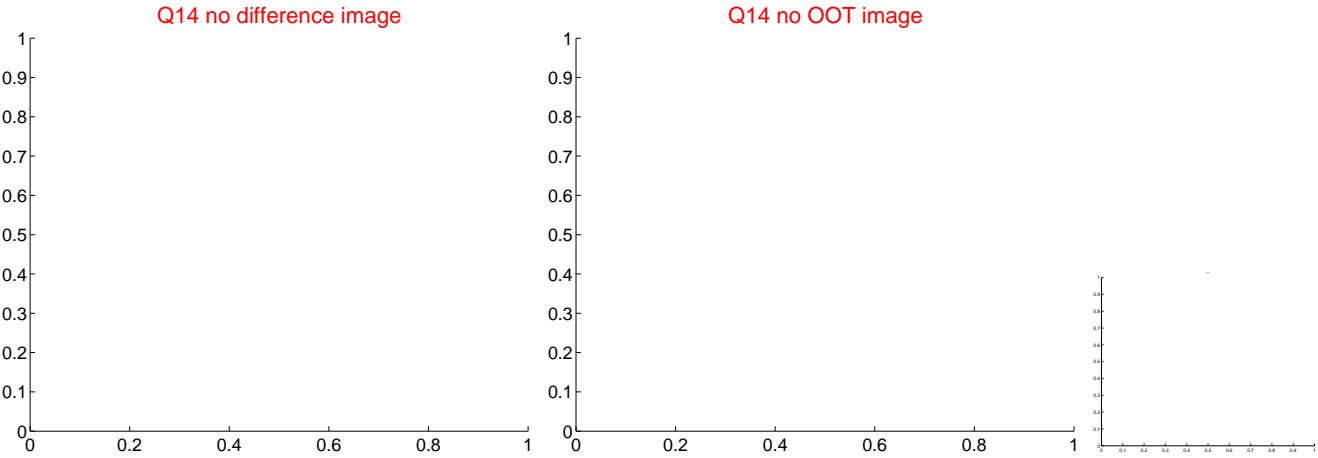
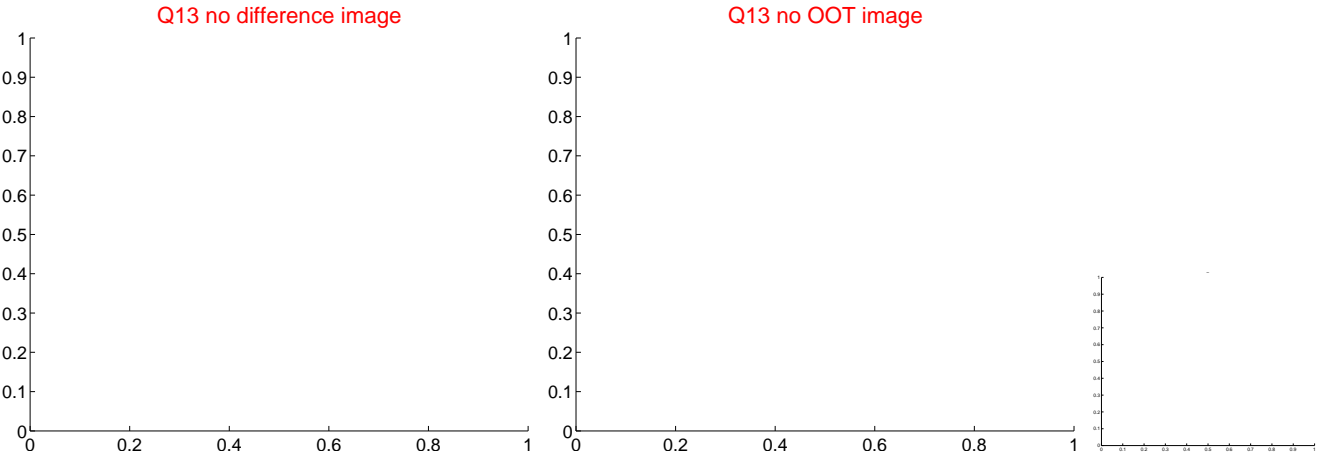
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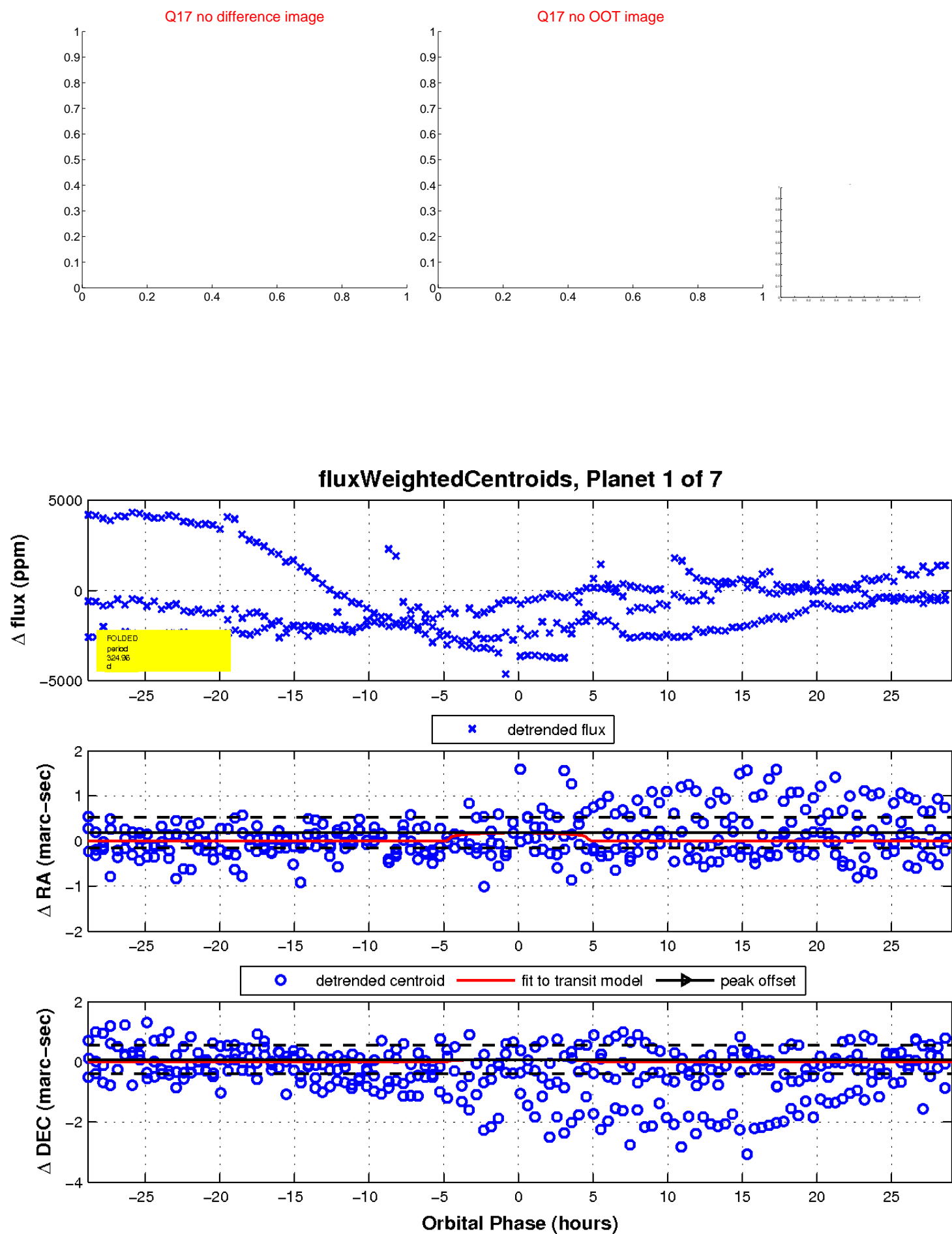
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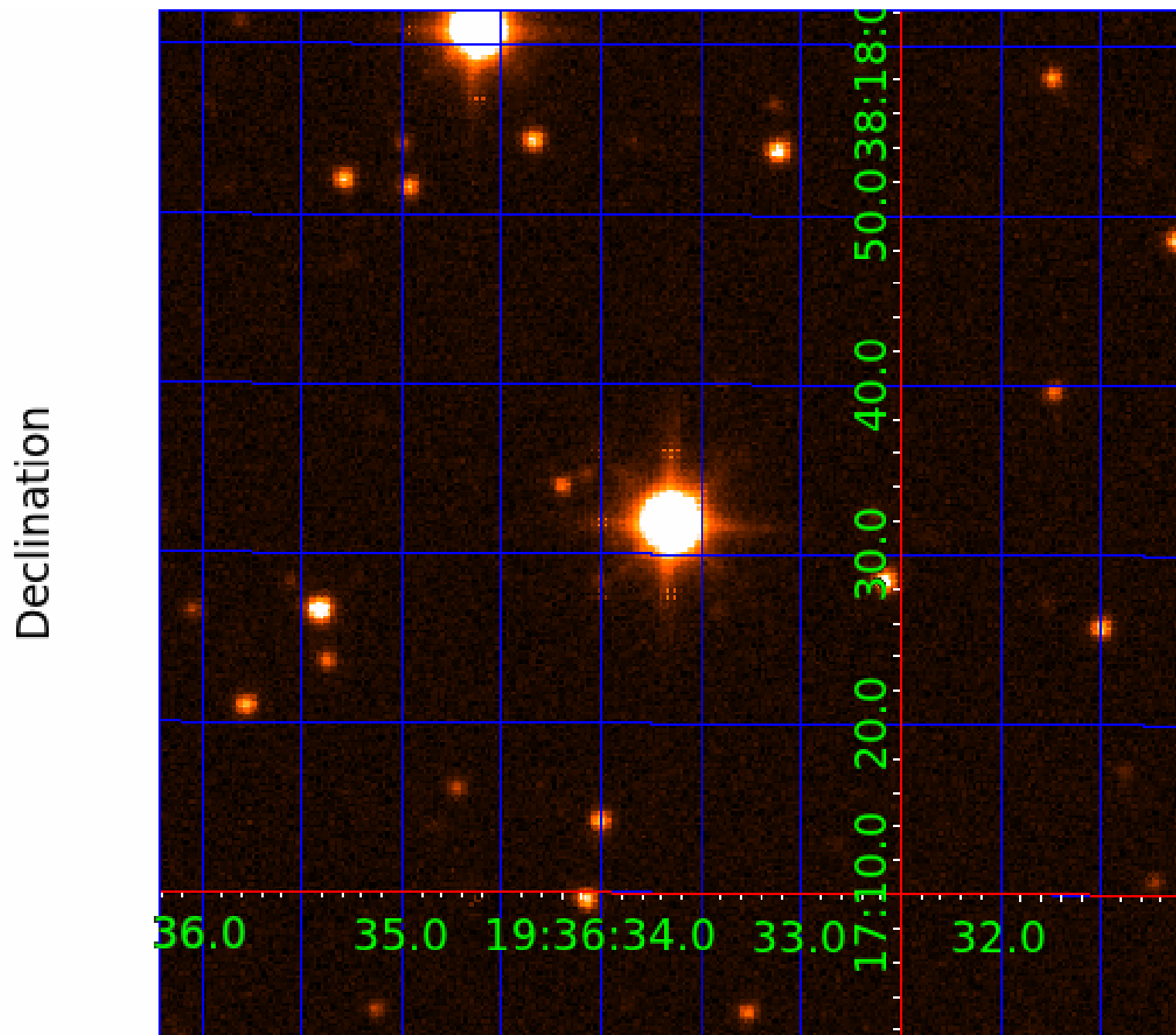
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image



KIC 003128488

Q1-17 DR25 TCE Parameters

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TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

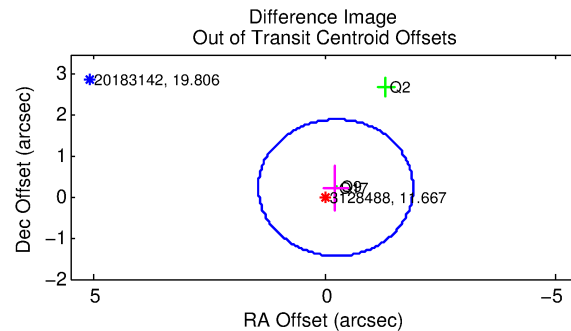
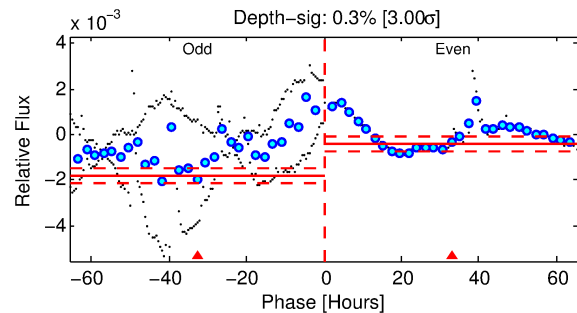
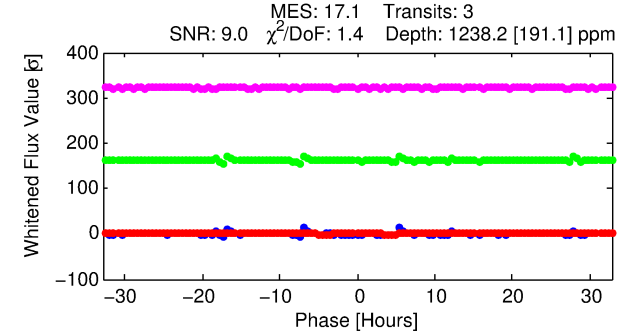
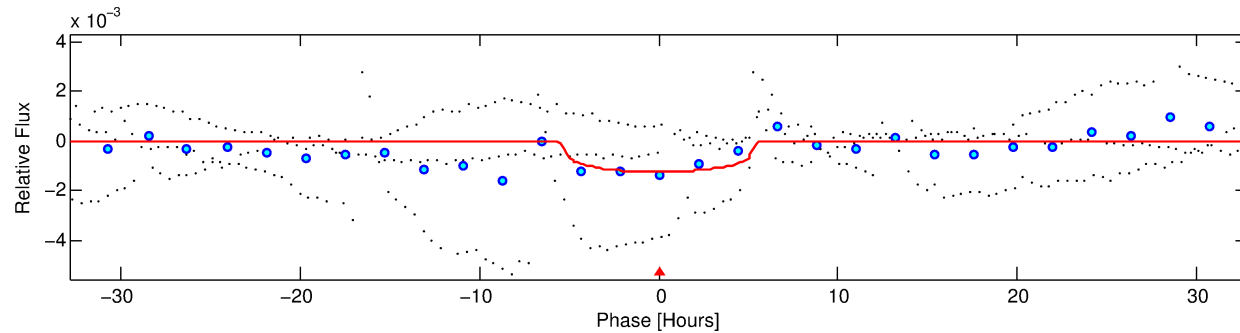
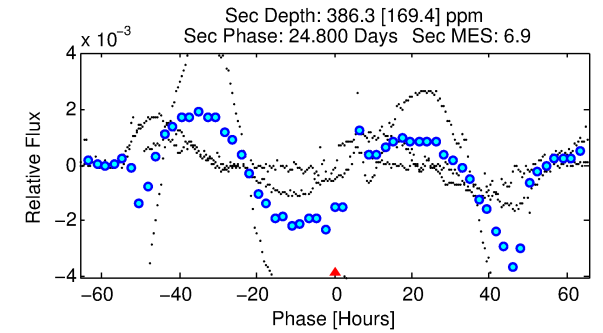
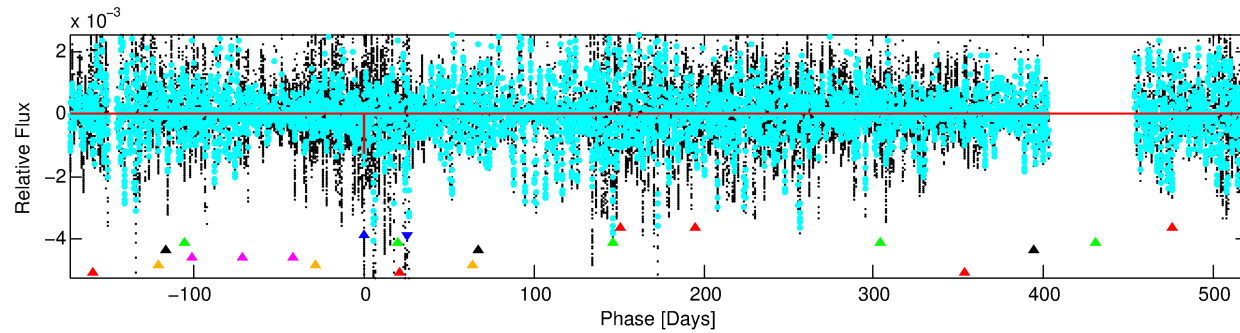
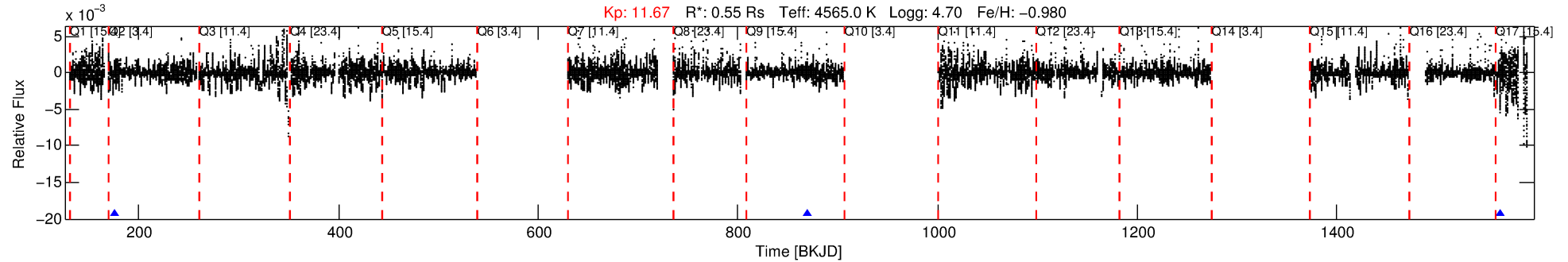
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-02

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 2 of 7 Period: 694.037 d



DV Fit Results:

Period = 694.03694 [0.00372] d
Epoch = 176.1124 [0.0046] BKJD
Rp/R* = 0.0314 [0.0107]
a/R* = 499.64 [575.40]
b = 0.00 [253.75]
Seff = 0.07 [0.01]
Teq = 133 [5] K
Rp = 1.87 [0.66] Re
a = 1.2515 [0.0837] AU
Ag = 95362.23 [78028.85] [1.22σ]
Teffp = 3614 [742] K [4.69σ]

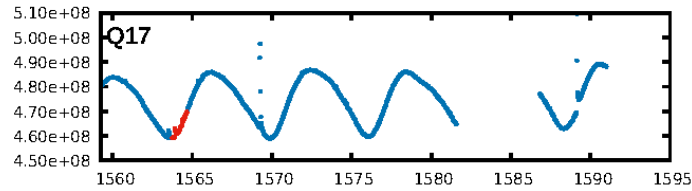
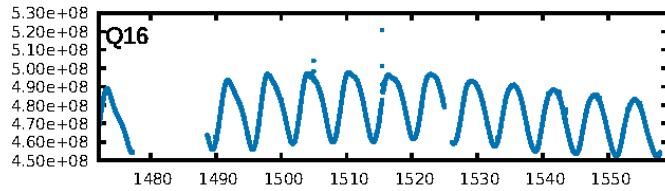
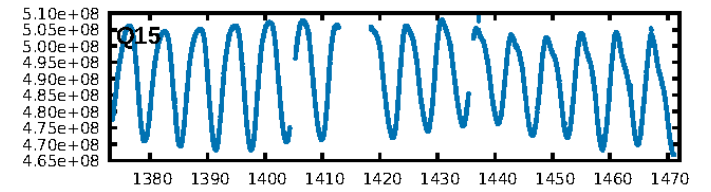
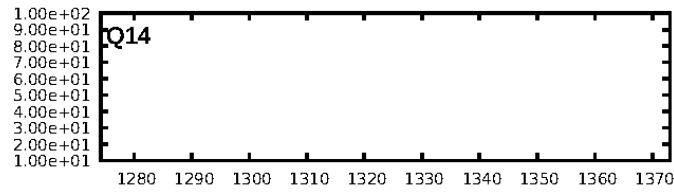
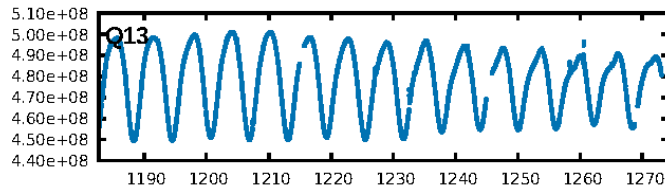
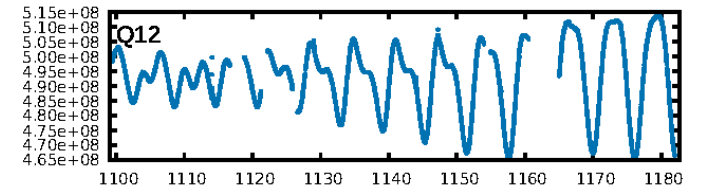
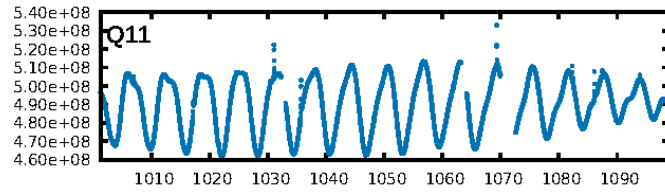
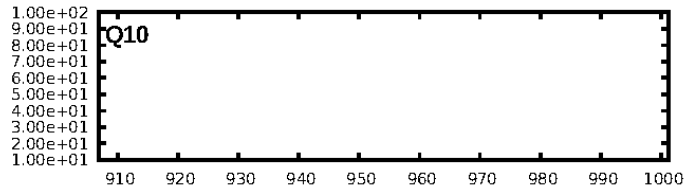
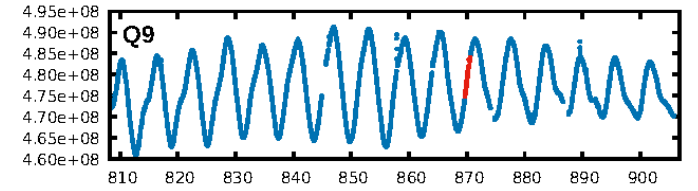
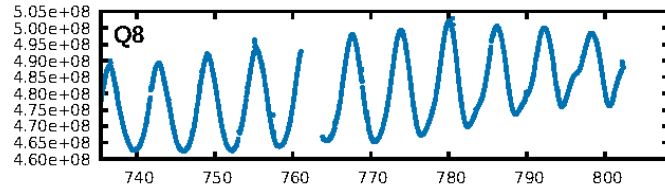
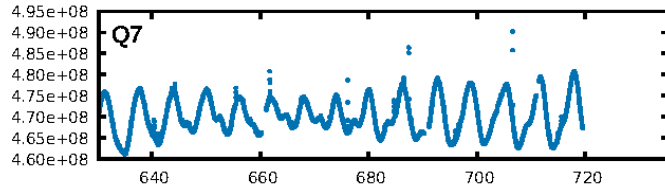
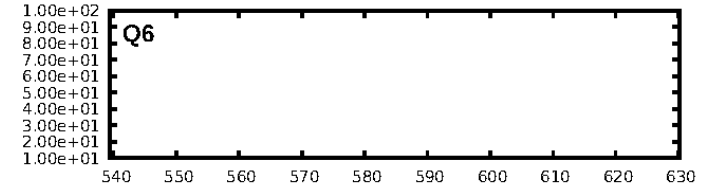
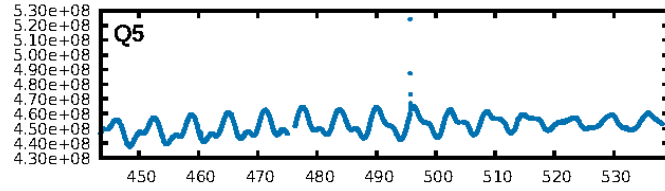
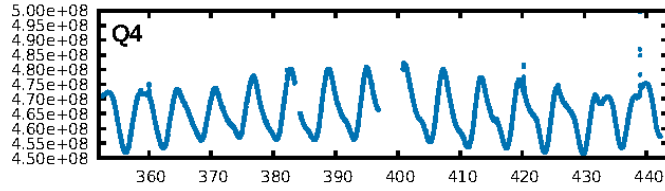
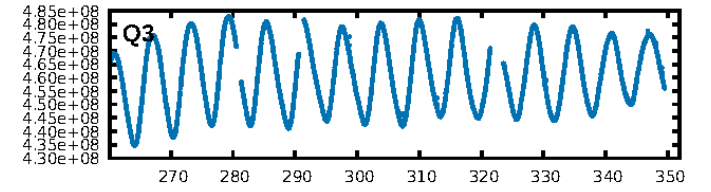
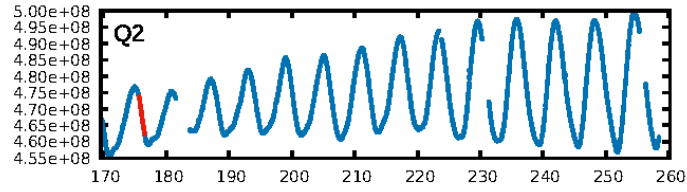
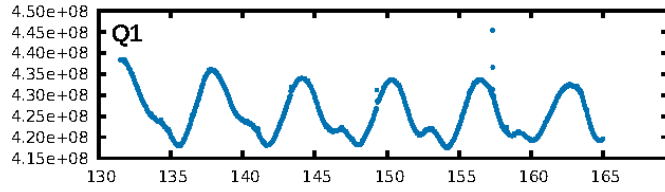
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [57.73σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 61.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.2419
Centroid-sig: 0.1%
Centroid-so: 0.641 arcsec [2.26σ]
OotOffset-rm: 0.336 arcsec [0.60σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-rm: 0.244 arcsec [0.37σ]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

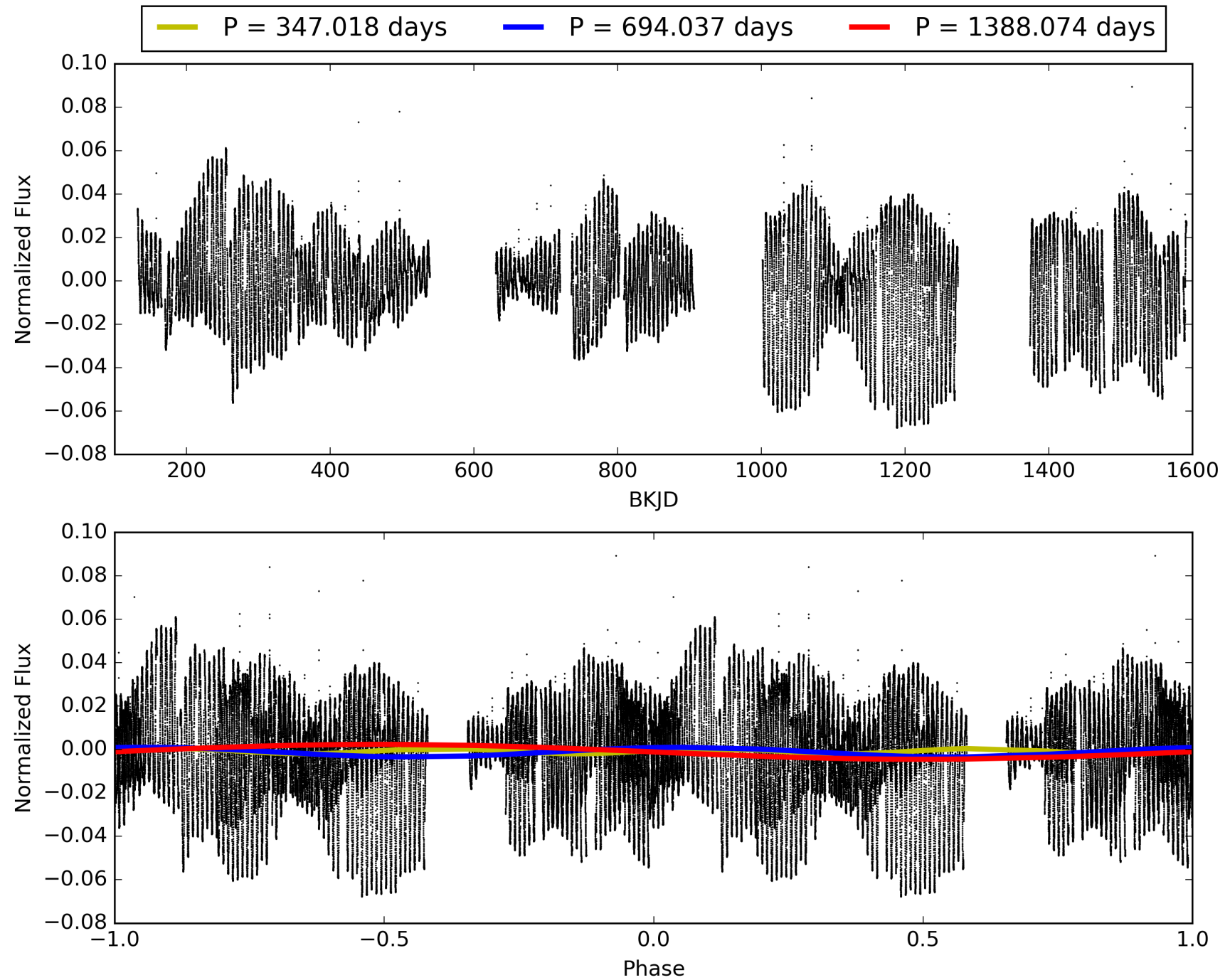
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:51:20 Z

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

TCE 003128488-02, PDC Light Curves

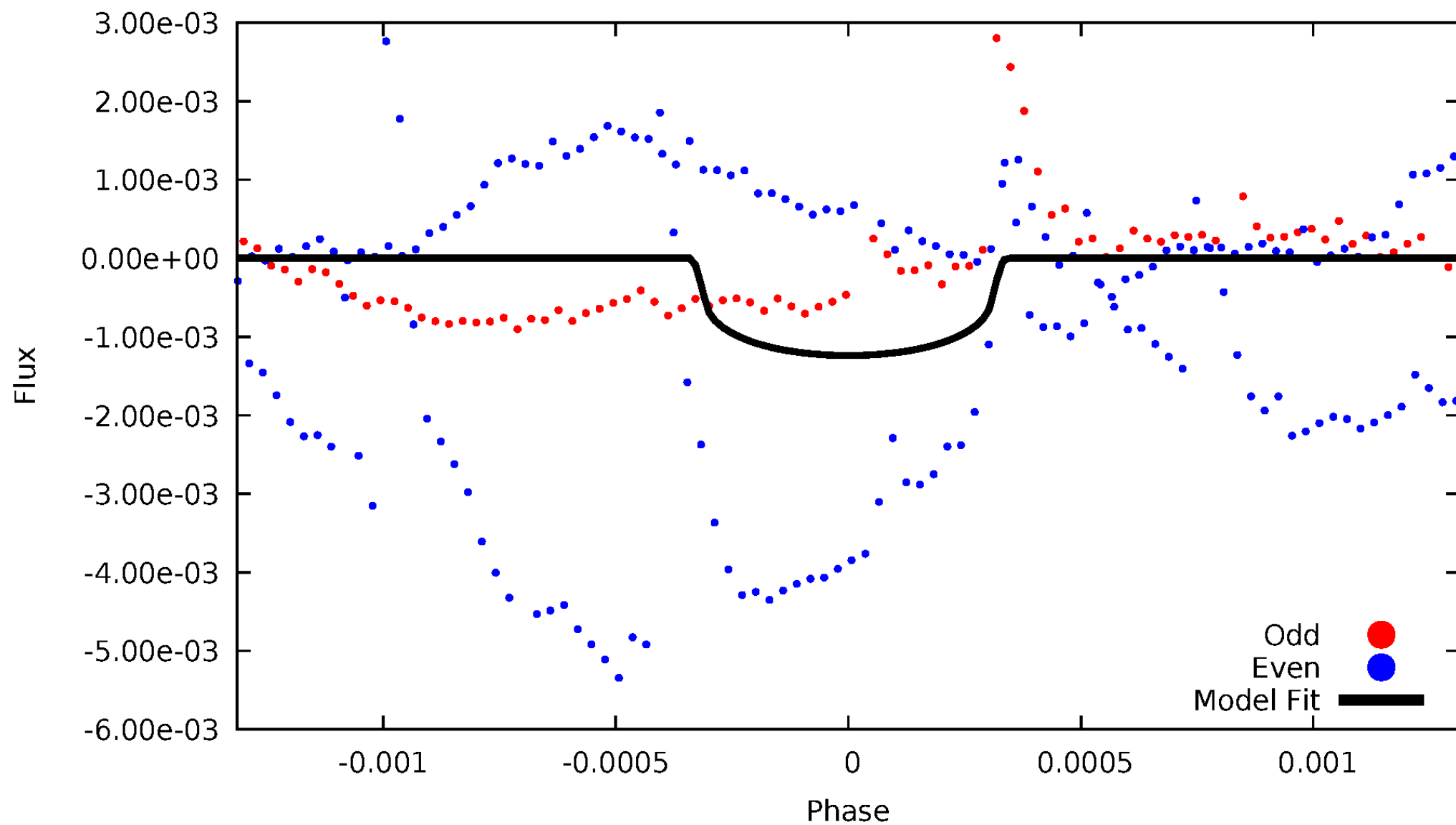


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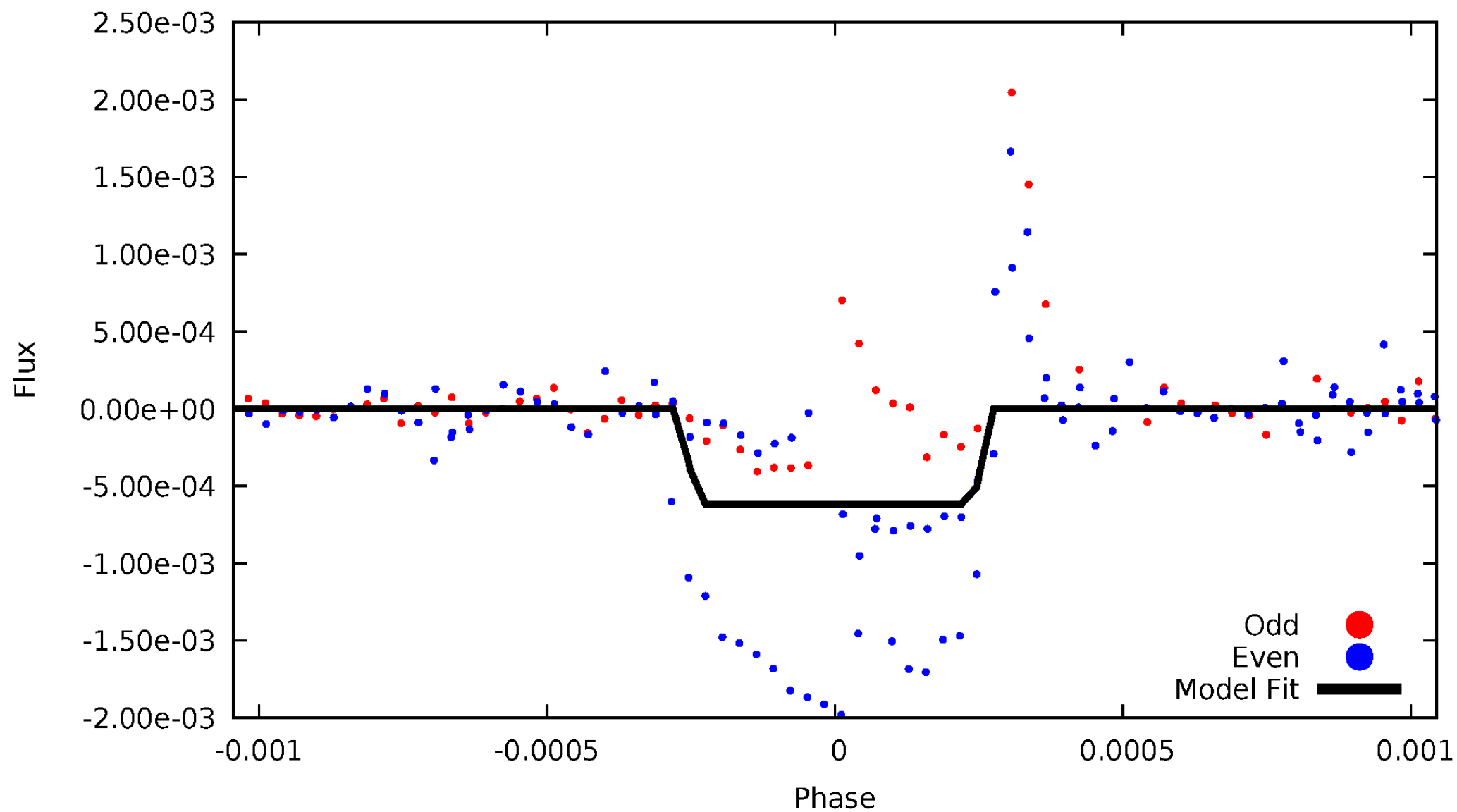
DV Odd/Even

TCE 003128488-02



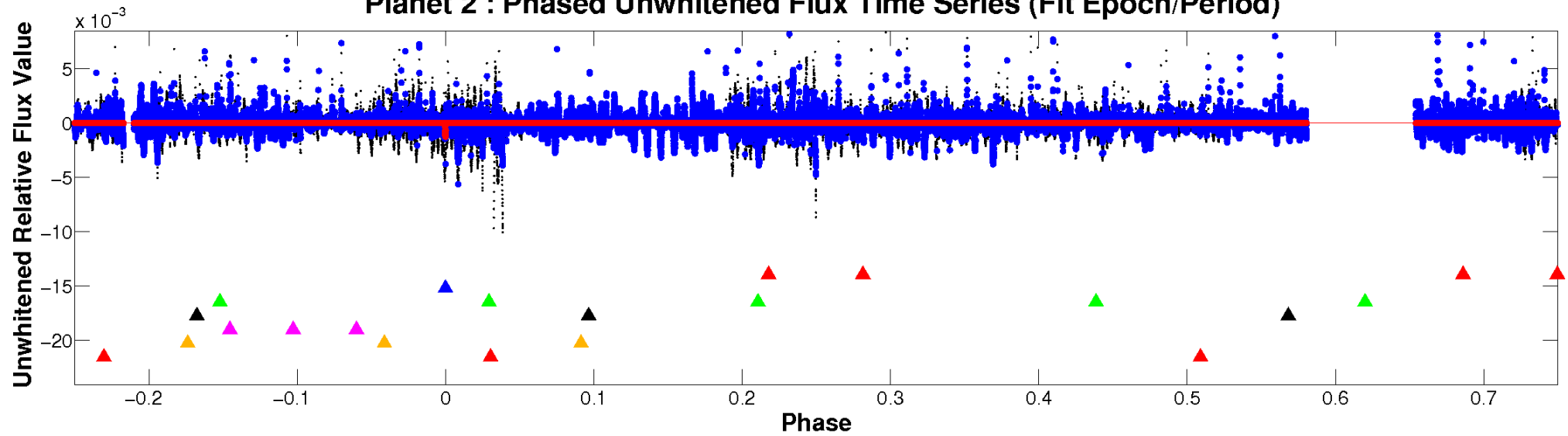
ALT Odd/Even

TCE 003128488-02

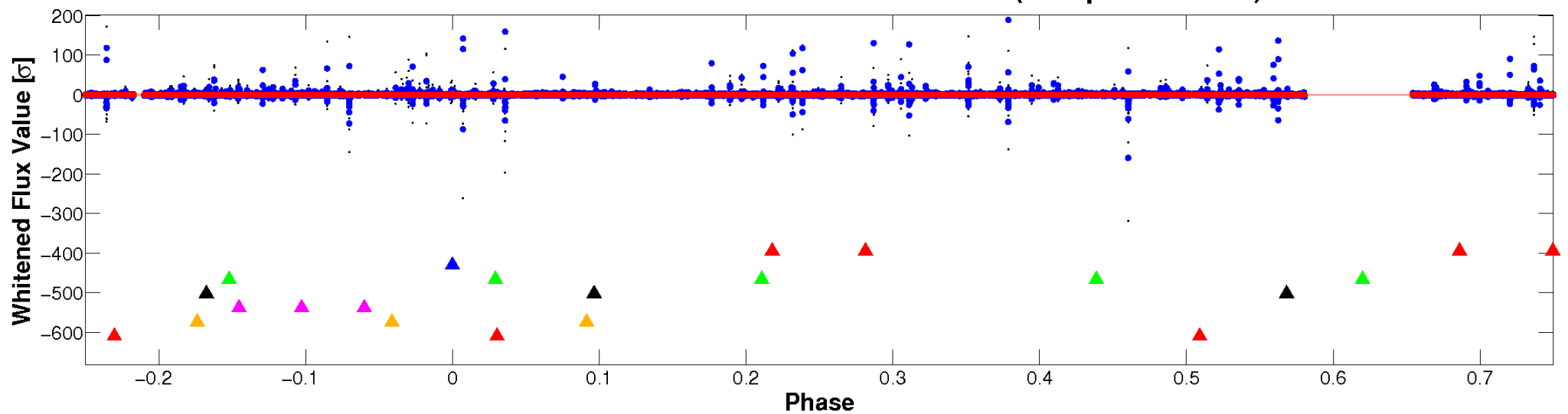


Non-Whitened Vs. Whitened Light Curve

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

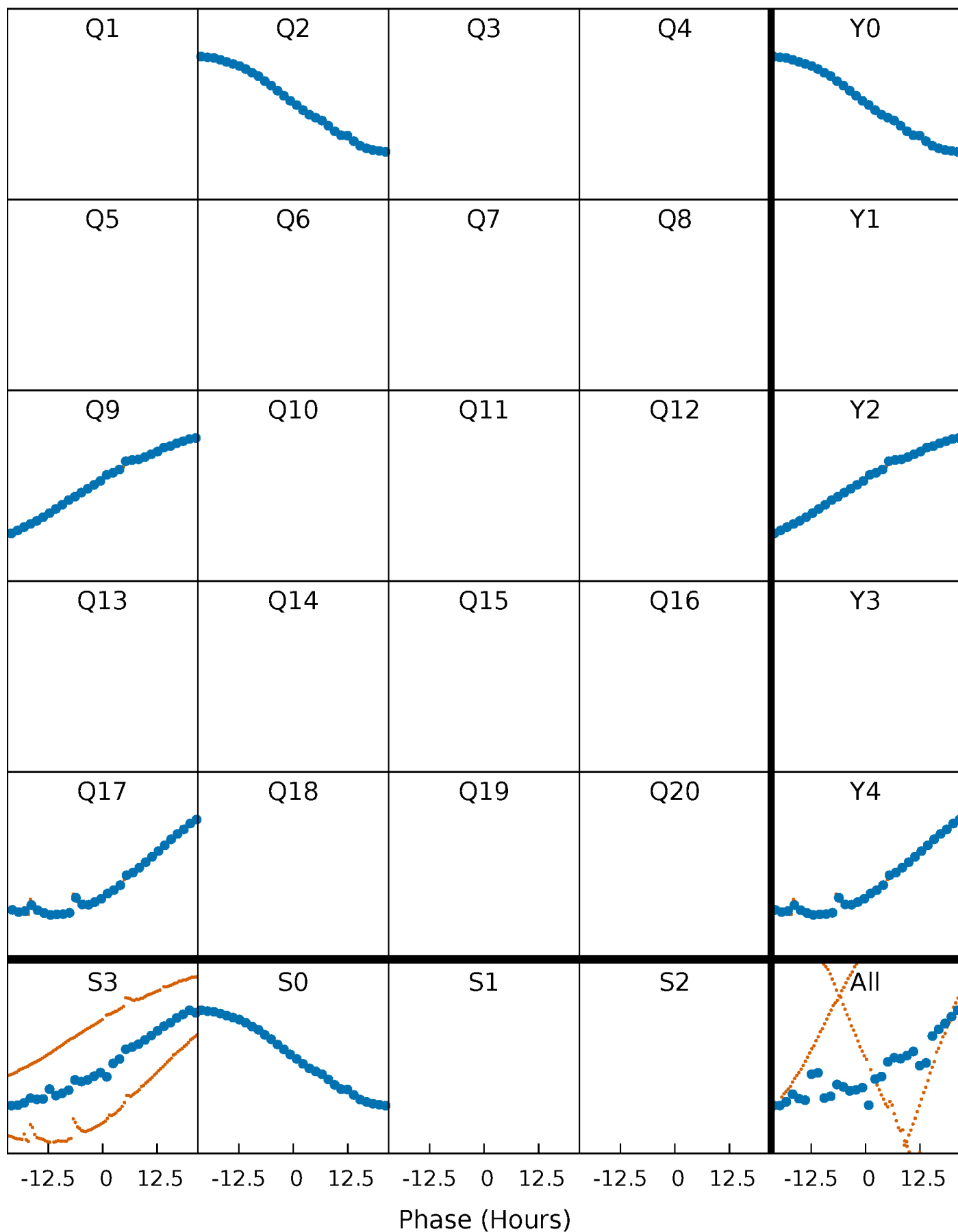


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



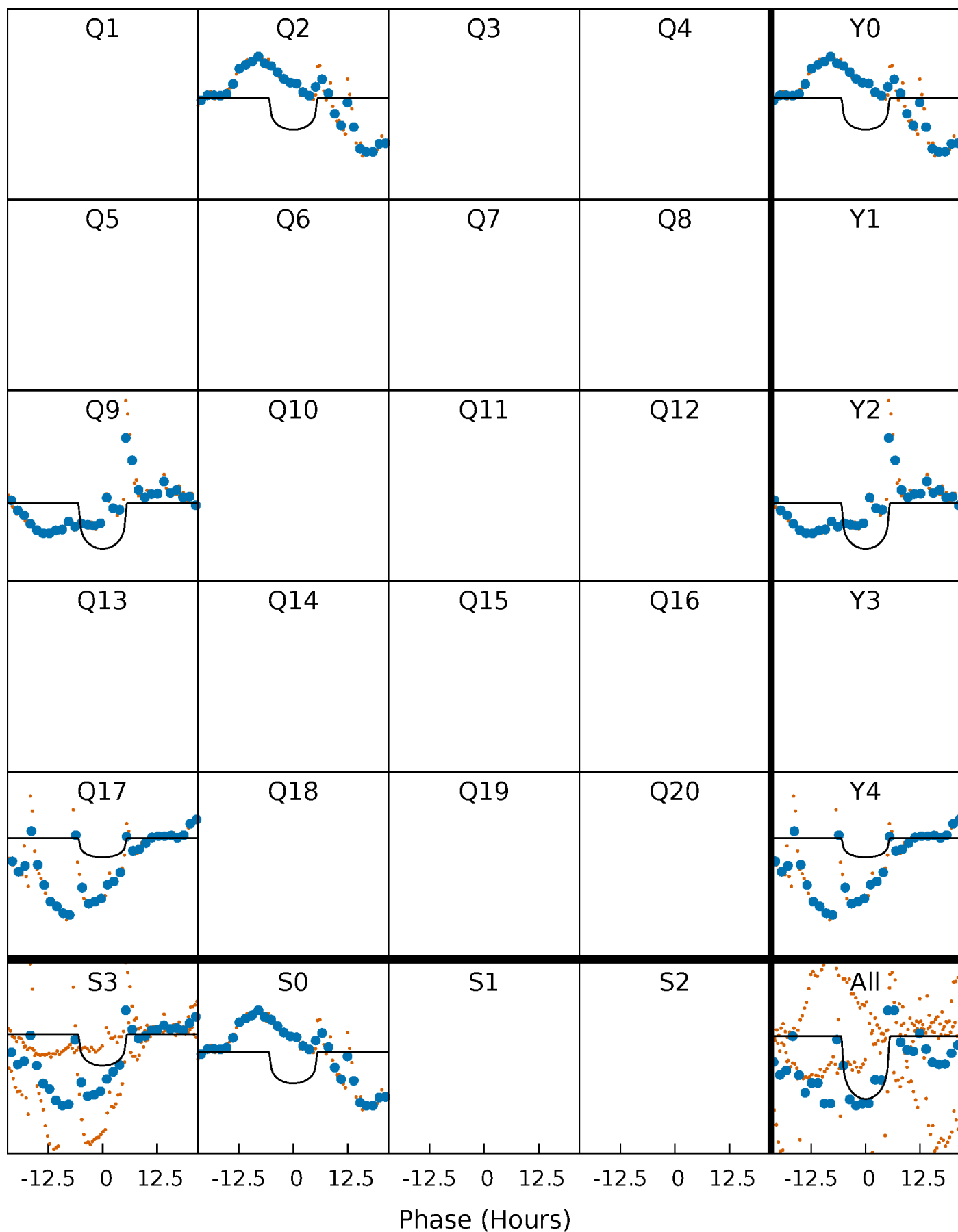
PDC Quarter-Phased Transit Curves

TCE 003128488-02 $P=694.036941$ Days $T_0=176.112418$ (BKJD)



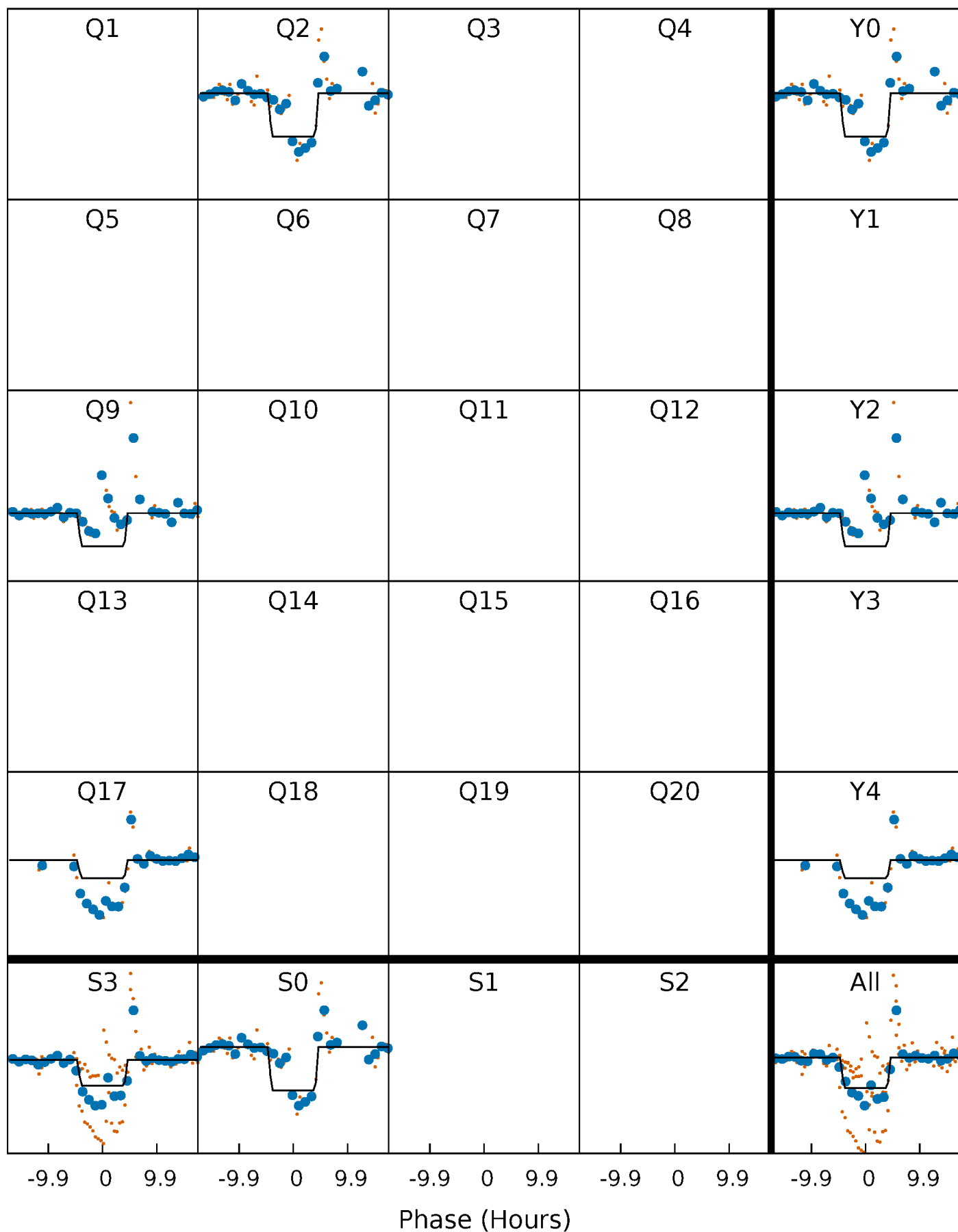
DV Quarter-Phased Transit Curves

TCE 003128488-02 $P=694.036941$ Days $T_0=176.112418$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

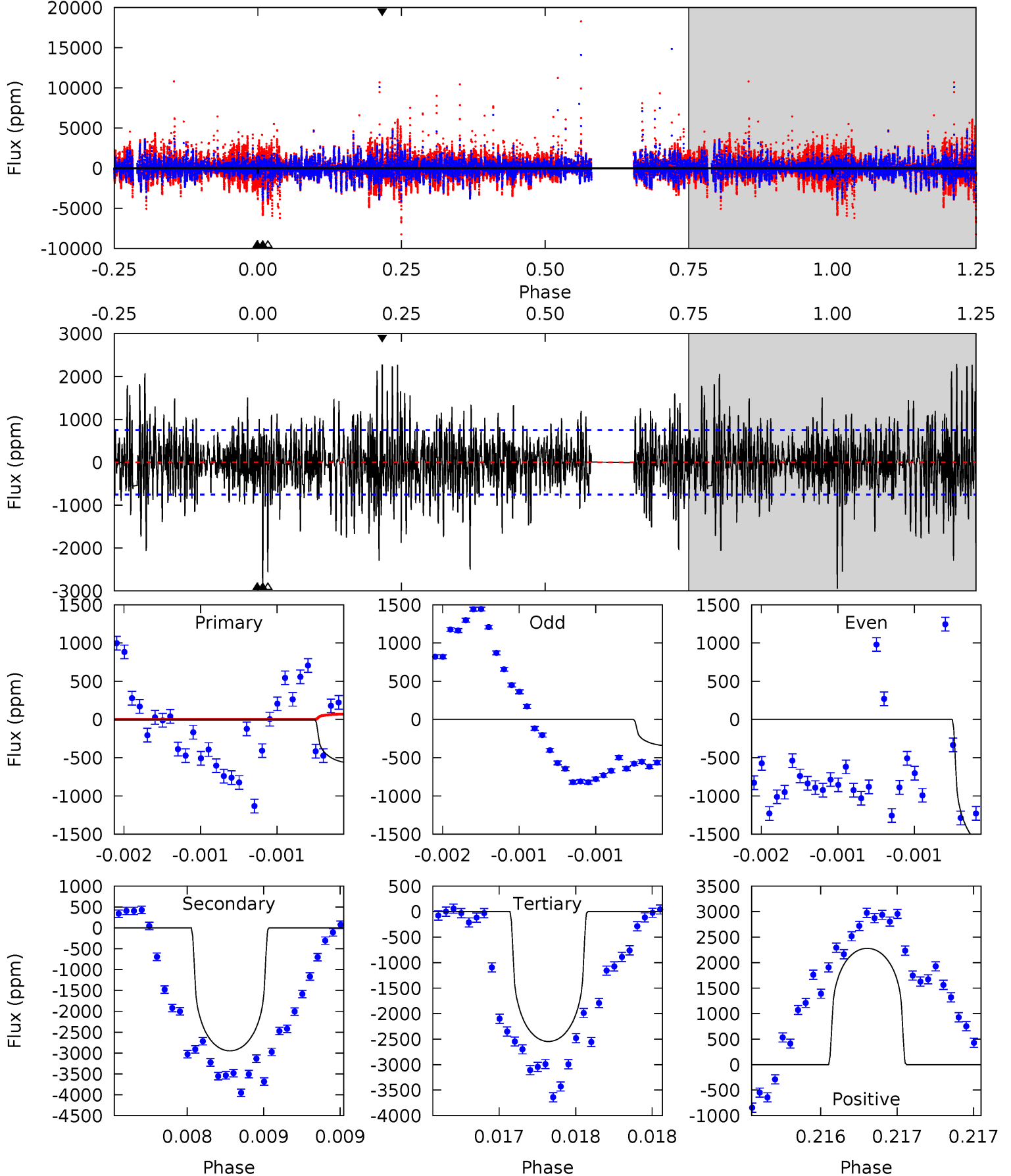
TCE 003128488-02 P=694.025865 Days $T_0=176.152470$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-02, P = 694.036941 Days, E = 176.112418 Days

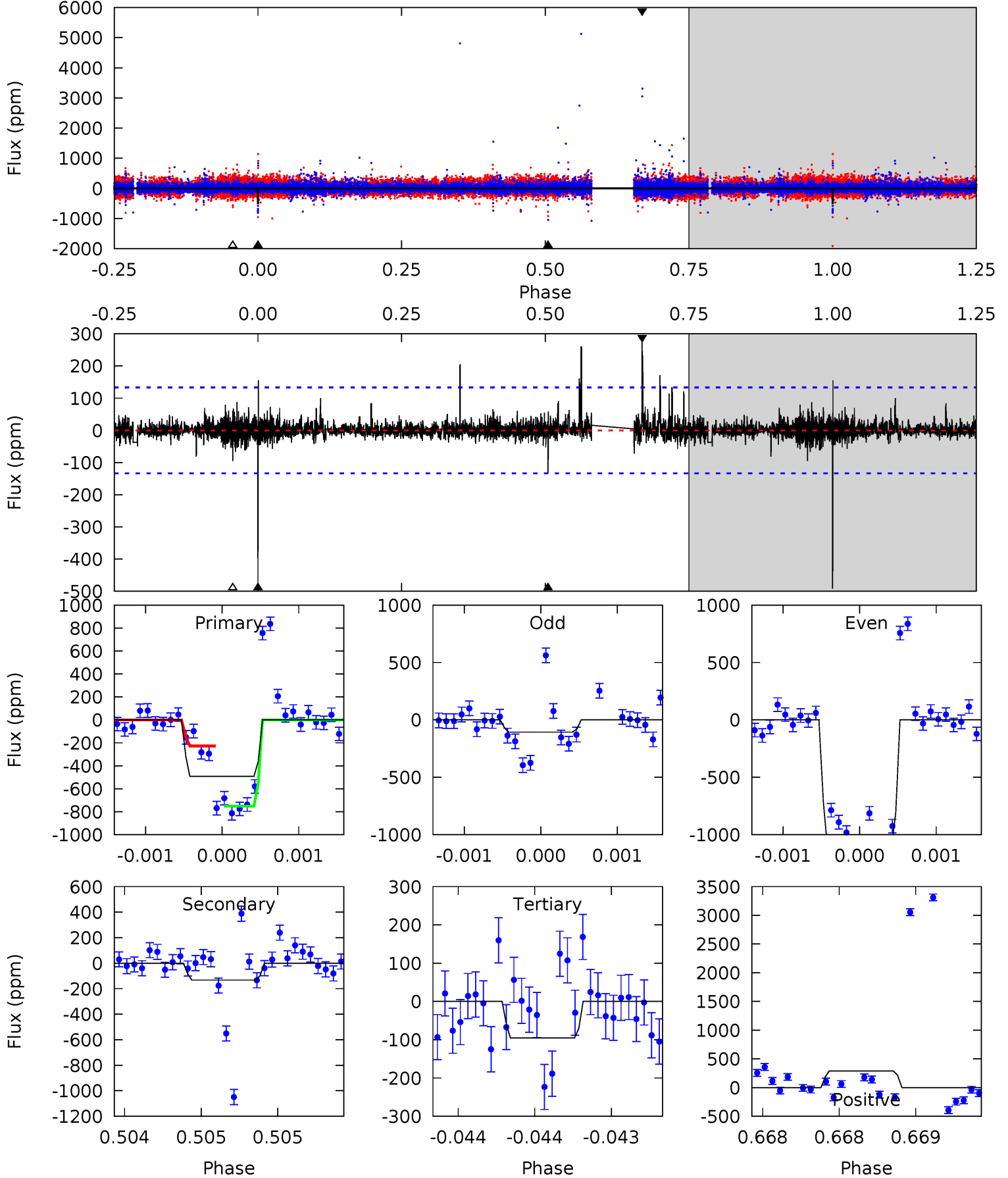
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.19	21.6	18.7	16.7	5.52	3.40	4.12	-14.5	-12.5	2.94	4.90	4.28	3.41	0.44	3.92



Alt Model-Shift Uniqueness Test

003128488-02, P = 694.025865 Days, E = 176.152470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	5.51	3.98	12.0	5.56	3.47	0.77	16.6	8.48	1.54	-6.54	23.5	1.50	0.37	0



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2948 ± 136	$1.88^{+0.67}_{-0.65}$	185^{+6}_{-6}	5801^{+1413}_{-782}	$727998^{+951816}_{-324144}$
Alt.	-132 ± 24	$1.47^{+0.66}_{-0.63}$	185^{+6}_{-7}	3477^{+682}_{-394}	$52284^{+108492}_{-27956}$

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

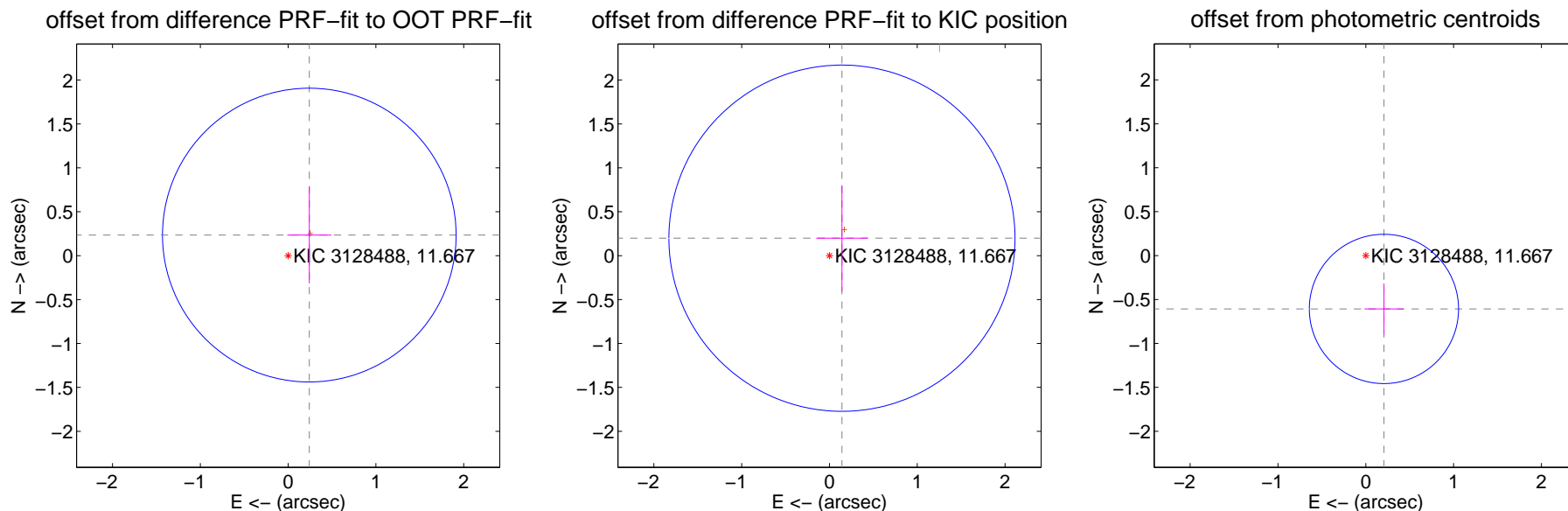
DV Centroid Data

Supplemental centroid analysis for 003128488-02. **Kepler magnitude: 11.67.** Transit SNR 8.99

There are 2 quarters with good PRF difference image offsets

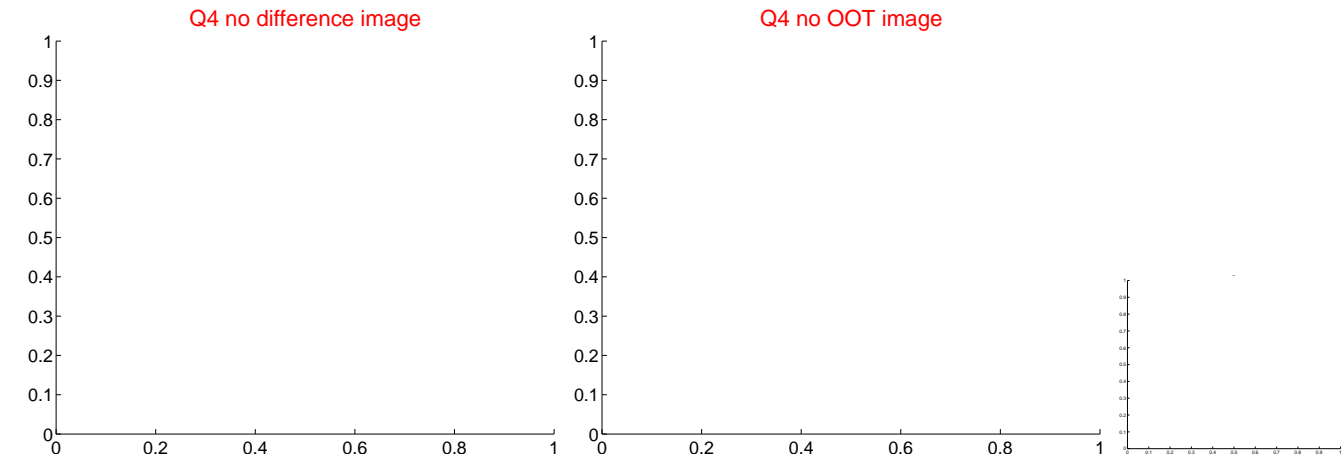
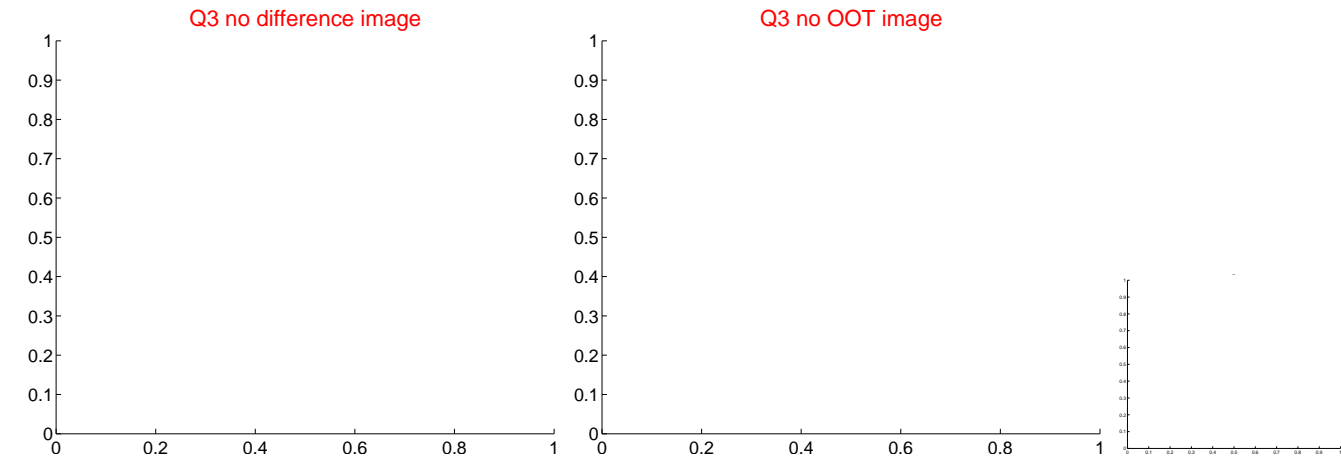
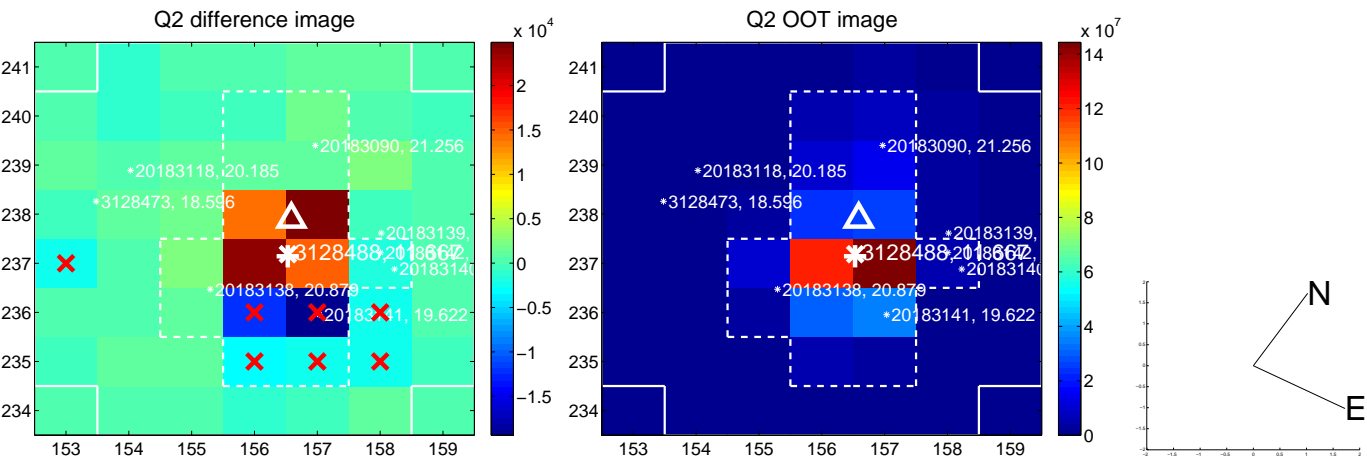
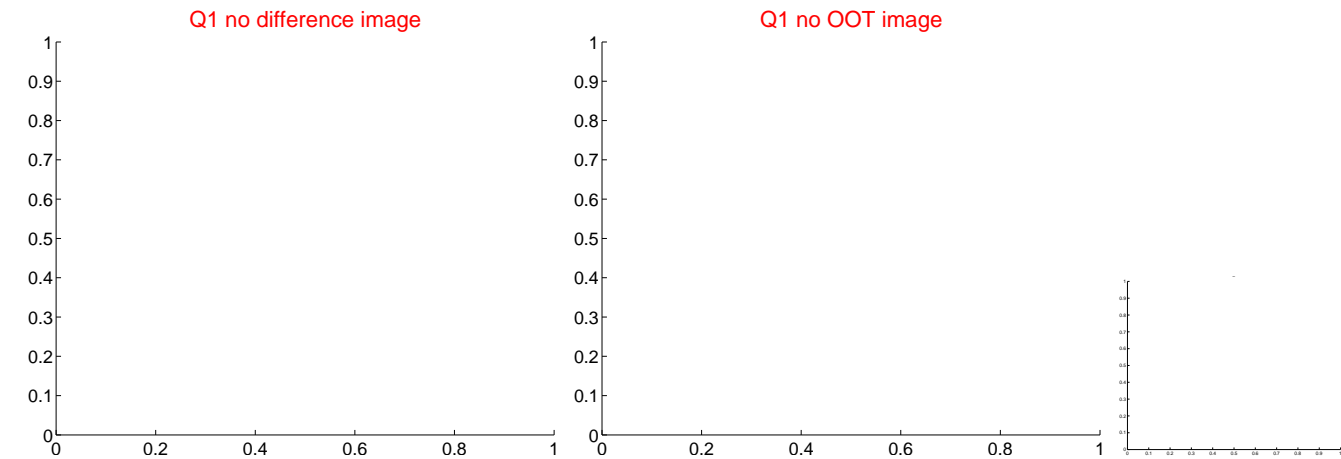
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.336 ± 0.557	0.60	-0.241 ± 0.251	0.234 ± 0.550
PRF-fit source offset from KIC position	0.244 ± 0.657	0.37	-0.142 ± 0.293	0.199 ± 0.603
photometric centroid source offset	0.64 ± 0.28	2.26	-0.21 ± 0.22	-0.61 ± 0.29

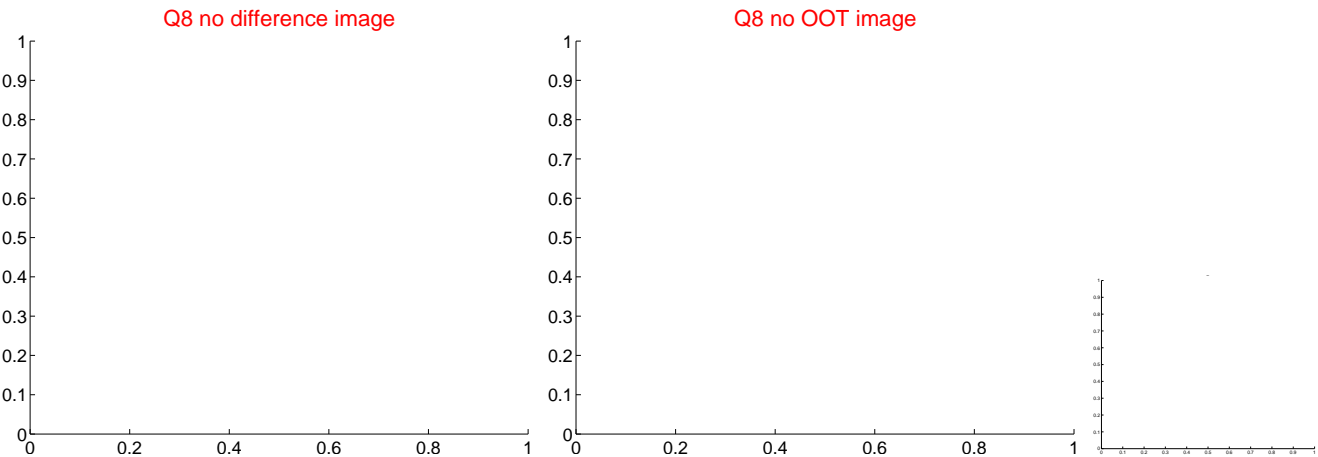
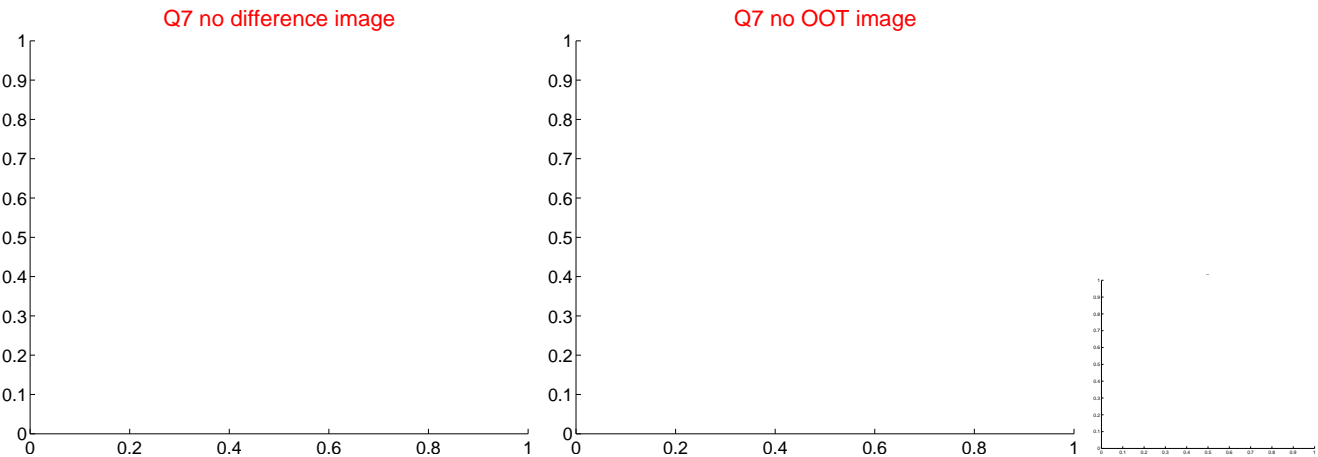
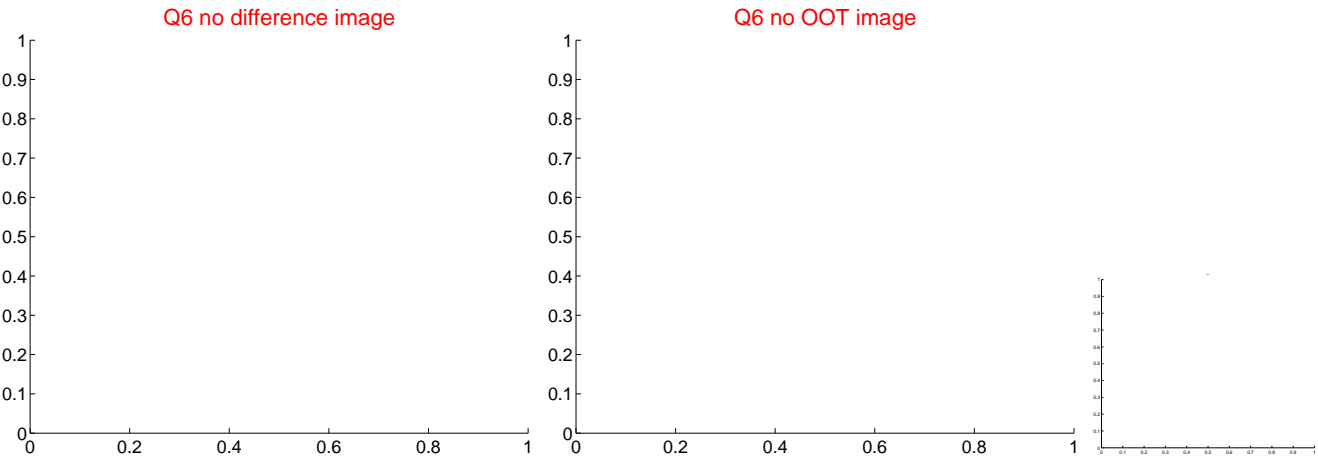
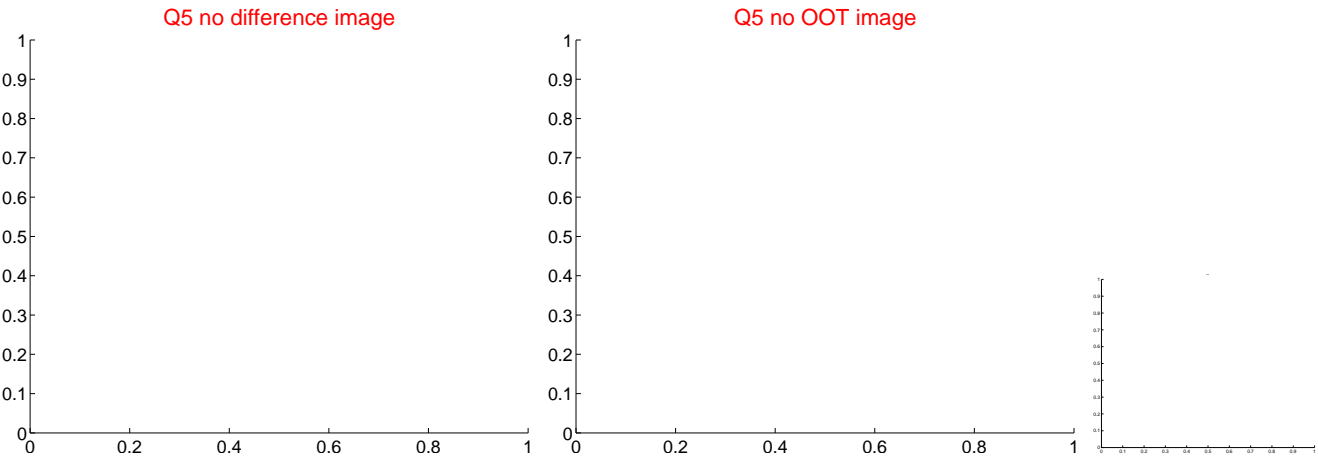


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

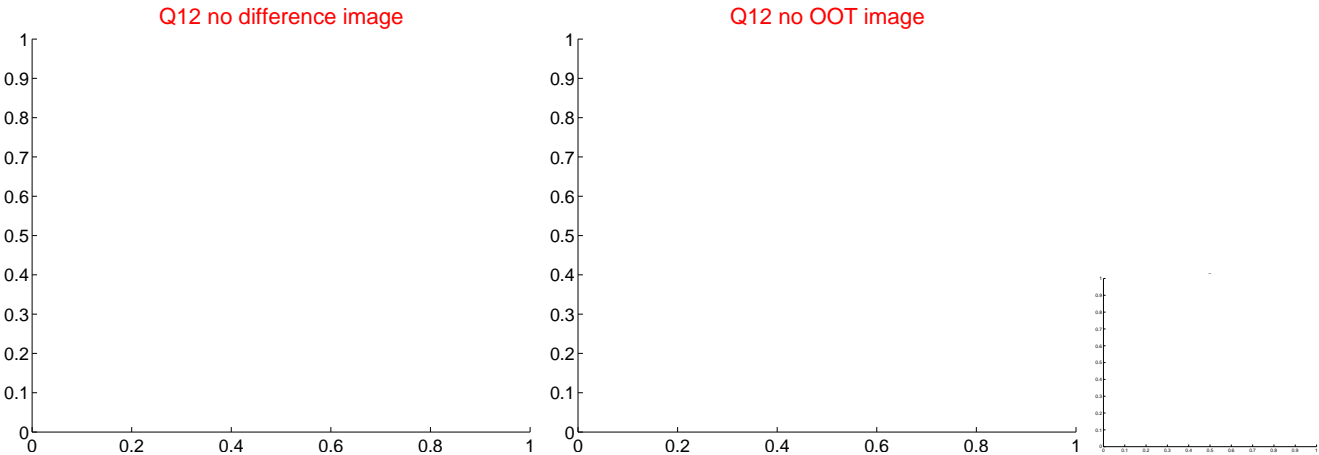
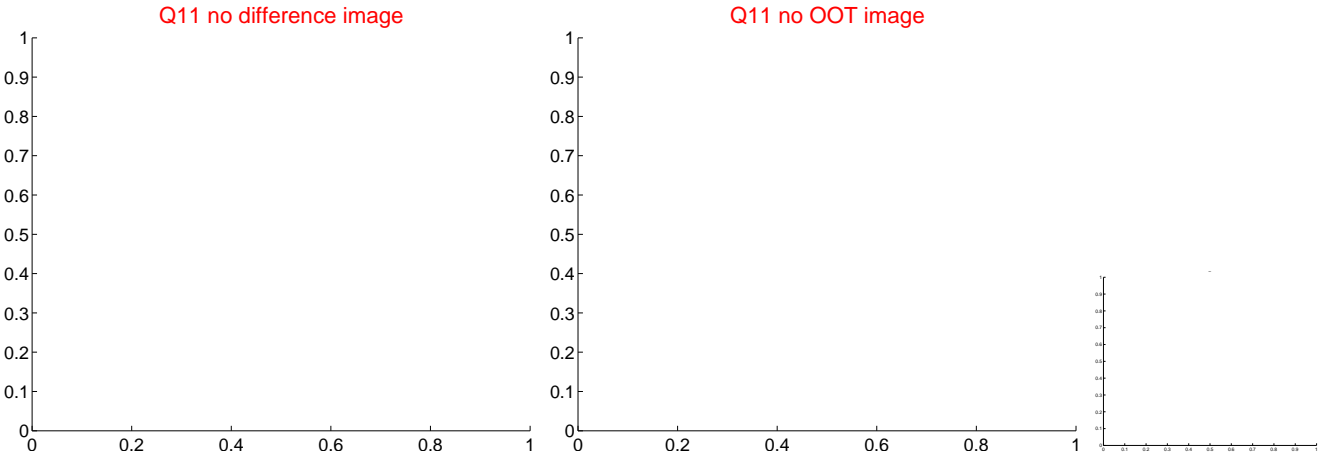
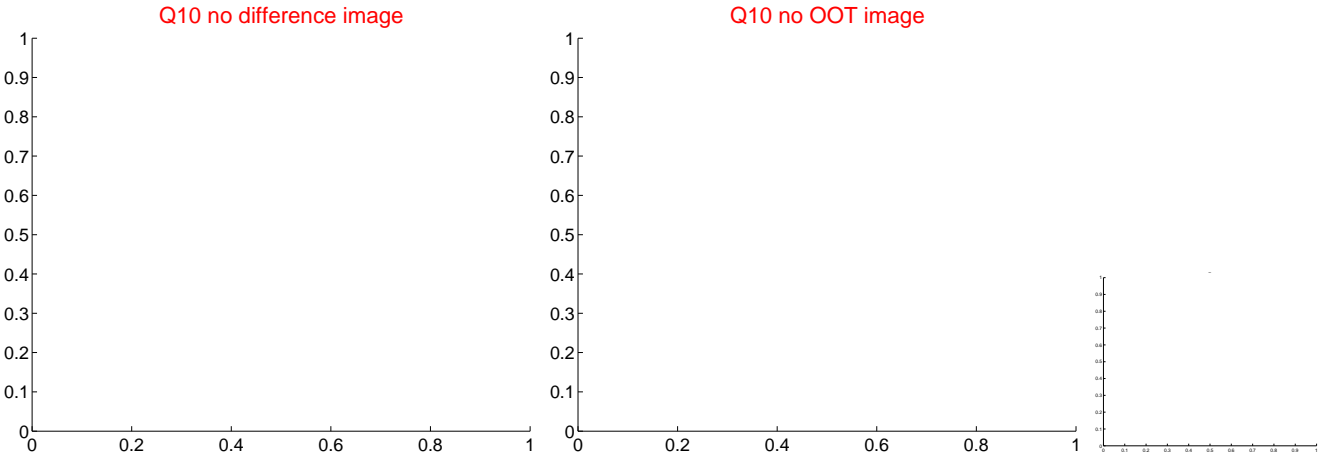
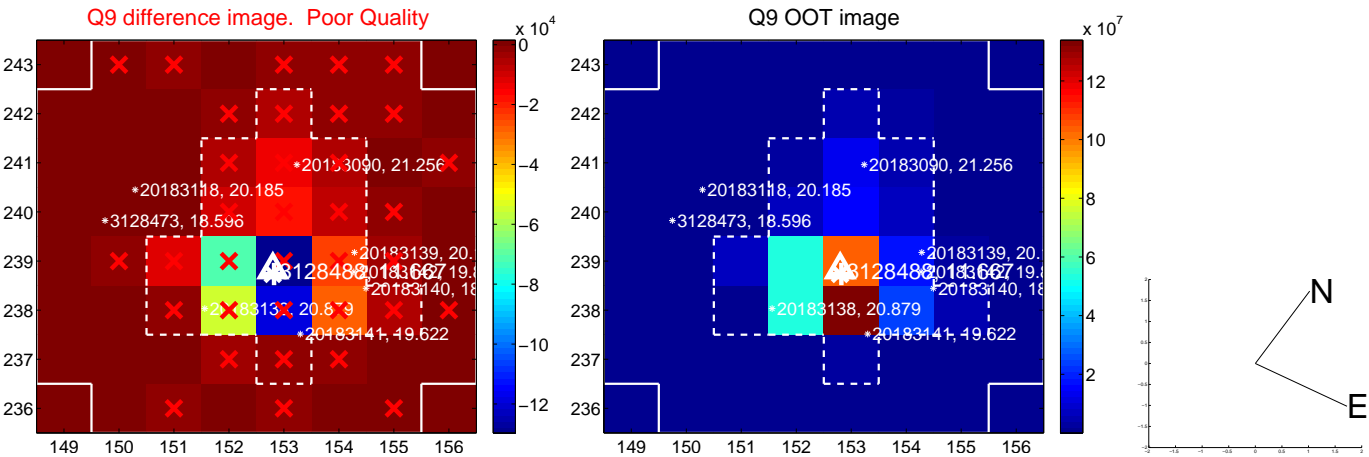
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



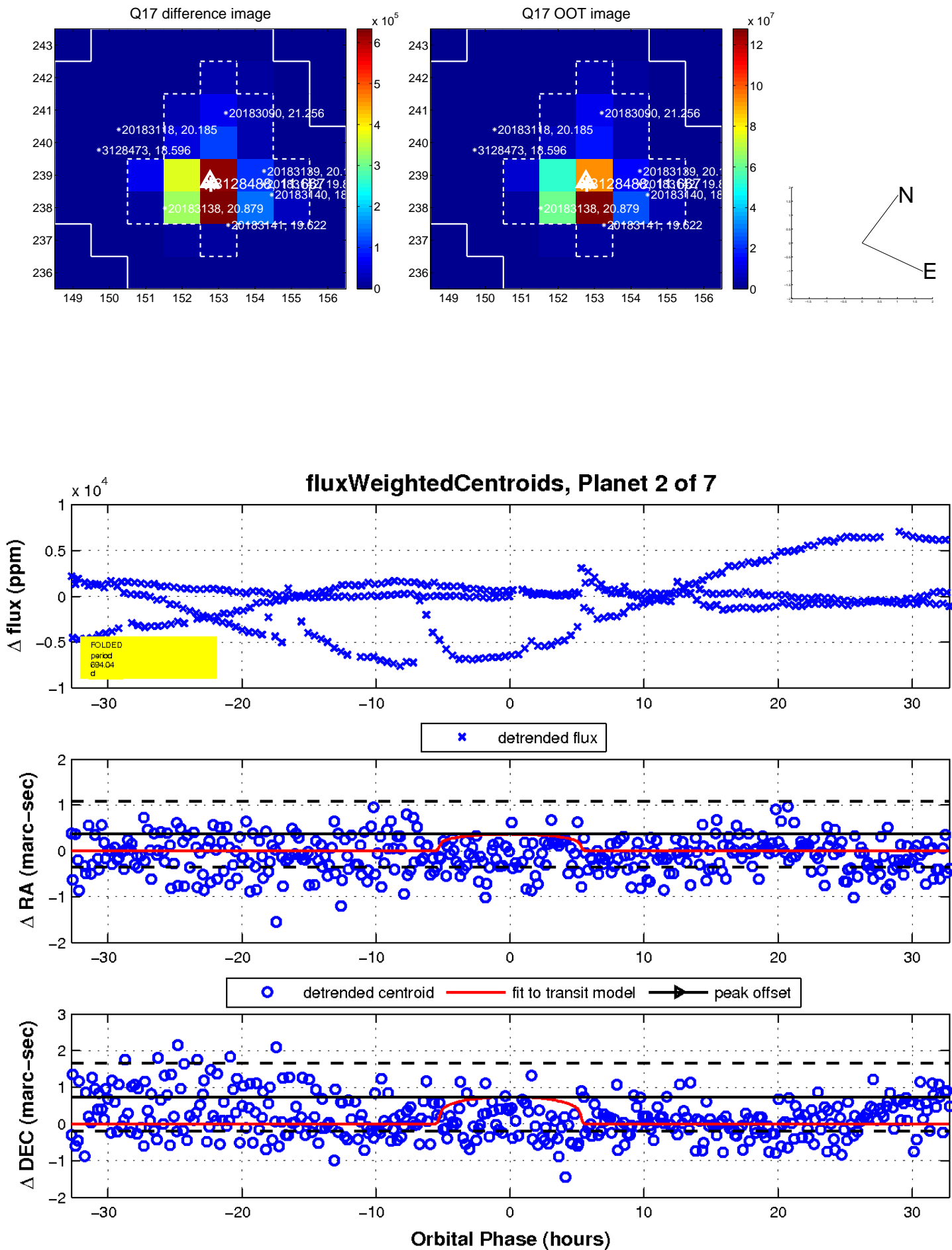
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



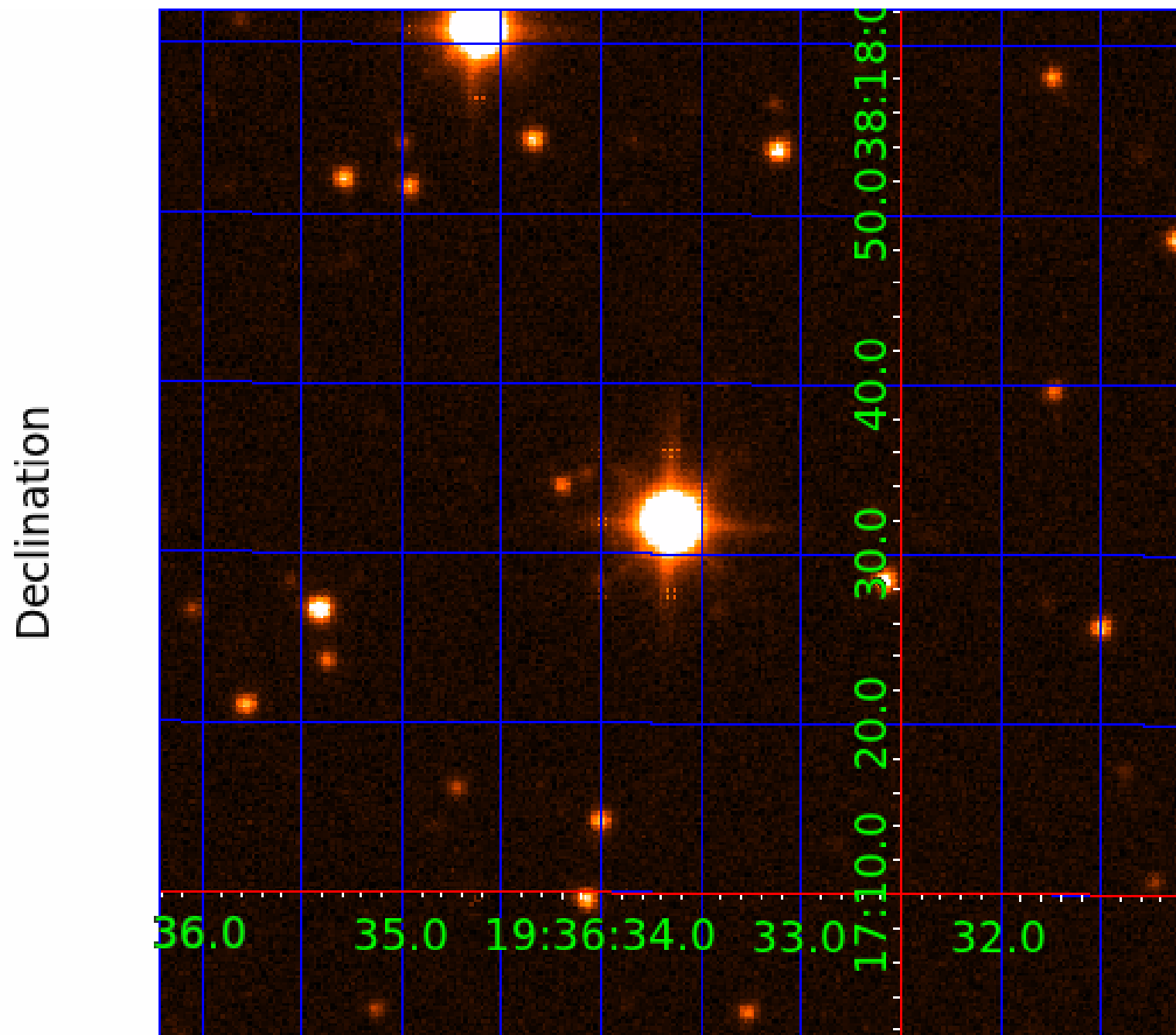
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003128488

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})
003128488-01	OBS	No	324.958304	371.434562	651.6	9.680	18.7	5.5	0.55	4565	1.45	0.20
003128488-02	OBS	No	694.036941	176.112418	1238.2	10.944	17.1	9.0	0.55	4565	1.87	0.07
003128488-03	OBS	No	284.070980	322.353452	680.8	3.542	15.1	8.6	0.55	4565	1.61	0.24
003128488-04	OBS	No	510.726750	243.094415	438.4	19.867	13.3	2.9	0.55	4565	1.14	0.11
003128488-05	OBS	No	664.424496	134.457468	550.3	5.638	14.8	4.6	0.55	4565	1.26	0.08
003128488-06	OBS	No	601.989902	239.565807	838.8	9.891	12.1	7.2	0.55	4565	1.58	0.09
003128488-07	OBS	No	513.112903	197.205862	806.3	9.179	12.1	7.8	0.55	4565	1.62	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

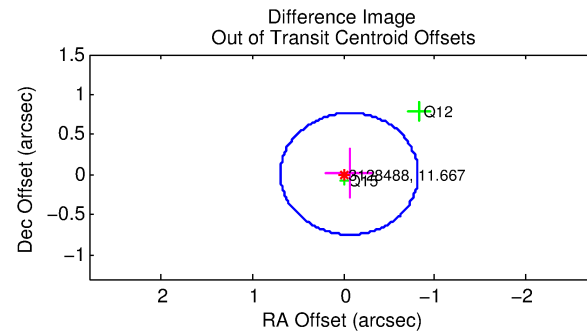
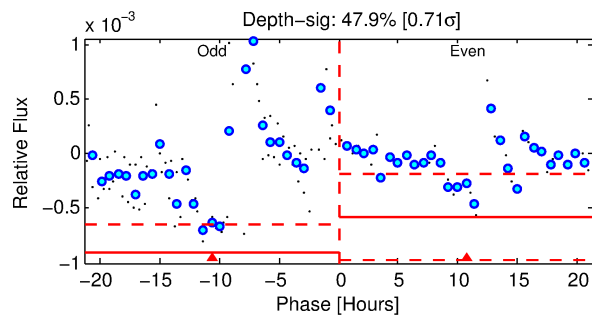
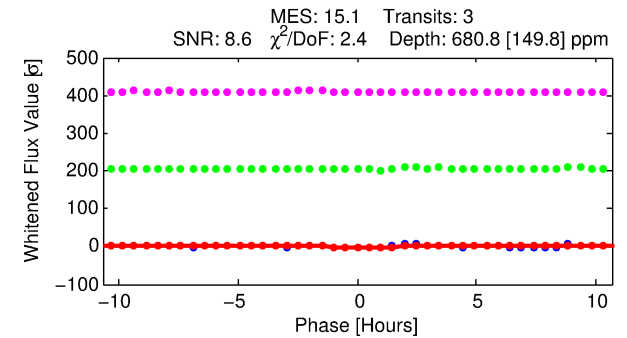
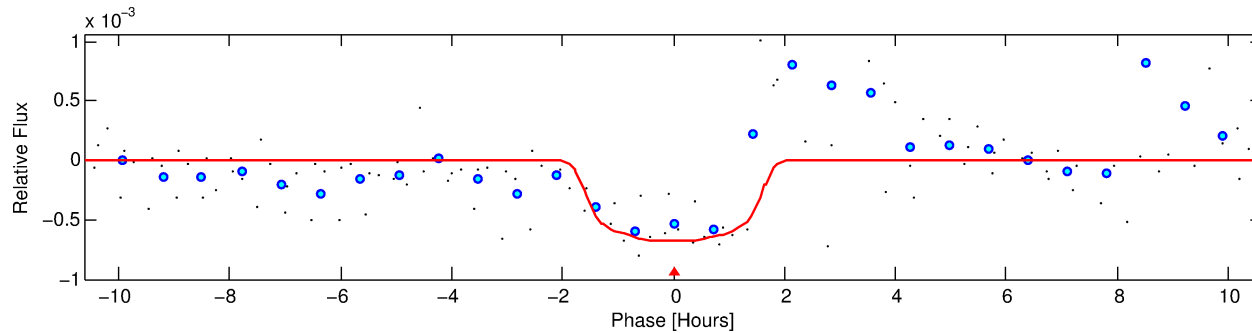
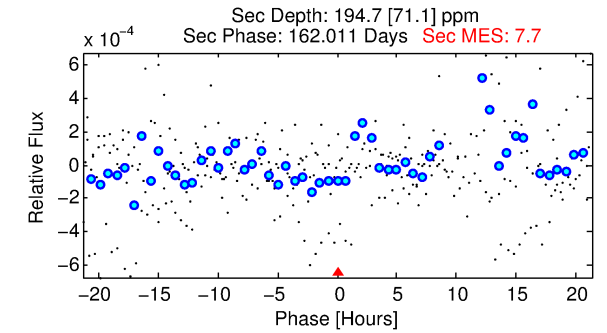
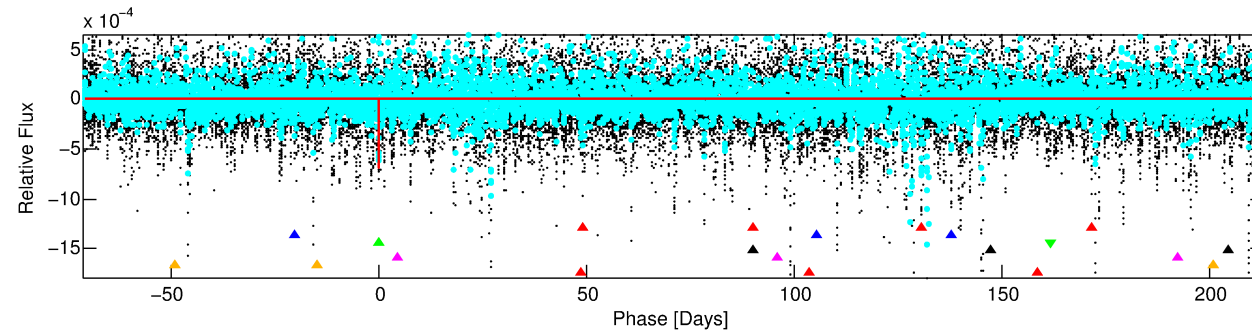
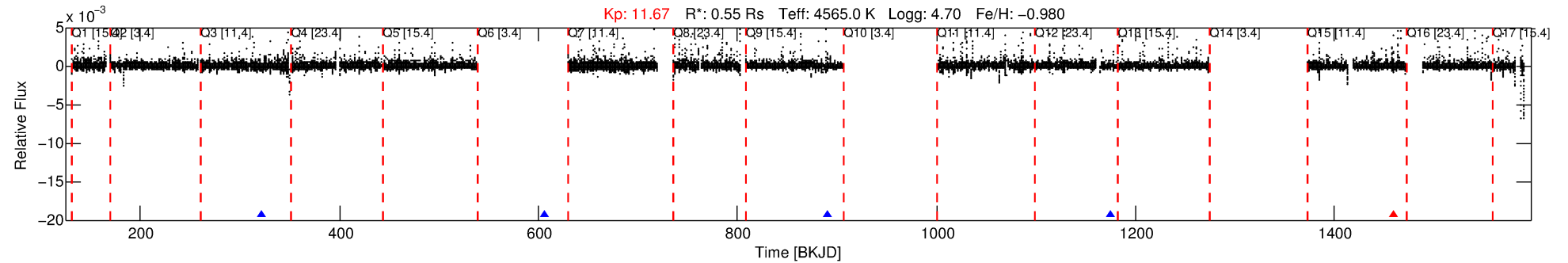
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-03

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 3 of 7 Period: 284.071 d



DV Fit Results:

Period = 284.07098 [0.00701] d
Epoch = 322.3535 [0.0195] BKJD
Rp/R* = 0.0270 [0.0219]
a/R* = 382.82 [1151.19]
b = 0.82 [1.26]
Seff = 0.24 [0.04]
Teq = 179 [7] K
Rp = 1.61 [1.31] Re
a = 0.6899 [0.0461] AU
Ag = 19745.44 [32852.63] [0.60σ]
Teffp = 3284 [1367] K [2.27σ]

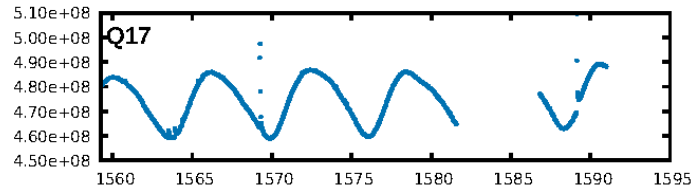
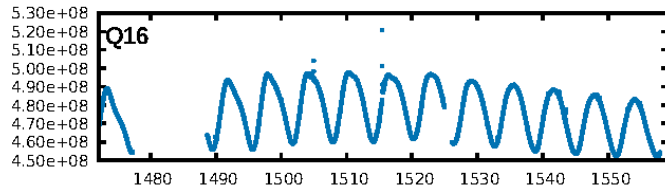
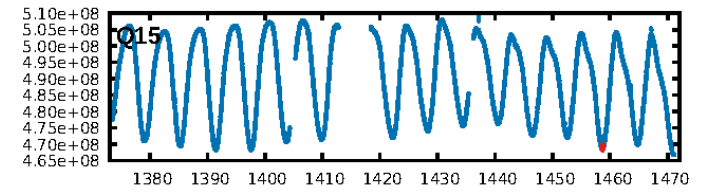
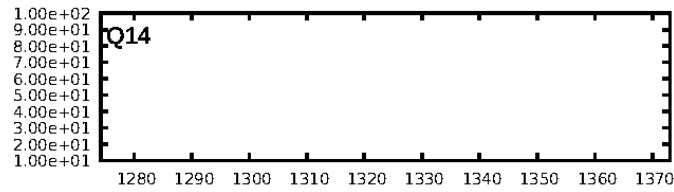
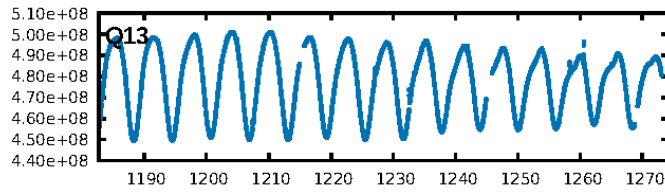
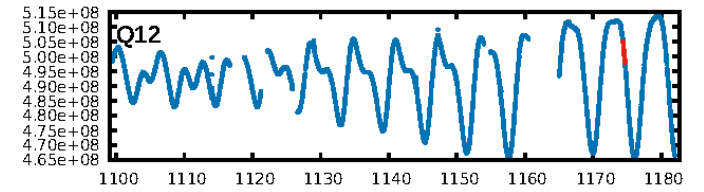
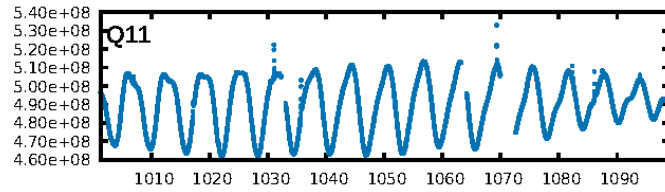
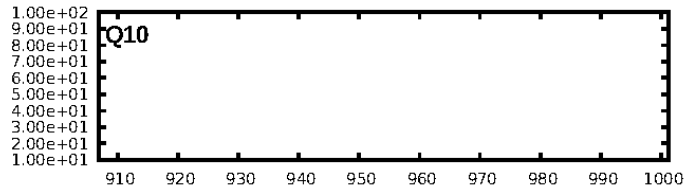
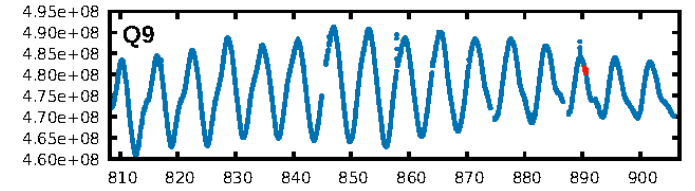
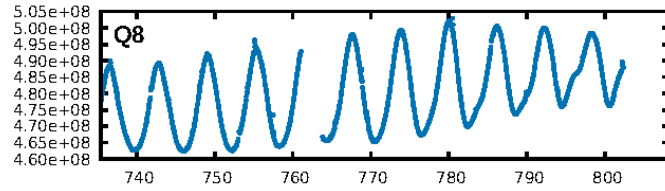
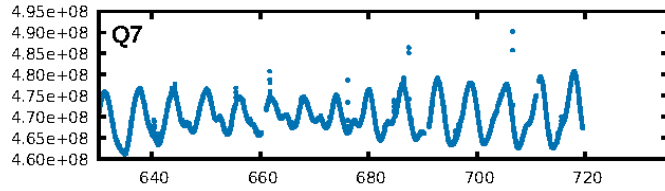
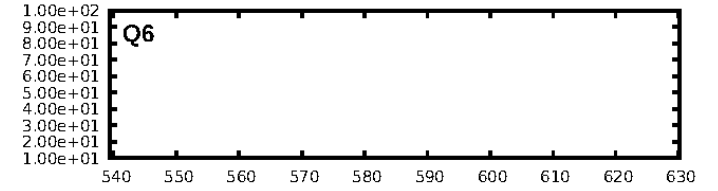
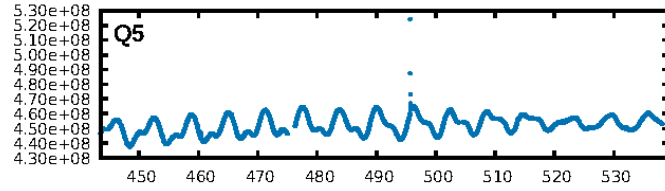
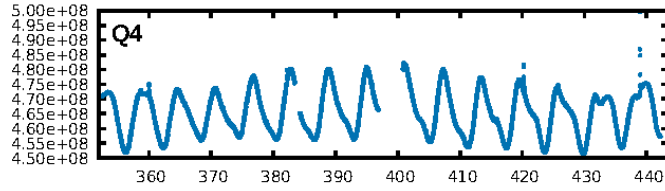
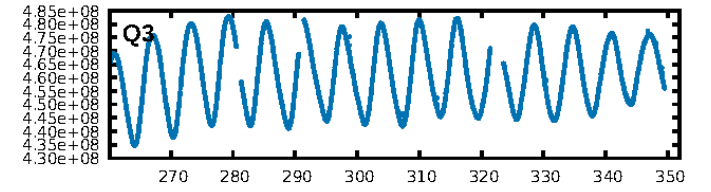
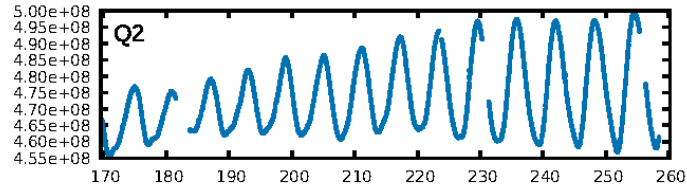
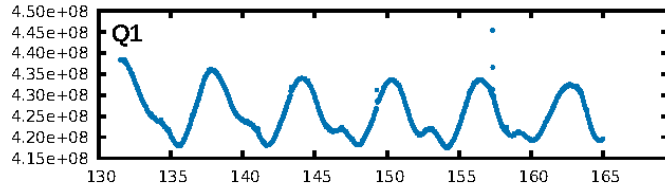
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [95.20σ]
ModelChiSquare2-sig: 4.4%
ModelChiSquareGof-sig: 16.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 0.6648
Centroid-sig: 8.3%
Centroid-so: 0.558 arcsec [1.26σ]
OotOffset-rm: 0.065 arcsec [0.26σ]
KicOffset-rm: 0.181 arcsec [0.54σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

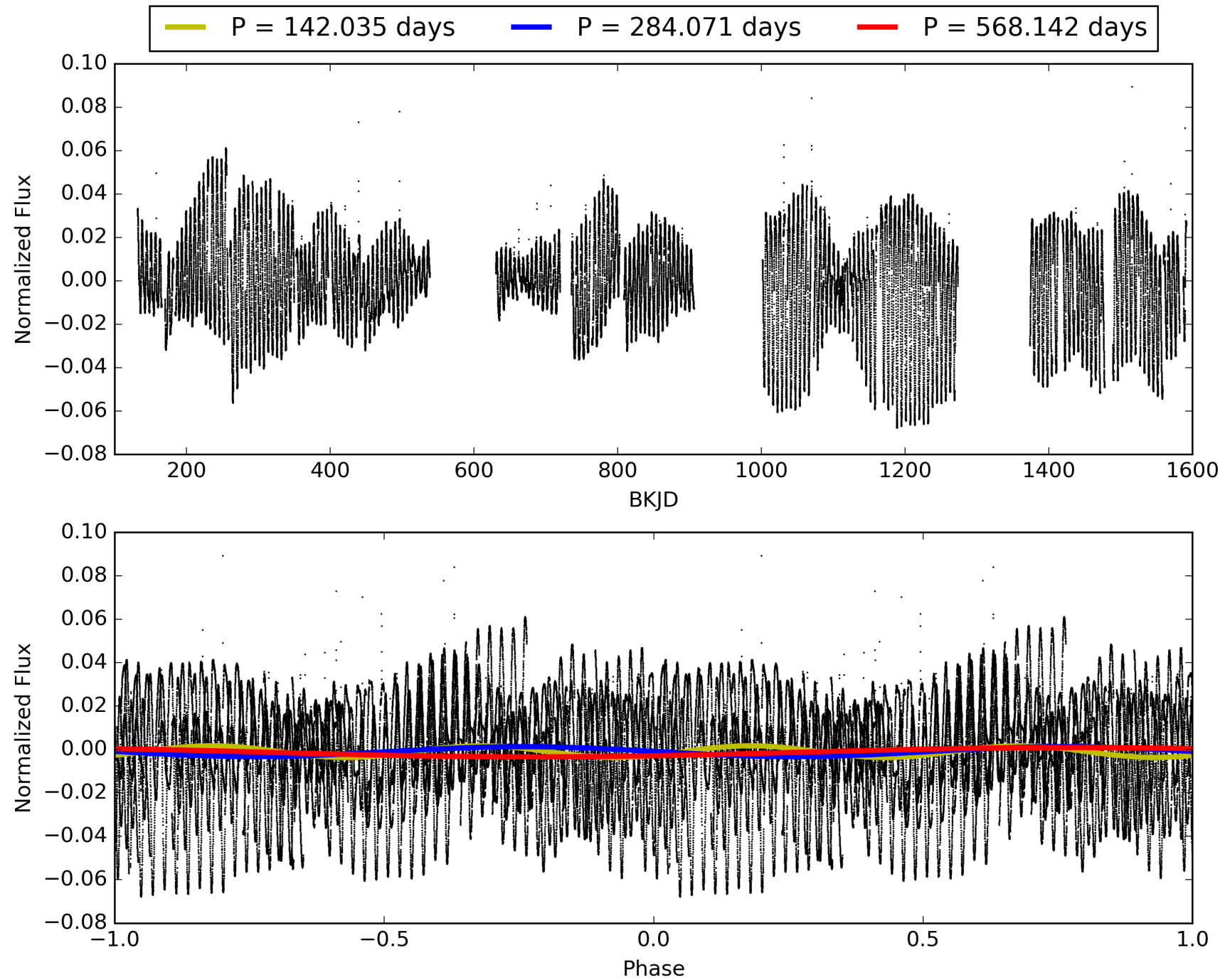
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:51:32 Z

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

TCE 003128488-03, PDC Light Curves

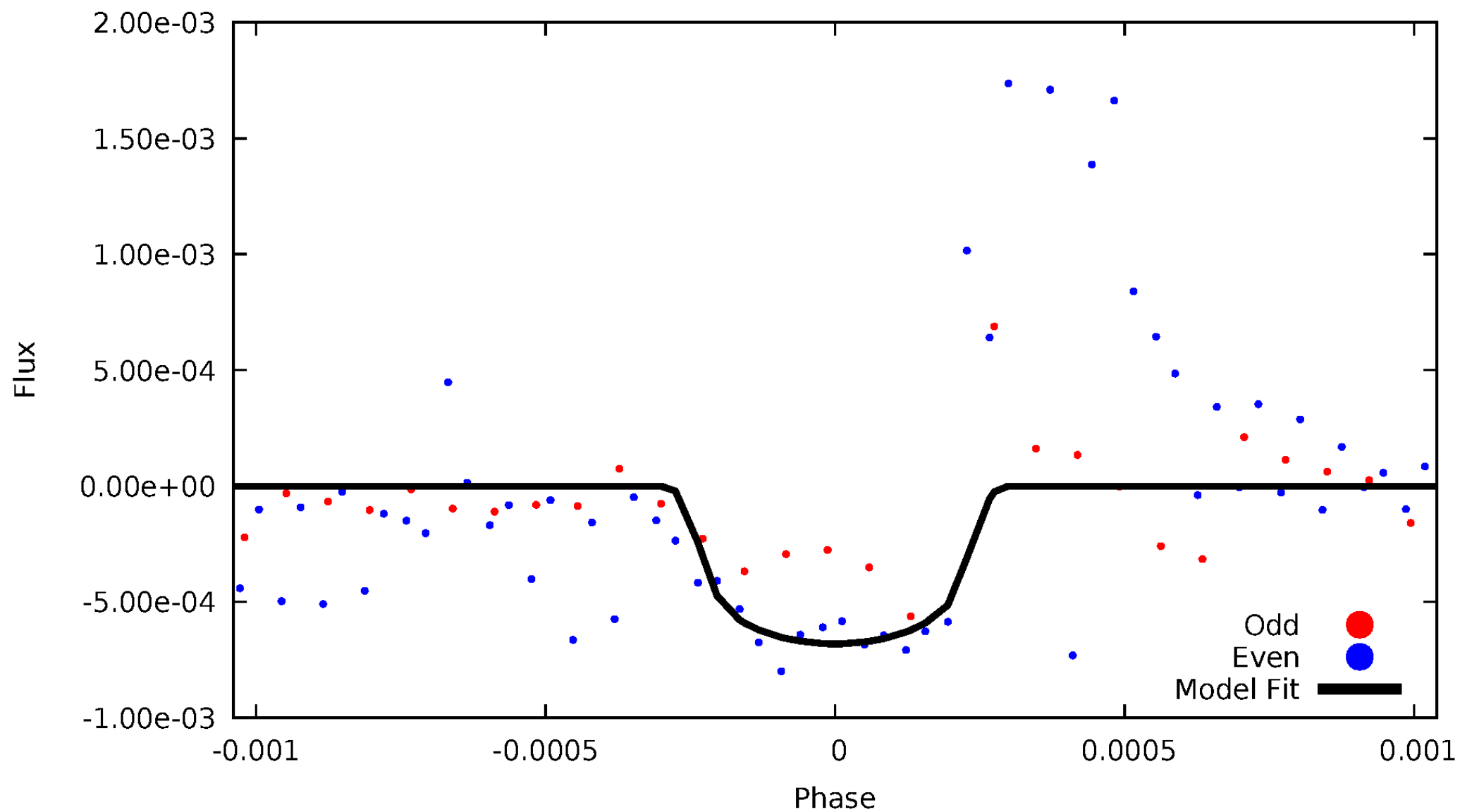


TCE 003128488-03



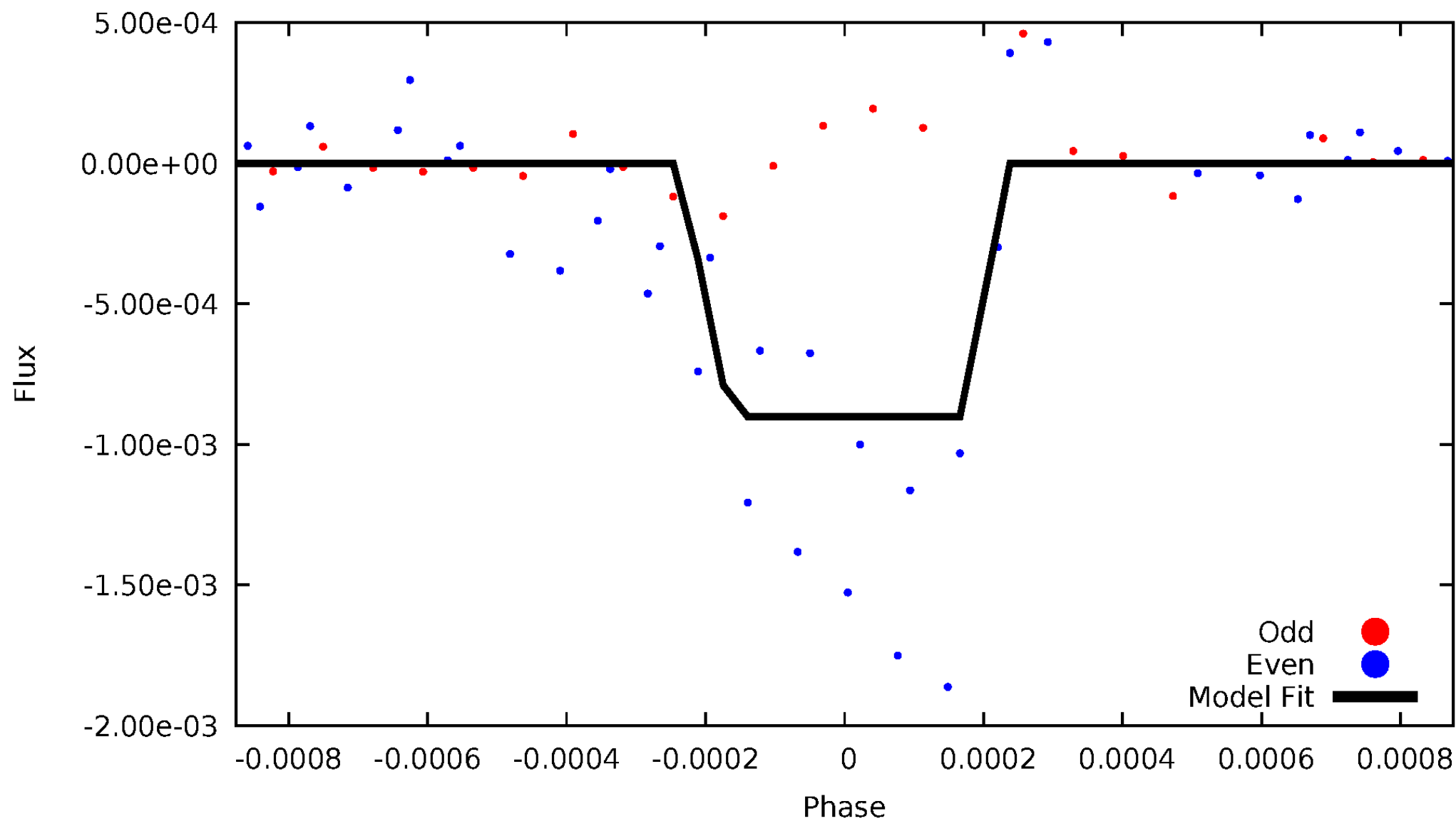
DV Odd/Even

TCE 003128488-03

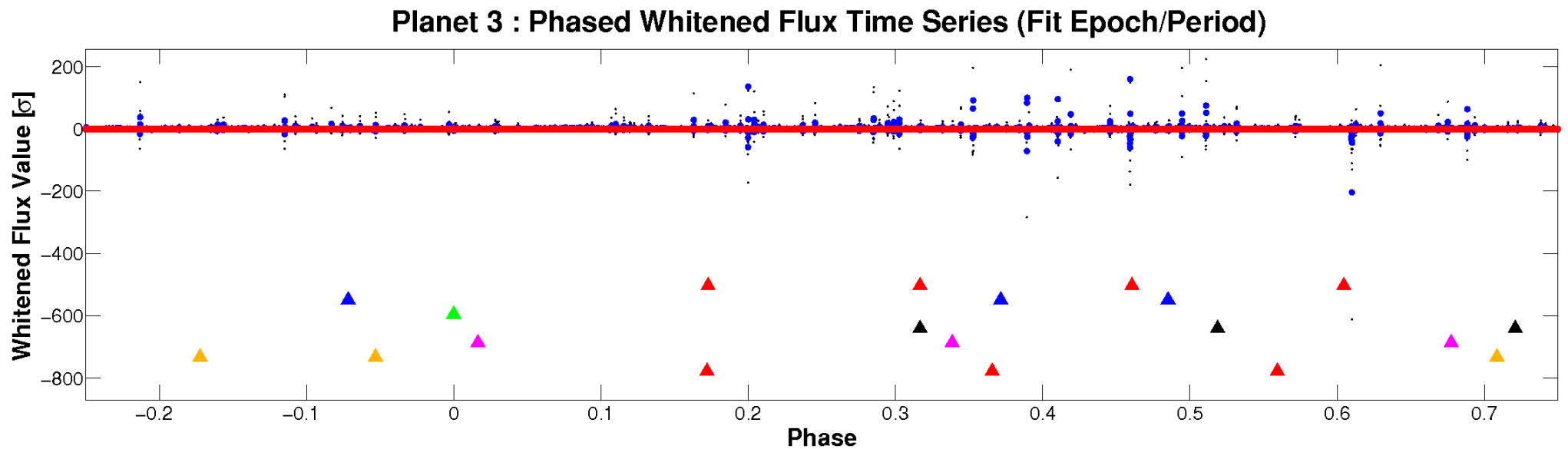
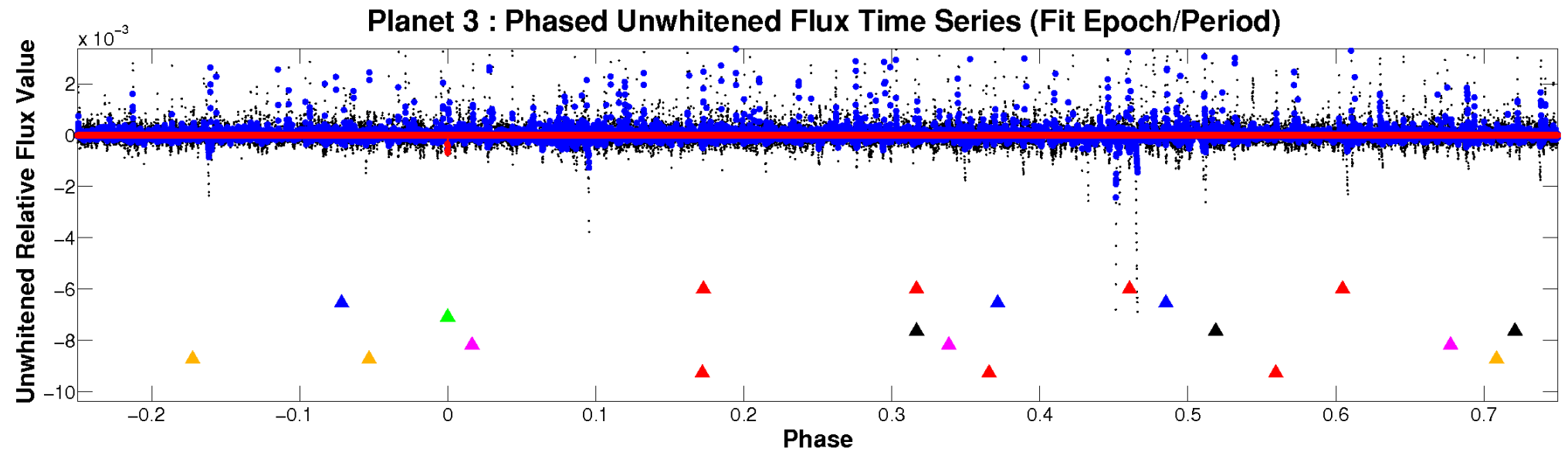


ALT Odd/Even

TCE 003128488-03



Non-Whitened Vs. Whitened Light Curve



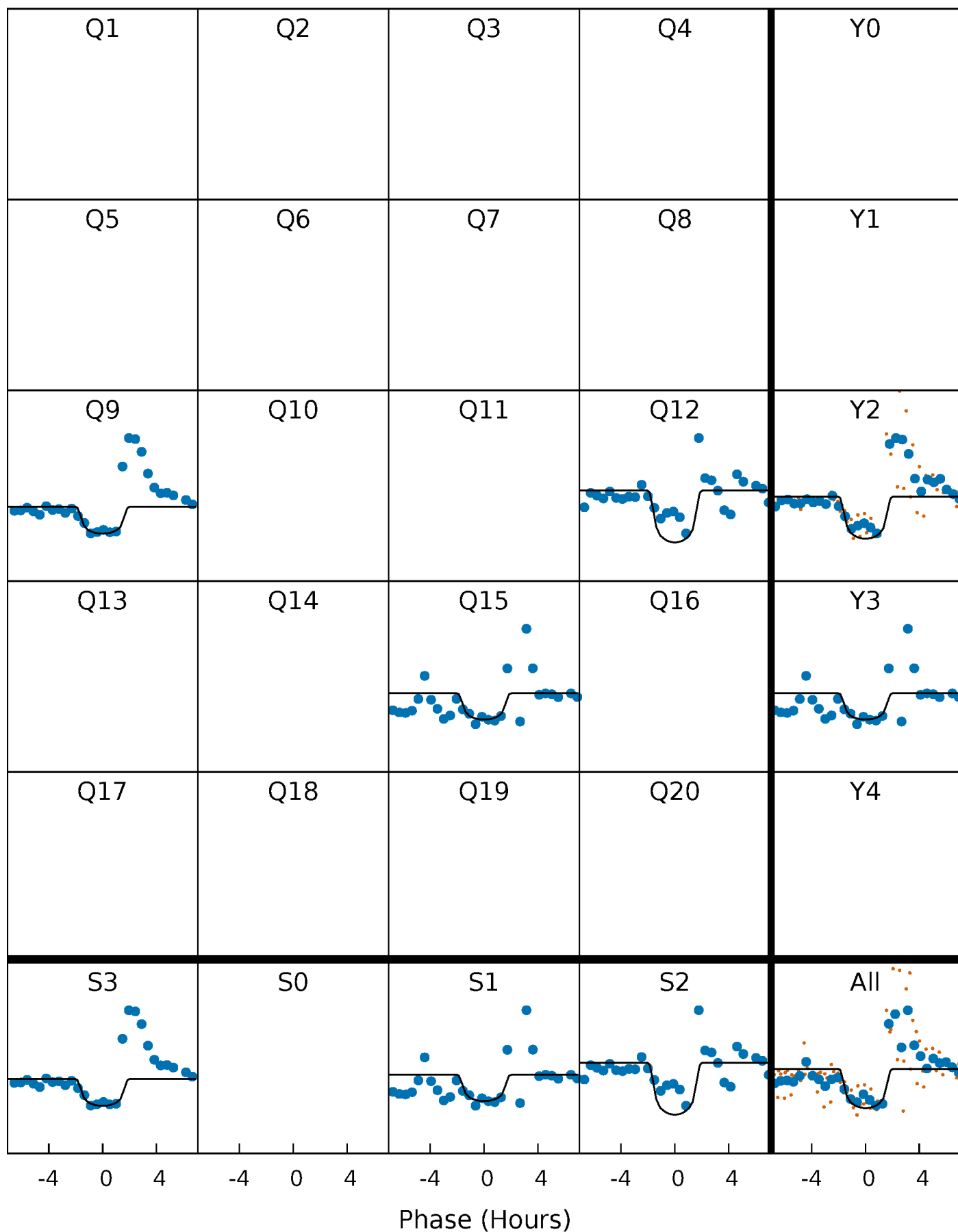
PDC Quarter-Phased Transit Curves

TCE 003128488-03 $P=284.070980$ Days $T_0=322.353452$ (BKJD)



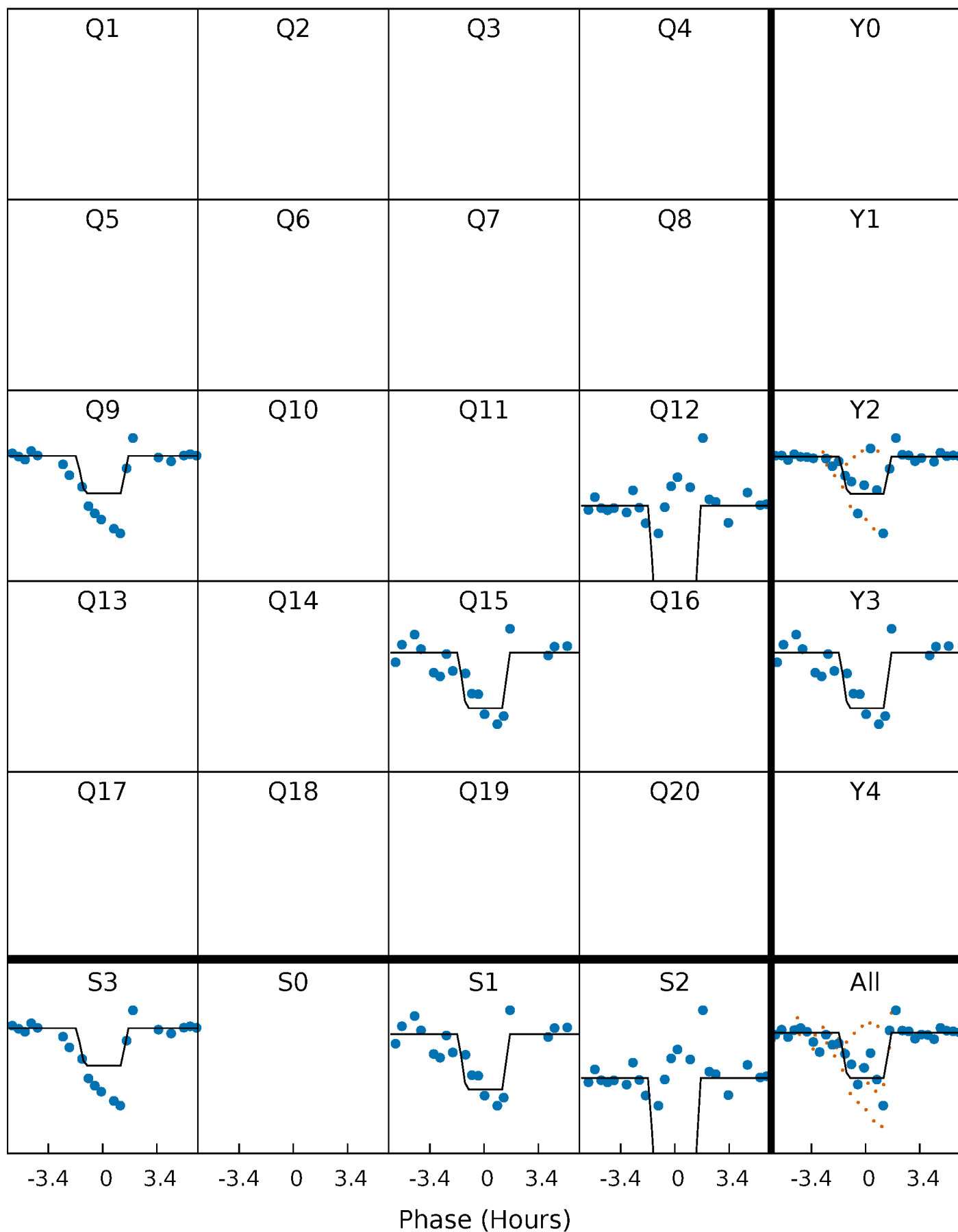
DV Quarter-Phased Transit Curves

TCE 003128488-03 $P=284.070980$ Days $T_0=322.353452$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

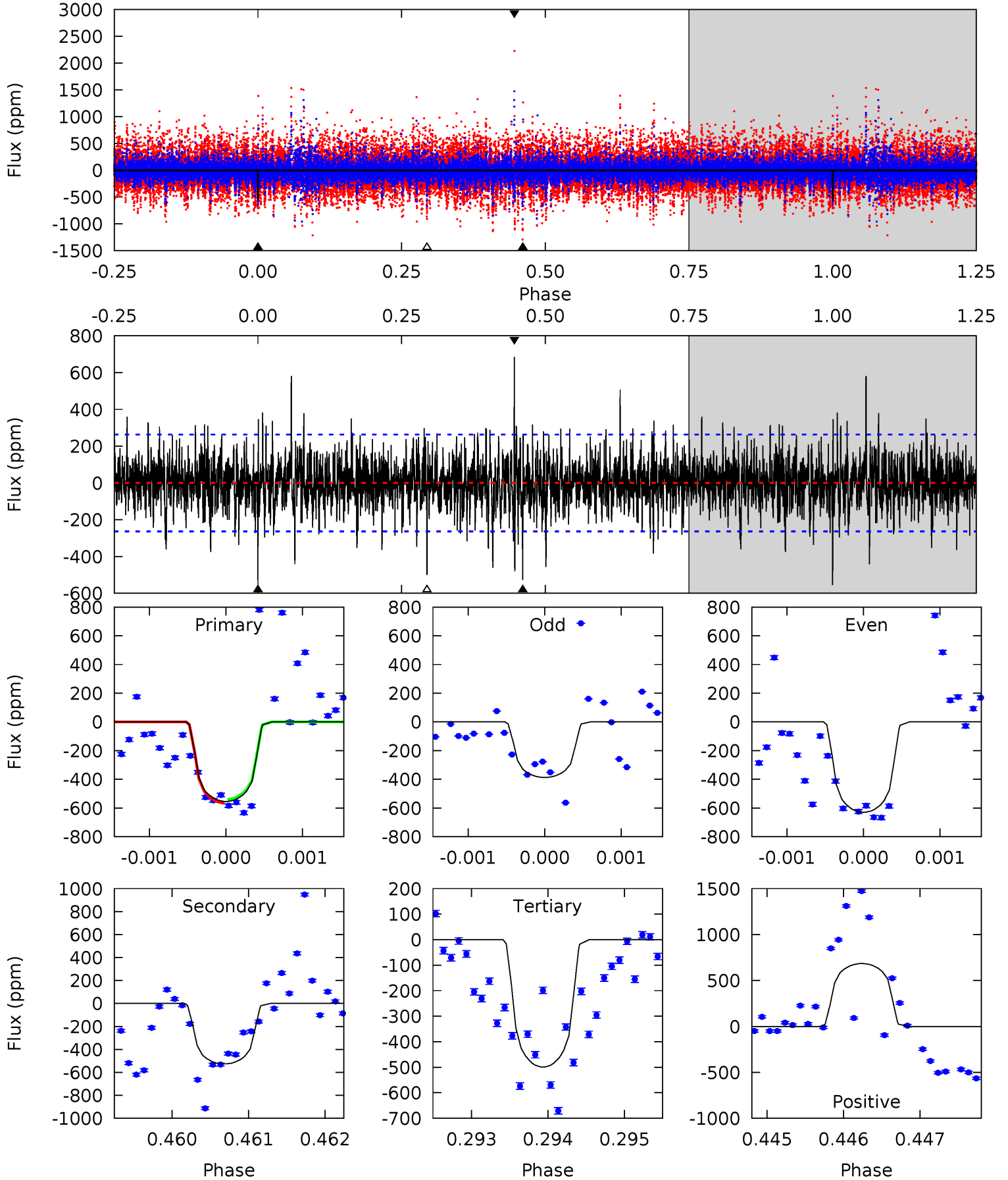
TCE 003128488-03 P=284.074001 Days $T_0=322.349515$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-03, P = 284.070980 Days, E = 38.282472 Days

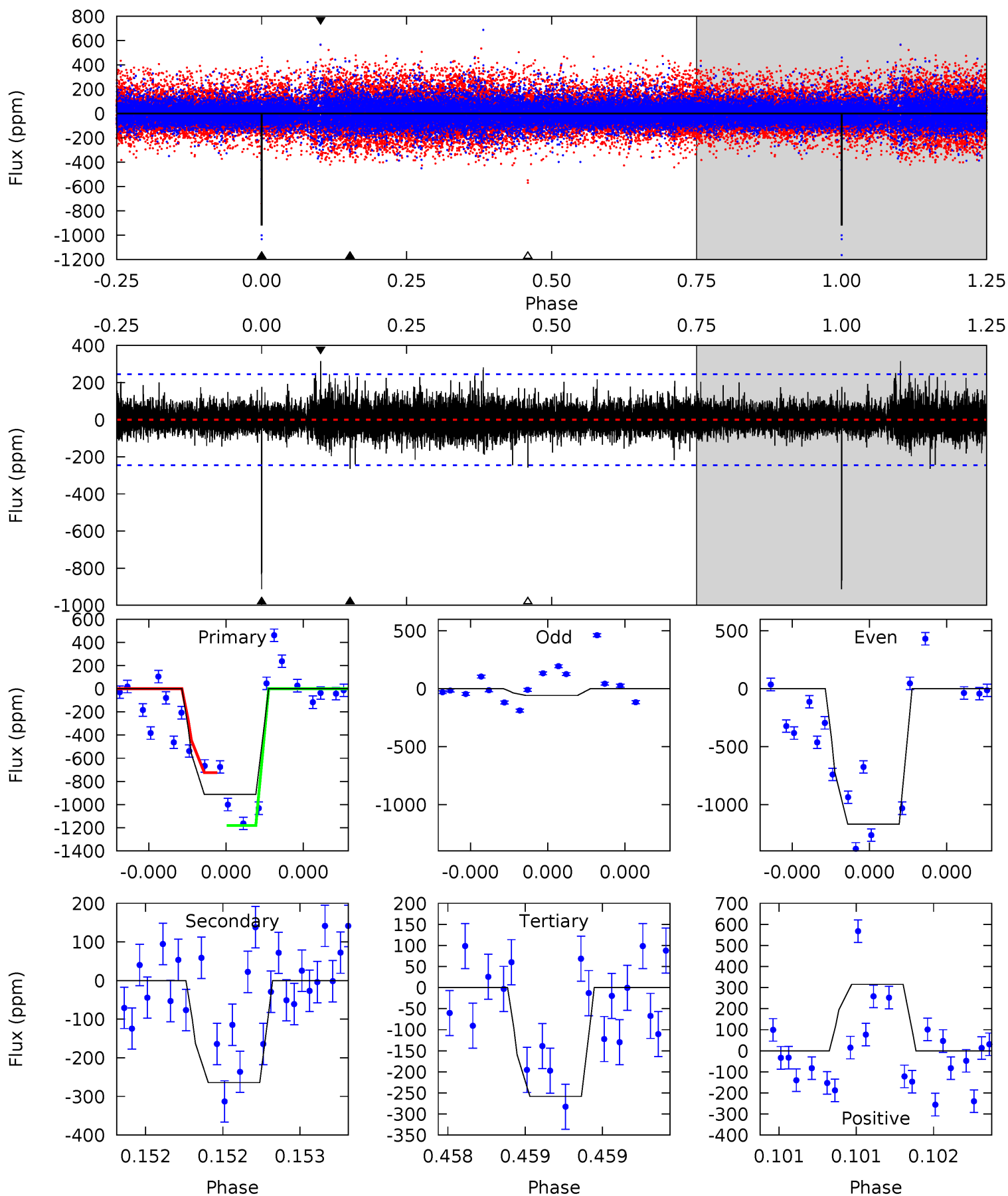
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	11.1	10.5	14.4	5.55	3.44	2.14	1.16	-2.74	0.58	-3.33	1.12	1.01	0.55	0.28



Alt Model-Shift Uniqueness Test

003128488-03, P = 284.074001 Days, E = 38.275514 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	6.03	5.89	7.19	5.60	3.52	1.09	14.9	13.6	0.13	-1.17	16.6	0.90	0.26	0



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-527 ± 47	$1.76^{+1.26}_{-1.06}$	249^{+8}_{-9}	4130^{+1997}_{-680}	$44531^{+236811}_{-29756}$
Alt.	-264 ± 44	$1.83^{+1.24}_{-1.02}$	249^{+8}_{-9}	3614^{+1266}_{-547}	21331^{+82166}_{-14340}

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

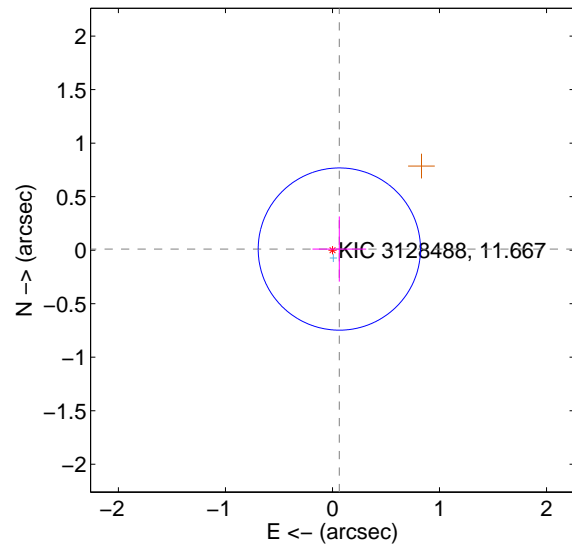
Supplemental centroid analysis for 003128488-03. **Kepler magnitude: 11.67.** Transit SNR 8.61

There are 1 quarters with good PRF difference image offsets

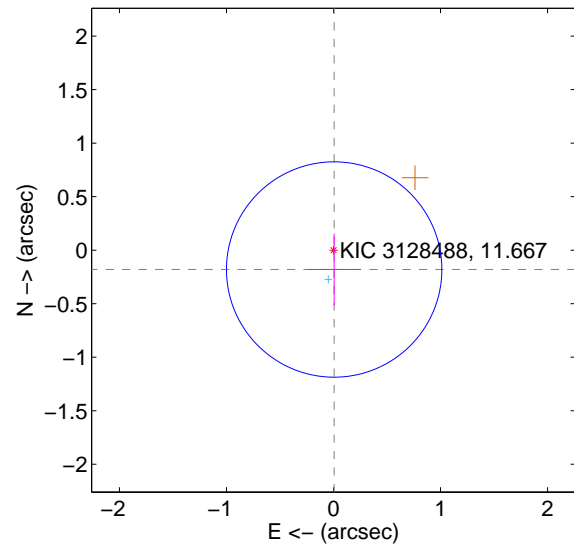
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.253	0.26	-0.064 ± 0.251	0.010 ± 0.304
PRF-fit source offset from KIC position	0.181 ± 0.335	0.54	-0.006 ± 0.248	-0.181 ± 0.335
photometric centroid source offset	0.56 ± 0.44	1.26	-0.51 ± 0.41	0.24 ± 0.57

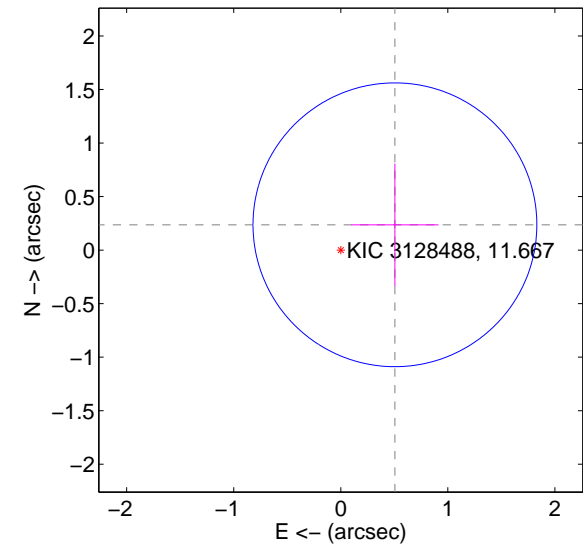
offset from difference PRF-fit to OOT PRF-fit



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.

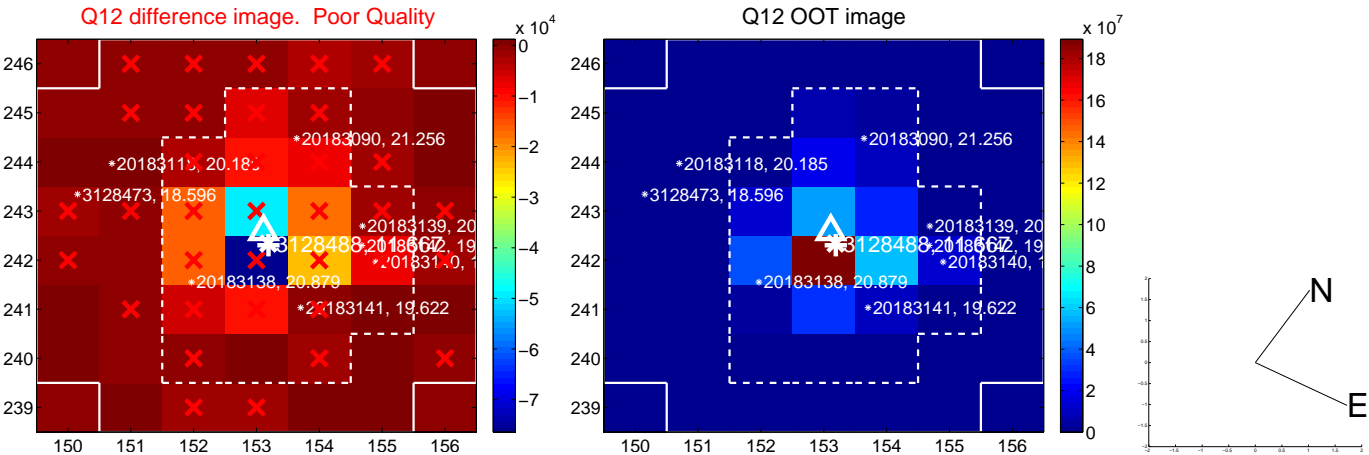
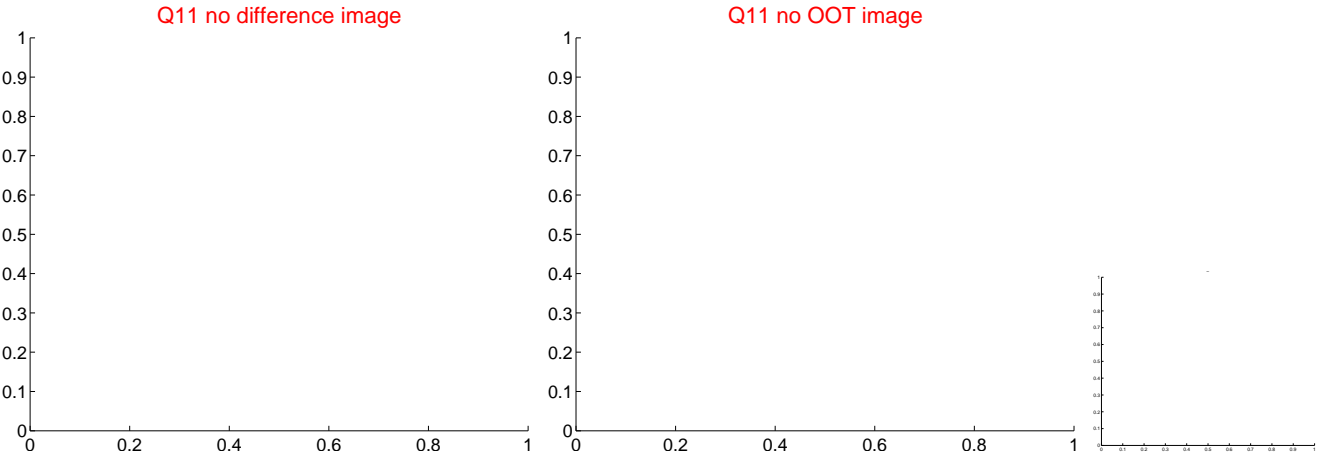
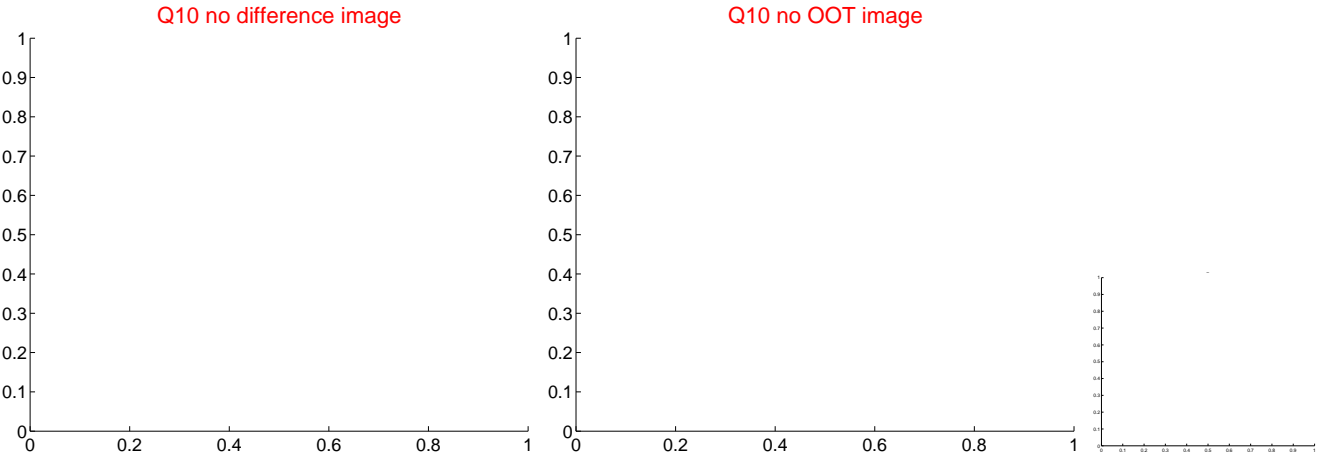
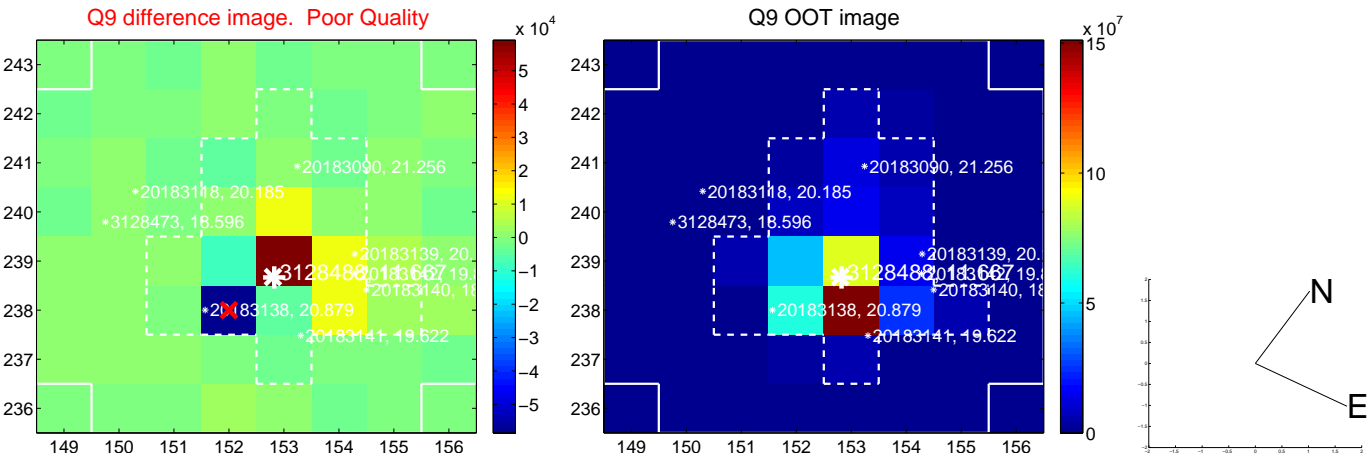
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



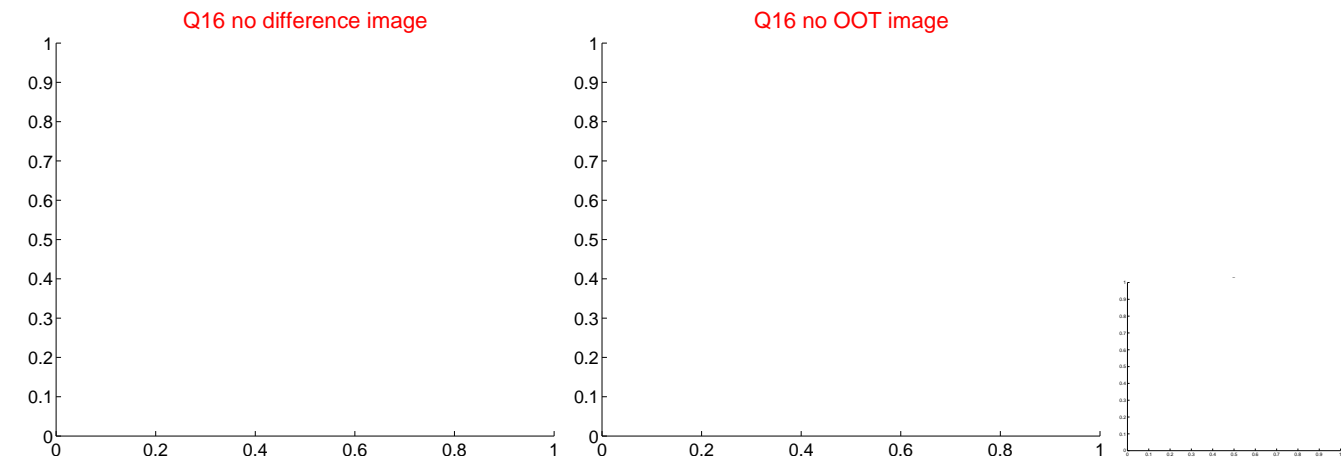
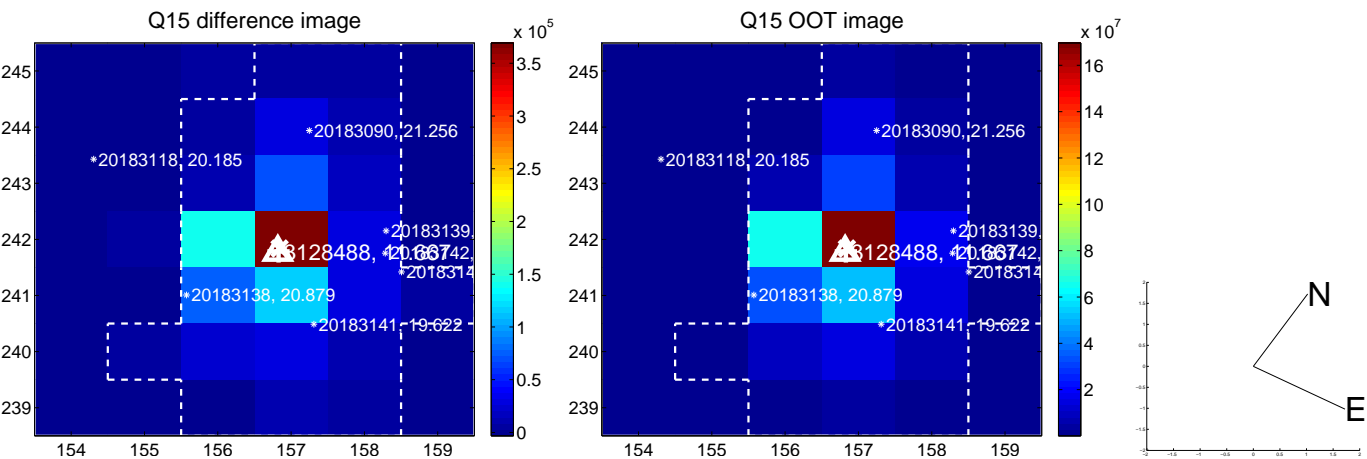
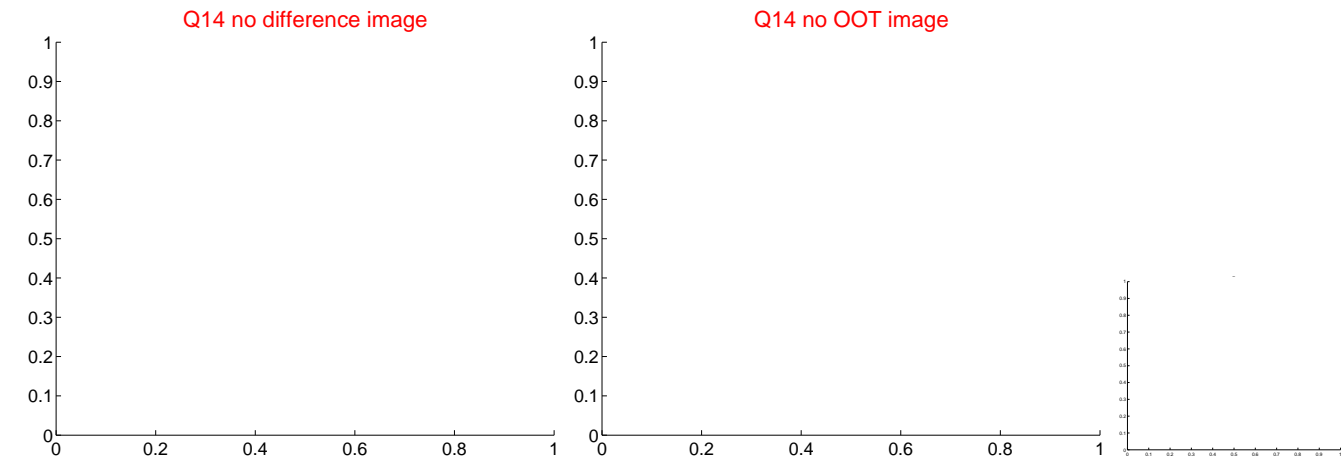
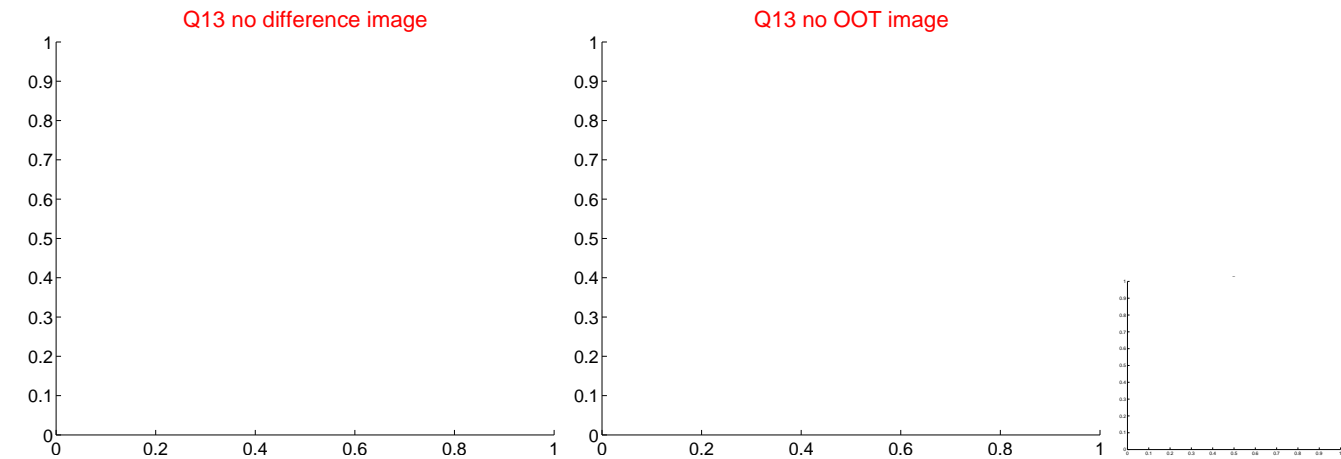
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



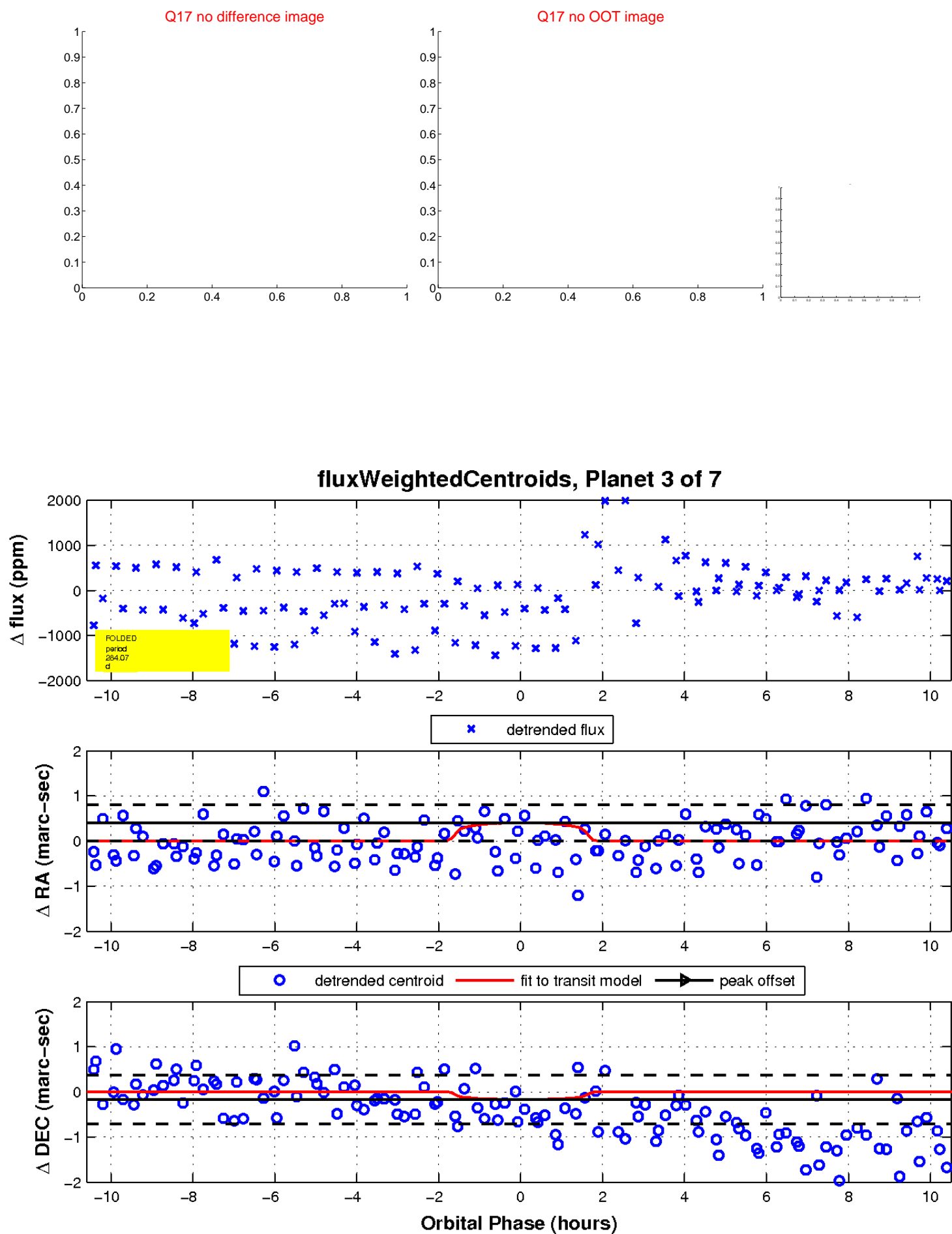
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



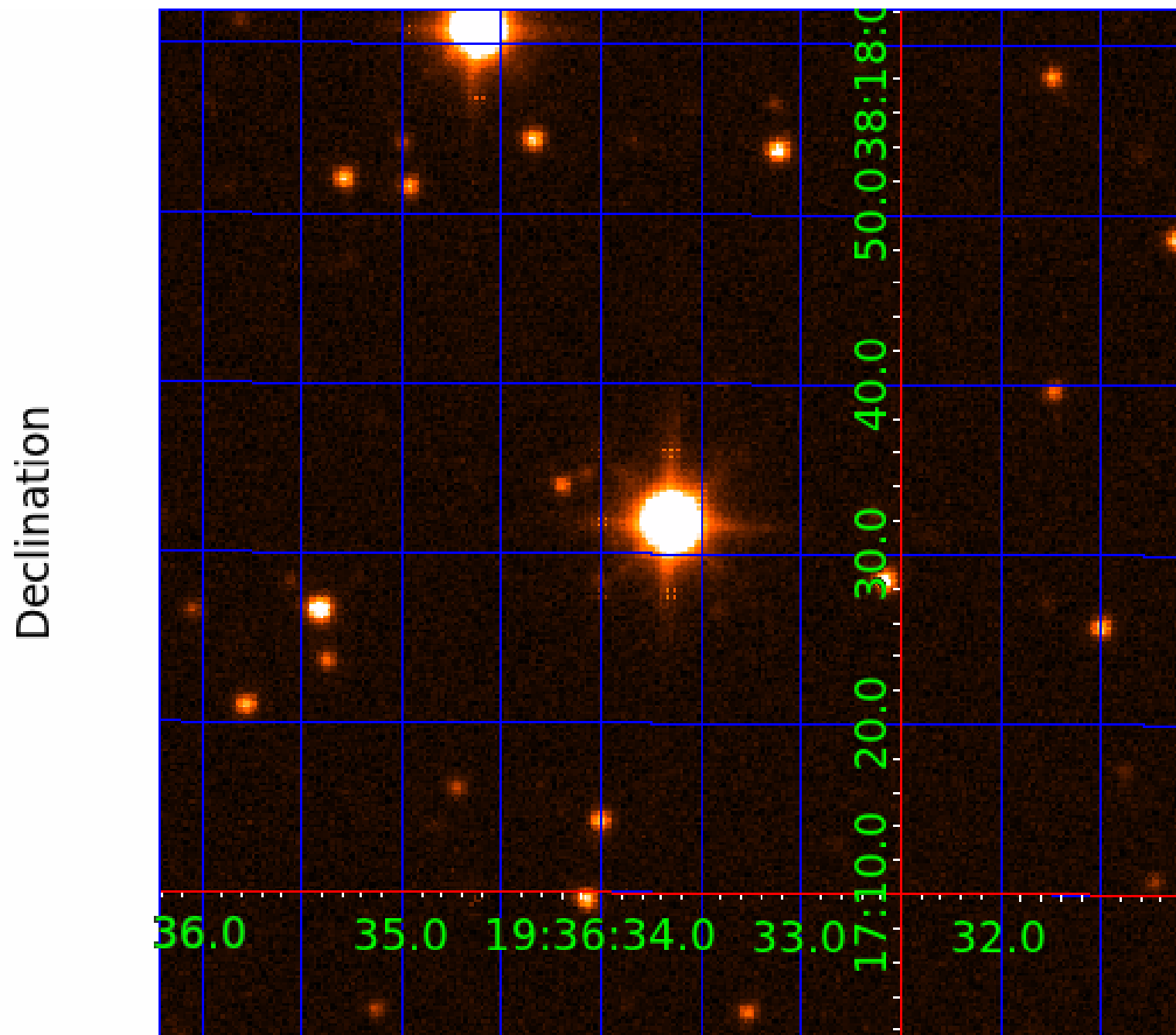
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003128488

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})
003128488-01	OBS	No	324.958304	371.434562	651.6	9.680	18.7	5.5	0.55	4565	1.45	0.20
003128488-02	OBS	No	694.036941	176.112418	1238.2	10.944	17.1	9.0	0.55	4565	1.87	0.07
003128488-03	OBS	No	284.070980	322.353452	680.8	3.542	15.1	8.6	0.55	4565	1.61	0.24
003128488-04	OBS	No	510.726750	243.094415	438.4	19.867	13.3	2.9	0.55	4565	1.14	0.11
003128488-05	OBS	No	664.424496	134.457468	550.3	5.638	14.8	4.6	0.55	4565	1.26	0.08
003128488-06	OBS	No	601.989902	239.565807	838.8	9.891	12.1	7.2	0.55	4565	1.58	0.09
003128488-07	OBS	No	513.112903	197.205862	806.3	9.179	12.1	7.8	0.55	4565	1.62	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

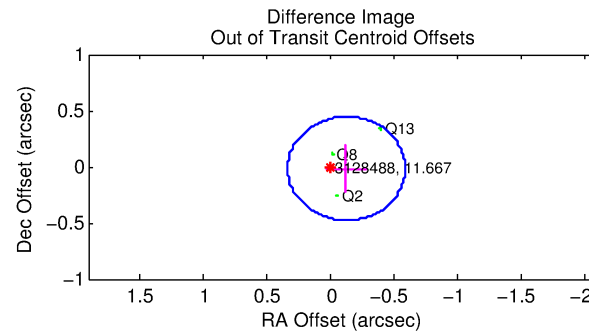
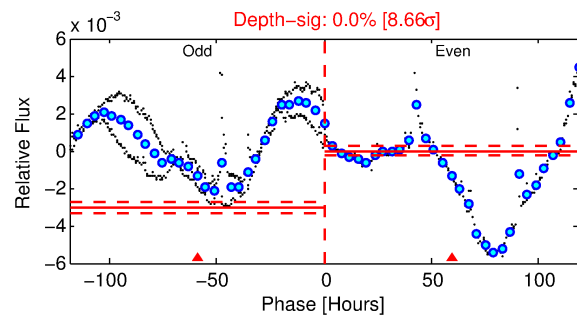
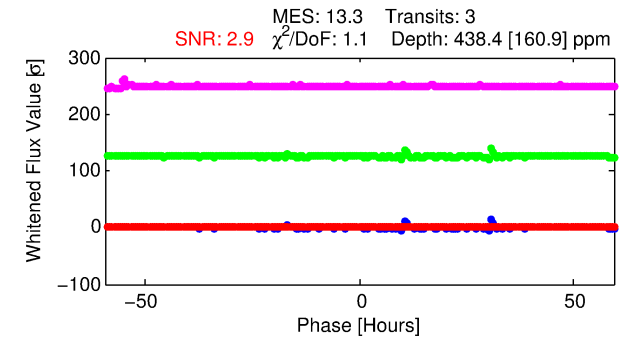
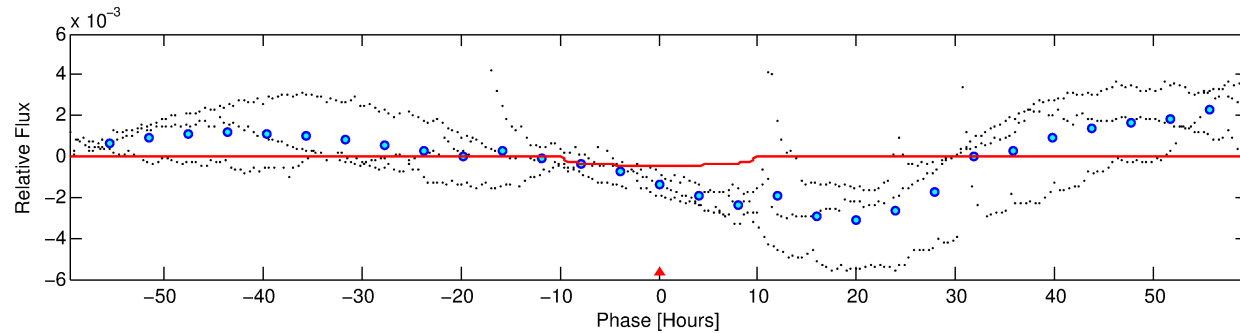
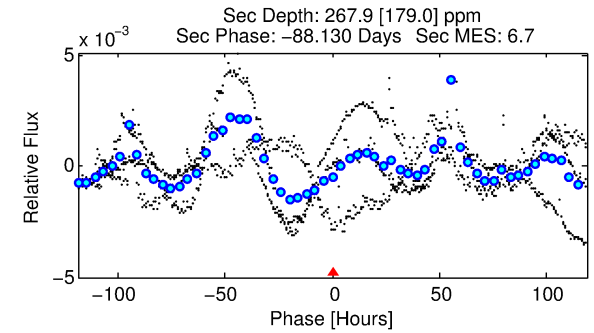
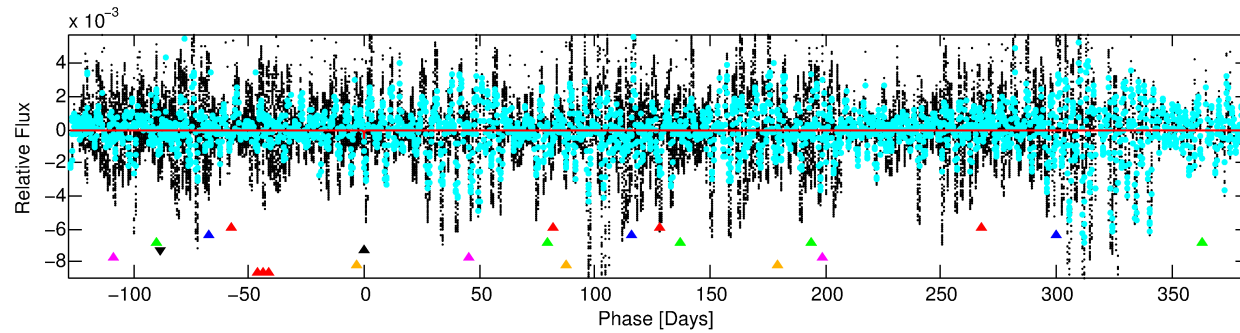
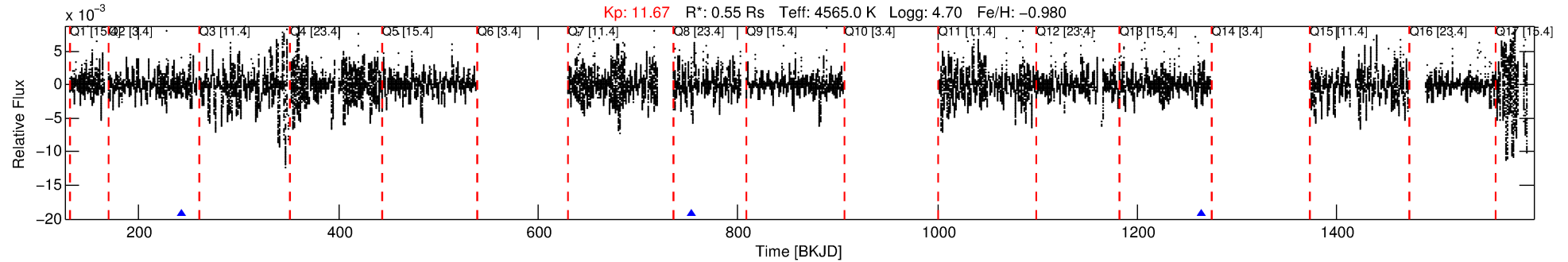
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-04

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 4 of 7 Period: 510.727 d



DV Fit Results:

Period = 510.72675 [0.00975] d
Epoch = 243.0944 [0.0139] BKJD
Rp/R* = 0.0192 [0.0085]
a/R* = 181.15 [256.20]
b = 0.43 [2.65]
Seff = 0.11 [0.02]
Teq = 147 [6] K
Rp = 1.14 [0.52] Re
a = 1.0200 [0.0682] AU
Ag = 117250.24 [130975.83] [0.90 σ]
Teffp = 4215 [1180] K [3.45 σ]

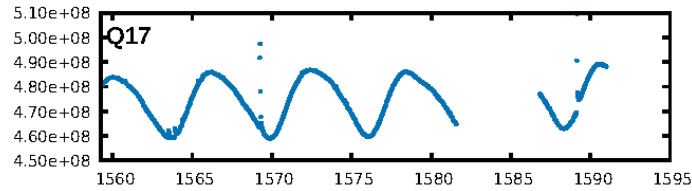
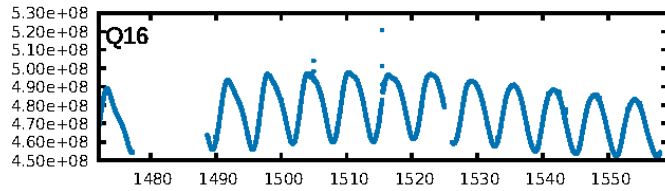
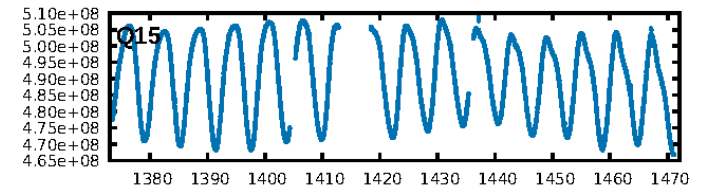
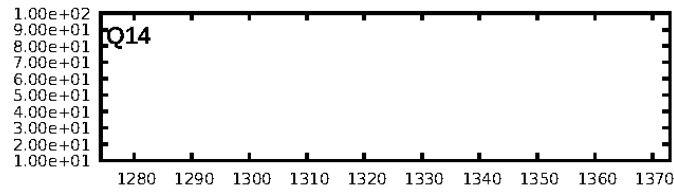
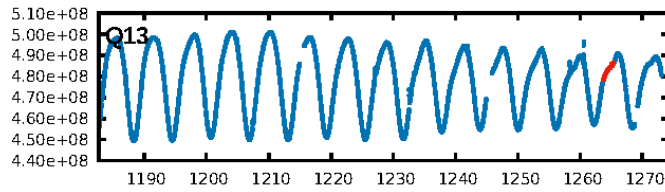
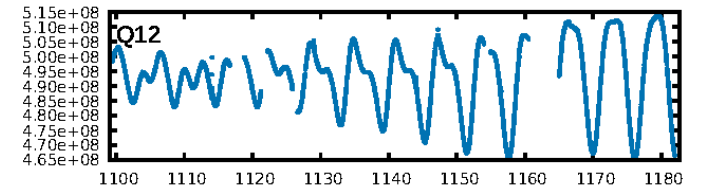
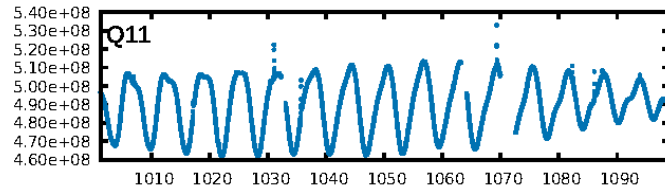
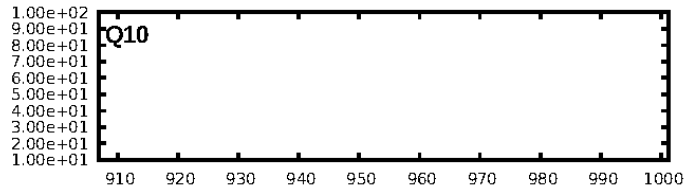
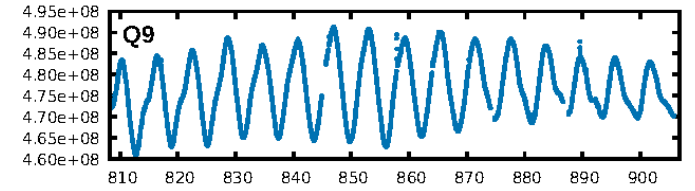
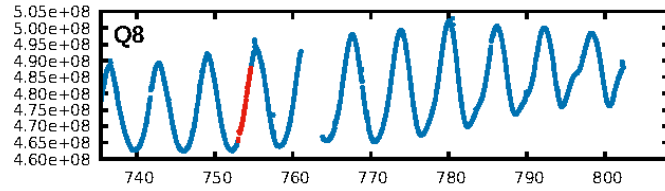
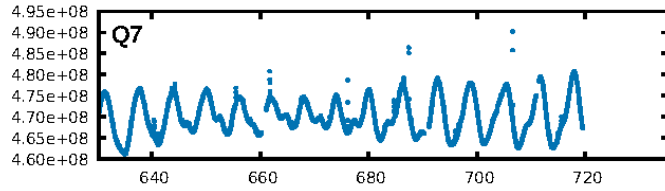
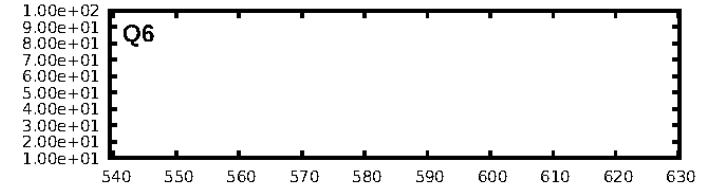
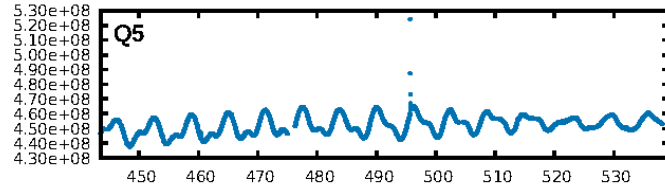
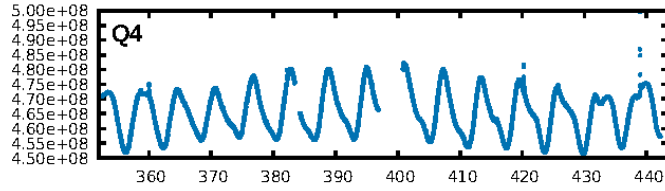
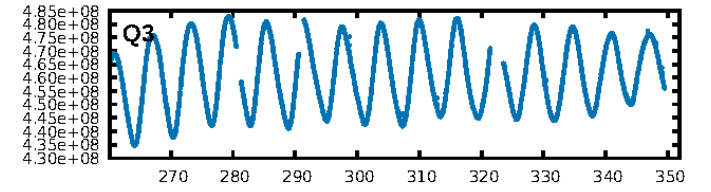
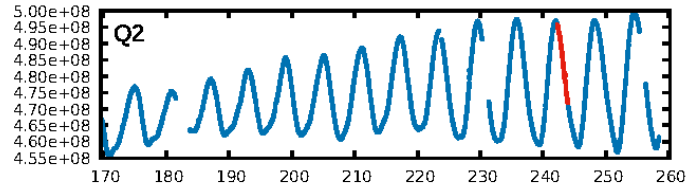
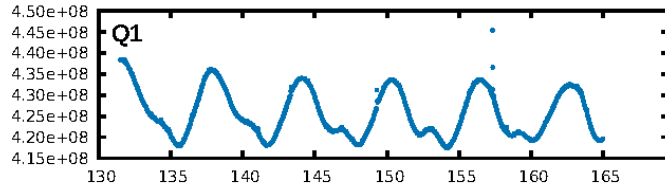
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [201.74 σ]
LongPeriod-sig: 99.1% [2.62 σ]
ModelChiSquare2-sig: 58.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5235
Centroid-sig: 31.2%
Centroid-so: 0.935 arcsec [0.76 σ]
OotOffset-rm: 0.130 arcsec [0.85 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.137 arcsec [0.79 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

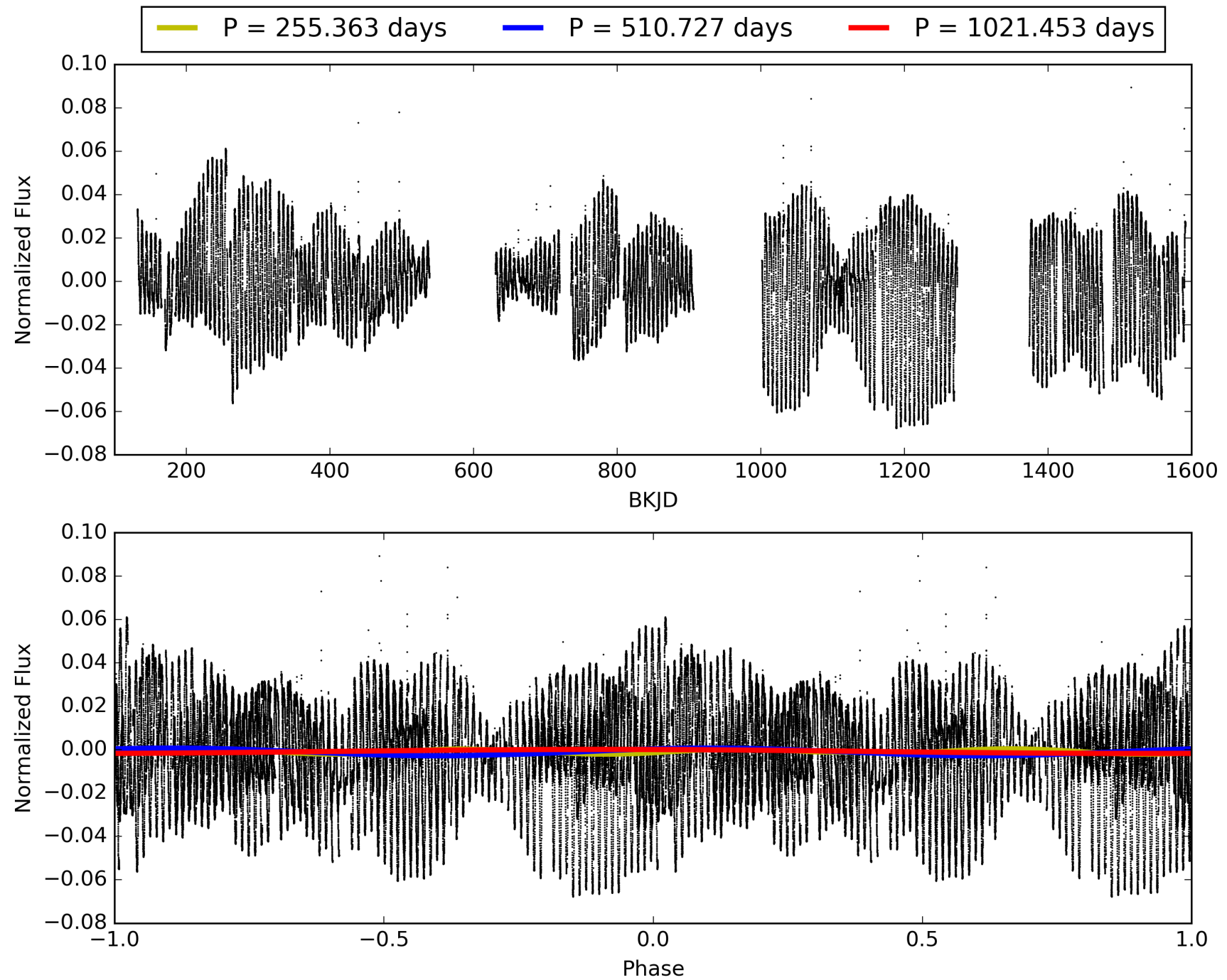
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:51:39 Z

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

TCE 003128488-04, PDC Light Curves

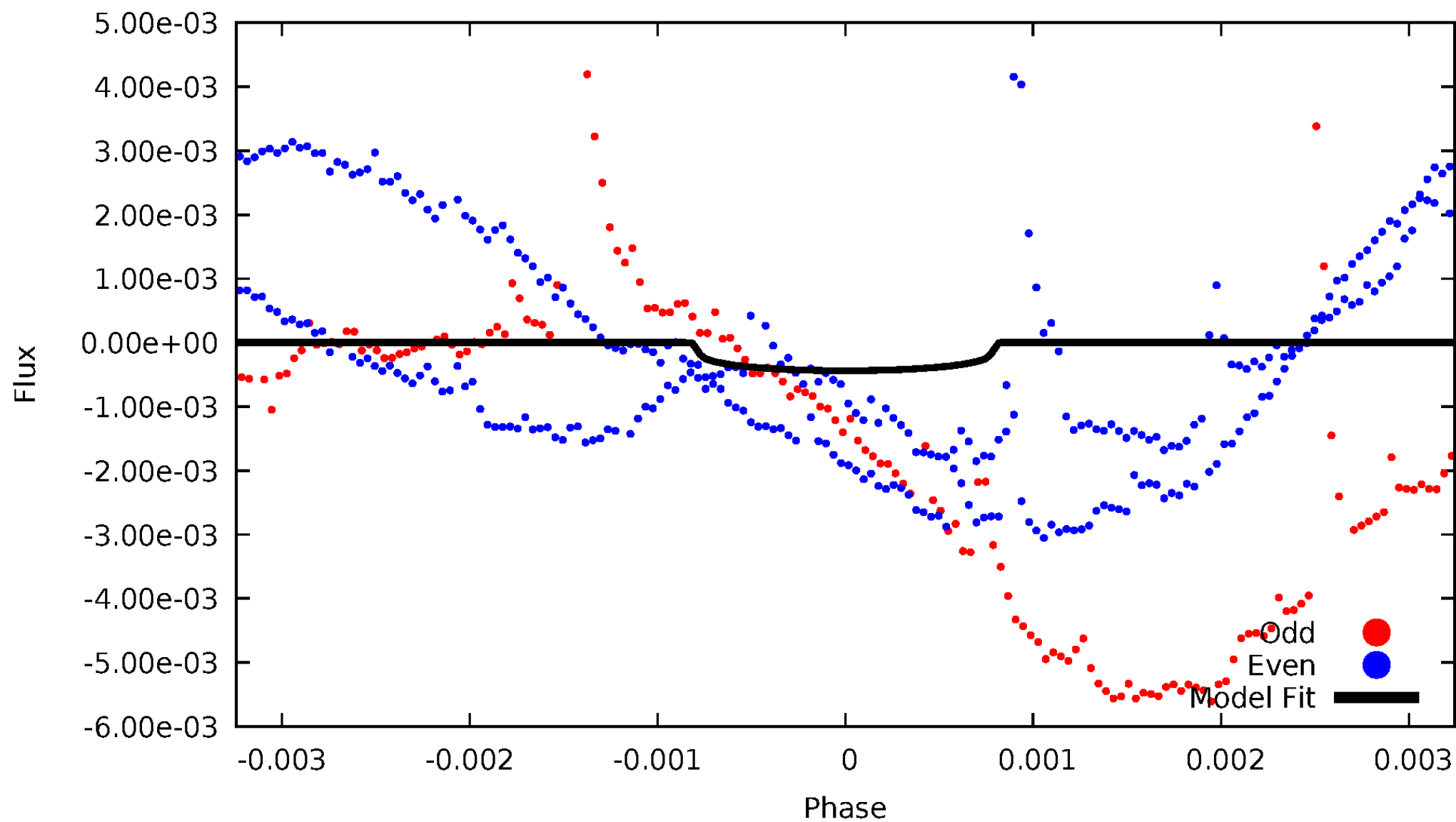


TCE 003128488-04



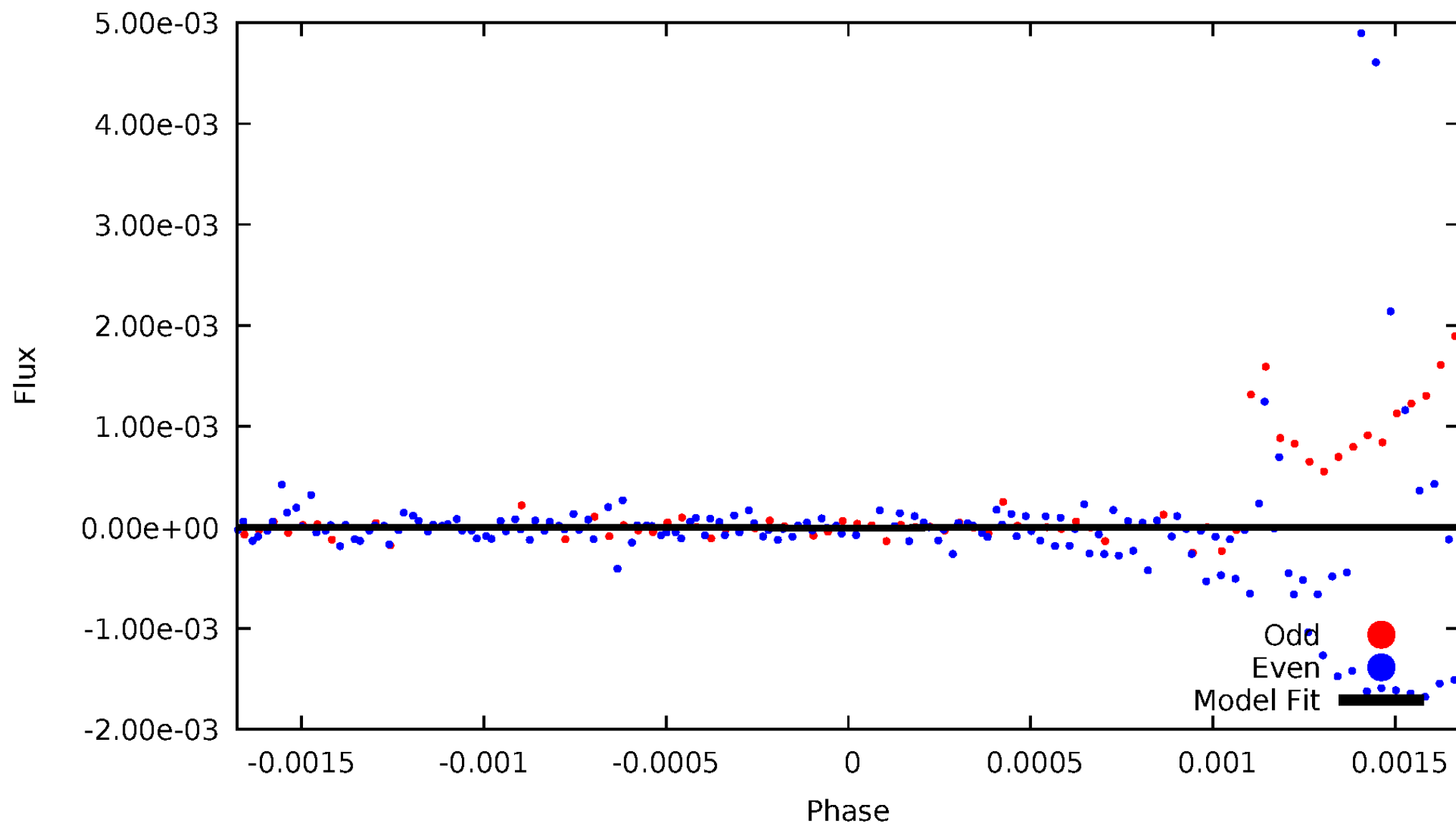
DV Odd/Even

TCE 003128488-04



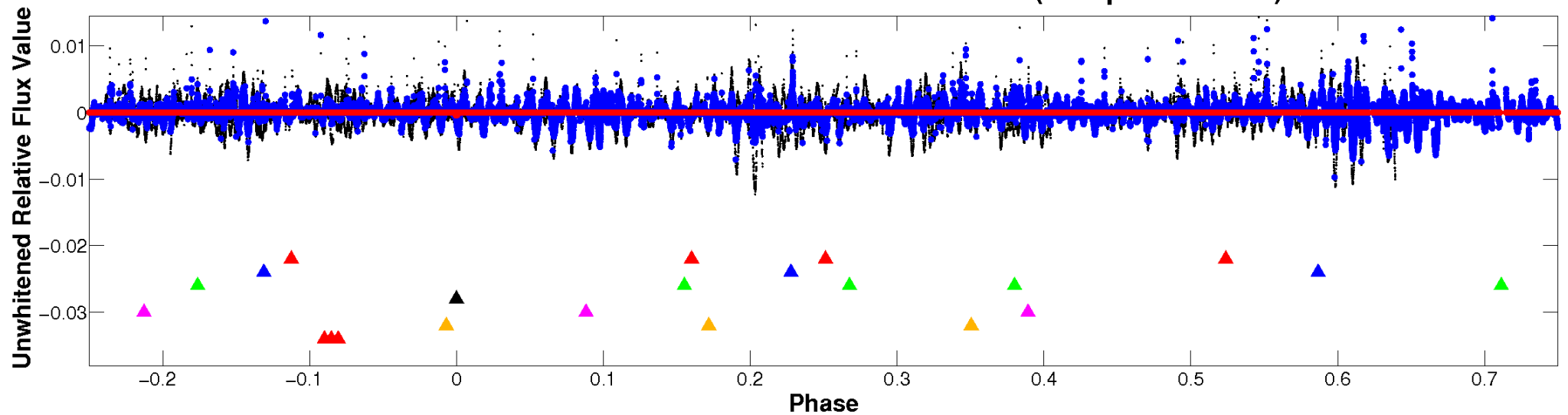
ALT Odd/Even

TCE 003128488-04

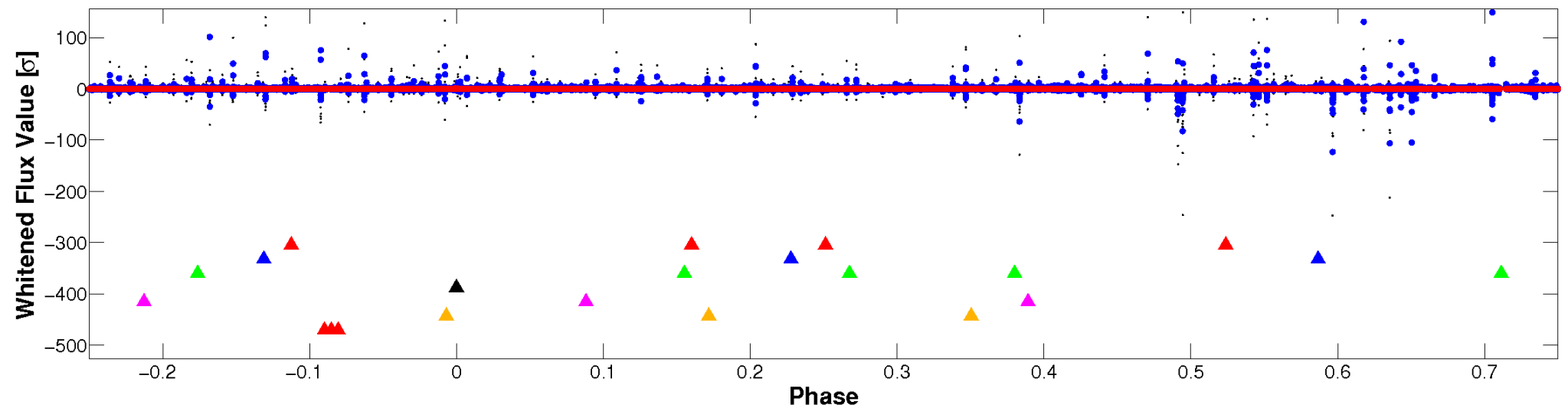


Non-Whitened Vs. Whitened Light Curve

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

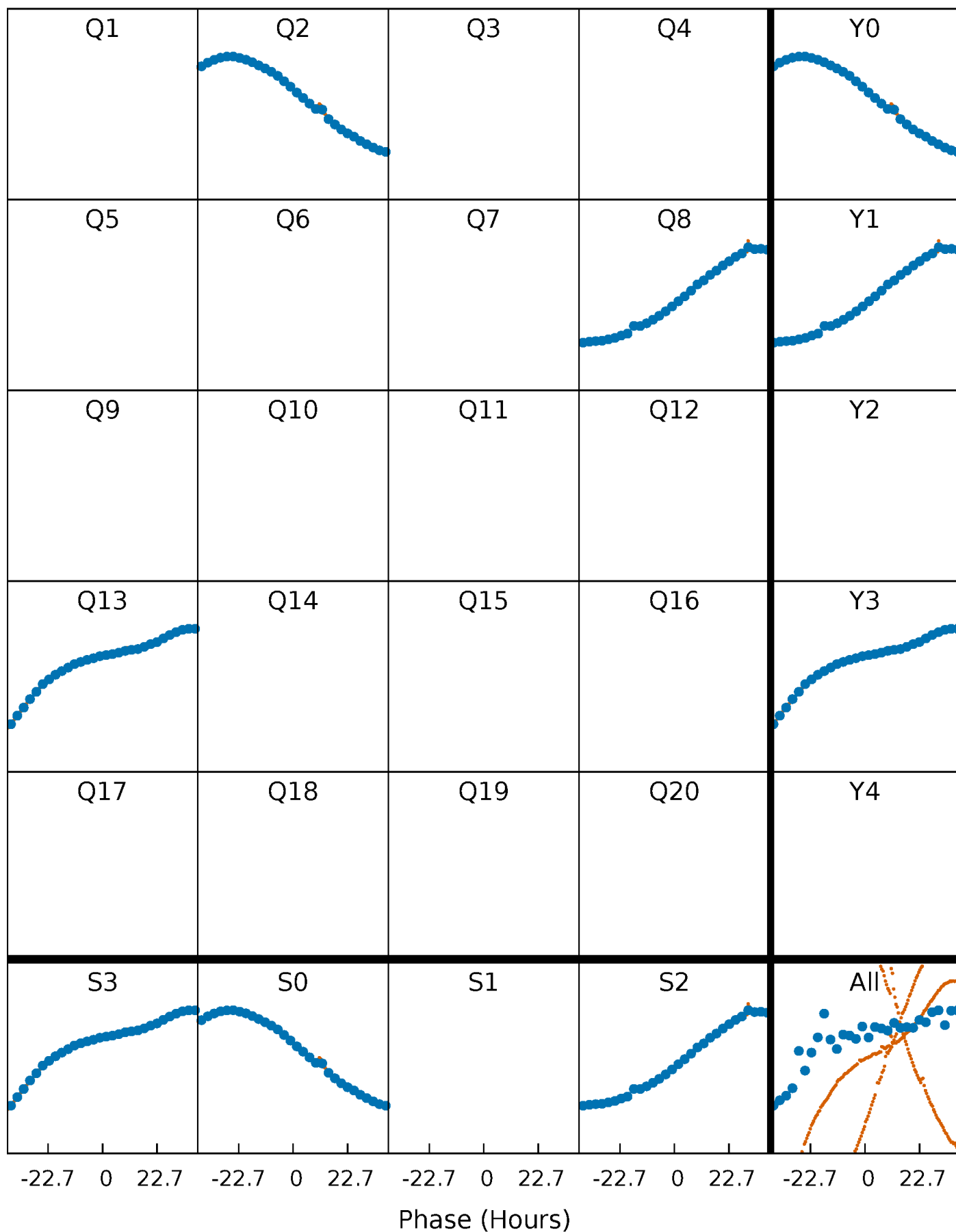


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



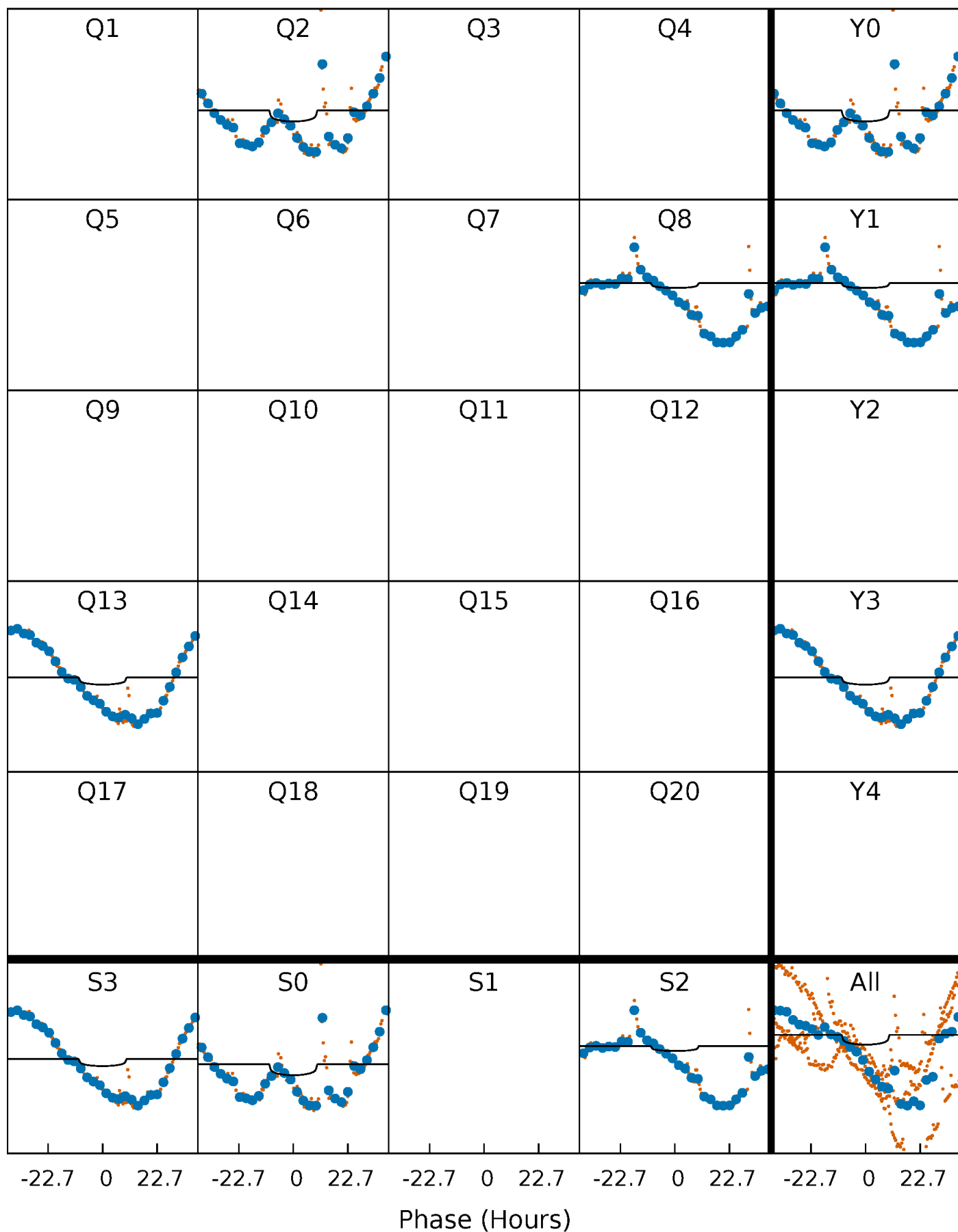
PDC Quarter-Phased Transit Curves

TCE 003128488-04 P=510.726750 Days $T_0=243.094415$ (BKJD)



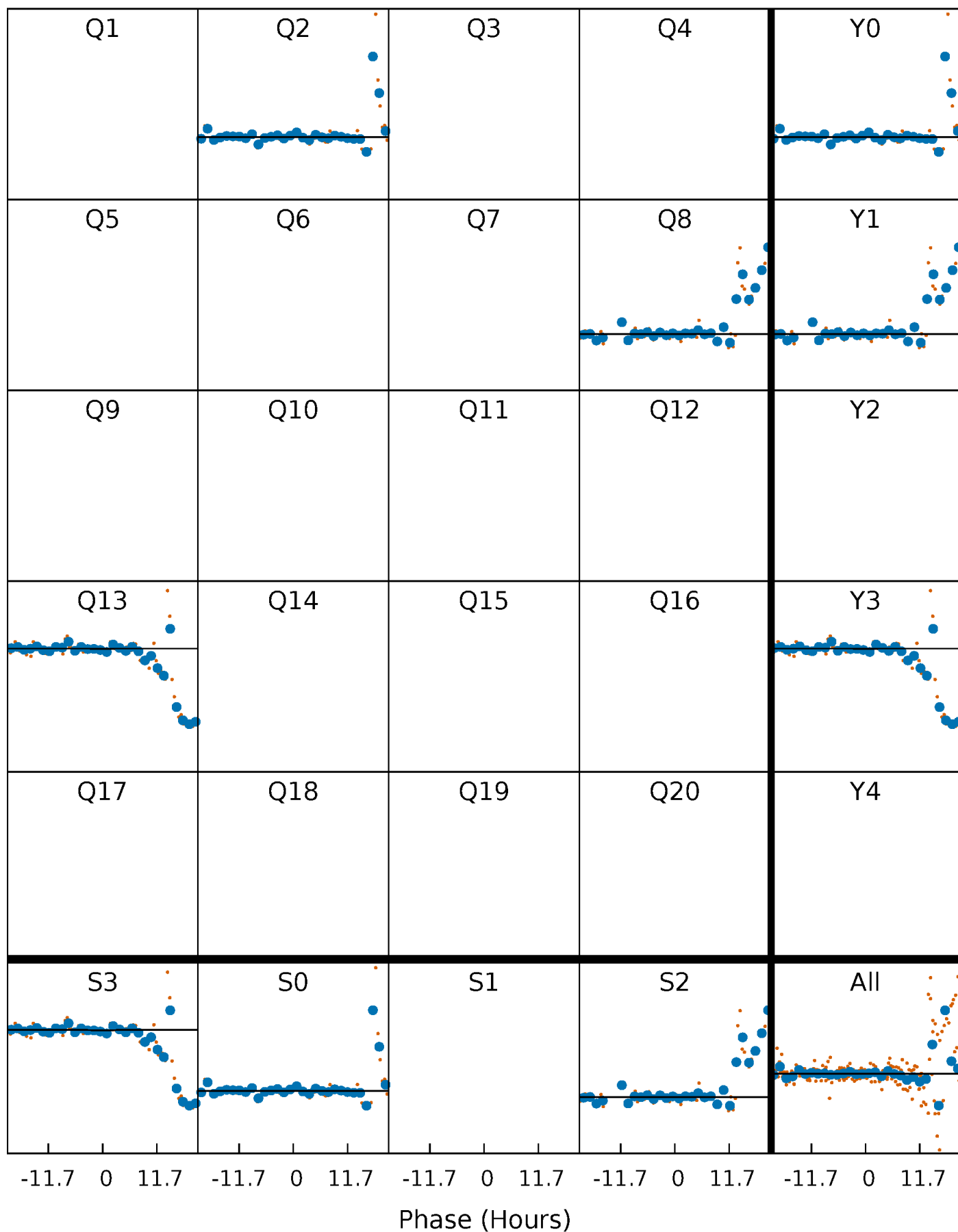
DV Quarter-Phased Transit Curves

TCE 003128488-04 $P=510.726750$ Days $T_0=243.094415$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

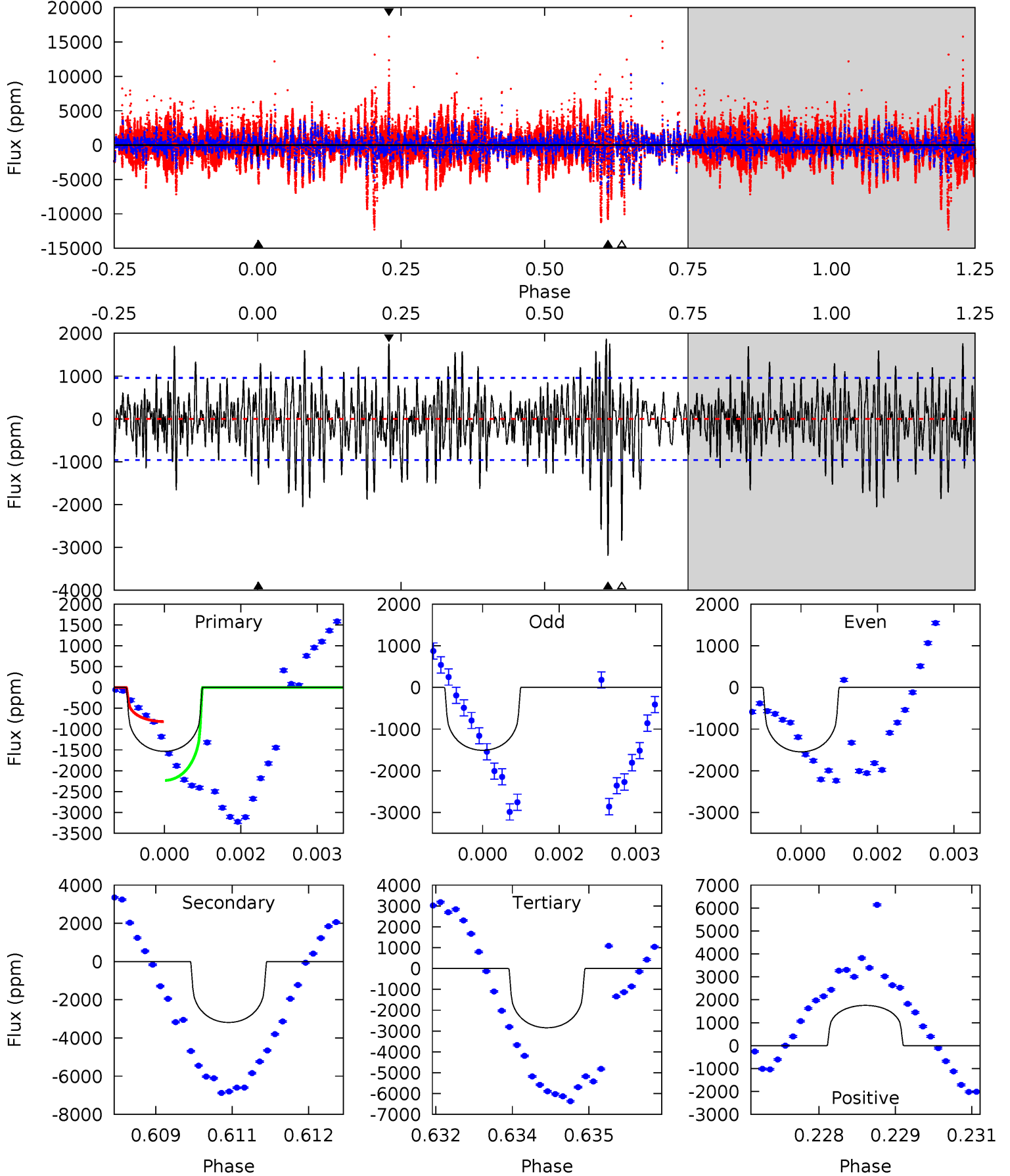
TCE 003128488-04 $P=510.784511$ Days $T_0=242.833327$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-04, P = 510.726750 Days, E = 243.094415 Days

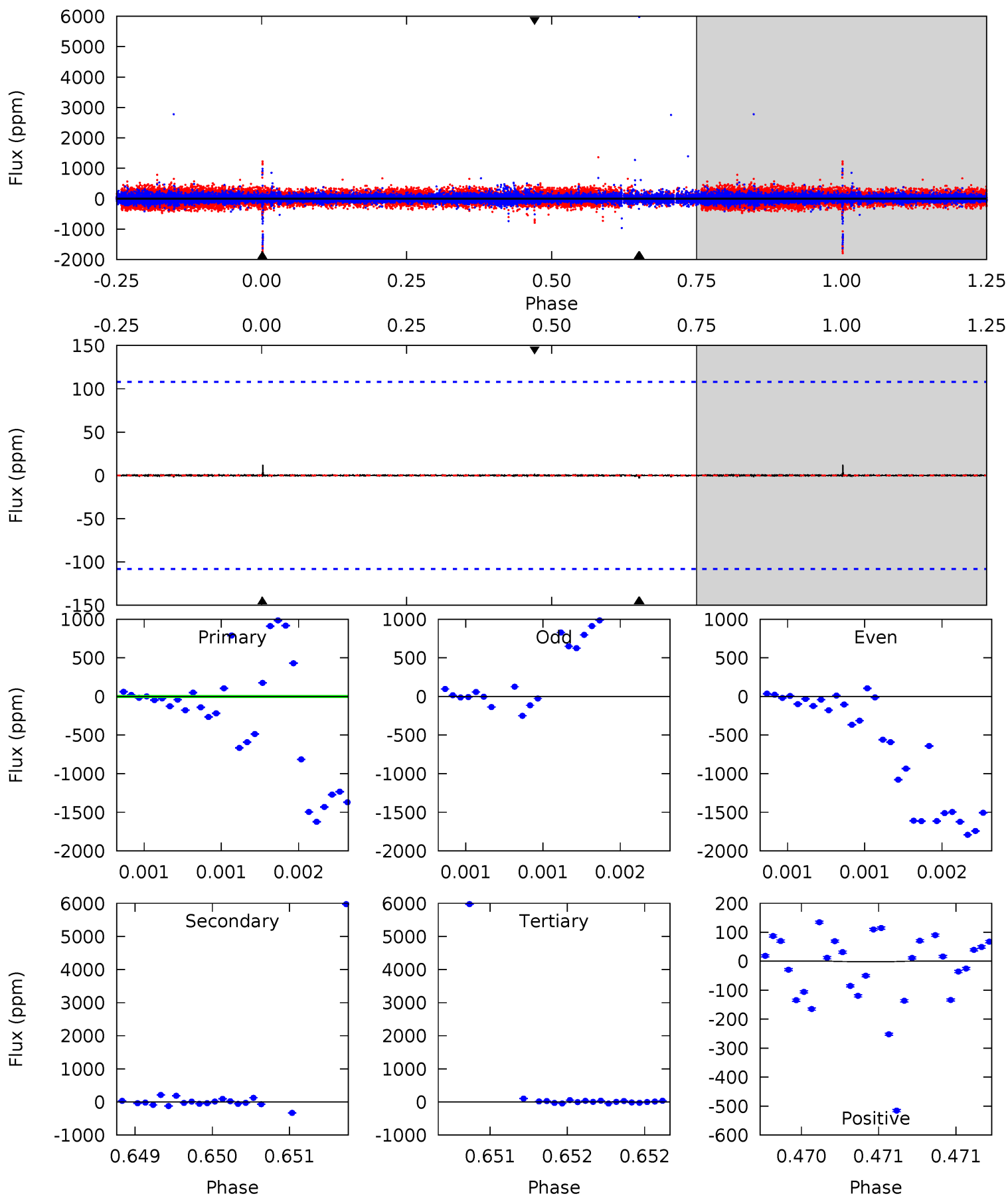
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	17.8	15.9	9.80	5.36	3.15	3.22	-7.32	-1.24	1.92	8.01	0.09	1.02	0.37	3.96



Alt Model-Shift Uniqueness Test

003128488-04, P = 510.784511 Days, E = 242.833327 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.02	0.15	0.14	0.07	5.56	3.46	0.02	-0.12	-0.04	0.00	0.08	0.04	0.38	0.81	0.13



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3189 ± 179	$1.15^{+0.49}_{-0.50}$	205^{+7}_{-7}	7633^{+3675}_{-1388}	$1399056^{+3103866}_{-701106}$
Alt.	-3 ± 19	$0.40^{+0.43}_{-0.27}$	204^{+7}_{-7}	2547^{+2061}_{-6611}	$3821^{+162997}_{-100895}$

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

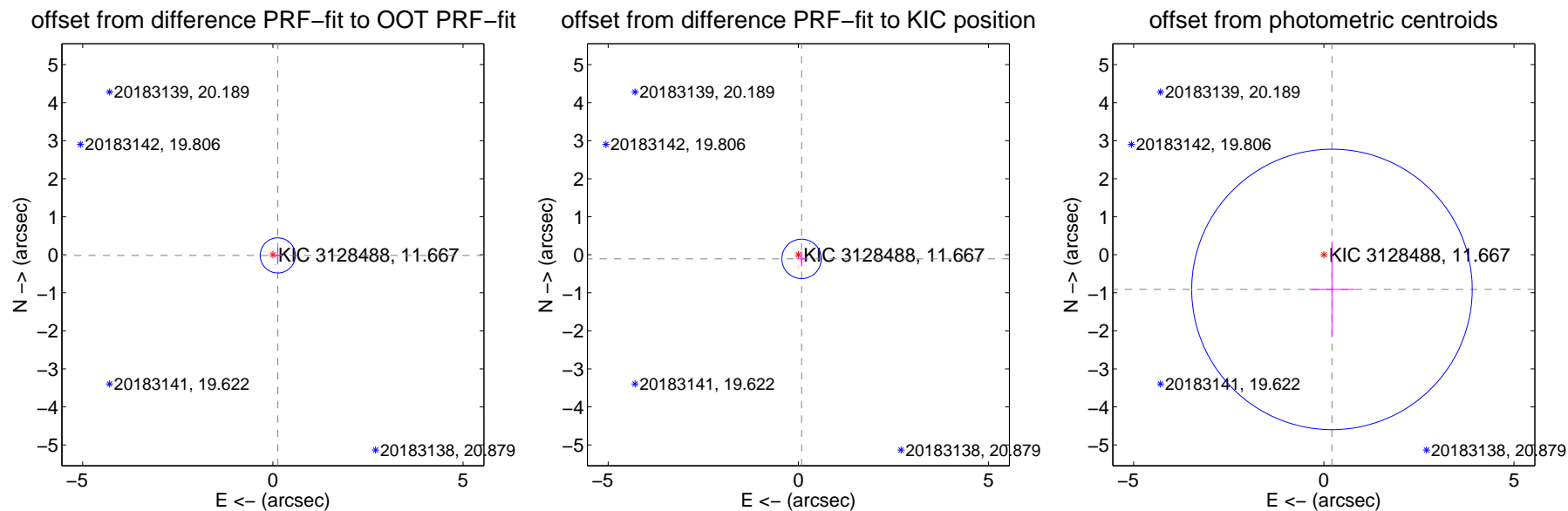
DV Centroid Data

Supplemental centroid analysis for 003128488-04. **Kepler magnitude: 11.67.** Transit SNR 2.94

There are 1 quarters with good PRF difference image offsets

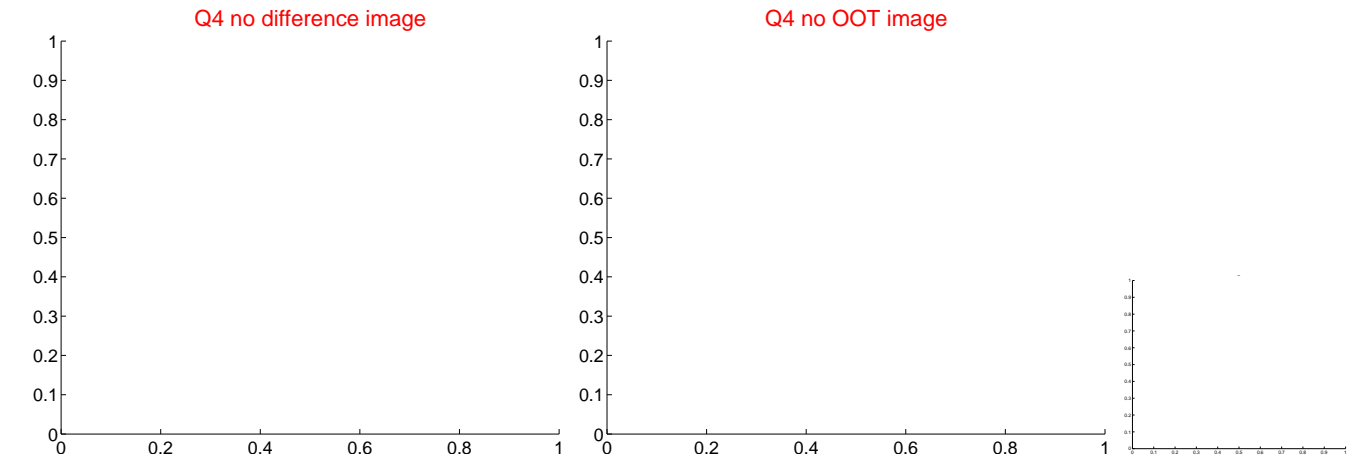
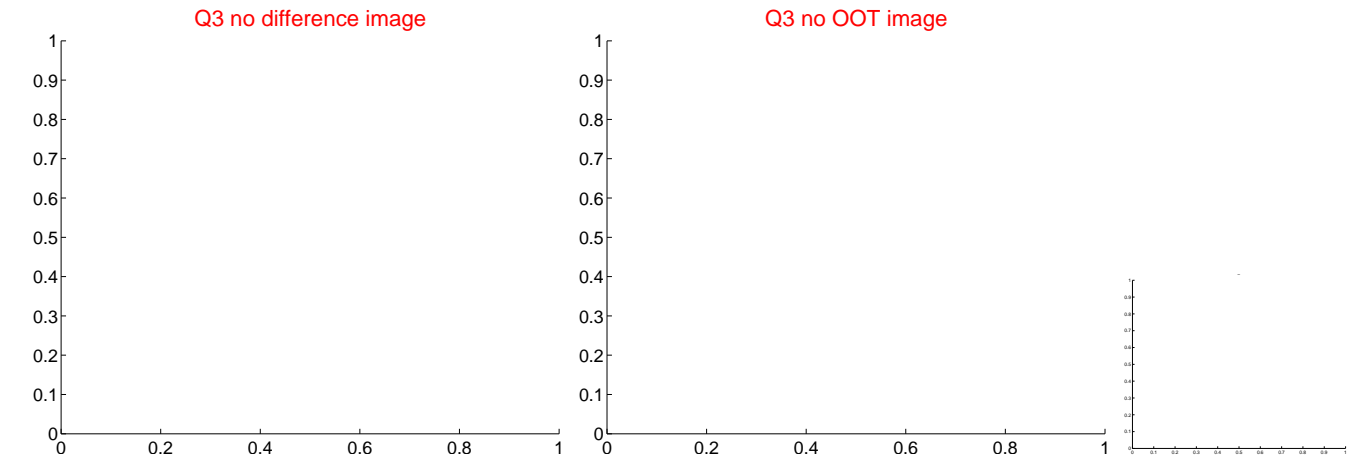
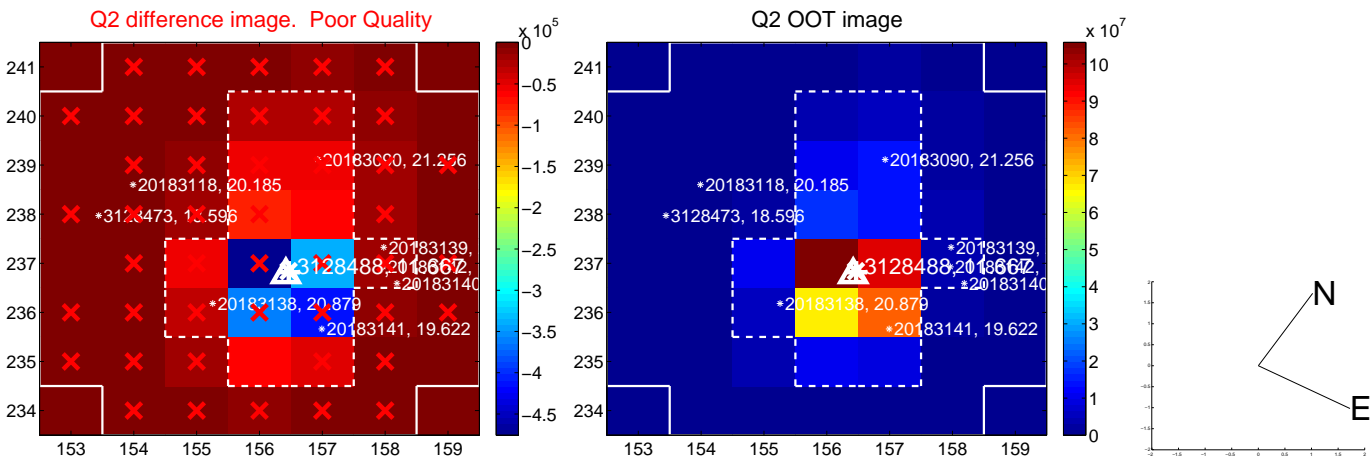
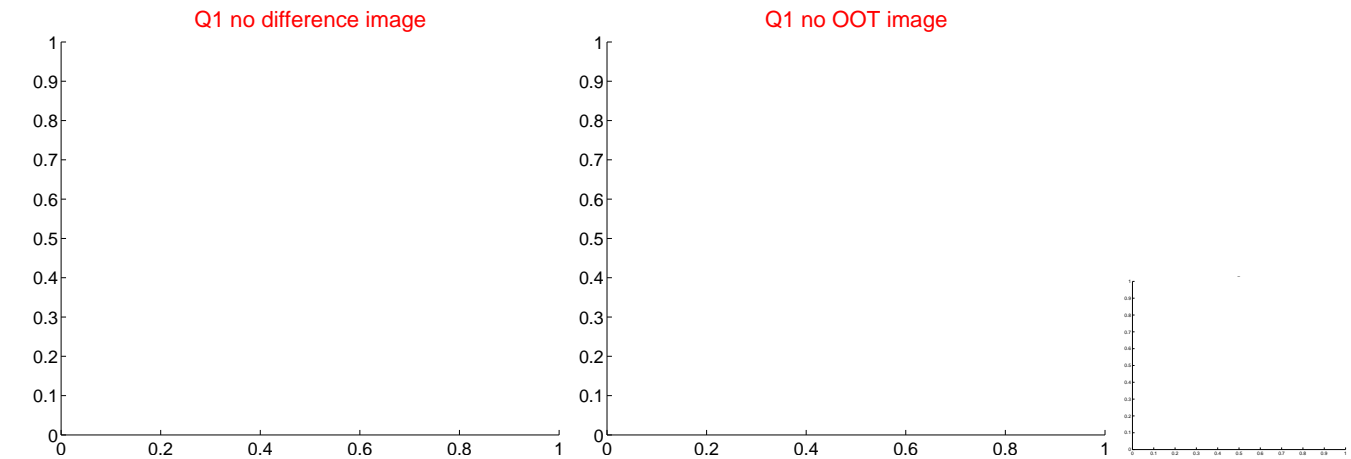
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.130 ± 0.154	0.85	-0.129 ± 0.153	-0.017 ± 0.207
PRF-fit source offset from KIC position	0.137 ± 0.173	0.79	-0.085 ± 0.128	-0.107 ± 0.196
photometric centroid source offset	0.94 ± 1.23	0.76	-0.21 ± 0.60	-0.91 ± 1.25

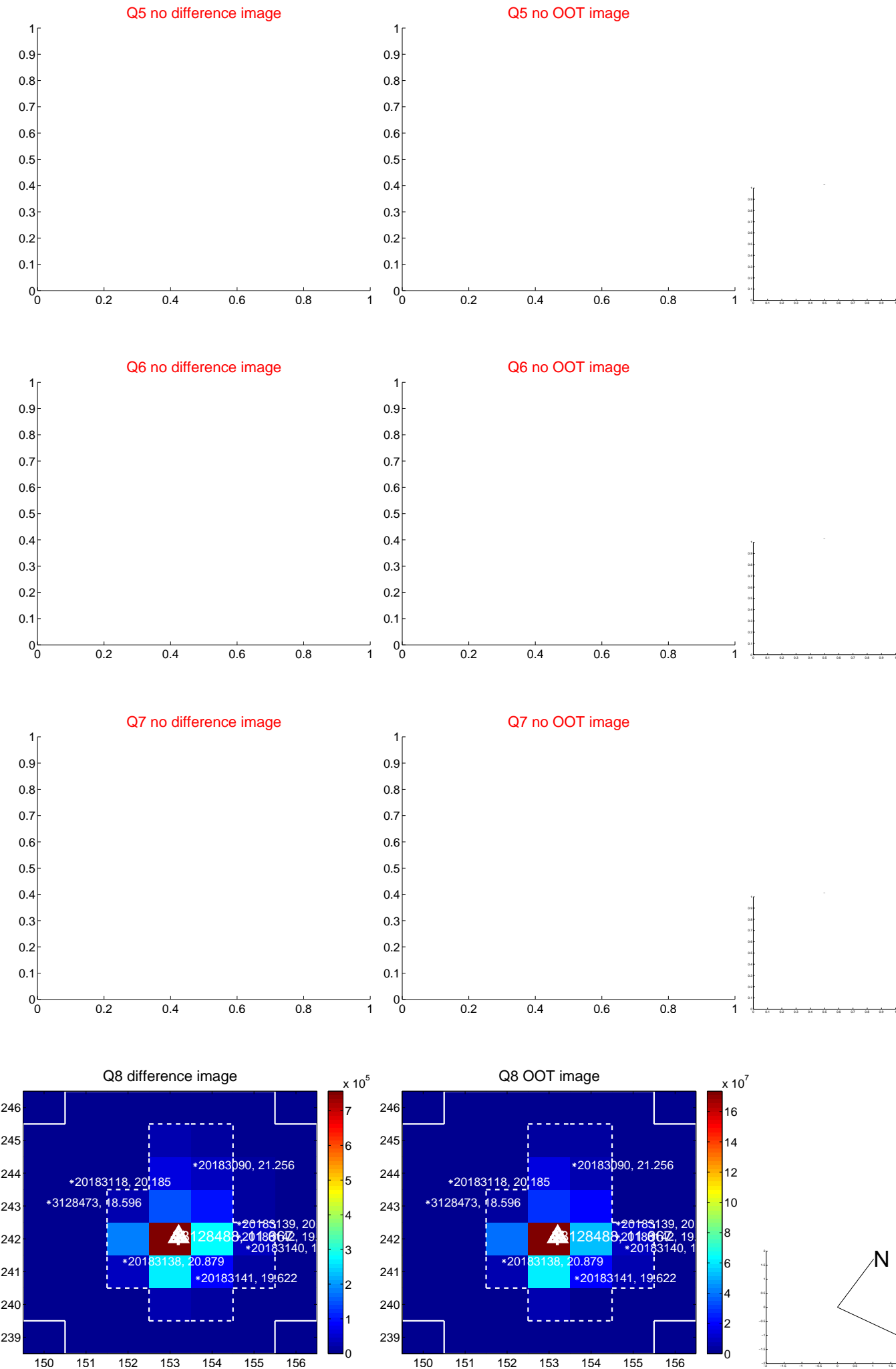


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



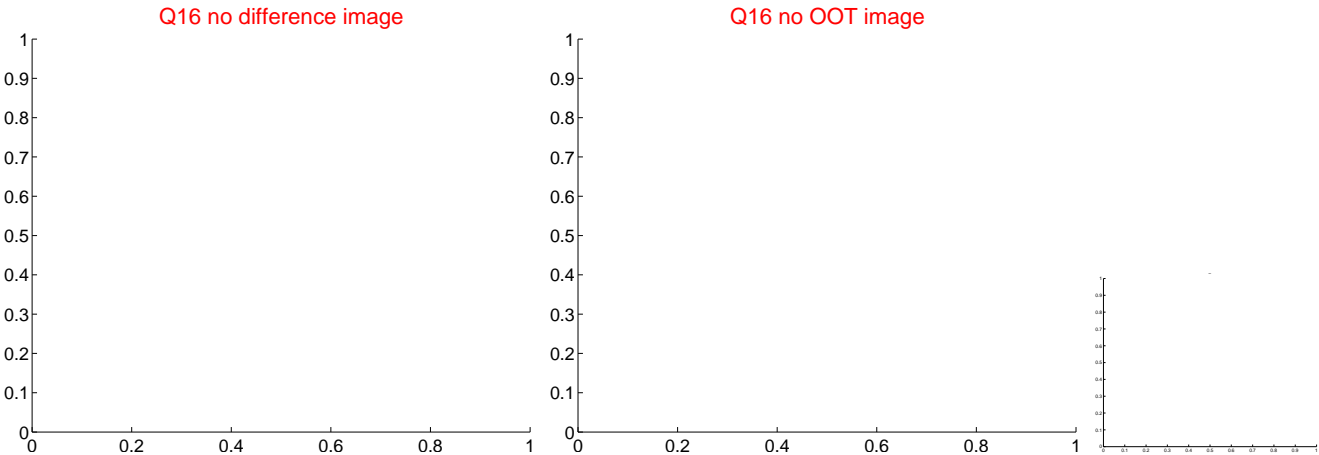
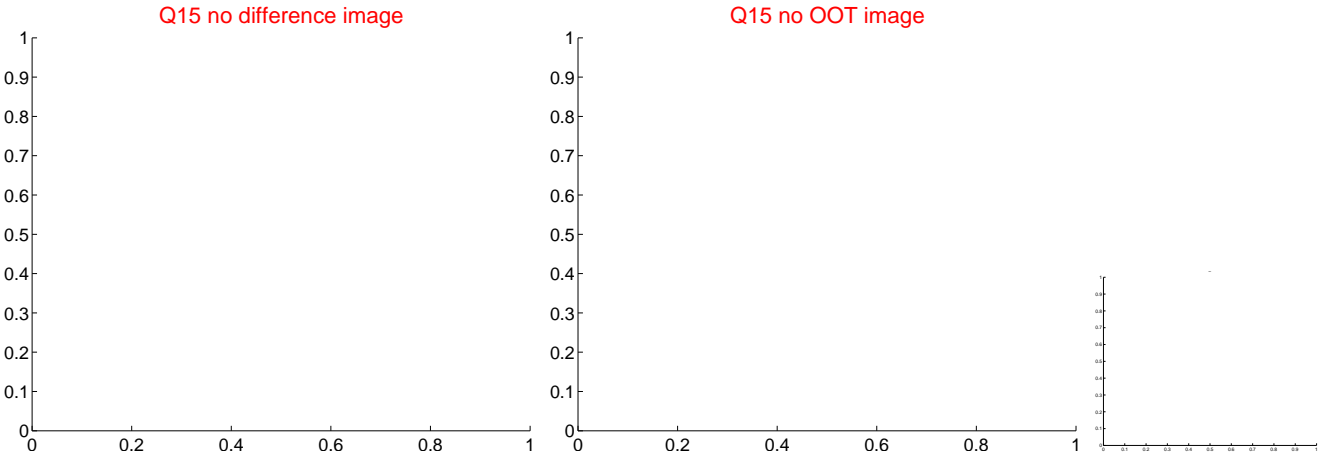
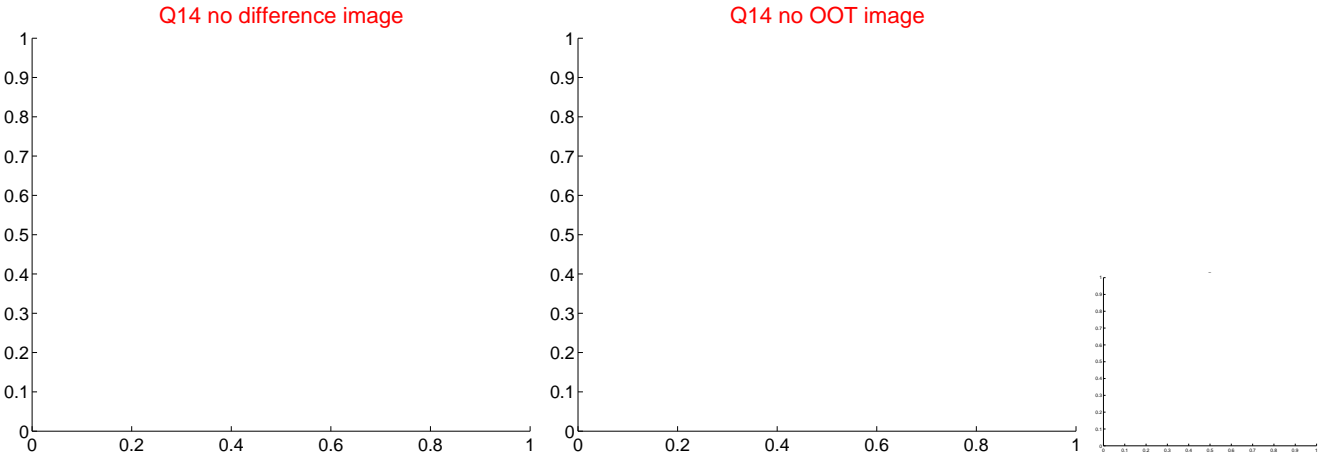
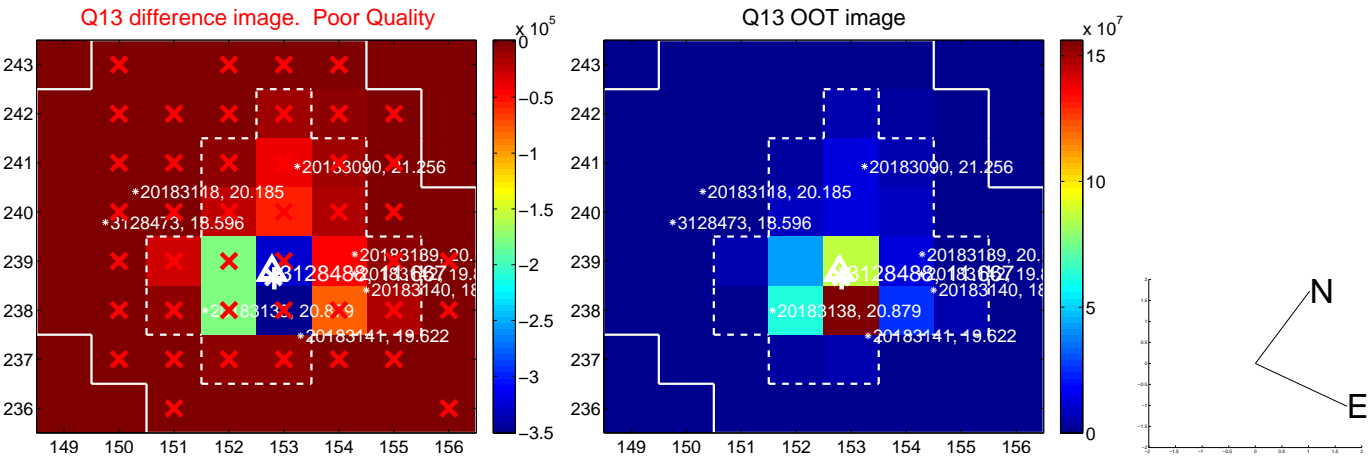
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



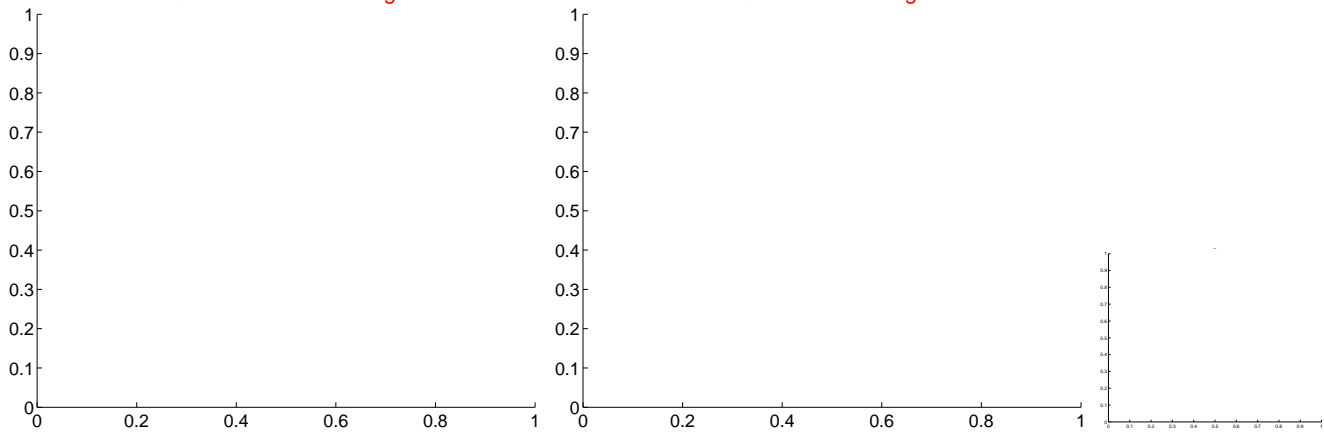
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



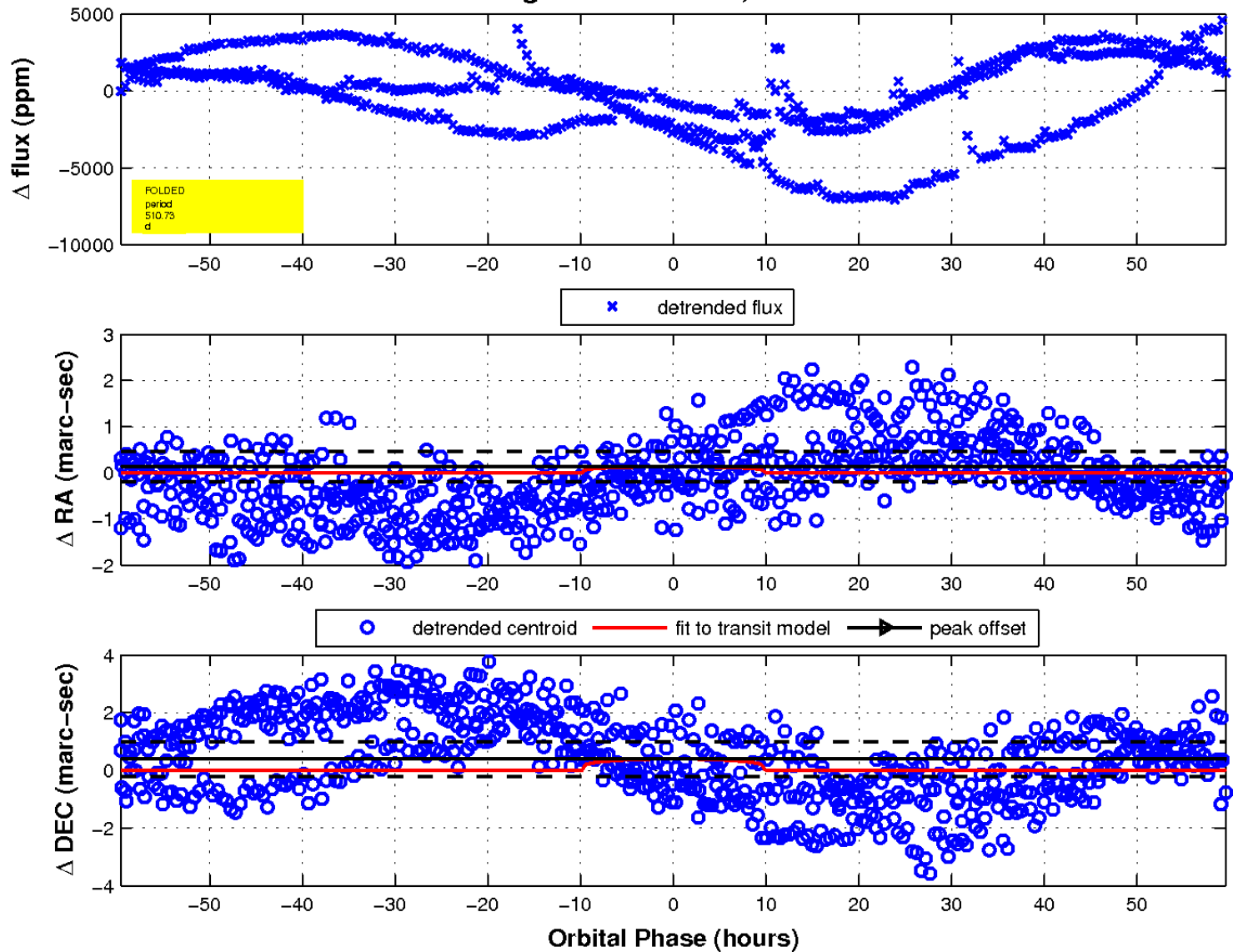
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

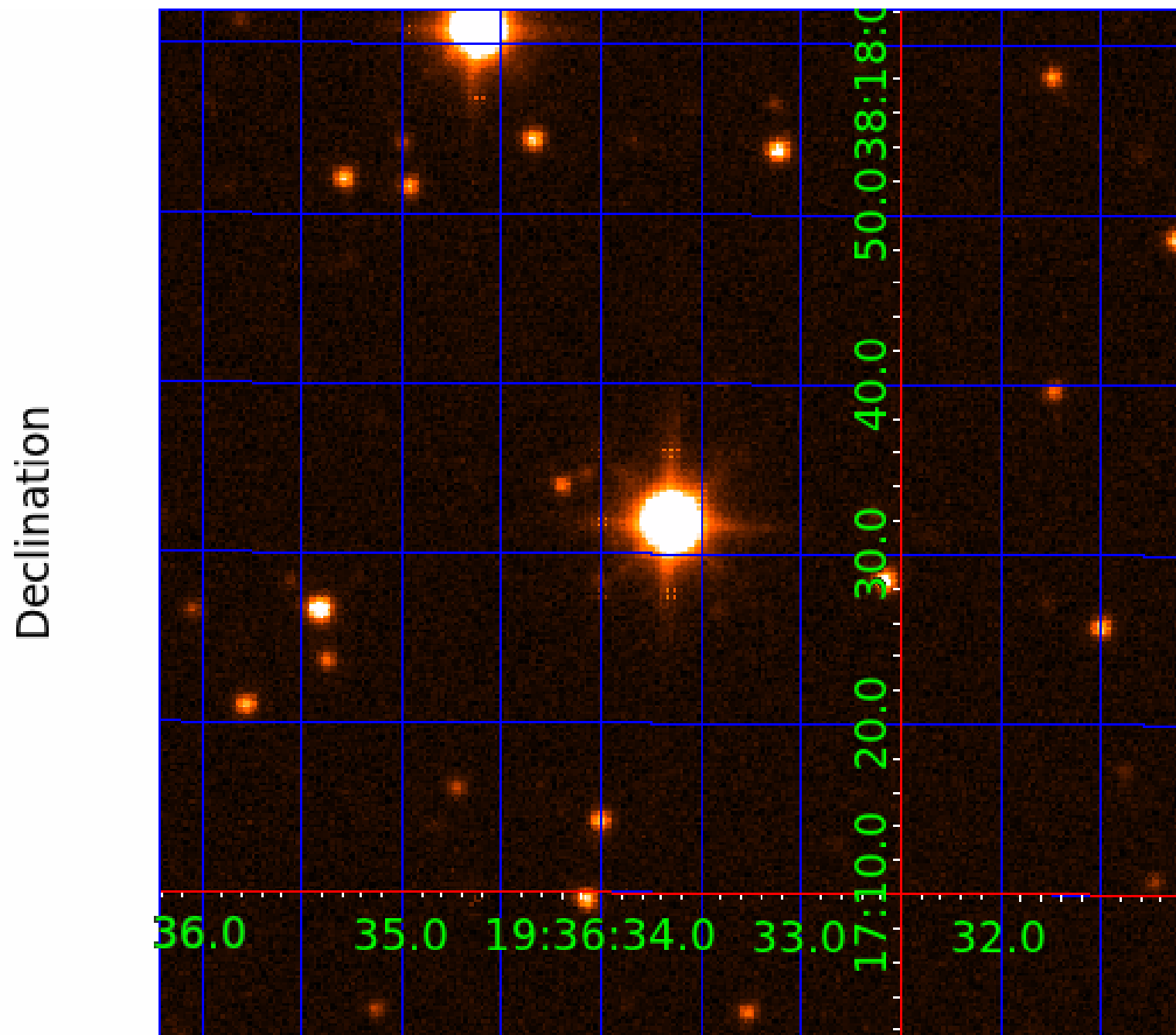
Q17 no OOT image



fluxWeightedCentroids, Planet 4 of 7



UKIRT Image



KIC 003128488

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})
003128488-01	OBS	No	324.958304	371.434562	651.6	9.680	18.7	5.5	0.55	4565	1.45	0.20
003128488-02	OBS	No	694.036941	176.112418	1238.2	10.944	17.1	9.0	0.55	4565	1.87	0.07
003128488-03	OBS	No	284.070980	322.353452	680.8	3.542	15.1	8.6	0.55	4565	1.61	0.24
003128488-04	OBS	No	510.726750	243.094415	438.4	19.867	13.3	2.9	0.55	4565	1.14	0.11
003128488-05	OBS	No	664.424496	134.457468	550.3	5.638	14.8	4.6	0.55	4565	1.26	0.08
003128488-06	OBS	No	601.989902	239.565807	838.8	9.891	12.1	7.2	0.55	4565	1.58	0.09
003128488-07	OBS	No	513.112903	197.205862	806.3	9.179	12.1	7.8	0.55	4565	1.62	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

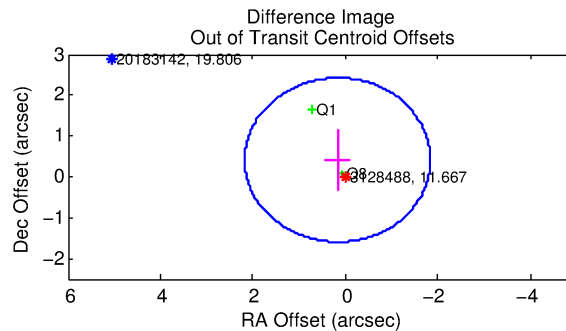
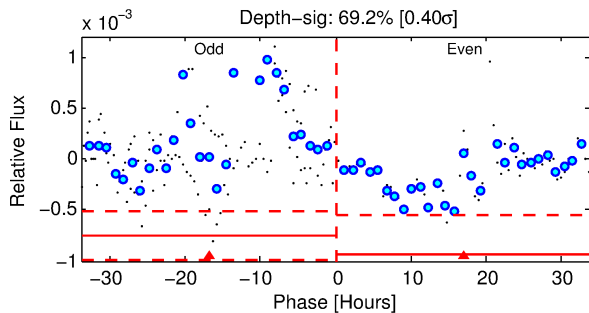
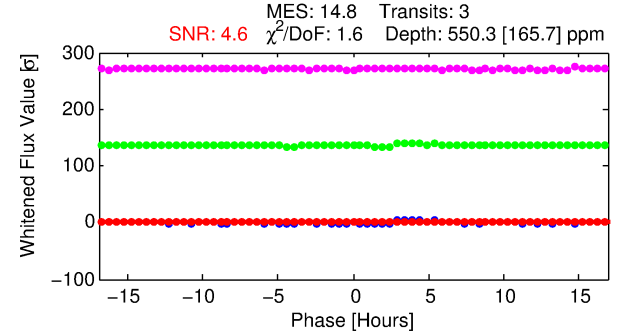
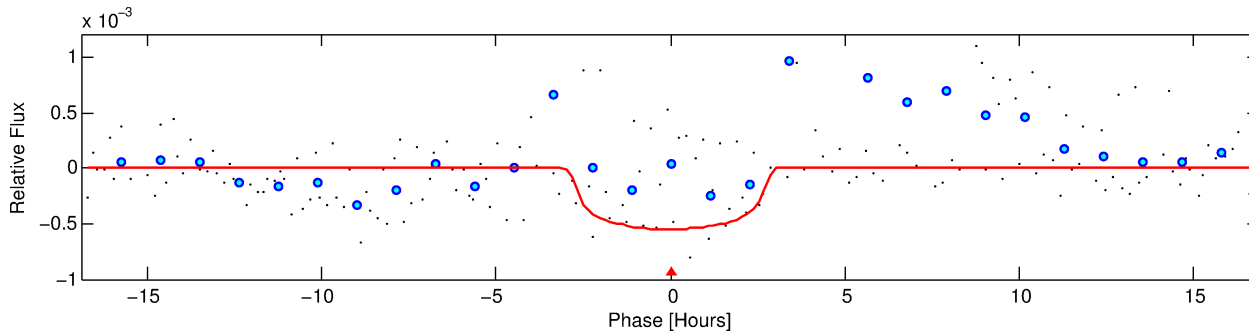
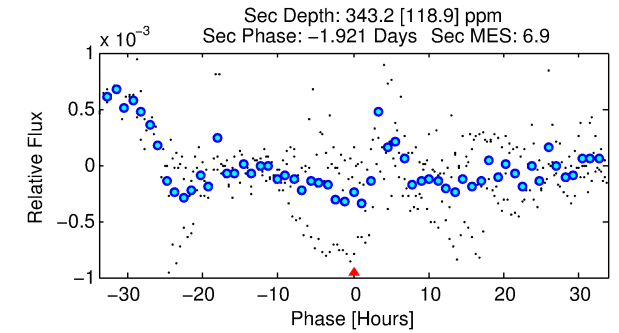
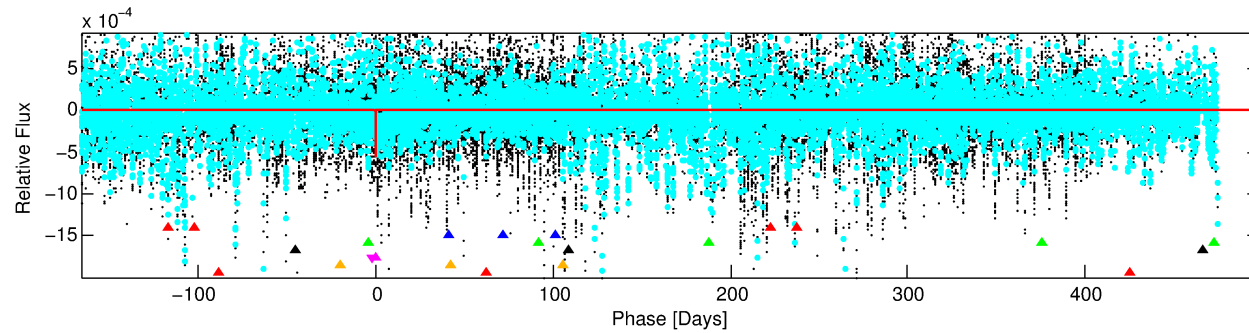
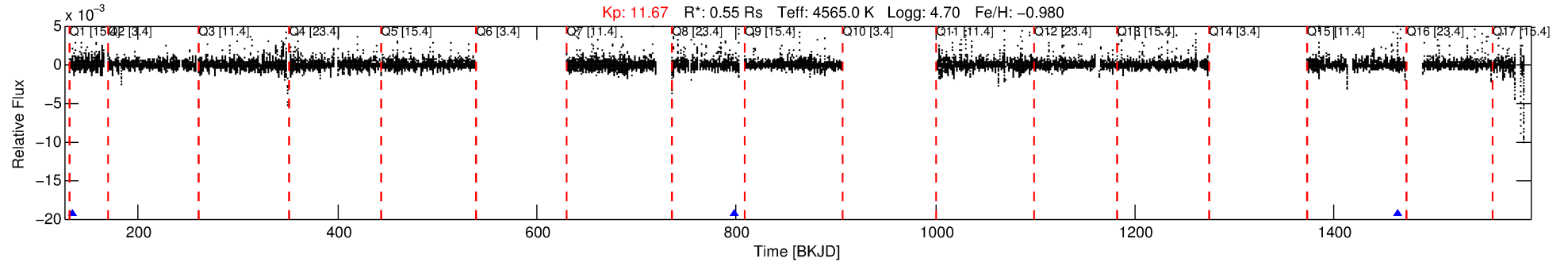
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-05

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 5 of 7 Period: 664.424 d



DV Fit Results:

Period = 664.42450 [0.00781] d
Epoch = 134.4575 [0.0102] BKJD
Rp/R* = 0.0212 [0.0553]
a/R* = 880.82 [8377.75]
b = 0.29 [30.09]
Seff = 0.08 [0.01]
Teq = 135 [5] K
Rp = 1.26 [3.30] Re
a = 1.2156 [0.0813] AU
Ag = 175474.66 [919894.38] [0.19σ]
Teffp = 4271 [5598] K [0.74σ]

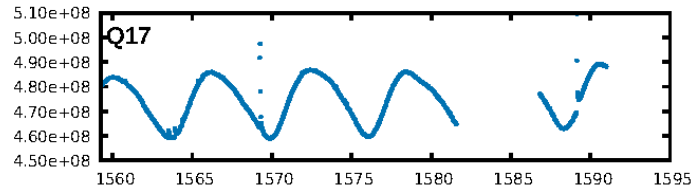
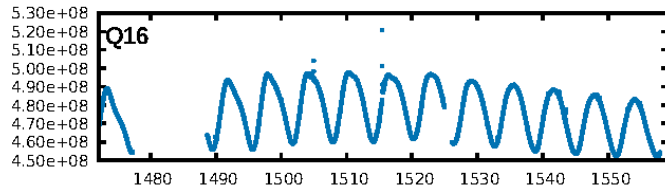
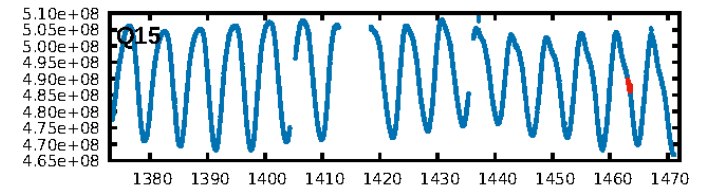
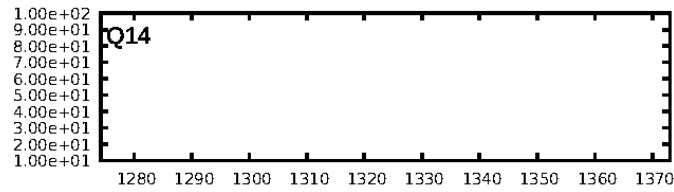
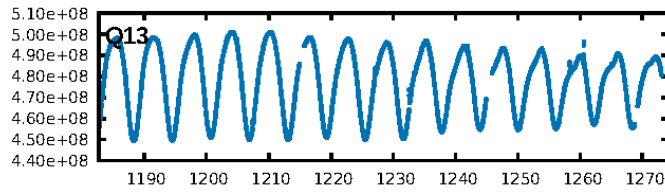
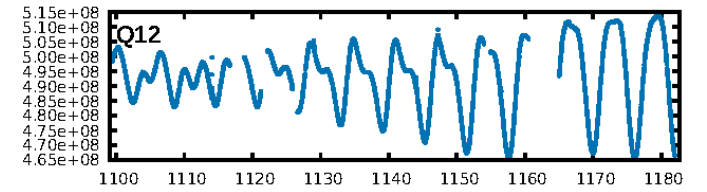
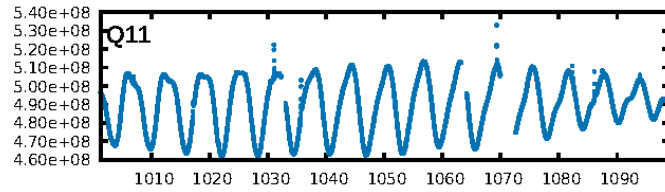
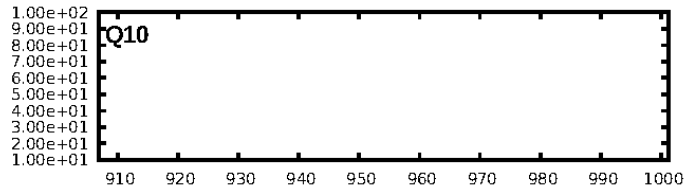
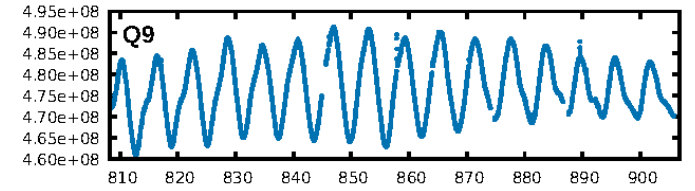
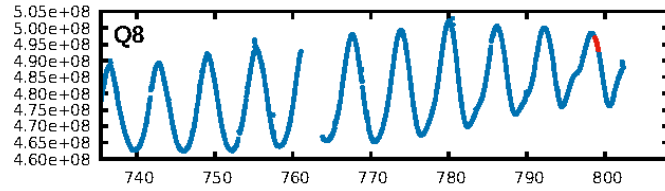
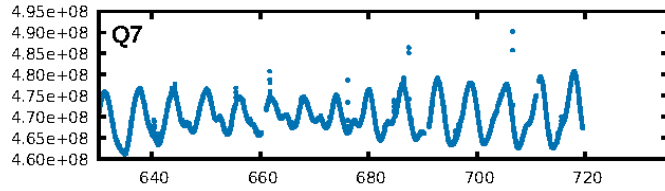
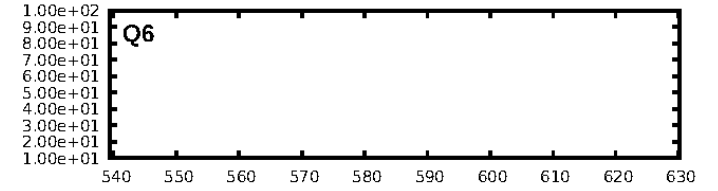
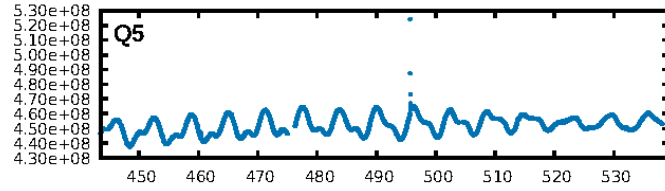
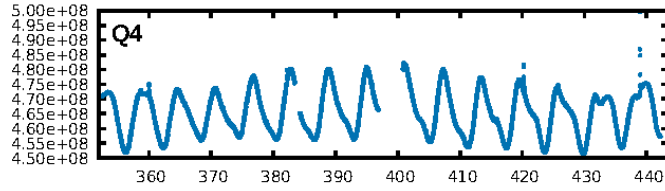
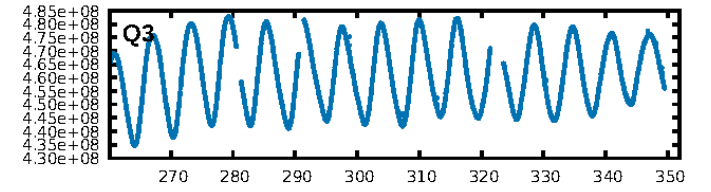
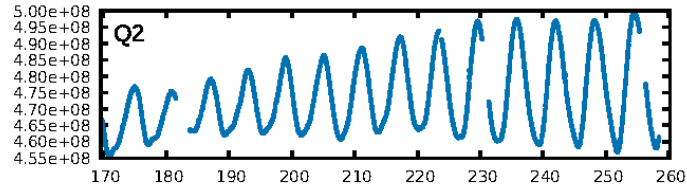
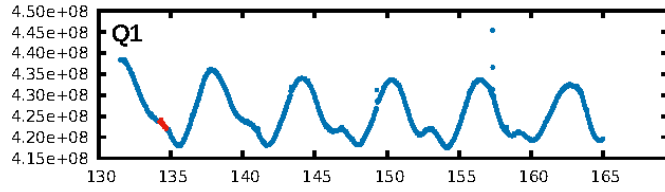
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [131.61σ]
LongPeriod-sig: 100.0% [57.73σ]
ModelChiSquare2-sig: 22.9%
ModelChiSquareGof-sig: 75.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.6262
Centroid-sig: 14.5%
Centroid-so: 0.594 arcsec [0.99σ]
OotOffset-rm: 0.447 arcsec [0.67σ]
KicOffset-rm: 0.336 arcsec [0.53σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

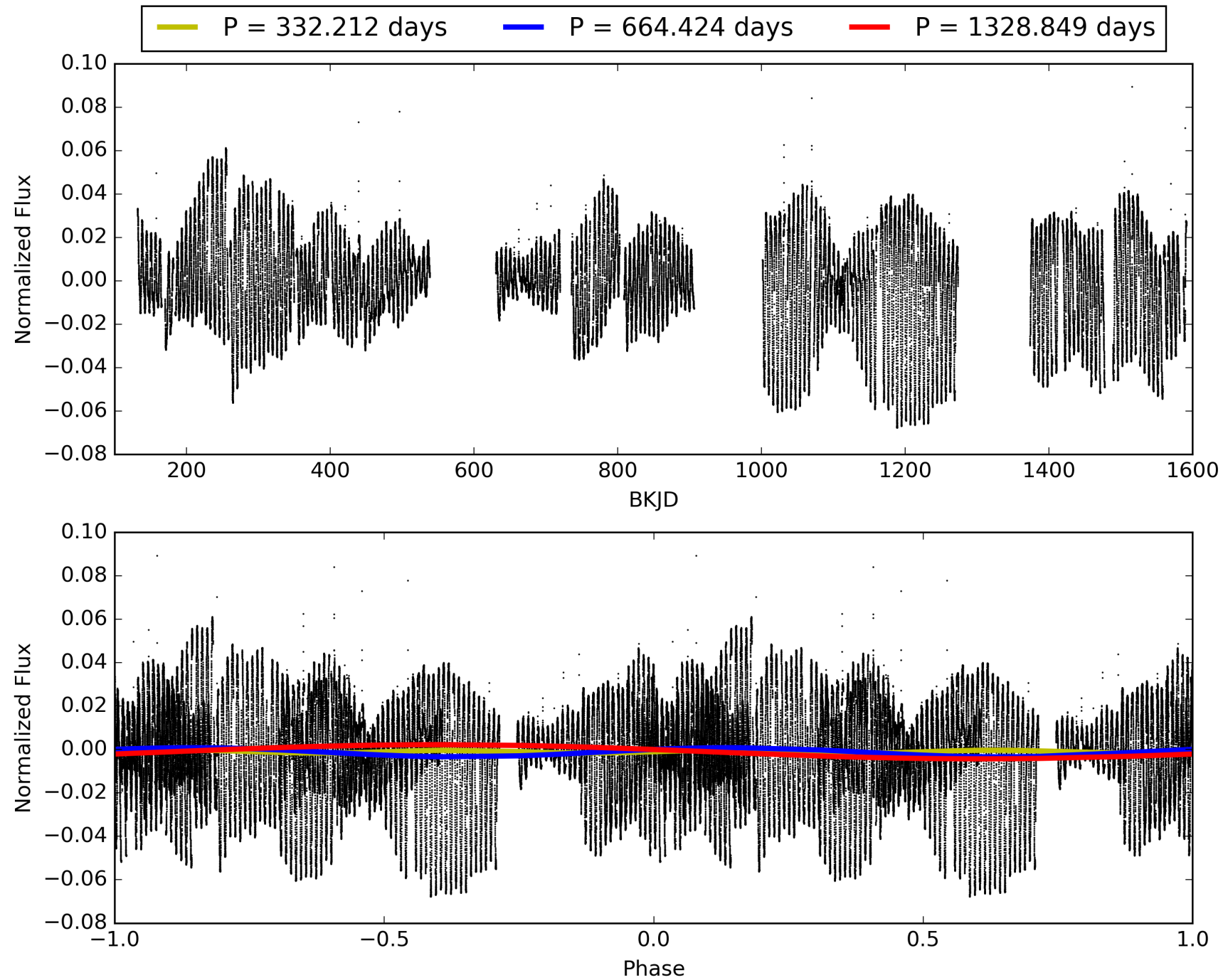
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:51:53 Z

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

TCE 003128488-05, PDC Light Curves

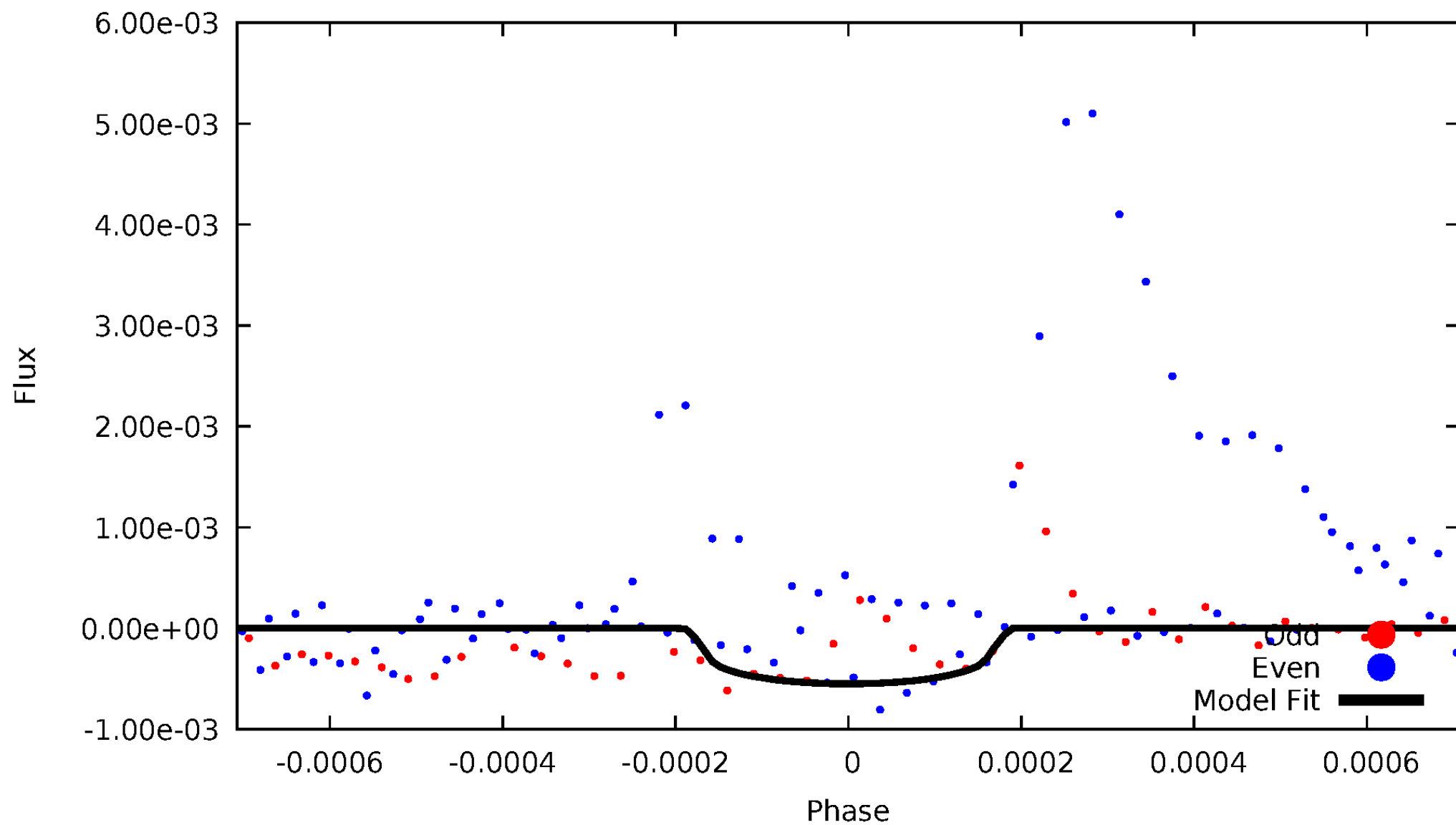


TCE 003128488-05



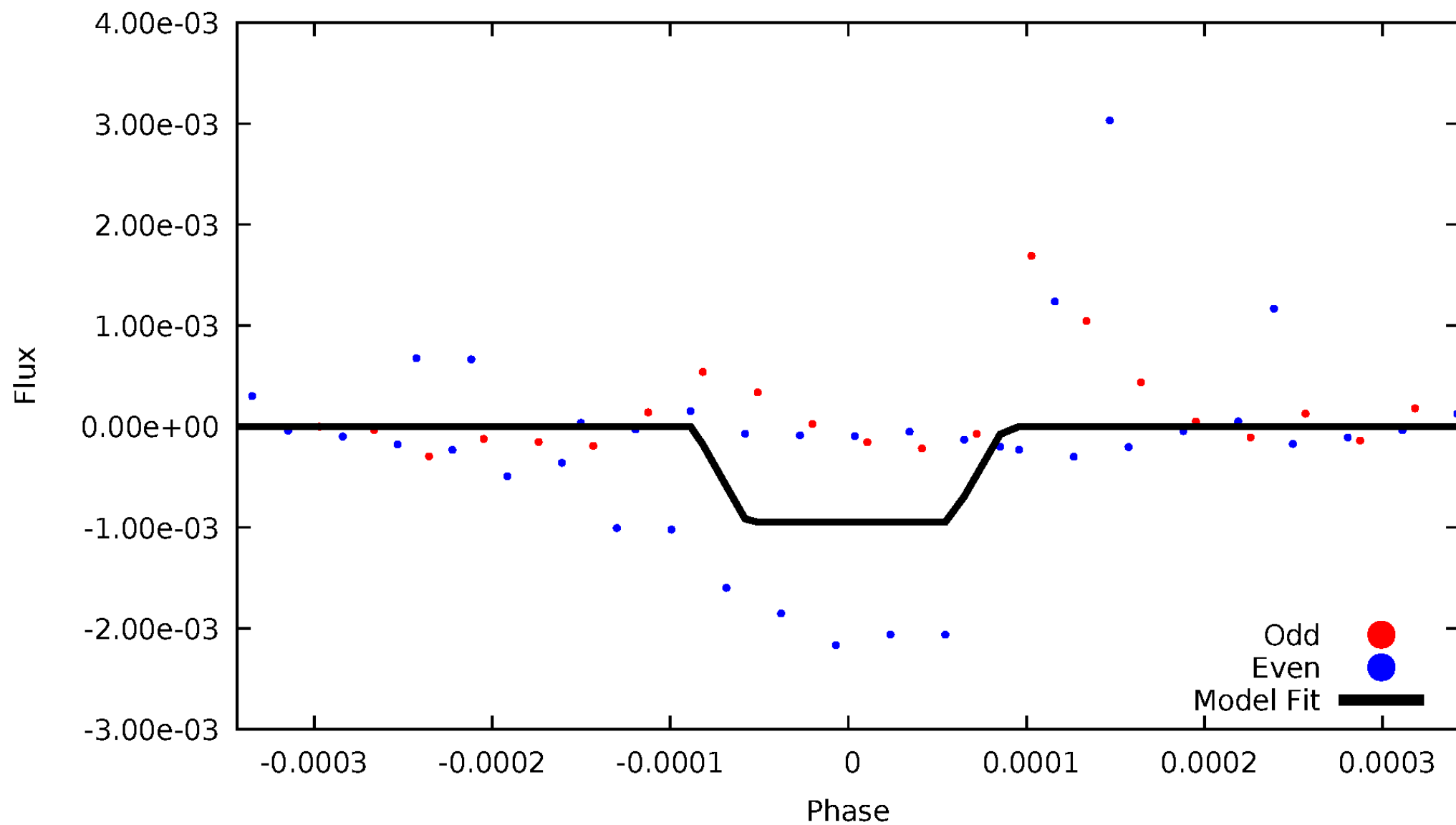
DV Odd/Even

TCE 003128488-05



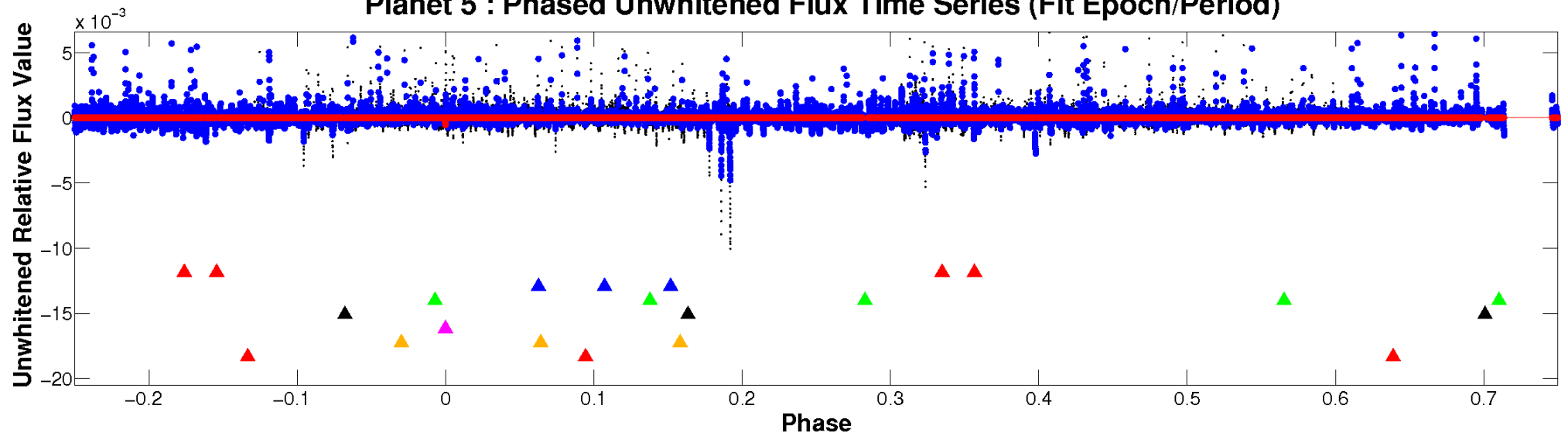
ALT Odd/Even

TCE 003128488-05

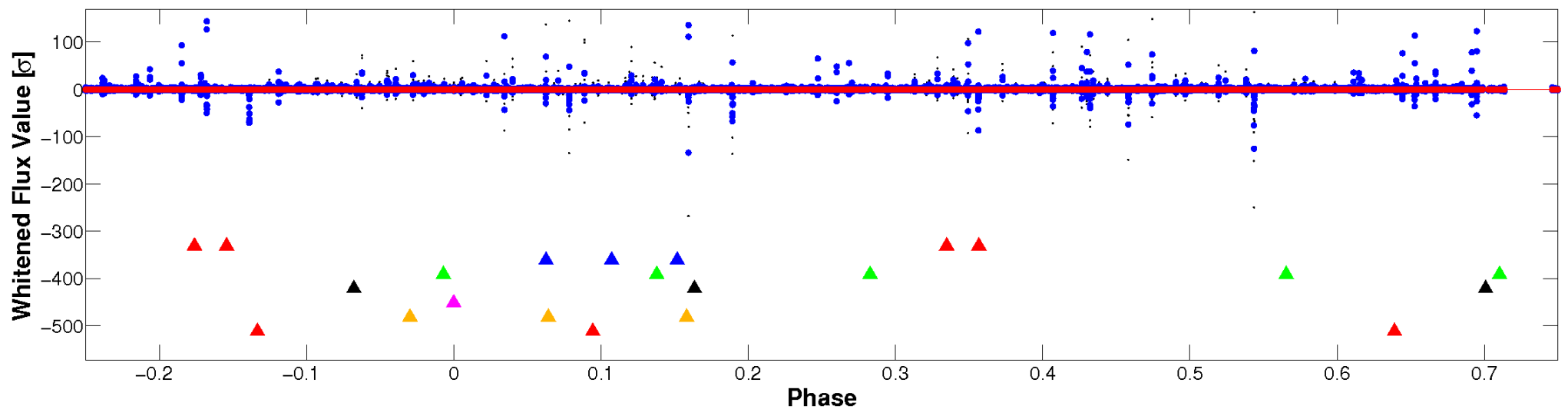


Non-Whitened Vs. Whitened Light Curve

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

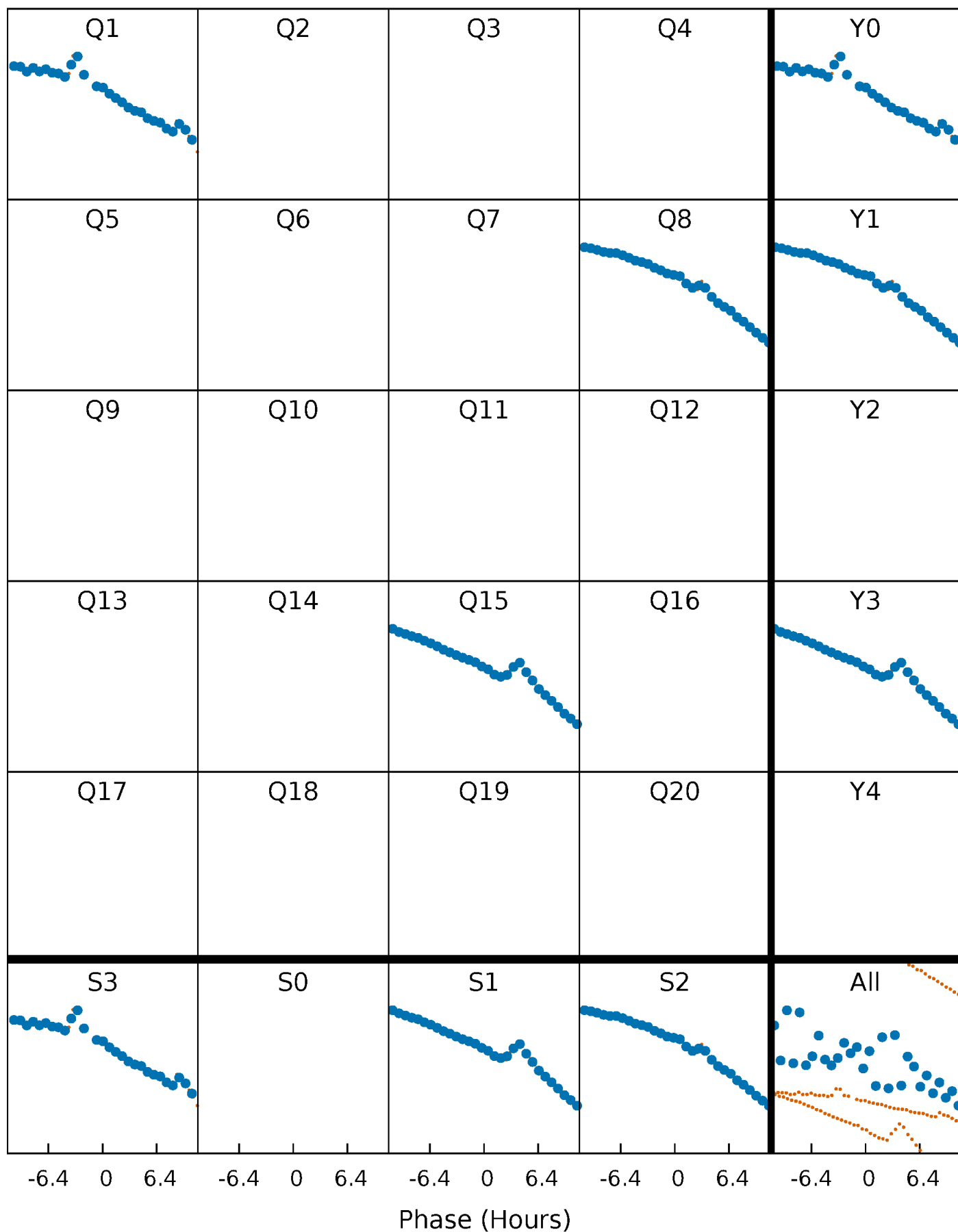


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



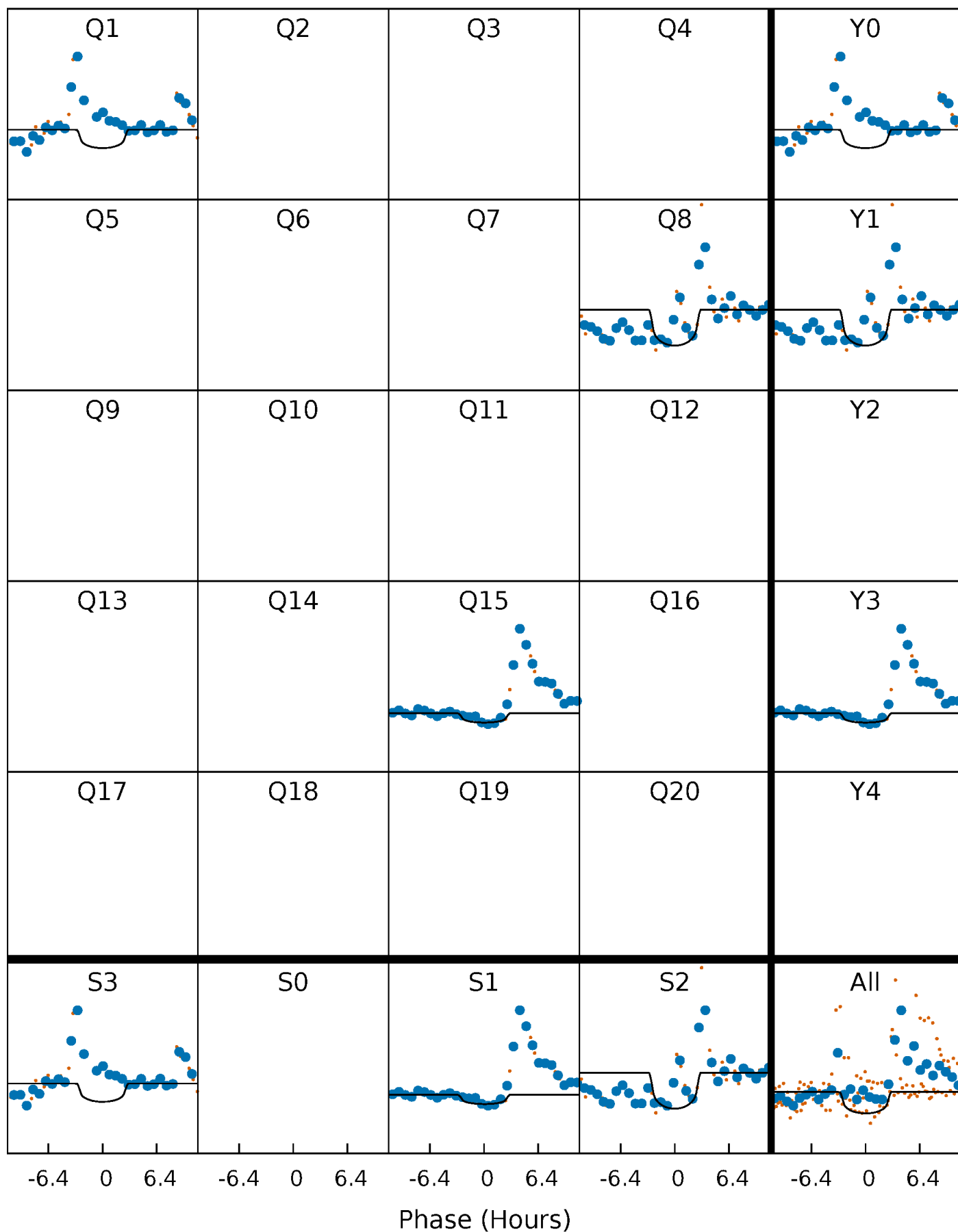
PDC Quarter-Phased Transit Curves

TCE 003128488-05 $P=664.424496$ Days $T_0=134.457468$ (BKJD)



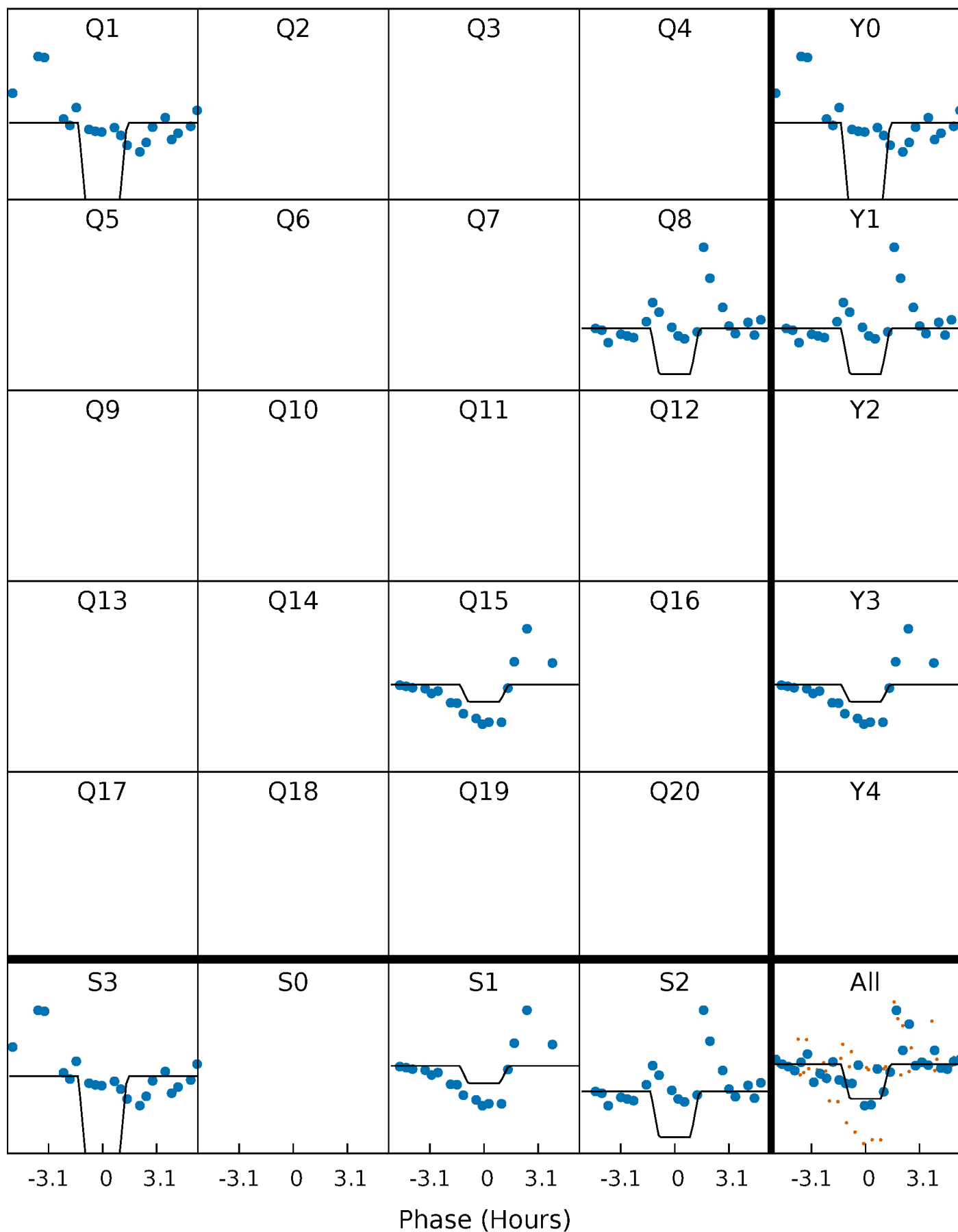
DV Quarter-Phased Transit Curves

TCE 003128488-05 $P=664.424496$ Days $T_0=134.457468$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

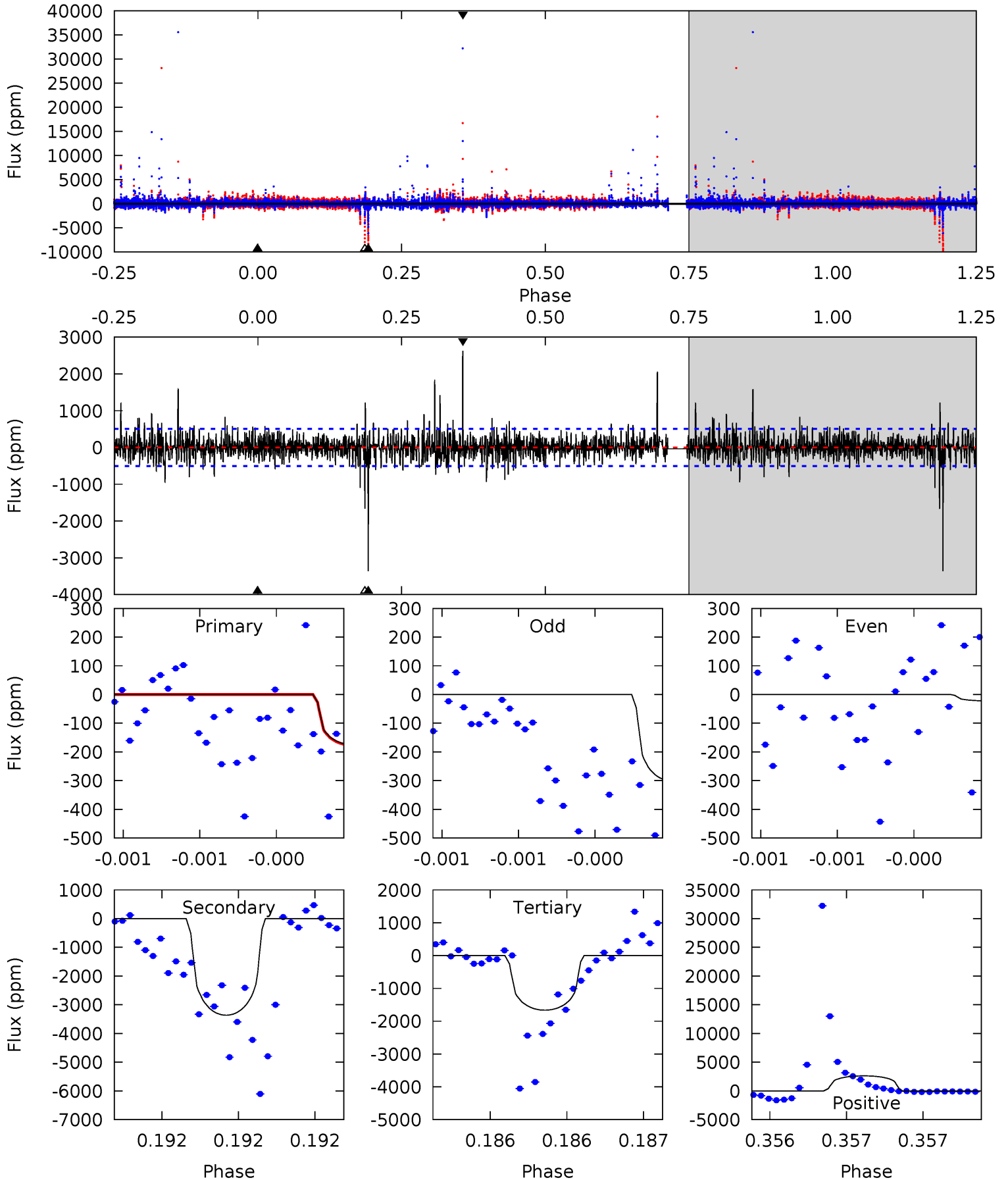
TCE 003128488-05 $P=664.431259$ Days $T_0=134.513935$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-05, P = 664.424496 Days, E = 134.457468 Days

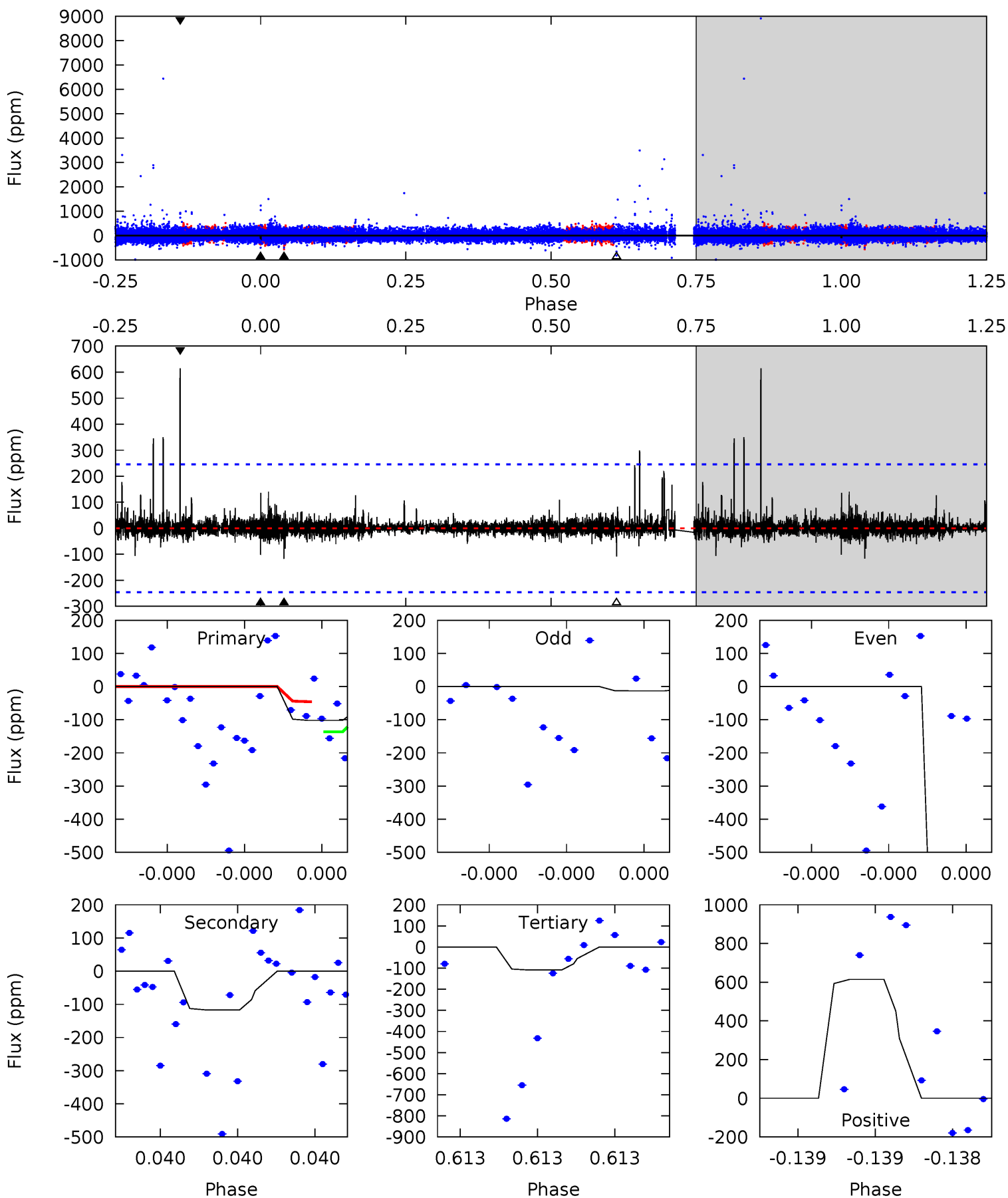
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.93	37.2	18.4	29.0	5.62	3.55	2.53	-16.5	-27.1	18.8	8.21	0.99	0.33	0.44	0.02



Alt Model-Shift Uniqueness Test

003128488-05, P = 664.431259 Days, E = 134.513935 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.39	2.75	2.55	14.4	5.78	3.78	0.44	-0.15	-12.0	0.20	-11.7	15.6	8.01	0.84	0



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3364 ± 90	$2.81^{+2.57}_{-1.91}$	187^{+6}_{-6}	4974^{+4188}_{-1091}	$365451^{+3066058}_{-270279}$
Alt.	-117 ± 43	$2.98^{+2.54}_{-2.03}$	187^{+6}_{-6}	2786^{+1193}_{-443}	10915^{+94263}_{-8175}

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

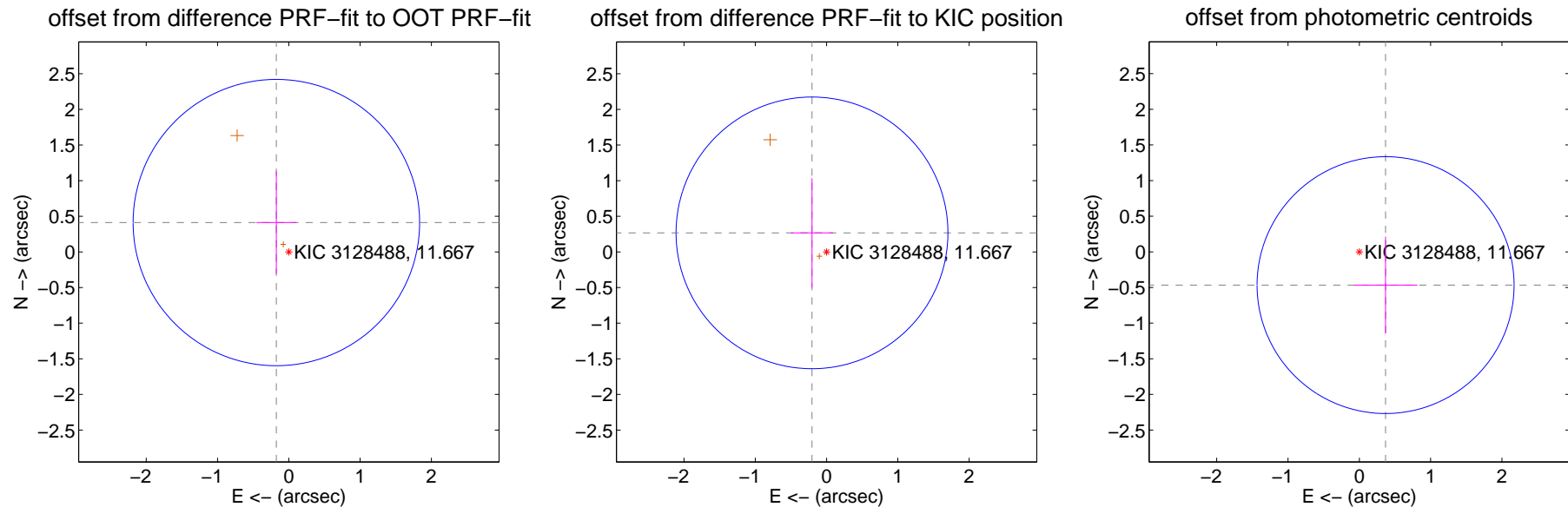
DV Centroid Data

Supplemental centroid analysis for 003128488-05. **Kepler magnitude: 11.67.** Transit SNR 4.61

There are 0 quarters with good PRF difference image offsets

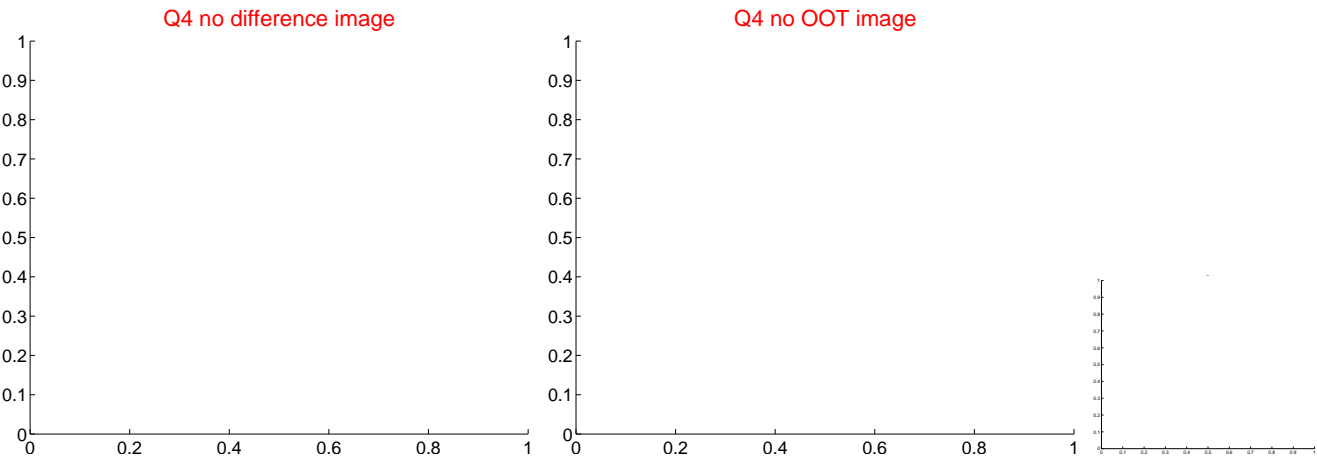
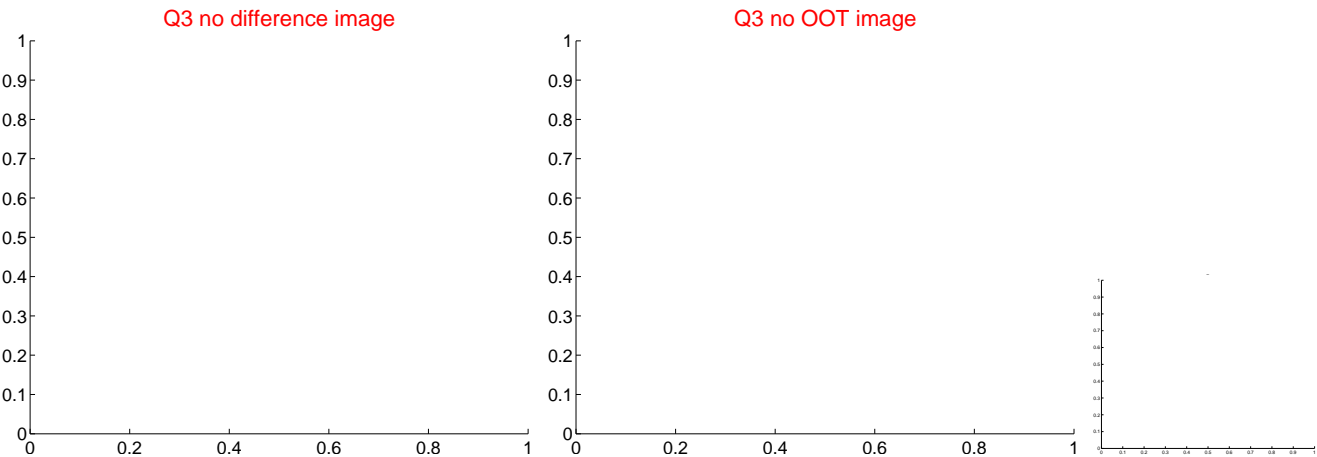
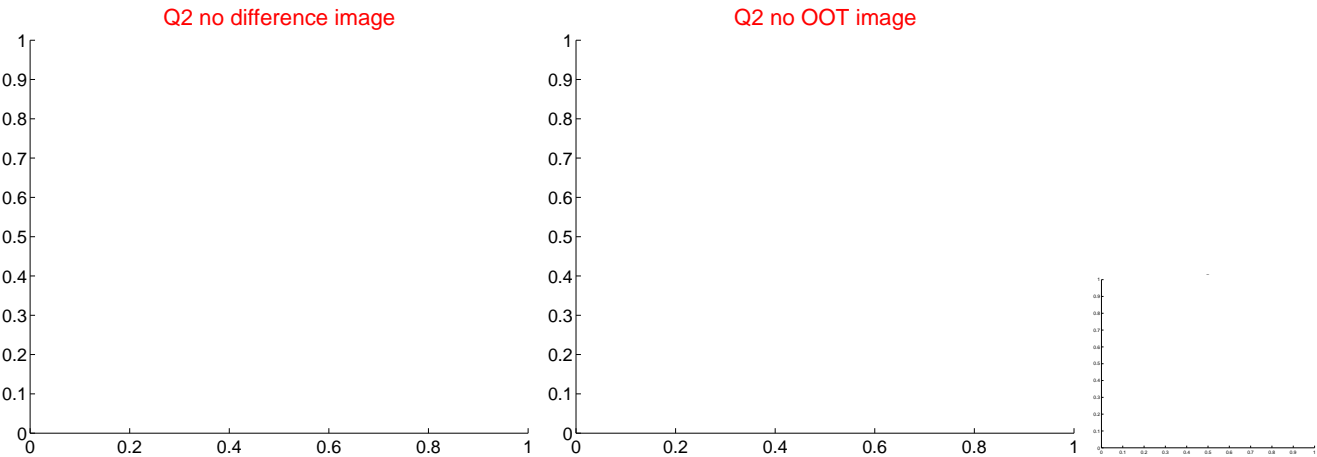
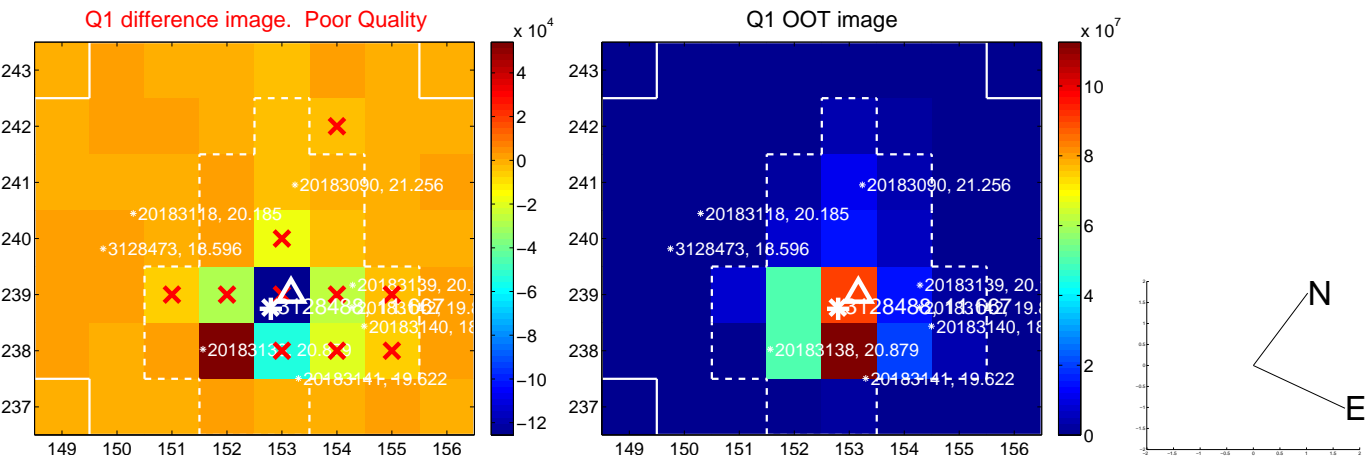
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.447 ± 0.670	0.67	0.175 ± 0.278	0.412 ± 0.718
PRF-fit source offset from KIC position	0.336 ± 0.635	0.53	0.204 ± 0.295	0.267 ± 0.767
photometric centroid source offset	0.59 ± 0.60	0.99	-0.37 ± 0.45	-0.47 ± 0.68

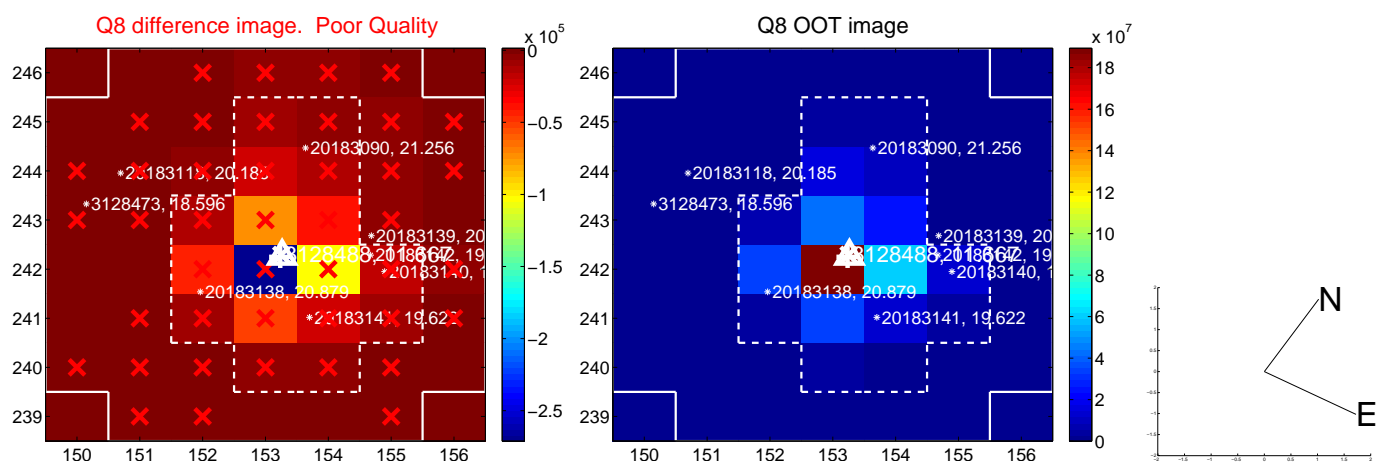
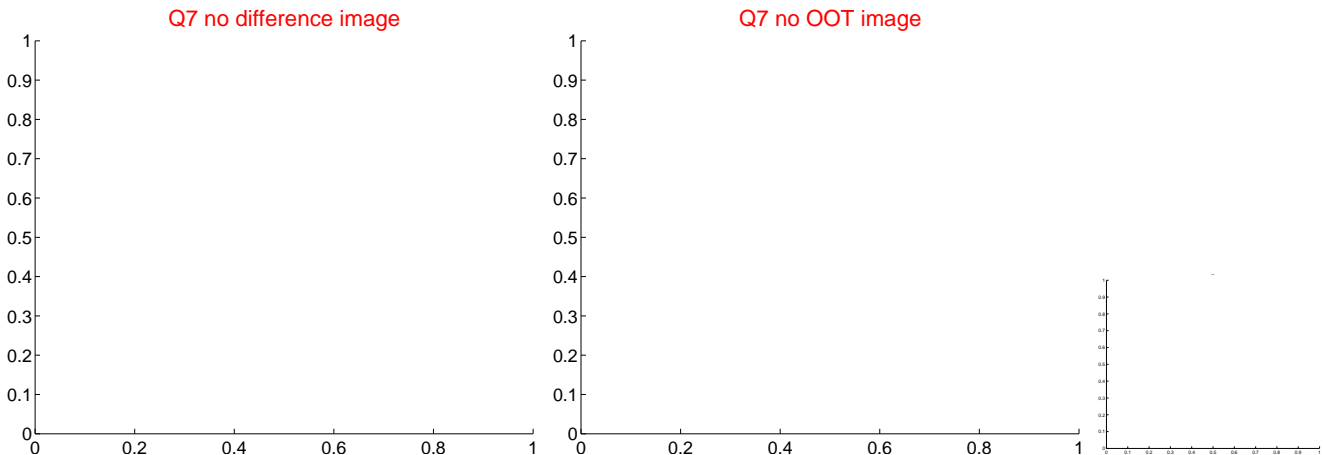
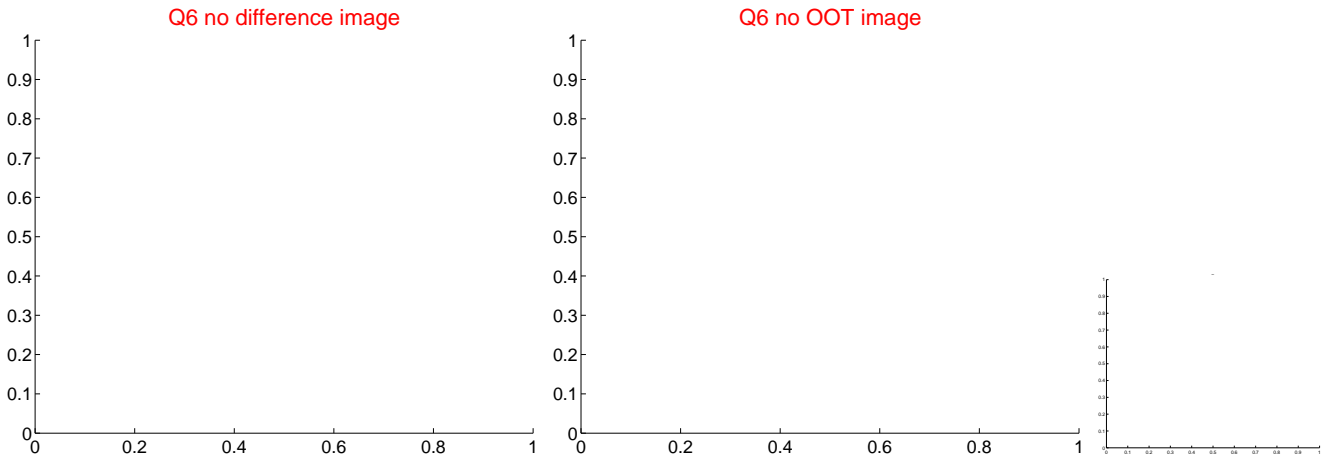
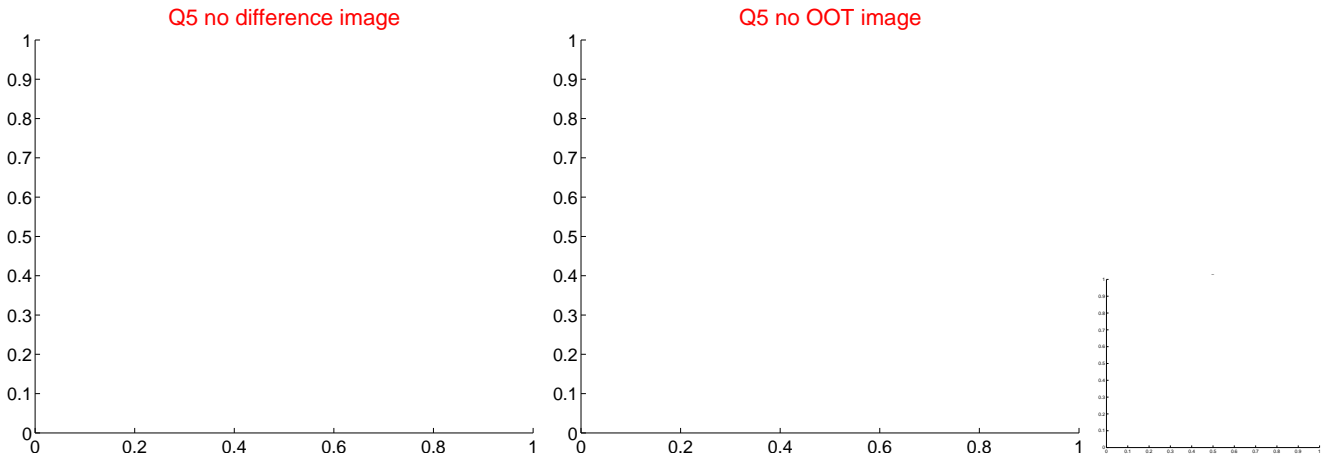


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



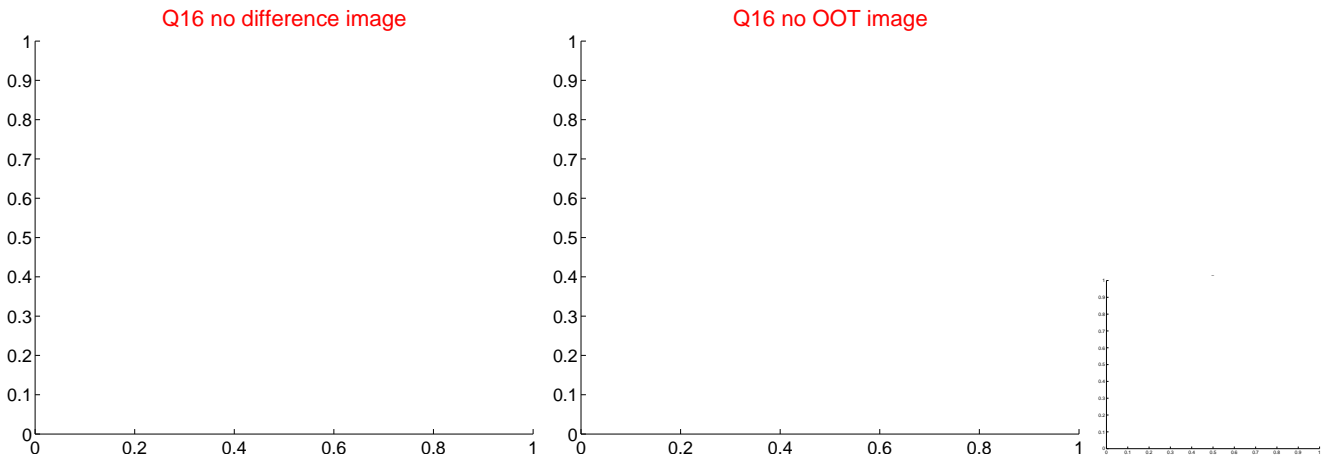
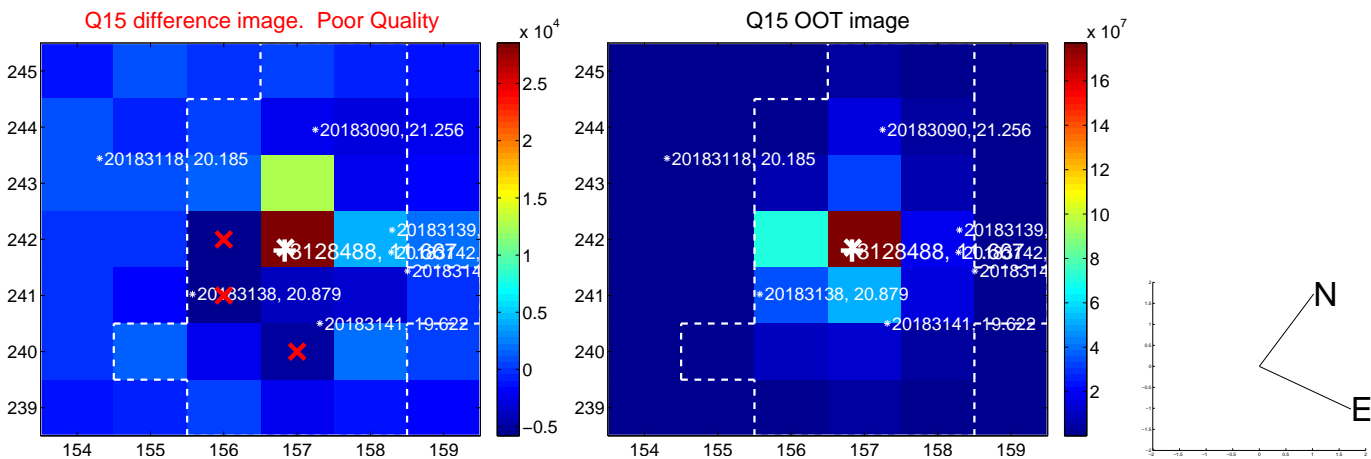
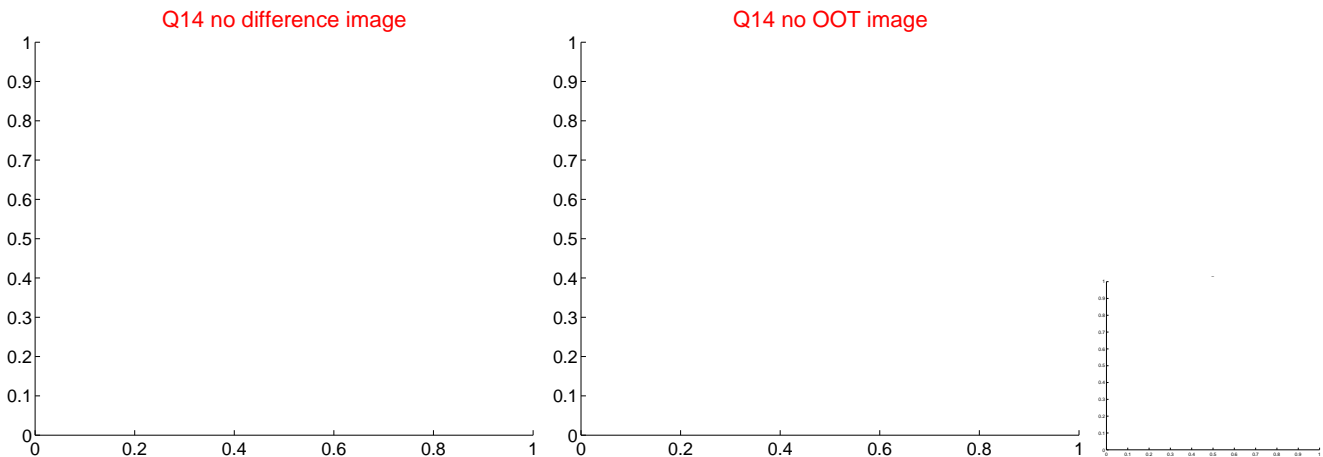
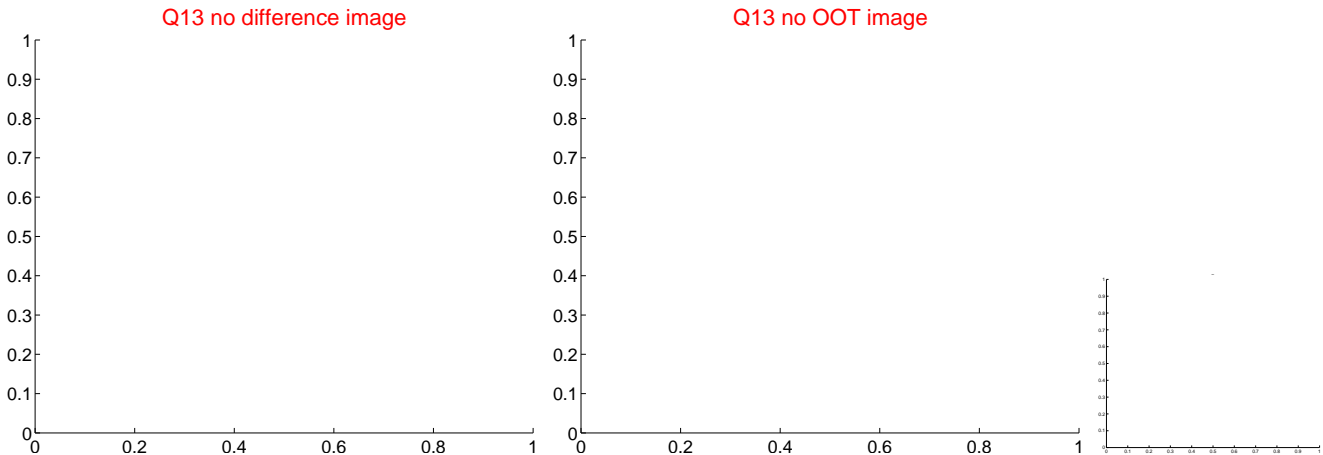
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



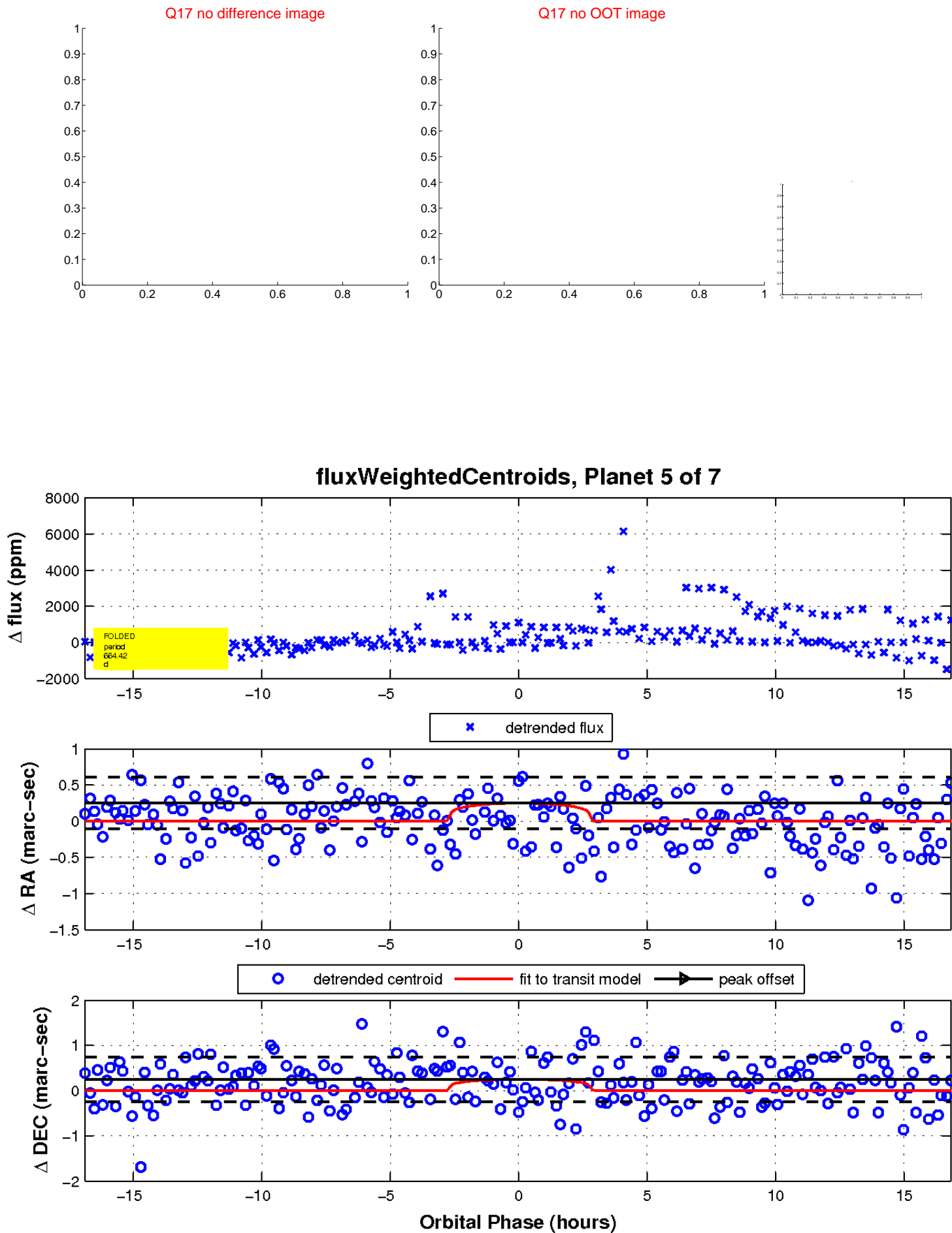
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



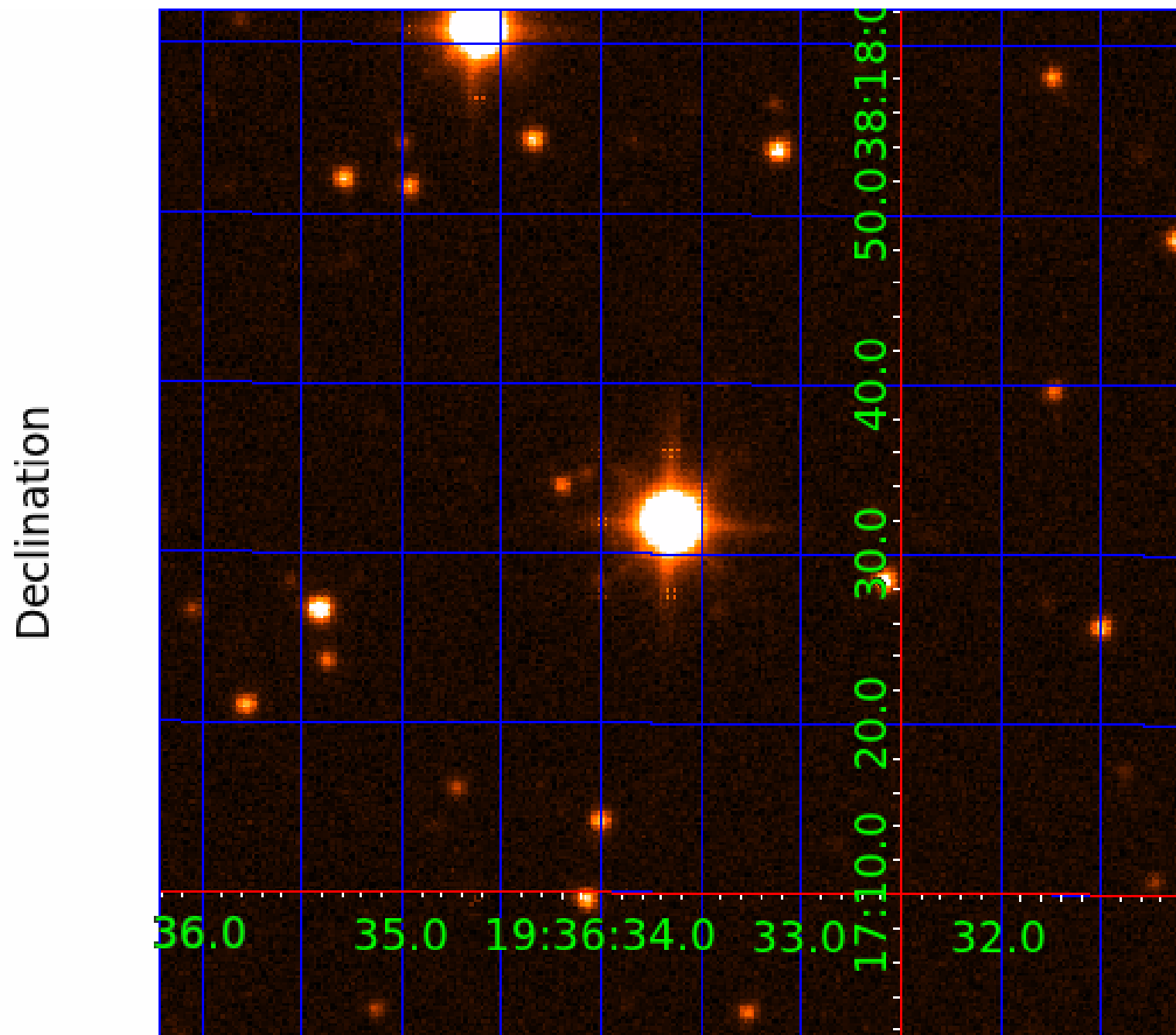
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 003128488

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})
003128488-01	OBS	No	324.958304	371.434562	651.6	9.680	18.7	5.5	0.55	4565	1.45	0.20
003128488-02	OBS	No	694.036941	176.112418	1238.2	10.944	17.1	9.0	0.55	4565	1.87	0.07
003128488-03	OBS	No	284.070980	322.353452	680.8	3.542	15.1	8.6	0.55	4565	1.61	0.24
003128488-04	OBS	No	510.726750	243.094415	438.4	19.867	13.3	2.9	0.55	4565	1.14	0.11
003128488-05	OBS	No	664.424496	134.457468	550.3	5.638	14.8	4.6	0.55	4565	1.26	0.08
003128488-06	OBS	No	601.989902	239.565807	838.8	9.891	12.1	7.2	0.55	4565	1.58	0.09
003128488-07	OBS	No	513.112903	197.205862	806.3	9.179	12.1	7.8	0.55	4565	1.62	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

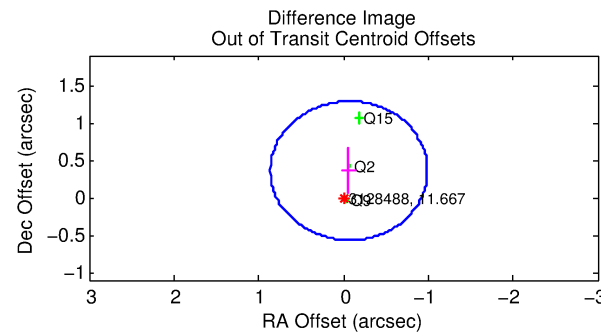
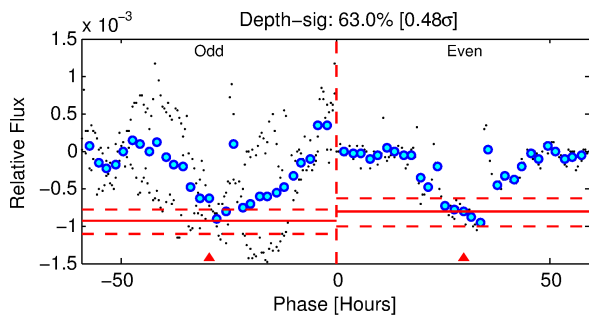
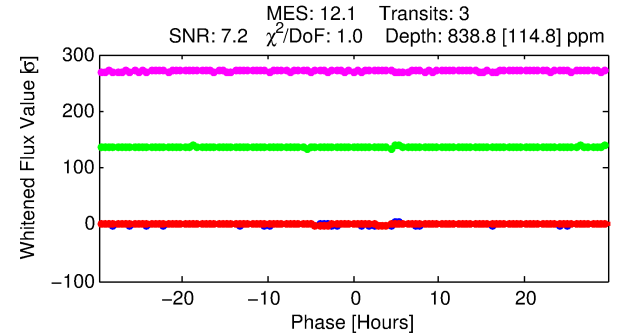
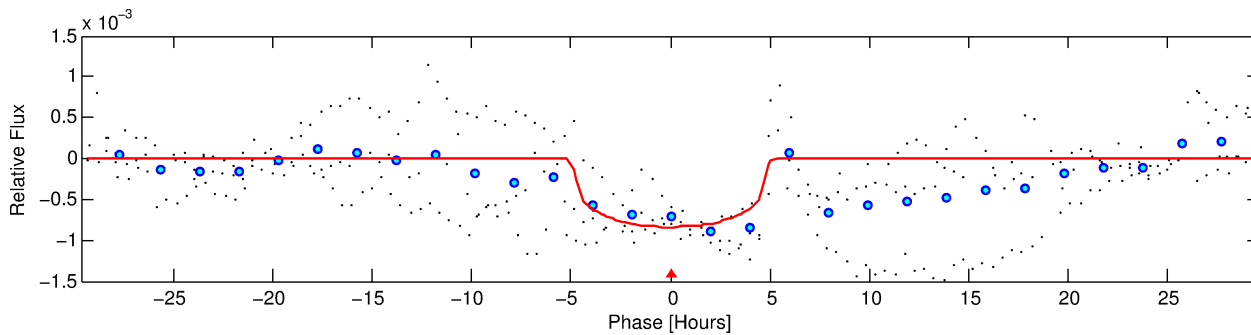
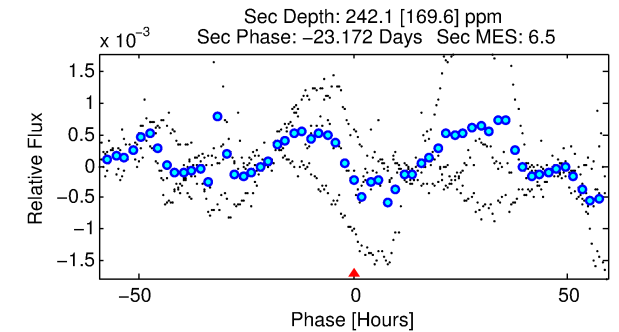
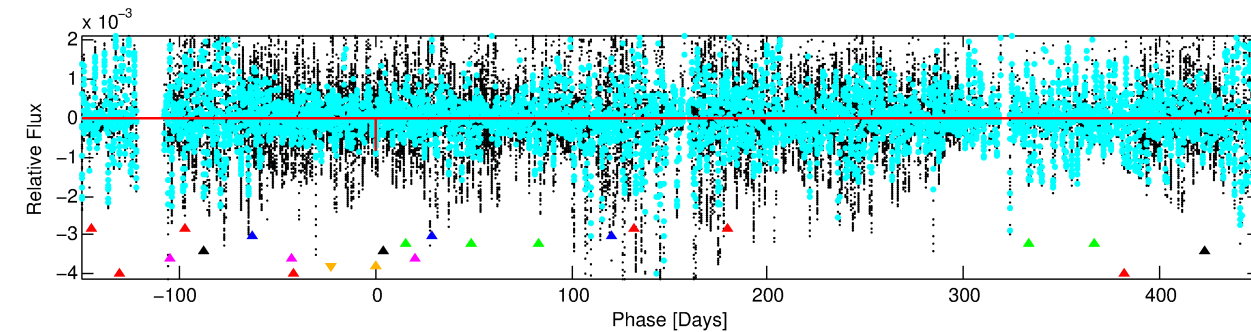
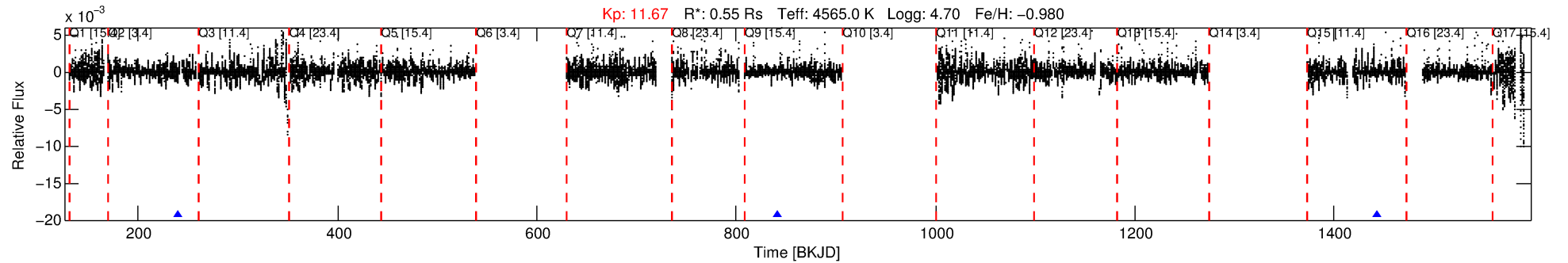
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-06

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 6 of 7 Period: 601.990 d



DV Fit Results:

Period = 601.98990 [0.00459] d
Epoch = 239.5658 [0.0059] BKJD
Rp/R* = 0.0266 [0.0104]
a/R* = 431.10 [597.03]
b = 0.44 [2.56]
Seff = 0.09 [0.01]
Teq = 139 [5] K
Rp = 1.58 [0.63] Re
a = 1.1382 [0.0761] AU
Ag = 68785.62 [72539.13] [0.95σ]
Teffp = 3493 [923] K [3.63σ]

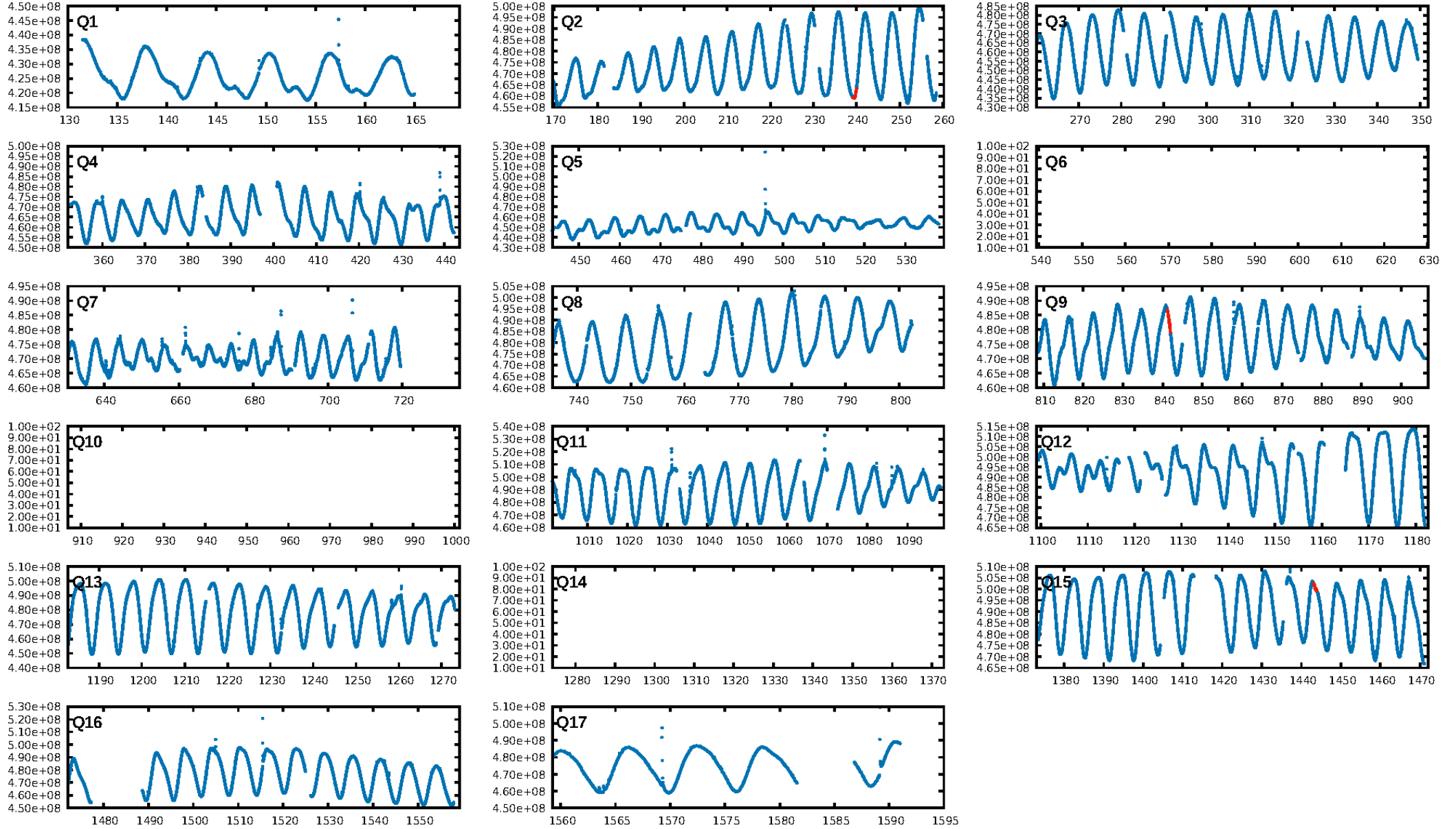
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [158.07σ]
LongPeriod-sig: 100.0% [131.61σ]
ModelChiSquare2-sig: 53.8%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 7.224
Centroid-sig: 18.4%
Centroid-so: 0.442 arcsec [1.21σ]
OotOffset-rm: 0.364 arcsec [1.18σ]
KicOffset-rm: 0.297 arcsec [1.80σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

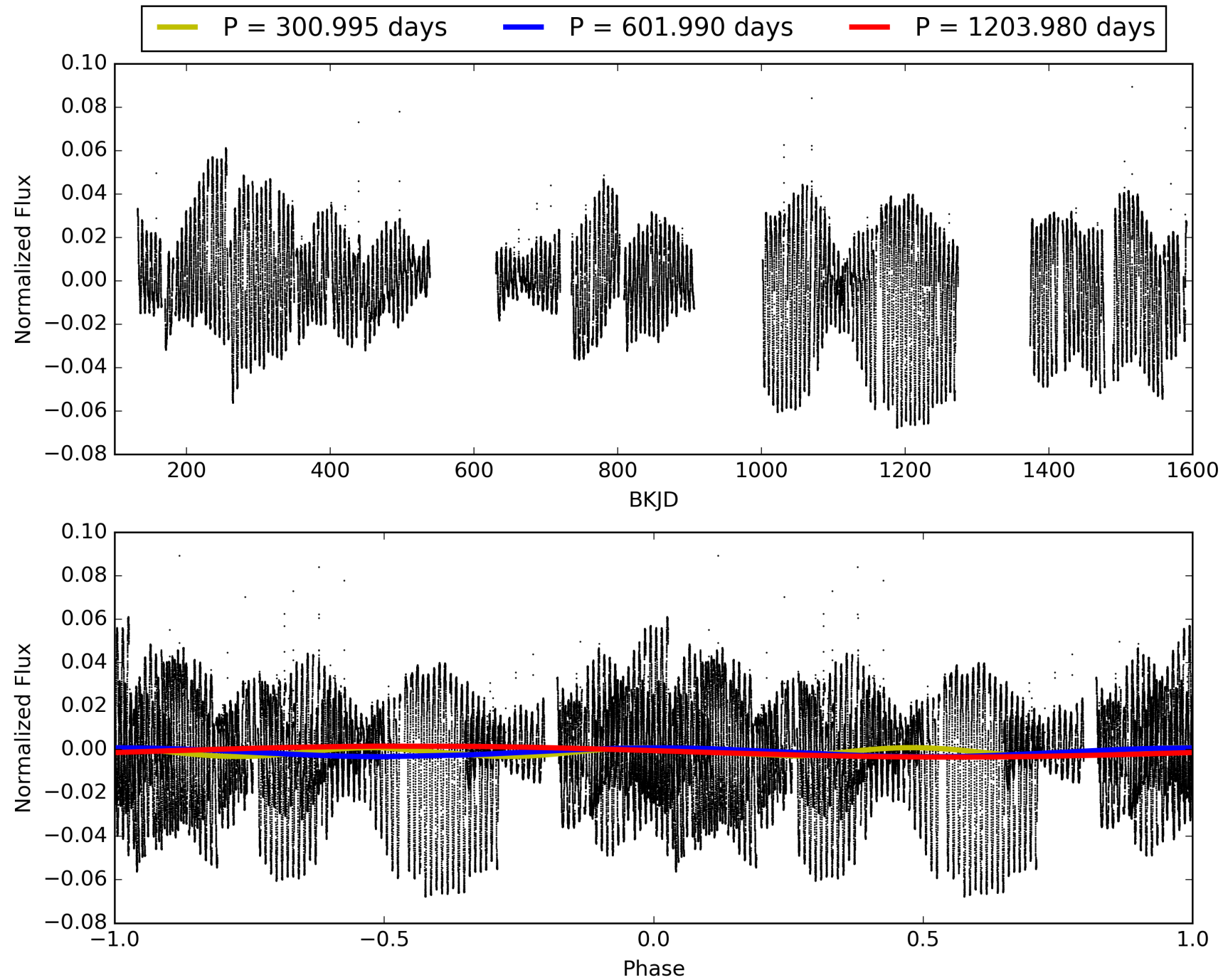
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:52:03 Z

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

TCE 003128488-06, PDC Light Curves

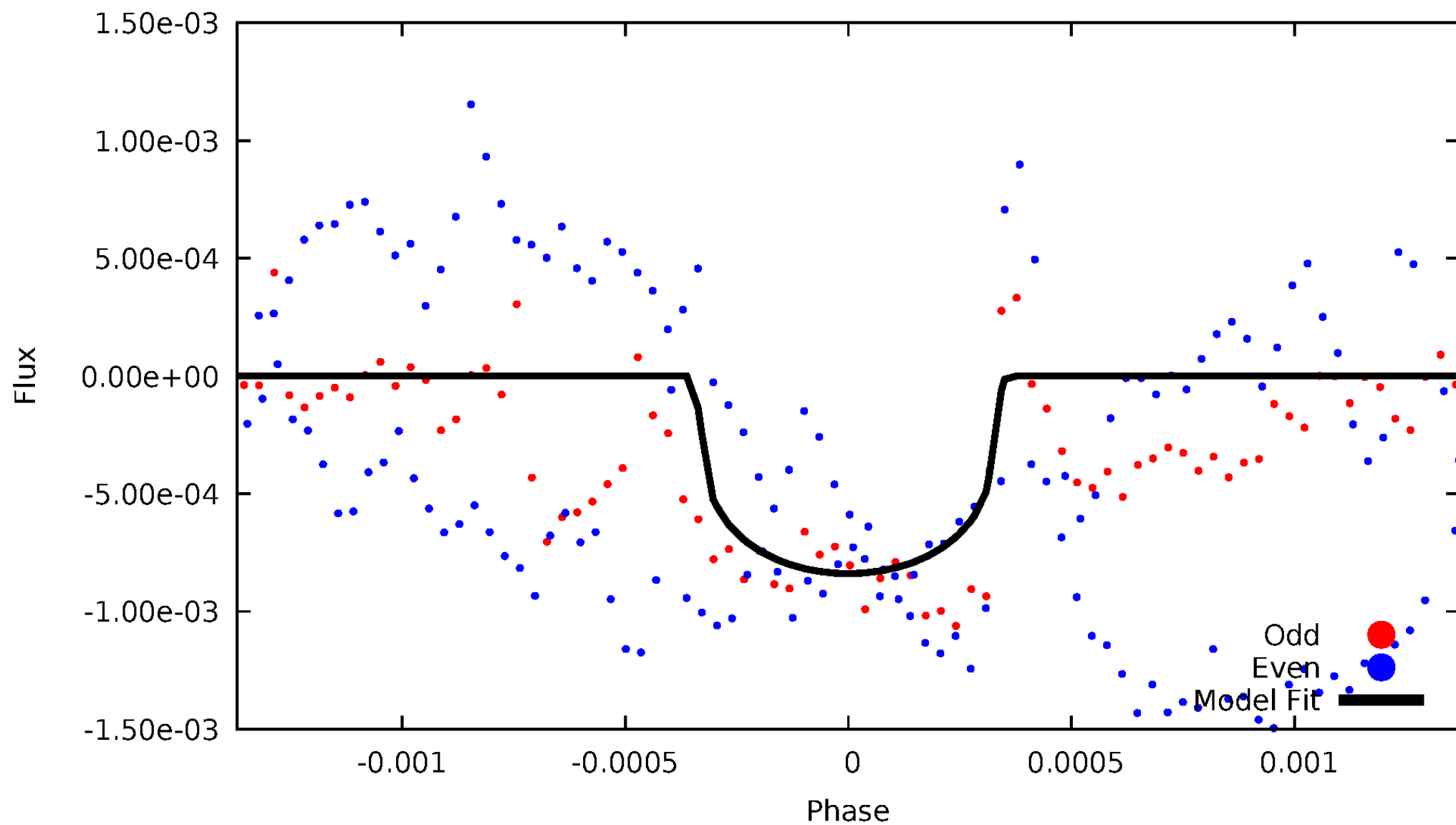


TCE 003128488-06



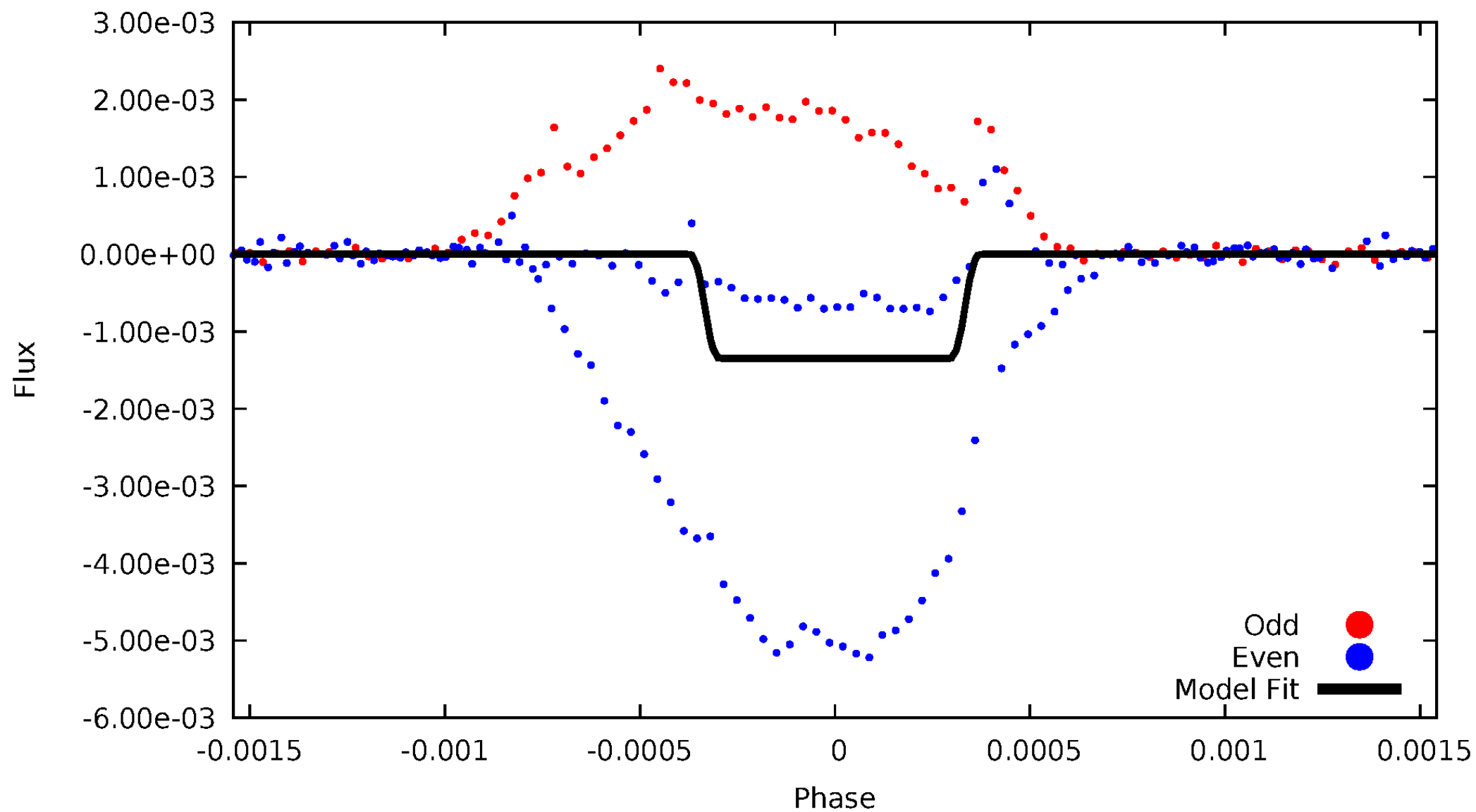
DV Odd/Even

TCE 003128488-06



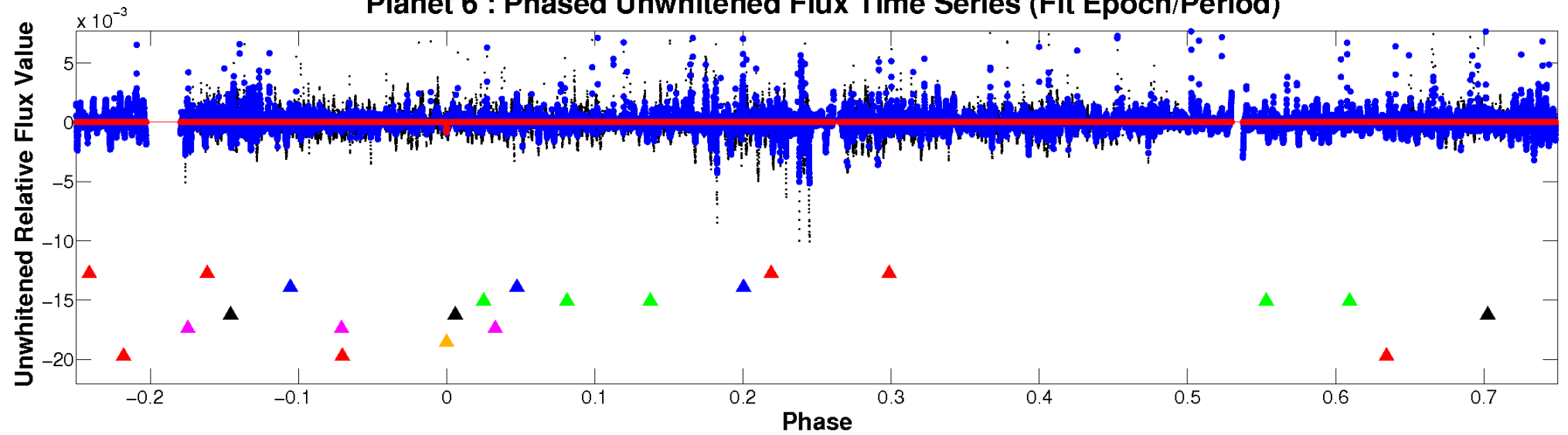
ALT Odd/Even

TCE 003128488-06

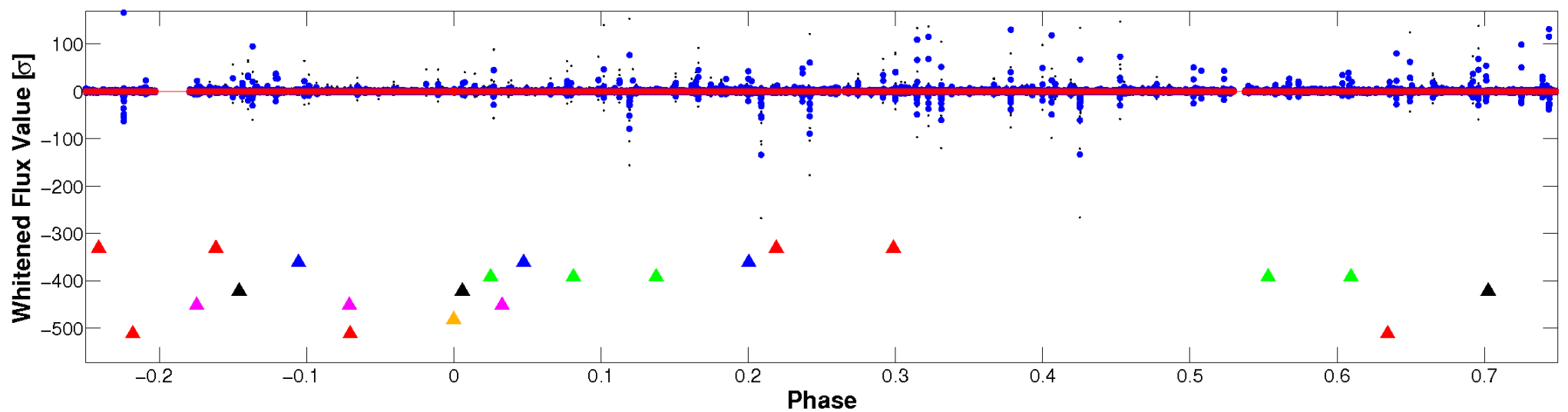


Non-Whitened Vs. Whitened Light Curve

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

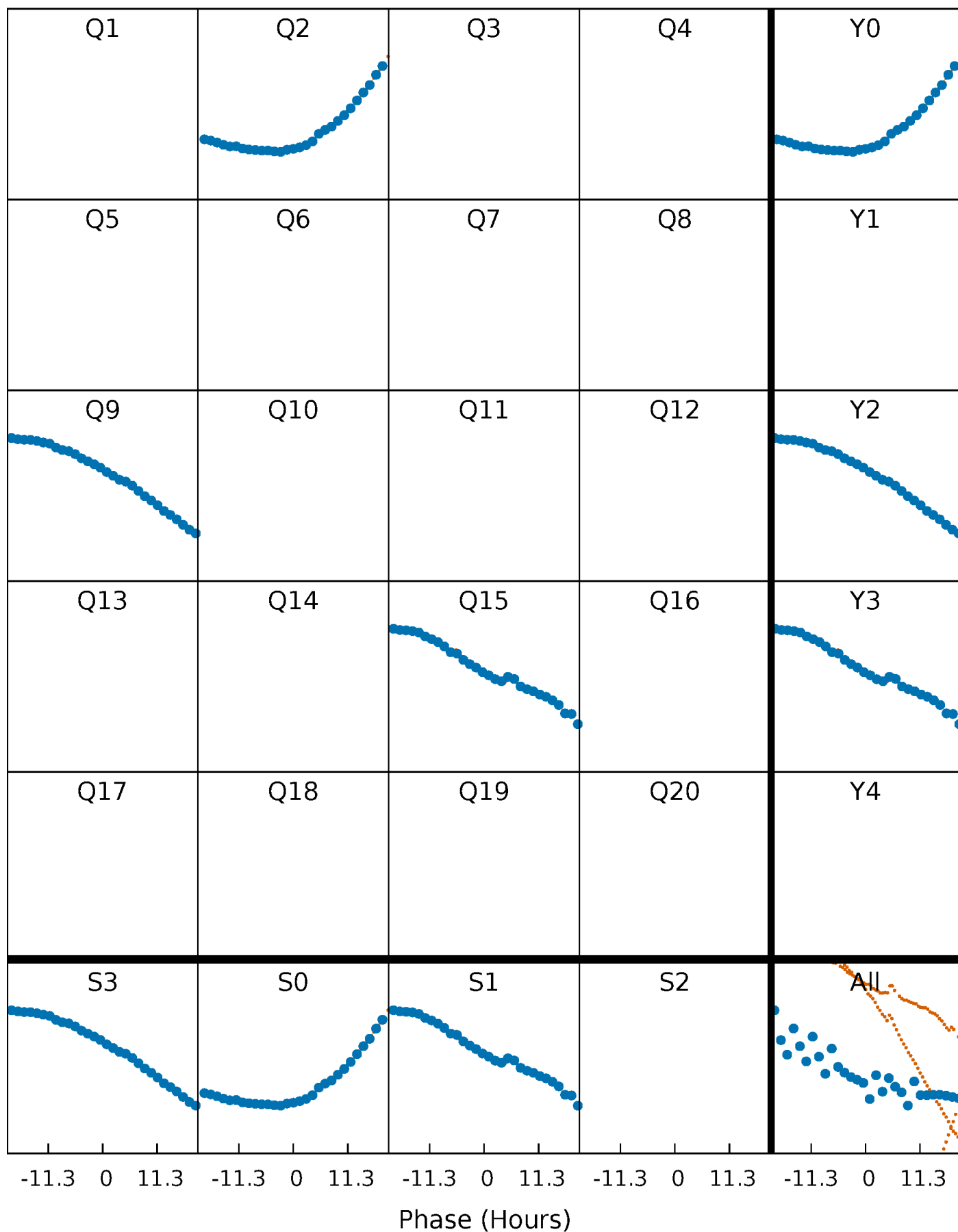


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



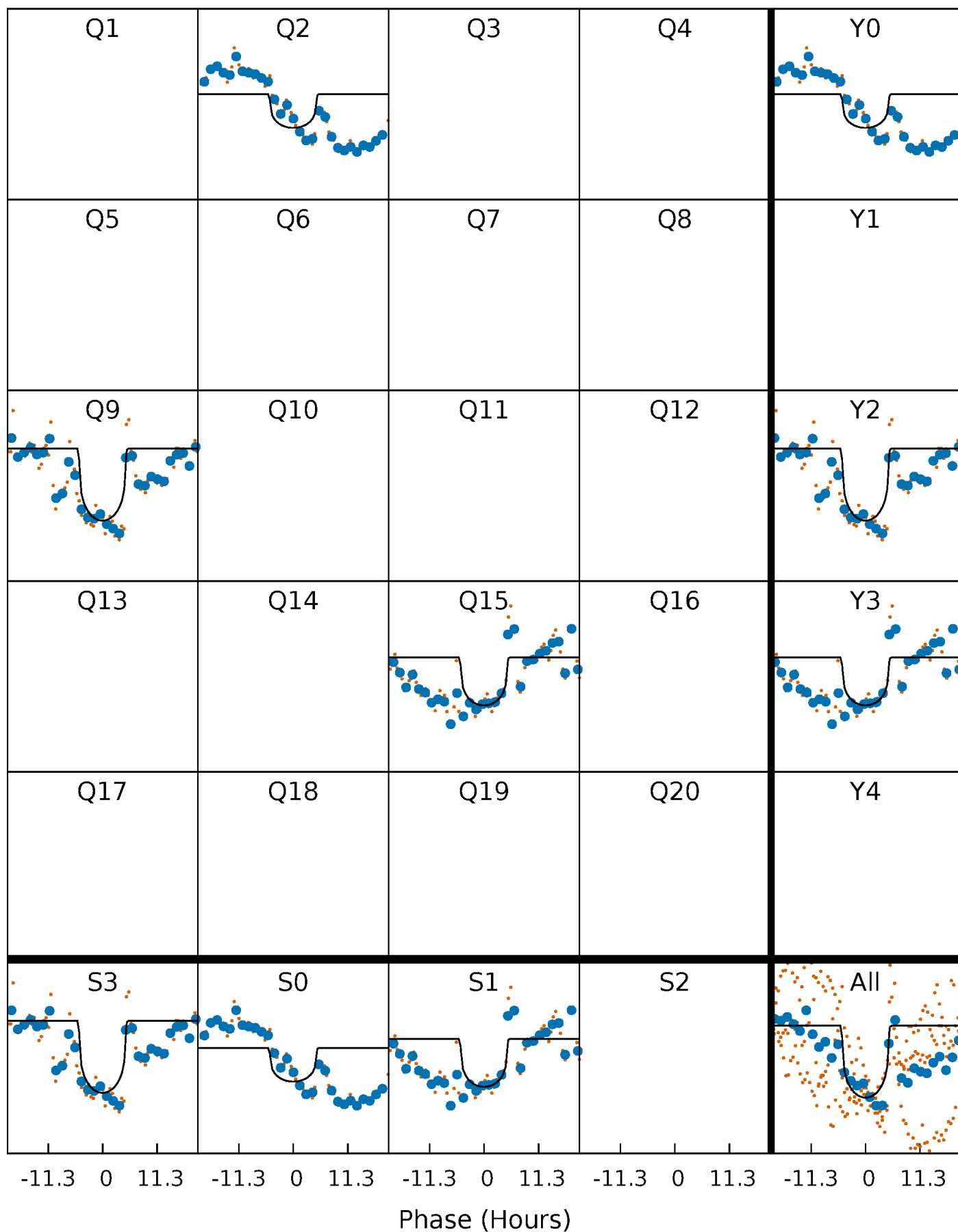
PDC Quarter-Phased Transit Curves

TCE 003128488-06 P=601.989902 Days $T_0=239.565807$ (BKJD)



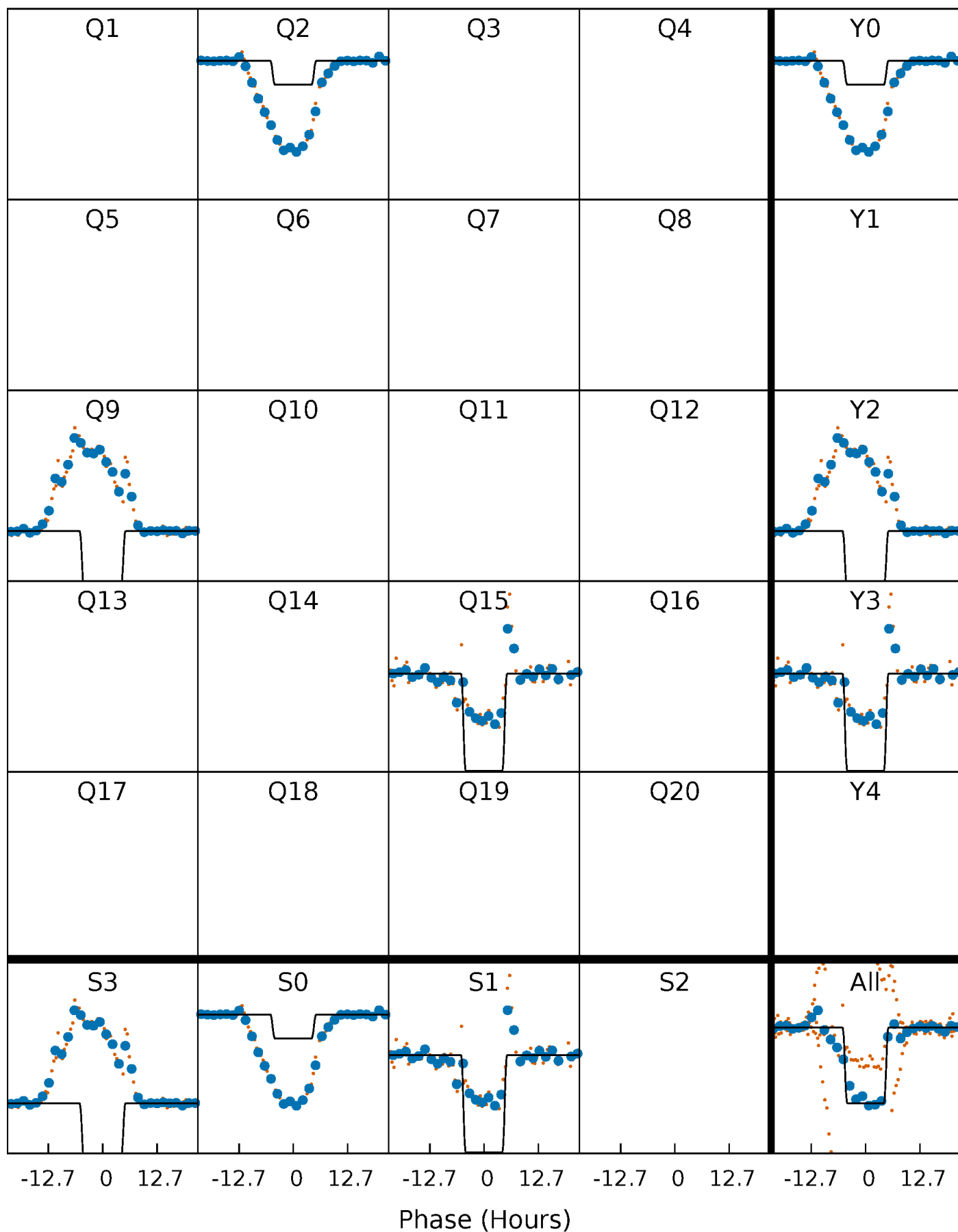
DV Quarter-Phased Transit Curves

TCE 003128488-06 P=601.989902 Days $T_0=239.565807$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

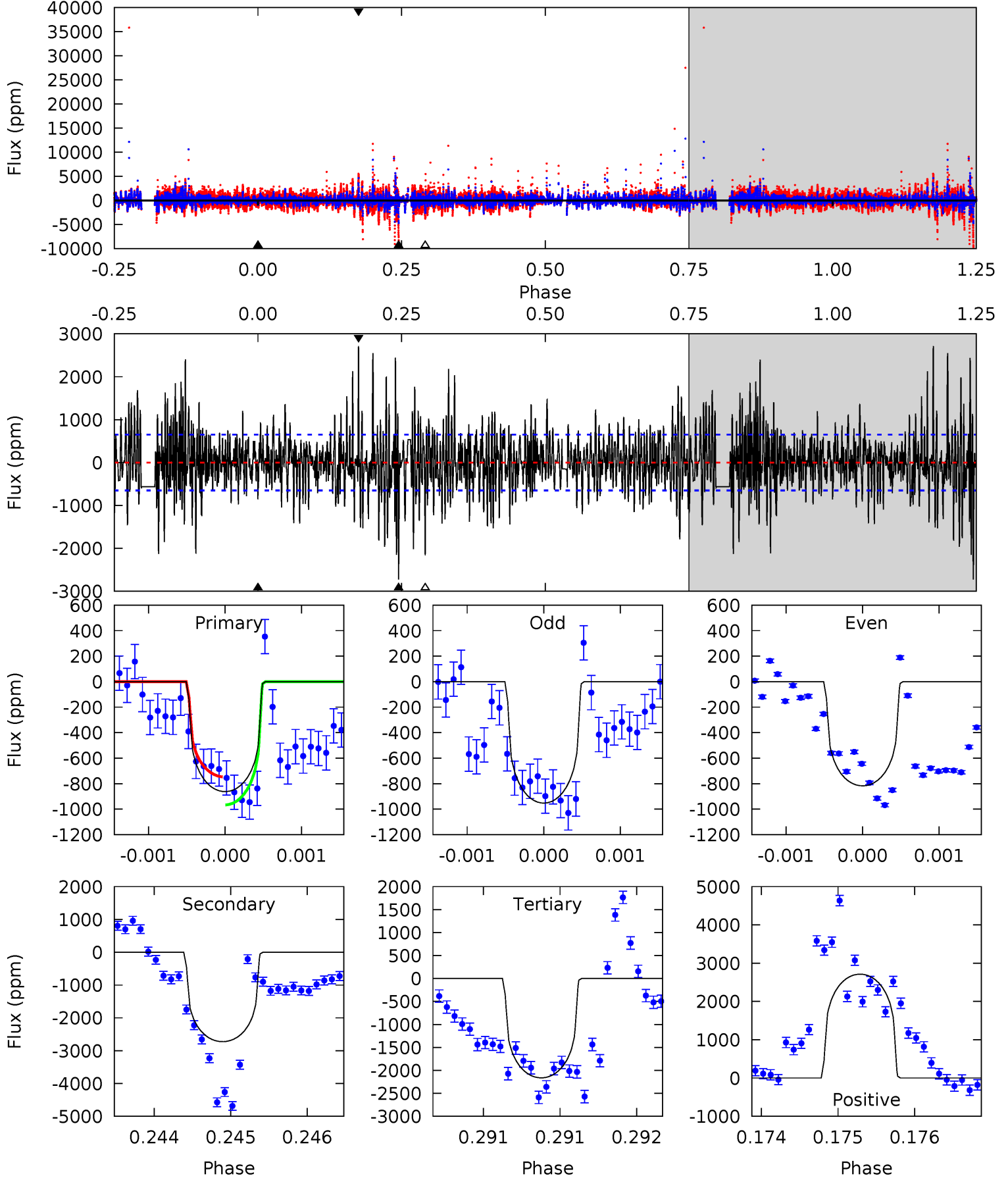
TCE 003128488-06 P=601.986300 Days $T_0=239.555432$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-06, P = 601.989902 Days, E = 239.565807 Days

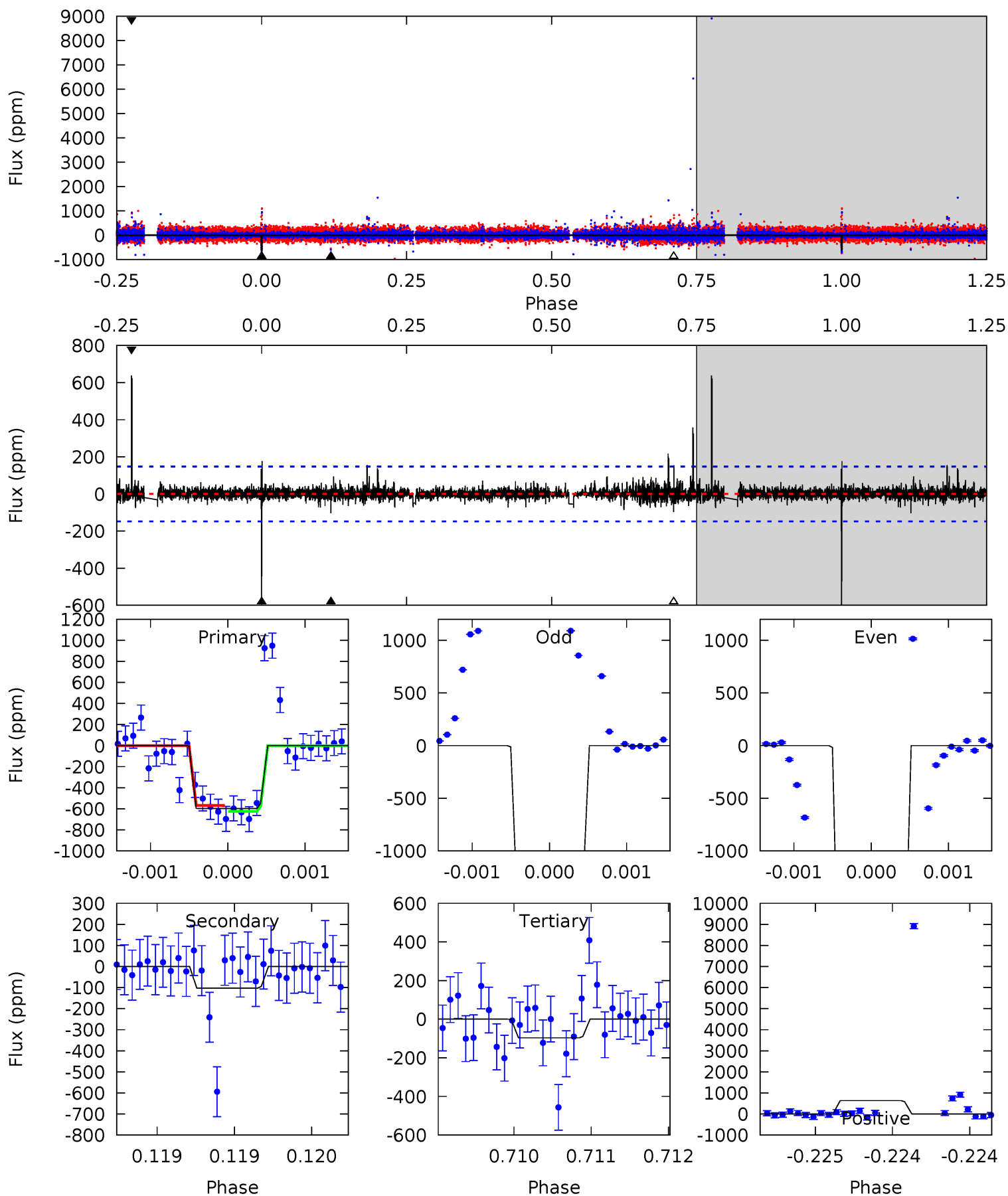
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.29	23.0	18.3	22.9	5.51	3.38	4.88	-11.0	-15.7	4.75	0.10	0.46	0.95	0.50	0.93



Alt Model-Shift Uniqueness Test

003128488-06, P = 601.986300 Days, E = 239.555432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	3.83	3.60	23.7	5.51	3.38	0.82	18.7	-1.48	0.23	-19.9	33.2	2.11	0.52	0



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2725 ± 118	$1.61^{+0.63}_{-0.61}$	194^{+6}_{-6}	6135^{+1826}_{-921}	$773677^{+1144166}_{-384276}$
Alt.	-103 ± 27	$2.17^{+0.70}_{-0.62}$	194^{+6}_{-7}	2970^{+339}_{-235}	15072^{+16230}_{-6461}

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 $A_{obs} \gg 1.0$

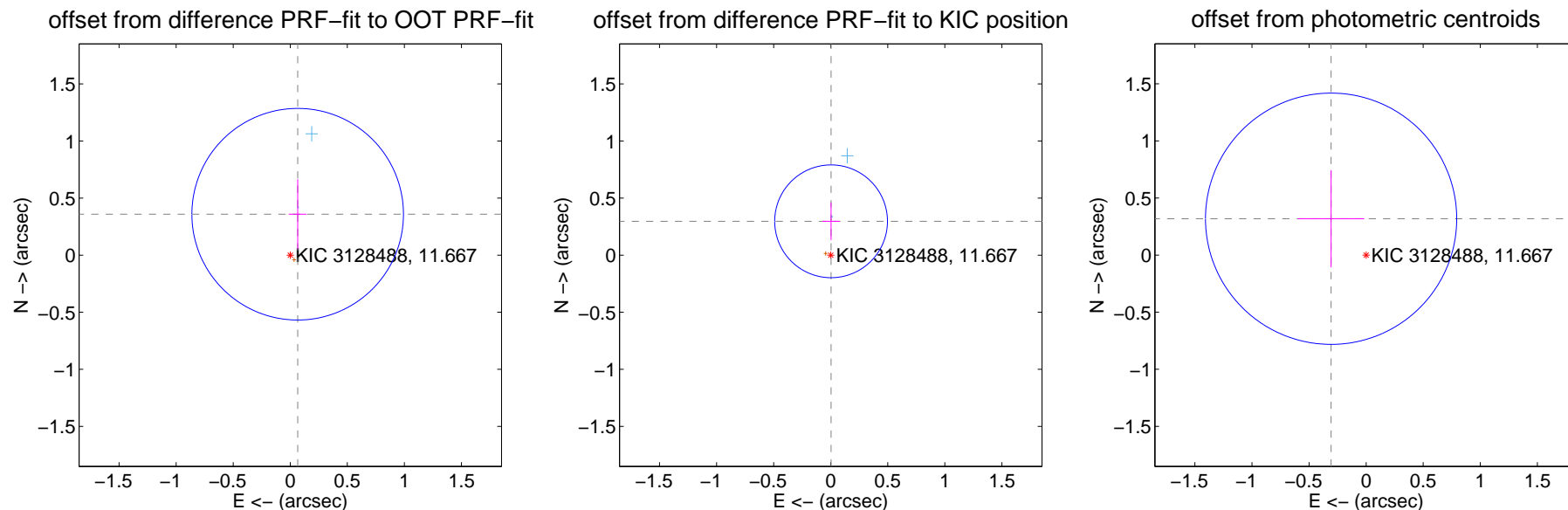
DV Centroid Data

Supplemental centroid analysis for 003128488-06. **Kepler magnitude: 11.67.** Transit SNR 7.23

There are 2 quarters with good PRF difference image offsets

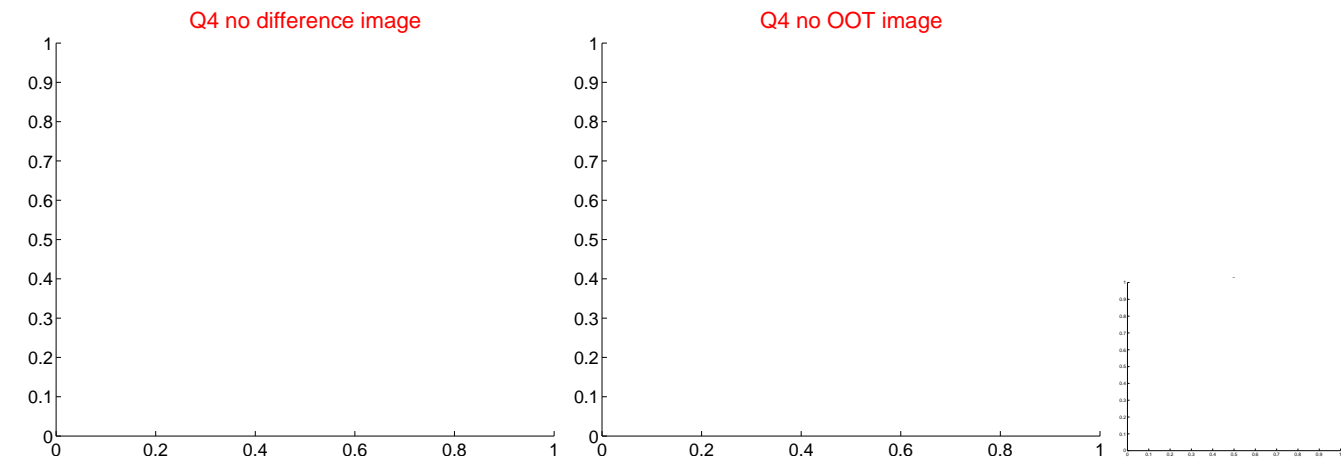
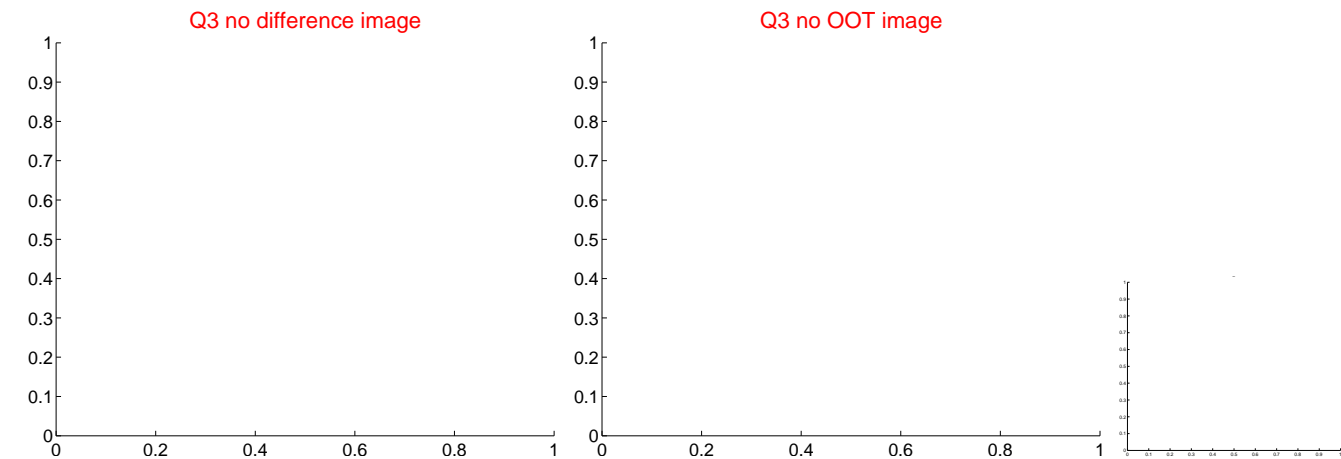
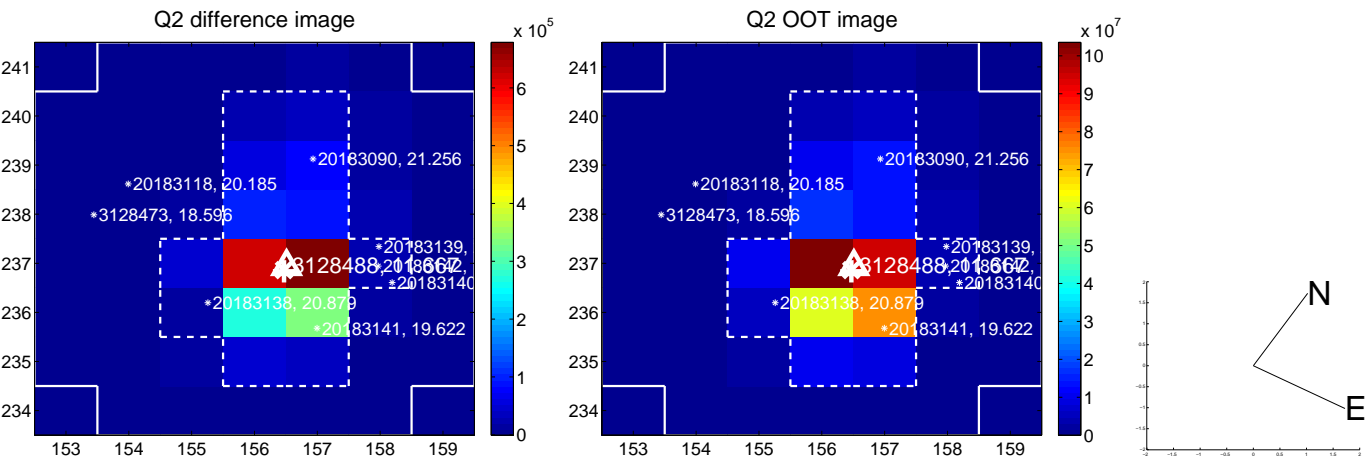
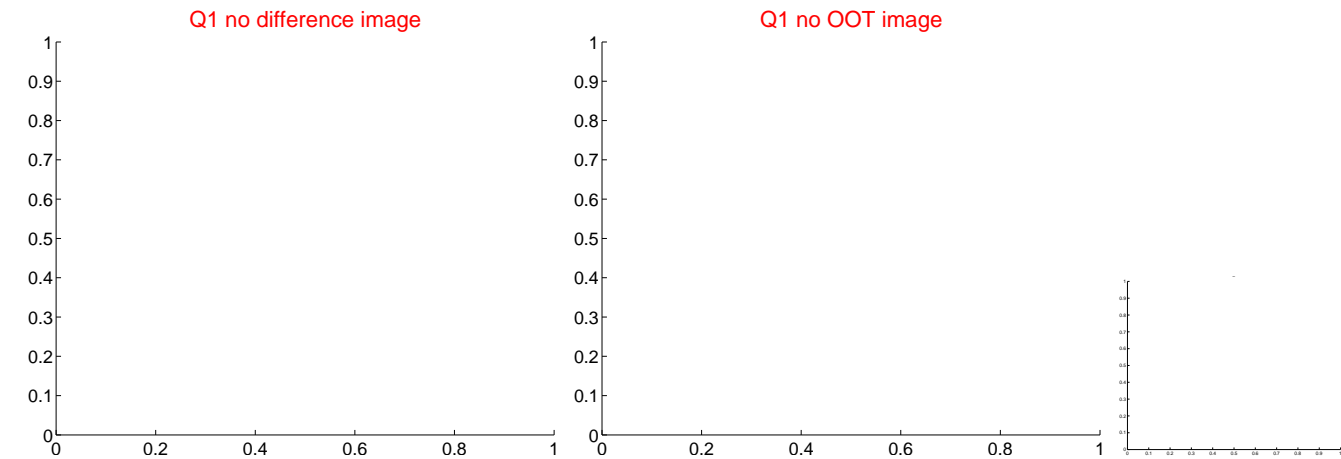
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.364 ± 0.309	1.18	-0.065 ± 0.078	0.359 ± 0.307
PRF-fit source offset from KIC position	0.297 ± 0.165	1.80	-0.003 ± 0.075	0.297 ± 0.164
photometric centroid source offset	0.44 ± 0.37	1.21	0.31 ± 0.29	0.32 ± 0.43

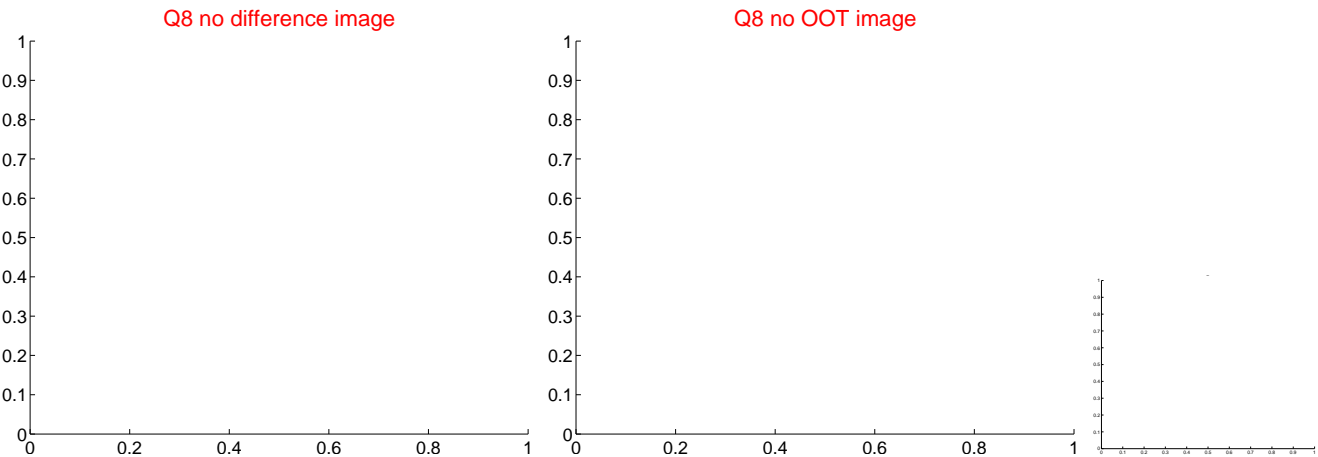
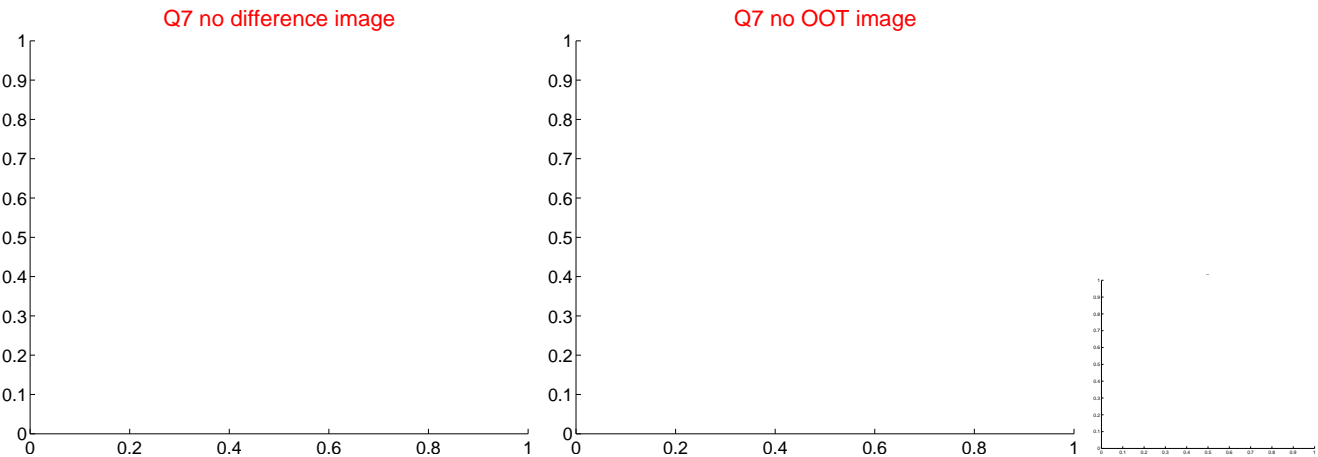
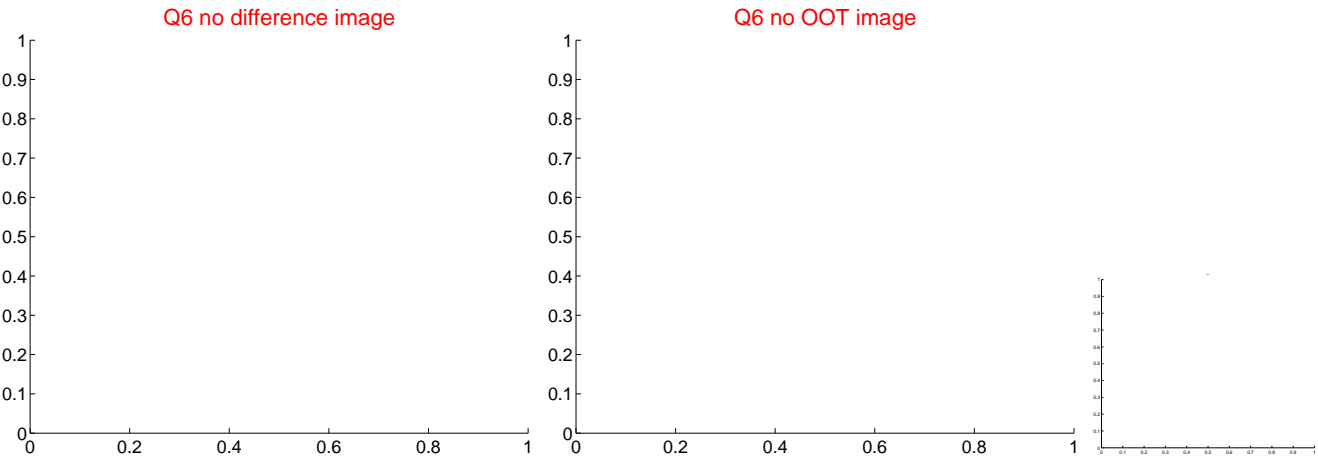
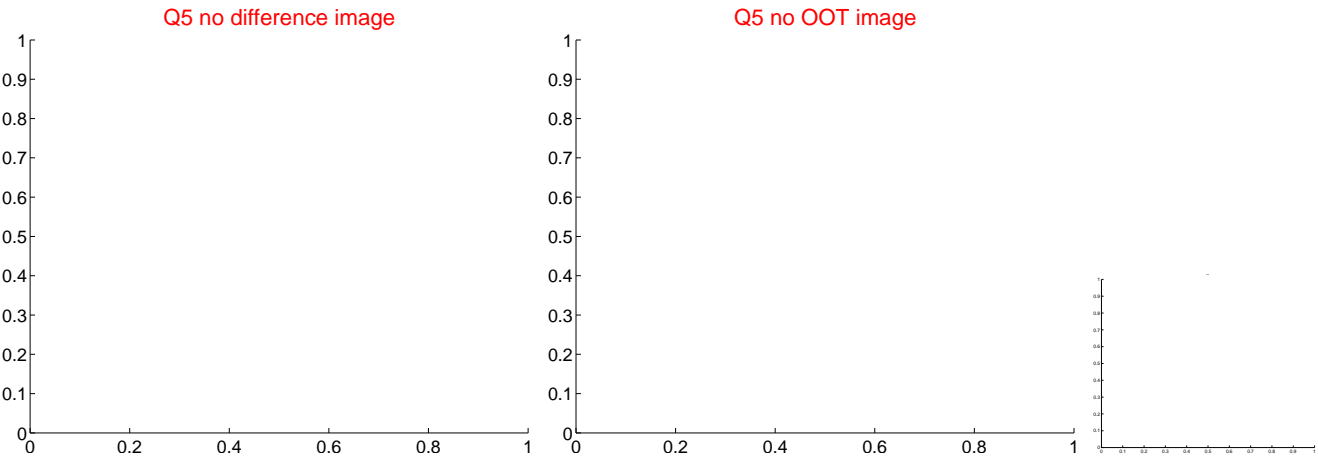


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

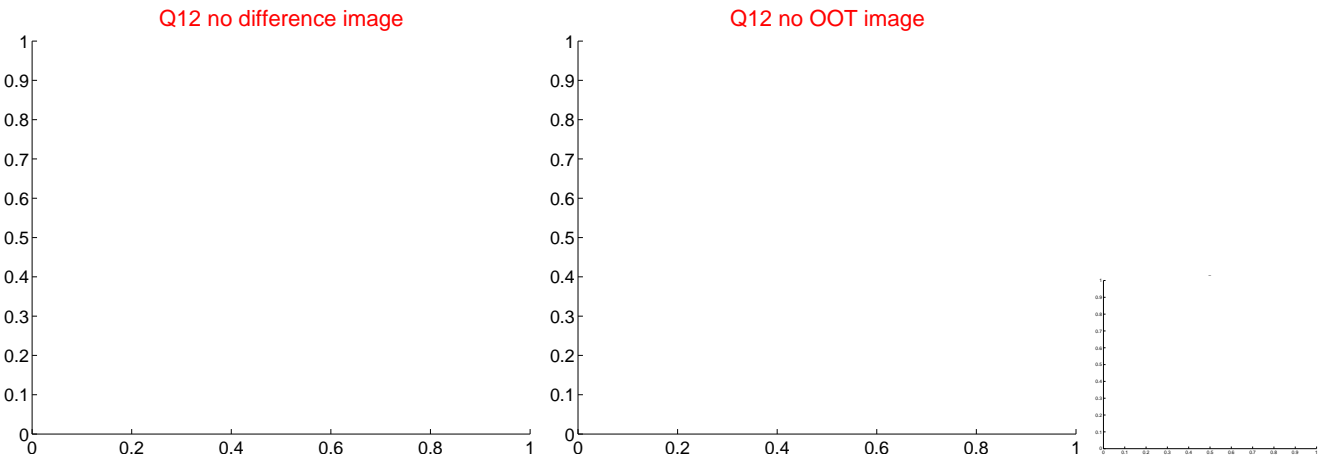
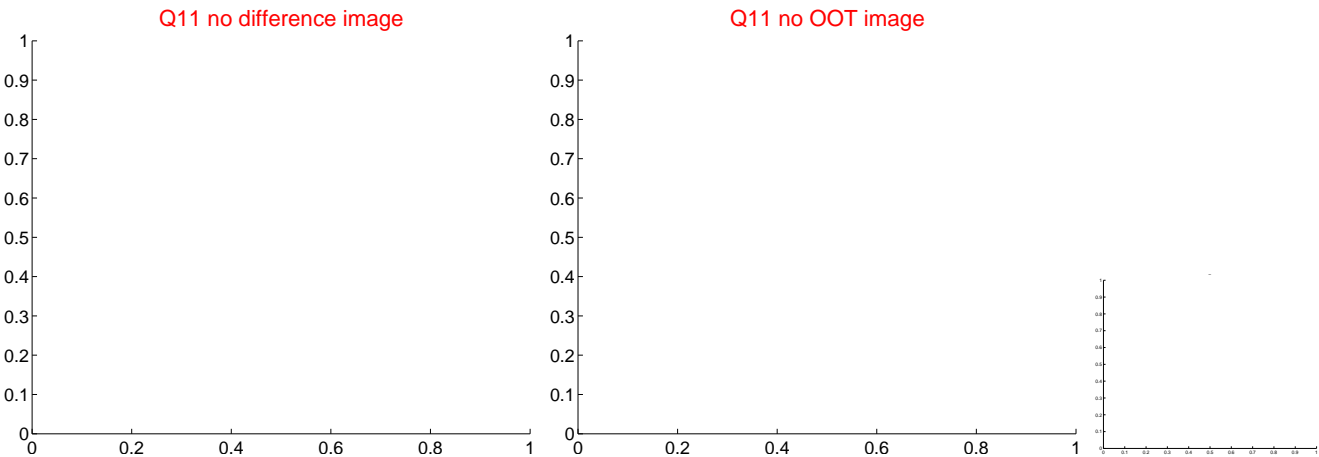
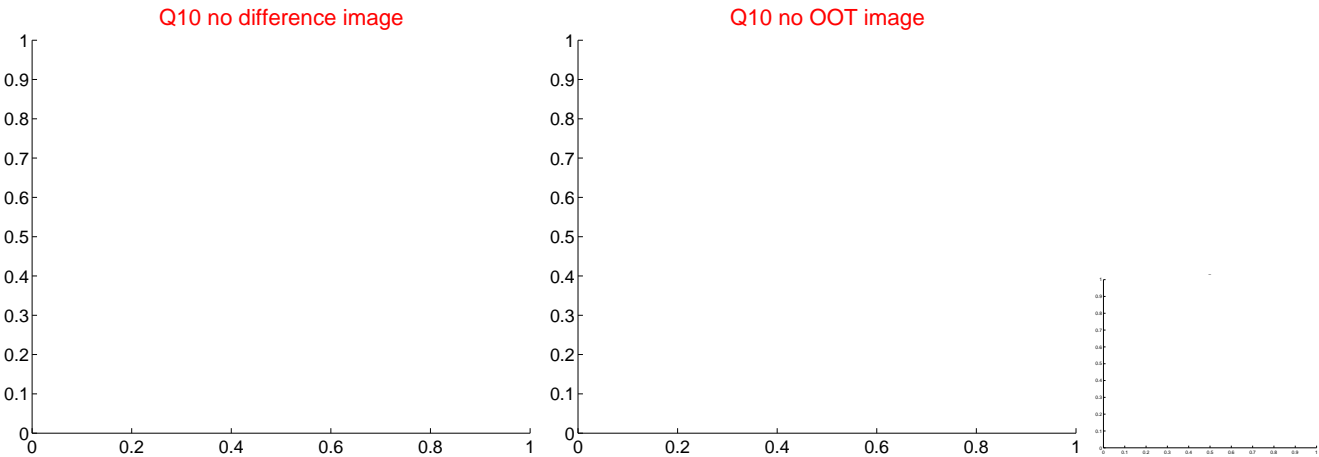
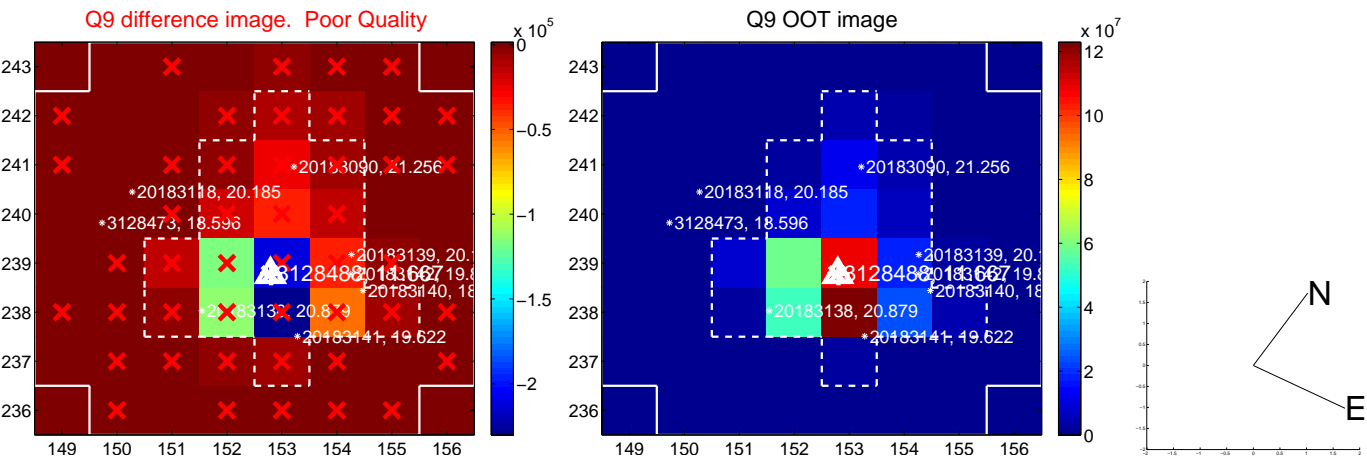
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



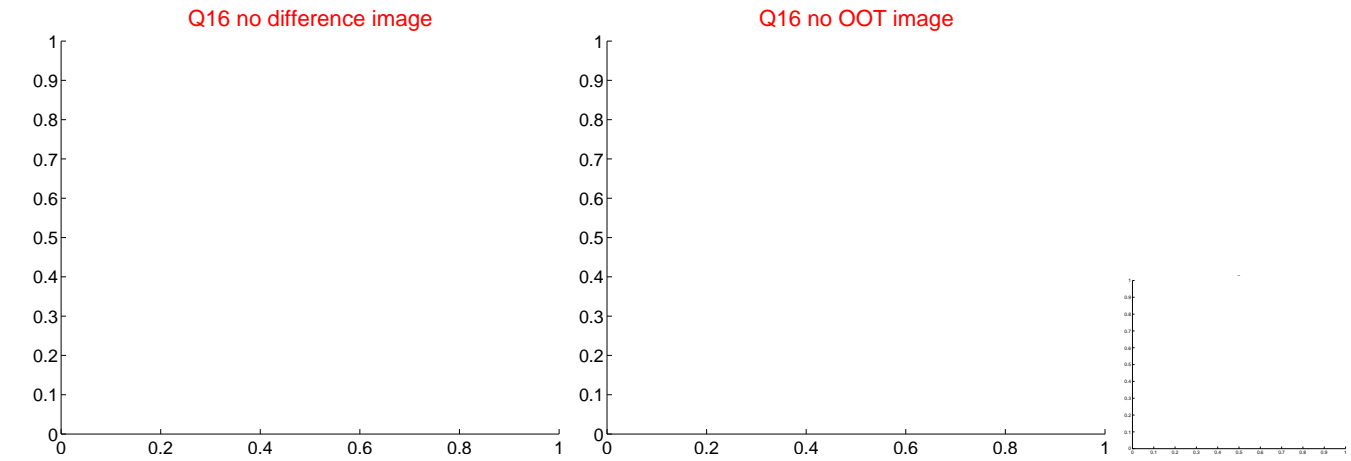
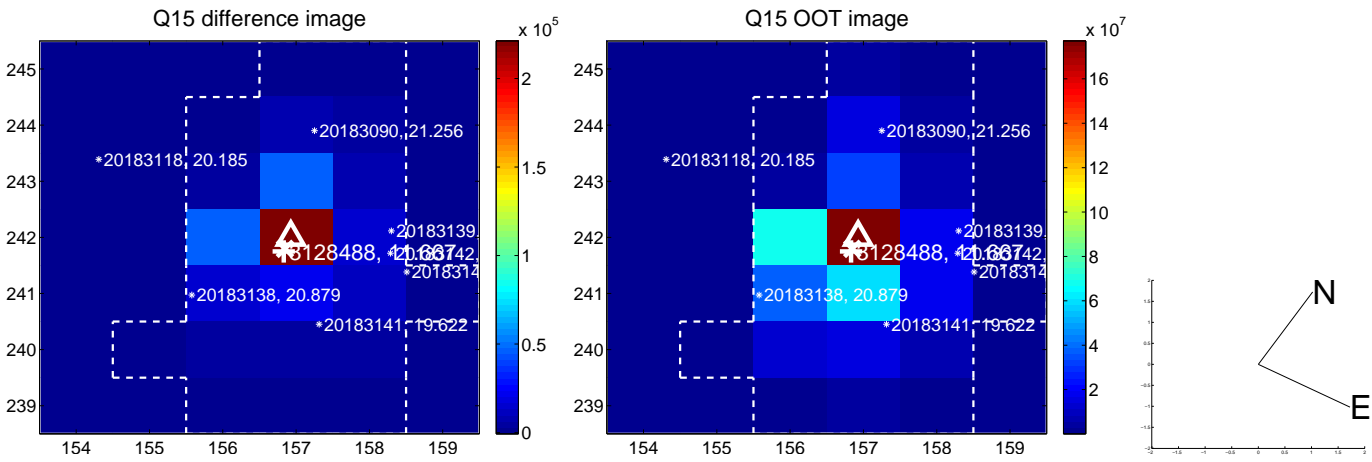
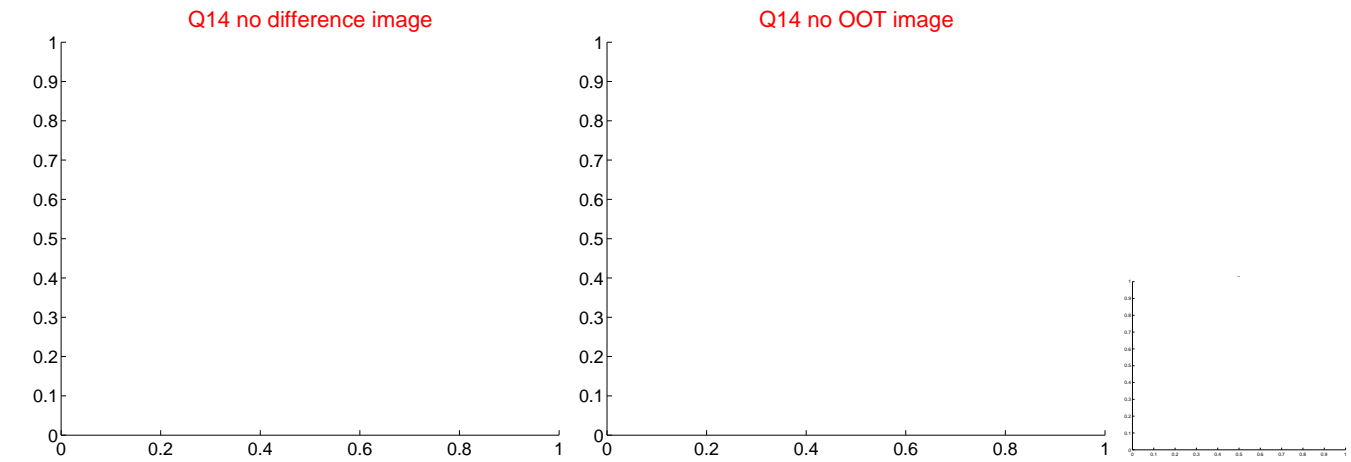
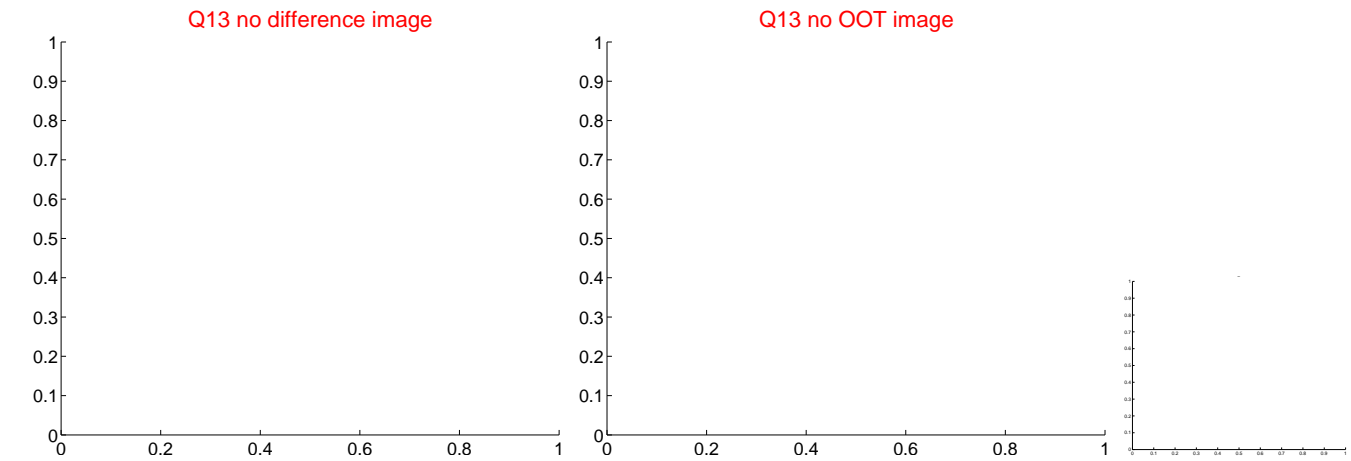
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



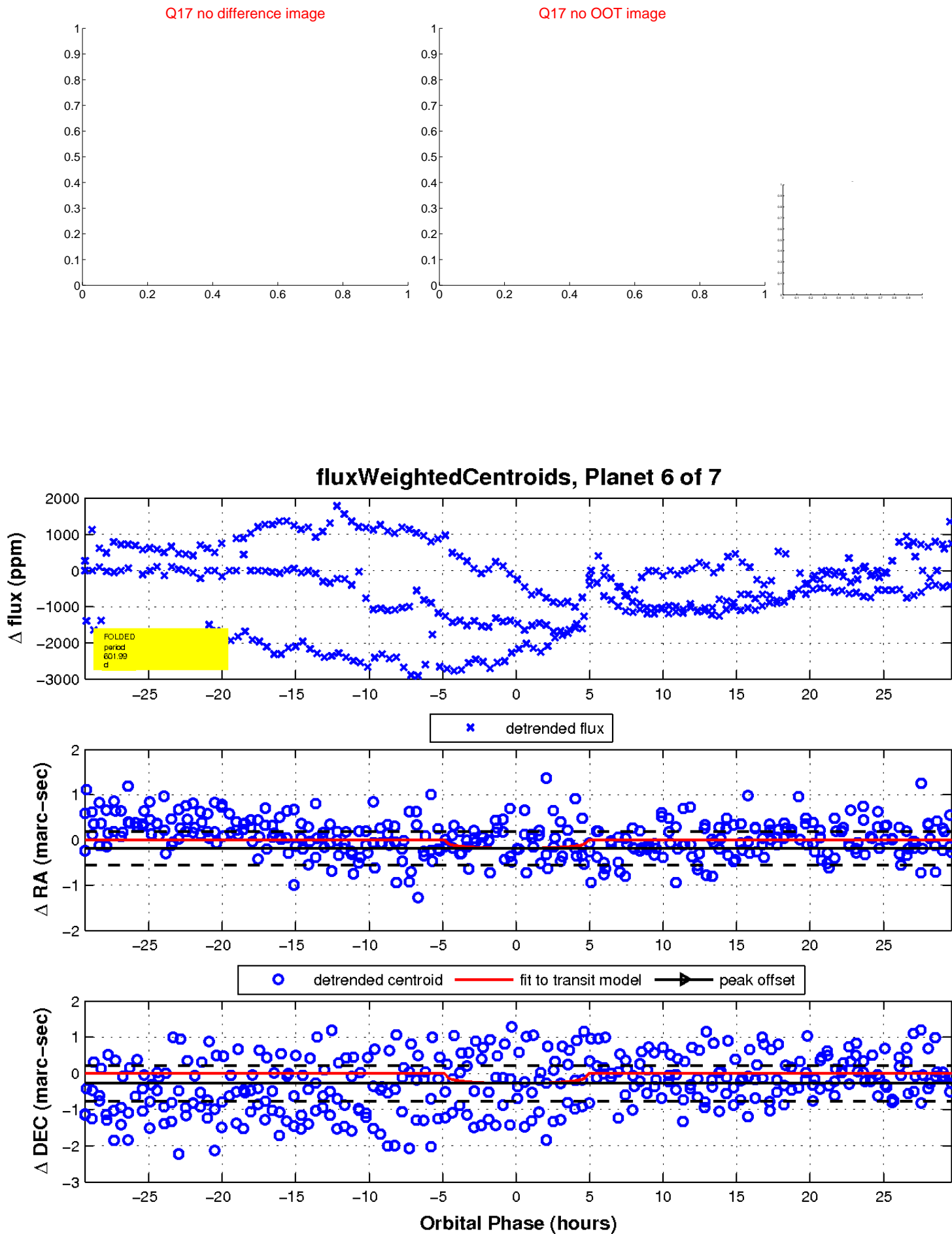
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



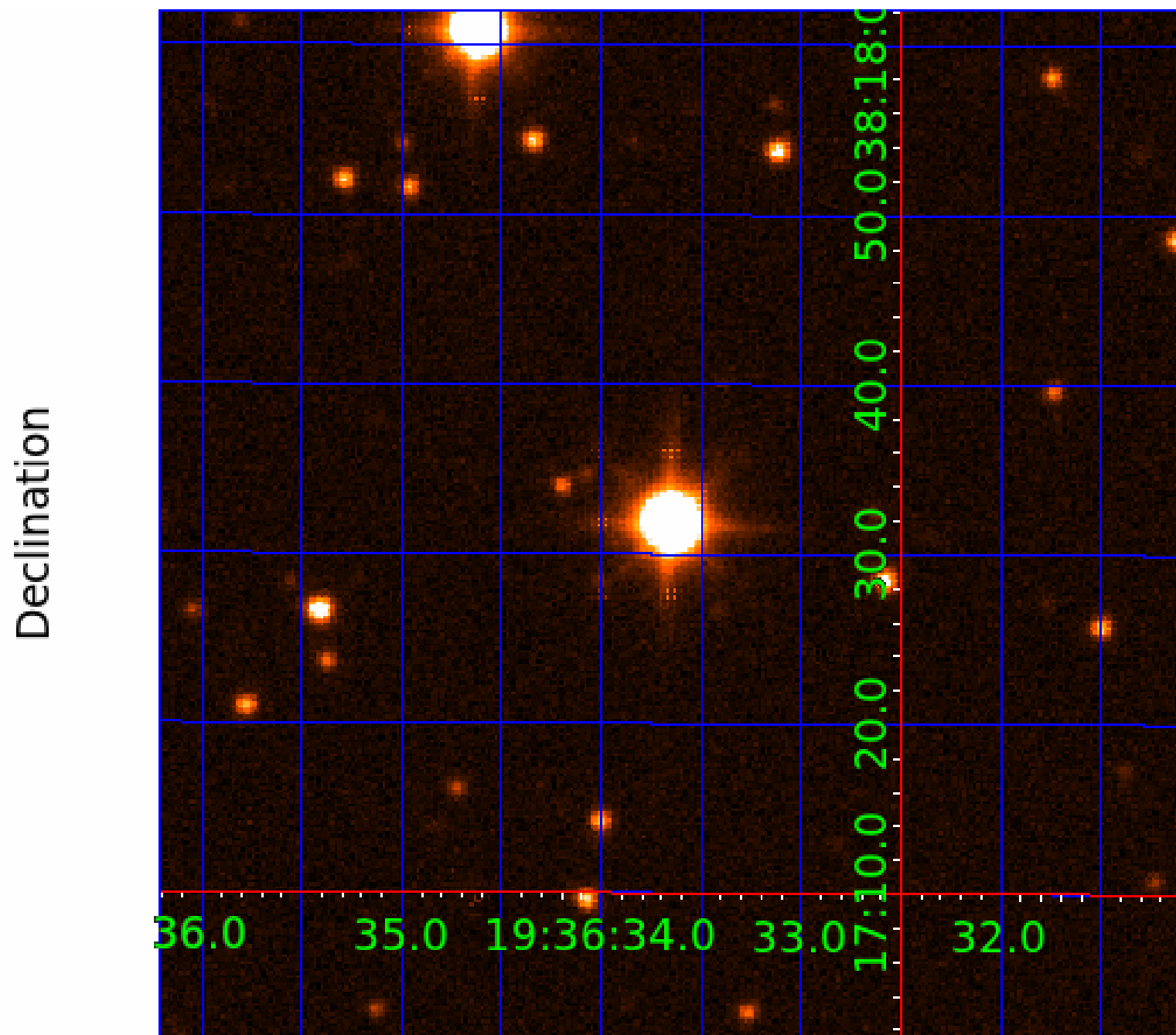
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003128488

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})
003128488-01	OBS	No	324.958304	371.434562	651.6	9.680	18.7	5.5	0.55	4565	1.45	0.20
003128488-02	OBS	No	694.036941	176.112418	1238.2	10.944	17.1	9.0	0.55	4565	1.87	0.07
003128488-03	OBS	No	284.070980	322.353452	680.8	3.542	15.1	8.6	0.55	4565	1.61	0.24
003128488-04	OBS	No	510.726750	243.094415	438.4	19.867	13.3	2.9	0.55	4565	1.14	0.11
003128488-05	OBS	No	664.424496	134.457468	550.3	5.638	14.8	4.6	0.55	4565	1.26	0.08
003128488-06	OBS	No	601.989902	239.565807	838.8	9.891	12.1	7.2	0.55	4565	1.58	0.09
003128488-07	OBS	No	513.112903	197.205862	806.3	9.179	12.1	7.8	0.55	4565	1.62	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003128488-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
003128488-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003128488-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—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_DIFFS
003128488-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003128488-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

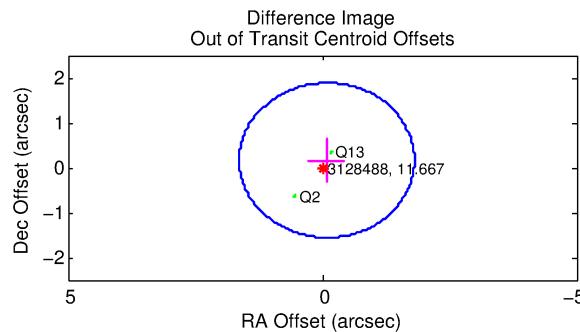
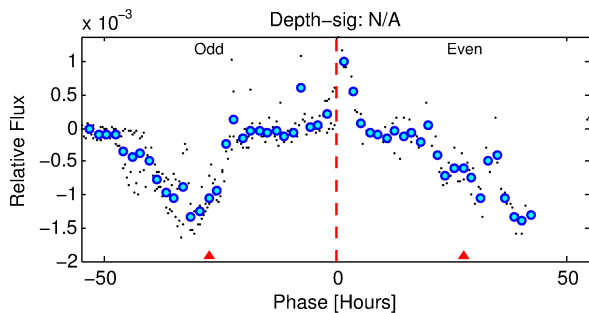
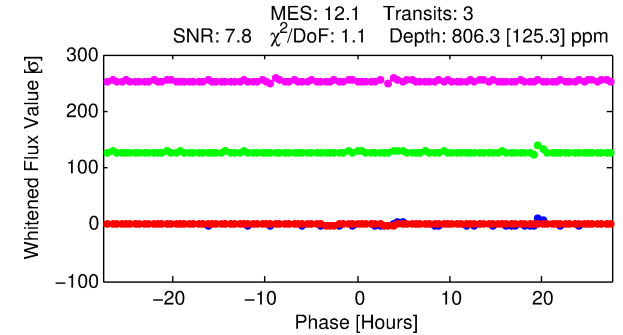
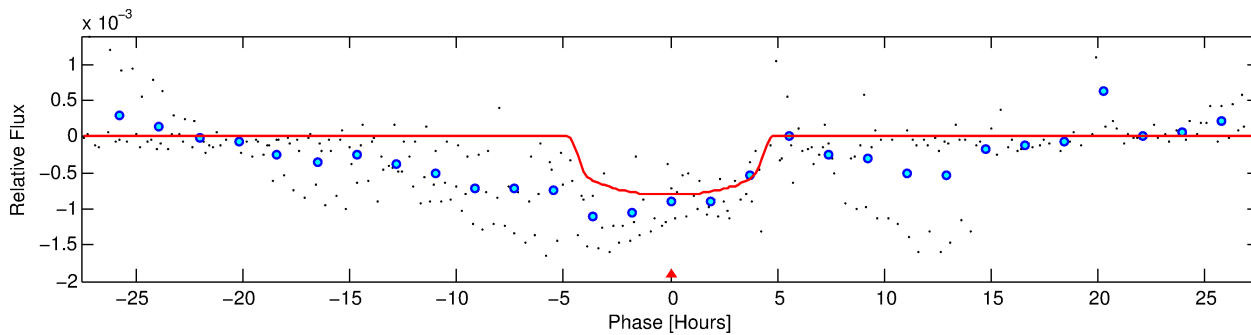
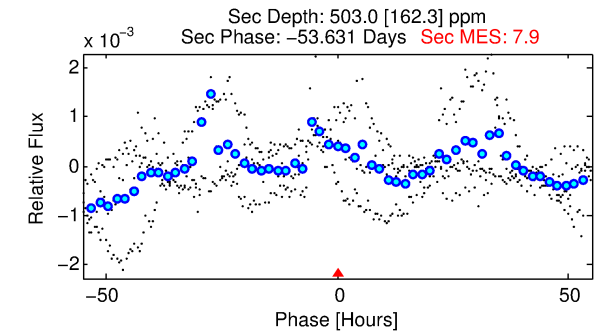
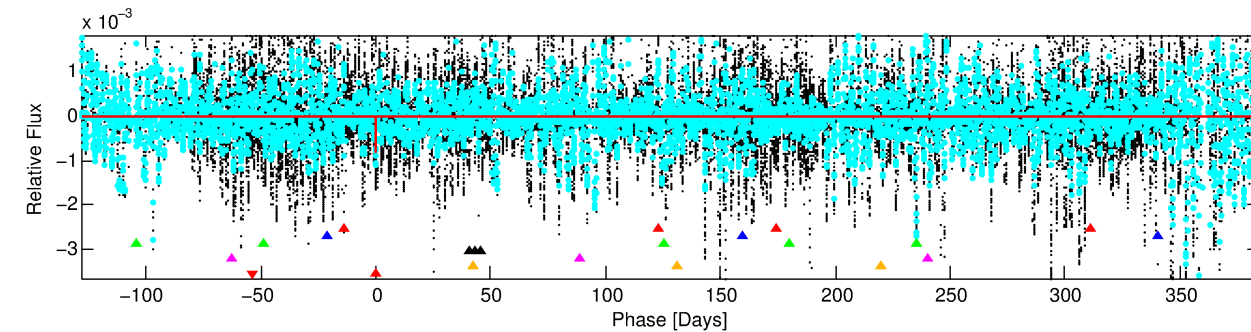
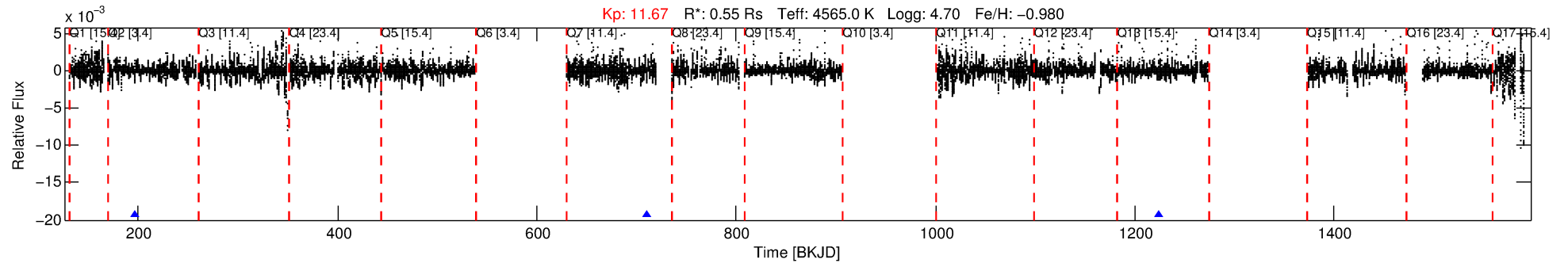
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003128488-07

No Significant Match Found

DV One-Page Summary

KIC: 3128488 Candidate: 7 of 7 Period: 513.113 d



DV Fit Results:

Period = 513.11290 [0.00402] d
Epoch = 197.2059 [0.0054] BKJD
Rp/R* = 0.0272 [0.0066]
a/R* = 343.49 [267.28]
b = 0.64 [0.73]
Seff = 0.11 [0.02]
Teq = 147 [6] K
Rp = 1.62 [0.41] Re
a = 1.0232 [0.0684] AU
Ag = 110452.35 [65106.71] [1.70σ]
Teffp = 4147 [616] K [6.50σ]

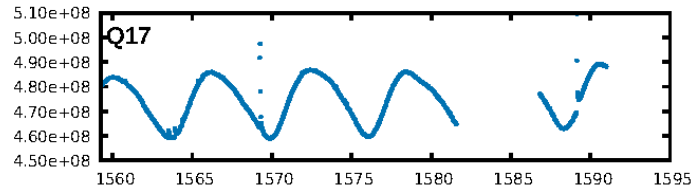
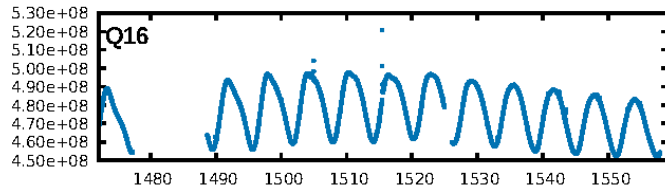
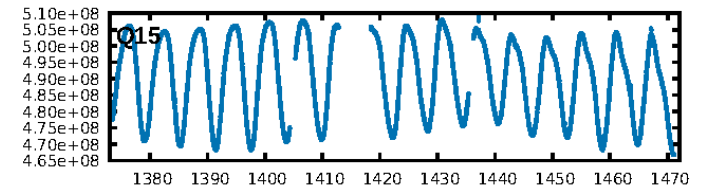
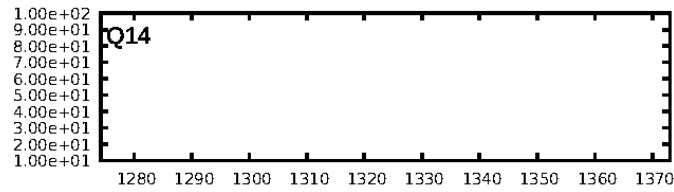
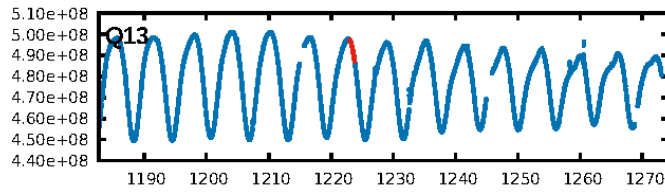
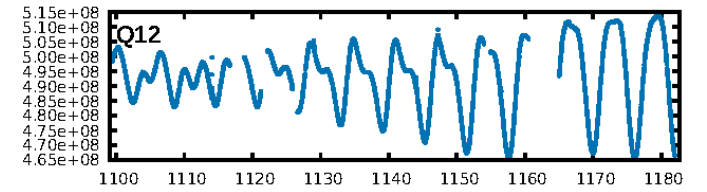
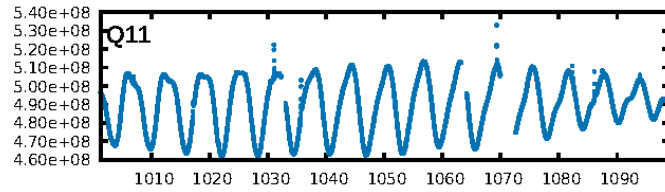
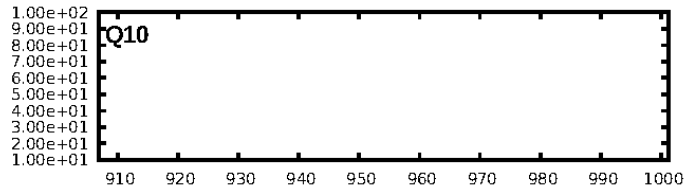
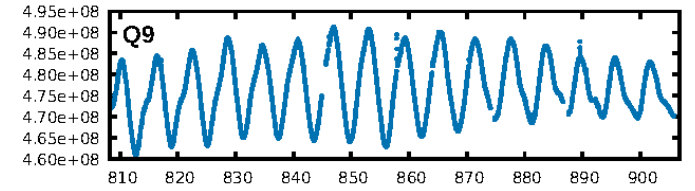
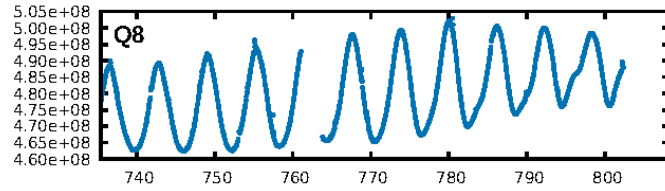
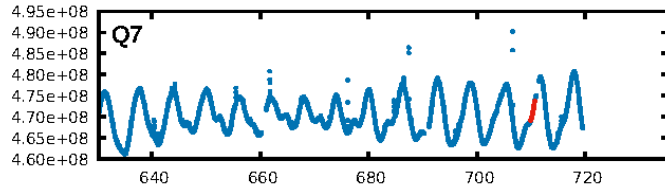
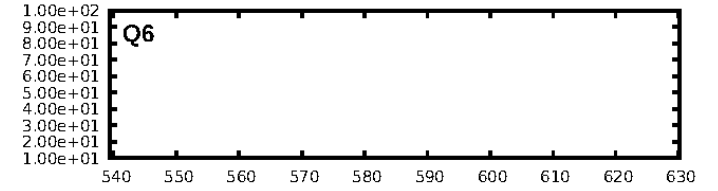
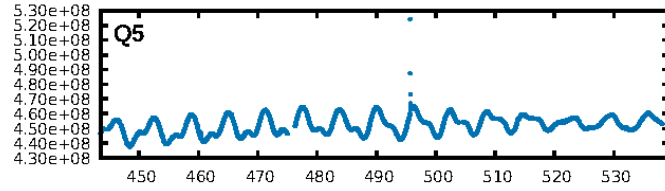
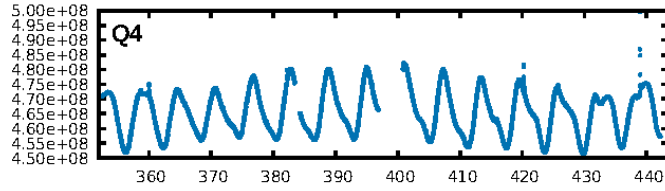
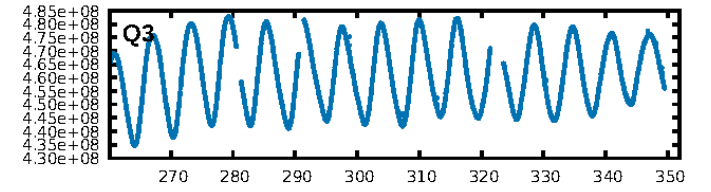
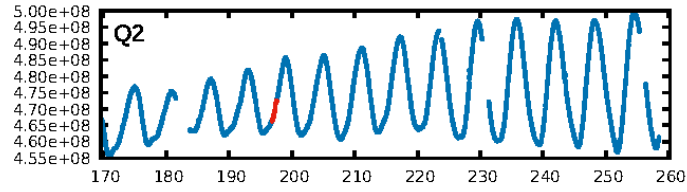
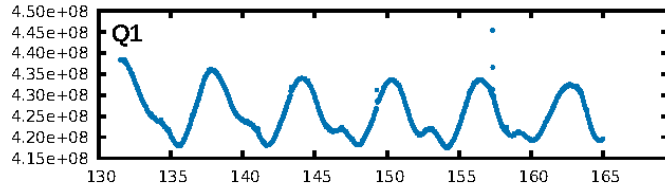
DV Diagnostic Results:

ShortPeriod-sig: 99.1% [2.62σ]
LongPeriod-sig: 100.0% [158.07σ]
ModelChiSquare2-sig: 14.8%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.001
Centroid-sig: 20.7%
Centroid-so: 0.464 arcsec [1.09σ]
OotOffset-rm: 0.184 arcsec [0.32σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-rm: 0.151 arcsec [0.29σ]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

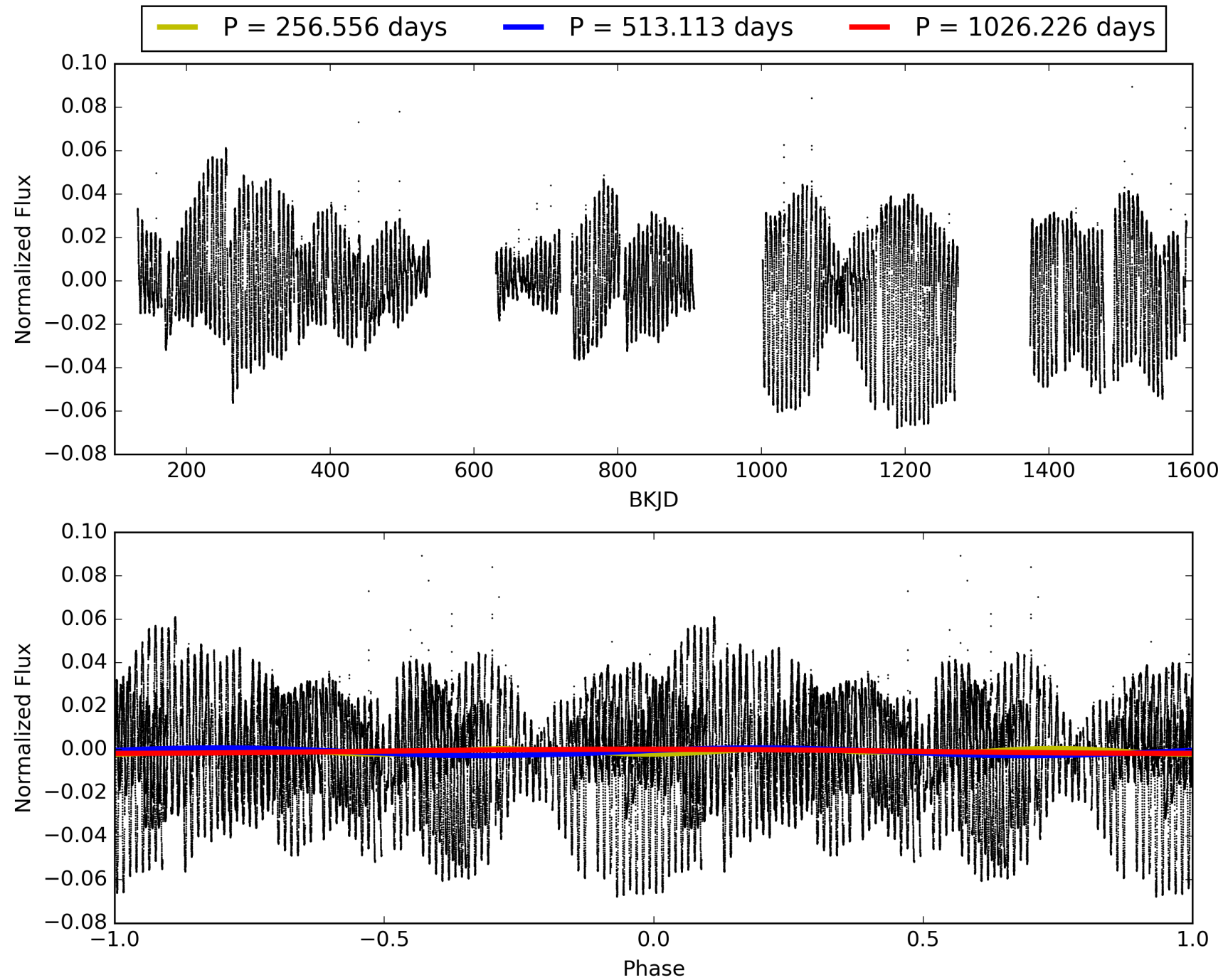
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:52:12 Z

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

TCE 003128488-07, PDC Light Curves

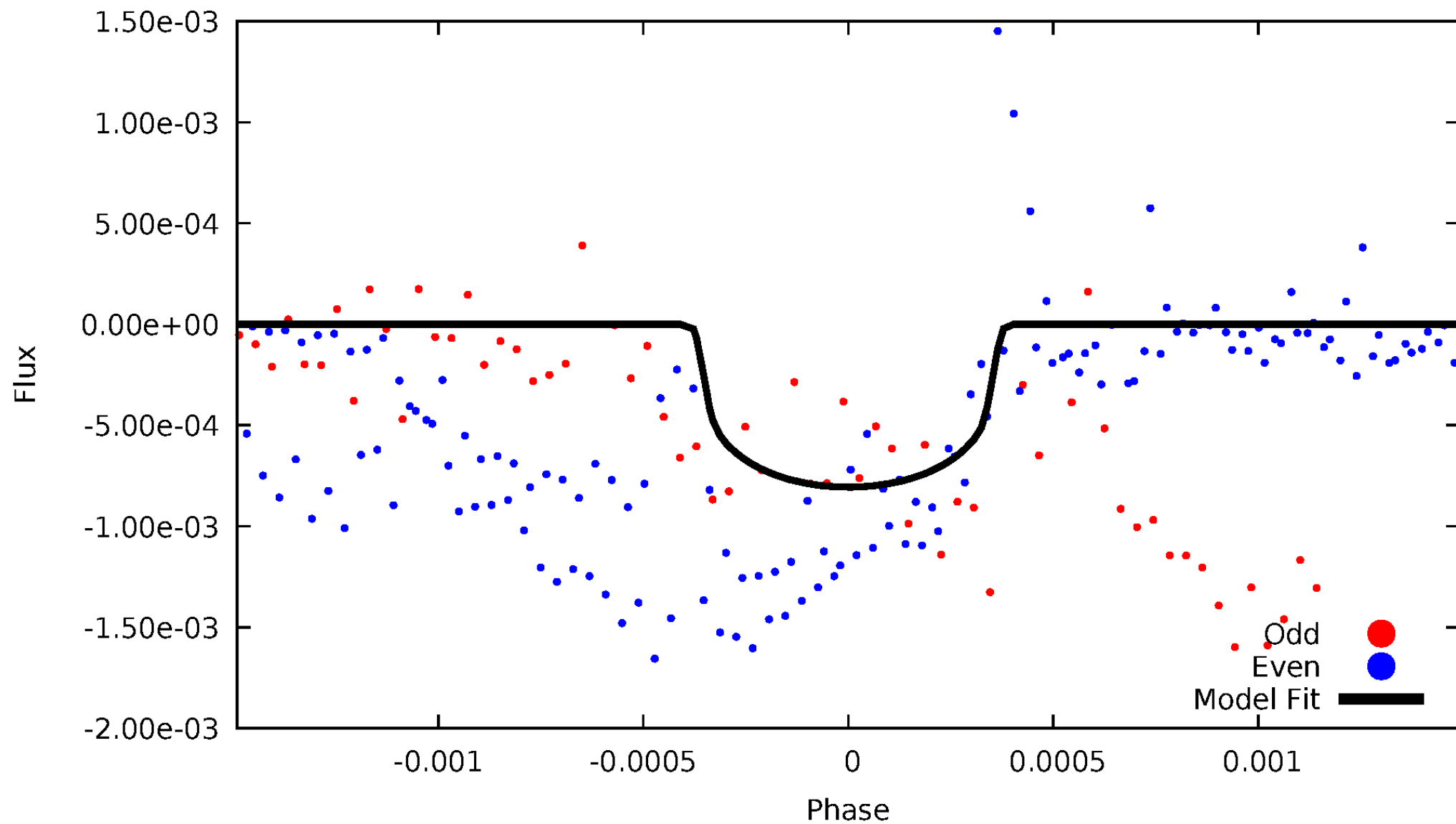


TCE 003128488-07



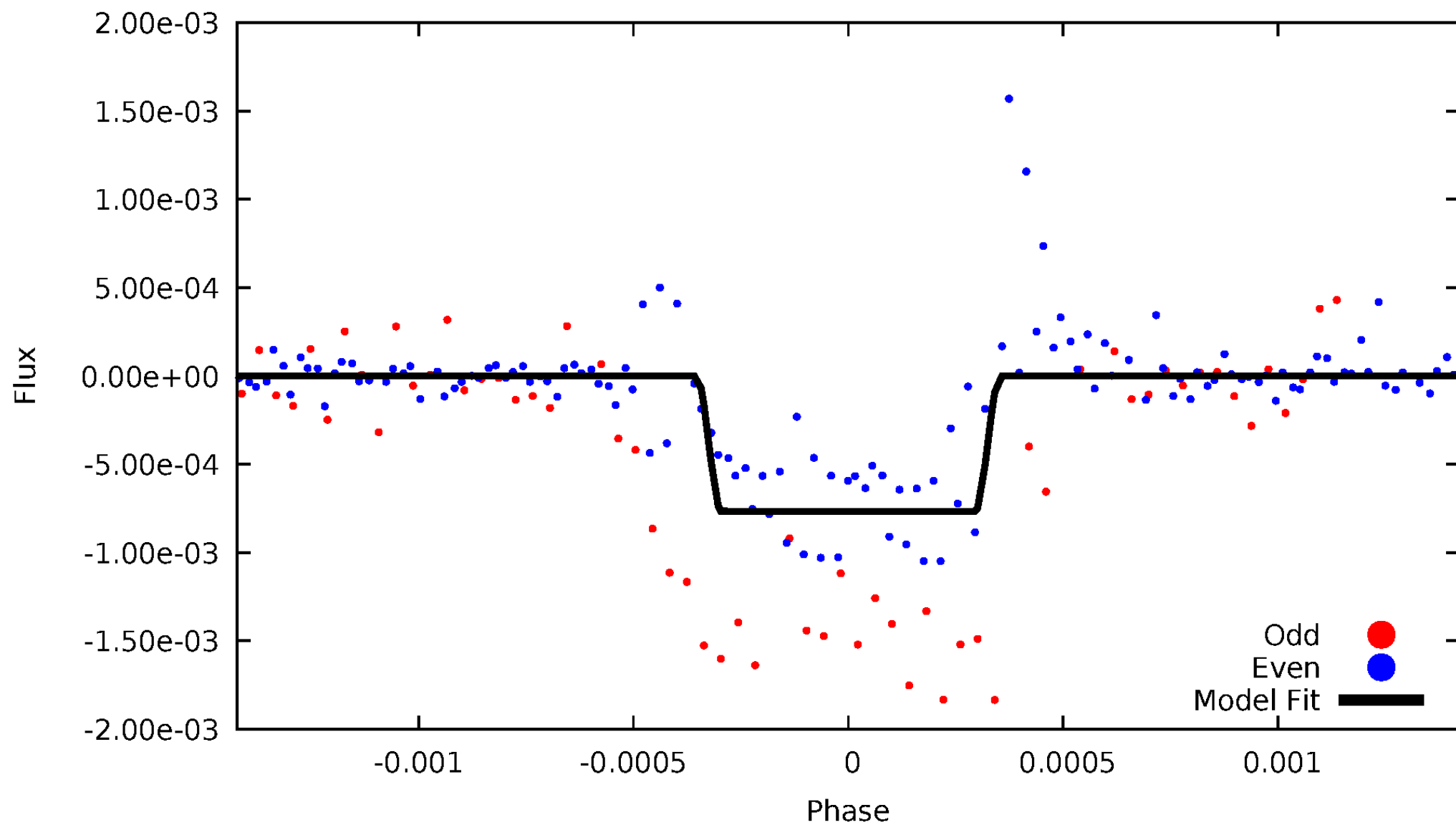
DV Odd/Even

TCE 003128488-07



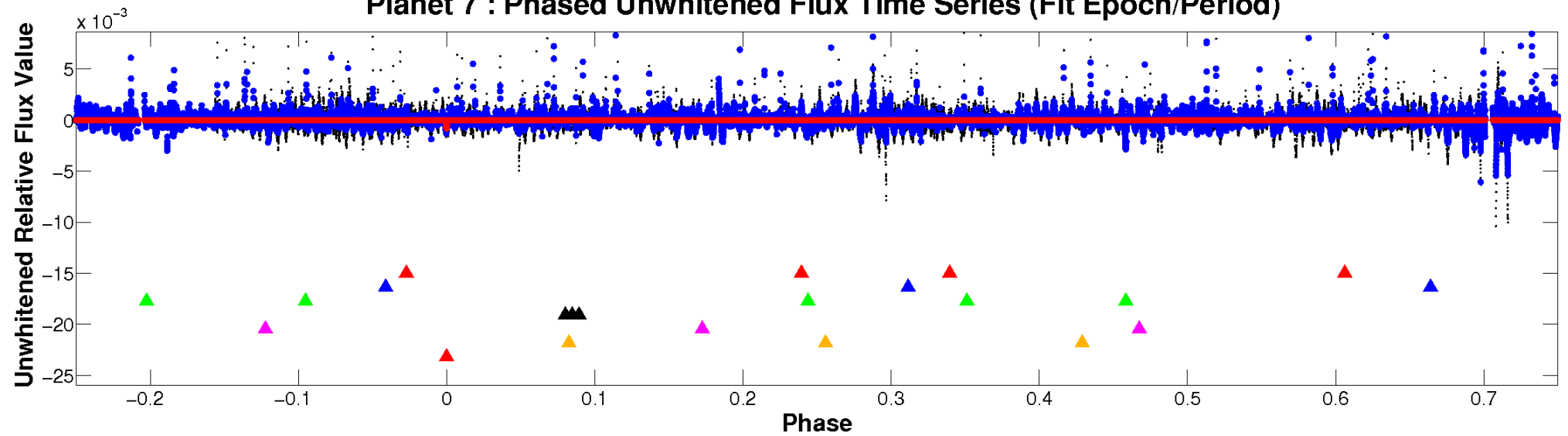
ALT Odd/Even

TCE 003128488-07

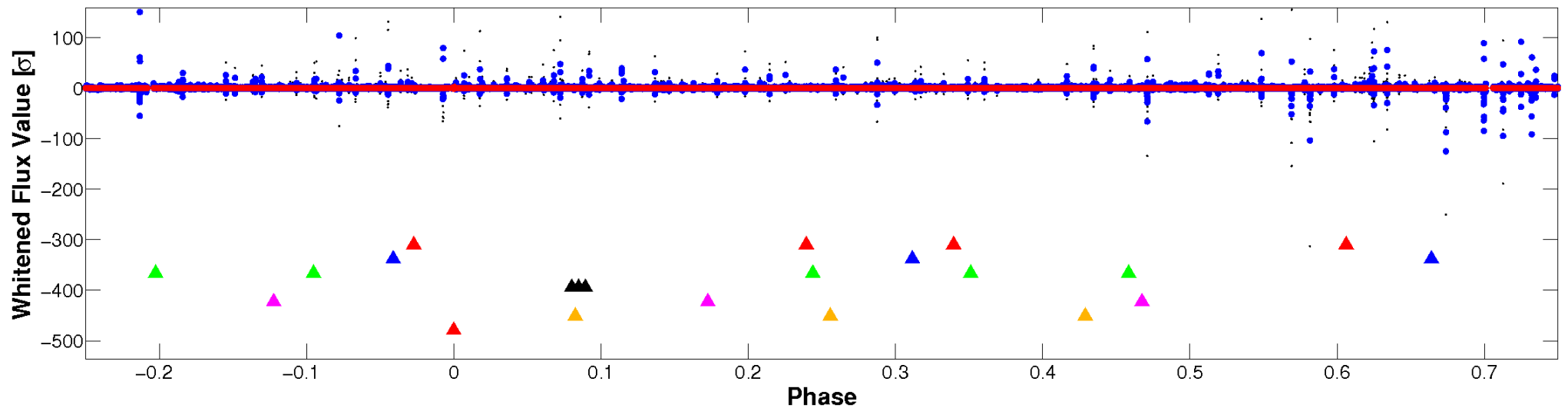


Non-Whitened Vs. Whitened Light Curve

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

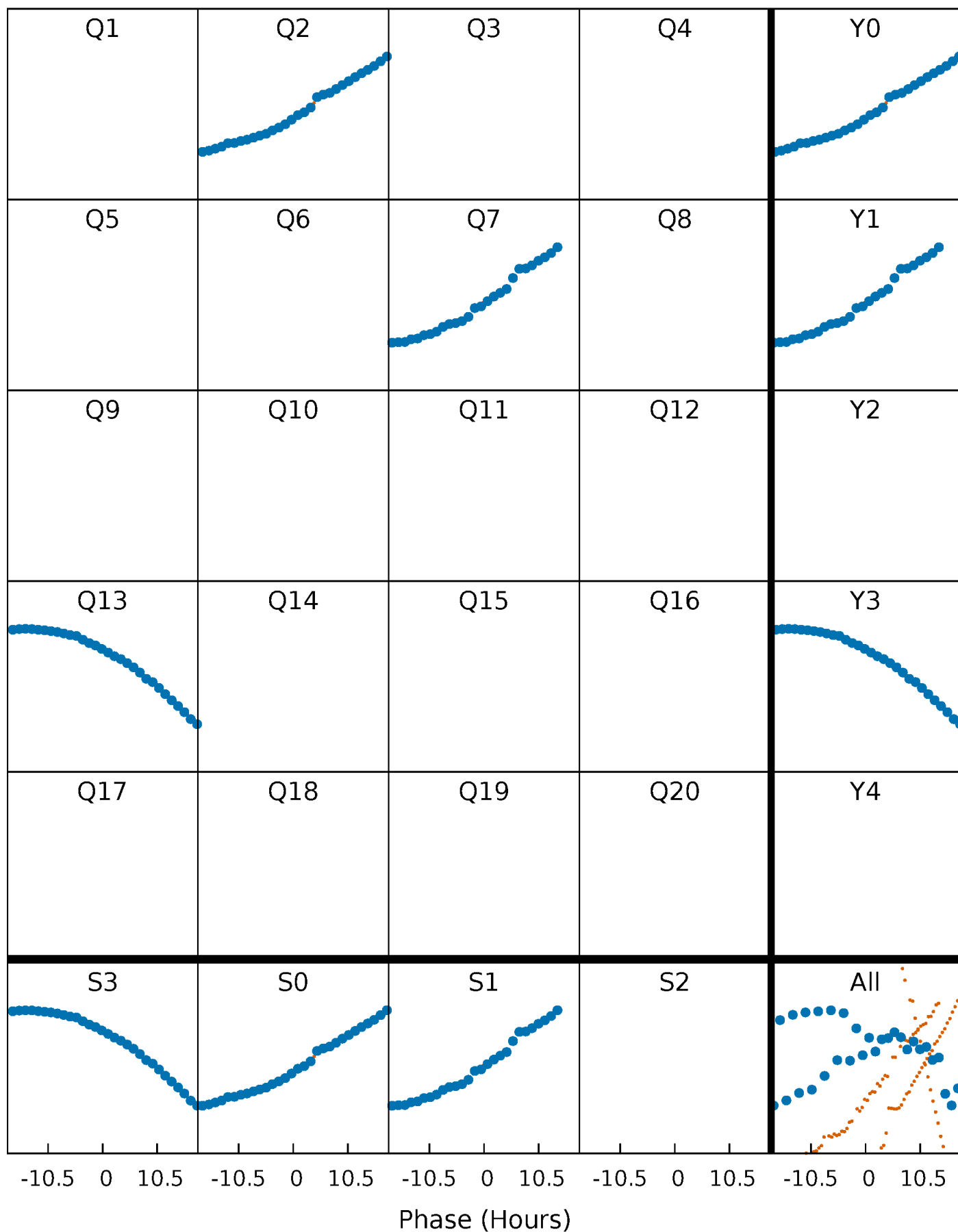


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 003128488-07 P=513.112903 Days $T_0=197.205862$ (BKJD)



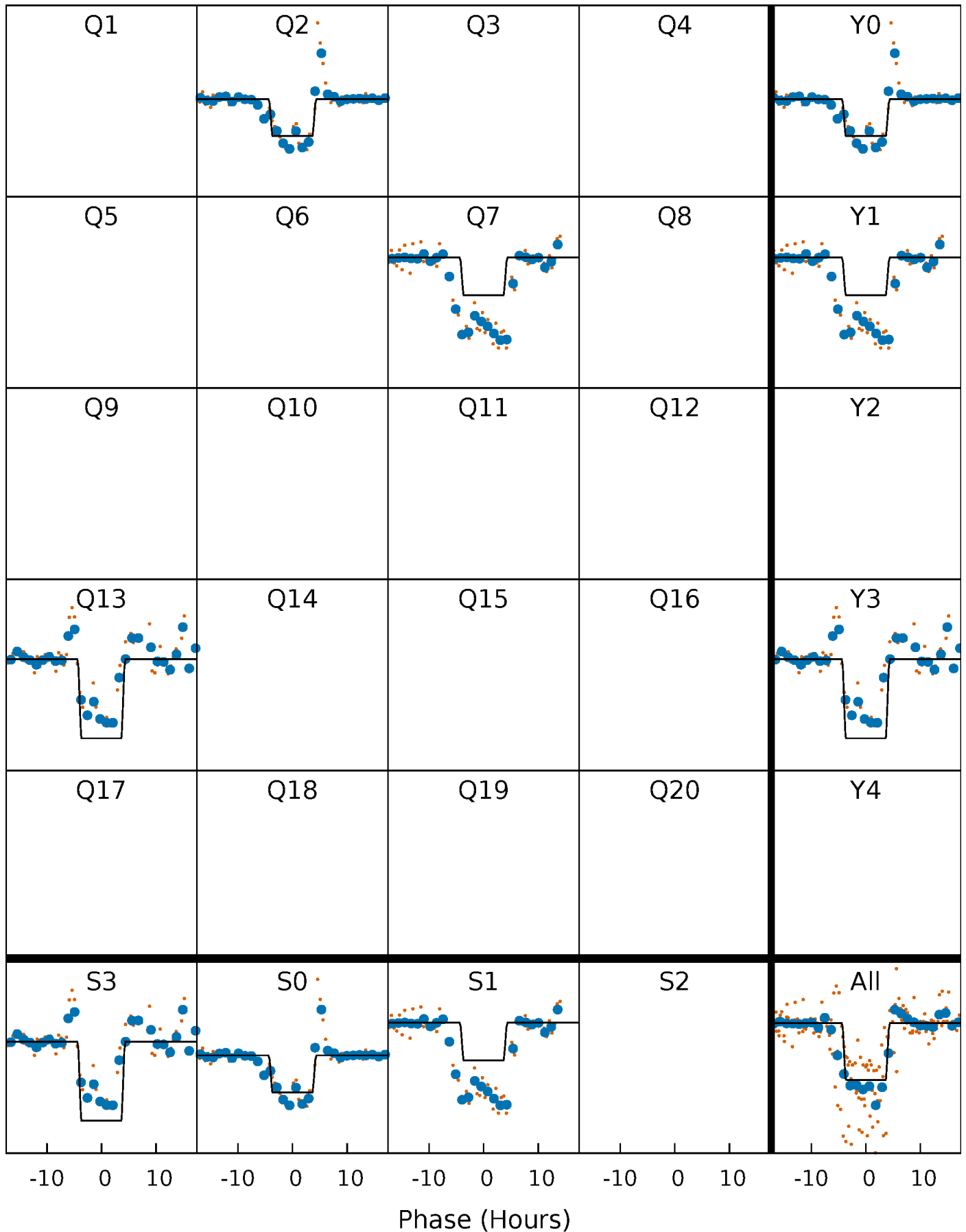
DV Quarter-Phased Transit Curves

TCE 003128488-07 $P=513.112903$ Days $T_0=197.205862$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

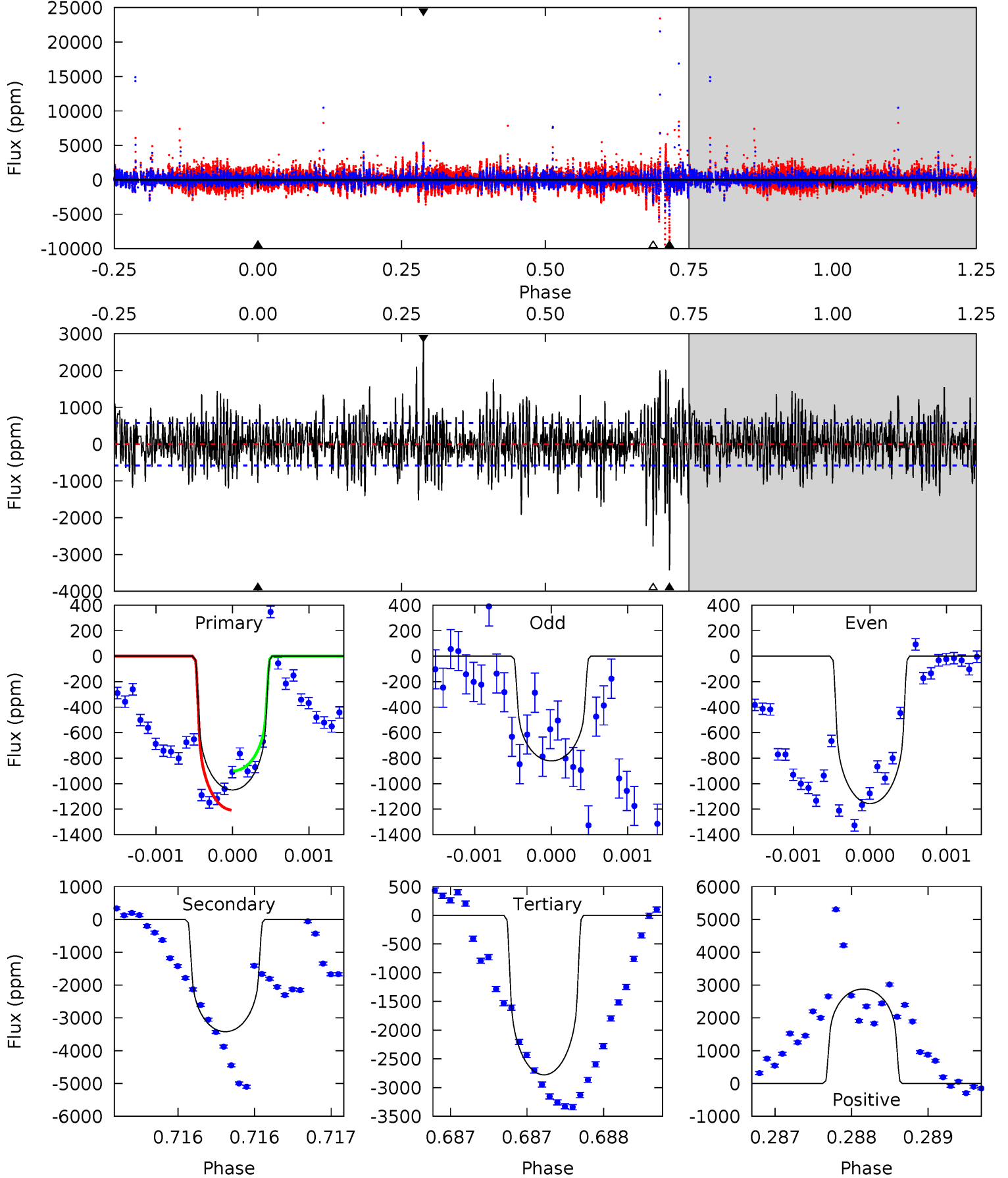
TCE 003128488-07 P=513.120747 Days $T_0=197.200641$ (BKJD)



DV Model-Shift Uniqueness Test

003128488-07, P = 513.112903 Days, E = 197.205862 Days

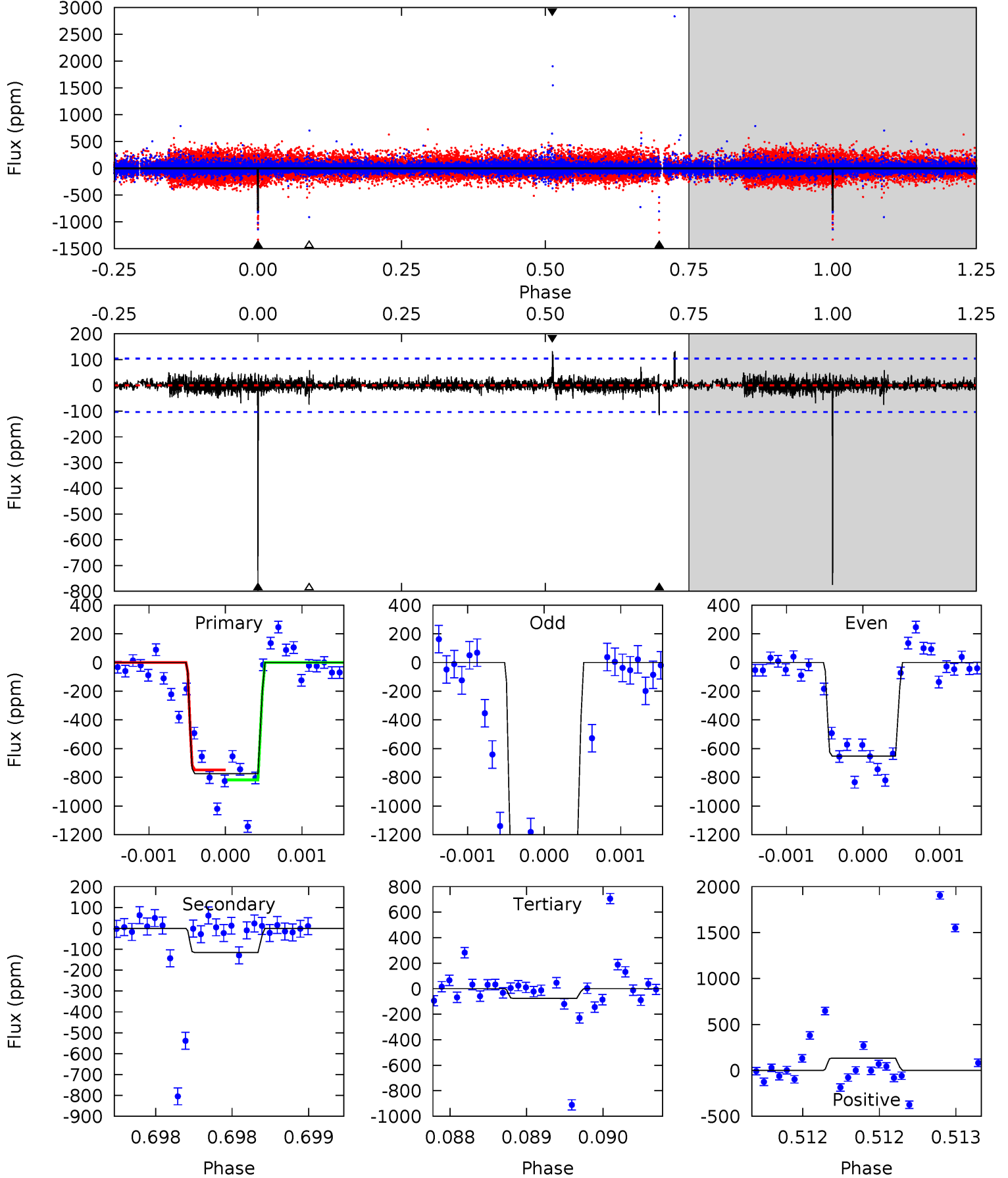
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.95	32.5	26.4	27.3	5.49	3.36	4.80	-16.4	-17.3	6.10	5.16	1.16	0.91	0.46	1.45



Alt Model-Shift Uniqueness Test

003128488-07, P = 513.120747 Days, E = 197.200641 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.2	6.16	4.04	7.08	5.52	3.39	0.67	37.2	34.1	2.12	-0.92	18.5	1.12	0.15	1.81



Stellar Parameters For KIC 003128488

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4565^{+125}_{-139}	$4.698^{+0.054}_{-0.032}$	$-0.980^{+0.300}_{-0.300}$	$0.546^{+0.039}_{-0.043}$	$0.543^{+0.044}_{-0.027}$	$4.701^{+1.000}_{-0.567}$
	+3%/-3%	+1%/-1%	+31%/-31%	+7%/-8%	+8%/-5%	+21%/-12%
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 003128488-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3422 ± 105	$1.60^{+0.41}_{-0.42}$	204^{+6}_{-7}	6439^{+1275}_{-727}	$775634^{+643227}_{-281921}$
Alt.	-116 ± 19	$1.64^{+0.40}_{-0.39}$	204^{+7}_{-7}	3292^{+308}_{-228}	24726^{+19484}_{-9050}

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

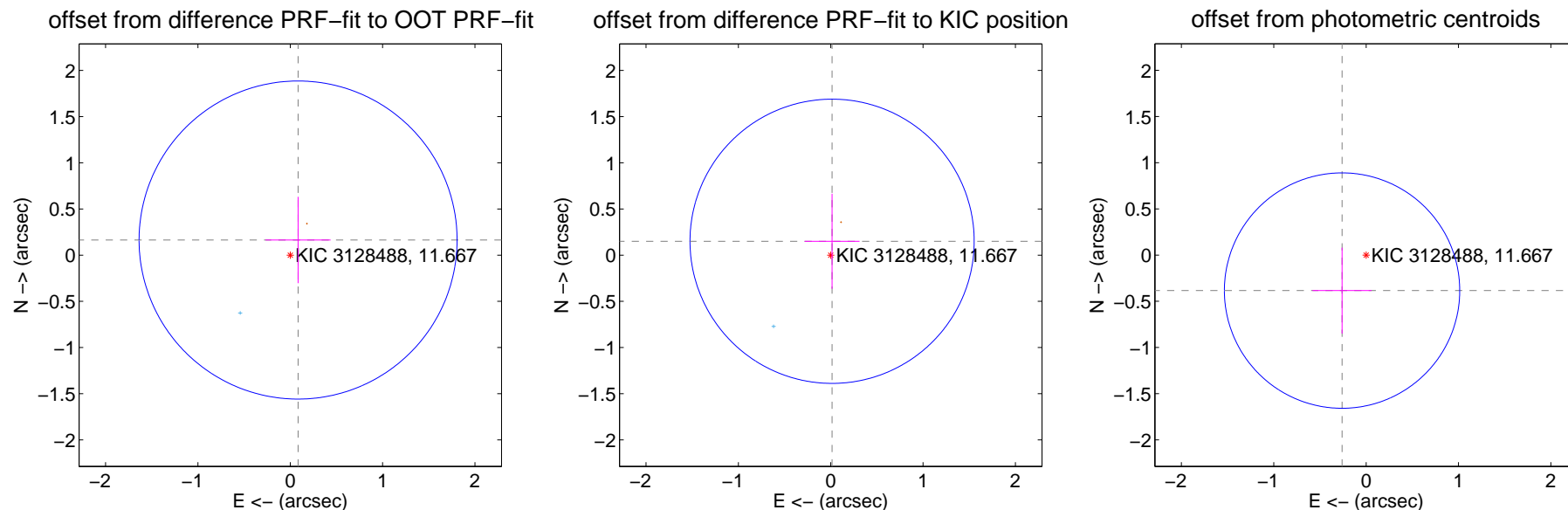
DV Centroid Data

Supplemental centroid analysis for 003128488-07. **Kepler magnitude: 11.67.** Transit SNR 7.78

There are 1 quarters with good PRF difference image offsets

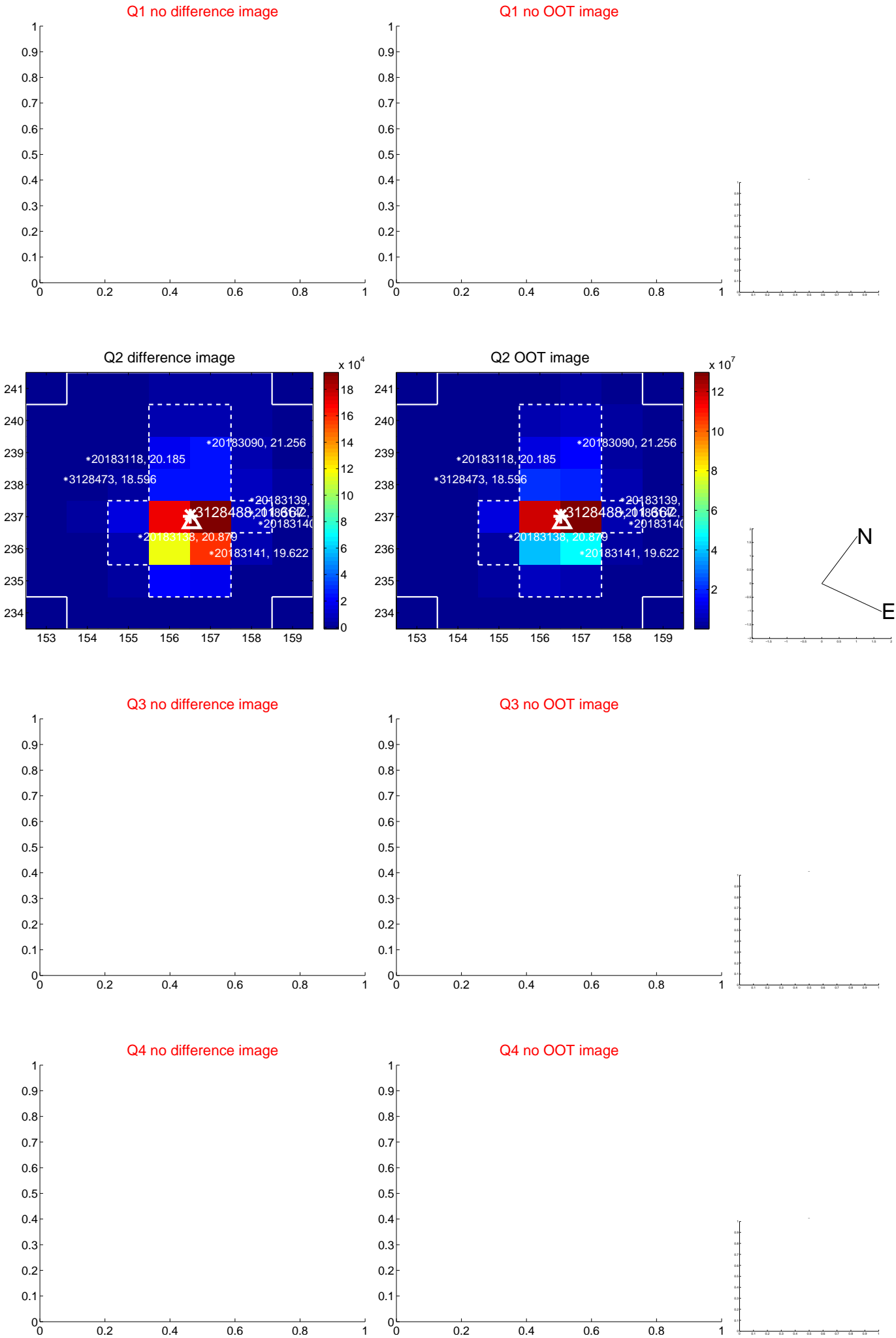
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.184 ± 0.574	0.32	-0.085 ± 0.352	0.164 ± 0.468
PRF-fit source offset from KIC position	0.151 ± 0.513	0.29	-0.015 ± 0.297	0.150 ± 0.515
photometric centroid source offset	0.46 ± 0.42	1.09	0.26 ± 0.32	-0.38 ± 0.46



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.



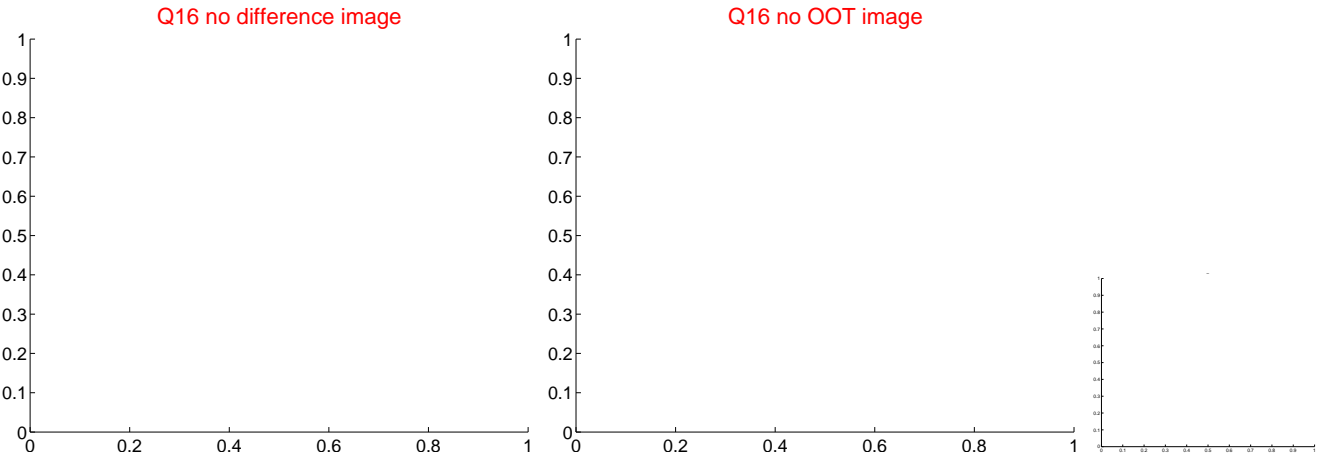
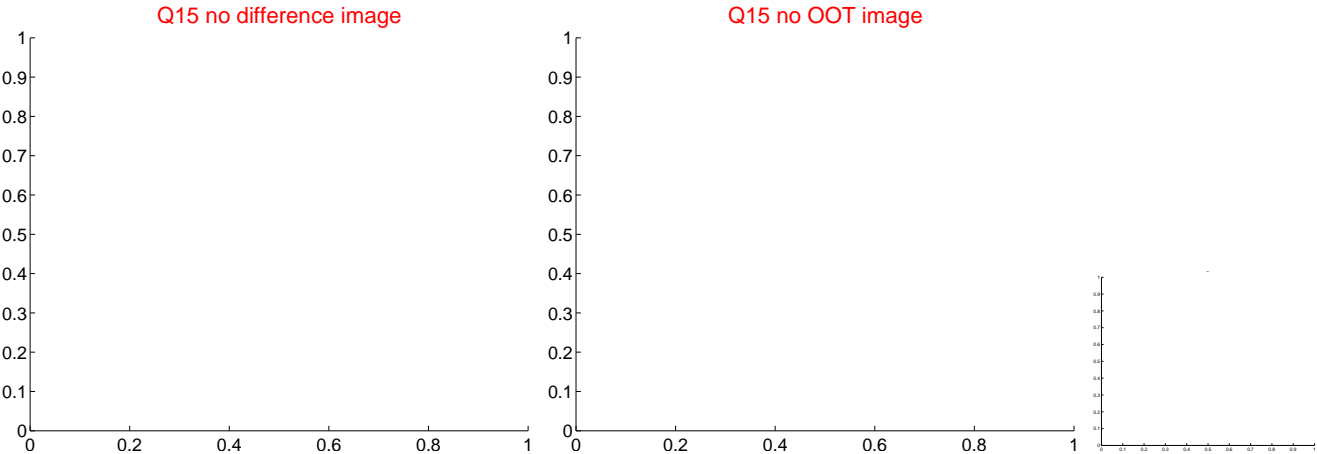
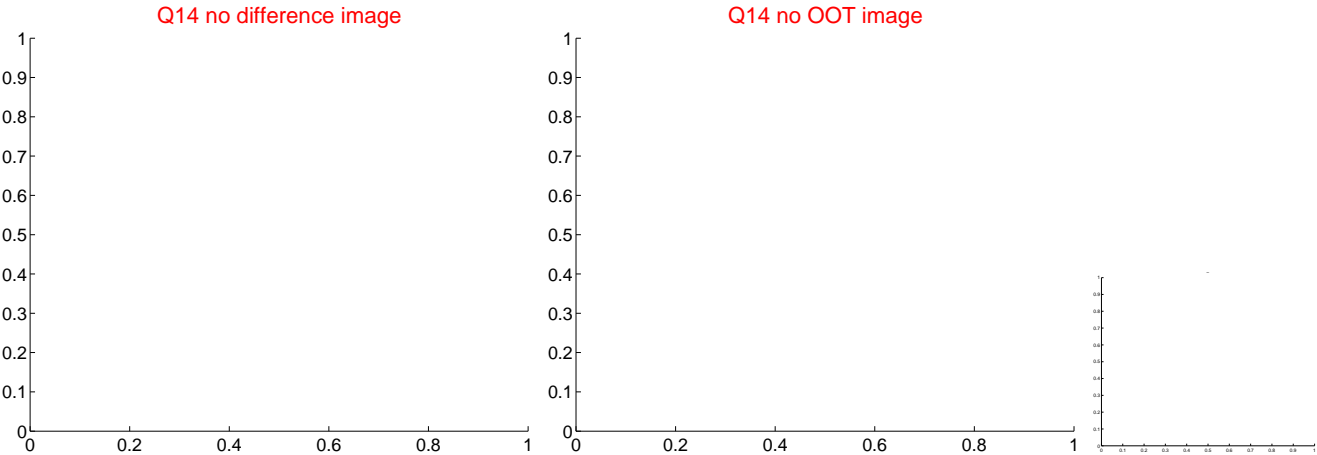
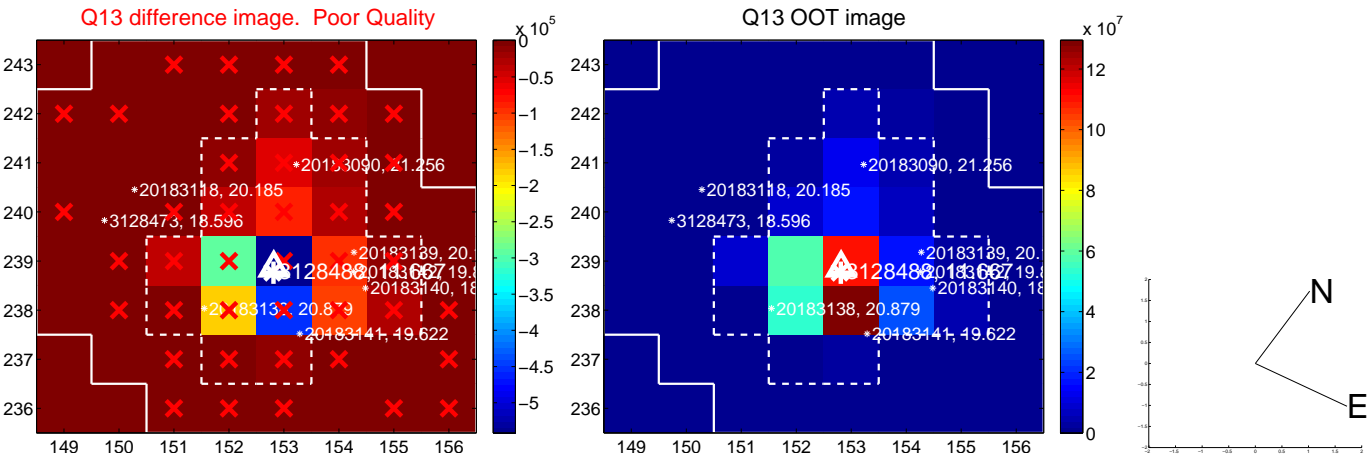
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



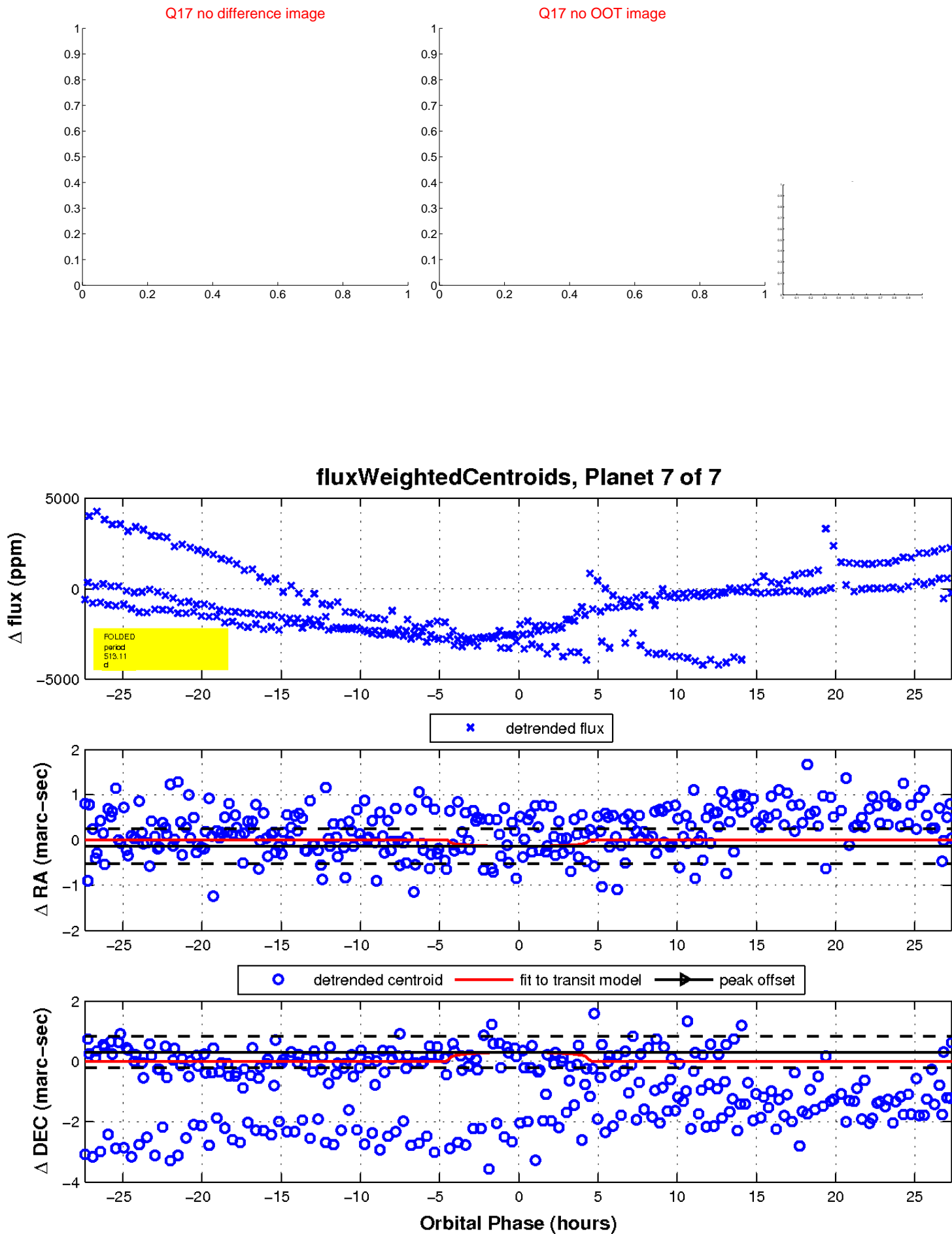
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

