

KIC 012053628

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})
012053628-01	OBS	No	2.996645	131.609256	9.8	16.034	7.5	7.3	1.43	6762	0.52	1826.85
012053628-02	OBS	No	312.135996	174.629677	361.0	106.952	9.2	12.9	1.43	6762	3.19	3.73
012053628-03	OBS	No	101.793128	176.007998	123.5	2.085	7.2	7.3	1.43	6762	1.79	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012053628-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
012053628-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012053628-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

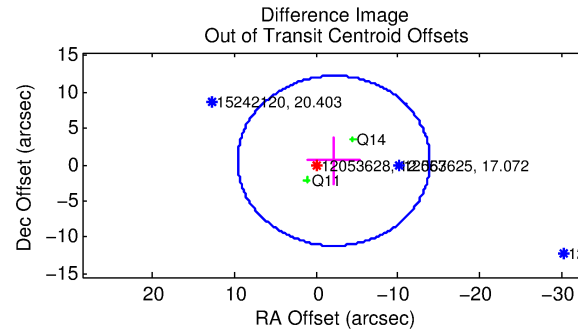
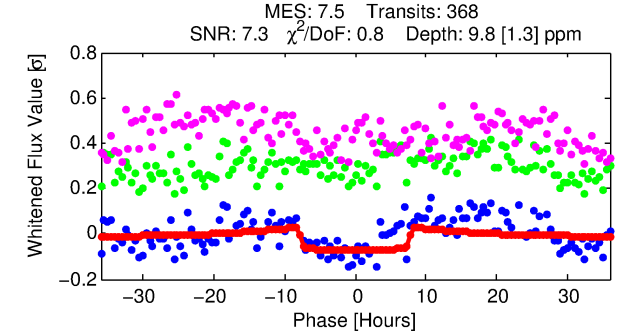
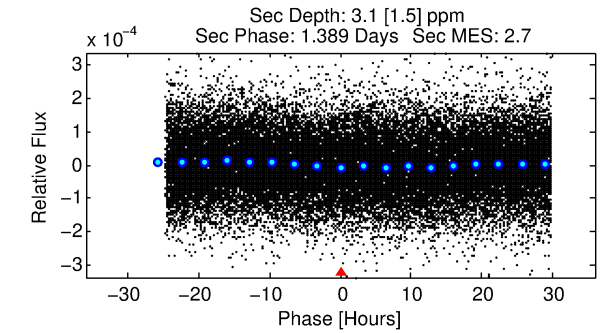
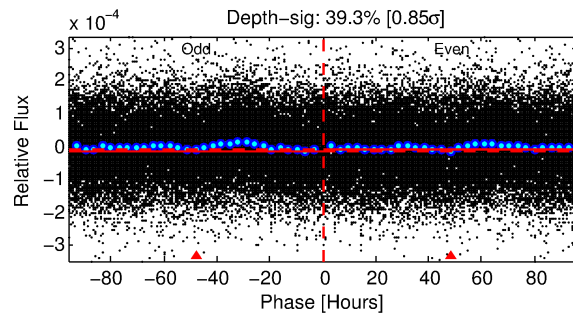
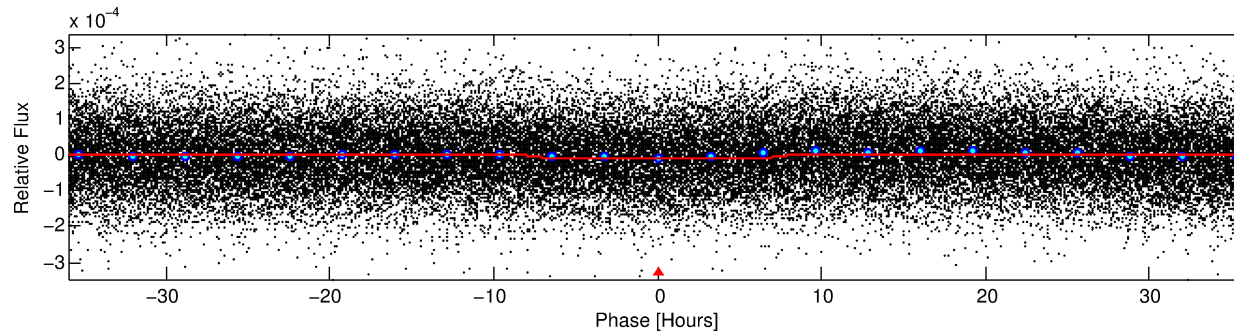
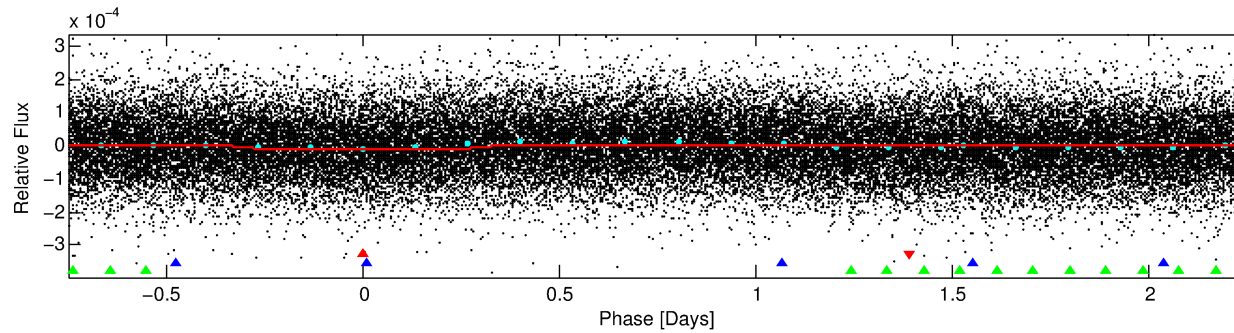
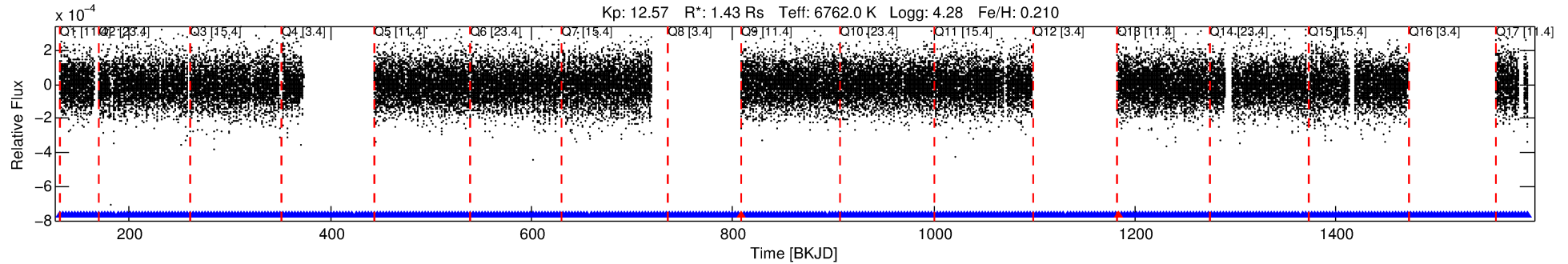
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012053628-01

No Significant Match Found

DV One-Page Summary

KIC: 12053628 Candidate: 1 of 3 Period: 2.997 d



DV Fit Results:

Period = 2.99664 [0.00007] d
Epoch = 131.6093 [0.0142] BKJD
Rp/R* = 0.0034 [0.0008]
a/R* = 1.12 [0.33]
b = 0.91 [0.27]
Seff = 1826.85 [818.24]
Teq = 1667 [187] K
Rp = 0.52 [0.23] Re
a = 0.0458 [0.0134] AU
Ag = 12.92 [10.45] [1.14 σ]
Teff = 4887 [878] K [3.59 σ]

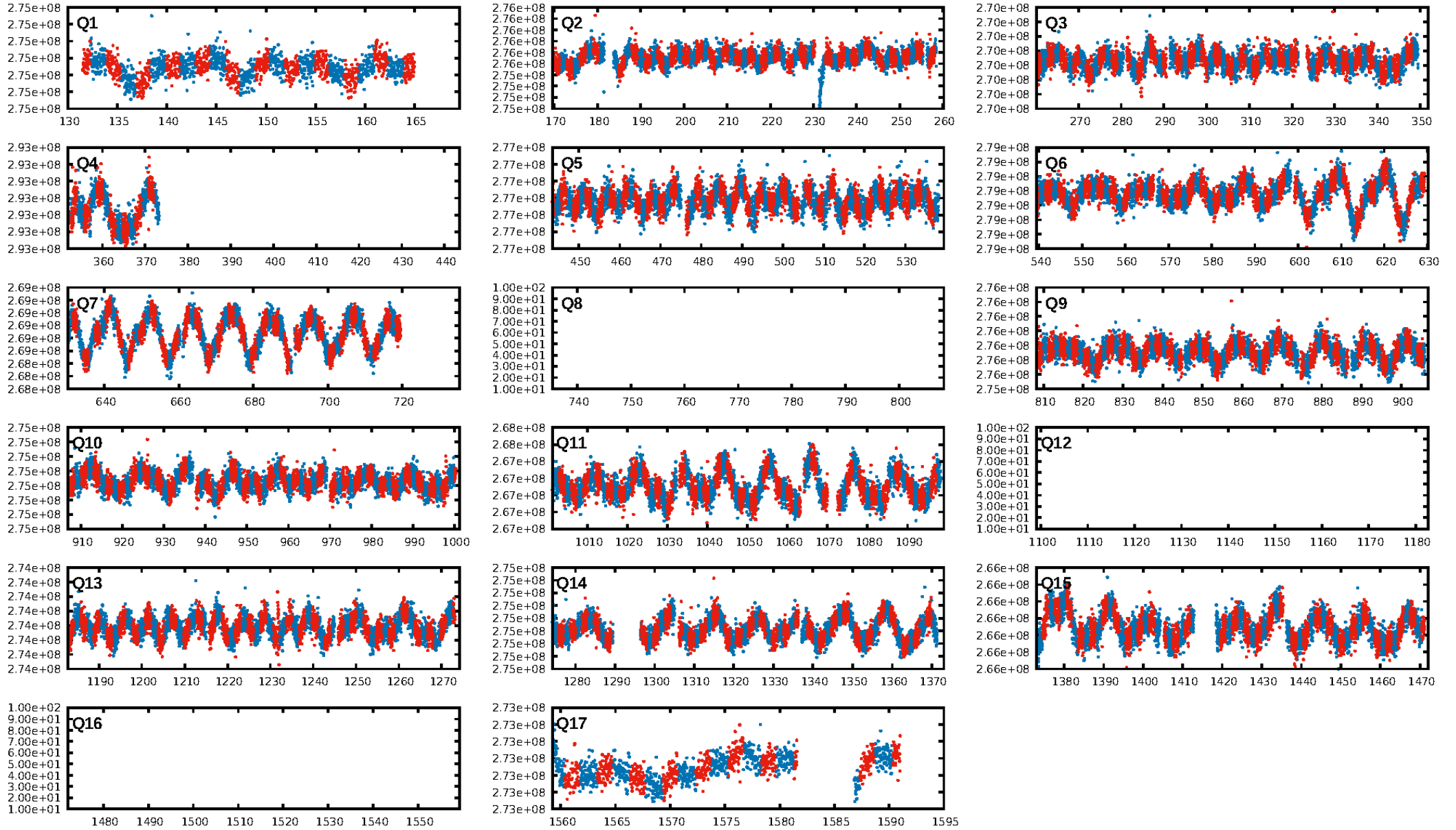
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [146.64 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.32e-10
RollingBand-fgt: 0.99 [338/340]
GhostDiagnostic-chr: 1.921
Centroid-sig: 17.6%
Centroid-so: 1.863 arcsec [1.06 σ]
OotOffset-rm: 2.233 arcsec [0.57 σ]
KicOffset-rm: 2.270 arcsec [0.71 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [14/14]

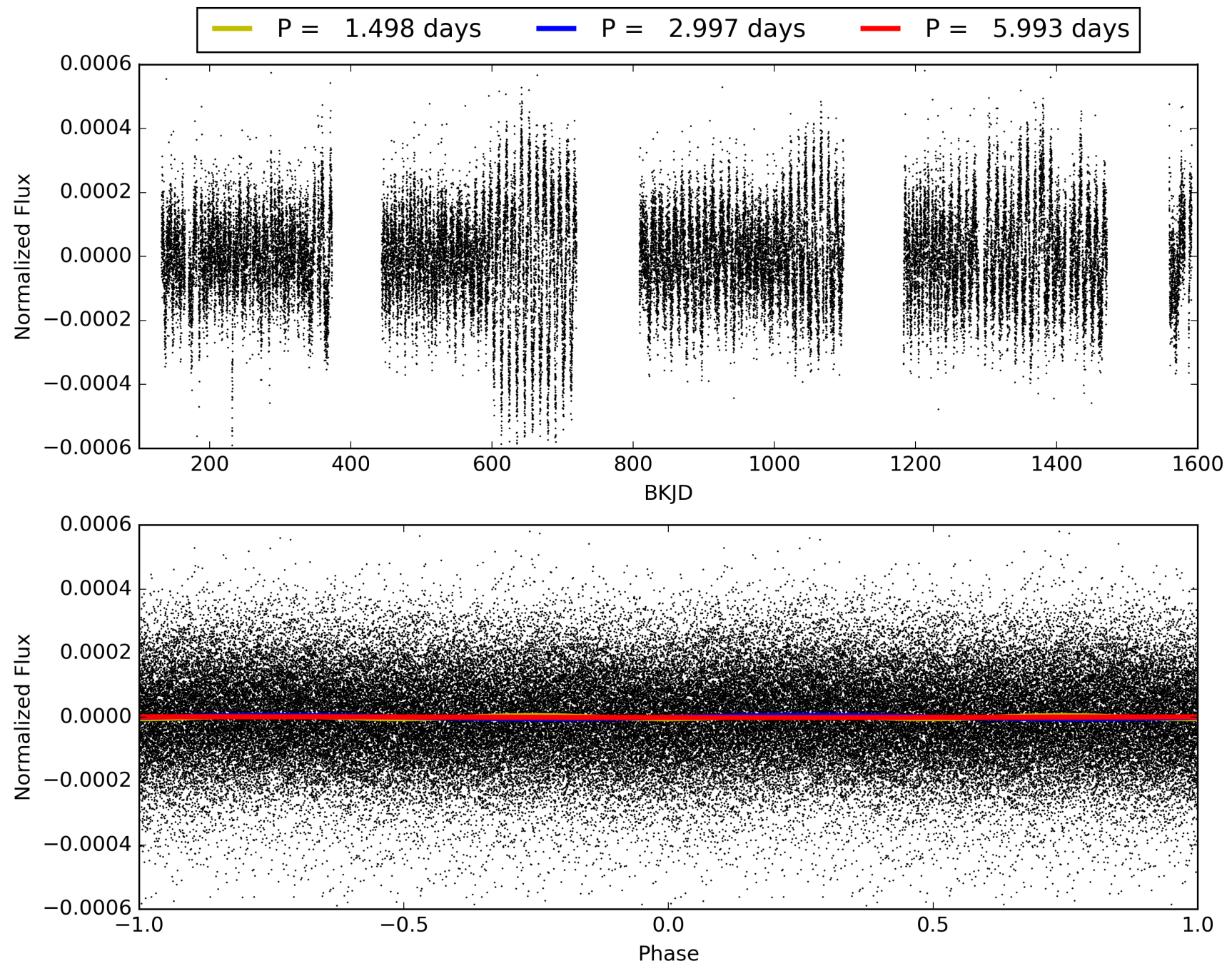
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:57:10 Z

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

TCE 012053628-01, PDC Light Curves

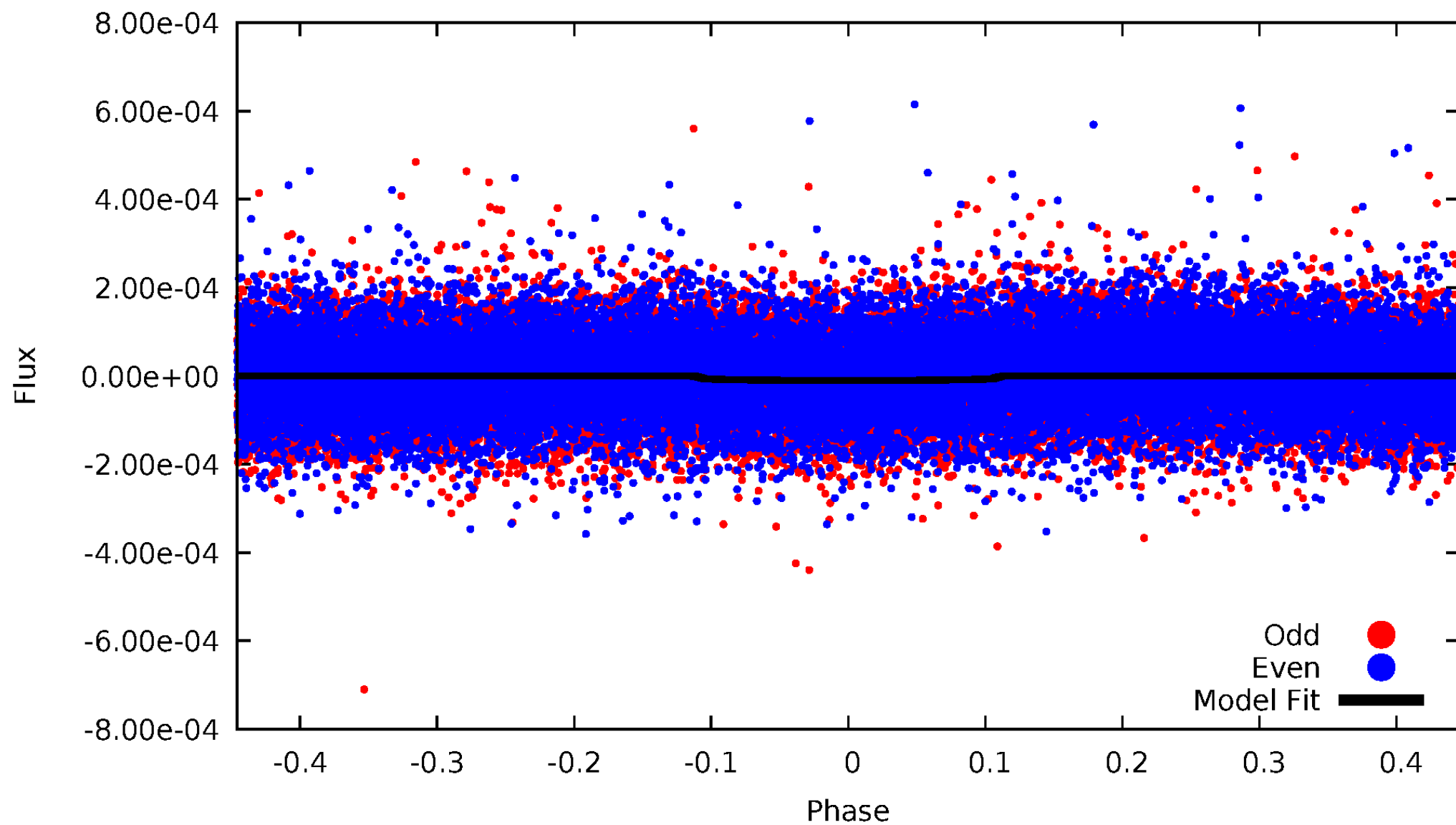


TCE 012053628-01



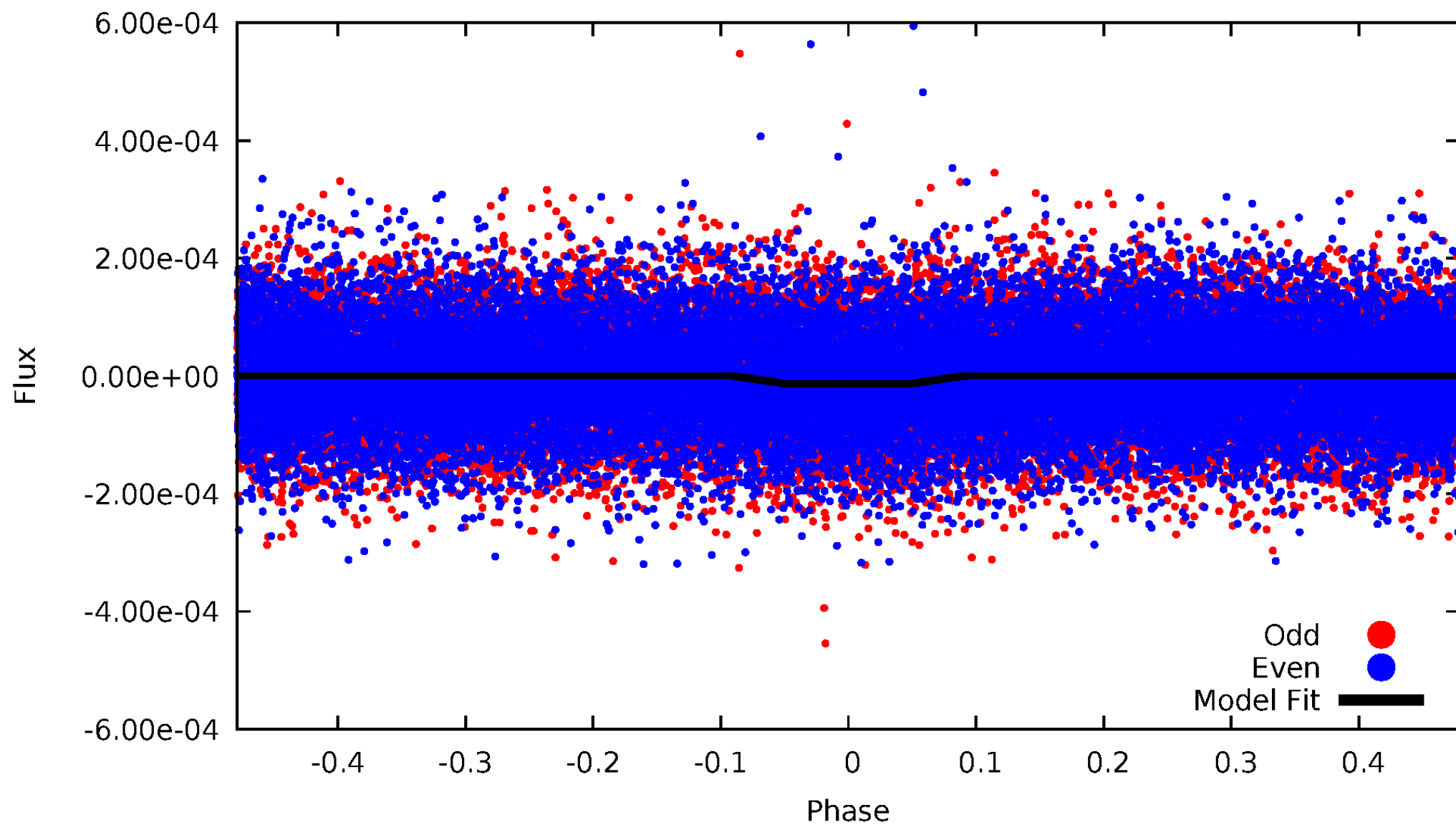
DV Odd/Even

TCE 012053628-01



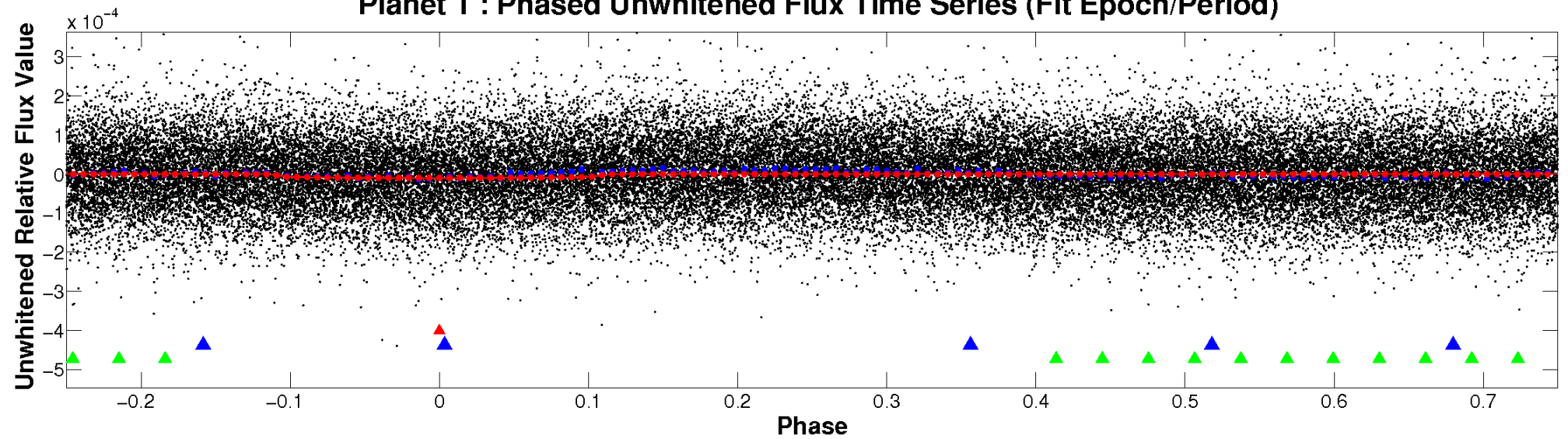
ALT Odd/Even

TCE 012053628-01

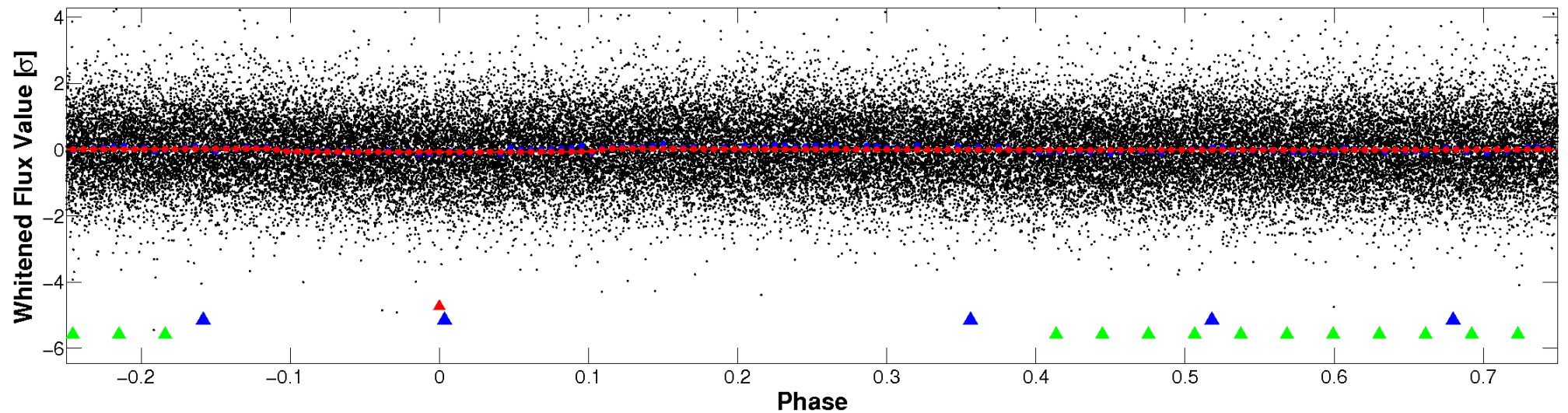


Non-Whitened Vs. Whitened Light Curve

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

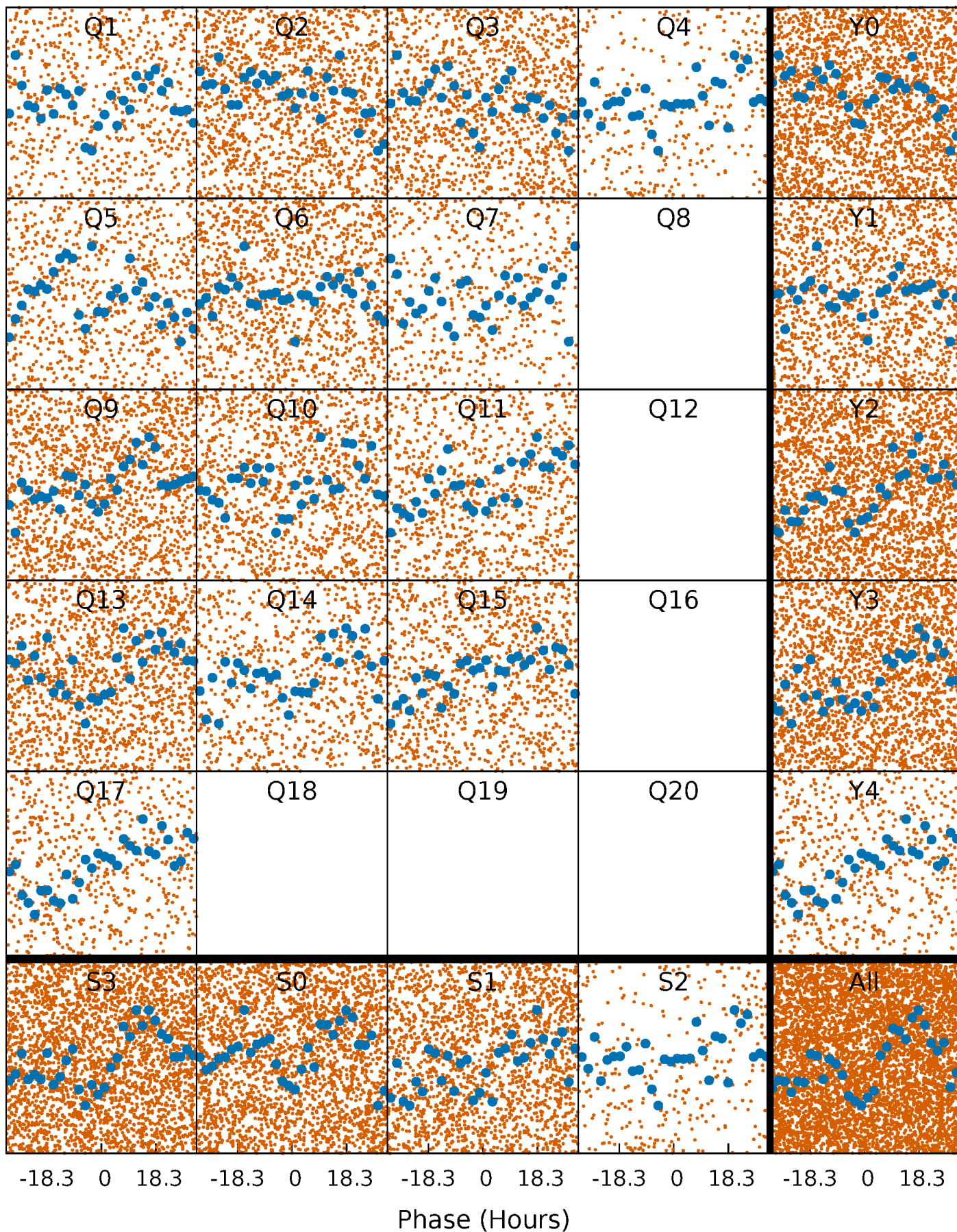


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



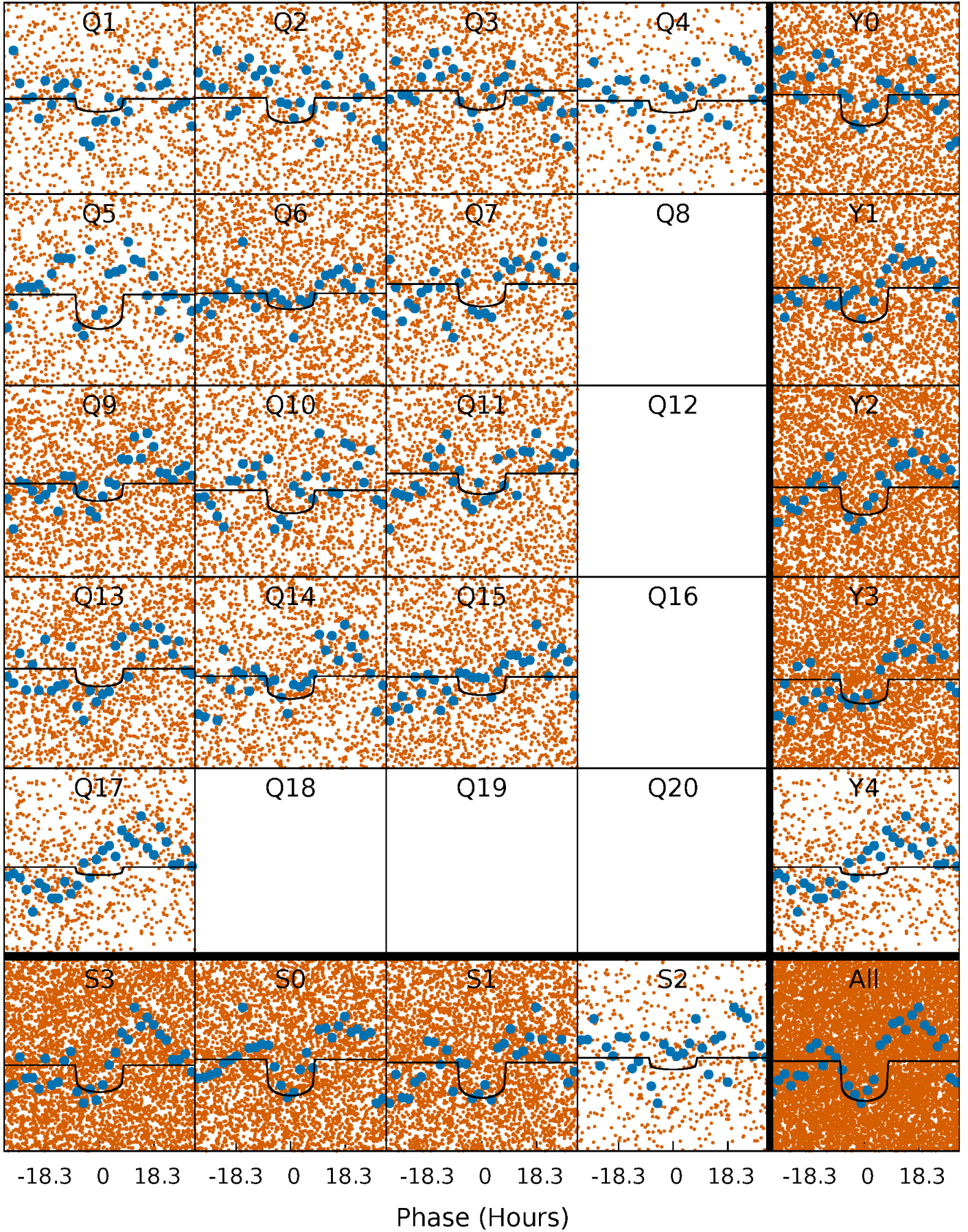
PDC Quarter-Phased Transit Curves

TCE 012053628-01 P= 2.996645 Days $T_0=131.609256$ (BKJD)



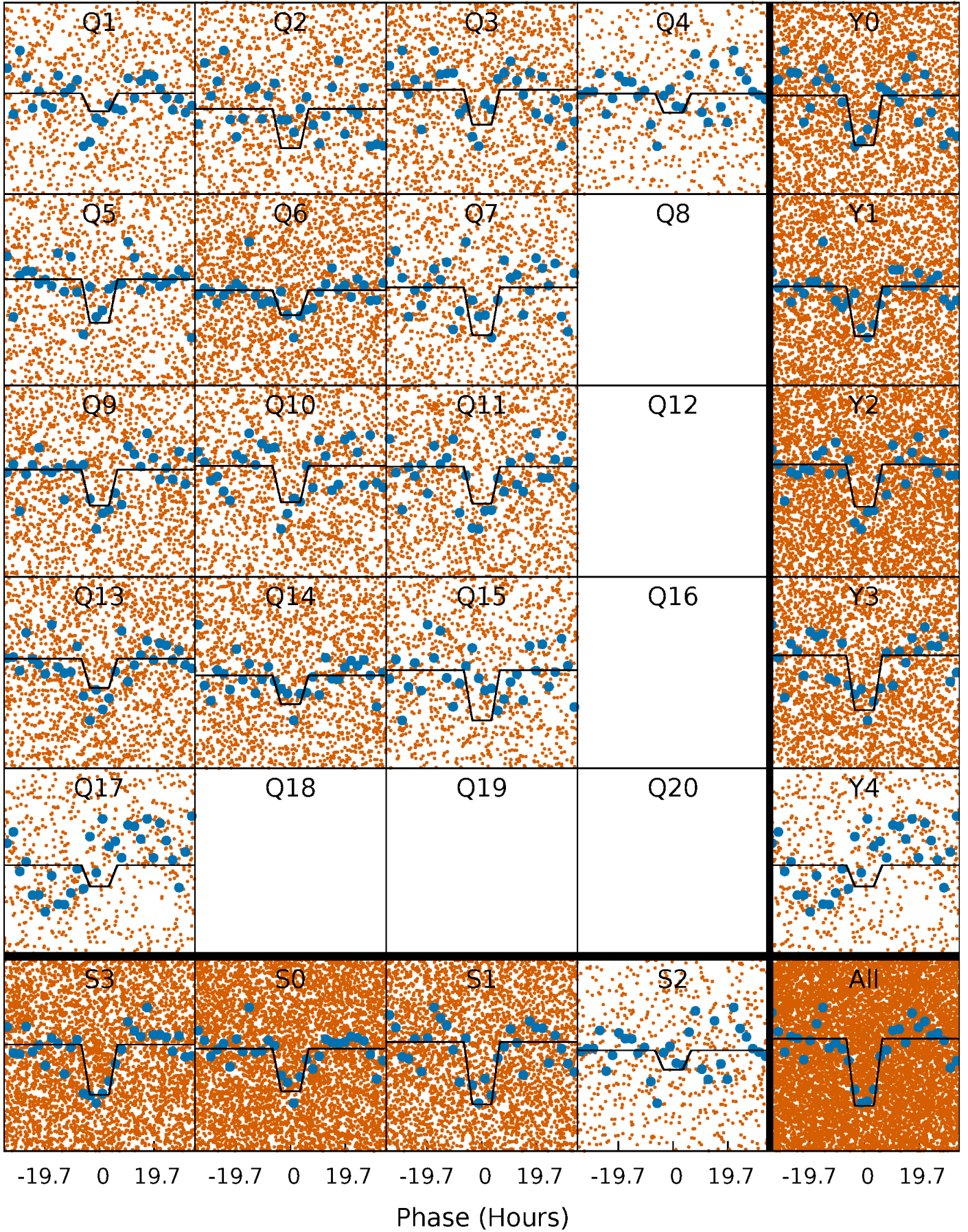
DV Quarter-Phased Transit Curves

TCE 012053628-01 P= 2.996645 Days $T_0=131.609256$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

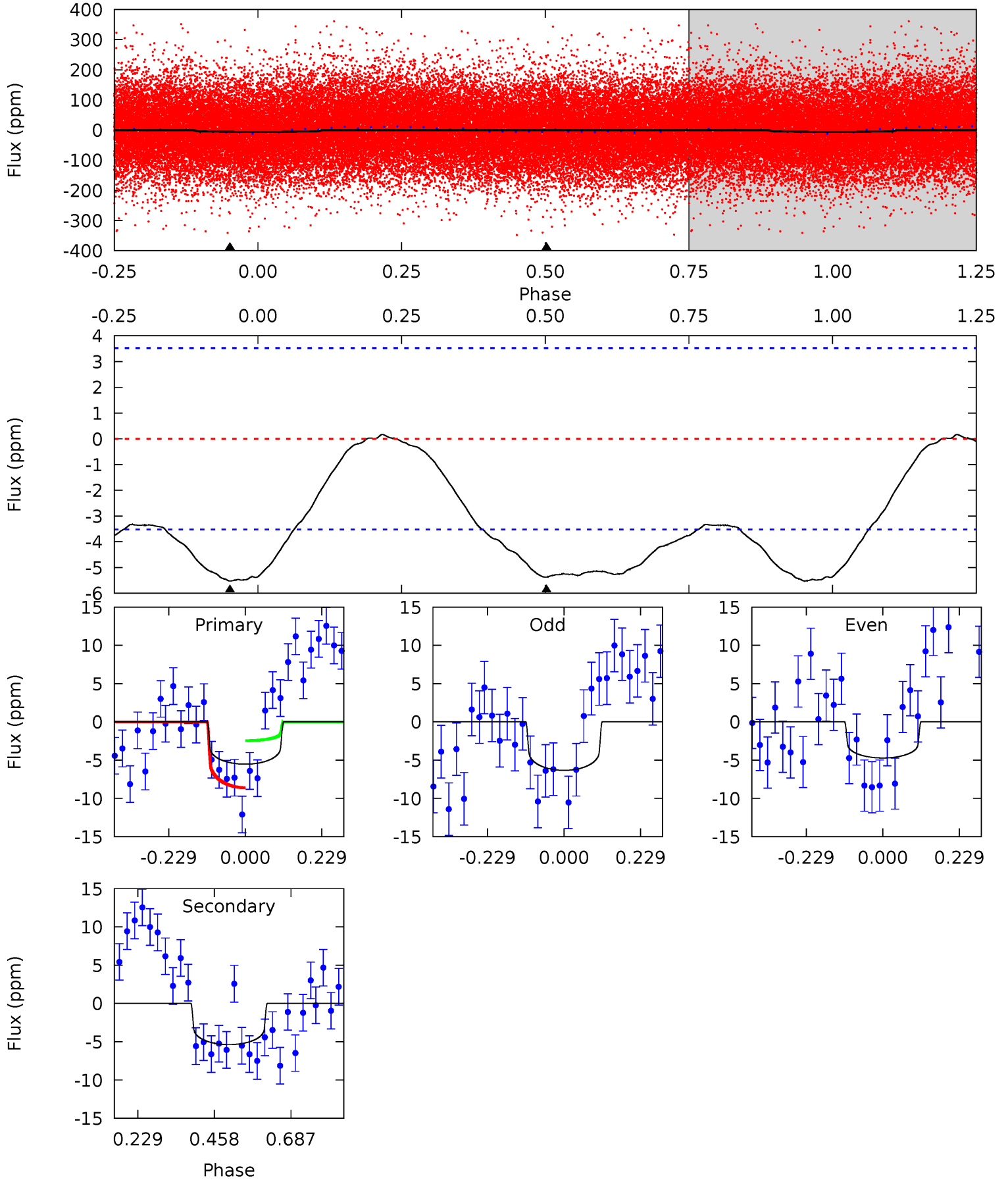
TCE 012053628-01 P= 2.996414 Days $T_0=131.616719$ (BKJD)



DV Model-Shift Uniqueness Test

012053628-01, P = 2.996645 Days, E = 128.612611 Days

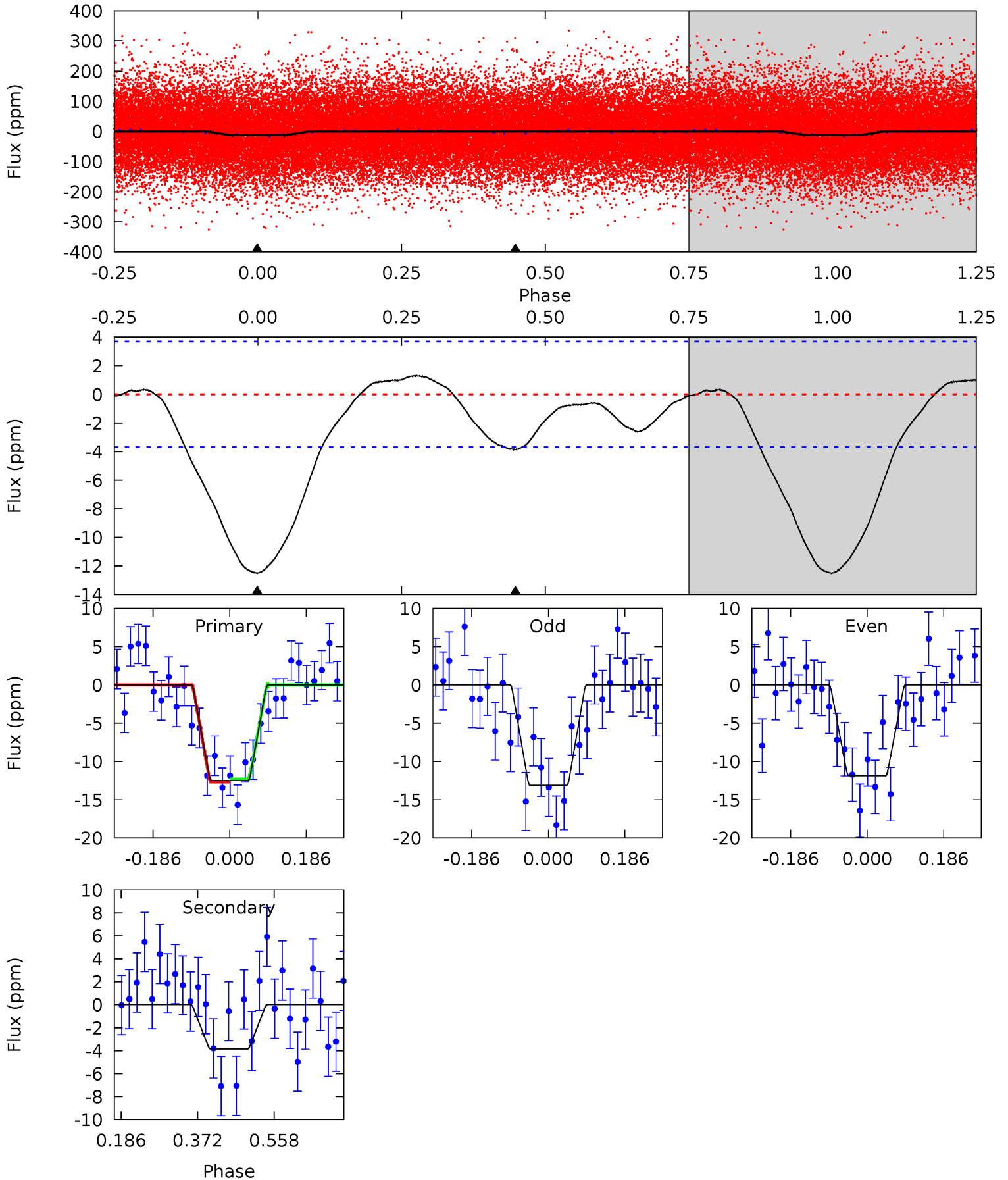
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.88	6.69	0	0	4.39	1.20	0.16	6.88	6.88	6.69	6.69	1.02	0.90	0.03	3.88



Alt Model-Shift Uniqueness Test

012053628-01, P = 2.996414 Days, E = 128.620305 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	4.63	0	0	4.43	1.32	1.49	15.0	15.0	4.63	4.63	0.75	0.94	0.09	0.26



Stellar Parameters For KIC 012053628

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6762^{+185}_{-301}	$4.281^{+0.072}_{-0.217}$	$0.210^{+0.150}_{-0.350}$	$1.429^{+0.516}_{-0.207}$	$1.424^{+0.203}_{-0.203}$	$0.687^{+0.228}_{-0.400}$
	+3%/-4%	+2%/-5%	+71%/-167%	+36%/-14%	+14%/-14%	+33%/-58%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012053628-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 1	$0.55^{+0.15}_{-0.14}$	2366^{+178}_{-131}	5552^{+860}_{-556}	20^{+14}_{-8}
Alt.	-4 ± 1	$0.60^{+0.18}_{-0.14}$	2374^{+182}_{-140}	4892^{+679}_{-429}	12^{+9}_{-5}

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

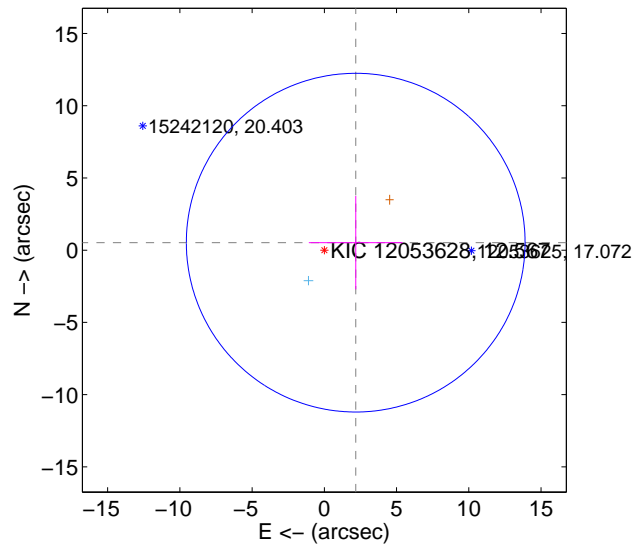
Supplemental centroid analysis for 012053628-01. Kepler magnitude: 12.57. Transit SNR 7.28

There are 1 quarters with good PRF difference image offsets

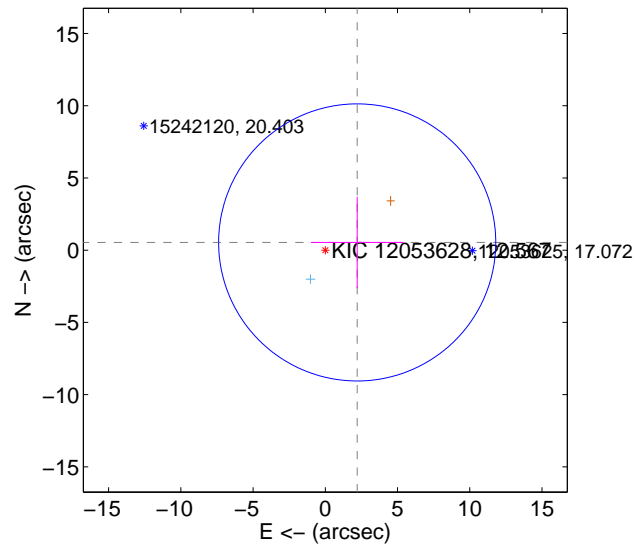
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.233 ± 3.907	0.57	-2.172 ± 3.243	0.520 ± 3.236
PRF-fit source offset from KIC position	2.270 ± 3.196	0.71	-2.206 ± 3.198	0.536 ± 3.161
photometric centroid source offset	1.86 ± 1.76	1.06	-0.73 ± 1.66	1.72 ± 1.77

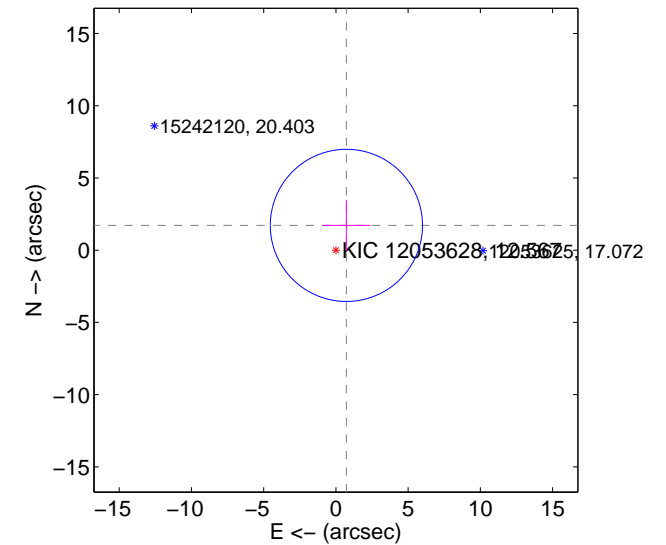
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

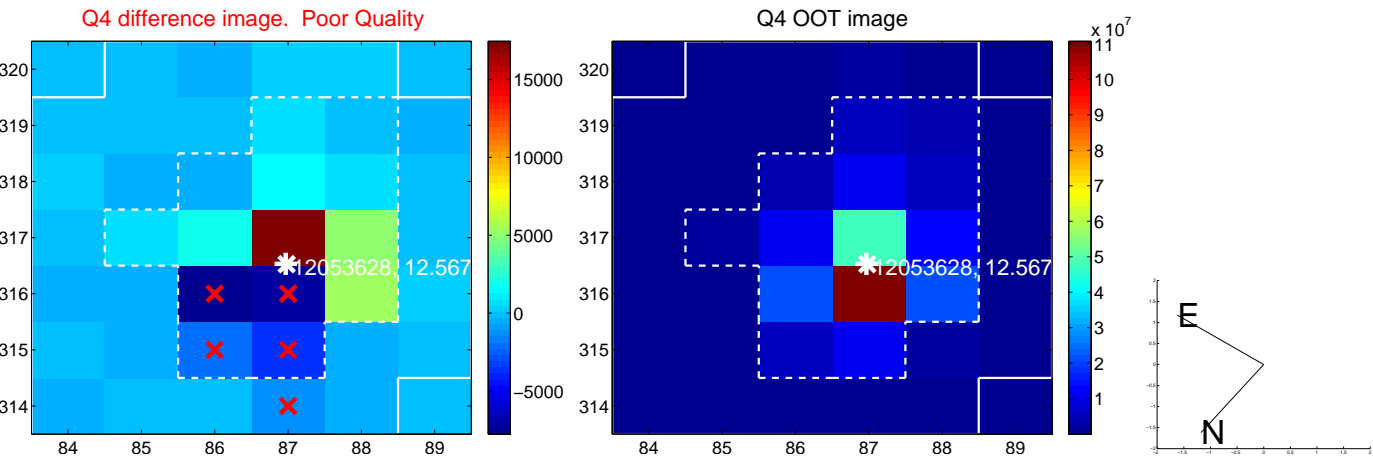
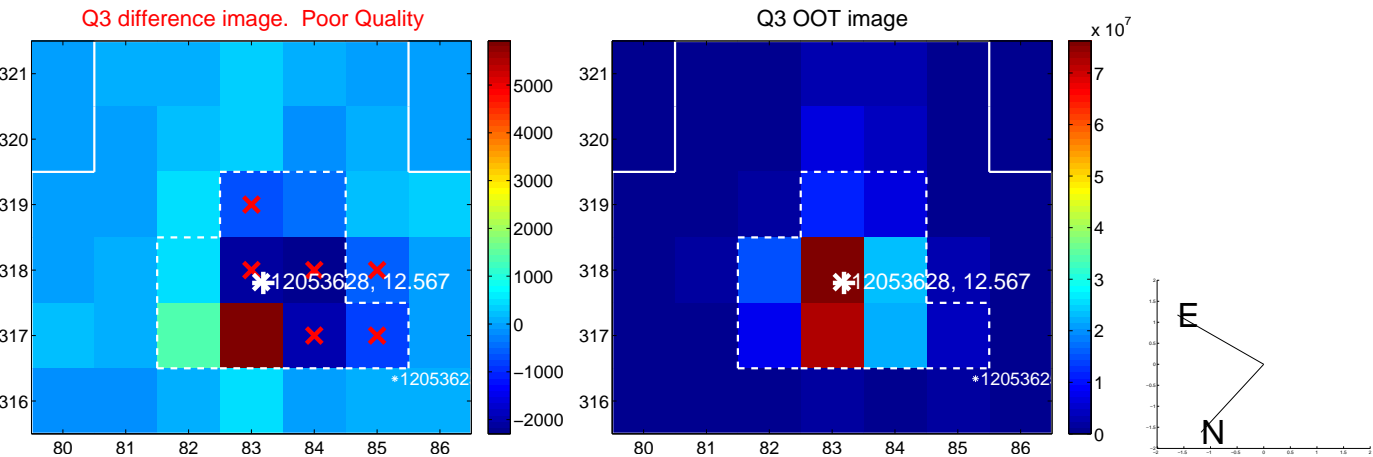
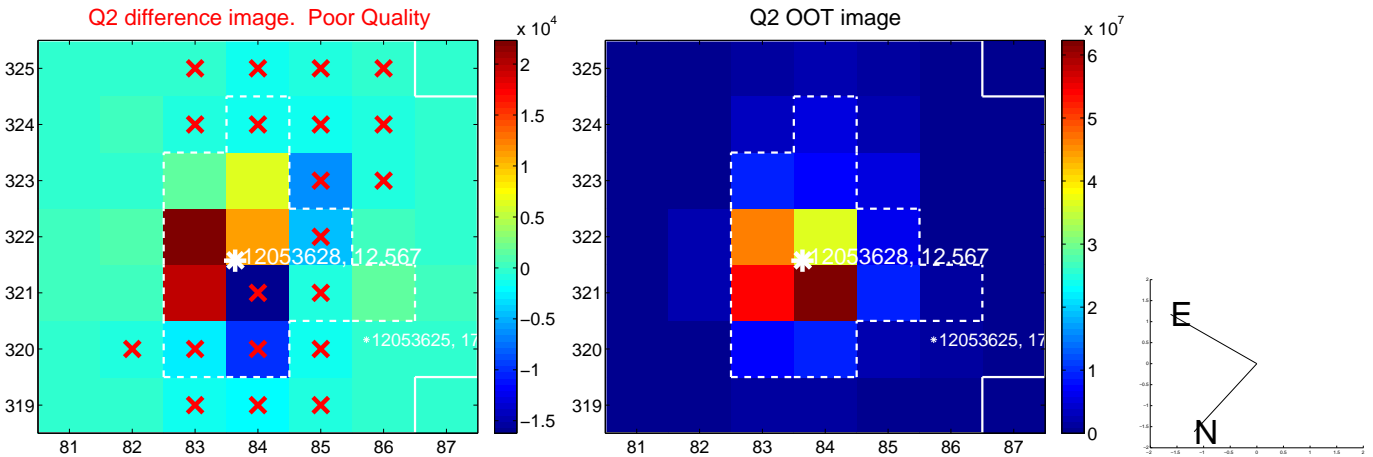
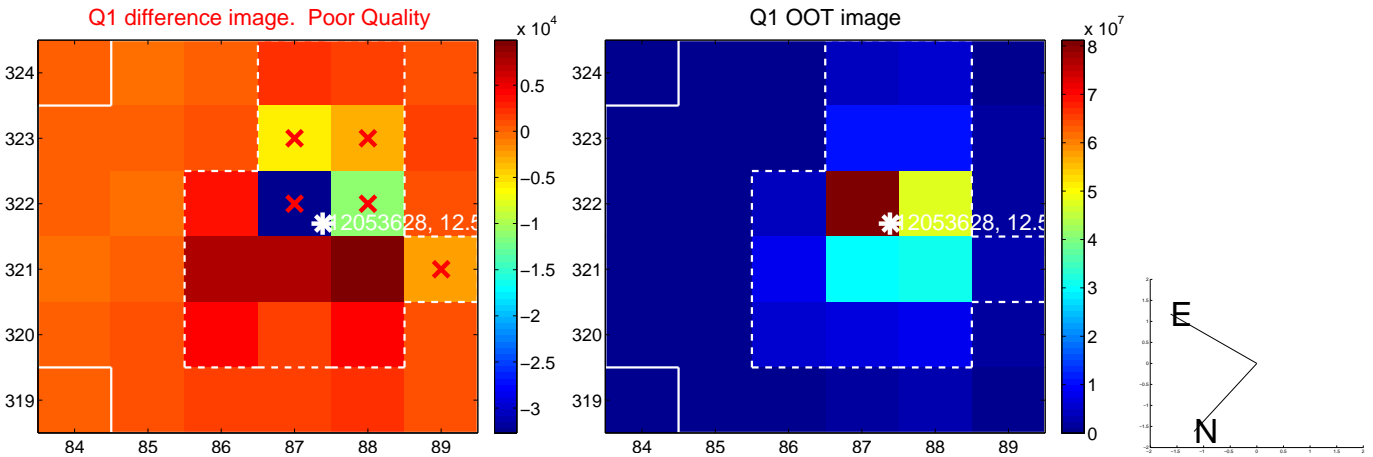


offset from photometric centroids

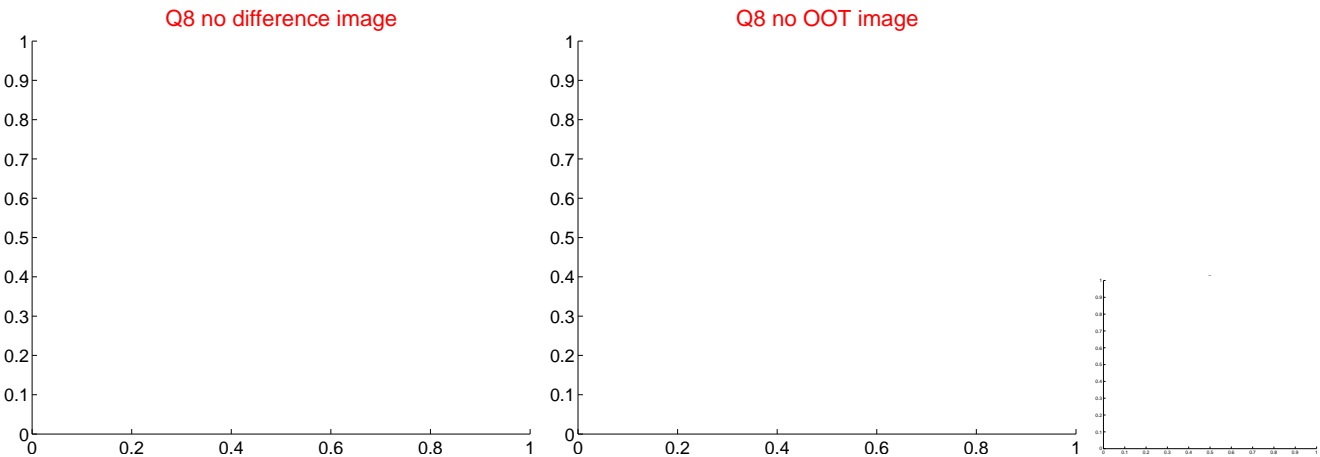
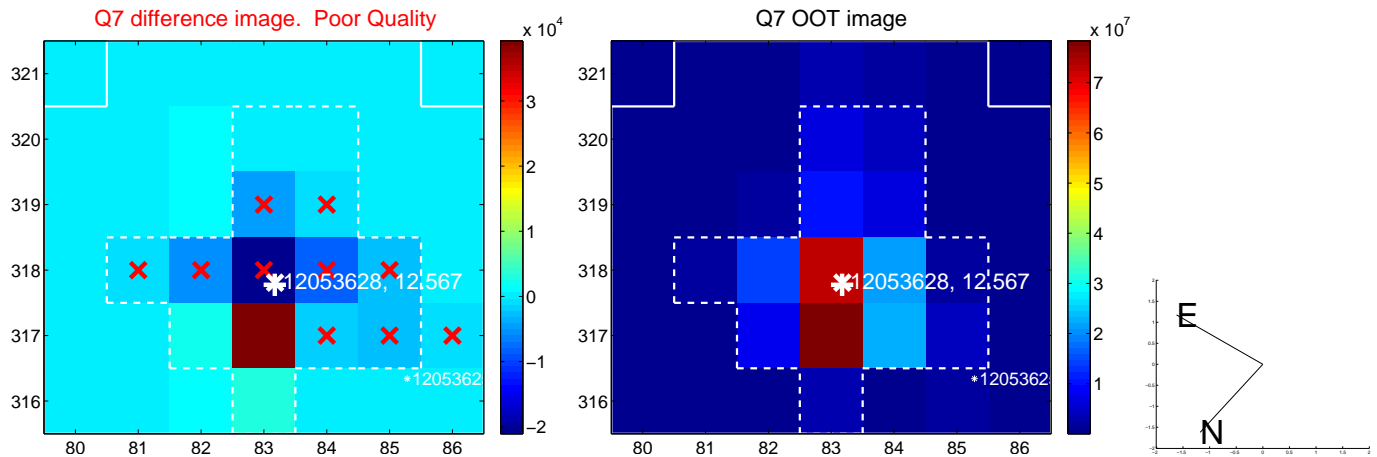
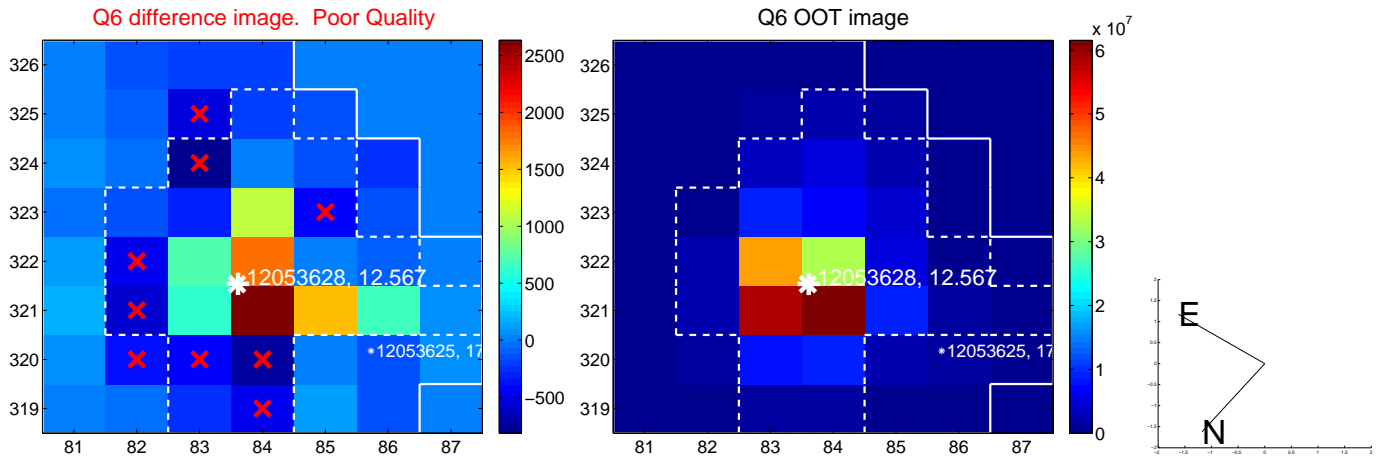
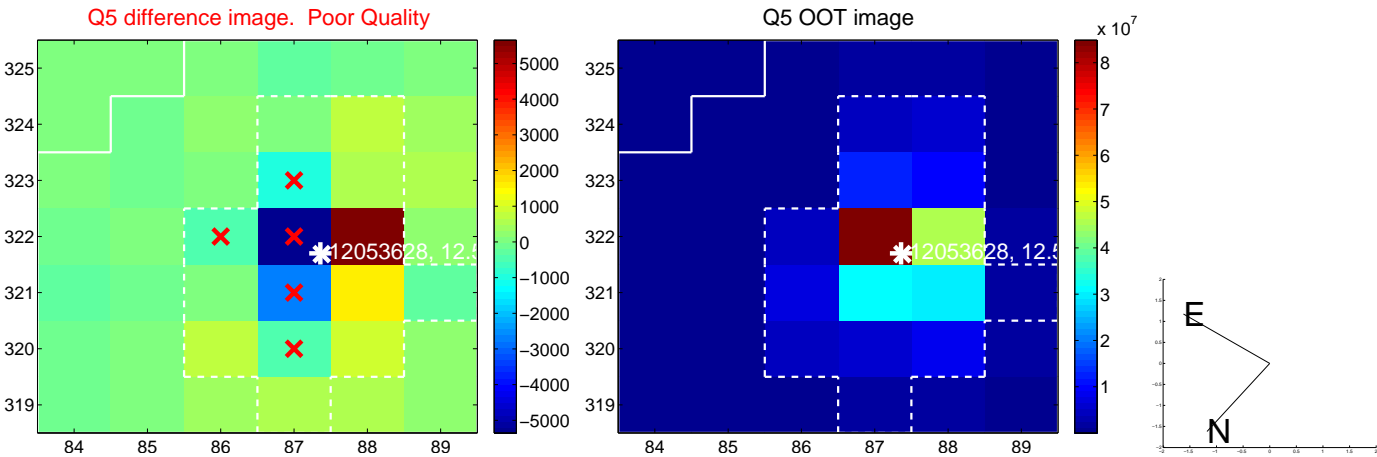


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

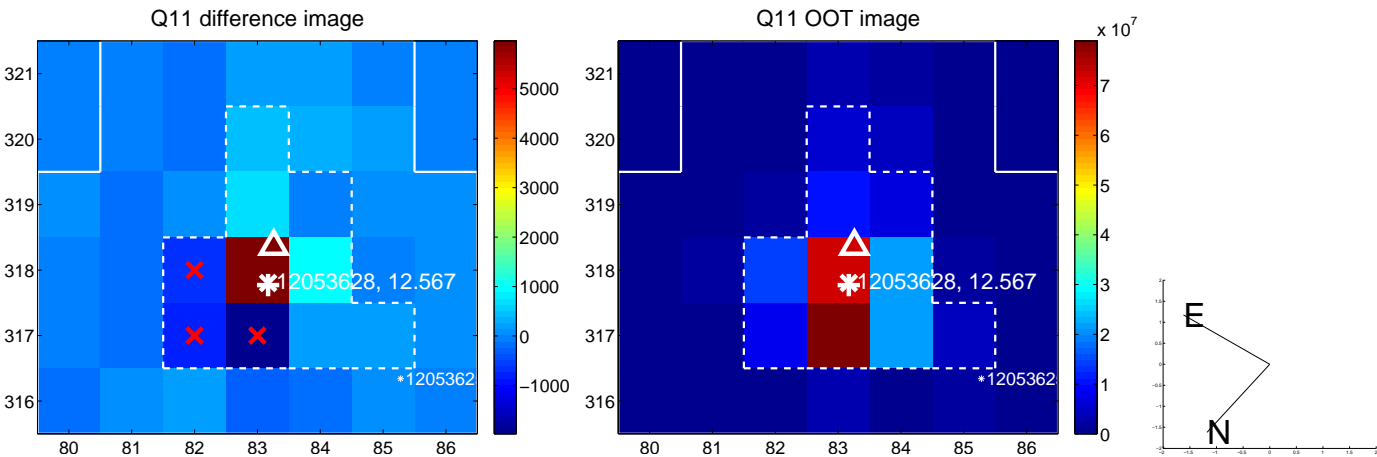
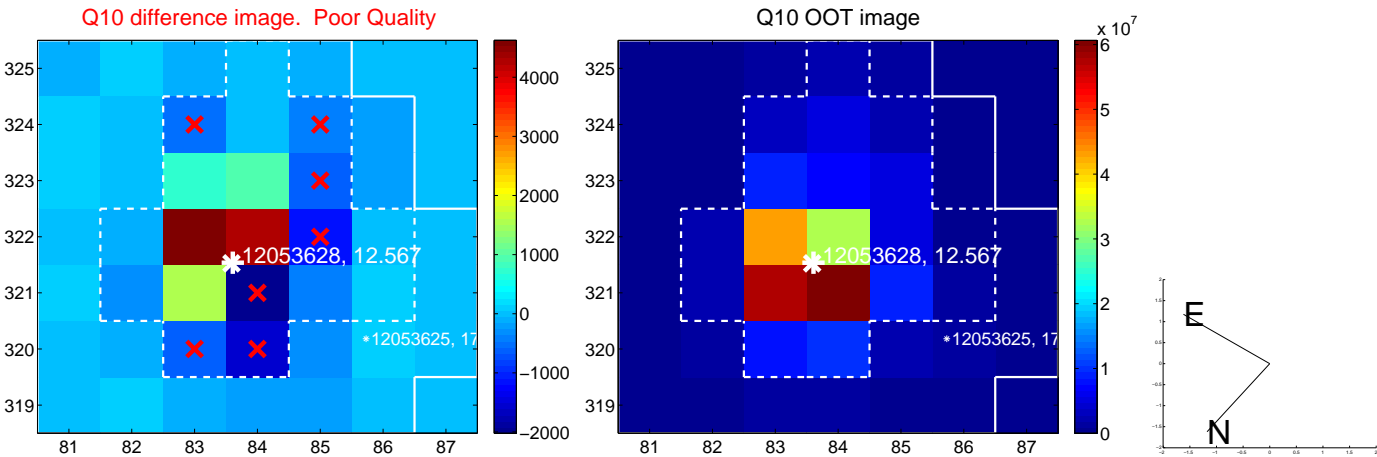
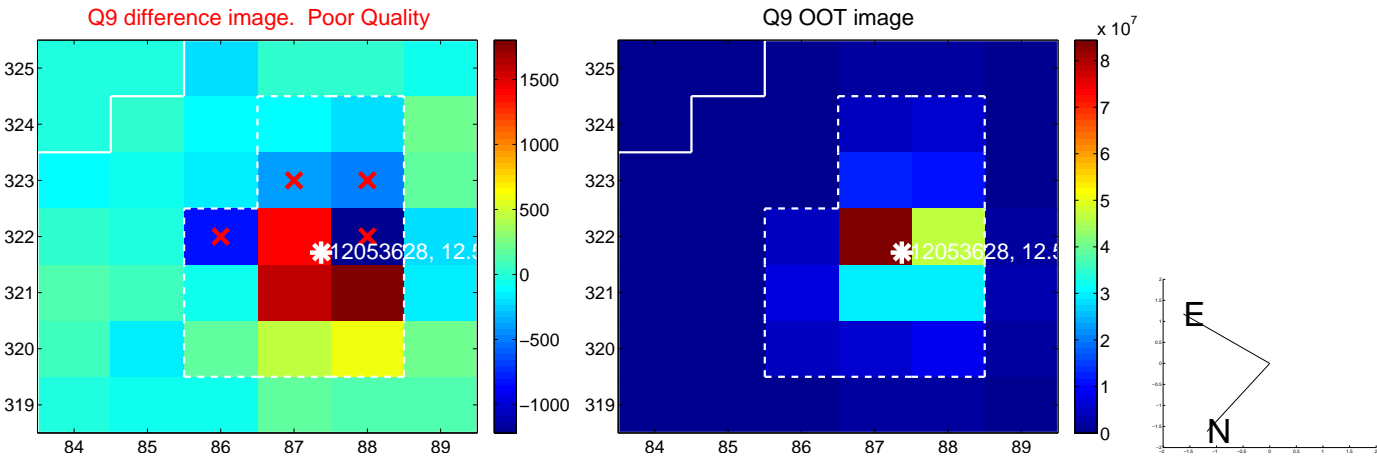
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



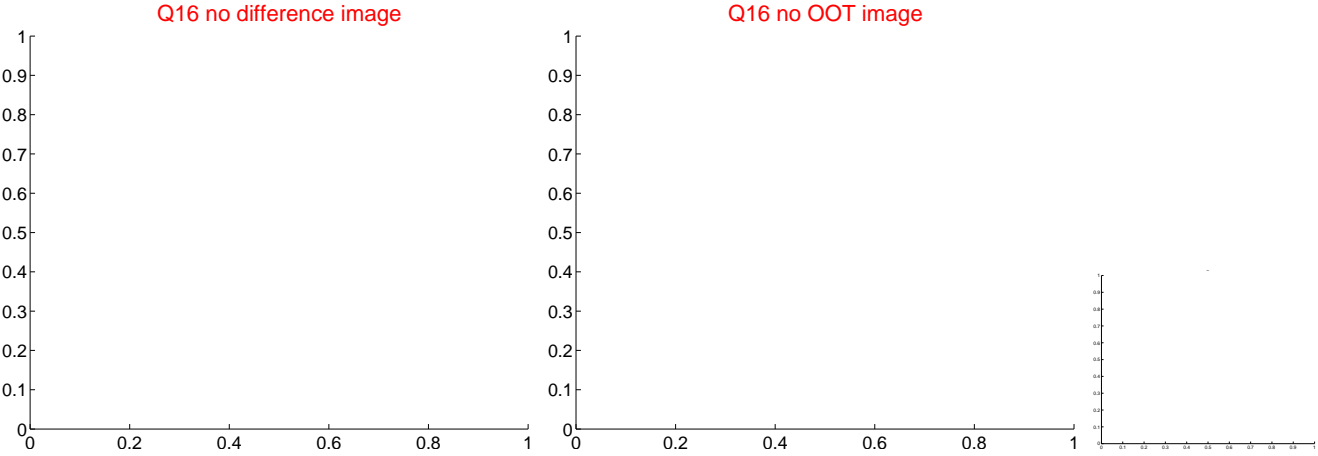
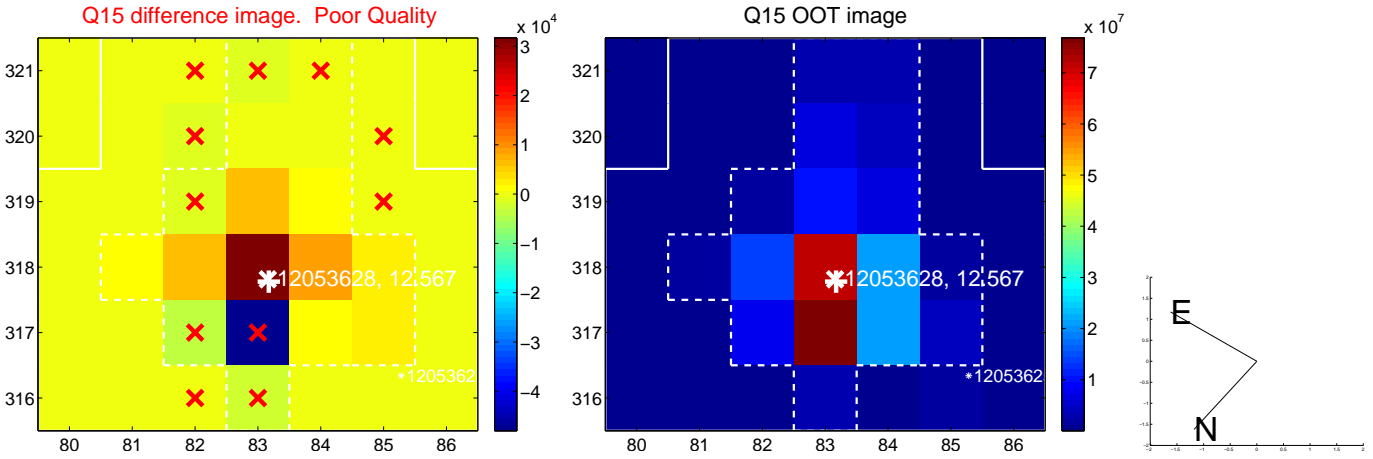
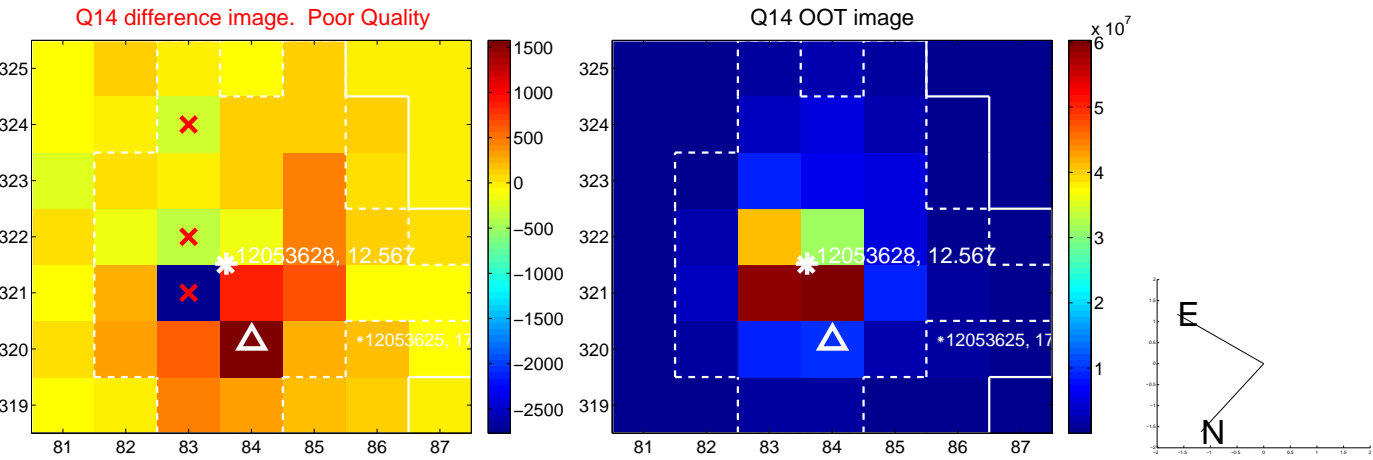
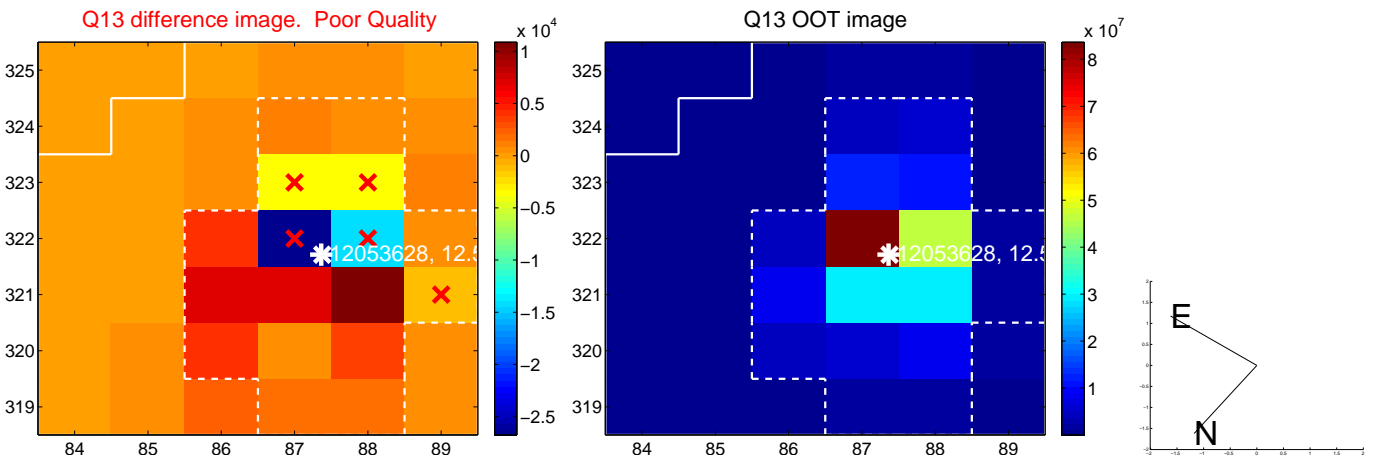
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



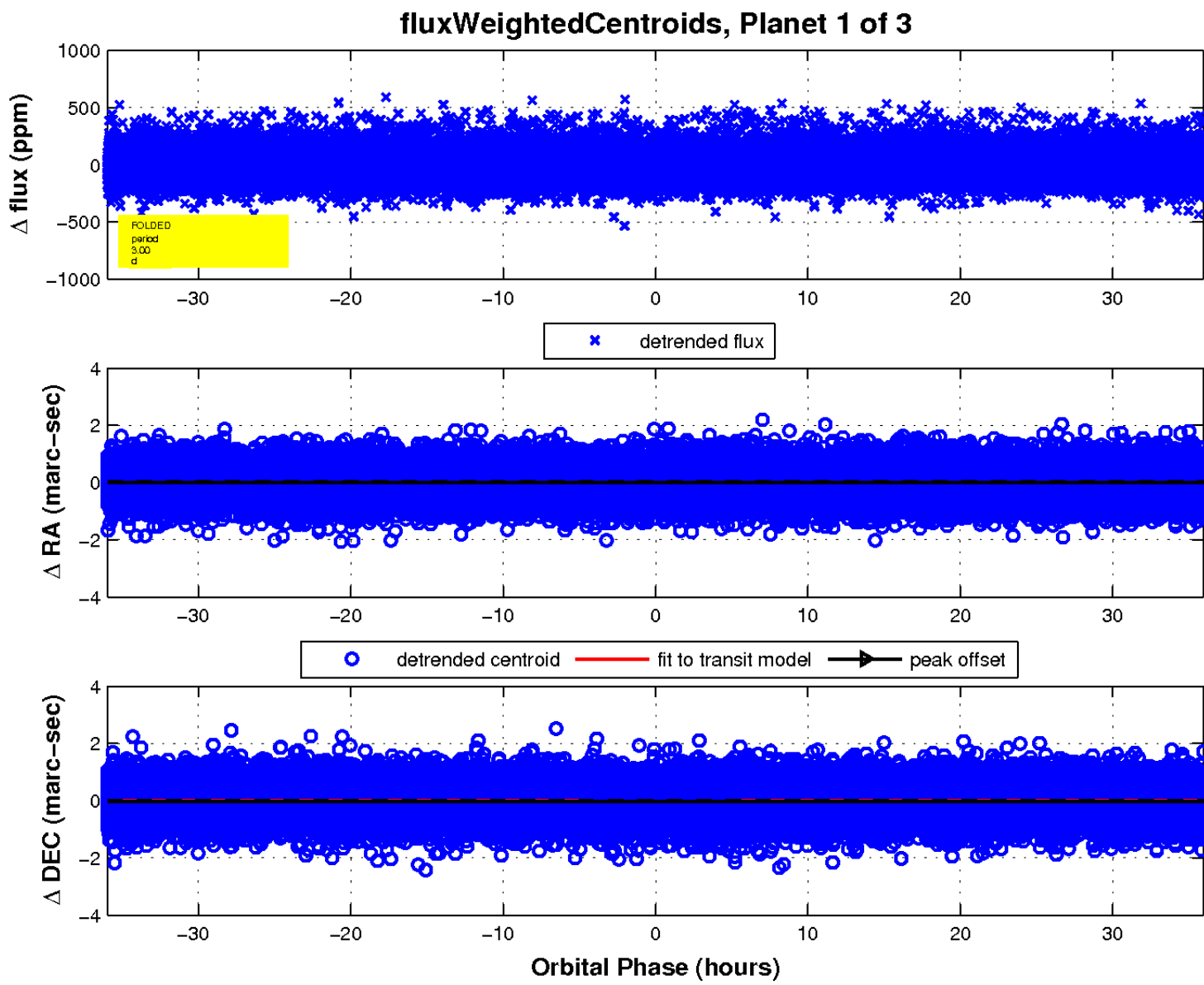
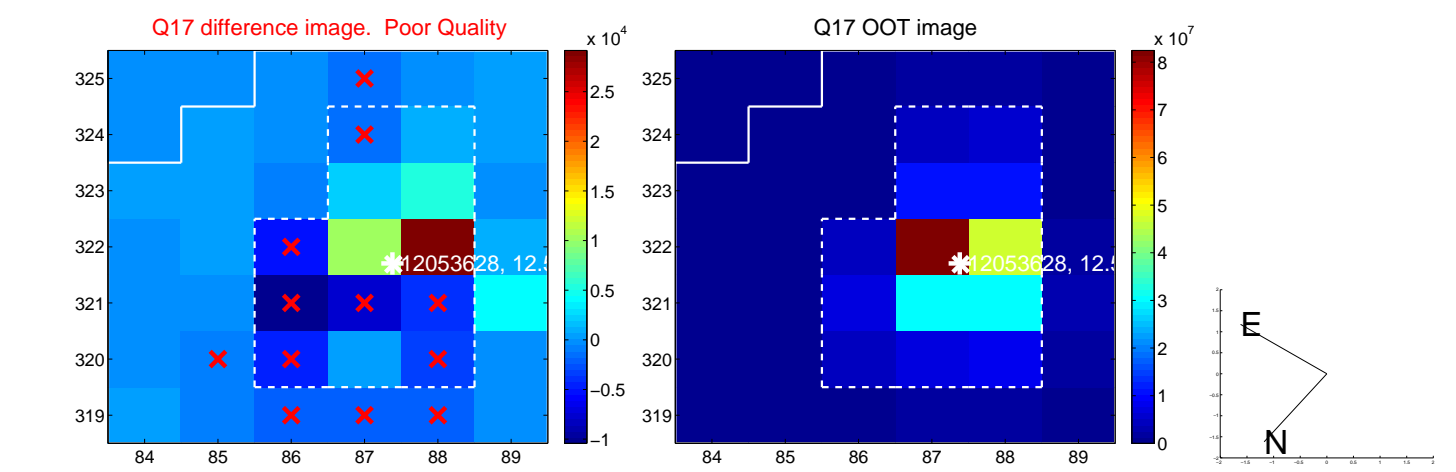
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

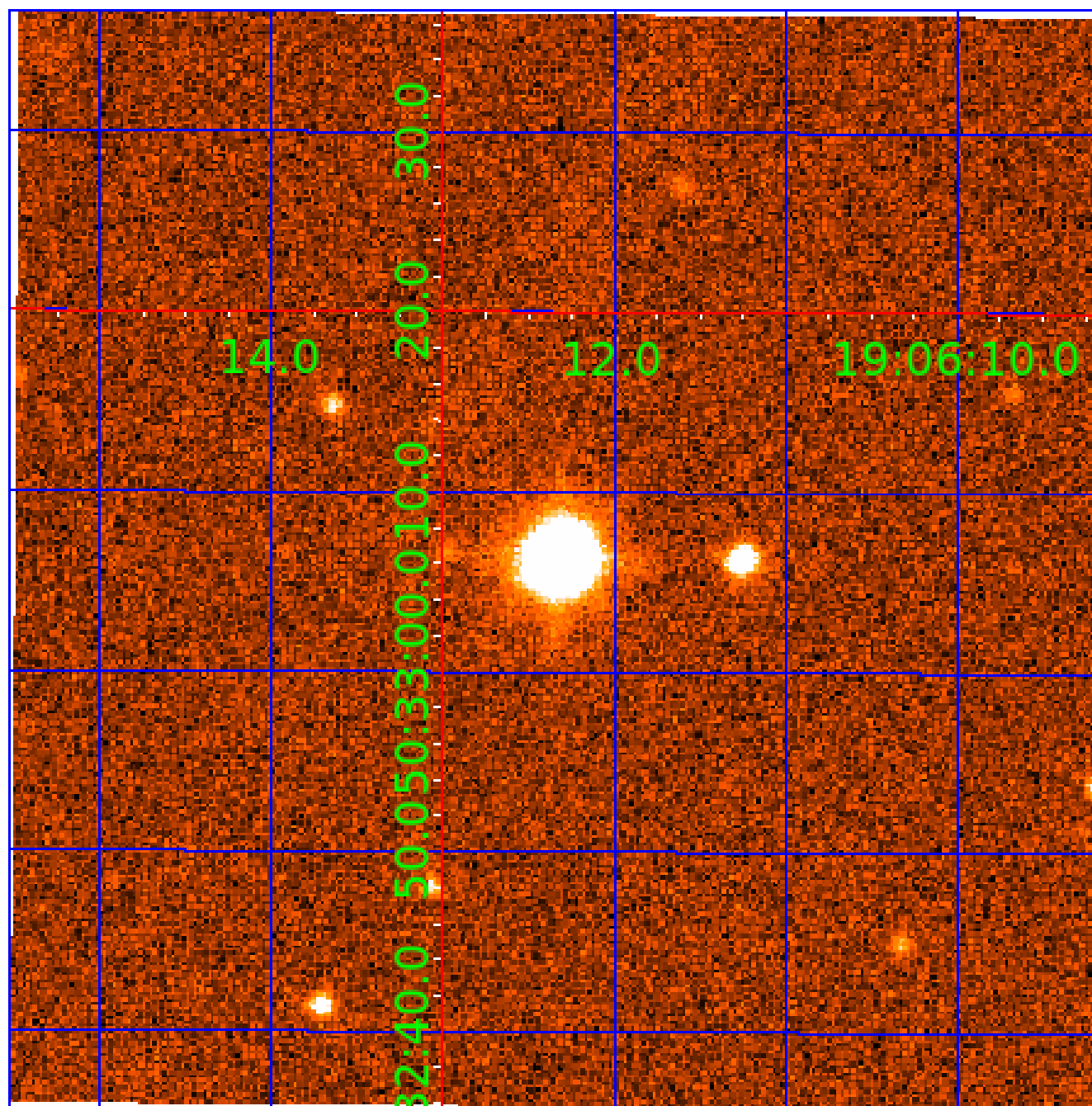


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012053628

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})
012053628-01	OBS	No	2.996645	131.609256	9.8	16.034	7.5	7.3	1.43	6762	0.52	1826.85
012053628-02	OBS	No	312.135996	174.629677	361.0	106.952	9.2	12.9	1.43	6762	3.19	3.73
012053628-03	OBS	No	101.793128	176.007998	123.5	2.085	7.2	7.3	1.43	6762	1.79	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012053628-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
012053628-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012053628-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

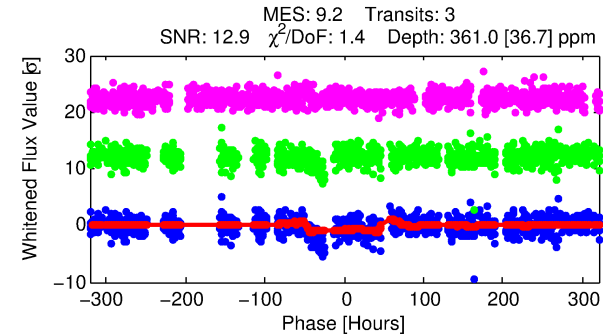
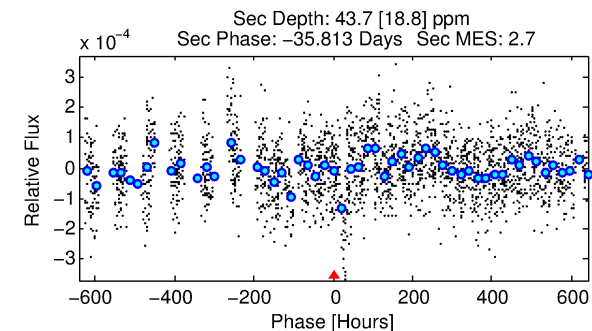
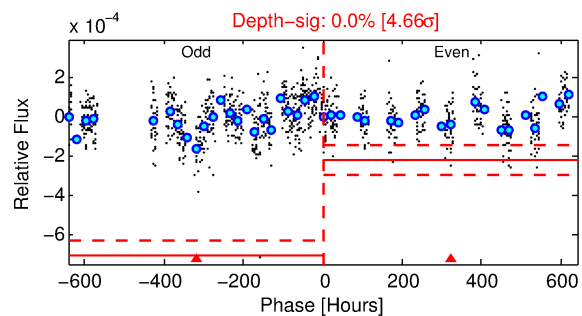
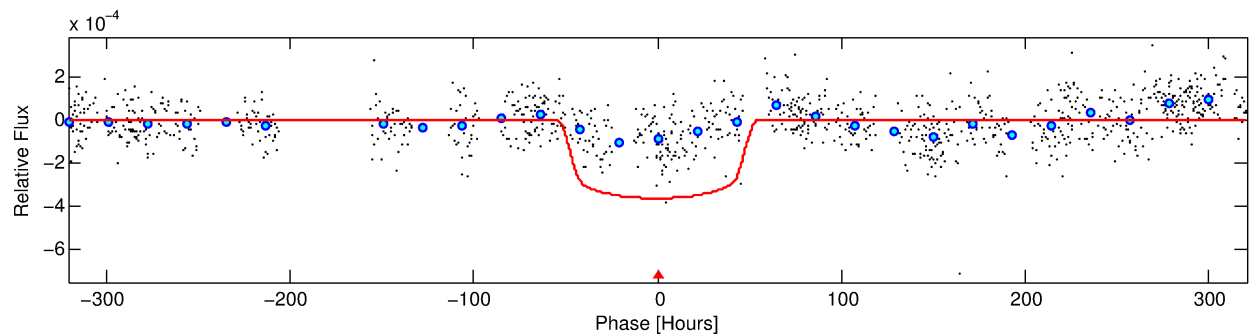
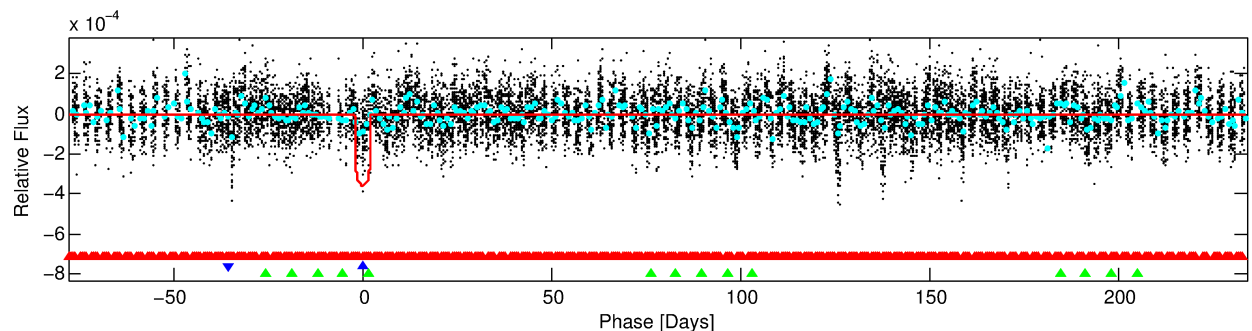
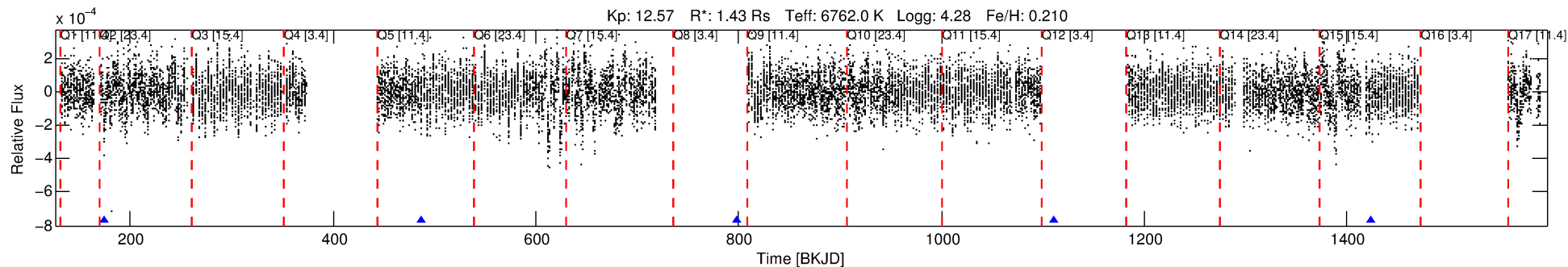
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012053628-02

No Significant Match Found

DV One-Page Summary

KIC: 12053628 Candidate: 2 of 3 Period: 312.136 d



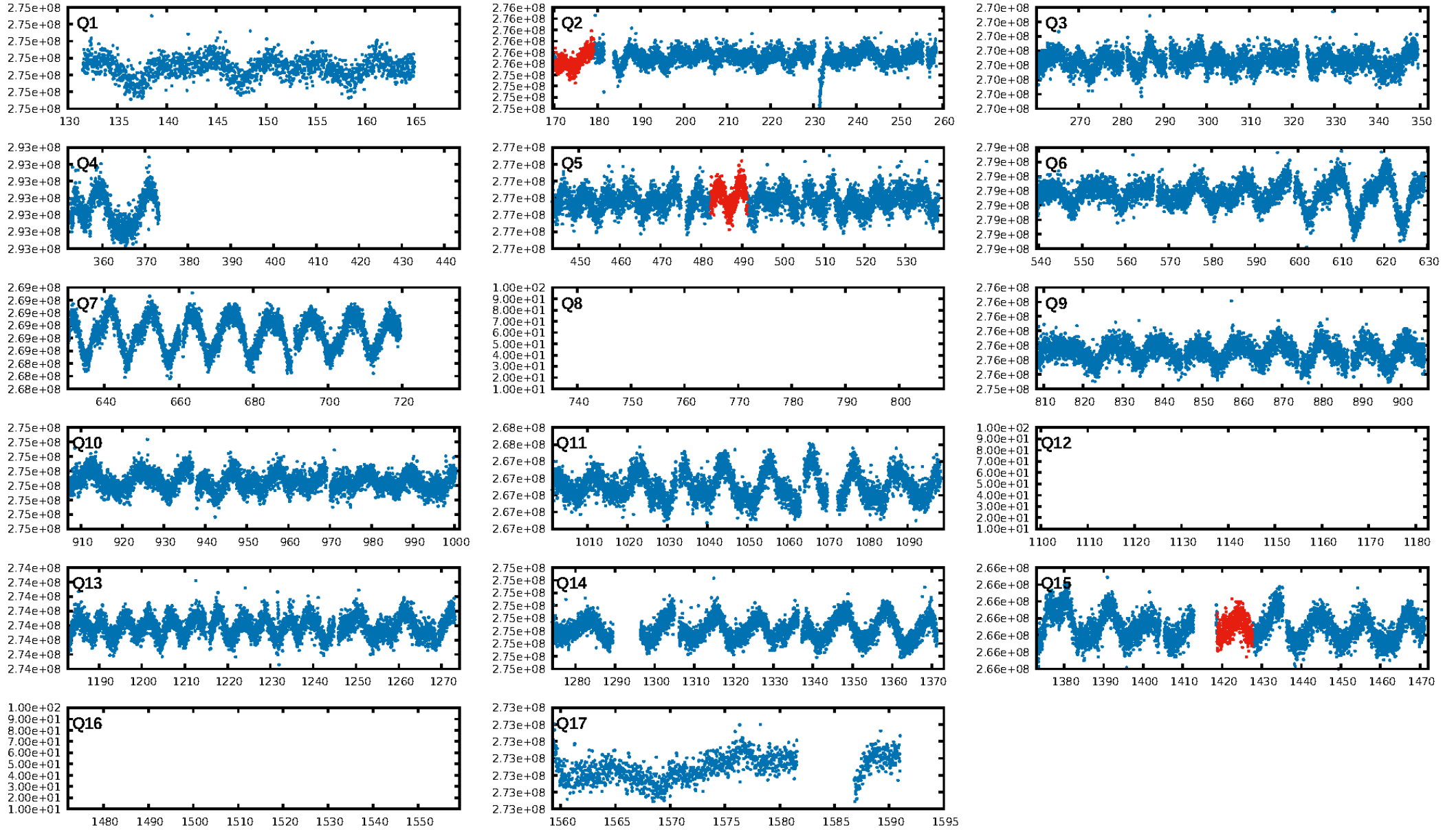
DV Fit Results:

Period = 312.13600 [0.03371] d
Epoch = 174.6297 [0.1217] BKJD
Rp/R* = 0.0205 [0.0013]
a/R* = 10.39 [2.01]
b = 0.91 [0.03]
Seff = 3.73 [1.67]
Teff = 354 [40] K
Rp = 3.19 [1.17] Re
a = 1.0130 [0.2965] AU
Ag = 2424.03 [1474.08] [1.64σ]
Teffp = 3844 [463] K [7.50σ]

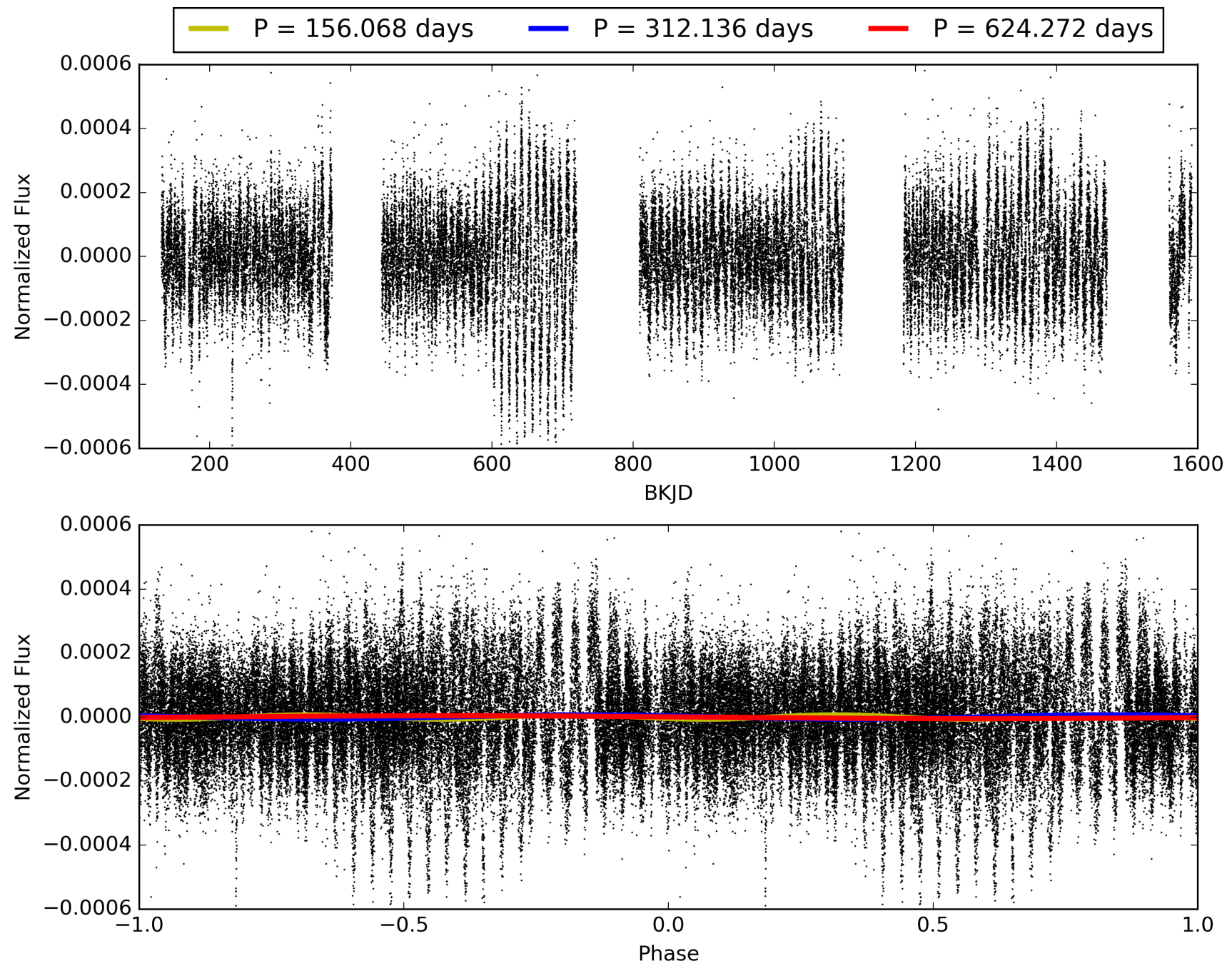
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.19σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.09e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2999
Centroid-sig: 99.6%
Centroid-so: 0.079 arcsec [0.25σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/1]

TCE 012053628-02, PDC Light Curves

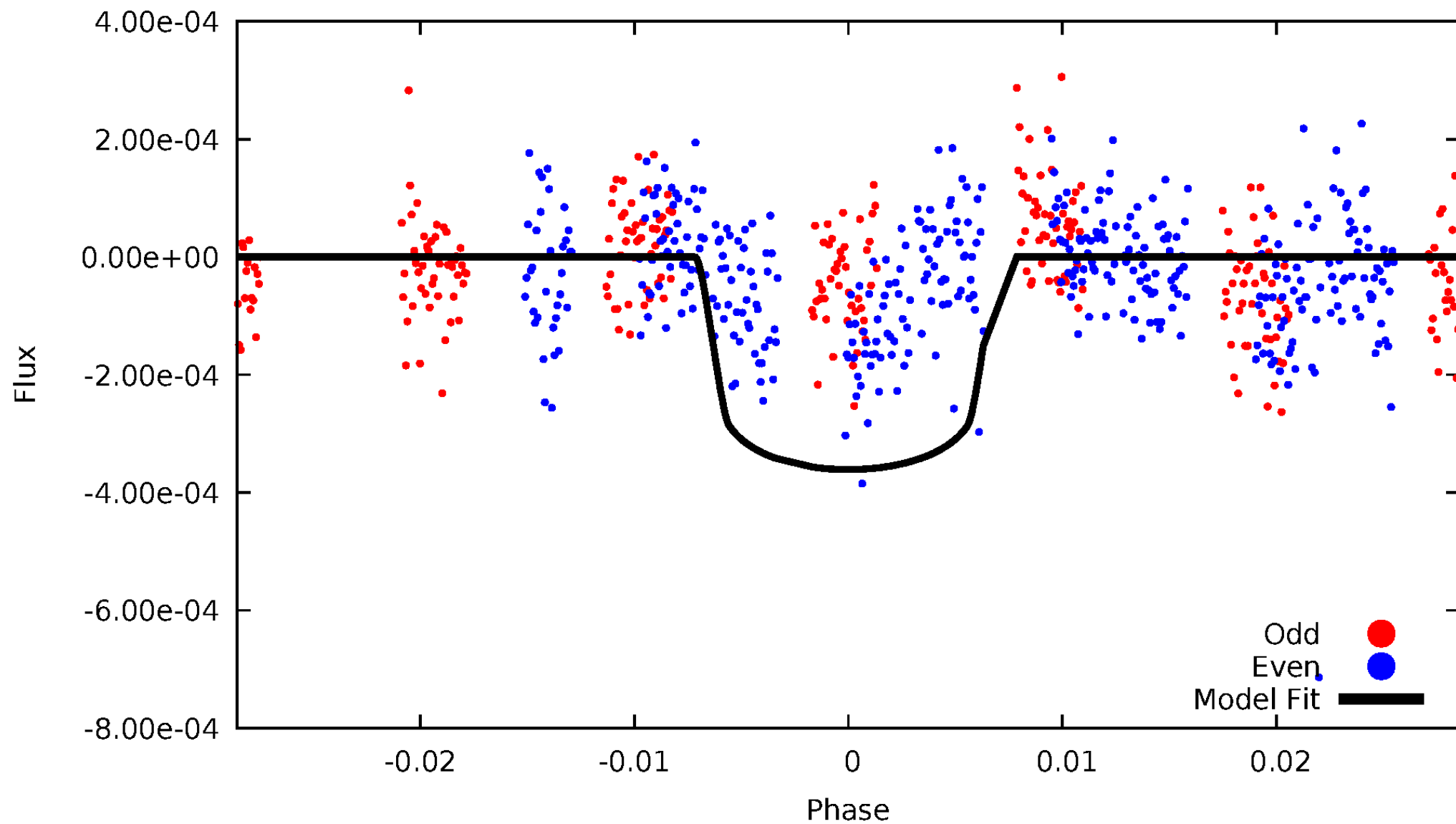


TCE 012053628-02



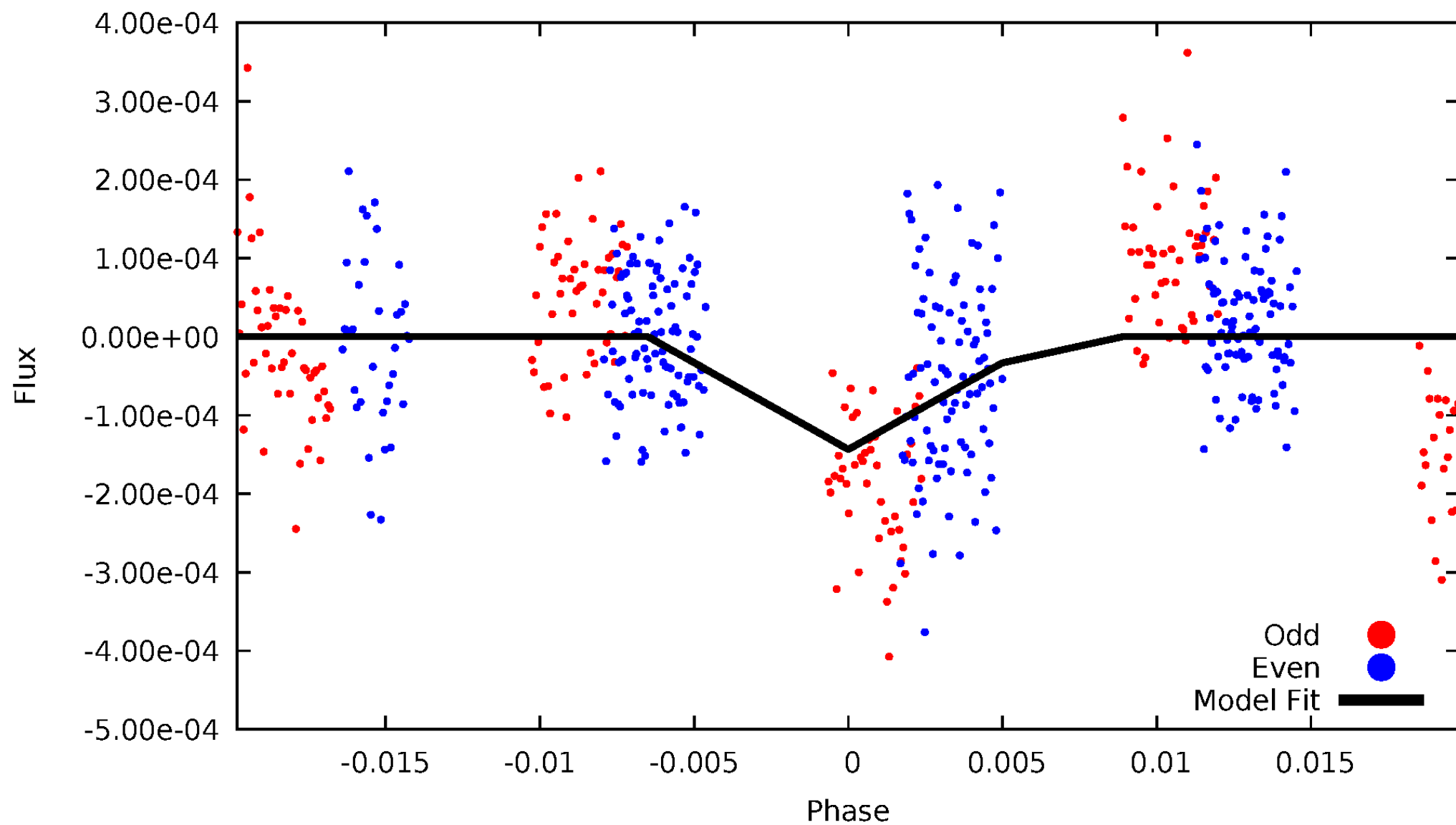
DV Odd/Even

TCE 012053628-02



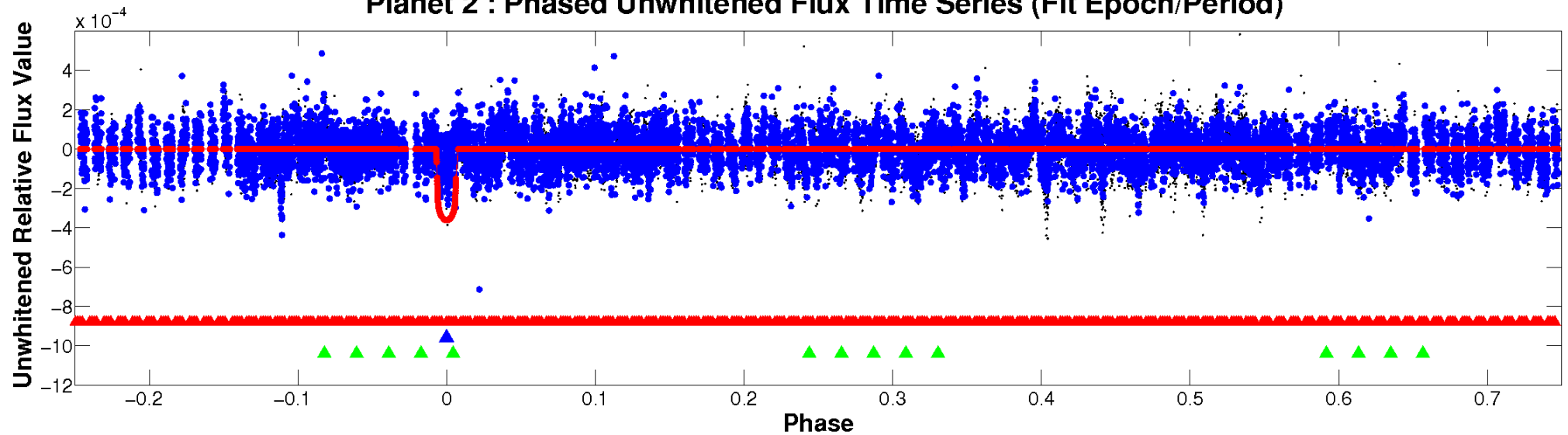
ALT Odd/Even

TCE 012053628-02

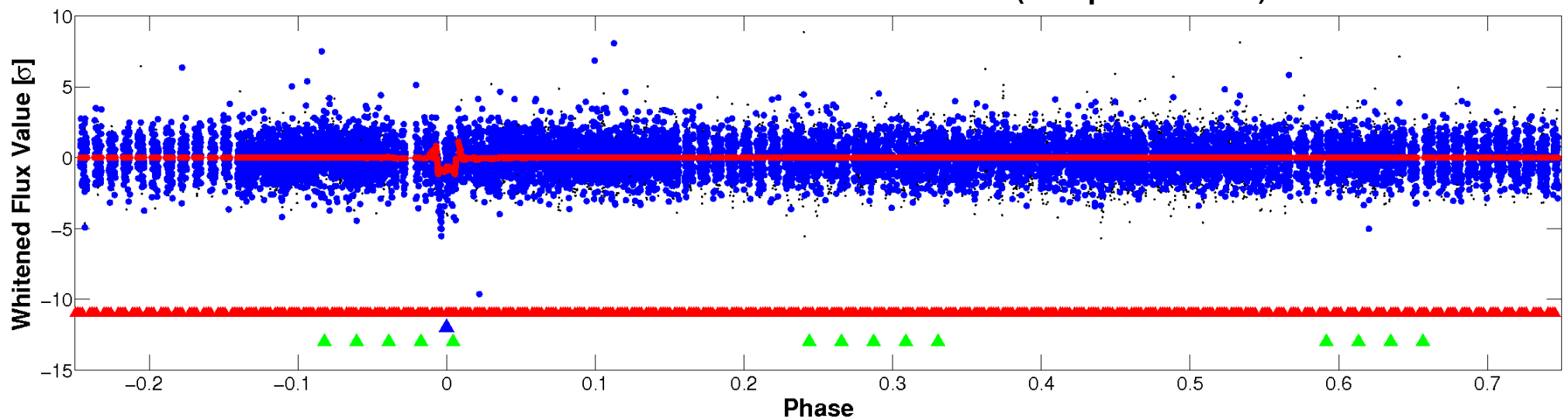


Non-Whitened Vs. Whitened Light Curve

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



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



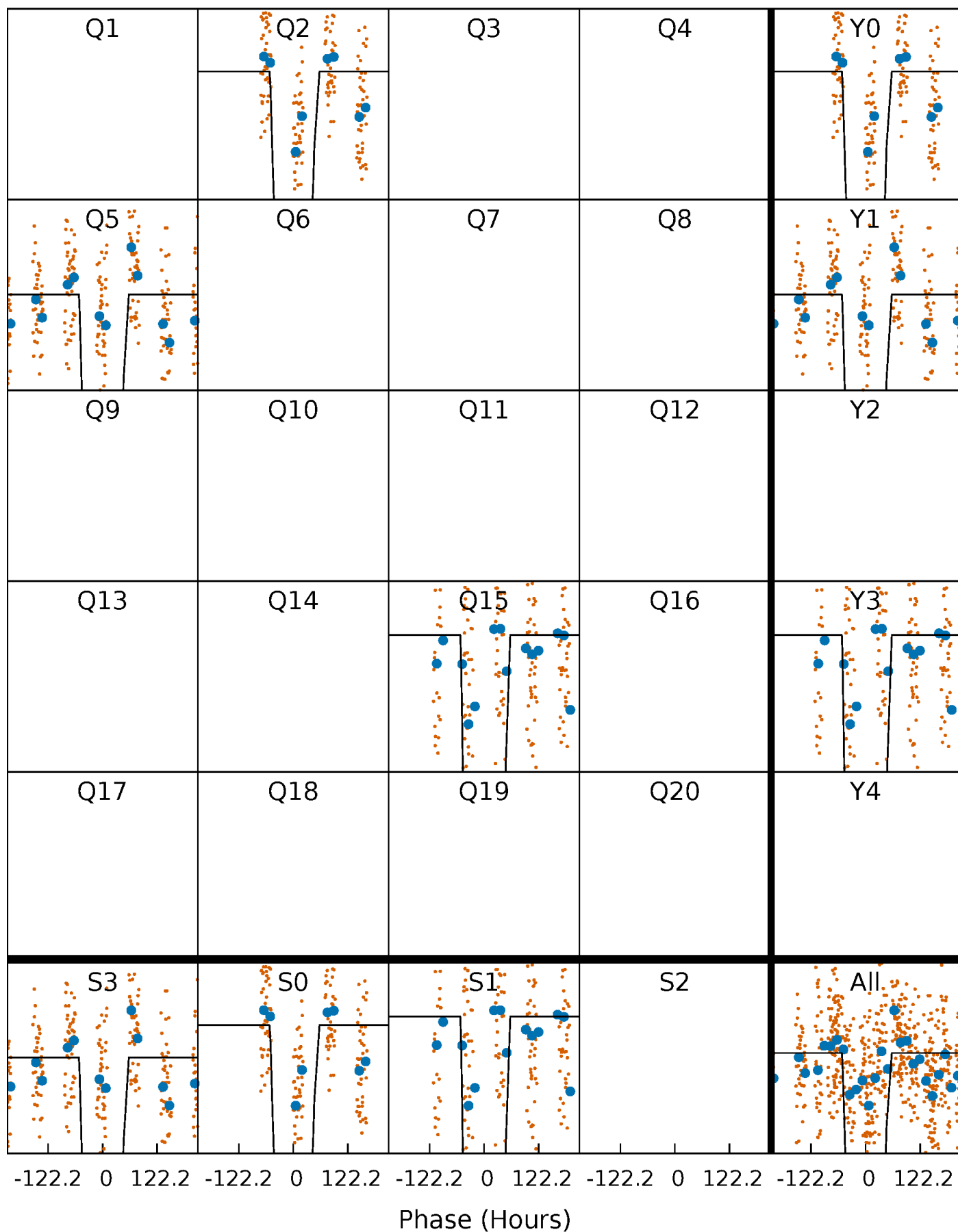
PDC Quarter-Phased Transit Curves

TCE 012053628-02 $P=312.135996$ Days $T_0=174.629677$ (BKJD)



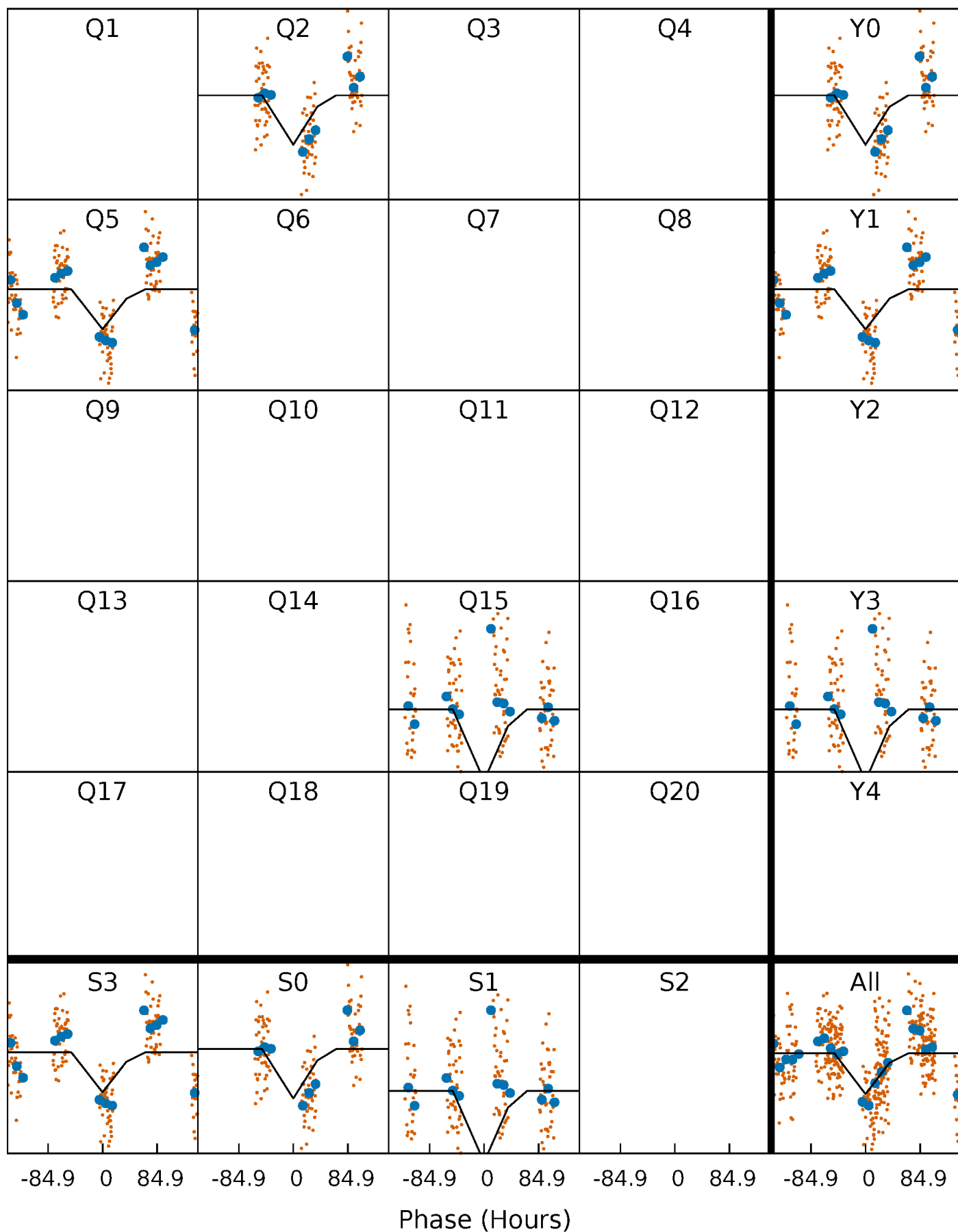
DV Quarter-Phased Transit Curves

TCE 012053628-02 P=312.135996 Days $T_0=174.629677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

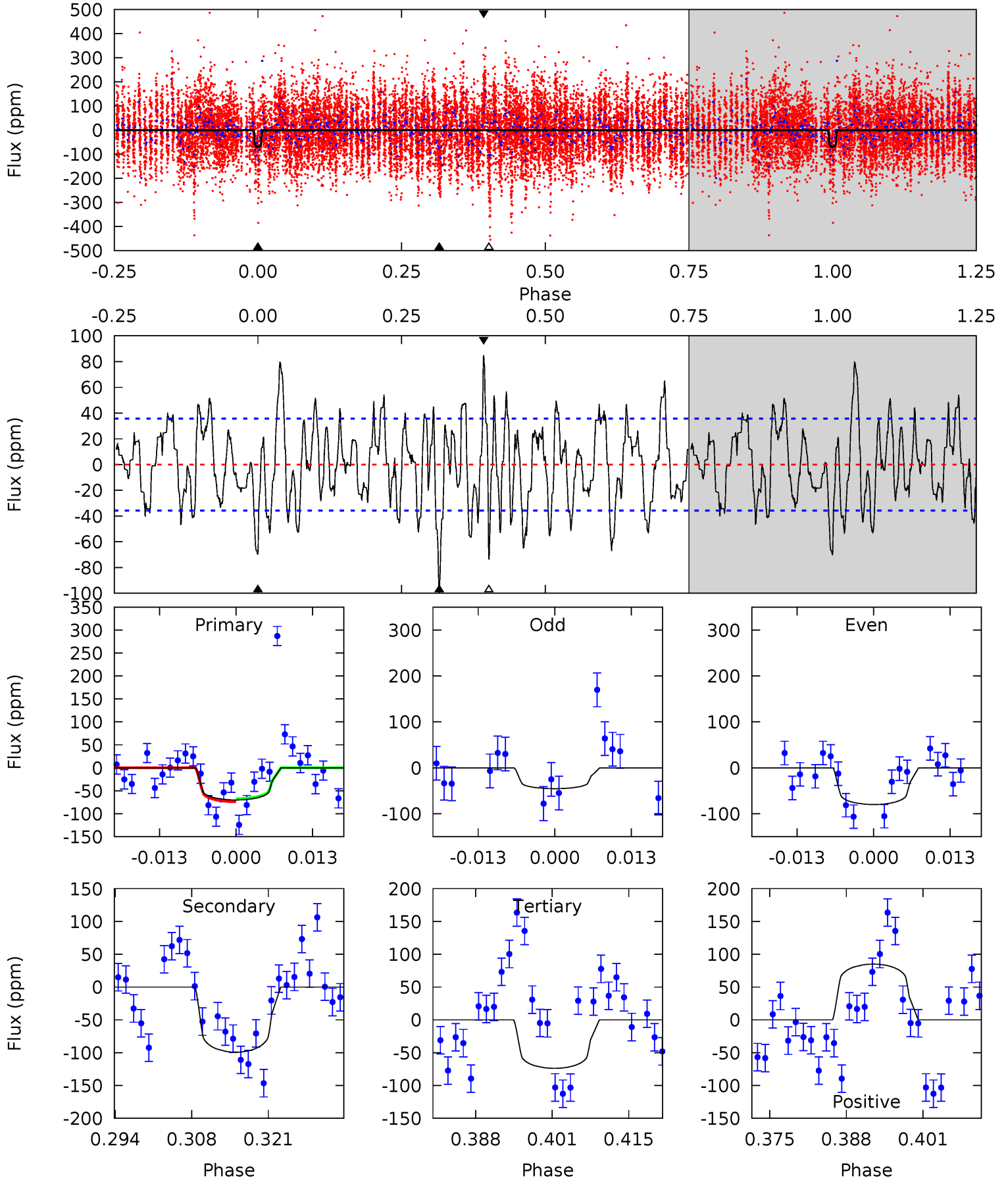
TCE 012053628-02 P=312.381454 Days $T_0=174.058177$ (BKJD)



DV Model-Shift Uniqueness Test

012053628-02, P = 312.135996 Days, E = 174.629677 Days

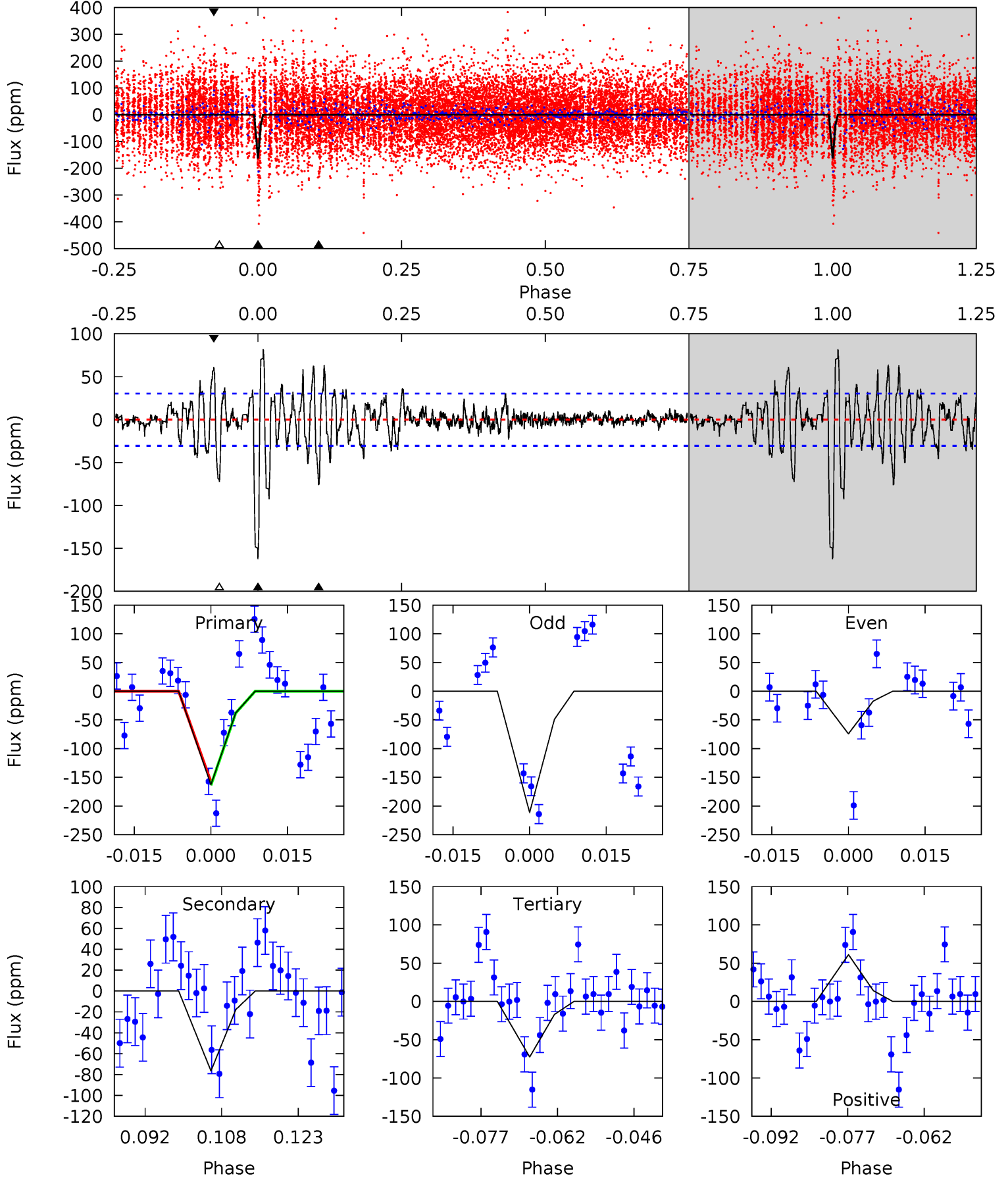
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.75	13.8	10.3	11.8	4.97	2.47	4.12	-0.53	-2.08	3.54	2.00	2.12	1.64	0.46	0.45



Alt Model-Shift Uniqueness Test

012053628-02, P = 312.381454 Days, E = 174.058177 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.4	12.4	11.7	9.91	4.94	2.42	2.53	14.6	16.5	0.66	2.50	9.43	0.64	0.34	0.52



Stellar Parameters For KIC 012053628

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6762^{+185}_{-301}	$4.281^{+0.072}_{-0.217}$	$0.210^{+0.150}_{-0.350}$	$1.429^{+0.516}_{-0.207}$	$1.424^{+0.203}_{-0.203}$	$0.687^{+0.228}_{-0.400}$
	+3%/-4%	+2%/-5%	+71%/-167%	+36%/-14%	+14%/-14%	+33%/-58%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012053628-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-99 ± 7	$3.29^{+0.57}_{-0.37}$	502^{+37}_{-30}	4797^{+188}_{-198}	5000^{+1342}_{-1193}
Alt.	-76 ± 6	$2.09^{+0.46}_{-0.29}$	503^{+41}_{-29}	5516^{+347}_{-314}	9721^{+3163}_{-2969}

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 $A_{obs} \gg 1.0$

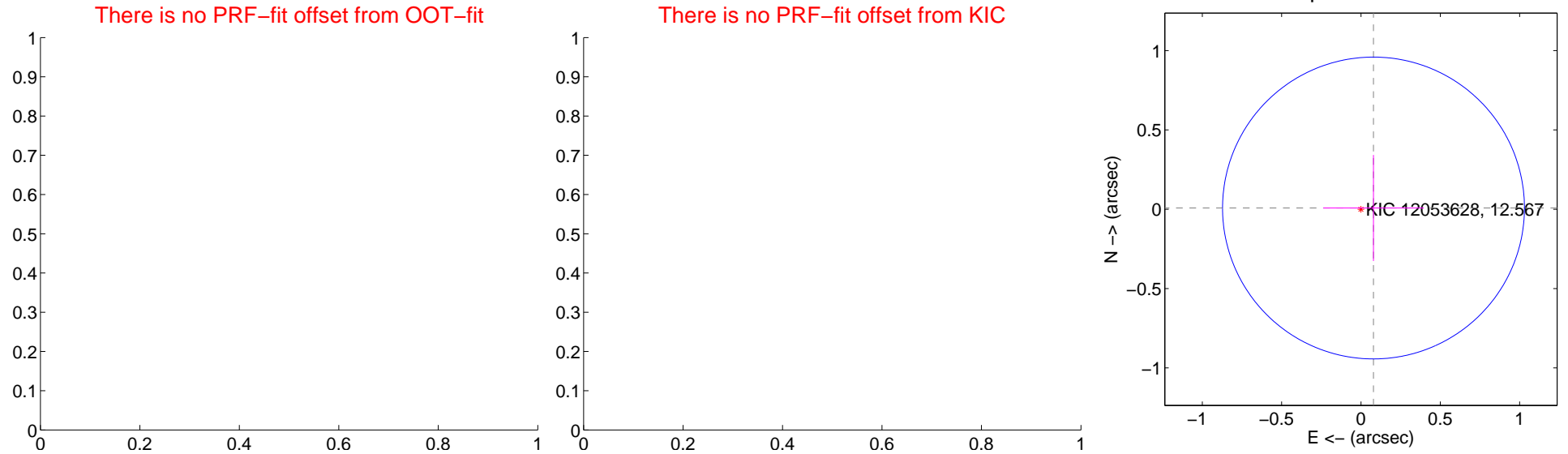
DV Centroid Data

Supplemental centroid analysis for 012053628-02. Kepler magnitude: 12.57. Transit SNR 12.86

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.08 ± 0.32	0.25	-0.08 ± 0.32	0.01 ± 0.33

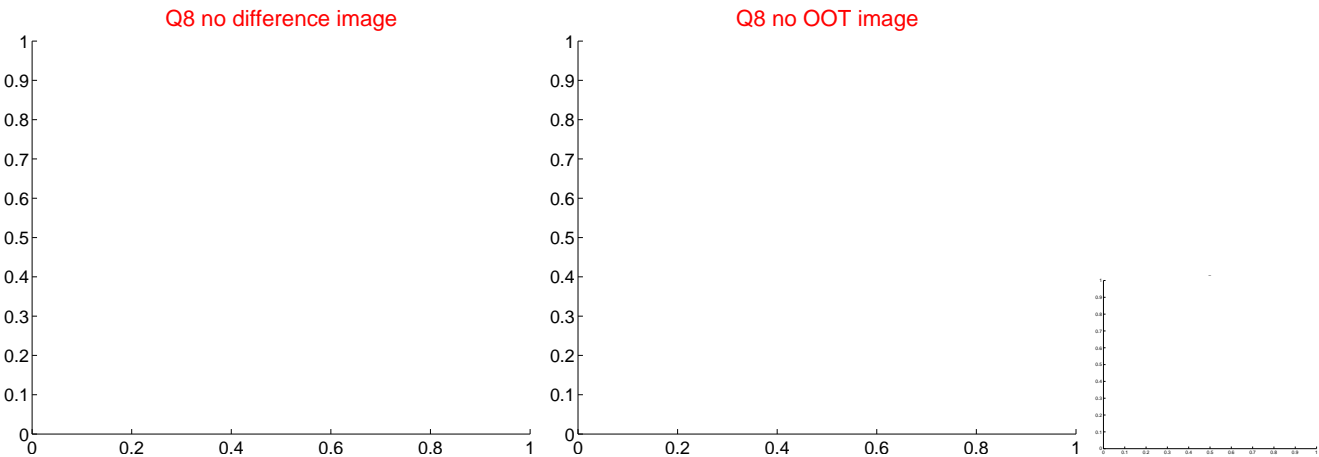
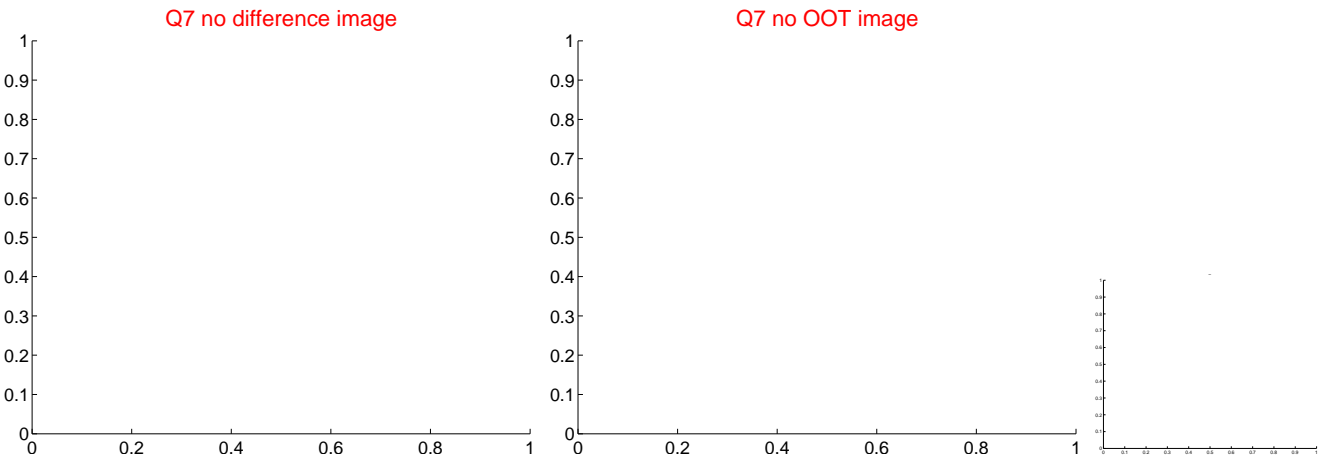
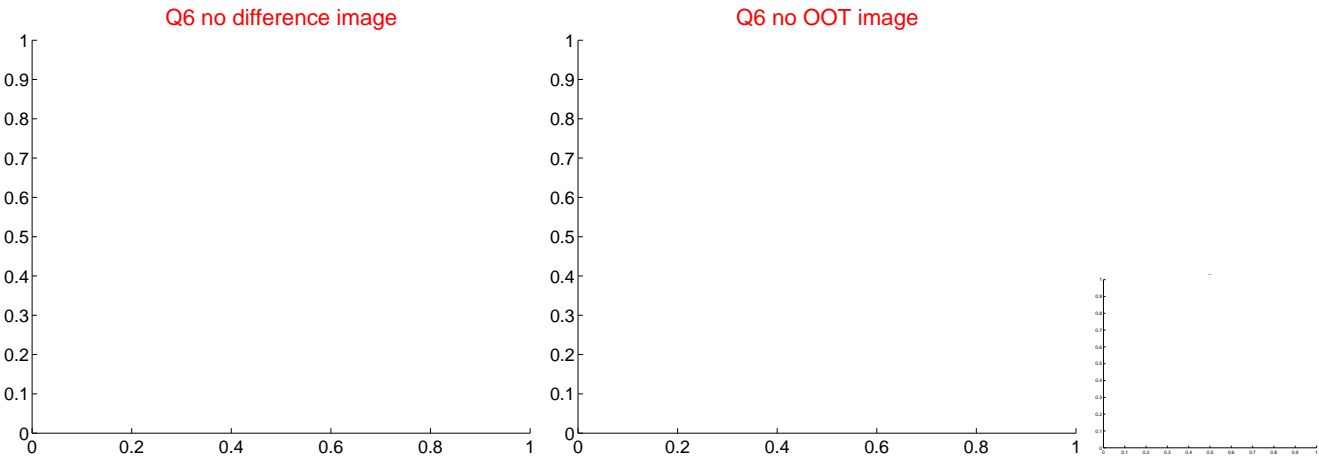
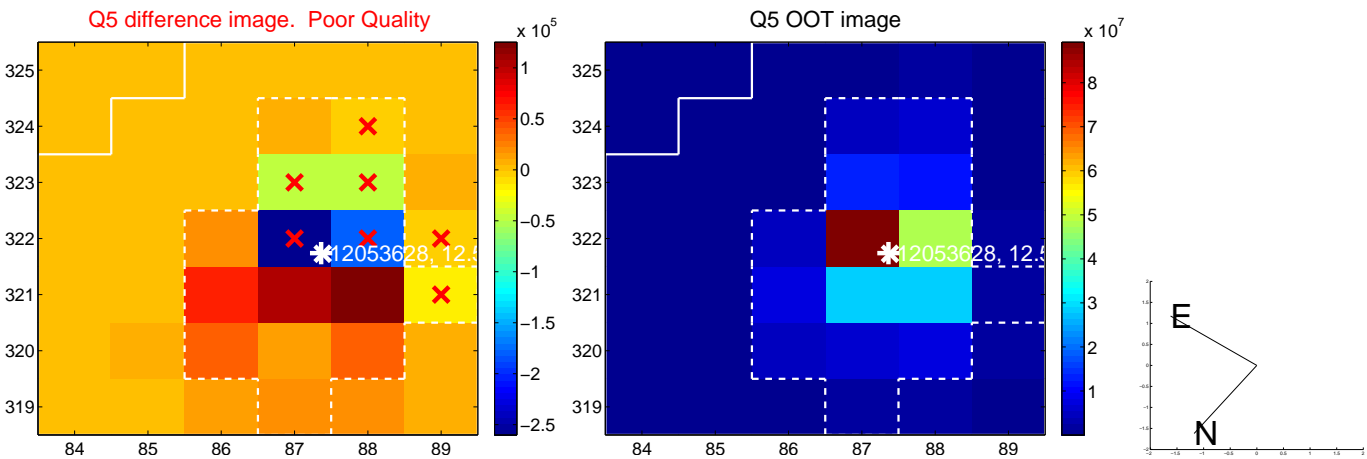


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



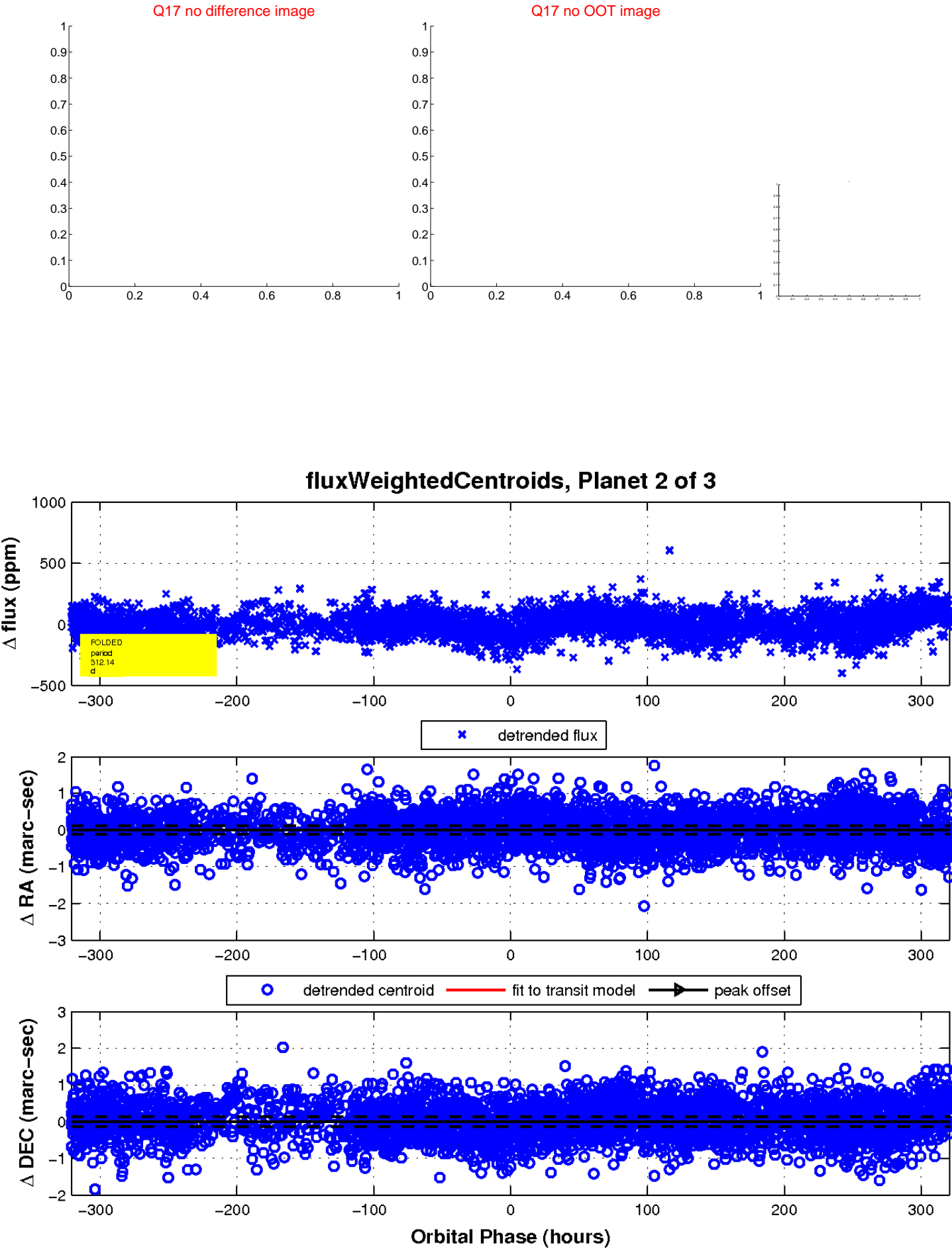
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

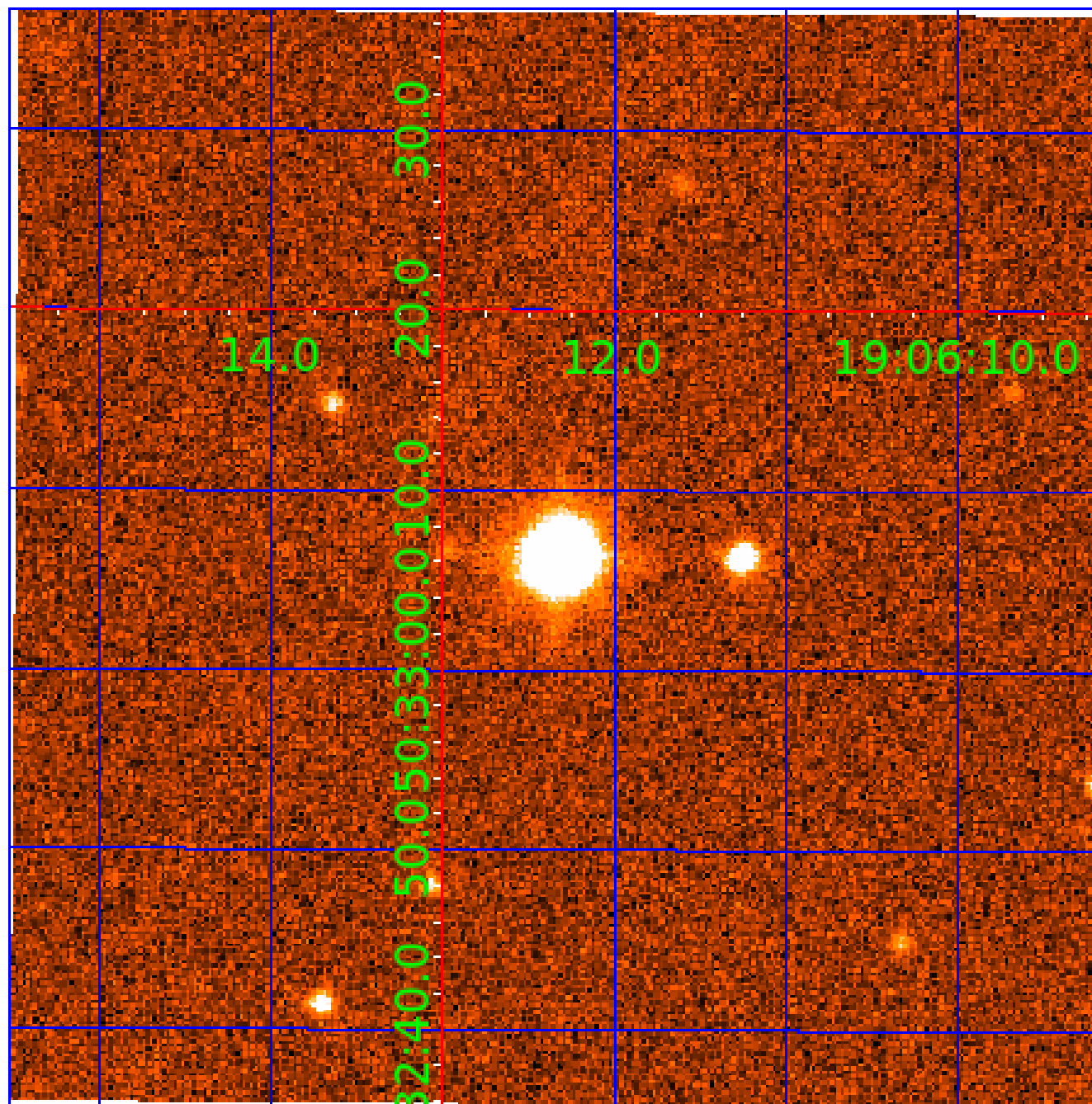


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012053628

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})
012053628-01	OBS	No	2.996645	131.609256	9.8	16.034	7.5	7.3	1.43	6762	0.52	1826.85
012053628-02	OBS	No	312.135996	174.629677	361.0	106.952	9.2	12.9	1.43	6762	3.19	3.73
012053628-03	OBS	No	101.793128	176.007998	123.5	2.085	7.2	7.3	1.43	6762	1.79	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012053628-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
012053628-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012053628-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

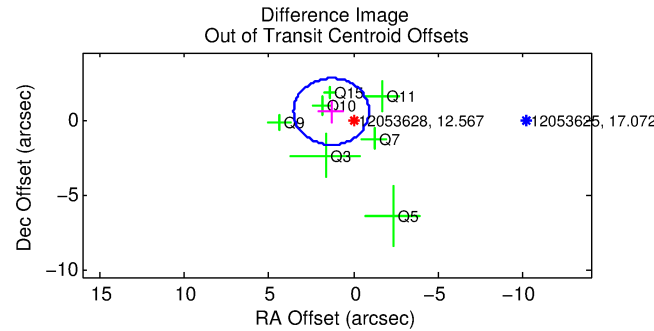
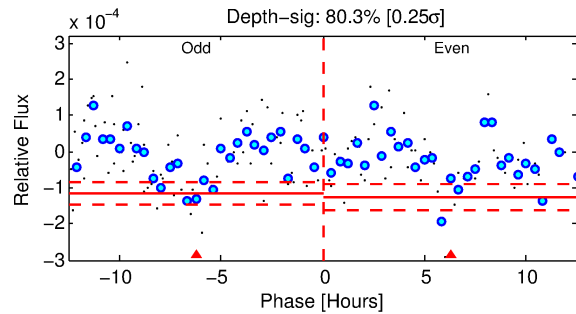
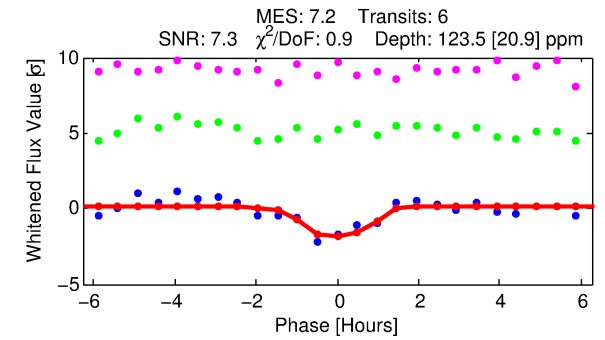
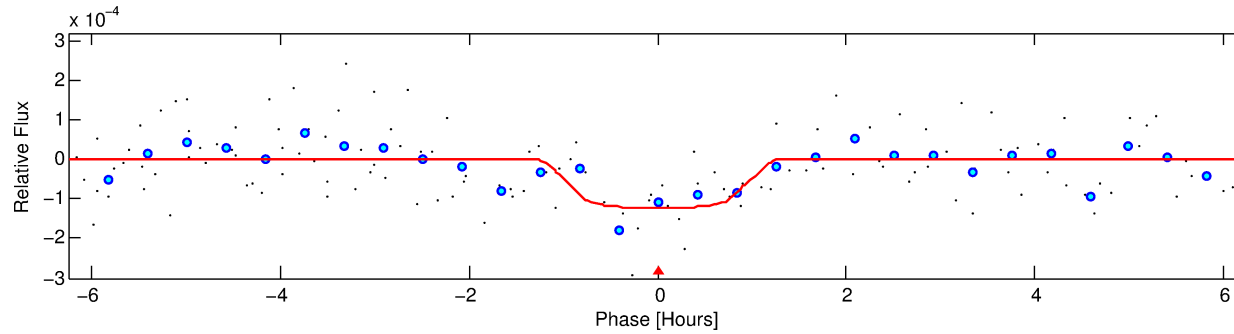
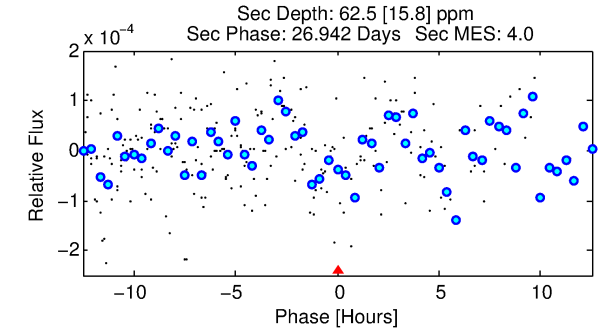
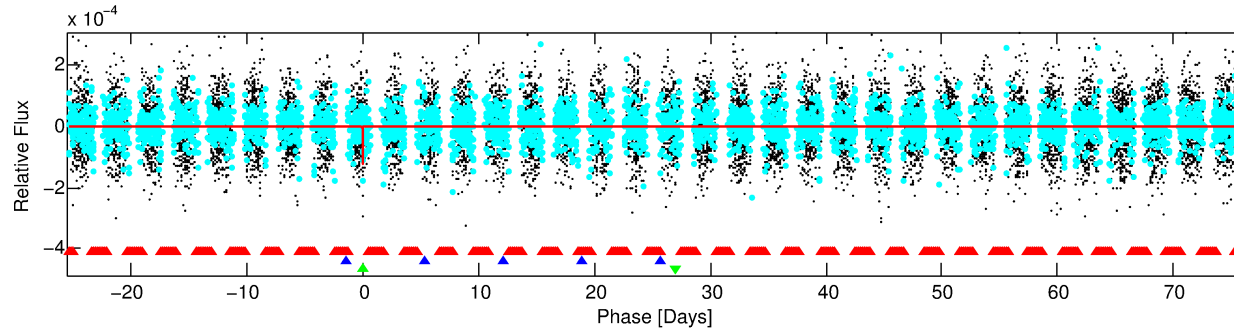
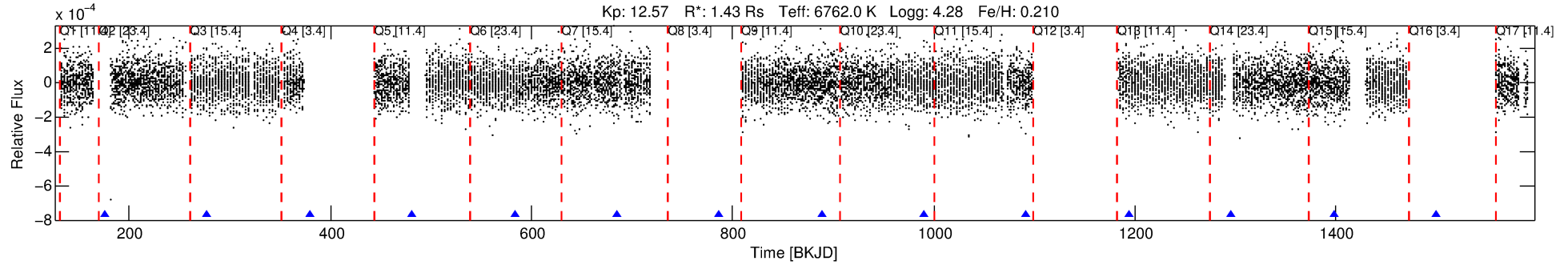
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012053628-03

No Significant Match Found

DV One-Page Summary

KIC: 12053628 Candidate: 3 of 3 Period: 101.793 d



DV Fit Results:

Period = 101.79313 [0.00179] d
Epoch = 176.0080 [0.0156] BKJD
Rp/R* = 0.0115 [0.0080]
a/R* = 205.21 [833.09]
b = 0.85 [1.34]
Seff = 16.61 [7.44]
Teq = 515 [58] K
Rp = 1.79 [1.41] Re
a = 0.4800 [0.1405] AU
Ag = 2458.15 [3635.04] [0.68σ]
Teffp = 5604 [2006] K [2.54σ]

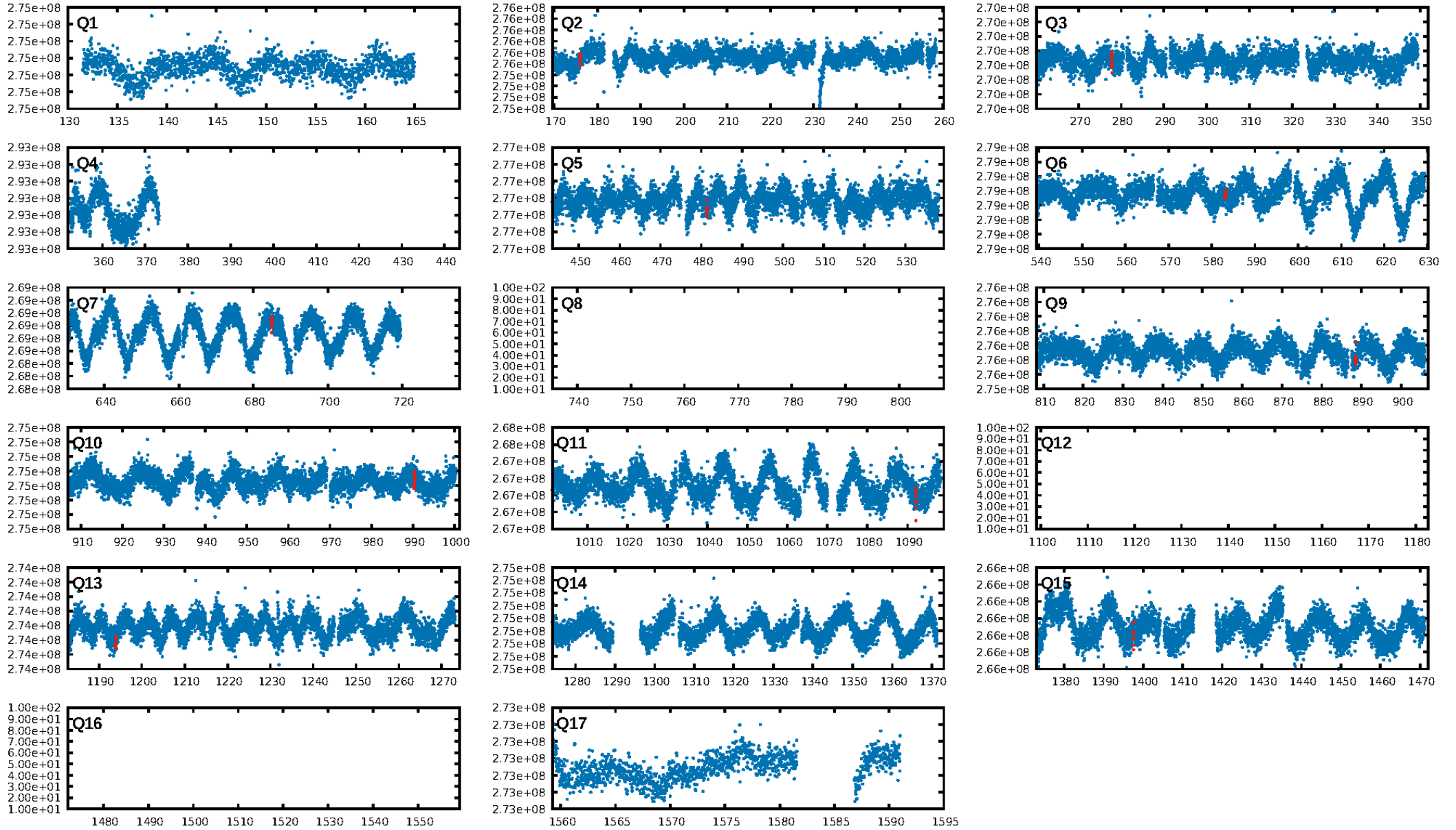
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [146.64σ]
LongPeriod-sig: 100.0% [47.19σ]
ModelChiSquare2-sig: 84.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.62e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.198
Centroid-sig: 0.2%
Centroid-so: 3.642 arcsec [1.84σ]
OotOffset-rm: 1.426 arcsec [1.93σ]
KicOffset-rm: 1.352 arcsec [1.29σ]
OotOffset-st: 1/4/0/2 [7]
KicOffset-st: 1/4/0/2 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.89 [8/9]

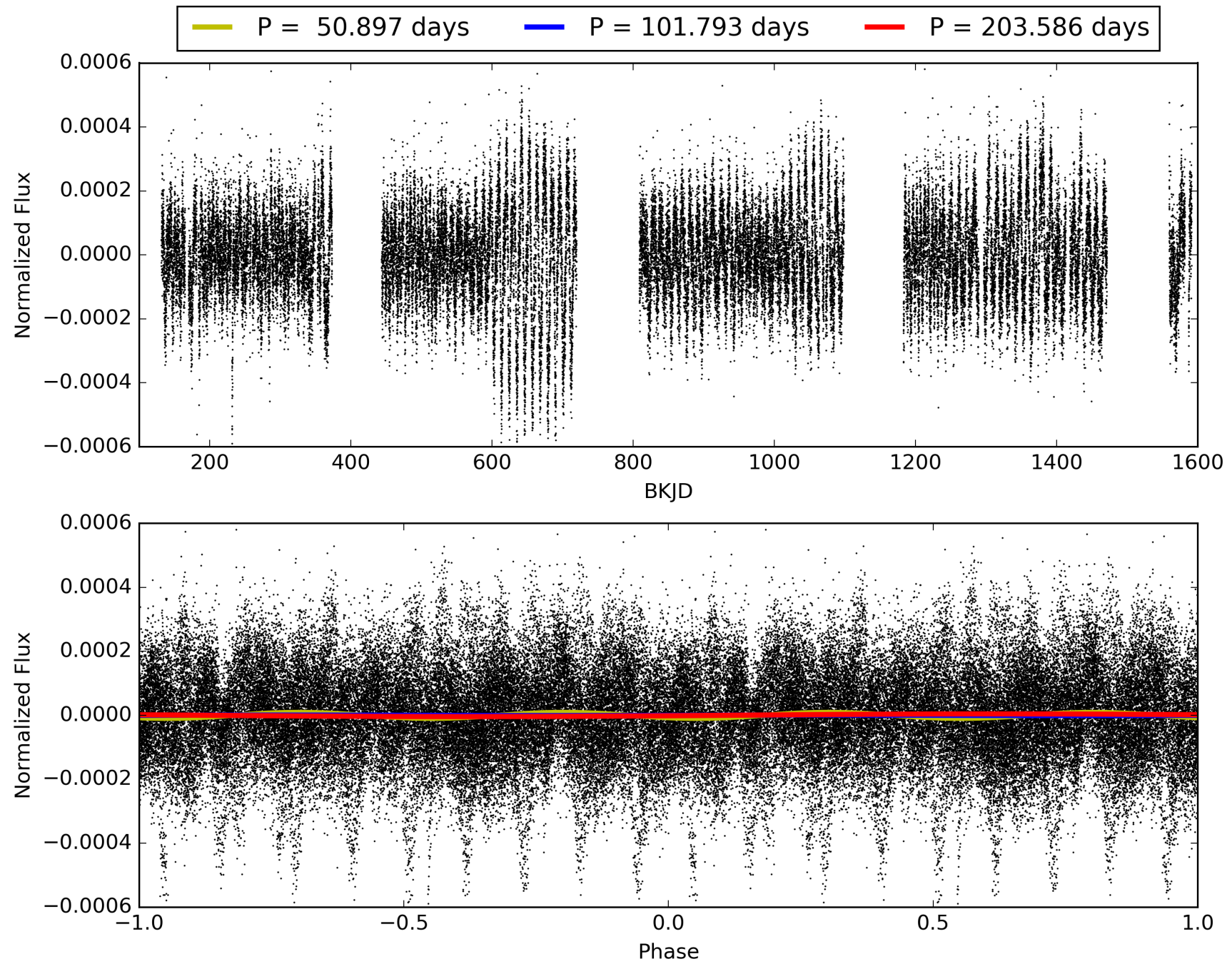
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:57:29 Z

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

TCE 012053628-03, PDC Light Curves

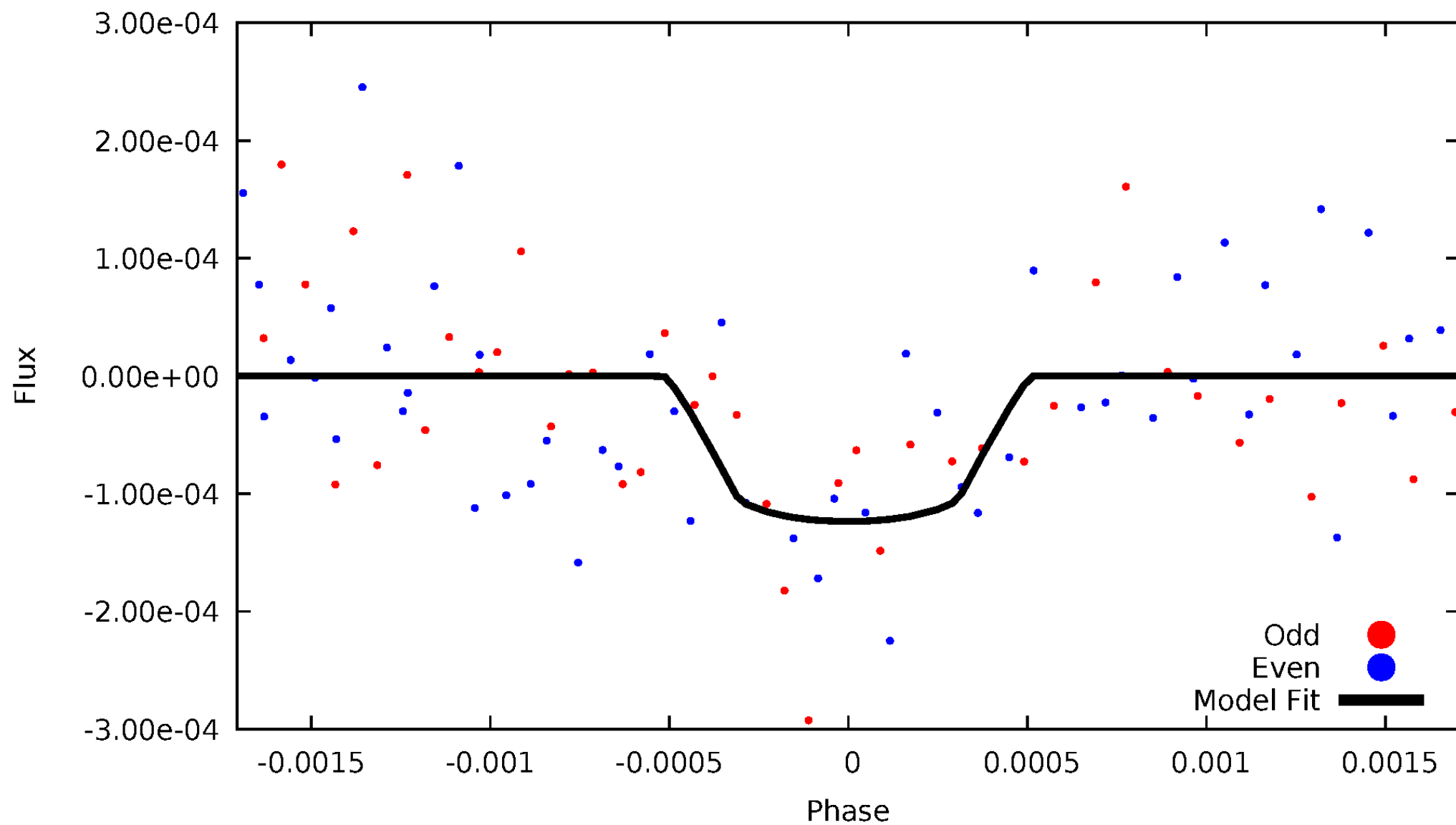


TCE 012053628-03



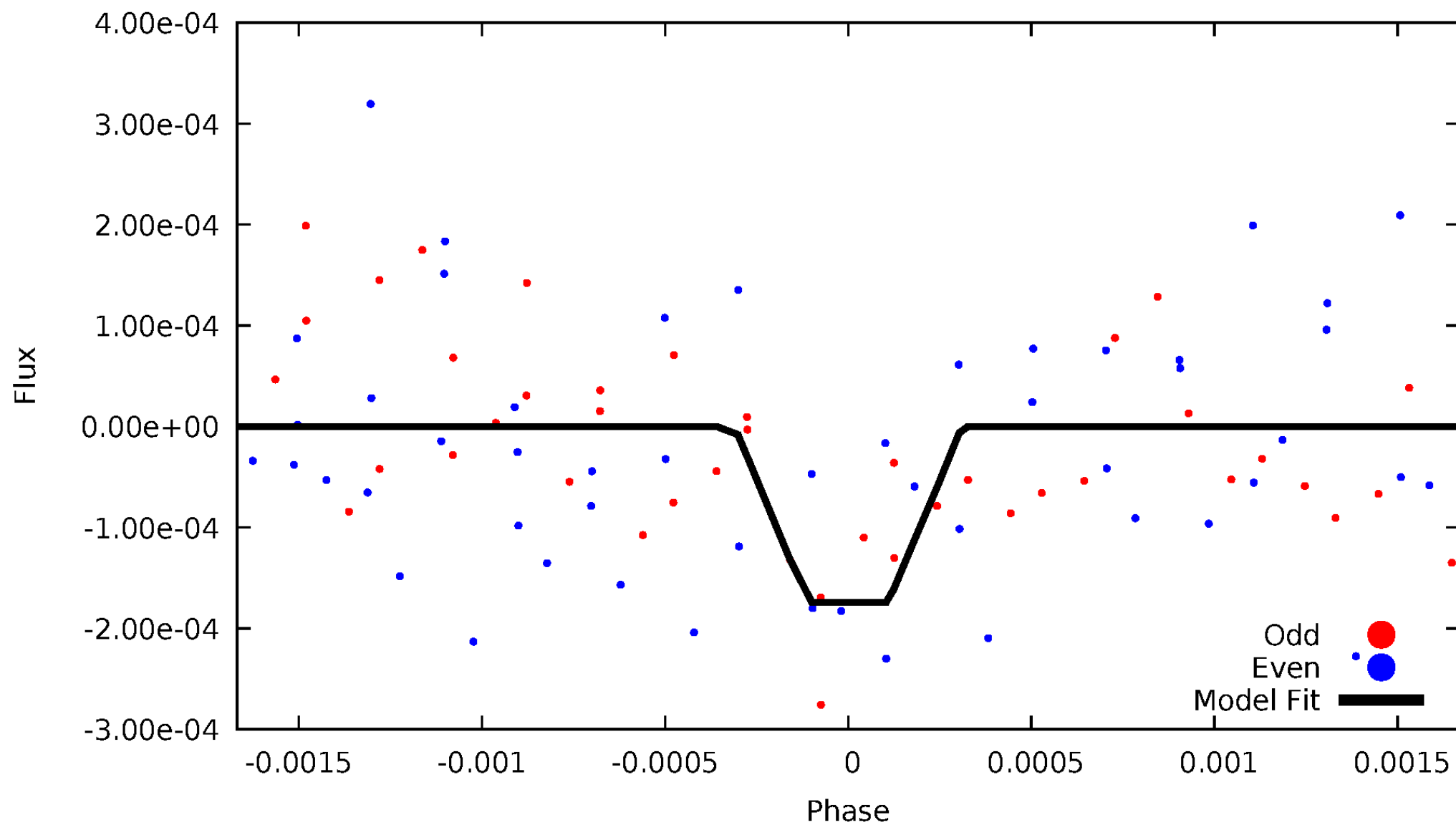
DV Odd/Even

TCE 012053628-03



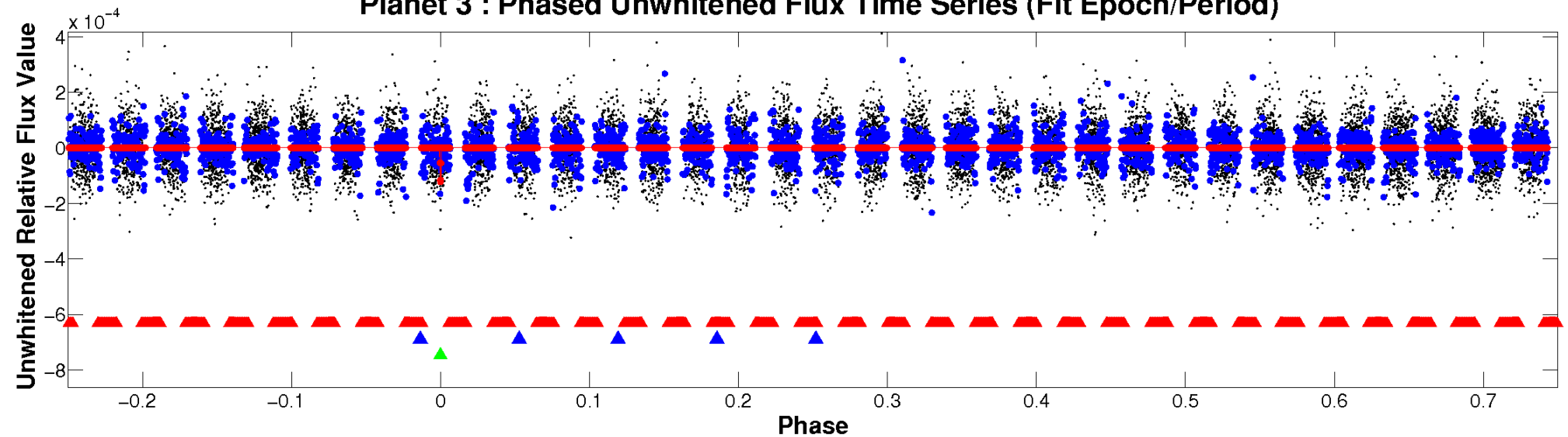
ALT Odd/Even

TCE 012053628-03

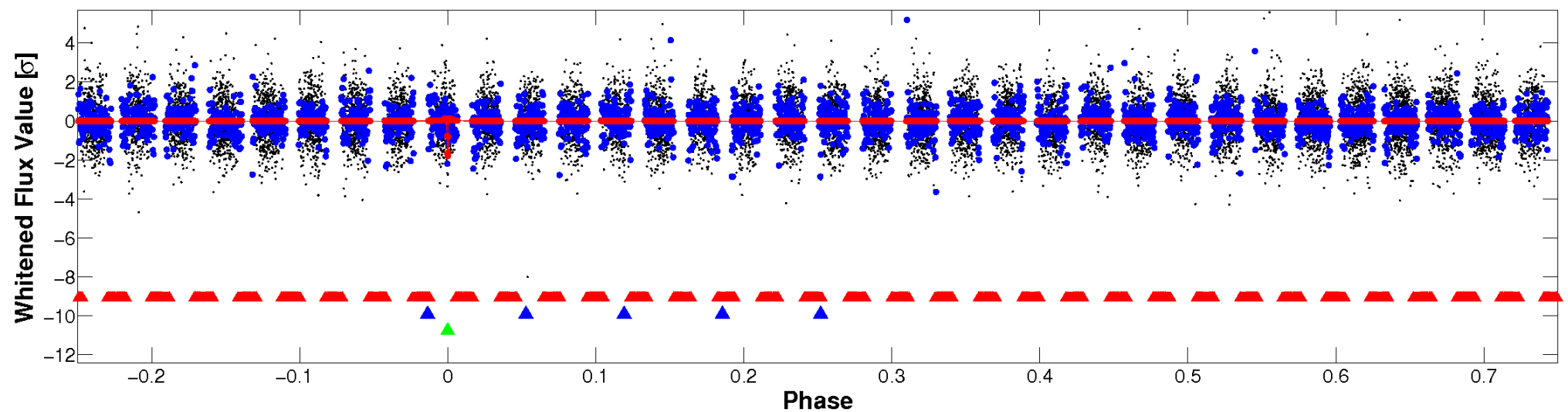


Non-Whitened Vs. Whitened Light Curve

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

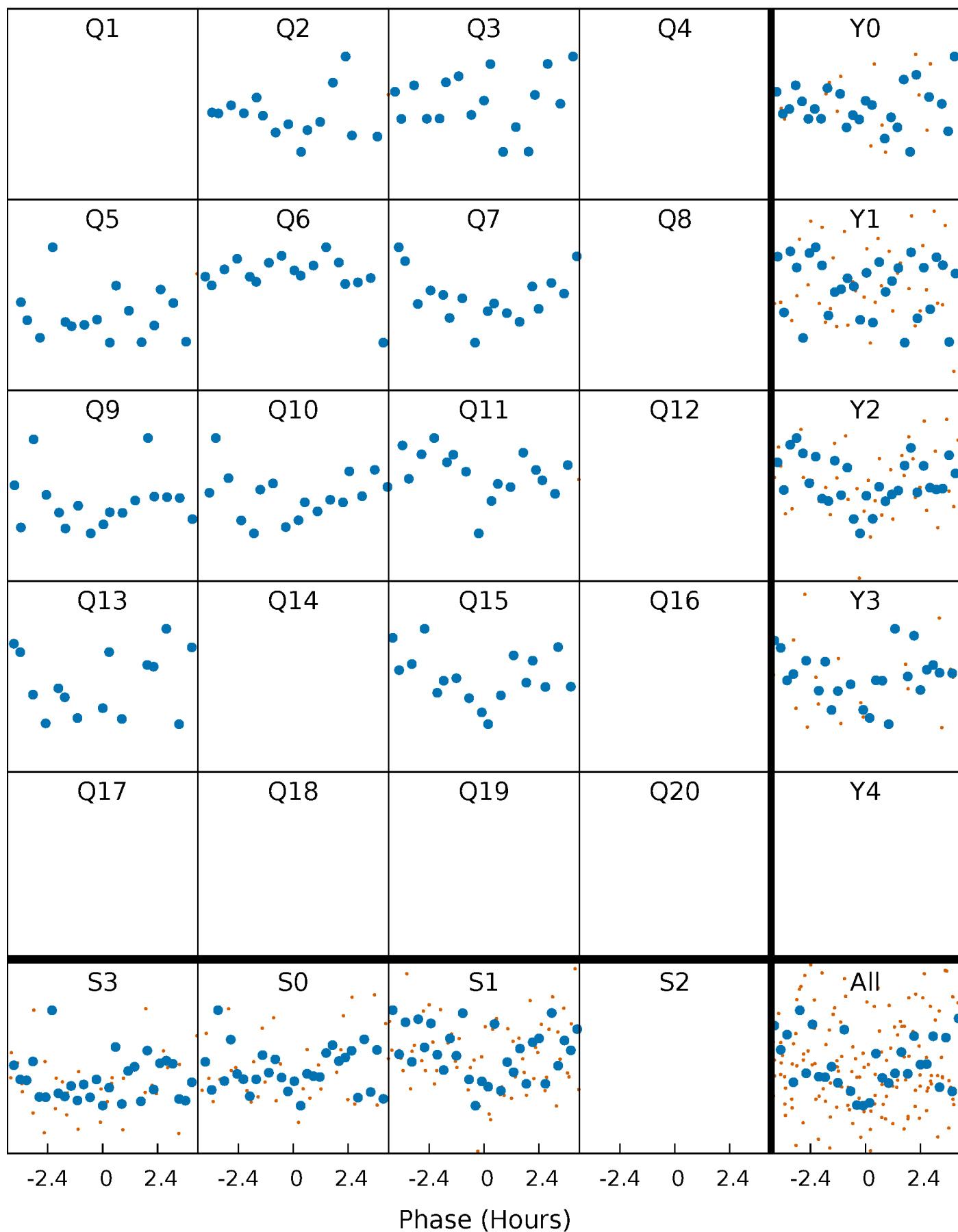


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



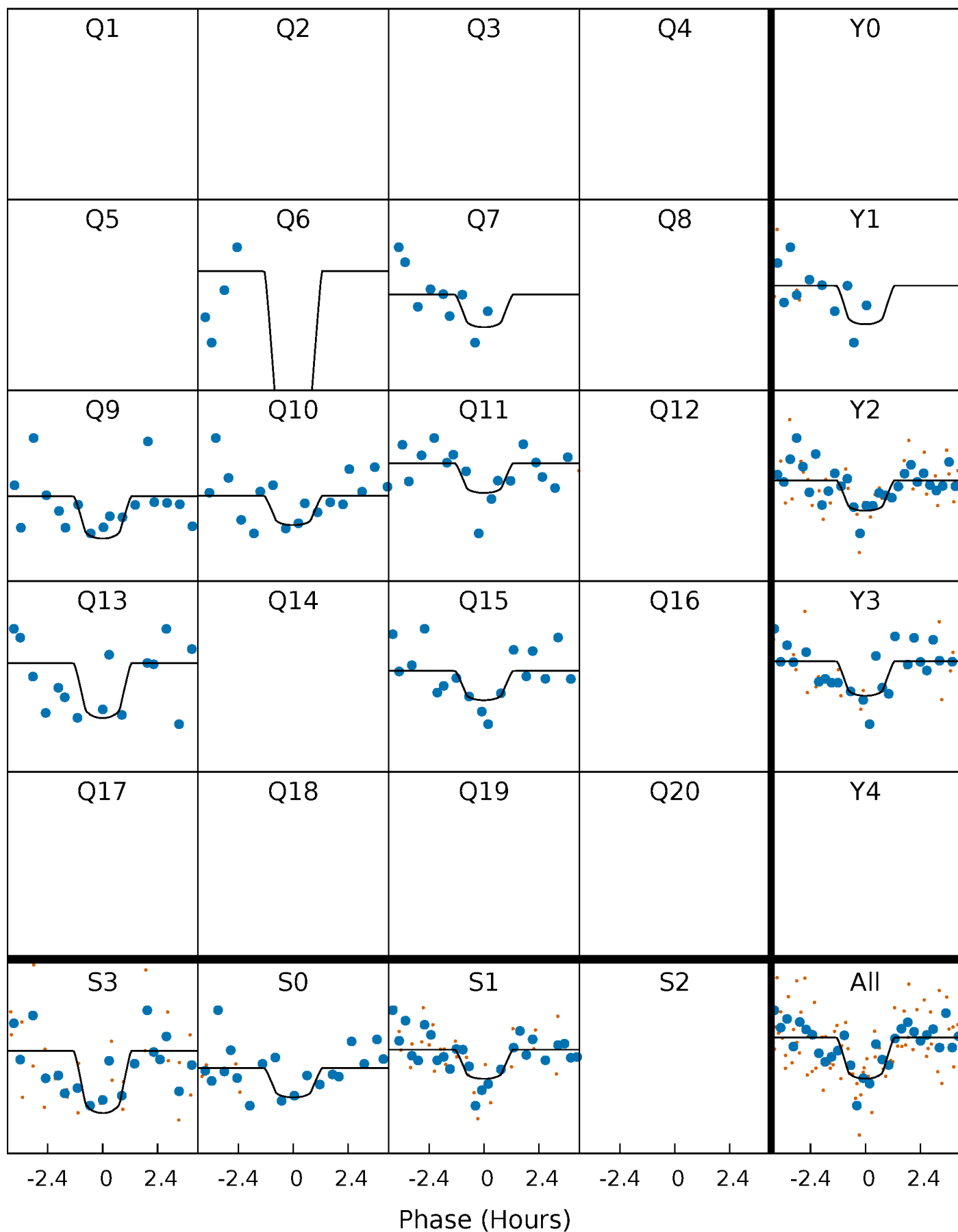
PDC Quarter-Phased Transit Curves

TCE 012053628-03 $P=101.793128$ Days $T_0=176.007998$ (BKJD)



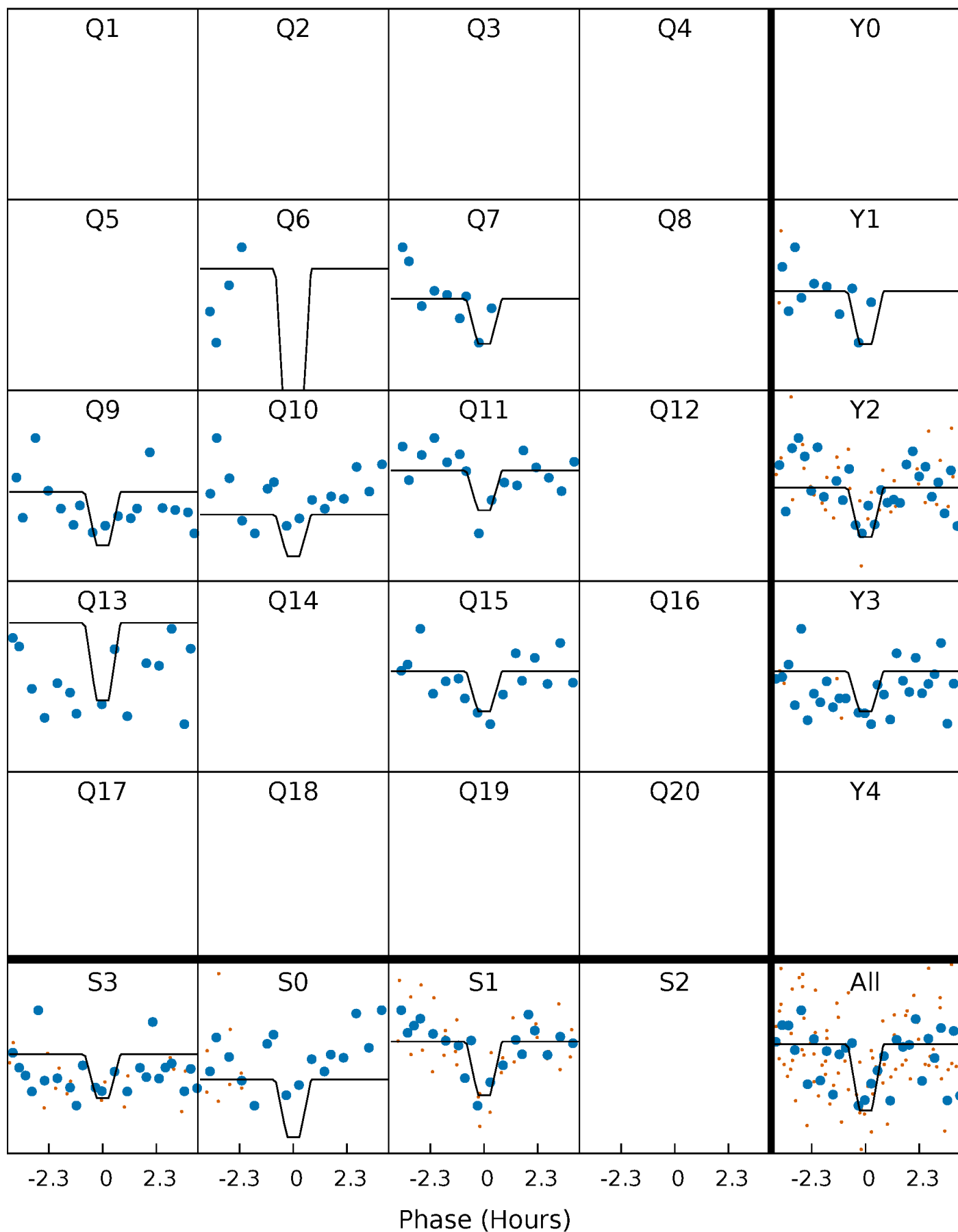
DV Quarter-Phased Transit Curves

TCE 012053628-03 P=101.793128 Days $T_0=176.007998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

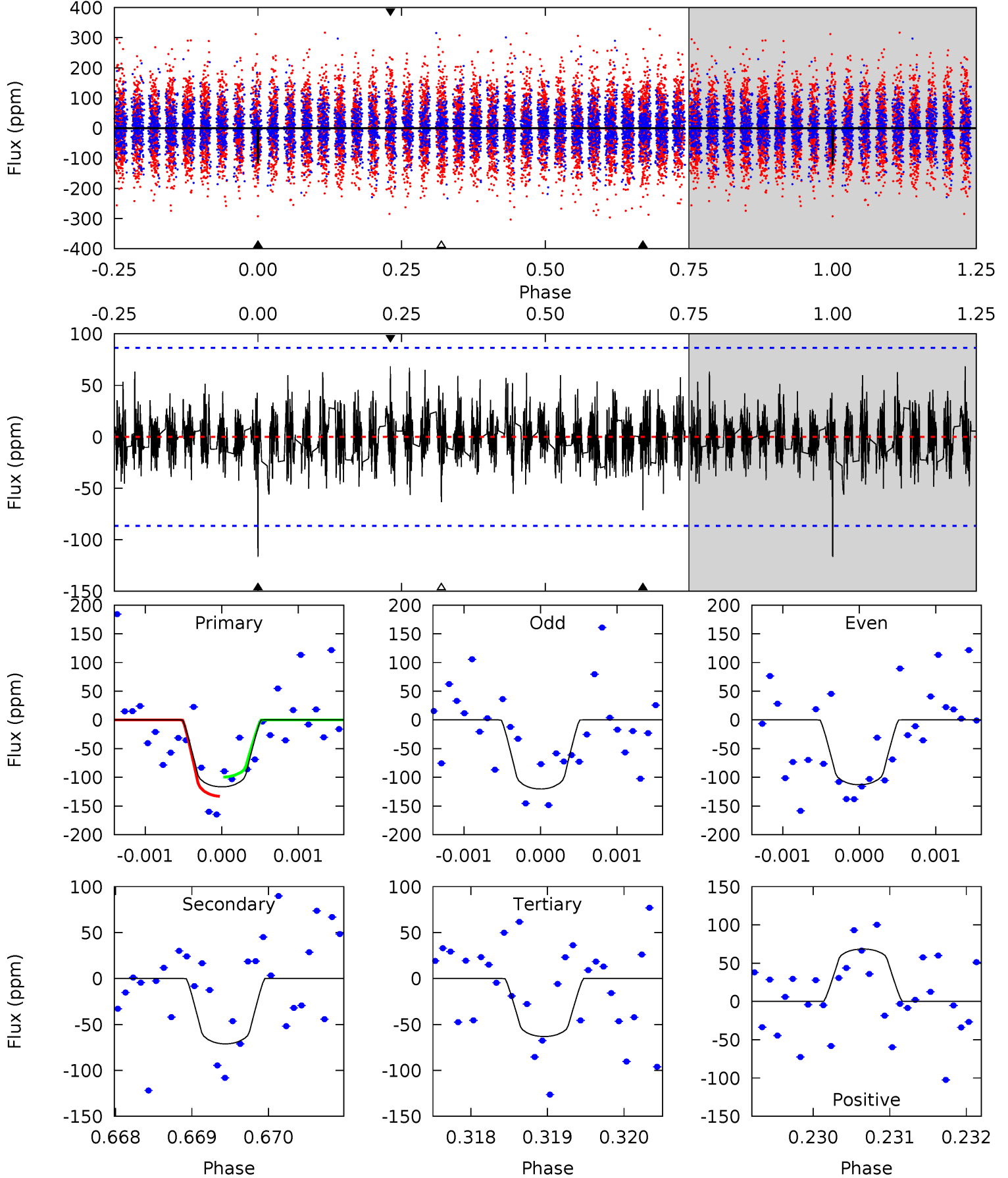
TCE 012053628-03 P=101.794804 Days $T_0=175.989200$ (BKJD)



DV Model-Shift Uniqueness Test

012053628-03, P = 101.793128 Days, E = 74.214870 Days

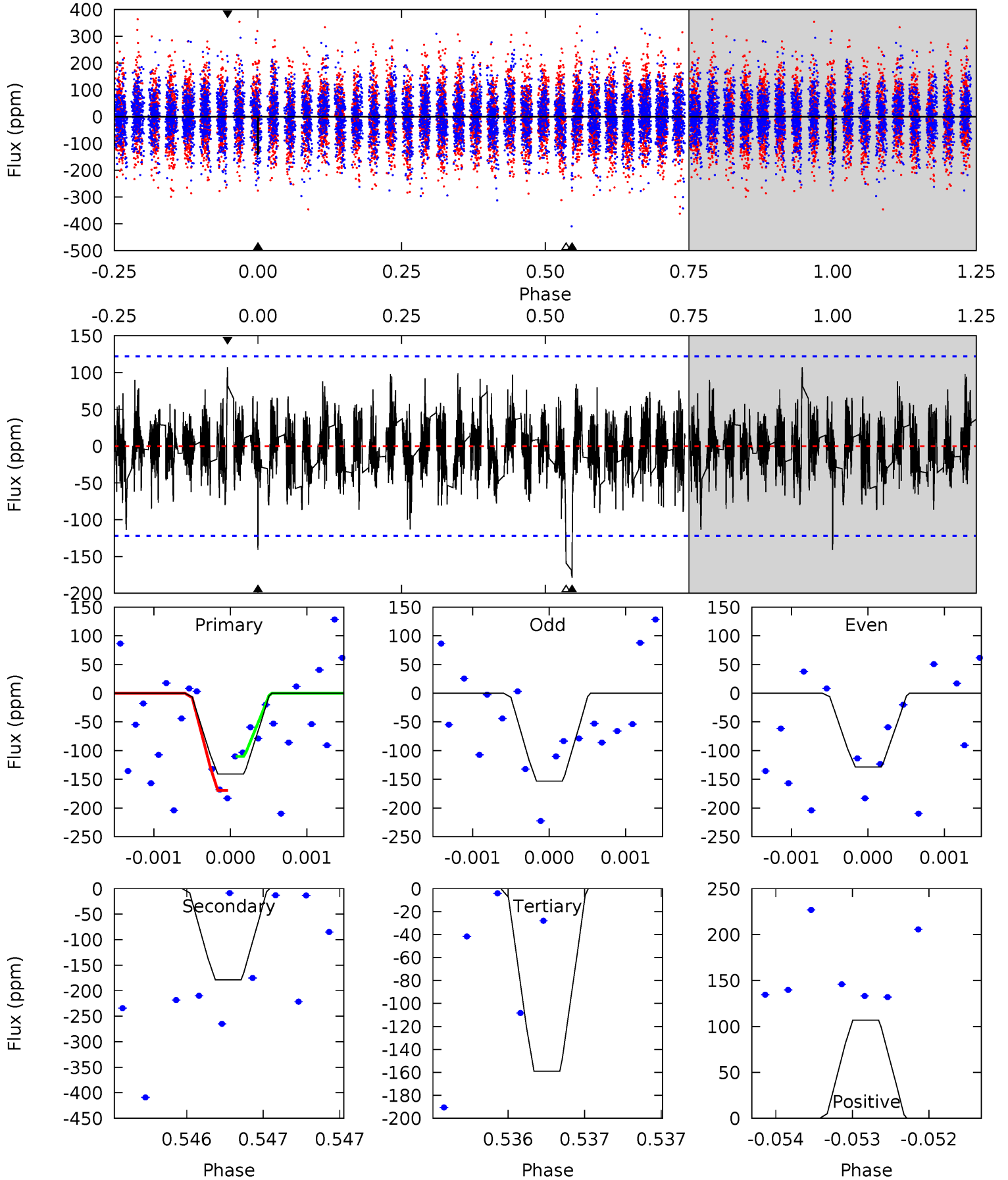
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.35	4.49	3.98	4.32	5.45	3.29	1.21	3.37	3.04	0.50	0.17	0.23	1.14	0.37	1.06



Alt Model-Shift Uniqueness Test

012053628-03, P = 101.794804 Days, E = 74.194396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.40	8.11	7.22	4.85	5.54	3.43	1.36	-0.82	1.55	0.88	3.25	0.58	0.96	0.37	1.35



Stellar Parameters For KIC 012053628

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6762^{+185}_{-301}	$4.281^{+0.072}_{-0.217}$	$0.210^{+0.150}_{-0.350}$	$1.429^{+0.516}_{-0.207}$	$1.424^{+0.203}_{-0.203}$	$0.687^{+0.228}_{-0.400}$
	+3%/-4%	+2%/-5%	+71%/-167%	+36%/-14%	+14%/-14%	+33%/-58%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012053628-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-71 ± 16	$2.03^{+1.21}_{-1.12}$	730^{+56}_{-42}	5630^{+2835}_{-1078}	2224^{+7924}_{-1380}
Alt.	-178 ± 22	$2.20^{+1.39}_{-1.14}$	730^{+57}_{-42}	6621^{+4029}_{-1315}	4581^{+15654}_{-2862}

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 $A_{obs} \gg 1.0$

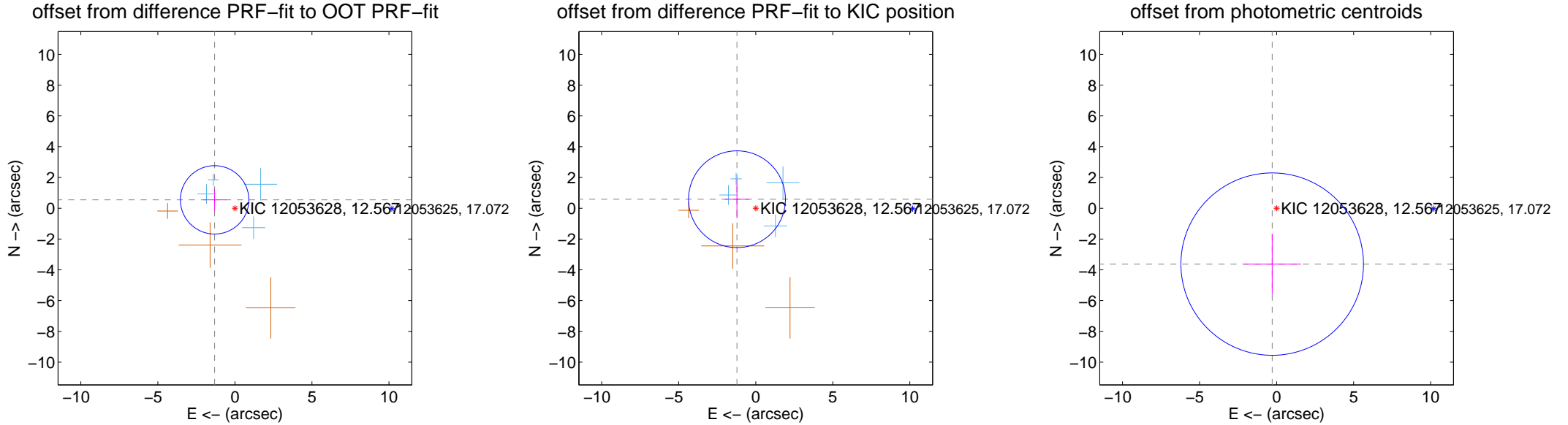
DV Centroid Data

Supplemental centroid analysis for 012053628-03. Kepler magnitude: 12.57. Transit SNR 7.31

There are 4 quarters with good PRF difference image offsets

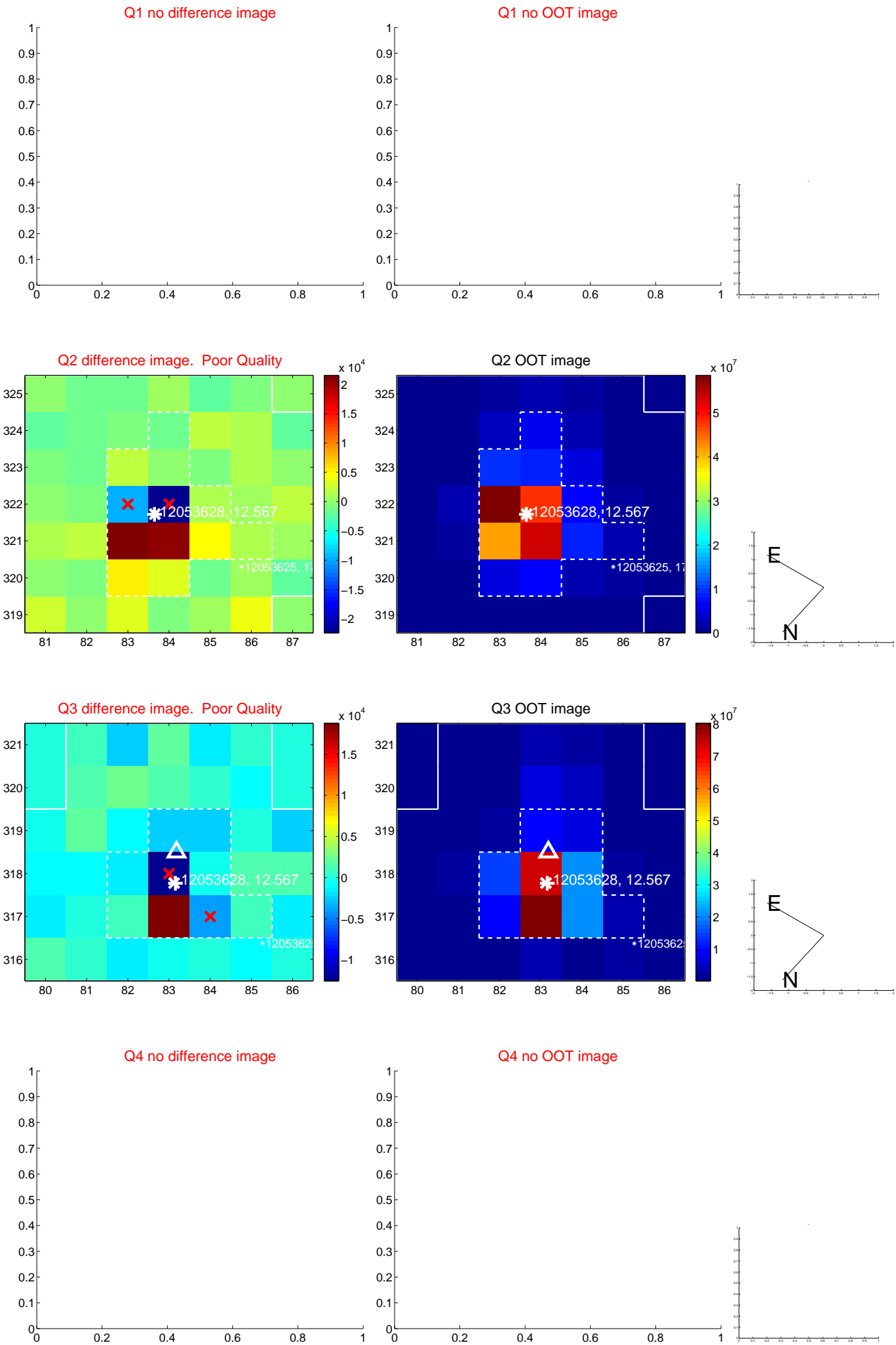
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.426 ± 0.740	1.93	1.318 ± 0.747	0.545 ± 0.699
PRF-fit source offset from KIC position	1.352 ± 1.048	1.29	1.219 ± 0.775	0.586 ± 1.239
photometric centroid source offset	3.64 ± 1.98	1.84	0.29 ± 1.87	-3.63 ± 1.98

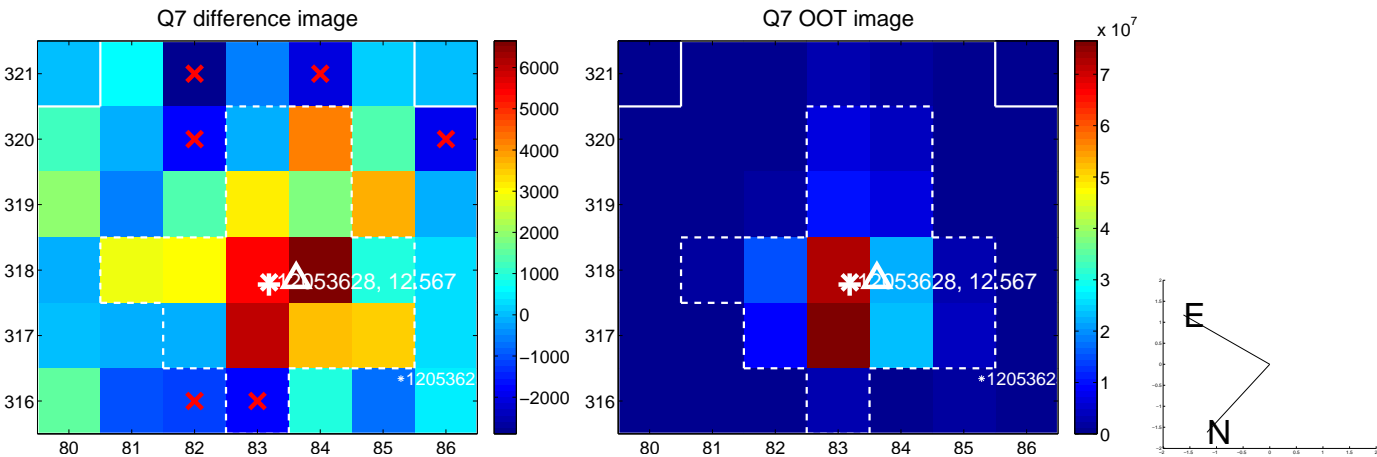
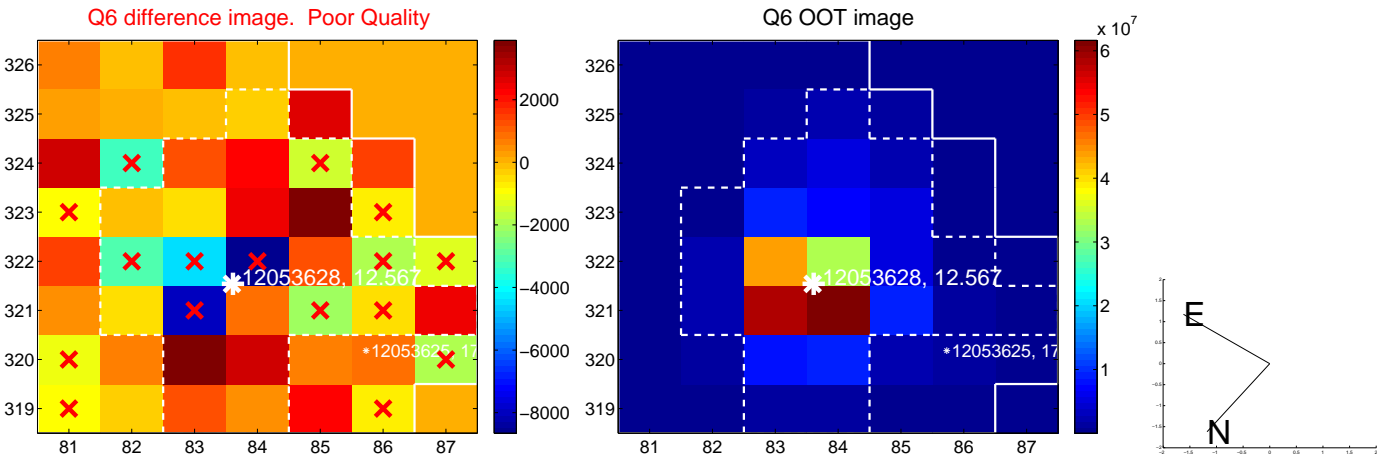
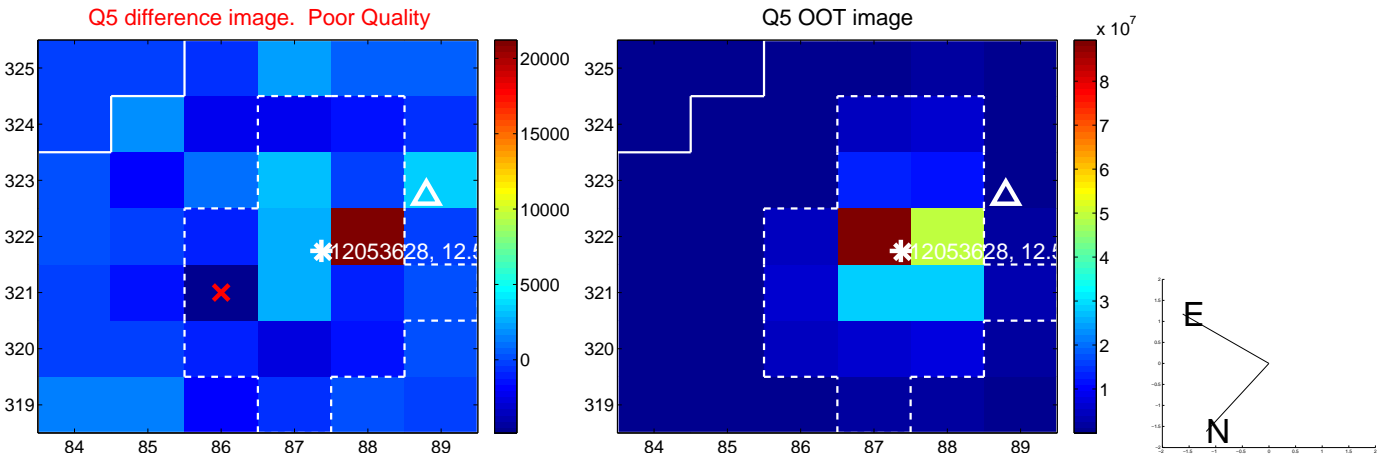


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

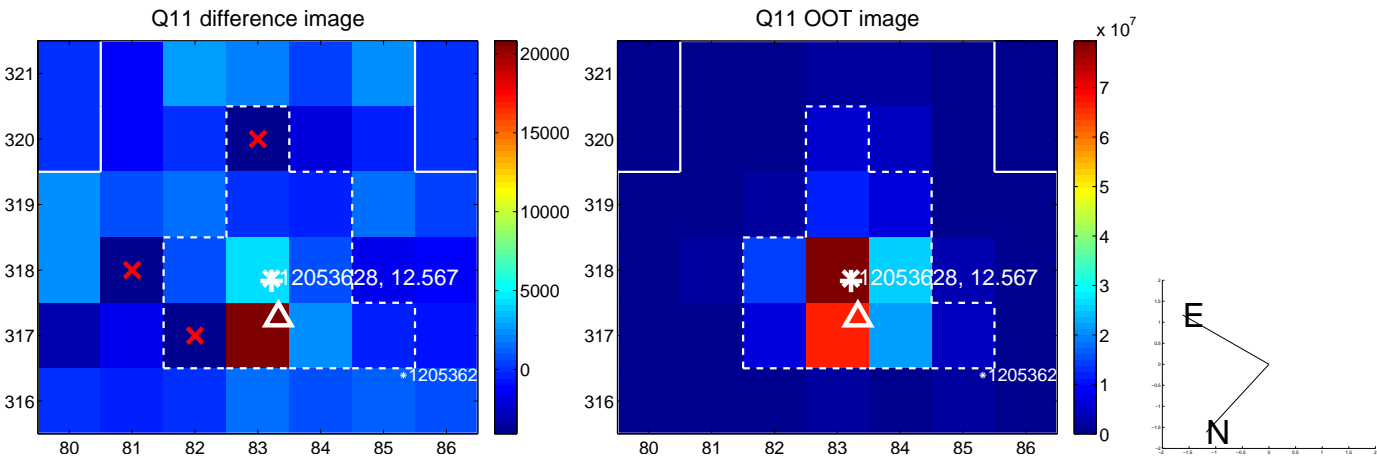
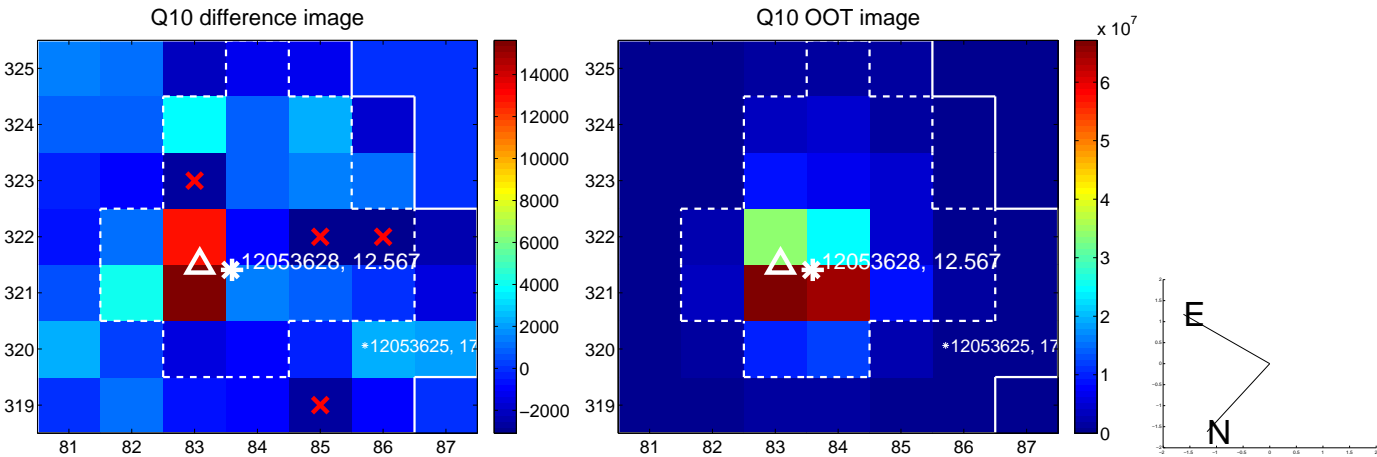
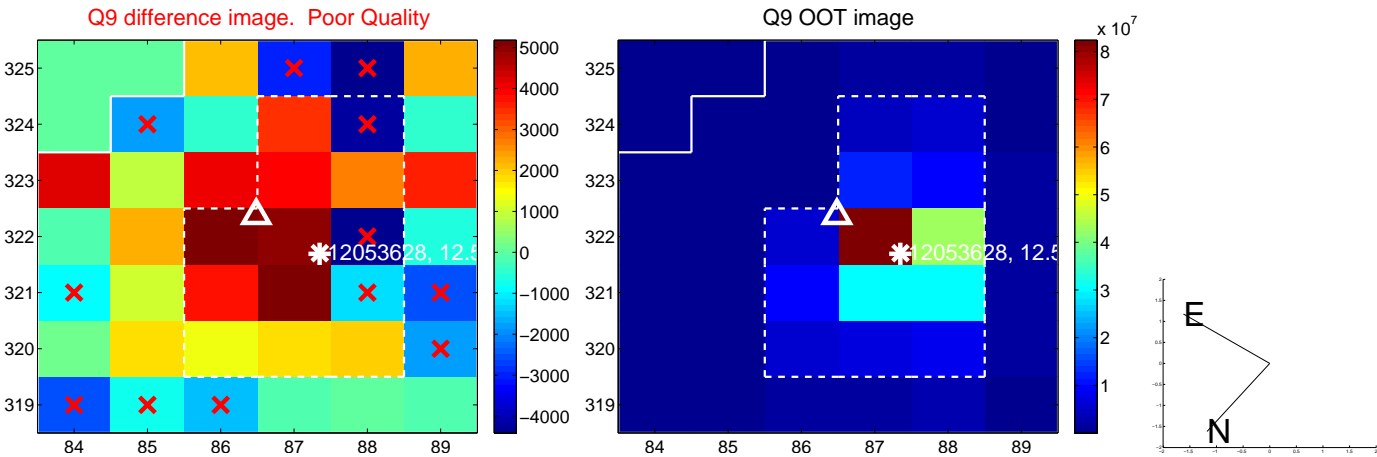
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



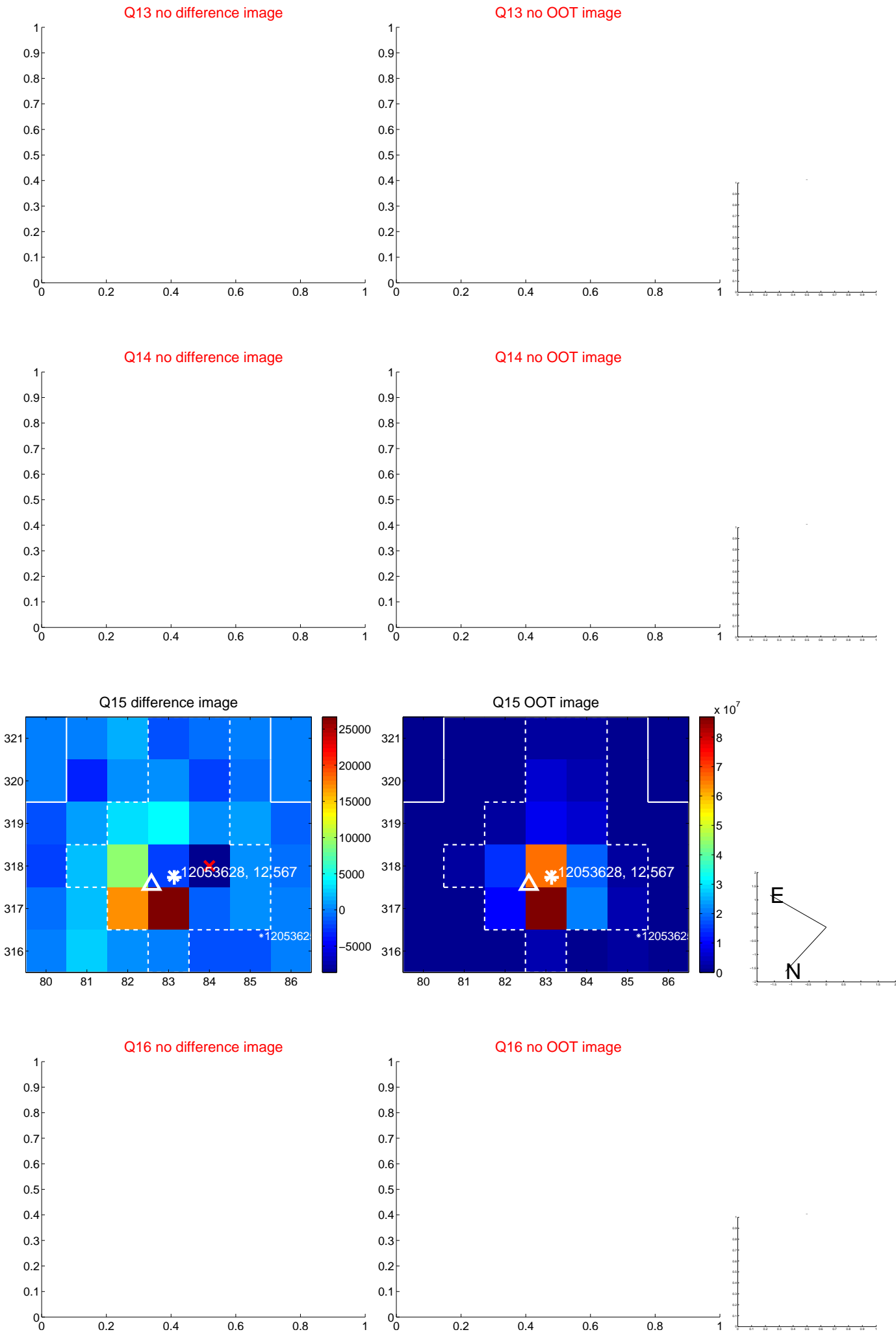
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



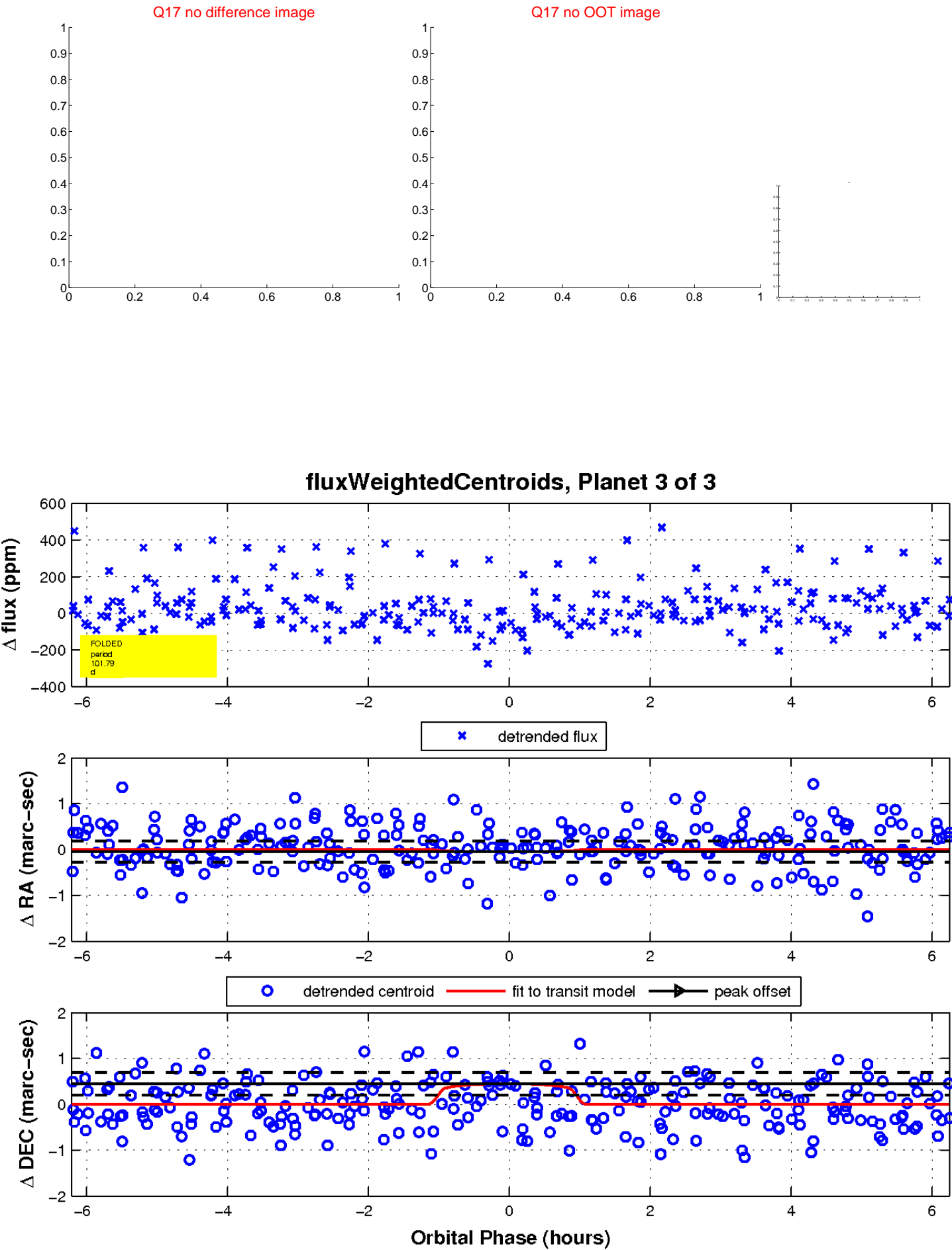
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

