

KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

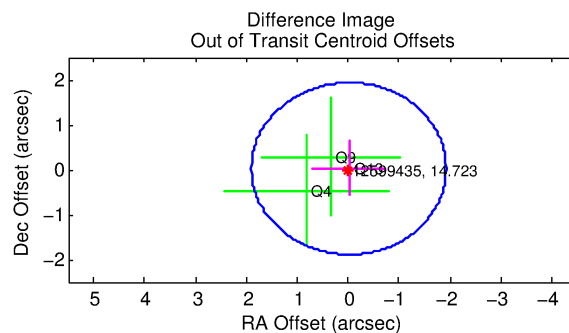
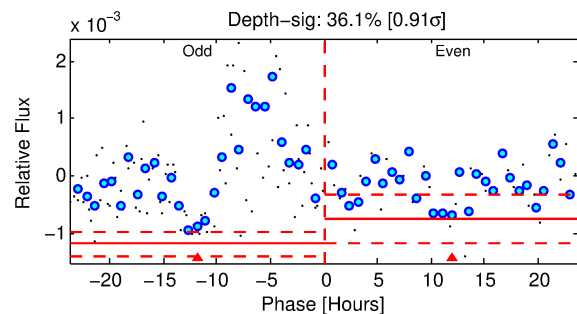
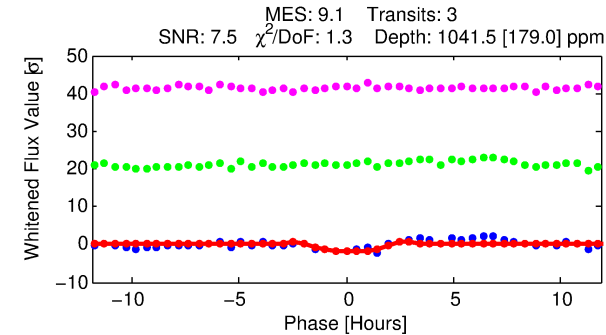
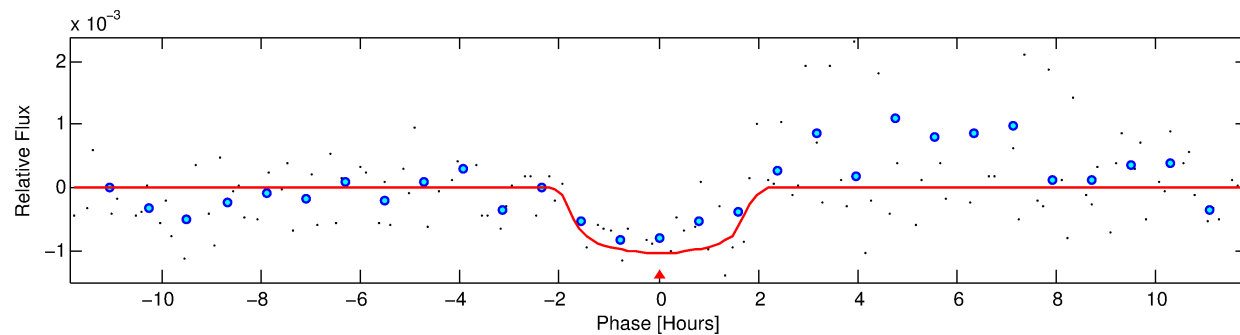
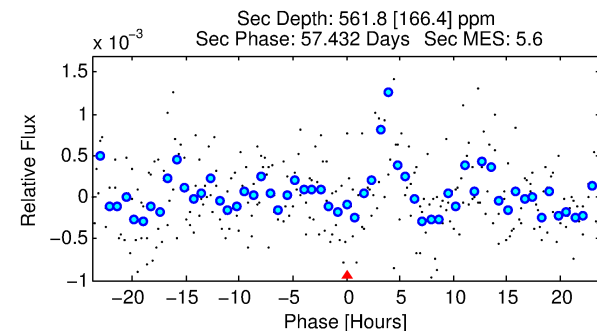
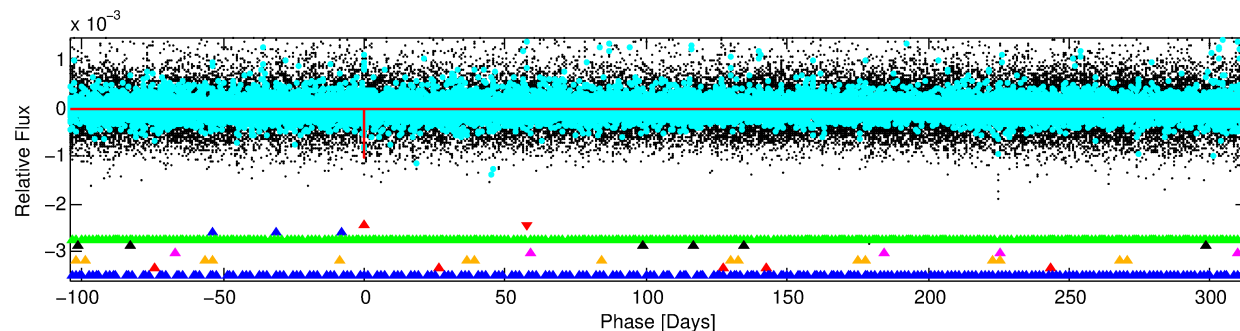
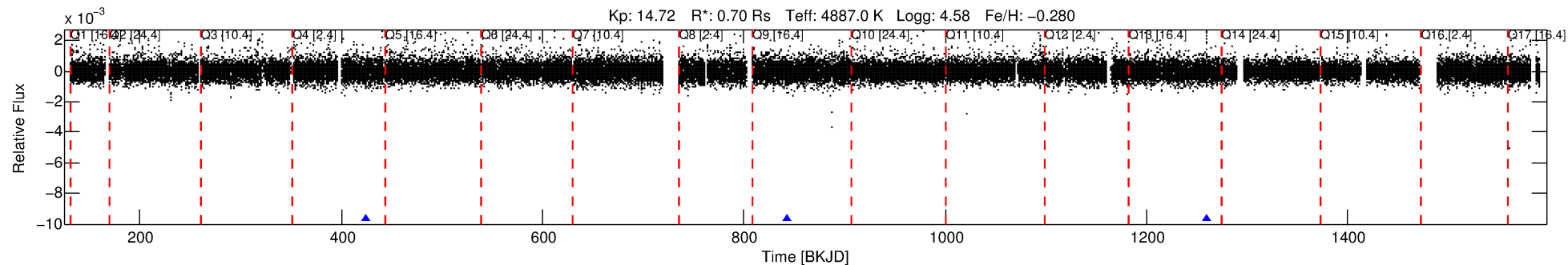
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-01

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 1 of 8 Period: 417.843 d



DV Fit Results:

Period = 417.84293 [0.00823] d
Epoch = 424.3333 [0.0105] BKJD
Rp/R* = 0.0331 [0.0389]
a/R* = 528.83 [2177.59]
b = 0.80 [1.93]
Seff = 0.27 [0.05]
Teq = 184 [8] K
Rp = 2.54 [3.00] Re
a = 0.9648 [0.0786] AU
Ag = 44456.78 [105488.55] [0.42 σ]
Teffp = 4135 [2453] K [1.61 σ]

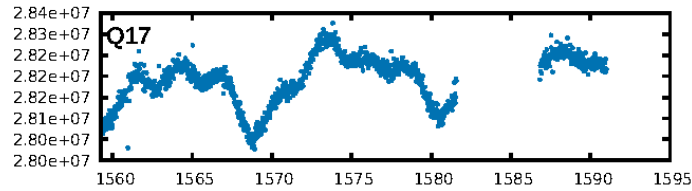
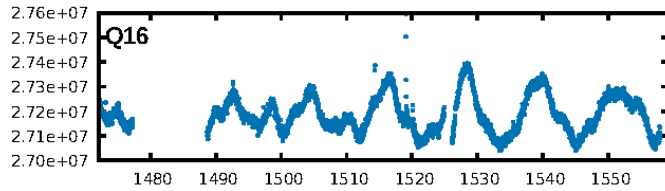
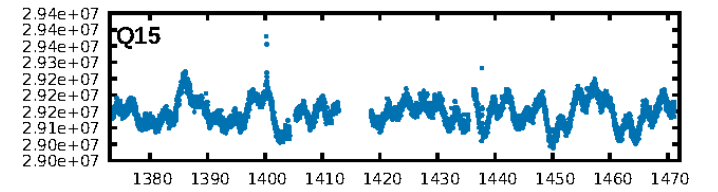
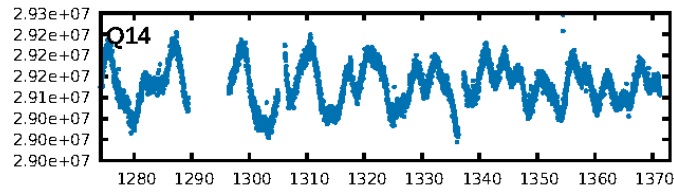
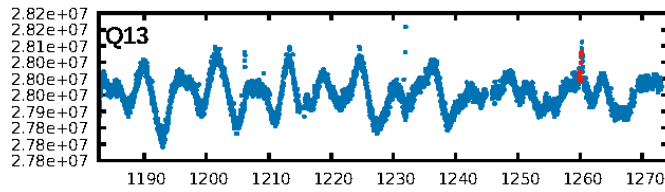
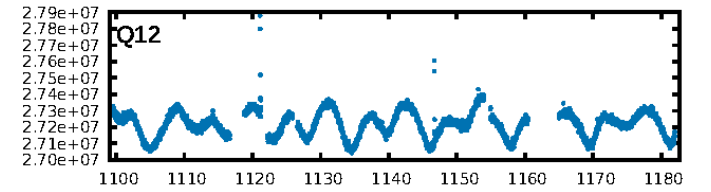
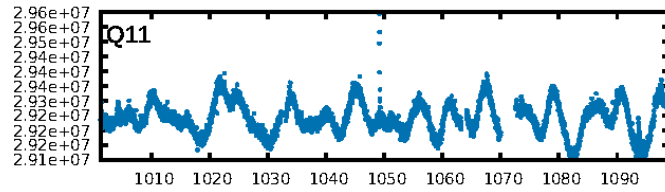
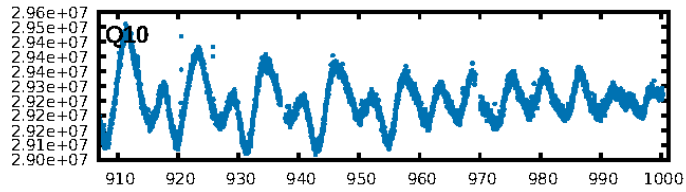
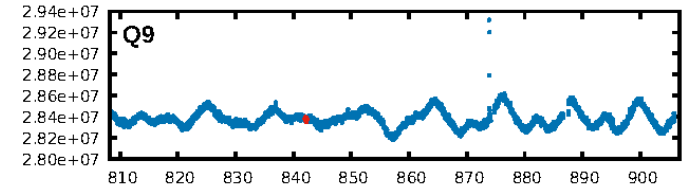
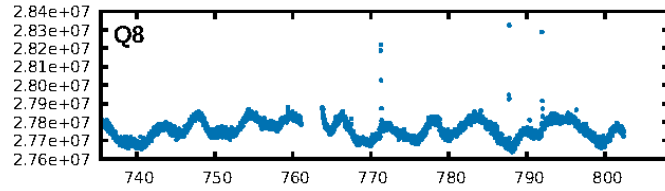
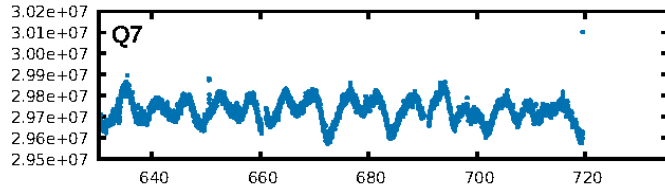
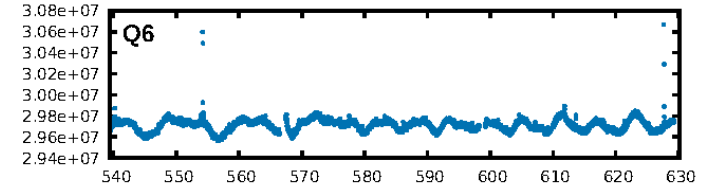
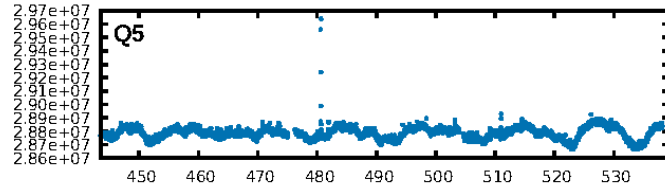
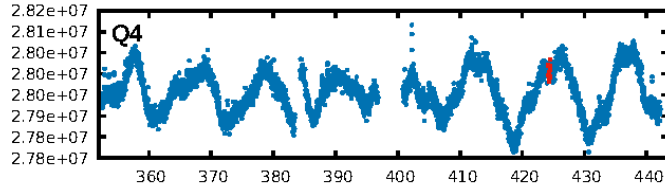
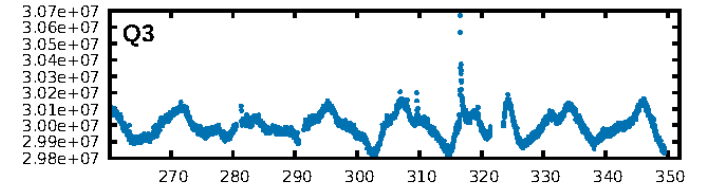
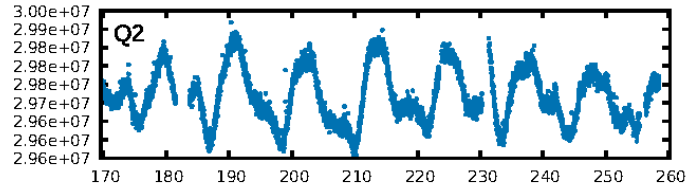
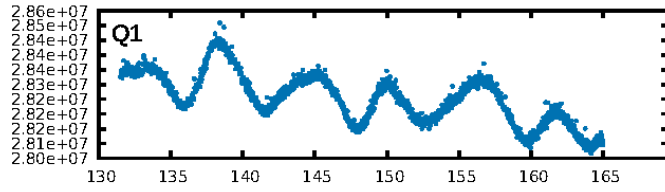
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [70.19 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.6%
ModelChiSquareGof-sig: 96.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.826
Centroid-sig: 96.9%
Centroid-so: 1.107 arcsec [0.82 σ]
OotOffset-rm: 0.027 arcsec [0.04 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 0.212 arcsec [0.31 σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

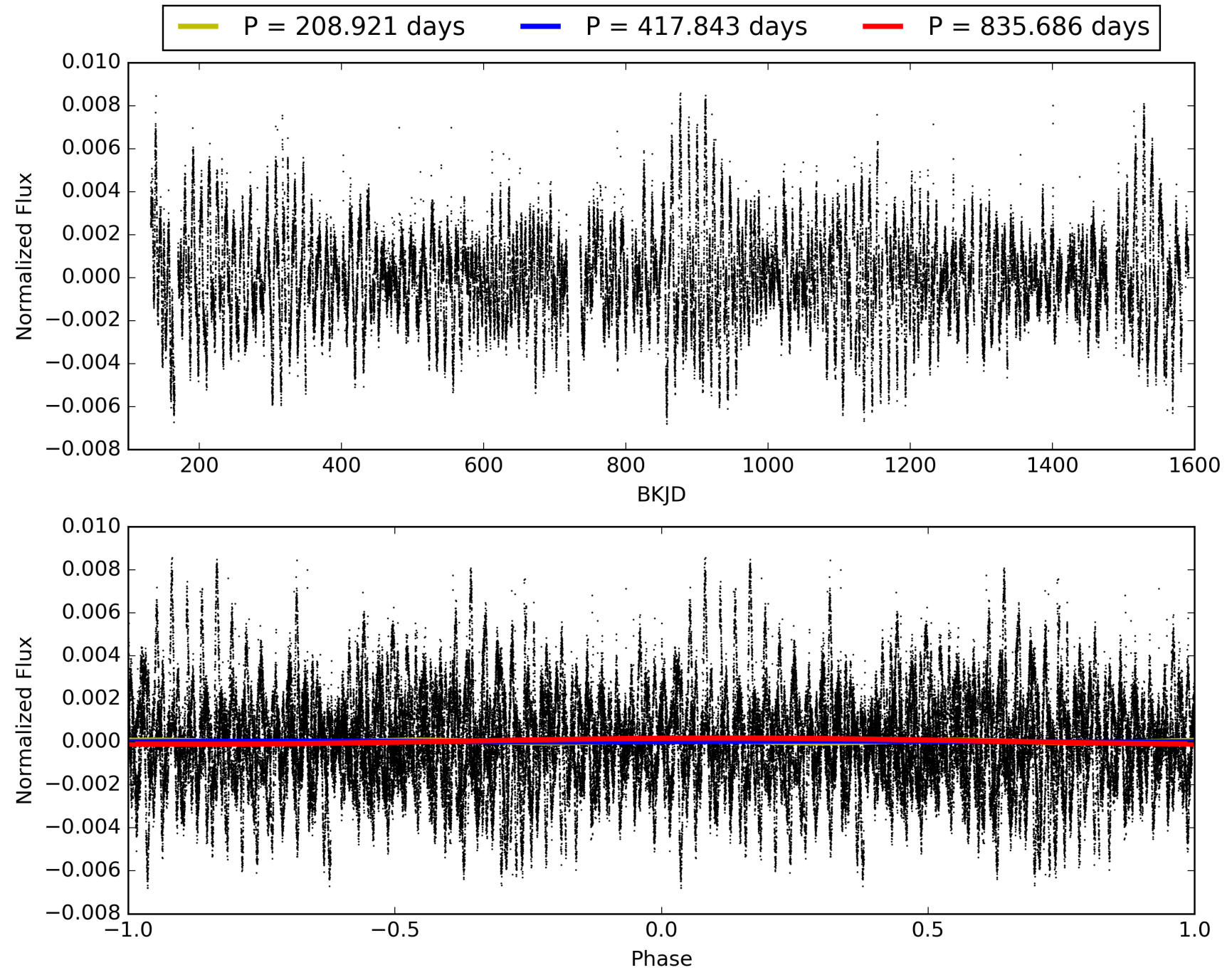
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:51:43 Z

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

TCE 012599435-01, PDC Light Curves

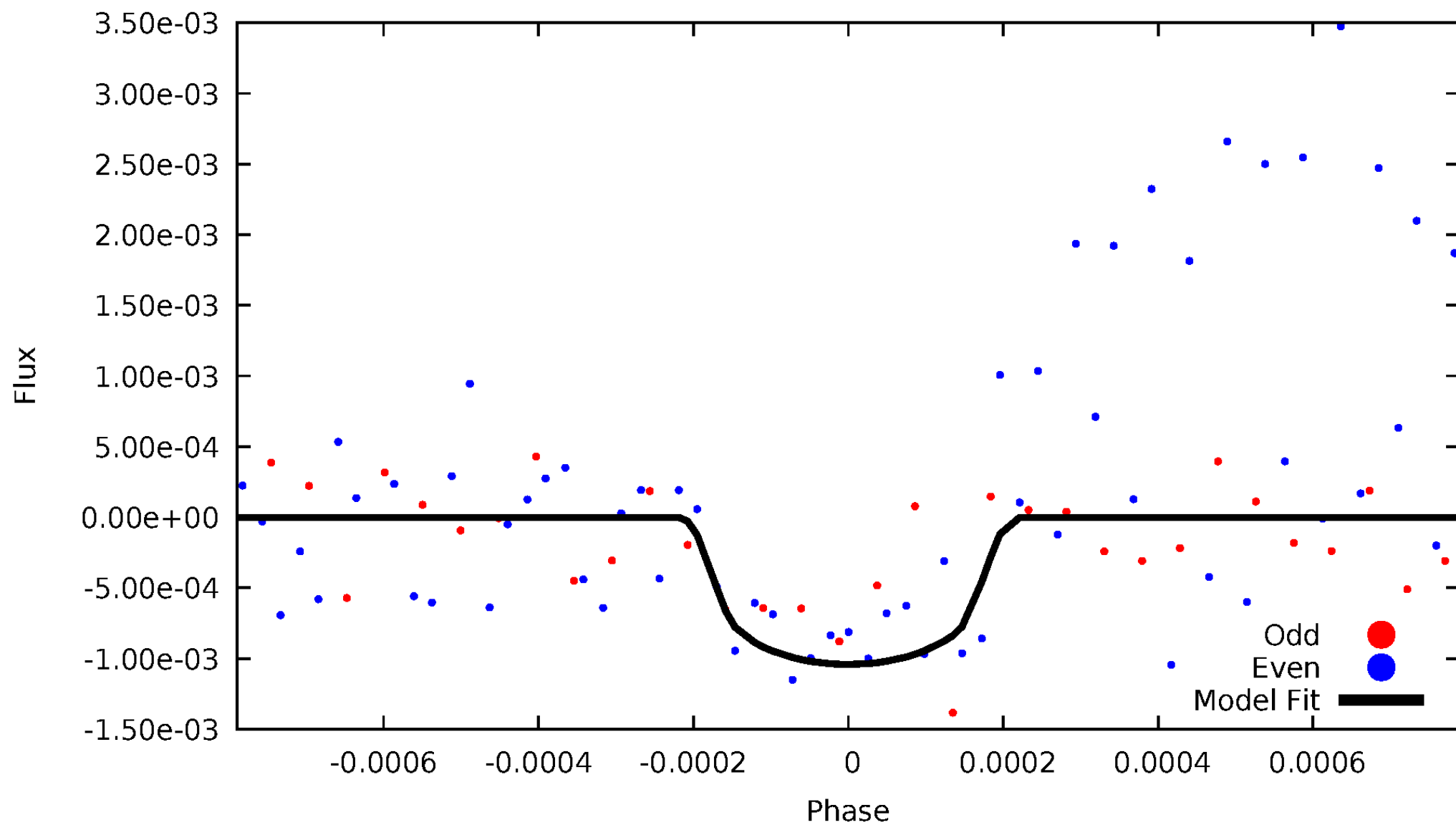


TCE 012599435-01



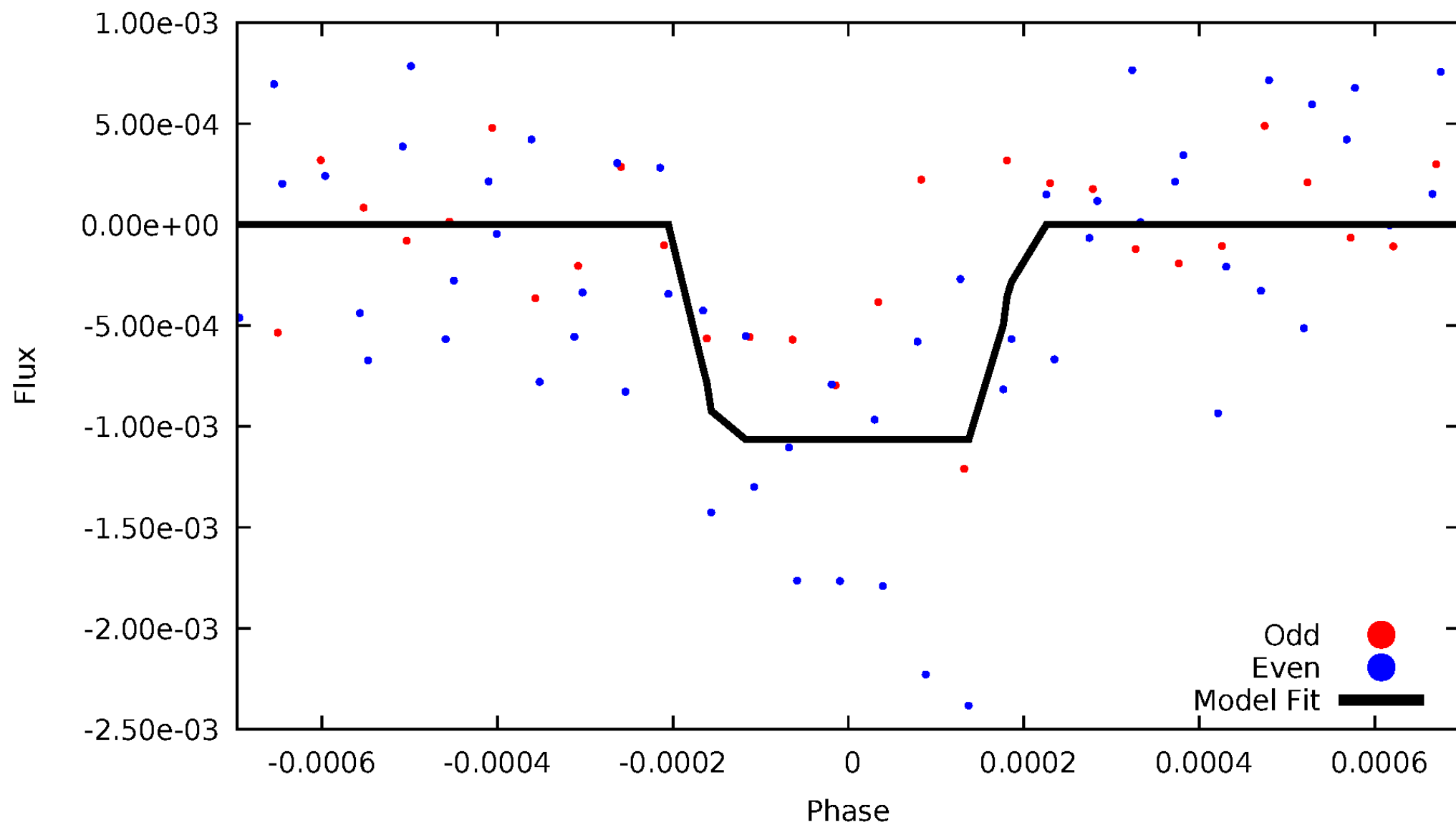
DV Odd/Even

TCE 012599435-01

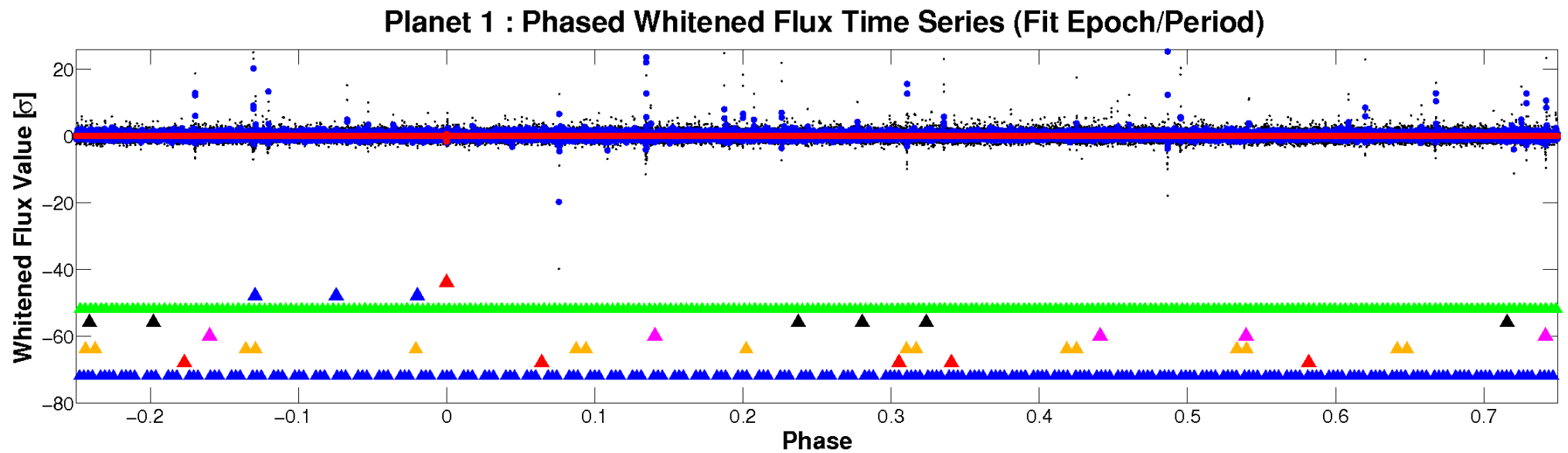
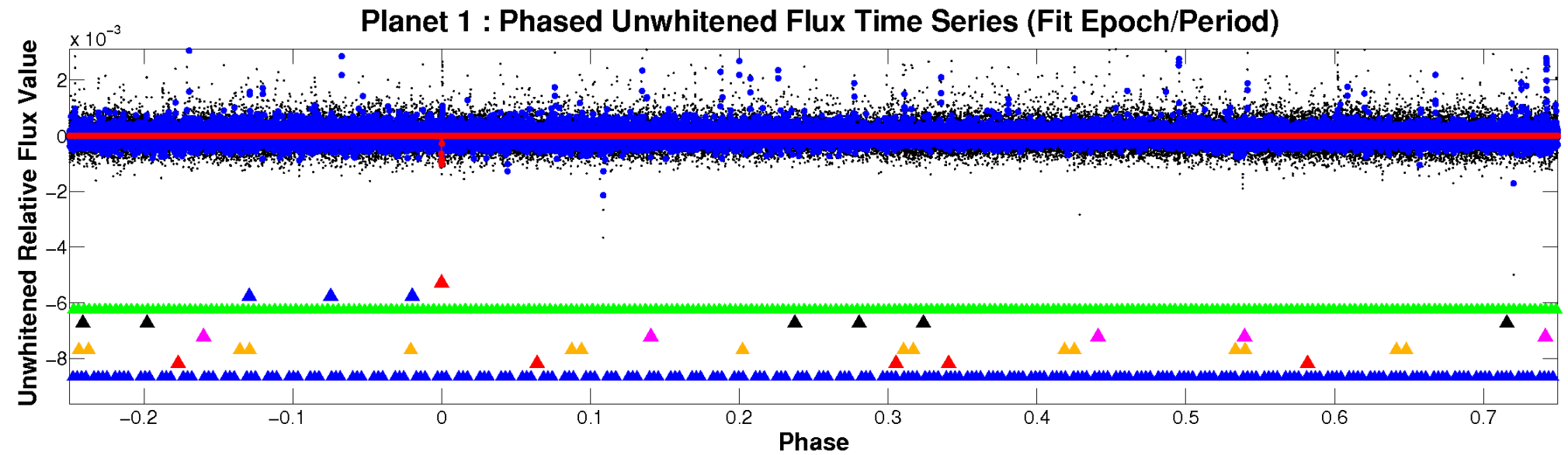


ALT Odd/Even

TCE 012599435-01

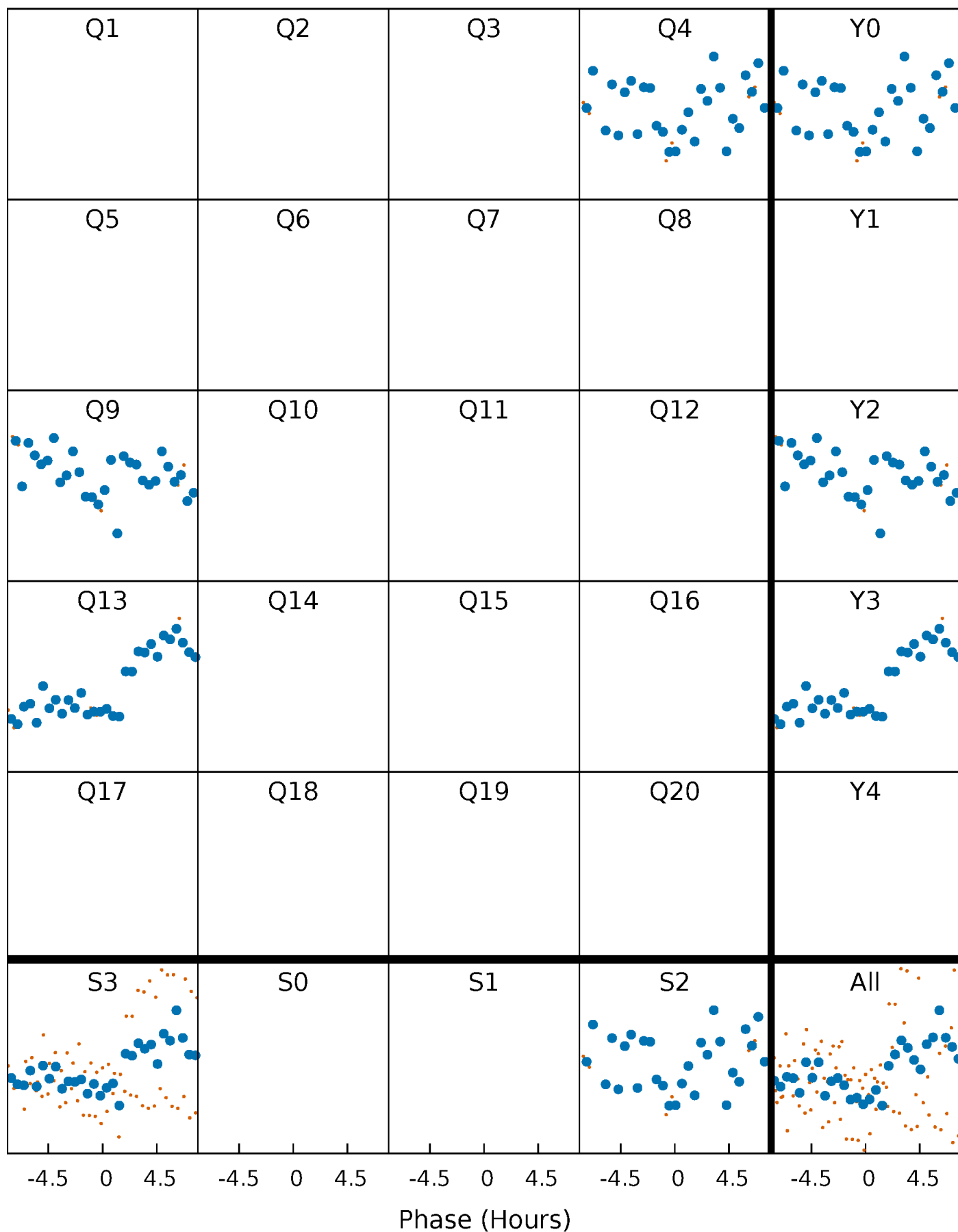


Non-Whitened Vs. Whitened Light Curve



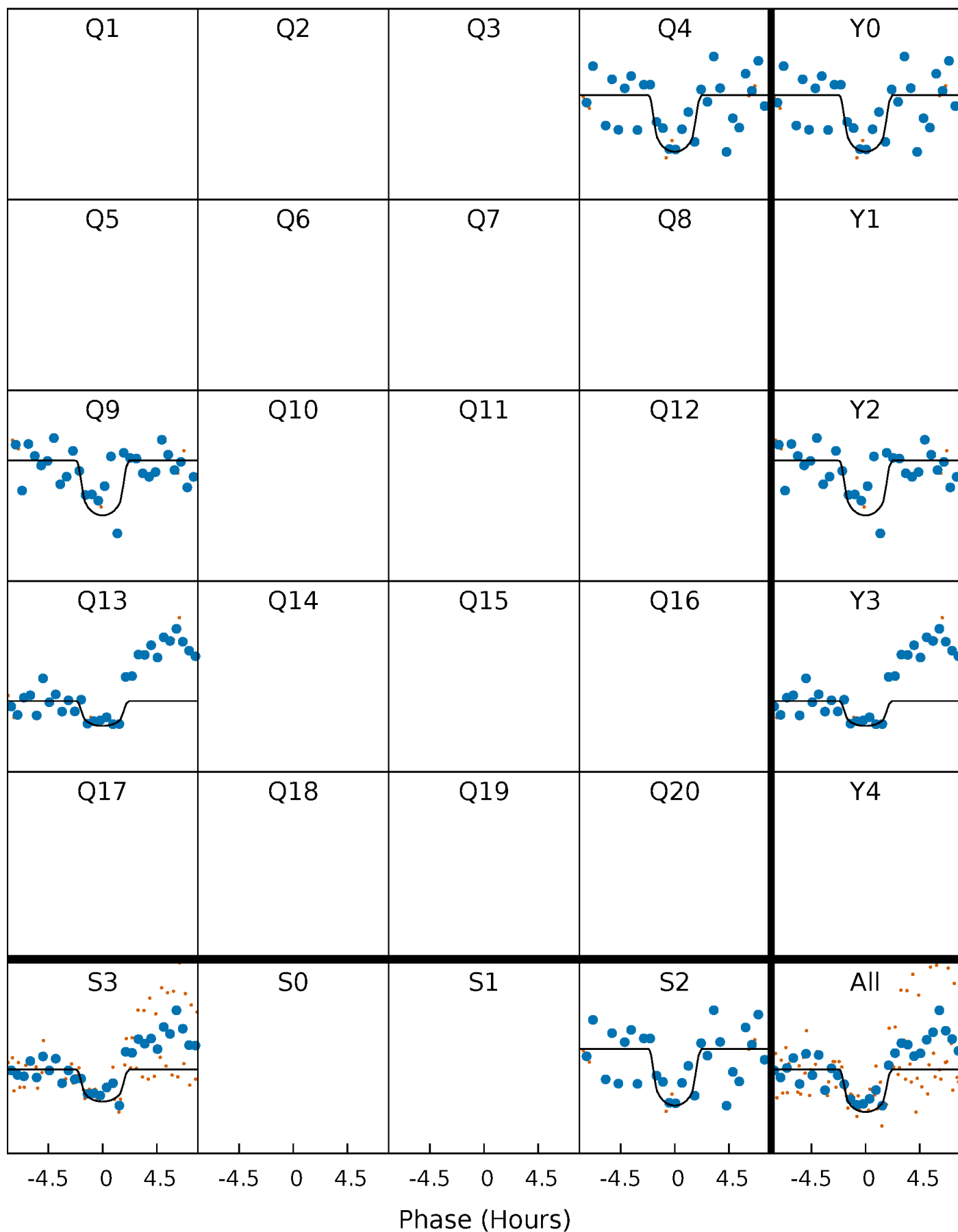
PDC Quarter-Phased Transit Curves

TCE 012599435-01 P=417.842927 Days $T_0=424.333283$ (BKJD)



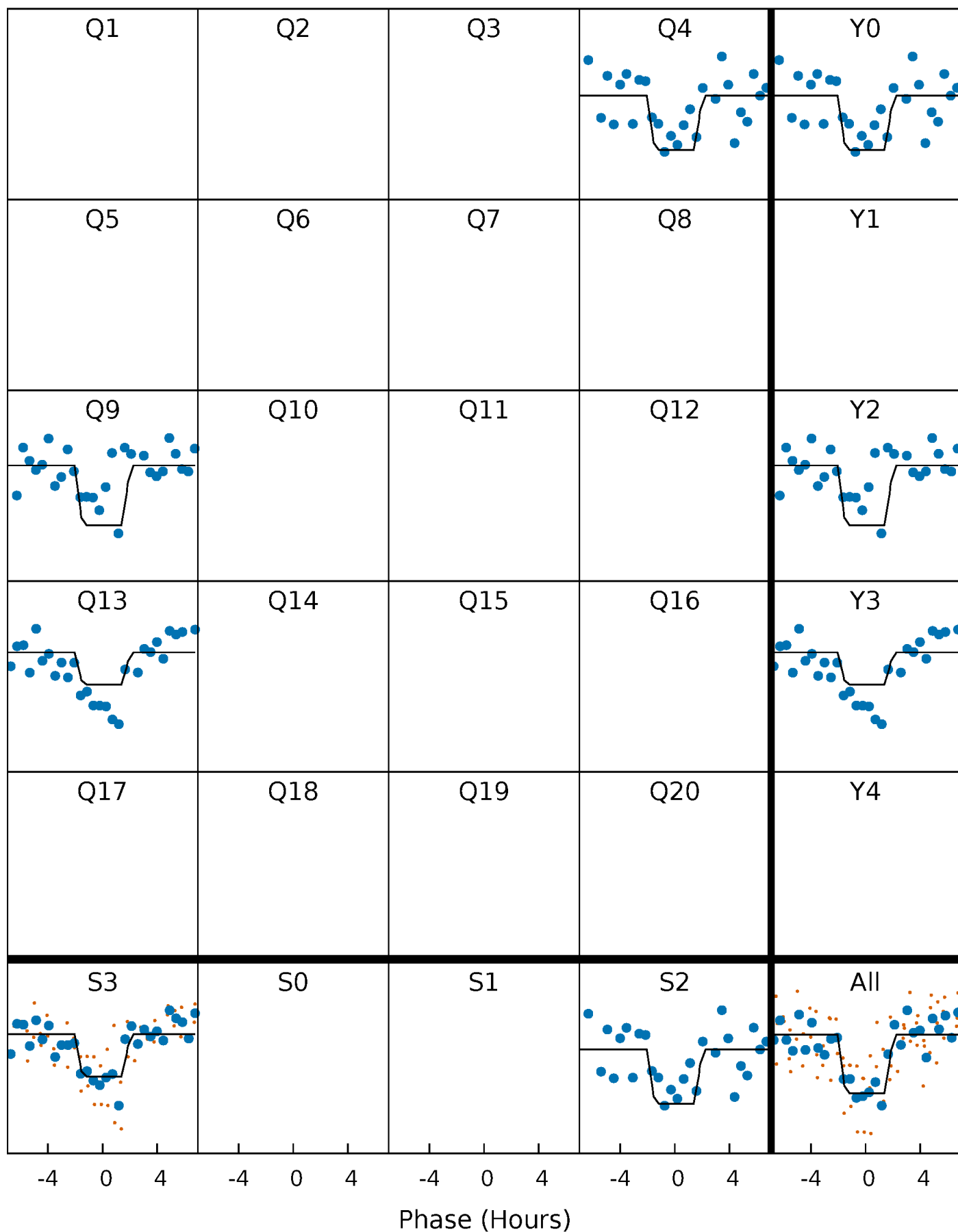
DV Quarter-Phased Transit Curves

TCE 012599435-01 P=417.842927 Days $T_0=424.333283$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

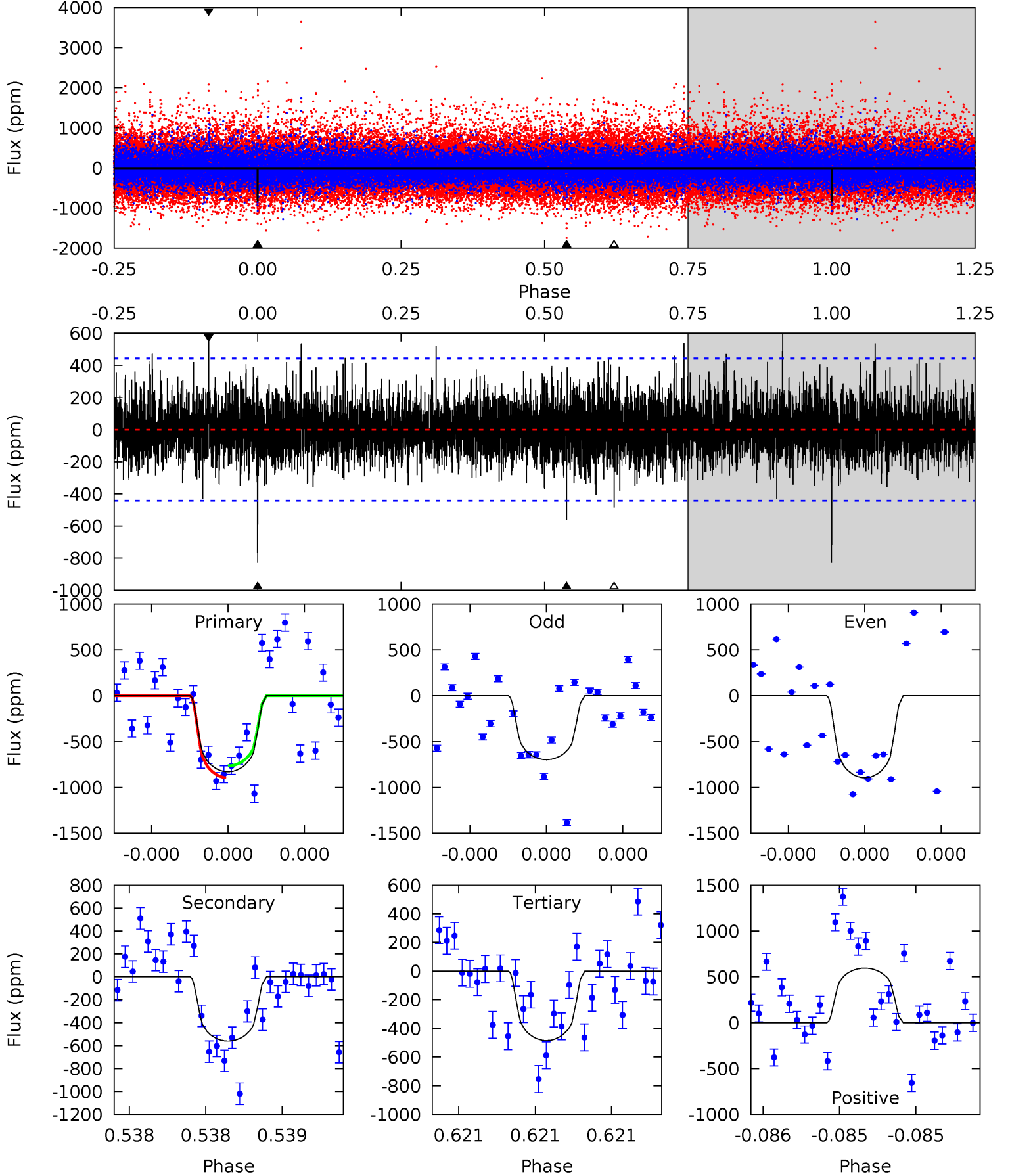
TCE 012599435-01 P=417.845868 Days $T_0=424.331487$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-01, P = 417.842927 Days, E = 6.490356 Days

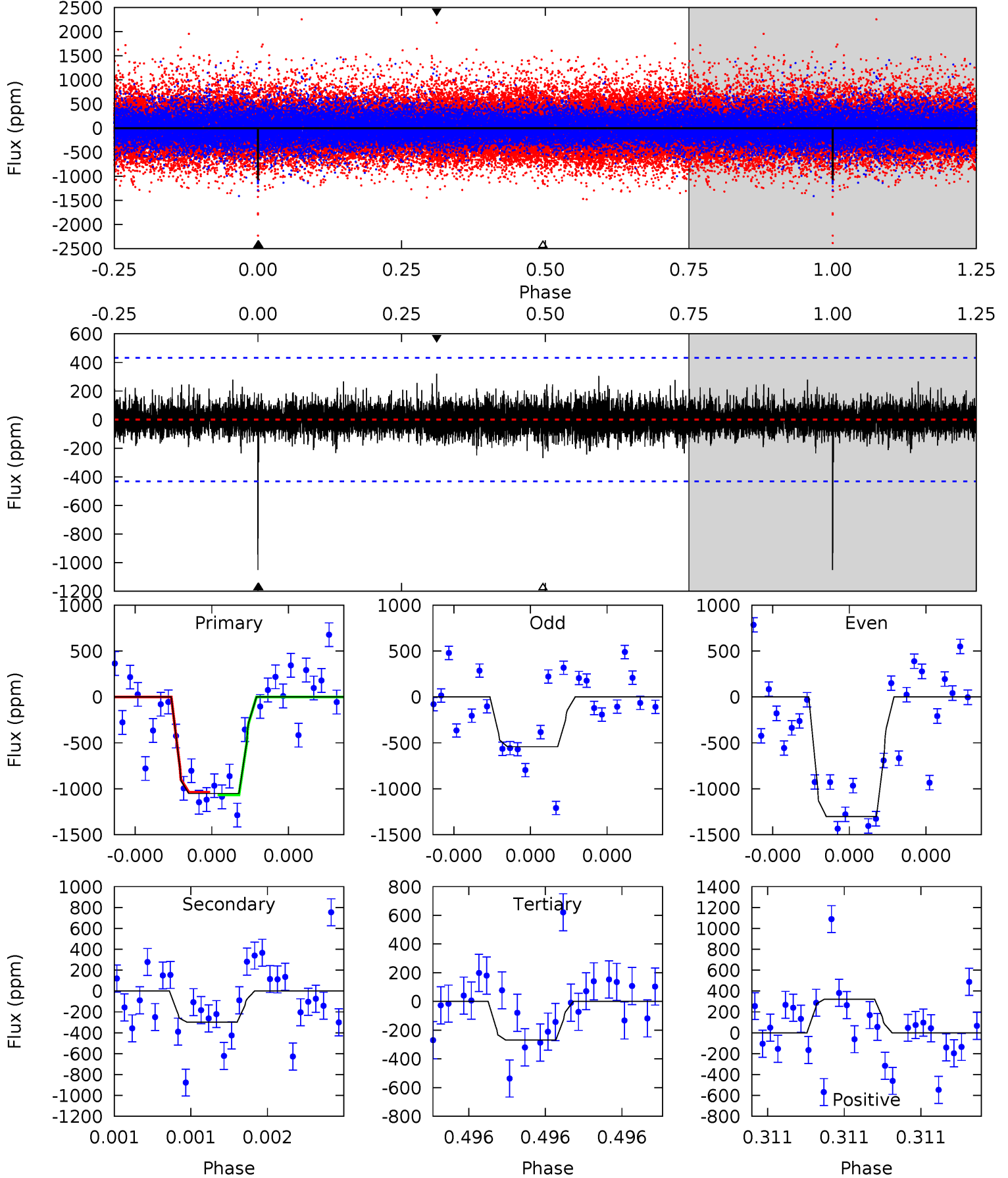
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	7.09	6.13	7.53	5.60	3.51	1.50	4.36	2.96	0.96	-0.44	0.98	0.95	0.42	0.83



Alt Model-Shift Uniqueness Test

012599435-01, P = 417.845868 Days, E = 6.485619 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	3.88	3.49	4.18	5.62	3.55	0.85	10.2	9.49	0.39	-0.30	4.58	1.41	0.23	0.18



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-561 ± 79	$3.20^{+2.79}_{-2.07}$	256^{+10}_{-9}	3905^{+2187}_{-712}	$28152^{+212104}_{-20527}$
Alt.	-298 ± 77	$3.39^{+2.66}_{-2.10}$	256^{+9}_{-10}	3472^{+1454}_{-572}	13541^{+80891}_{-9561}

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

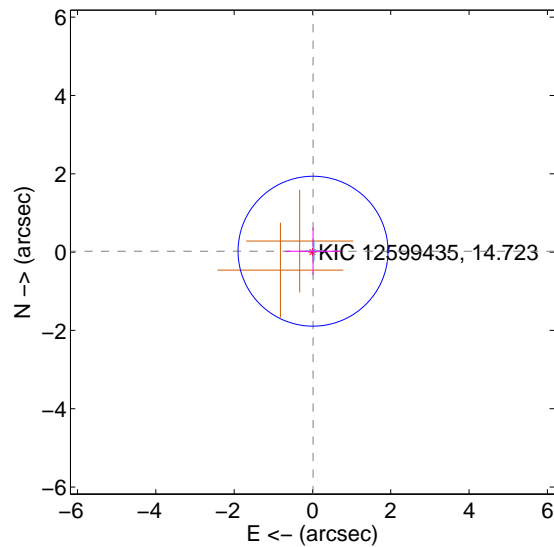
Supplemental centroid analysis for 012599435-01. Kepler magnitude: 14.72. Transit SNR 7.50

There are 1 quarters with good PRF difference image offsets

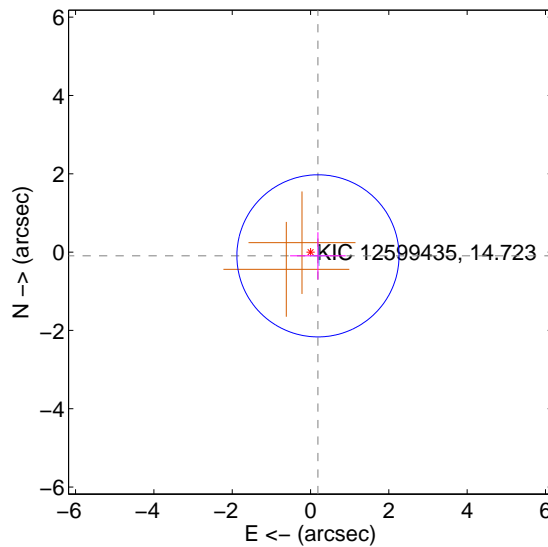
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.027 ± 0.638	0.04	-0.015 ± 0.710	0.023 ± 0.604
PRF-fit source offset from KIC position	0.212 ± 0.690	0.31	-0.190 ± 0.710	-0.096 ± 0.604
photometric centroid source offset	1.11 ± 1.35	0.82	-0.09 ± 1.42	1.10 ± 1.35

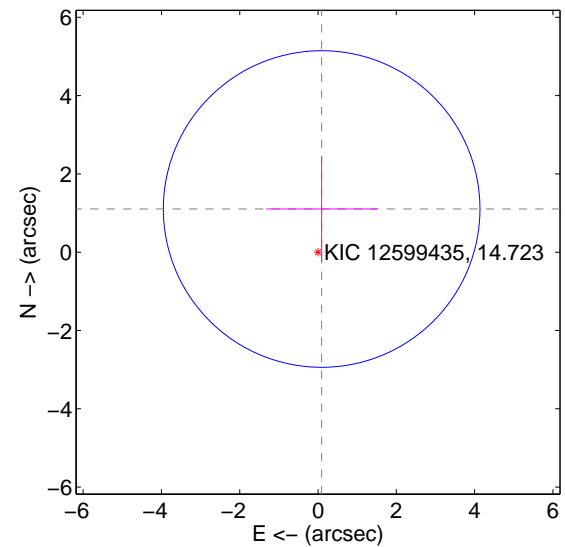
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

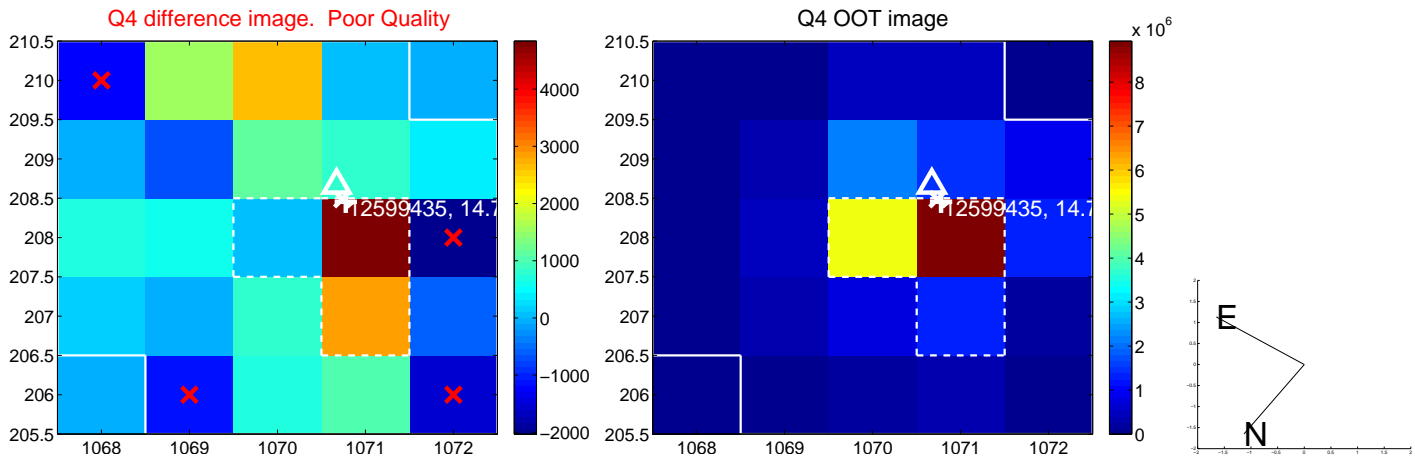
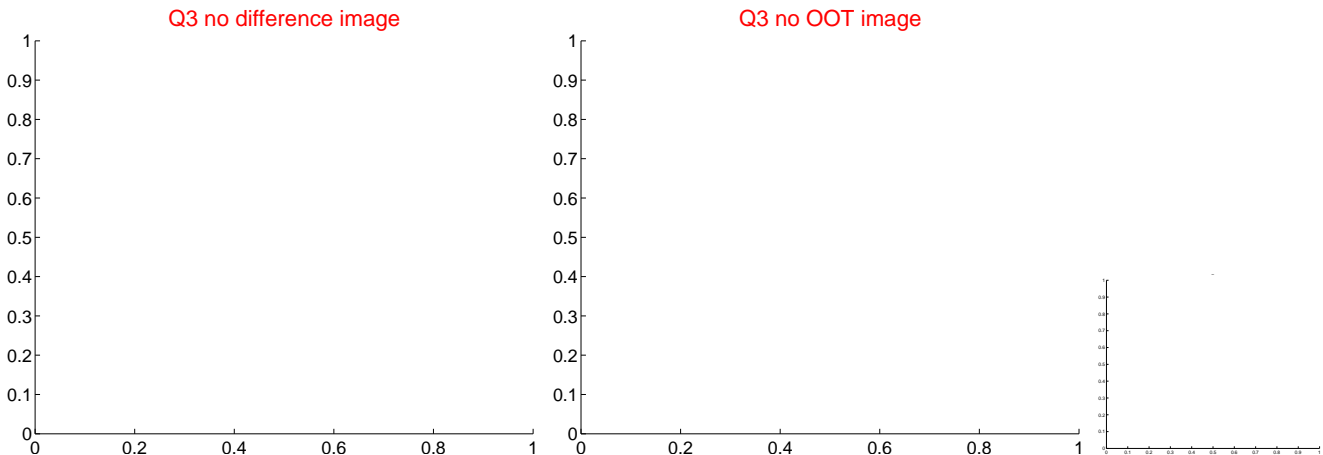
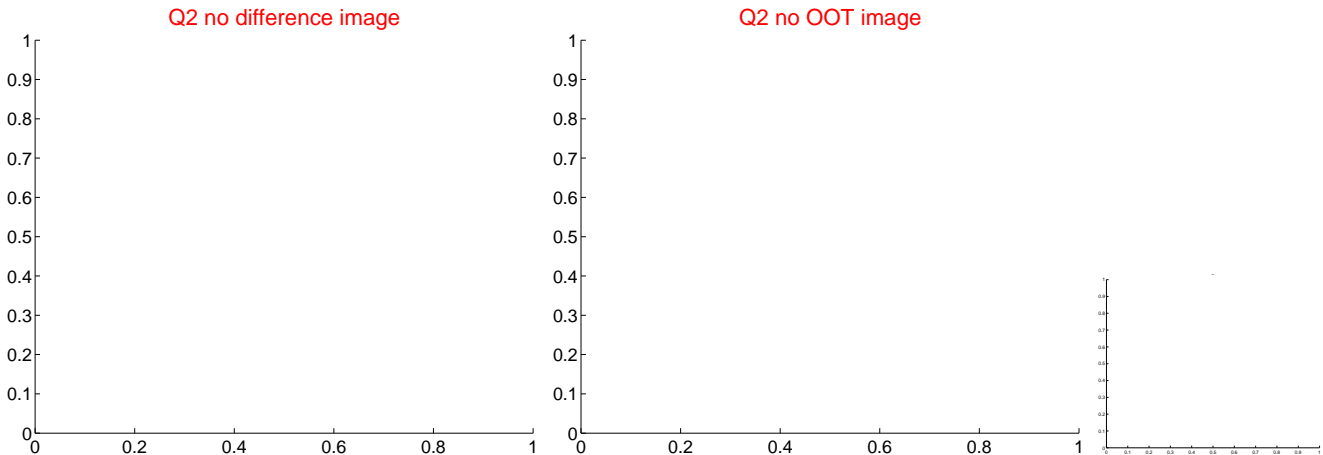


offset from photometric centroids



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

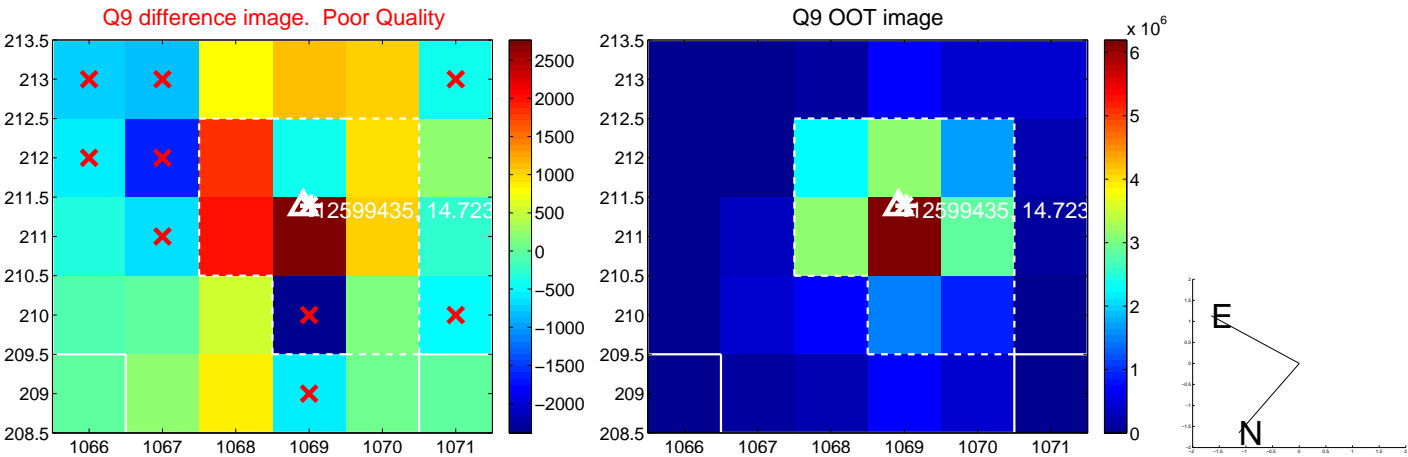
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



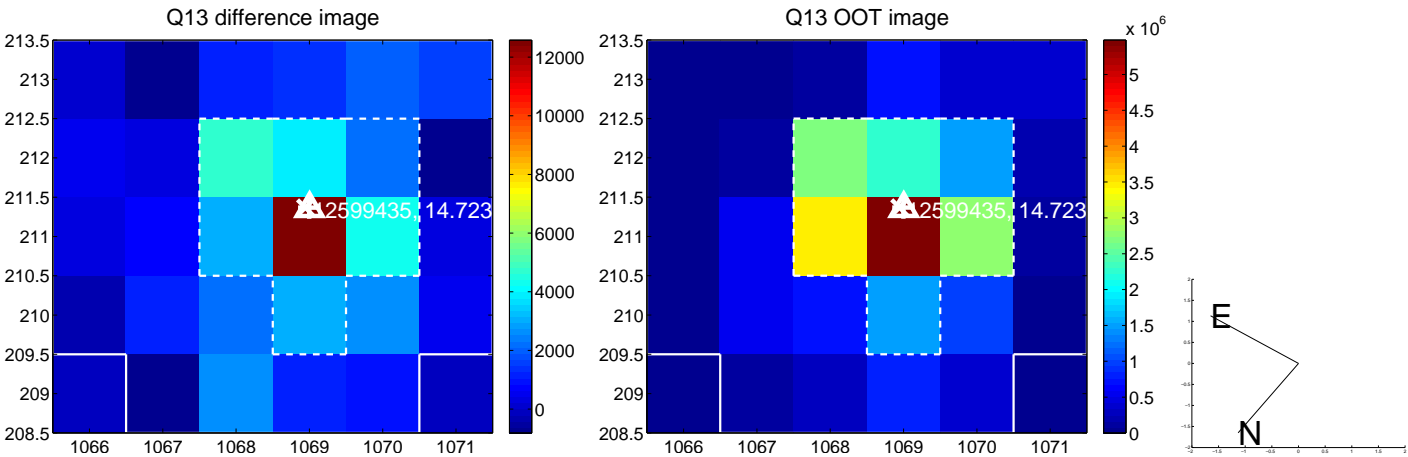
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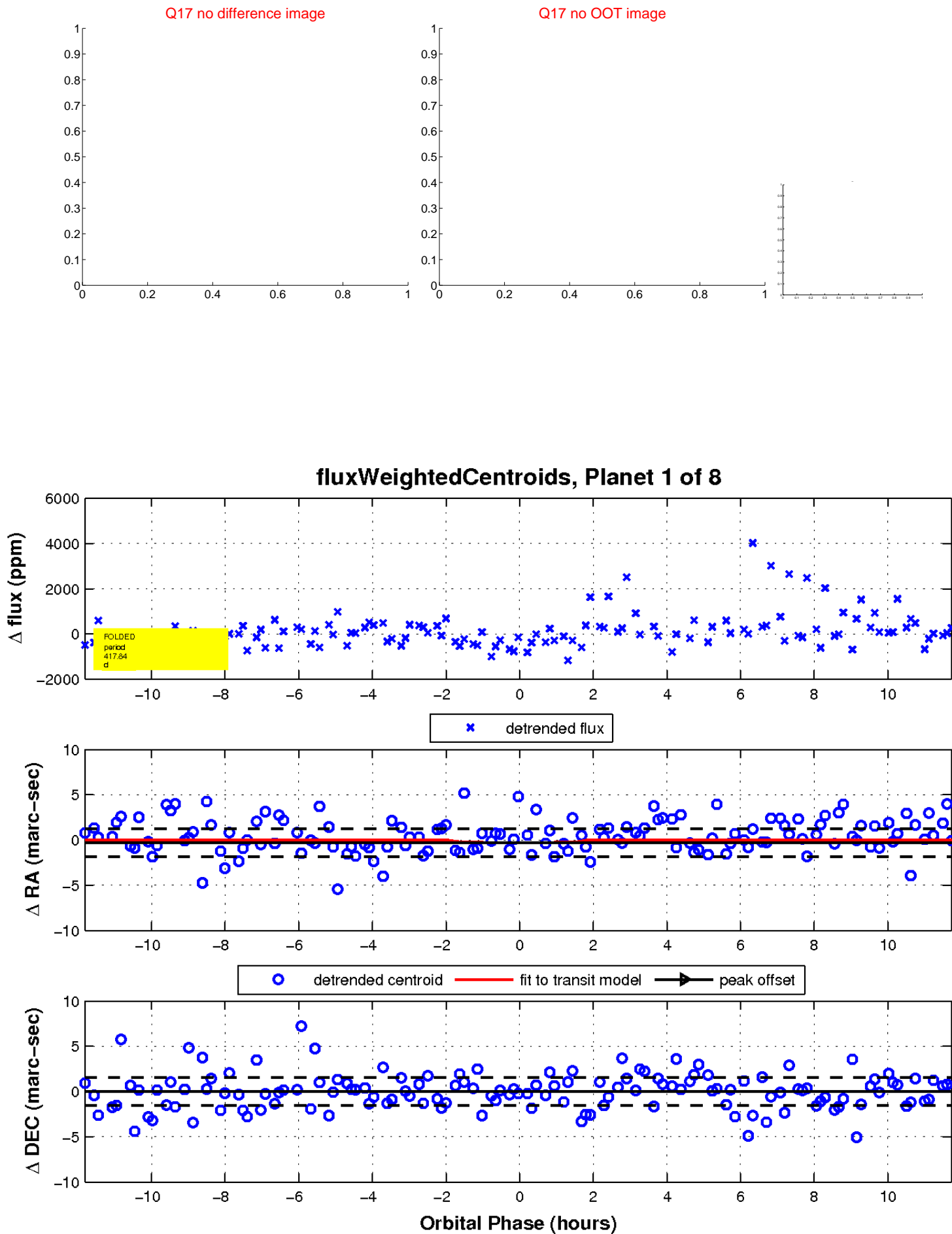
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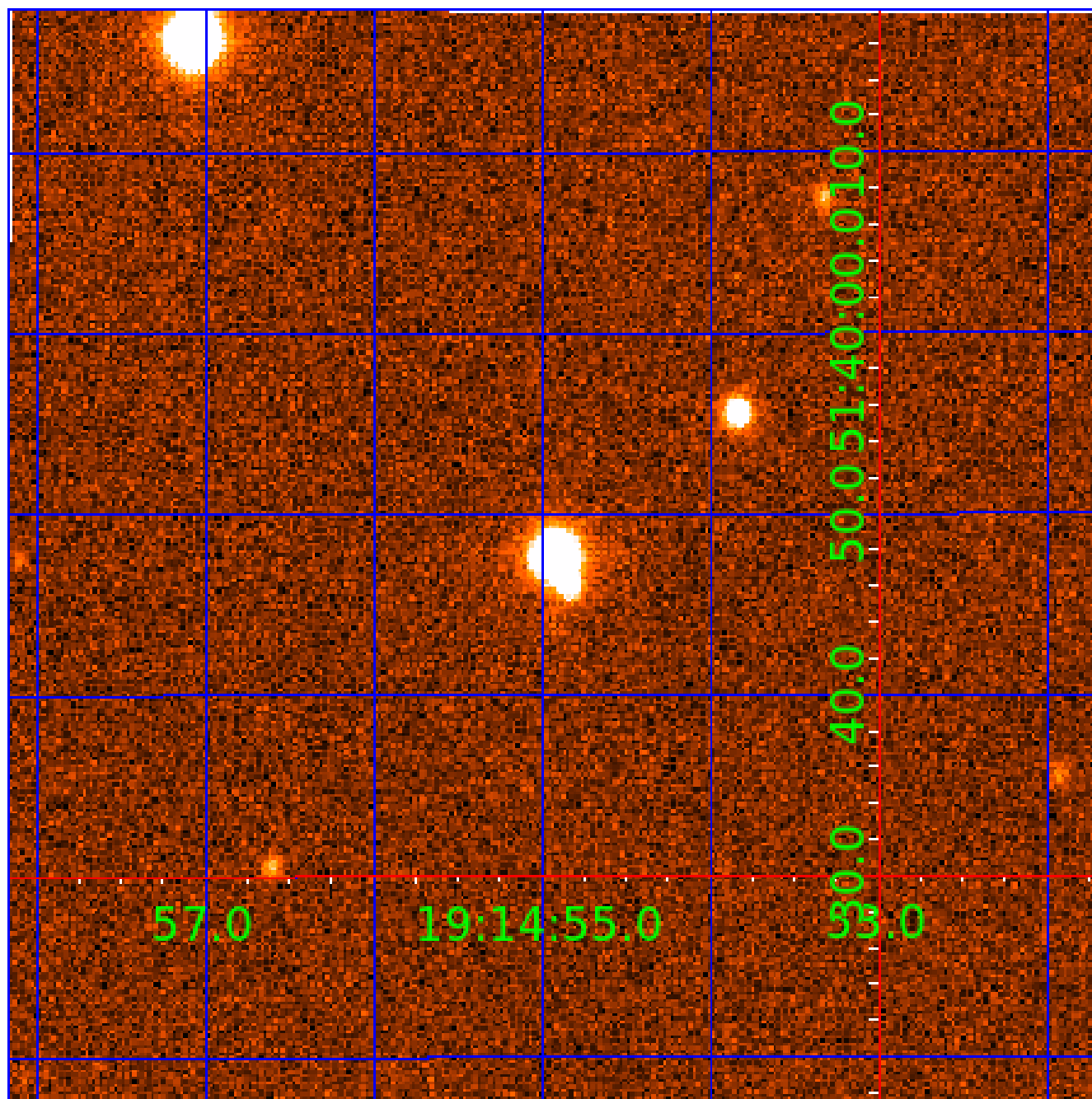


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

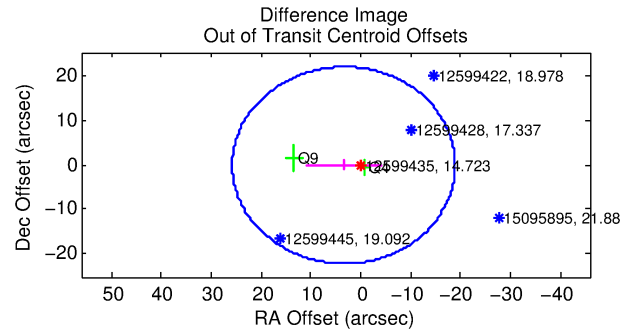
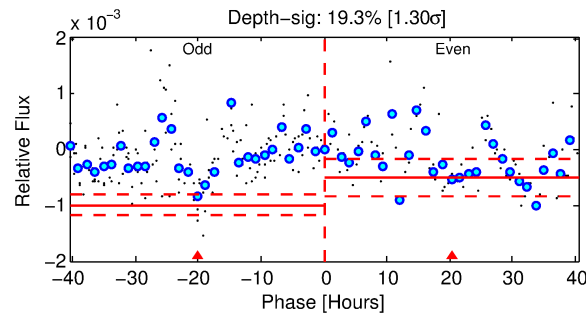
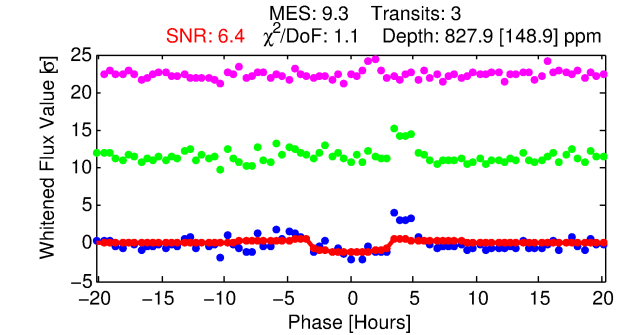
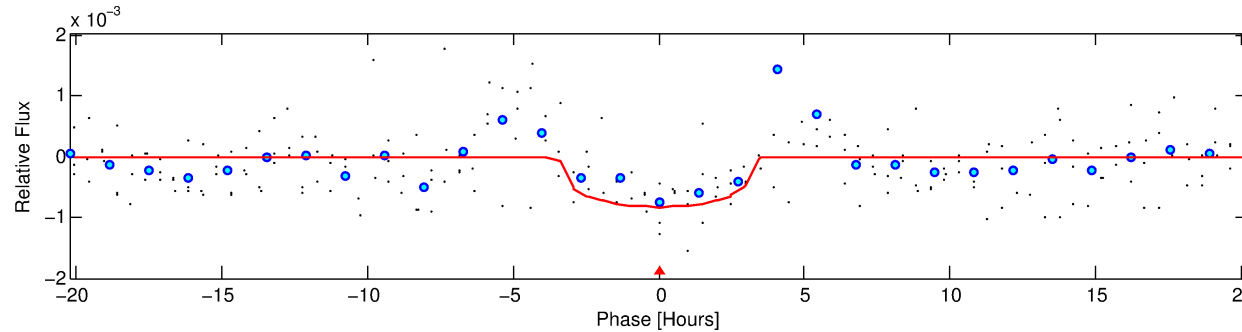
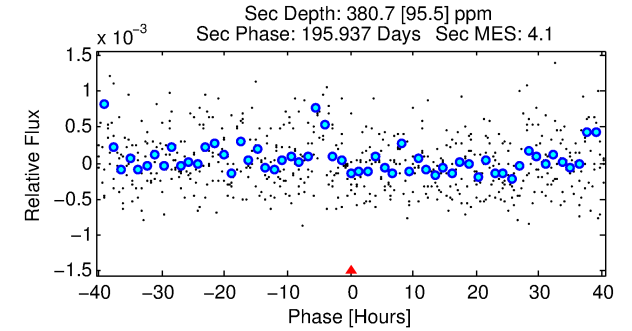
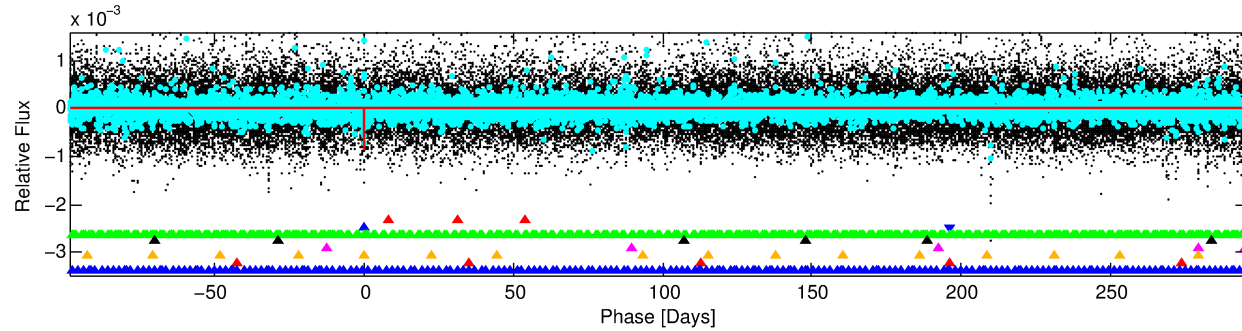
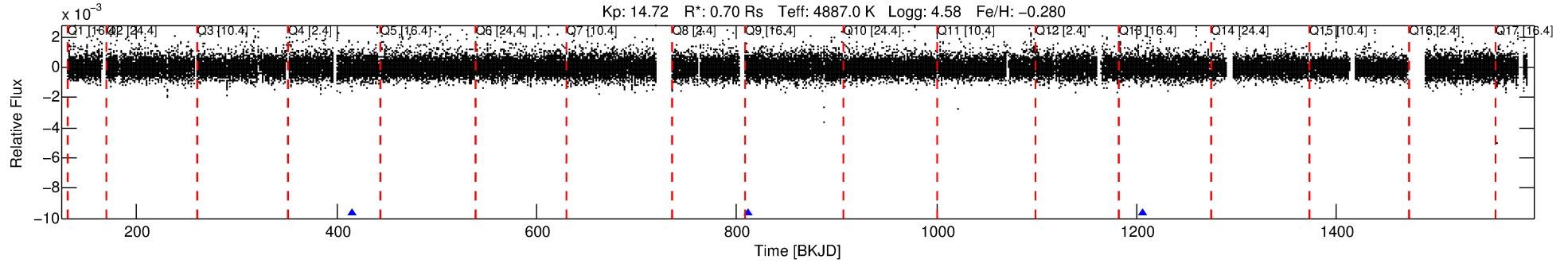
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-02

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 2 of 8 Period: 394.962 d



DV Fit Results:

Period = 394.96227 [0.01159] d
Epoch = 416.0869 [0.0152] BKJD
Rp/R* = 0.0270 [0.0373]
a/R* = 381.56 [1770.58]
b = 0.57 [5.59]
Seff = 0.29 [0.05]
Teq = 188 [8] K
Rp = 2.07 [2.88] Re
a = 0.9292 [0.0757] AU
Ag = 42027.35 [116839.59] [0.36σ]
Teffp = 4154 [2887] K [1.37σ]

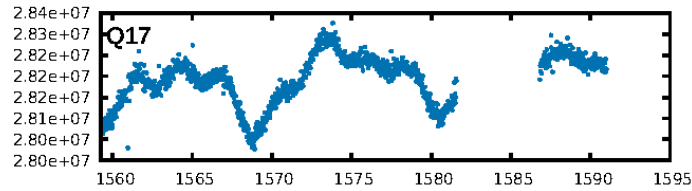
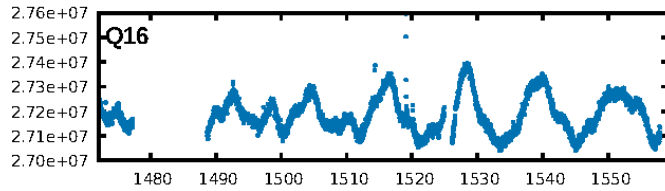
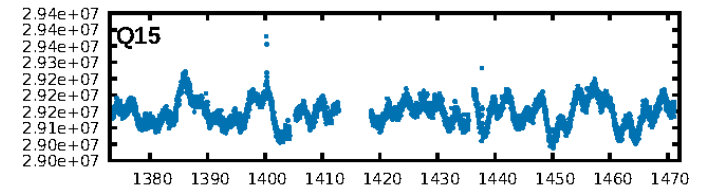
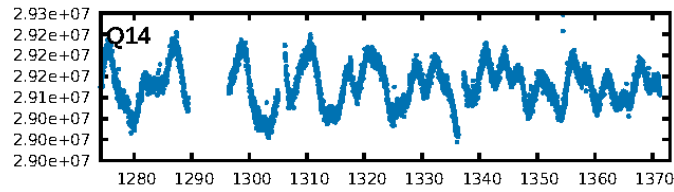
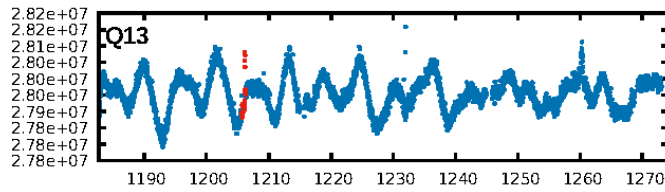
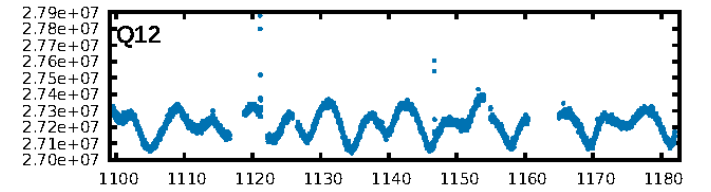
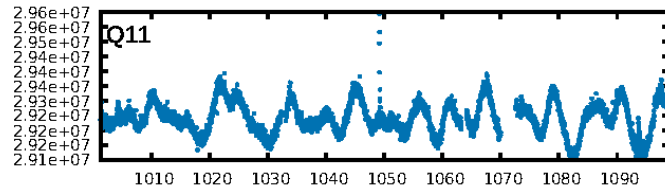
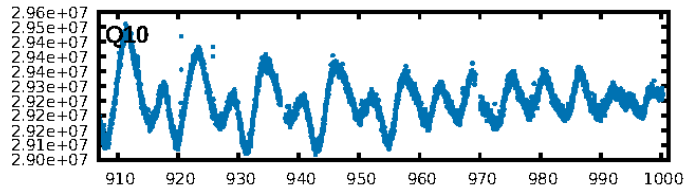
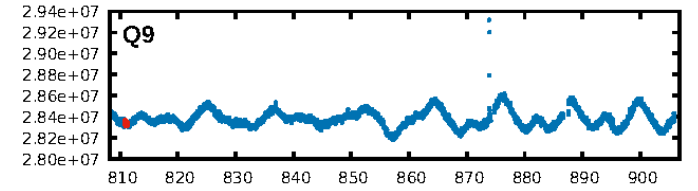
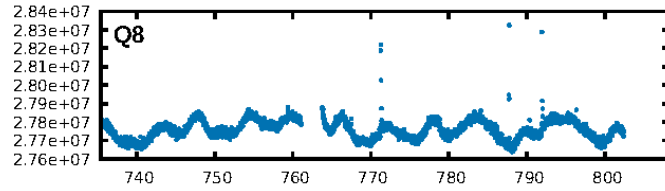
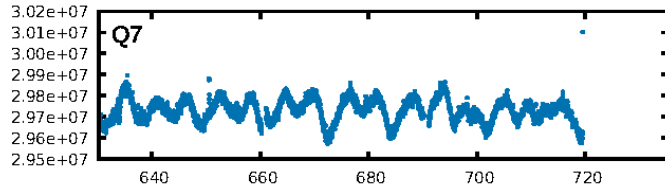
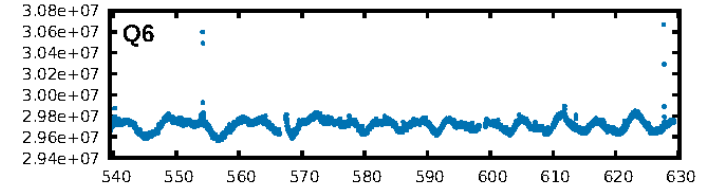
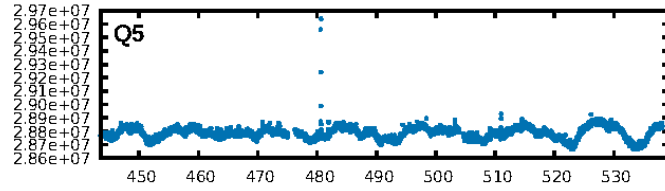
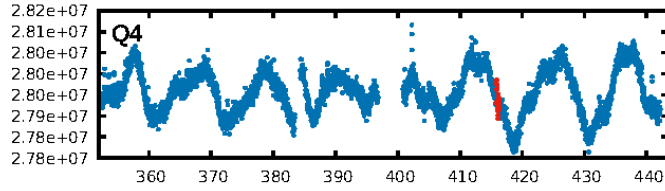
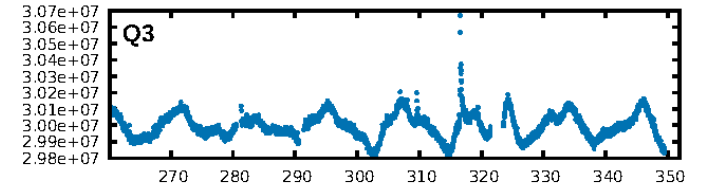
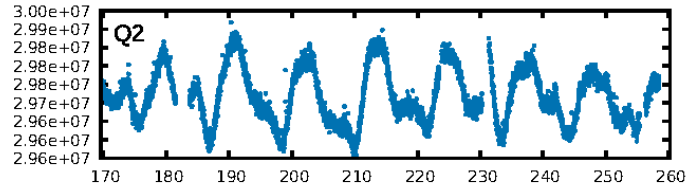
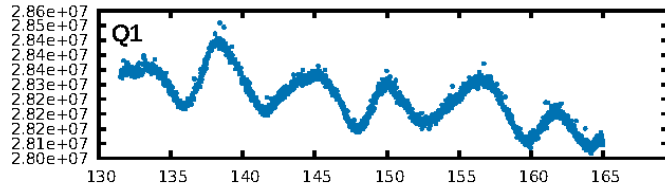
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [180.87σ]
LongPeriod-sig: 100.0% [70.19σ]
ModelChiSquare2-sig: 6.9%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.387
Centroid-sig: 33.8%
Centroid-so: 2.229 arcsec [1.64σ]
OotOffset-rm: 3.361 arcsec [0.45σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 3.193 arcsec [0.43σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/2]

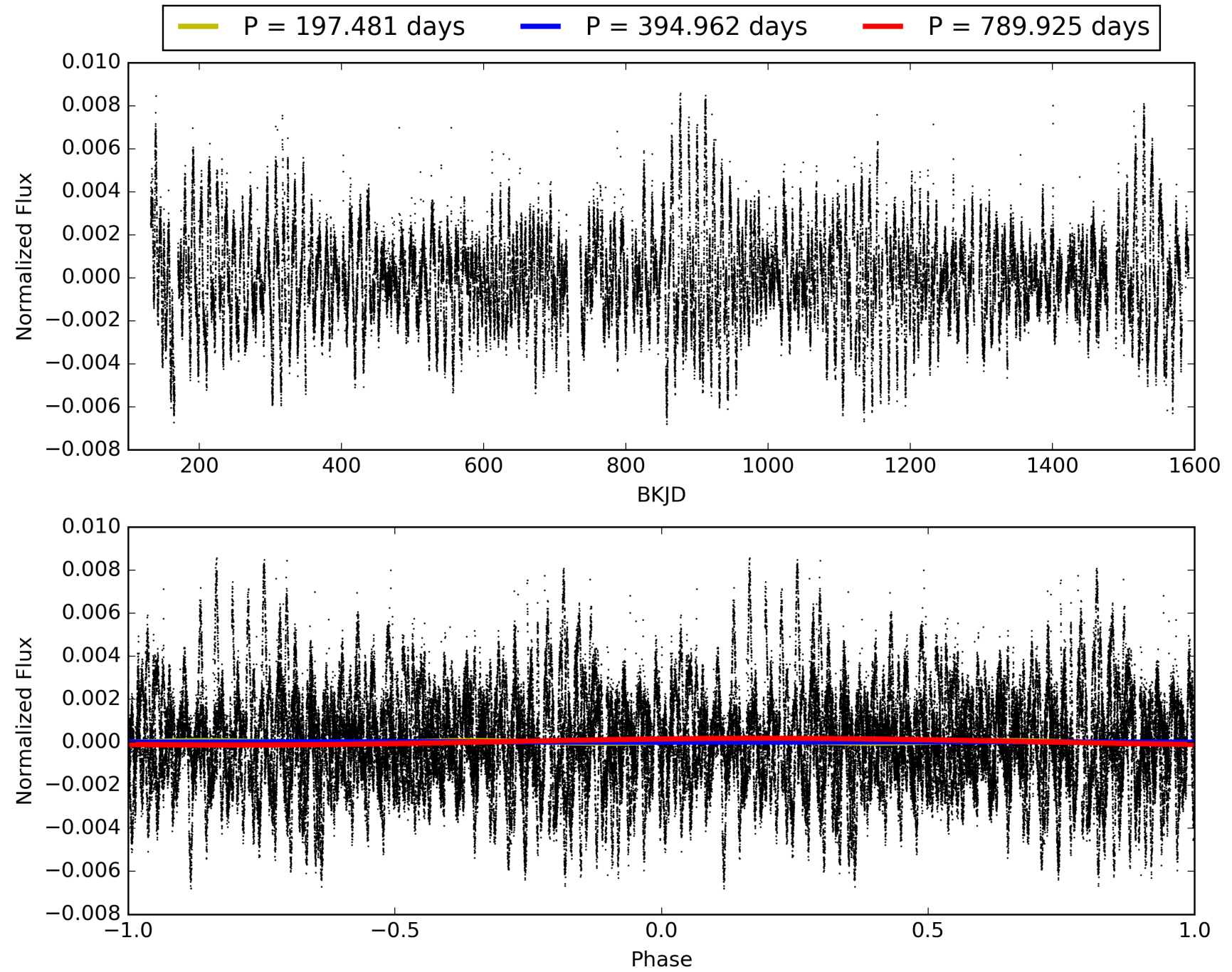
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:51:55 Z

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

TCE 012599435-02, PDC Light Curves

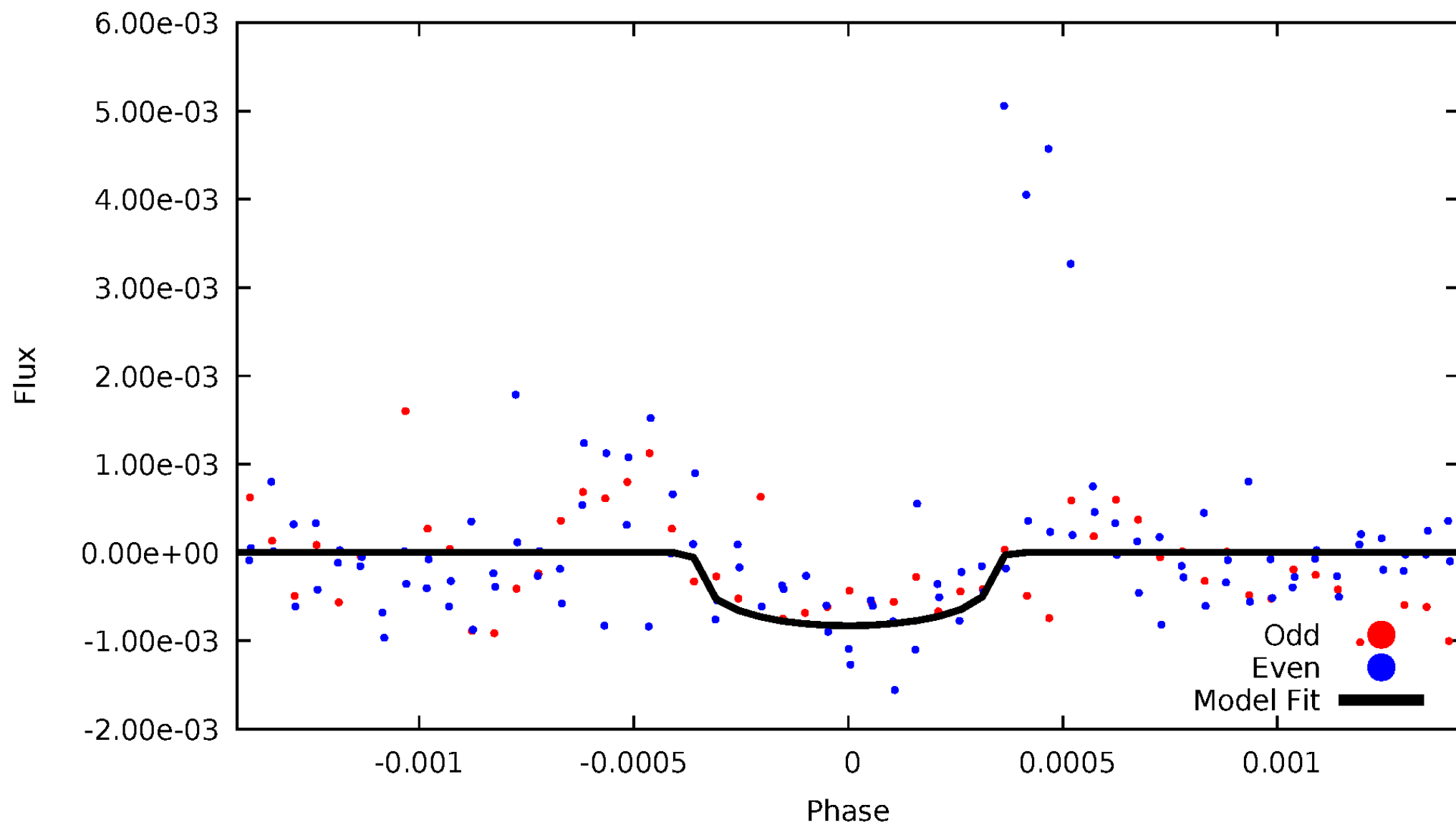


TCE 012599435-02



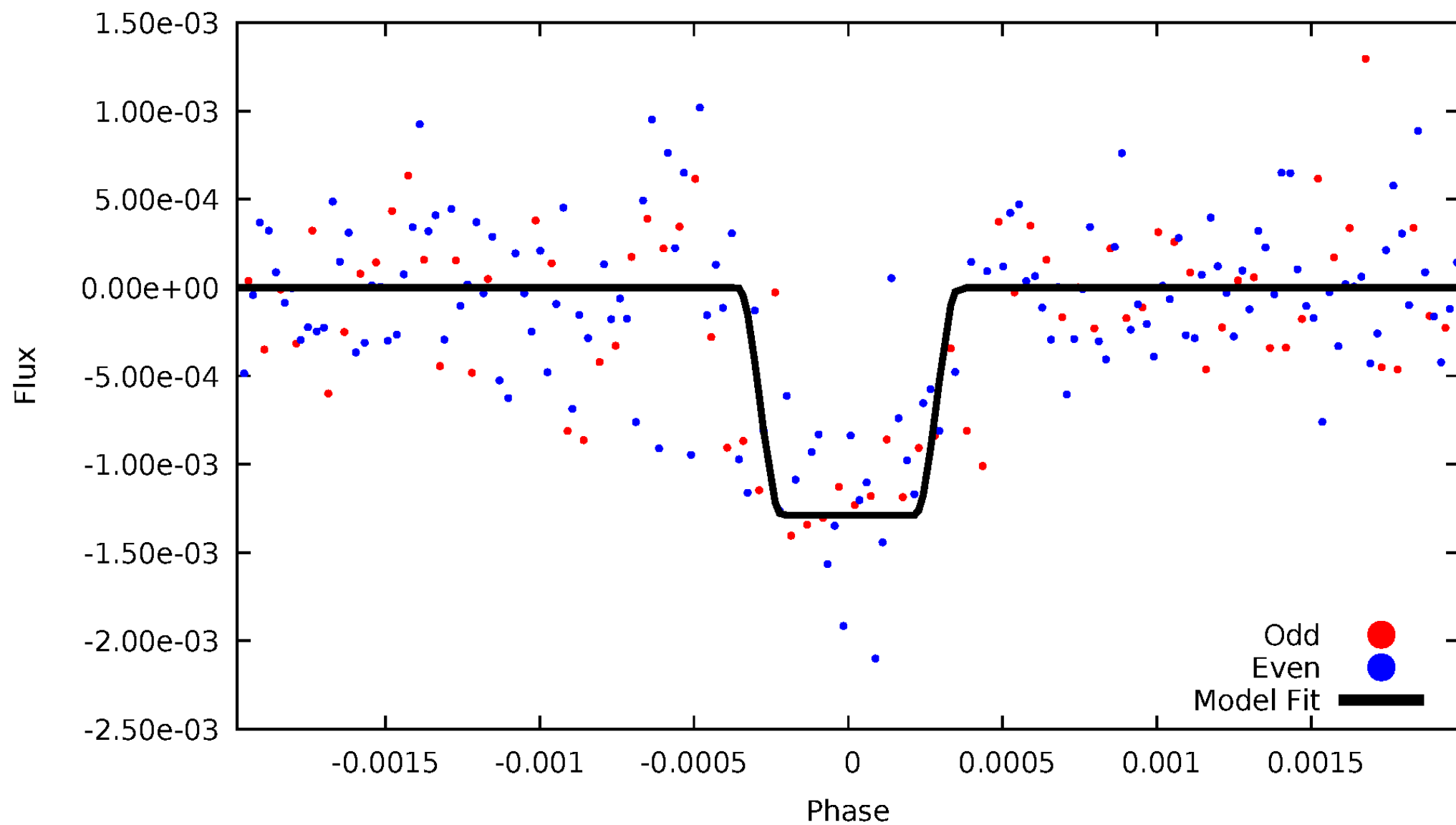
DV Odd/Even

TCE 012599435-02



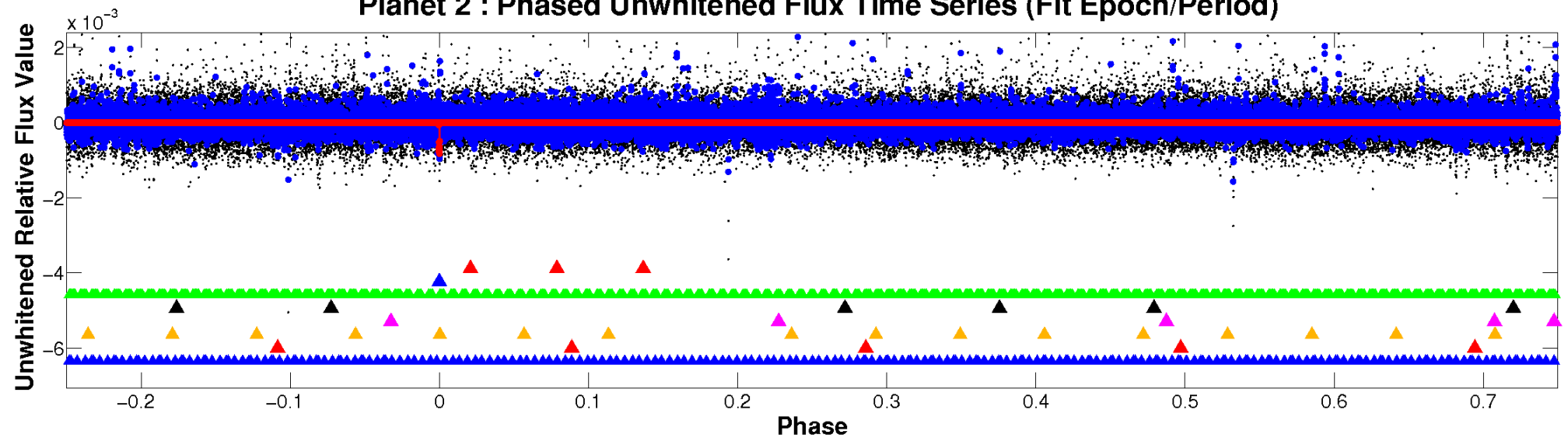
ALT Odd/Even

TCE 012599435-02

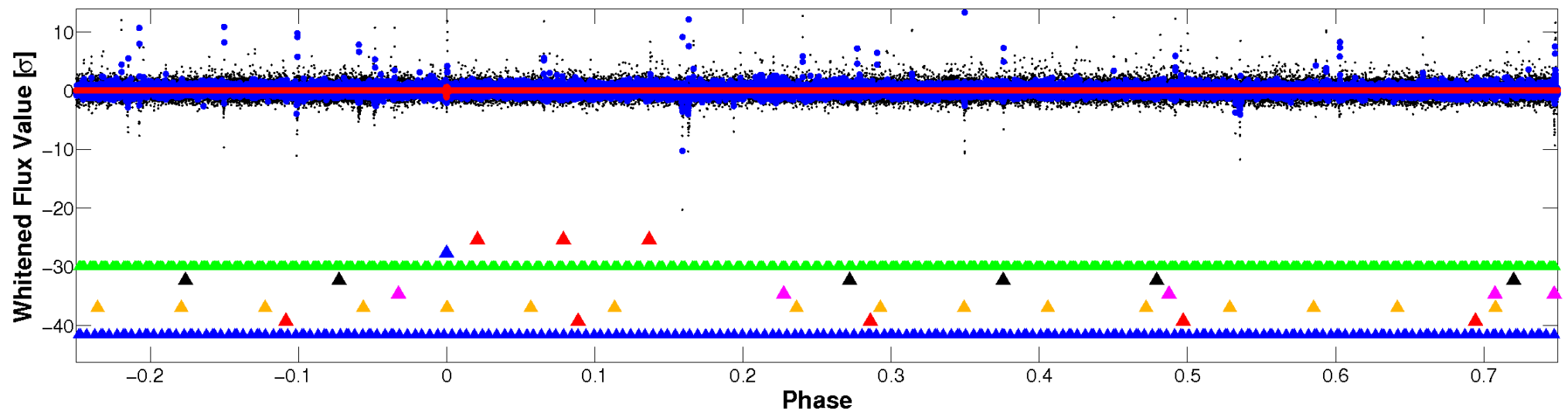


Non-Whitened Vs. Whitened Light Curve

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

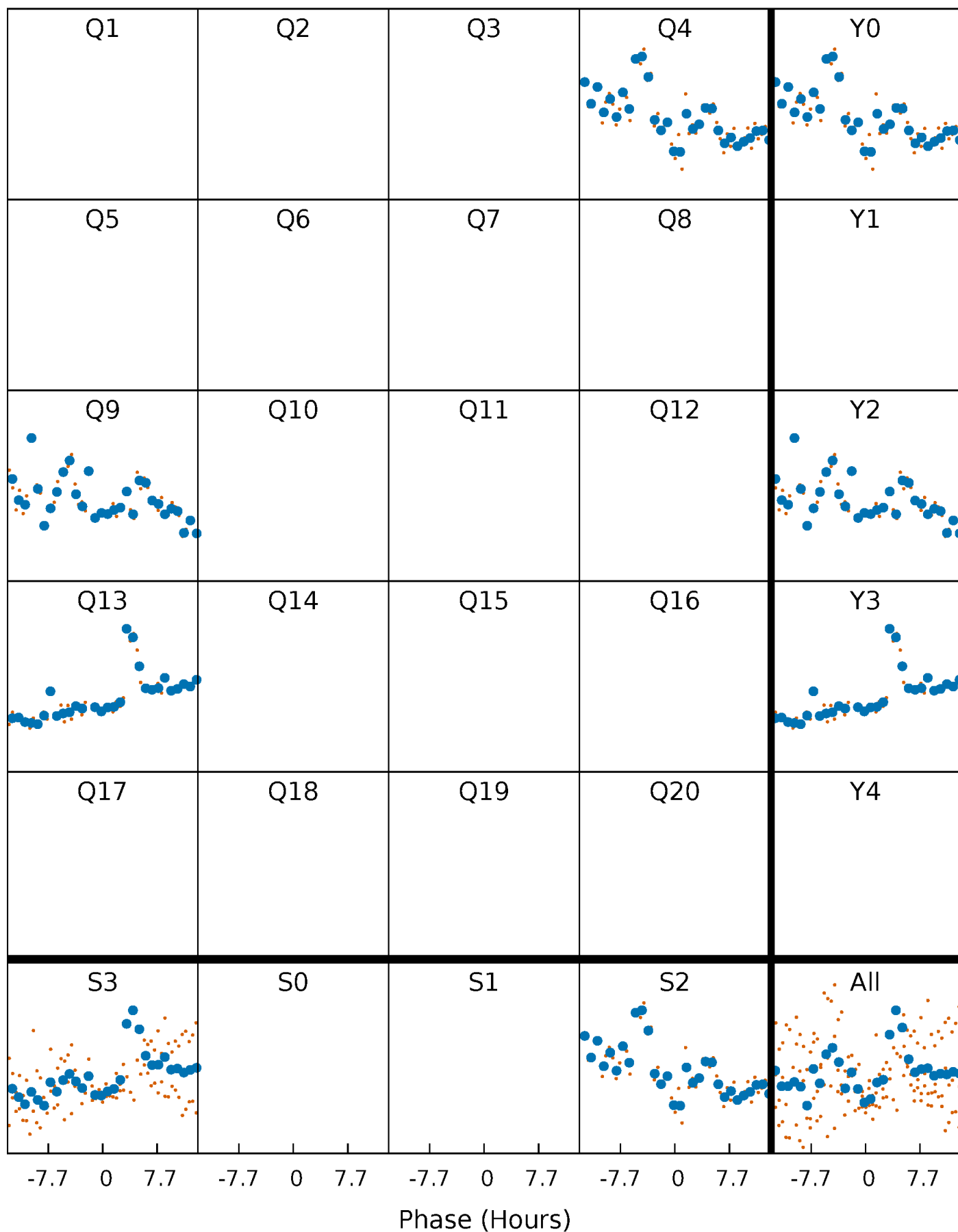


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



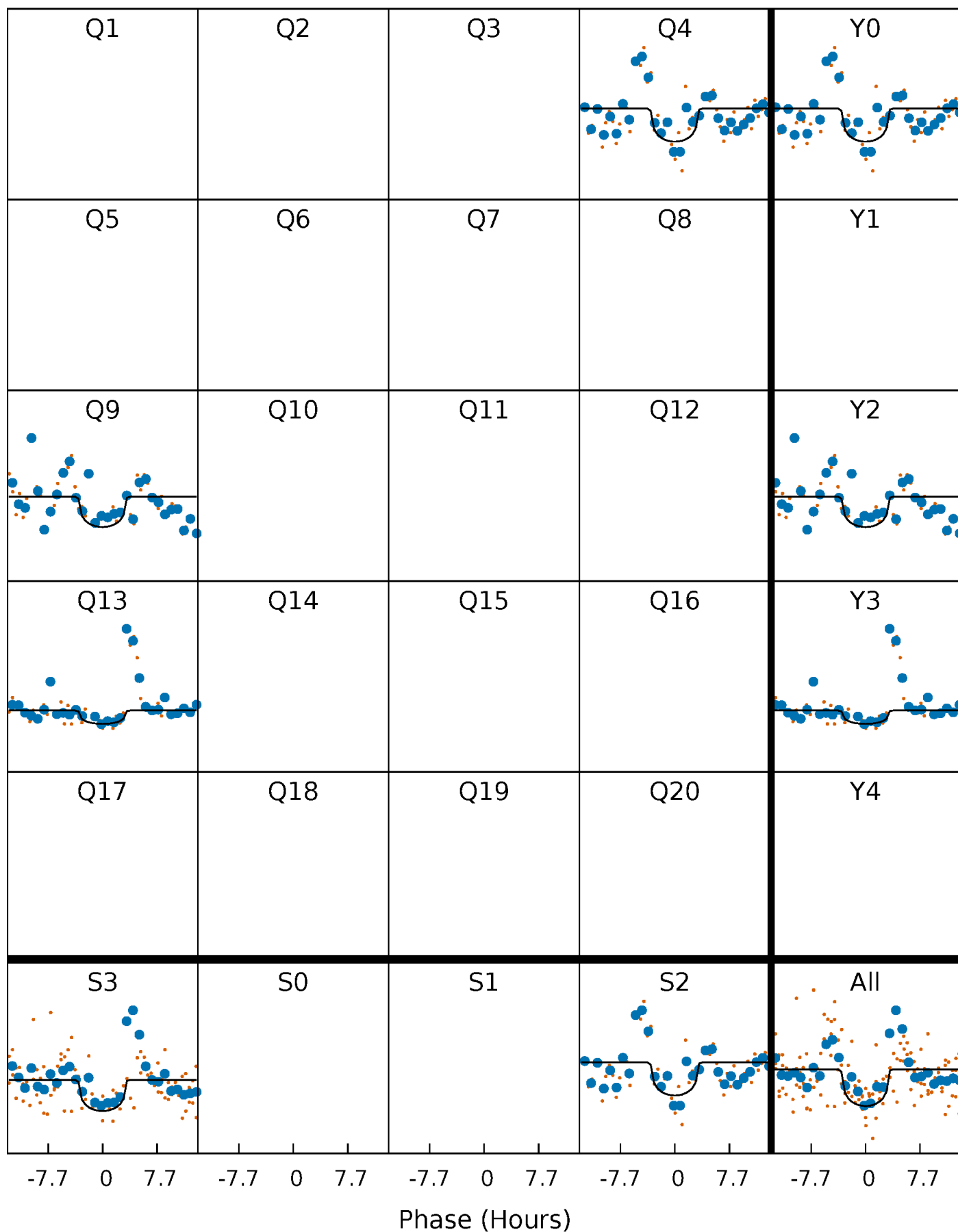
PDC Quarter-Phased Transit Curves

TCE 012599435-02 $P=394.962269$ Days $T_0=416.086863$ (BKJD)



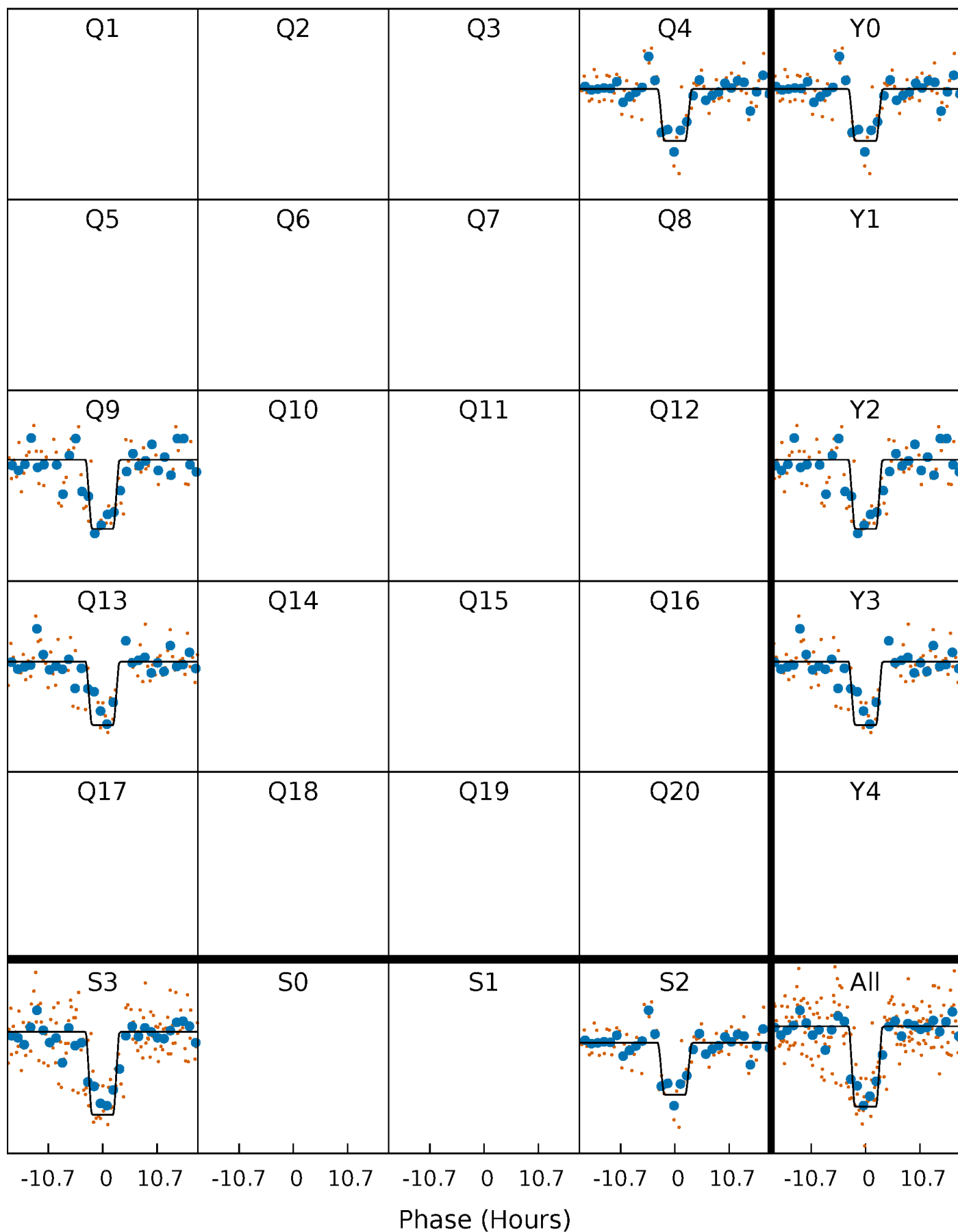
DV Quarter-Phased Transit Curves

TCE 012599435-02 $P=394.962269$ Days $T_0=416.086863$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

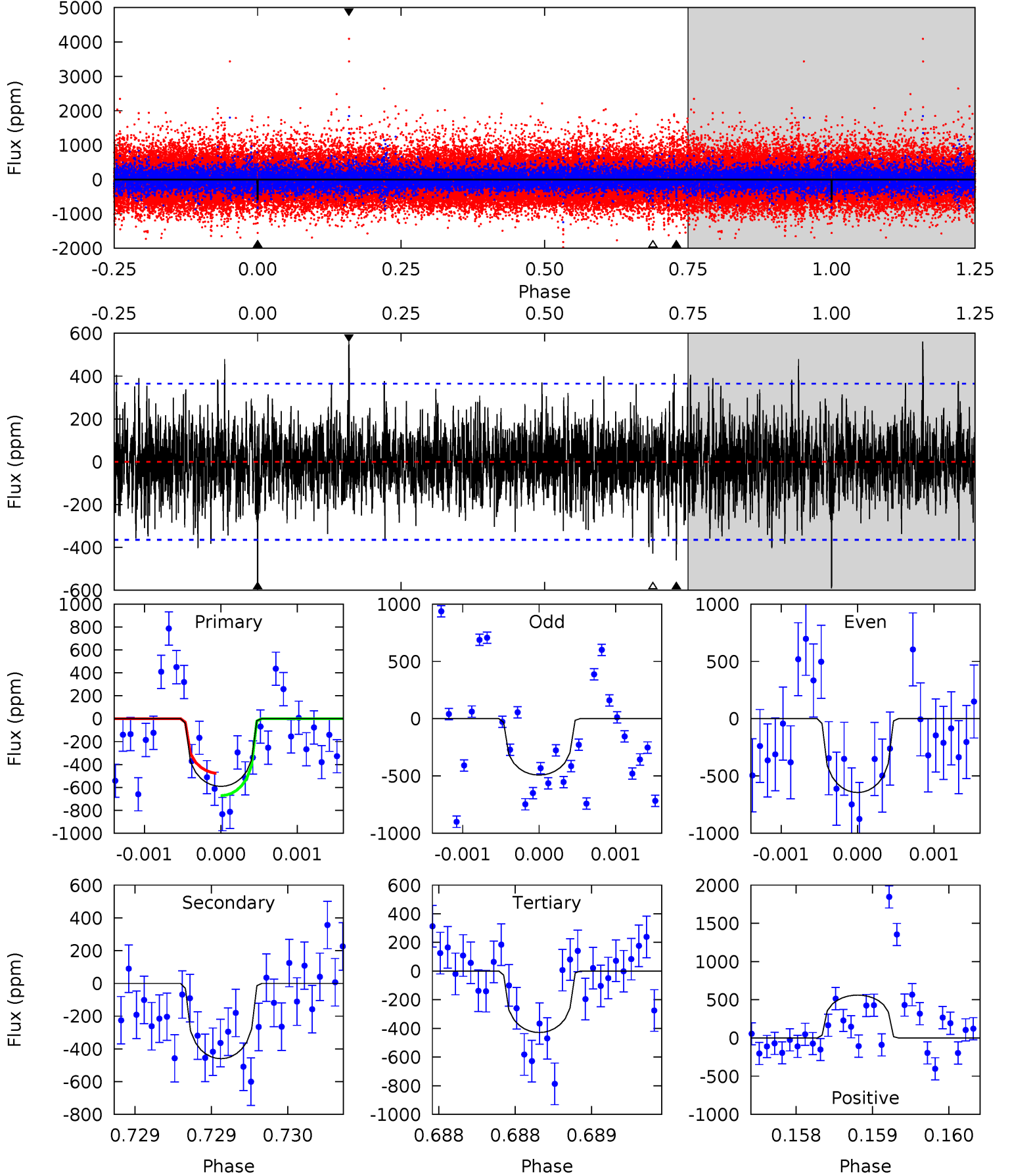
TCE 012599435-02 $P=394.967092$ Days $T_0=416.095020$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-02, $P = 394.962269$ Days, $E = 21.124594$ Days

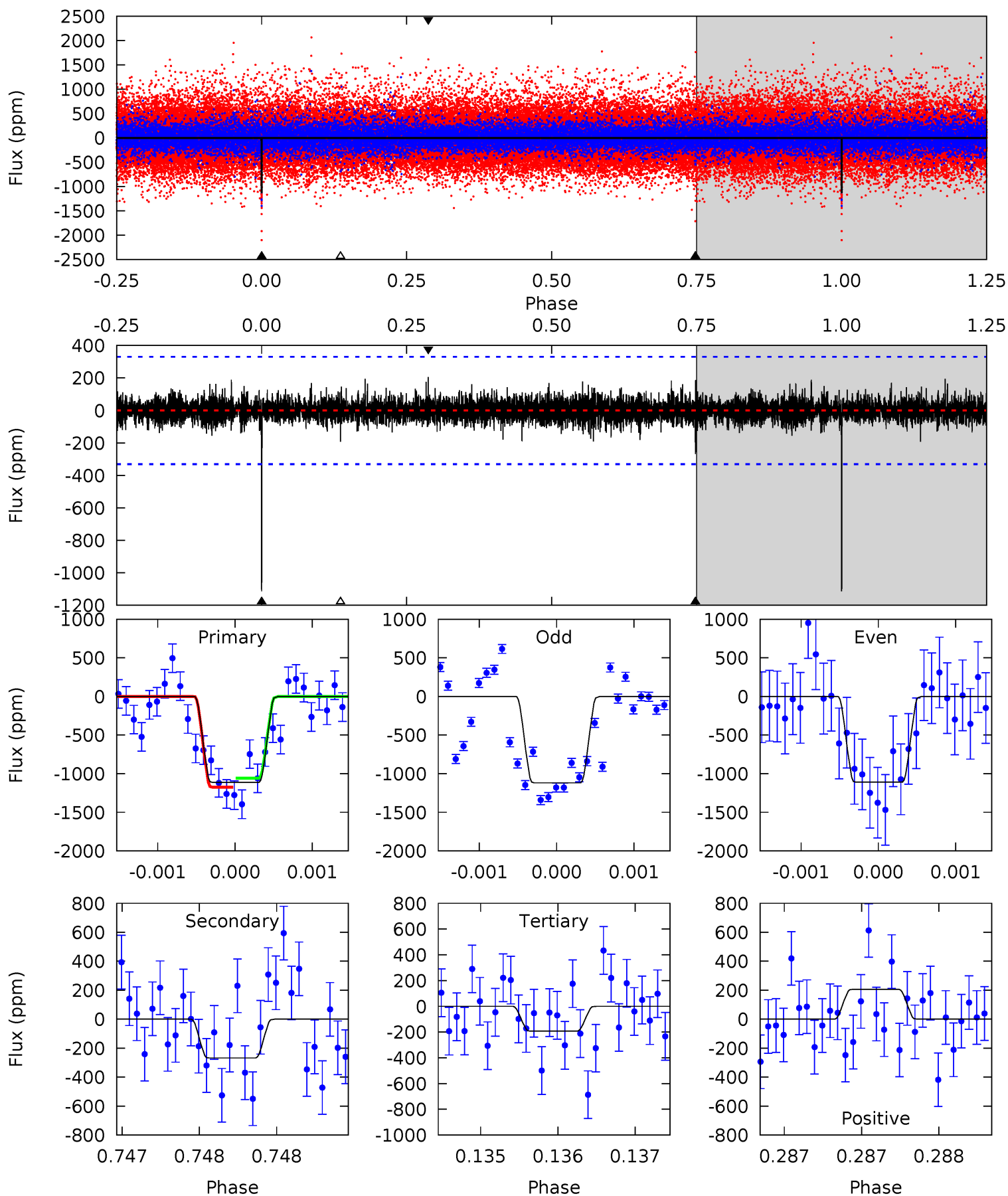
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.90	6.93	6.46	8.46	5.50	3.36	1.68	2.44	0.44	0.47	-1.53	0.94	0.96	0.49	1.45



Alt Model-Shift Uniqueness Test

012599435-02, $P = 394.967092$ Days, $E = 21.127928$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	4.46	3.21	3.43	5.52	3.39	0.76	15.3	15.1	1.26	1.04	0.07	0.99	0.16	0.98



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-460 ± 66	$2.83^{+2.79}_{-1.81}$	260^{+10}_{-9}	3936^{+2164}_{-774}	$27343^{+190289}_{-20586}$
Alt.	-268 ± 60	$3.39^{+2.57}_{-2.07}$	261^{+9}_{-9}	3405^{+1386}_{-518}	11155^{+63429}_{-7686}

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

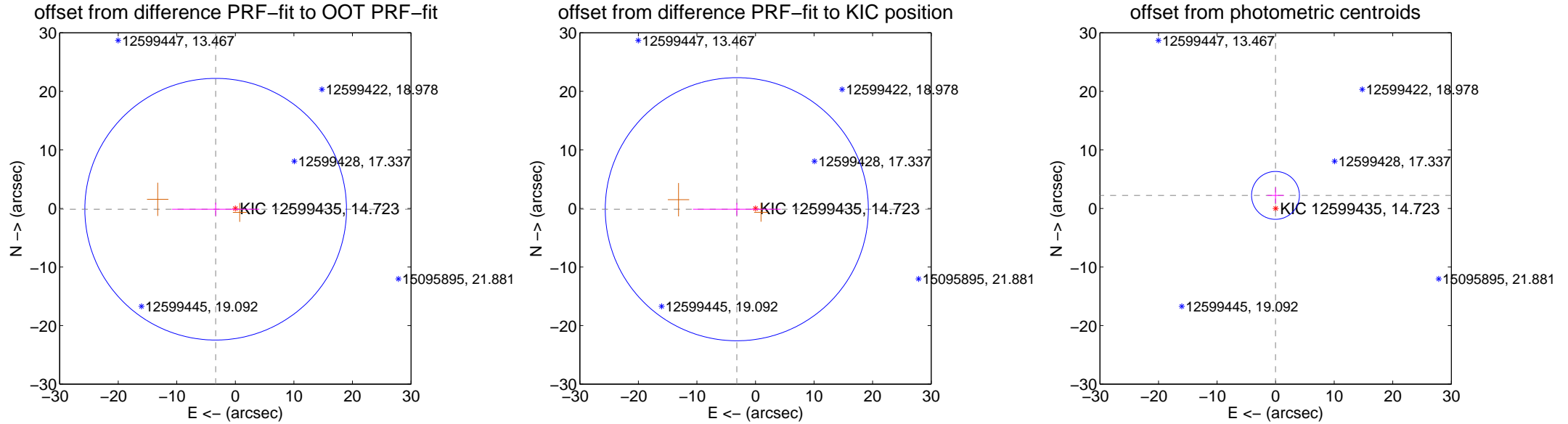
DV Centroid Data

Supplemental centroid analysis for 012599435-02. Kepler magnitude: 14.72. Transit SNR 6.35

There are 0 quarters with good PRF difference image offsets

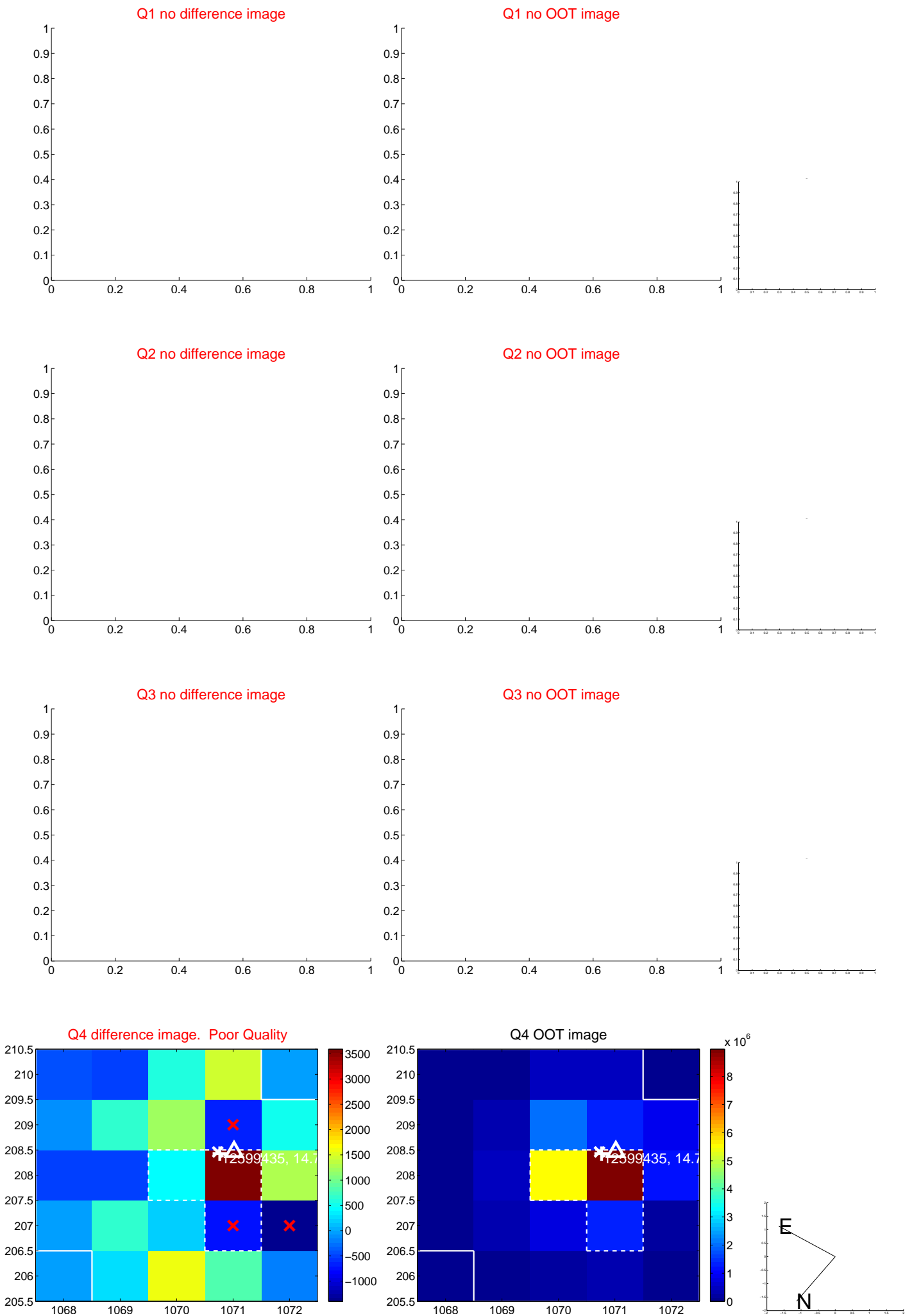
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.361 ± 7.446	0.45	3.358 ± 7.452	-0.133 ± 1.123
PRF-fit source offset from KIC position	3.193 ± 7.487	0.43	3.191 ± 7.494	-0.131 ± 1.079
photometric centroid source offset	2.23 ± 1.36	1.64	0.03 ± 1.43	2.23 ± 1.36



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.

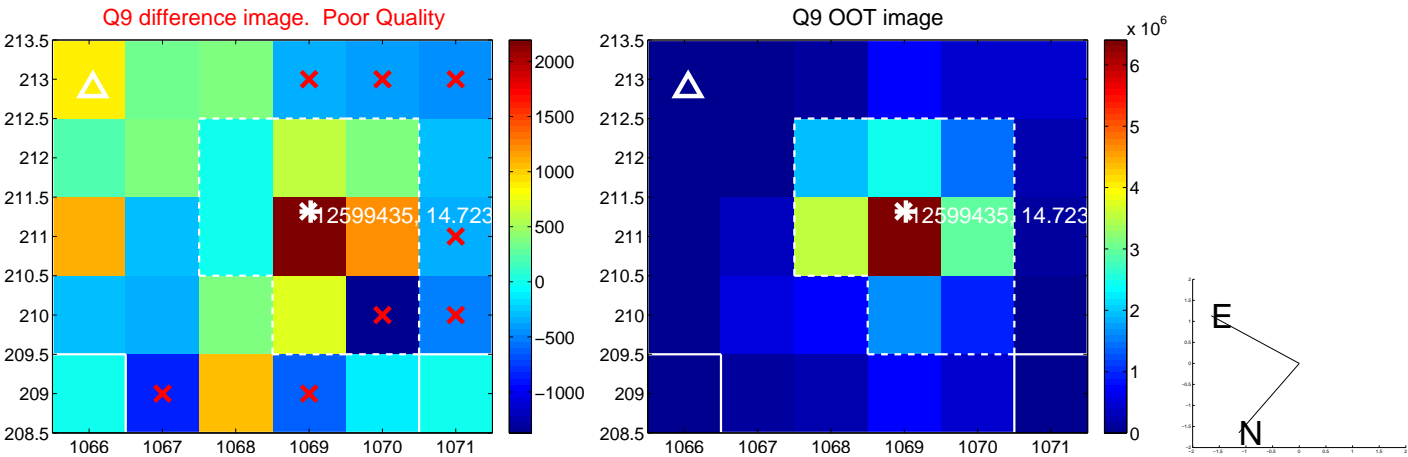
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



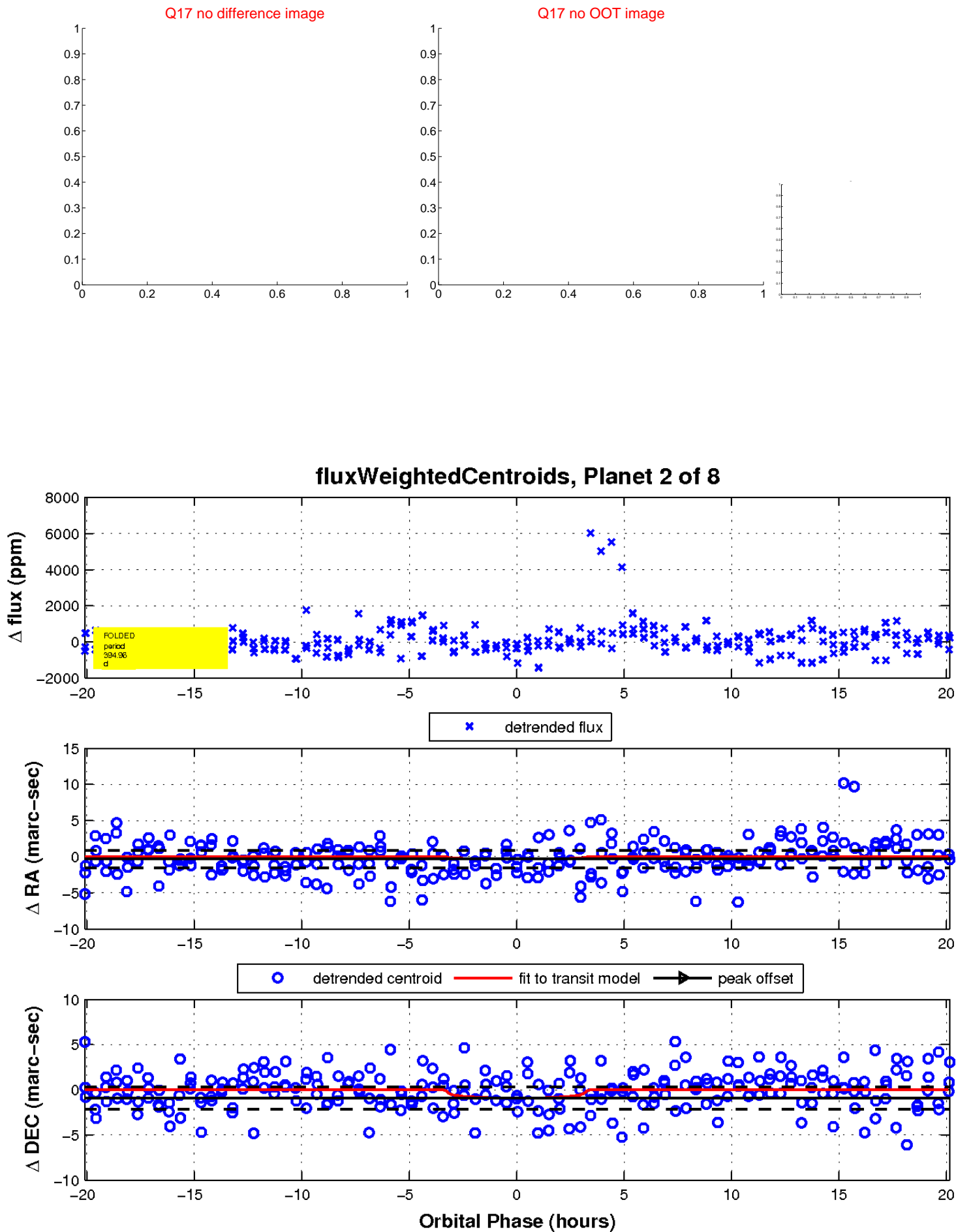
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

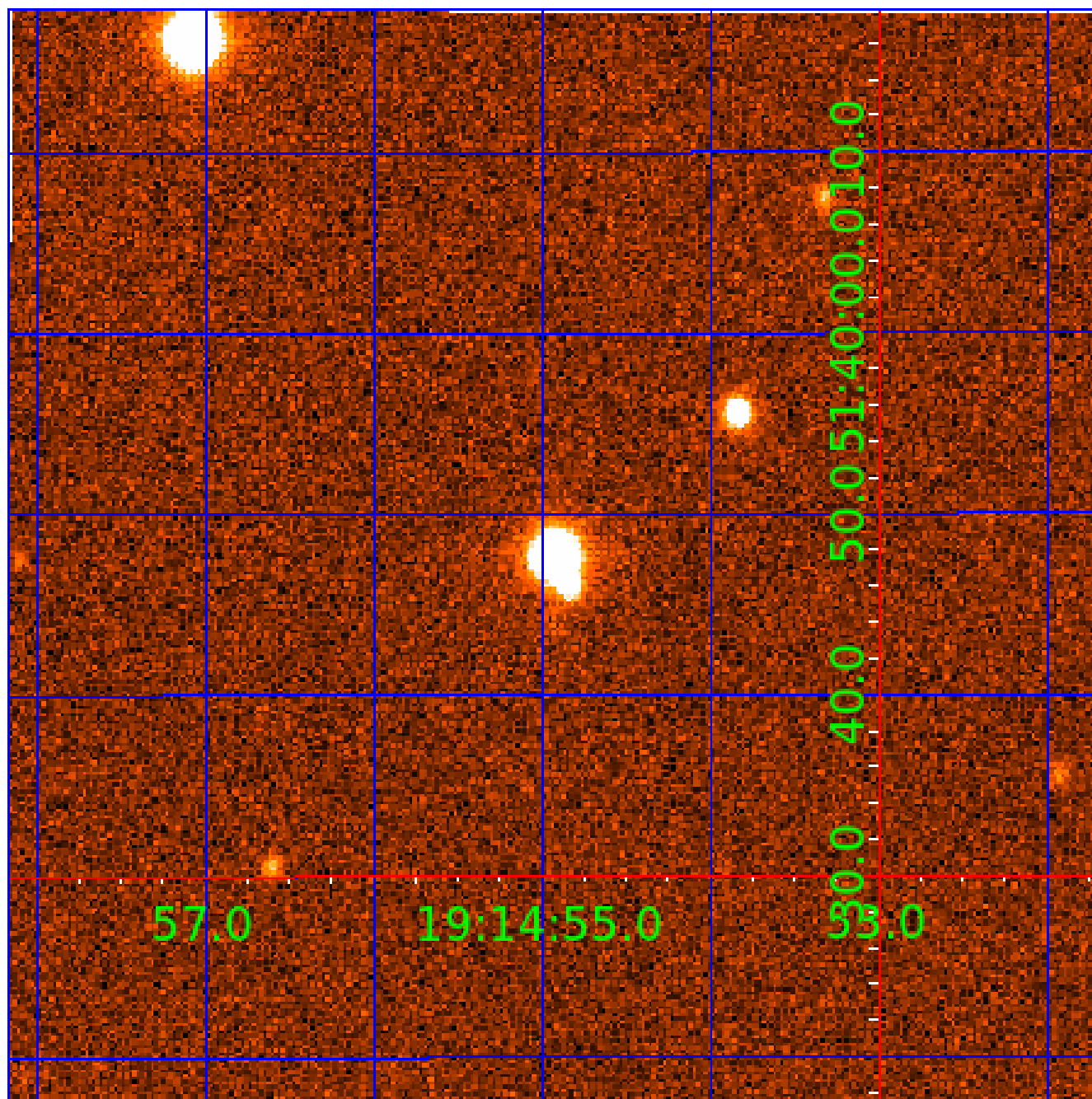


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

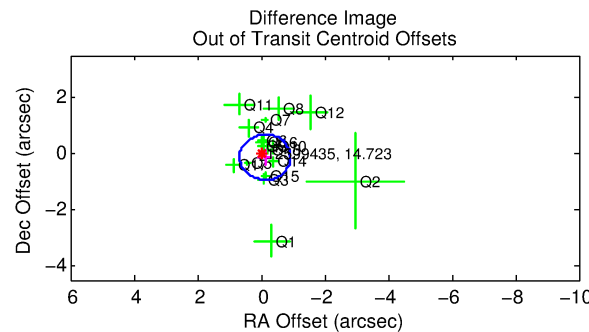
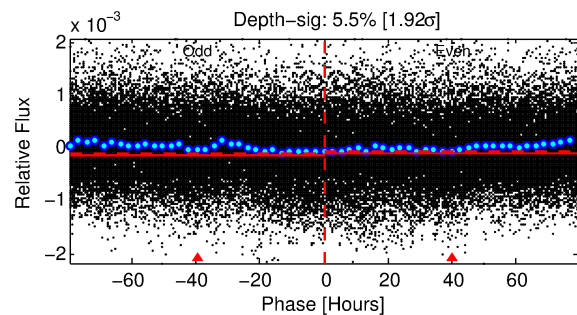
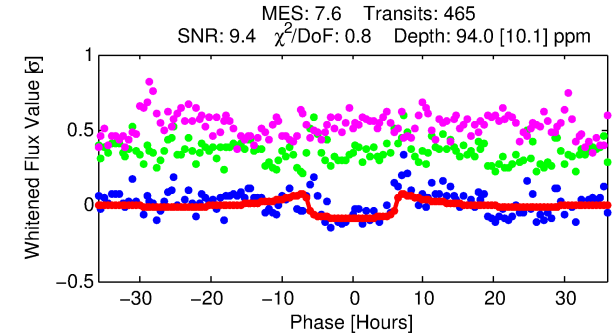
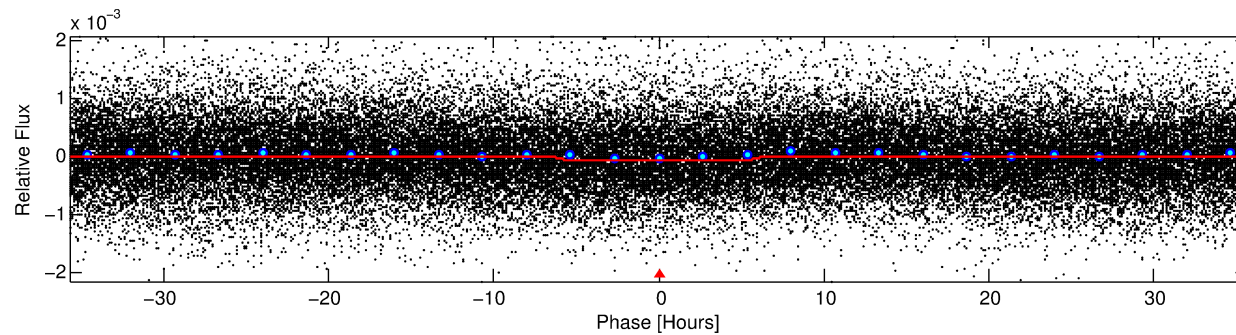
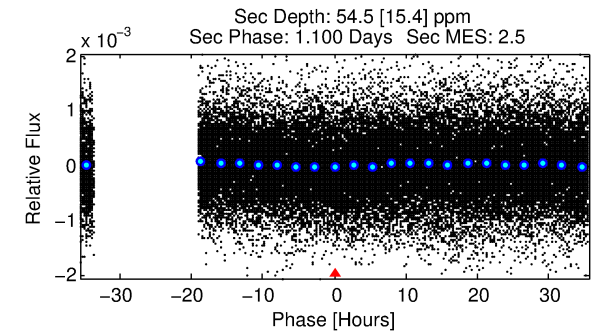
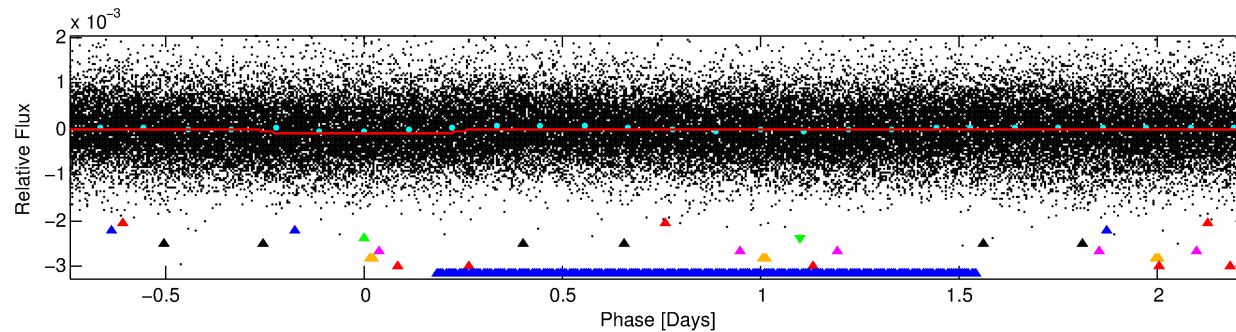
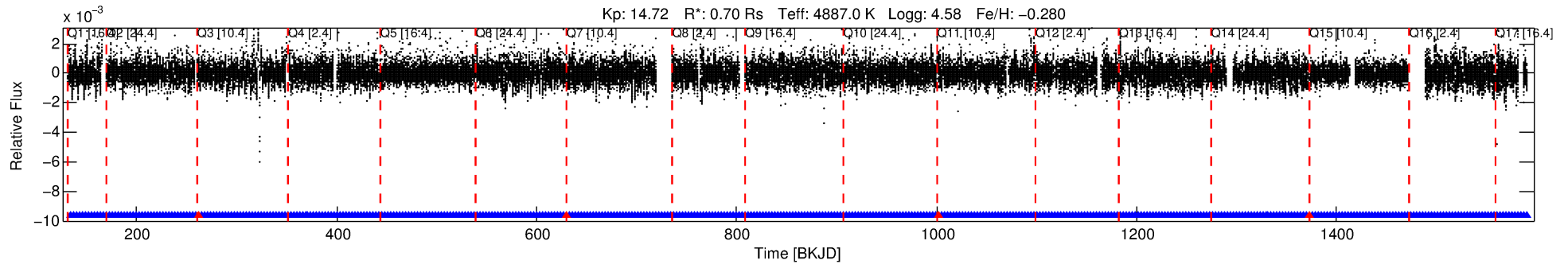
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-03

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 3 of 8 Period: 2.973 d



DV Fit Results:

Period = 2.97312 [0.00004] d
Epoch = 133.8126 [0.0091] BKJD
Rp/R* = 0.0110 [0.0013]
a/R* = 1.20 [0.16]
b = 0.91 [0.08]
Seff = 198.84 [33.50]
Teff = 958 [40] K
Rp = 0.84 [0.13] Re
a = 0.0357 [0.0029] AU
Ag = 53.49 [20.69] [2.54σ]
Teffp = 4004 [387] K [7.82σ]

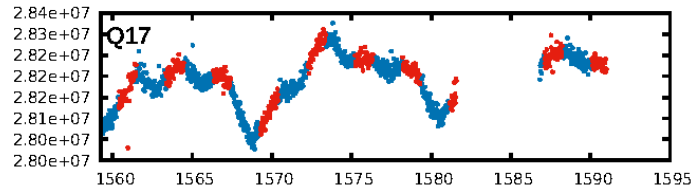
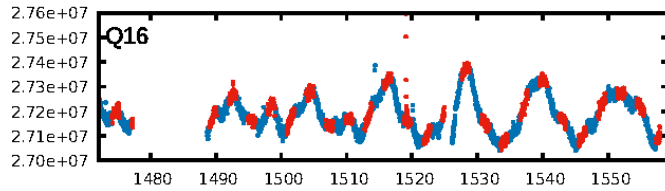
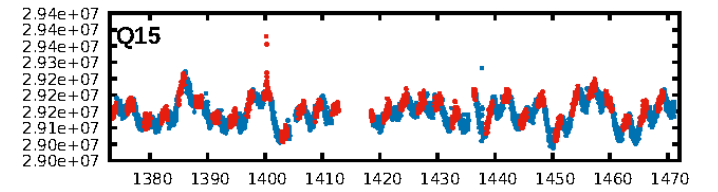
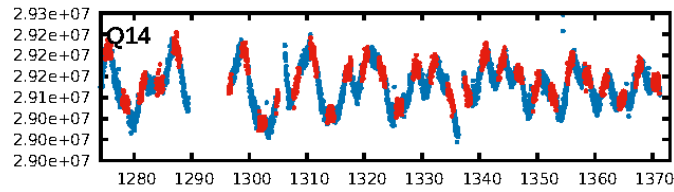
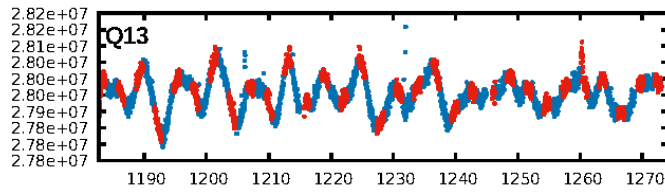
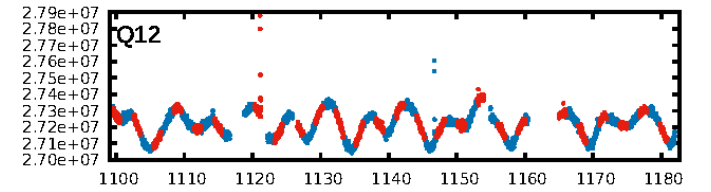
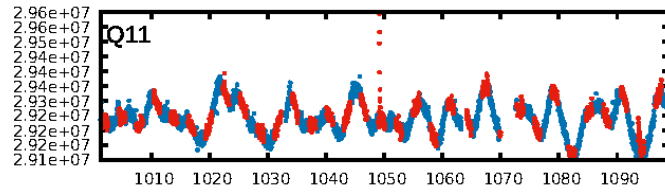
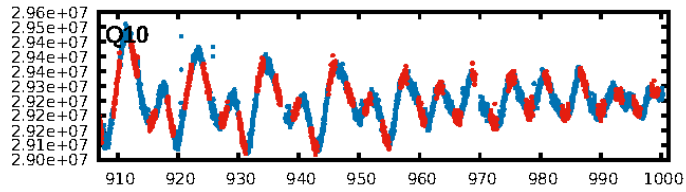
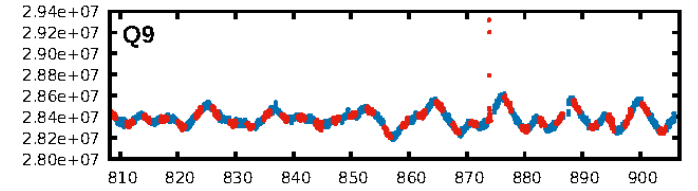
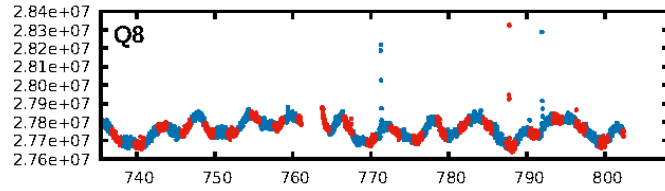
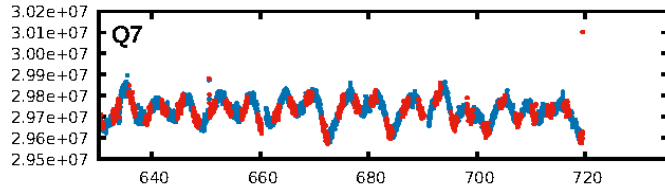
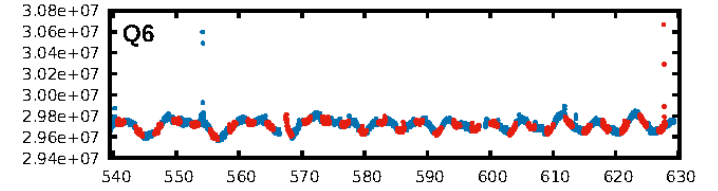
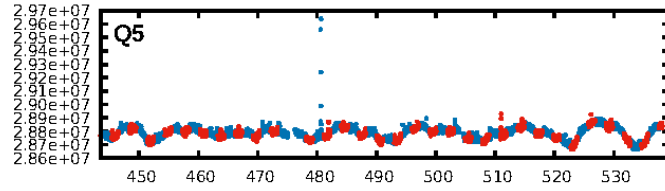
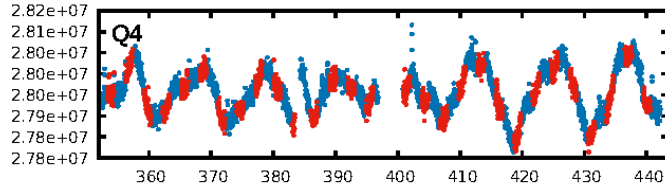
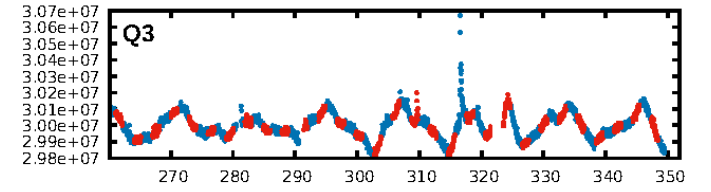
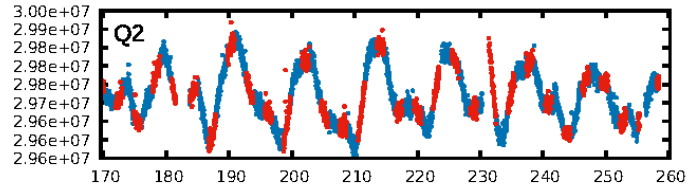
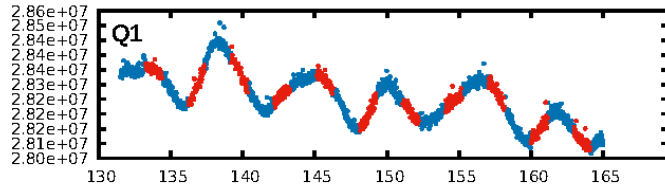
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.9% [3.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [440/444]
GhostDiagnostic-chr: 0.8814
Centroid-sig: 97.1%
Centroid-so: 1.082 arcsec [1.83σ]
OotOffset-rm: 0.180 arcsec [0.67σ]
KicOffset-rm: 0.281 arcsec [1.10σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

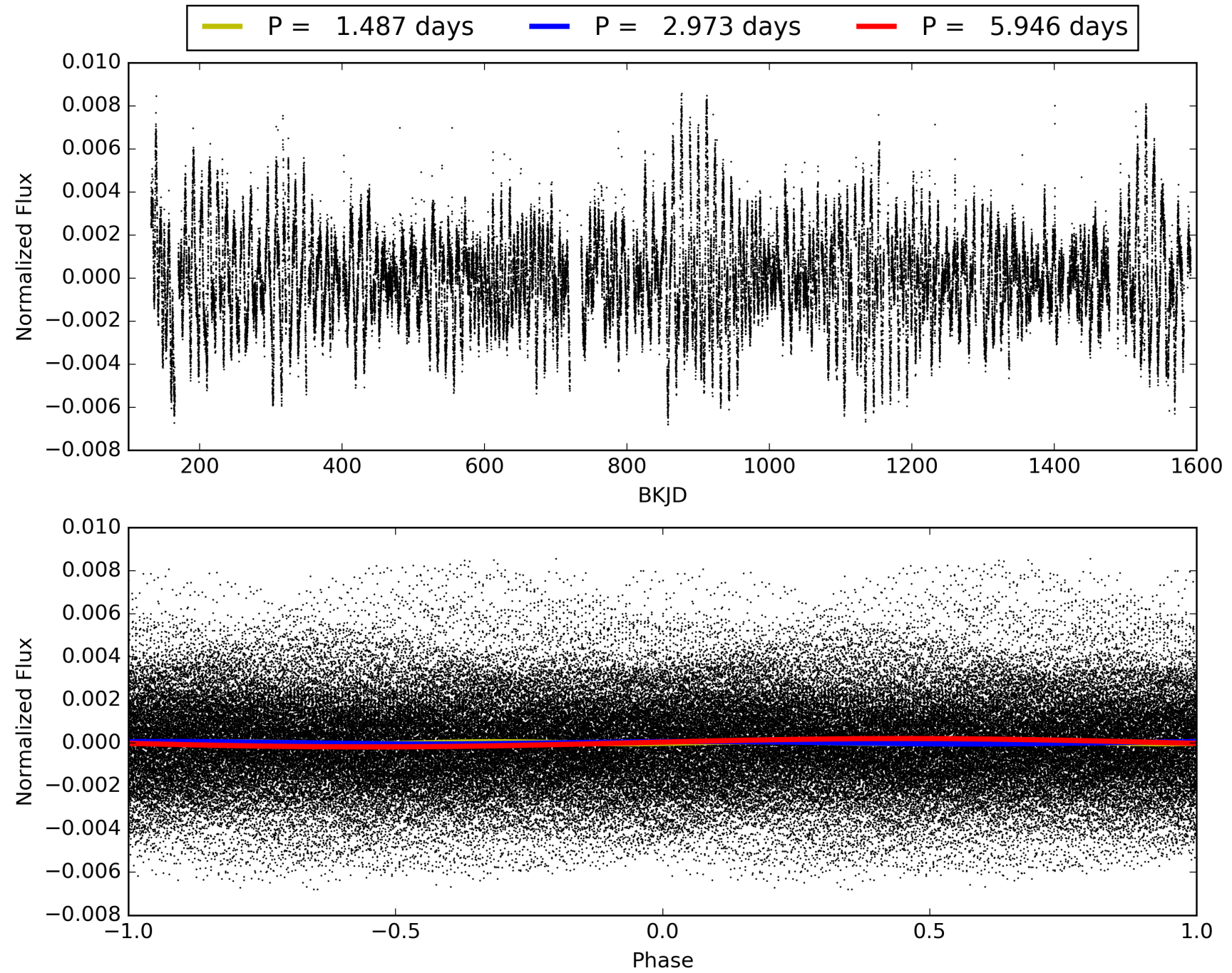
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:04 Z

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

TCE 012599435-03, PDC Light Curves

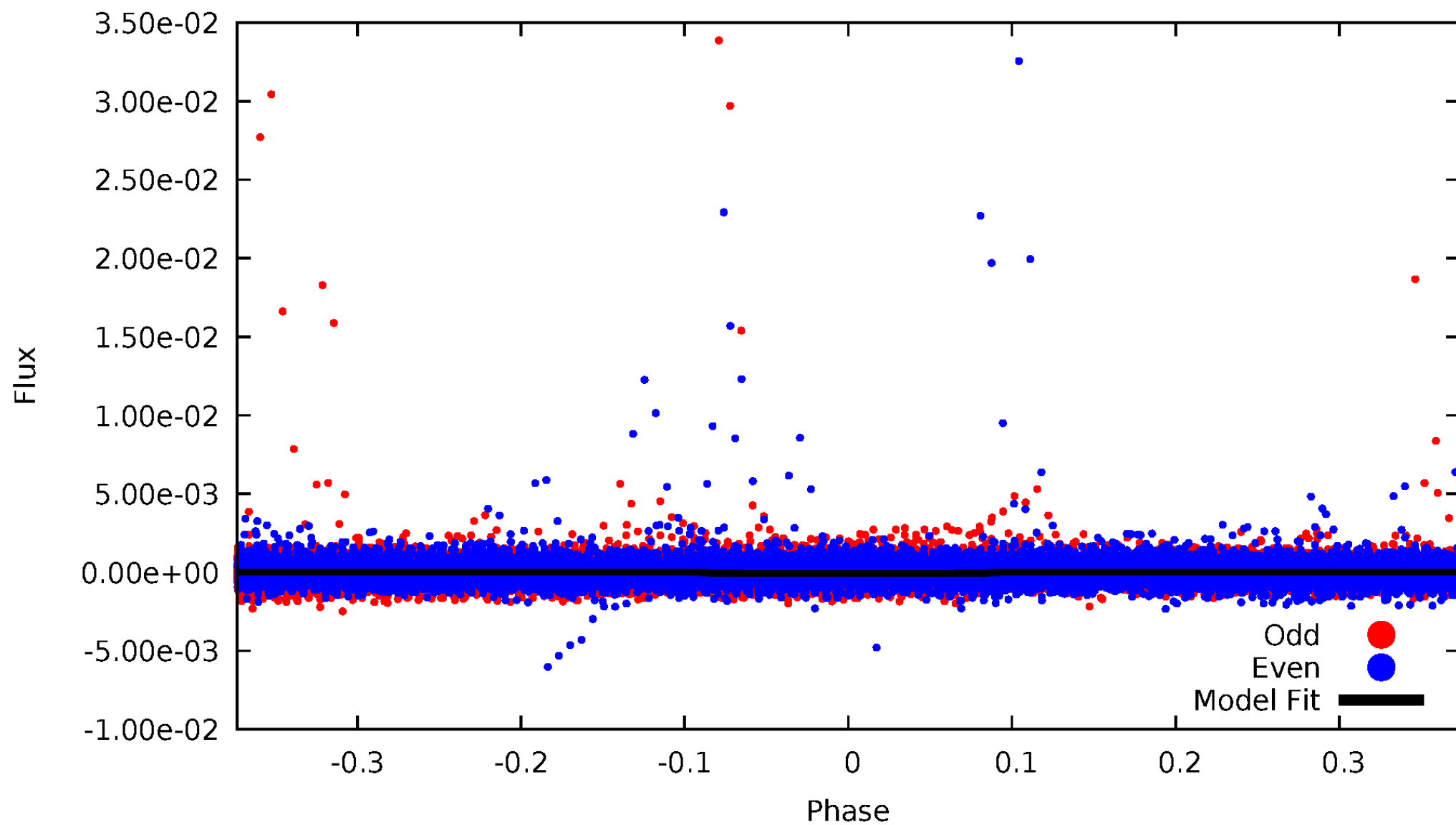


TCE 012599435-03



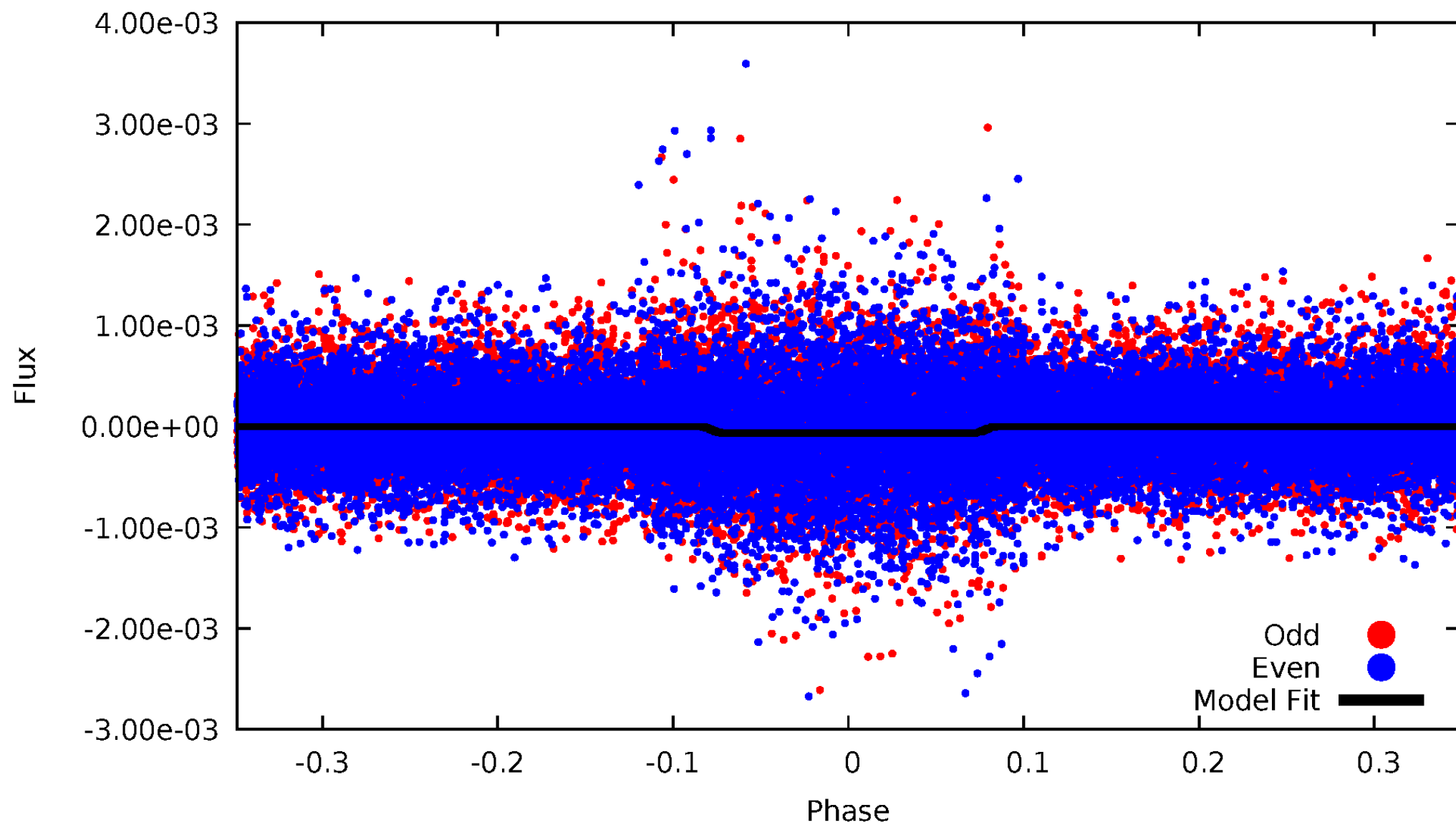
DV Odd/Even

TCE 012599435-03



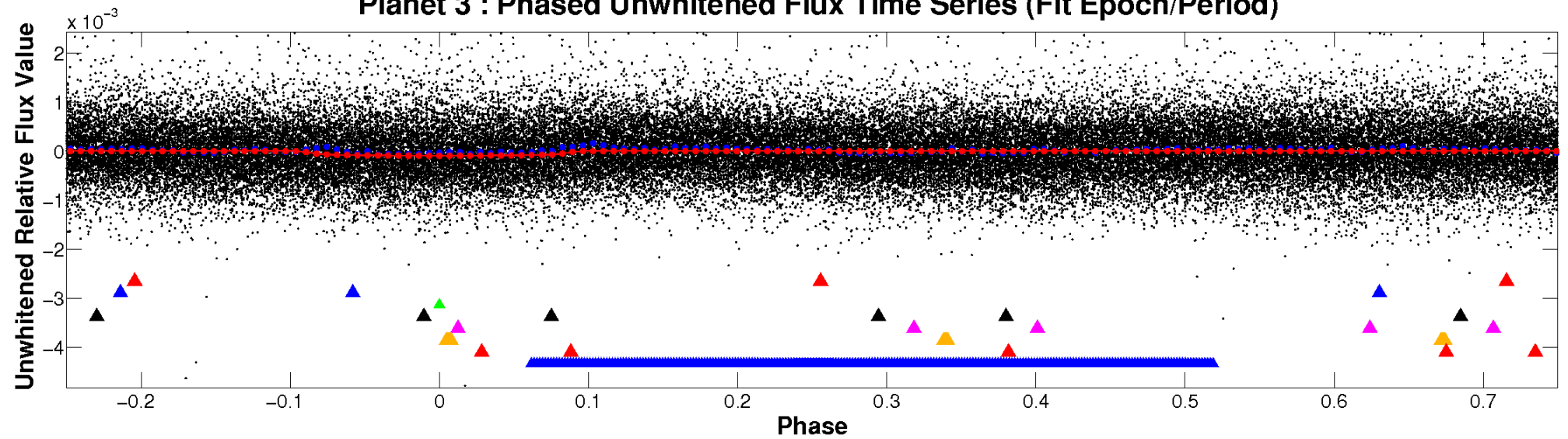
ALT Odd/Even

TCE 012599435-03

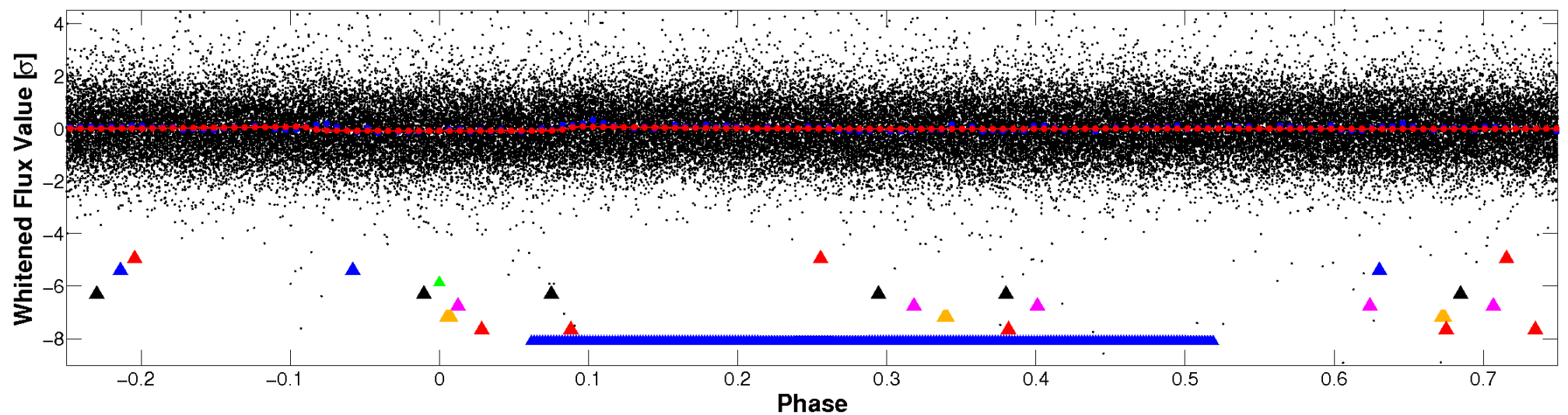


Non-Whitened Vs. Whitened Light Curve

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

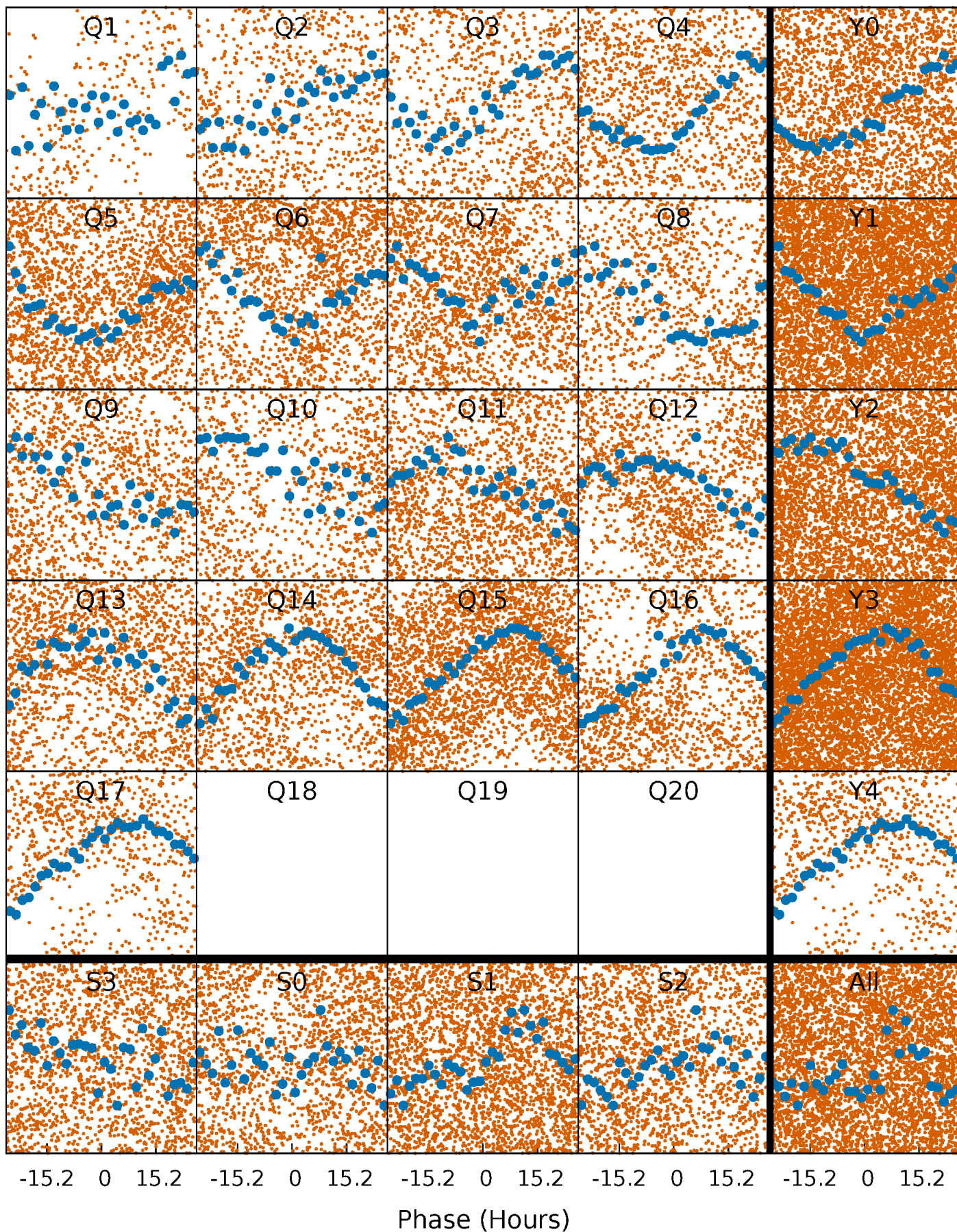


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



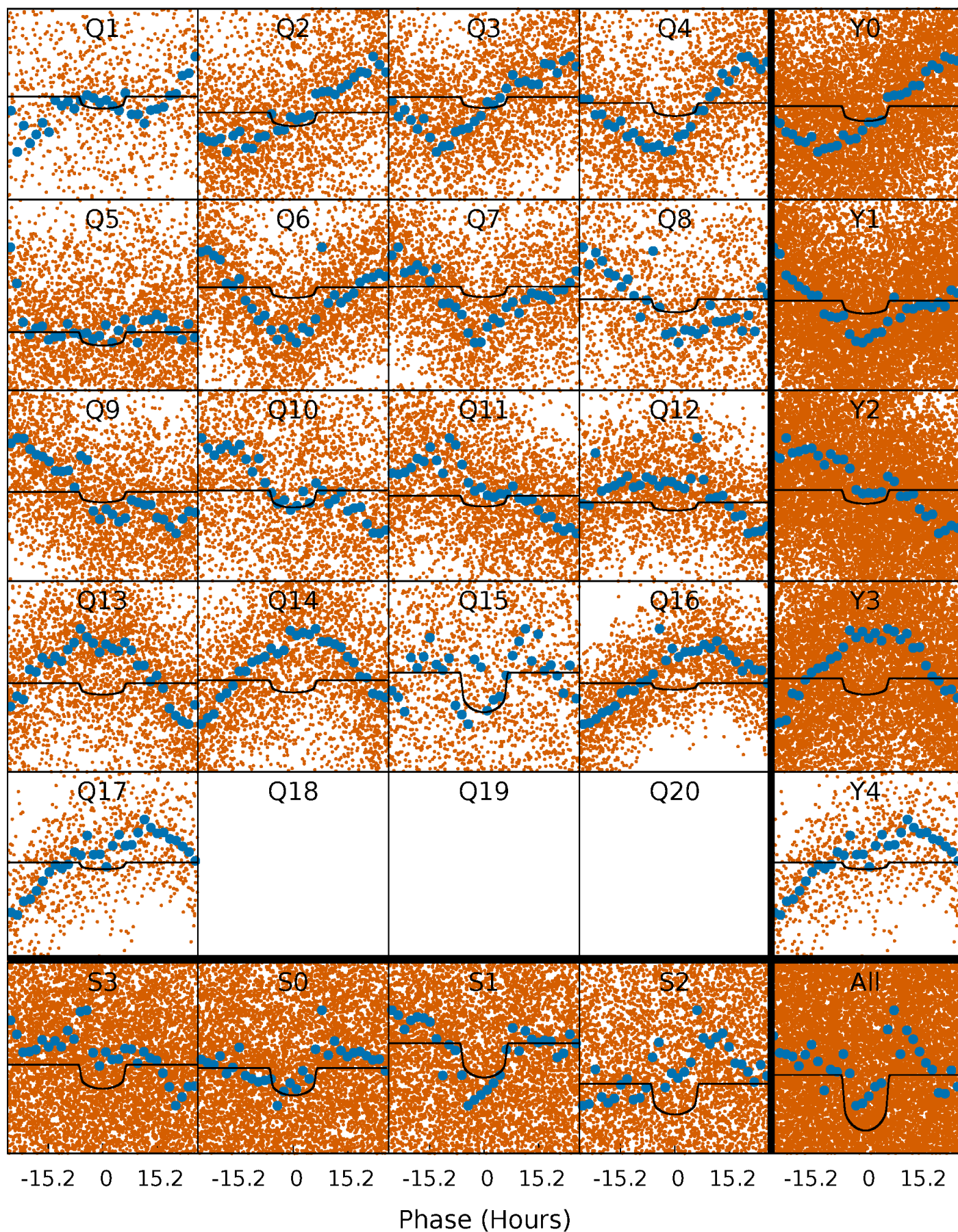
PDC Quarter-Phased Transit Curves

TCE 012599435-03 P= 2.973124 Days $T_0=133.812648$ (BKJD)



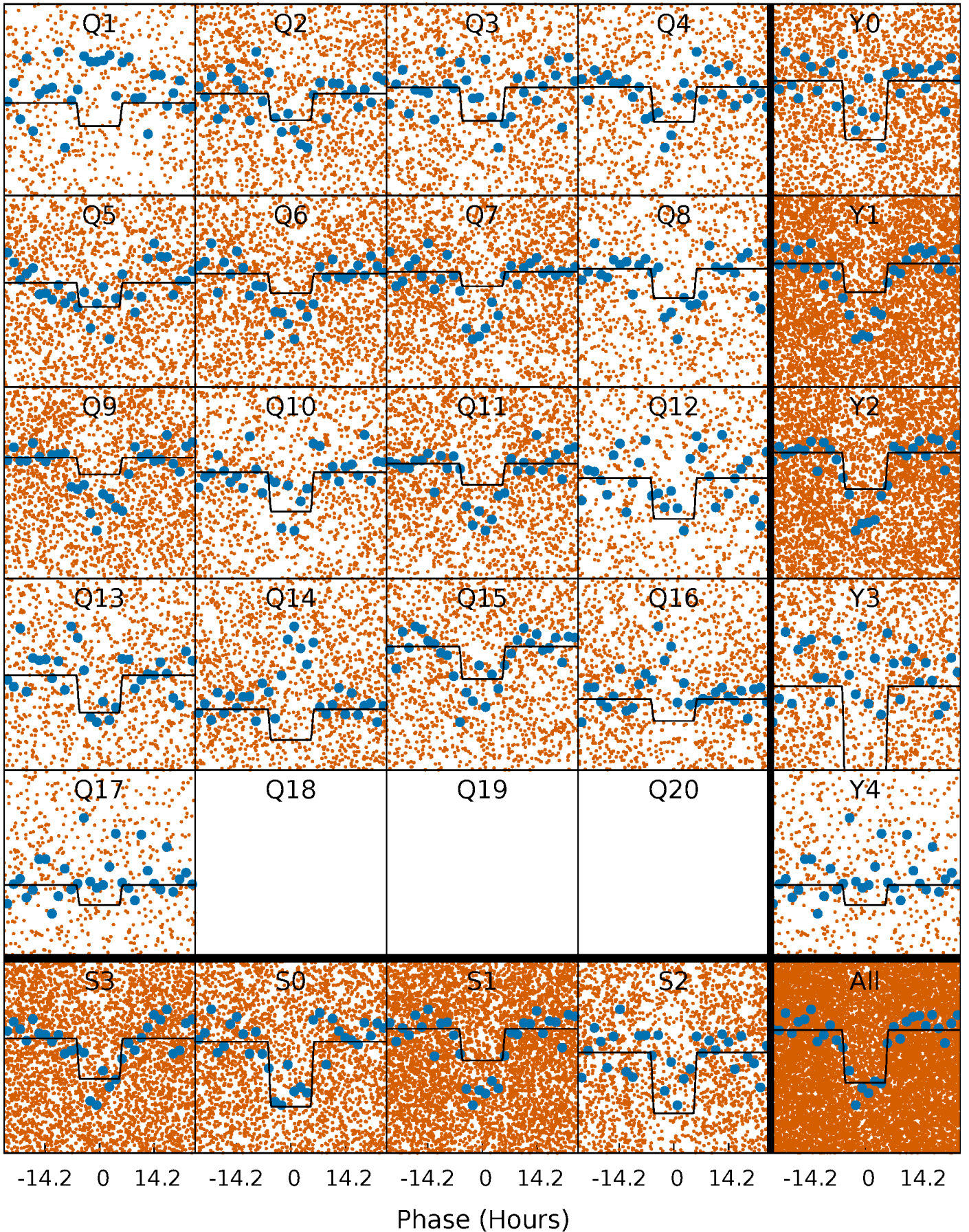
DV Quarter-Phased Transit Curves

TCE 012599435-03 P= 2.973124 Days $T_0=133.812648$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

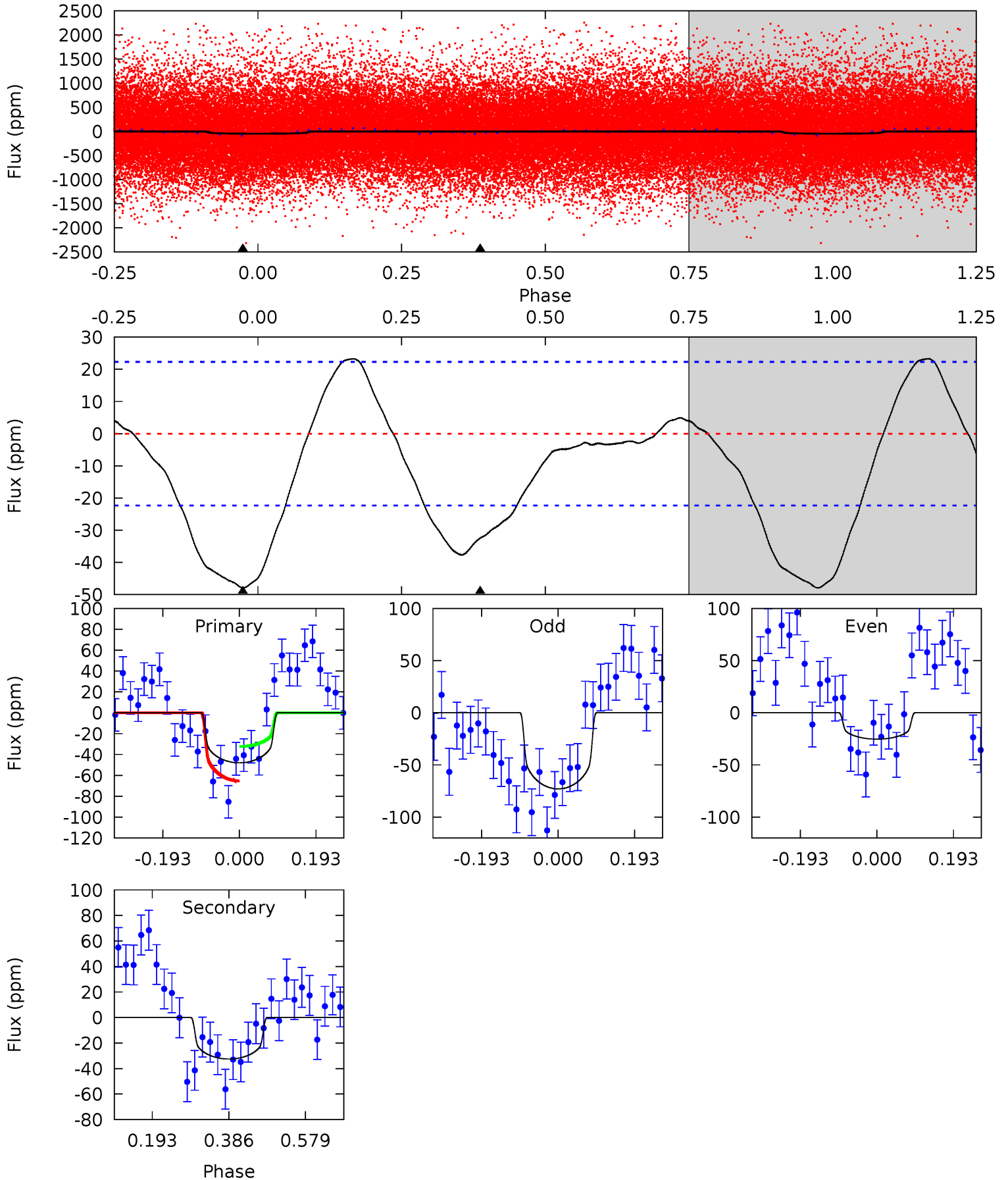
TCE 012599435-03 P= 2.973176 Days $T_0=133.808668$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-03, P = 2.973124 Days, E = 130.839524 Days

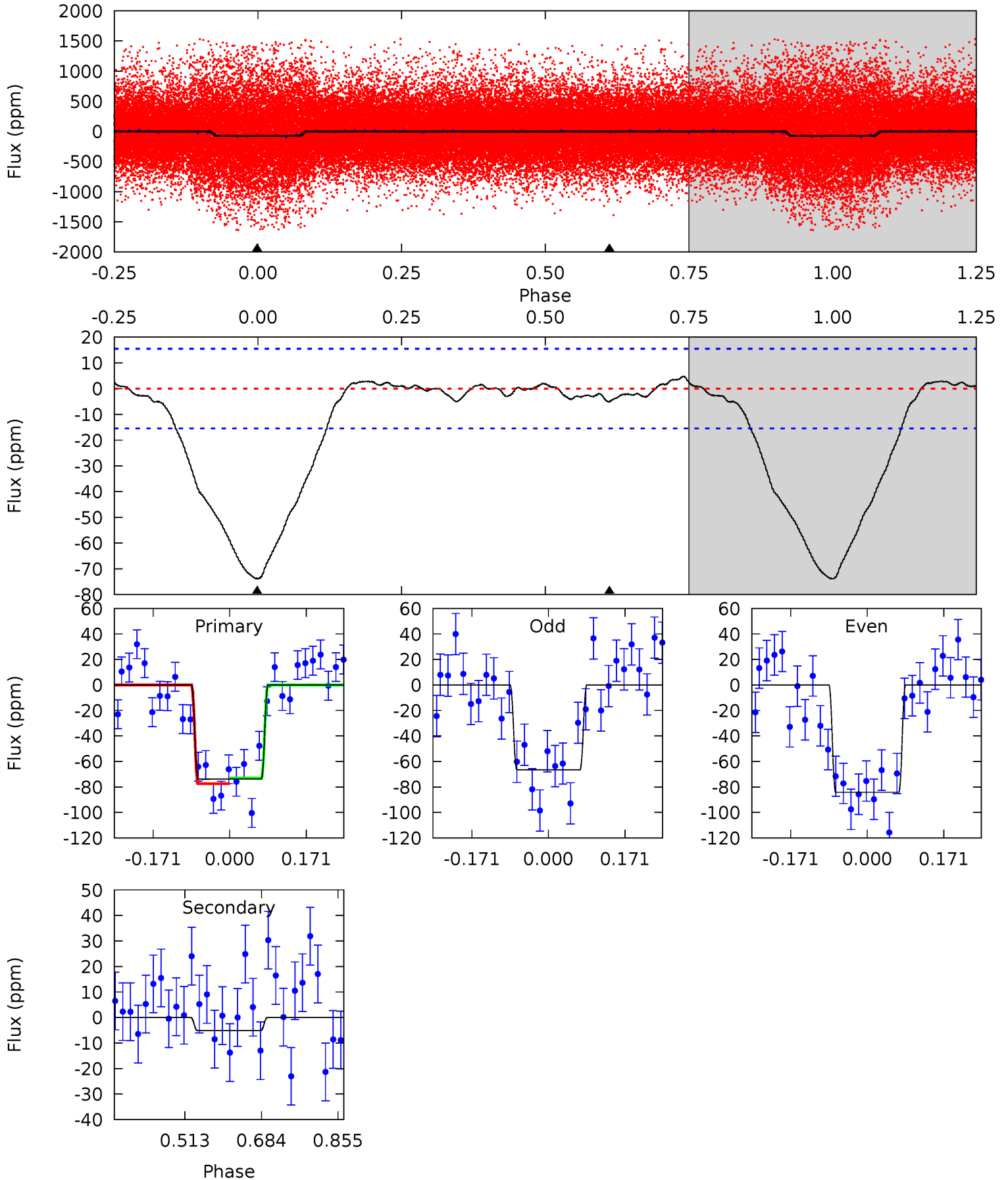
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	6.45	0	0	4.42	1.30	1.45	9.51	9.51	6.45	6.45	5.01	0.11	0.33	3.37



Alt Model-Shift Uniqueness Test

012599435-03, P = 2.973176 Days, E = 130.835492 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	1.48	0	0	4.45	1.37	0.64	21.3	21.3	1.48	1.48	2.56	1.07	0.06	0.63



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 5	$0.85^{+0.11}_{-0.11}$	1333^{+47}_{-47}	3807^{+234}_{-183}	32^{+12}_{-8}
Alt.	-5 ± 3	$0.62^{+0.11}_{-0.11}$	1328^{+46}_{-49}	3088^{+364}_{-446}	$8.852^{+8.744}_{-5.778}$

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

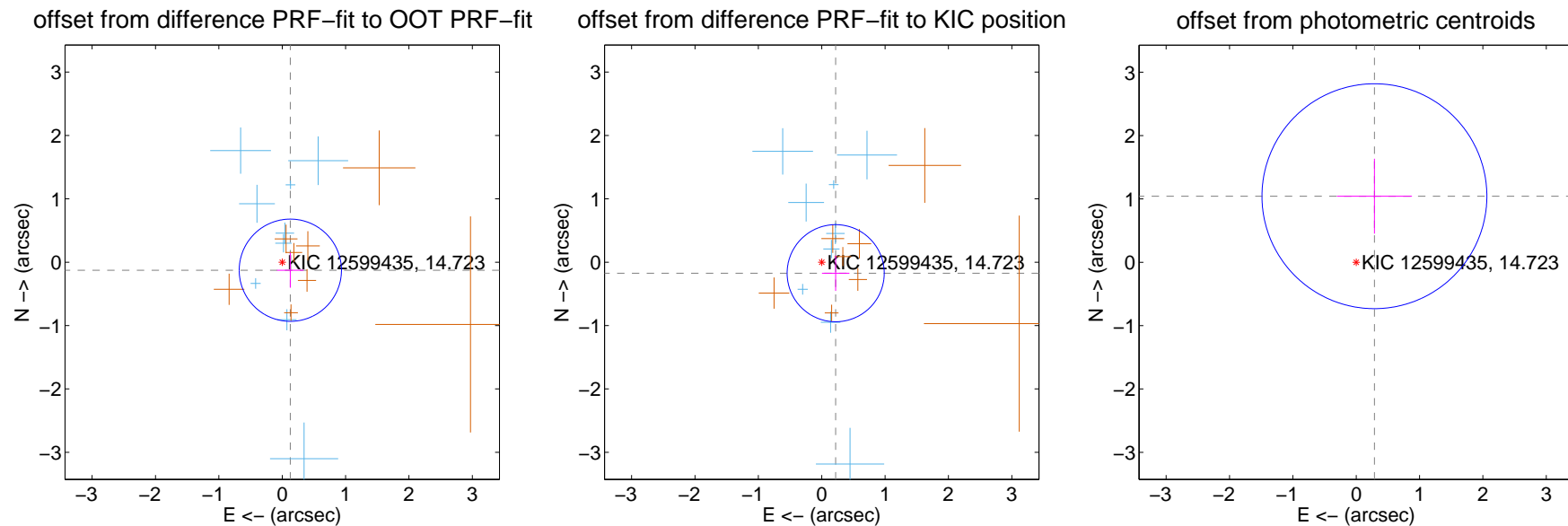
DV Centroid Data

Supplemental centroid analysis for 012599435-03. Kepler magnitude: 14.72. Transit SNR 9.43

There are 9 quarters with good PRF difference image offsets

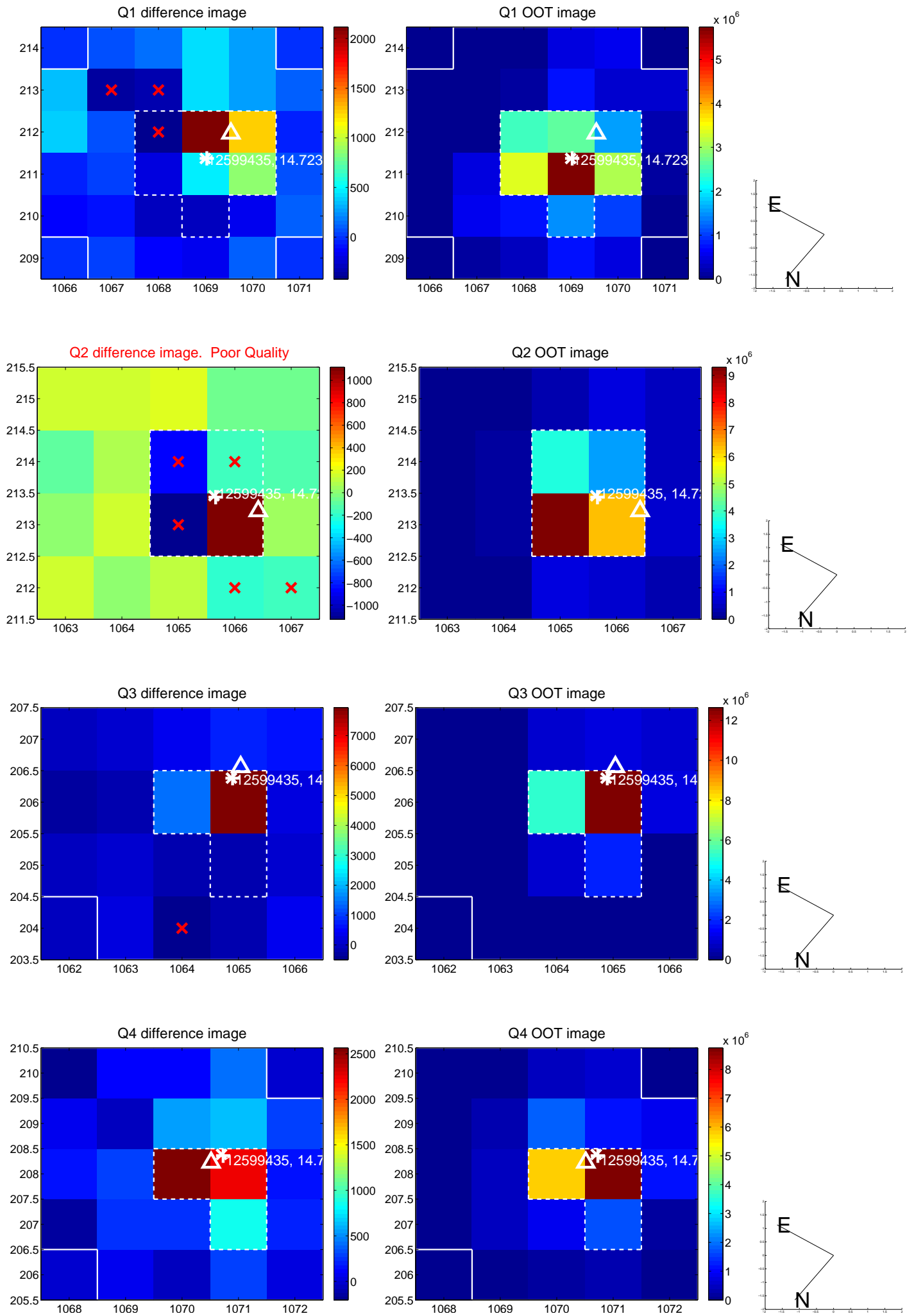
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.180 ± 0.269	0.67	-0.128 ± 0.211	-0.127 ± 0.277
PRF-fit source offset from KIC position	0.281 ± 0.255	1.10	-0.220 ± 0.216	-0.174 ± 0.281
photometric centroid source offset	1.08 ± 0.59	1.83	-0.29 ± 0.59	1.04 ± 0.59

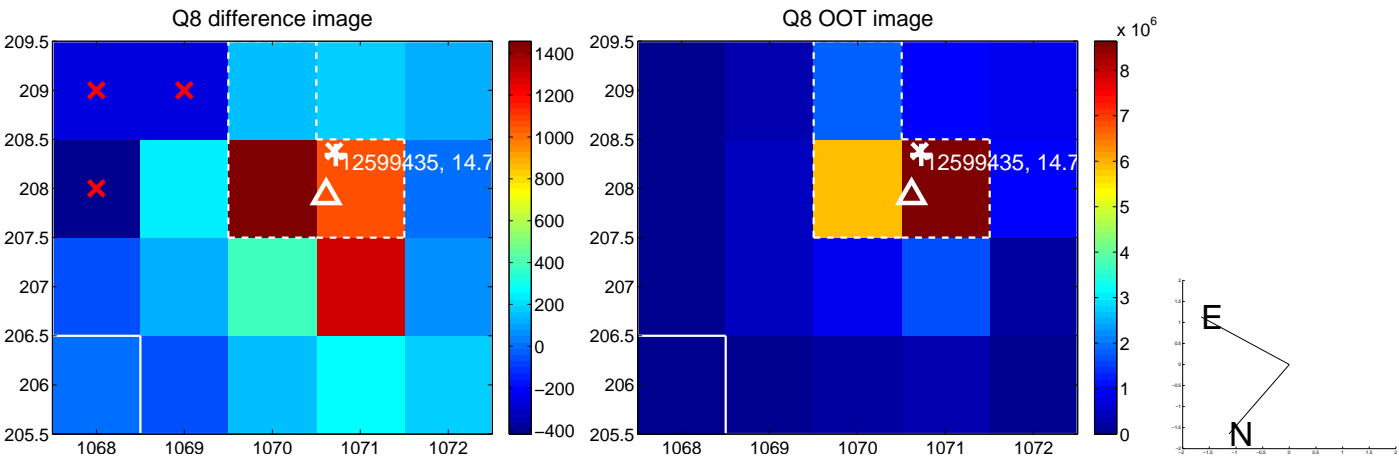
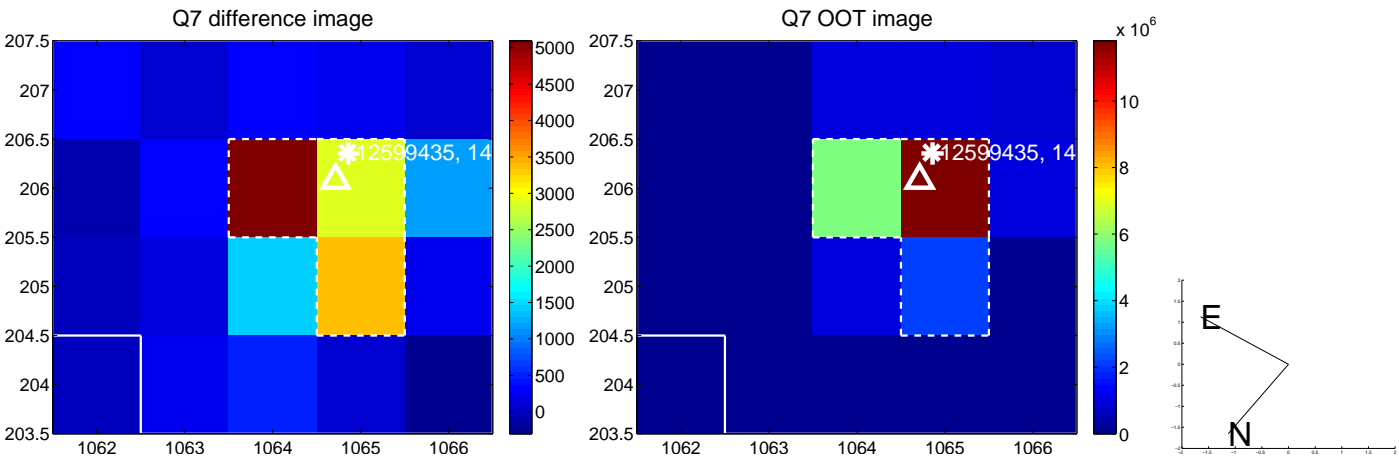
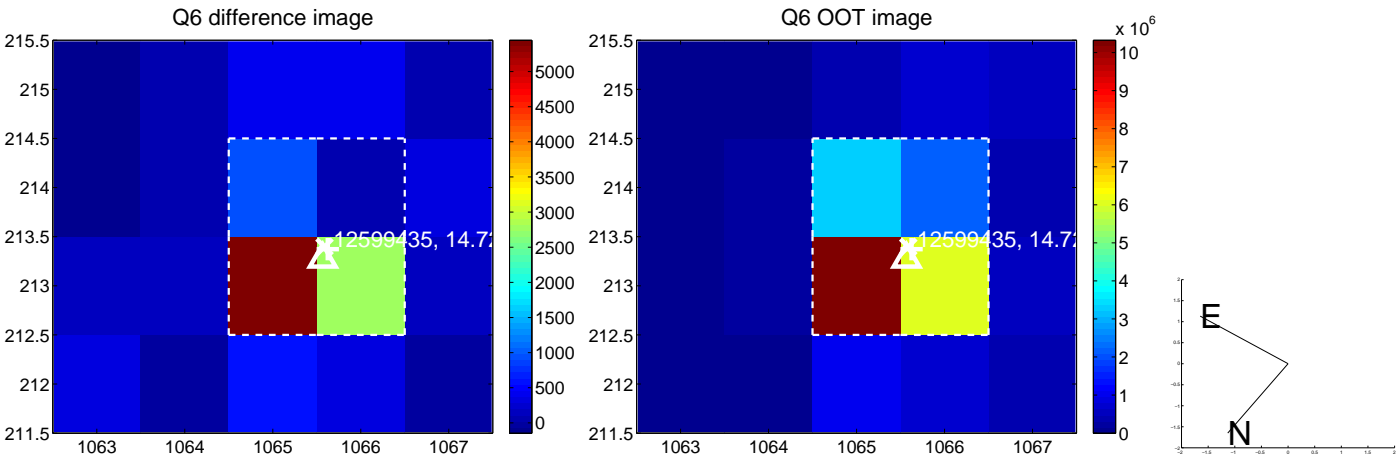
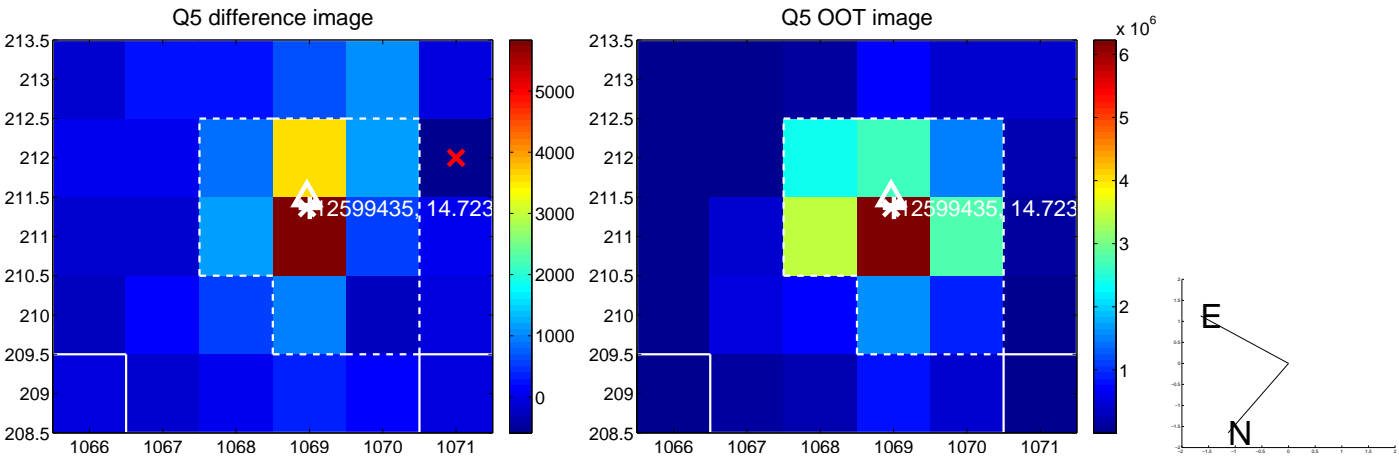


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

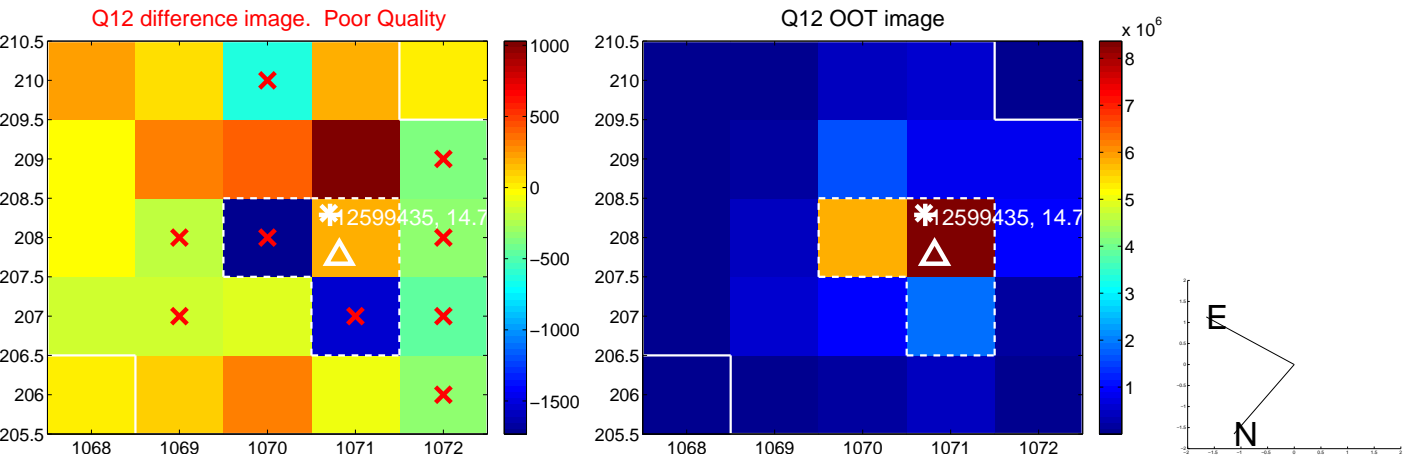
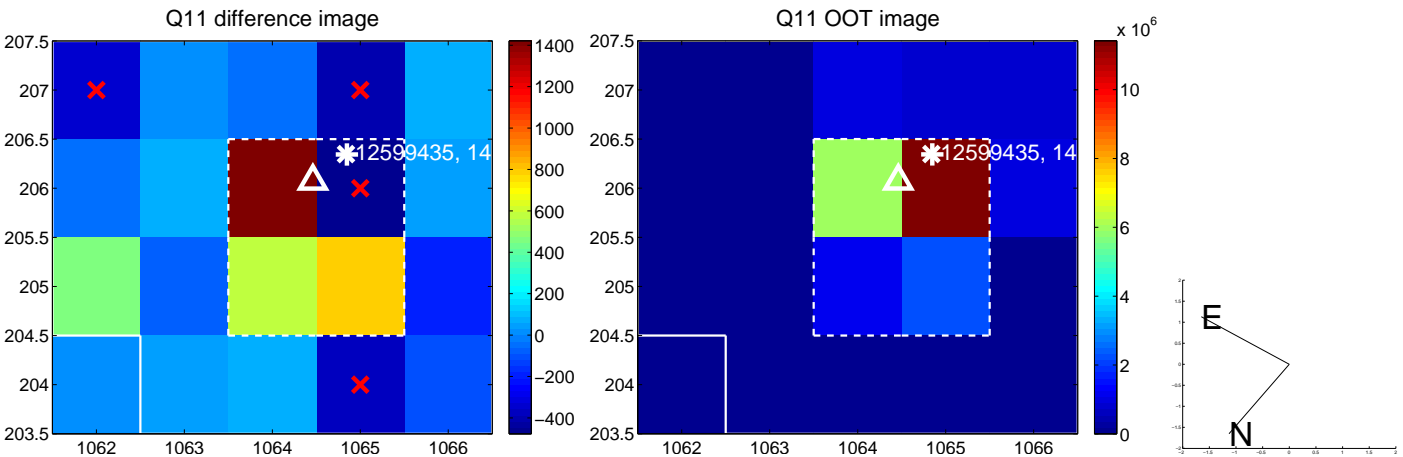
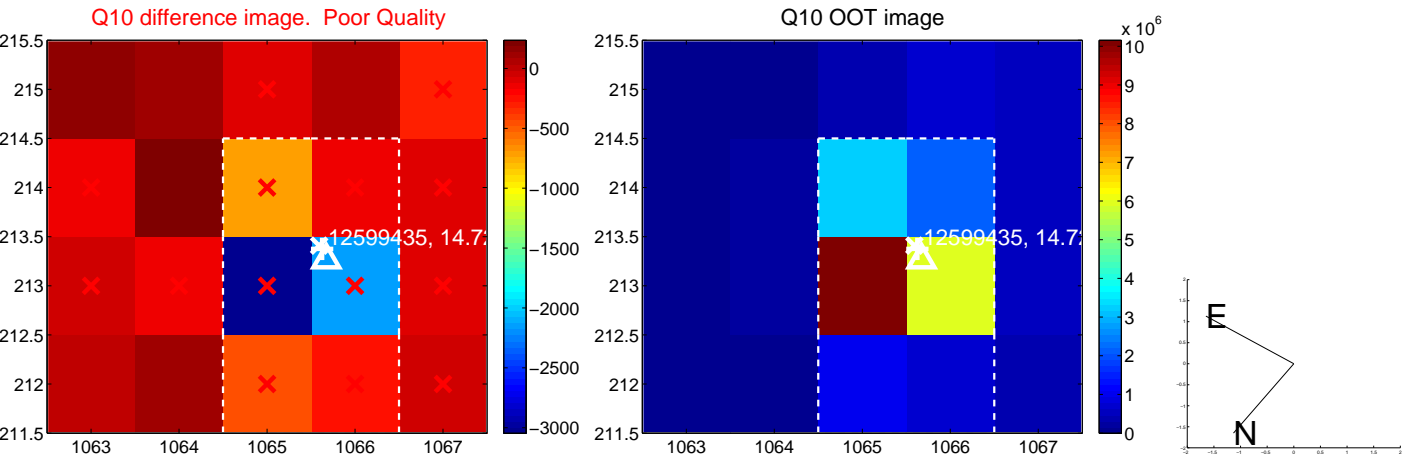
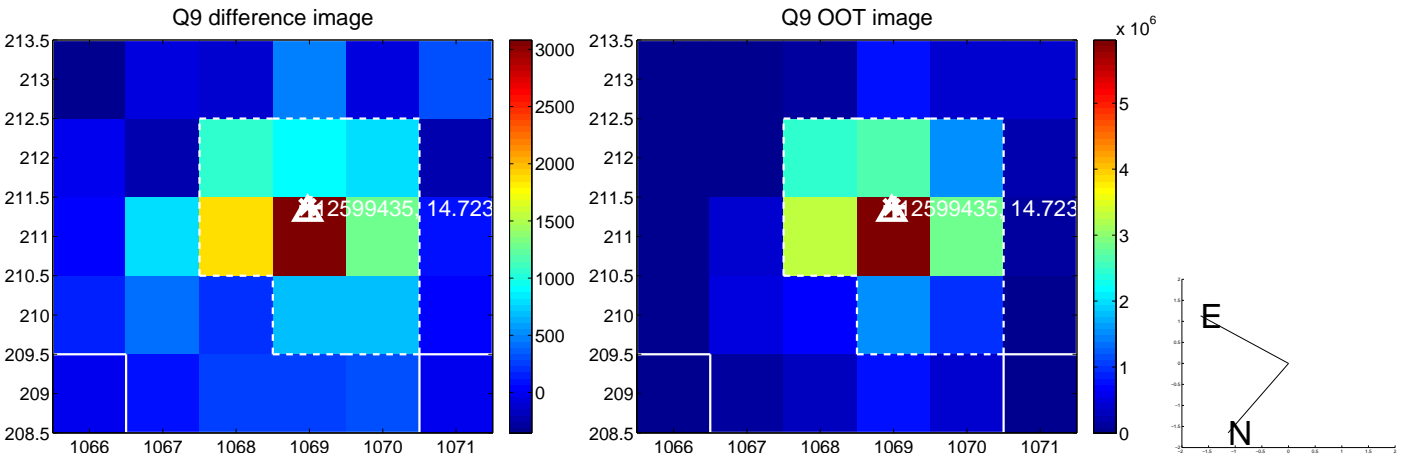
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



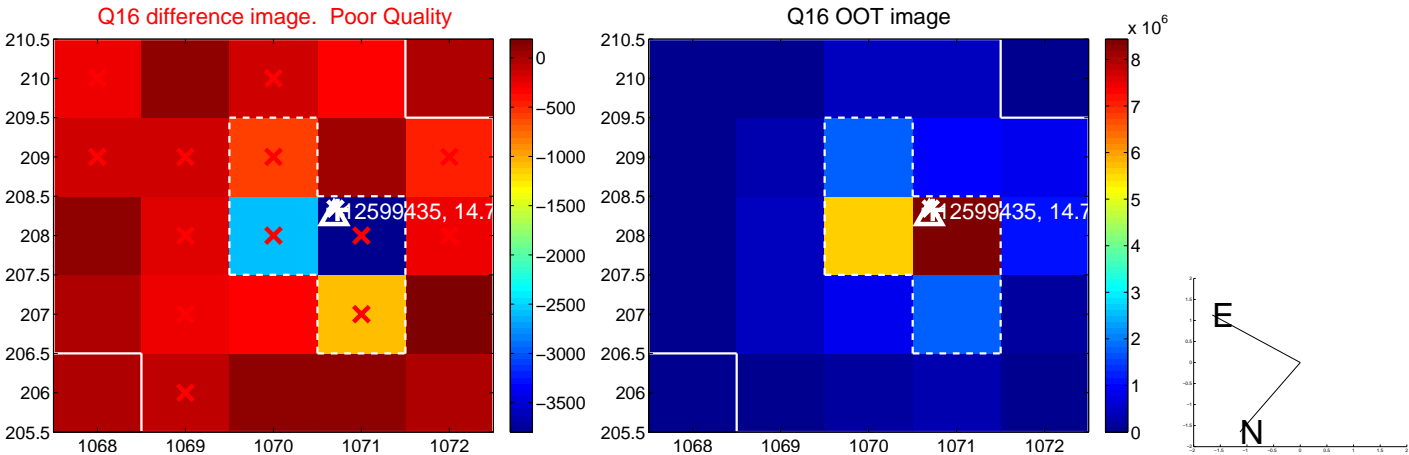
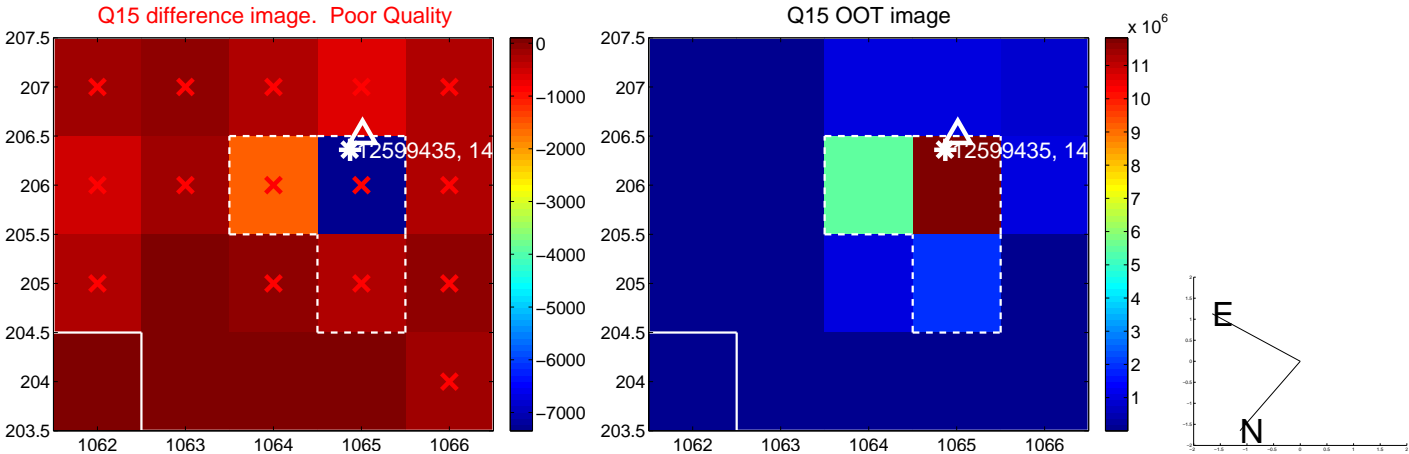
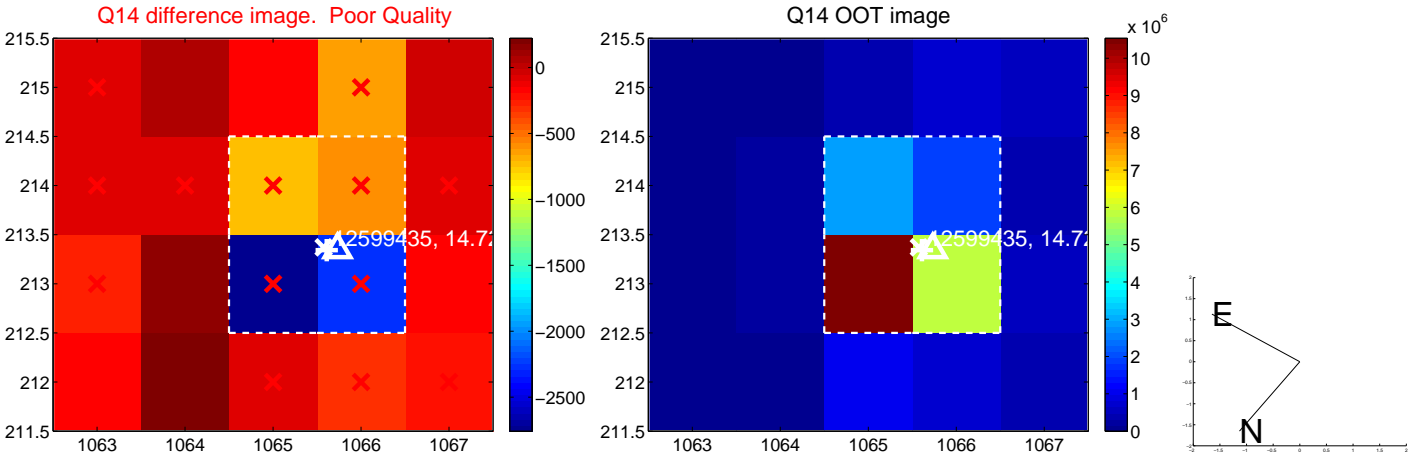
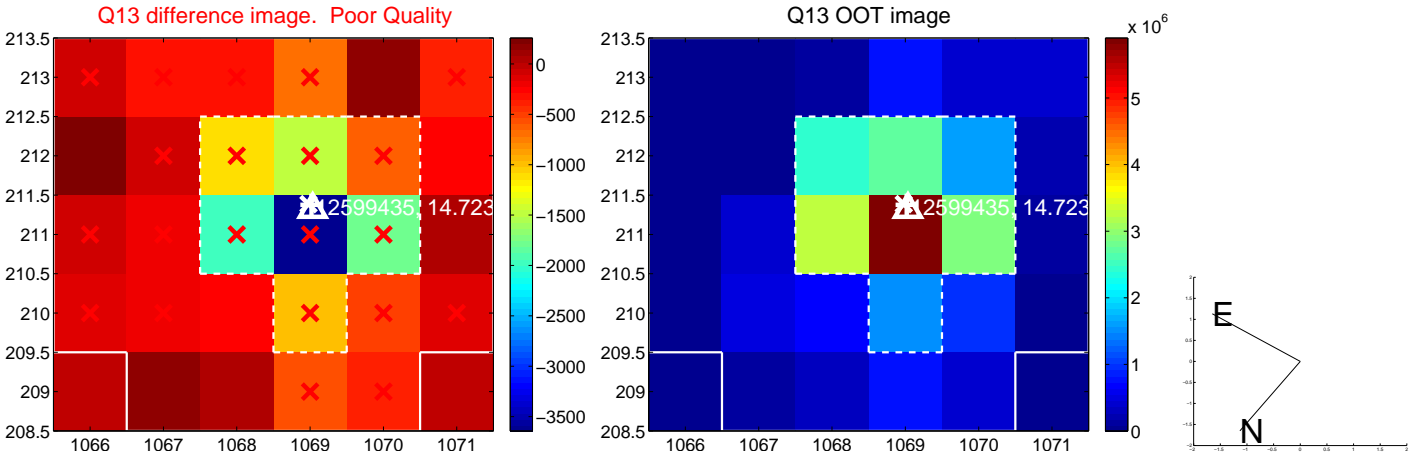
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



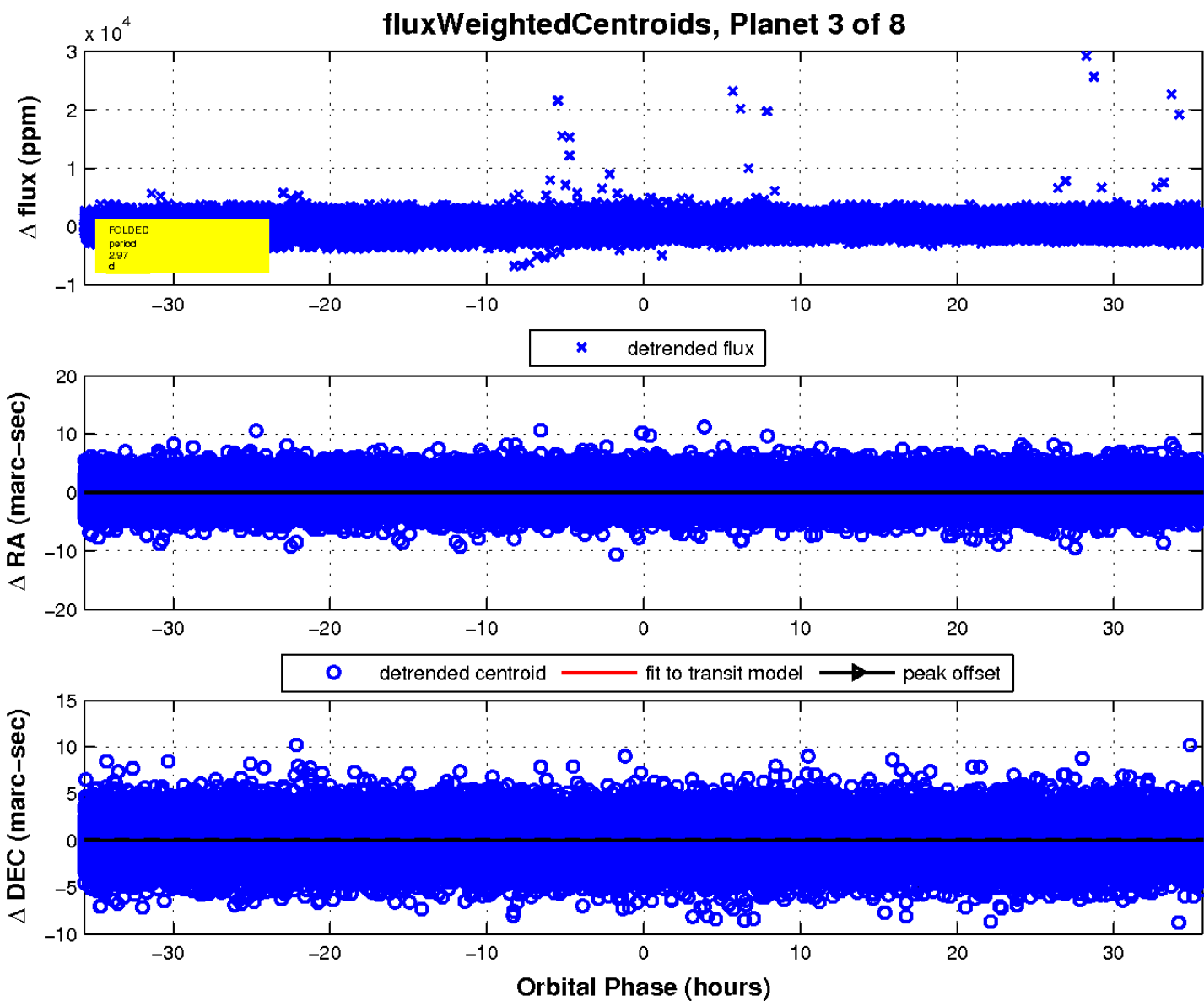
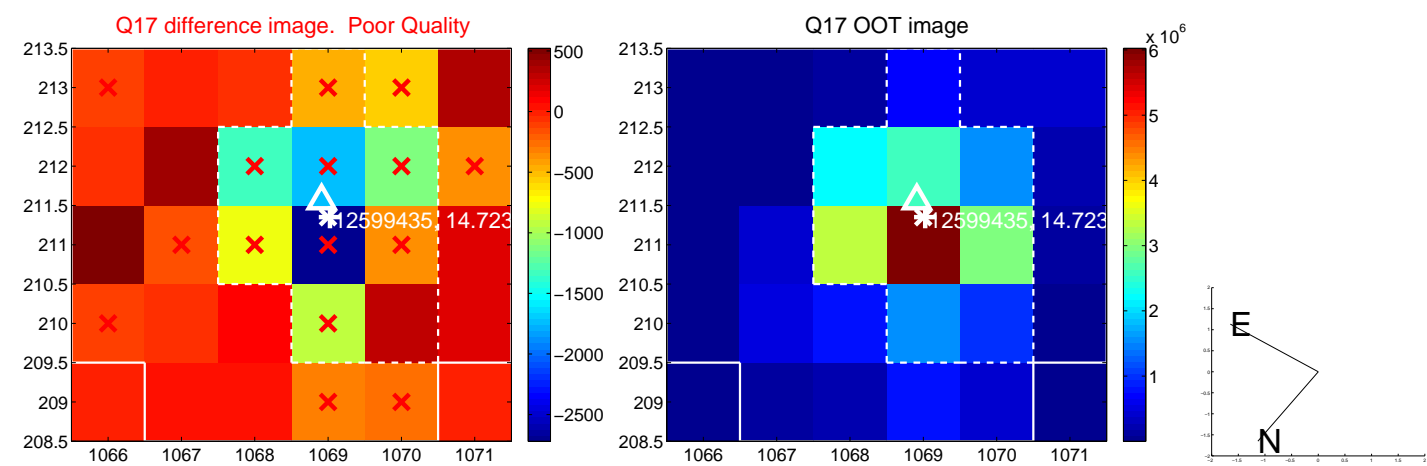
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

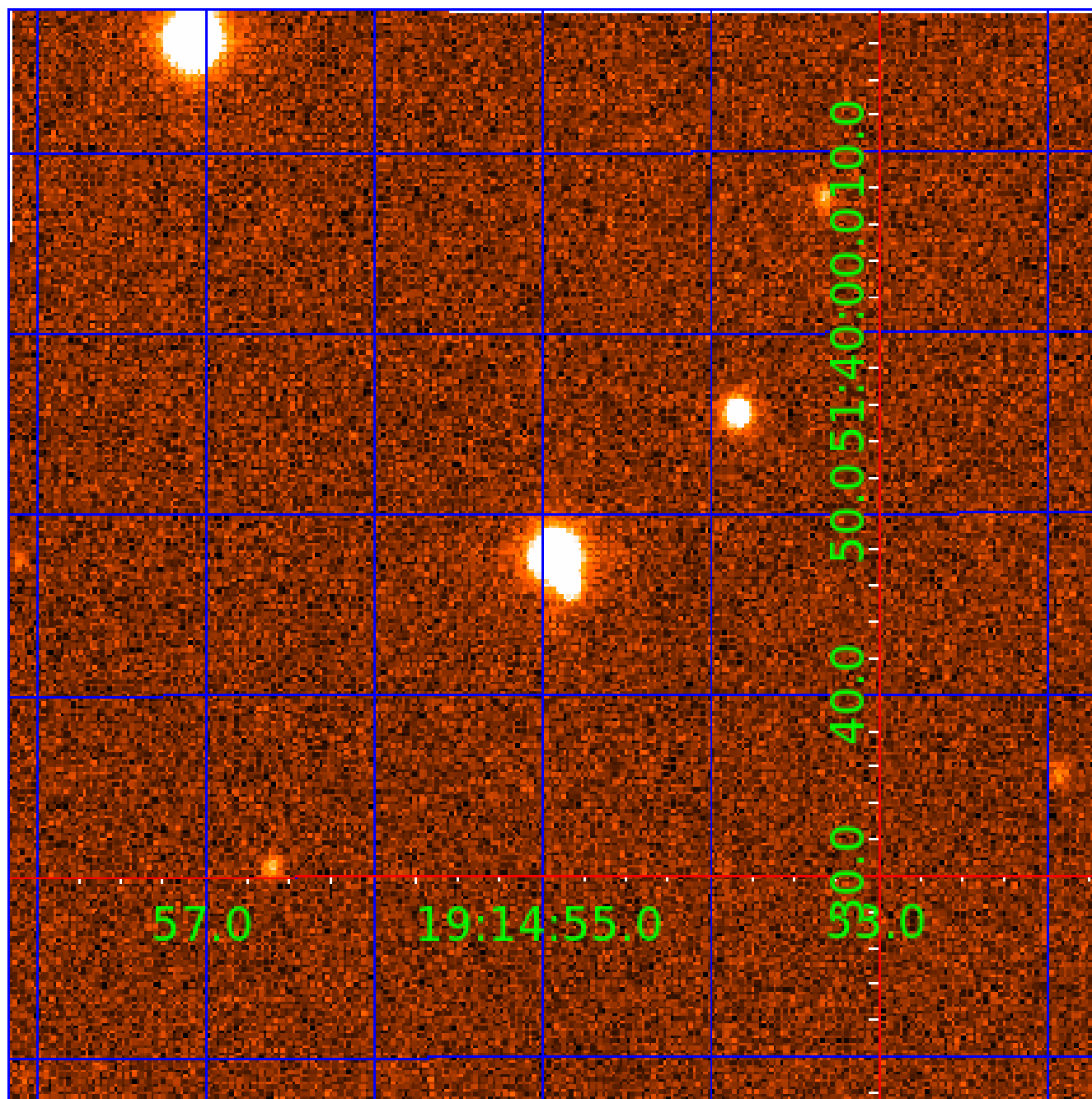


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

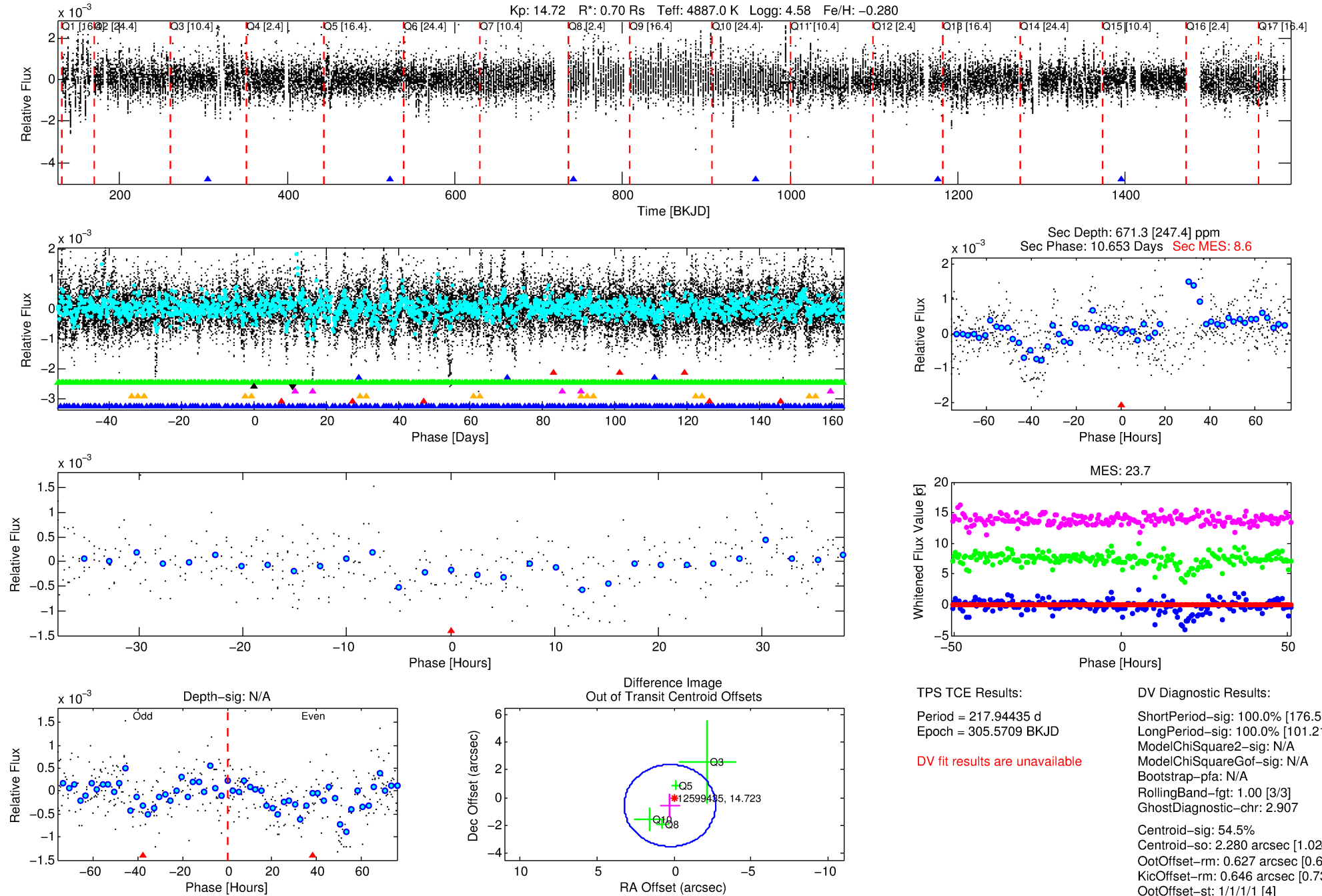
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-04

No Significant Match Found

DV One-Page Summary

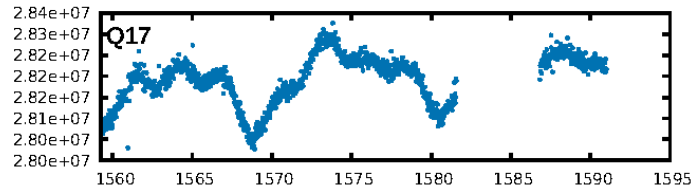
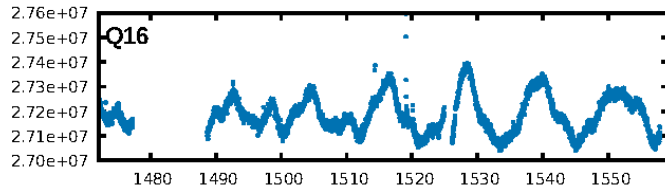
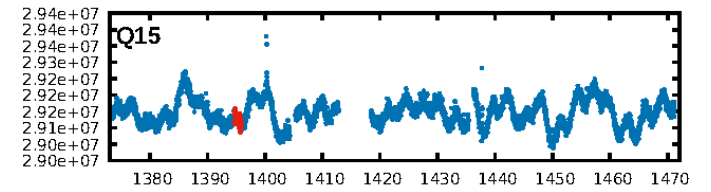
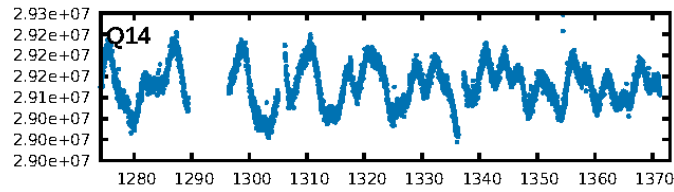
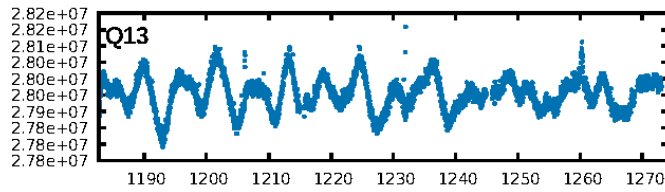
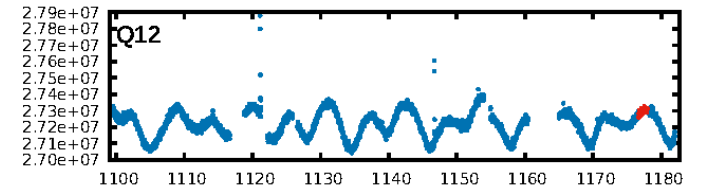
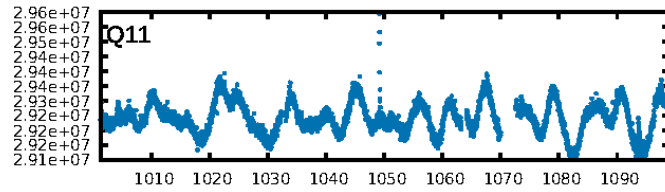
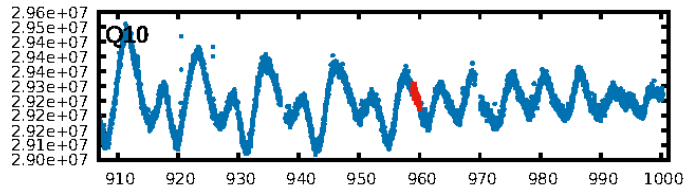
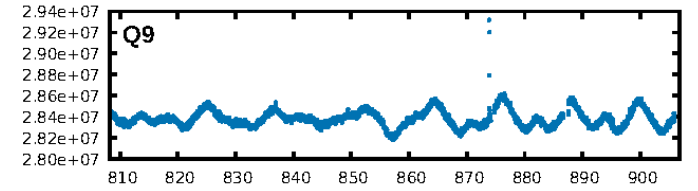
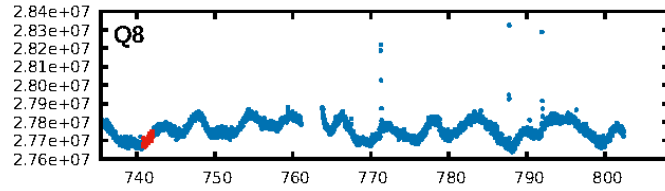
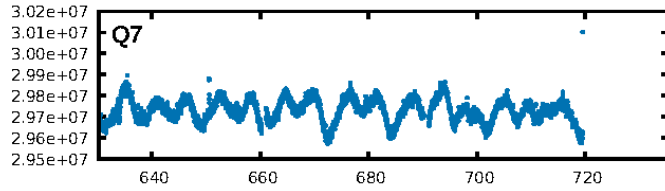
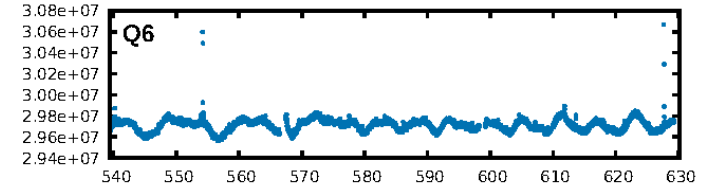
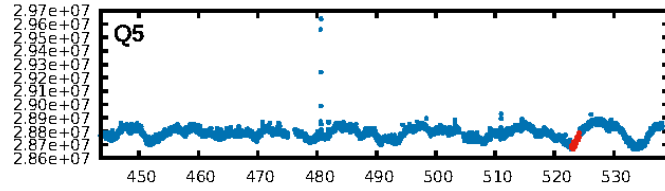
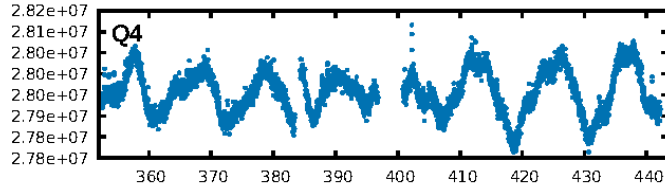
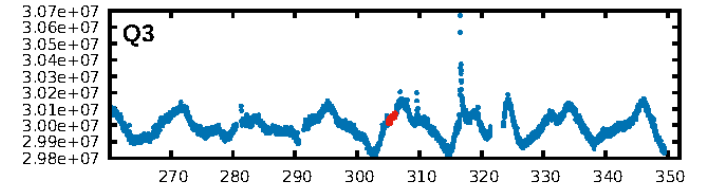
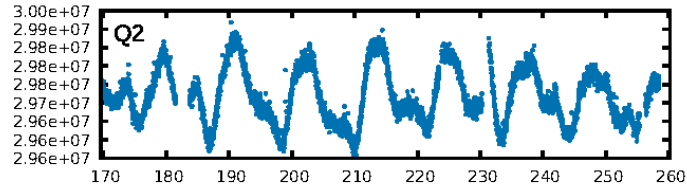
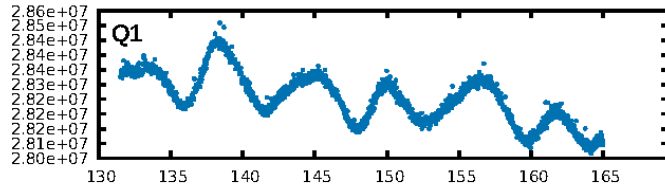
KIC: 12599435 Candidate: 4 of 8 Period: 217.944 d



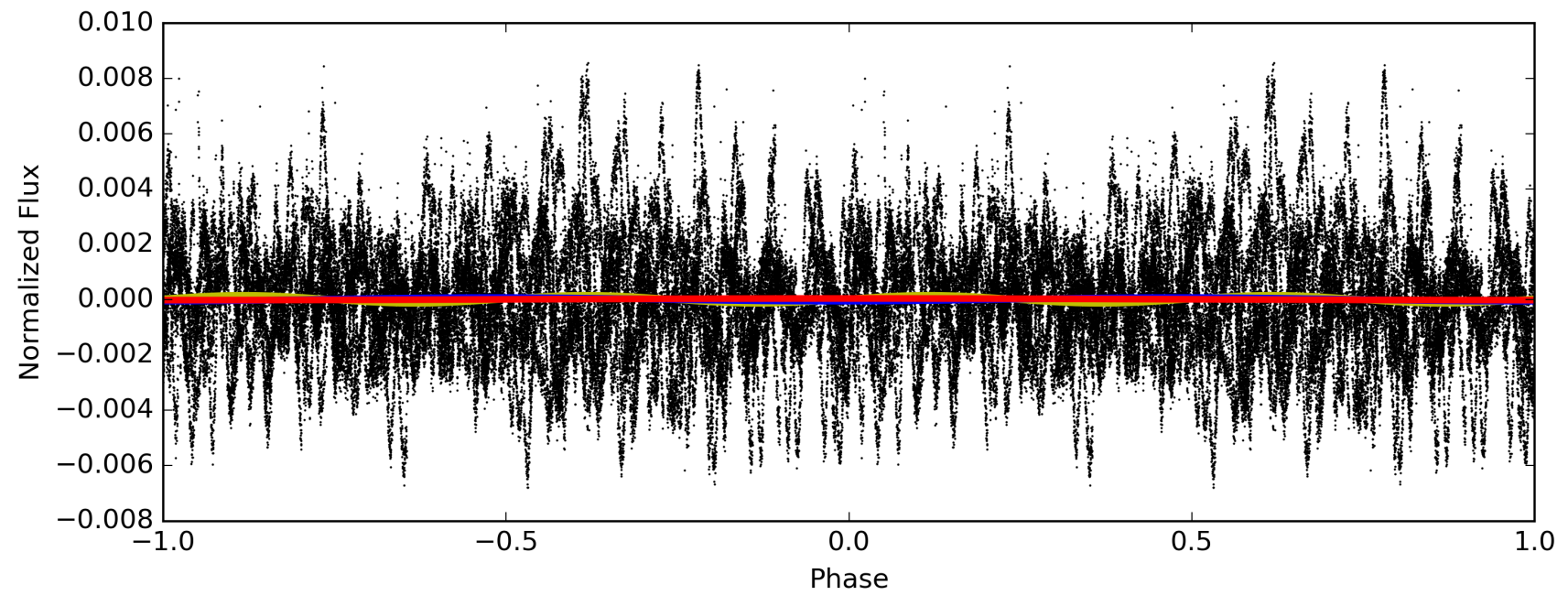
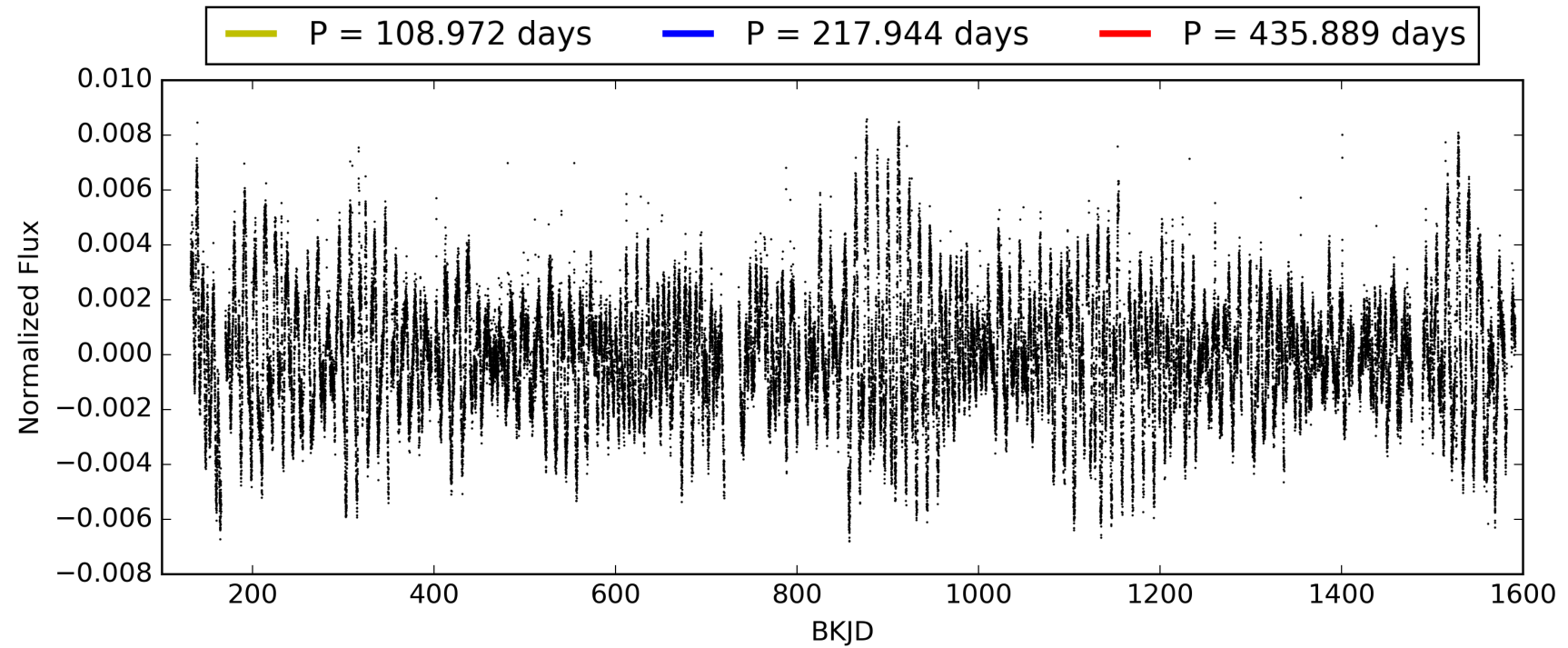
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:16 Z

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

TCE 012599435-04, PDC Light Curves

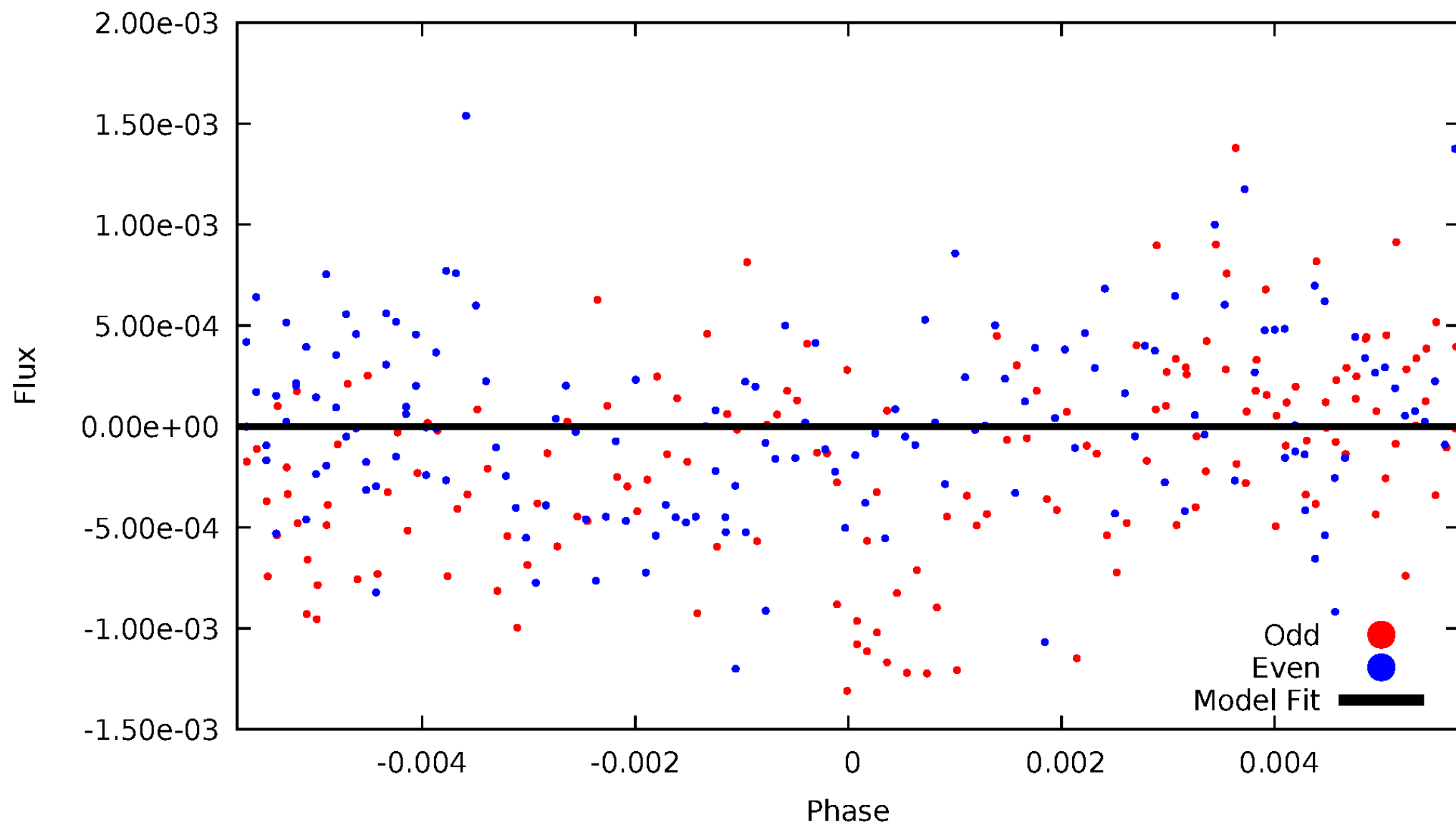


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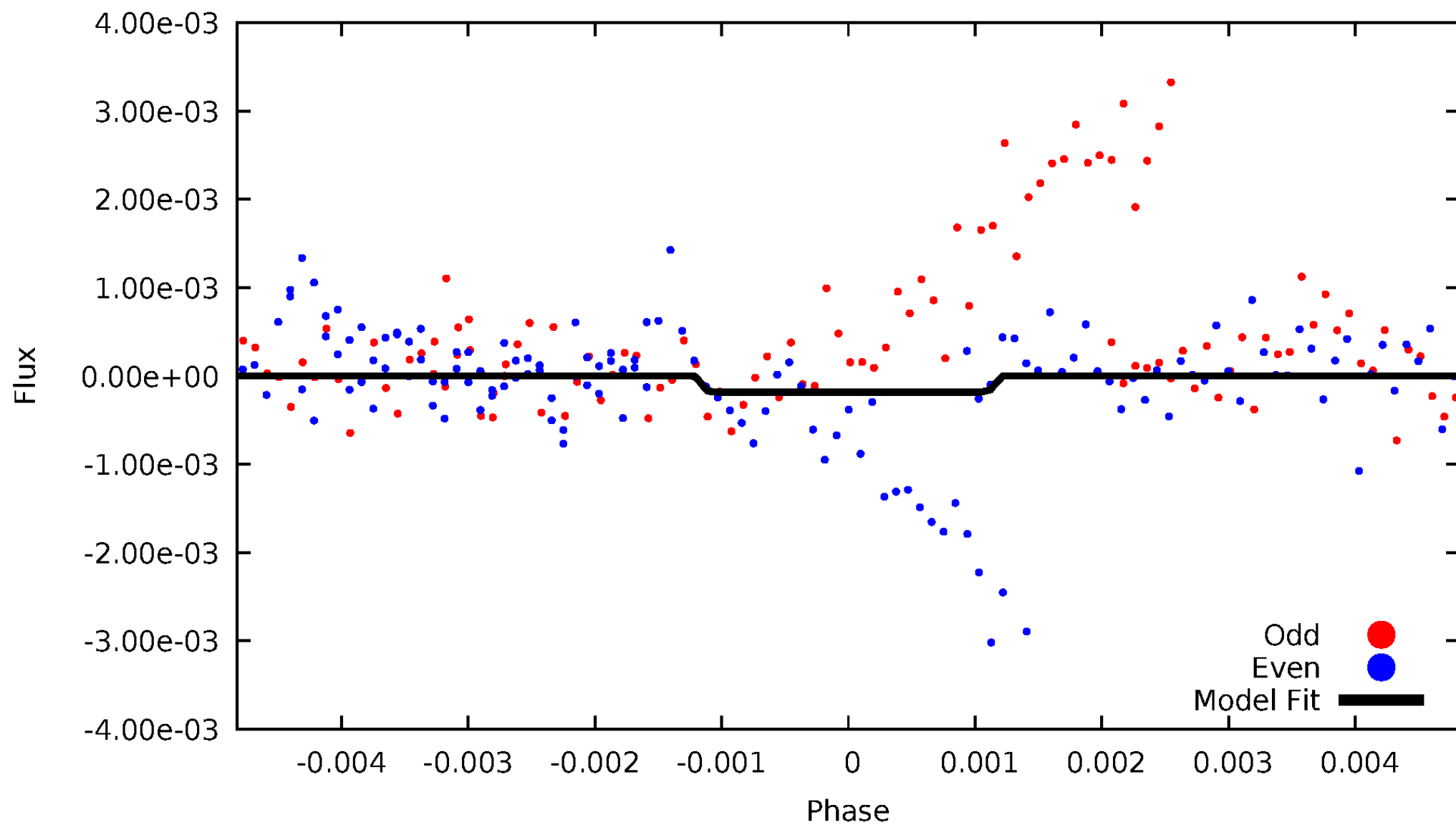
DV Odd/Even

TCE 012599435-04



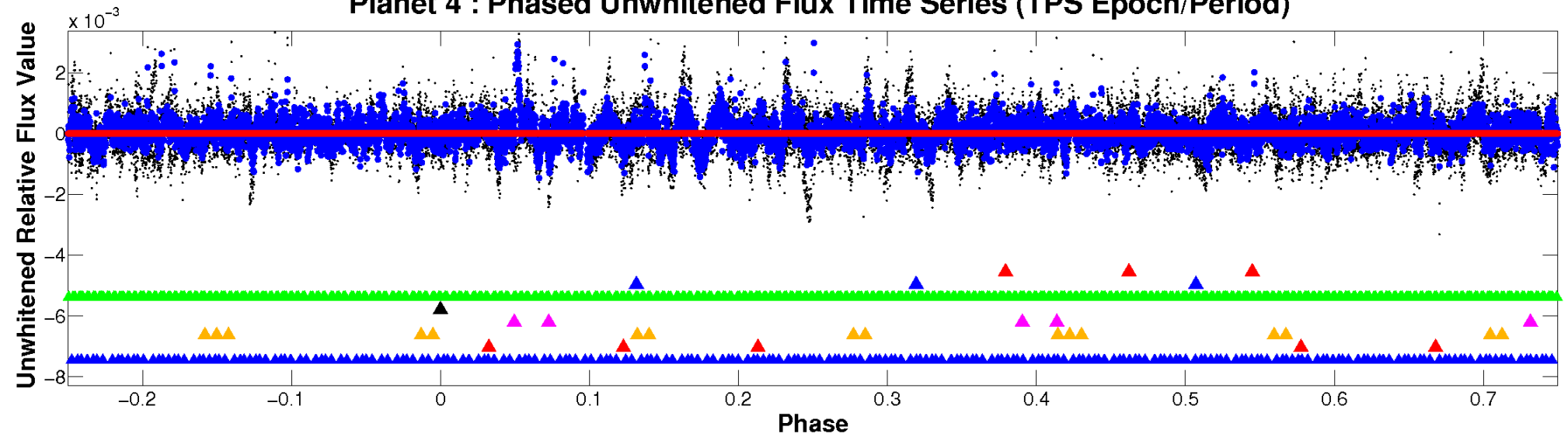
ALT Odd/Even

TCE 012599435-04



Non-Whitened Vs. Whitened Light Curve

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

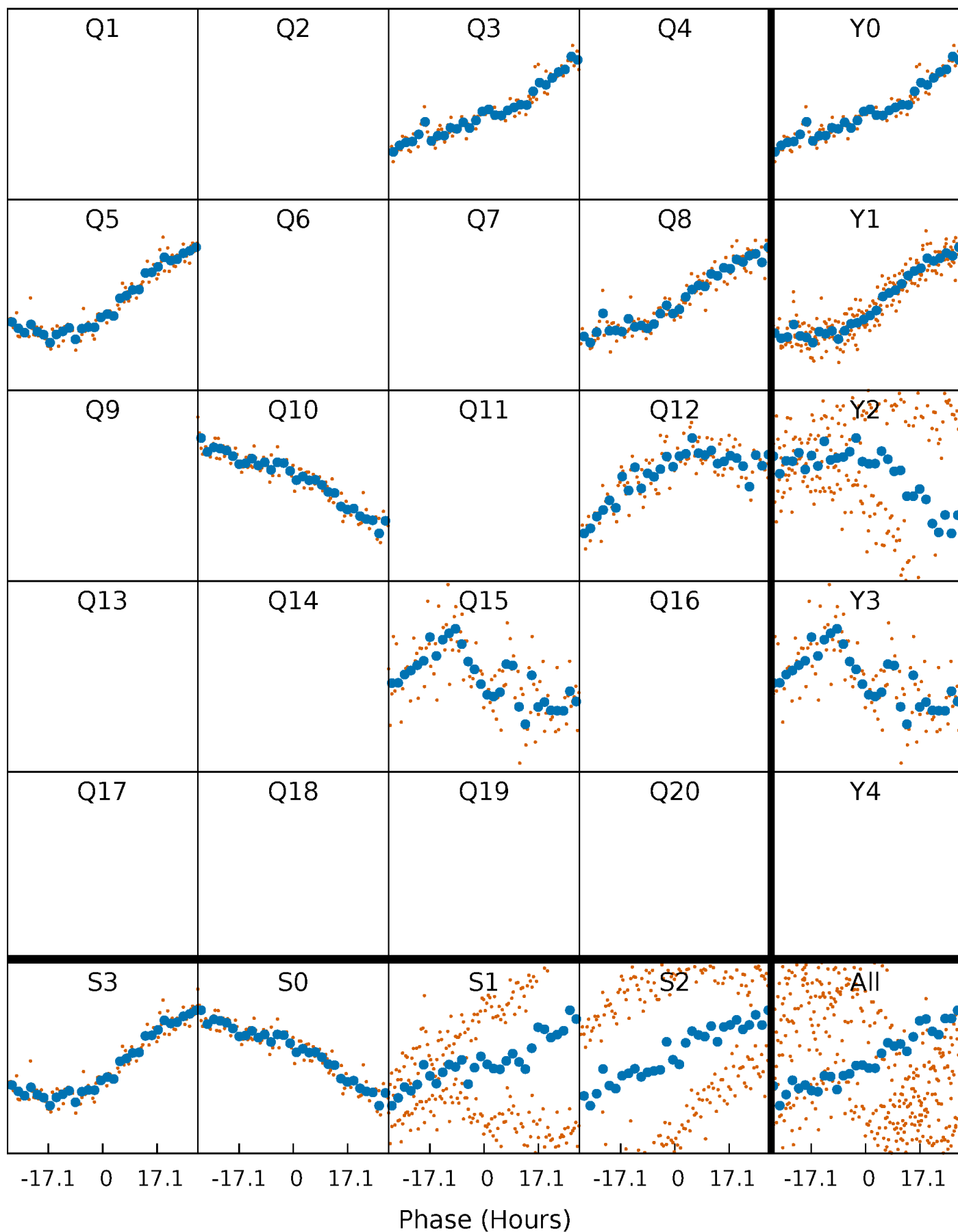


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



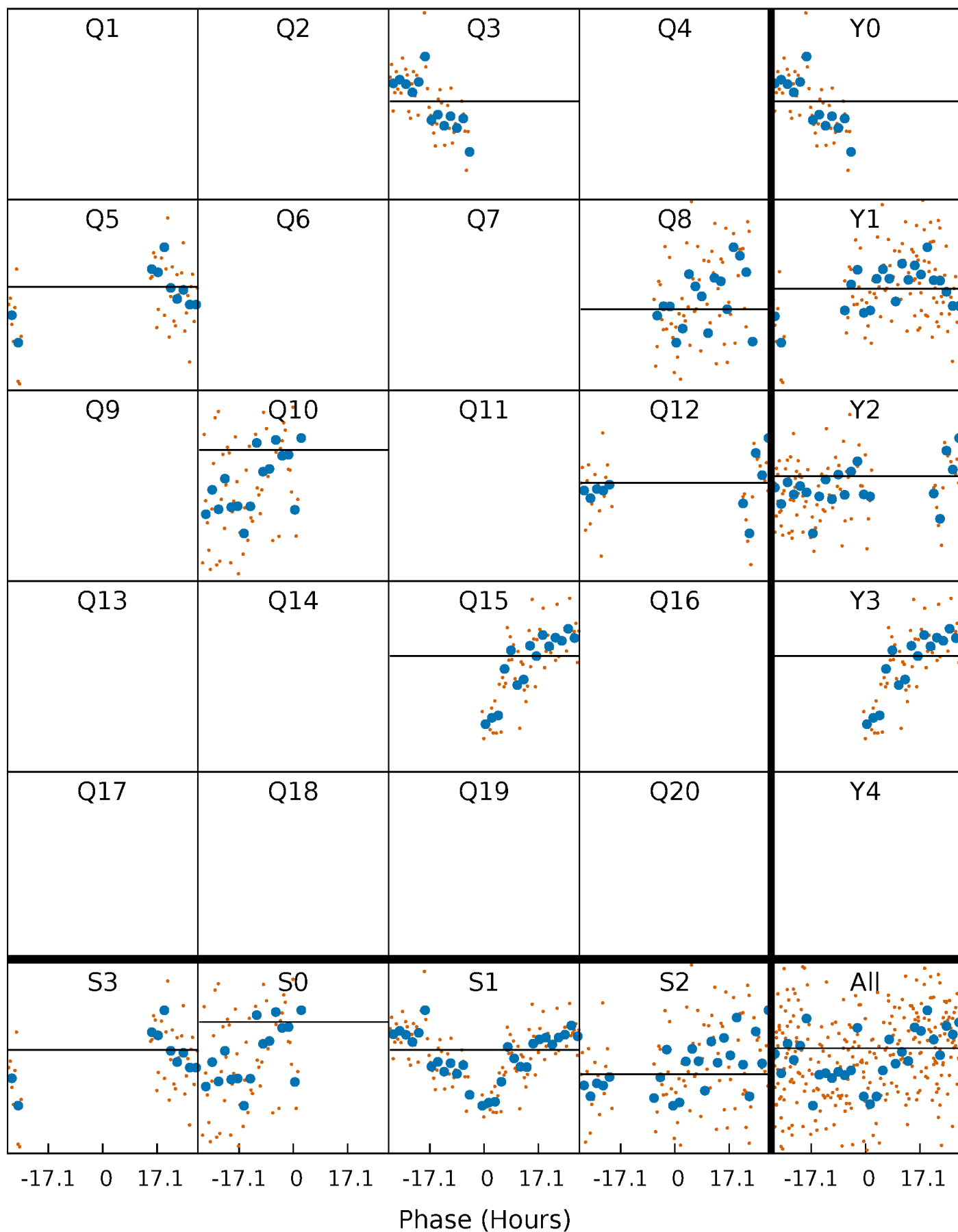
PDC Quarter-Phased Transit Curves

TCE 012599435-04 $P=217.944351$ Days $T_0=305.570869$ (BKJD)



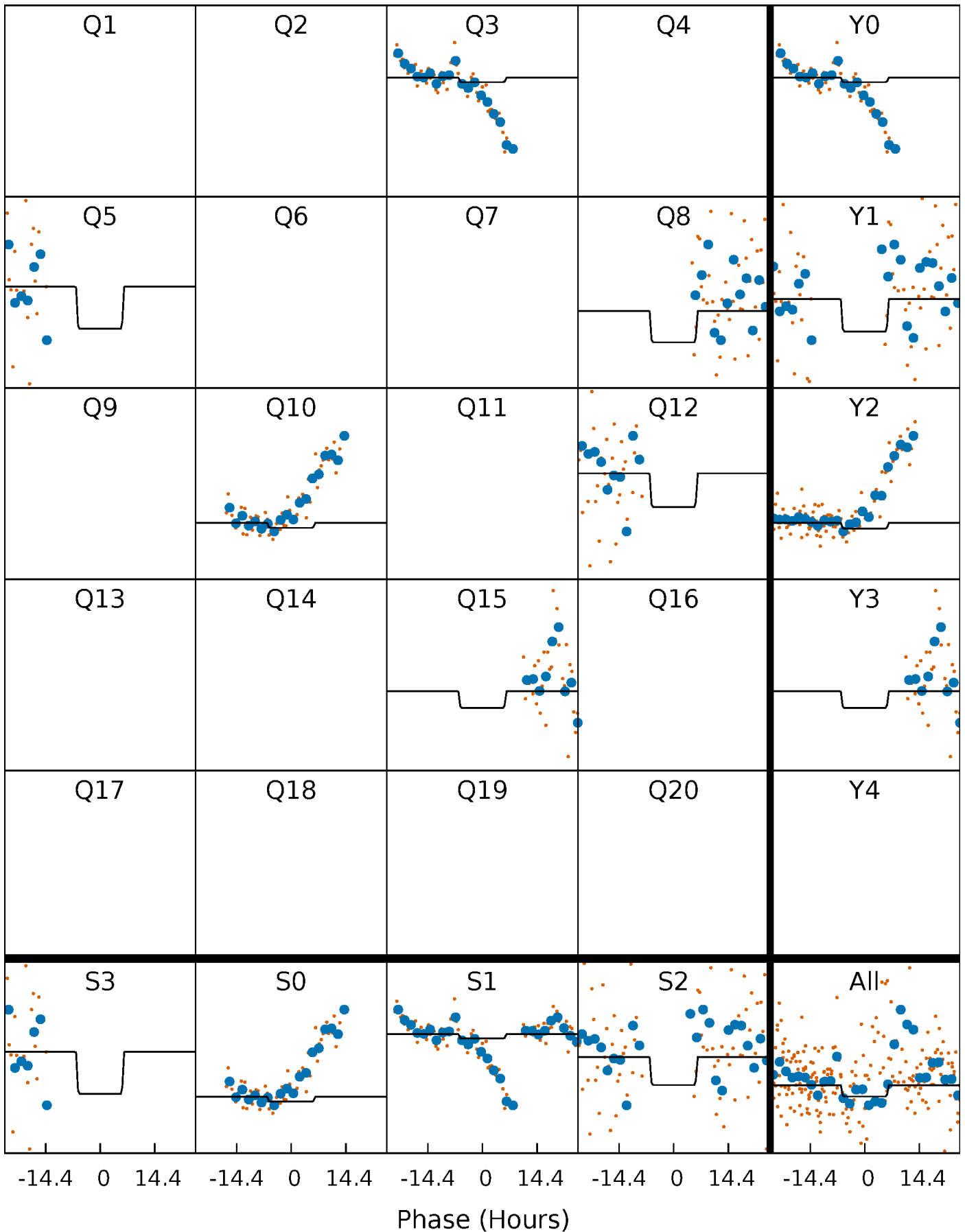
DV Quarter-Phased Transit Curves

TCE 012599435-04 P=217.944351 Days $T_0=305.570869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

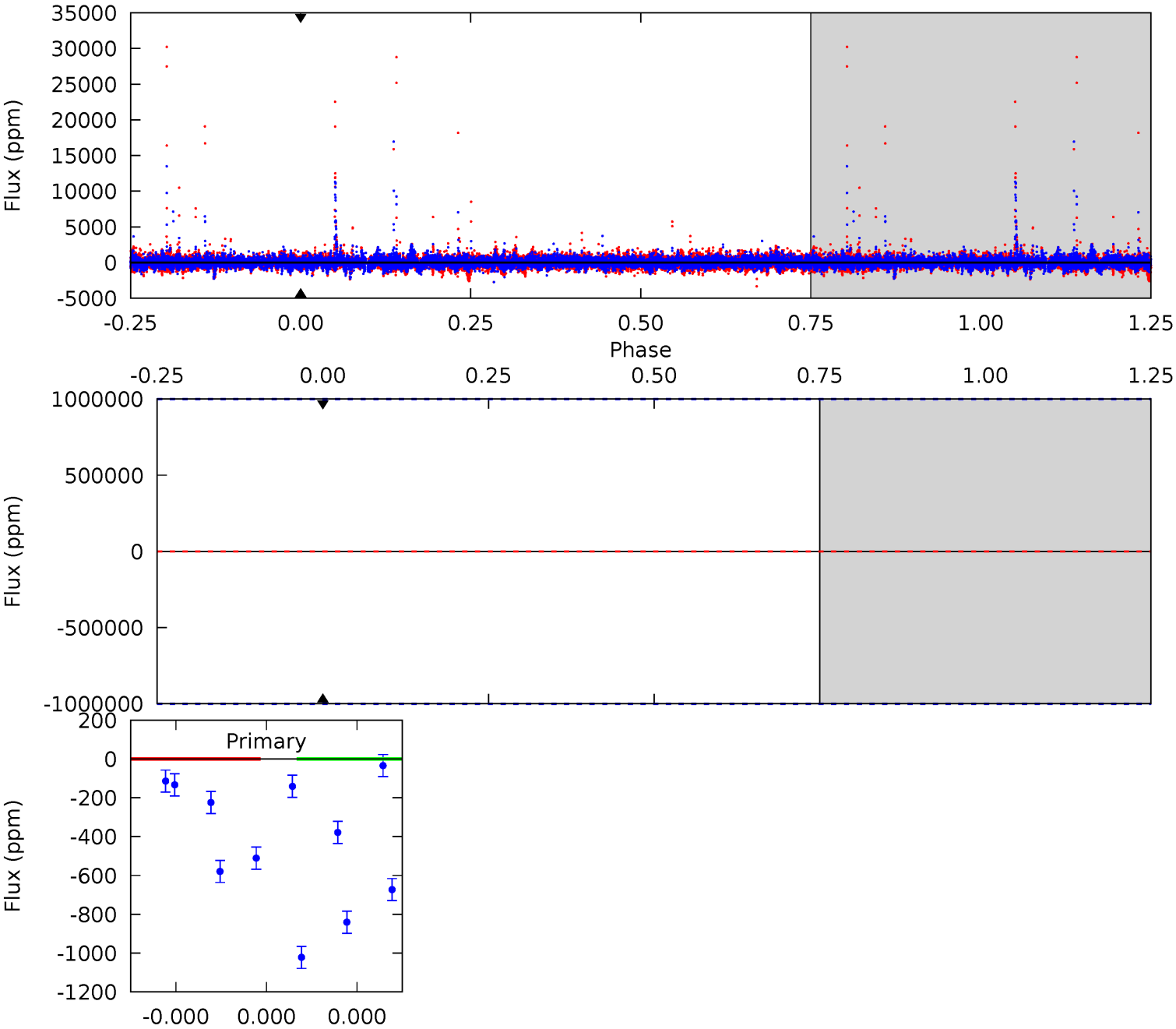
TCE 012599435-04 $P=217.944351$ Days $T_0=305.094938$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-04, P = 217.944351 Days, E = 87.626518 Days

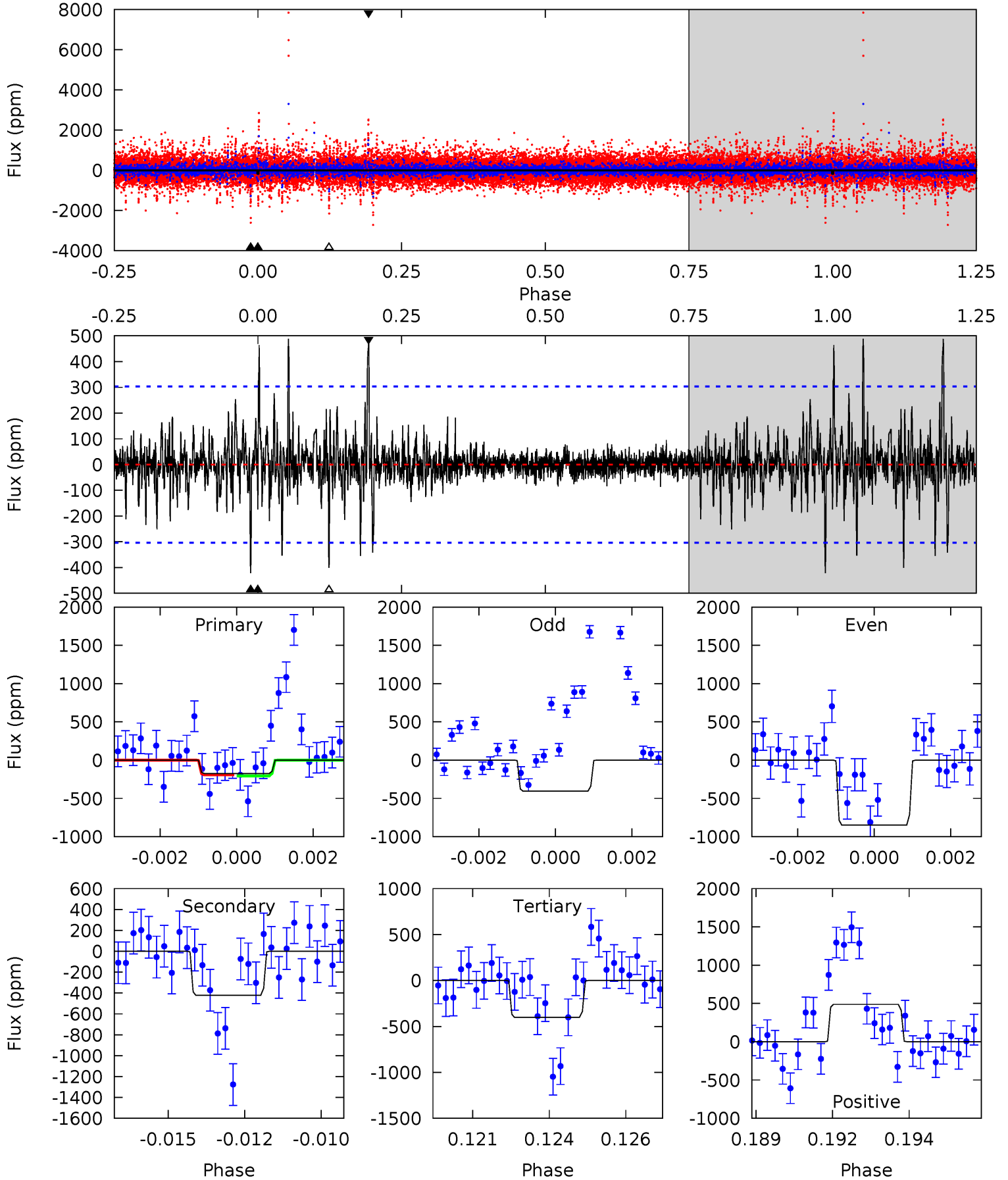
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

012599435-04, P = 217.944351 Days, E = 87.150587 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.03	7.35	6.98	8.50	5.29	3.03	1.12	-3.95	-5.47	0.37	-1.16	3.81	10.1	0.54	0.12



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$6.38^{+6.05}_{-4.41}$	318^{+11}_{-13}	-3185^{+16097}_{-9084}	$-3278.582^{+959453.772}_{-808509.747}$
Alt.	-421 ± 57	$5.40^{+5.88}_{-3.60}$	318^{+10}_{-12}	3201^{+1362}_{-602}	3198^{+23597}_{-2494}

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

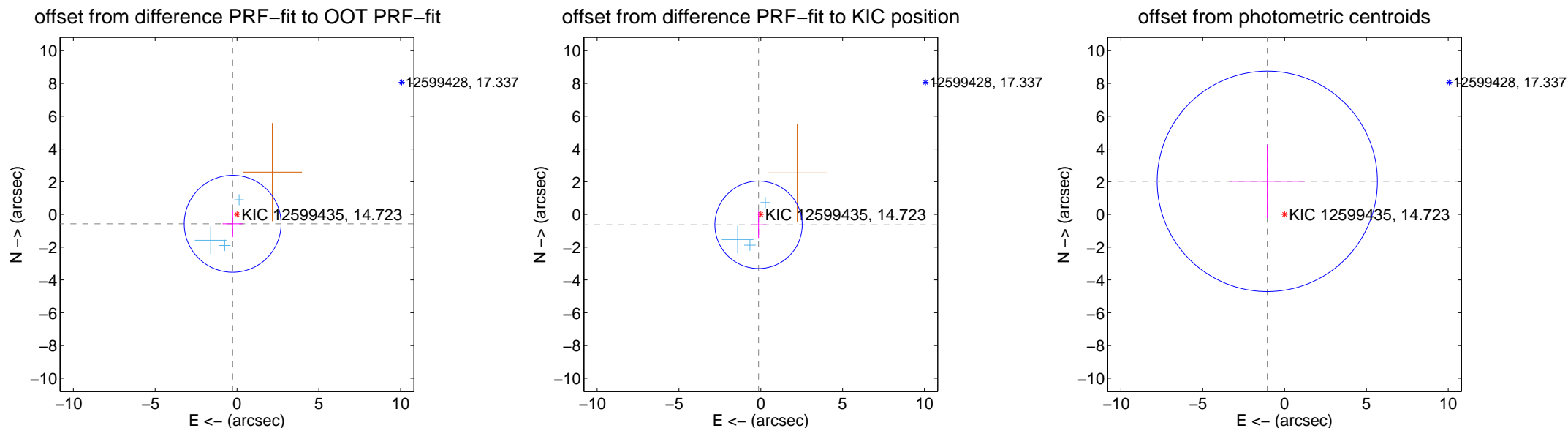
DV Centroid Data

Supplemental centroid analysis for 012599435-04. Kepler magnitude: 14.72. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

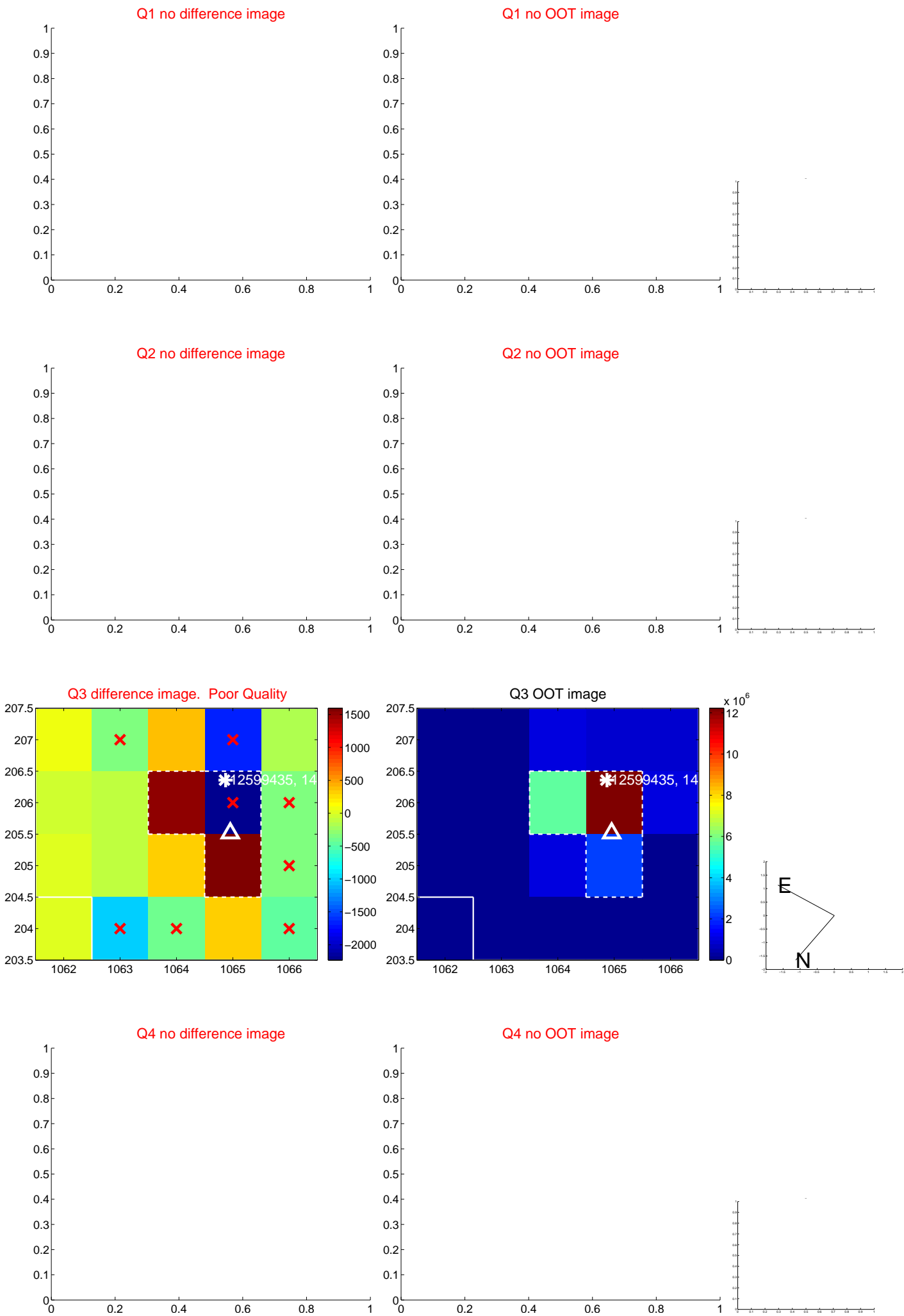
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.627 ± 0.987	0.64	0.264 ± 0.620	-0.569 ± 0.815
PRF-fit source offset from KIC position	0.646 ± 0.890	0.73	0.136 ± 0.494	-0.632 ± 0.808
photometric centroid source offset	2.28 ± 2.24	1.02	1.06 ± 2.28	2.02 ± 2.23

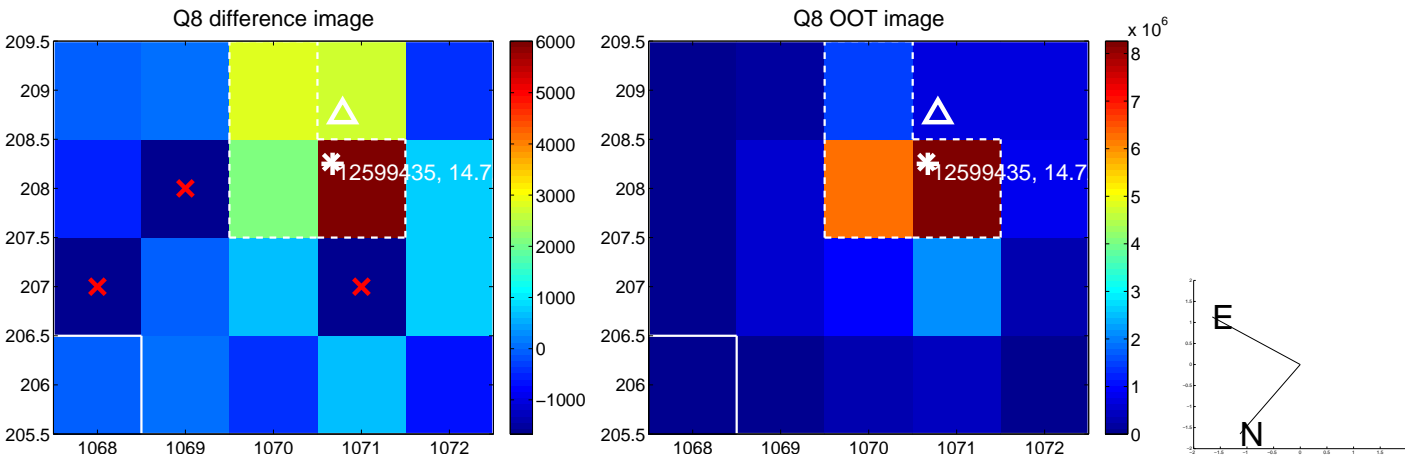
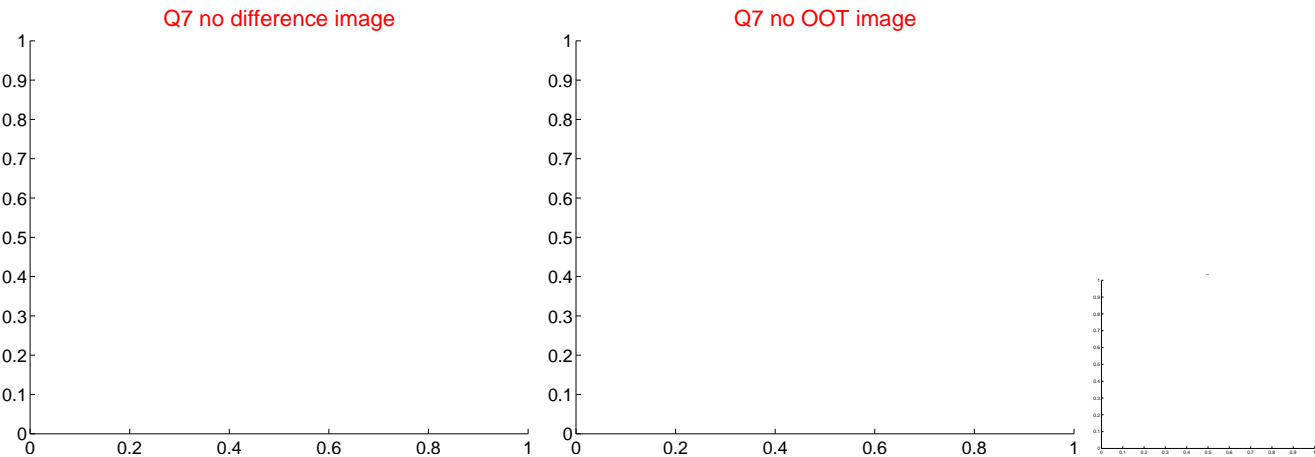
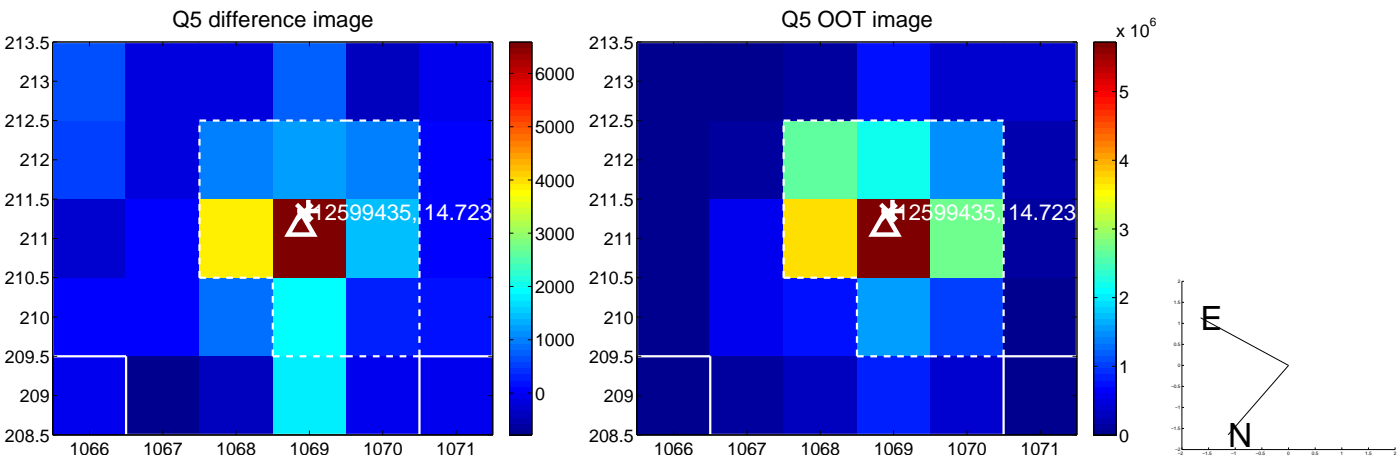


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

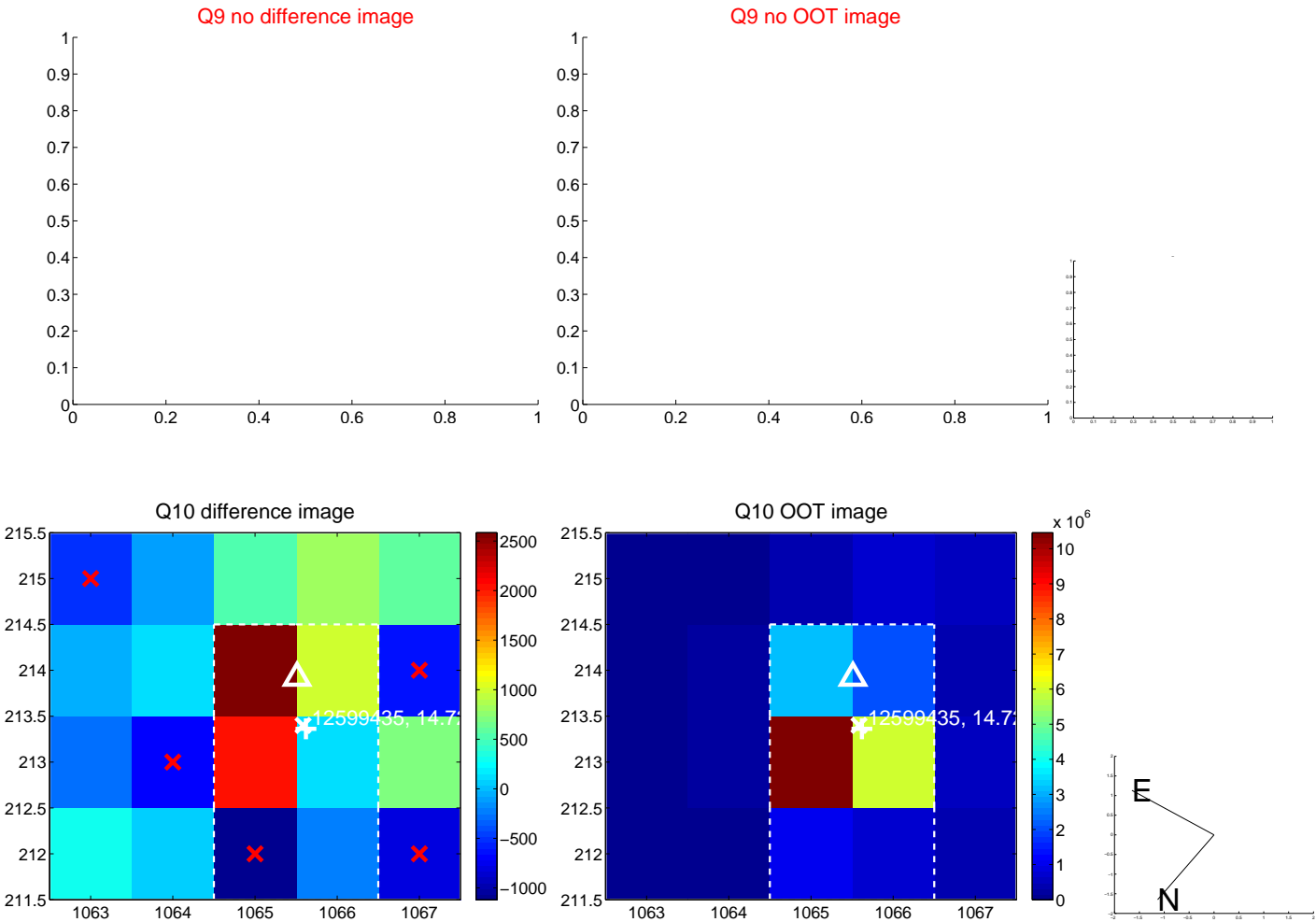
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



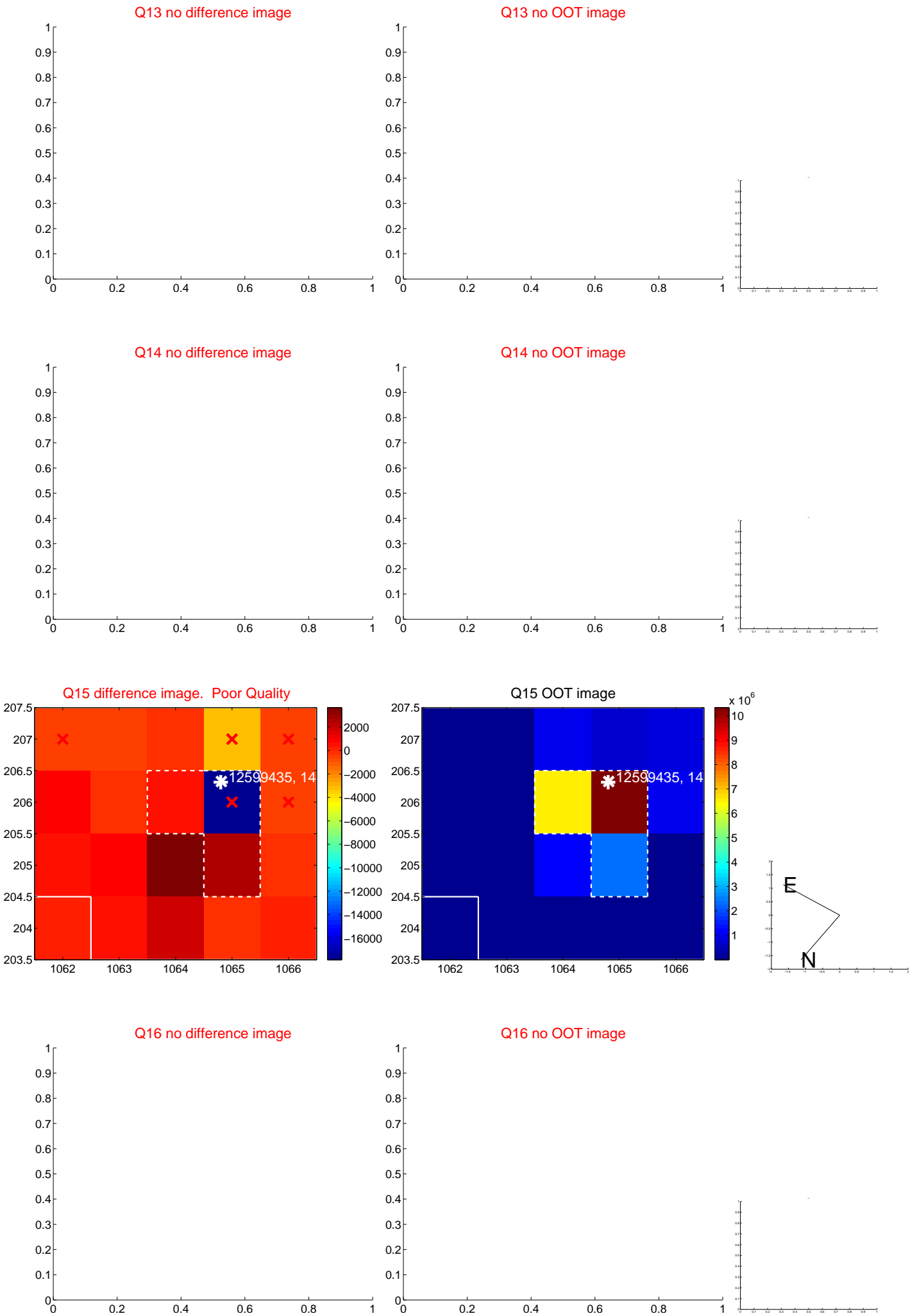
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



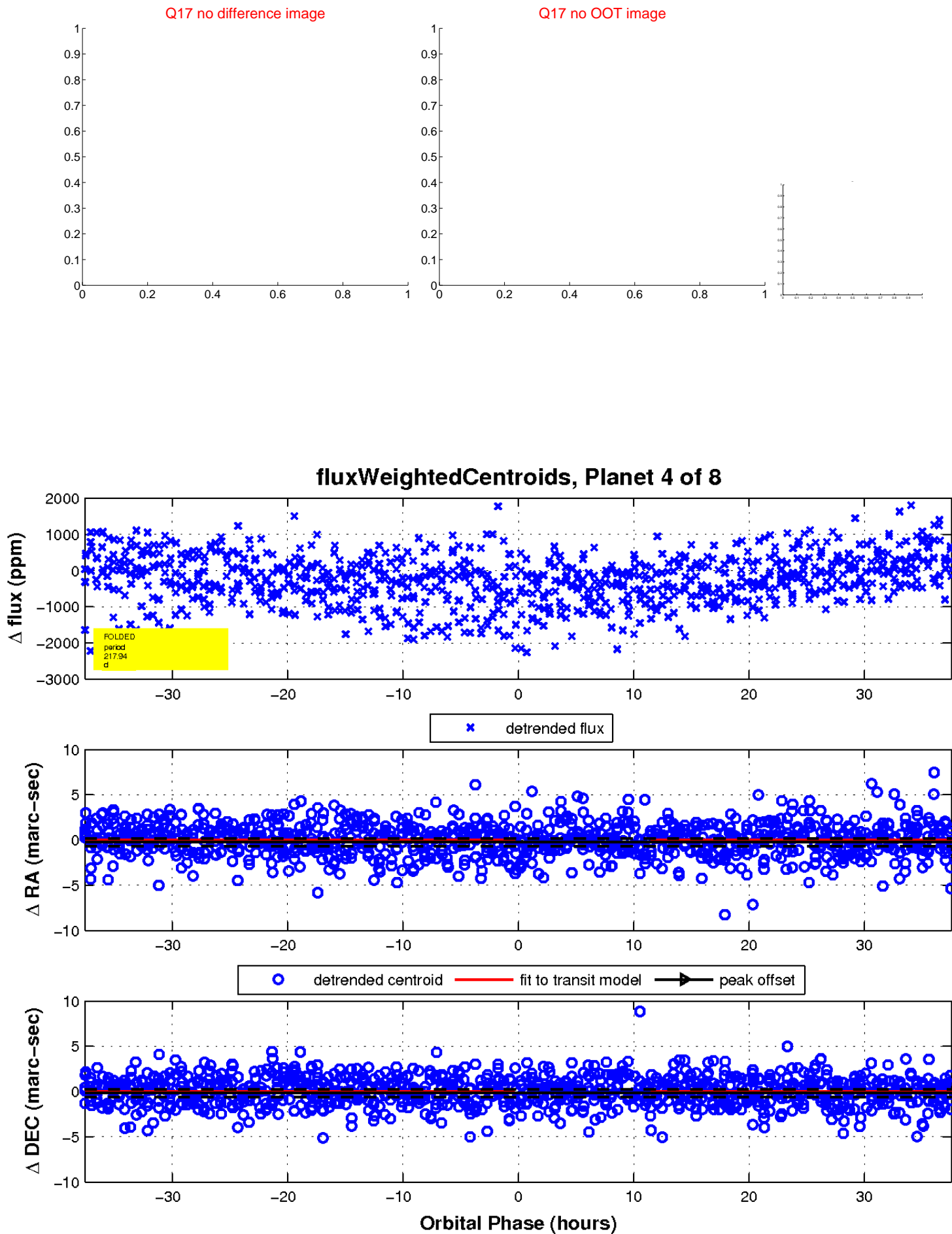
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

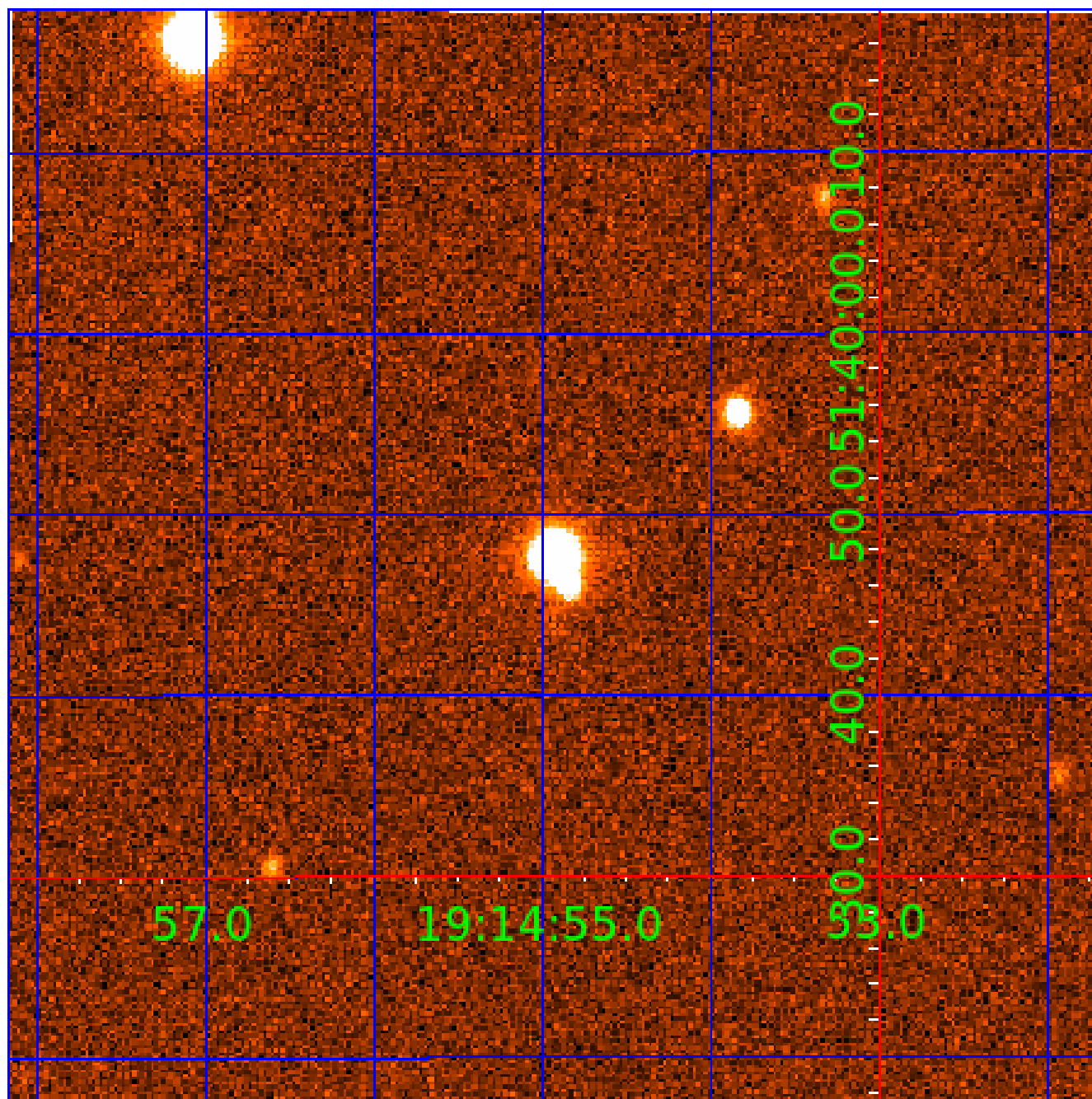


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

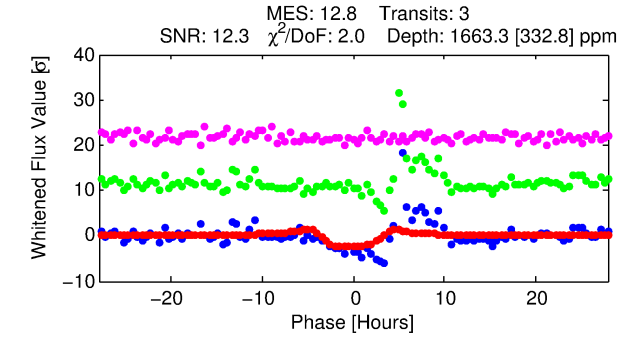
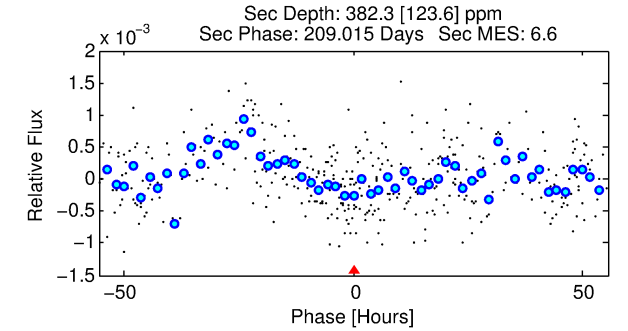
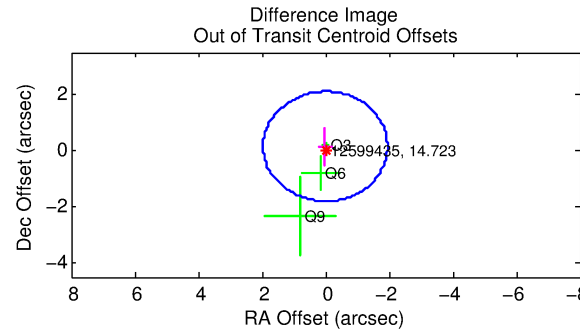
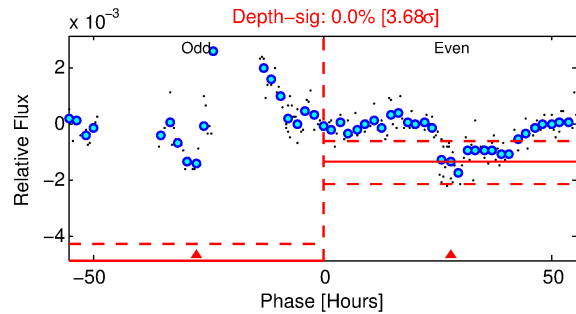
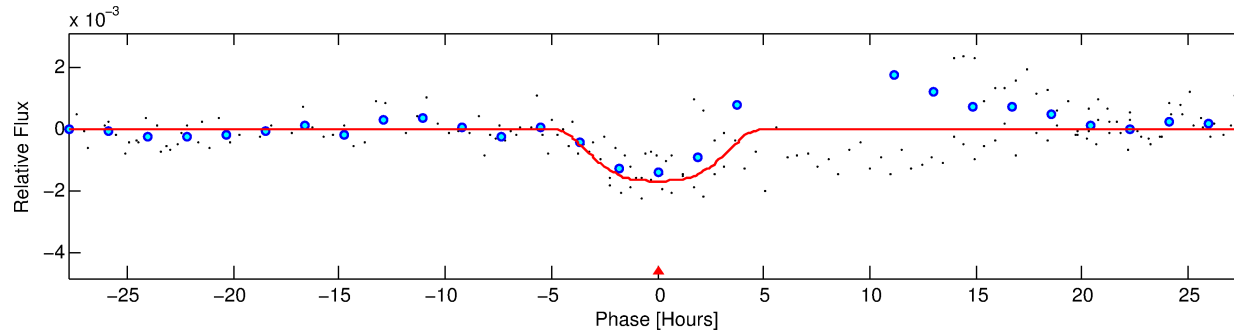
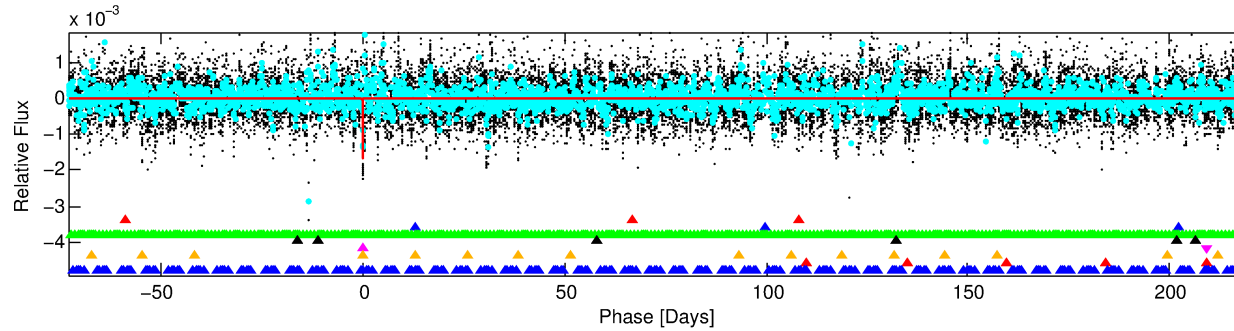
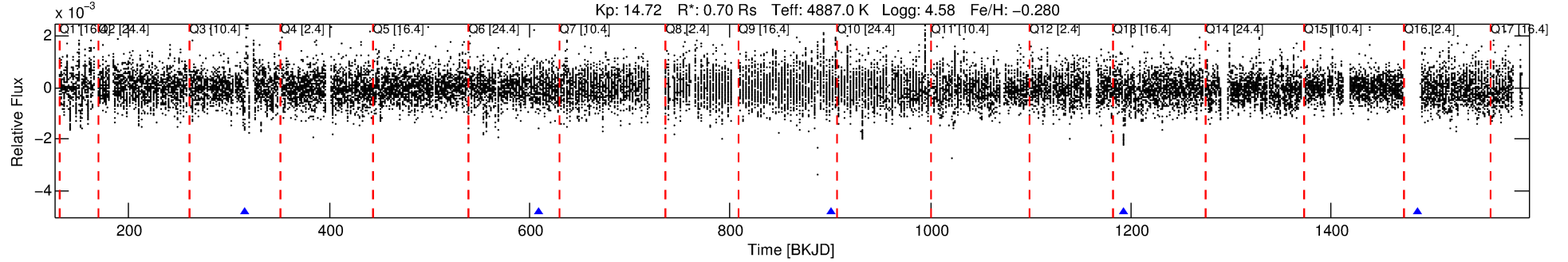
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-05

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 5 of 8 Period: 292.275 d



DV Fit Results:

Period = 292.27515 [0.01346] d
Epoch = 316.3655 [0.0213] BKJD
Rp/R* = 0.0487 [0.0070]
a/R* = 111.22 [28.97]
b = 0.94 [0.03]
Seff = 0.44 [0.07]
Teq = 207 [9] K
Rp = 3.74 [0.65] Re
a = 0.7602 [0.0619] AU
Ag = 8672.51 [3880.35] [2.23σ]
Teffp = 3096 [346] K [8.33σ]

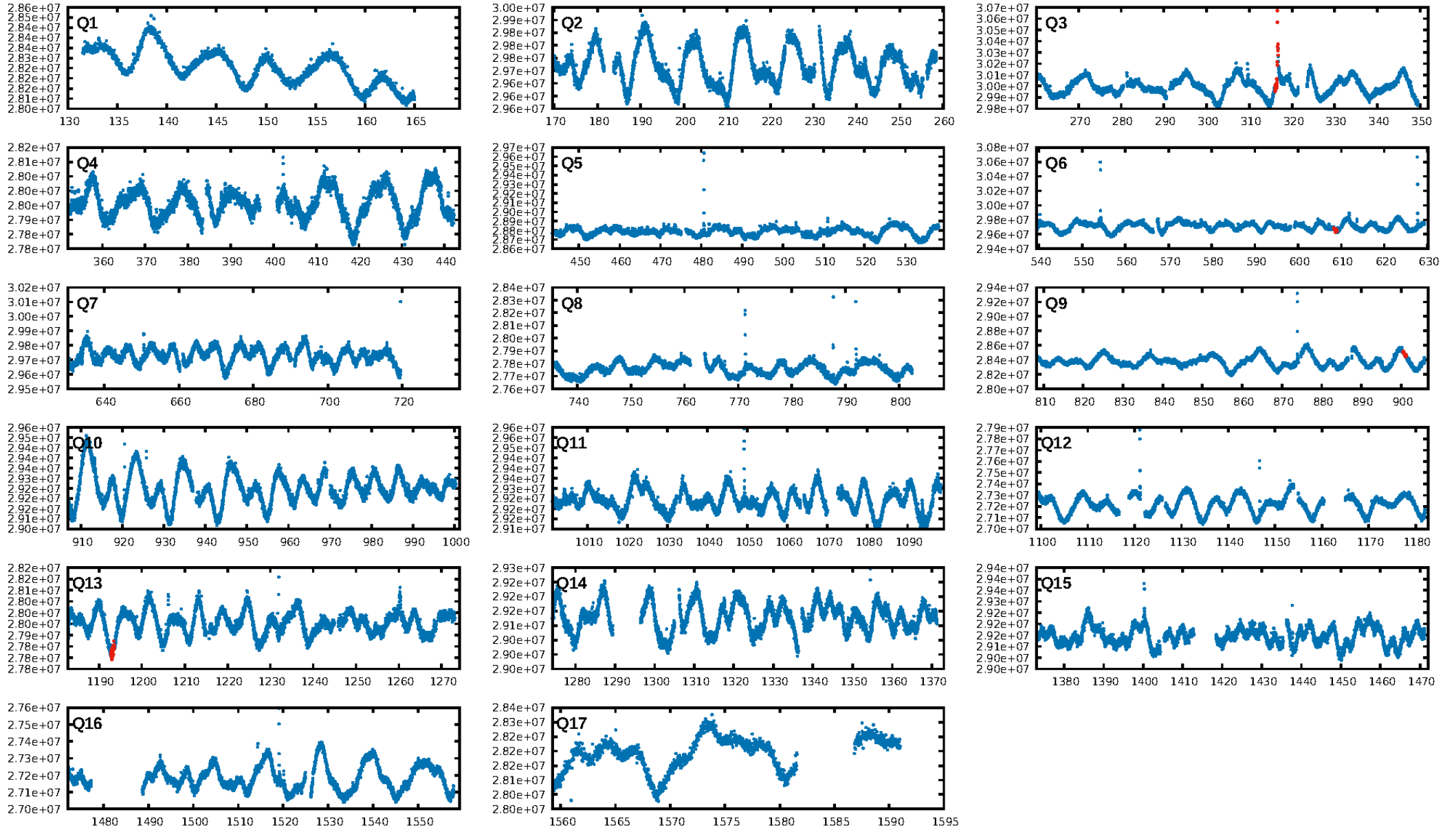
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [101.21σ]
LongPeriod-sig: 100.0% [49.10σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 13.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.916
Centroid-sig: 2.6%
Centroid-so: 1.906 arcsec [3.77σ]
OotOffset-rm: 0.149 arcsec [0.23σ]
KicOffset-rm: 0.108 arcsec [0.23σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.33 [1/3]

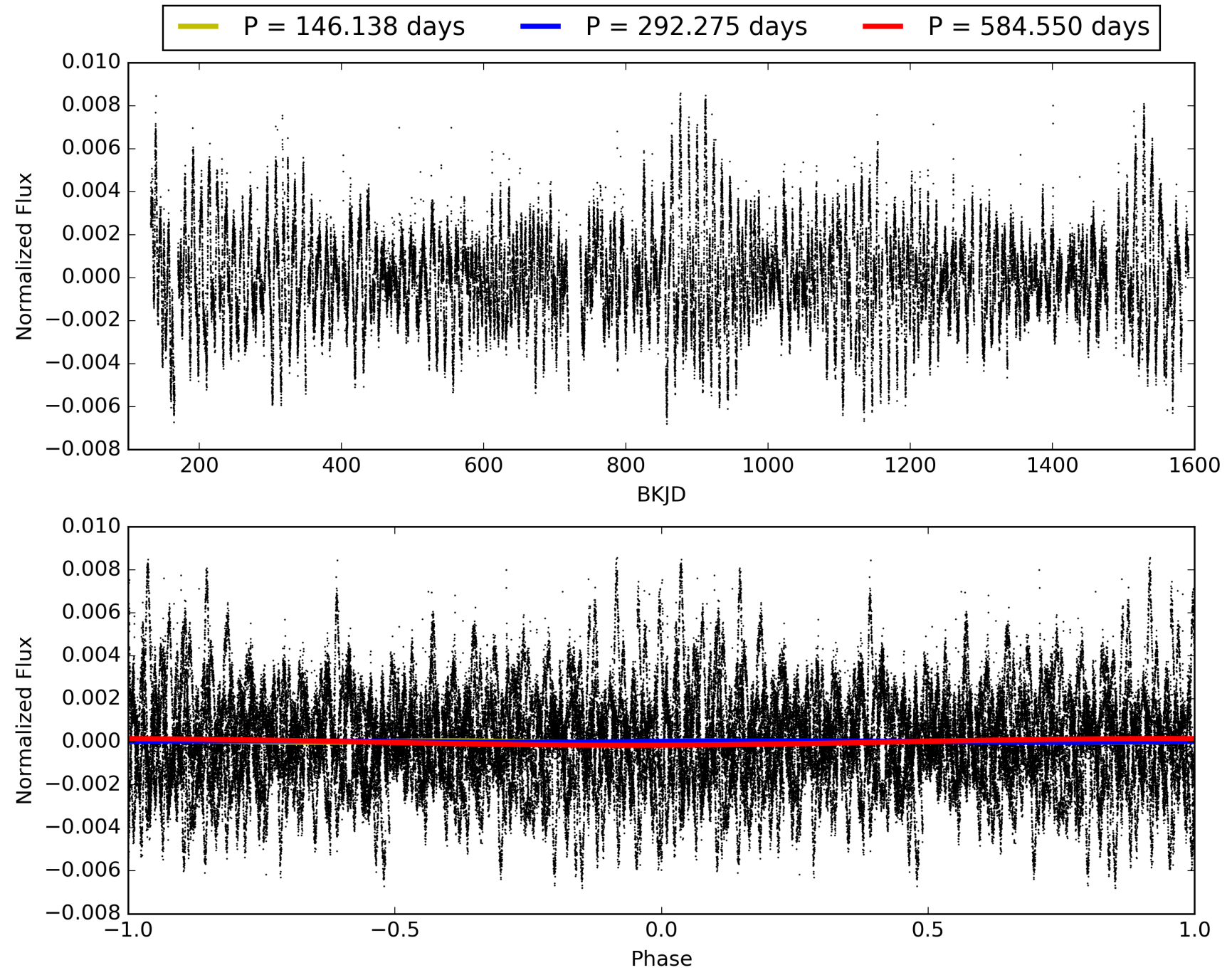
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:21 Z

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

TCE 012599435-05, PDC Light Curves

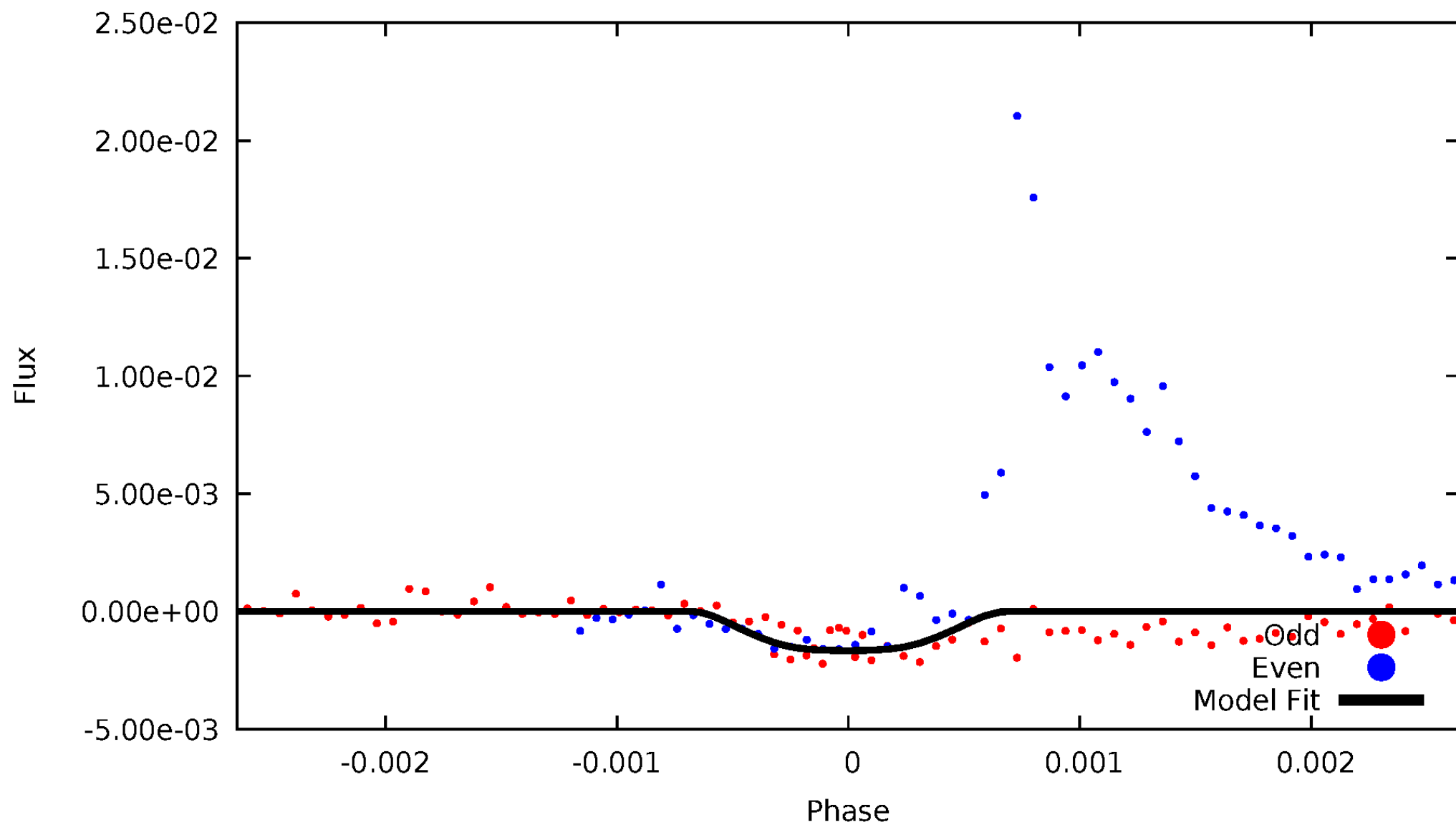


TCE 012599435-05



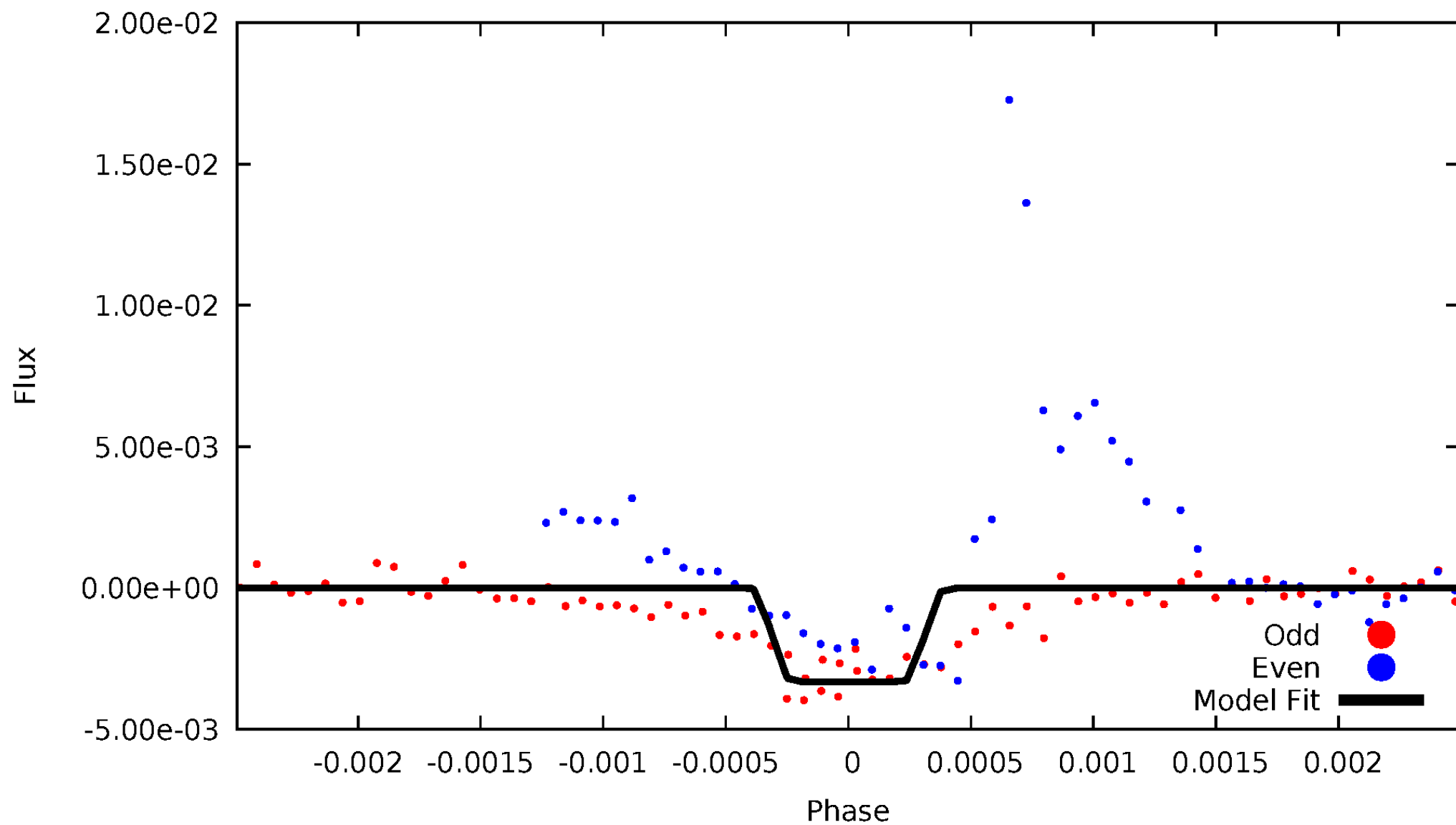
DV Odd/Even

TCE 012599435-05

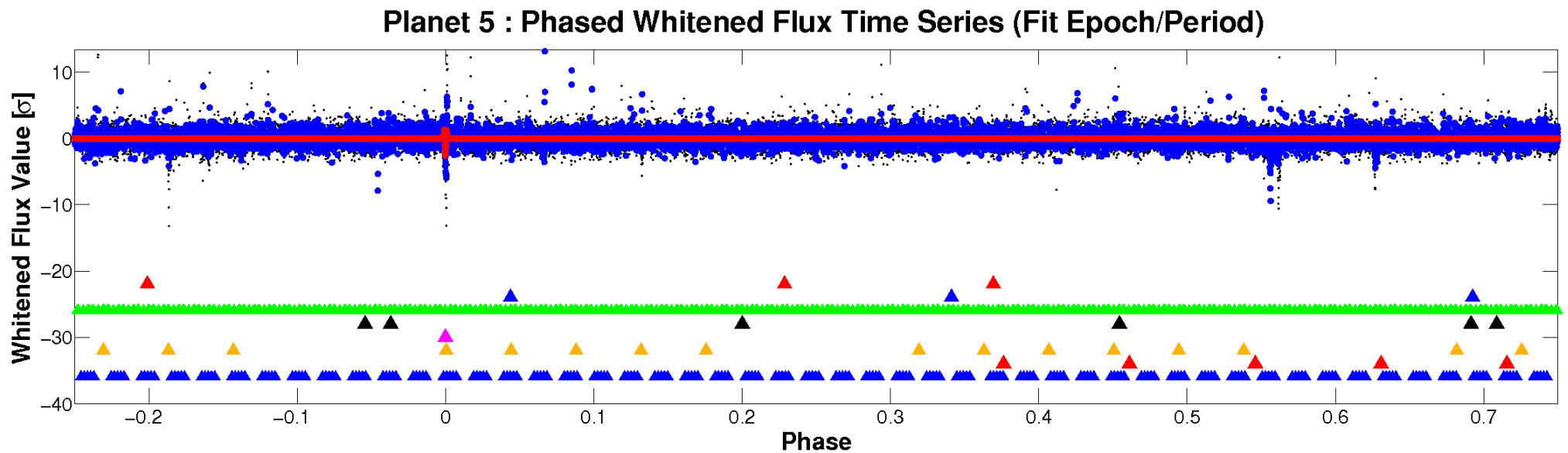
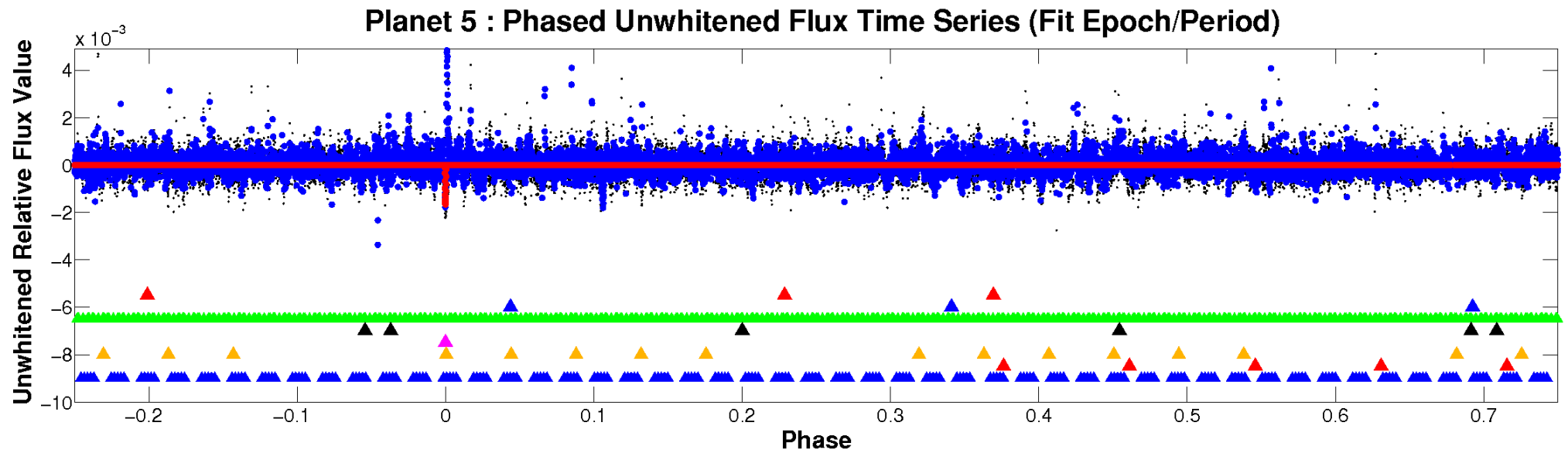


ALT Odd/Even

TCE 012599435-05

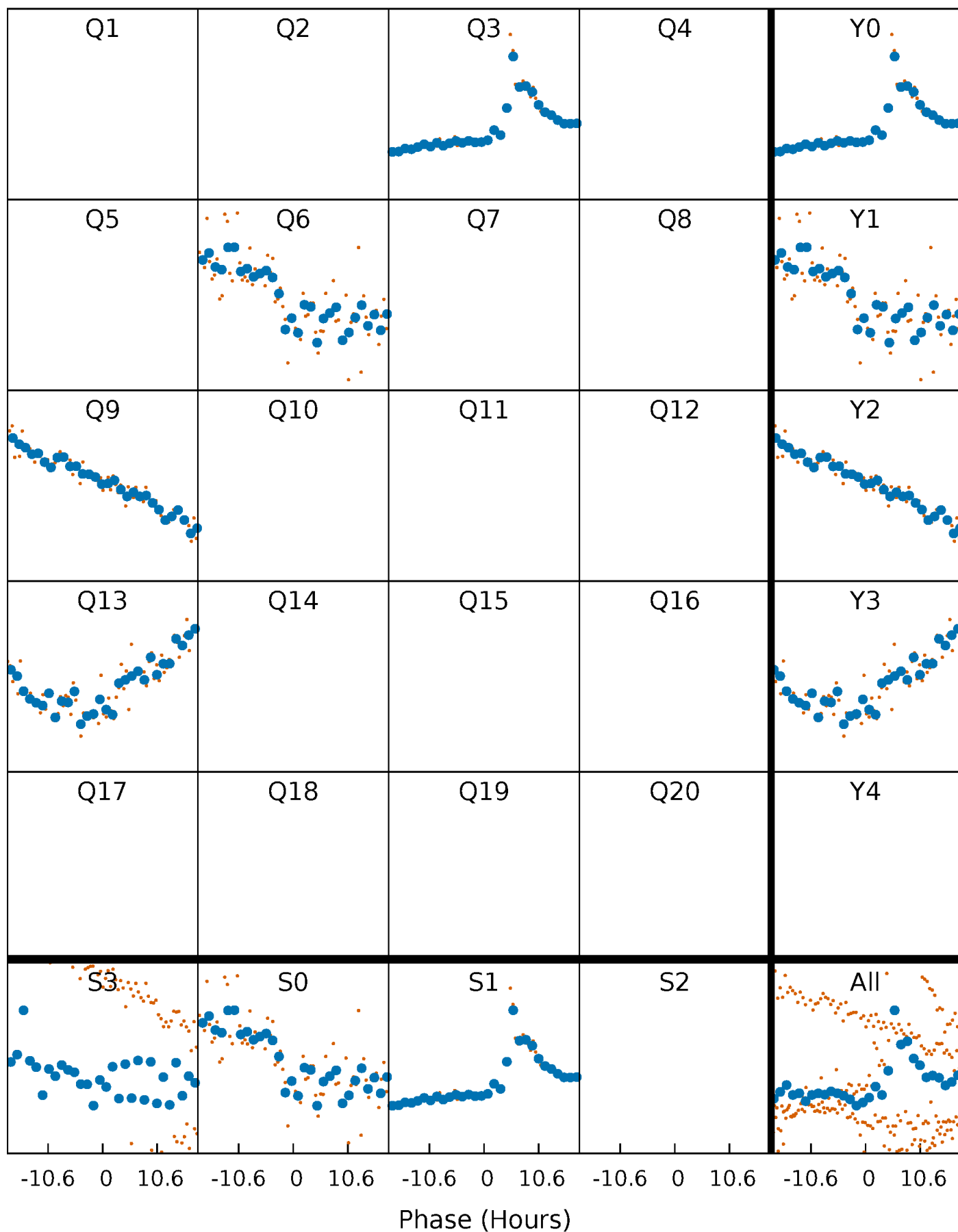


Non-Whitened Vs. Whitened Light Curve



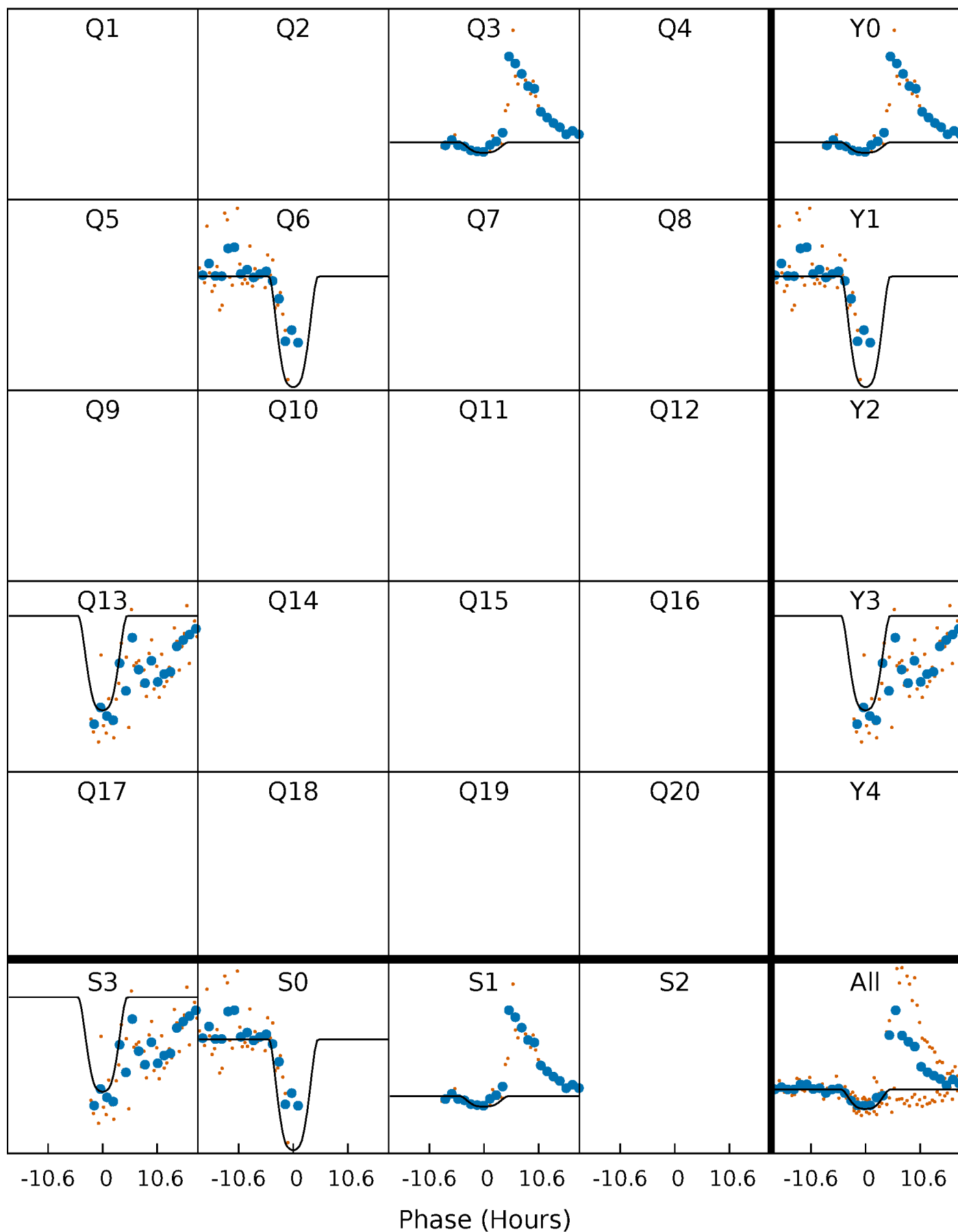
PDC Quarter-Phased Transit Curves

TCE 012599435-05 $P=292.275154$ Days $T_0=316.365515$ (BKJD)



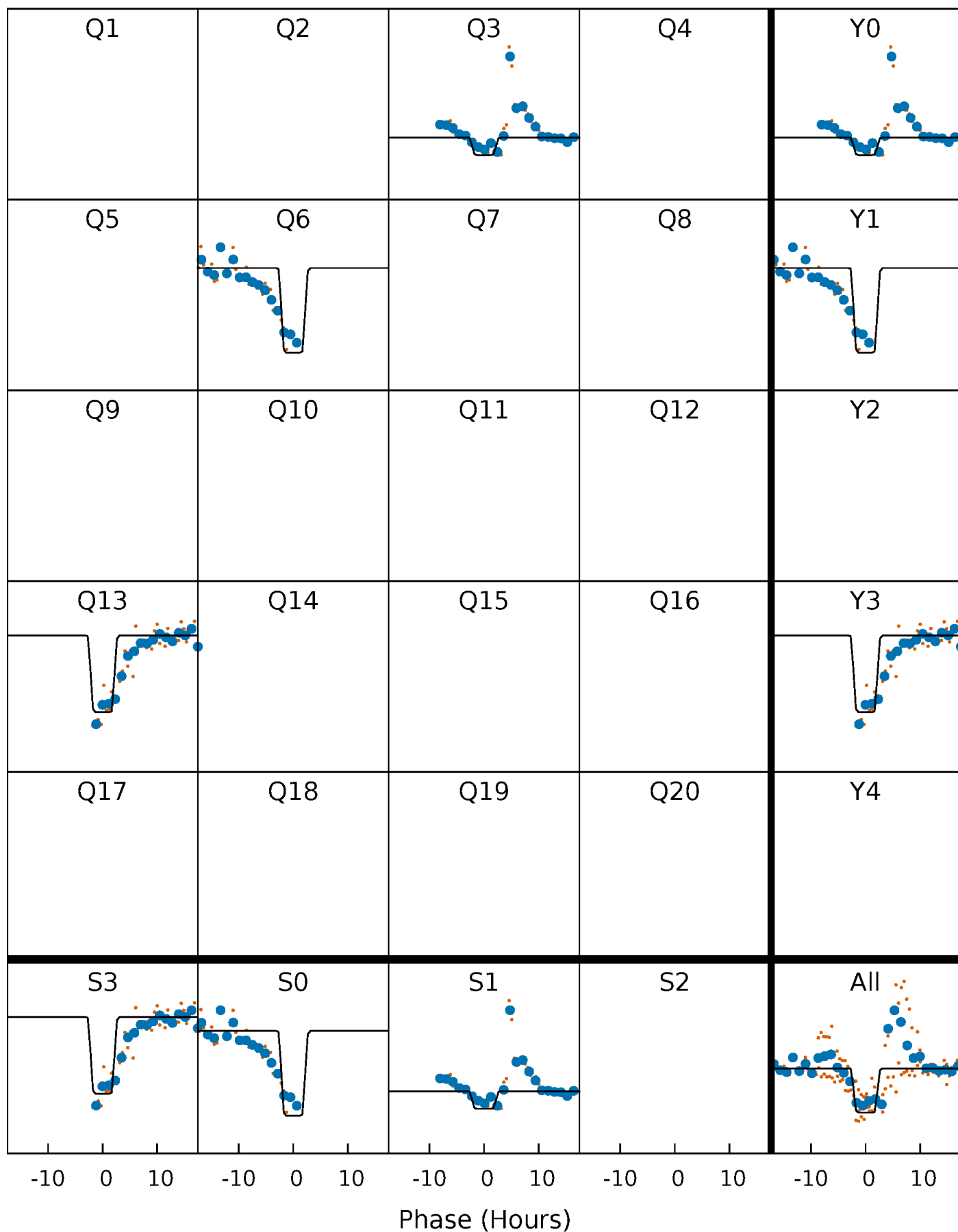
DV Quarter-Phased Transit Curves

TCE 012599435-05 $P=292.275154$ Days $T_0=316.365515$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

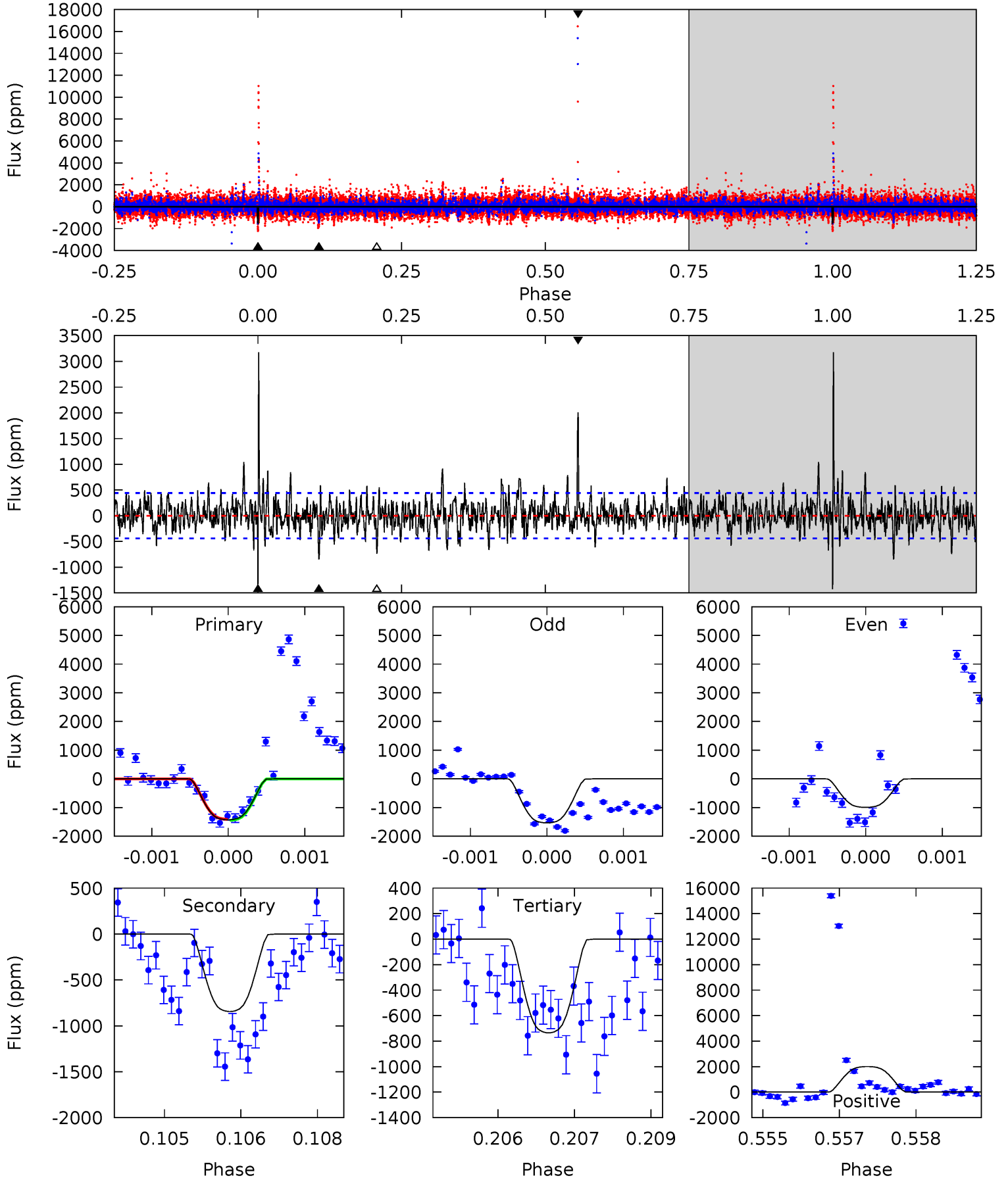
TCE 012599435-05 $P=292.261209$ Days $T_0=316.387009$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-05, P = 292.275154 Days, E = 24.090361 Days

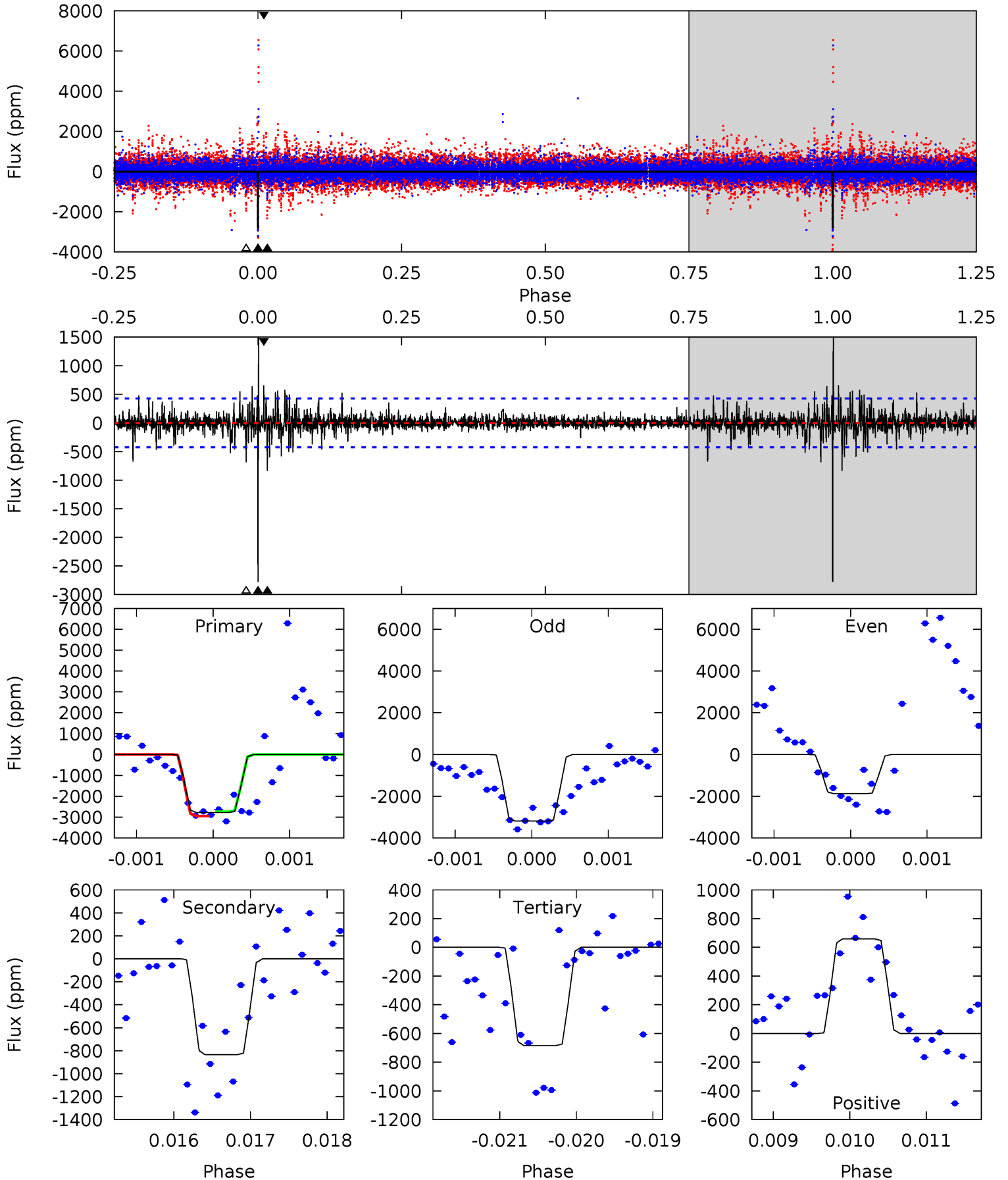
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	10.4	9.01	24.6	5.40	3.21	2.90	8.48	-7.09	1.34	-14.2	2.91	1.29	0.69	0.21



Alt Model-Shift Uniqueness Test

012599435-05, P = 292.261209 Days, E = 24.125800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.8	10.7	8.82	8.49	5.48	3.34	1.36	27.0	27.3	1.93	2.26	8.26	0.95	0.35	1.31



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-844 ± 82	$3.76^{+0.59}_{-0.55}$	289^{+10}_{-10}	4007^{+266}_{-225}	19499^{+7309}_{-5103}
Alt.	-835 ± 78	$4.42^{+0.63}_{-0.54}$	287^{+11}_{-11}	3762^{+205}_{-171}	13808^{+4489}_{-3319}

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

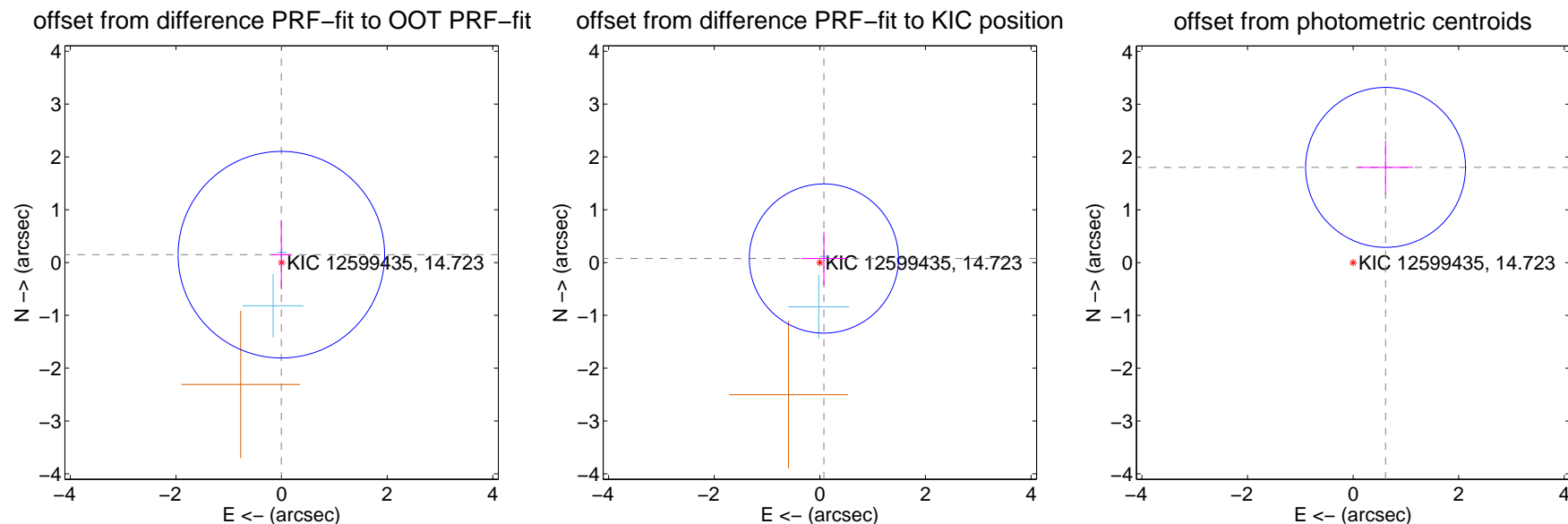
DV Centroid Data

Supplemental centroid analysis for 012599435-05. Kepler magnitude: 14.72. Transit SNR 12.34

There are 2 quarters with good PRF difference image offsets

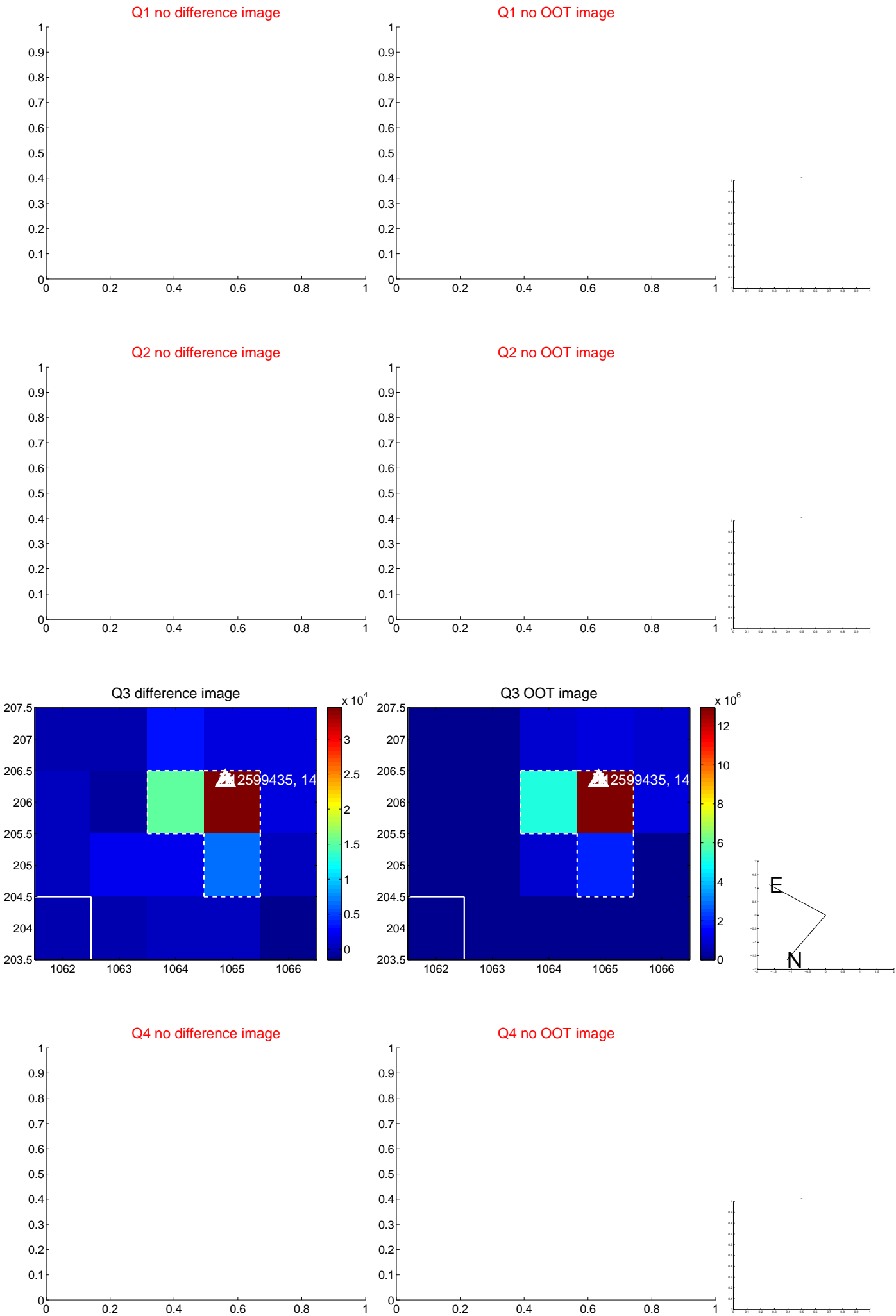
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.652	0.23	0.004 ± 0.203	0.149 ± 0.657
PRF-fit source offset from KIC position	0.108 ± 0.471	0.23	-0.077 ± 0.427	0.076 ± 0.512
photometric centroid source offset	1.91 ± 0.50	3.77	-0.62 ± 0.52	1.80 ± 0.50

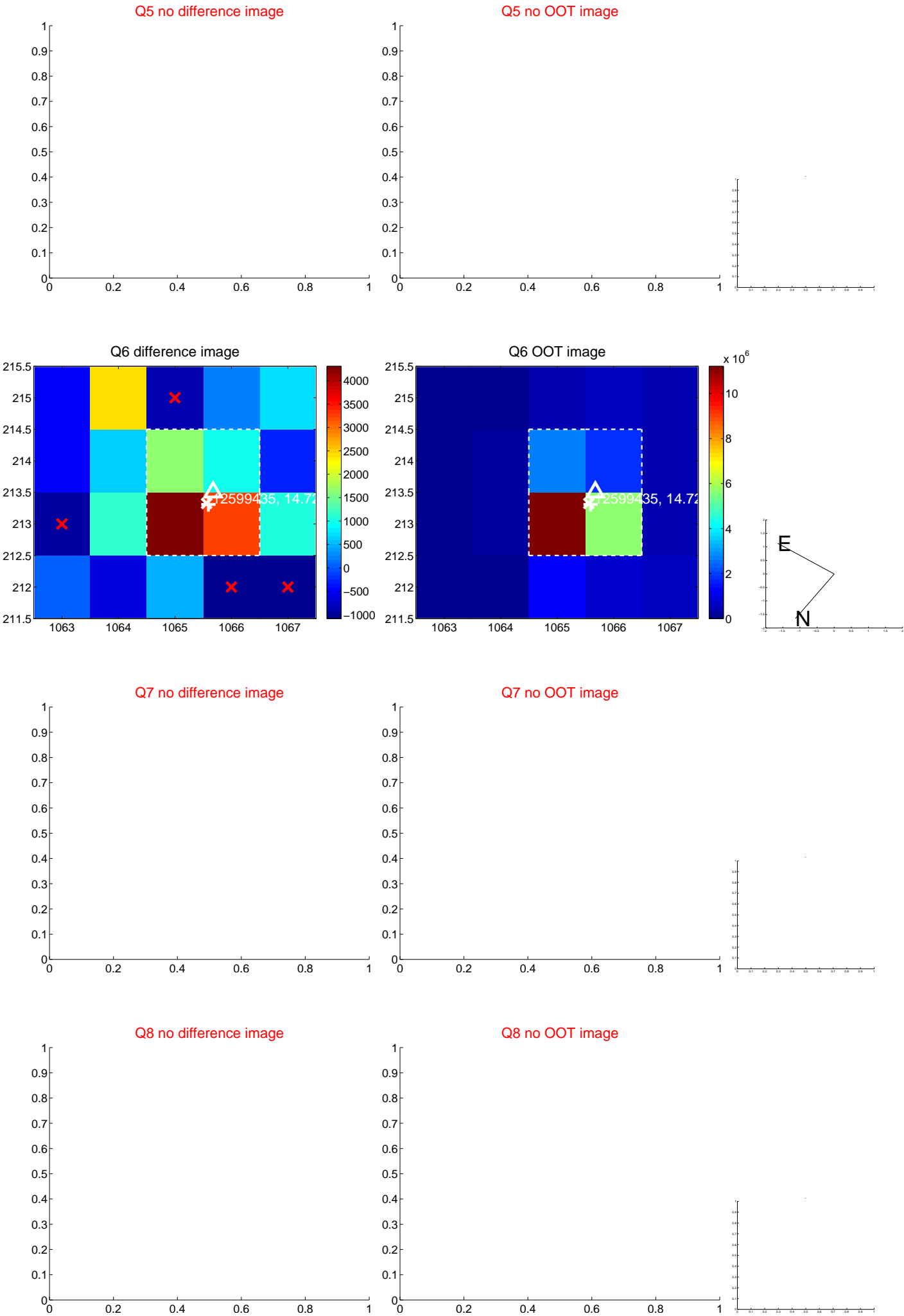


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

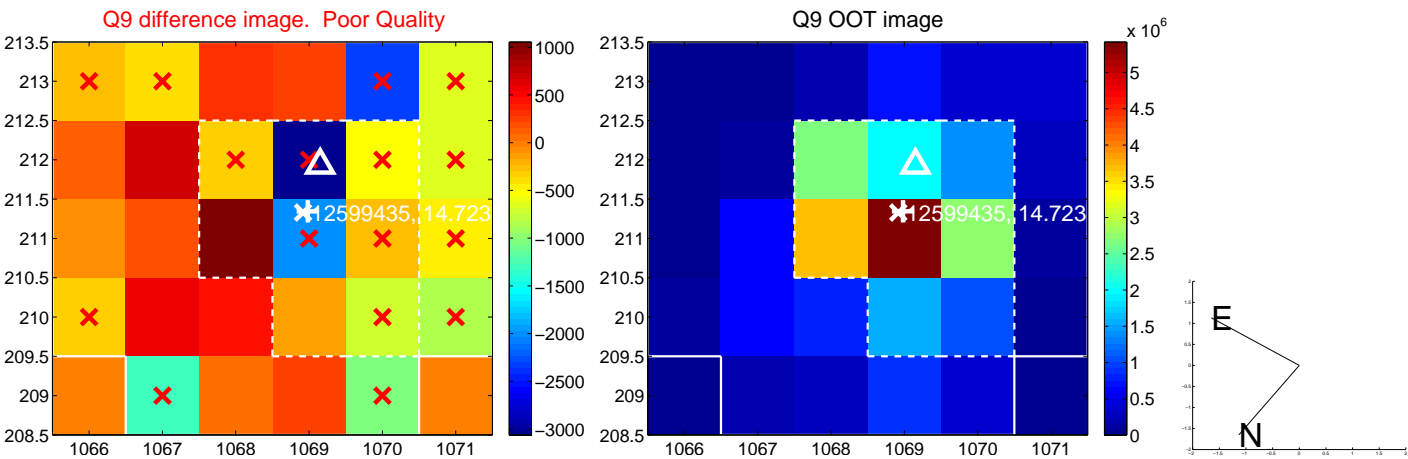
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



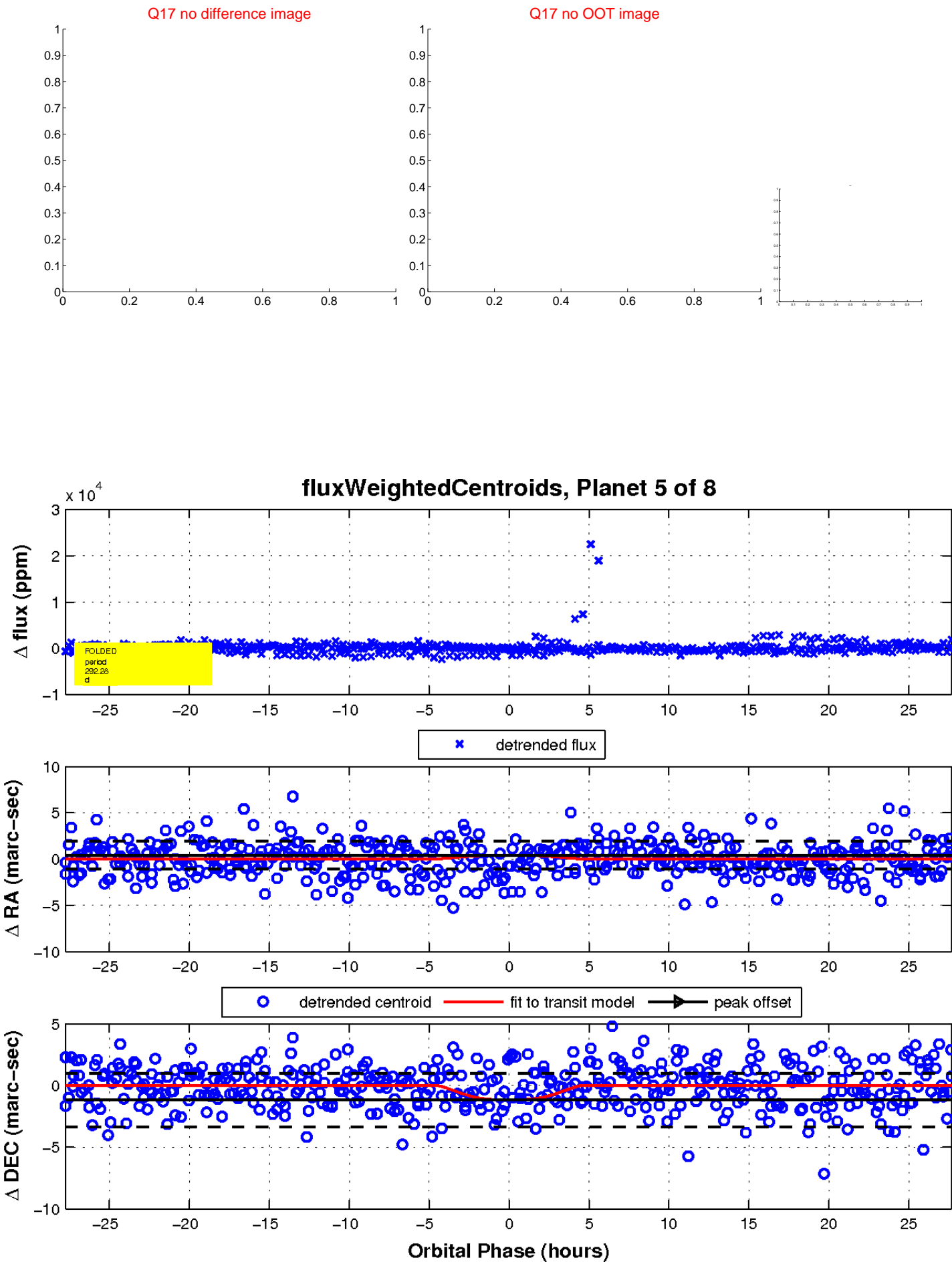
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

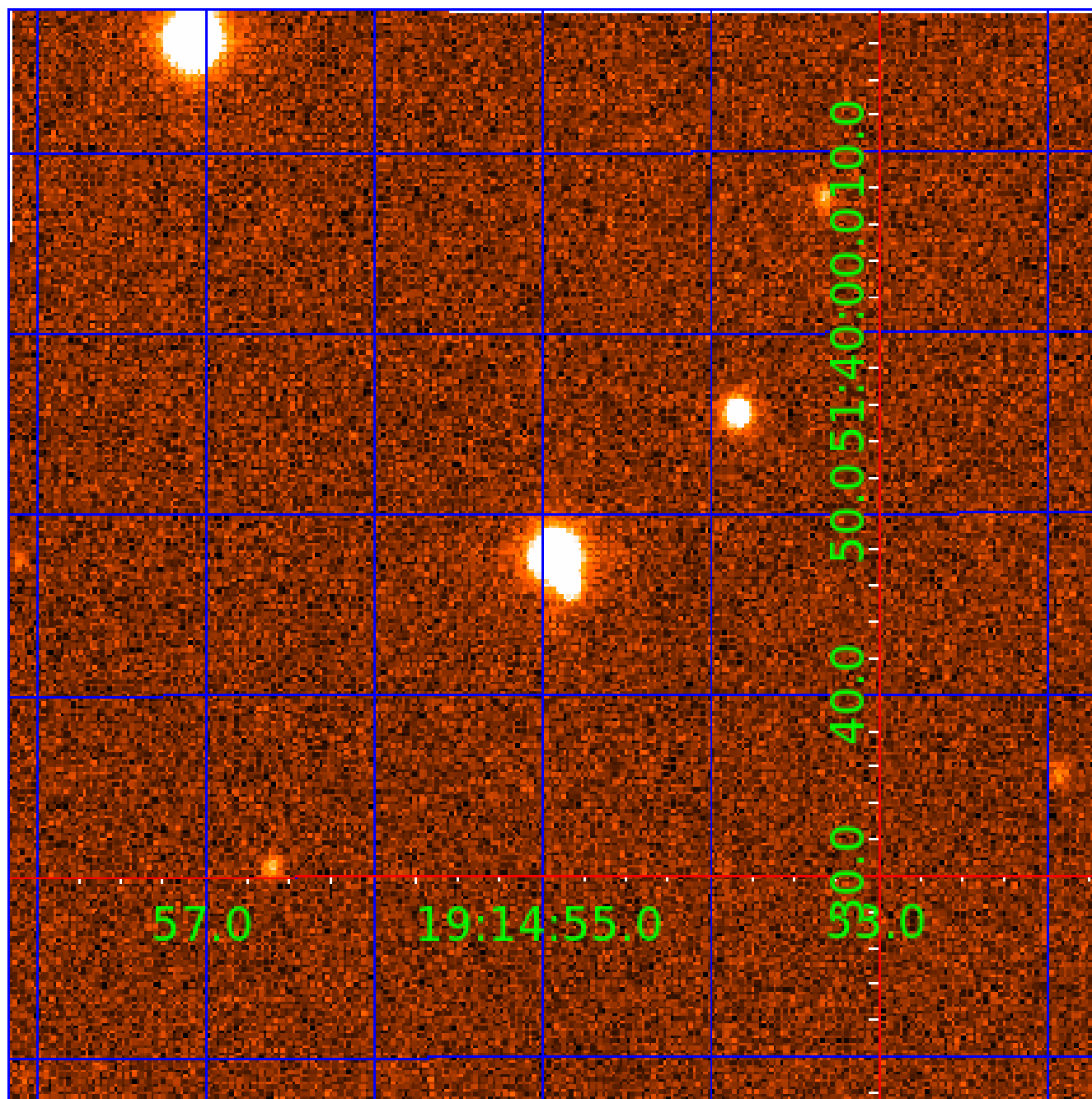


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

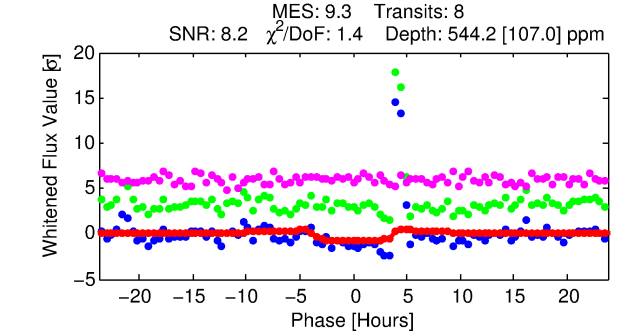
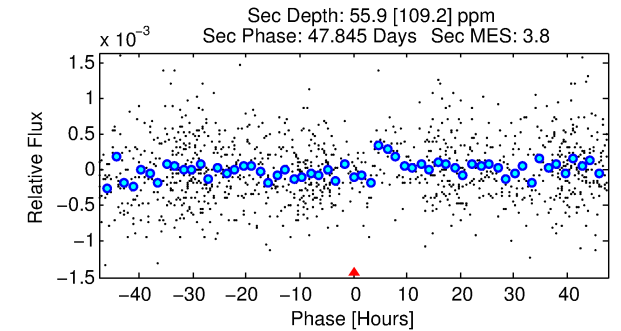
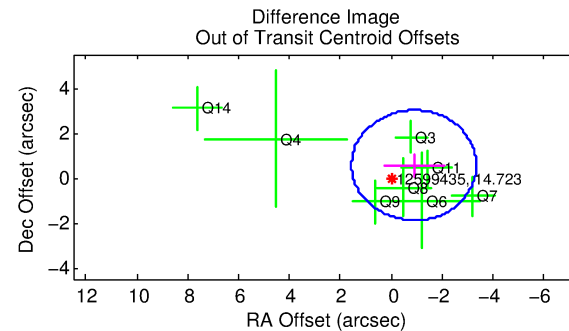
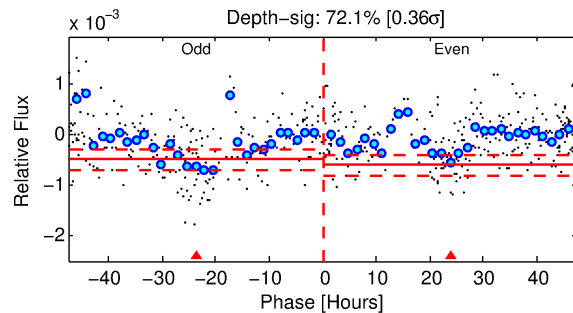
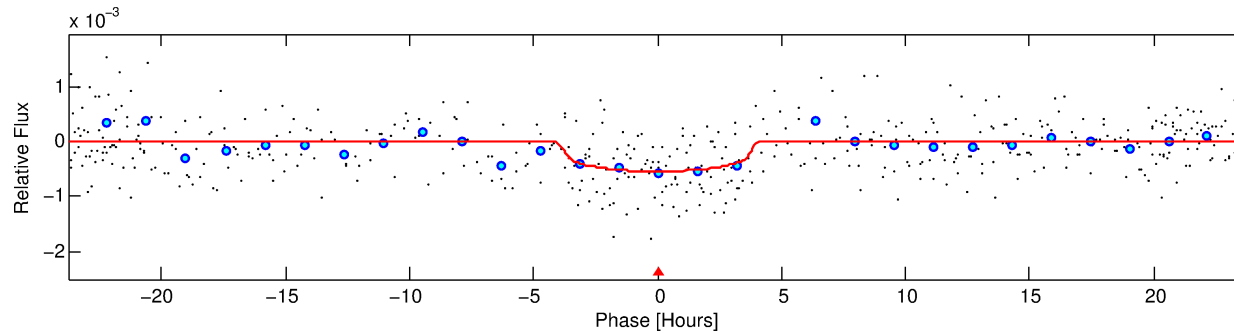
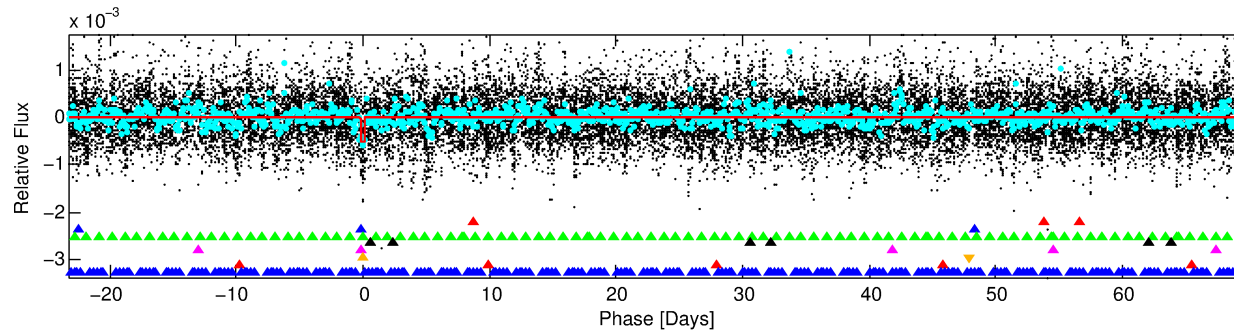
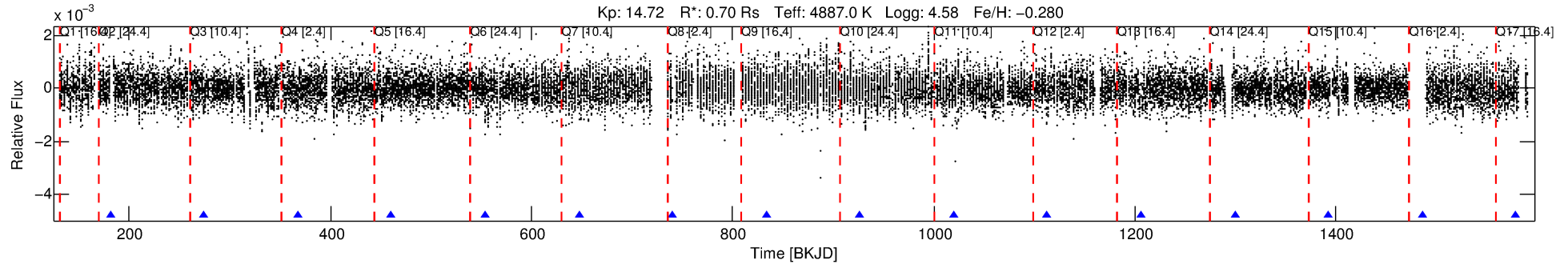
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-06

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 6 of 8 Period: 93.159 d



DV Fit Results:

Period = 93.15856 [0.00230] d
Epoch = 181.3963 [0.0177] BKJD
Rp/R* = 0.0224 [0.0311]
a/R* = 70.74 [340.61]
b = 0.65 [4.31]
Seff = 2.01 [0.34]
Teq = 304 [13] K
Rp = 1.72 [2.40] Re
a = 0.3547 [0.0289] AU
Ag = 1307.55 [4441.74] [0.29 σ]
Teffp = 2824 [2398] K [1.05 σ]

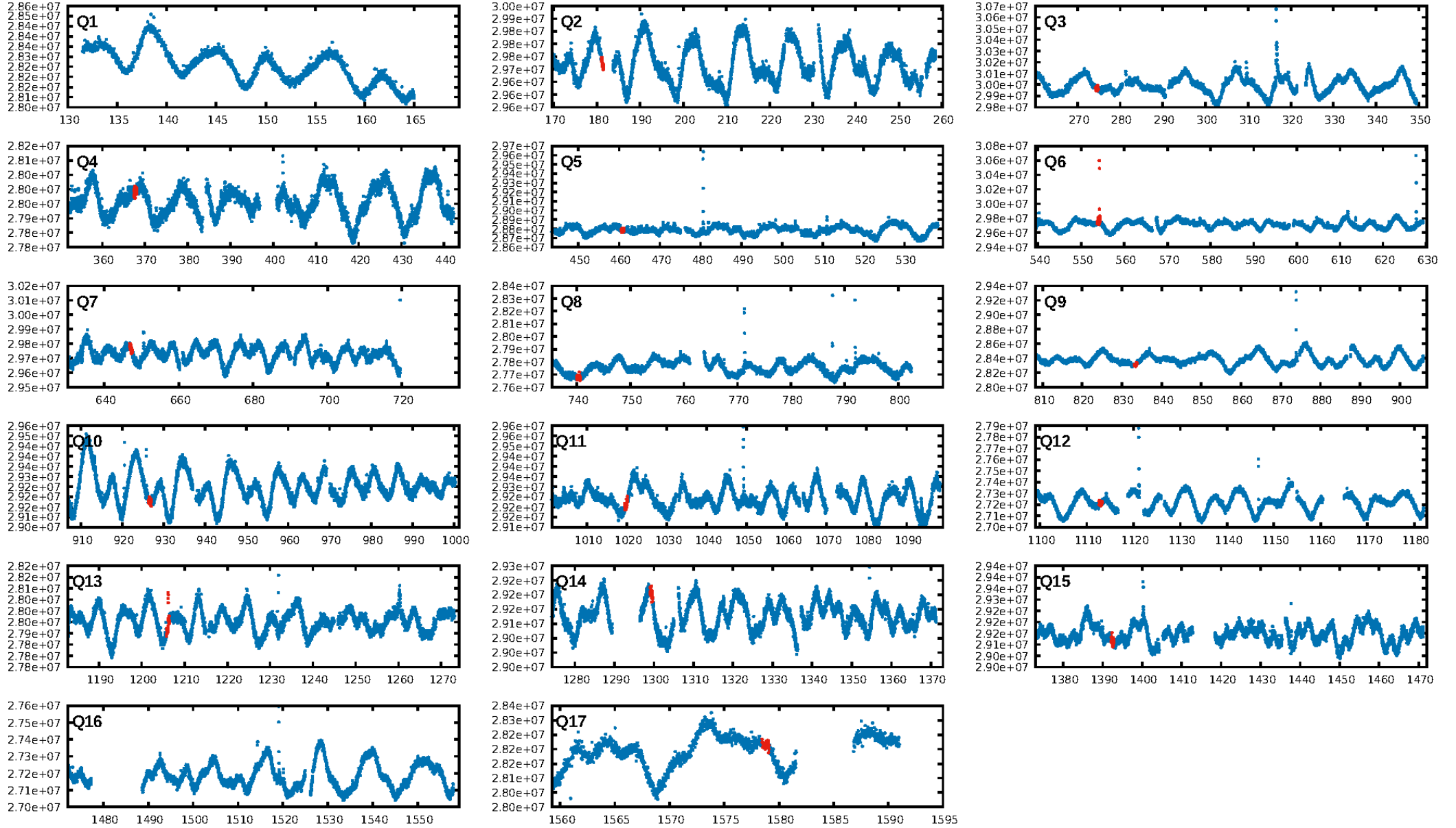
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [113.67 σ]
LongPeriod-sig: 100.0% [176.54 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 50.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -1.366
Centroid-sig: 1.1%
Centroid-so: 1.801 arcsec [2.50 σ]
OotOffset-rm: 1.057 arcsec [1.29 σ]
KicOffset-rm: 1.117 arcsec [1.28 σ]
OotOffset-st: 2/3/2/1 [8]
KicOffset-st: 2/3/2/1 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.58 [7/12]

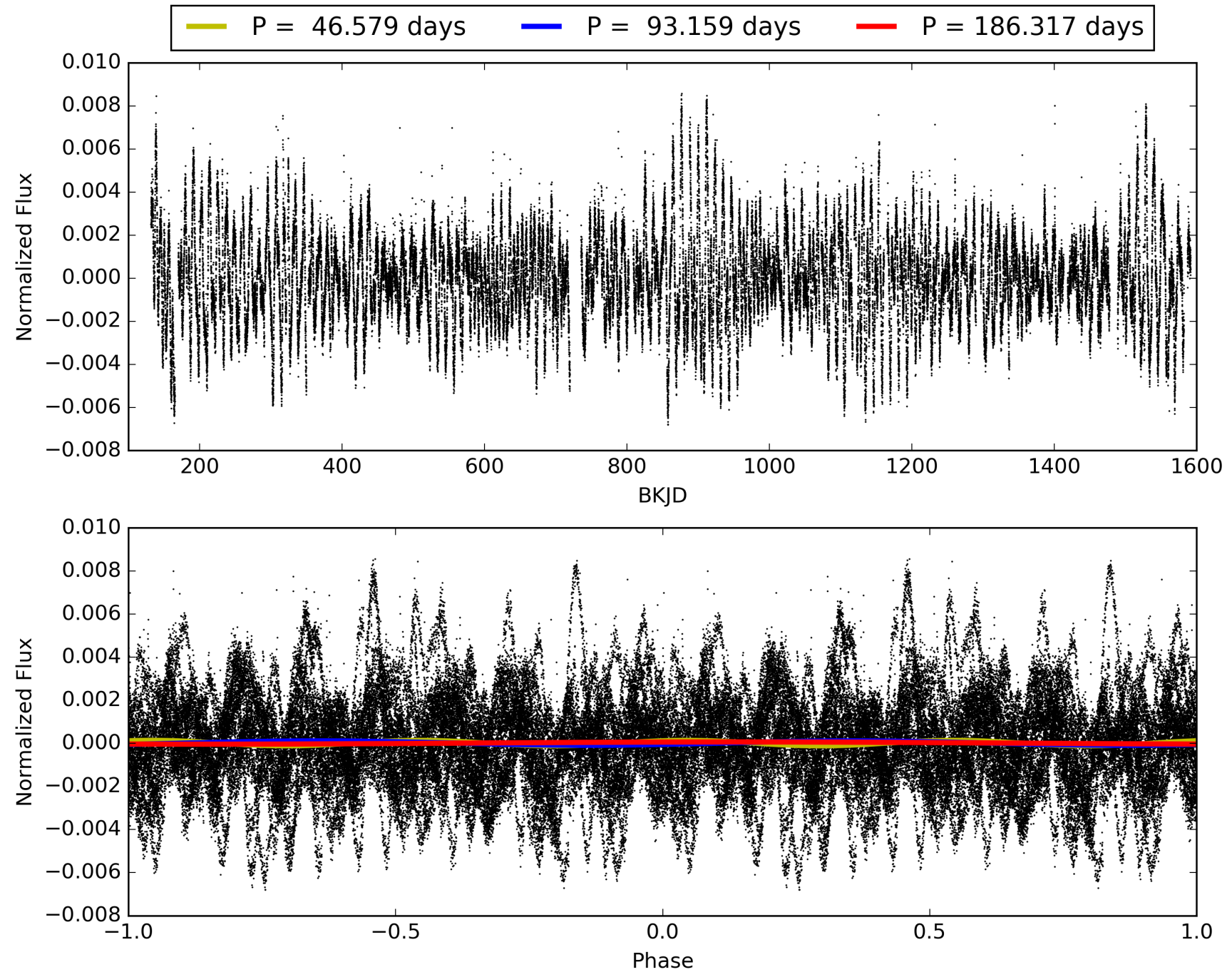
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:26 Z

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

TCE 012599435-06, PDC Light Curves

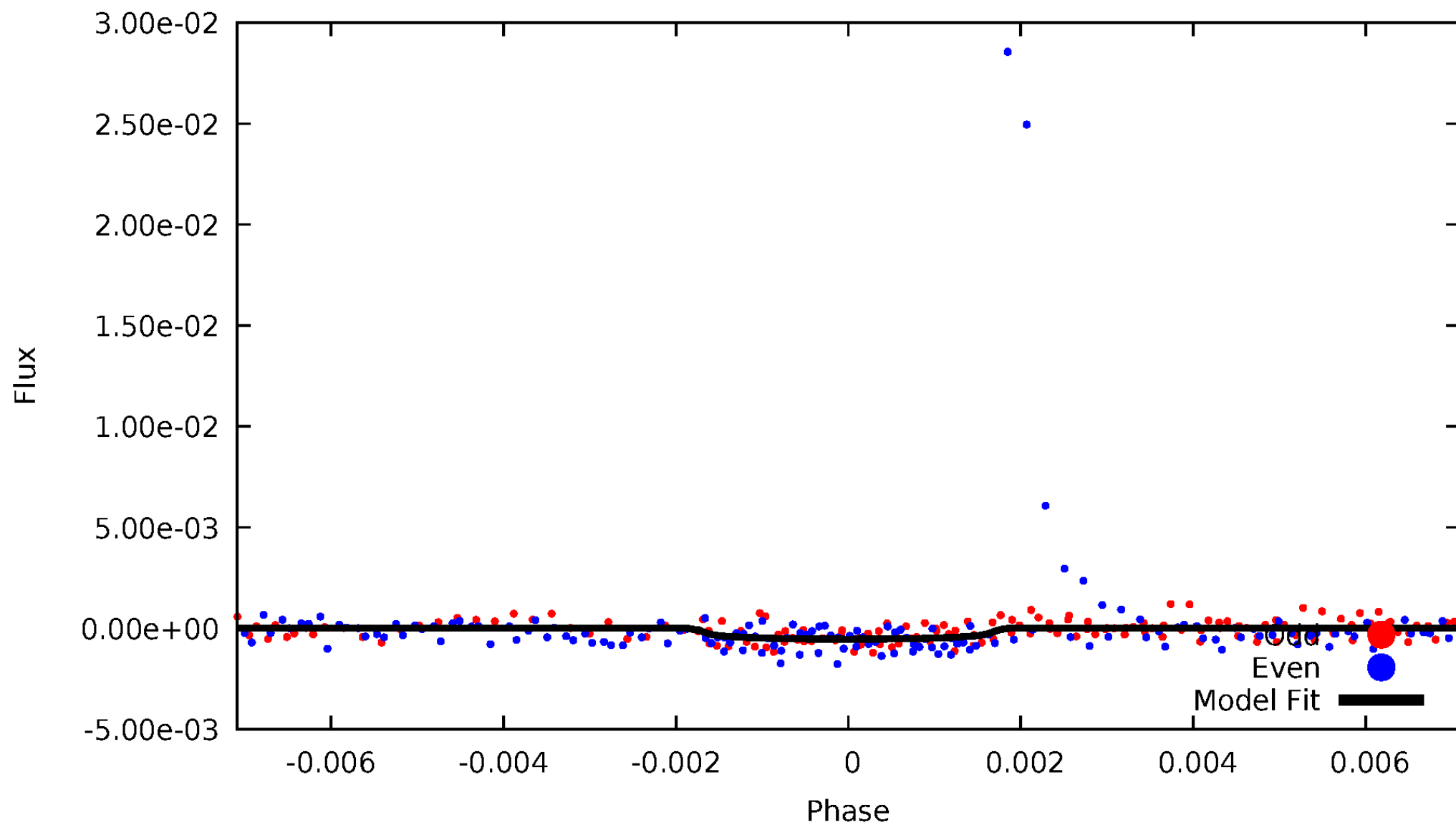


TCE 012599435-06



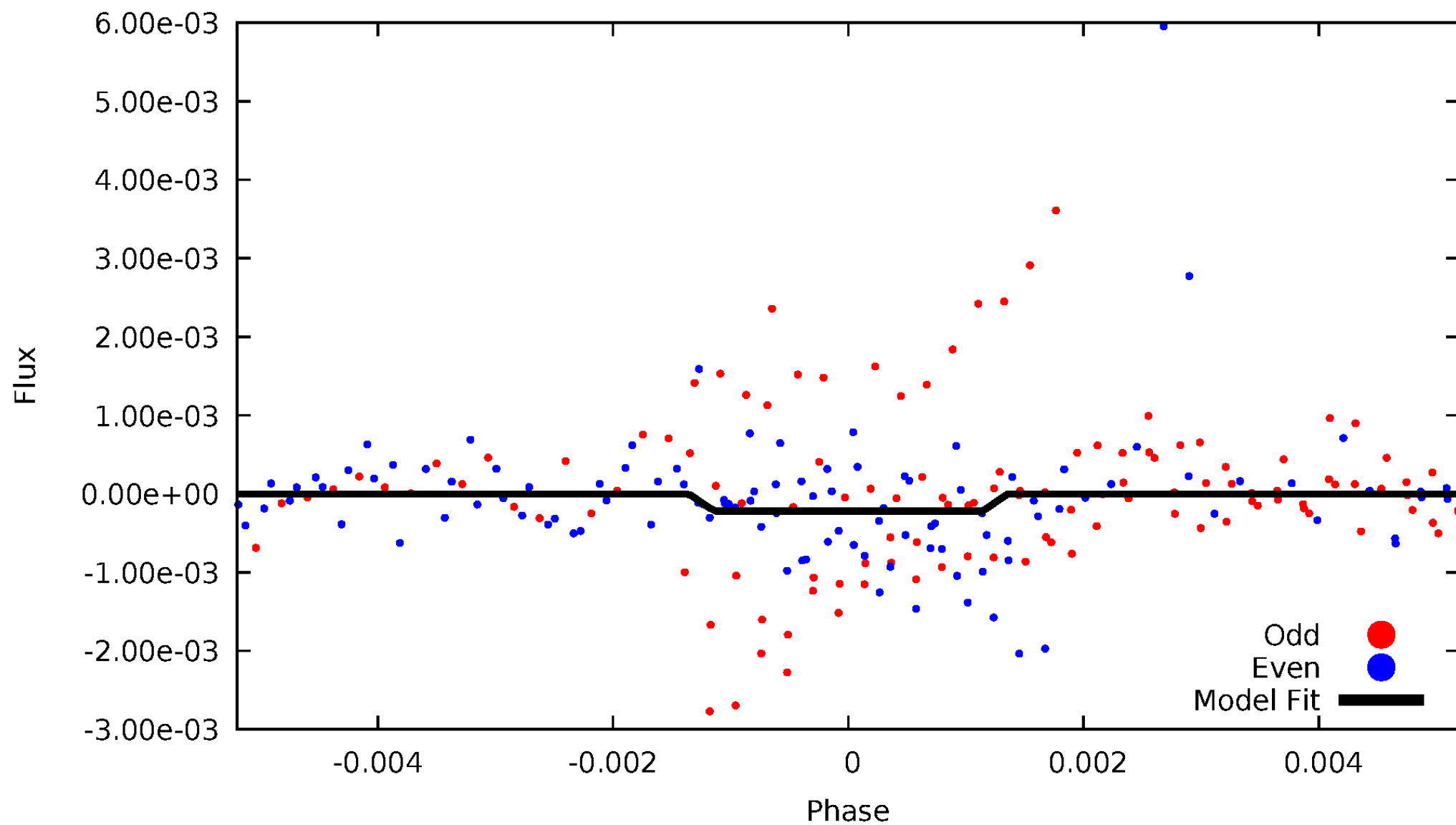
DV Odd/Even

TCE 012599435-06



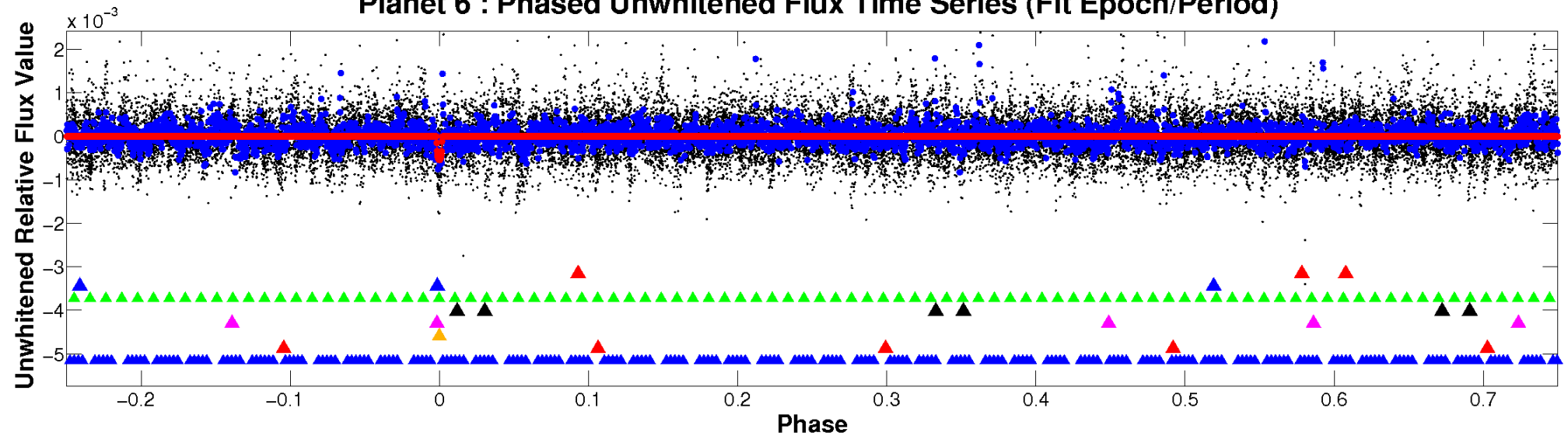
ALT Odd/Even

TCE 012599435-06

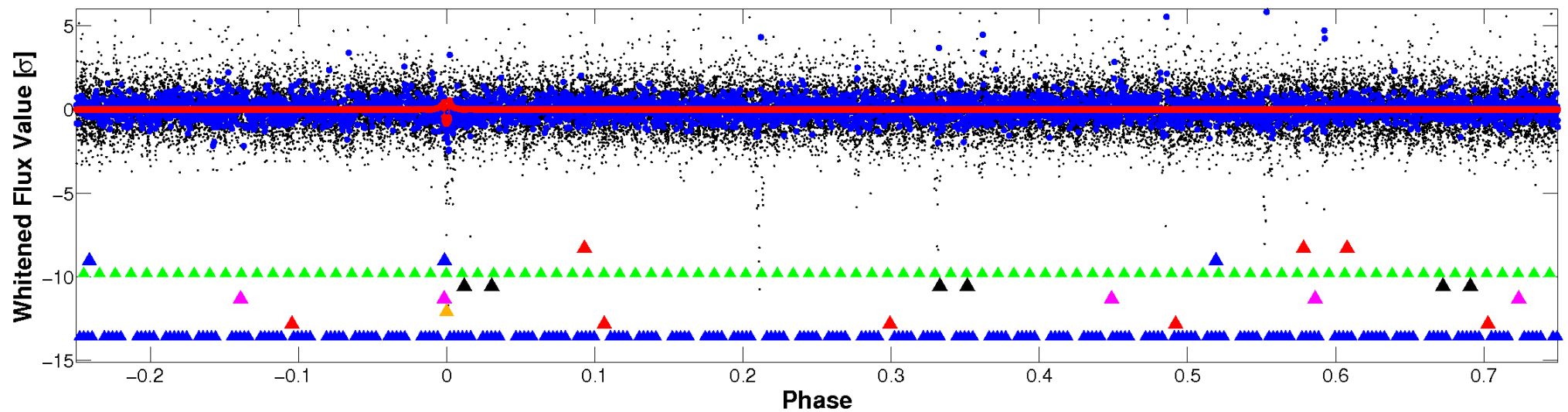


Non-Whitened Vs. Whitened Light Curve

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

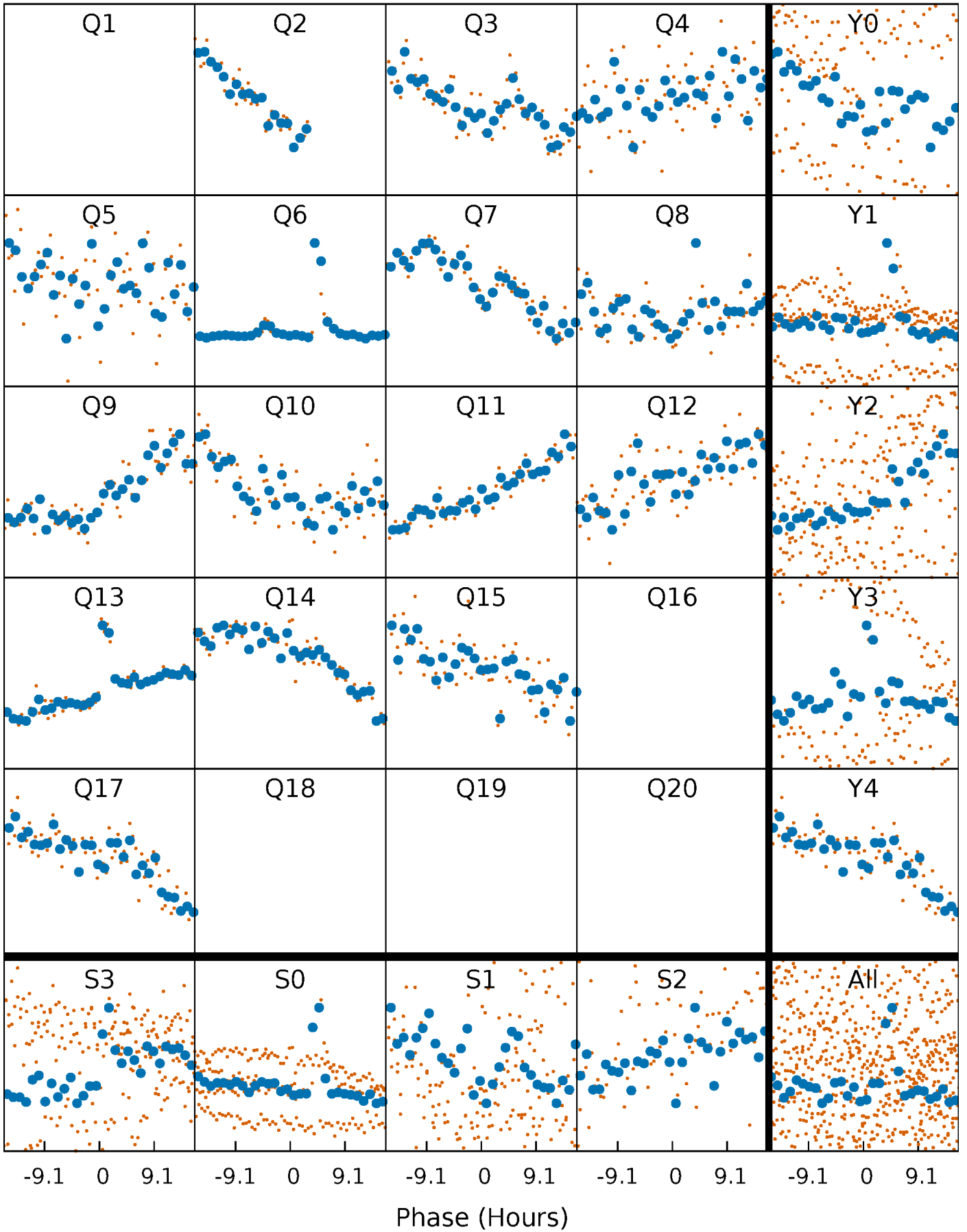


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



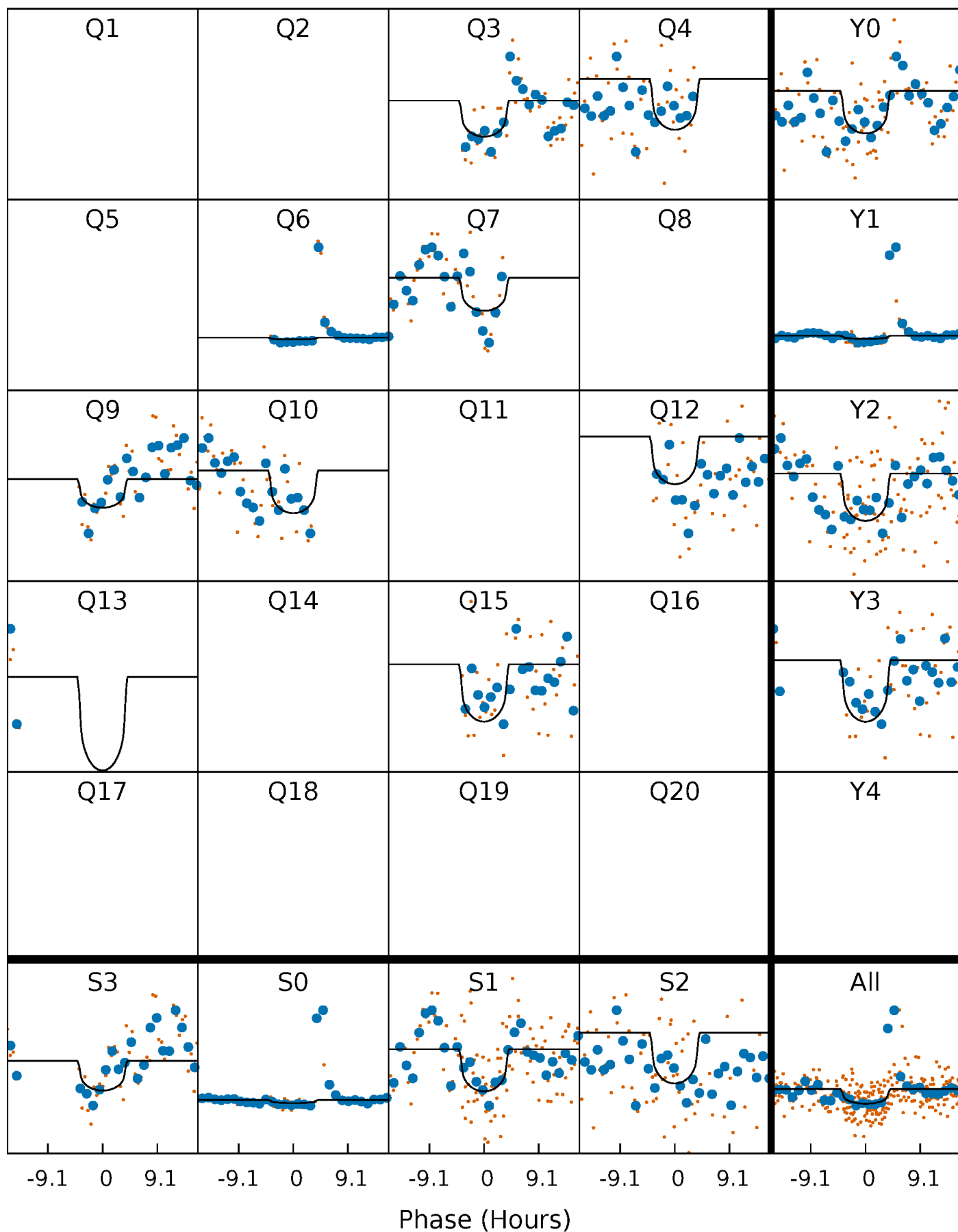
PDC Quarter-Phased Transit Curves

TCE 012599435-06 P= 93.158555 Days $T_0=181.396279$ (BKJD)



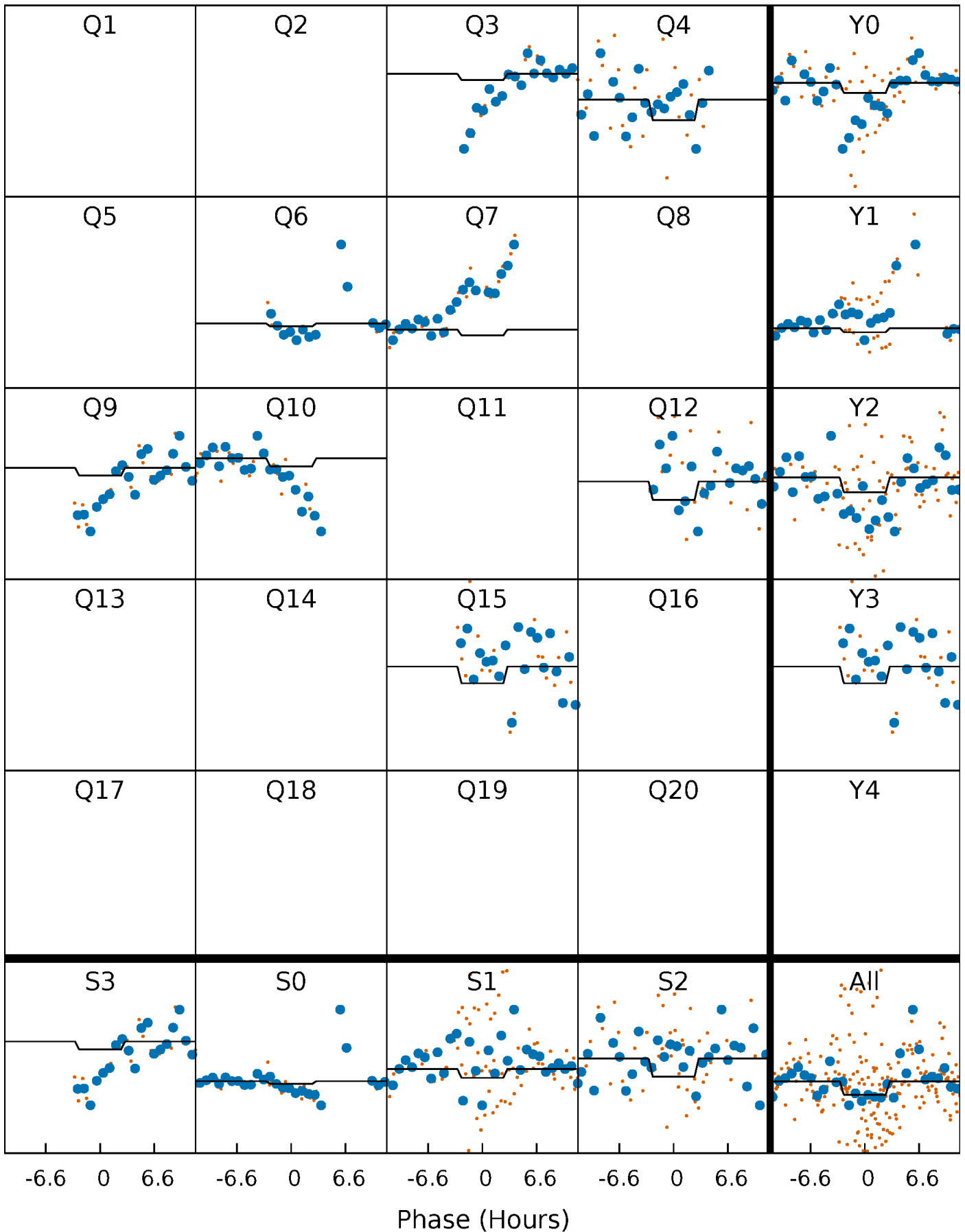
DV Quarter-Phased Transit Curves

TCE 012599435-06 P= 93.158555 Days $T_0=181.396279$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

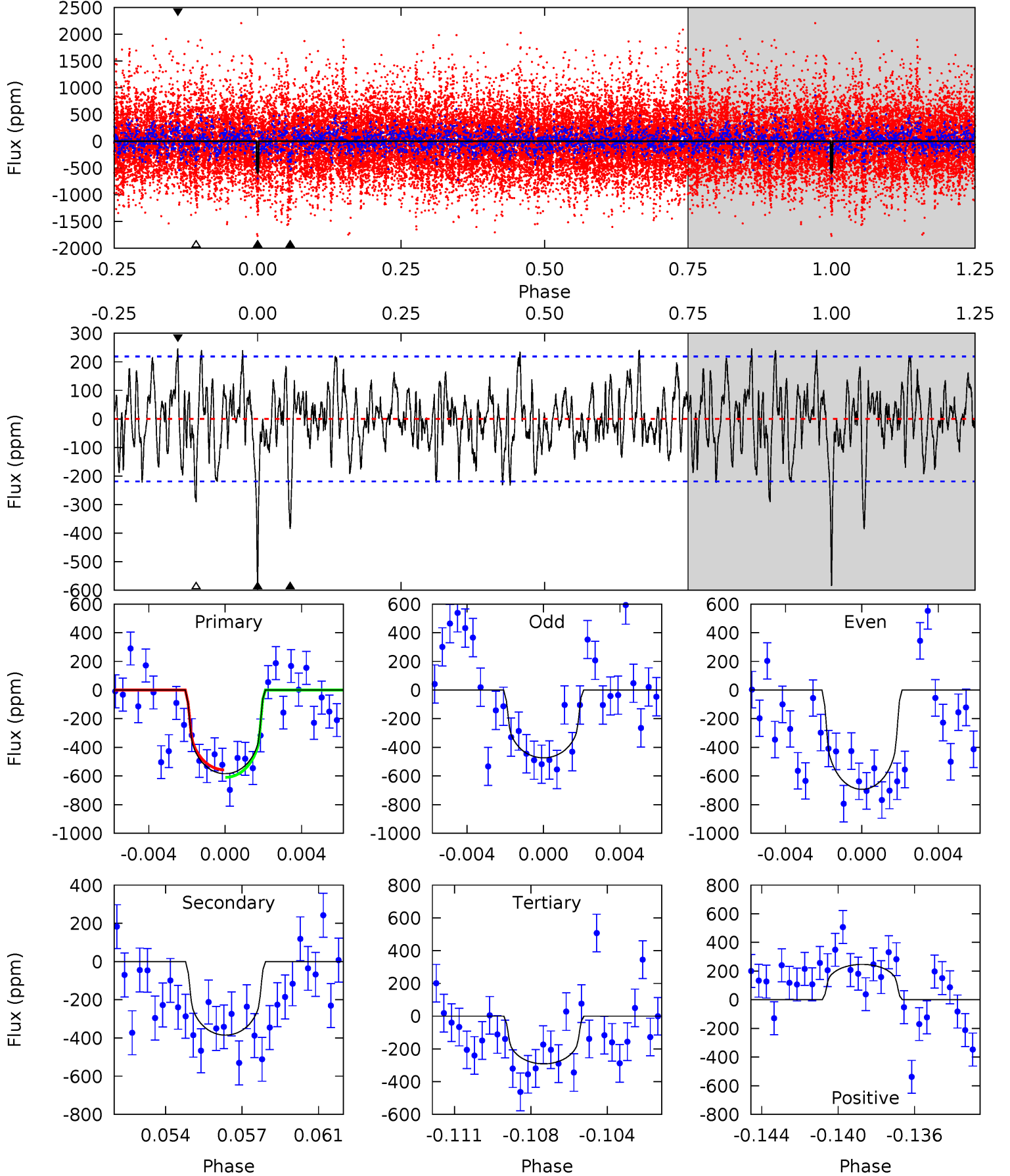
TCE 012599435-06 $P = 93.159772$ Days $T_0 = 181.354906$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-06, P = 93.158555 Days, E = 88.237724 Days

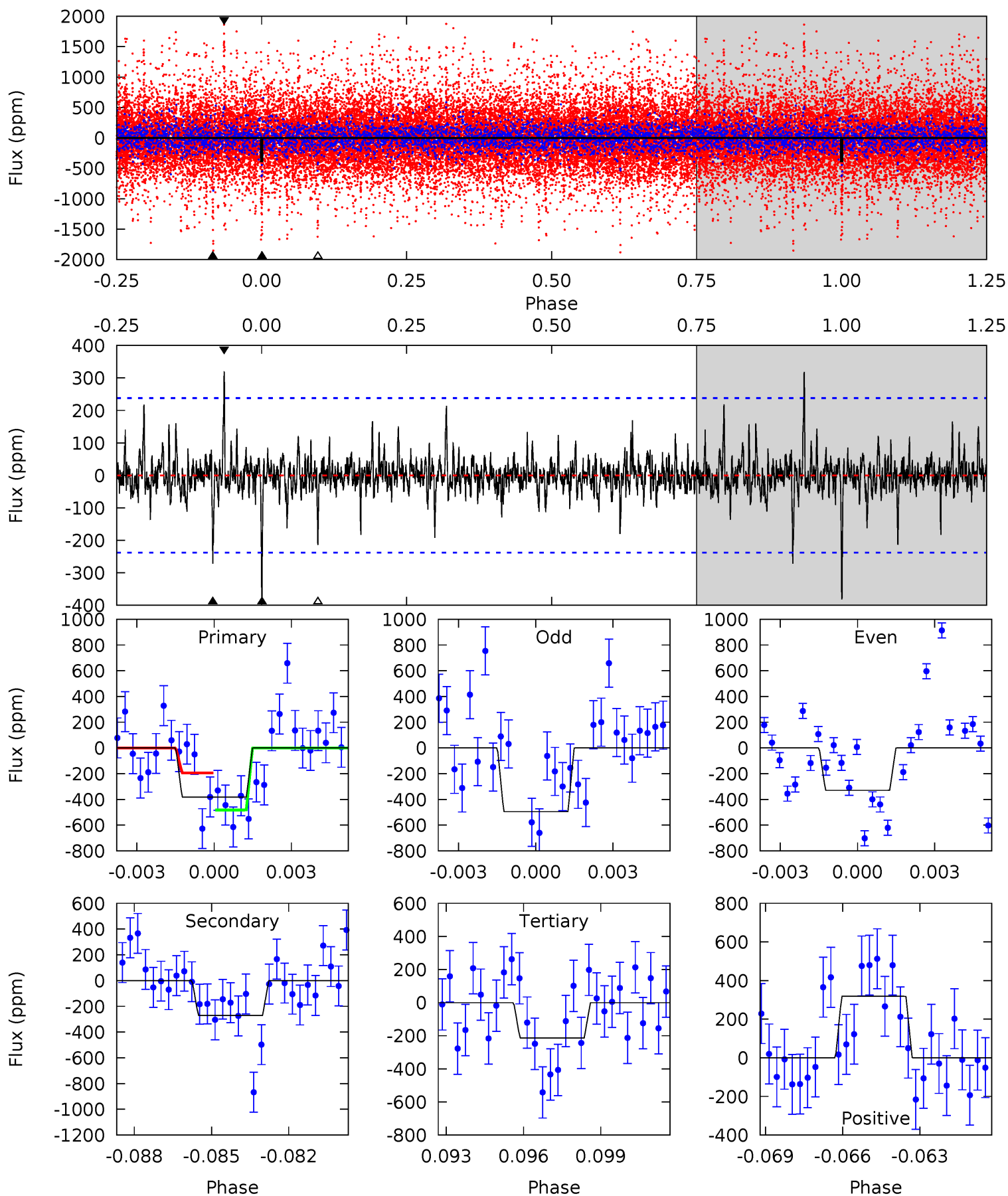
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	9.19	6.95	5.88	5.22	2.91	2.10	6.98	8.05	2.23	3.30	2.63	1.28	0.30	0.62



Alt Model-Shift Uniqueness Test

012599435-06, P = 93.159772 Days, E = 88.195134 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.47	6.01	4.74	7.05	5.27	3.00	1.07	3.73	1.42	1.28	-1.04	1.86	0.77	0.45	3.16



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-385 ± 42	$2.47^{+1.96}_{-1.70}$	423^{+14}_{-17}	4069^{+2643}_{-754}	4479^{+41396}_{-3121}
Alt.	-271 ± 45	$2.13^{+2.04}_{-1.38}$	422^{+15}_{-15}	3996^{+2179}_{-794}	4124^{+29442}_{-3040}

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

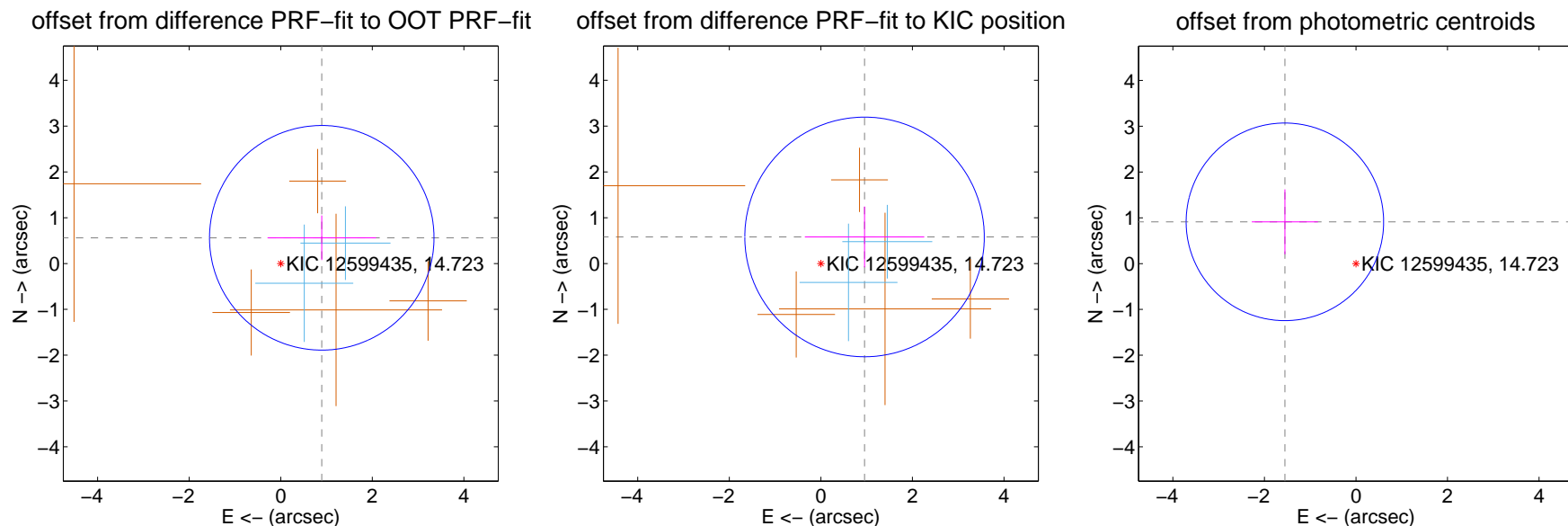
DV Centroid Data

Supplemental centroid analysis for 012599435-06. Kepler magnitude: 14.72. Transit SNR 8.19

There are 2 quarters with good PRF difference image offsets

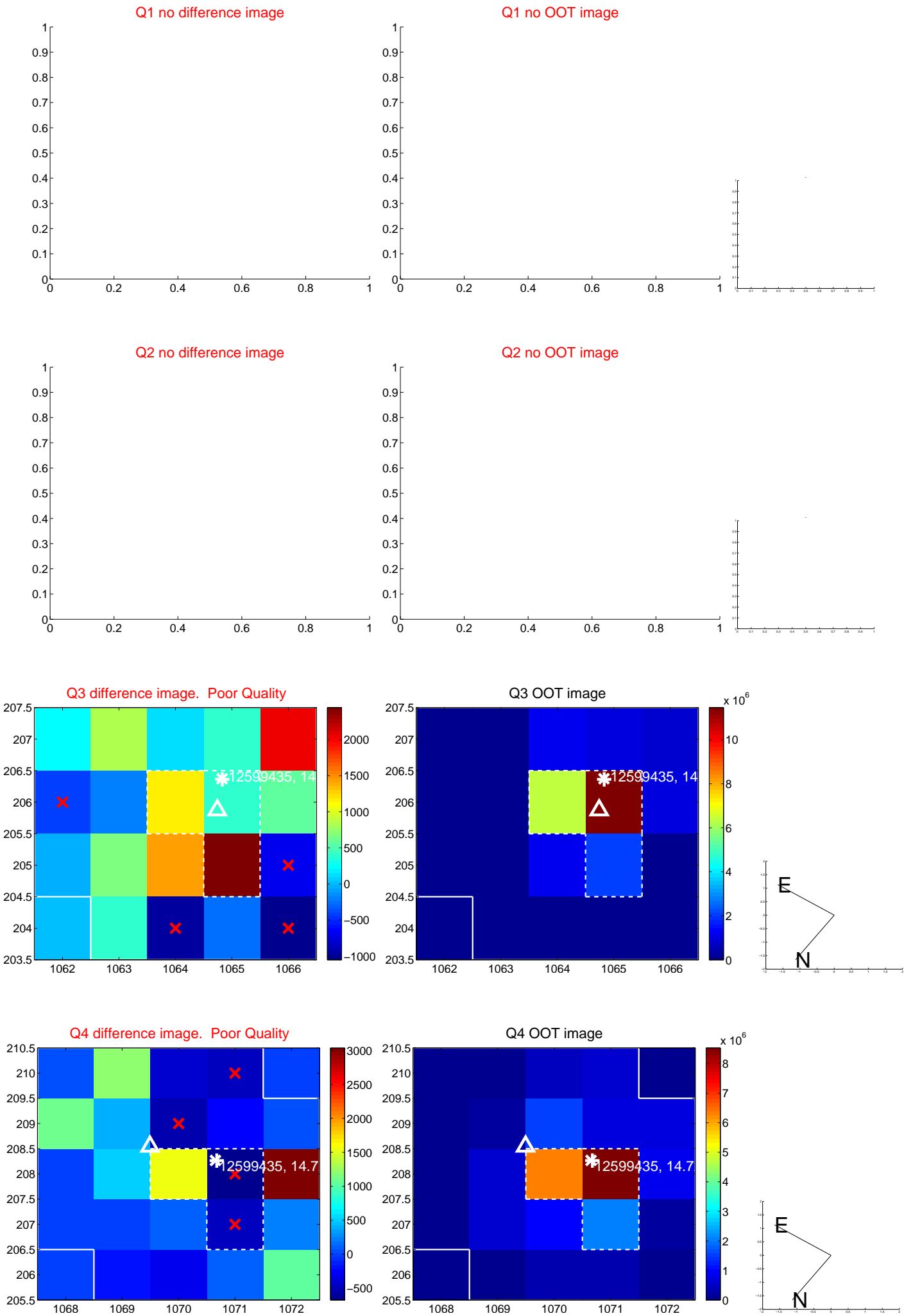
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.057 ± 0.817	1.29	-0.896 ± 1.184	0.562 ± 0.487
PRF-fit source offset from KIC position	1.117 ± 0.872	1.28	-0.954 ± 1.304	0.581 ± 0.663
photometric centroid source offset	1.80 ± 0.72	2.50	1.55 ± 0.72	0.91 ± 0.71

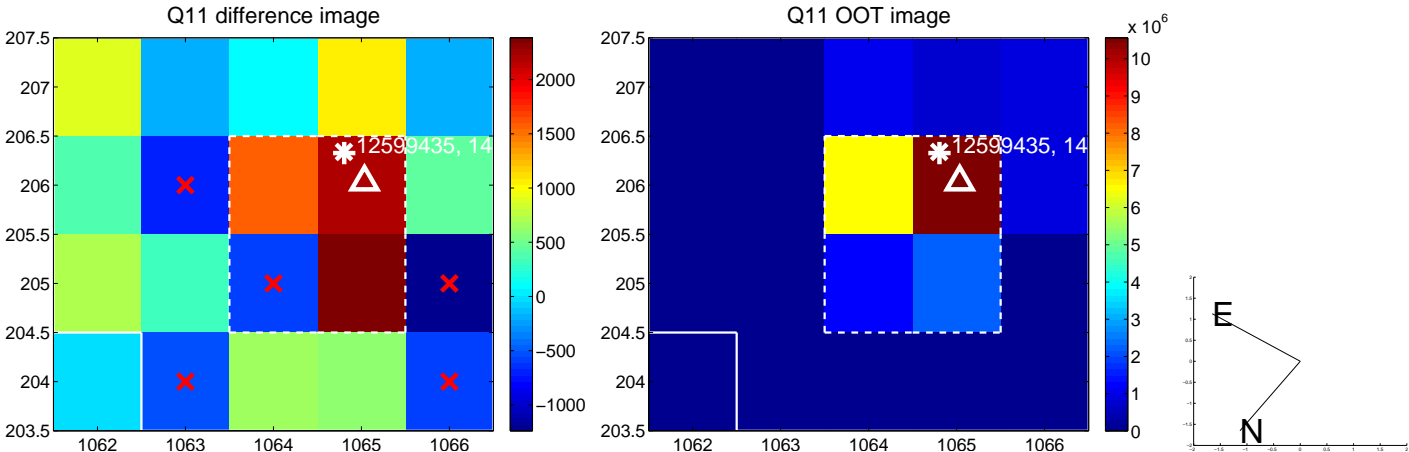
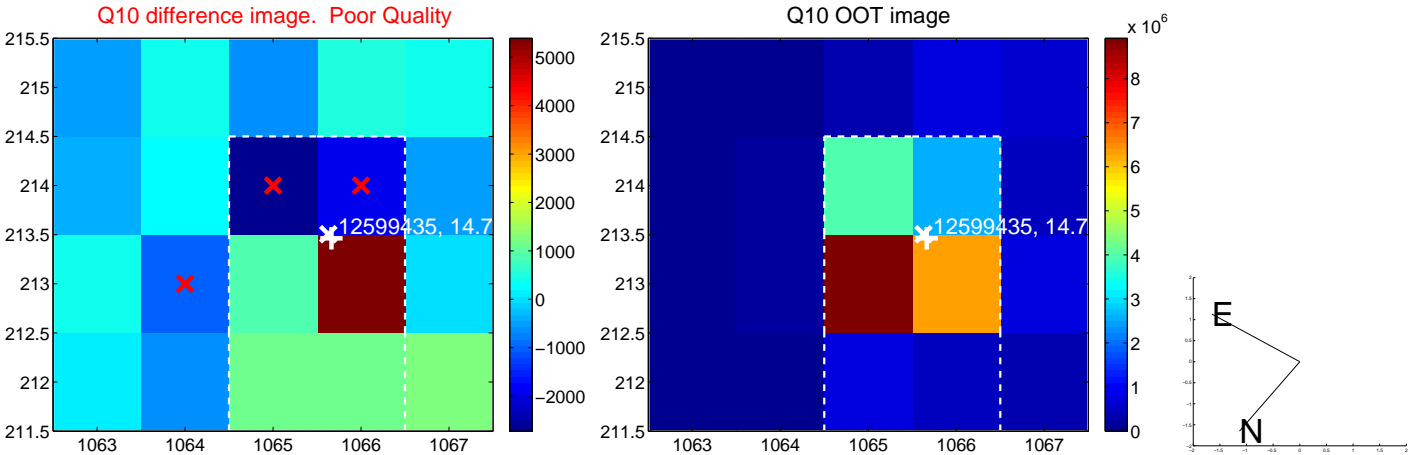
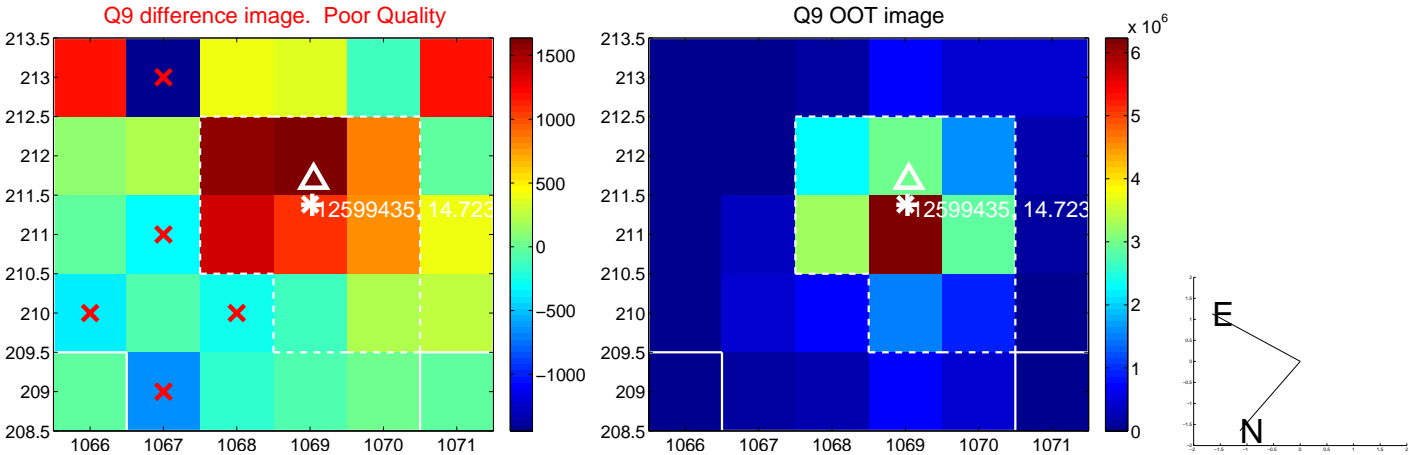


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

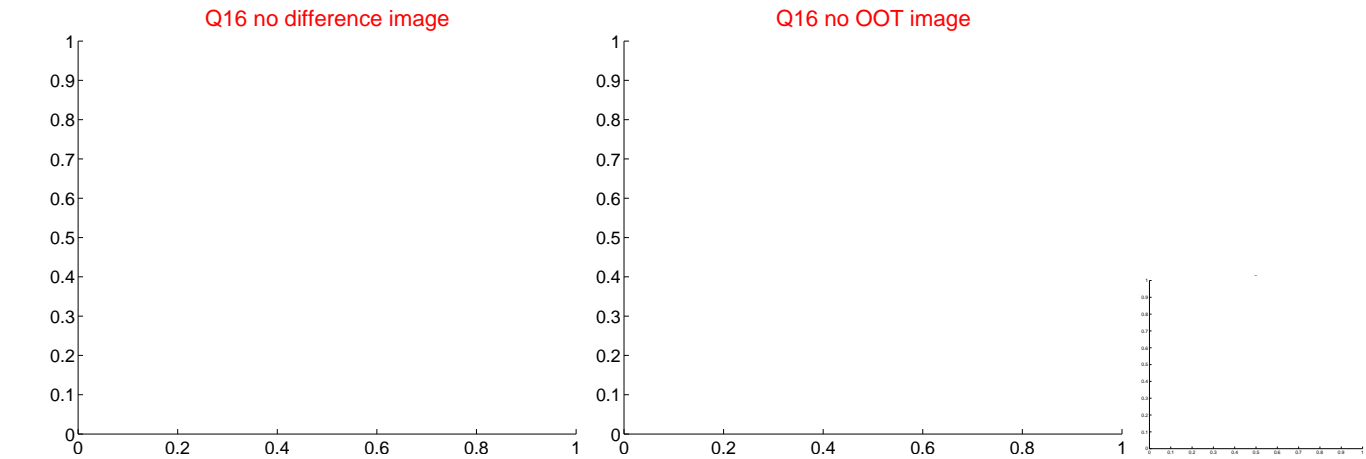
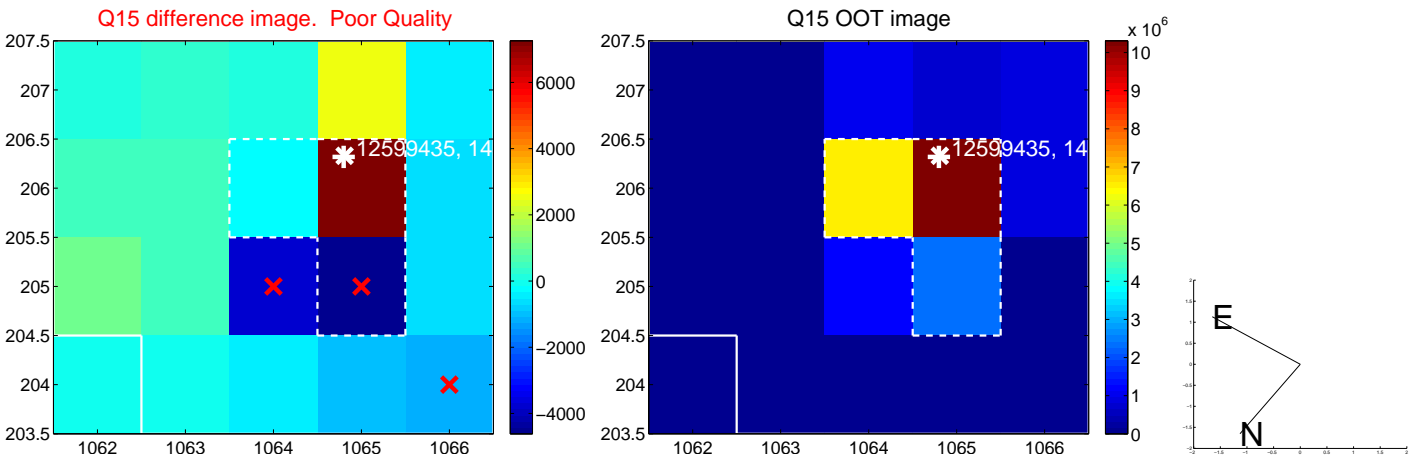
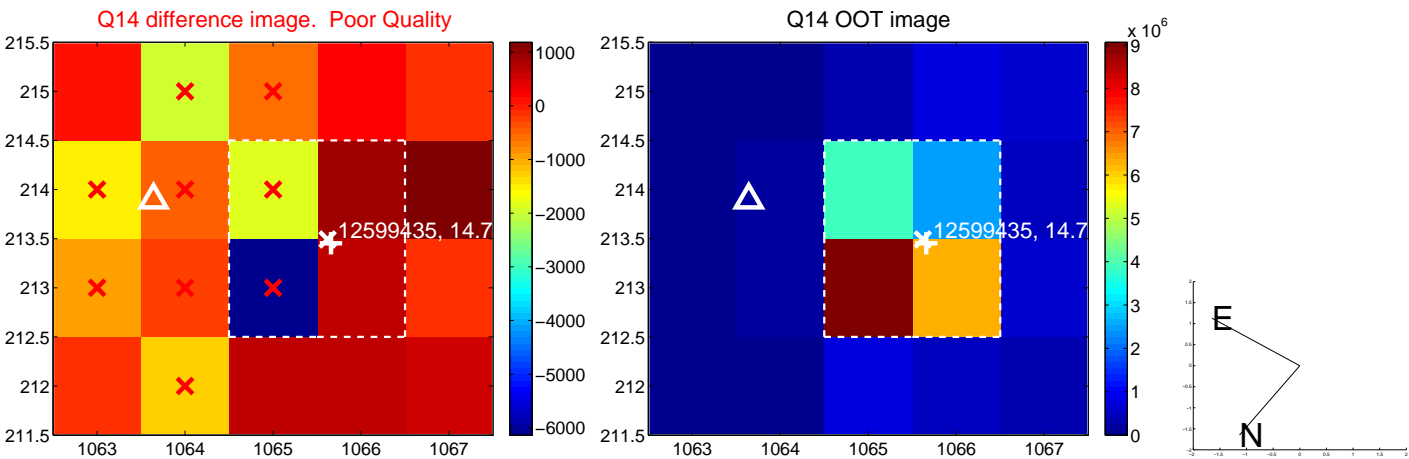
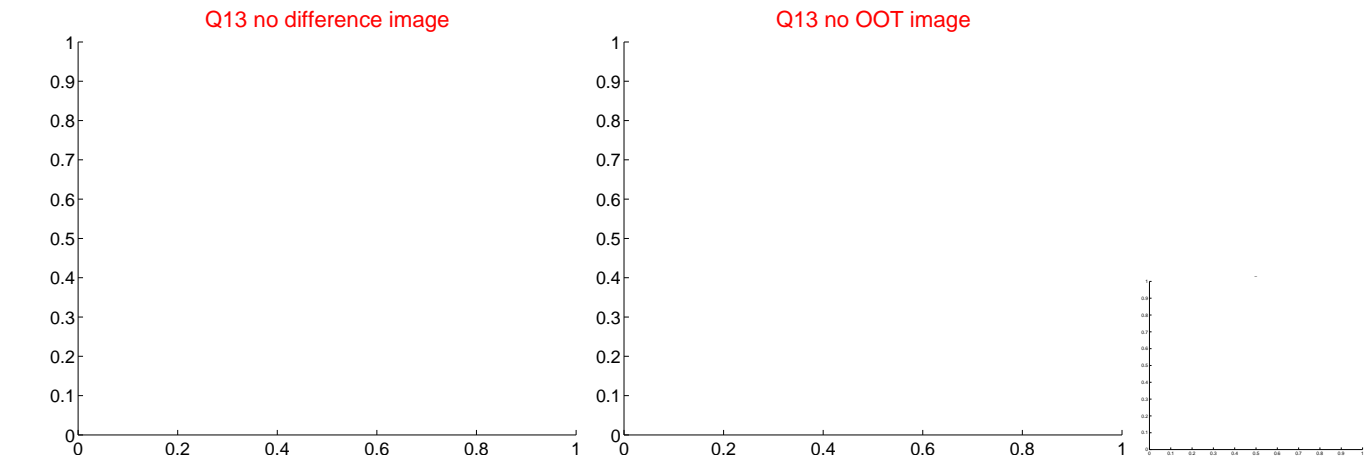
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



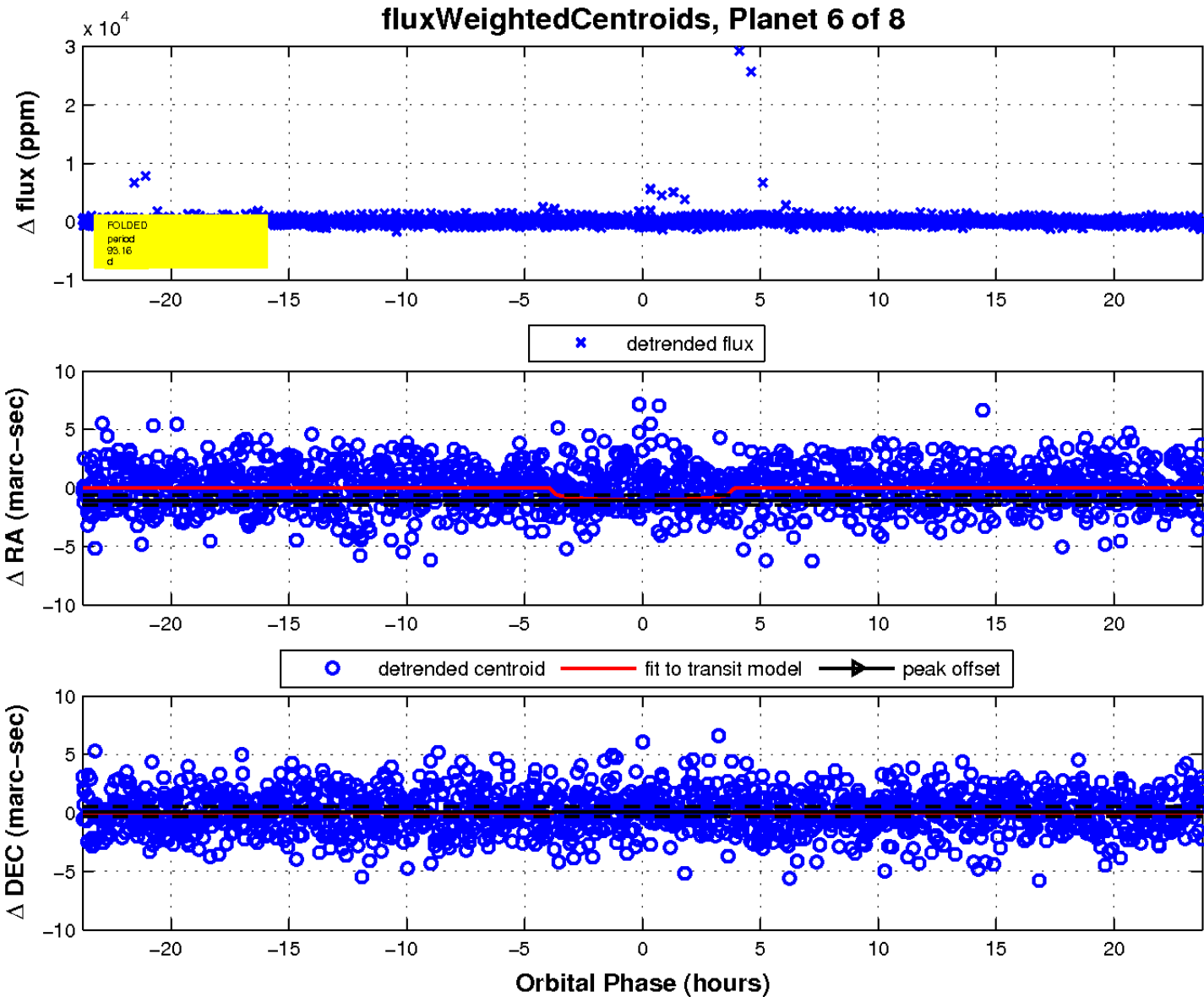
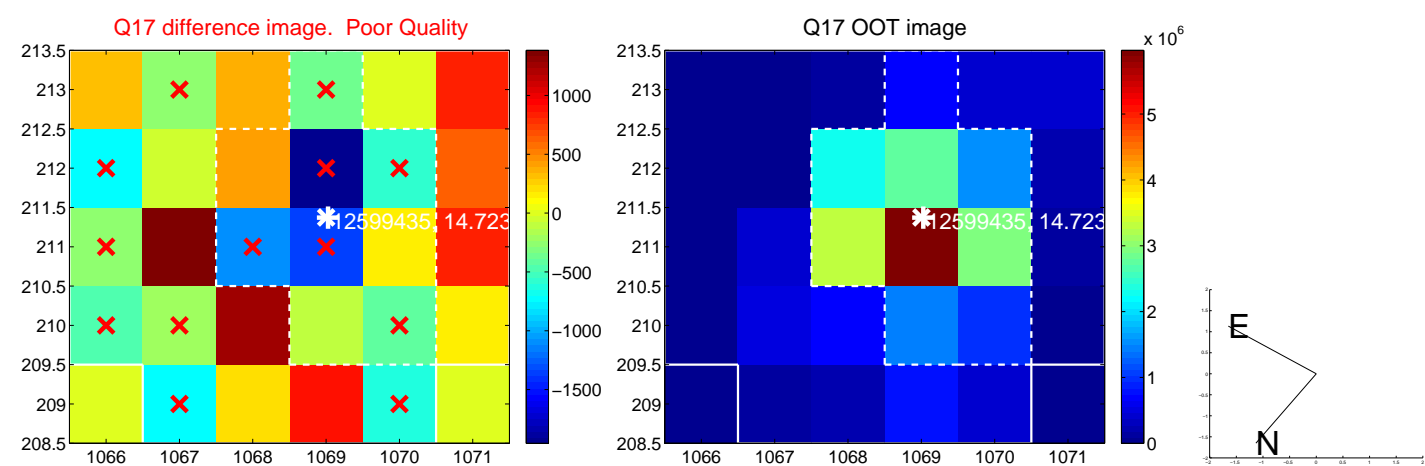
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

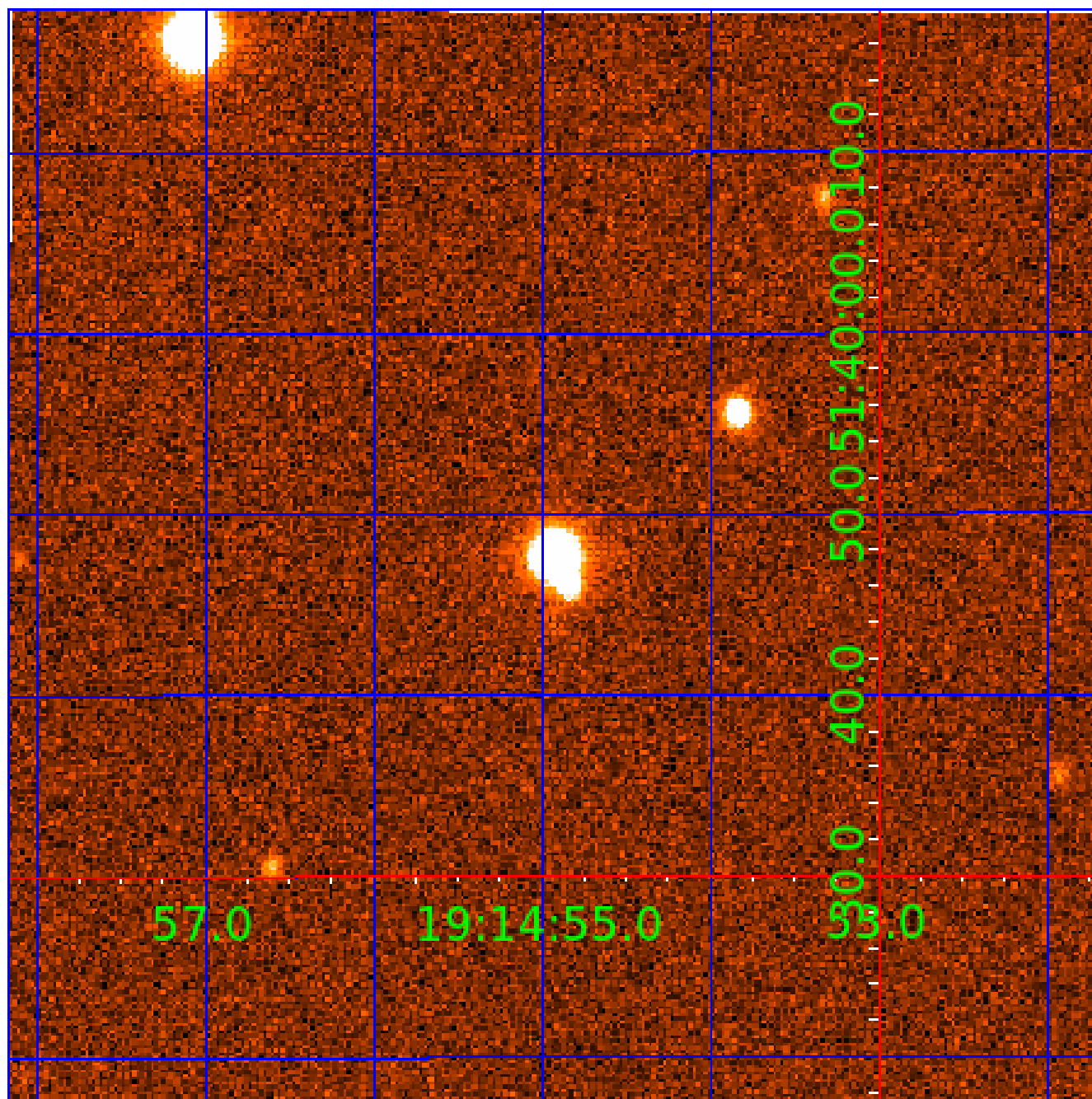


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

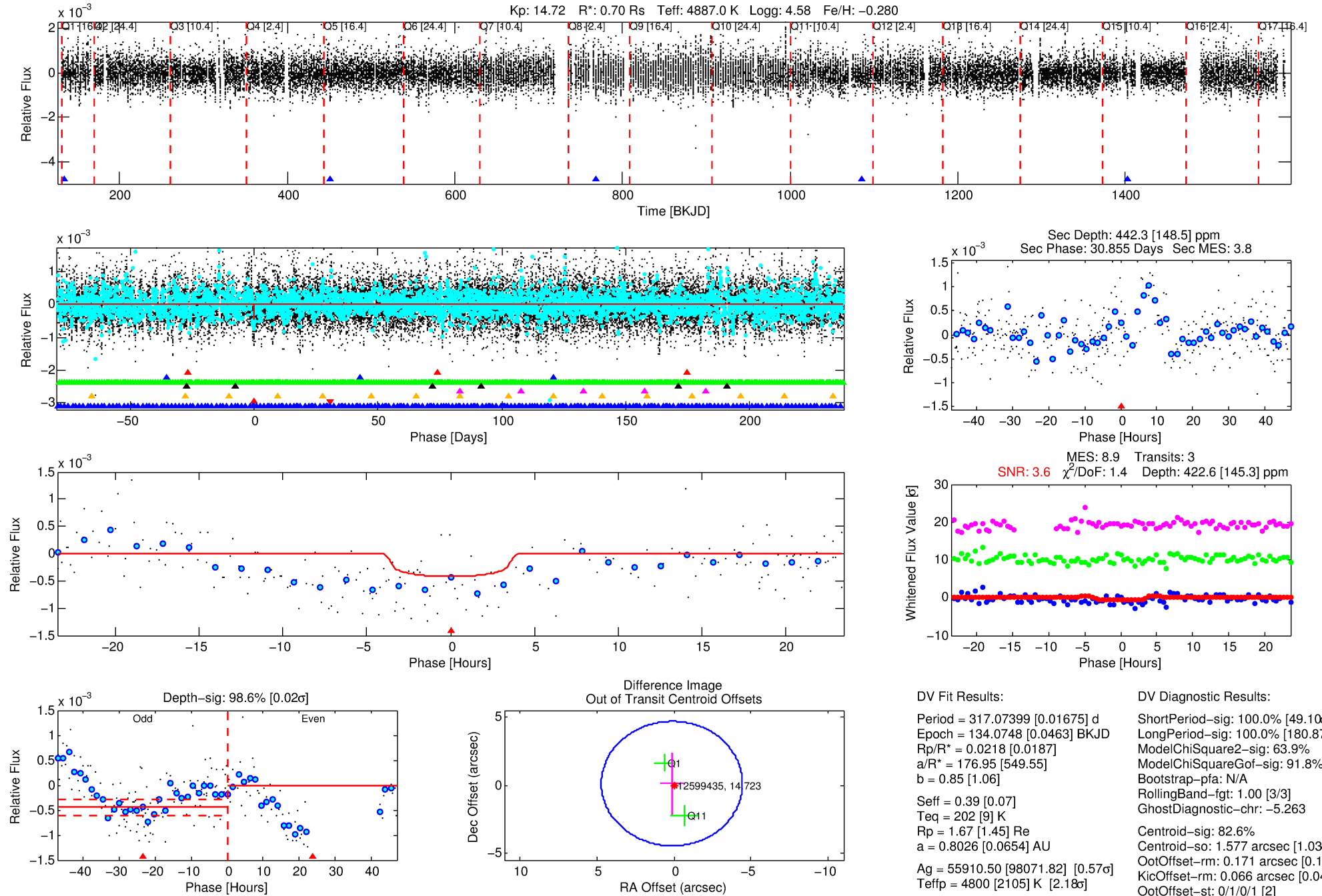
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-07

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 7 of 8 Period: 317.074 d



DV Fit Results:

Period = 317.07399 [0.01675] d
Epoch = 134.0748 [0.0463] BKJD
Rp/R* = 0.0218 [0.0187]
a/R* = 176.95 [549.55]
b = 0.85 [1.06]
Seff = 0.39 [0.07]
Teq = 202 [9] K
Rp = 1.67 [1.45] Re
a = 0.8026 [0.0654] AU
Ag = 55910.50 [98071.82] [0.57 σ]
Teffp = 4800 [2105] K [2.18 σ]

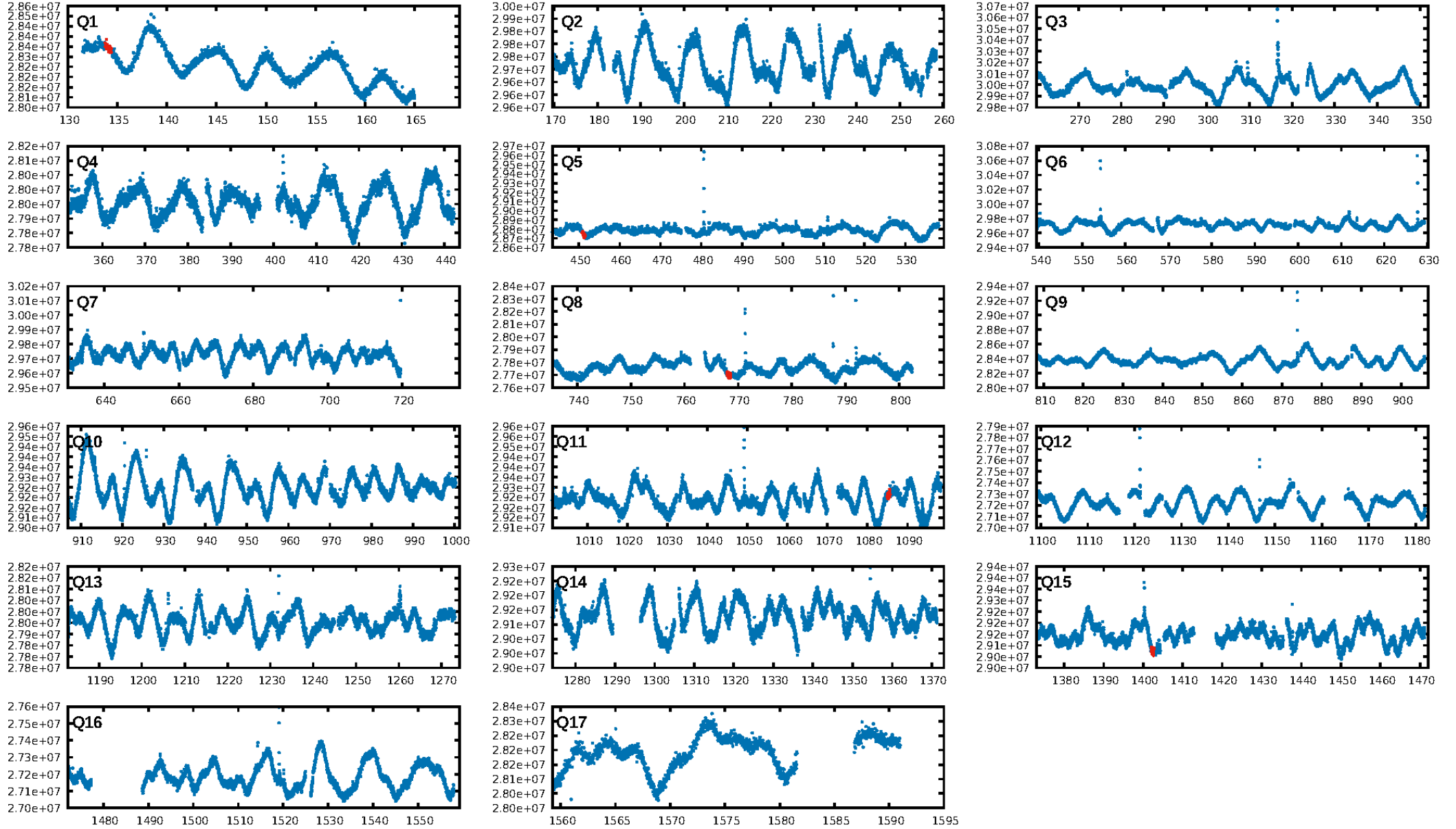
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [49.10 σ]
LongPeriod-sig: 100.0% [180.87 σ]
ModelChiSquare2-sig: 63.9%
ModelChiSquareGof-sig: 91.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -5.263
Centroid-sig: 82.6%
Centroid-so: 1.5777 arcsec [1.03 σ]
OotOffset-rm: 0.171 arcsec [0.11 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 0.066 arcsec [0.04 σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.20 [1/5]

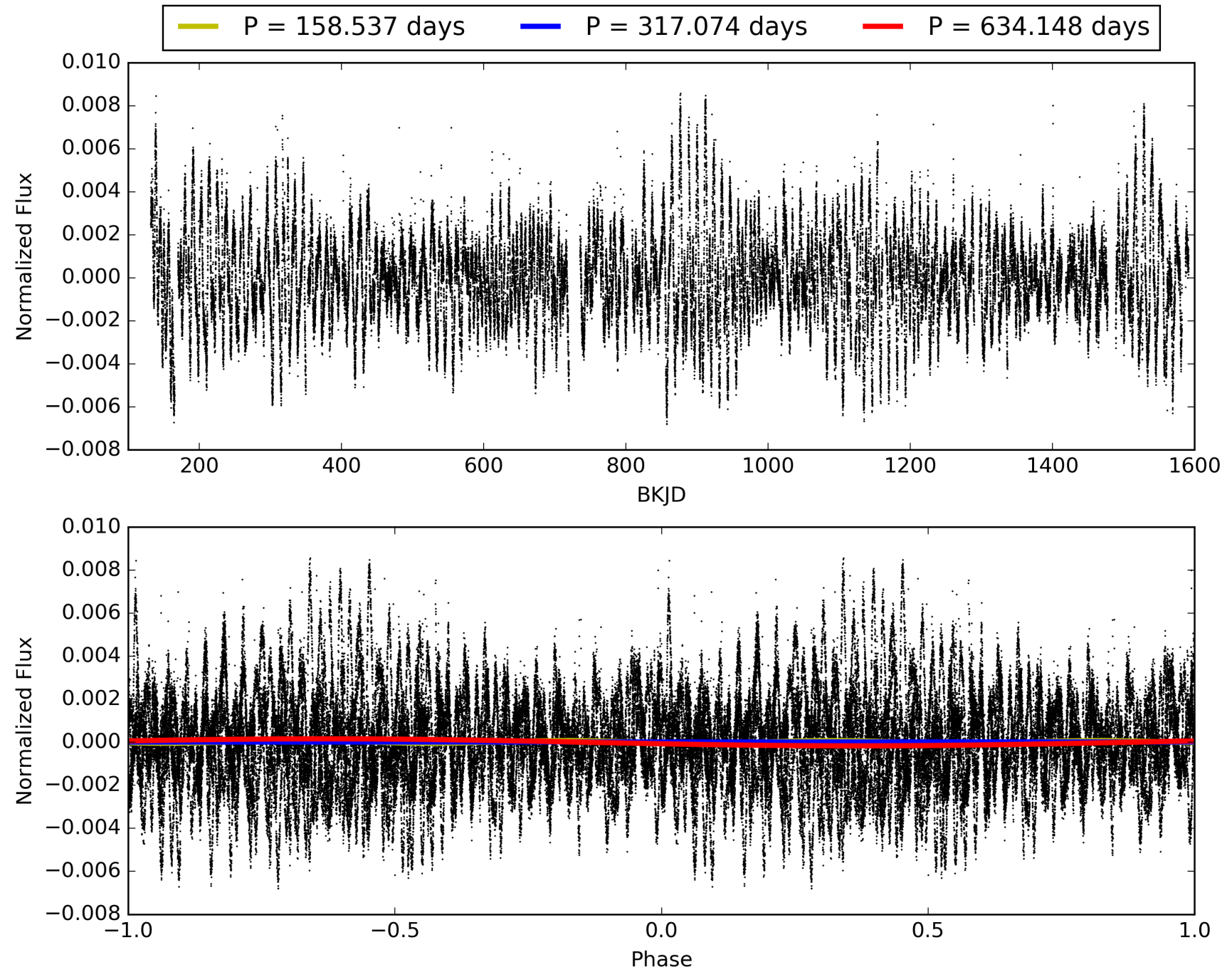
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:32 Z

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

TCE 012599435-07, PDC Light Curves

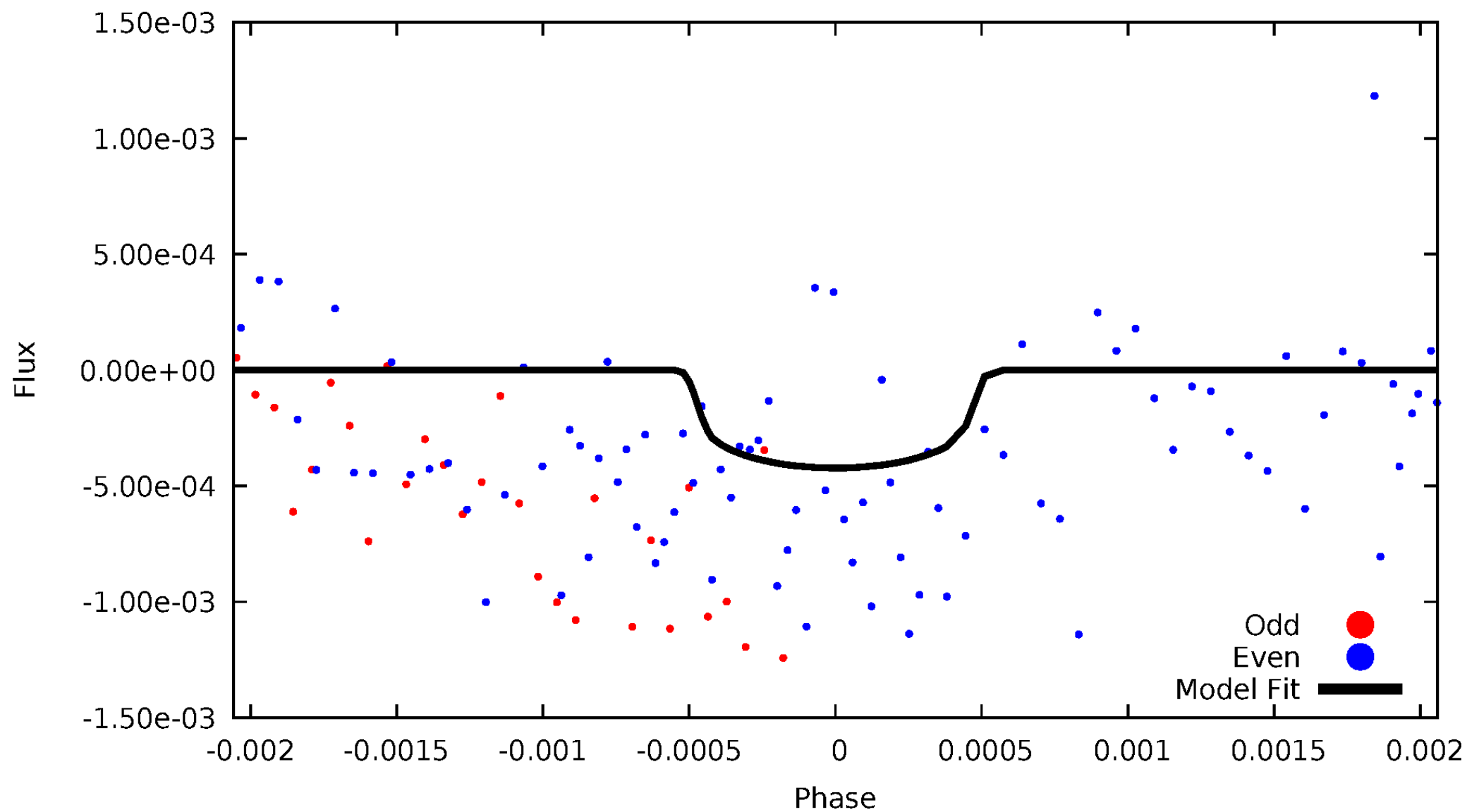


TCE 012599435-07



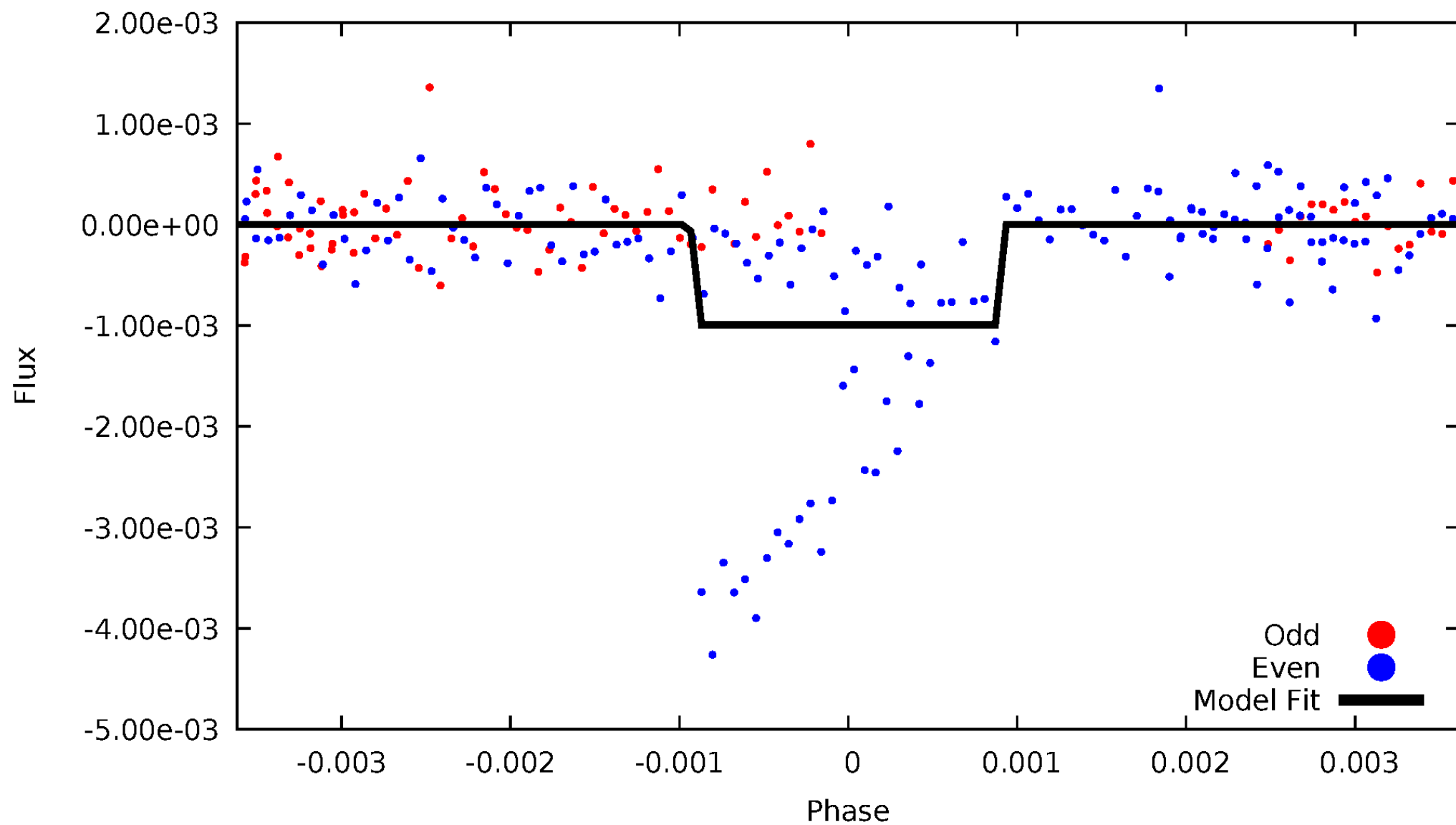
DV Odd/Even

TCE 012599435-07



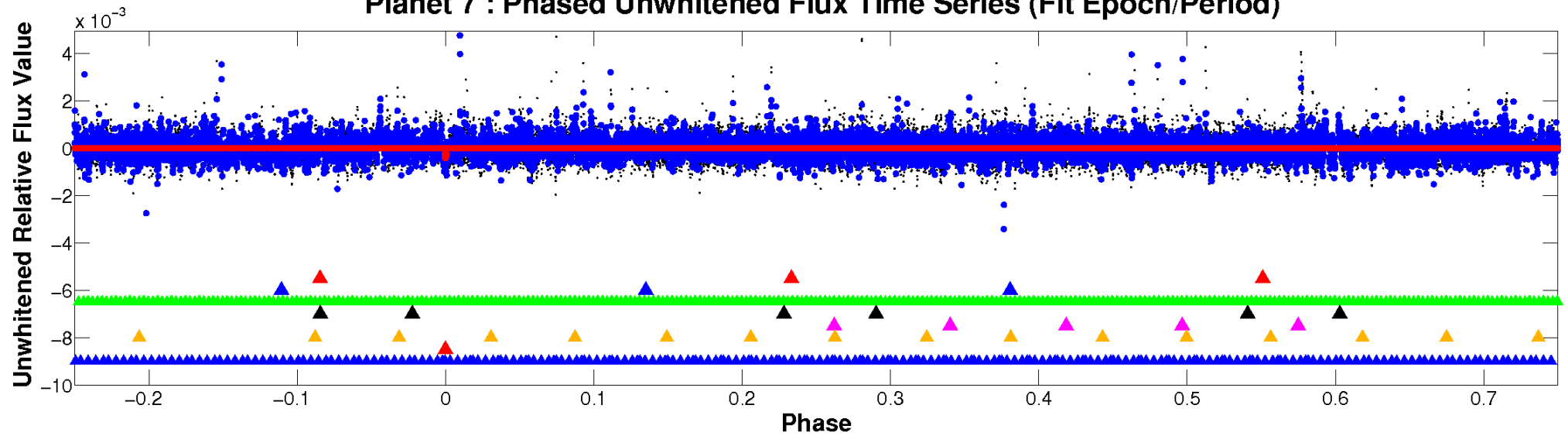
ALT Odd/Even

TCE 012599435-07

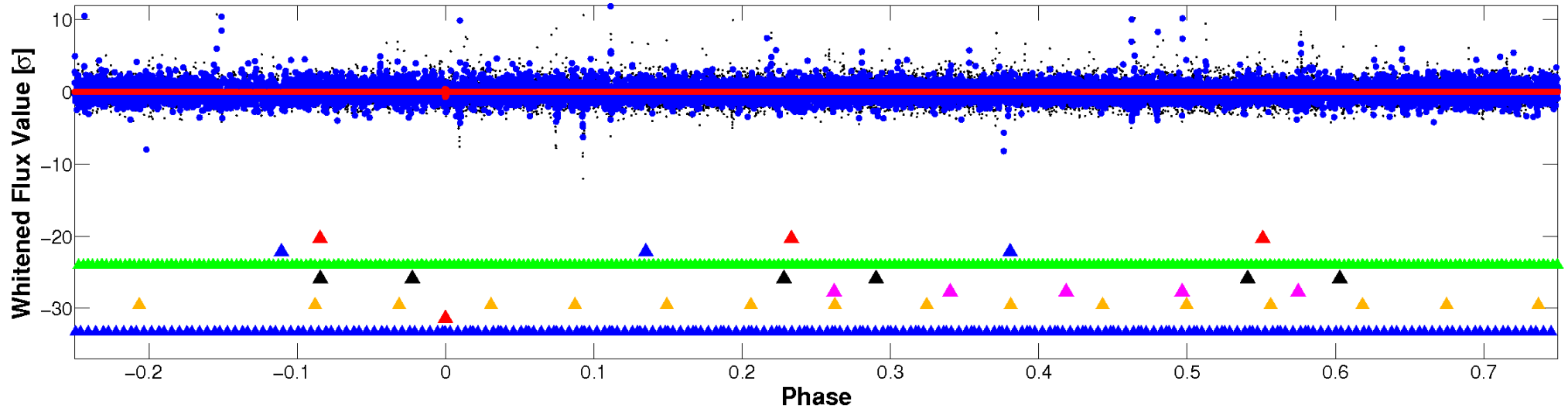


Non-Whitened Vs. Whitened Light Curve

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

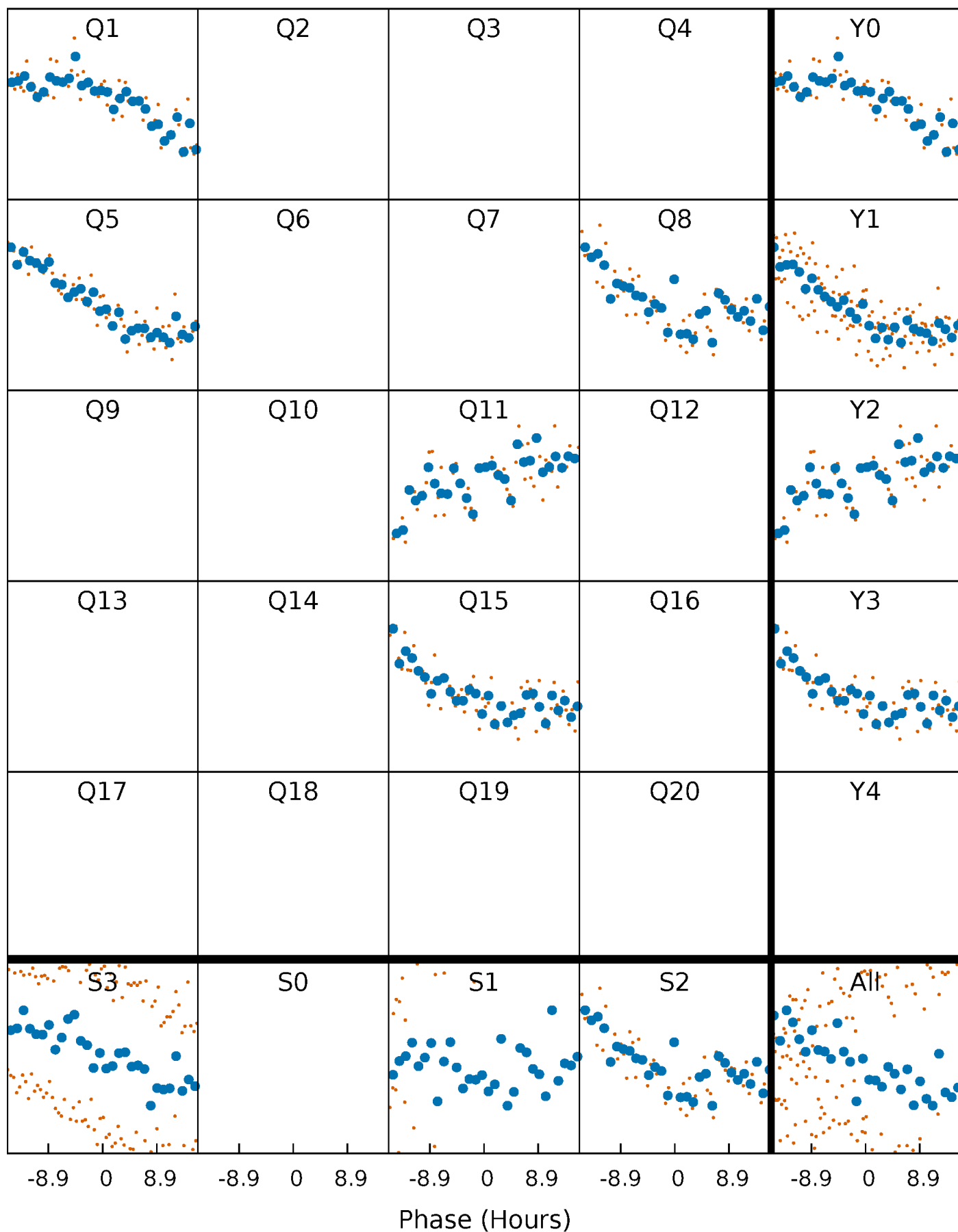


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



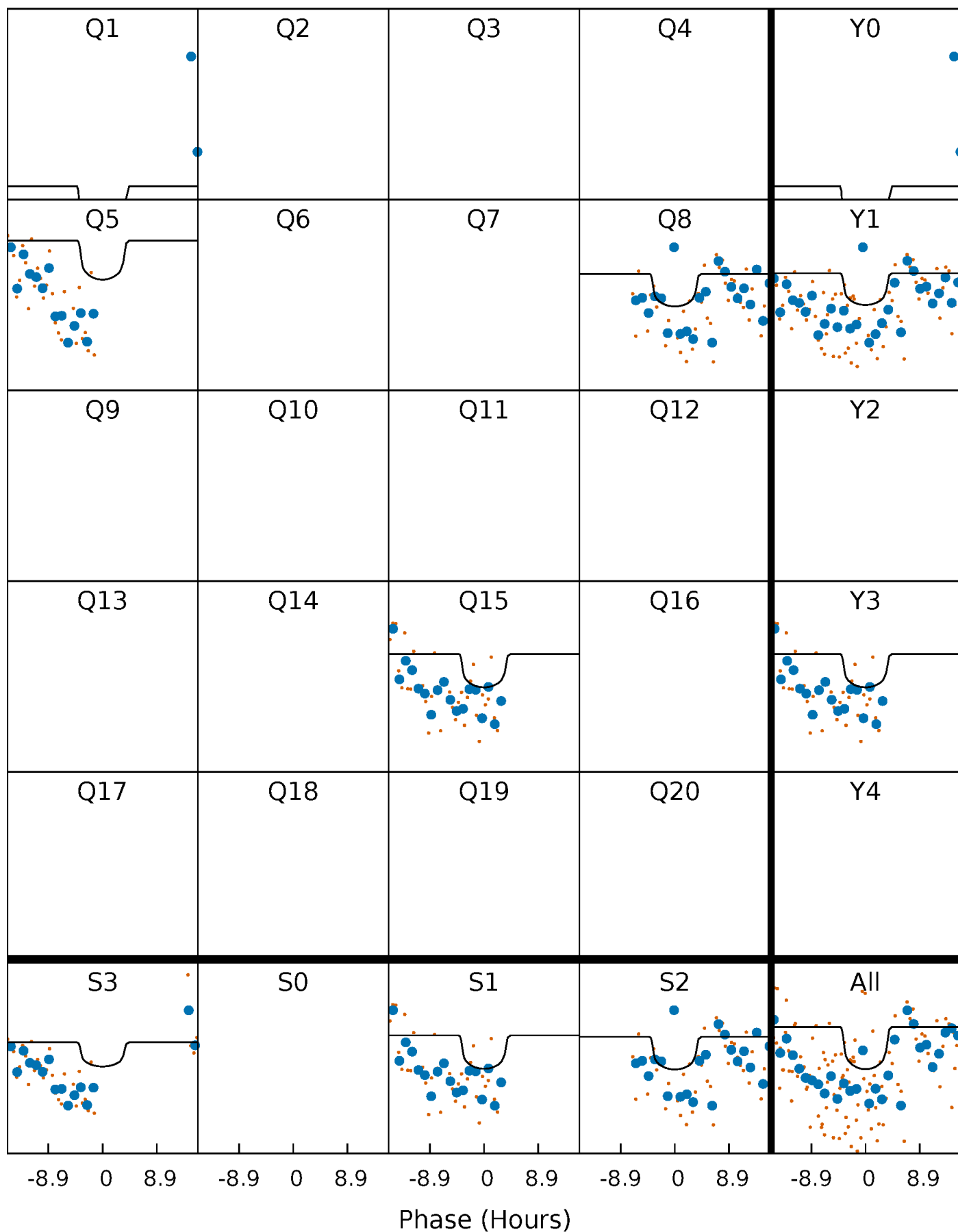
PDC Quarter-Phased Transit Curves

TCE 012599435-07 $P=317.073993$ Days $T_0=134.074757$ (BKJD)



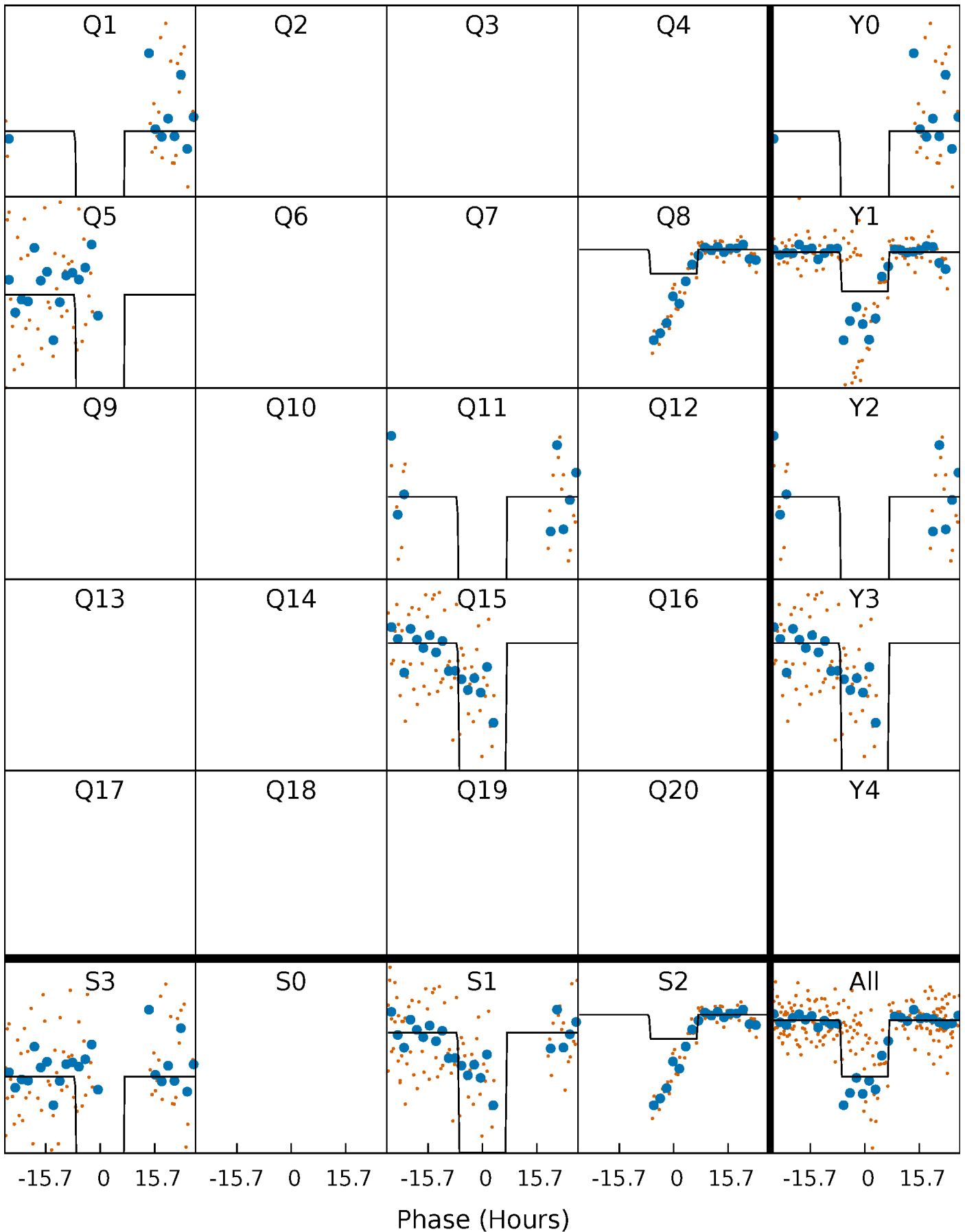
DV Quarter-Phased Transit Curves

TCE 012599435-07 $P=317.073993$ Days $T_0=134.074757$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

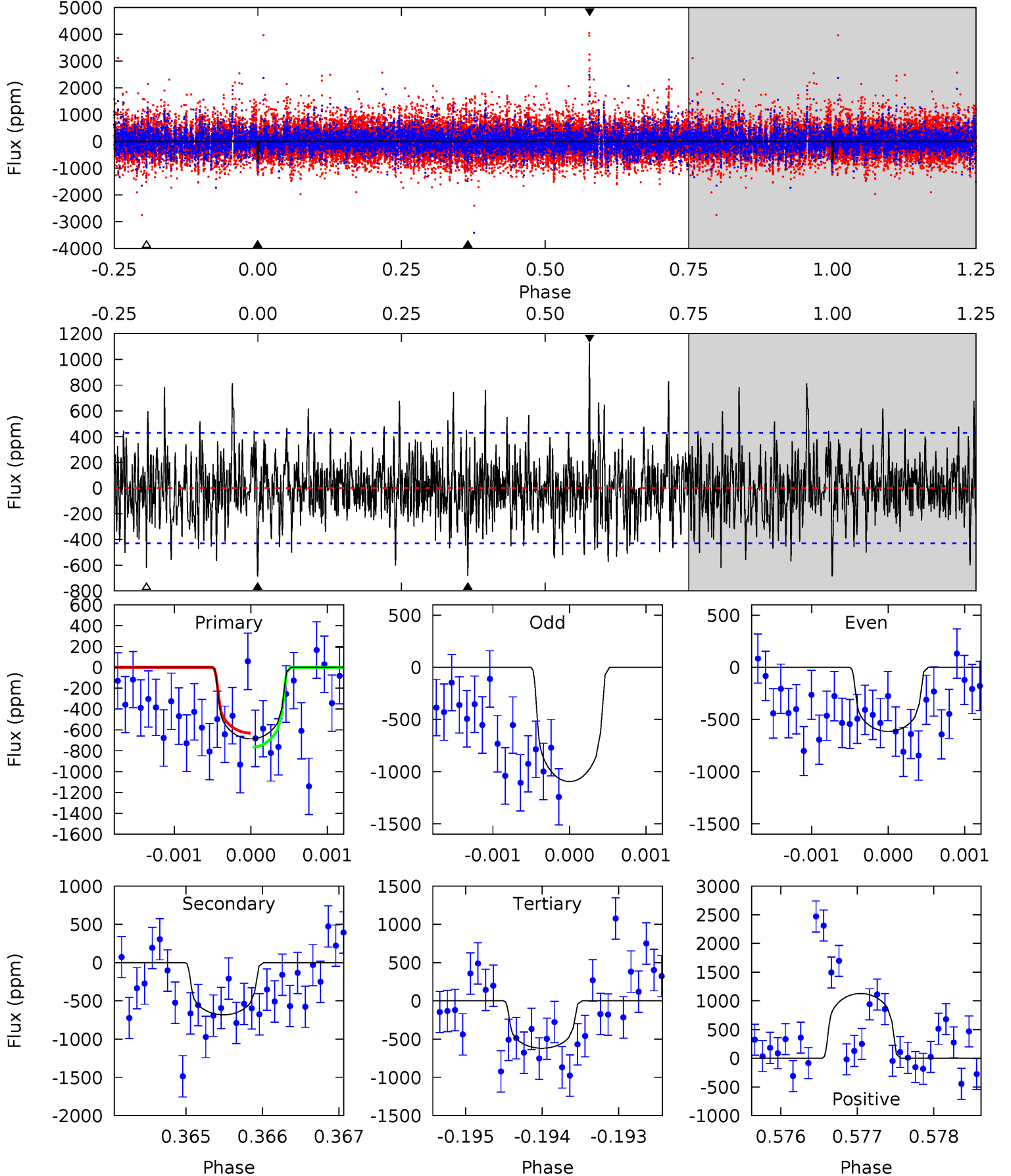
TCE 012599435-07 $P=317.067550$ Days $T_0=134.075291$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-07, P = 317.073993 Days, E = 134.074757 Days

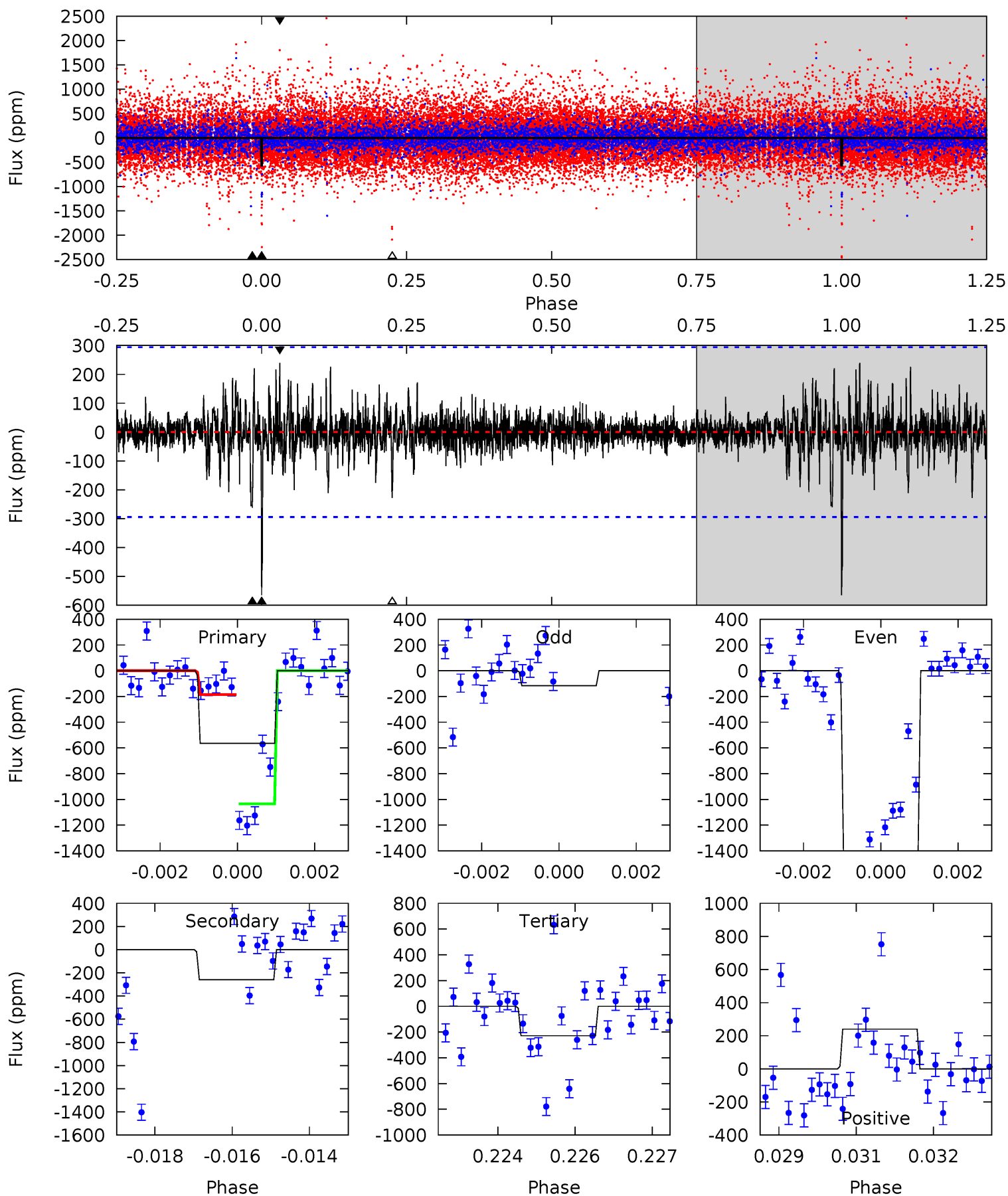
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.70	8.65	7.85	14.3	5.44	3.26	2.45	0.85	-5.61	0.80	-5.65	1.92	1.19	0.62	0.85



Alt Model-Shift Uniqueness Test

012599435-07, P = 317.067550 Days, E = 134.075291 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.71	4.15	4.36	5.35	3.12	0.84	6.13	5.91	0.57	0.35	10.6	2.47	0.30	7.66



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-682 ± 79	$1.76^{+1.49}_{-1.10}$	280^{+10}_{-9}	5185^{+3331}_{-1114}	$81908^{+464942}_{-58202}$
Alt.	-259 ± 55	$2.54^{+1.38}_{-1.29}$	280^{+11}_{-10}	3742^{+1093}_{-508}	14846^{+42054}_{-8949}

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

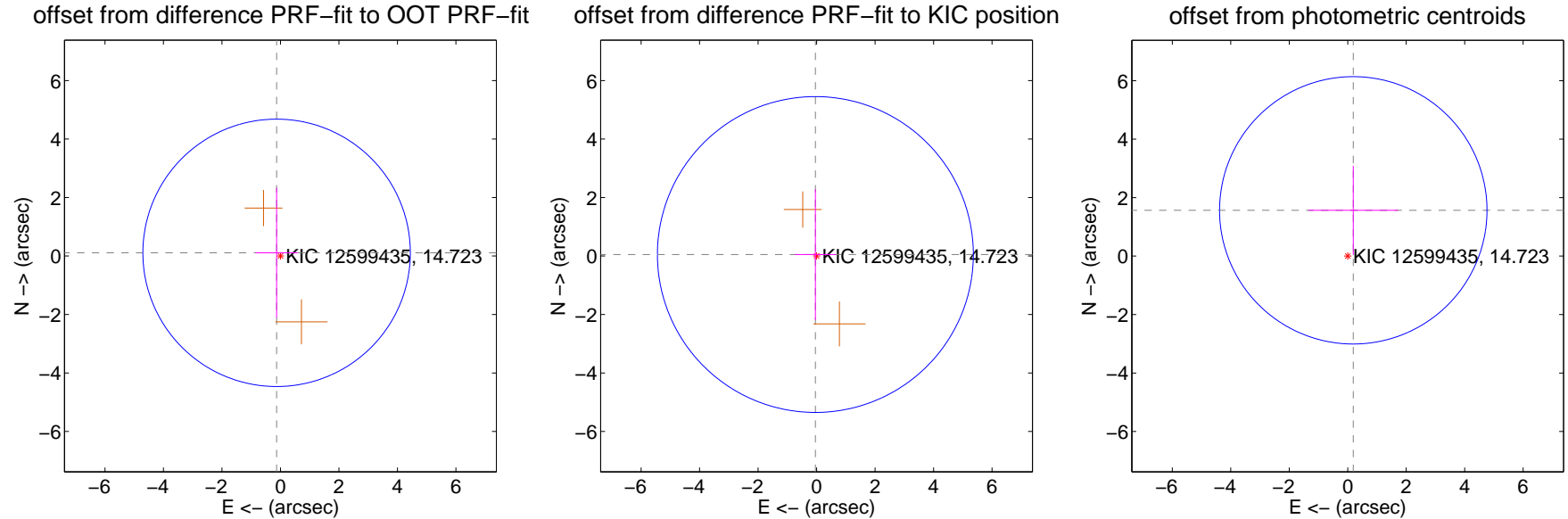
DV Centroid Data

Supplemental centroid analysis for 012599435-07. Kepler magnitude: 14.72. Transit SNR 3.65

There are 0 quarters with good PRF difference image offsets

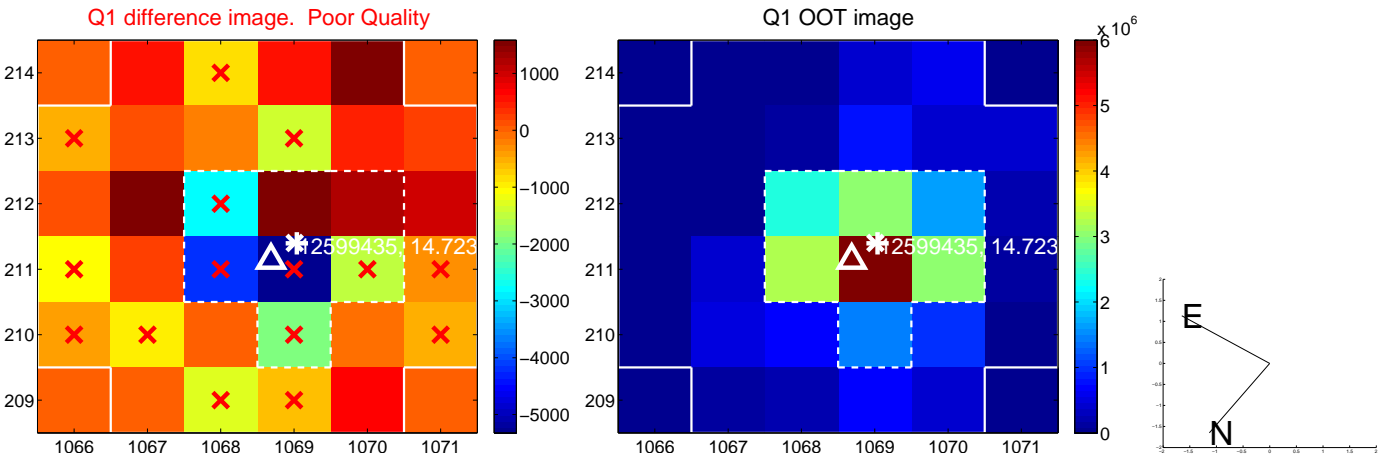
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.171 ± 1.524	0.11	0.132 ± 0.722	0.109 ± 2.224
PRF-fit source offset from KIC position	0.066 ± 1.800	0.04	0.041 ± 0.699	0.052 ± 2.236
photometric centroid source offset	1.58 ± 1.52	1.03	-0.19 ± 1.53	1.57 ± 1.52

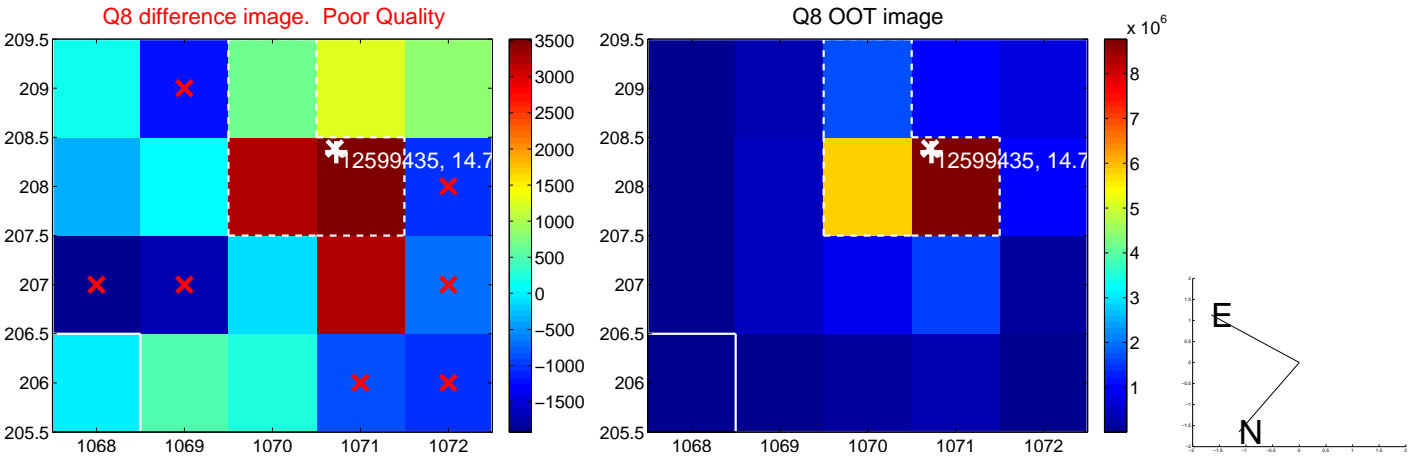
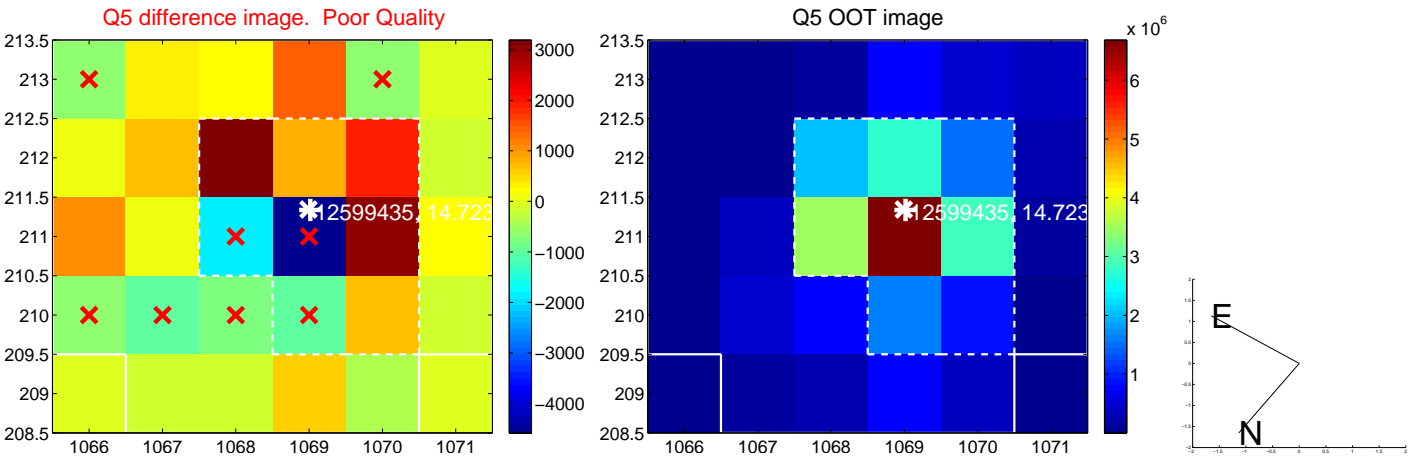


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

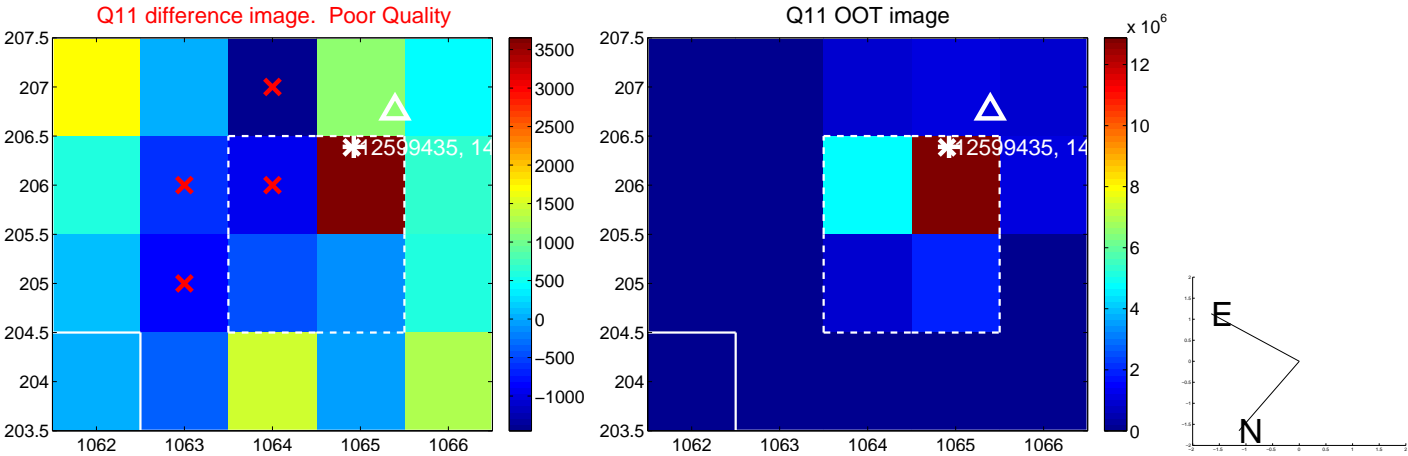
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



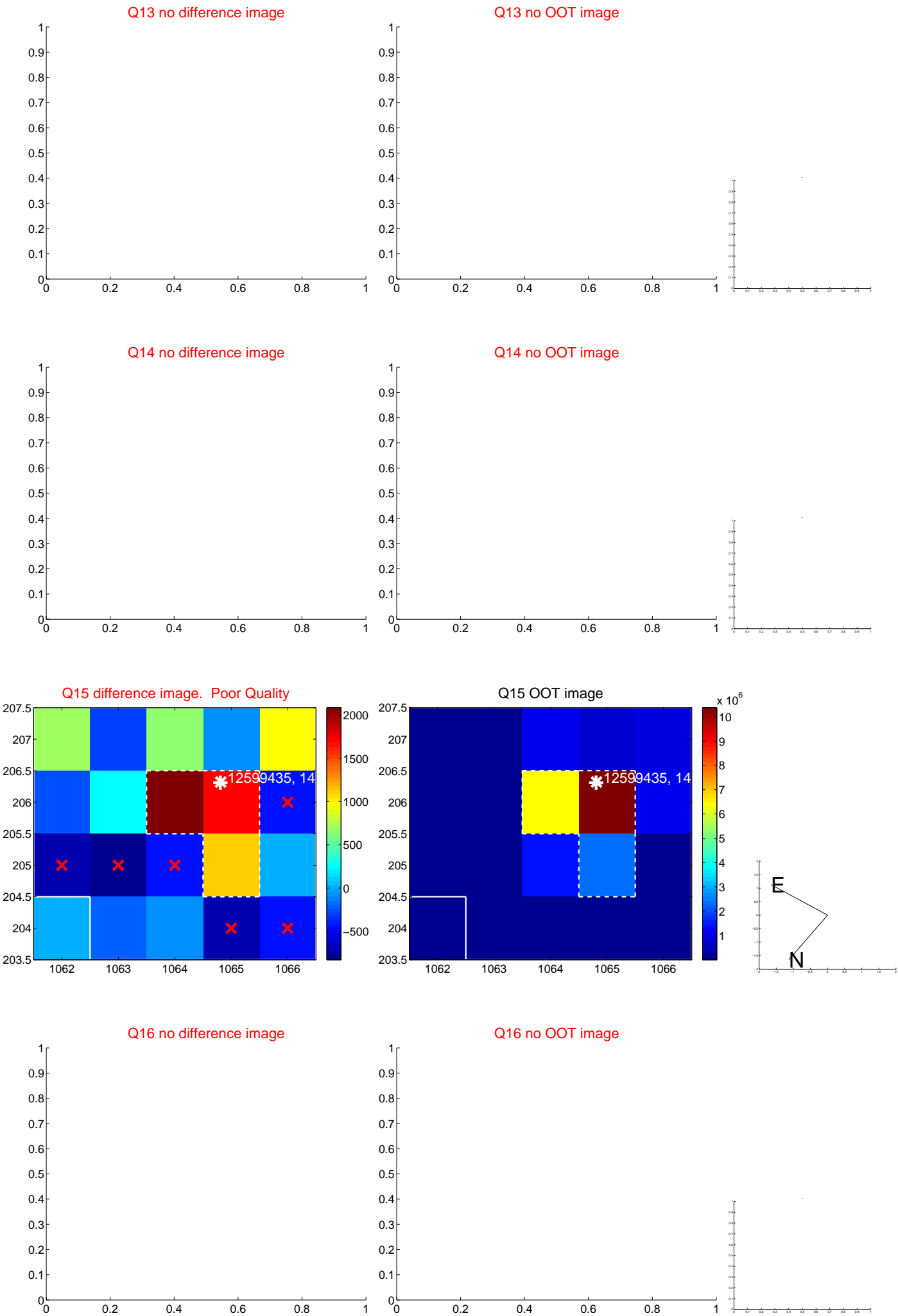
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



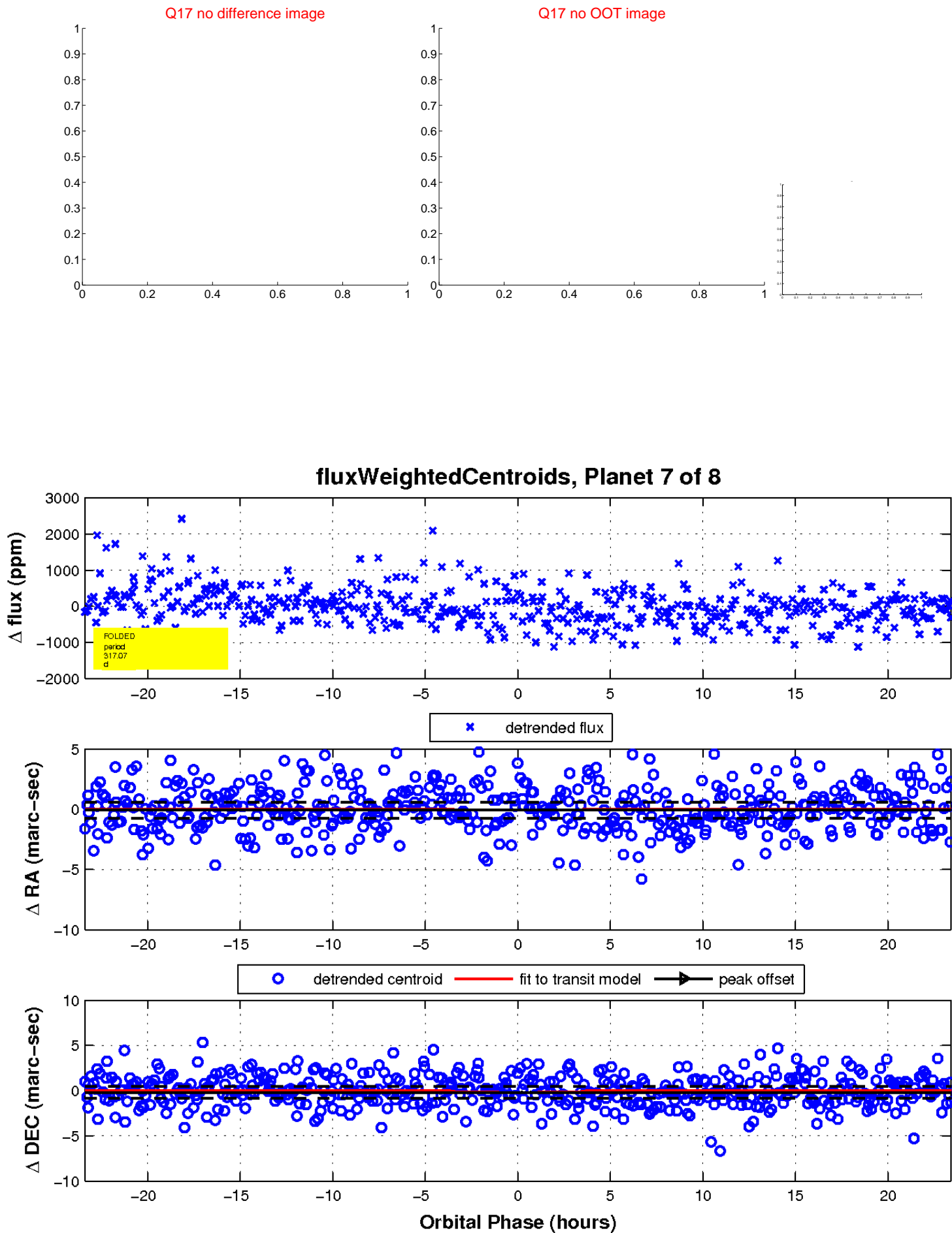
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

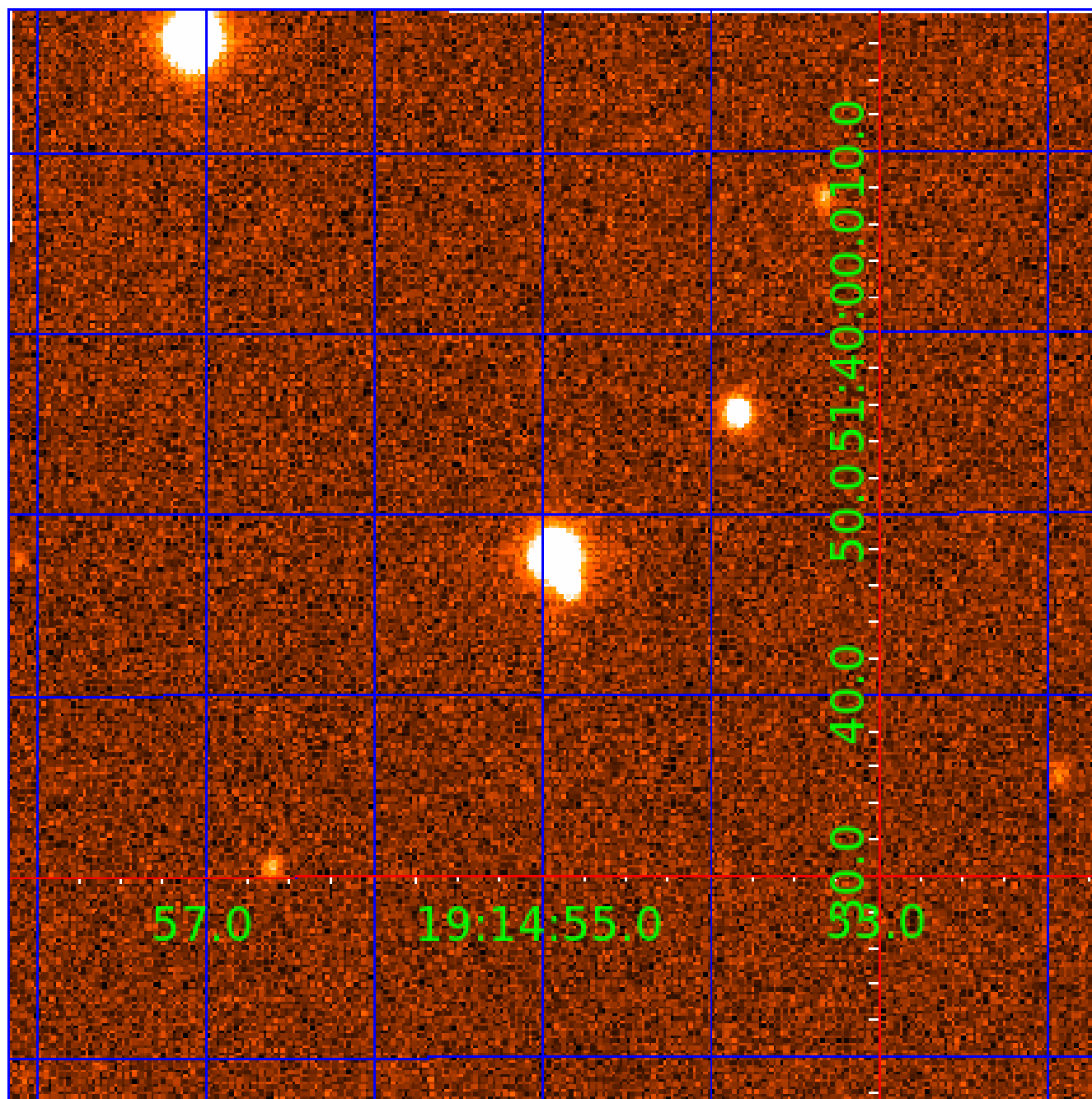


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012599435

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})
012599435-01	OBS	No	417.842927	424.333283	1041.5	3.957	9.1	7.5	0.70	4887	2.54	0.27
012599435-02	OBS	No	394.962269	416.086863	827.9	6.749	9.3	6.4	0.70	4887	2.07	0.29
012599435-03	OBS	No	2.973124	133.812648	94.0	13.329	7.6	9.4	0.70	4887	0.84	198.84
012599435-04	OBS	No	217.944351	305.570869	1433.4	15.000	23.7	-1.0	0.70	4887	2.58	0.65
012599435-05	OBS	No	292.275154	316.365515	1663.3	9.258	12.8	12.3	0.70	4887	3.74	0.44
012599435-06	OBS	No	93.158555	181.396279	544.2	7.923	9.3	8.2	0.70	4887	1.72	2.01
012599435-07	OBS	No	317.073993	134.074757	422.6	7.827	8.9	3.6	0.70	4887	1.67	0.39
012599435-08	OBS	No	5.951819	133.995940	201.3	16.621	9.8	10.6	0.70	4887	1.00	78.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012599435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-03	OBS	FP	0.00	1	0	0	0	LPP_DV
012599435-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
012599435-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012599435-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
012599435-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
012599435-08	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

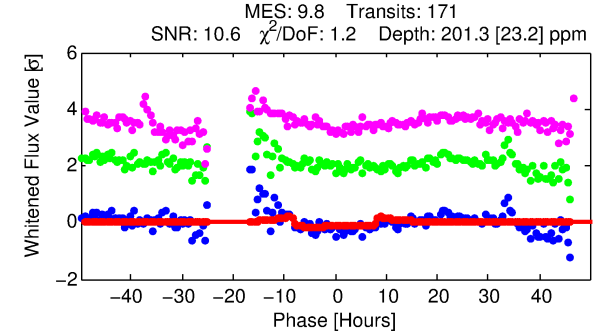
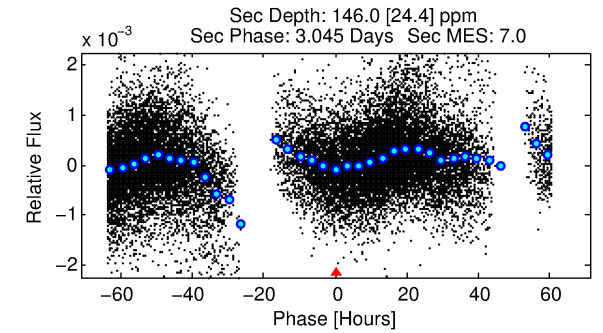
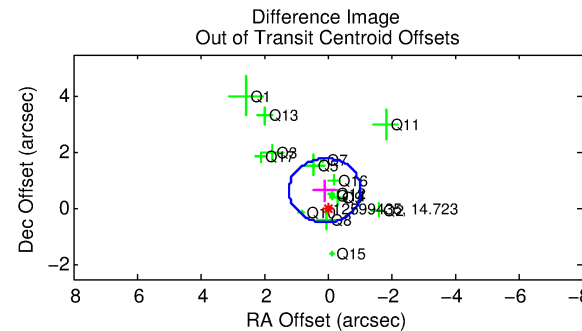
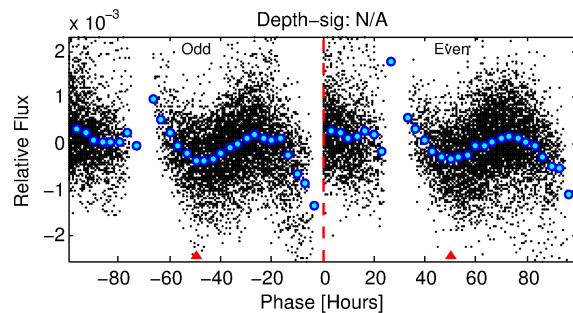
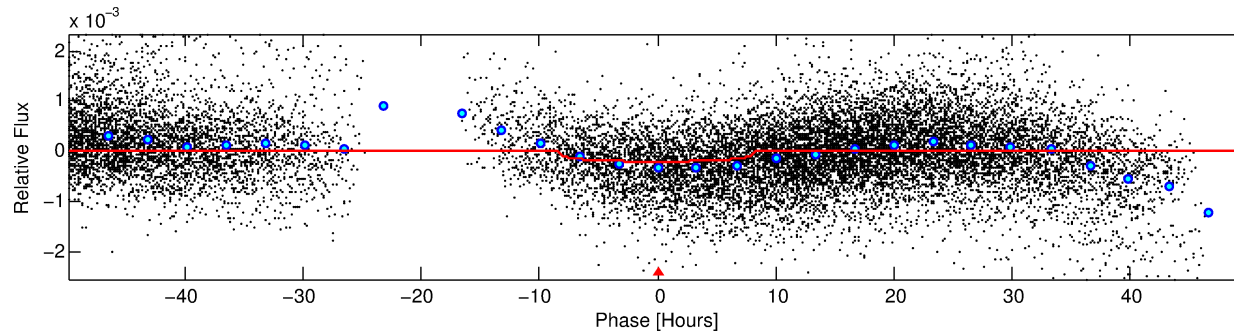
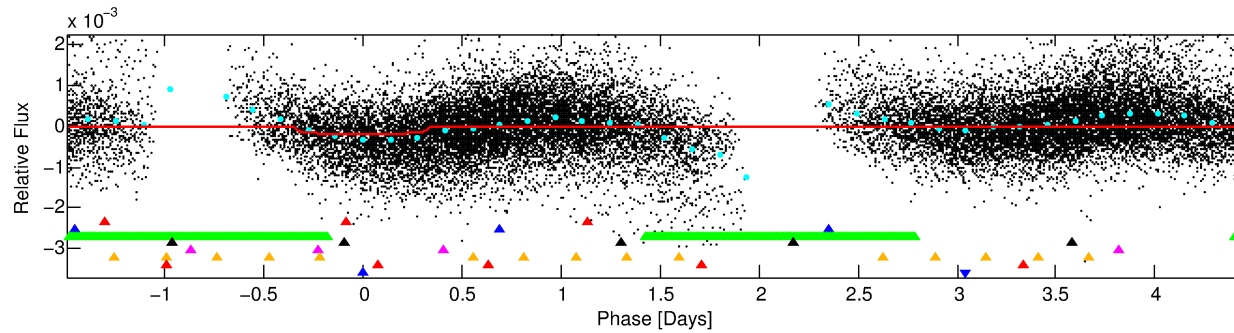
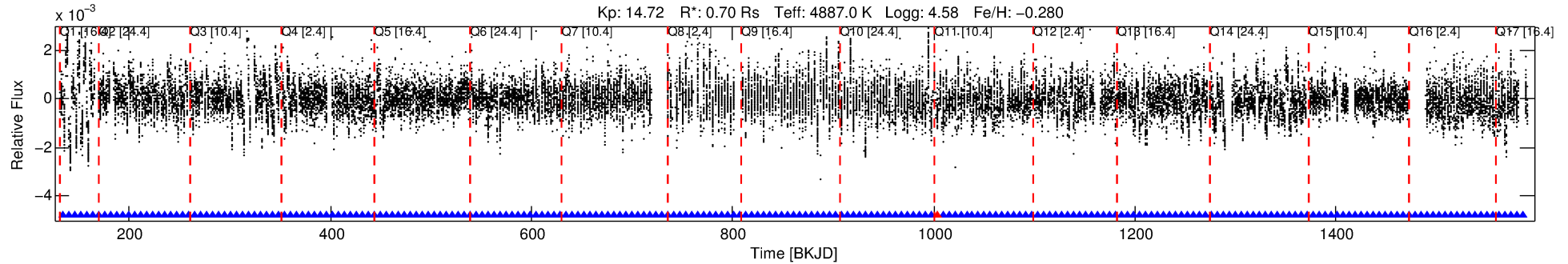
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012599435-08

No Significant Match Found

DV One-Page Summary

KIC: 12599435 Candidate: 8 of 8 Period: 5.952 d



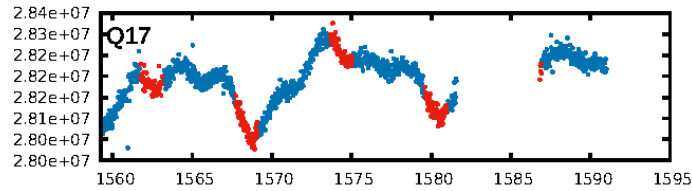
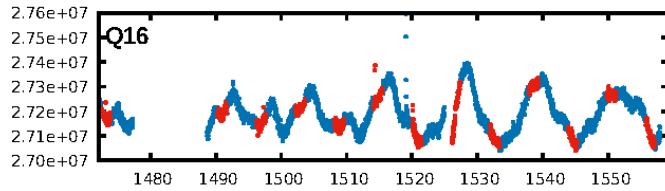
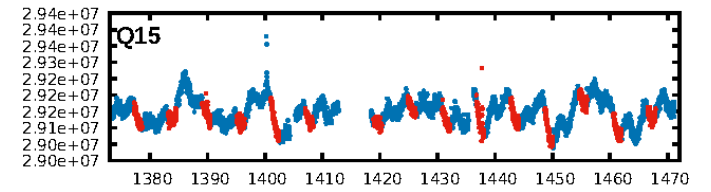
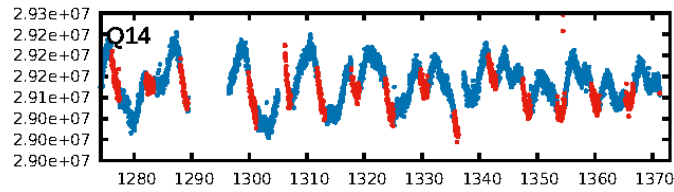
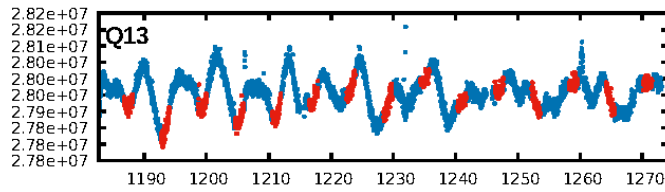
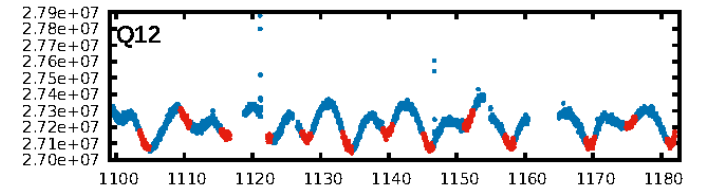
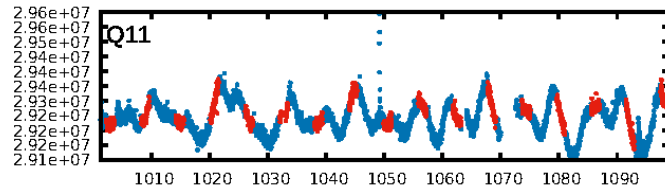
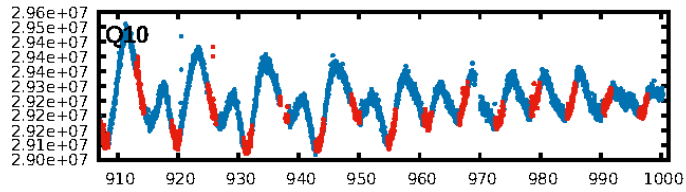
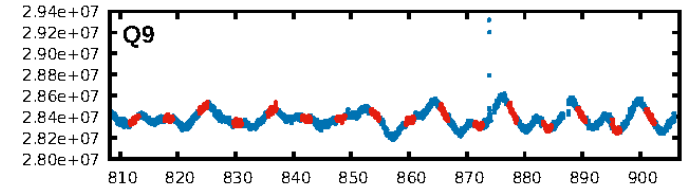
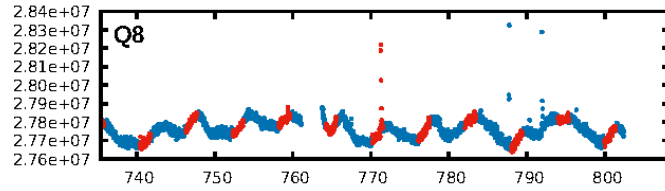
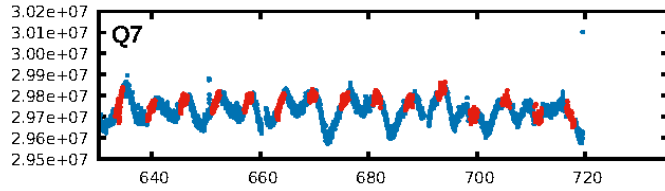
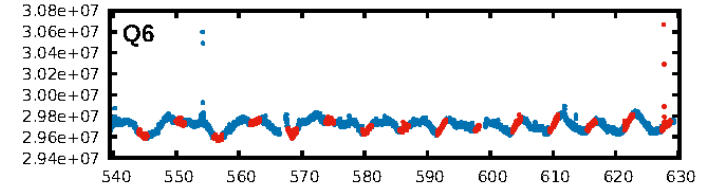
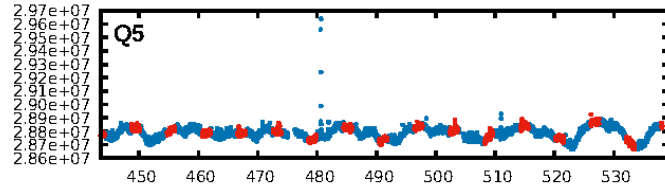
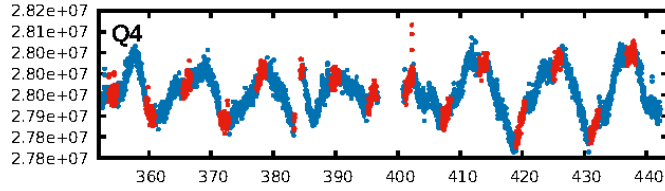
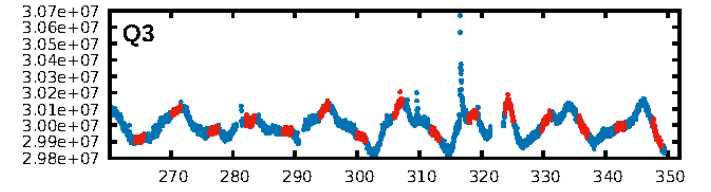
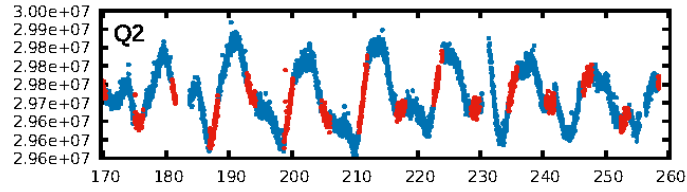
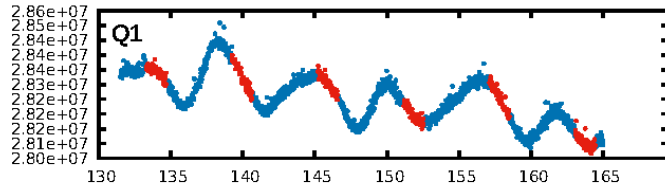
DV Fit Results:

Period = 5.95182 [0.00007] d
Epoch = 133.9959 [0.0113] BKJD
Rp/R* = 0.0130 [0.0061]
a/R* = 2.58 [3.56]
b = 0.44 [2.96]
Seff = 78.81 [13.28]
Teq = 760 [32] K
Rp = 1.00 [0.48] Re
a = 0.0567 [0.0046] AU
Ag = 259.88 [249.82] [1.04 σ]
Teffp = 4716 [1134] K [3.49 σ]

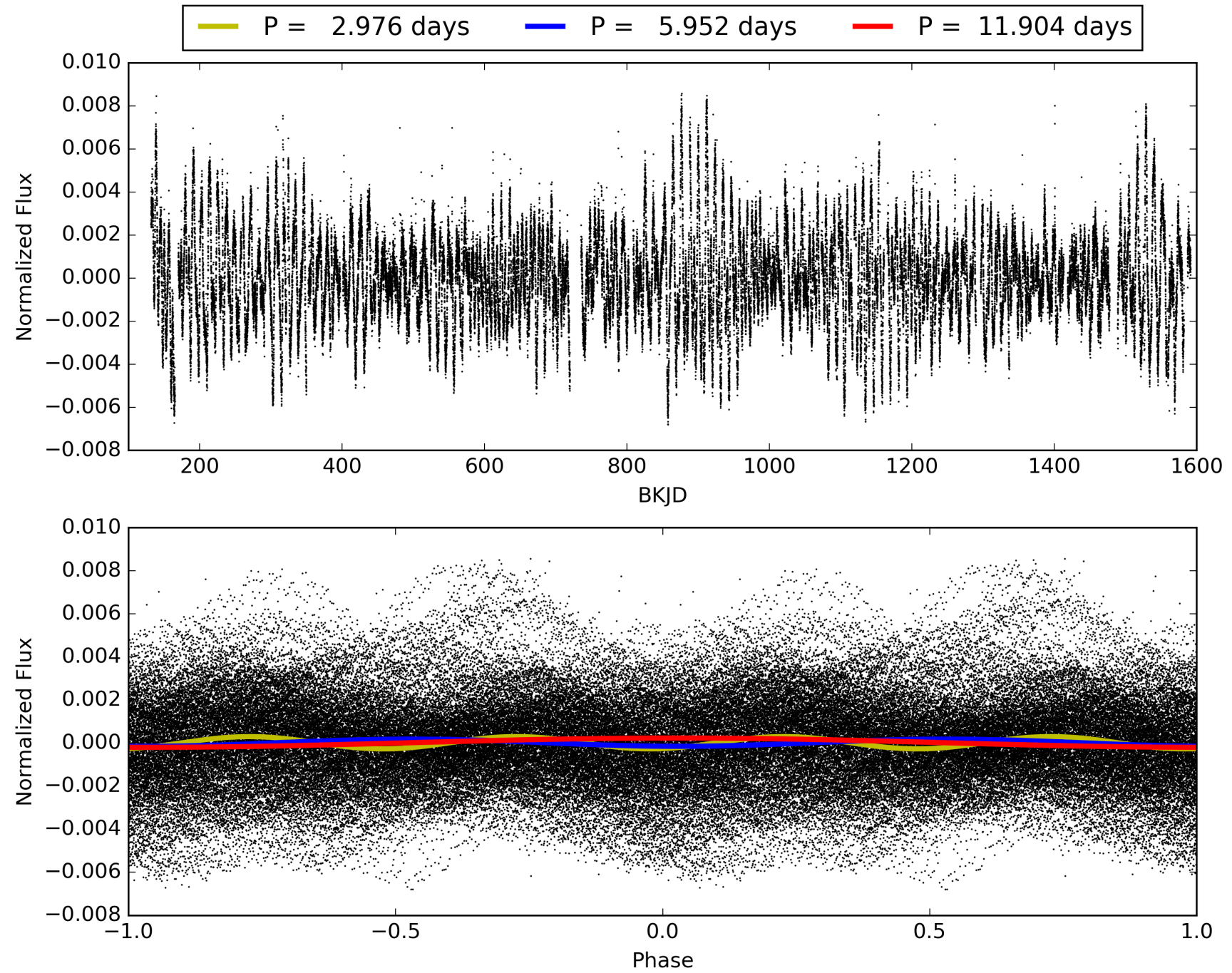
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.36 σ]
LongPeriod-sig: 100.0% [113.67 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [166/167]
GhostDiagnostic-chr: 1.663
Centroid-sig: 41.9%
Centroid-so: 0.976 arcsec [2.79 σ]
OotOffset-rm: 0.657 arcsec [1.73 σ]
OotOffset-st: 3/4/3/5 [15]
KicOffset-rm: 0.669 arcsec [1.96 σ]
KicOffset-st: 3/4/3/5 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.06 [1/17]

TCE 012599435-08, PDC Light Curves

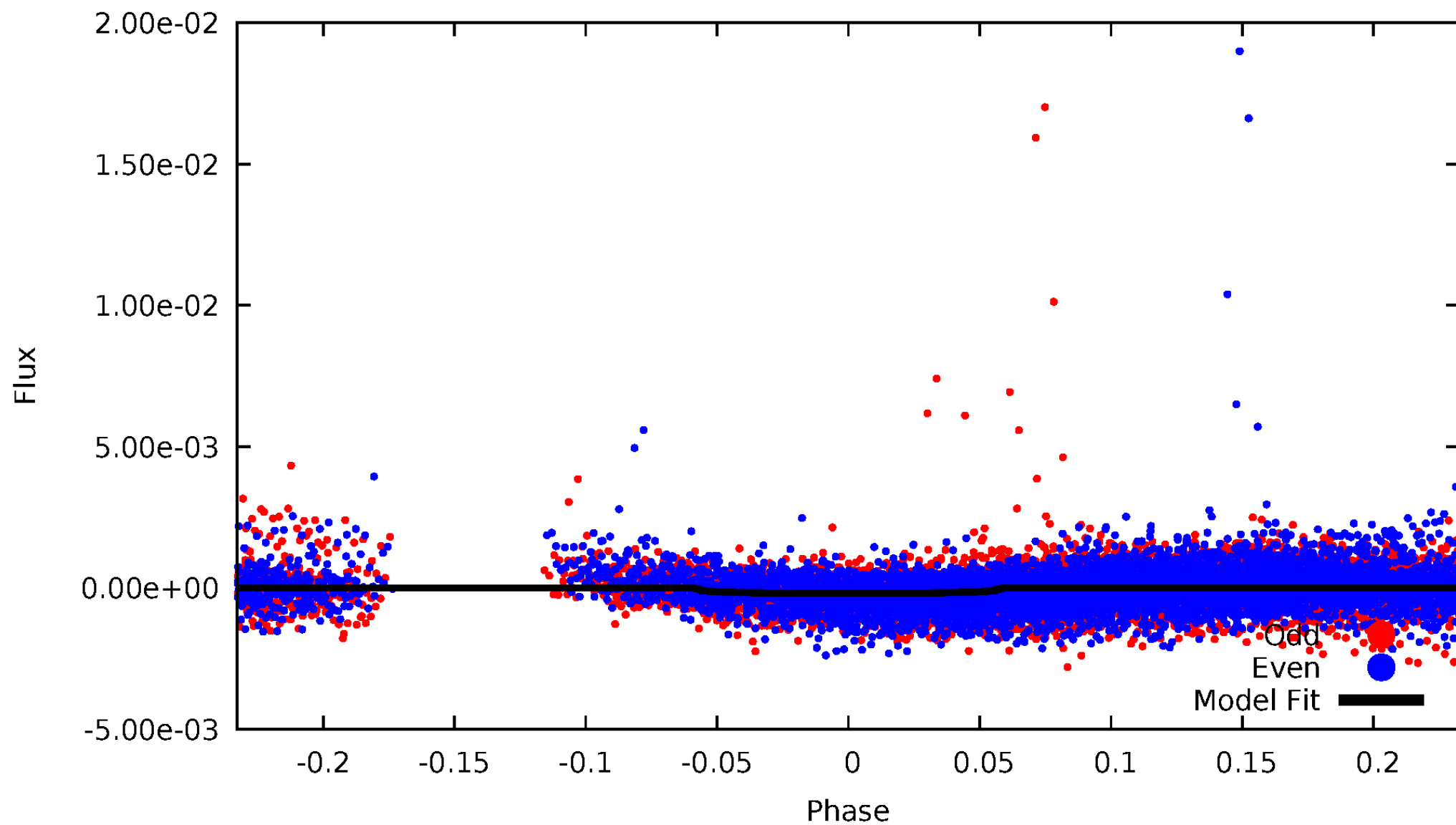


TCE 012599435-08



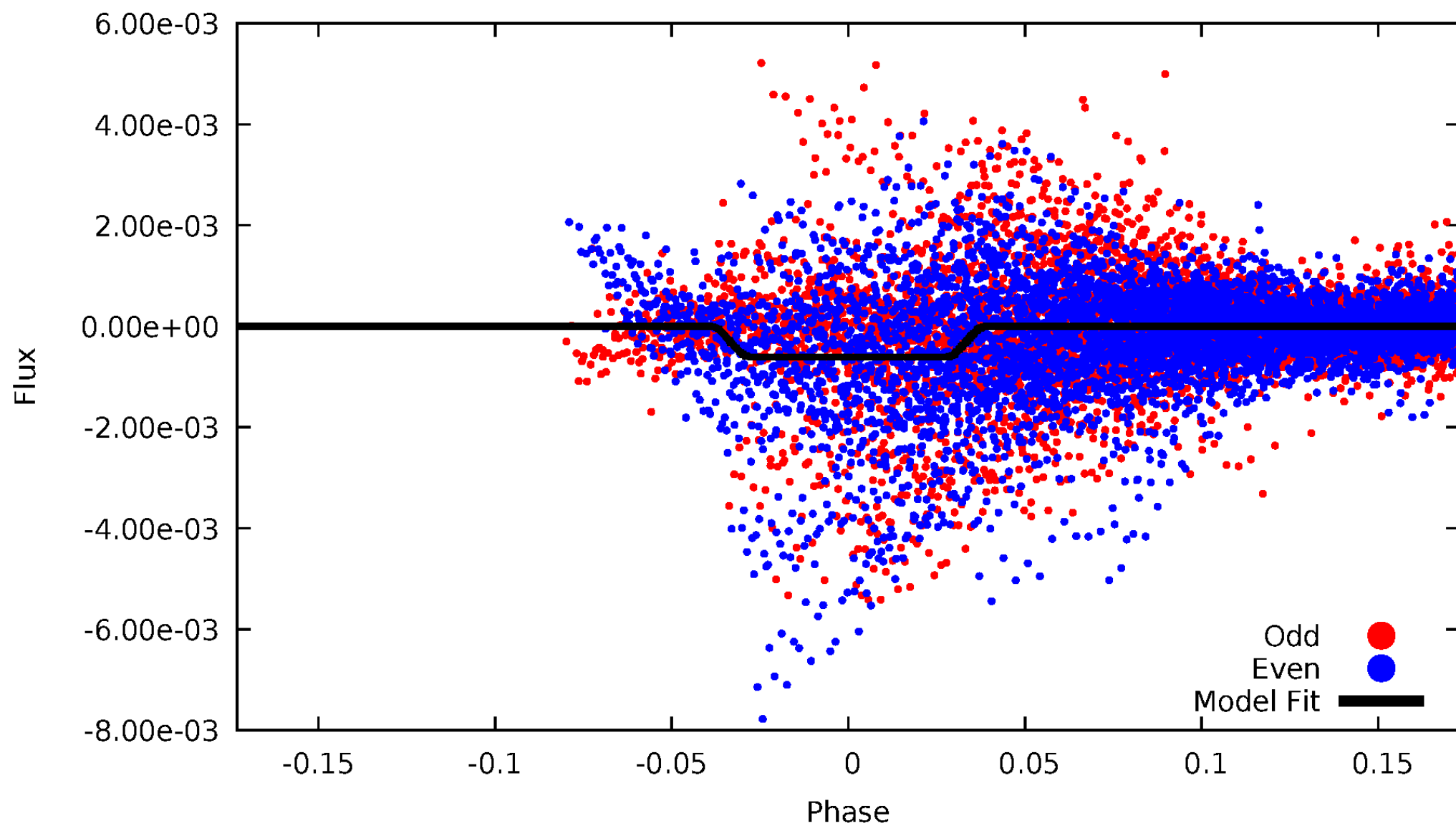
DV Odd/Even

TCE 012599435-08



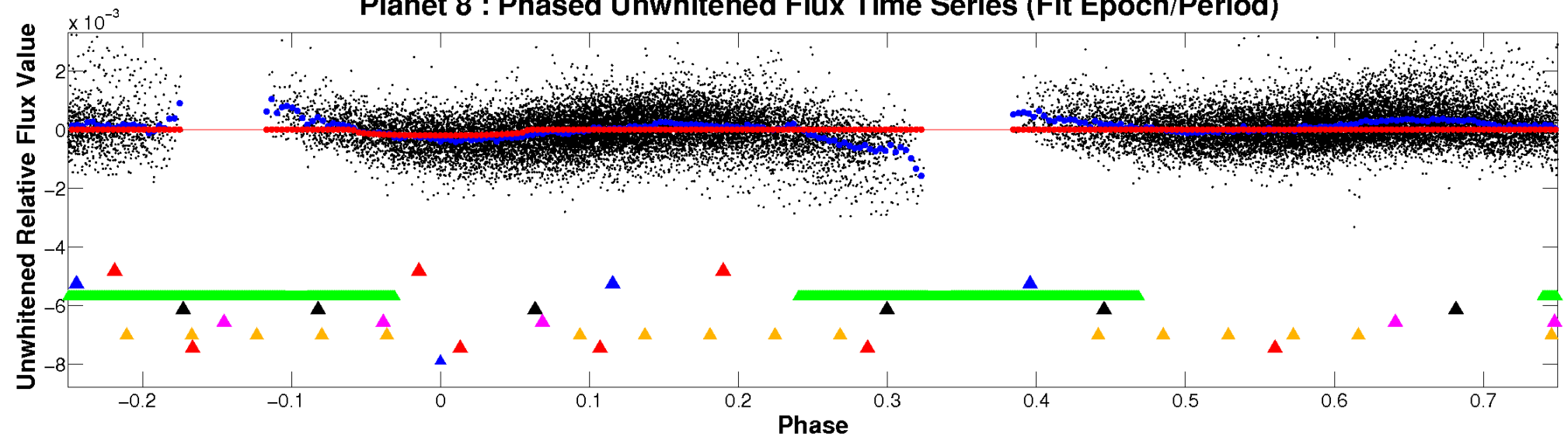
ALT Odd/Even

TCE 012599435-08

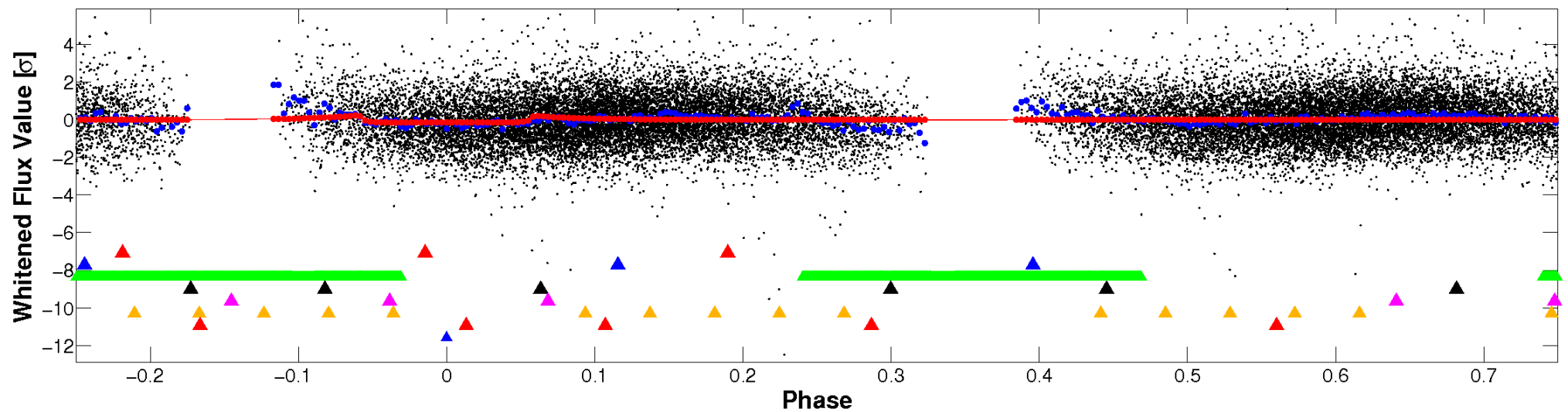


Non-Whitened Vs. Whitened Light Curve

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

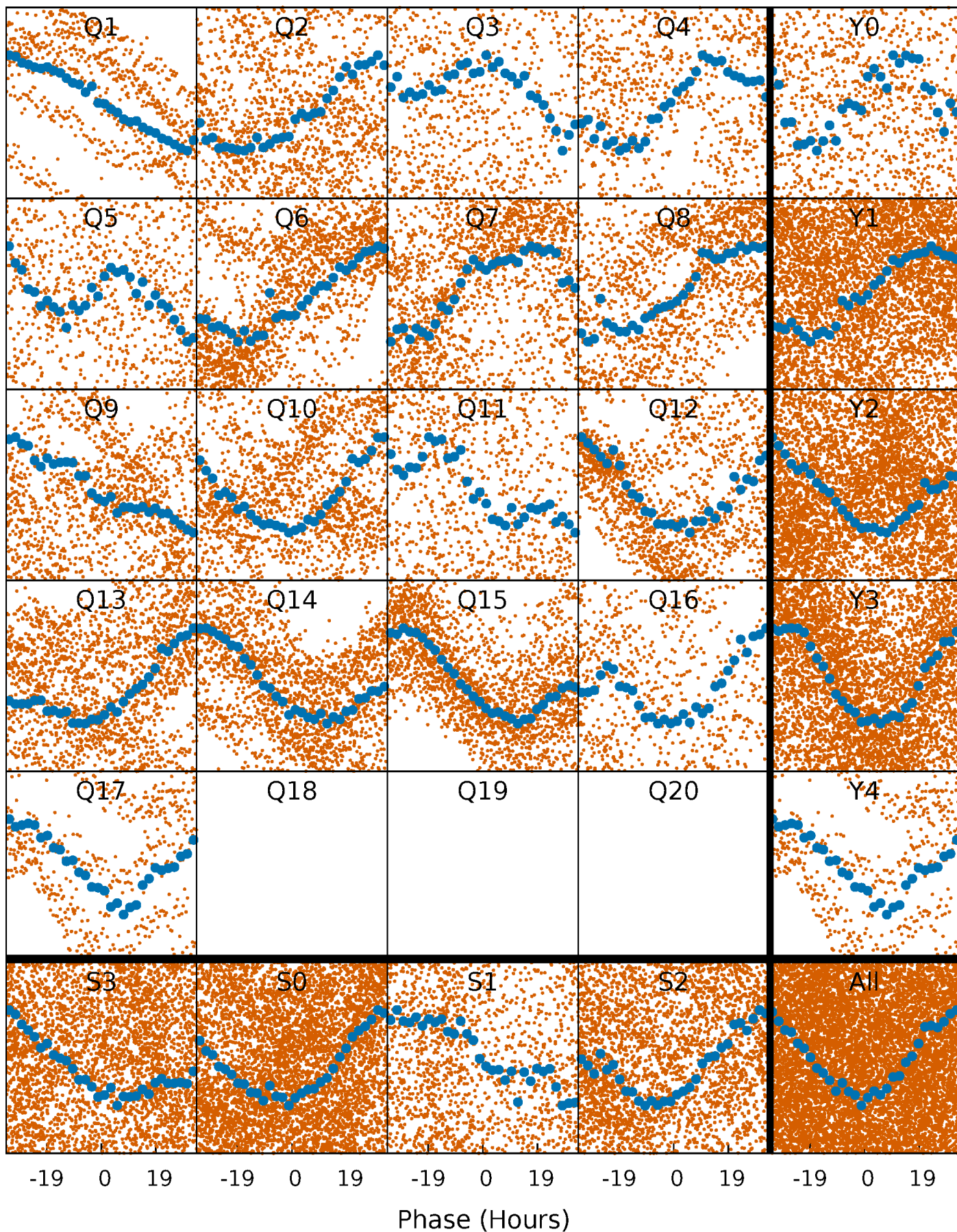


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



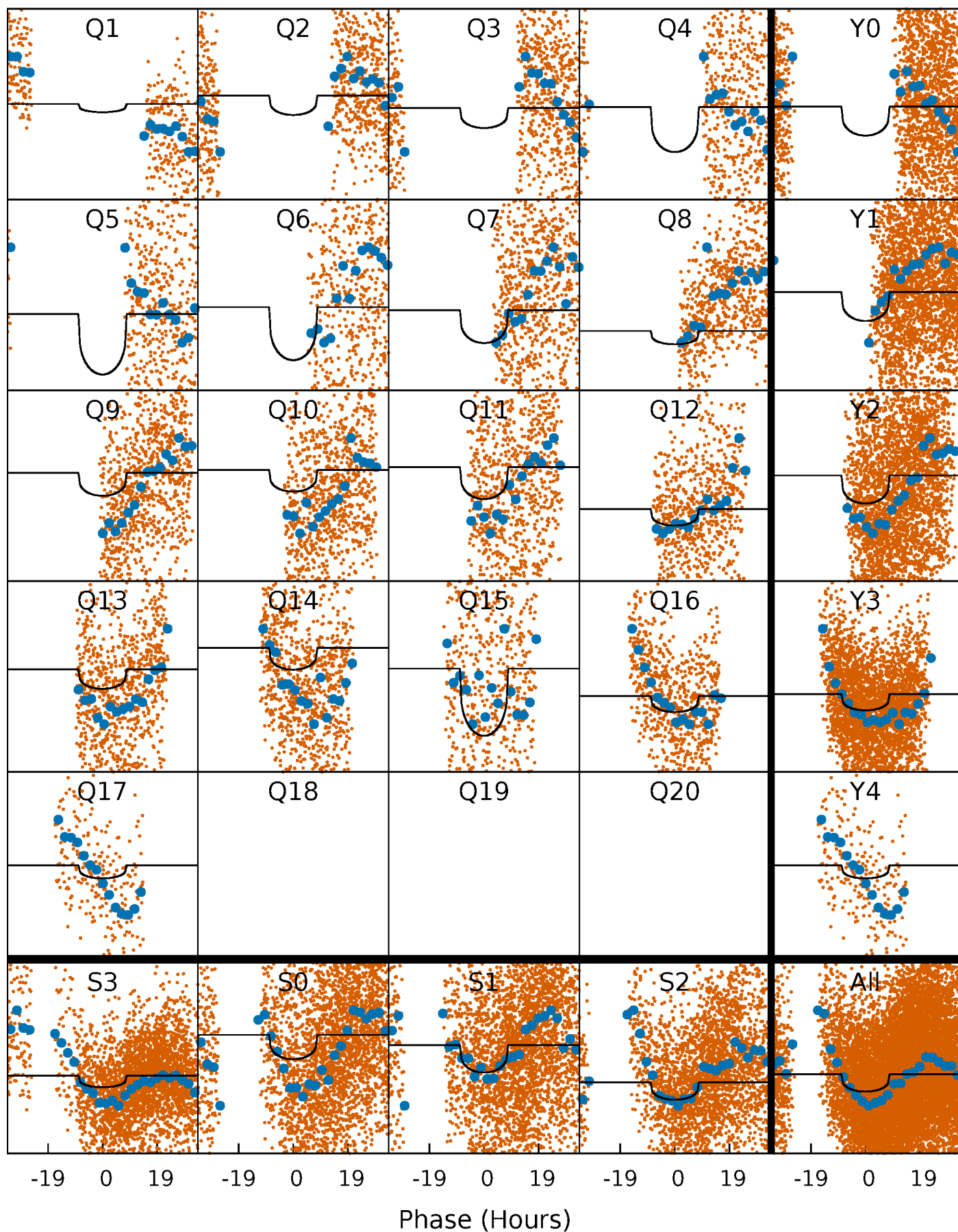
PDC Quarter-Phased Transit Curves

TCE 012599435-08 P= 5.951819 Days $T_0=133.995940$ (BKJD)



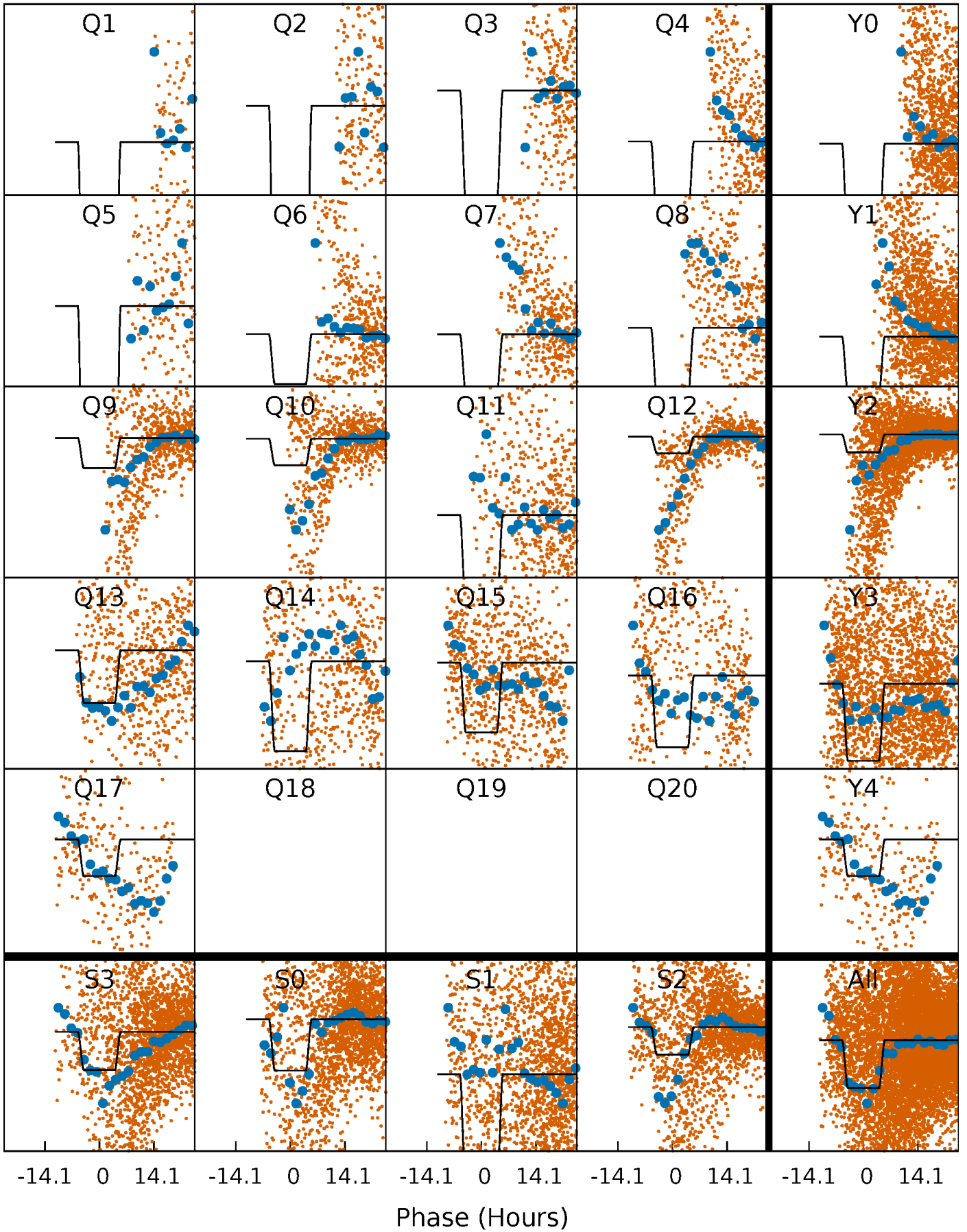
DV Quarter-Phased Transit Curves

TCE 012599435-08 P= 5.951819 Days $T_0=133.995940$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

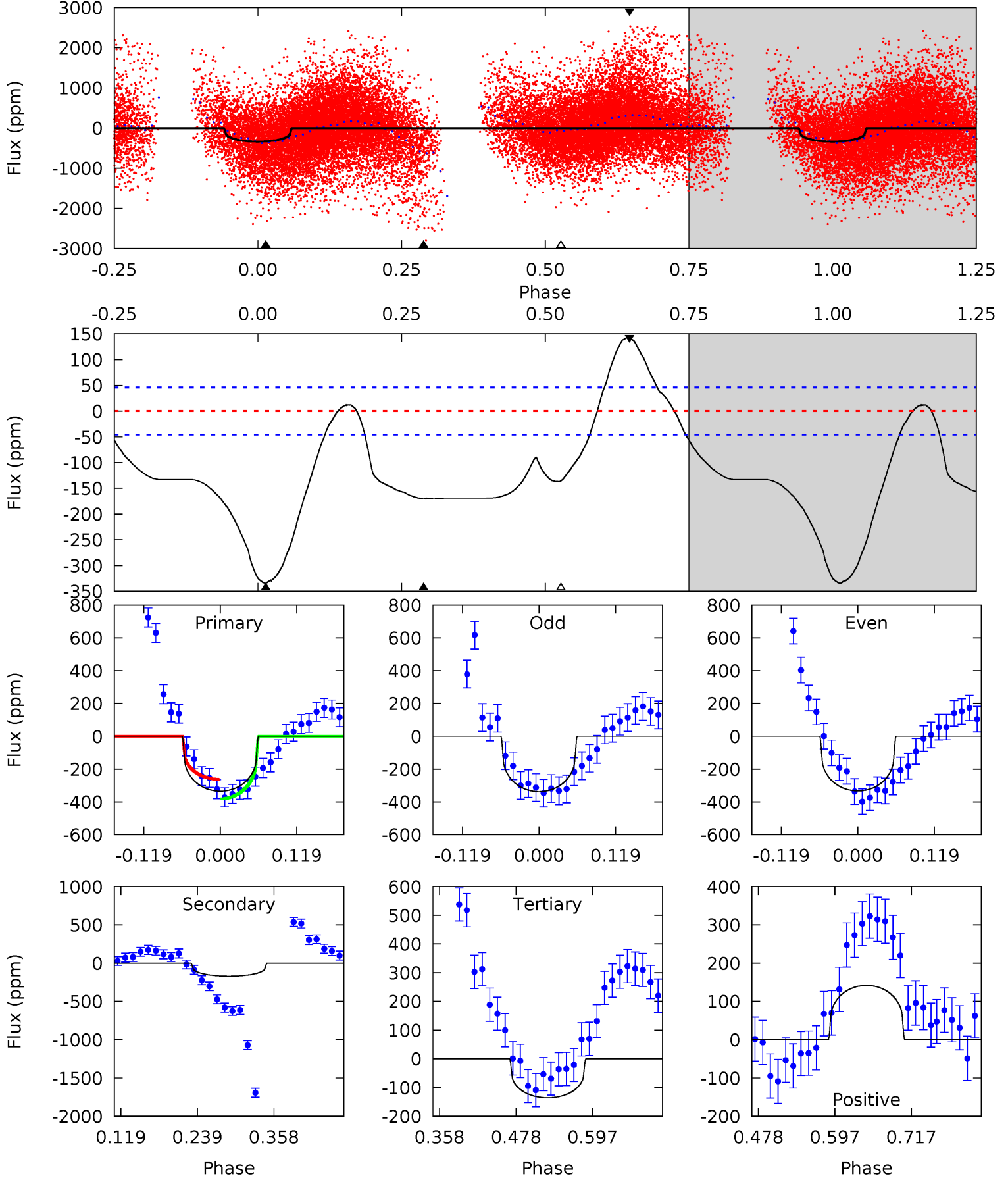
TCE 012599435-08 P= 5.950595 Days $T_0=134.079308$ (BKJD)



DV Model-Shift Uniqueness Test

012599435-08, P = 5.951819 Days, E = 128.044121 Days

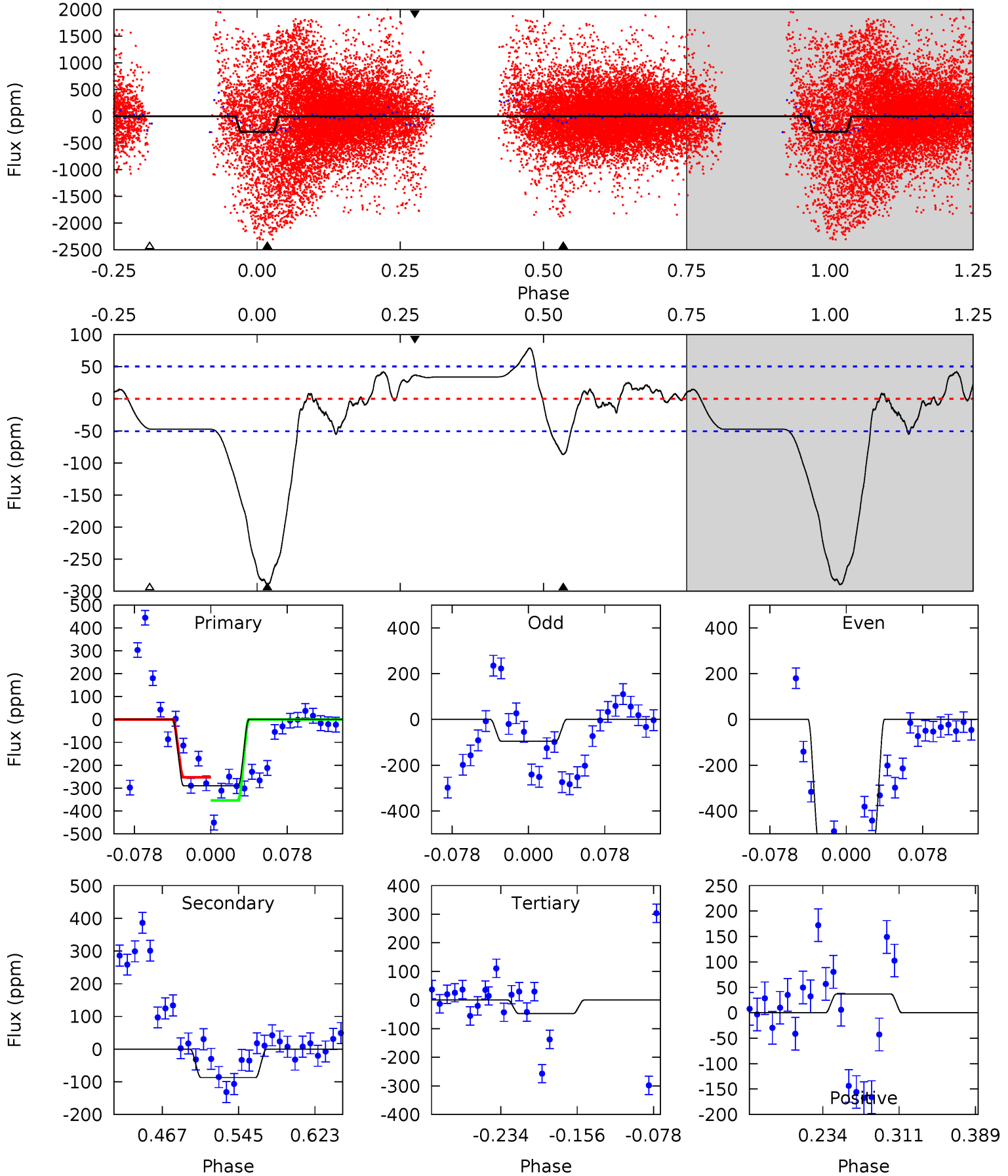
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.1	16.8	13.4	14.0	4.53	1.56	9.26	19.7	19.0	3.45	2.81	0.21	1.27	0.30	5.25



Alt Model-Shift Uniqueness Test

012599435-08, P = 5.950595 Days, E = 128.128713 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.5	7.94	4.32	3.37	4.62	1.76	2.10	22.1	23.1	3.62	4.58	20.2	1.61	0.21	4.56



Stellar Parameters For KIC 012599435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4887^{+146}_{-146}	$4.579^{+0.065}_{-0.035}$	$-0.280^{+0.300}_{-0.300}$	$0.704^{+0.062}_{-0.068}$	$0.686^{+0.088}_{-0.047}$	$2.767^{+0.736}_{-0.403}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+13%/-7%	+27%/-15%
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 012599435-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-170 ± 10	$1.01^{+0.44}_{-0.44}$	1055^{+37}_{-38}	4870^{+1476}_{-656}	301^{+616}_{-156}
Alt.	-87 ± 11	$1.87^{+0.47}_{-0.46}$	1056^{+36}_{-40}	3445^{+340}_{-239}	45^{+34}_{-16}

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

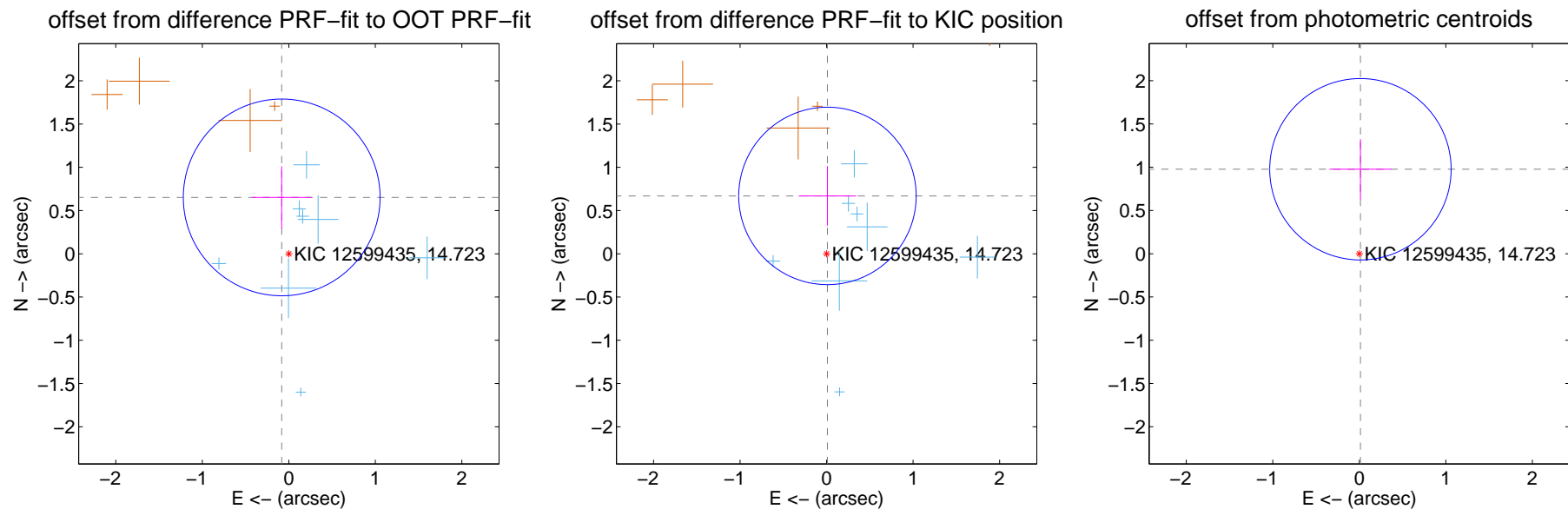
DV Centroid Data

Supplemental centroid analysis for 012599435-08. Kepler magnitude: 14.72. Transit SNR 10.60

There are 8 quarters with good PRF difference image offsets

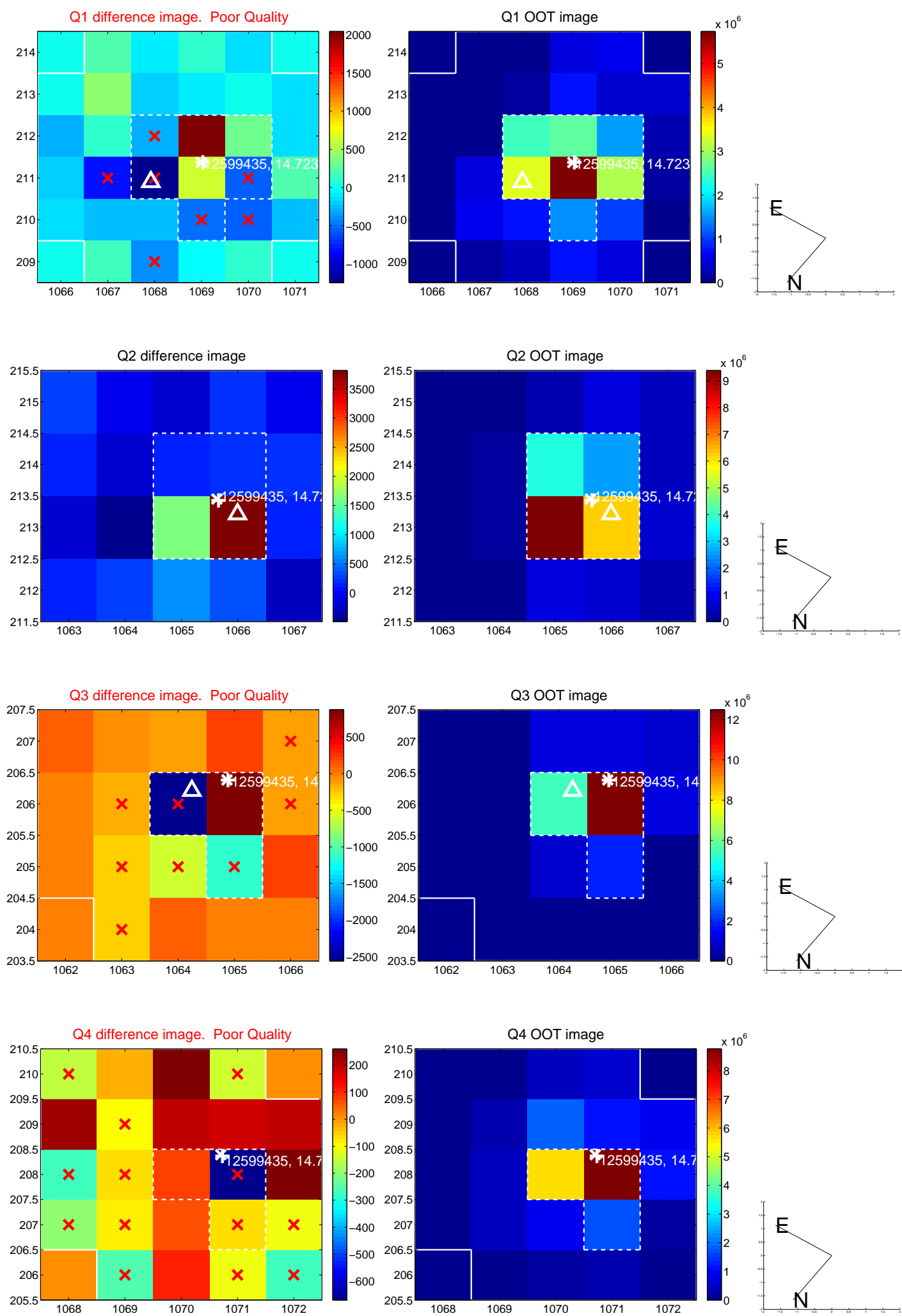
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.657 ± 0.379	1.73	0.082 ± 0.344	0.652 ± 0.361
PRF-fit source offset from KIC position	0.669 ± 0.342	1.96	-0.010 ± 0.332	0.669 ± 0.344
photometric centroid source offset	0.98 ± 0.35	2.79	-0.01 ± 0.36	0.98 ± 0.35

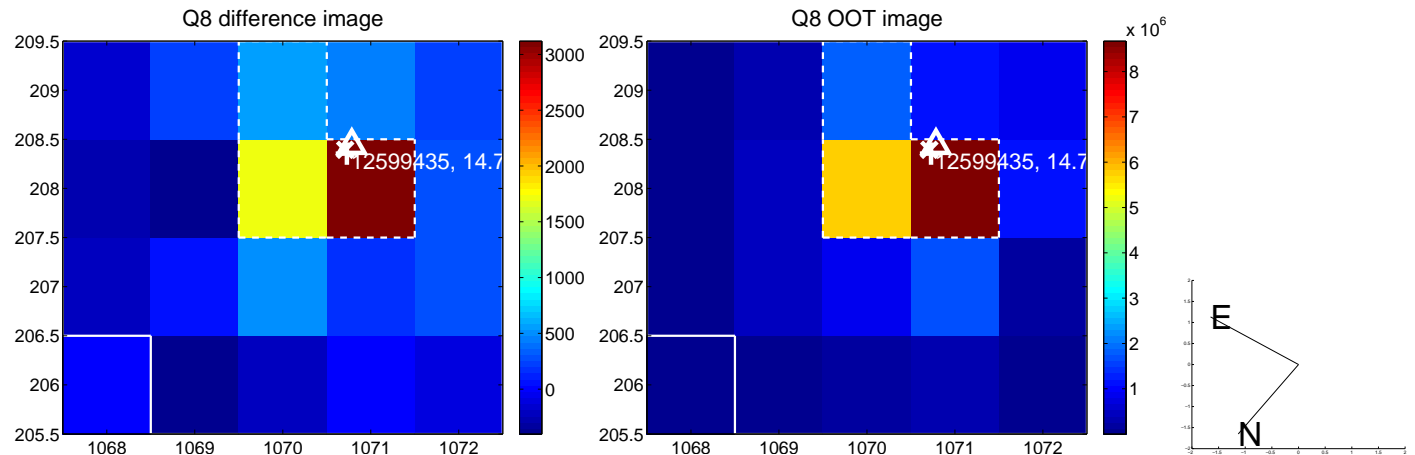
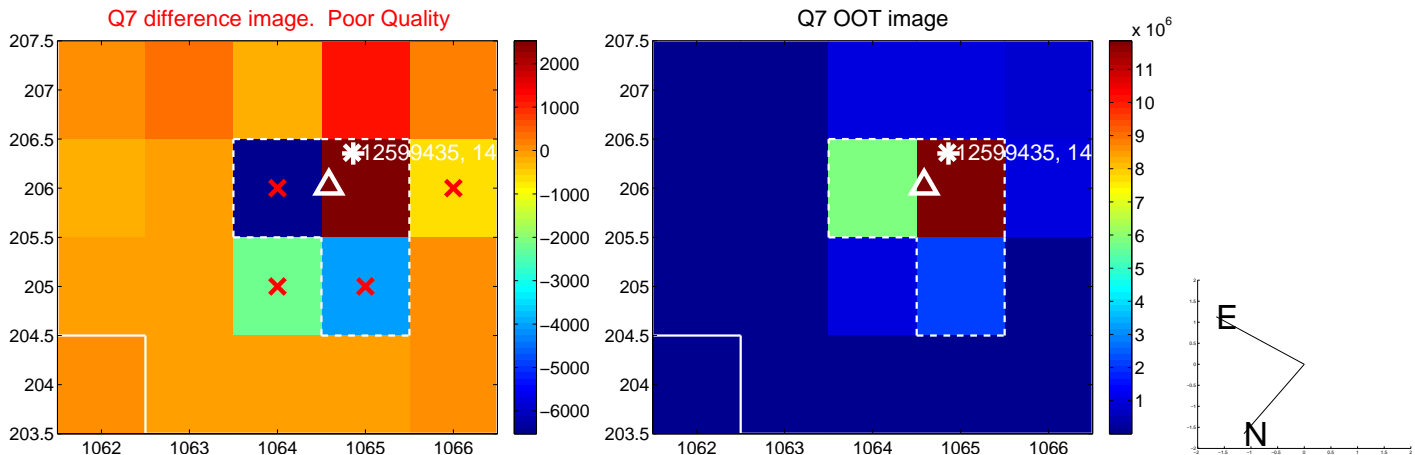
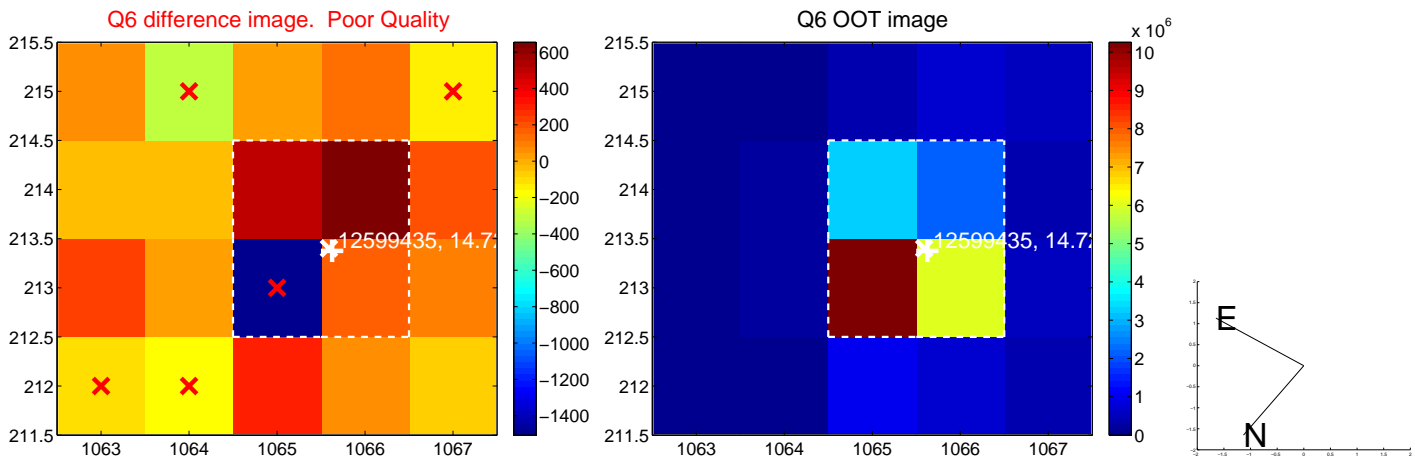
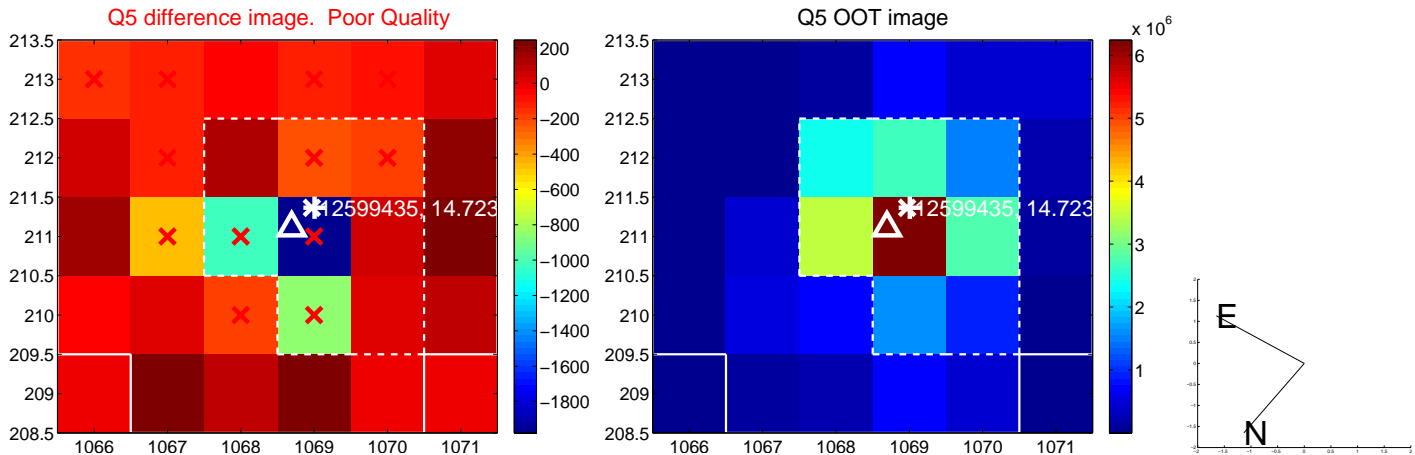


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

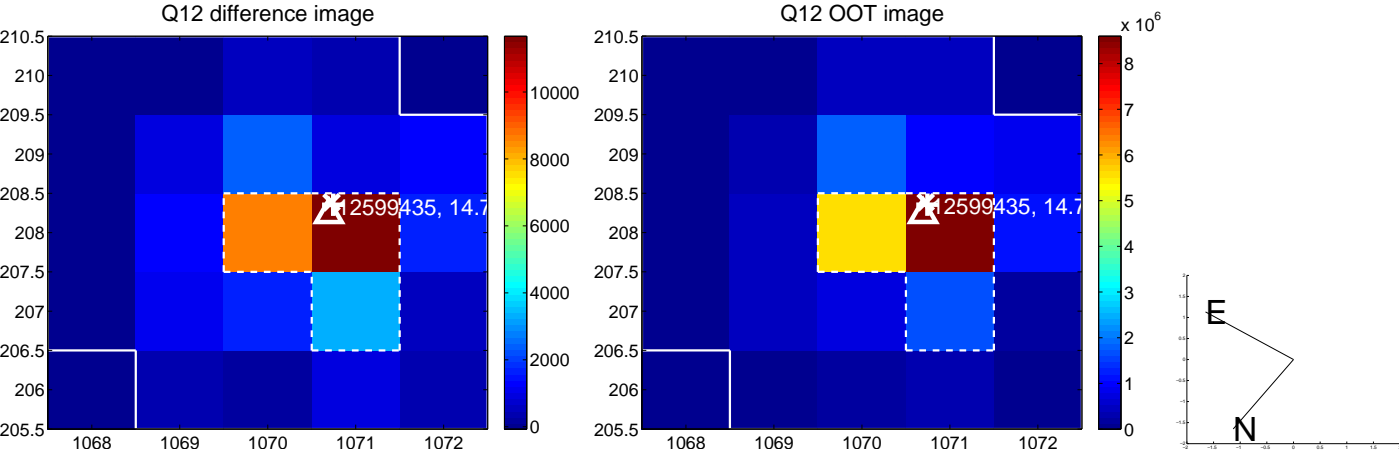
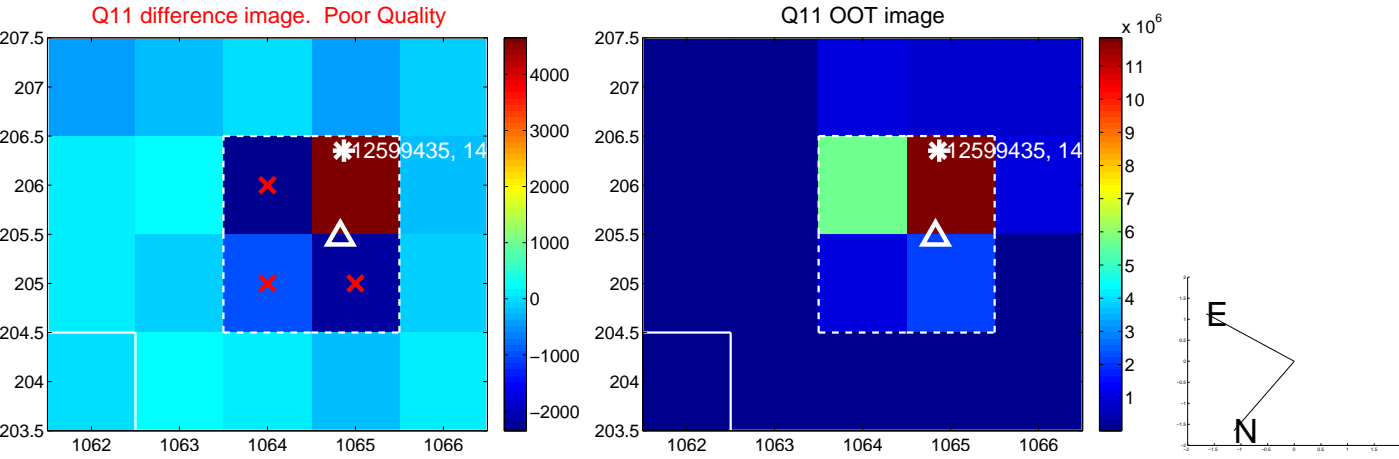
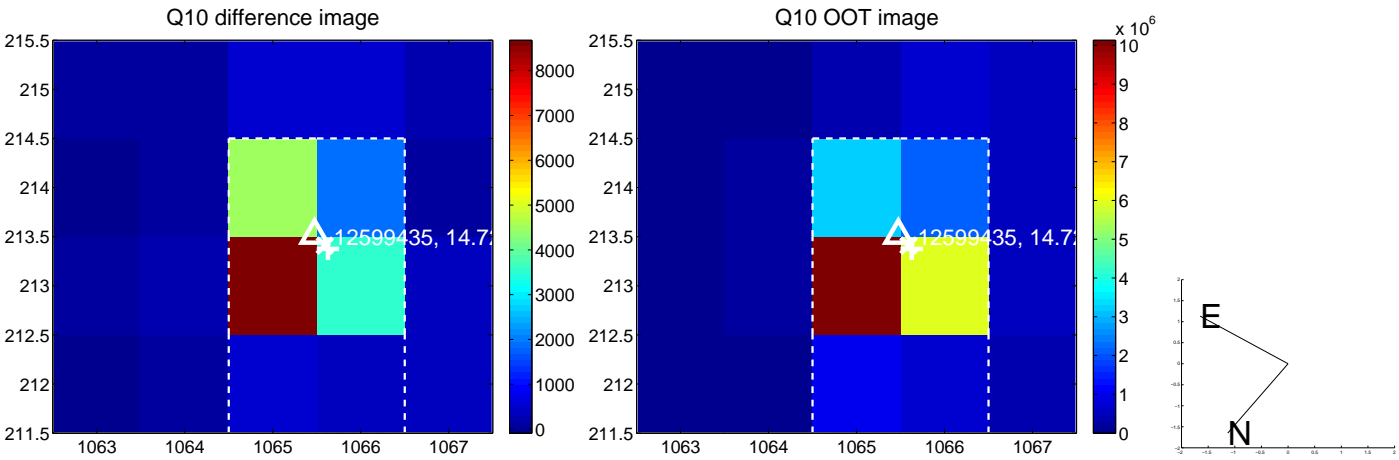
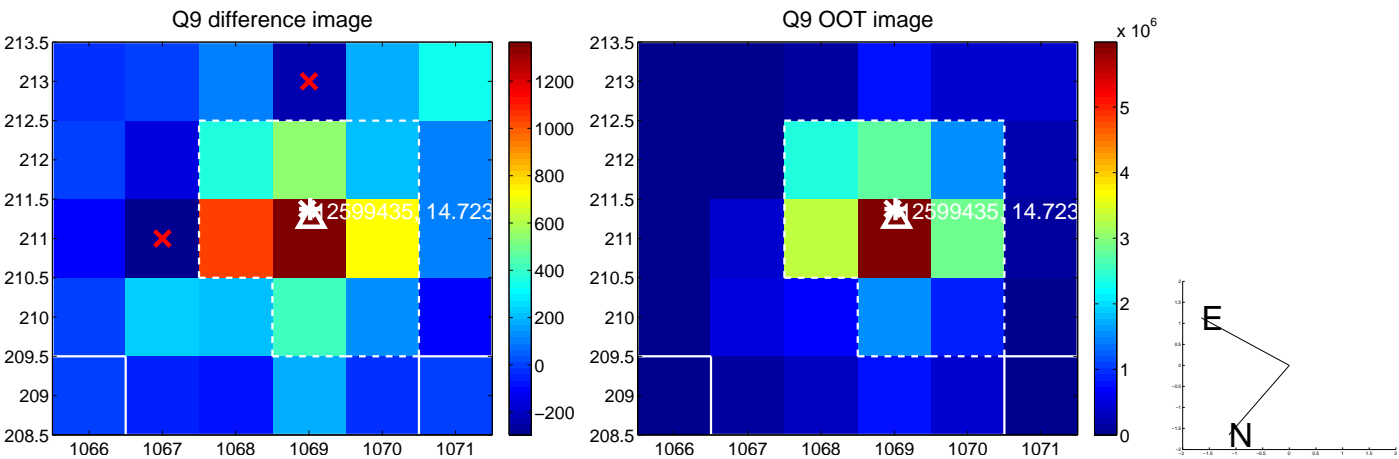
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



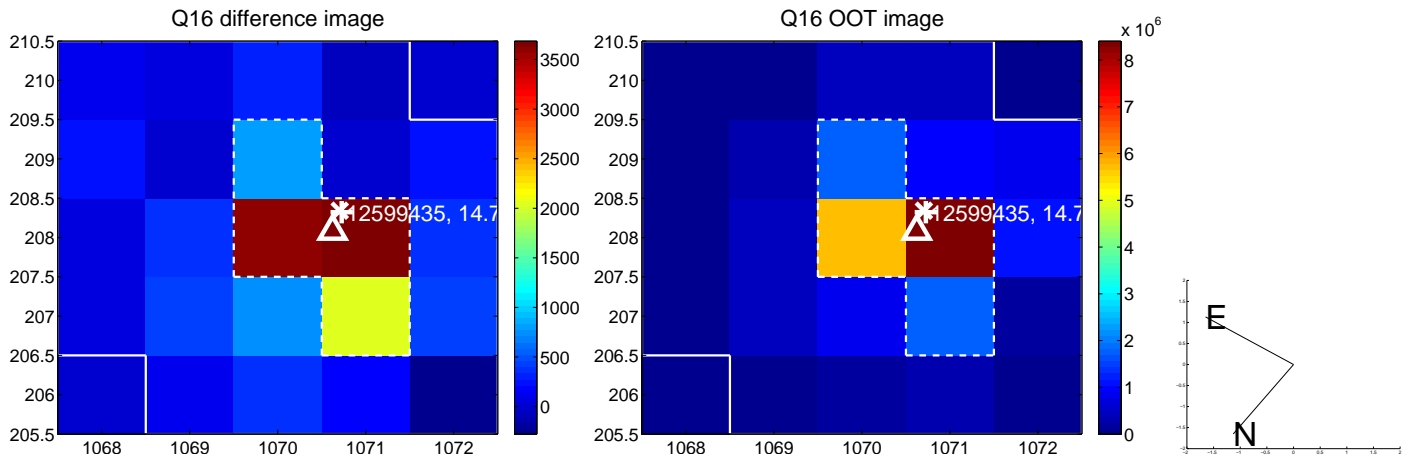
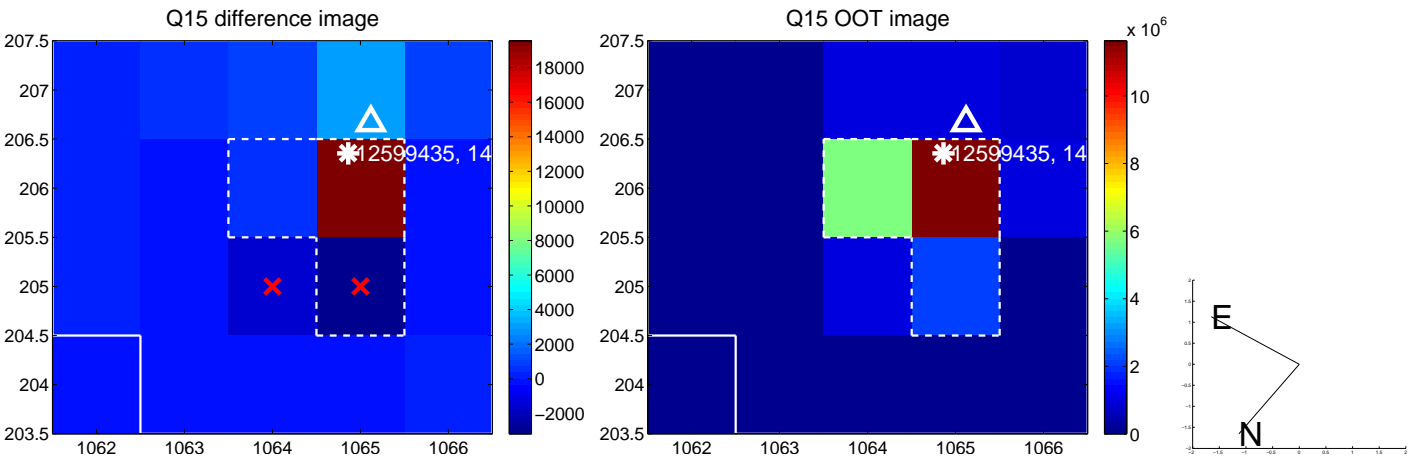
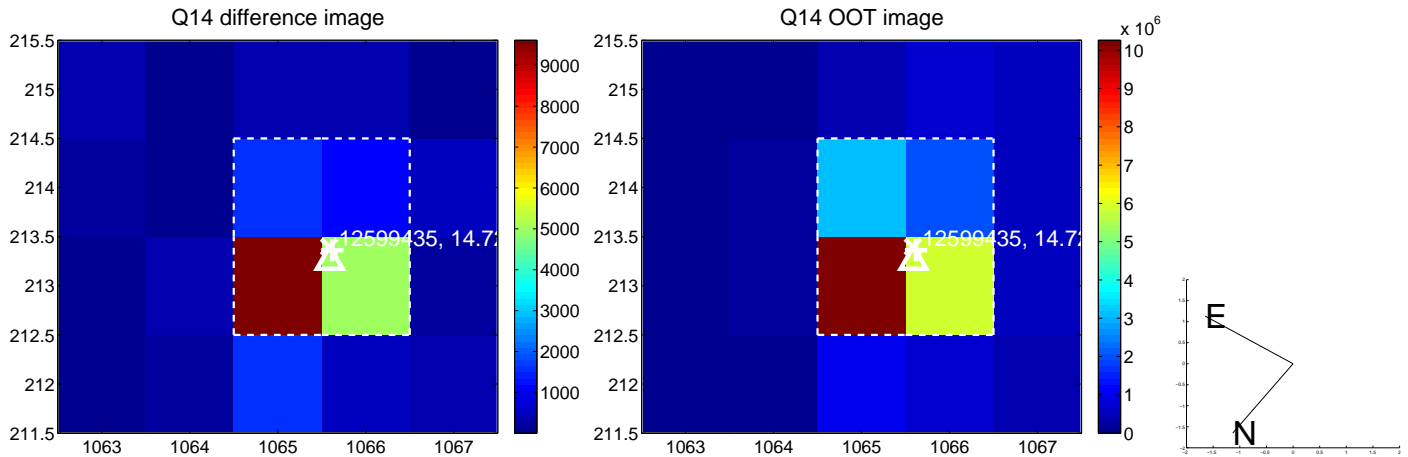
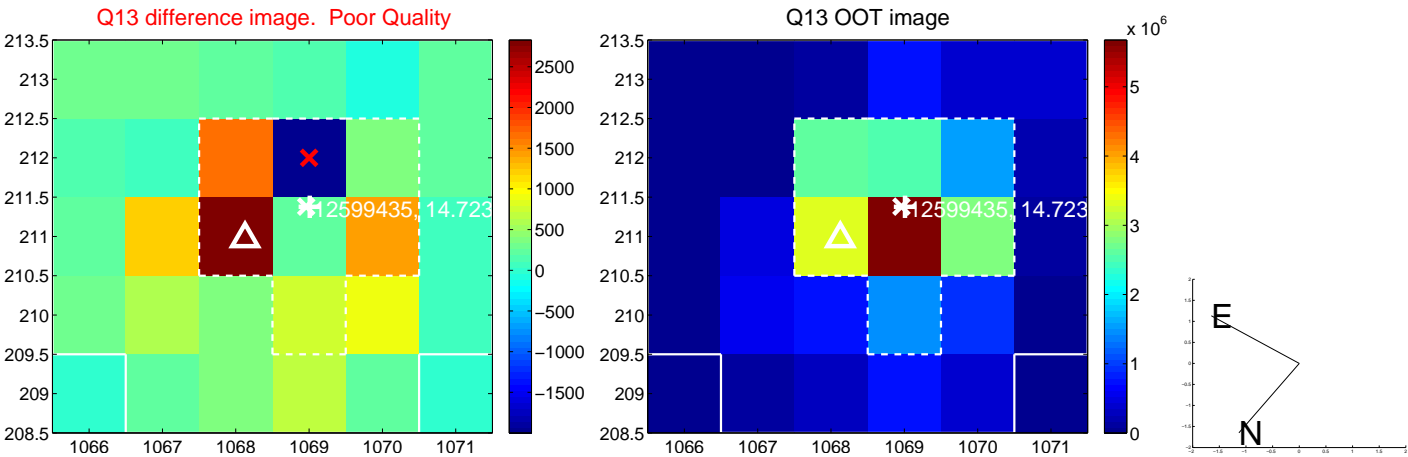
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



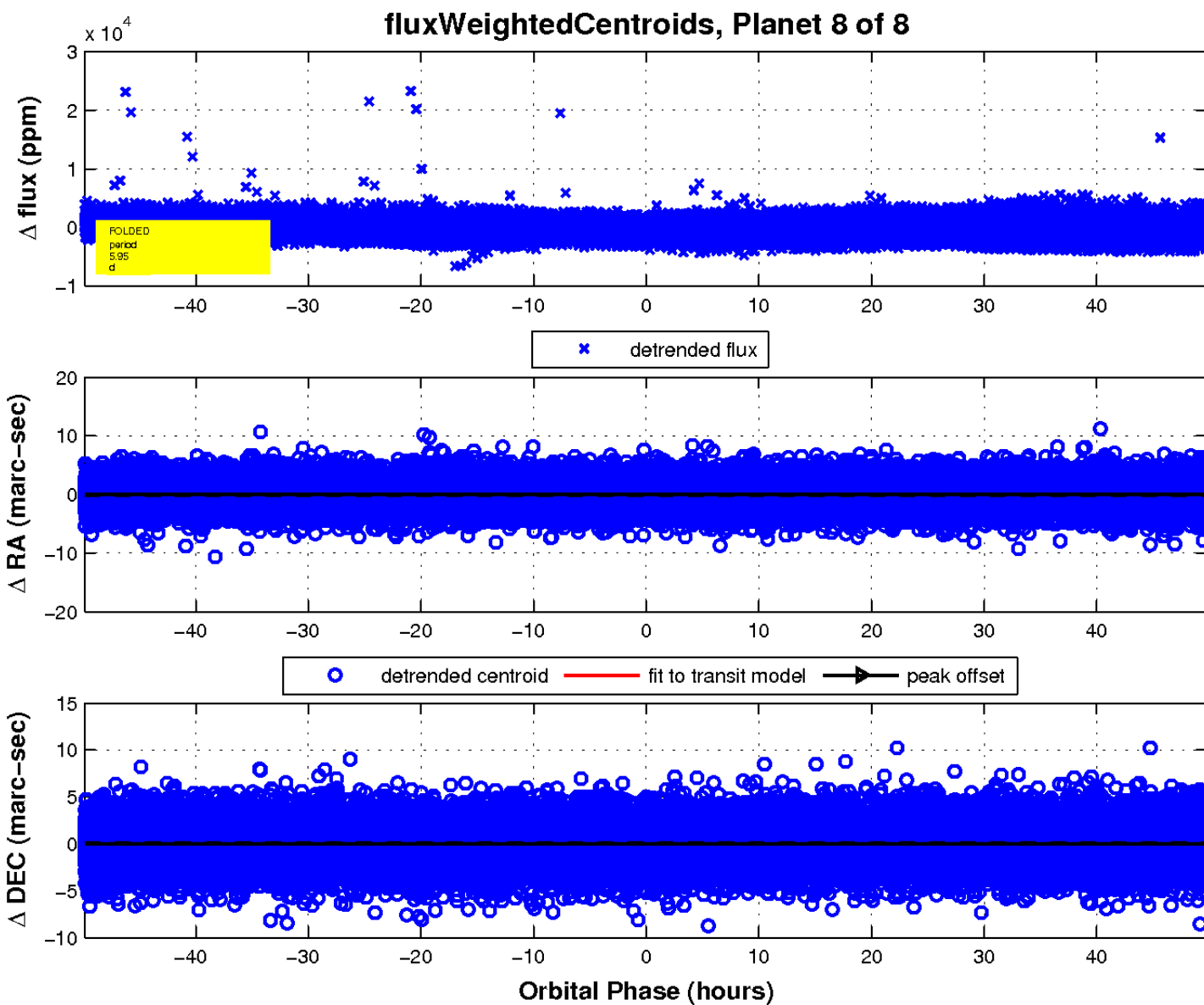
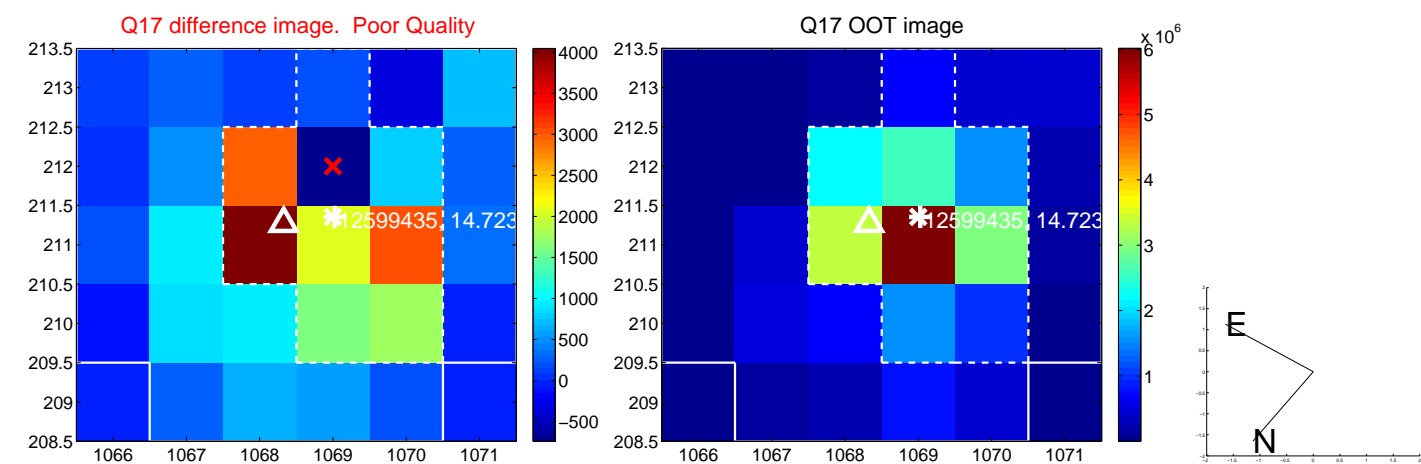
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

