

KIC 002983219

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})
002983219-01	OBS	No	391.866426	448.919213	289.3	6.127	7.6	8.2	1.67	6250	3.25	3.09
002983219-02	OBS	No	362.884065	479.940574	245.6	6.205	7.8	8.0	1.67	6250	2.82	3.42
002983219-03	OBS	No	410.714058	446.889167	260.0	8.656	8.1	8.1	1.67	6250	2.94	2.90
002983219-04	OBS	No	376.854959	446.779960	275.5	9.469	7.5	7.9	1.67	6250	3.14	3.25
002983219-05	OBS	No	376.111523	447.543400	265.8	10.305	9.1	8.8	1.67	6250	3.16	3.26
002983219-06	OBS	No	391.575969	471.703477	247.8	9.355	7.4	7.6	1.67	6250	2.91	3.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002983219-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002983219-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
002983219-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002983219-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

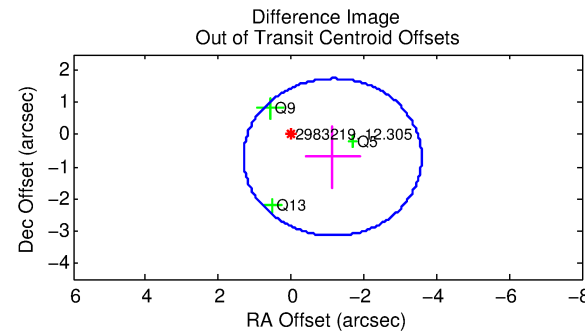
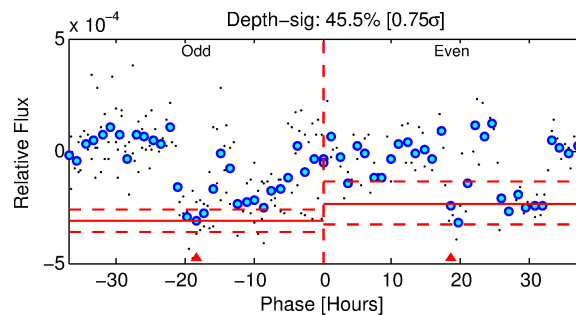
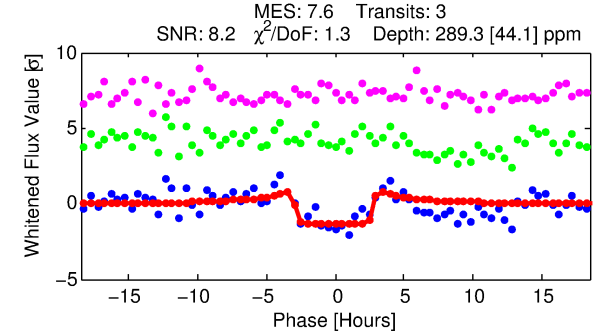
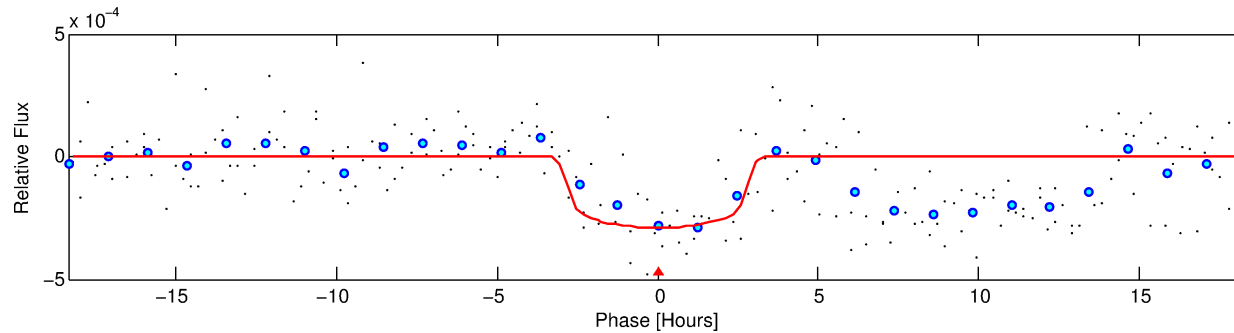
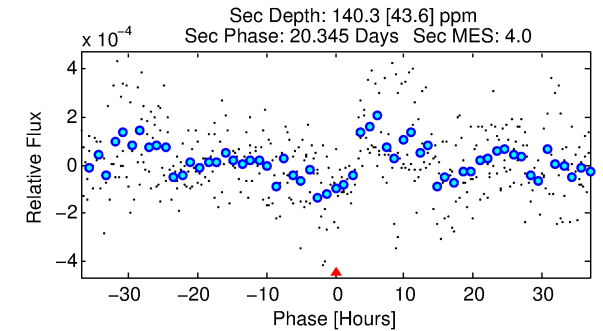
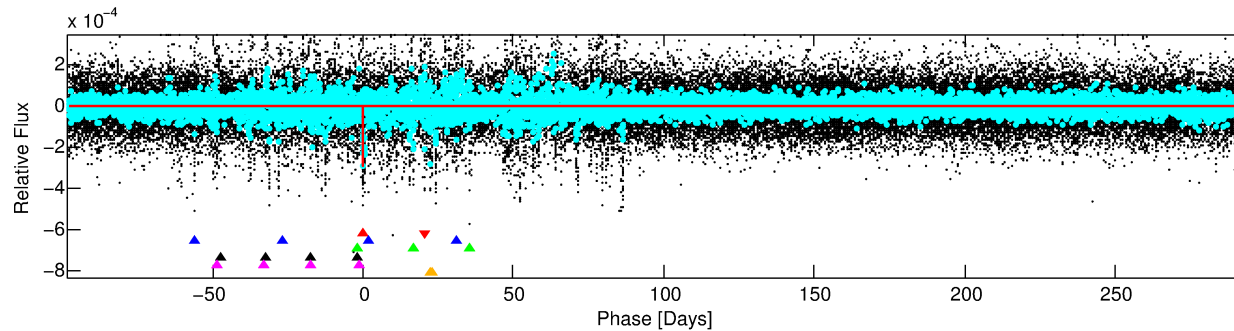
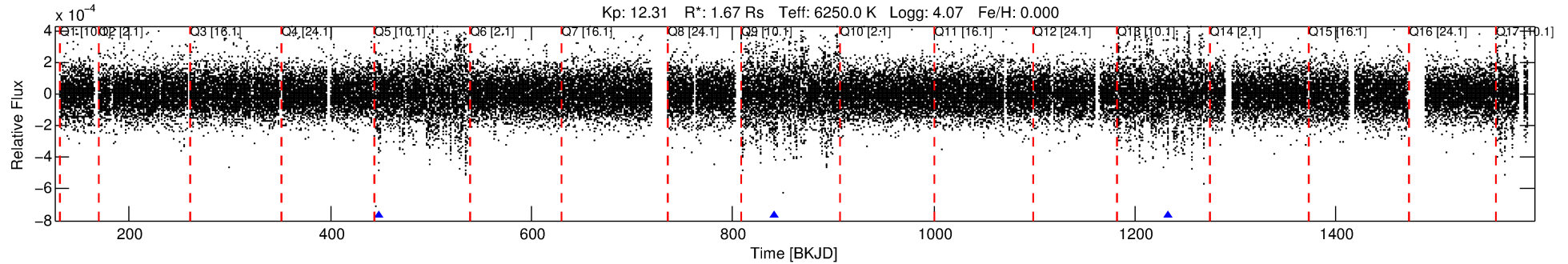
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002983219-01

No Significant Match Found

DV One-Page Summary

KIC: 2983219 Candidate: 1 of 6 Period: 391.866 d



DV Fit Results:

Period = 391.86643 [0.00666] d
Epoch = 448.9192 [0.0081] BKJD
Rp/R* = 0.0178 [0.0045]
a/R* = 265.15 [316.99]
b = 0.86 [0.36]
Seff = 3.09 [0.99]
Teq = 338 [27] K
Rp = 3.25 [1.08] Re
a = 1.1129 [0.2251] AU
Ag = 9064.74 [6066.28] [1.49σ]
Teffp = 5100 [755] K [6.30σ]

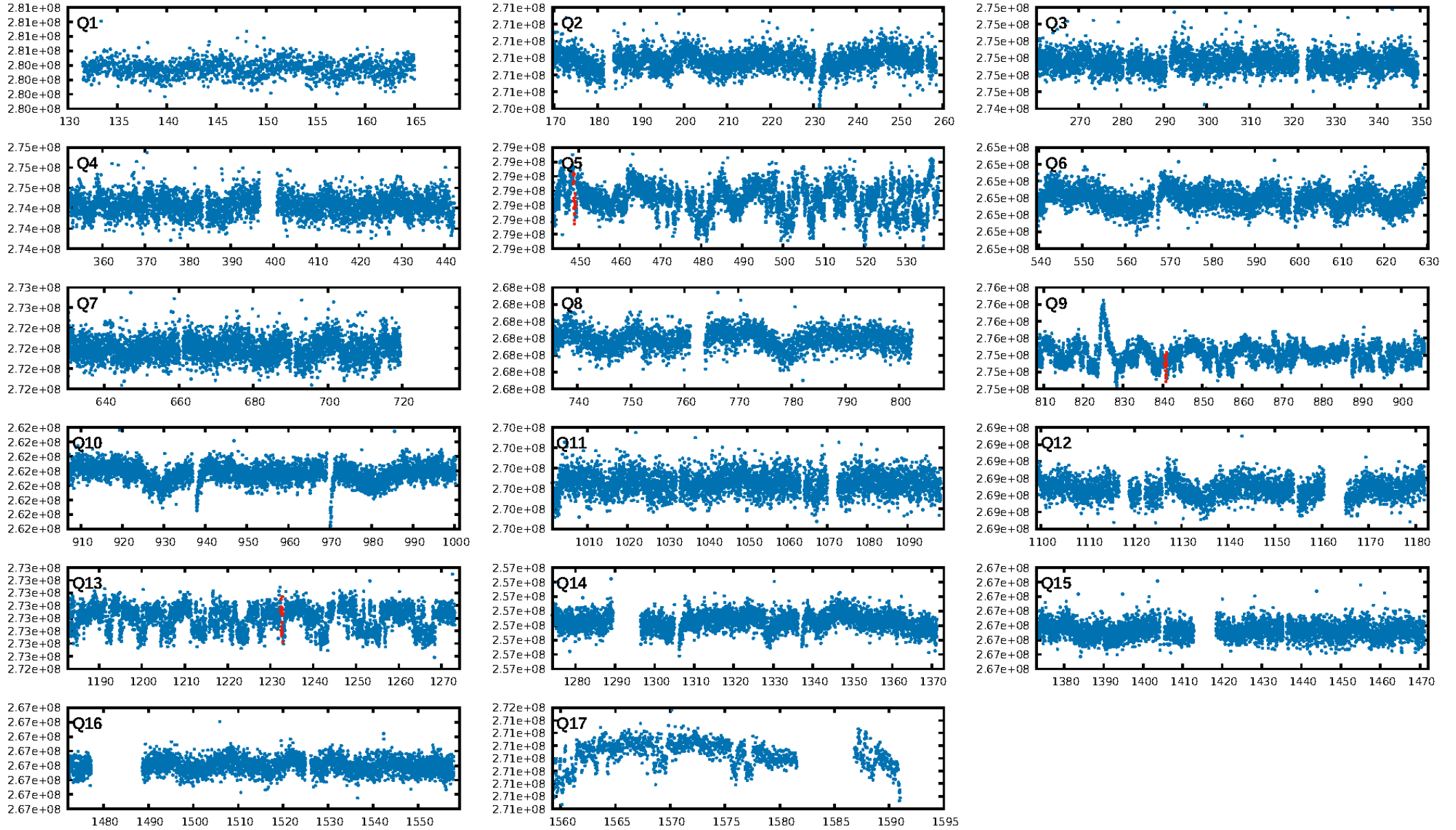
DV Diagnostic Results:

ShortPeriod-sig: 46.7% [0.62σ]
LongPeriod-sig: 100.0% [42.65σ]
ModelChiSquare2-sig: 77.3%
ModelChiSquareGof-sig: 95.0%
Bootstrap-pfa: 4.82e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.982
Centroid-sig: 44.8%
Centroid-so: 0.777 arcsec [0.82σ]
OotOffset-rm: 1.344 arcsec [1.65σ]
KicOffset-rm: 1.310 arcsec [1.65σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

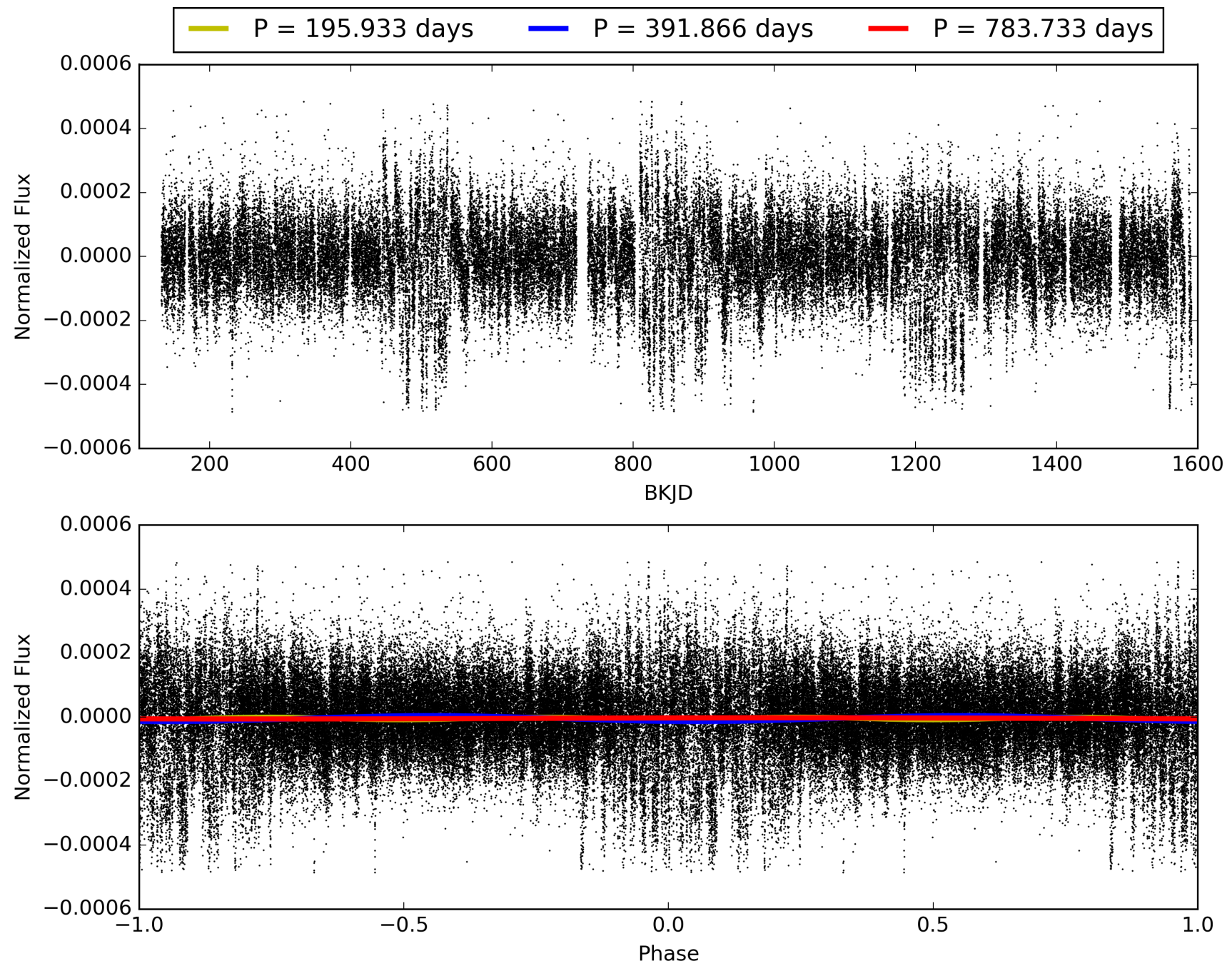
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 002983219-01, PDC Light Curves

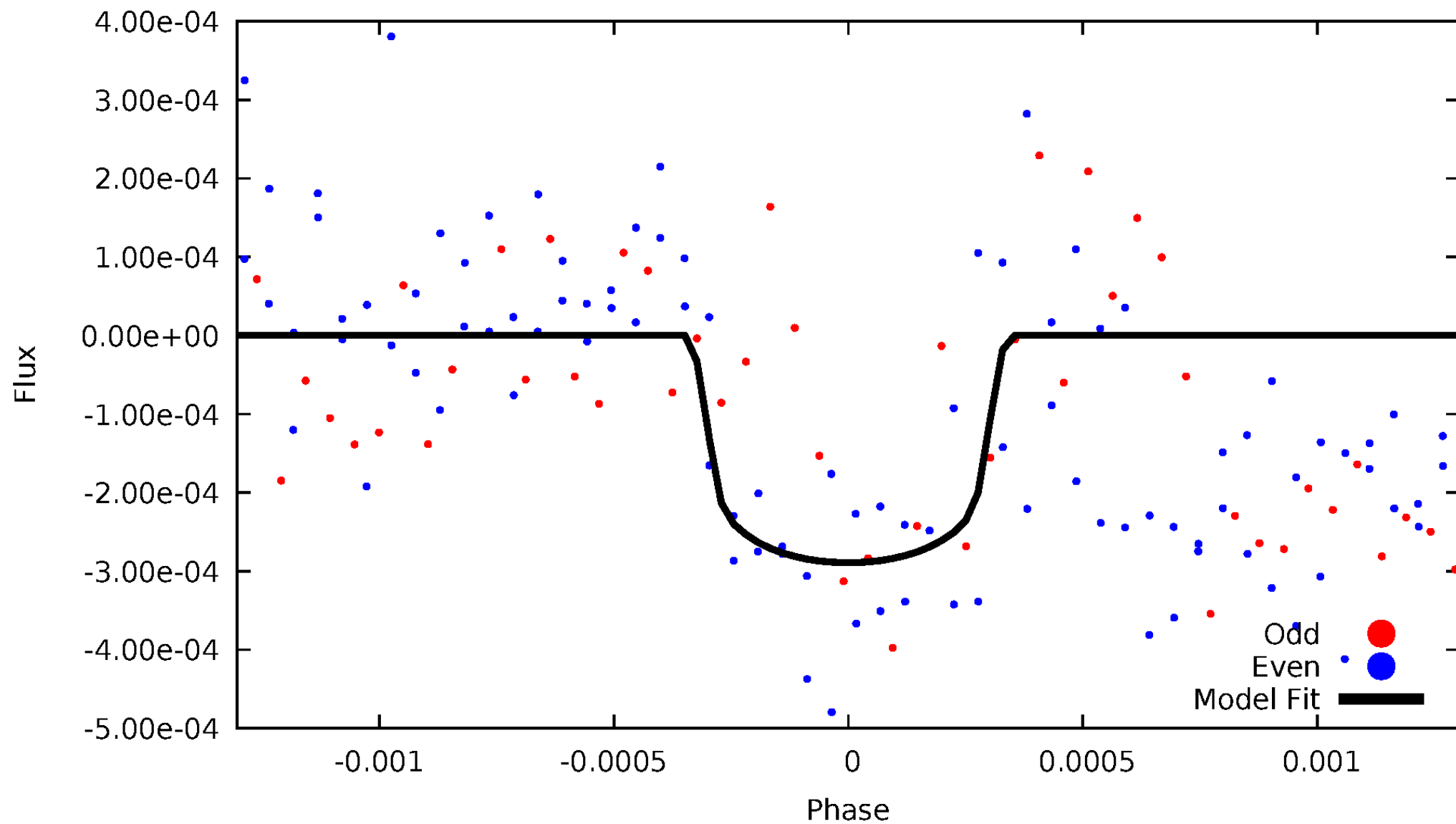


TCE 002983219-01



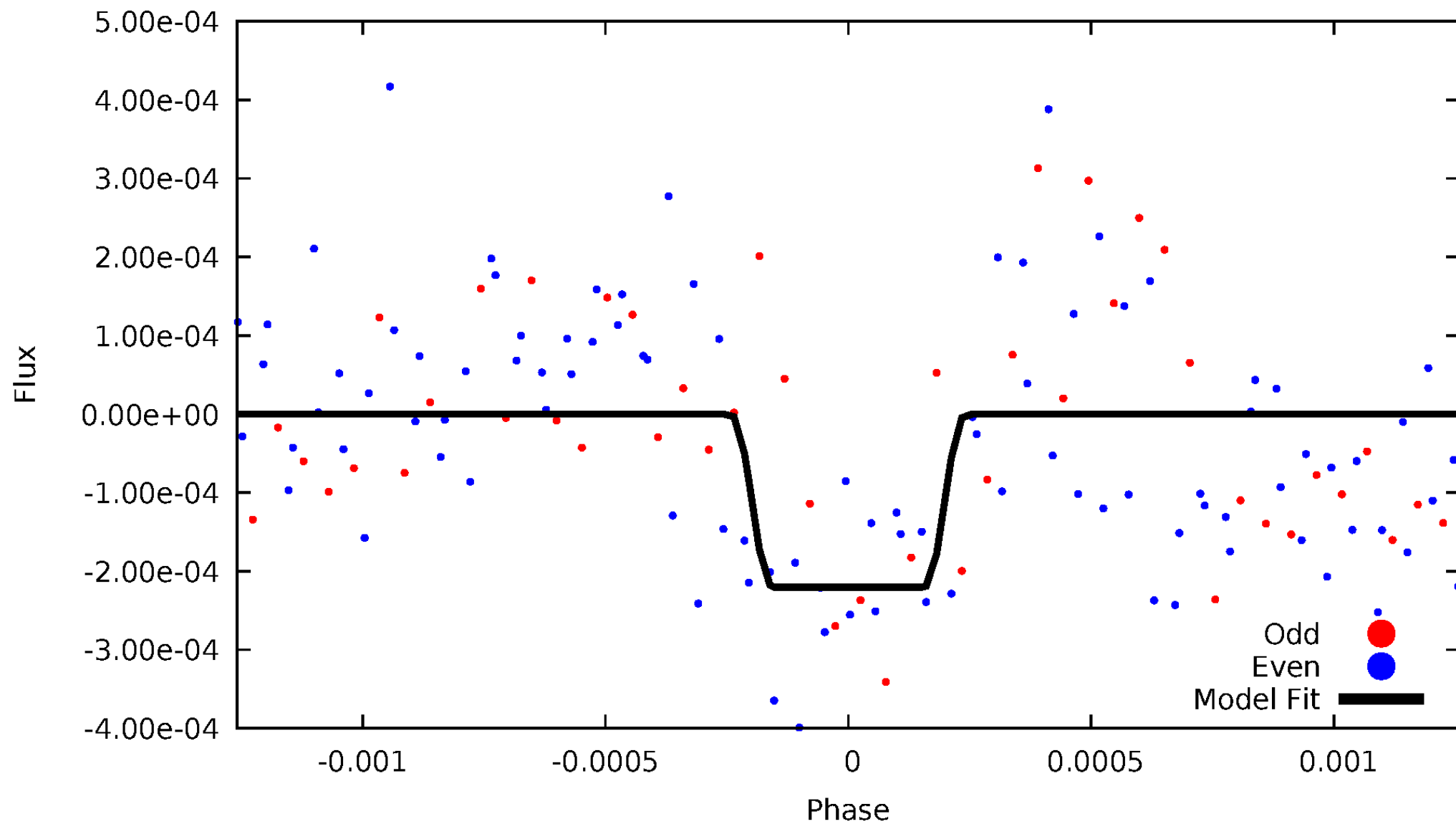
DV Odd/Even

TCE 002983219-01

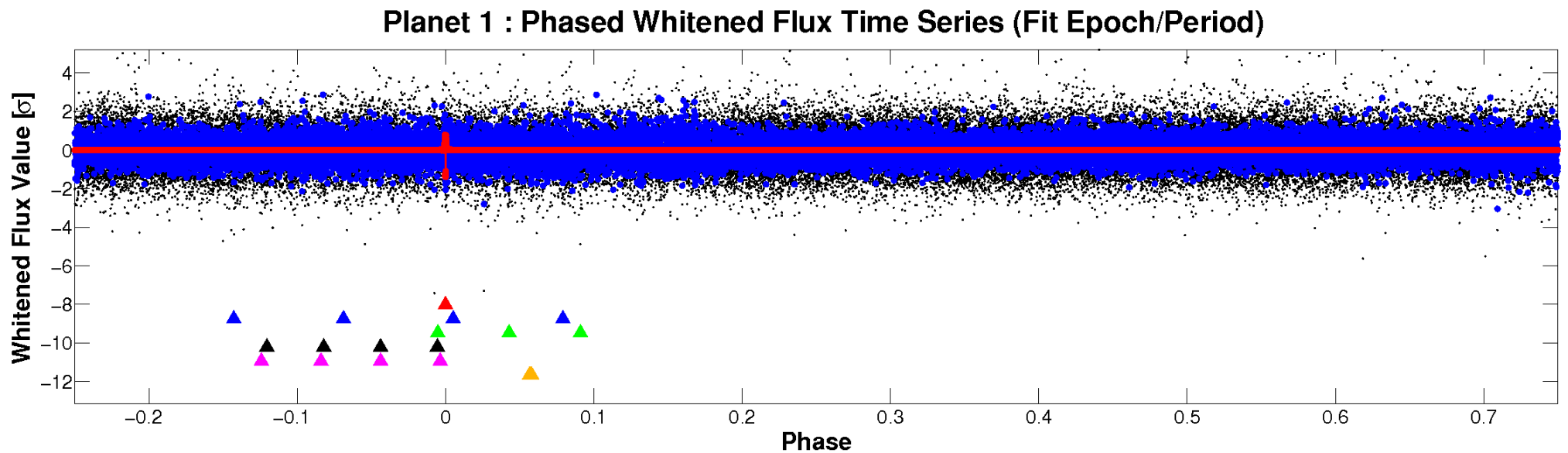
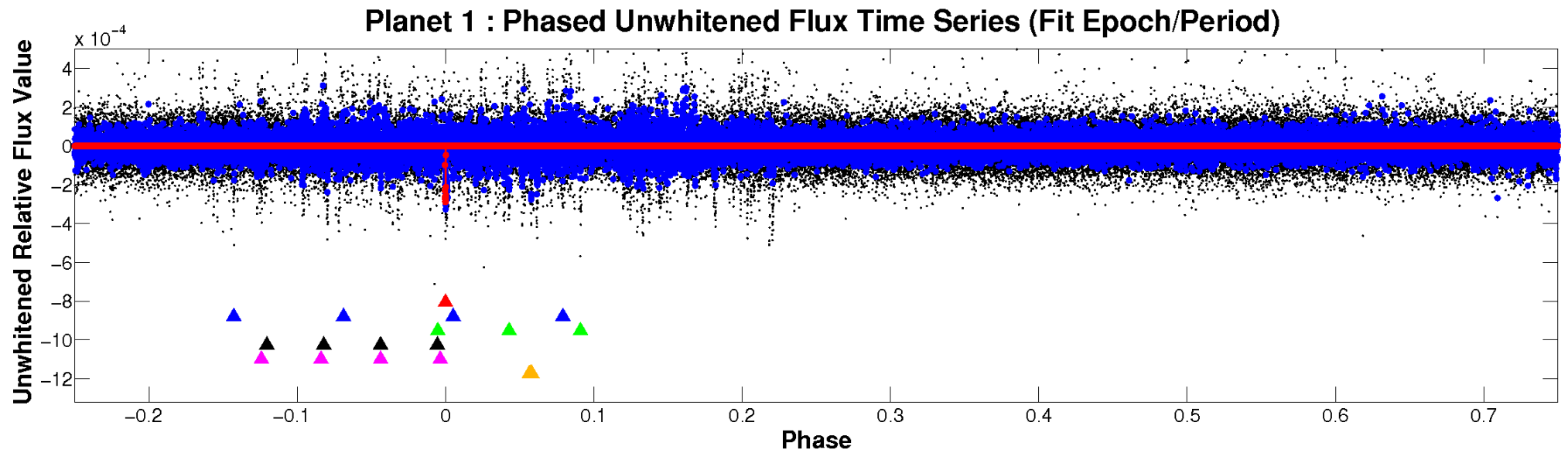


ALT Odd/Even

TCE 002983219-01

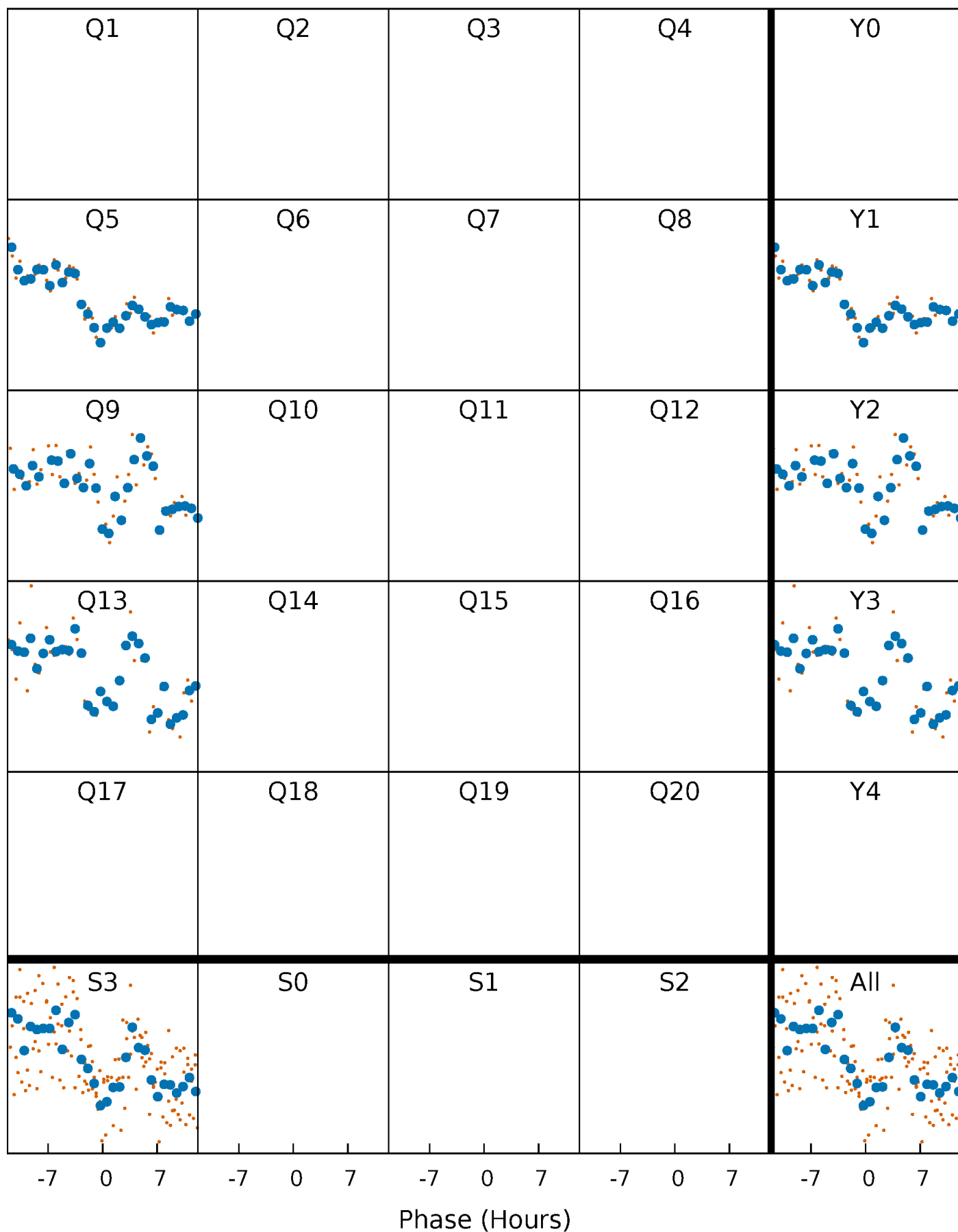


Non-Whitened Vs. Whitened Light Curve



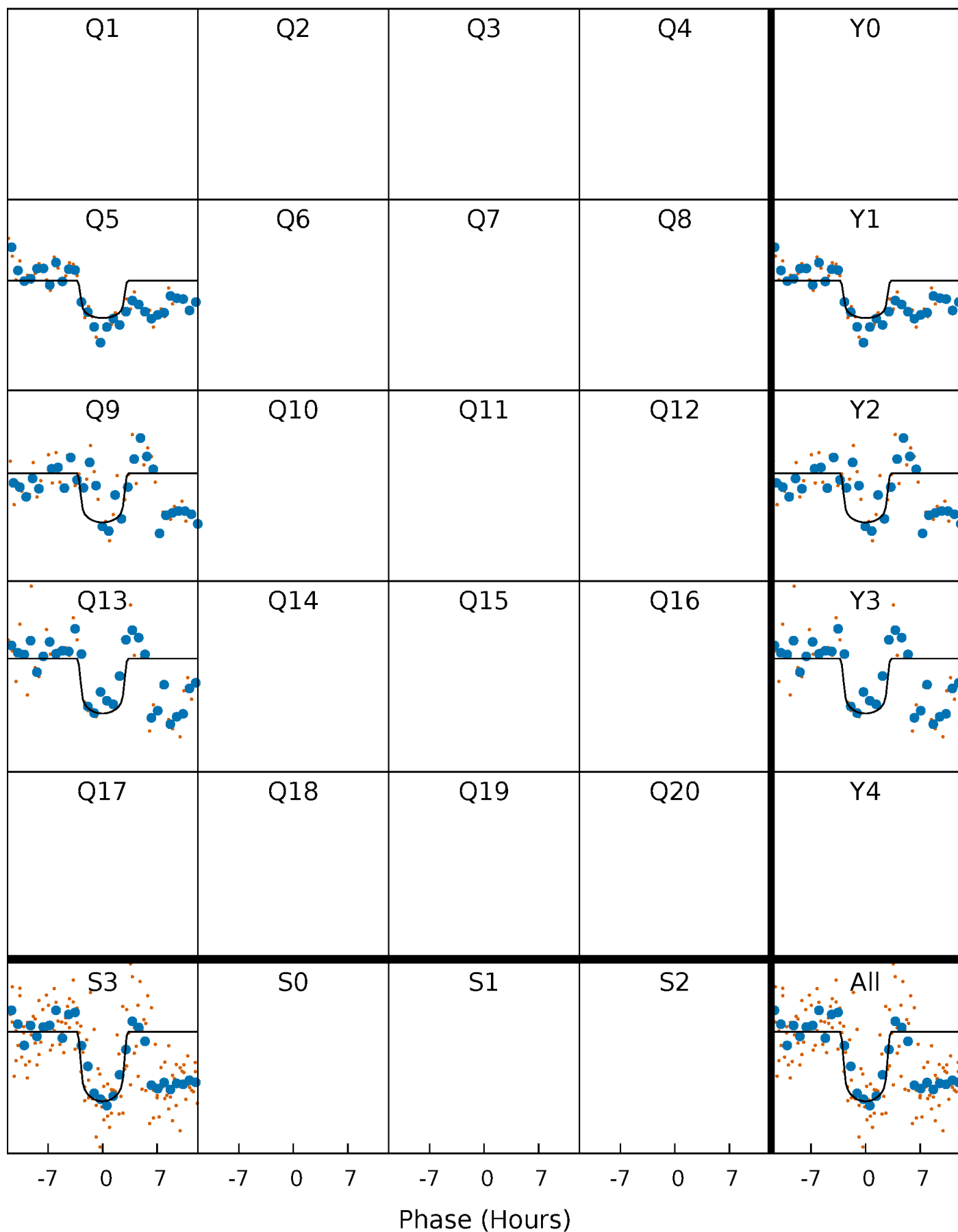
PDC Quarter-Phased Transit Curves

TCE 002983219-01 $P=391.866426$ Days $T_0=448.919213$ (BKJD)



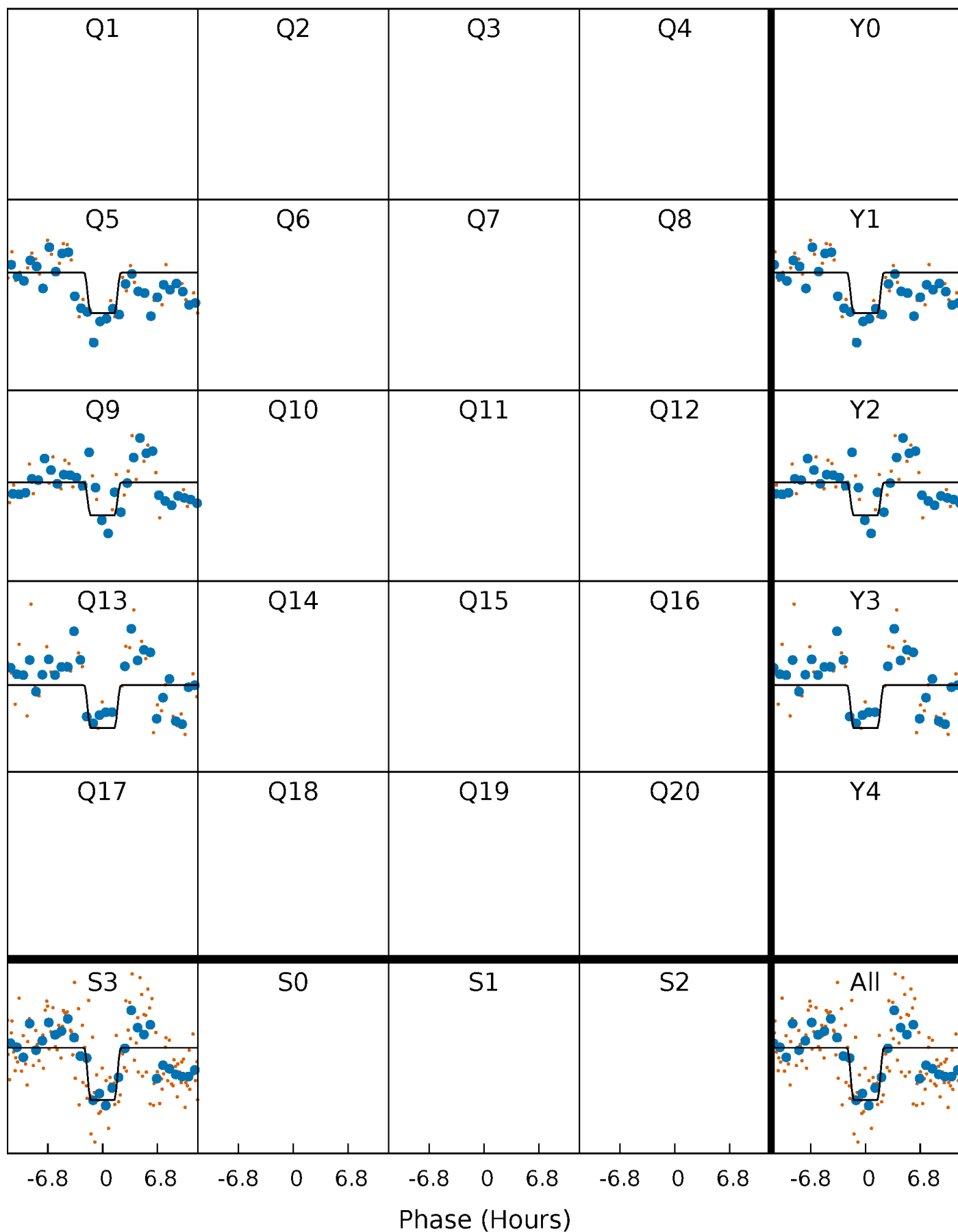
DV Quarter-Phased Transit Curves

TCE 002983219-01 P=391.866426 Days $T_0=448.919213$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

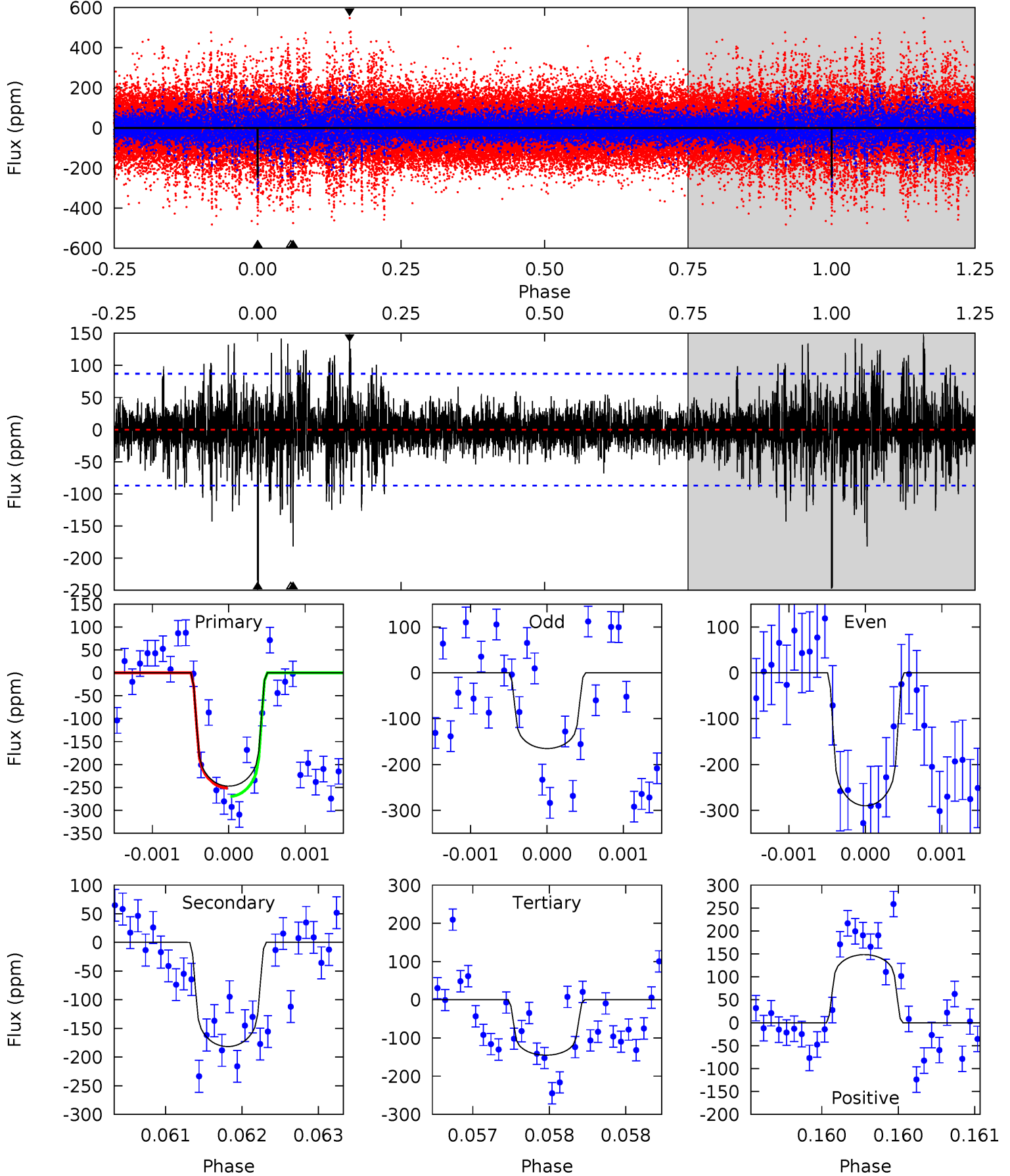
TCE 002983219-01 P=391.847569 Days $T_0=448.944715$ (BKJD)



DV Model-Shift Uniqueness Test

002983219-01, $P = 391.866426$ Days, $E = 57.052787$ Days

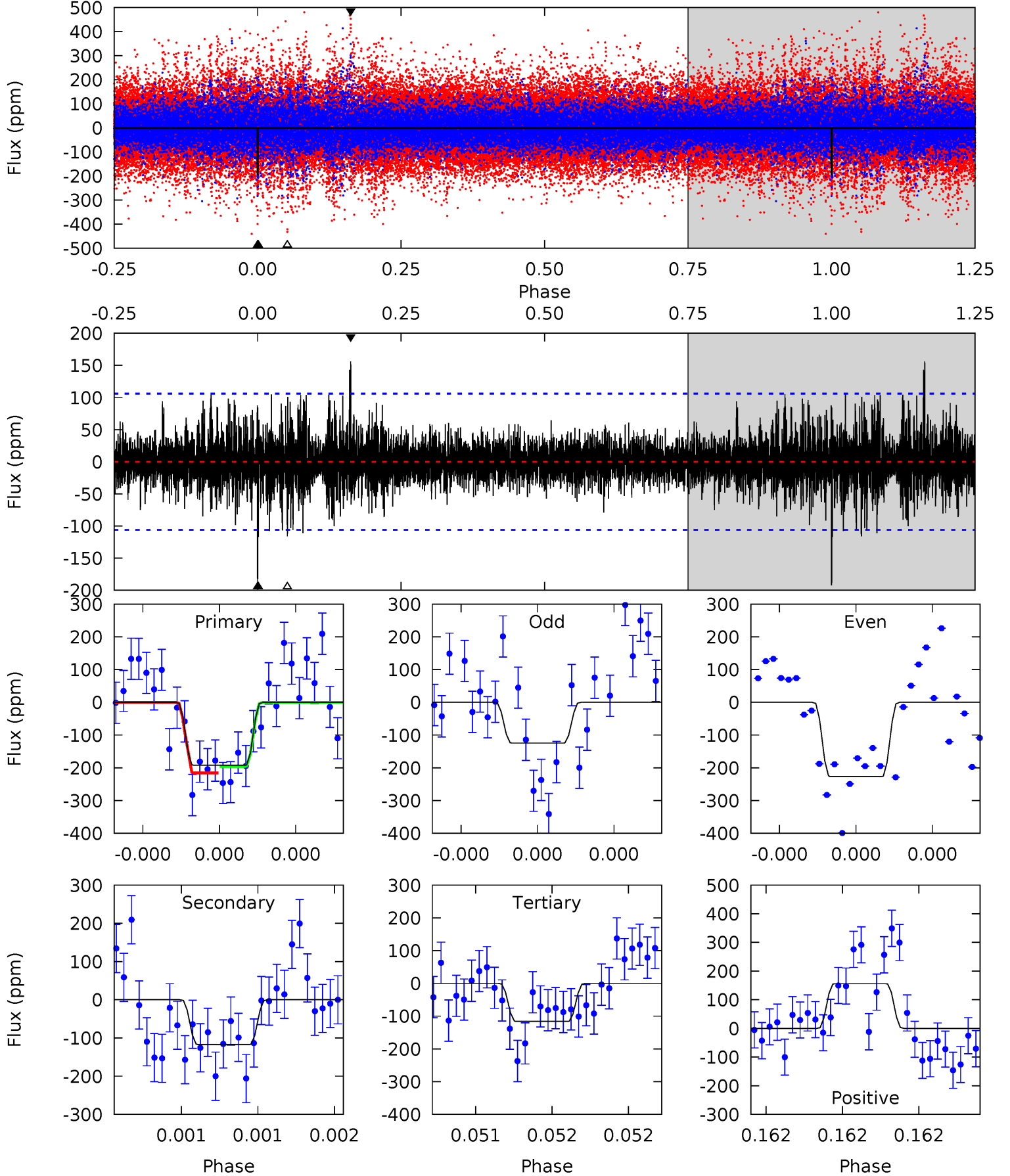
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	11.5	9.19	9.41	5.51	3.39	1.78	6.48	6.26	2.33	2.11	3.75	1.17	0.38	0.57



Alt Model-Shift Uniqueness Test

002983219-01, P = 391.847569 Days, E = 57.097146 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.18	6.13	8.23	5.59	3.51	1.28	4.02	1.91	0.05	-2.05	2.55	1.18	0.45	0.52



Stellar Parameters For KIC 002983219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6250^{+75}_{-75}	$4.069^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.673^{+0.300}_{-0.367}$	$1.196^{+0.143}_{-0.096}$	$0.360^{+0.325}_{-0.126}$
	+1%/-1%	+4%/-2%	+inf%/-inf%	+18%/-22%	+12%/-8%	+90%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002983219-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-182 ± 16	$3.07^{+0.96}_{-0.79}$	469^{+21}_{-26}	5525^{+799}_{-540}	13029^{+10599}_{-5367}
Alt.	-117 ± 19	$2.65^{+0.92}_{-0.83}$	470^{+21}_{-27}	5358^{+1123}_{-606}	11375^{+13511}_{-5193}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

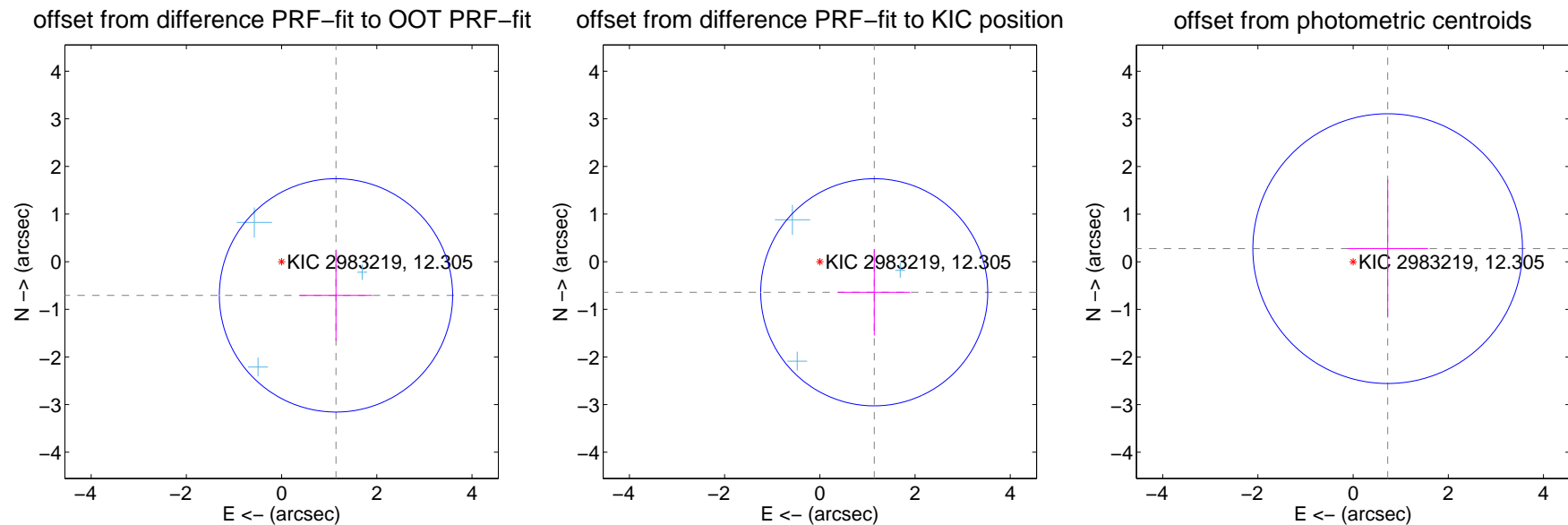
DV Centroid Data

Supplemental centroid analysis for 002983219-01. Kepler magnitude: 12.30. Transit SNR 8.23

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.344 ± 0.817	1.65	-1.143 ± 0.760	-0.707 ± 0.948
PRF-fit source offset from KIC position	1.310 ± 0.795	1.65	-1.142 ± 0.755	-0.642 ± 0.909
photometric centroid source offset	0.78 ± 0.94	0.82	-0.73 ± 0.85	0.28 ± 1.45

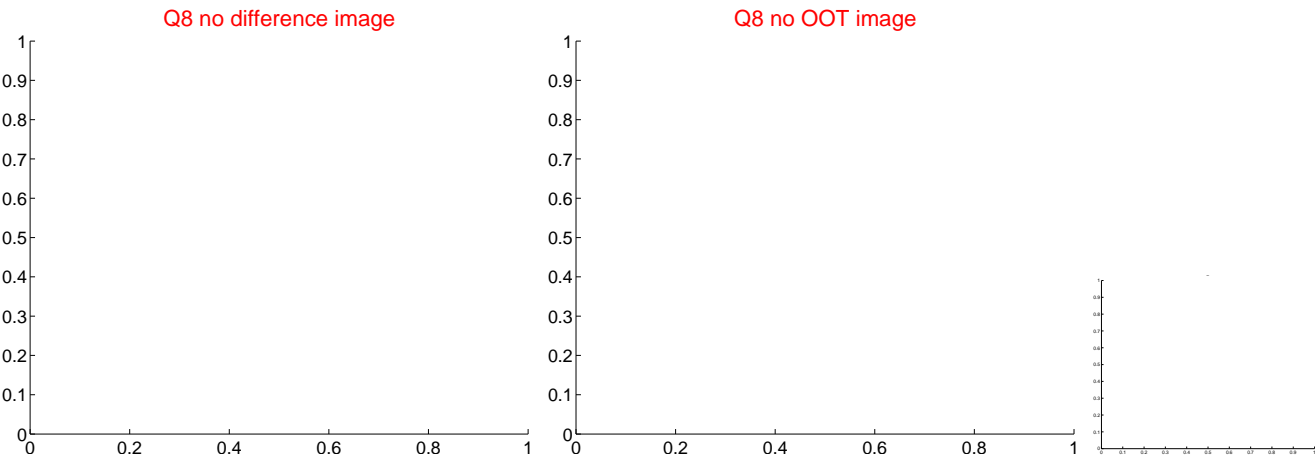
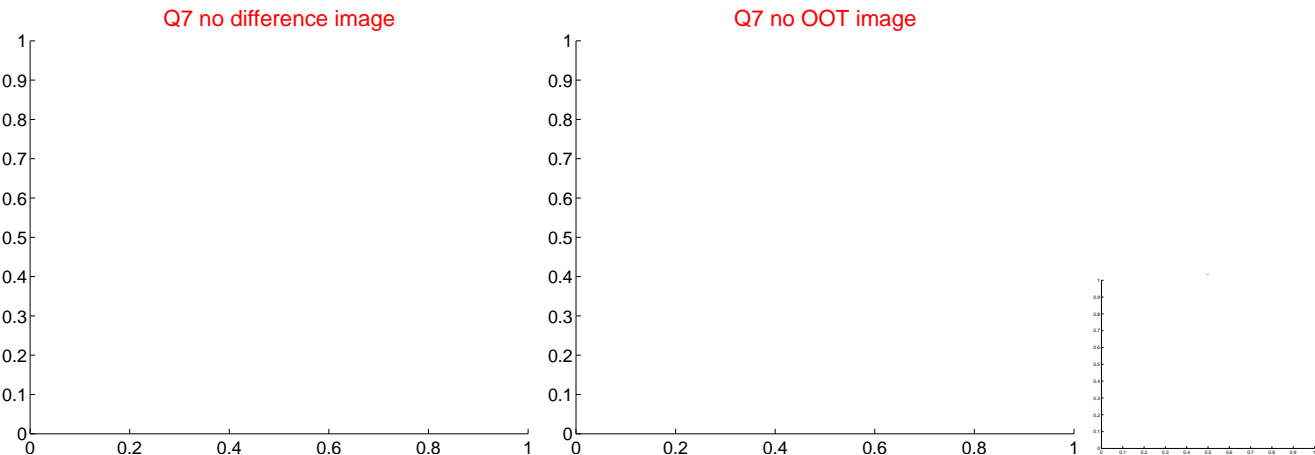
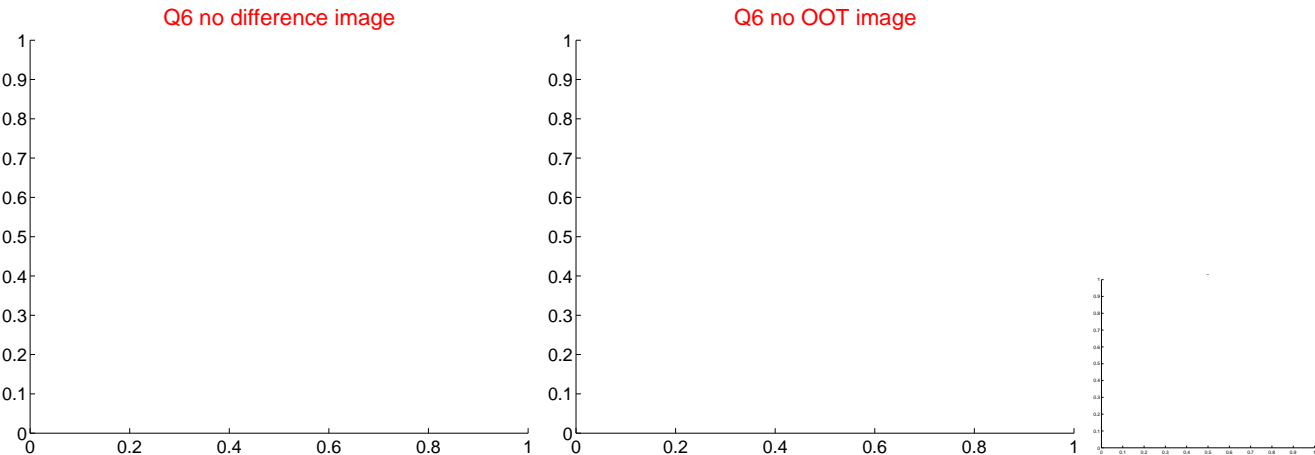
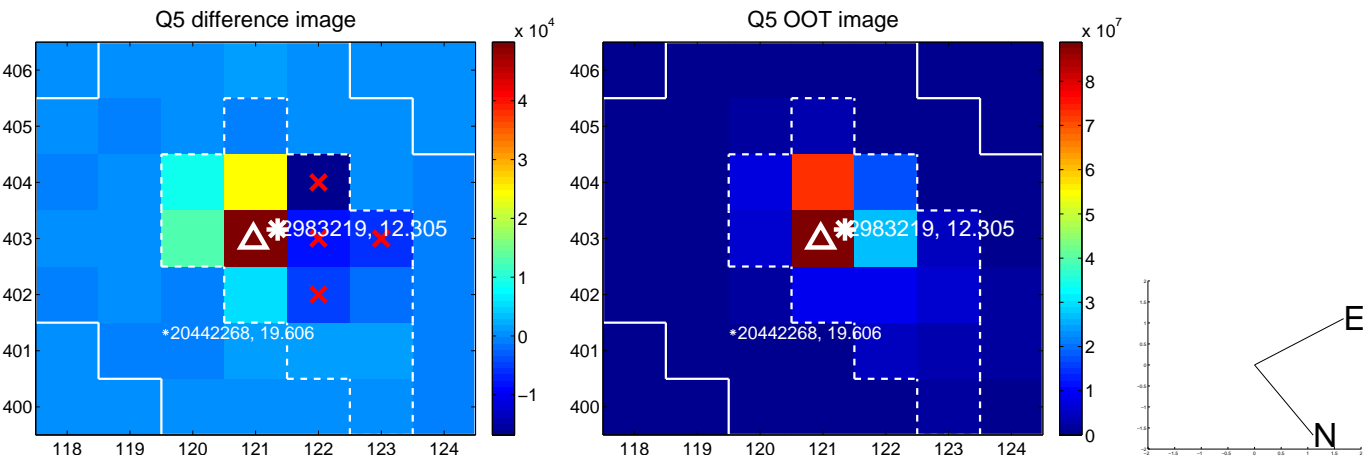


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

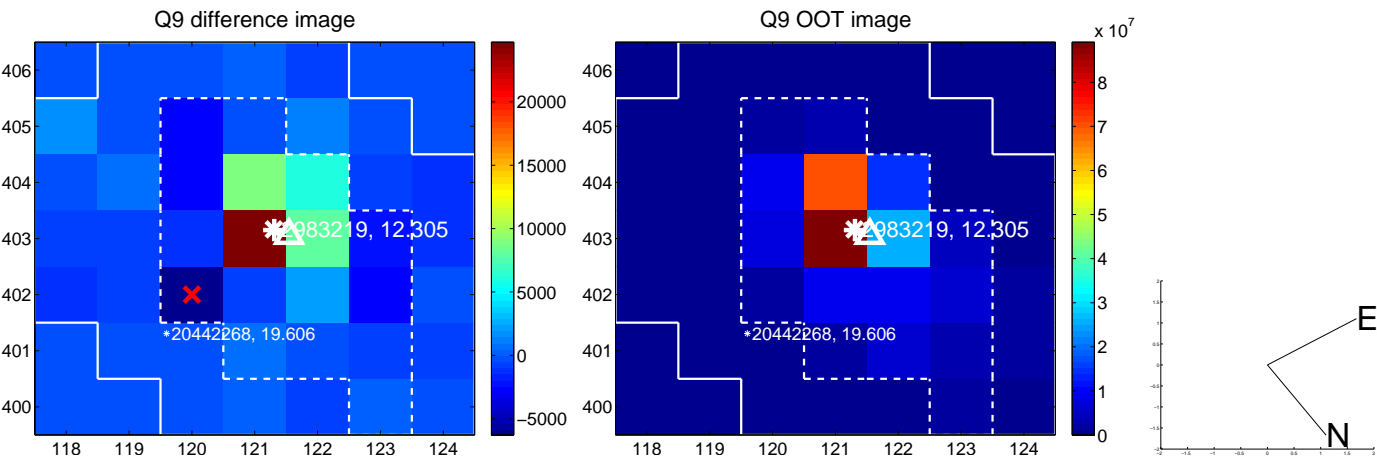
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



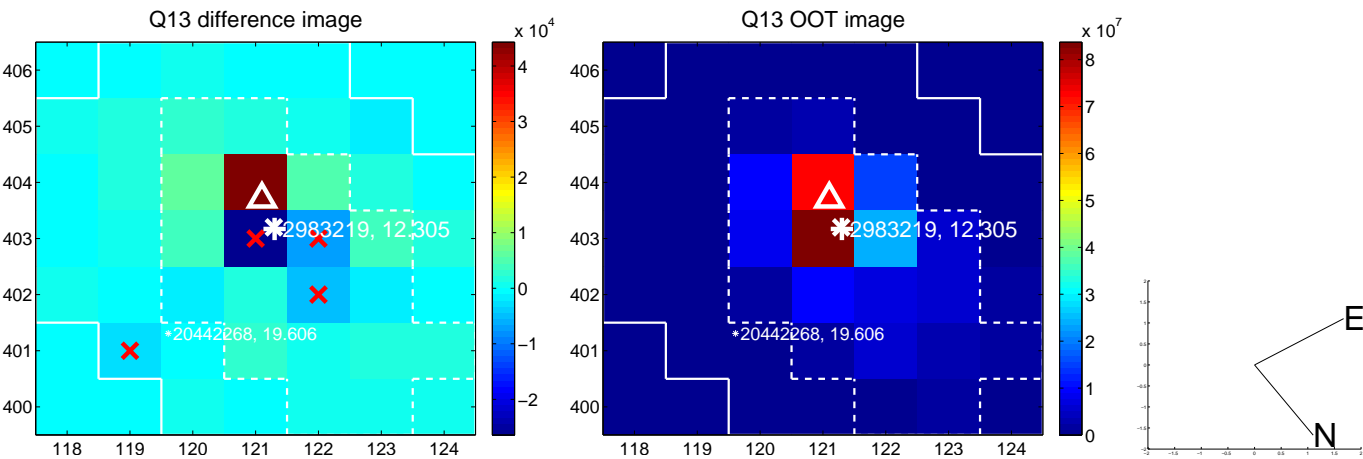
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



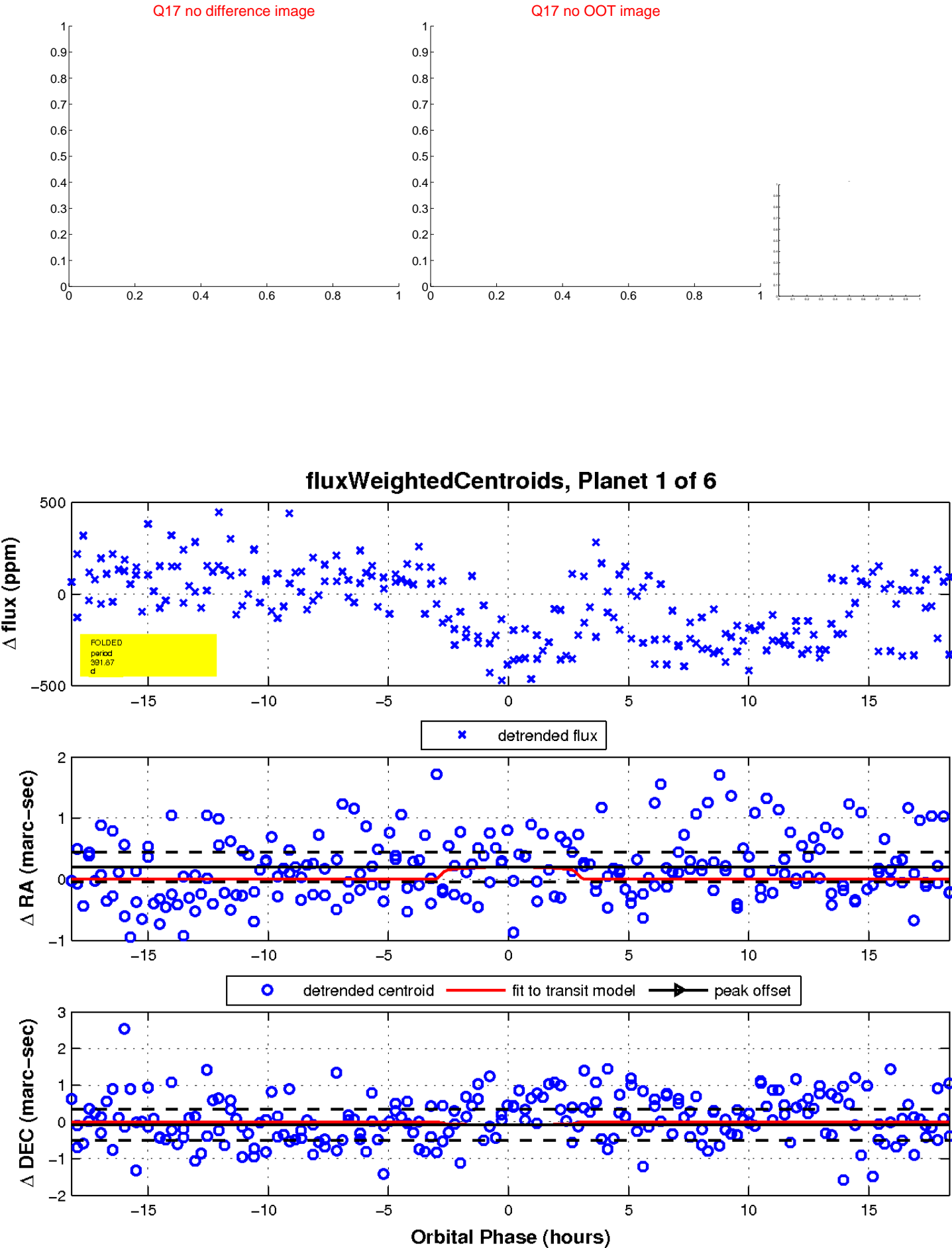
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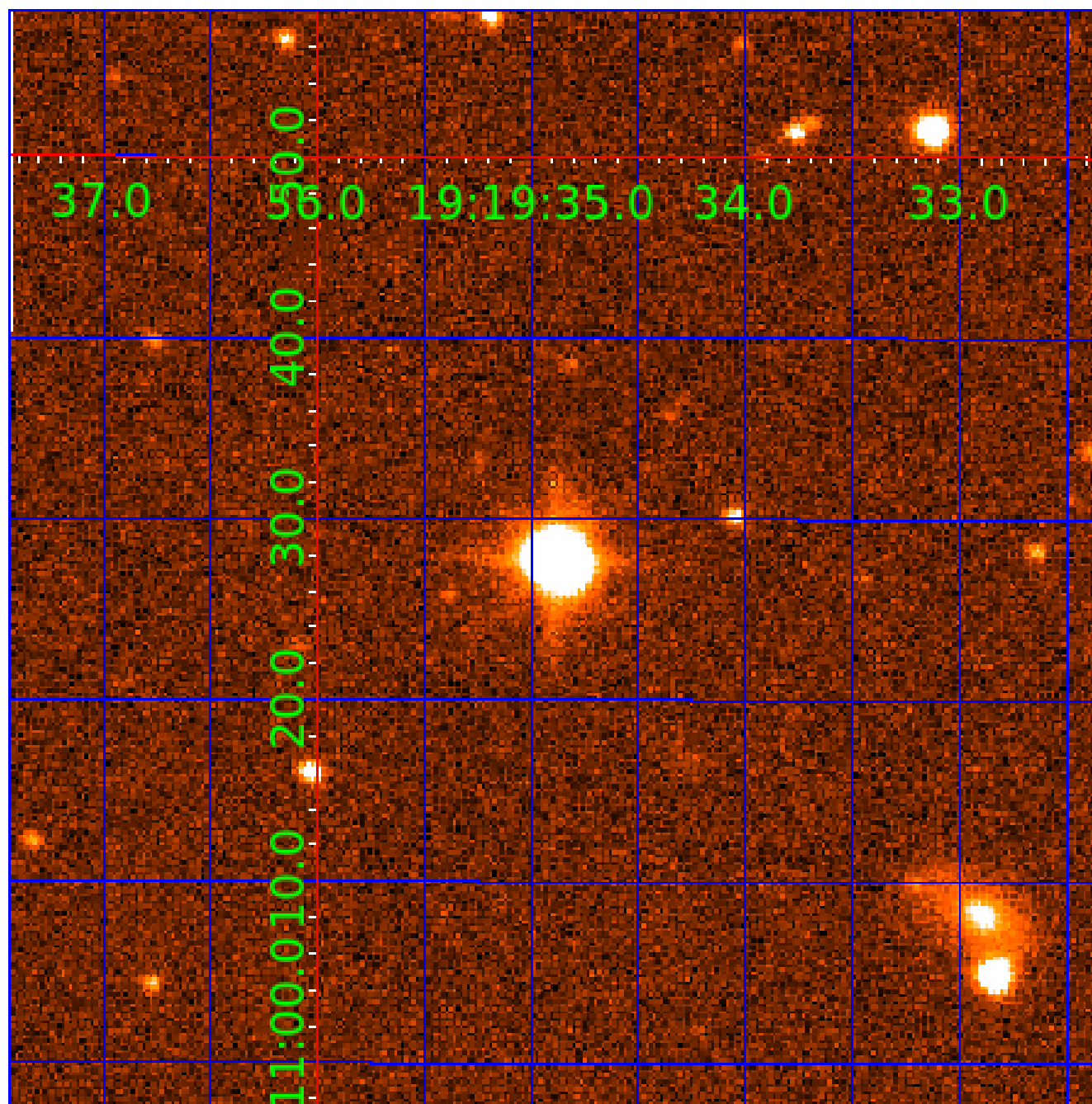


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002983219

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})
002983219-01	OBS	No	391.866426	448.919213	289.3	6.127	7.6	8.2	1.67	6250	3.25	3.09
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Robovetter Results

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002983219-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
002983219-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002983219-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

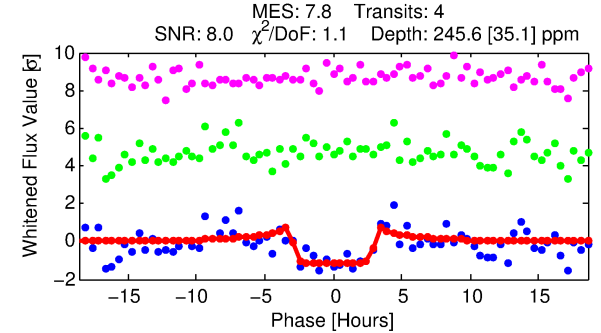
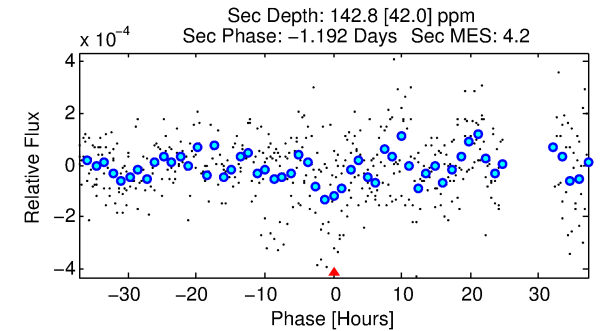
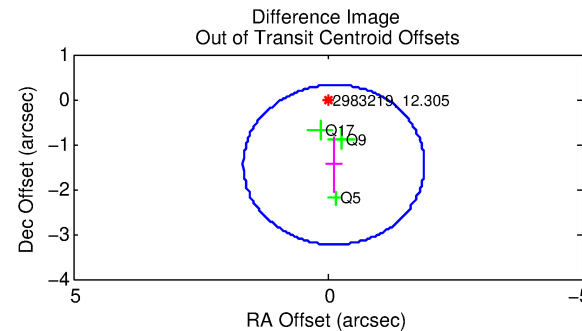
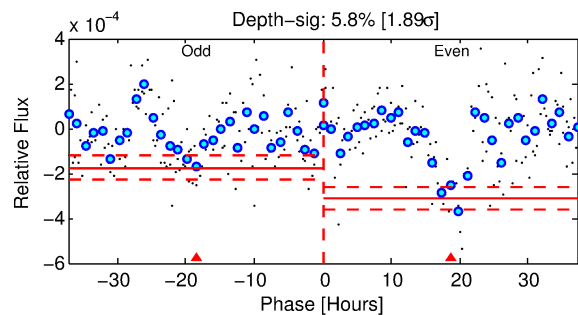
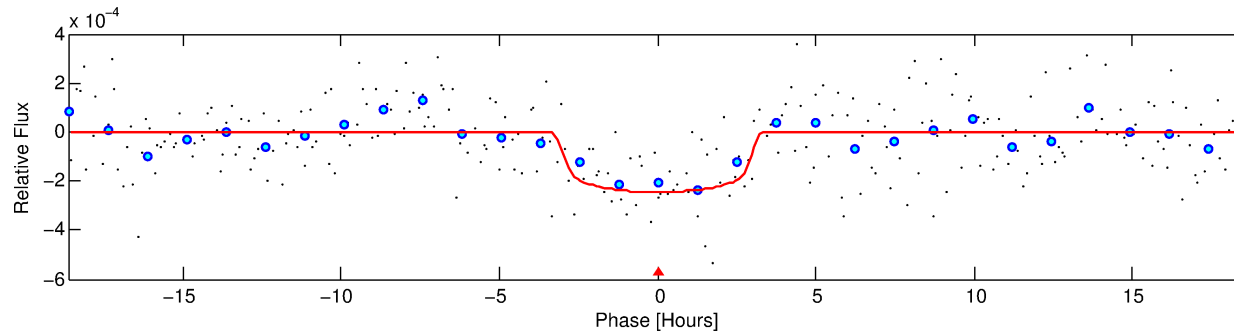
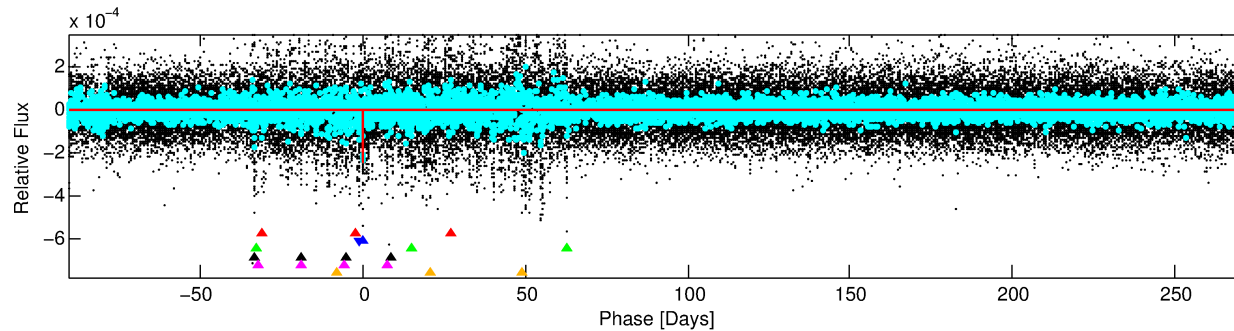
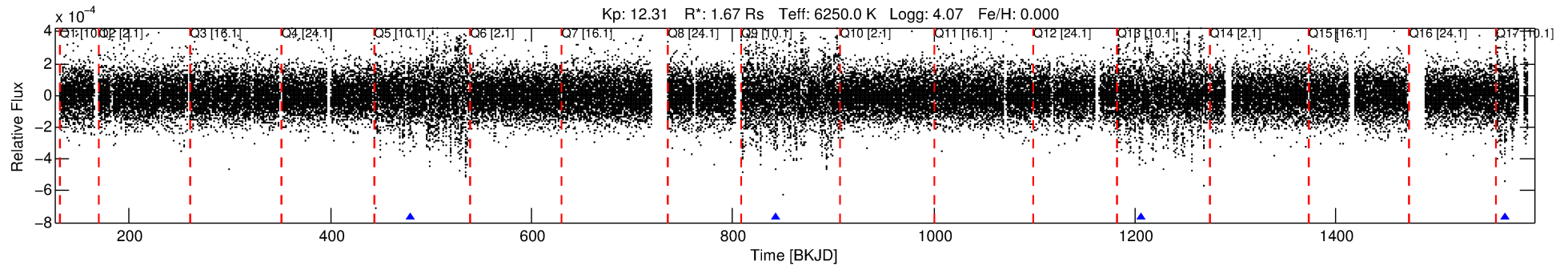
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002983219-02

No Significant Match Found

DV One-Page Summary

KIC: 2983219 Candidate: 2 of 6 Period: 362.884 d



DV Fit Results:

Period = 362.88407 [0.00443] d
Epoch = 479.9406 [0.0085] BKJD
Rp/R* = 0.0155 [0.0139]
a/R* = 317.10 [1459.29]
b = 0.73 [3.02]
Seff = 3.42 [1.09]
Teq = 347 [28] K
Rp = 2.82 [2.61] Re
a = 1.0573 [0.2138] AU
Ag = 11012.19 [20314.16] [0.54 σ]
Teffp = 5493 [2497] K [2.06 σ]

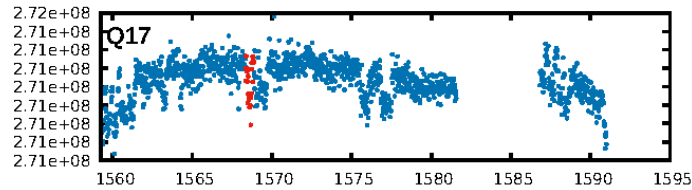
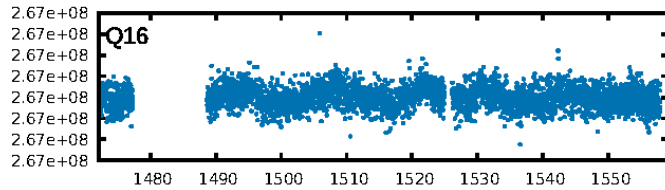
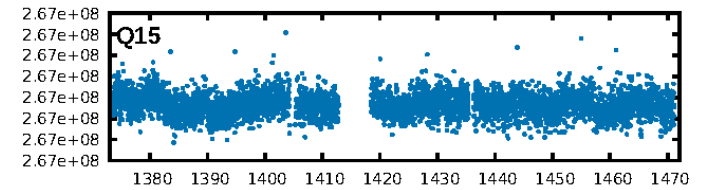
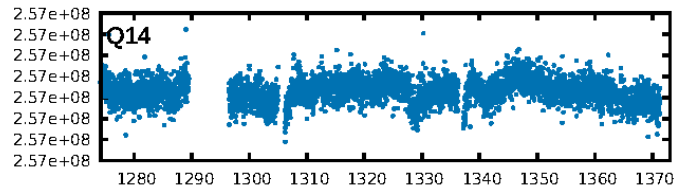
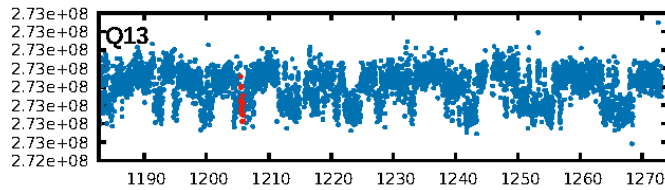
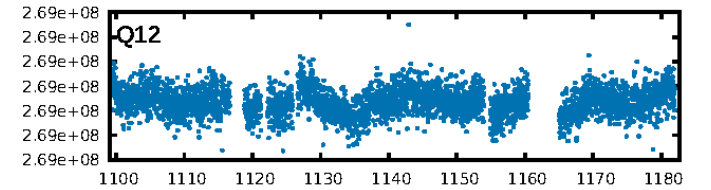
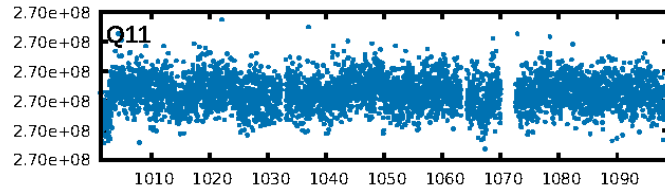
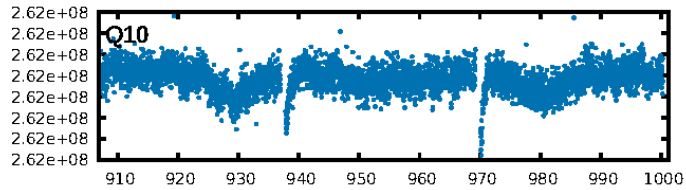
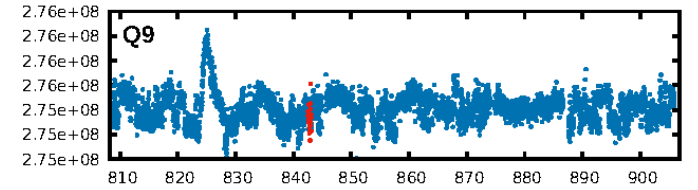
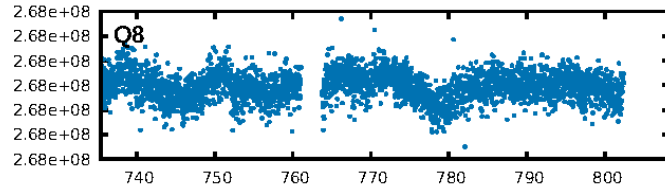
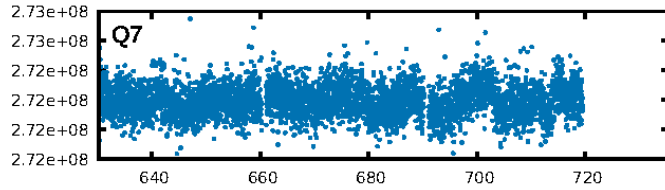
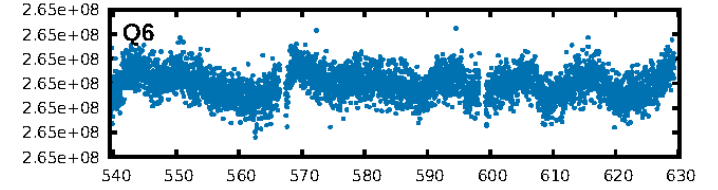
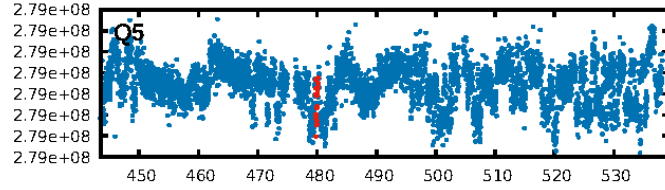
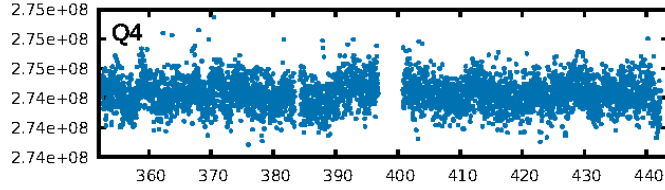
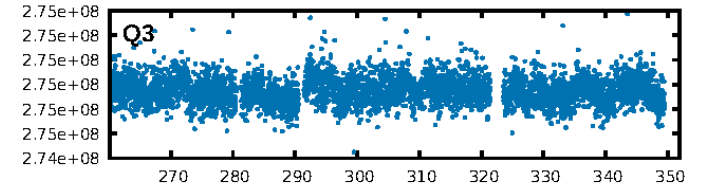
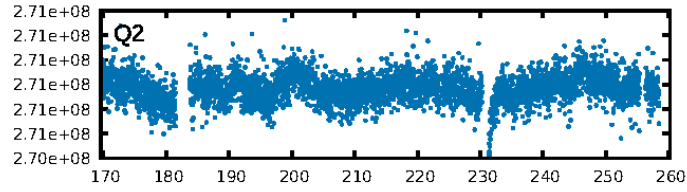
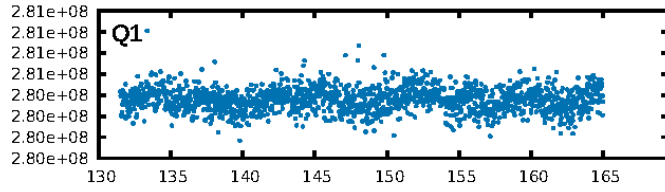
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [26.39 σ]
ModelChiSquare2-sig: 12.4%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 4.79e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 7.237
Centroid-sig: 62.0%
Centroid-so: 0.621 arcsec [0.47 σ]
OotOffset-rm: 1.462 arcsec [2.47 σ]
KicOffset-rm: 1.416 arcsec [2.36 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

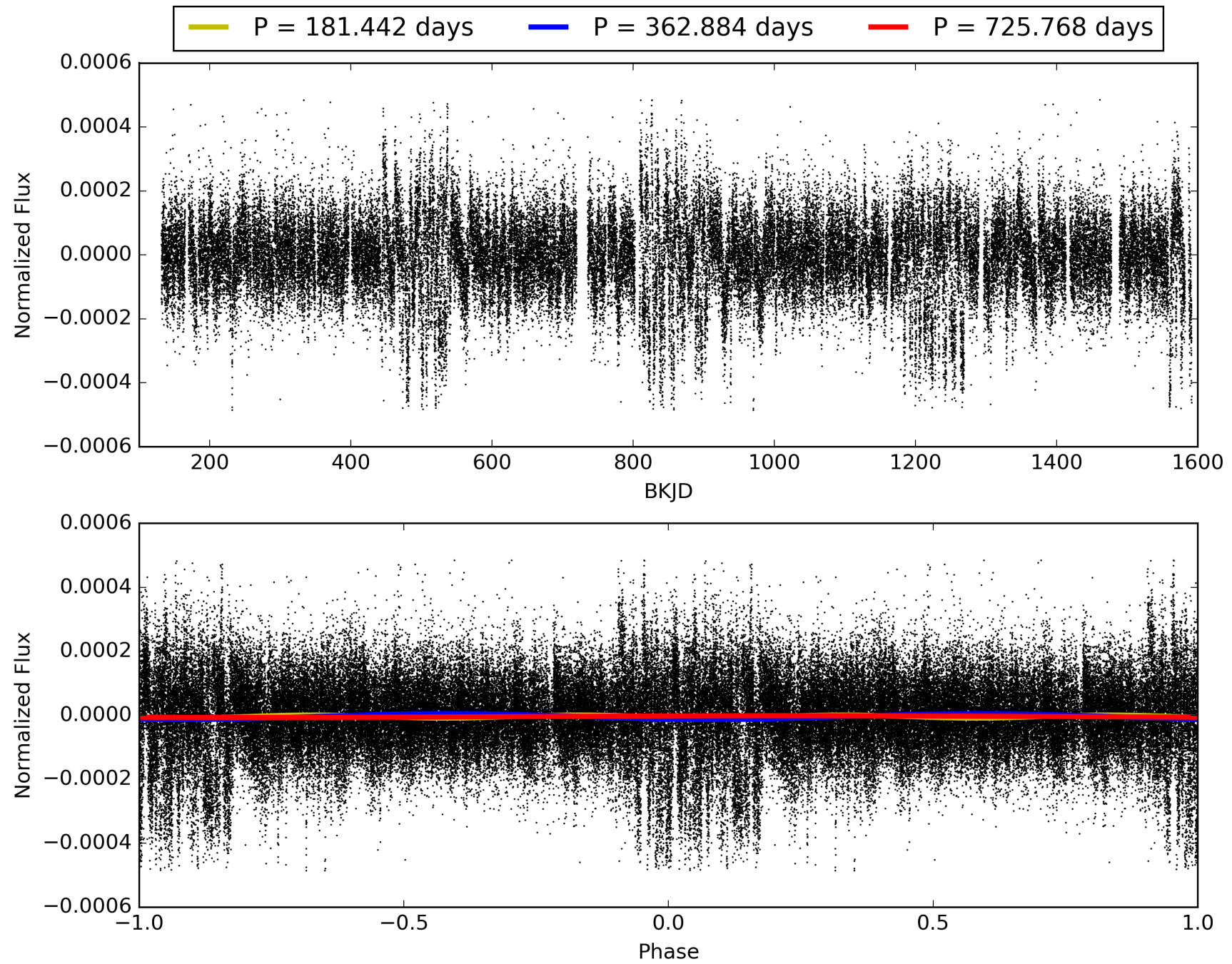
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:16:11 Z

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

TCE 002983219-02, PDC Light Curves

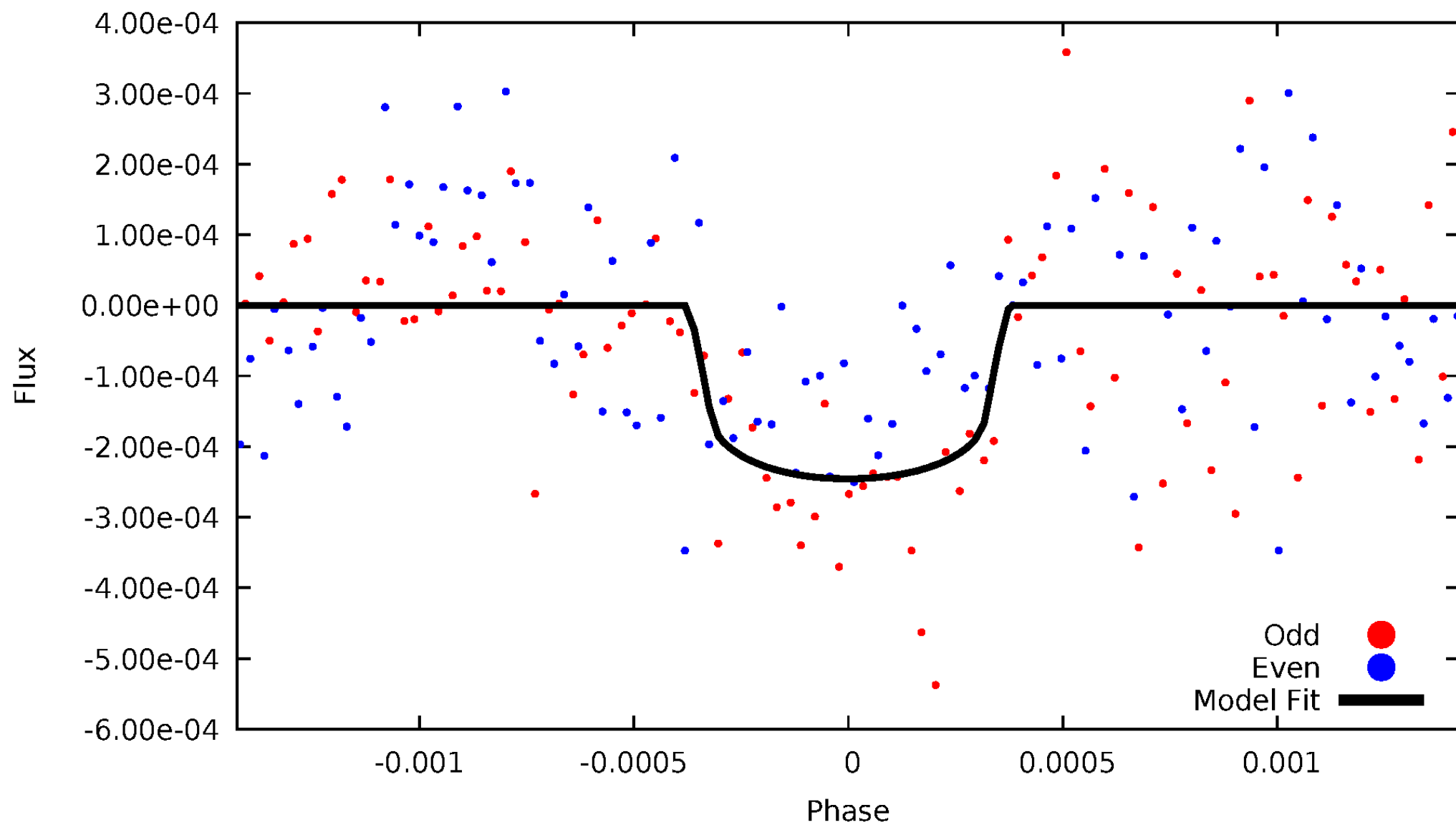


TCE 002983219-02



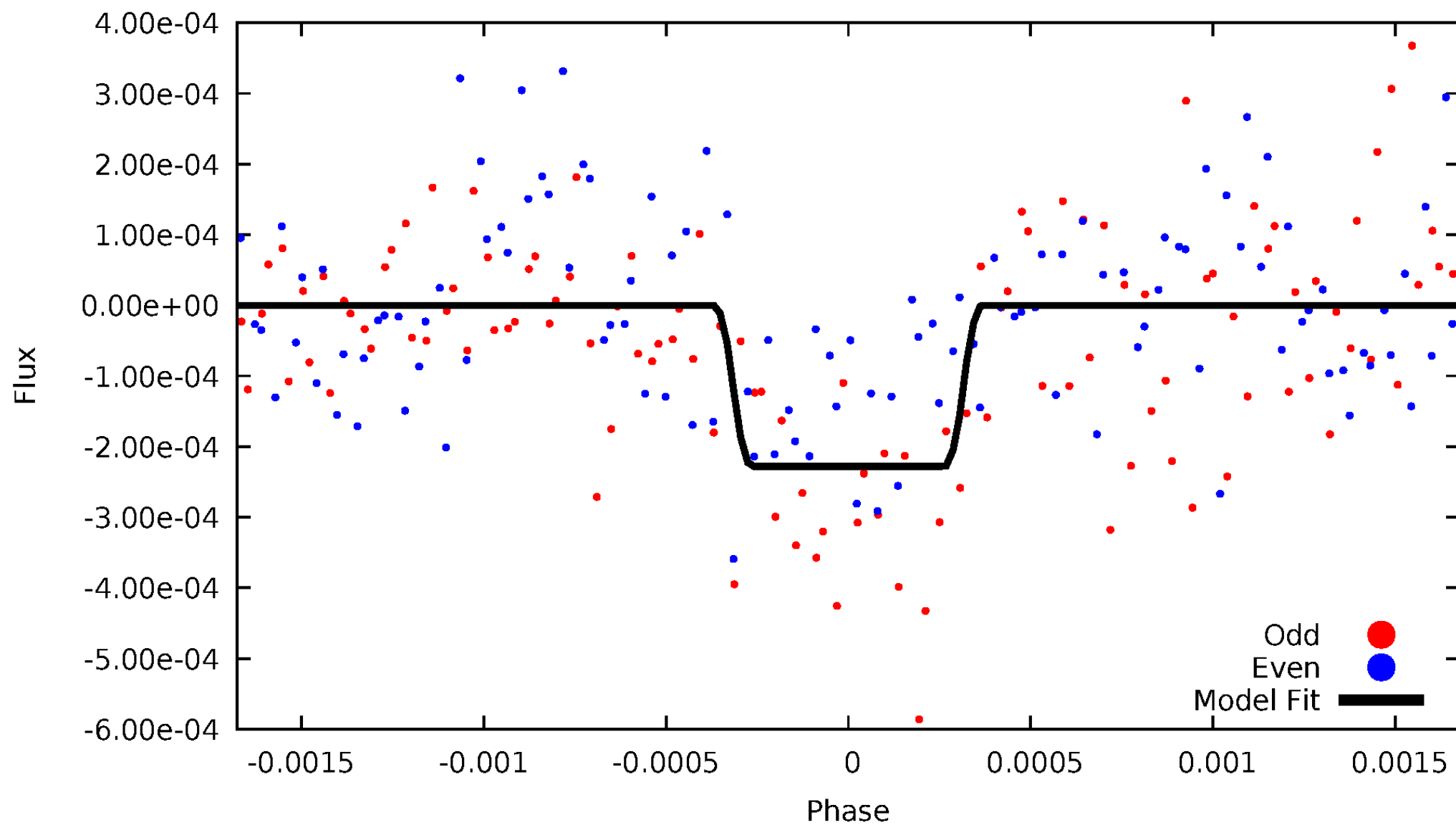
DV Odd/Even

TCE 002983219-02



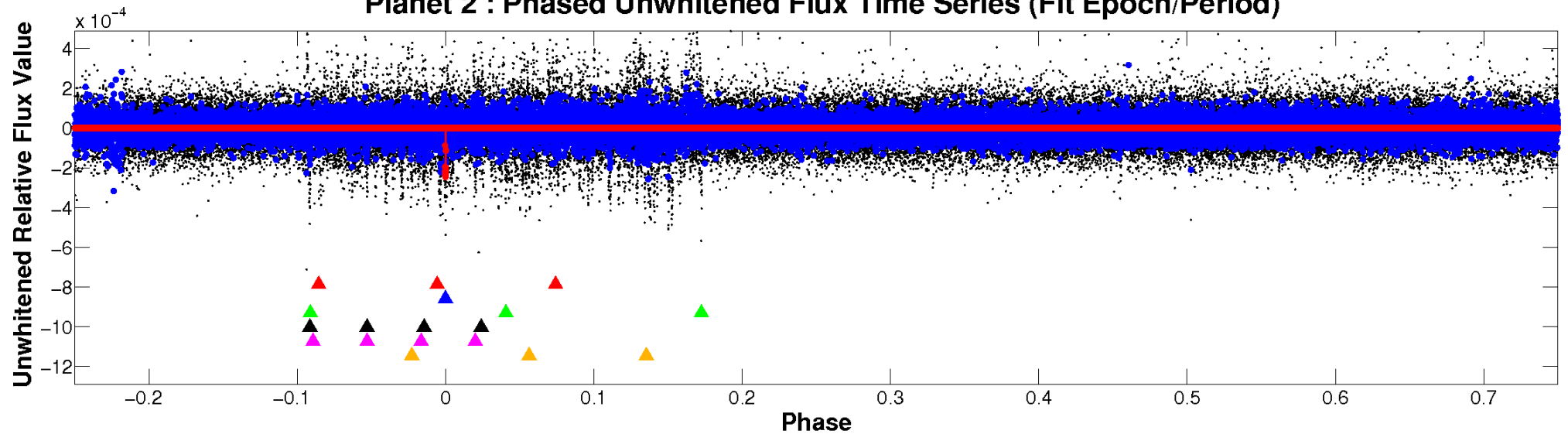
ALT Odd/Even

TCE 002983219-02

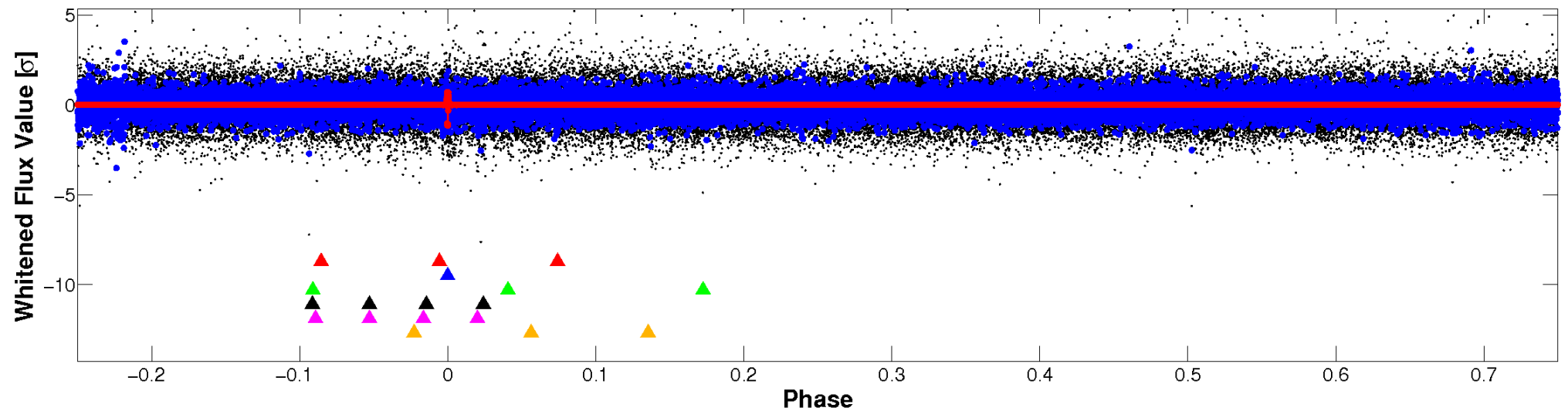


Non-Whitened Vs. Whitened Light Curve

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



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



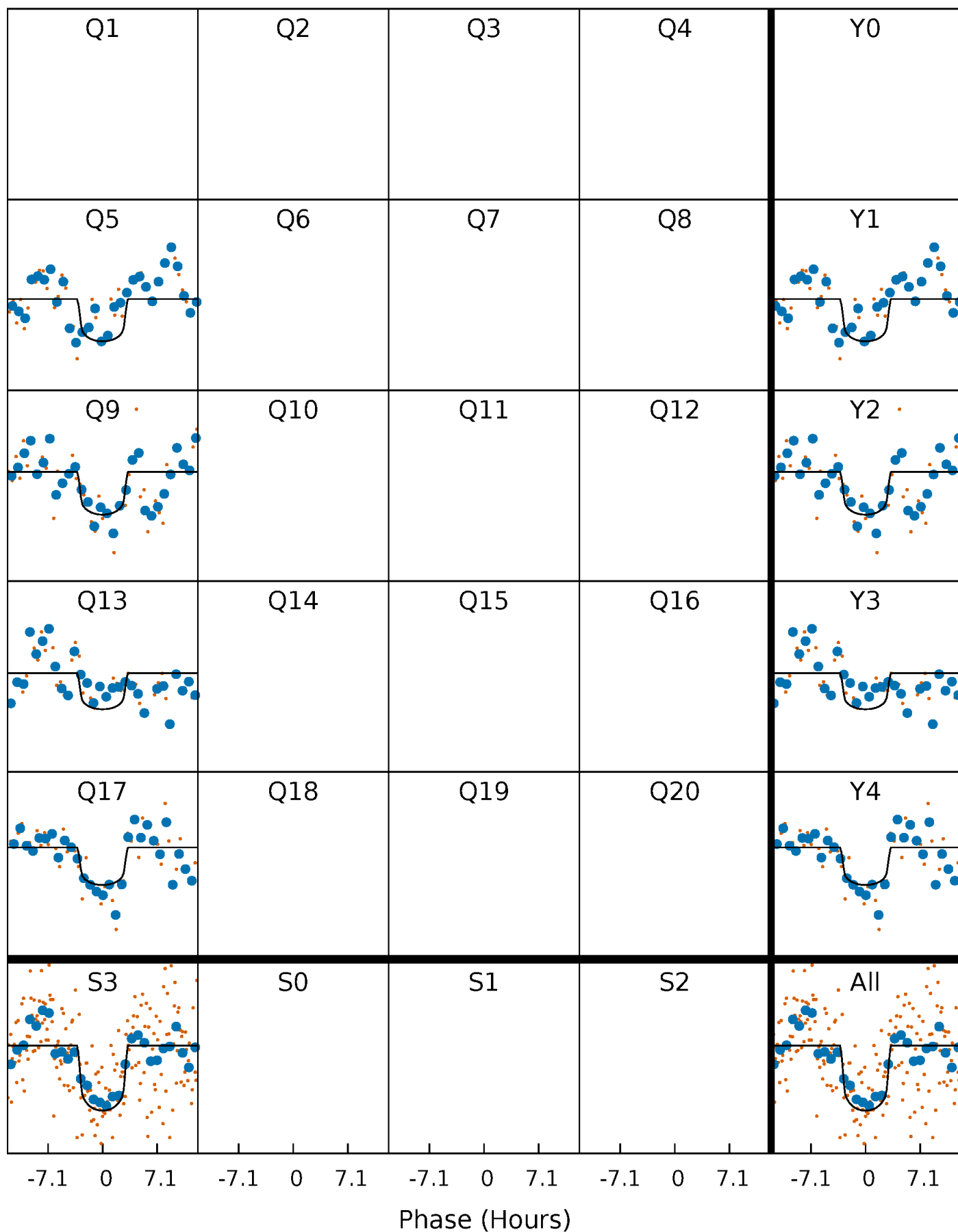
PDC Quarter-Phased Transit Curves

TCE 002983219-02 $P=362.884065$ Days $T_0=479.940574$ (BKJD)



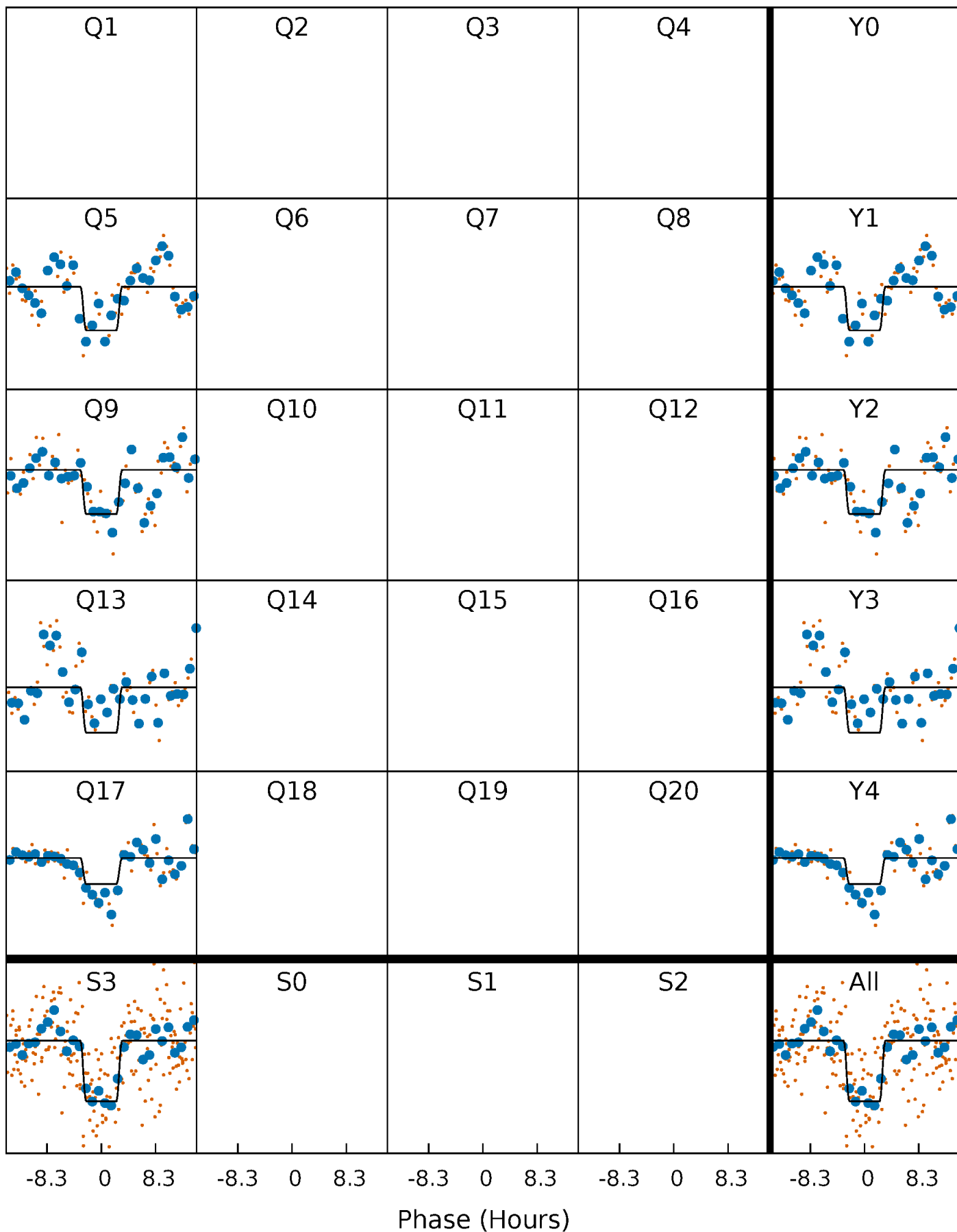
DV Quarter-Phased Transit Curves

TCE 002983219-02 $P=362.884065$ Days $T_0=479.940574$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

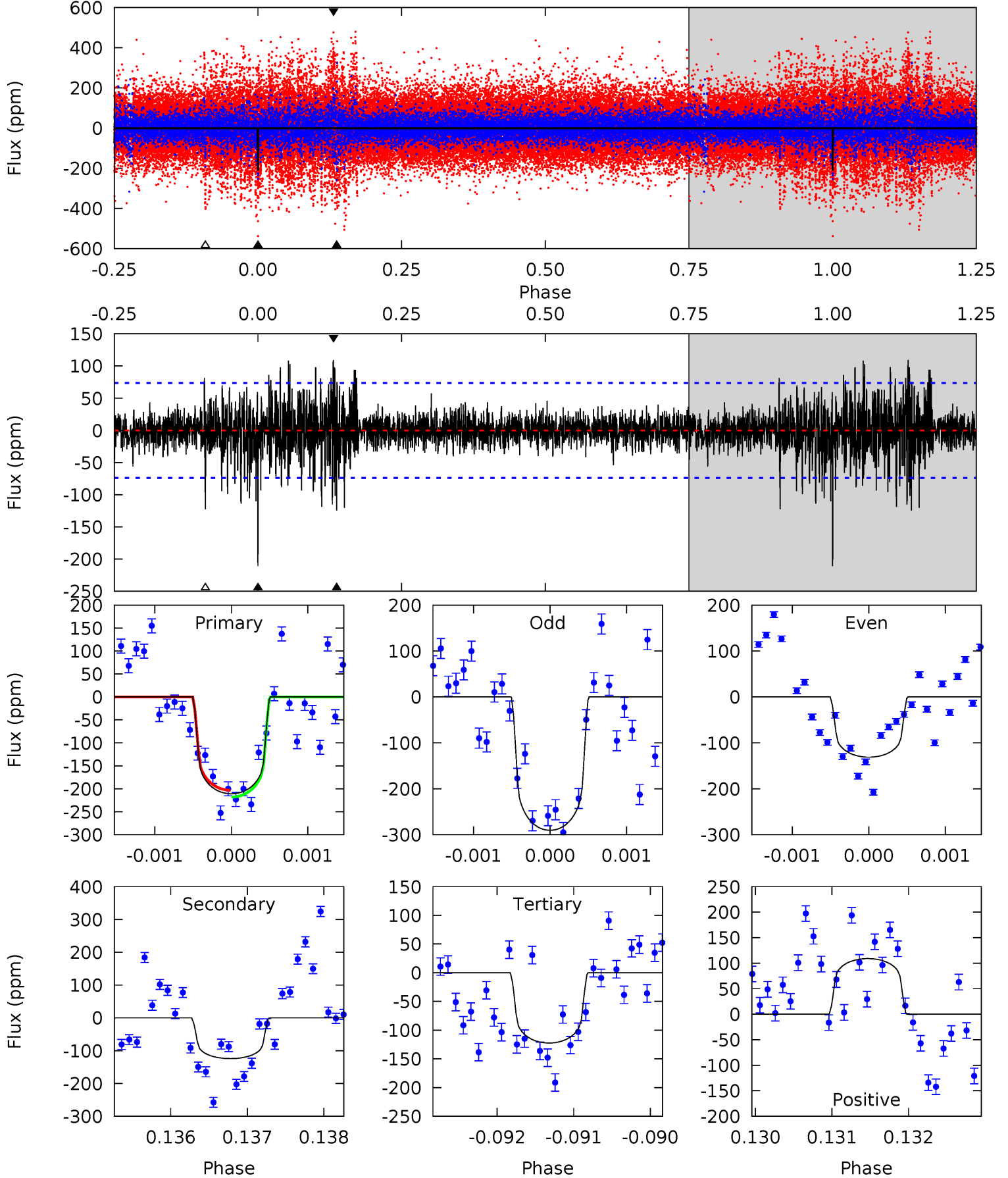
TCE 002983219-02 $P=362.893214$ Days $T_0=479.916496$ (BKJD)



DV Model-Shift Uniqueness Test

002983219-02, P = 362.884065 Days, E = 117.056509 Days

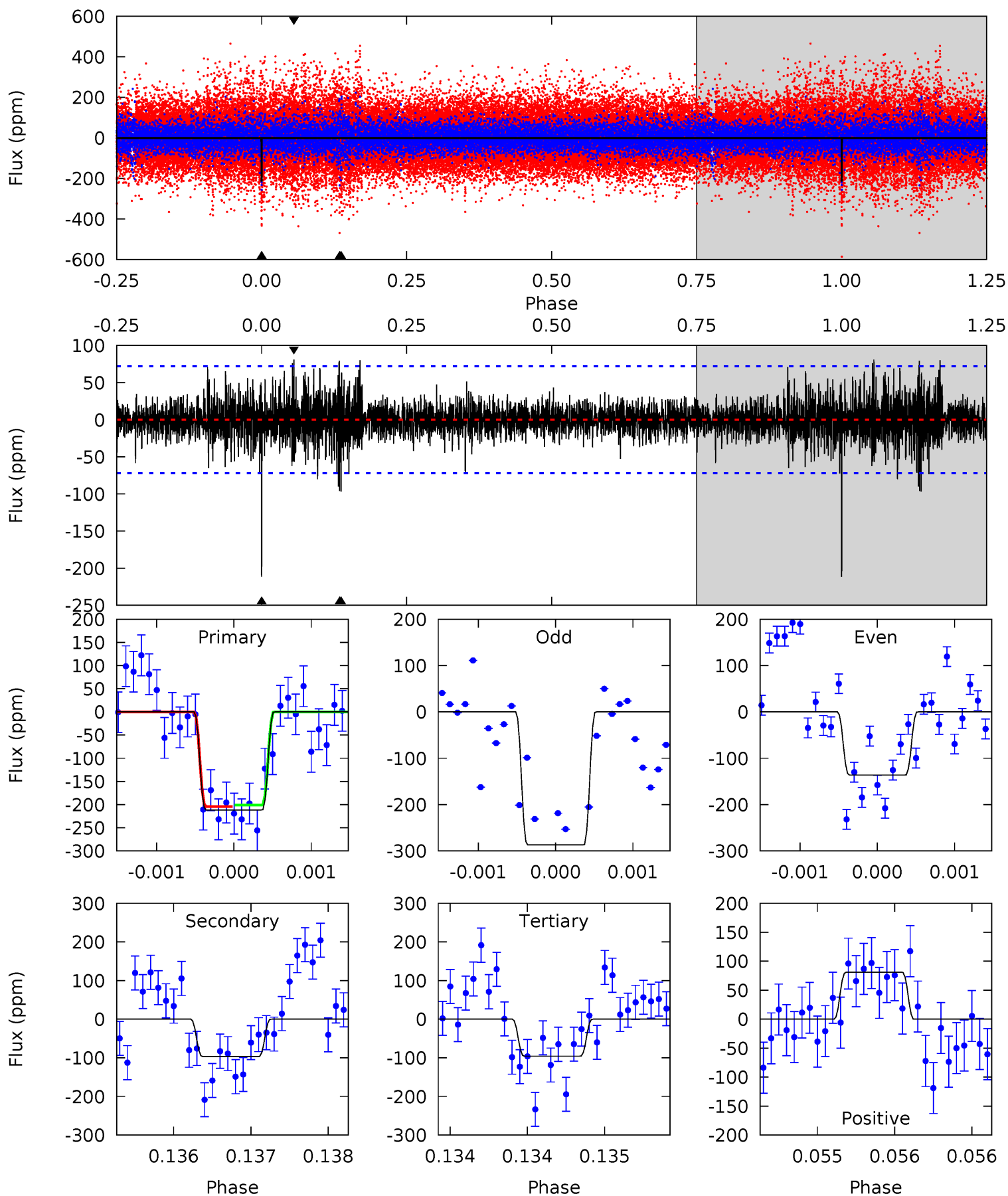
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	9.27	9.13	8.14	5.50	3.37	1.72	6.60	7.60	0.14	1.14	5.97	1.06	0.34	0.55



Alt Model-Shift Uniqueness Test

002983219-02, P = 362.893214 Days, E = 117.023282 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	7.40	7.33	6.20	5.51	3.38	1.32	8.86	9.99	0.08	1.21	5.76	1.05	0.28	0.11



Stellar Parameters For KIC 002983219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6250^{+75}_{-75}	$4.069^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.673^{+0.300}_{-0.367}$	$1.196^{+0.143}_{-0.096}$	$0.360^{+0.325}_{-0.126}$
	+1%/-1%	+4%/-2%	+inf%/-inf%	+18%/-22%	+12%/-8%	+90%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002983219-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-124 ± 13	$3.14^{+2.39}_{-1.83}$	481^{+23}_{-28}	5046^{+2922}_{-955}	7855^{+36528}_{-5337}
Alt.	-97 ± 13	$3.09^{+2.41}_{-1.94}$	482^{+23}_{-26}	4842^{+3063}_{-938}	6205^{+39864}_{-4192}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

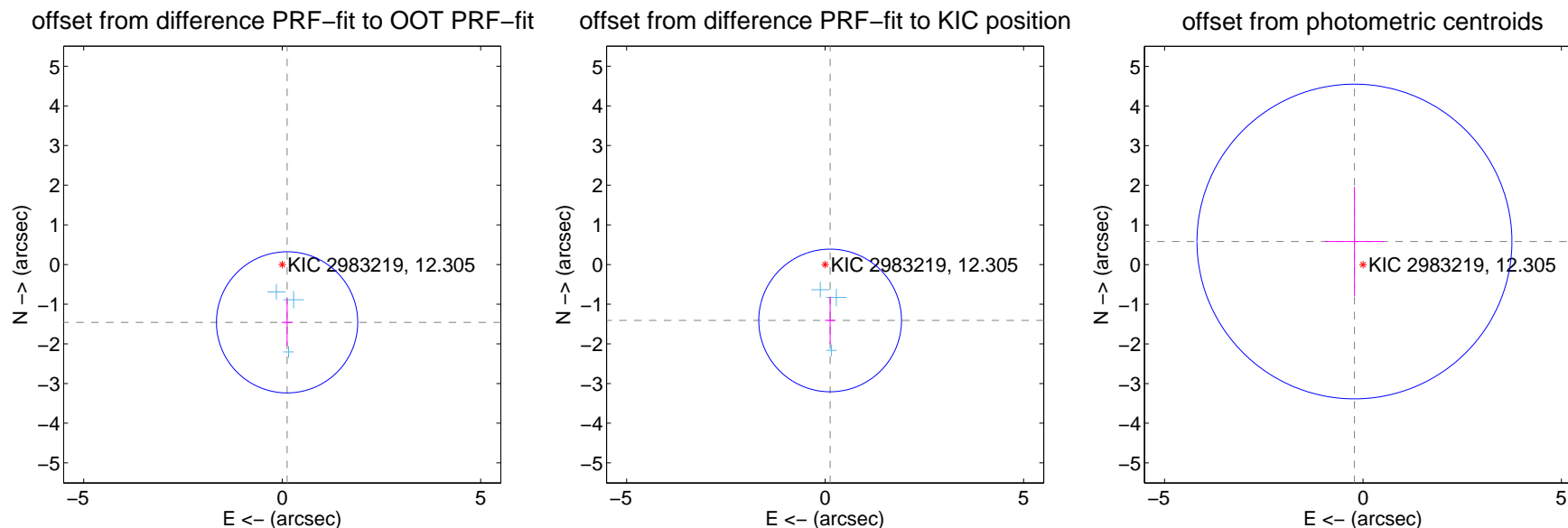
DV Centroid Data

Supplemental centroid analysis for 002983219-02. Kepler magnitude: 12.30. Transit SNR 8.02

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.462 ± 0.593	2.47	-0.123 ± 0.138	-1.457 ± 0.595
PRF-fit source offset from KIC position	1.416 ± 0.599	2.36	-0.127 ± 0.129	-1.410 ± 0.602
photometric centroid source offset	0.62 ± 1.32	0.47	0.22 ± 0.74	0.58 ± 1.38

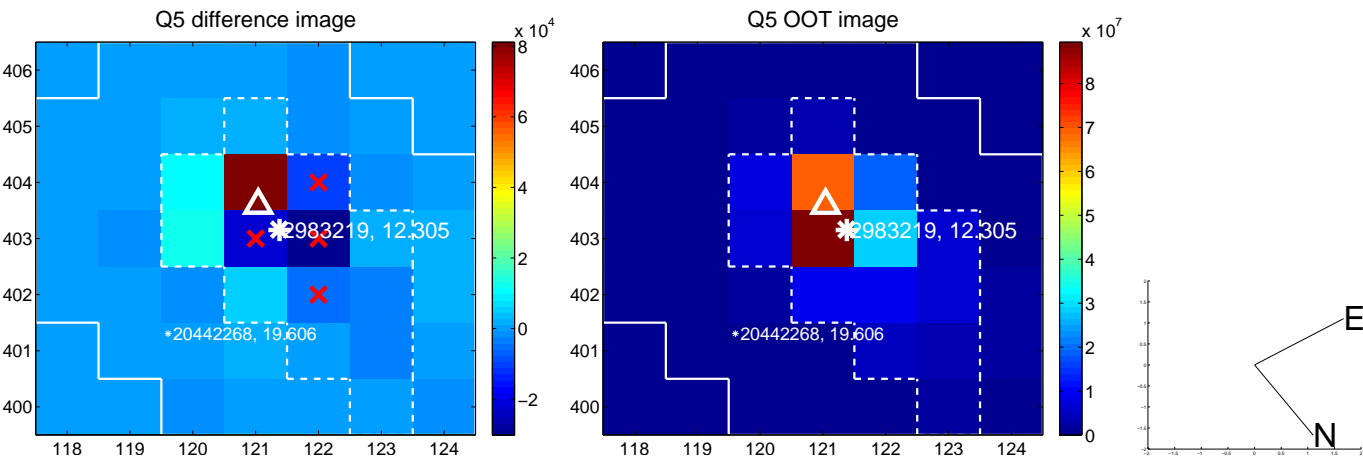


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

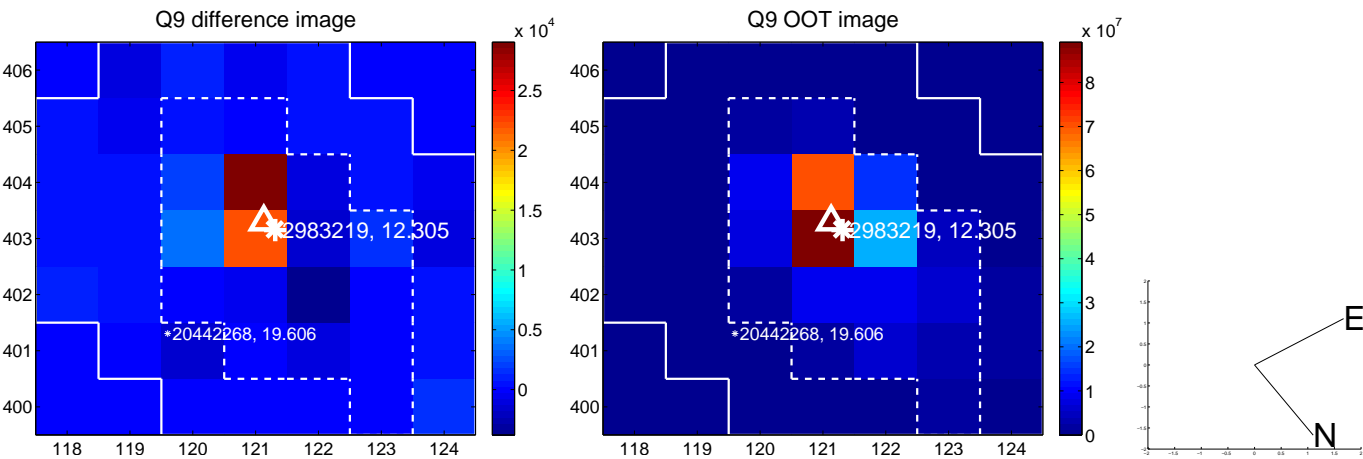
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



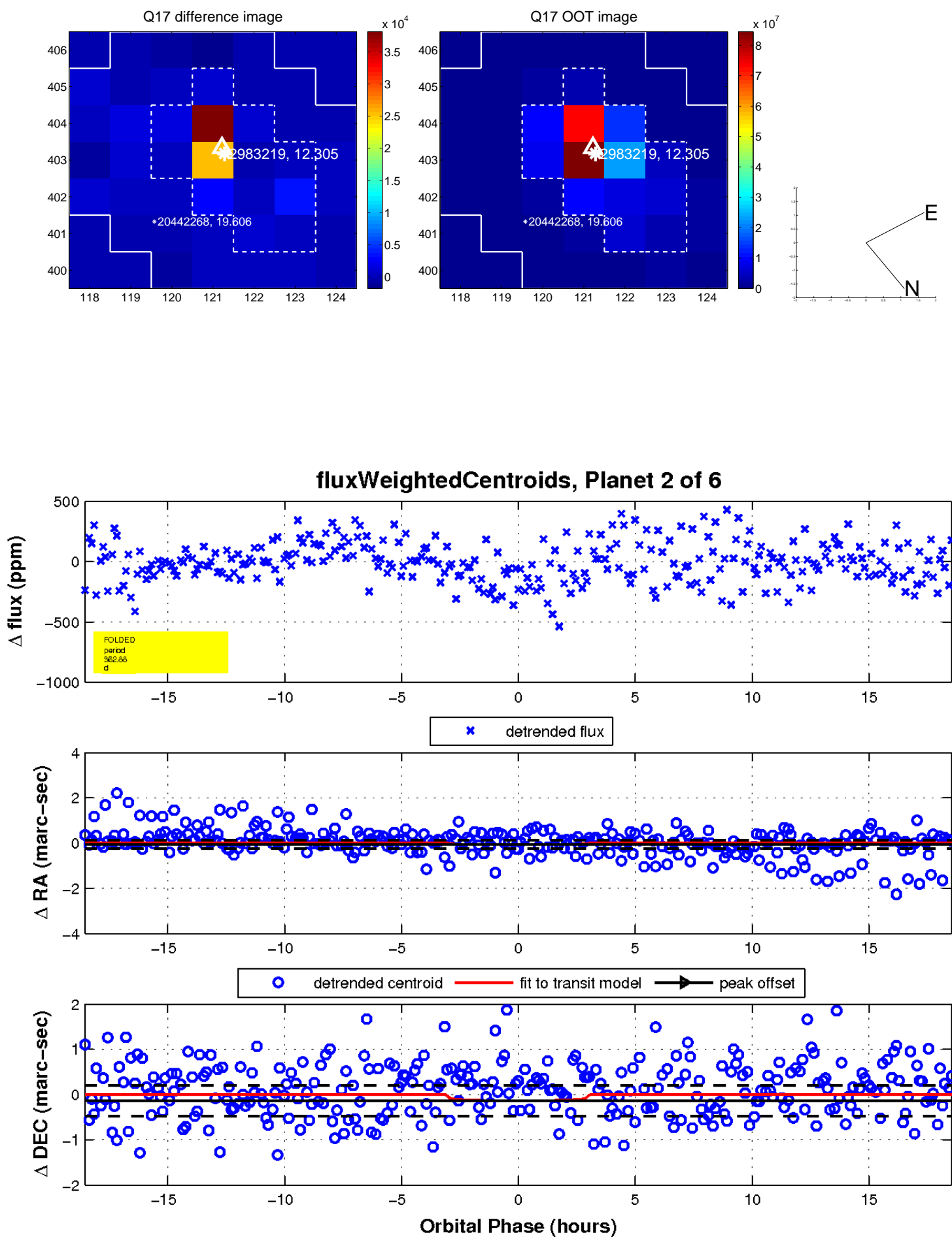
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

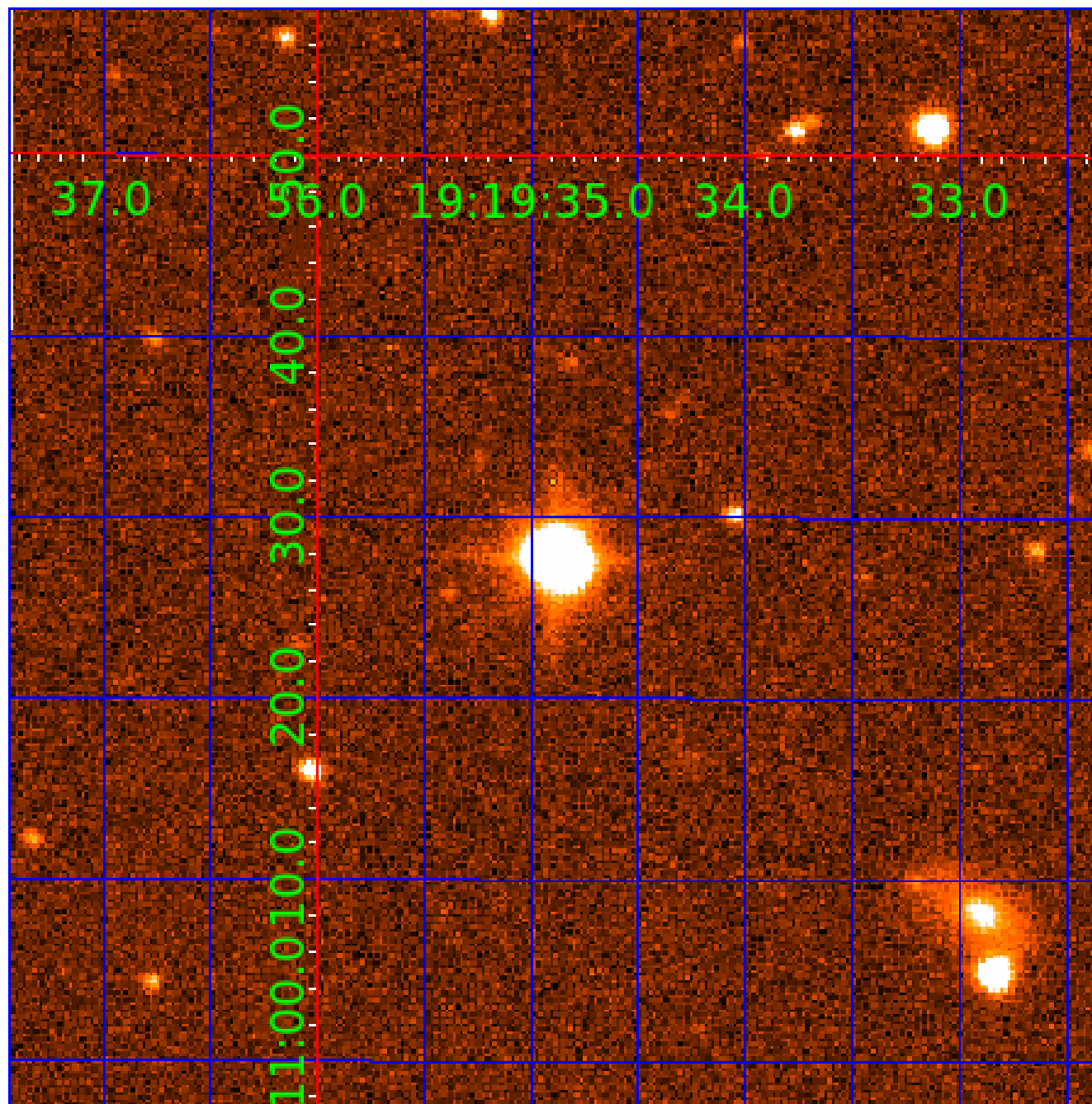


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002983219

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})
002983219-01	OBS	No	391.866426	448.919213	289.3	6.127	7.6	8.2	1.67	6250	3.25	3.09
002983219-02	OBS	No	362.884065	479.940574	245.6	6.205	7.8	8.0	1.67	6250	2.82	3.42
002983219-03	OBS	No	410.714058	446.889167	260.0	8.656	8.1	8.1	1.67	6250	2.94	2.90
002983219-04	OBS	No	376.854959	446.779960	275.5	9.469	7.5	7.9	1.67	6250	3.14	3.25
002983219-05	OBS	No	376.111523	447.543400	265.8	10.305	9.1	8.8	1.67	6250	3.16	3.26
002983219-06	OBS	No	391.575969	471.703477	247.8	9.355	7.4	7.6	1.67	6250	2.91	3.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002983219-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002983219-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
002983219-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002983219-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

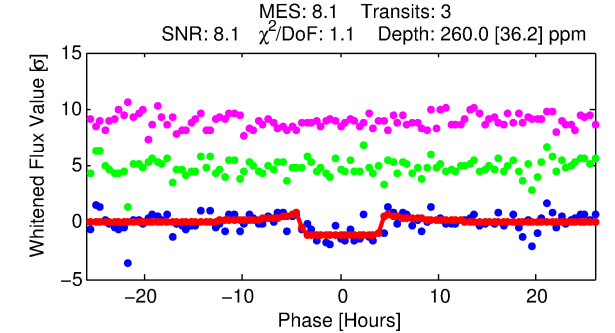
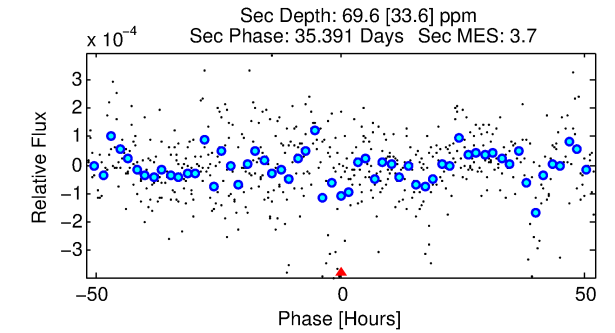
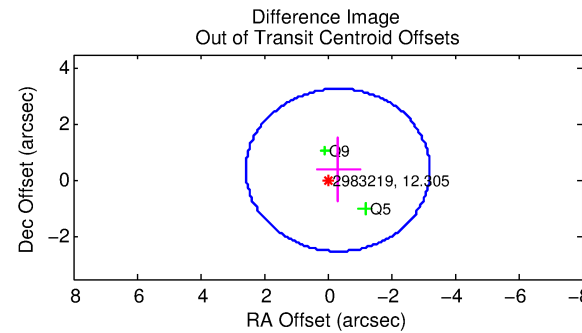
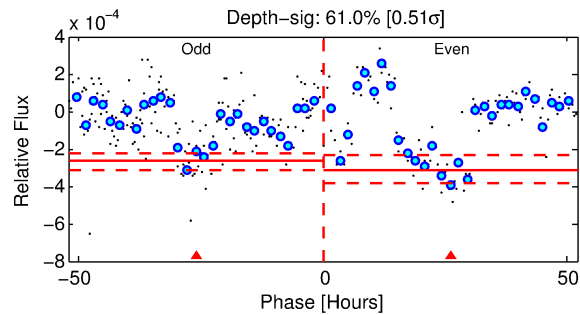
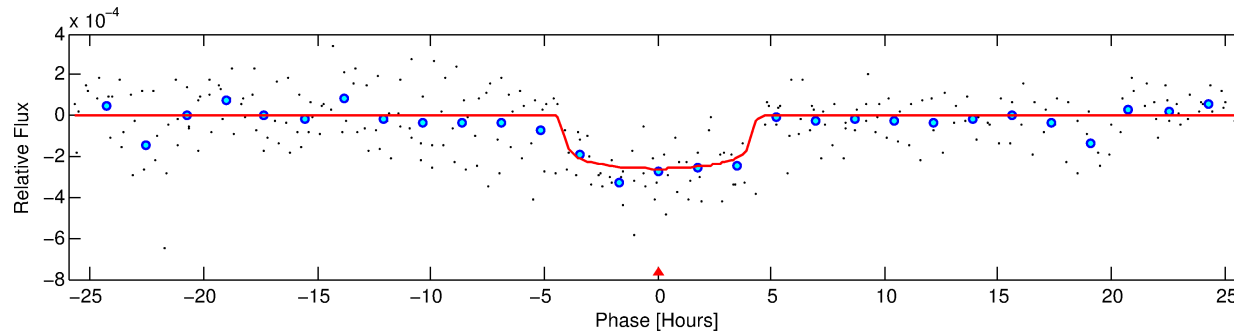
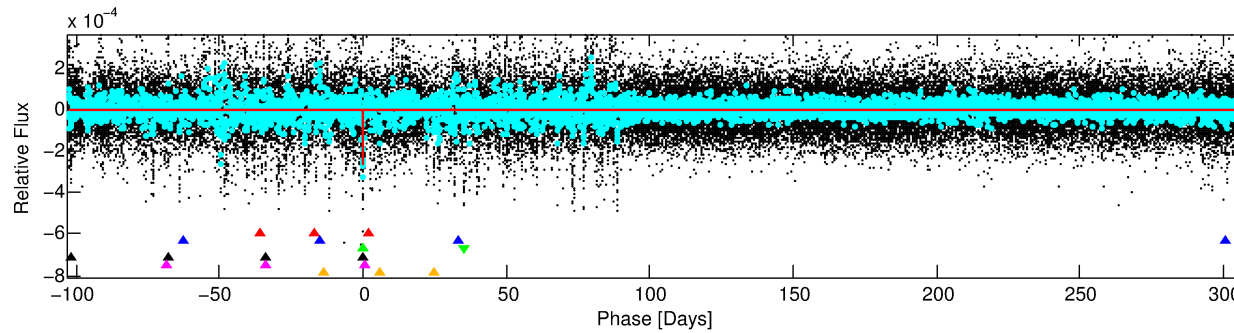
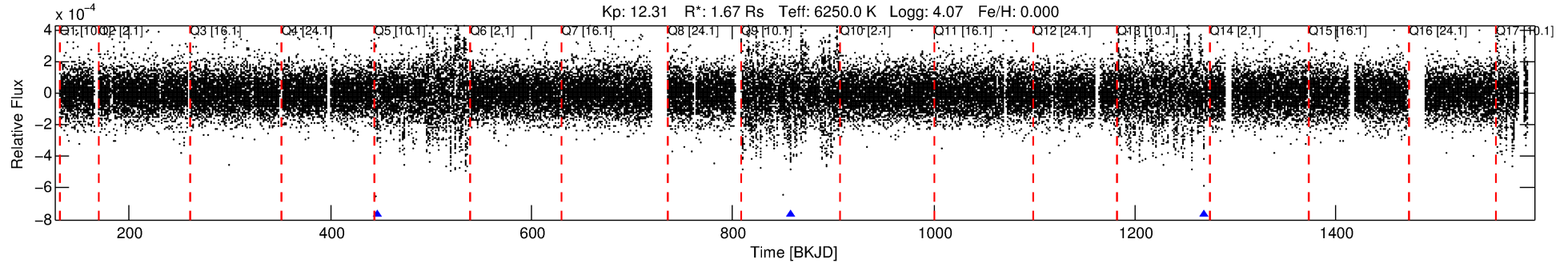
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002983219-03

No Significant Match Found

DV One-Page Summary

KIC: 2983219 Candidate: 3 of 6 Period: 410.714 d



DV Fit Results:

Period = 410.71406 [0.00769] d
Epoch = 446.8892 [0.0084] BKJD
Rp/R* = 0.0161 [0.0049]
a/R* = 243.38 [360.38]
b = 0.76 [0.82]
Seff = 2.90 [0.93]
Teq = 333 [27] K
Rp = 2.94 [1.10] Re
a = 1.1483 [0.2322] AU
Ag = 5841.77 [4876.36] [1.20 σ]
Teffp = 4499 [871] K [4.78 σ]

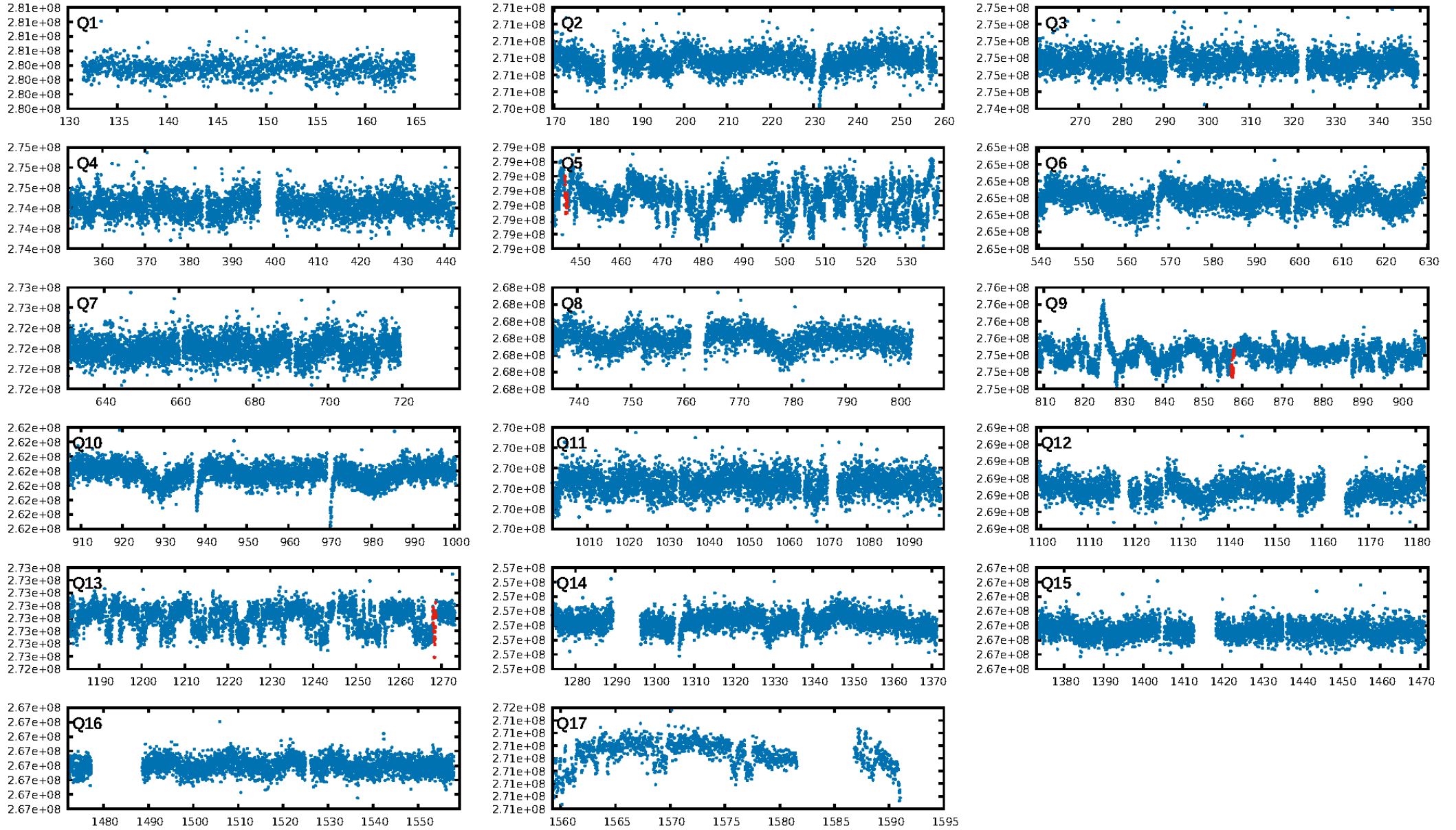
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.65 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.6%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 2.65e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.285
Centroid-sig: 34.5%
Centroid-so: 0.899 arcsec [0.75 σ]
OotOffset-rm: 0.499 arcsec [0.52 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.547 arcsec [0.54 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.50 [1/2]

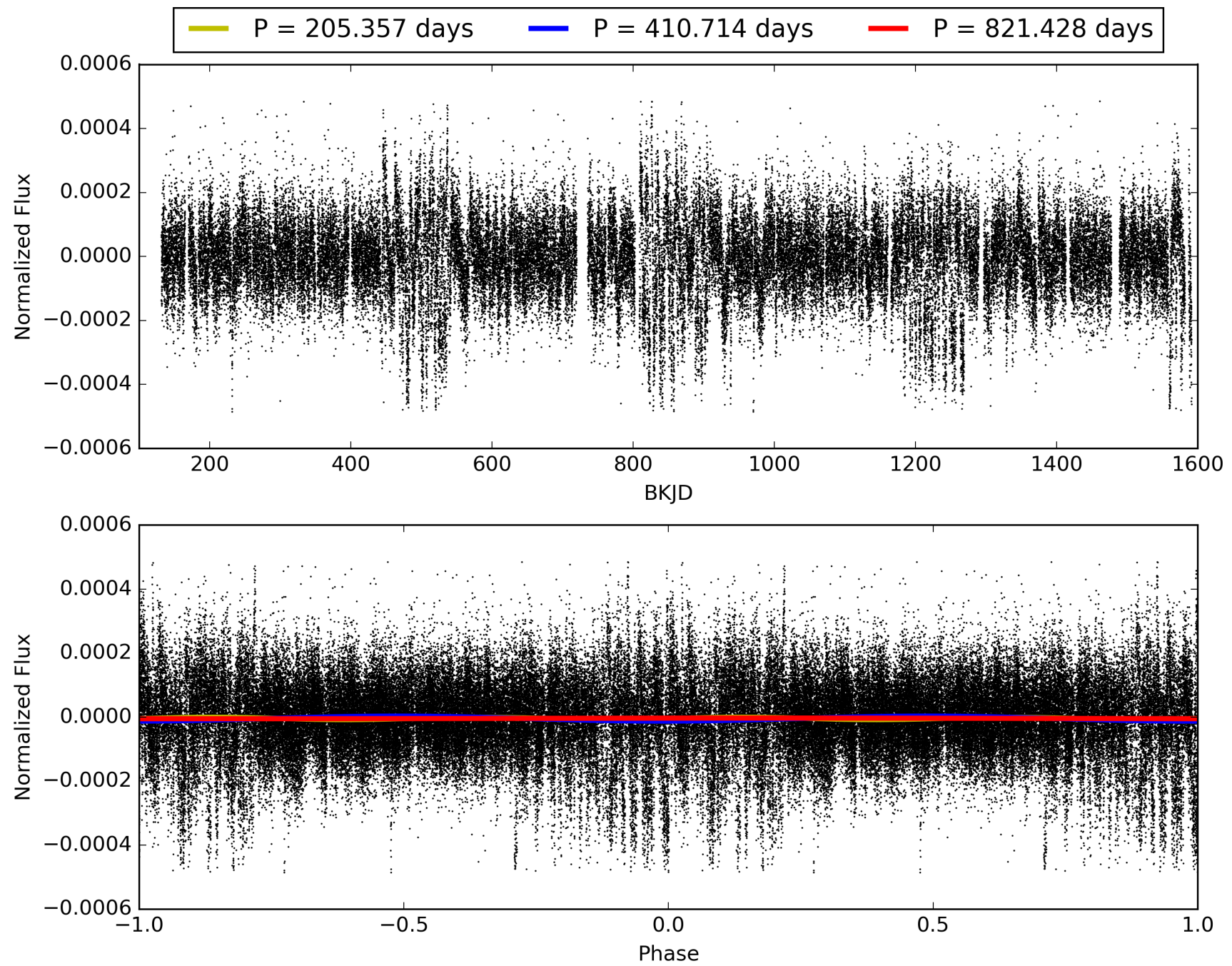
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:16:22 Z

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

TCE 002983219-03, PDC Light Curves

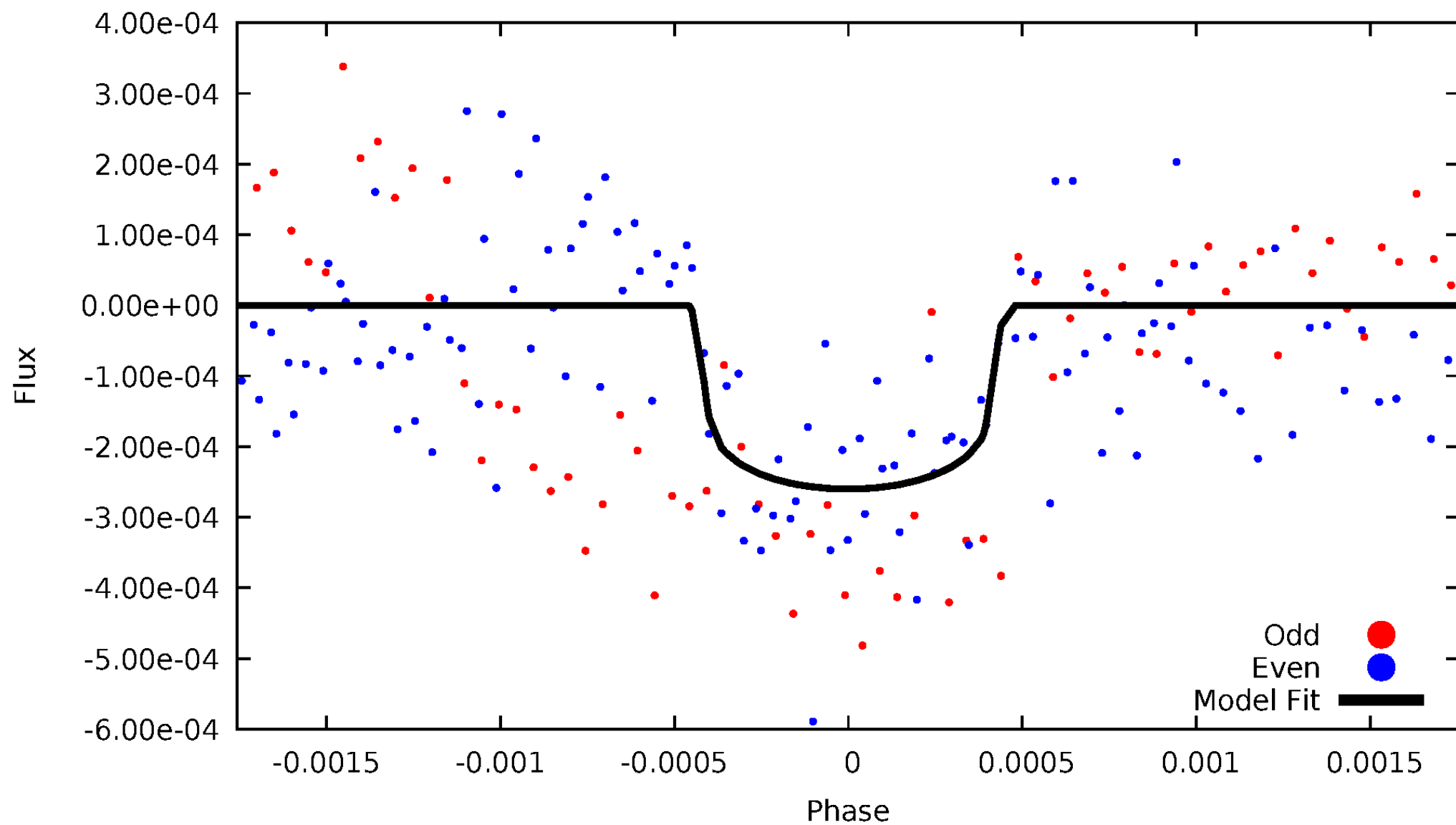


TCE 002983219-03



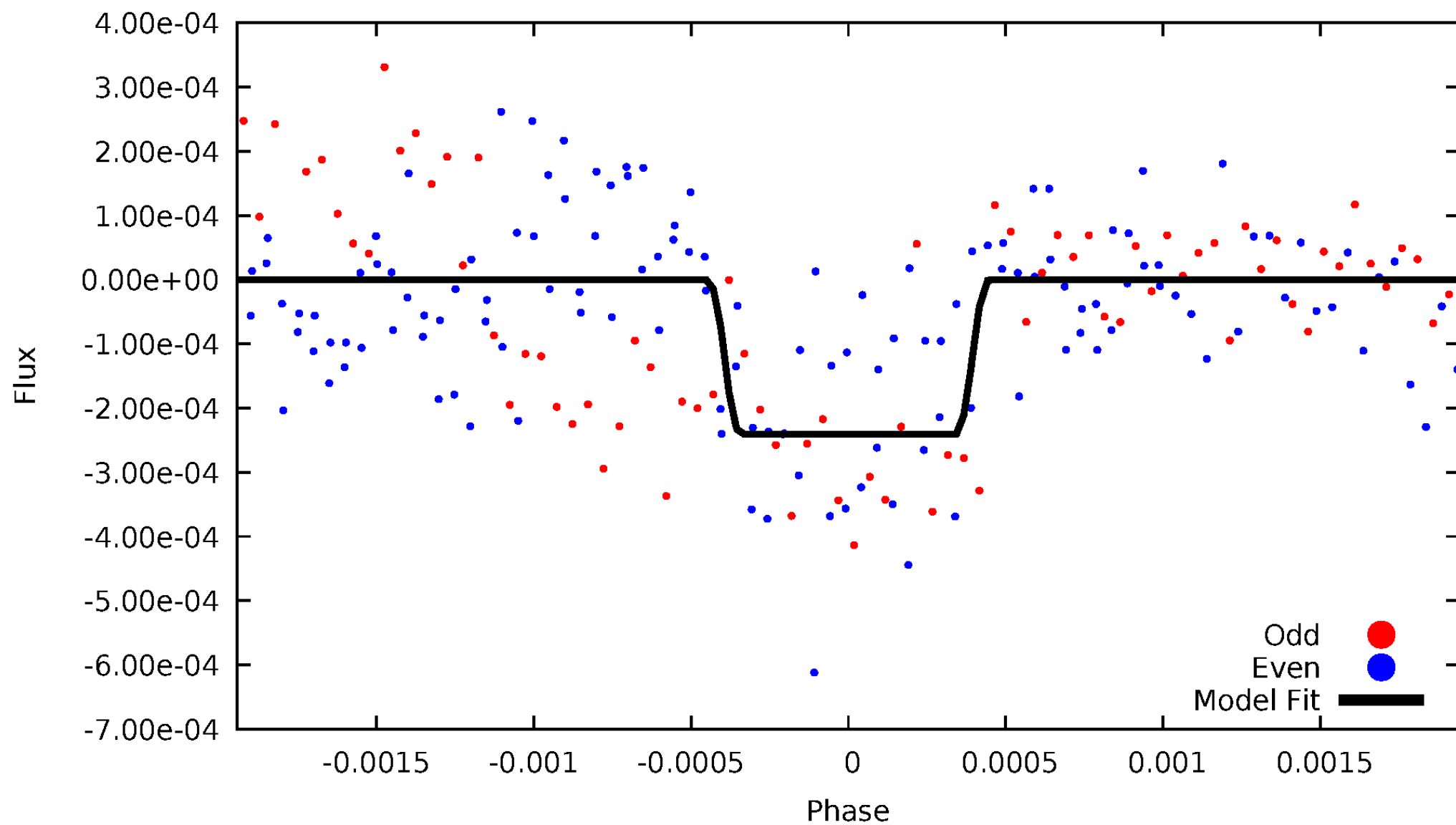
DV Odd/Even

TCE 002983219-03

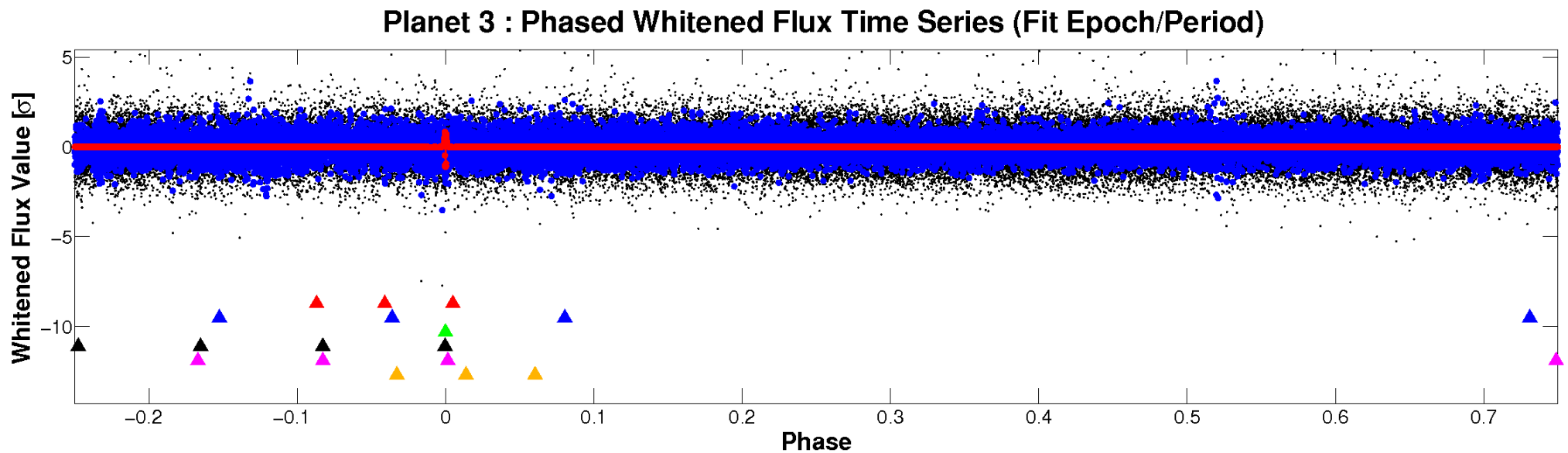
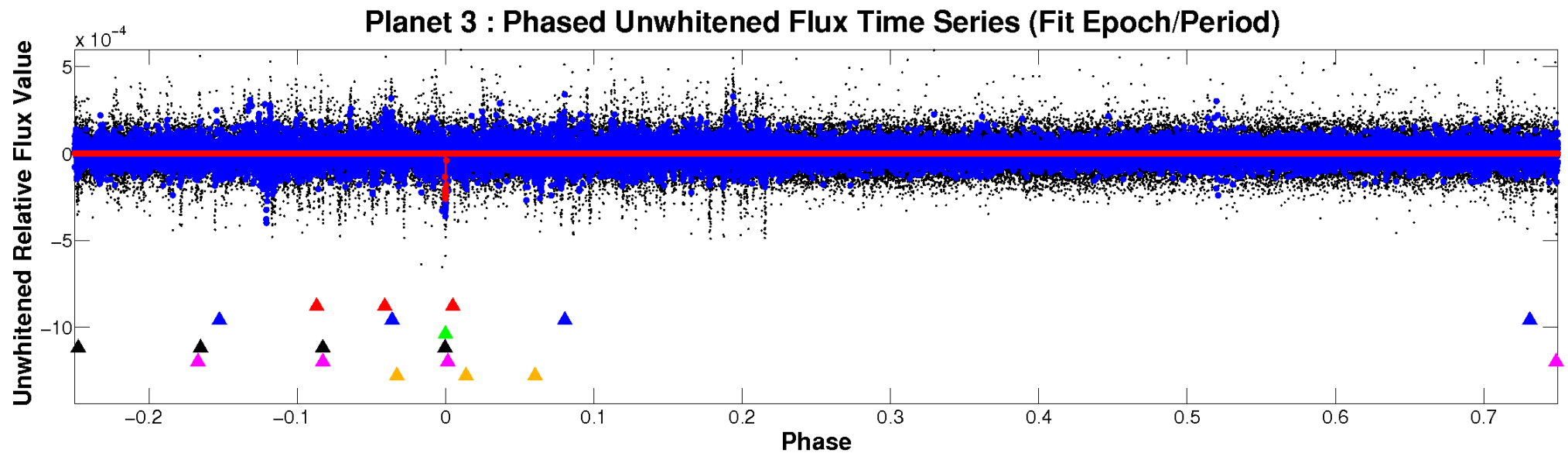


ALT Odd/Even

TCE 002983219-03

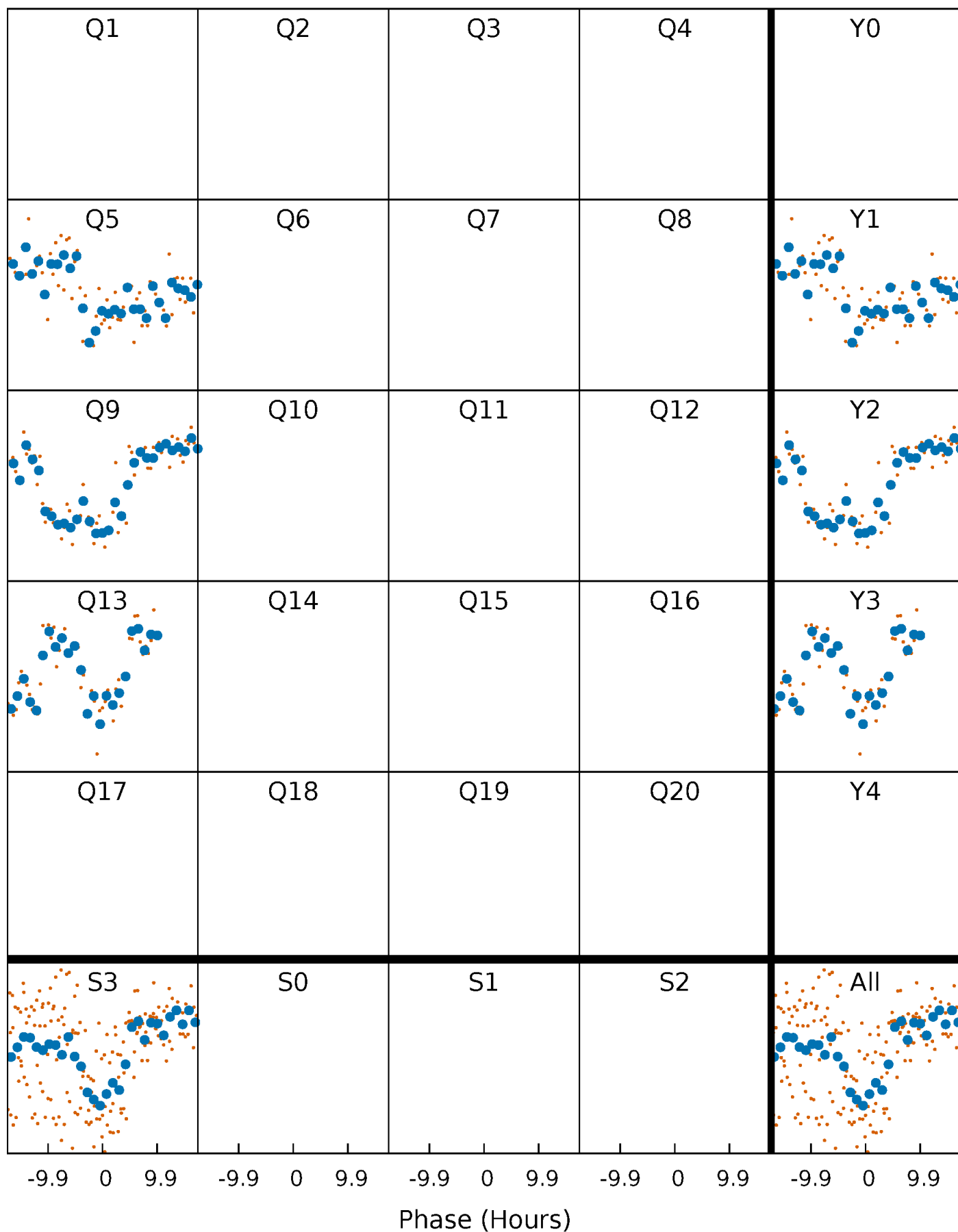


Non-Whitened Vs. Whitened Light Curve



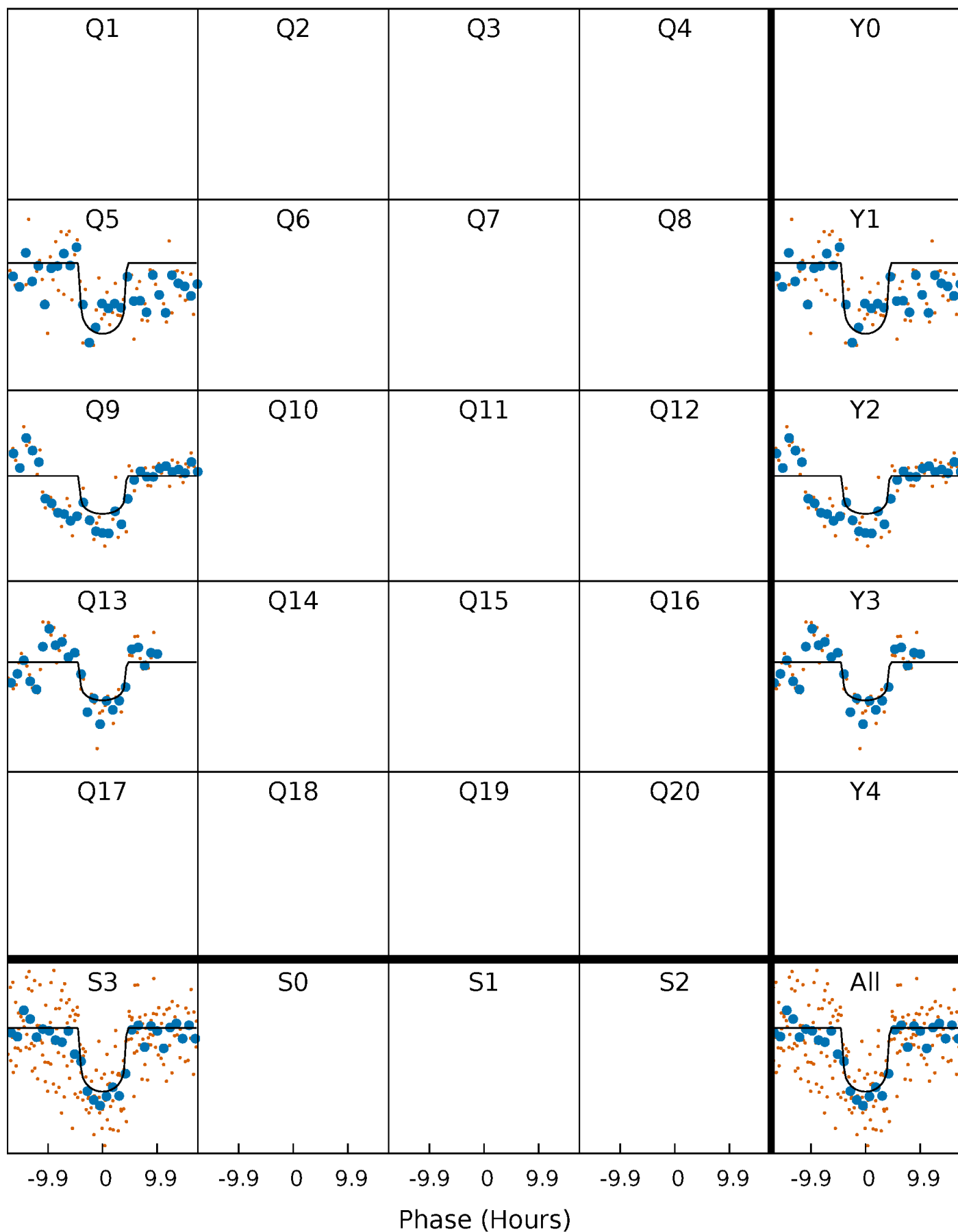
PDC Quarter-Phased Transit Curves

TCE 002983219-03 $P=410.714058$ Days $T_0=446.889167$ (BKJD)



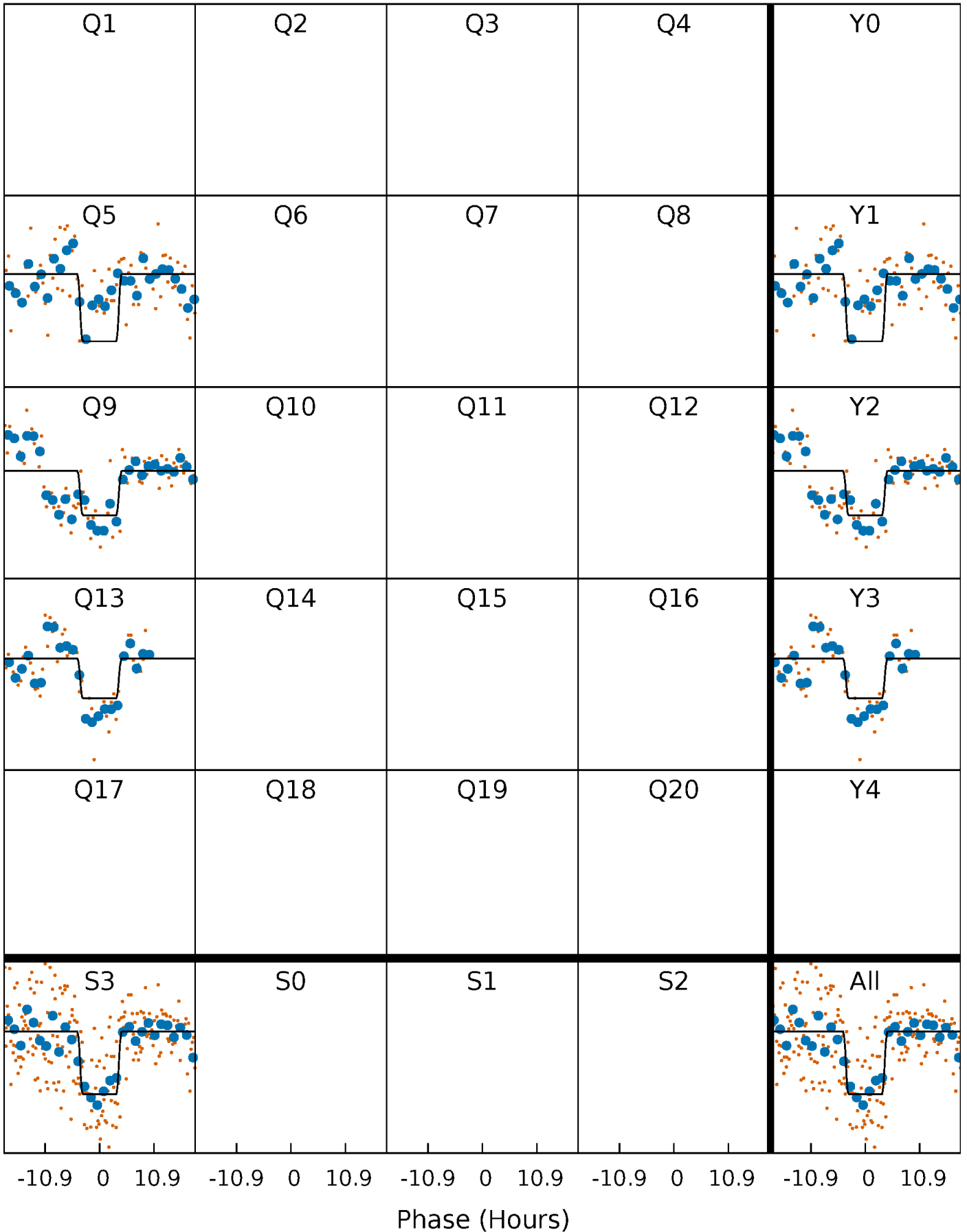
DV Quarter-Phased Transit Curves

TCE 002983219-03 $P=410.714058$ Days $T_0=446.889167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

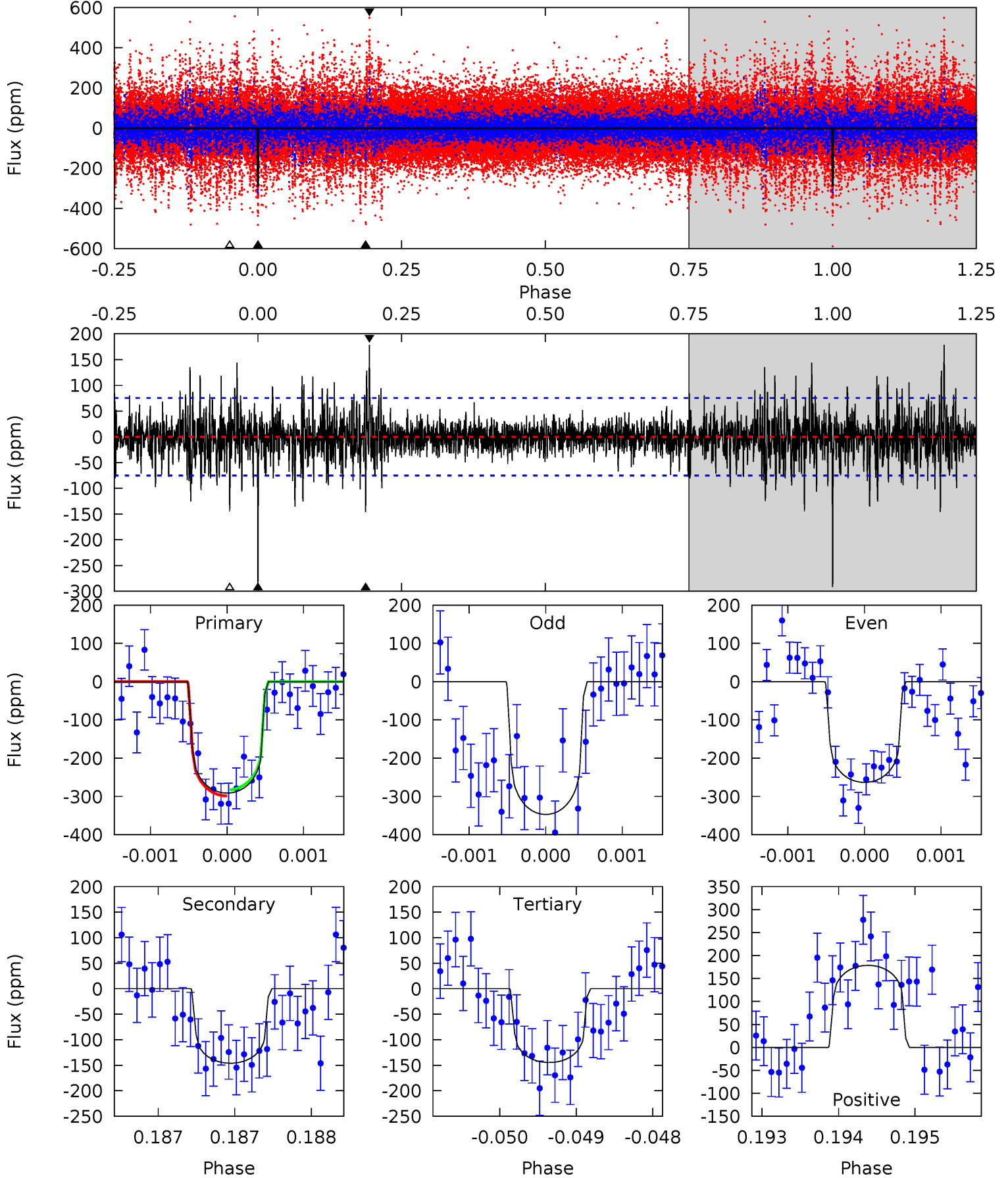
TCE 002983219-03 $P=410.707745$ Days $T_0=446.904591$ (BKJD)



DV Model-Shift Uniqueness Test

002983219-03, P = 410.714058 Days, E = 36.175109 Days

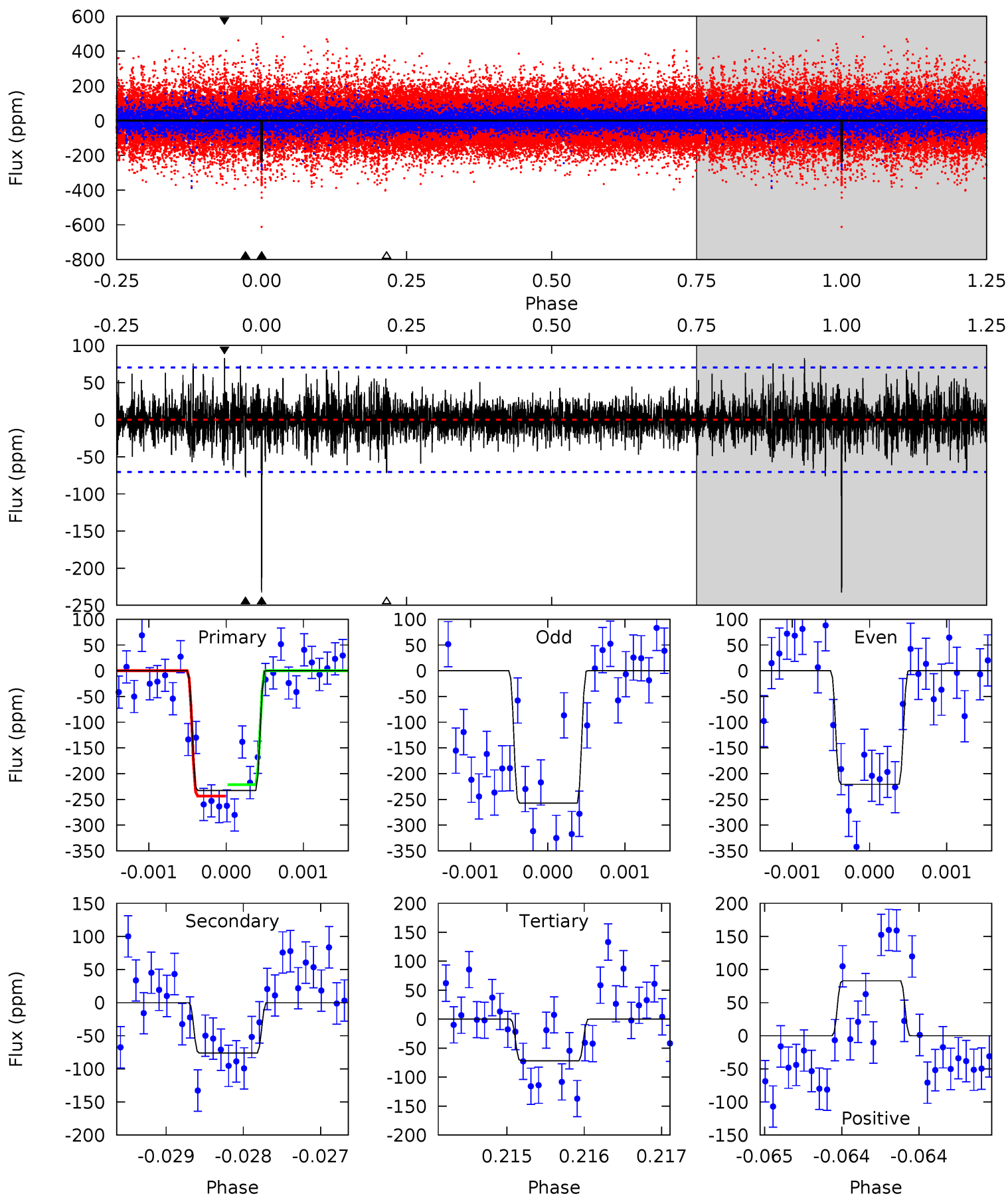
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	10.6	10.5	13.0	5.47	3.32	1.95	10.6	8.18	0.10	-2.37	2.85	0.90	0.38	0.57



Alt Model-Shift Uniqueness Test

002983219-03, P = 410.707745 Days, E = 36.196846 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	5.91	5.57	6.44	5.47	3.32	1.29	12.5	11.6	0.34	-0.53	1.33	0.91	0.26	0.86



Stellar Parameters For KIC 002983219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6250^{+75}_{-75}	$4.069^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.673^{+0.300}_{-0.367}$	$1.196^{+0.143}_{-0.096}$	$0.360^{+0.325}_{-0.126}$
	+1%/-1%	+4%/-2%	+inf%/-inf%	+18%/-22%	+12%/-8%	+90%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002983219-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-146 ± 14	$2.87^{+0.91}_{-0.90}$	462^{+19}_{-28}	5431^{+988}_{-566}	12730^{+14337}_{-5385}
Alt.	-76 ± 13	$2.78^{+0.90}_{-0.89}$	461^{+22}_{-26}	4802^{+860}_{-509}	7201^{+8257}_{-3186}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

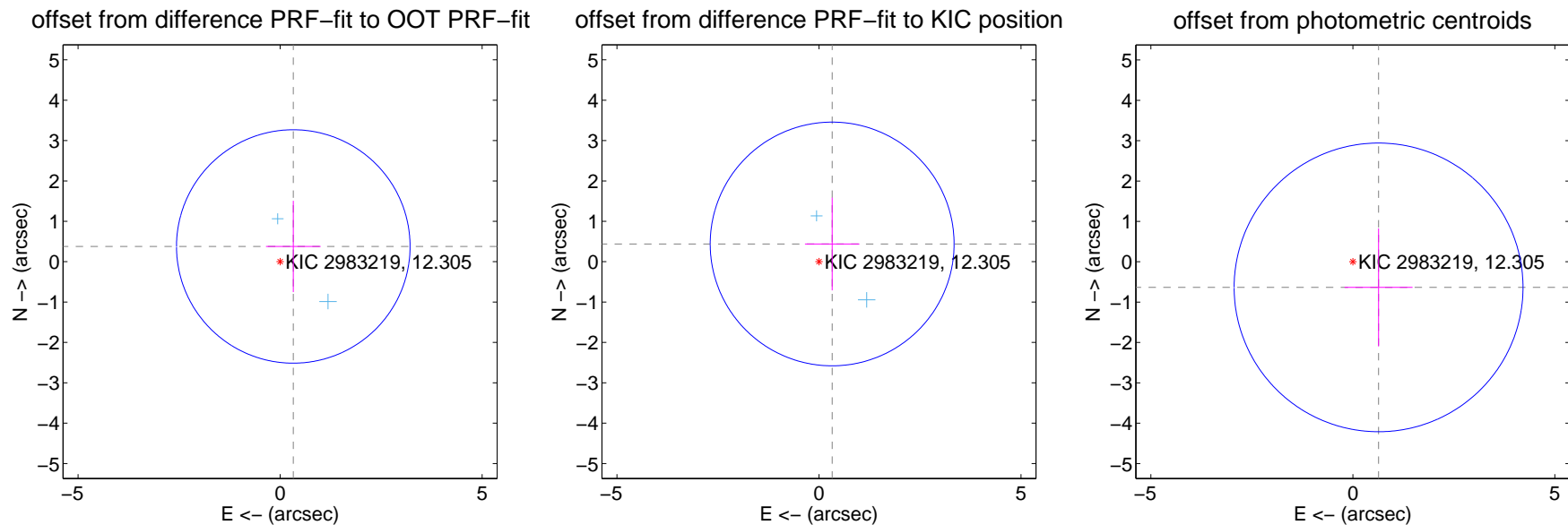
DV Centroid Data

Supplemental centroid analysis for 002983219-03. Kepler magnitude: 12.30. Transit SNR 8.12

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.499 ± 0.964	0.52	-0.326 ± 0.676	0.377 ± 1.132
PRF-fit source offset from KIC position	0.547 ± 1.006	0.54	-0.326 ± 0.673	0.439 ± 1.149
photometric centroid source offset	0.90 ± 1.19	0.75	-0.64 ± 0.84	-0.63 ± 1.46

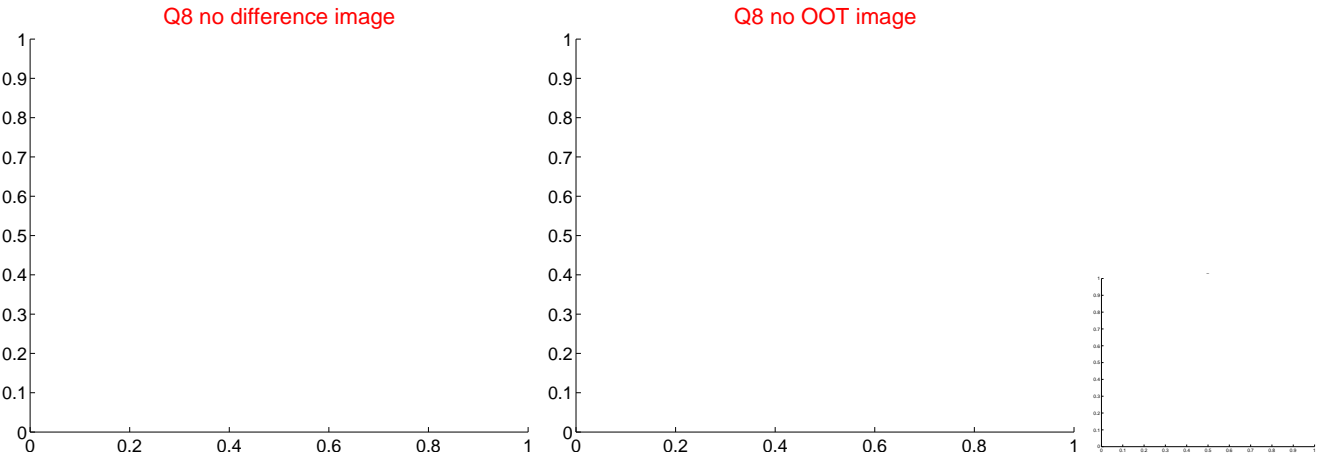
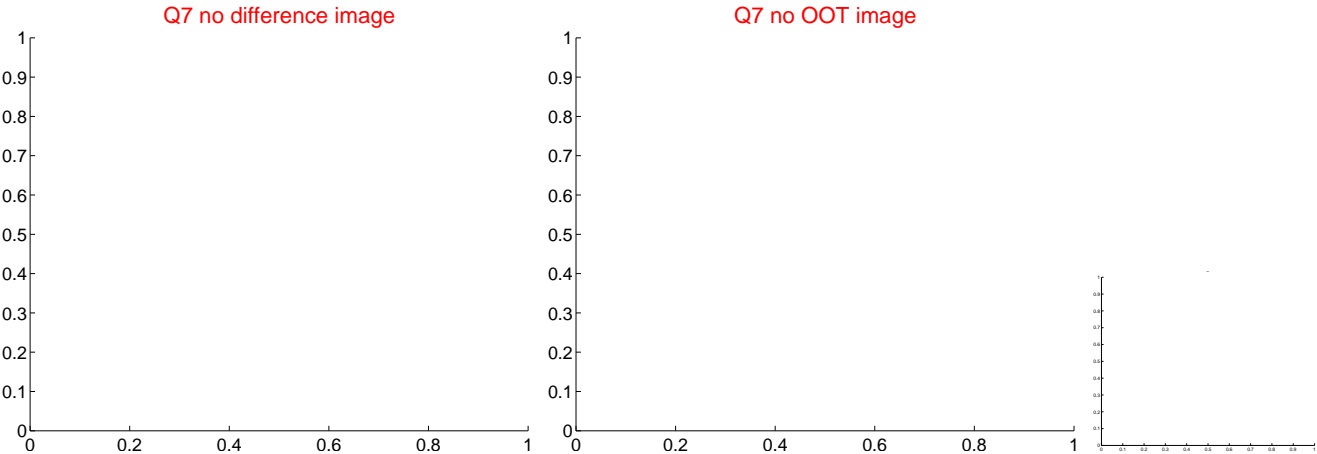
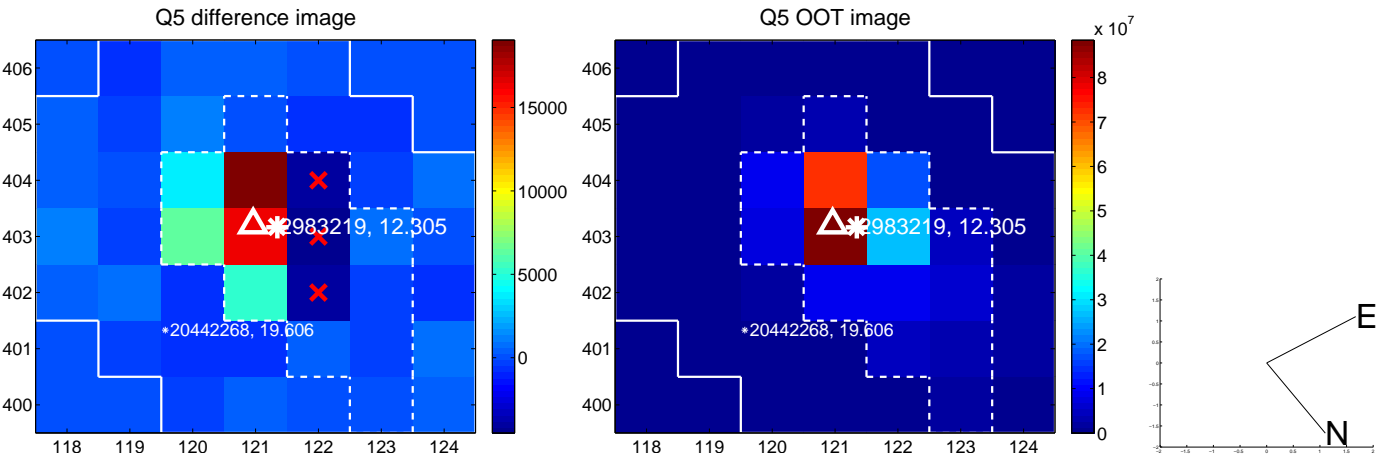


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

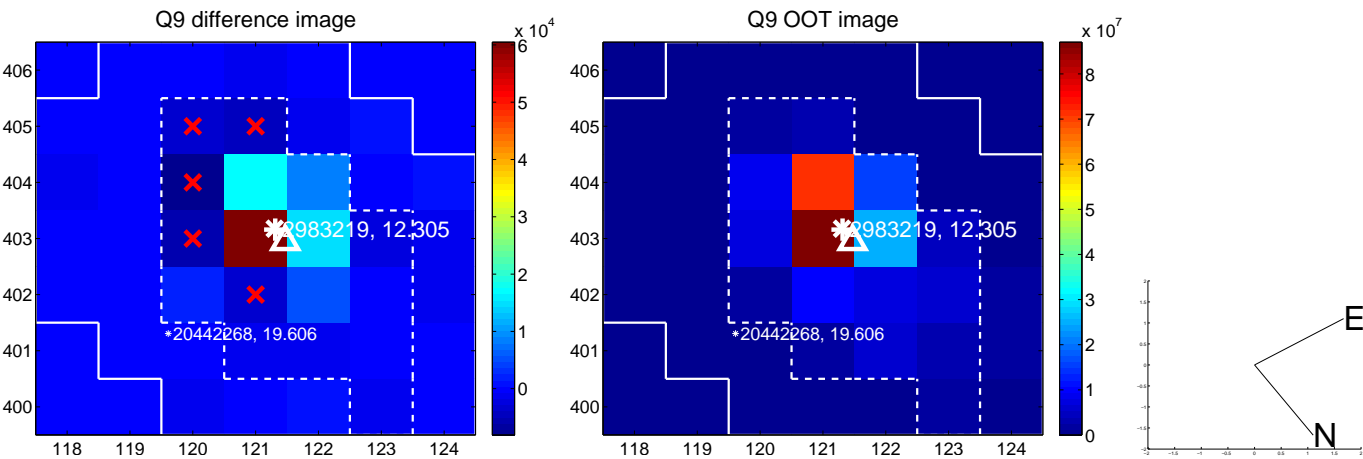
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



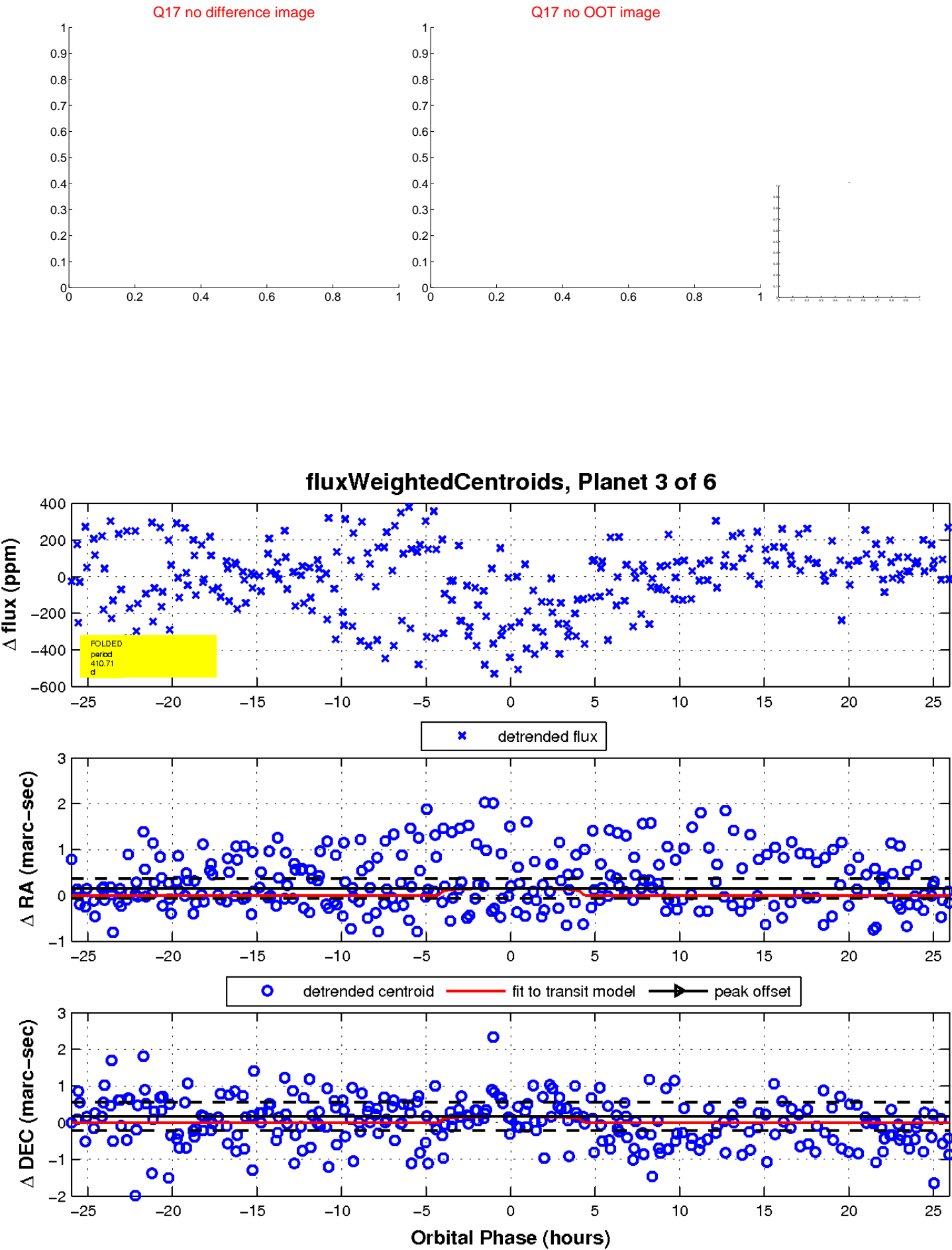
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

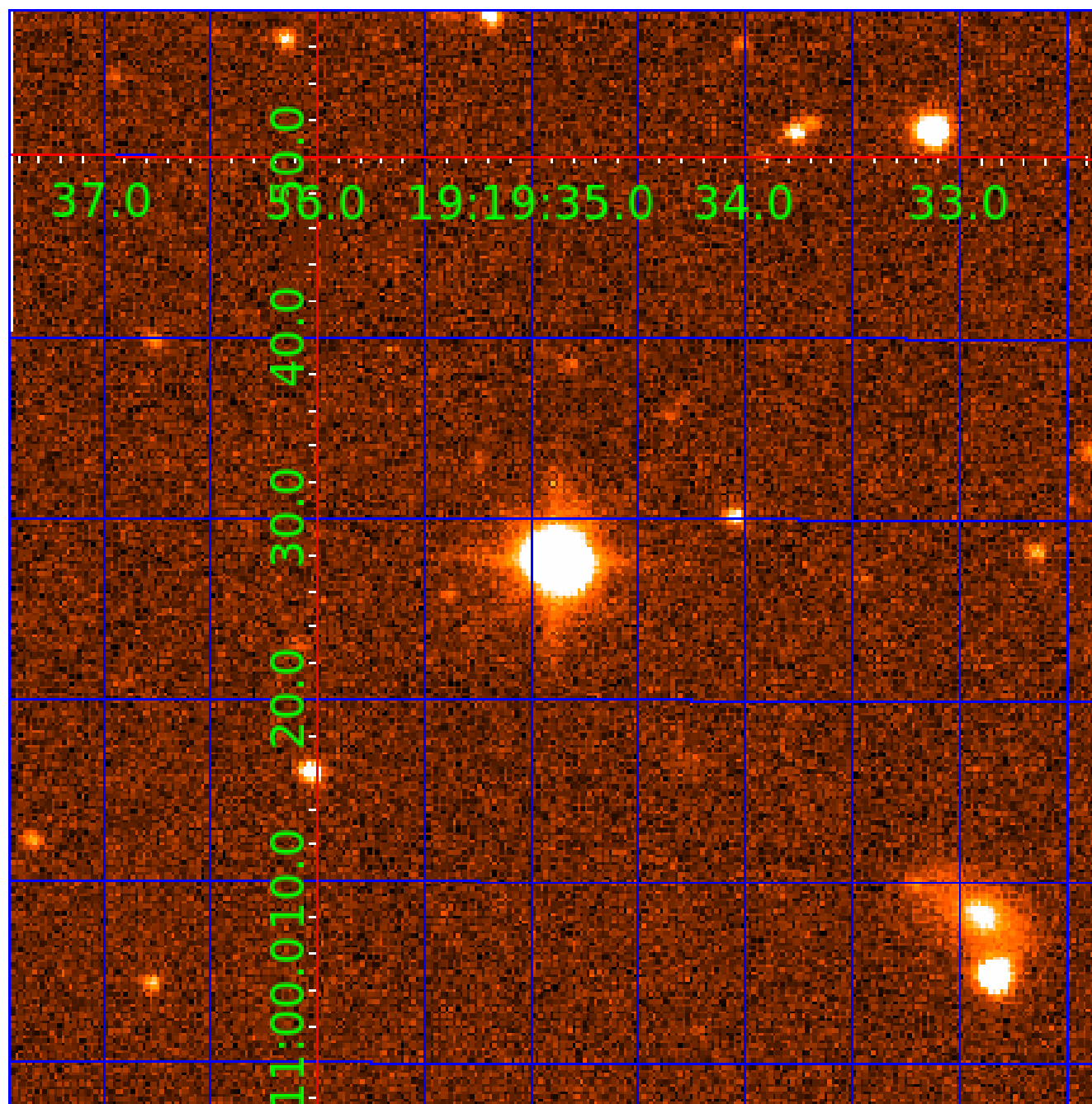


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002983219

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})
002983219-01	OBS	No	391.866426	448.919213	289.3	6.127	7.6	8.2	1.67	6250	3.25	3.09
002983219-02	OBS	No	362.884065	479.940574	245.6	6.205	7.8	8.0	1.67	6250	2.82	3.42
002983219-03	OBS	No	410.714058	446.889167	260.0	8.656	8.1	8.1	1.67	6250	2.94	2.90
002983219-04	OBS	No	376.854959	446.779960	275.5	9.469	7.5	7.9	1.67	6250	3.14	3.25
002983219-05	OBS	No	376.111523	447.543400	265.8	10.305	9.1	8.8	1.67	6250	3.16	3.26
002983219-06	OBS	No	391.575969	471.703477	247.8	9.355	7.4	7.6	1.67	6250	2.91	3.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002983219-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002983219-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
002983219-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002983219-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

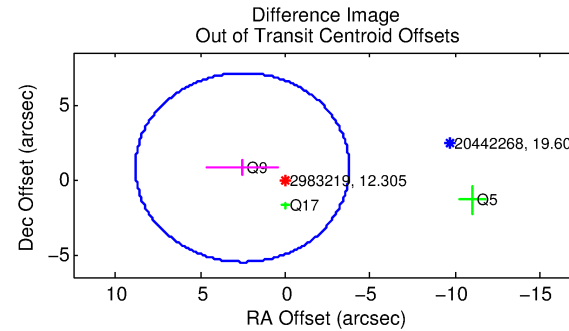
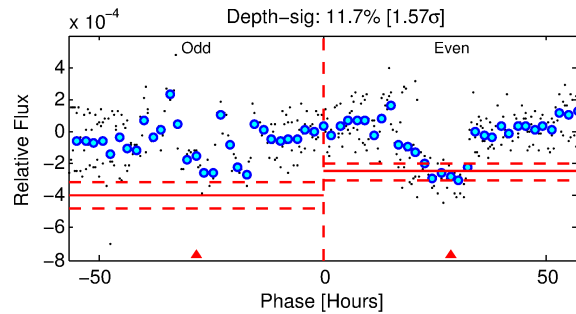
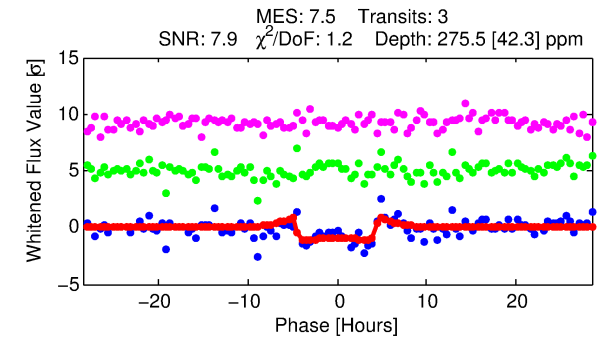
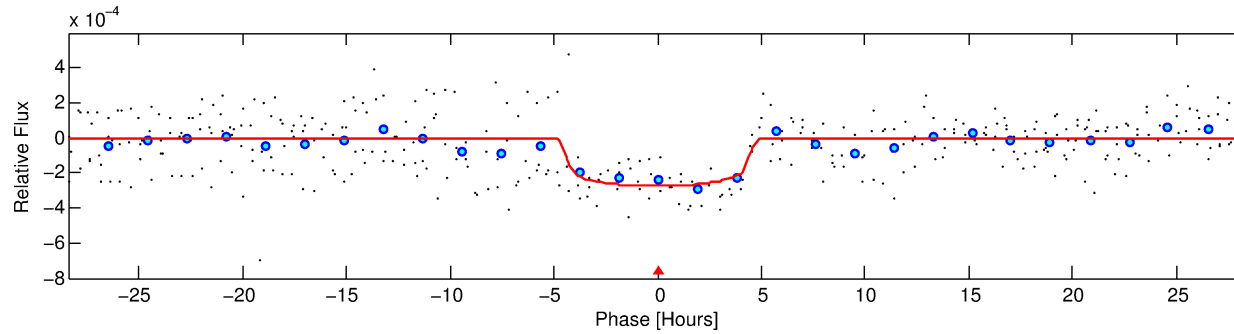
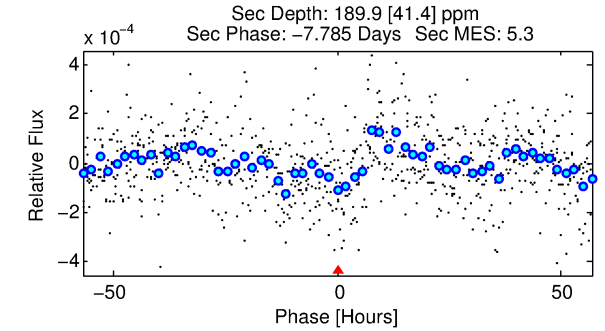
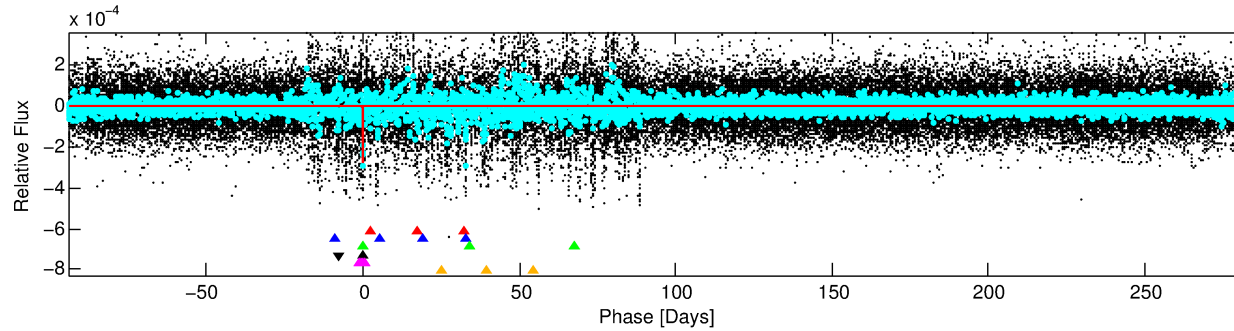
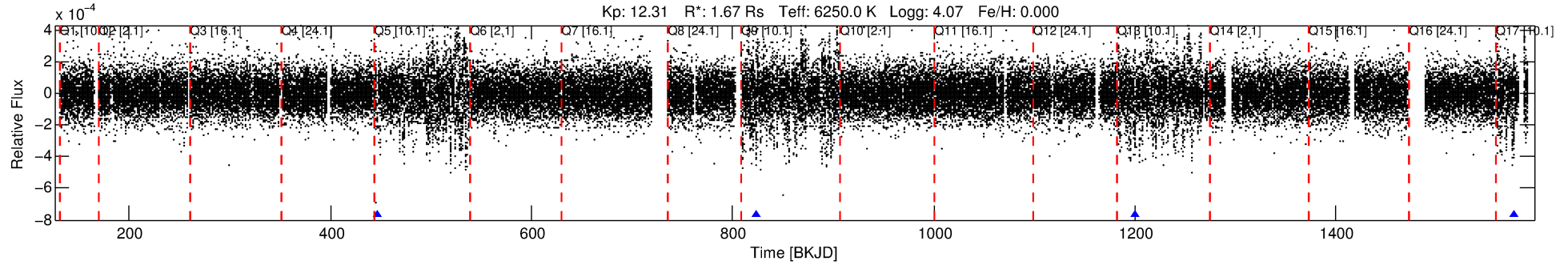
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002983219-04

No Significant Match Found

DV One-Page Summary

KIC: 2983219 Candidate: 4 of 6 Period: 376.855 d



DV Fit Results:

Period = 376.85496 [0.00763] d
Epoch = 446.7800 [0.0165] BKJD
Rp/R* = 0.0172 [0.0039]
a/R* = 171.74 [185.78]
b = 0.85 [0.37]
Seff = 3.25 [1.04]
Teq = 342 [27] K
Rp = 3.14 [1.00] Re
a = 1.0843 [0.2193] AU
Ag = 12456.87 [7433.36] [1.68σ]
Teffp = 5594 [712] K [7.37σ]

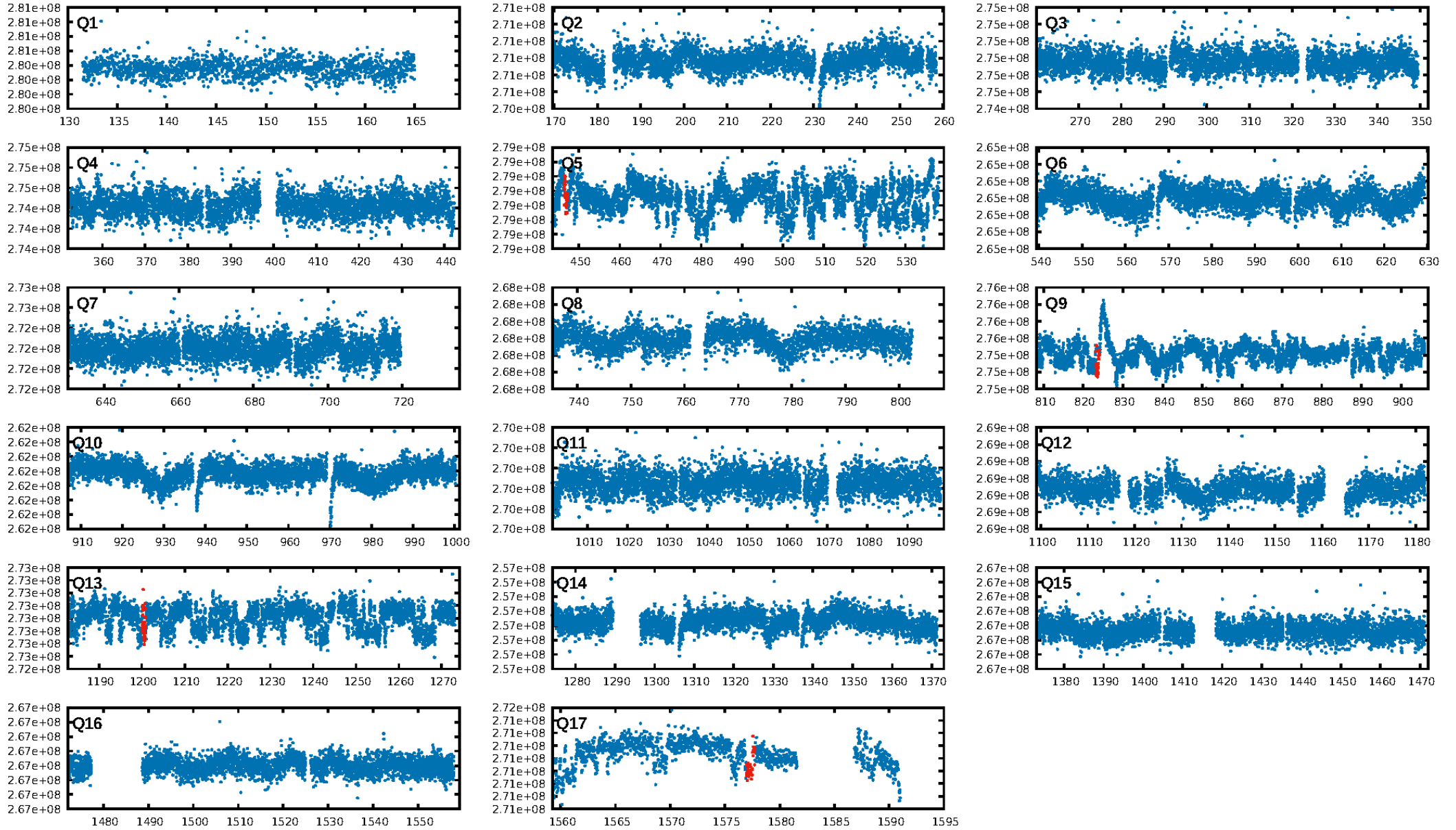
DV Diagnostic Results:

ShortPeriod-sig: 79.8% [1.27σ]
LongPeriod-sig: 100.0% [26.54σ]
ModelChiSquare2-sig: 43.5%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 3.45e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -4.058
Centroid-sig: 15.9%
Centroid-so: 0.882 arcsec [0.93σ]
OotOffset-rm: 2.647 arcsec [1.26σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-rm: 2.693 arcsec [0.87σ]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

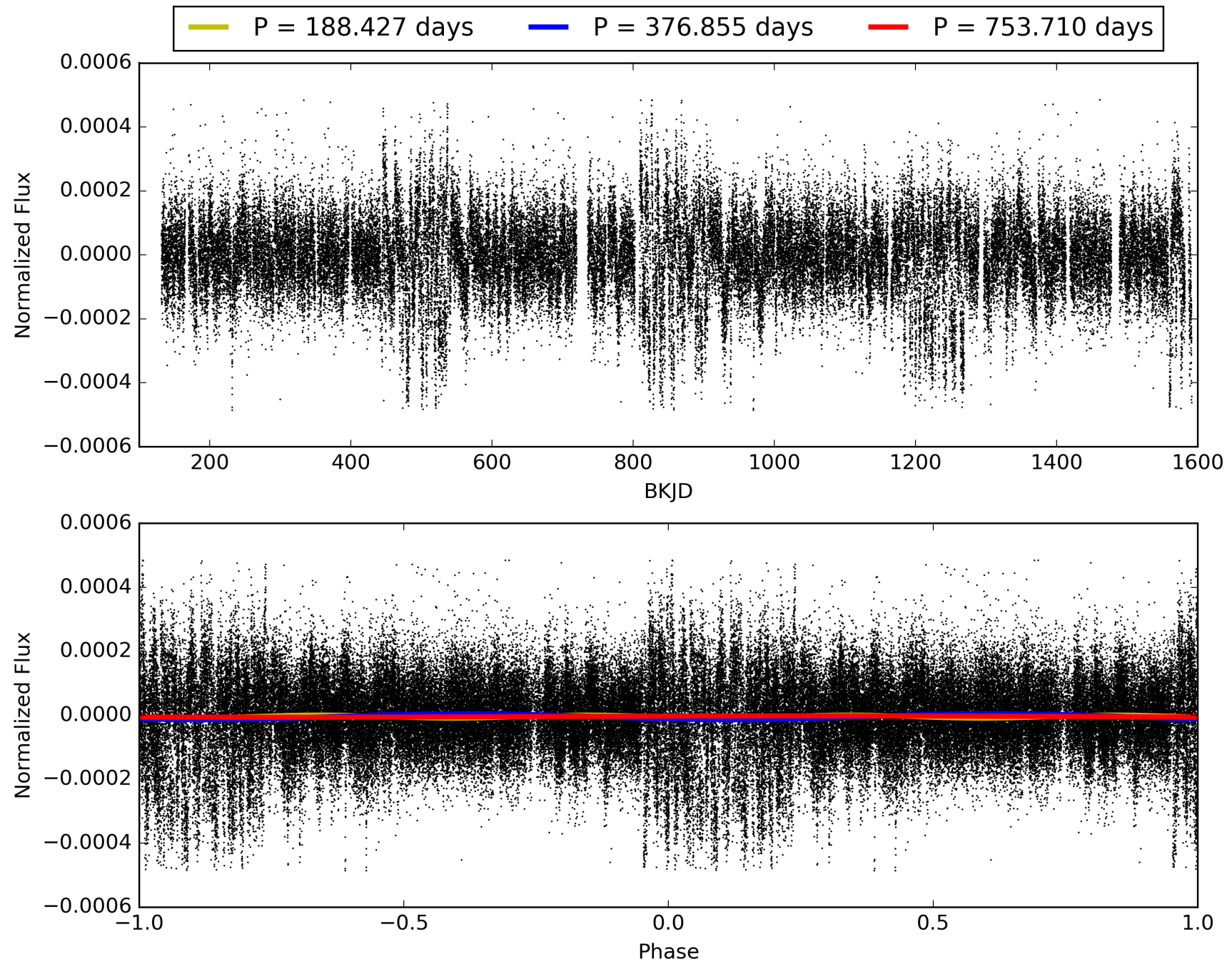
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:16:31 Z

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

TCE 002983219-04, PDC Light Curves

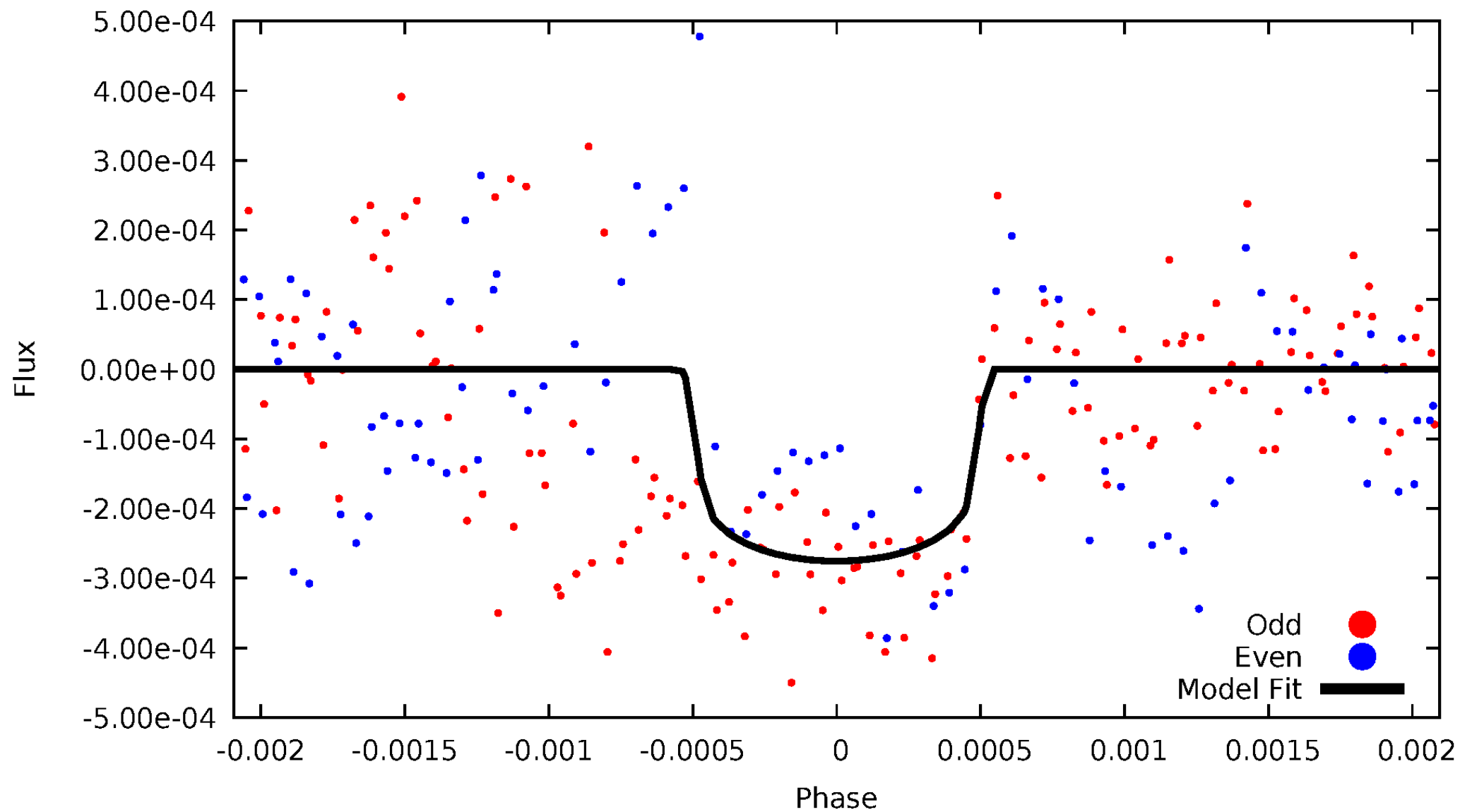


TCE 002983219-04



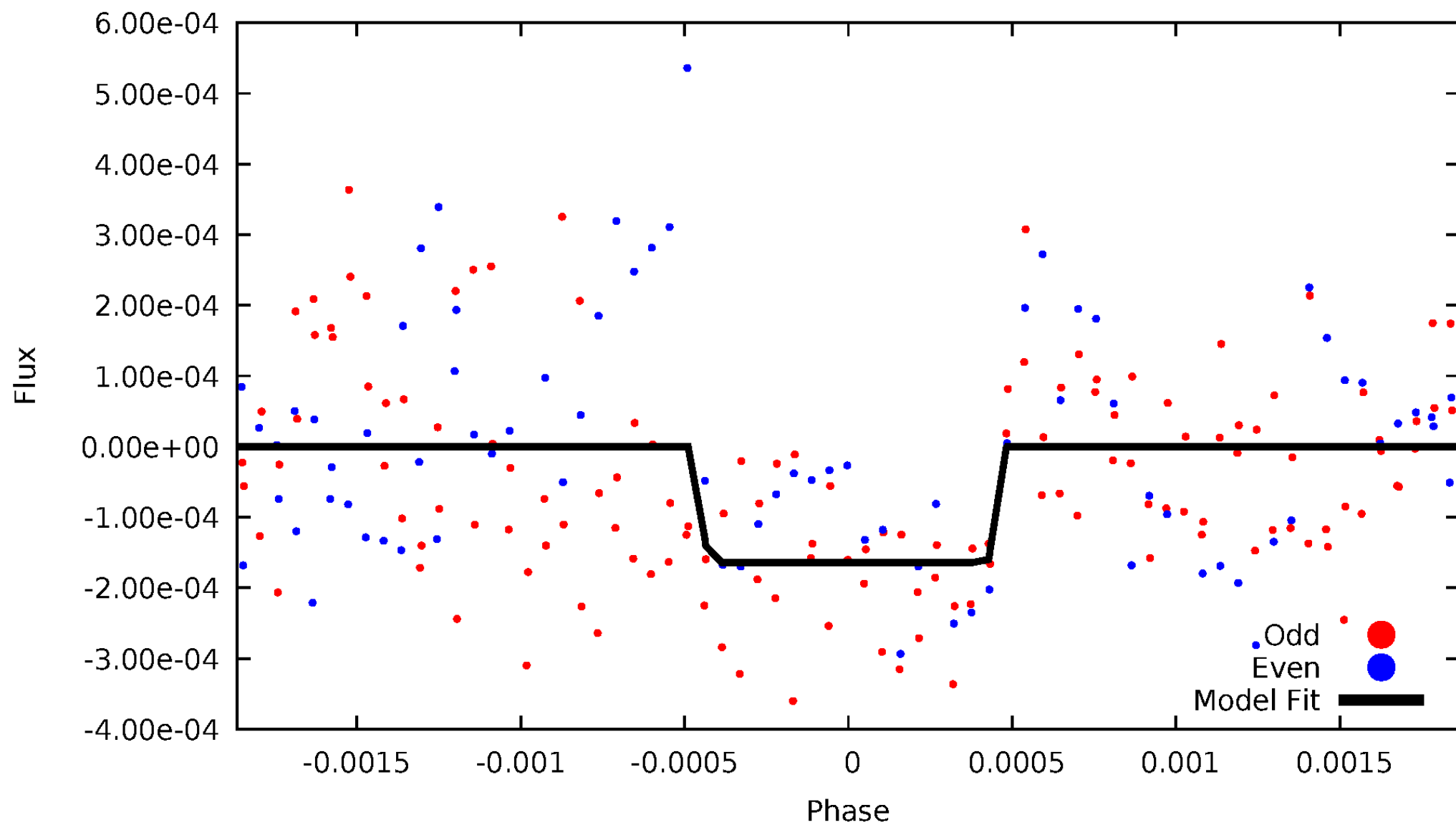
DV Odd/Even

TCE 002983219-04



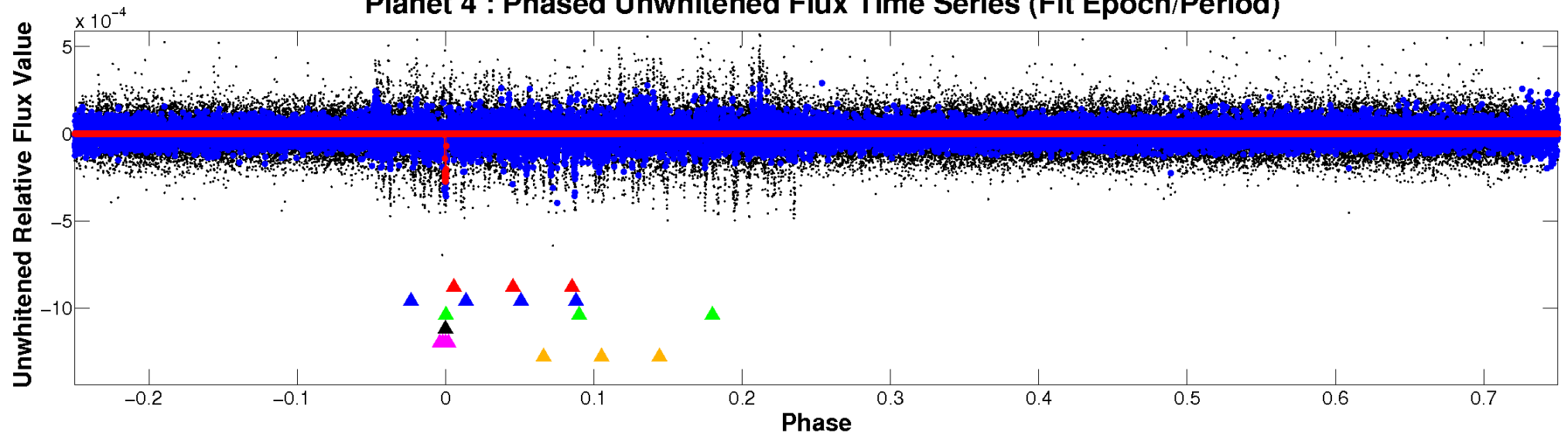
ALT Odd/Even

TCE 002983219-04

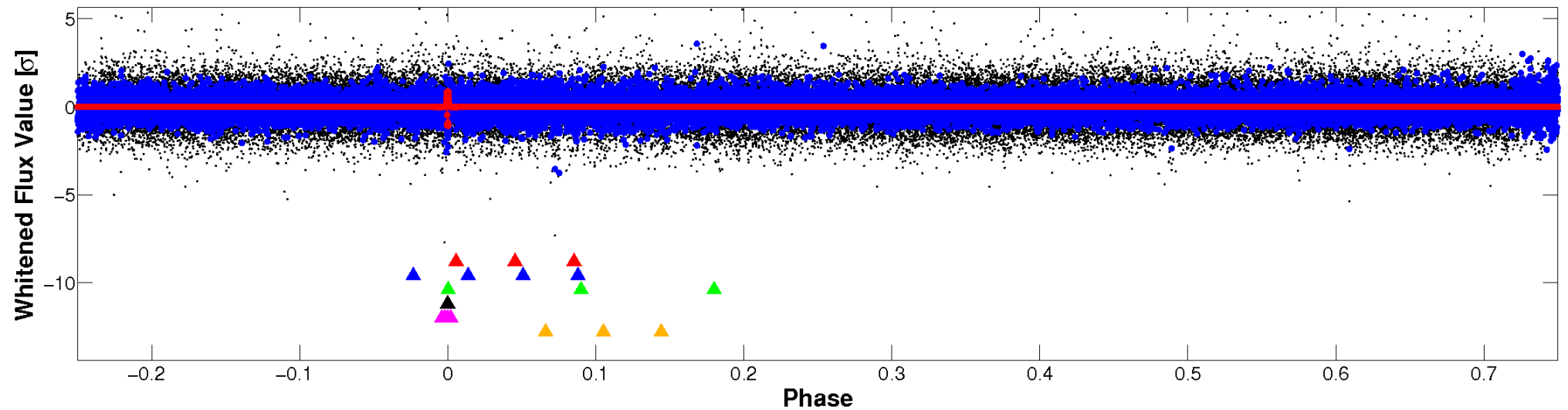


Non-Whitened Vs. Whitened Light Curve

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

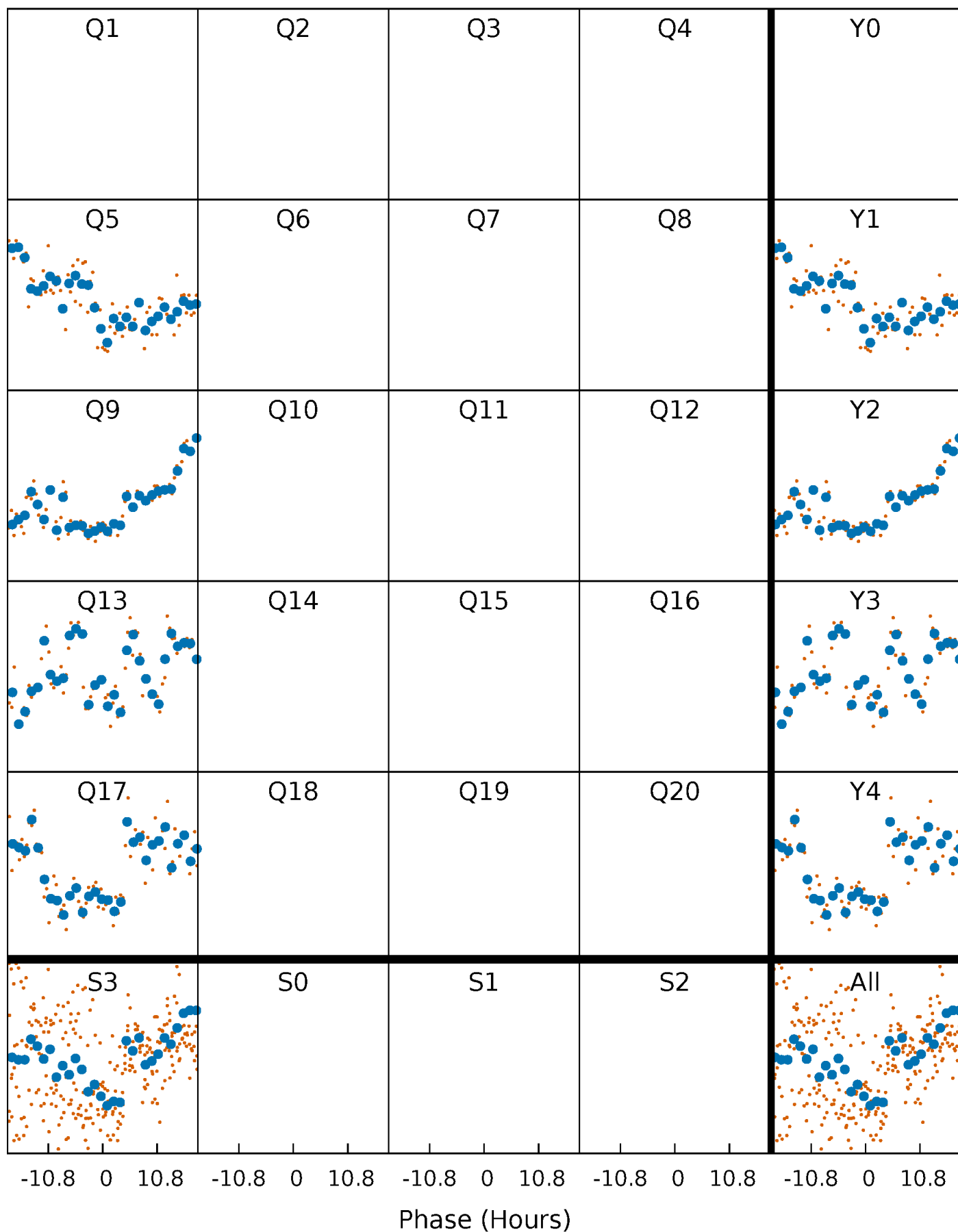


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



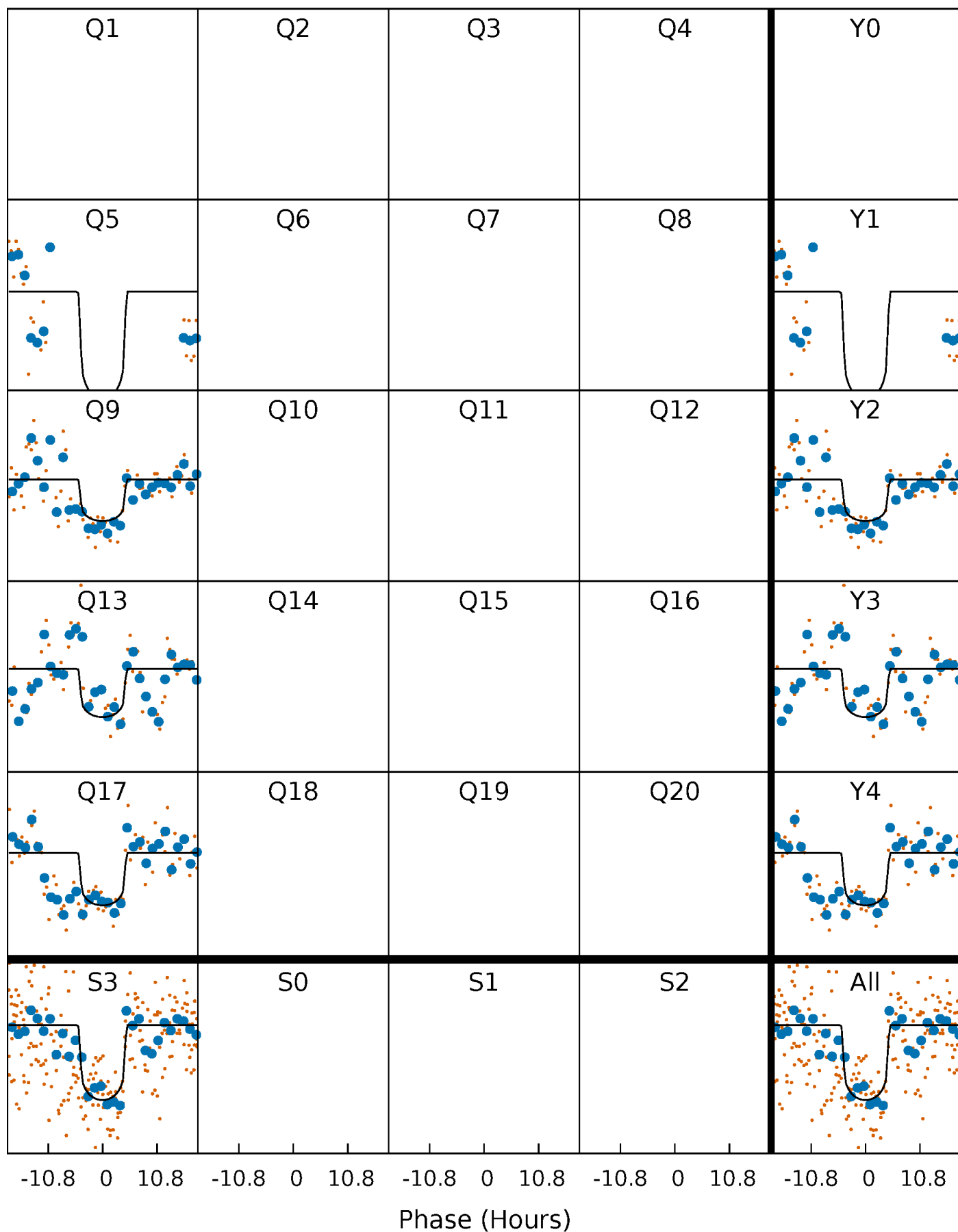
PDC Quarter-Phased Transit Curves

TCE 002983219-04 $P=376.854959$ Days $T_0=446.779960$ (BKJD)



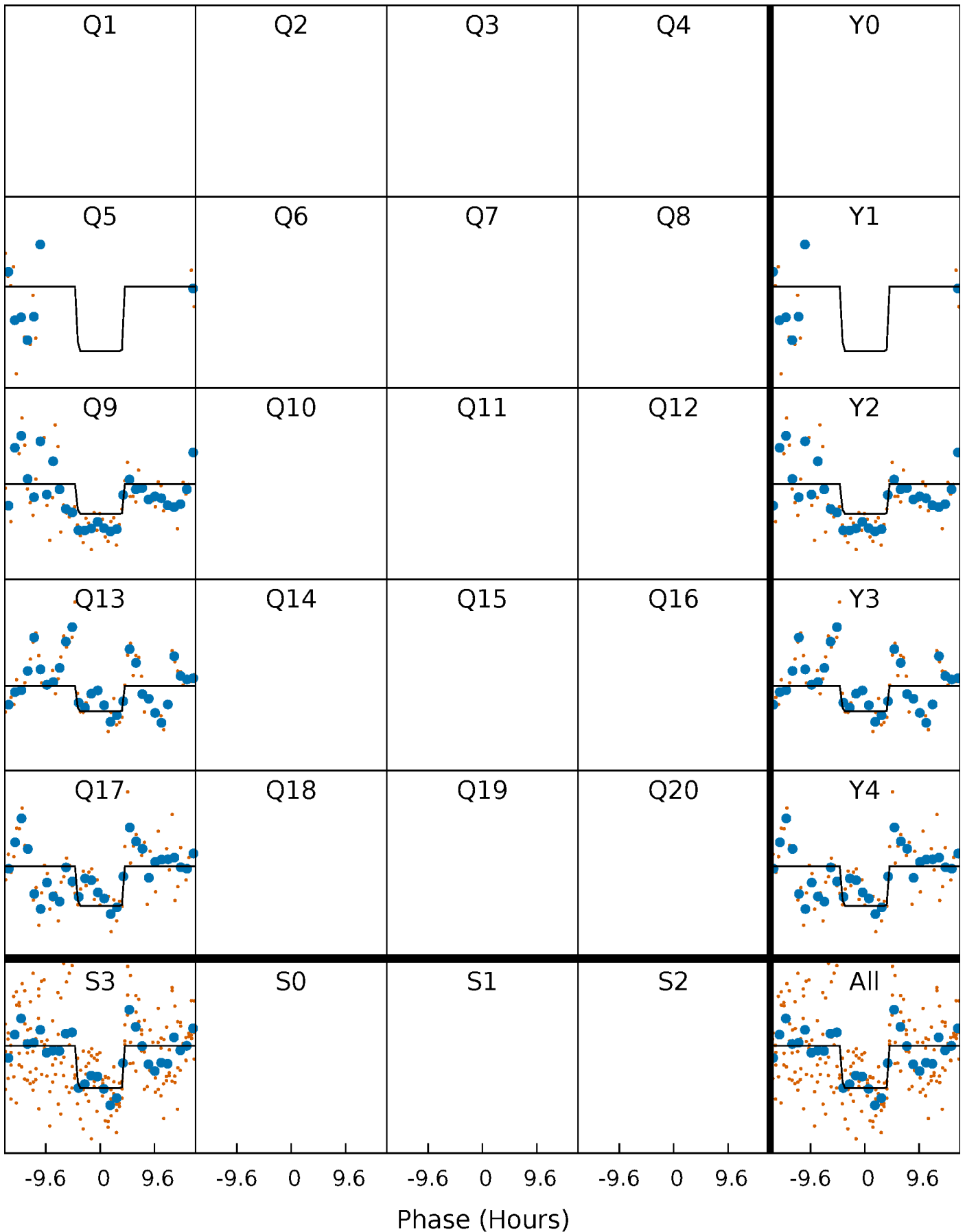
DV Quarter-Phased Transit Curves

TCE 002983219-04 $P=376.854959$ Days $T_0=446.779960$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

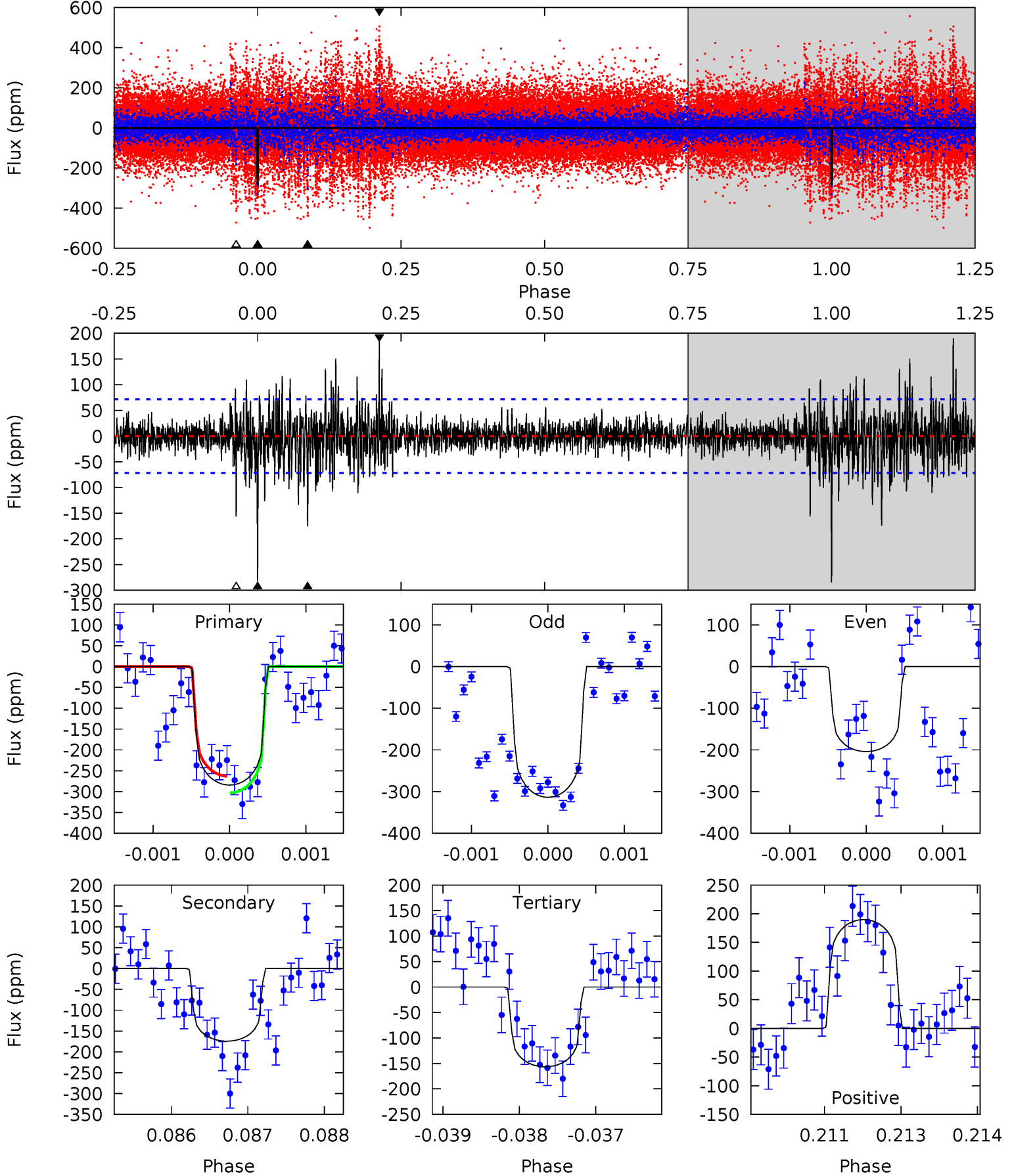
TCE 002983219-04 $P=376.856147$ Days $T_0=446.783238$ (BKJD)



DV Model-Shift Uniqueness Test

002983219-04, P = 376.854959 Days, E = 69.925001 Days

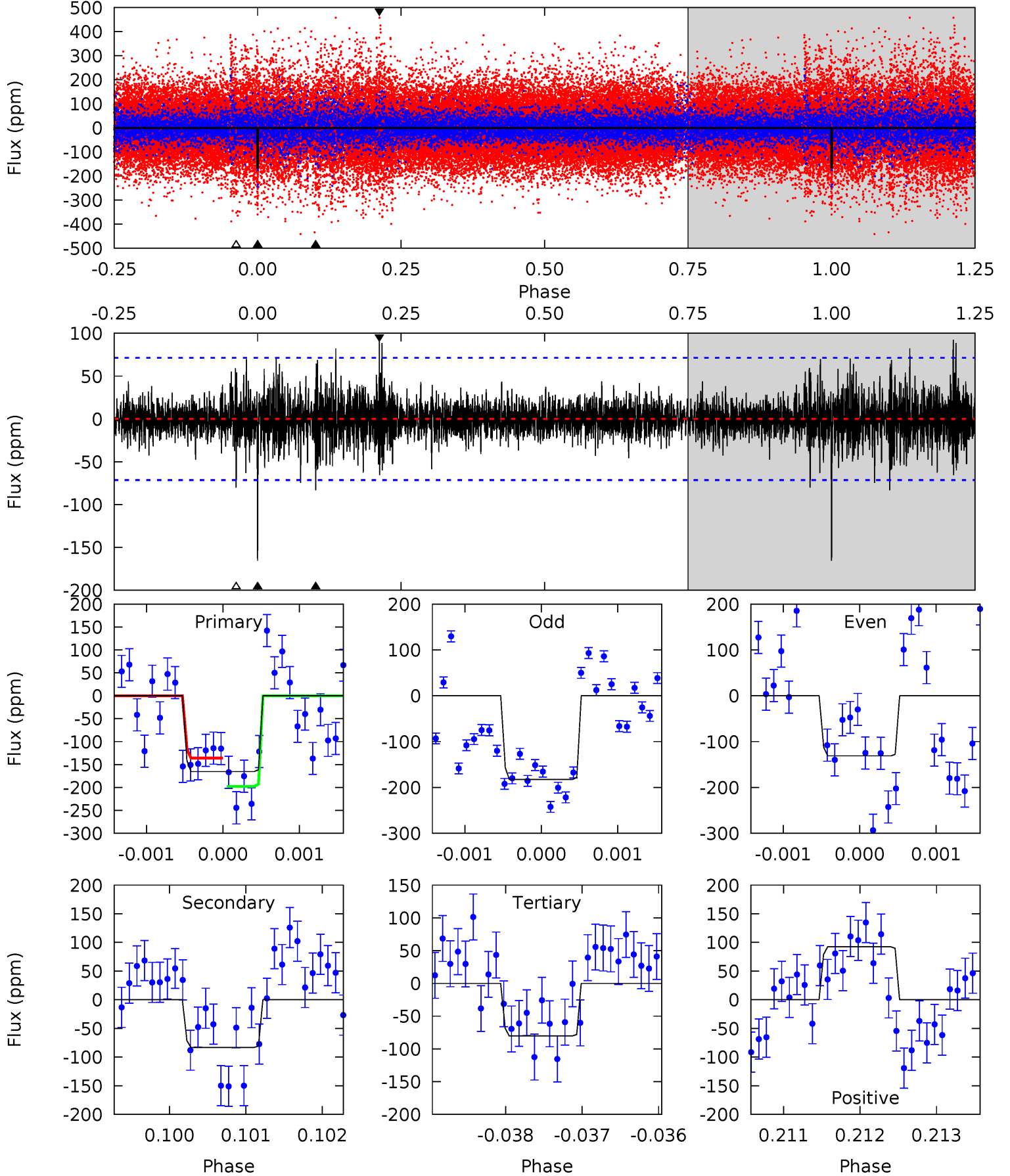
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	13.2	11.9	14.4	5.44	3.27	1.96	9.70	7.16	1.35	-1.19	3.91	0.97	0.40	1.51



Alt Model-Shift Uniqueness Test

002983219-04, $P = 376.856147$ Days, $E = 69.927091$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	6.37	6.14	7.06	5.47	3.31	1.19	6.53	5.60	0.23	-0.70	1.84	1.26	0.36	2.36



Stellar Parameters For KIC 002983219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6250^{+75}_{-75}	$4.069^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.673^{+0.300}_{-0.367}$	$1.196^{+0.143}_{-0.096}$	$0.360^{+0.325}_{-0.126}$
	+1%/-1%	+4%/-2%	+inf%/-inf%	+18%/-22%	+12%/-8%	+90%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002983219-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-174 ± 13	$3.12^{+0.78}_{-0.83}$	475^{+22}_{-26}	5494^{+780}_{-506}	11839^{+9826}_{-4402}
Alt.	-83 ± 13	$2.26^{+0.78}_{-0.74}$	475^{+21}_{-28}	5322^{+1002}_{-612}	10476^{+12284}_{-4746}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

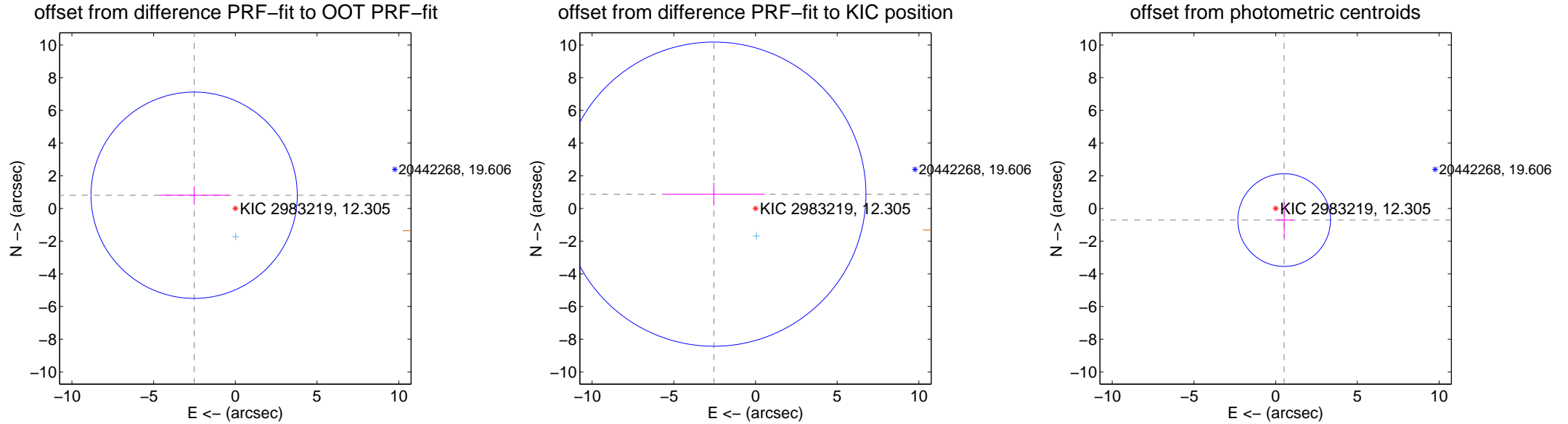
DV Centroid Data

Supplemental centroid analysis for 002983219-04. Kepler magnitude: 12.30. Transit SNR 7.94

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.647 ± 2.104	1.26	2.521 ± 2.115	0.808 ± 0.549
PRF-fit source offset from KIC position	2.693 ± 3.102	0.87	2.547 ± 3.110	0.875 ± 0.708
photometric centroid source offset	0.88 ± 0.94	0.93	-0.52 ± 0.58	-0.71 ± 1.09

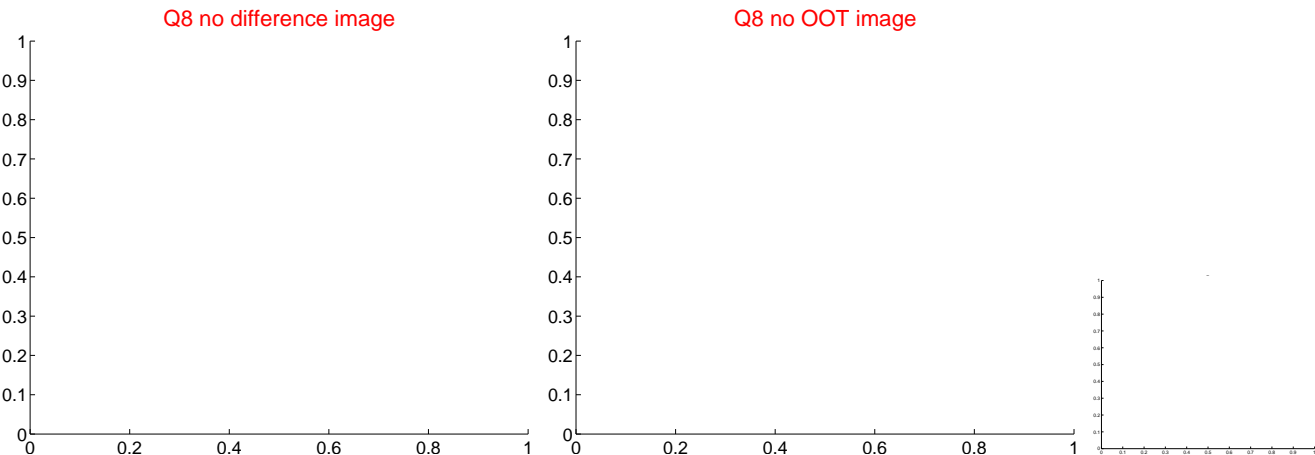
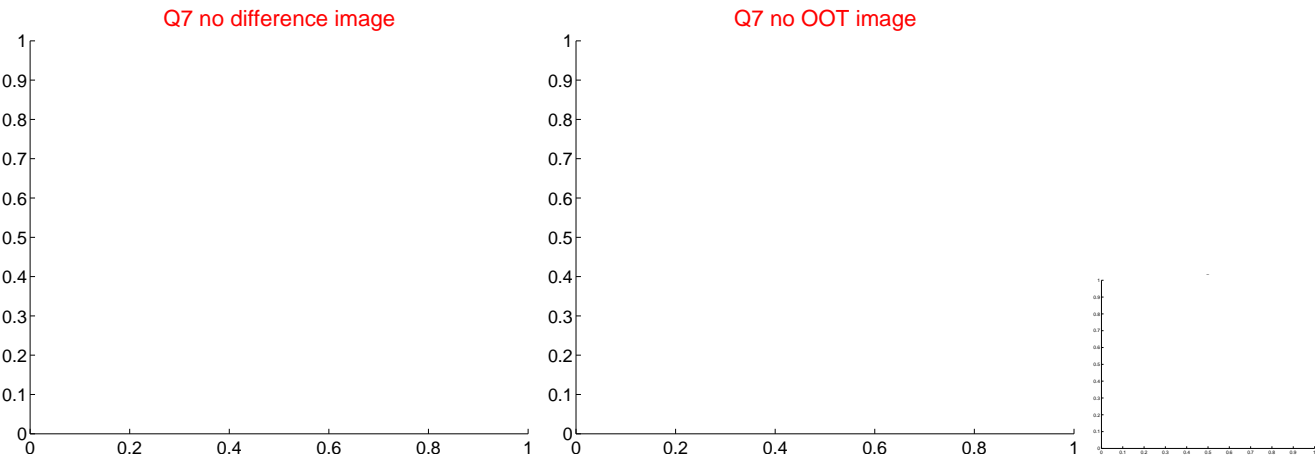
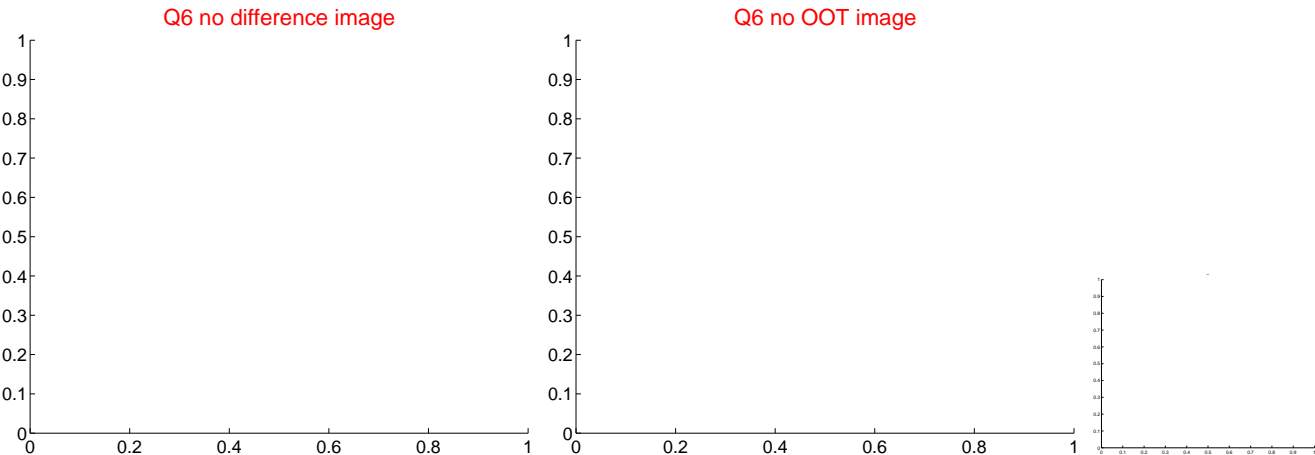
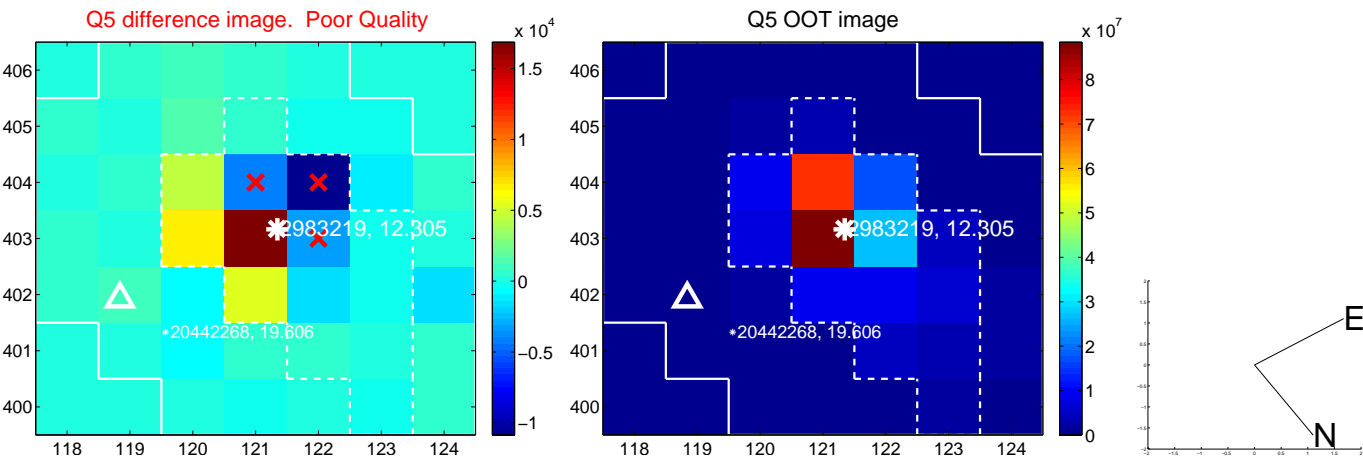


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

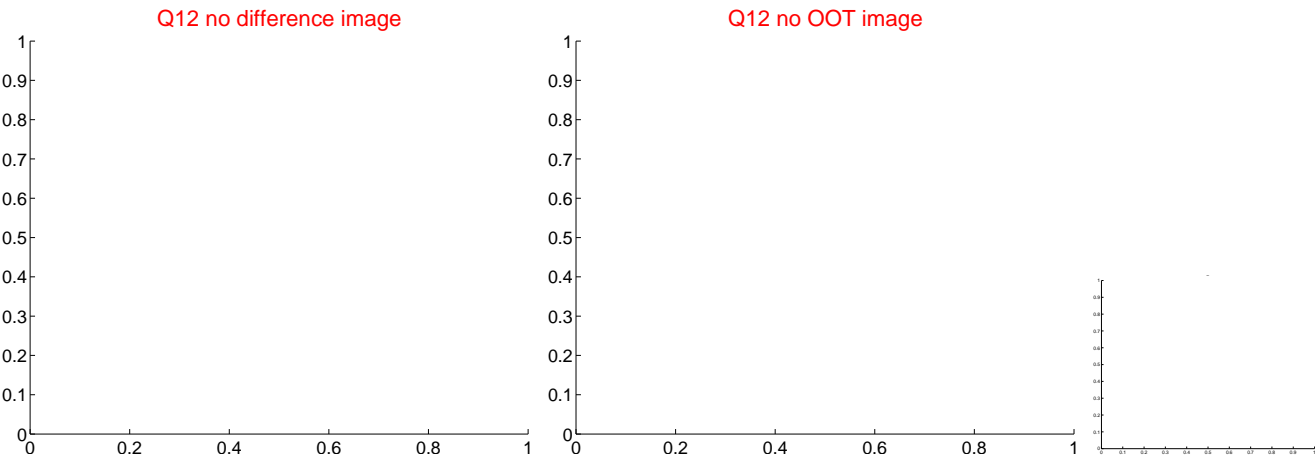
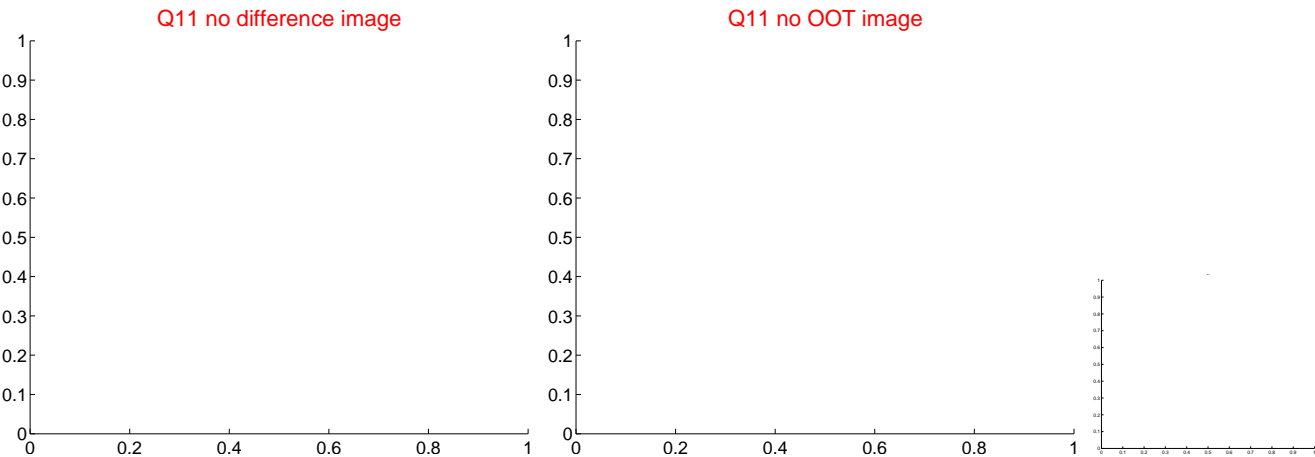
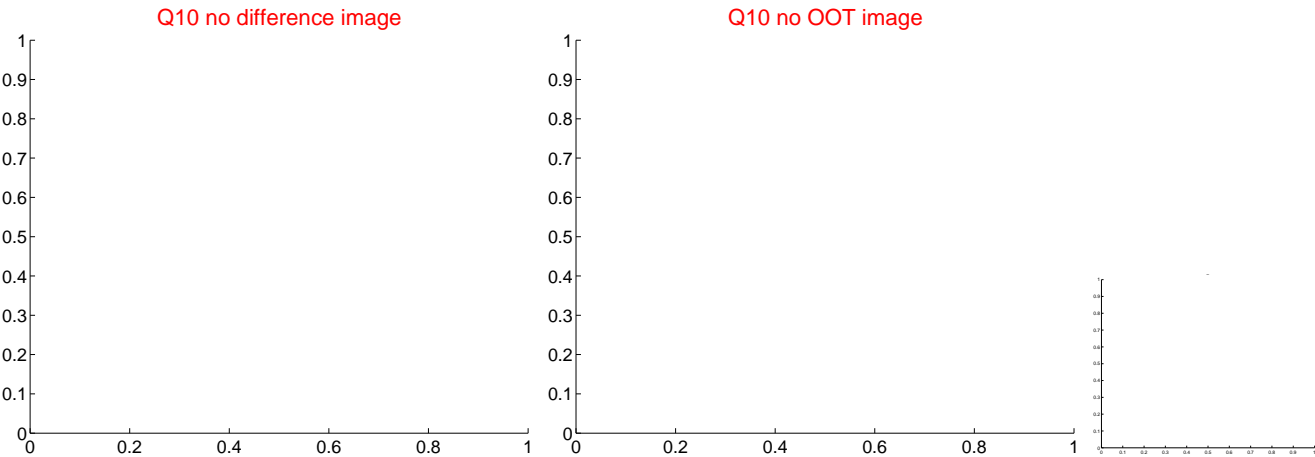
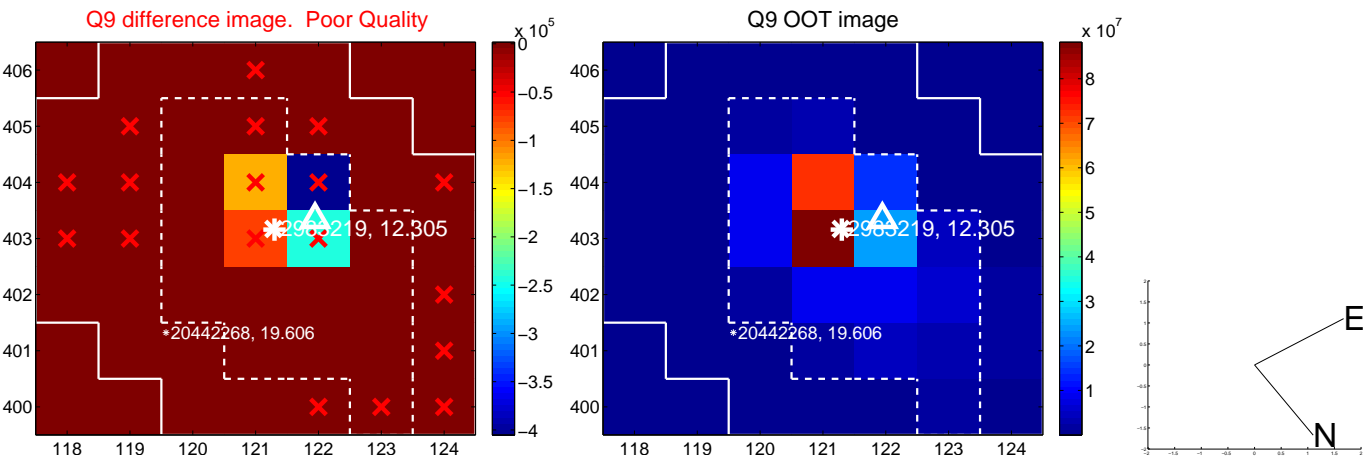
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



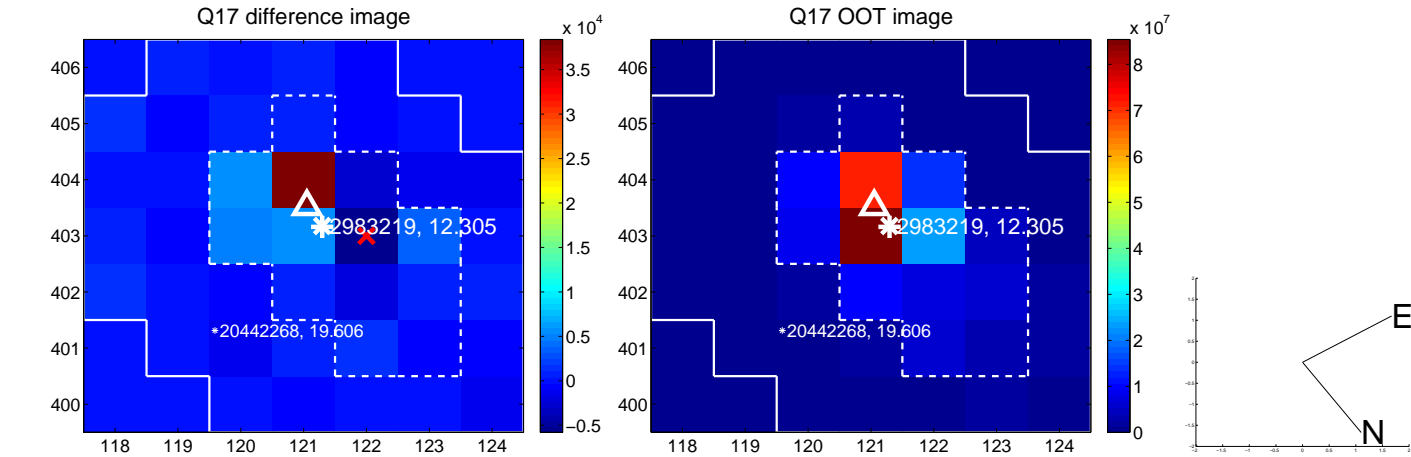
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



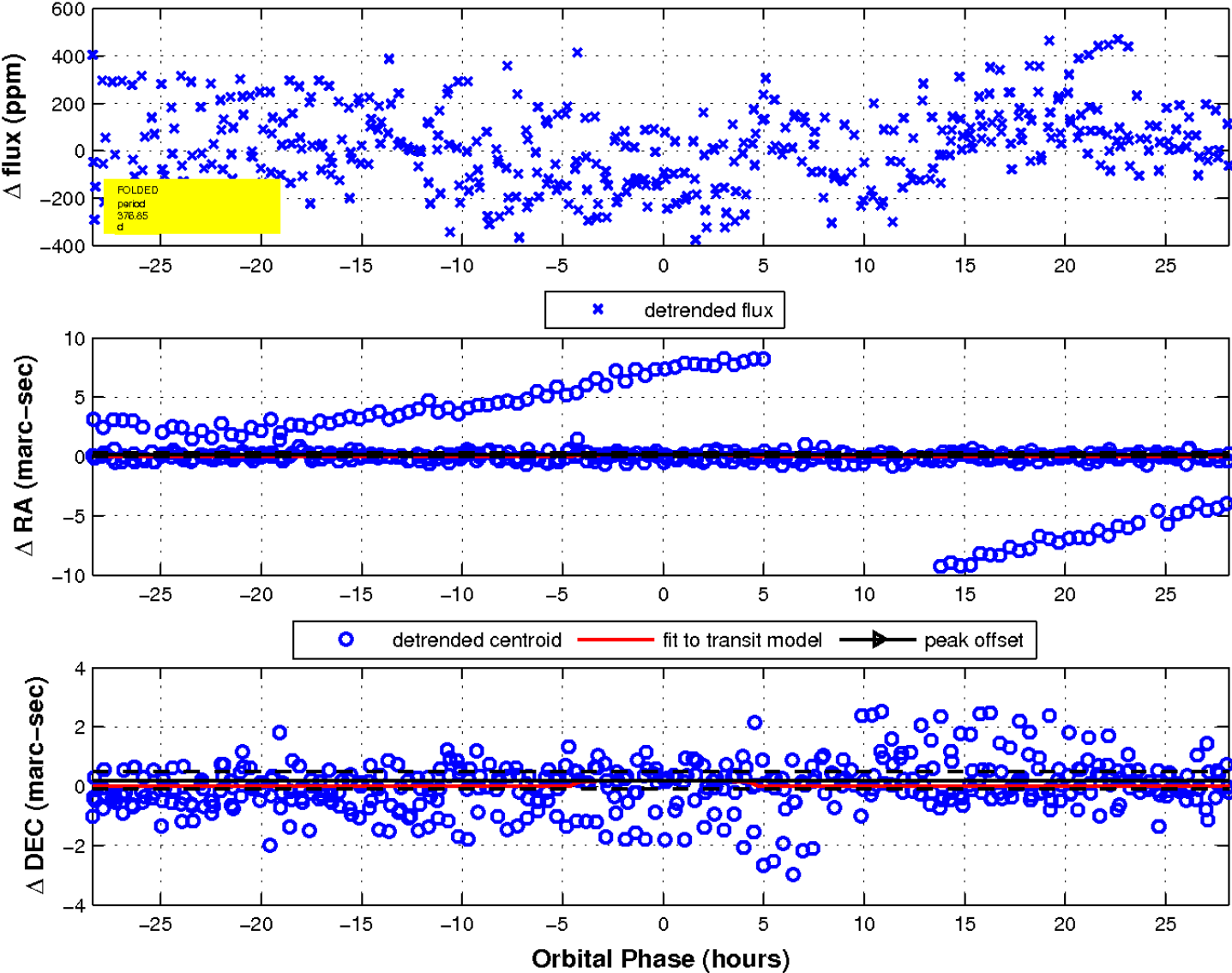
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

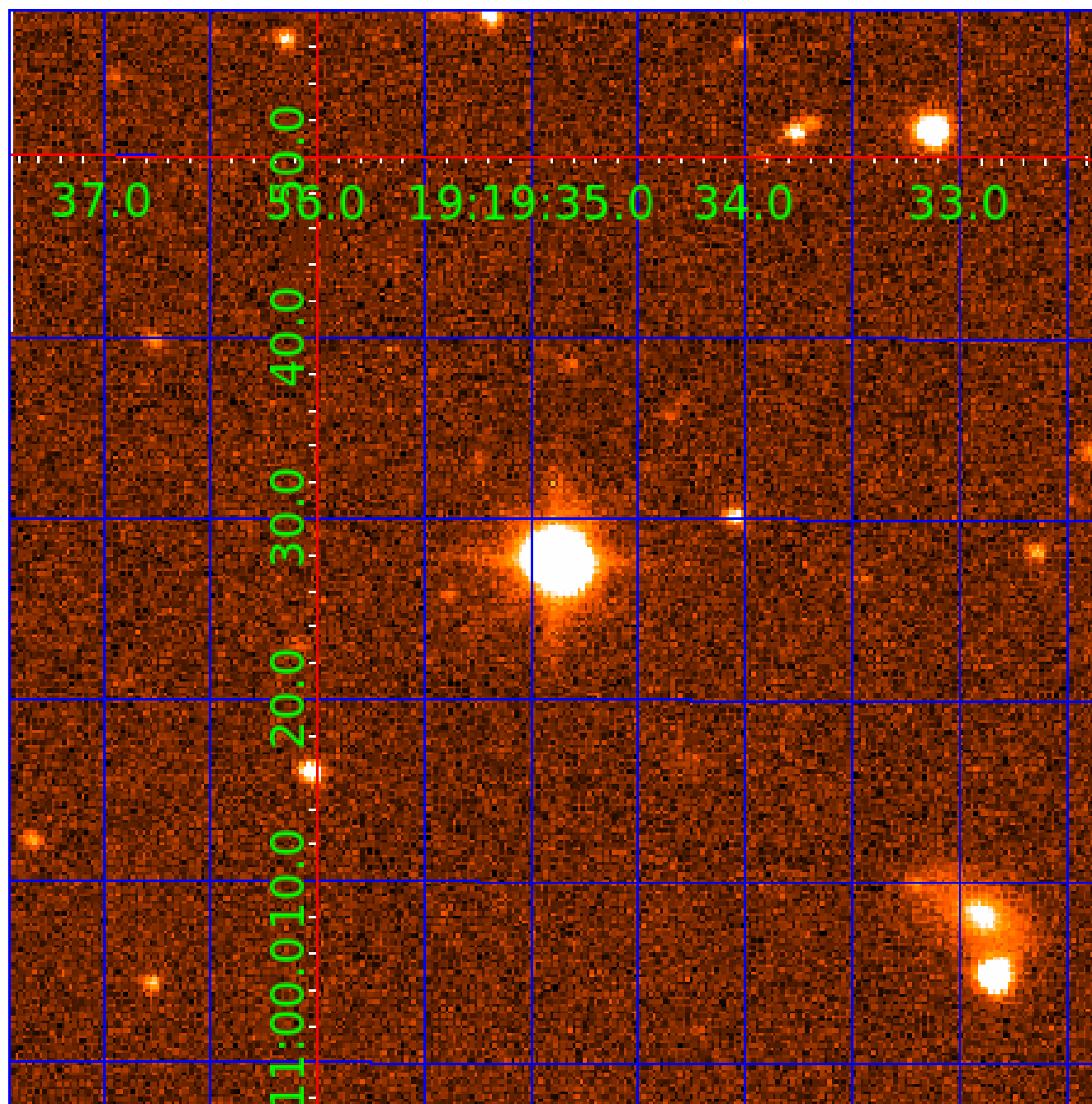


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 002983219

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})
002983219-01	OBS	No	391.866426	448.919213	289.3	6.127	7.6	8.2	1.67	6250	3.25	3.09
002983219-02	OBS	No	362.884065	479.940574	245.6	6.205	7.8	8.0	1.67	6250	2.82	3.42
002983219-03	OBS	No	410.714058	446.889167	260.0	8.656	8.1	8.1	1.67	6250	2.94	2.90
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002983219-05	OBS	No	376.111523	447.543400	265.8	10.305	9.1	8.8	1.67	6250	3.16	3.26
002983219-06	OBS	No	391.575969	471.703477	247.8	9.355	7.4	7.6	1.67	6250	2.91	3.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002983219-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002983219-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
002983219-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002983219-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

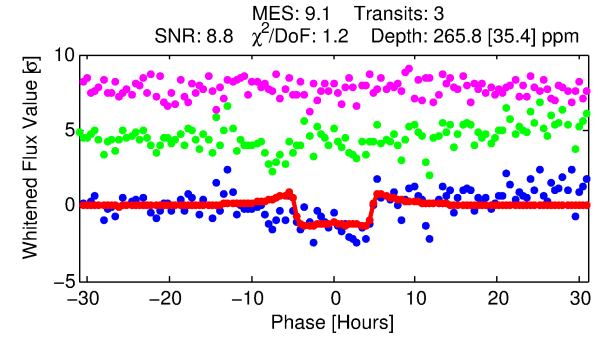
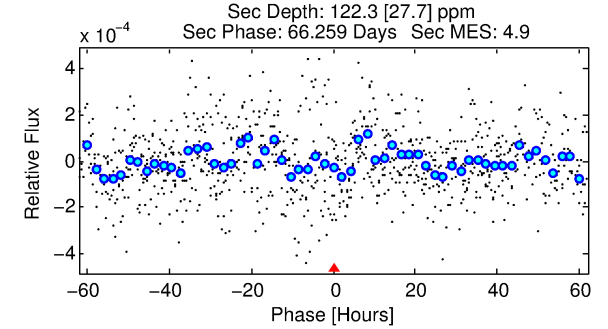
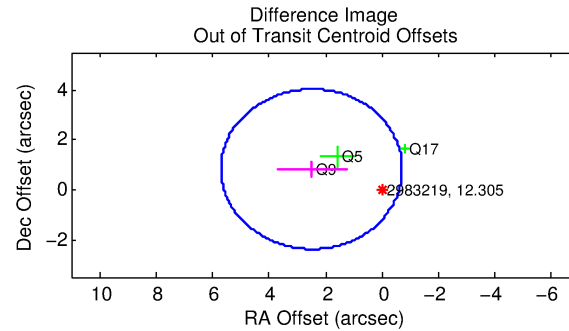
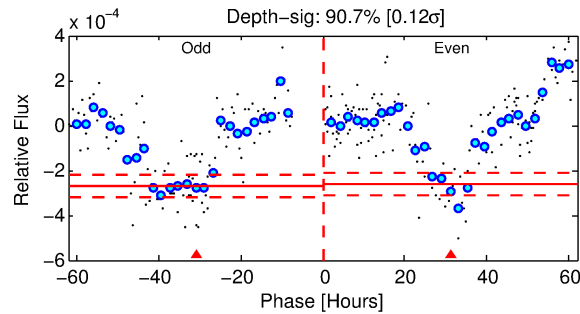
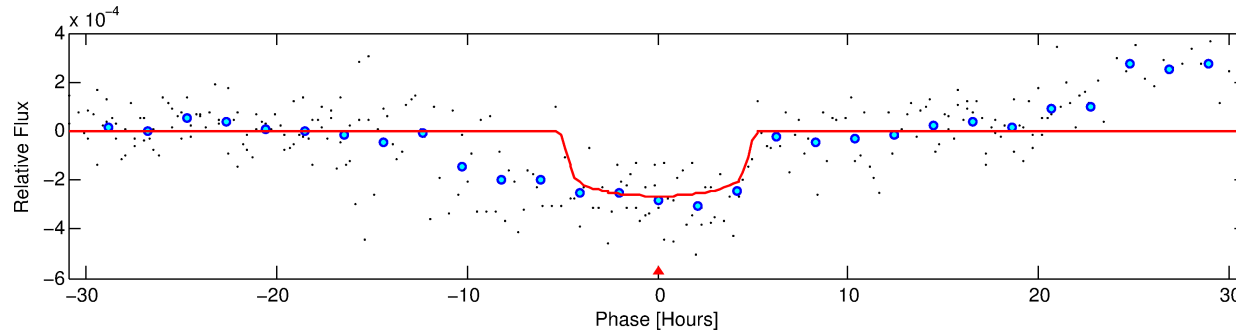
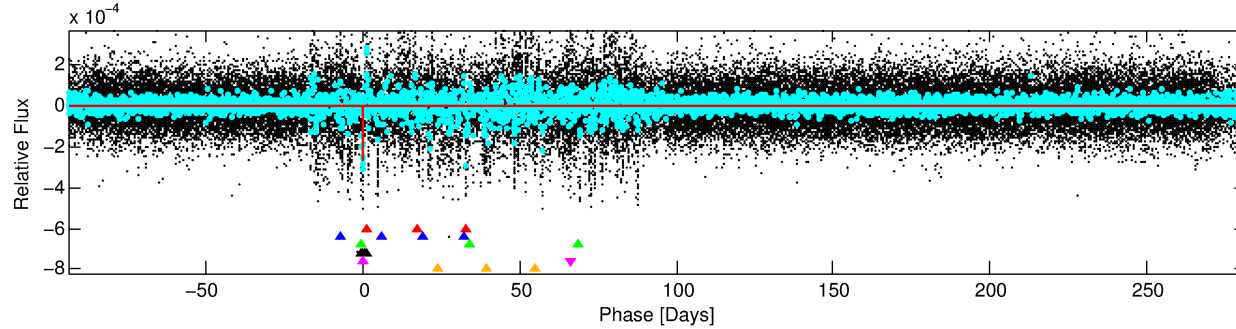
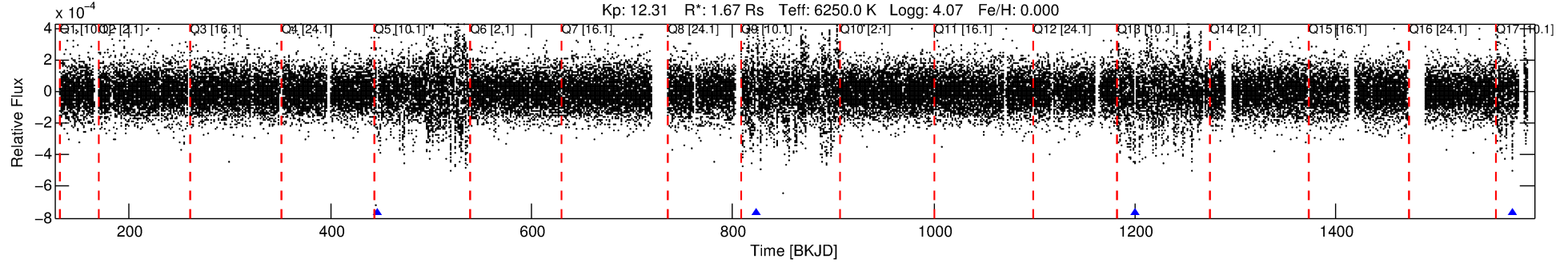
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002983219-05

No Significant Match Found

DV One-Page Summary

KIC: 2983219 Candidate: 5 of 6 Period: 376.112 d



DV Fit Results:

Period = 376.11152 [0.00725] d
Epoch = 447.5434 [0.0173] BKJD
Rp/R* = 0.0173 [0.0028]
a/R* = 141.45 [104.52]
b = 0.88 [0.19]
Seff = 3.26 [1.04]
Teq = 343 [27] K
Rp = 3.16 [0.86] Re
a = 1.0829 [0.2190] AU
Ag = 7919.60 [3992.97] [1.98 σ]
Teffp = 4999 [495] K [9.39 σ]

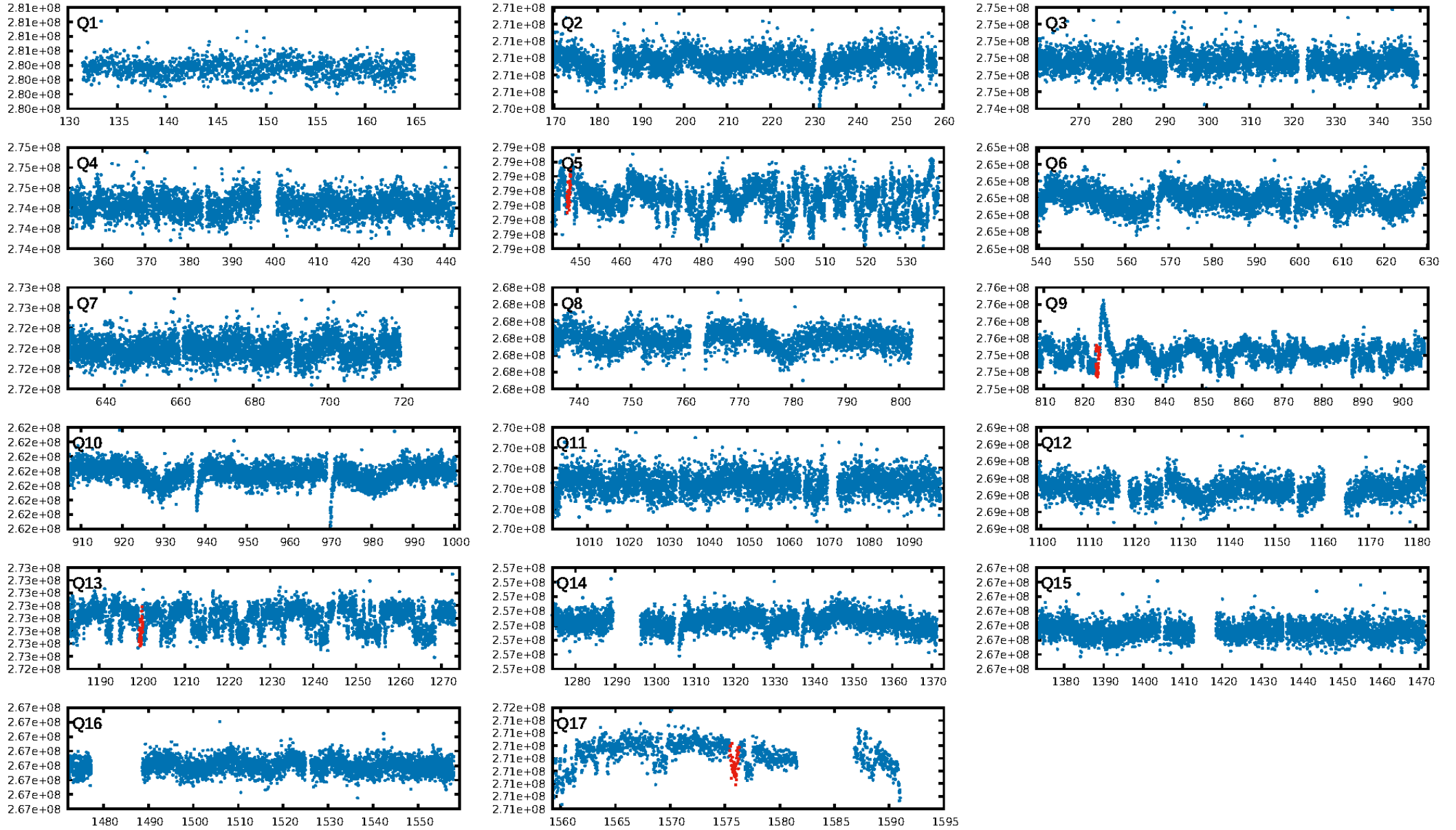
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.39 σ]
LongPeriod-sig: 79.8% [1.27 σ]
ModelChiSquare2-sig: 7.4%
ModelChiSquareGof-sig: 95.9%
Bootstrap-pfa: 5.53e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 3.448
Centroid-sig: 75.3%
Centroid-so: 0.388 arcsec [0.36 σ]
OotOffset-rm: 2.624 arcsec [2.46 σ]
KicOffset-rm: 2.670 arcsec [3.40 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.33 [1/3]

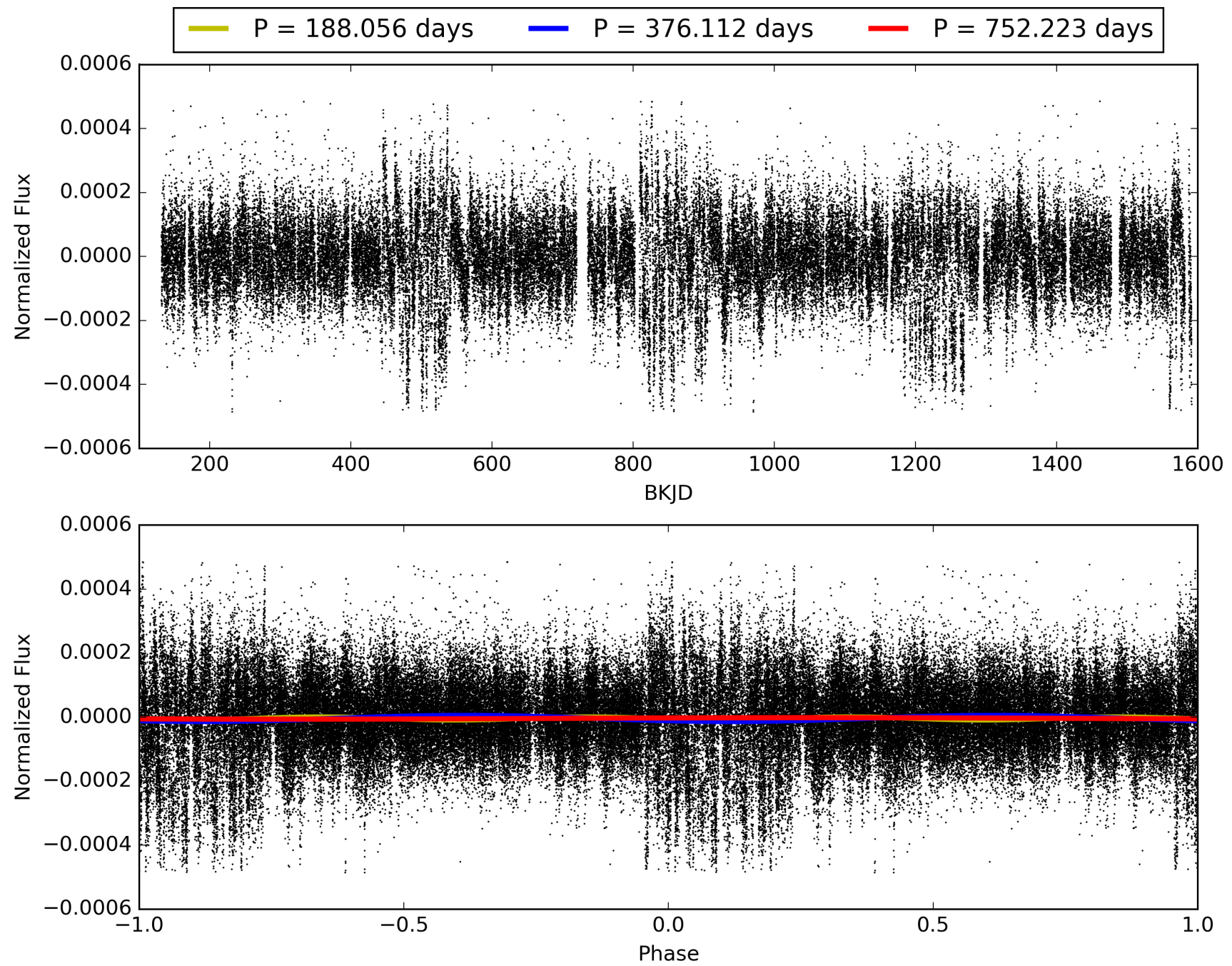
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:16:41 Z

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

TCE 002983219-05, PDC Light Curves

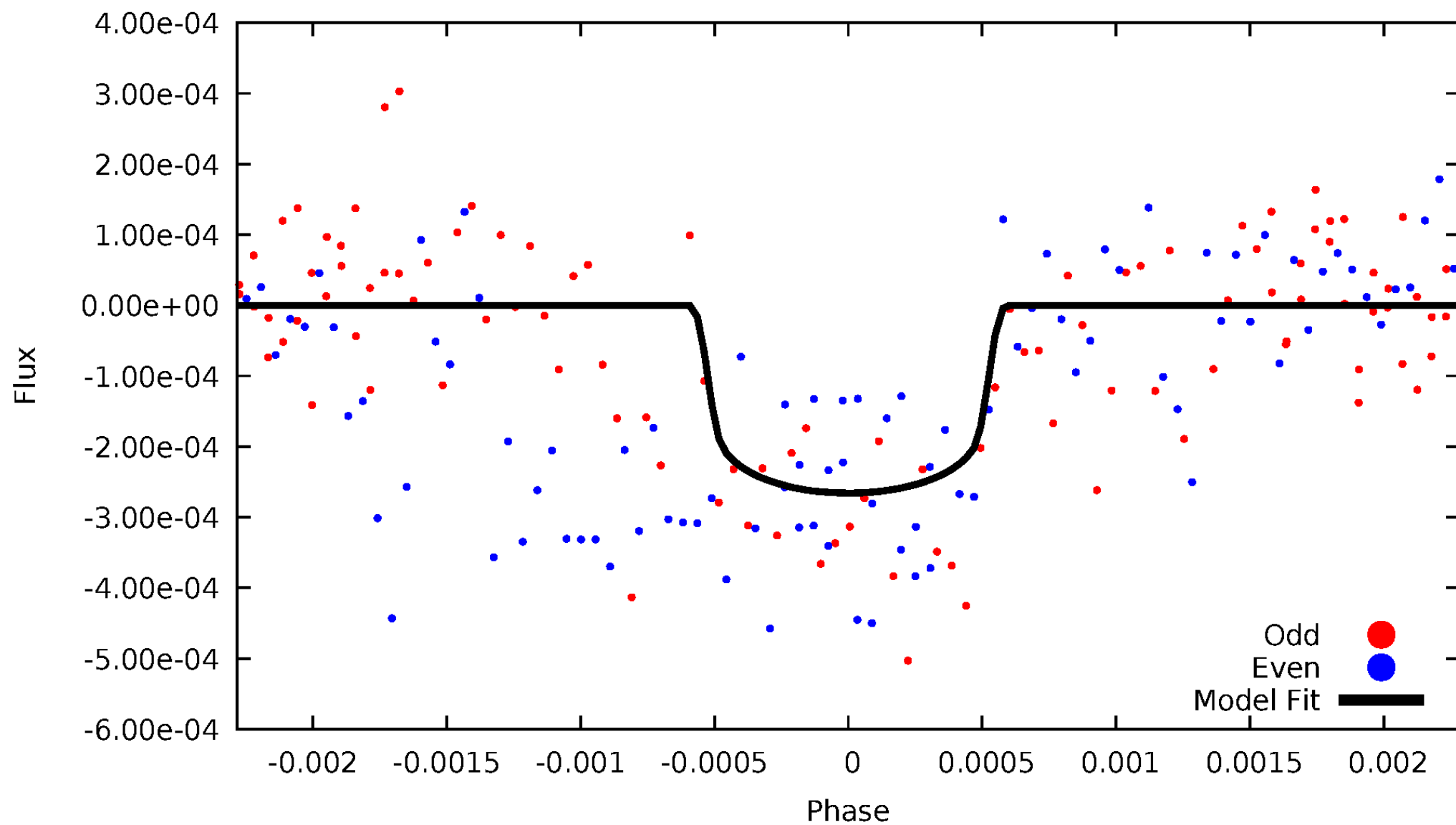


TCE 002983219-05



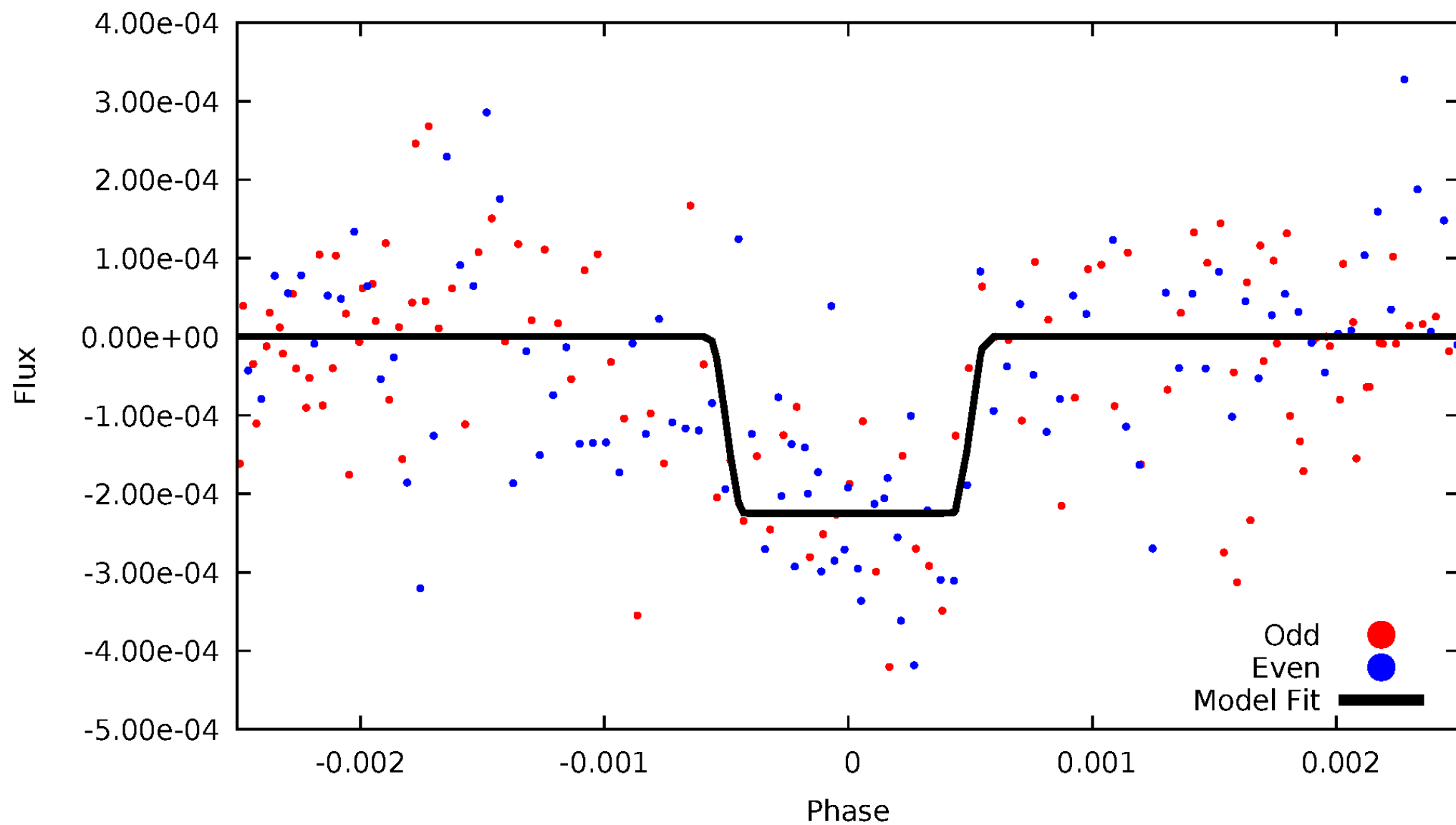
DV Odd/Even

TCE 002983219-05



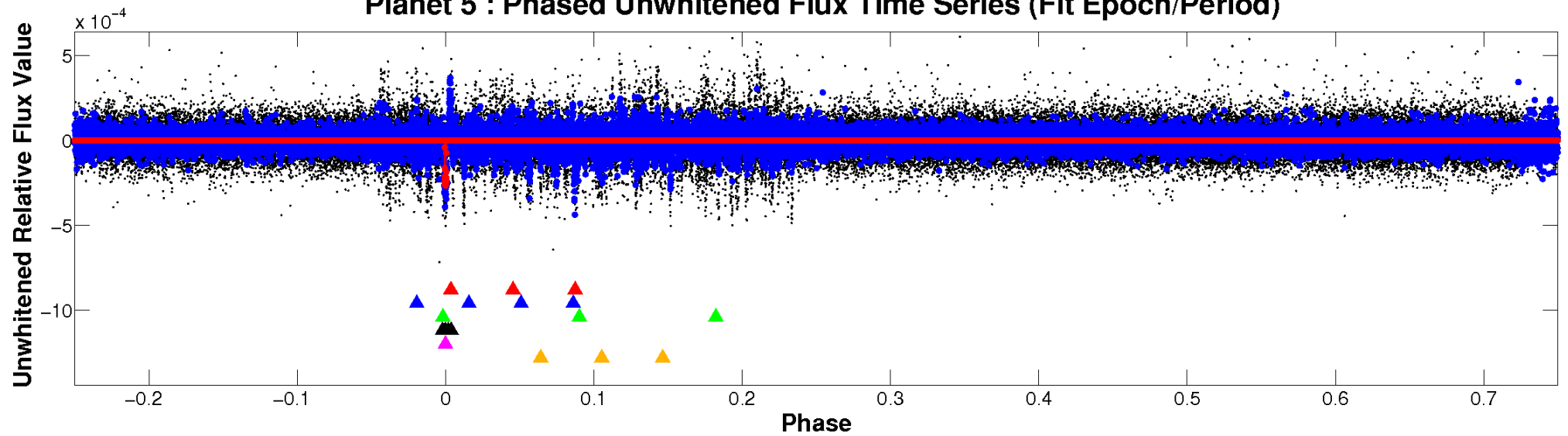
ALT Odd/Even

TCE 002983219-05

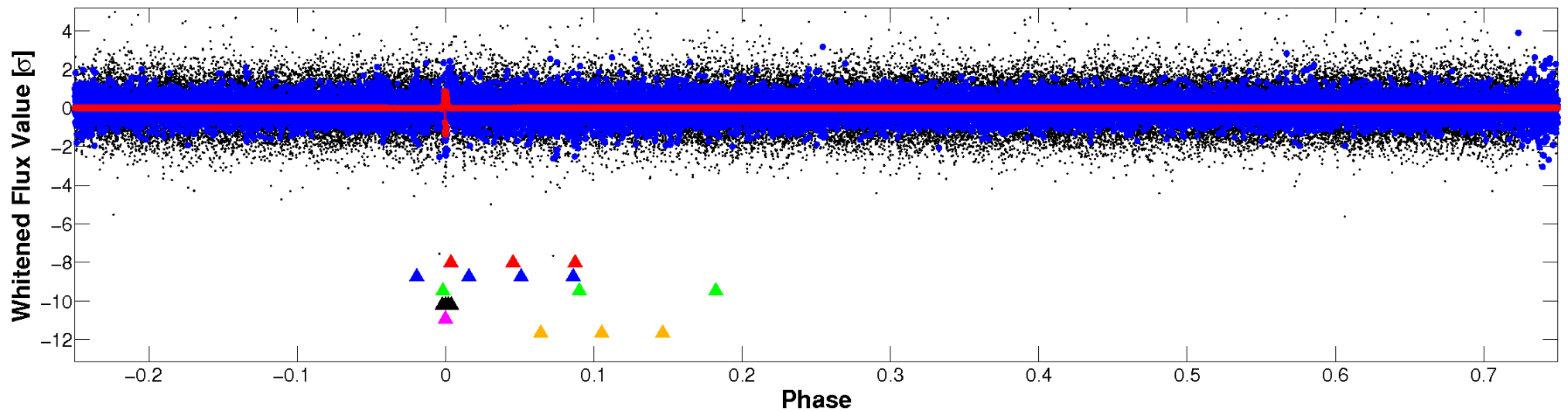


Non-Whitened Vs. Whitened Light Curve

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

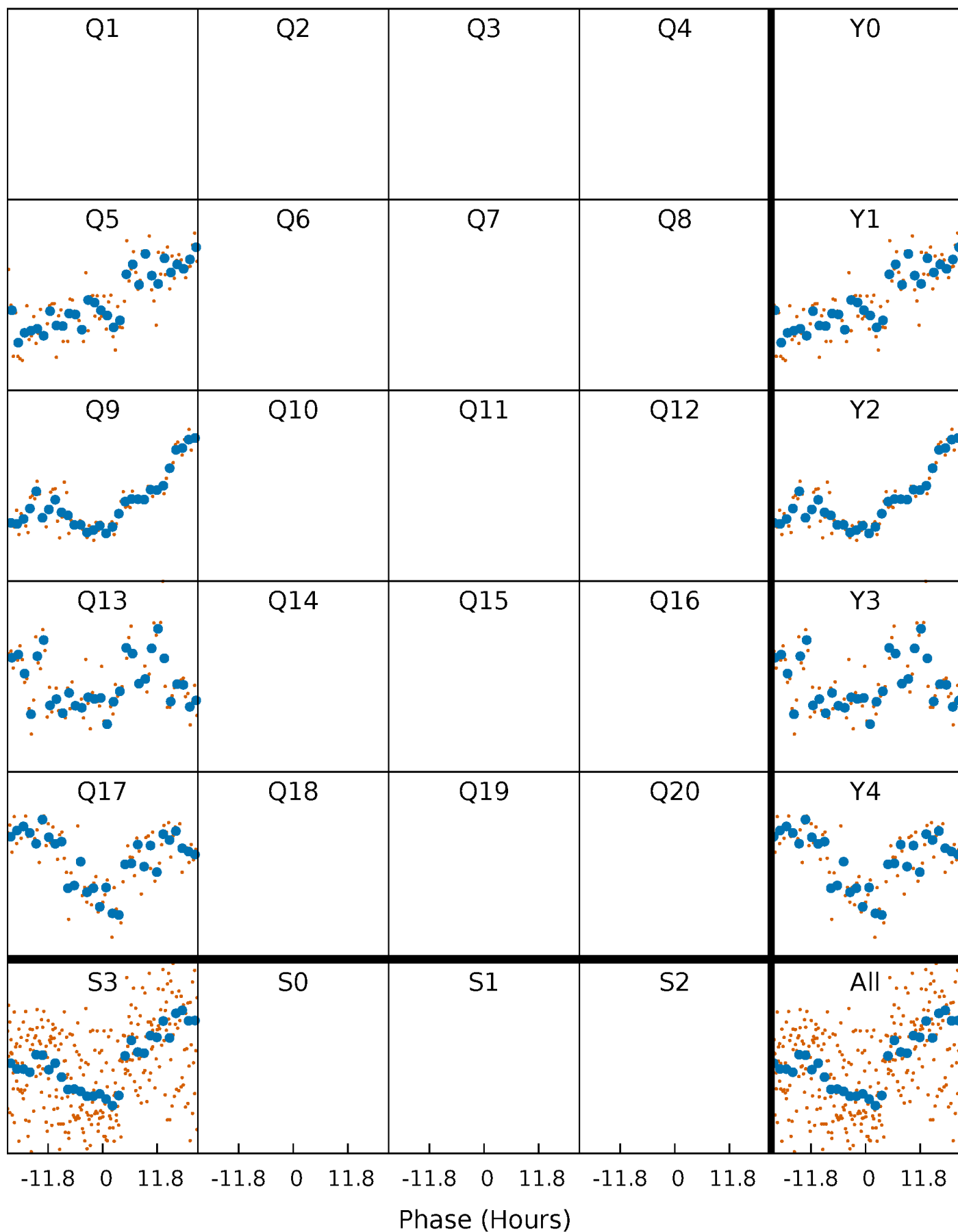


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



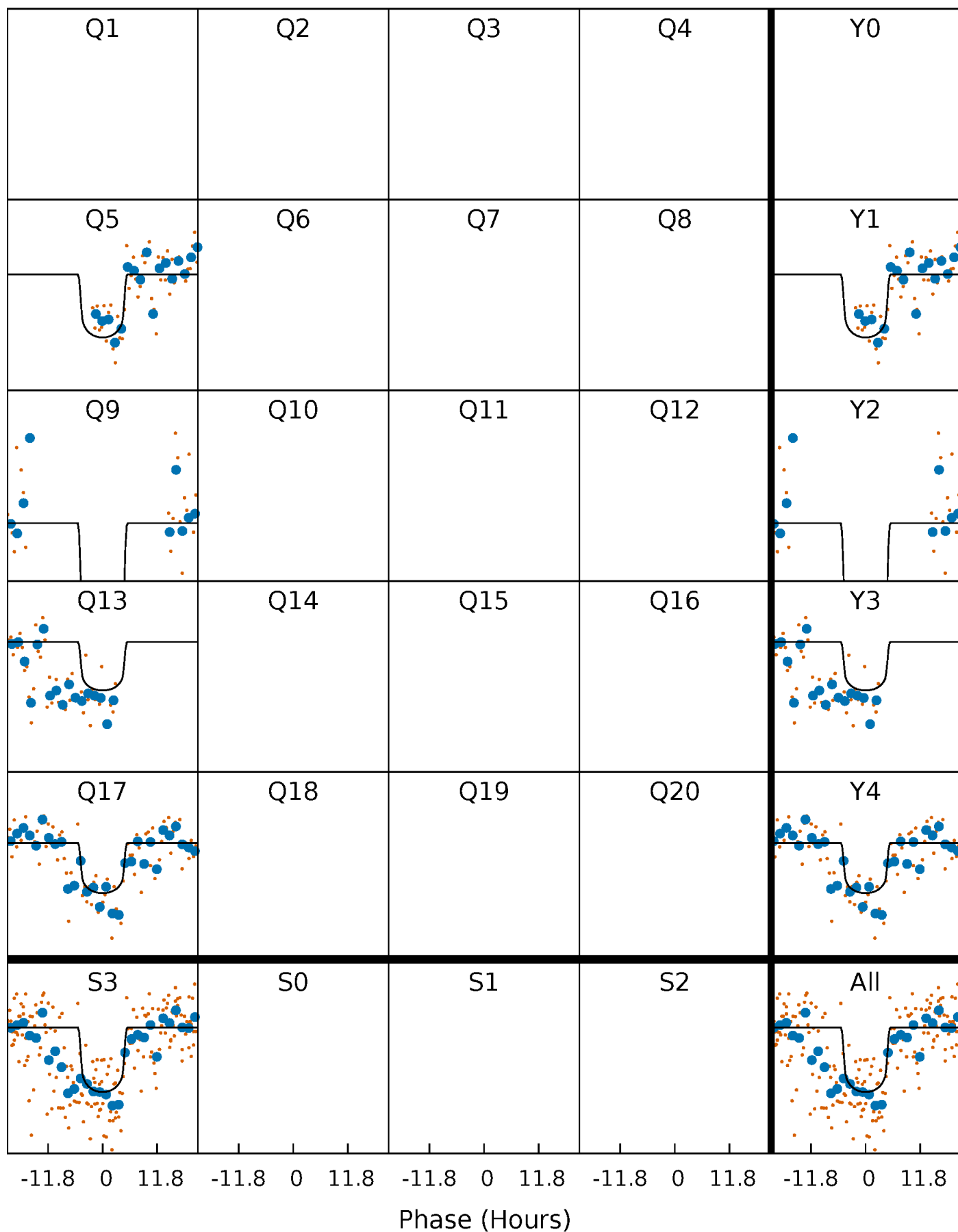
PDC Quarter-Phased Transit Curves

TCE 002983219-05 $P=376.111523$ Days $T_0=447.543400$ (BKJD)



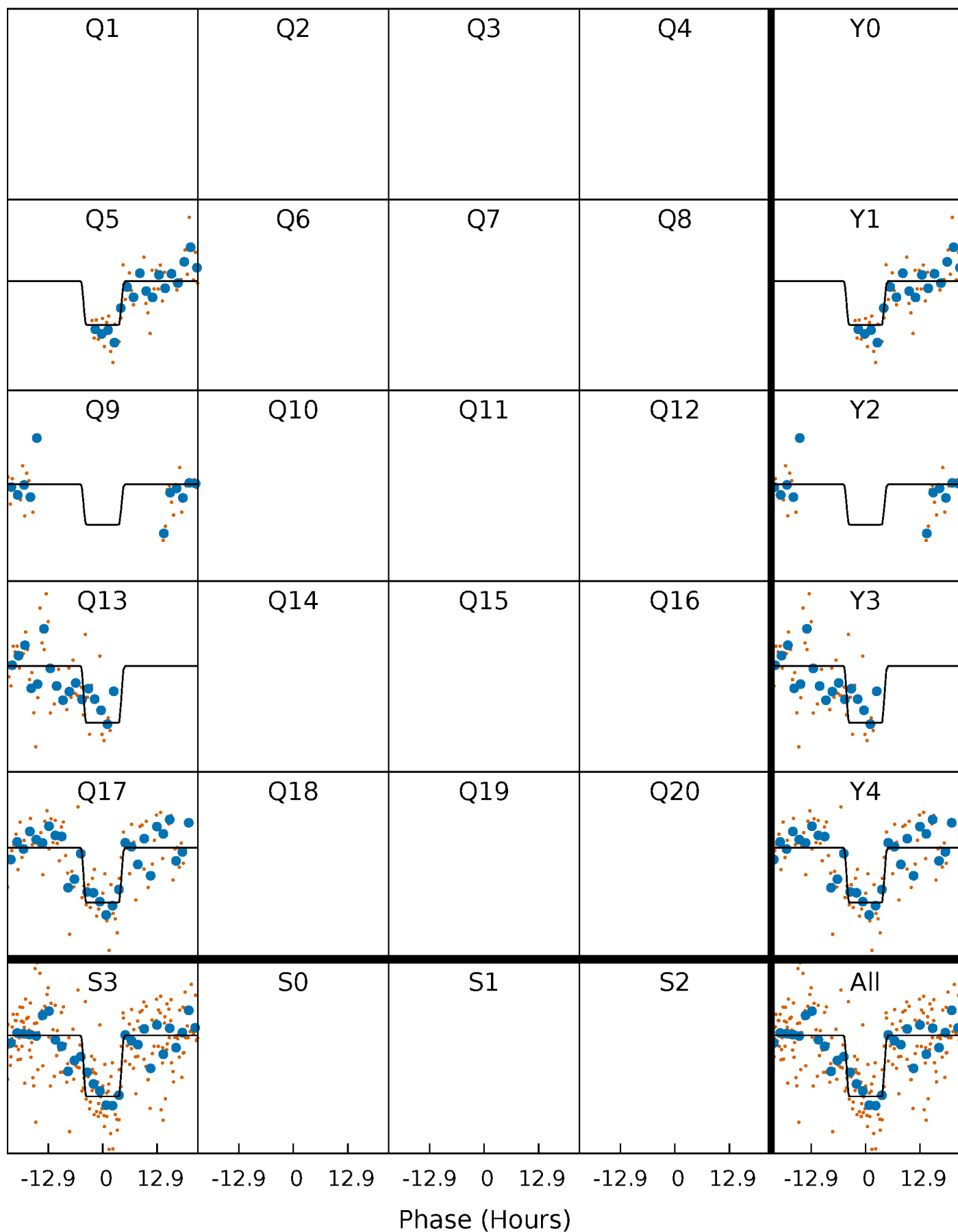
DV Quarter-Phased Transit Curves

TCE 002983219-05 $P=376.111523$ Days $T_0=447.543400$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

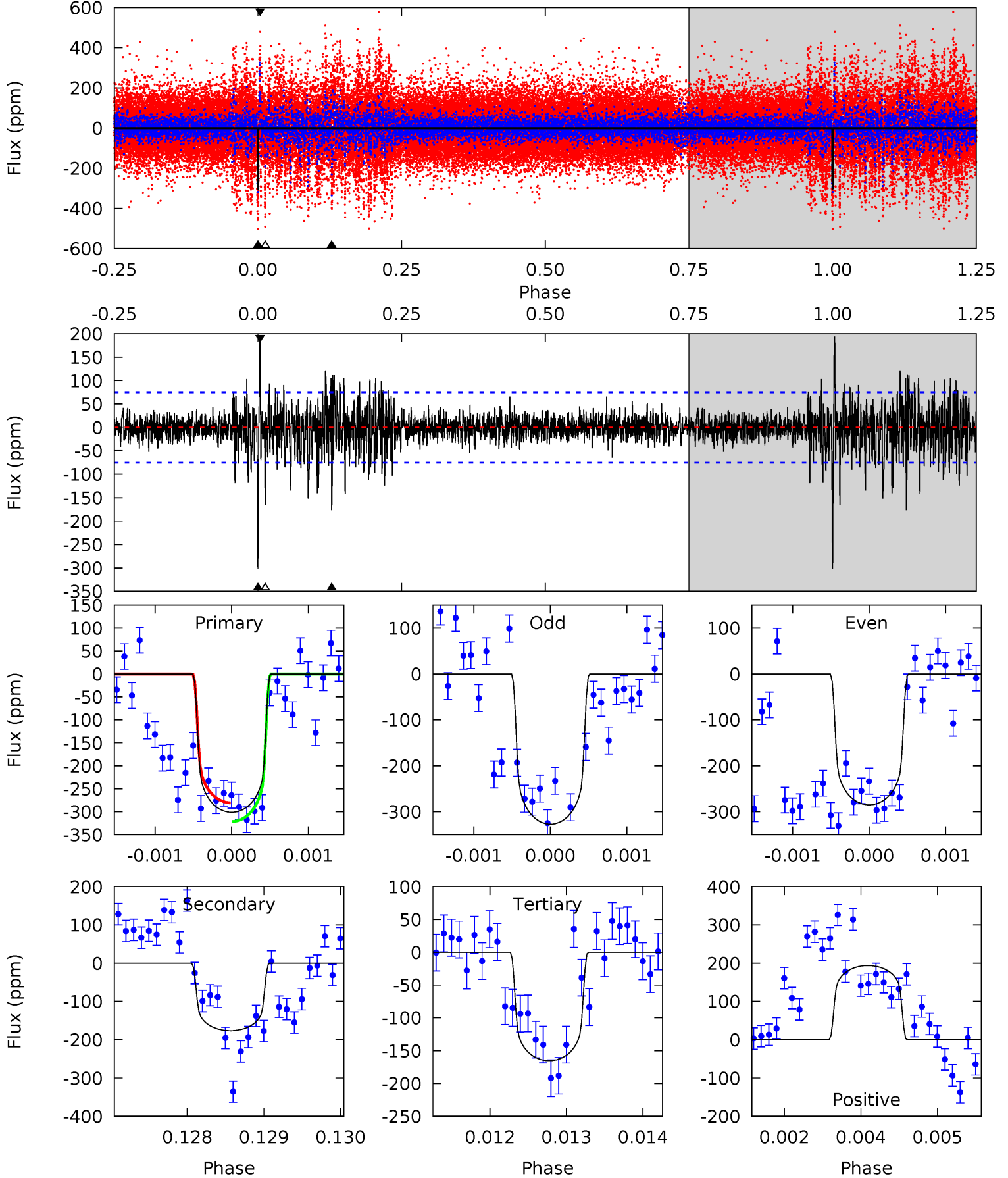
TCE 002983219-05 $P=376.113728$ Days $T_0=447.557397$ (BKJD)



DV Model-Shift Uniqueness Test

002983219-05, P = 376.111523 Days, E = 71.431877 Days

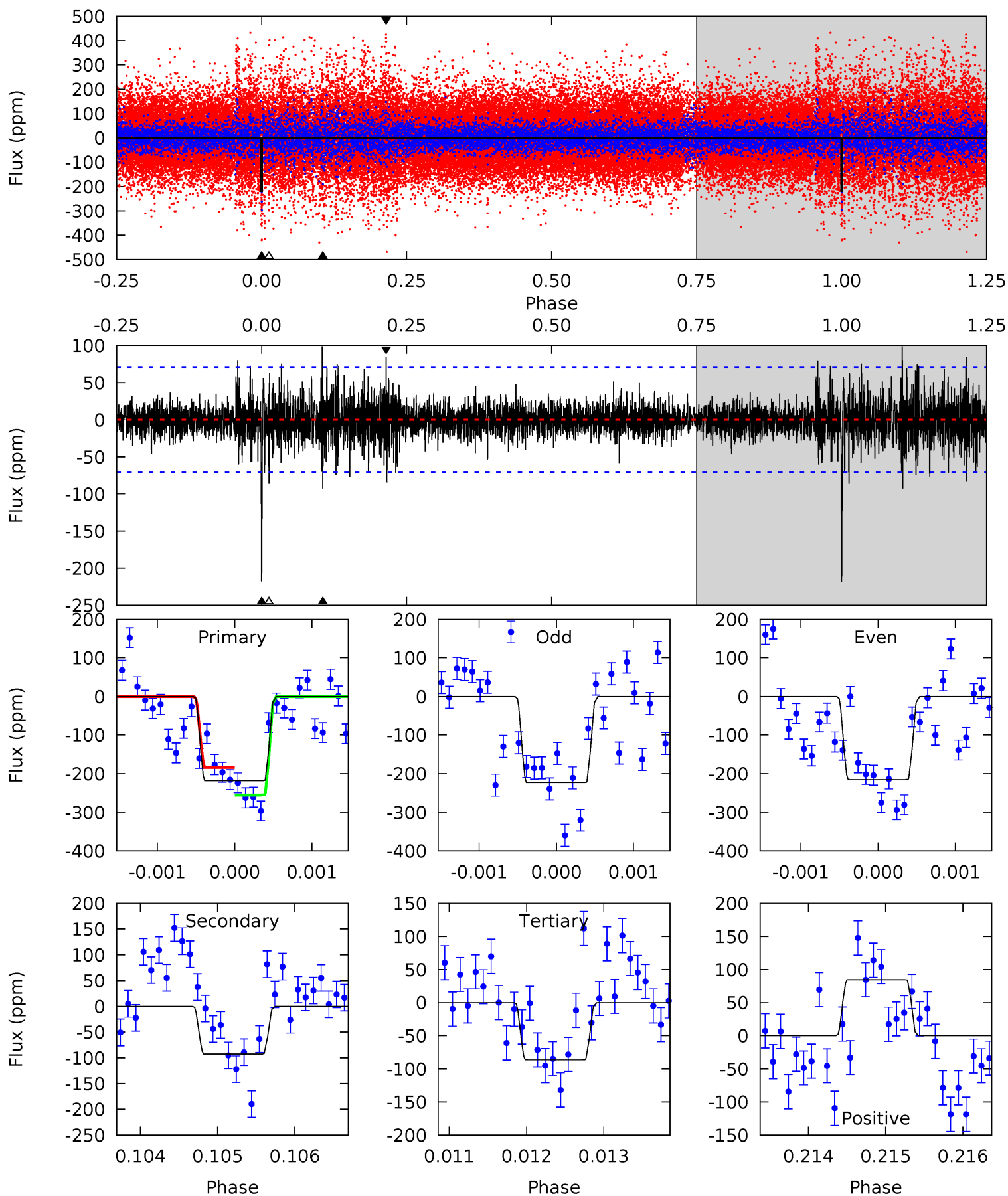
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	12.7	12.0	14.0	5.42	3.25	1.95	9.83	7.77	0.79	-1.26	1.49	0.91	0.39	1.47



Alt Model-Shift Uniqueness Test

002983219-05, $P = 376.113728$ Days, $E = 71.443669$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	7.08	6.59	6.47	5.43	3.26	1.26	10.1	10.2	0.49	0.61	0.29	0.97	0.31	2.71



Stellar Parameters For KIC 002983219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6250^{+75}_{-75}	$4.069^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.673^{+0.300}_{-0.367}$	$1.196^{+0.143}_{-0.096}$	$0.360^{+0.325}_{-0.126}$
	+1%/-1%	+4%/-2%	+inf%/-inf%	+18%/-22%	+12%/-8%	+90%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002983219-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-176 ± 14	$3.09^{+0.62}_{-0.59}$	475^{+21}_{-27}	5475^{+502}_{-361}	11995^{+6683}_{-3822}
Alt.	-93 ± 13	$2.71^{+0.62}_{-0.57}$	478^{+20}_{-28}	5078^{+504}_{-363}	8230^{+5299}_{-2905}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

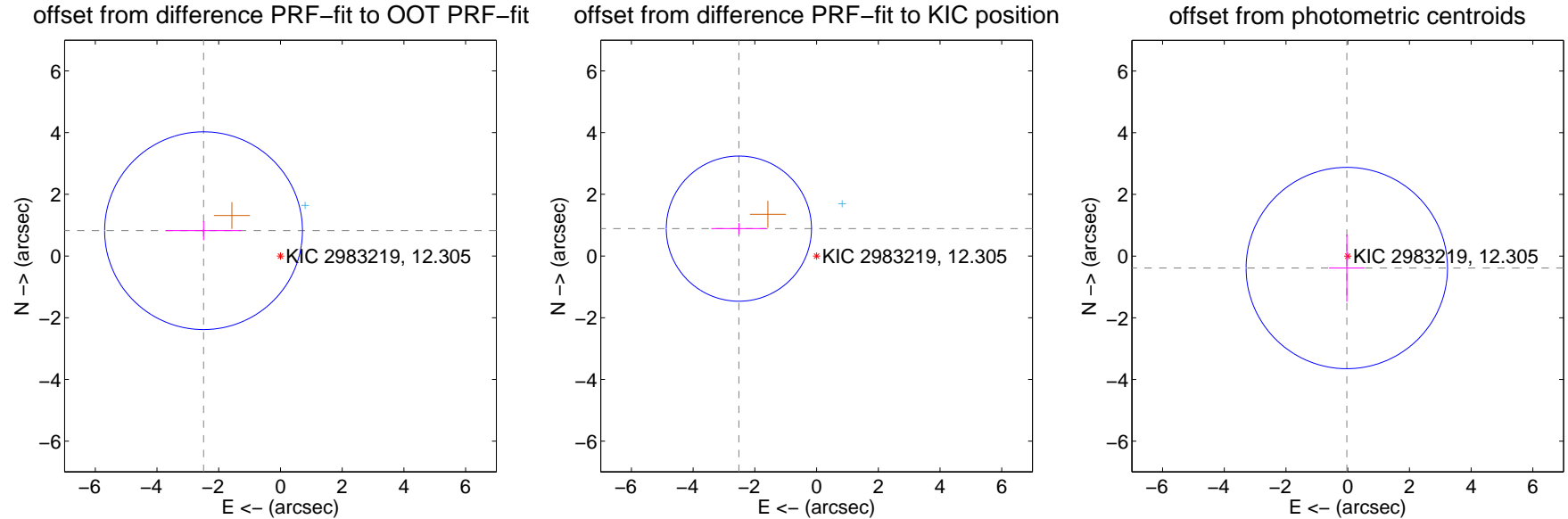
DV Centroid Data

Supplemental centroid analysis for 002983219-05. Kepler magnitude: 12.30. Transit SNR 8.83

There are 1 quarters with good PRF difference image offsets

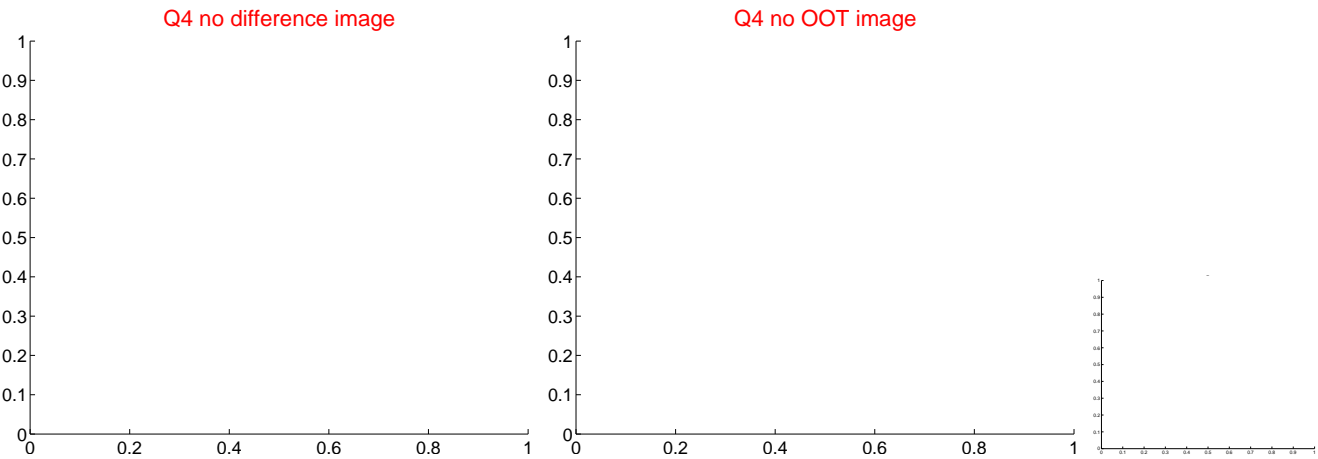
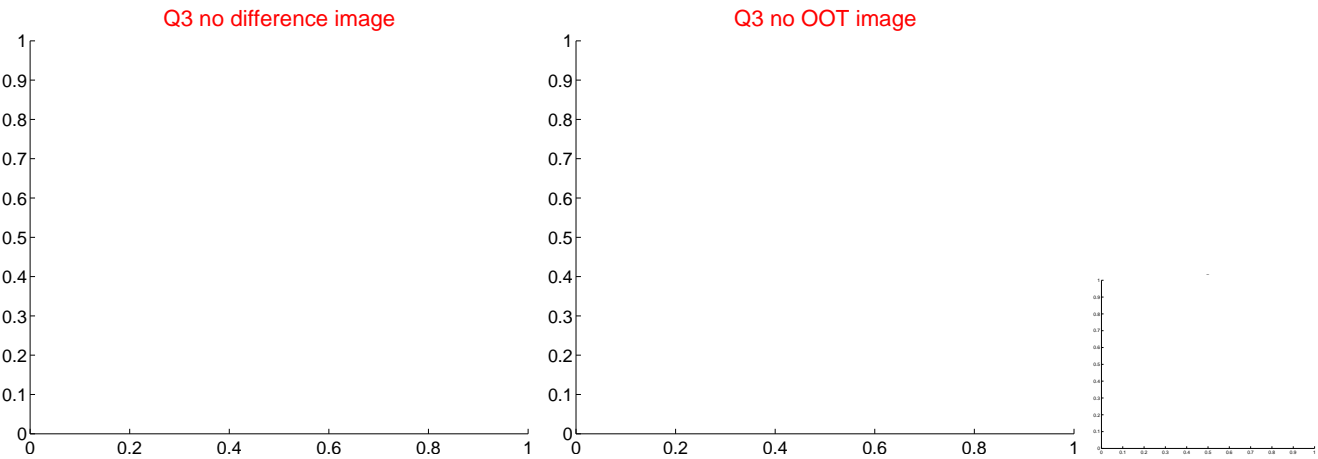
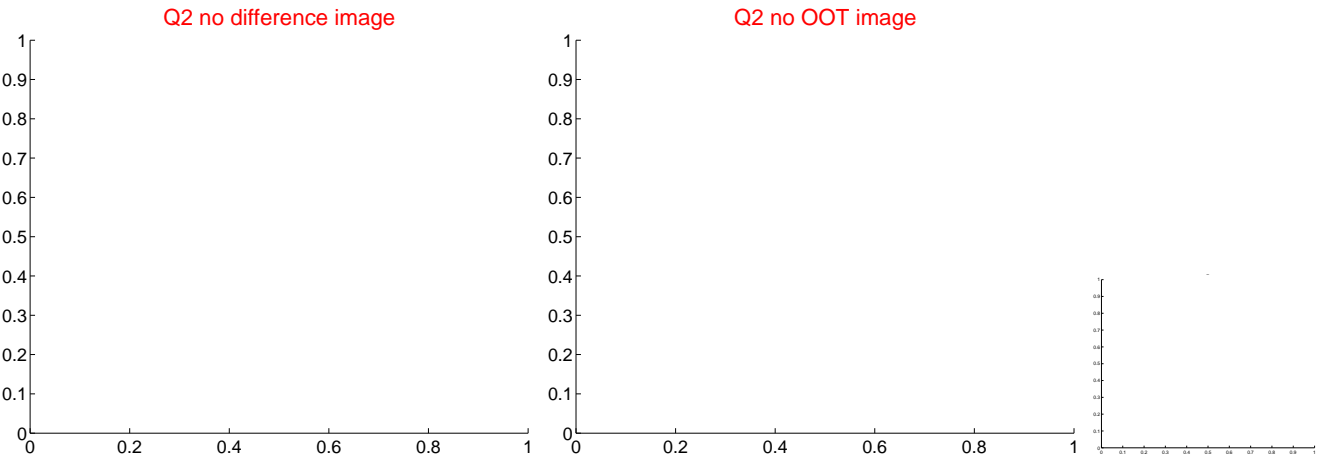
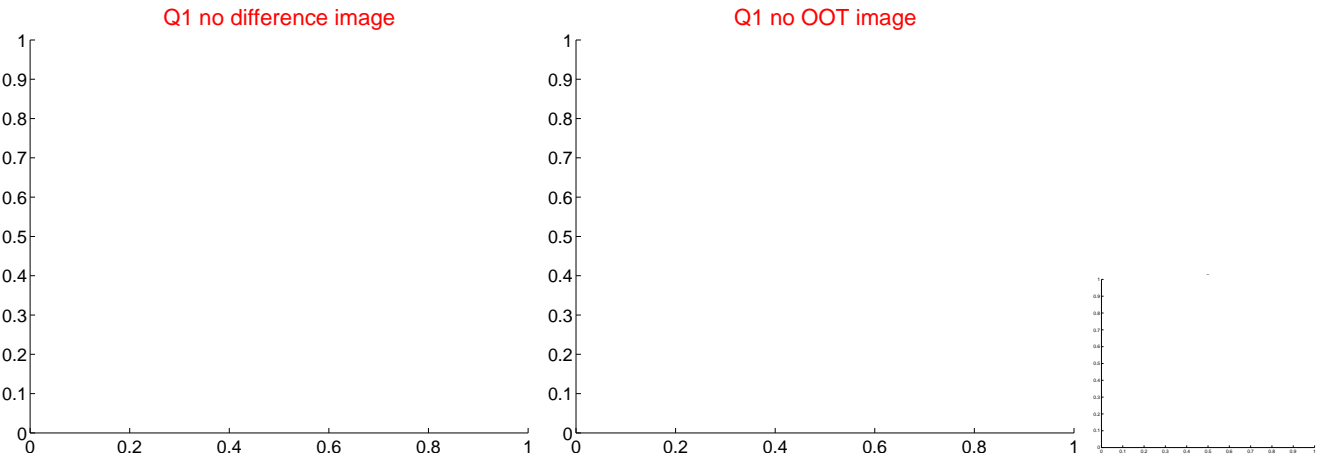
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.624 ± 1.068	2.46	2.493 ± 1.222	0.821 ± 0.308
PRF-fit source offset from KIC position	2.670 ± 0.784	3.40	2.518 ± 0.889	0.888 ± 0.182
photometric centroid source offset	0.39 ± 1.09	0.36	0.03 ± 0.58	-0.39 ± 1.09

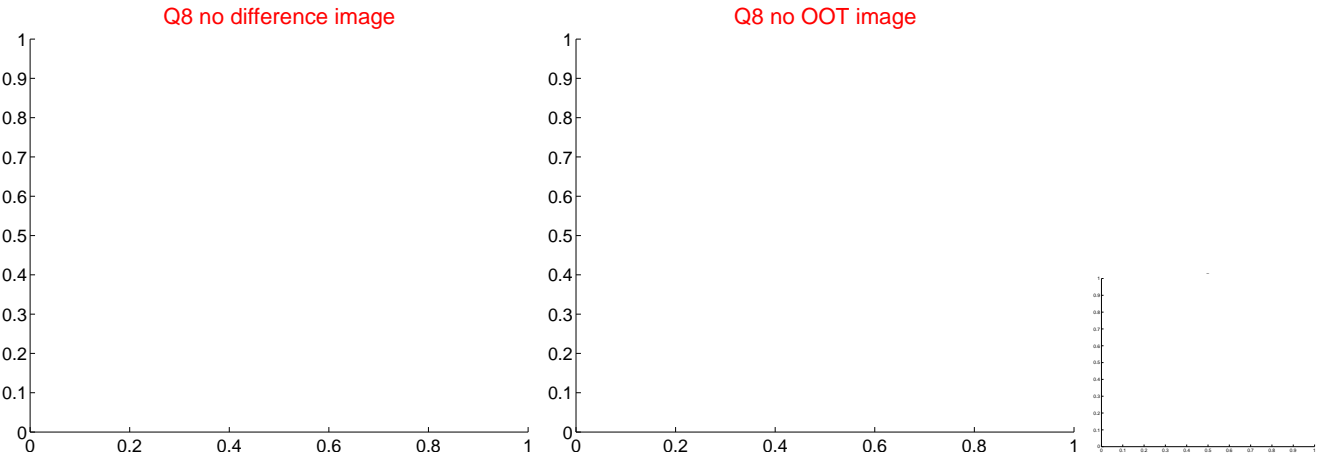
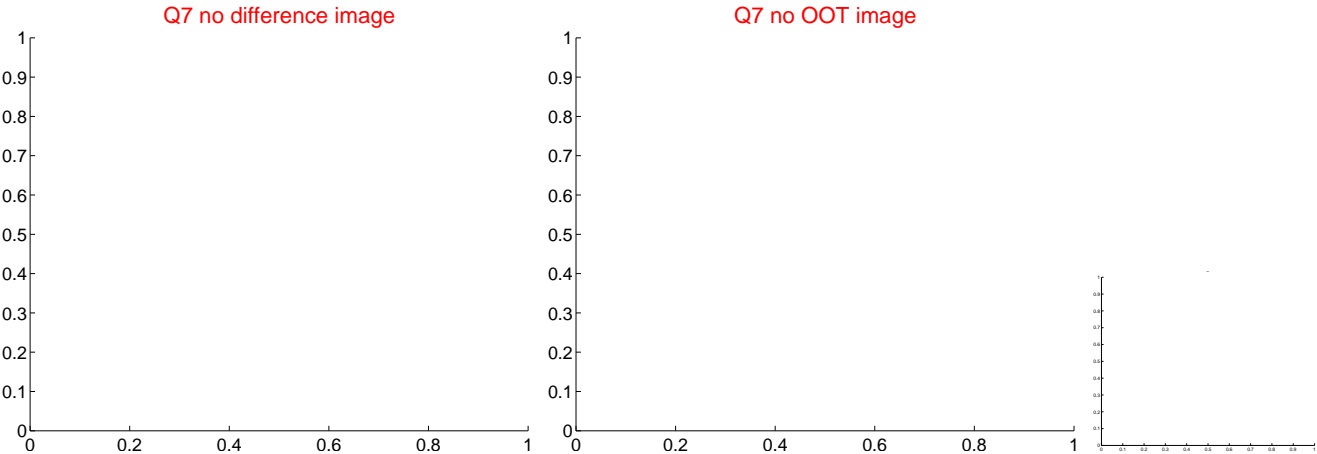
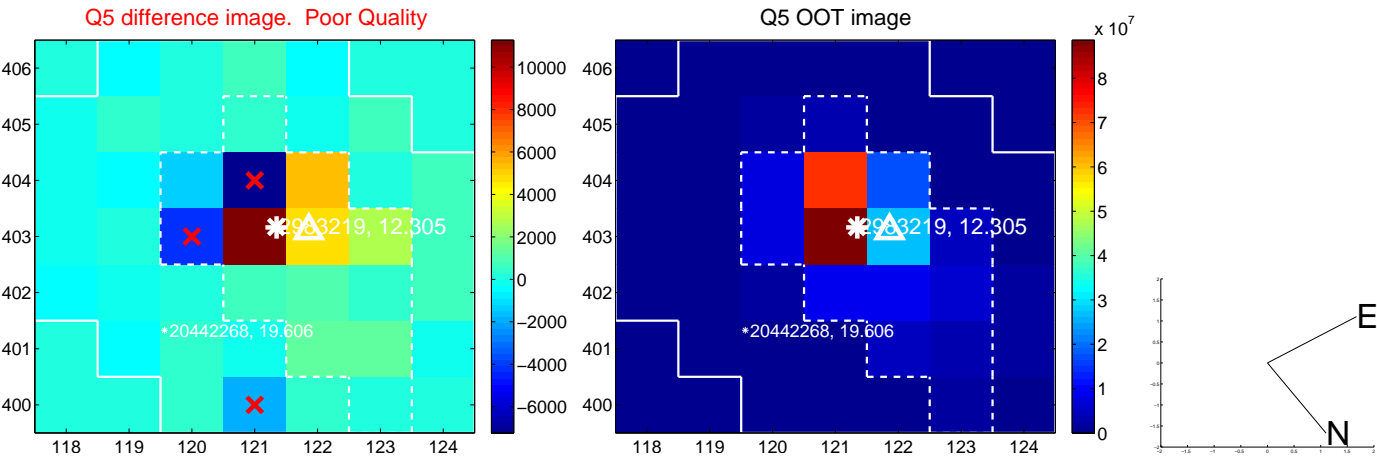


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

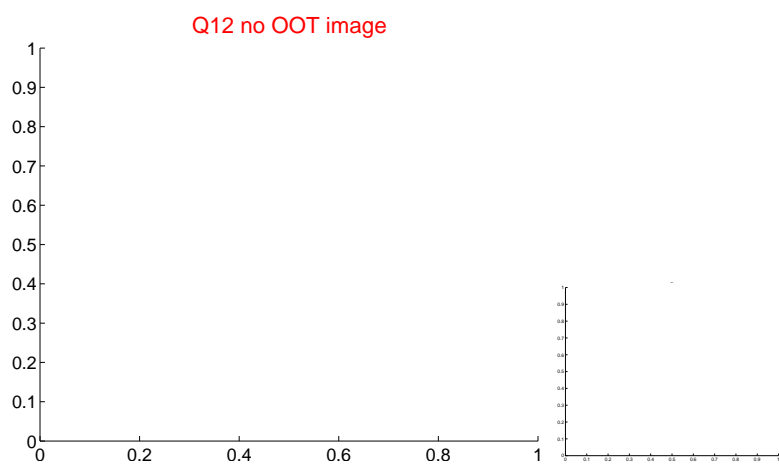
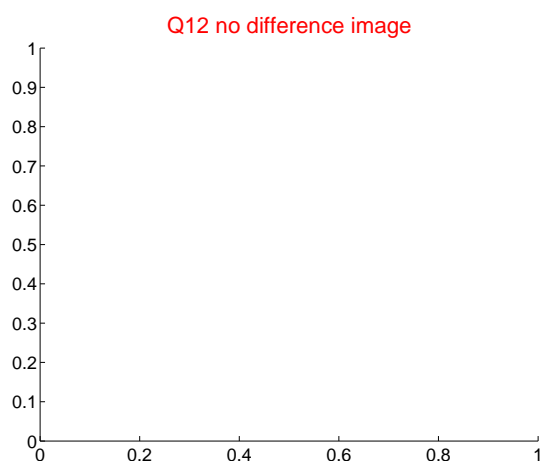
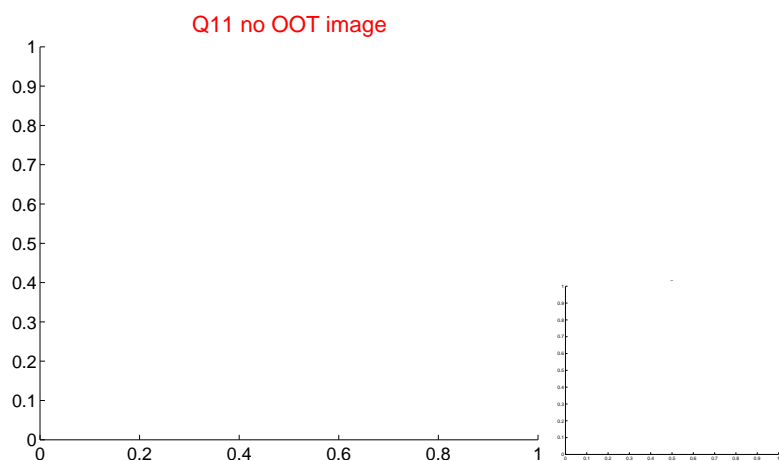
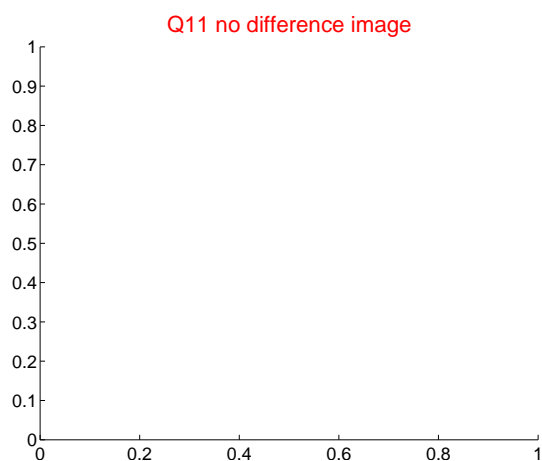
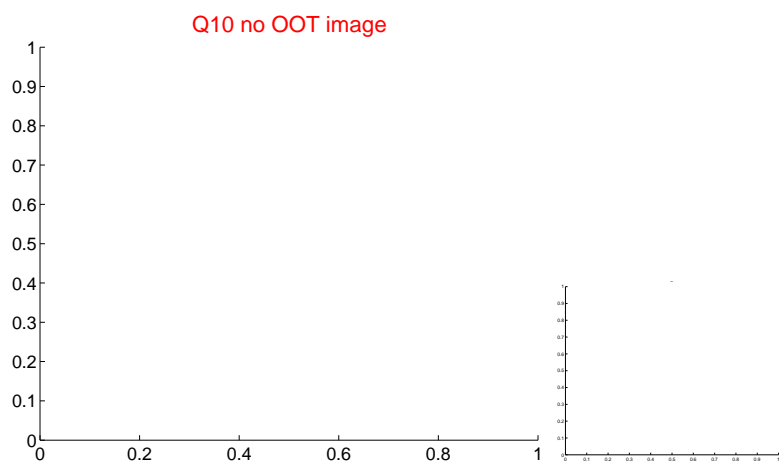
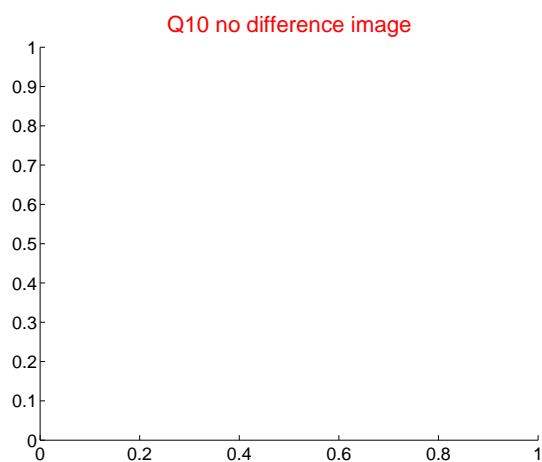
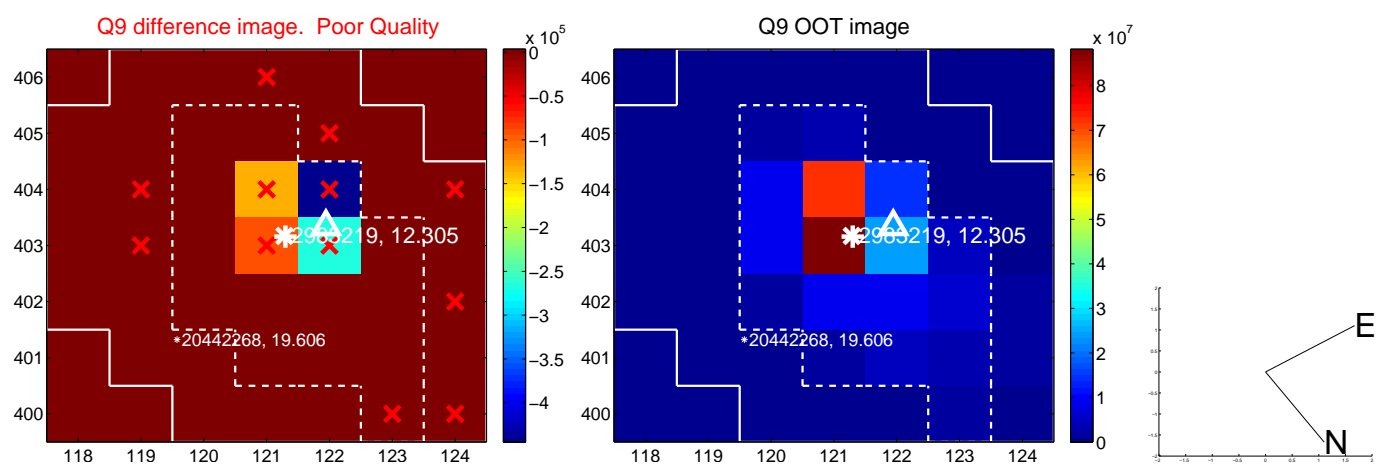
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



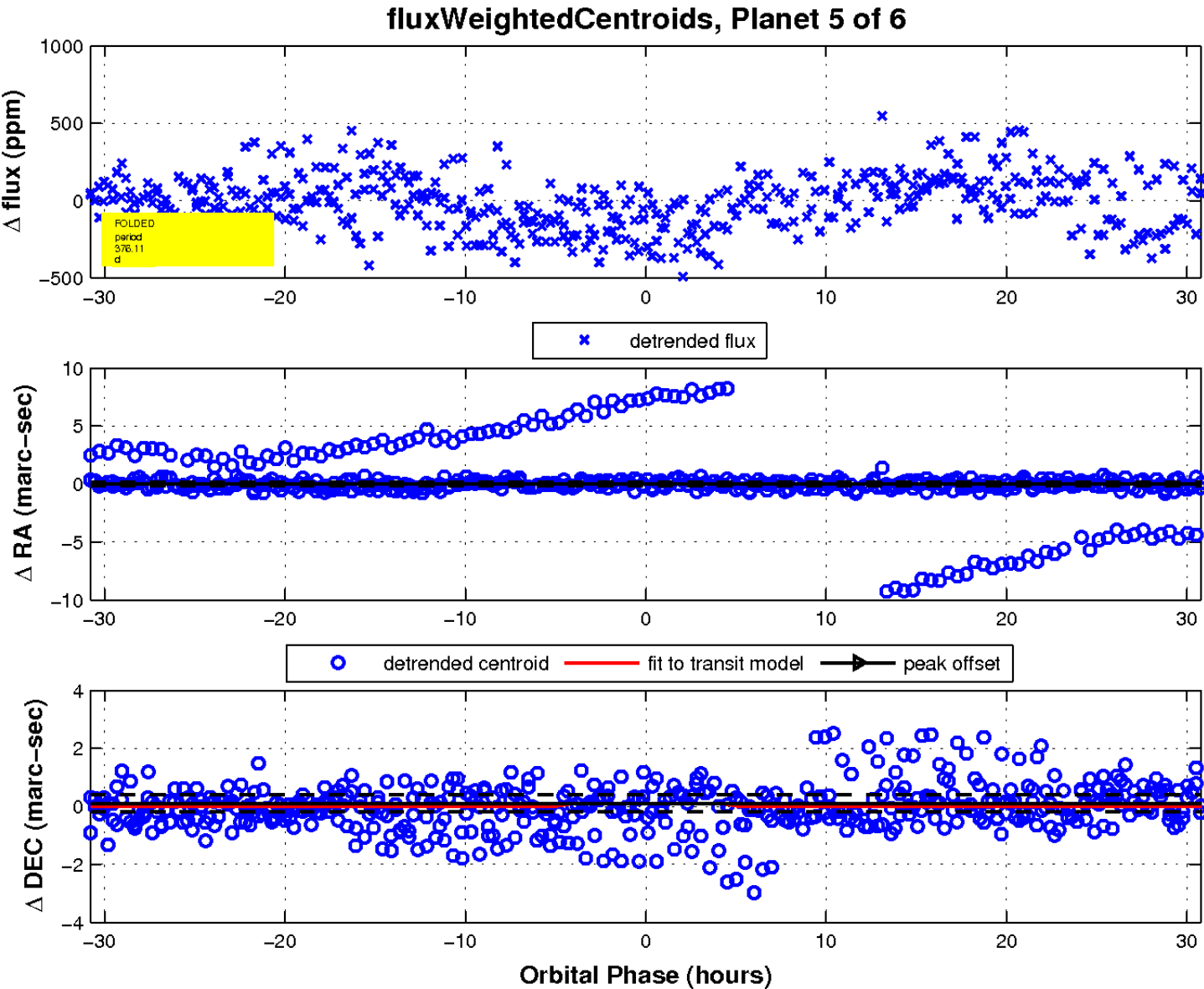
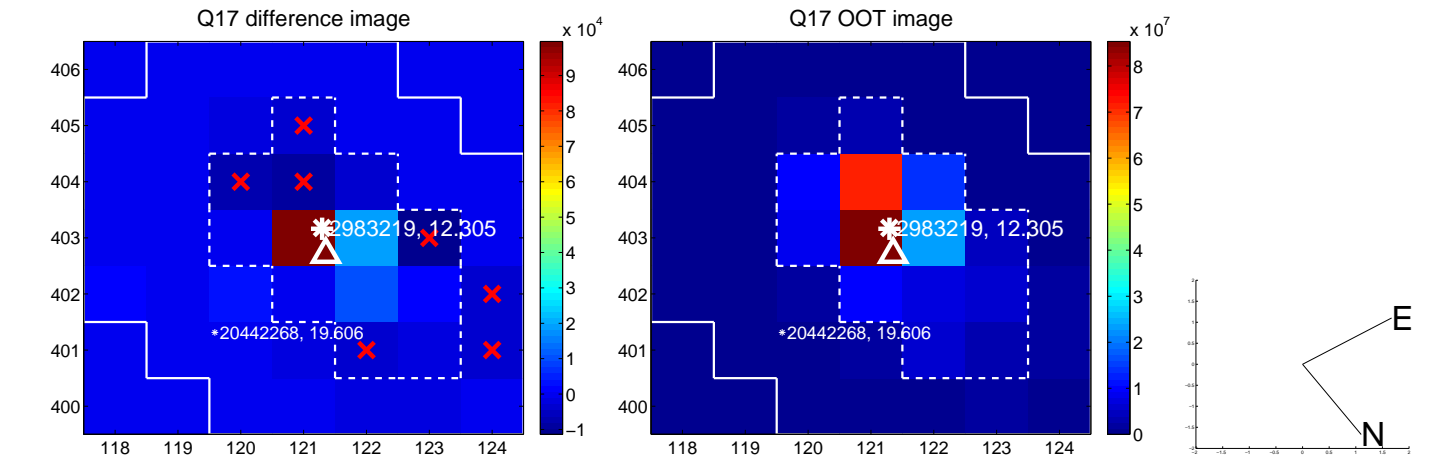
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

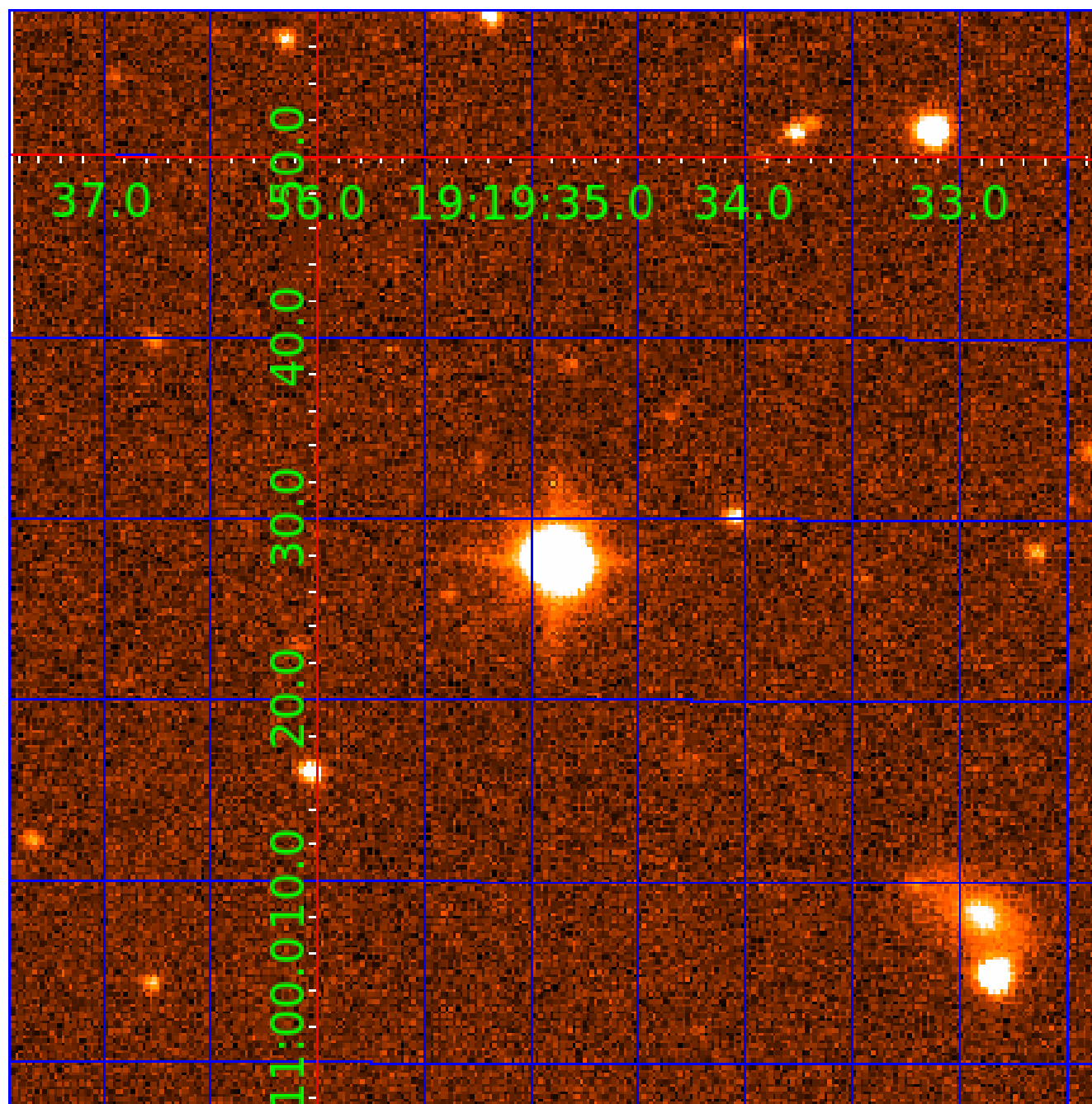


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002983219

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})
002983219-01	OBS	No	391.866426	448.919213	289.3	6.127	7.6	8.2	1.67	6250	3.25	3.09
002983219-02	OBS	No	362.884065	479.940574	245.6	6.205	7.8	8.0	1.67	6250	2.82	3.42
002983219-03	OBS	No	410.714058	446.889167	260.0	8.656	8.1	8.1	1.67	6250	2.94	2.90
002983219-04	OBS	No	376.854959	446.779960	275.5	9.469	7.5	7.9	1.67	6250	3.14	3.25
002983219-05	OBS	No	376.111523	447.543400	265.8	10.305	9.1	8.8	1.67	6250	3.16	3.26
002983219-06	OBS	No	391.575969	471.703477	247.8	9.355	7.4	7.6	1.67	6250	2.91	3.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002983219-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002983219-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
002983219-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002983219-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002983219-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

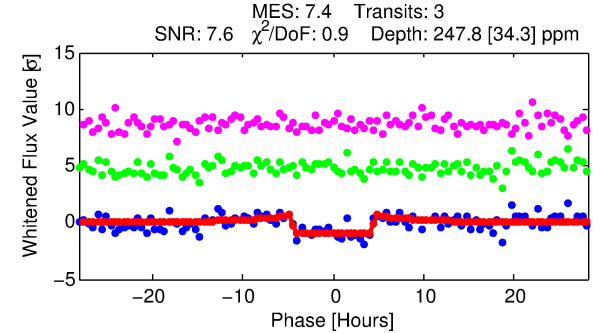
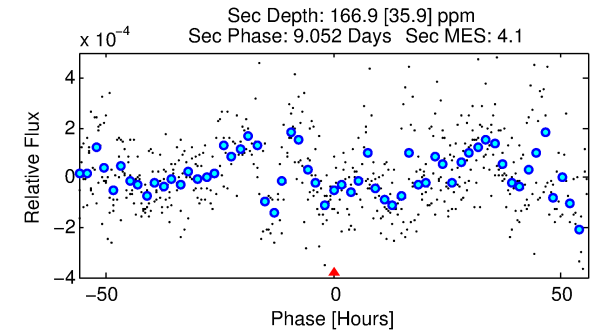
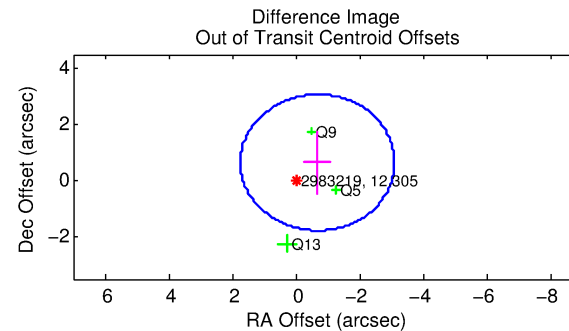
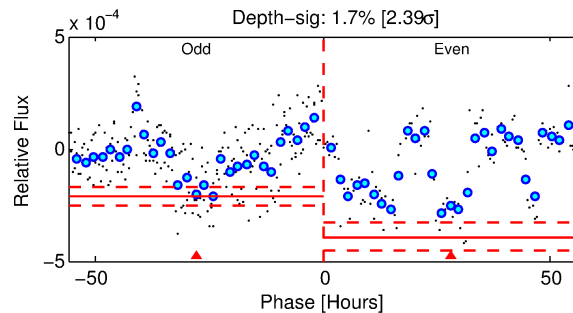
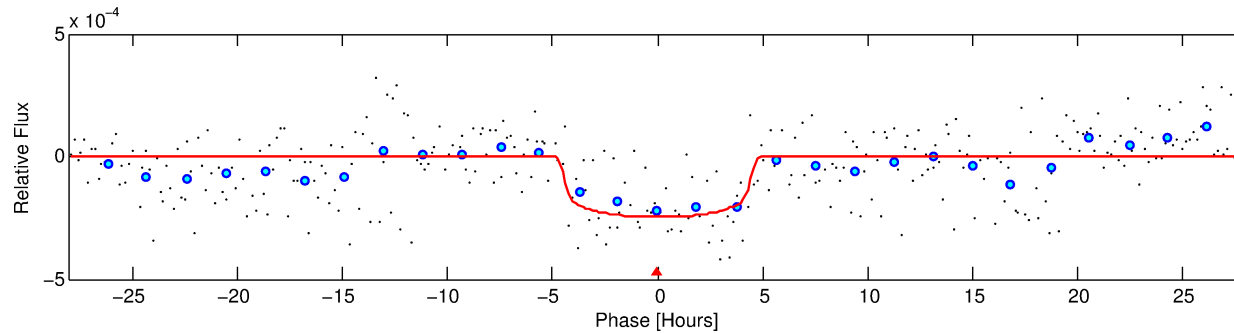
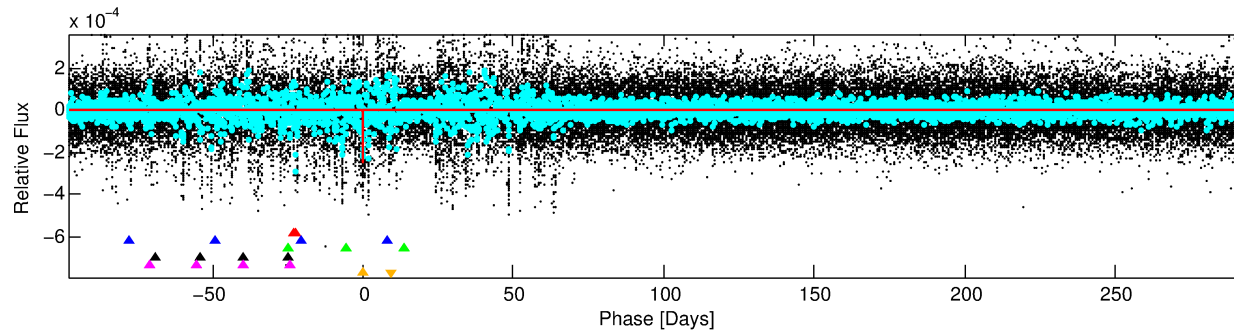
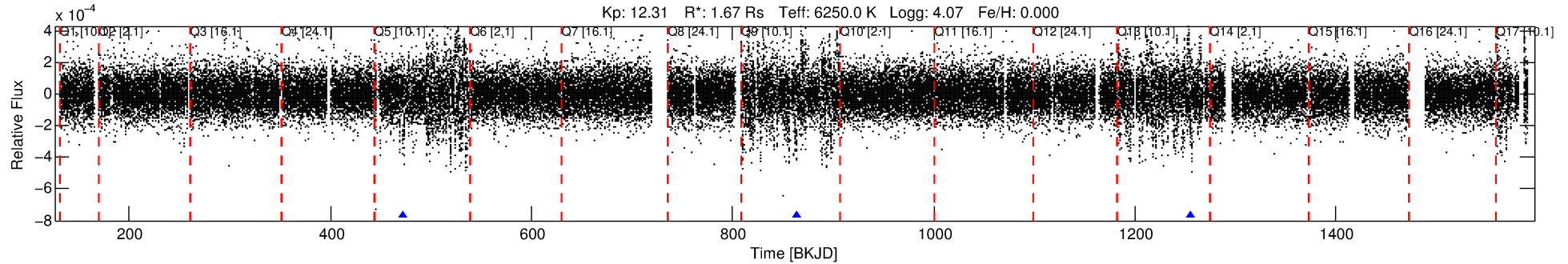
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002983219-06

No Significant Match Found

DV One-Page Summary

KIC: 2983219 Candidate: 6 of 6 Period: 391.576 d



DV Fit Results:

Period = 391.57597 [0.00820] d
Epoch = 471.7035 [0.0102] BKJD
Rp/R* = 0.0159 [0.0049]
a/R* = 201.23 [310.22]
b = 0.80 [0.71]
Seff = 3.09 [0.99]
Teq = 338 [27] K
Rp = 2.91 [1.10] Re
a = 1.1123 [0.2250] AU
Ag = 13419.21 [9745.93] [1.38 σ]
Teffp = 5627 [923] K [5.73 σ]

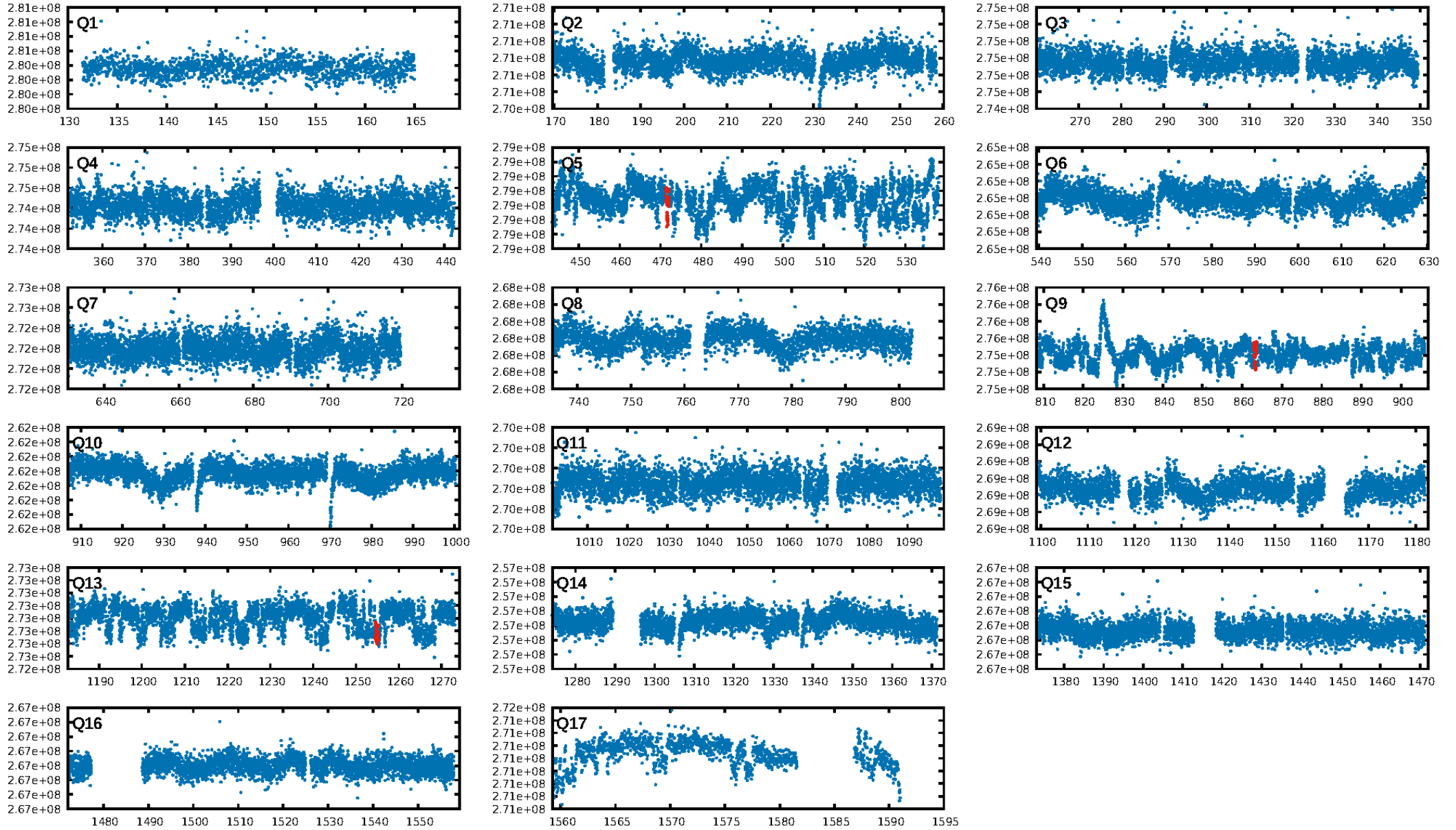
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.54 σ]
LongPeriod-sig: 46.7% [0.62 σ]
ModelChiSquare2-sig: 13.9%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 2.27e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.097
Centroid-sig: 4.6%
Centroid-so: 1.739 arcsec [1.21 σ]
OotOffset-rm: 0.939 arcsec [1.16 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-rm: 0.994 arcsec [1.17 σ]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

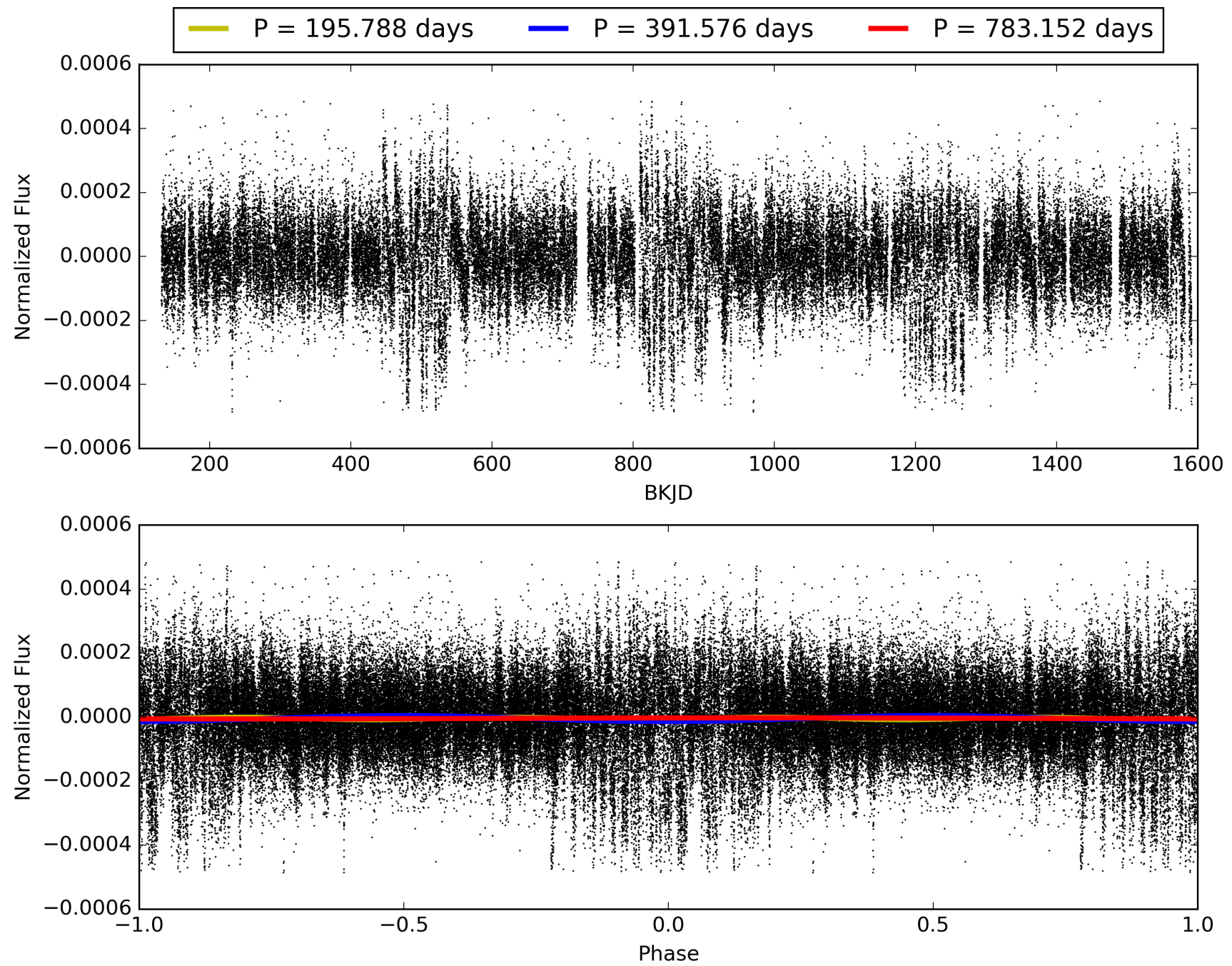
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:16:51 Z

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

TCE 002983219-06, PDC Light Curves

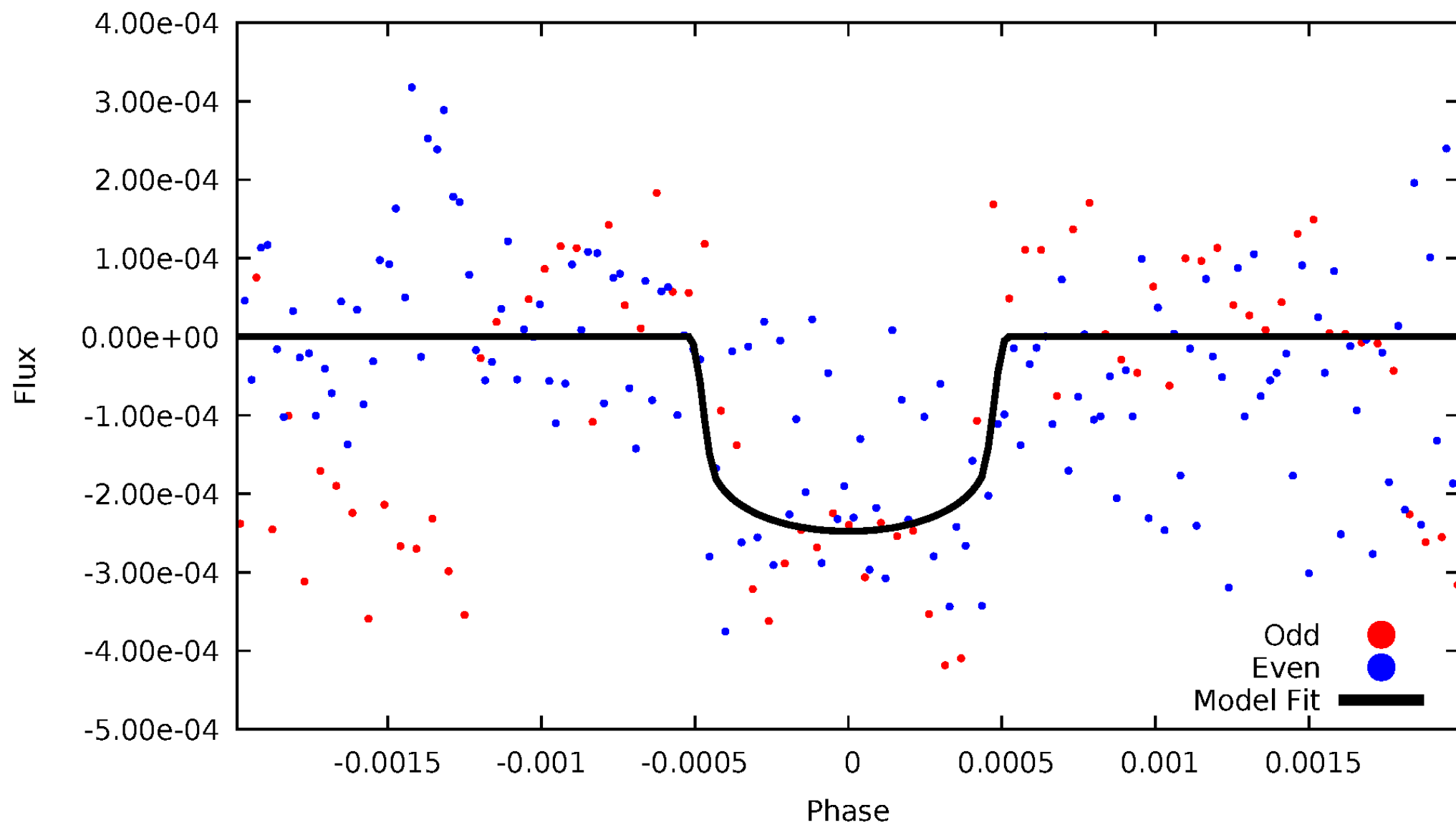


TCE 002983219-06



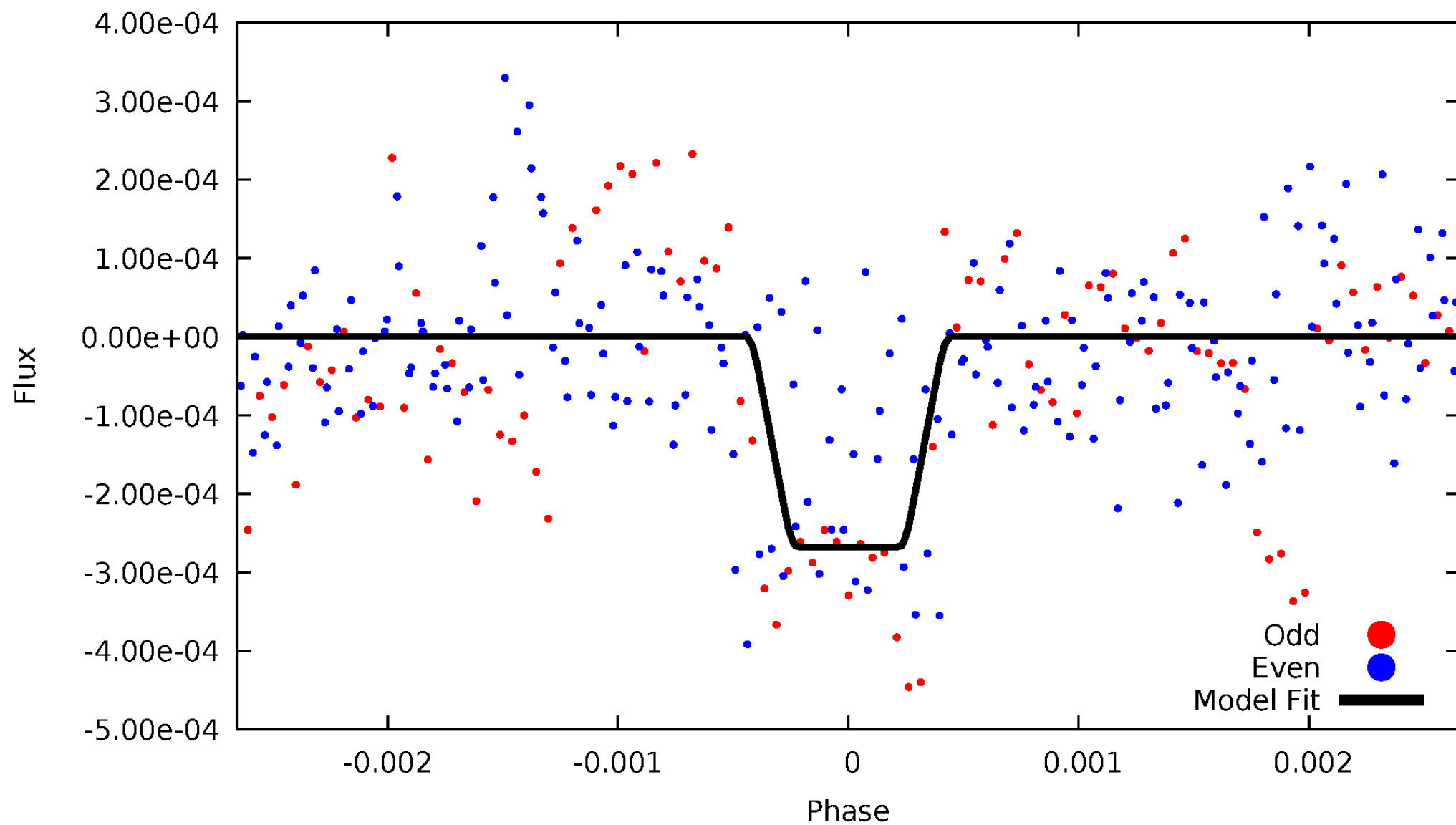
DV Odd/Even

TCE 002983219-06



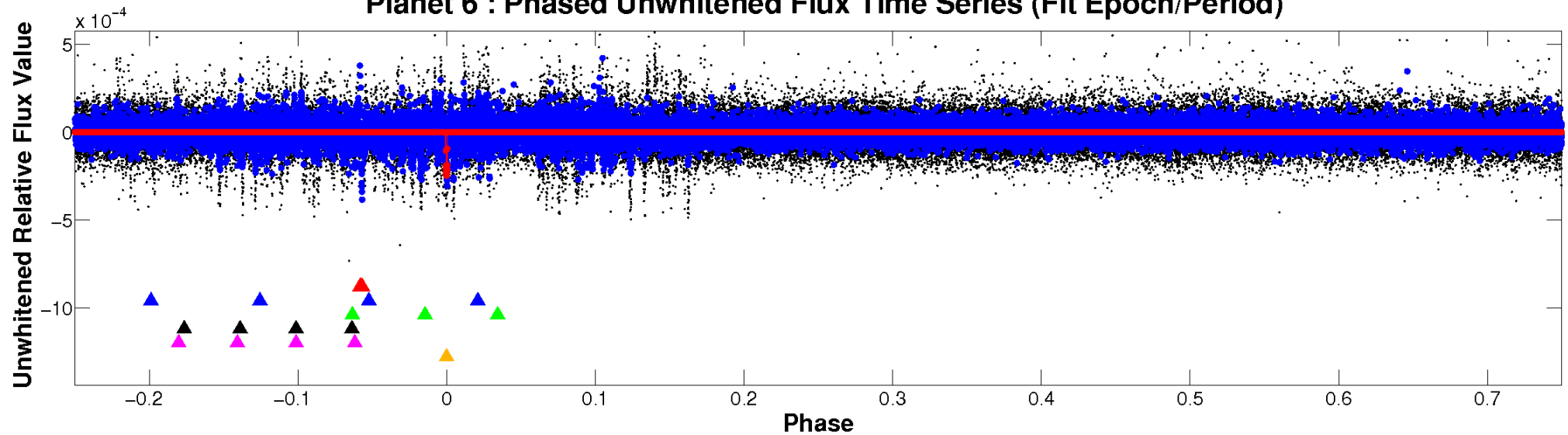
ALT Odd/Even

TCE 002983219-06

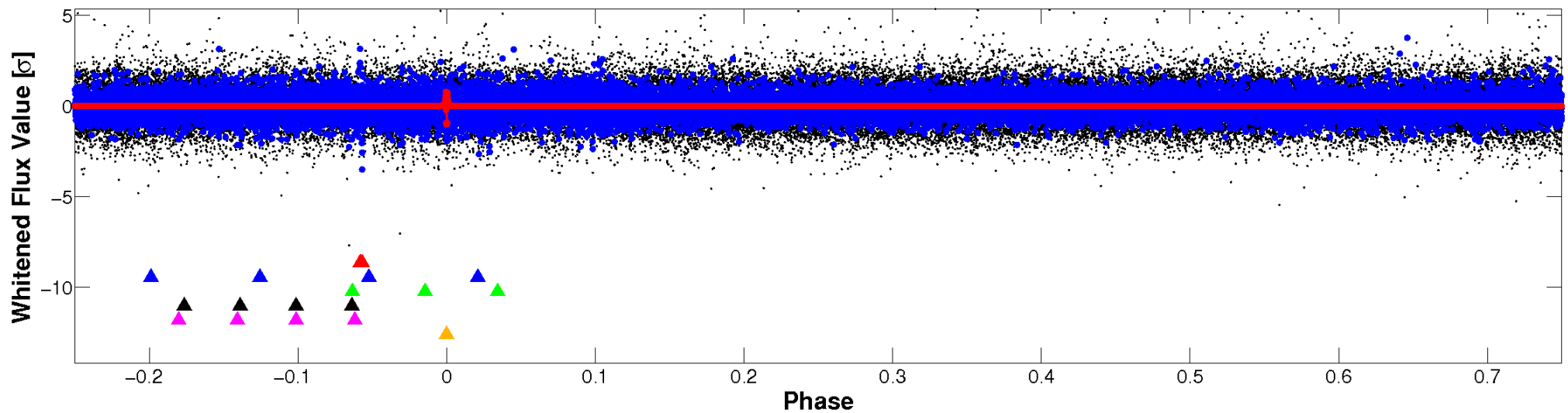


Non-Whitened Vs. Whitened Light Curve

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

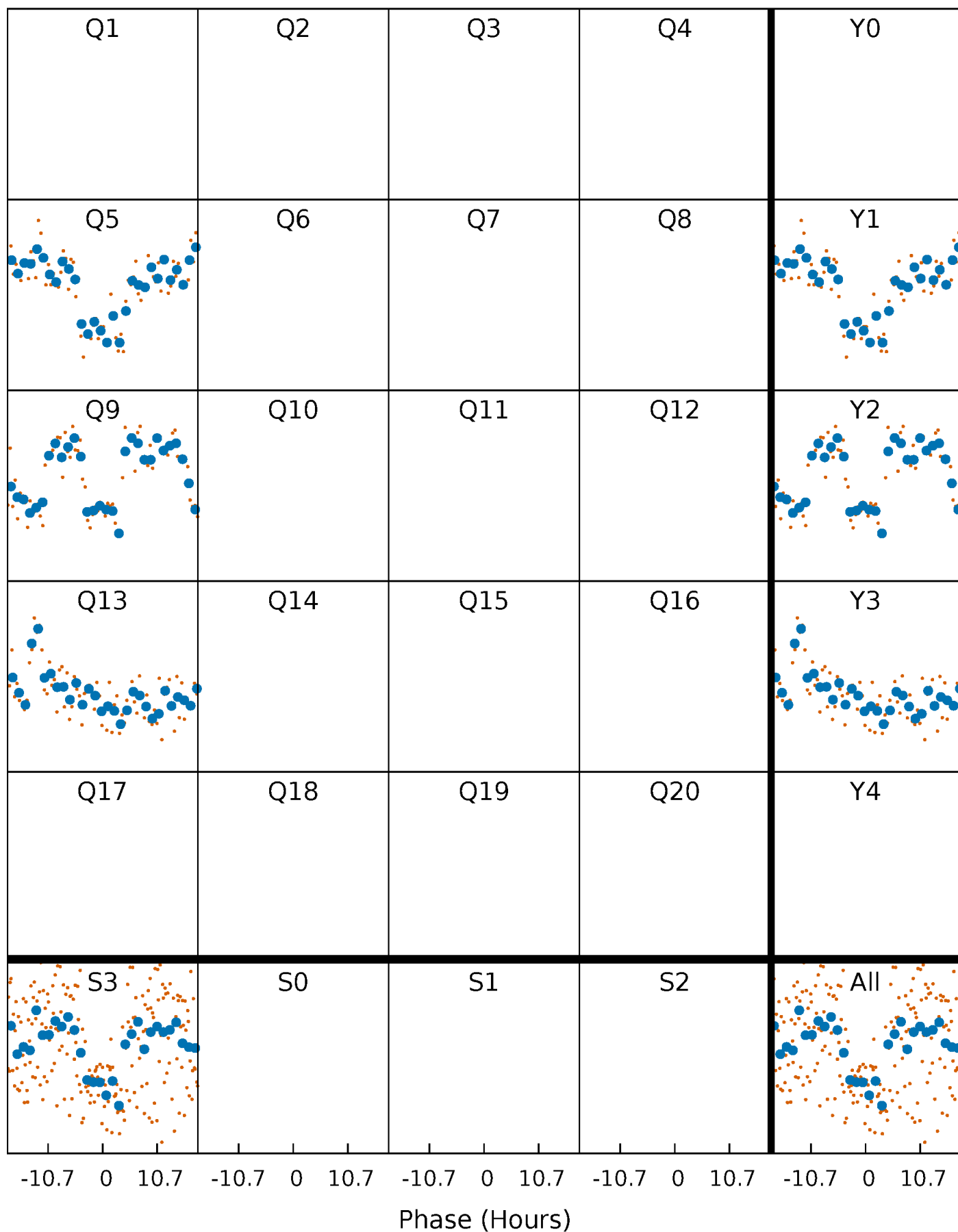


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



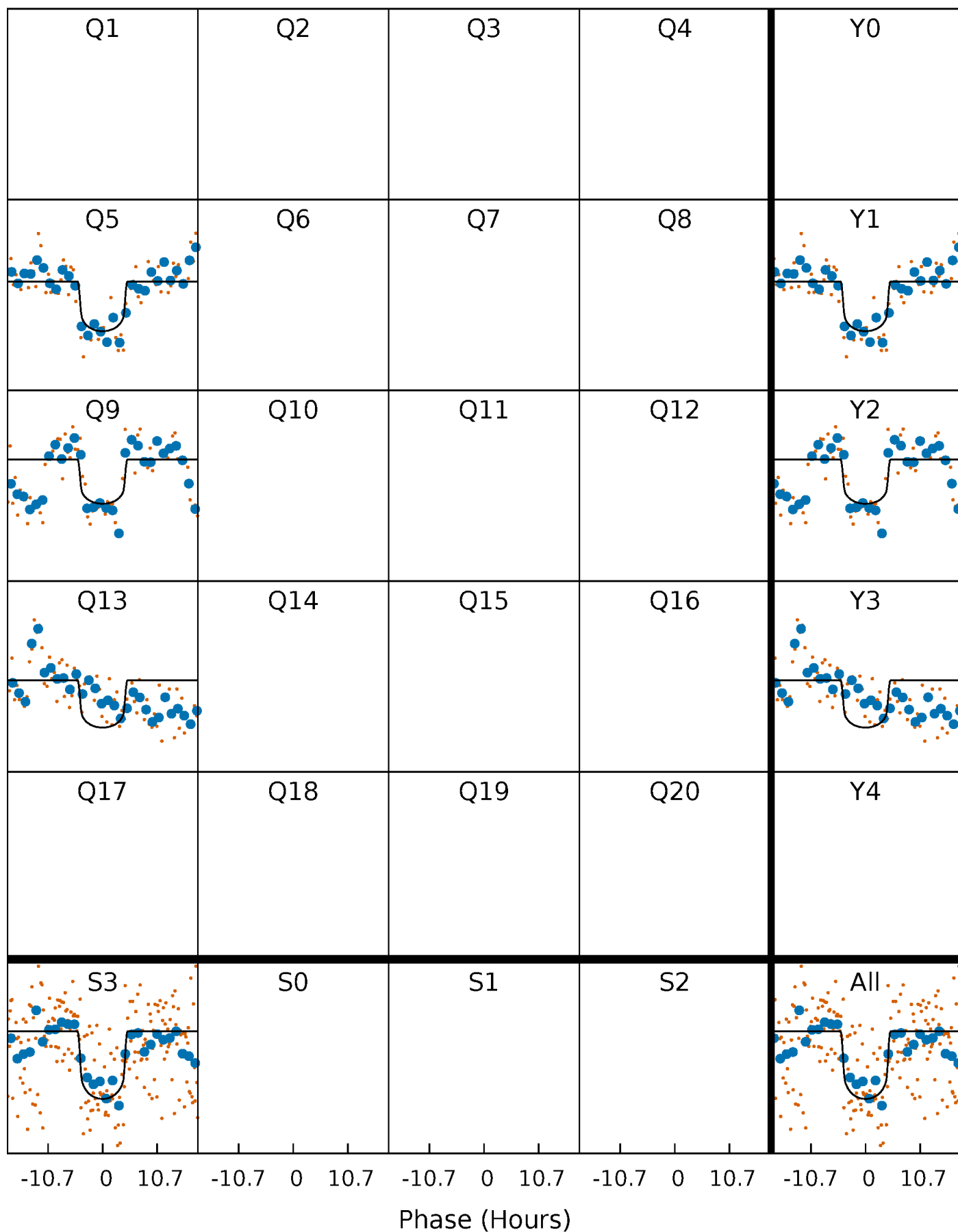
PDC Quarter-Phased Transit Curves

TCE 002983219-06 $P=391.575969$ Days $T_0=471.703477$ (BKJD)



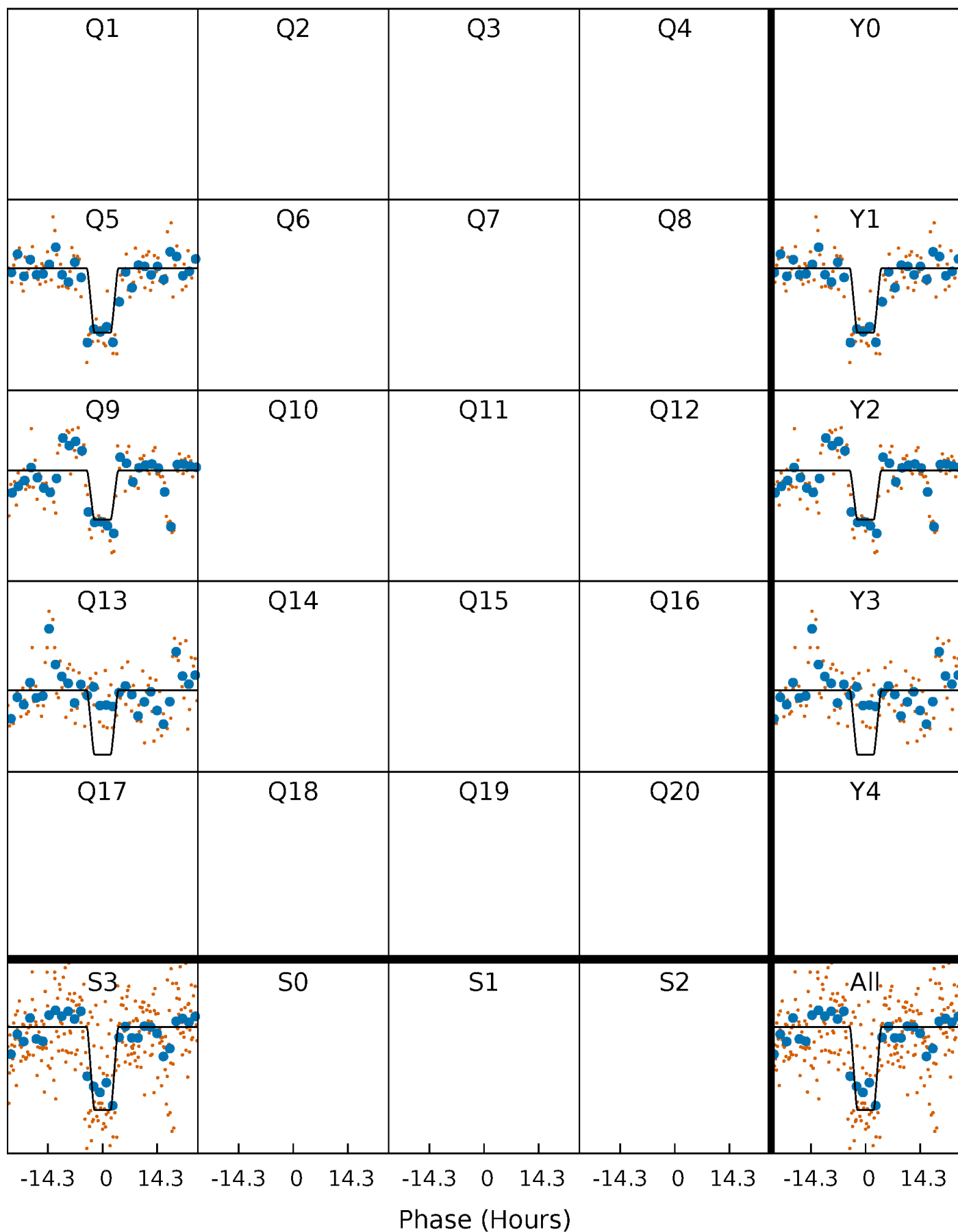
DV Quarter-Phased Transit Curves

TCE 002983219-06 $P=391.575969$ Days $T_0=471.703477$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

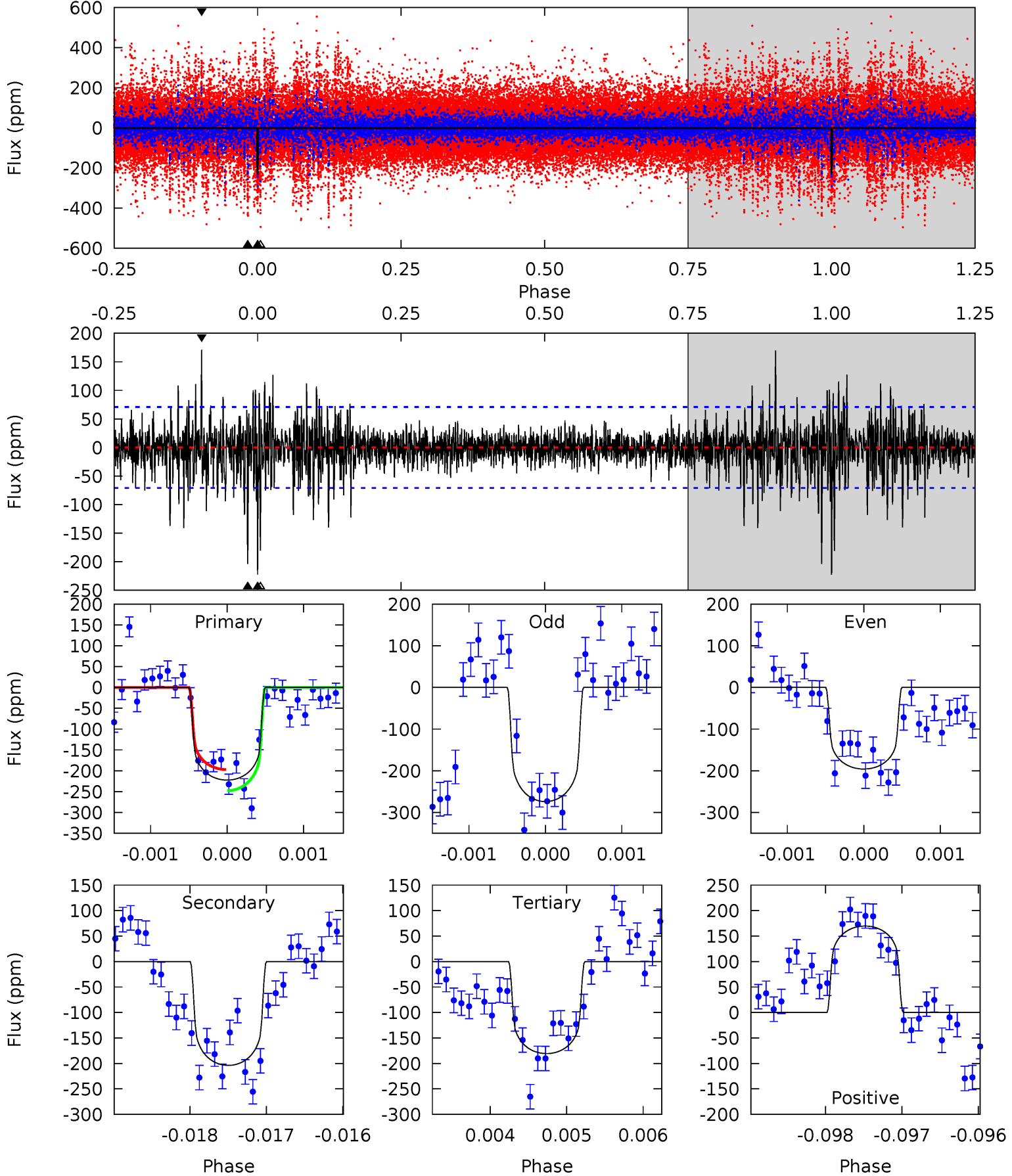
TCE 002983219-06 $P=391.581933$ Days $T_0=471.718404$ (BKJD)



DV Model-Shift Uniqueness Test

002983219-06, P = 391.575969 Days, E = 80.127508 Days

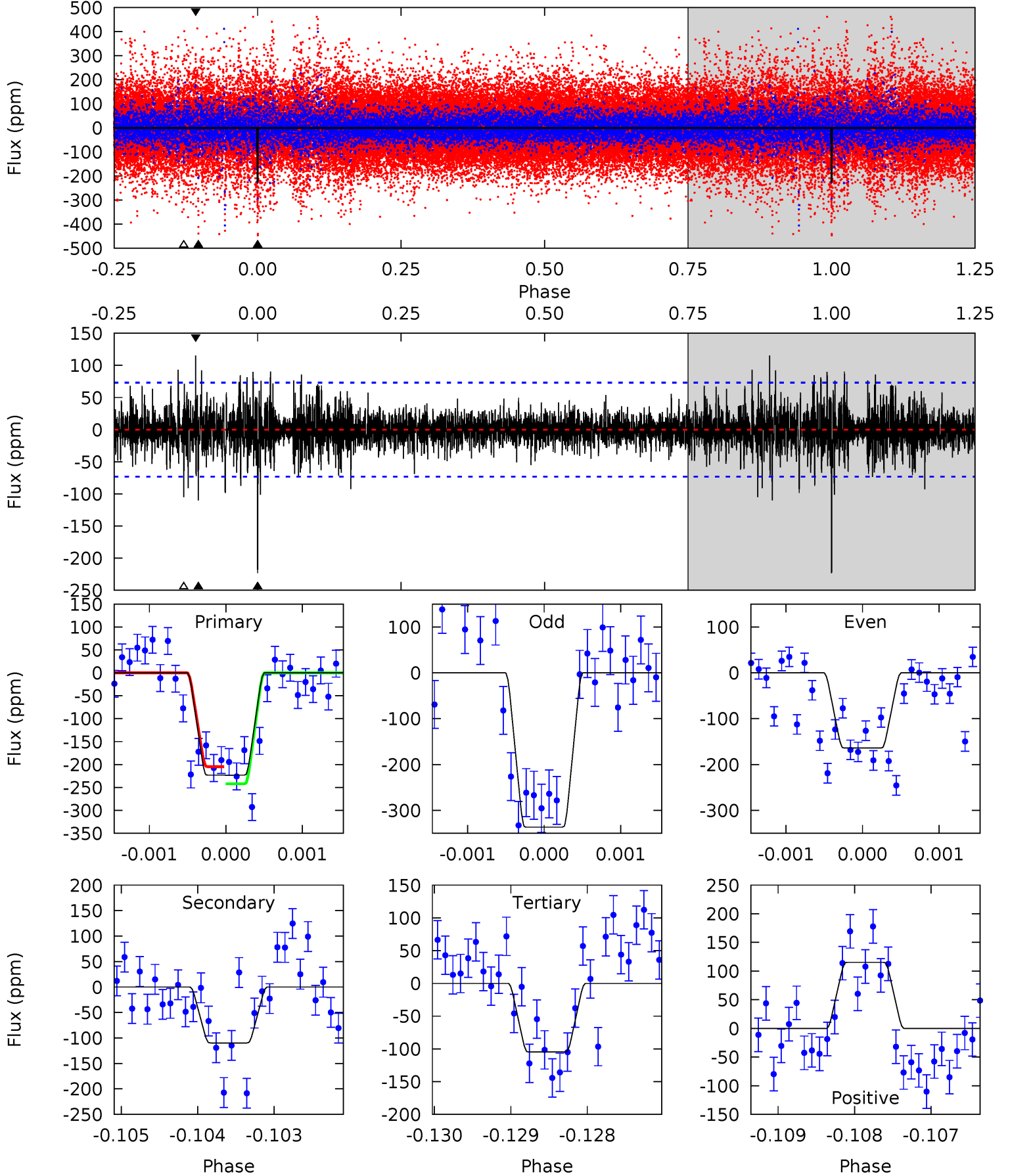
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	15.7	13.9	13.1	5.44	3.28	1.99	3.21	4.05	1.78	2.62	2.82	0.82	0.43	1.95



Alt Model-Shift Uniqueness Test

002983219-06, P = 391.581933 Days, E = 80.136471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	8.22	7.85	8.64	5.47	3.33	1.47	8.88	8.09	0.37	-0.42	6.20	0.77	0.34	1.40



Stellar Parameters For KIC 002983219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6250^{+75}_{-75}	$4.069^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.673^{+0.300}_{-0.367}$	$1.196^{+0.143}_{-0.096}$	$0.360^{+0.325}_{-0.126}$
	+1%/-1%	+4%/-2%	+inf%/-inf%	+18%/-22%	+12%/-8%	+90%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002983219-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-204 ± 13	$2.83^{+0.97}_{-0.90}$	468^{+21}_{-28}	5946^{+1196}_{-720}	17316^{+21127}_{-7493}
Alt.	-110 ± 13	$2.89^{+1.00}_{-0.91}$	470^{+20}_{-26}	5092^{+944}_{-536}	9037^{+10336}_{-3996}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

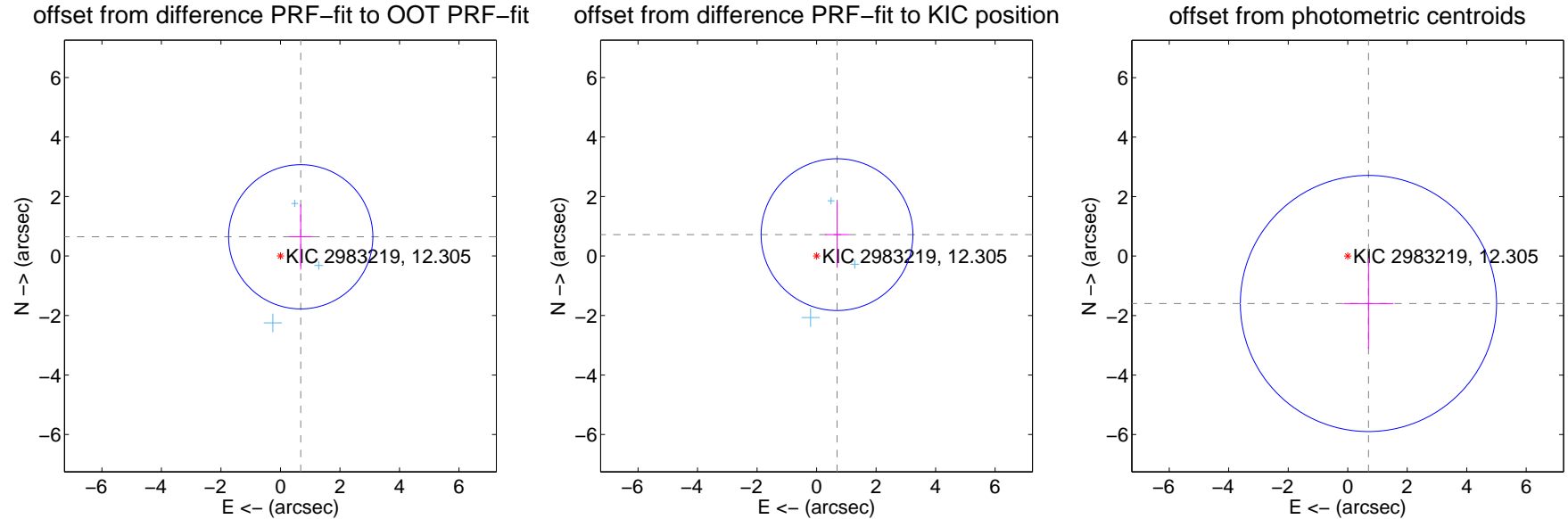
DV Centroid Data

Supplemental centroid analysis for 002983219-06. Kepler magnitude: 12.30. Transit SNR 7.63

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.939 ± 0.808	1.16	-0.681 ± 0.398	0.646 ± 1.096
PRF-fit source offset from KIC position	0.994 ± 0.850	1.17	-0.687 ± 0.393	0.719 ± 1.114
photometric centroid source offset	1.74 ± 1.44	1.21	-0.70 ± 0.84	-1.59 ± 1.52

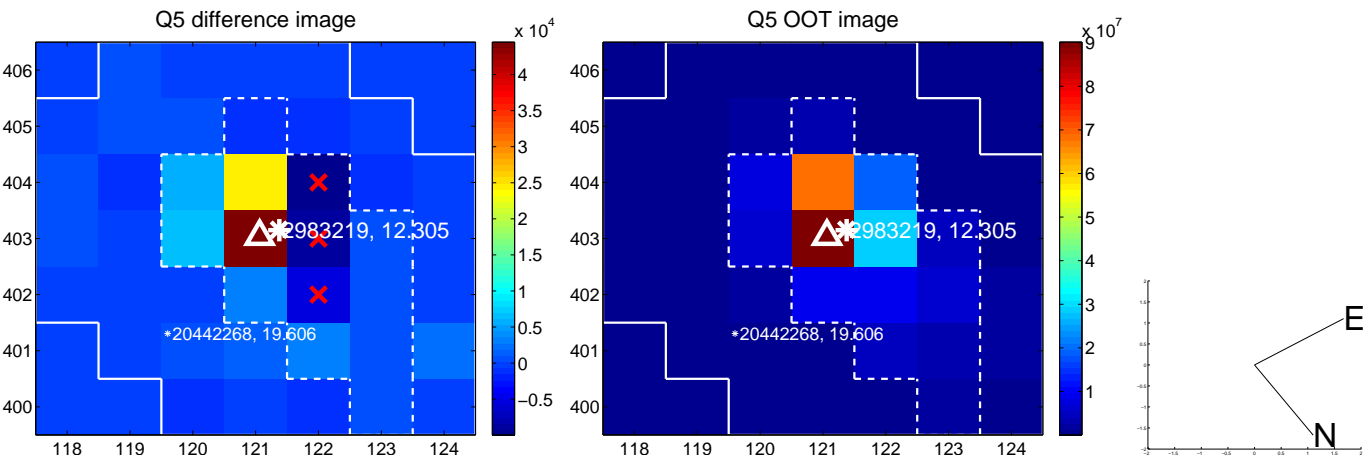


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

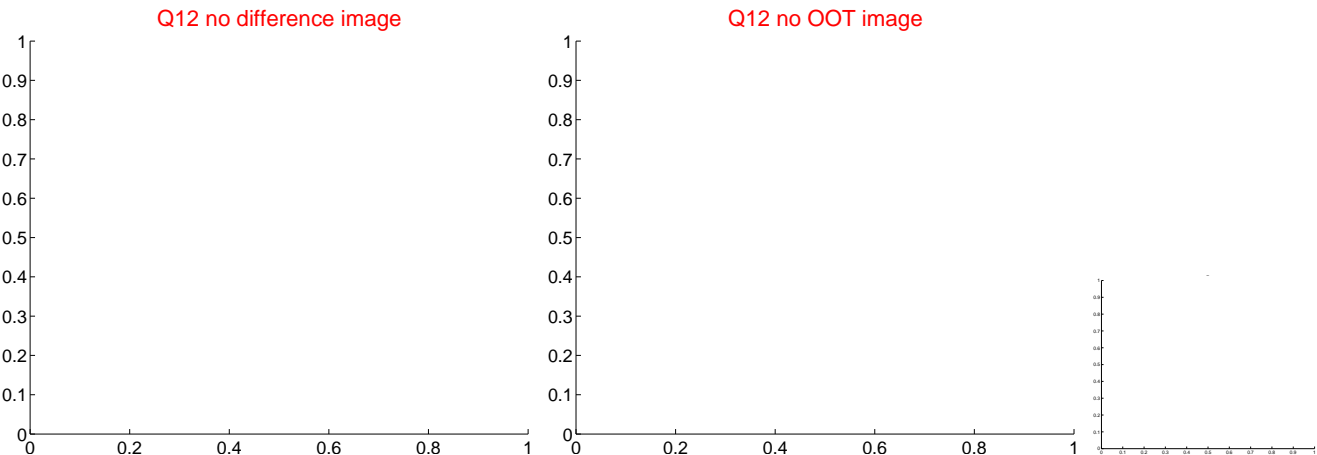
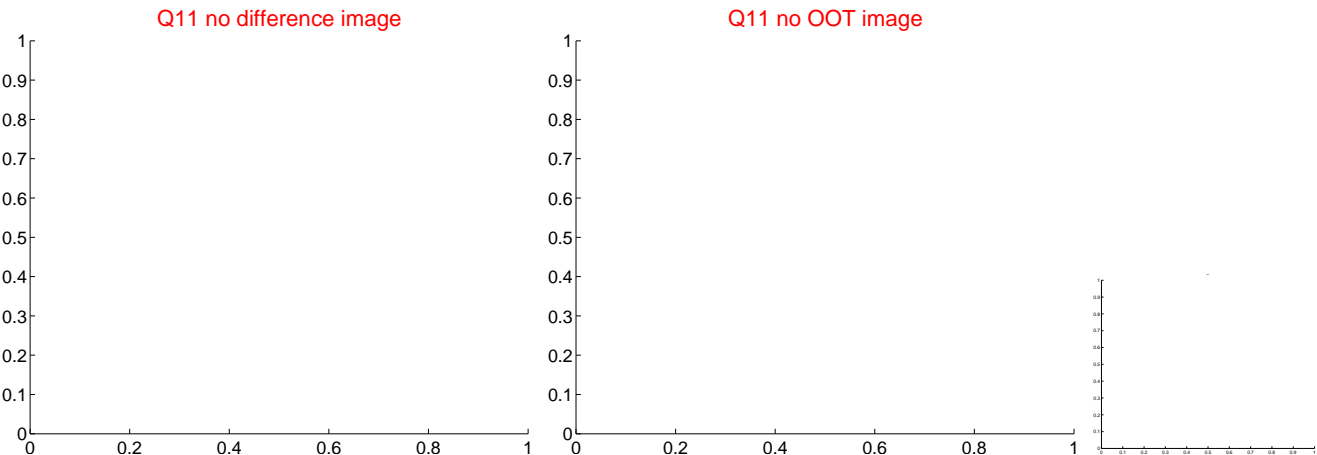
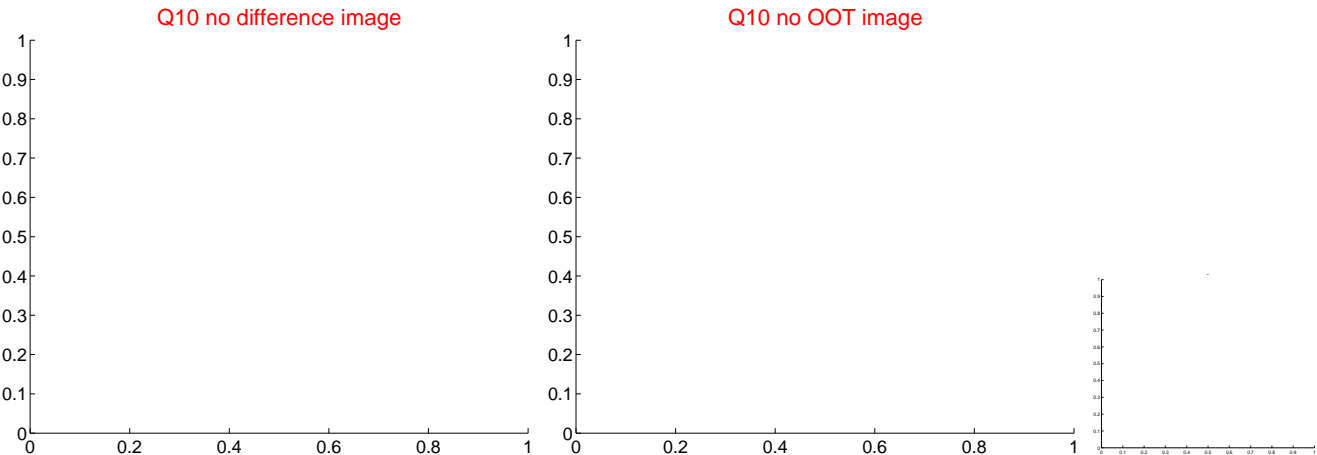
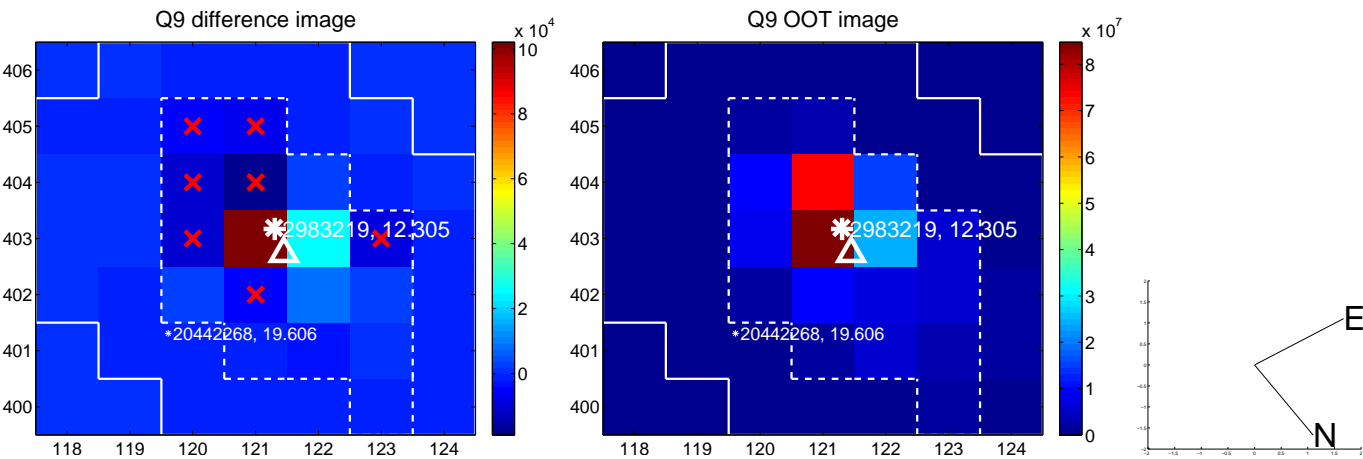
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



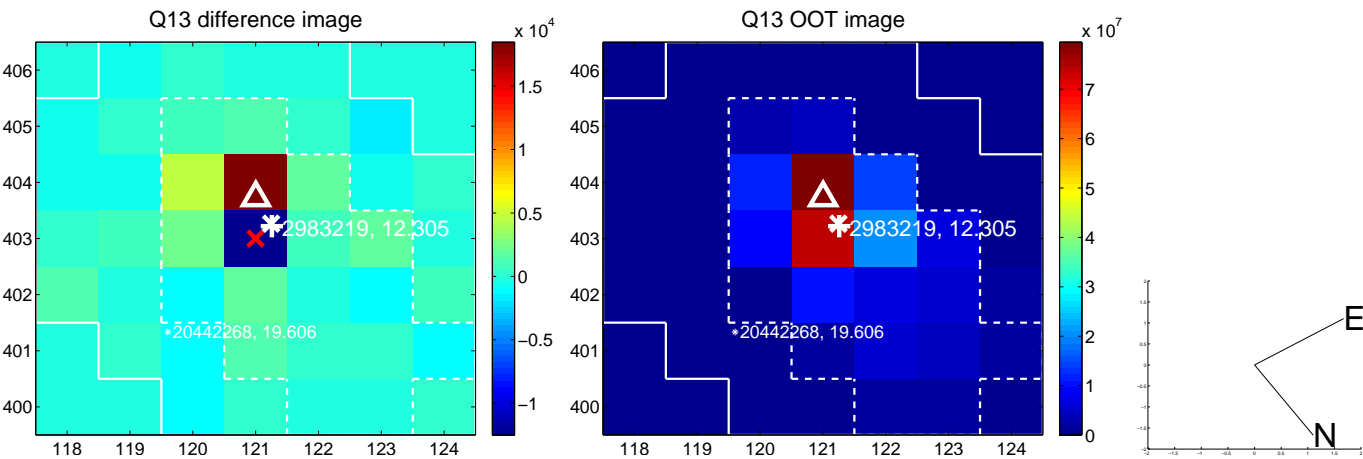
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



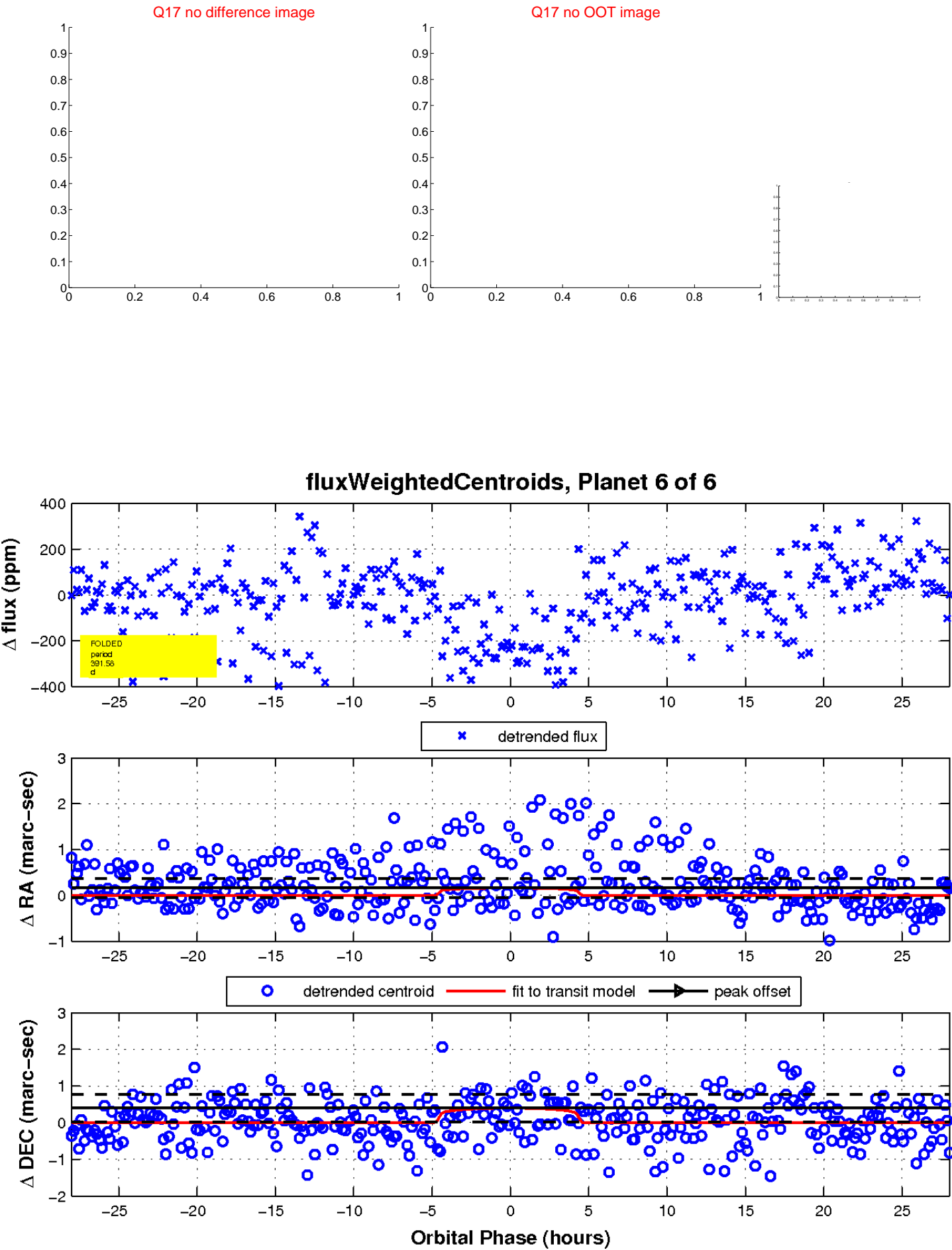
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \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

