

KIC 005384713

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})
005384713-01	OBS	3444.02	60.326652	145.058087	3156.3	1.711	59.2	70.5	0.53	3705	5.25	0.79
005384713-02	OBS	3444.03	2.635957	132.317098	100.0	1.563	11.4	13.1	0.53	3705	0.64	51.26
005384713-03	OBS	3444.01	12.671259	137.523630	165.0	2.734	10.2	11.1	0.53	3705	0.84	6.32
005384713-04	OBS	No	331.533765	240.156346	483.6	7.332	9.7	7.4	0.53	3705	1.32	0.08
005384713-05	OBS	3444.04	14.150286	141.474977	185.8	2.377	8.0	9.5	0.53	3705	1.20	5.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005384713-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS
005384713-02	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
005384713-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005384713-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005384713-05	OBS	FP	0.00	0	0	1	0	CENT_KIC_POS—HALO_GHOST

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.

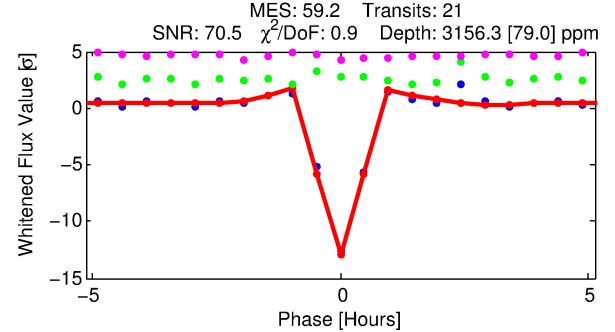
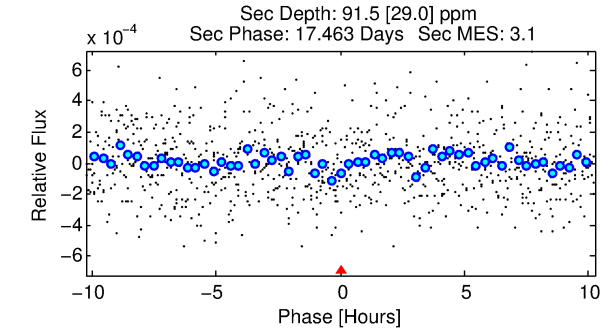
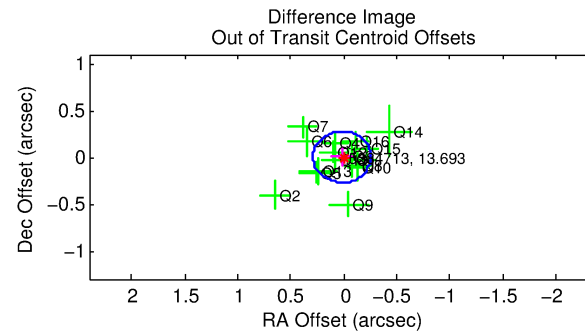
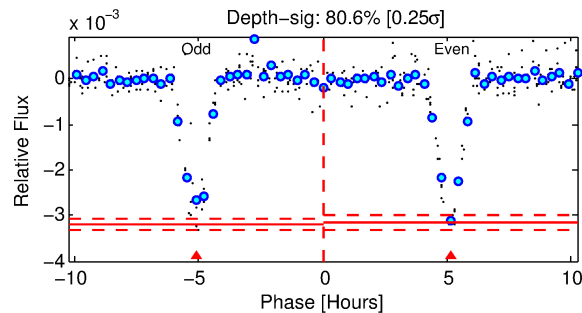
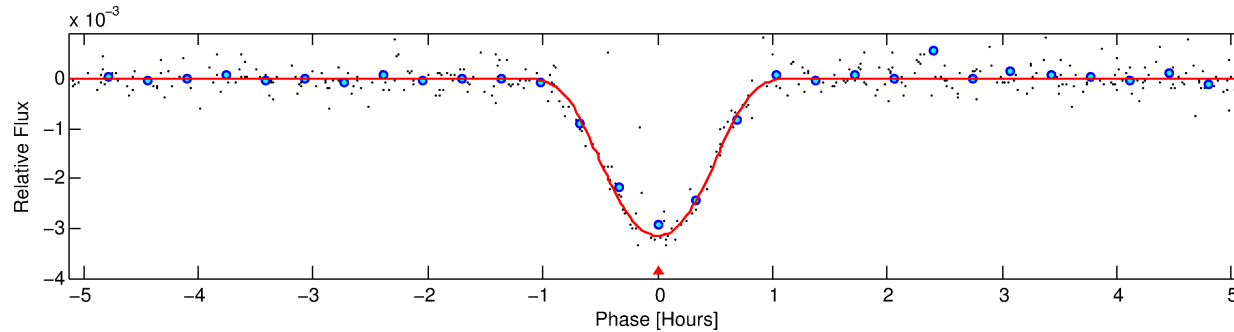
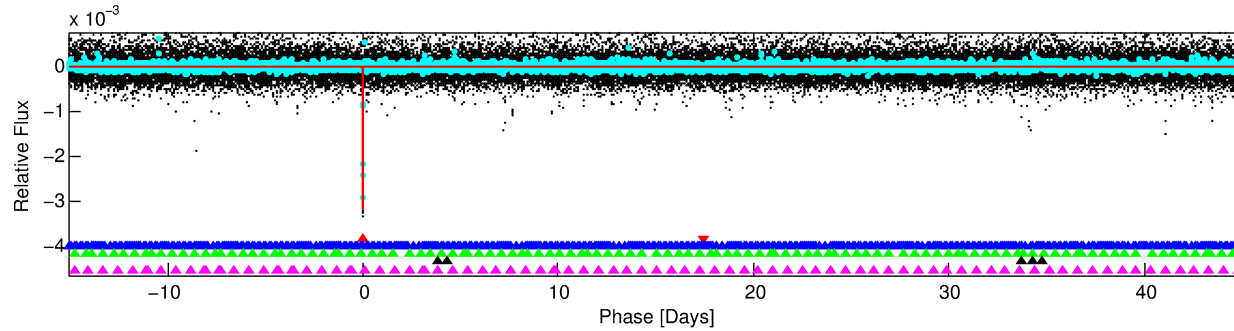
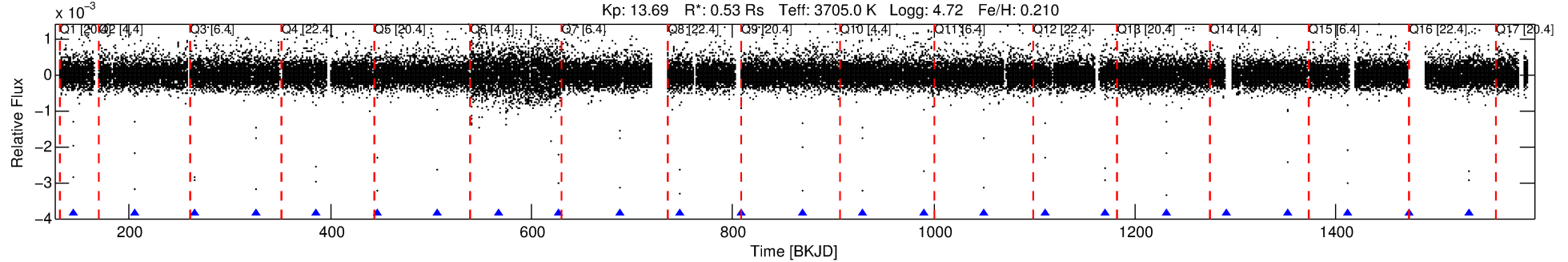
Ephemeris Match Information For 005384713-01

No Significant Match Found

DV One-Page Summary

KIC: 5384713 Candidate: 1 of 5 Period: 60.327 d
KOI: K03444.02 Corr: 0.998

Kp: 13.69 R*: 0.53 Rs Teff: 3705.0 K Logg: 4.72 Fe/H: 0.210



DV Fit Results:

Period = 60.32665 [0.00005] d
Epoch = 145.0581 [0.0006] BKJD
Rp/R* = 0.0910 [0.0722]
a/R* = 126.56 [23.49]
b = 0.98 [0.11]
Seff = 0.79 [0.09]
Teq = 240 [7] K
Rp = 5.25 [4.19] Re
a = 0.2447 [0.0138] AU
Ag = 109.29 [177.11] [0.61σ]
Teffp = 1201 [487] K [1.97σ]

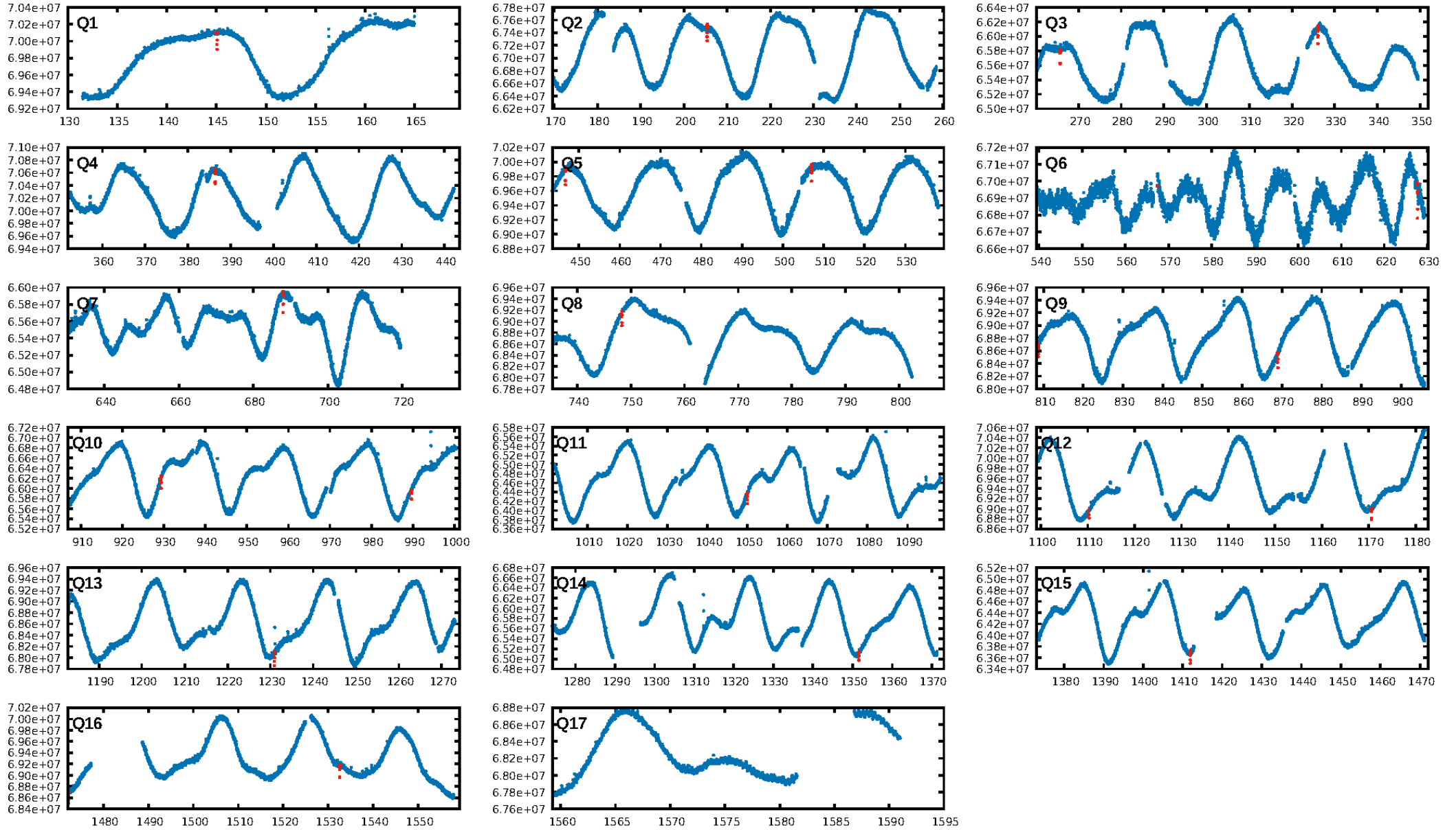
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [378.34σ]
LongPeriod-sig: 100.0% [864.51σ]
ModelChiSquare2-sig: 91.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 4.631
Centroid-sig: 0.0%
Centroid-so: 0.631 arcsec [3.76σ]
OotOffset-rm: 0.016 arcsec [0.18σ]
KicOffset-rm: 0.546 arcsec [5.93σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.75 [12/16]

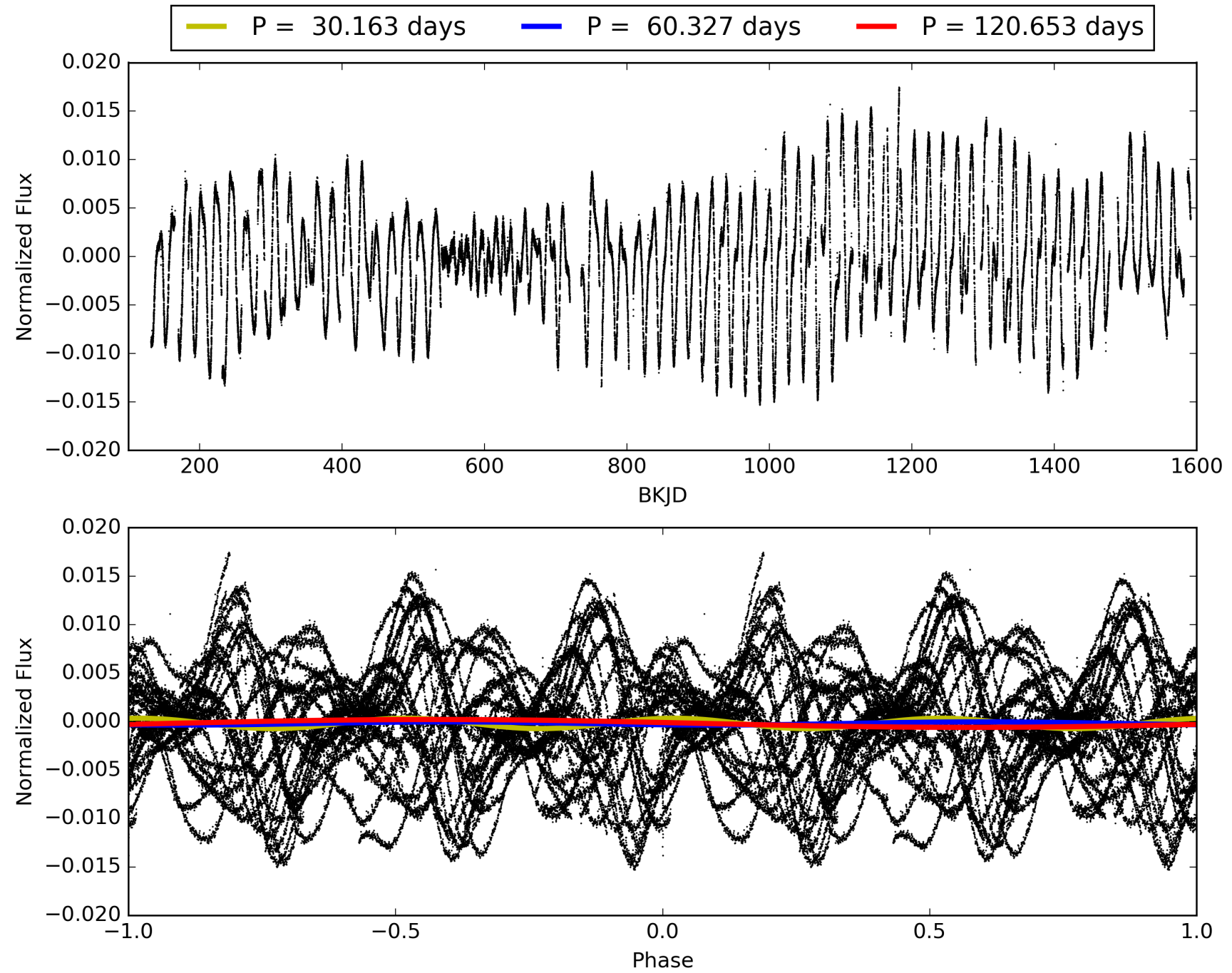
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005384713-01, PDC Light Curves

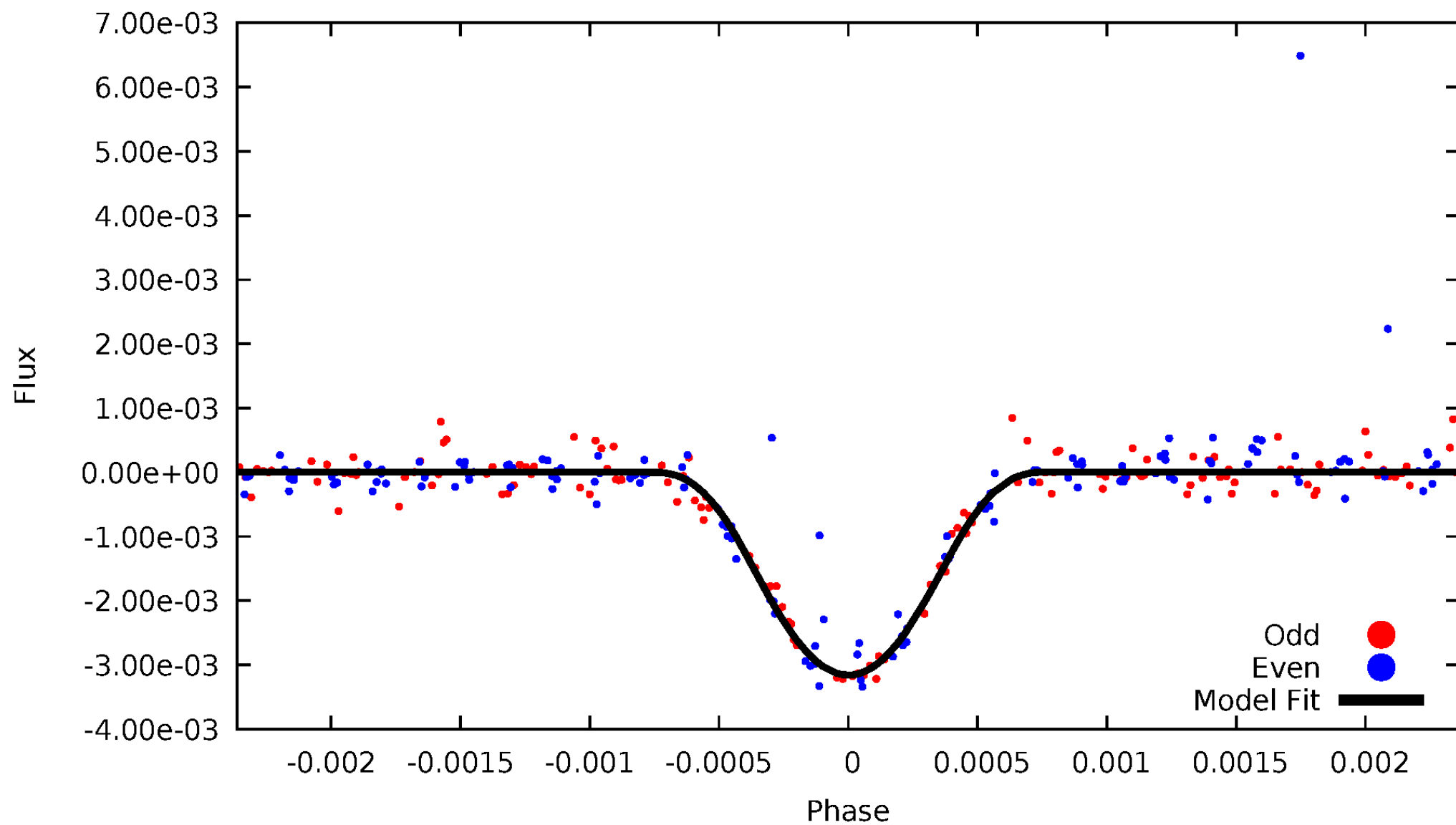


TCE 005384713-01



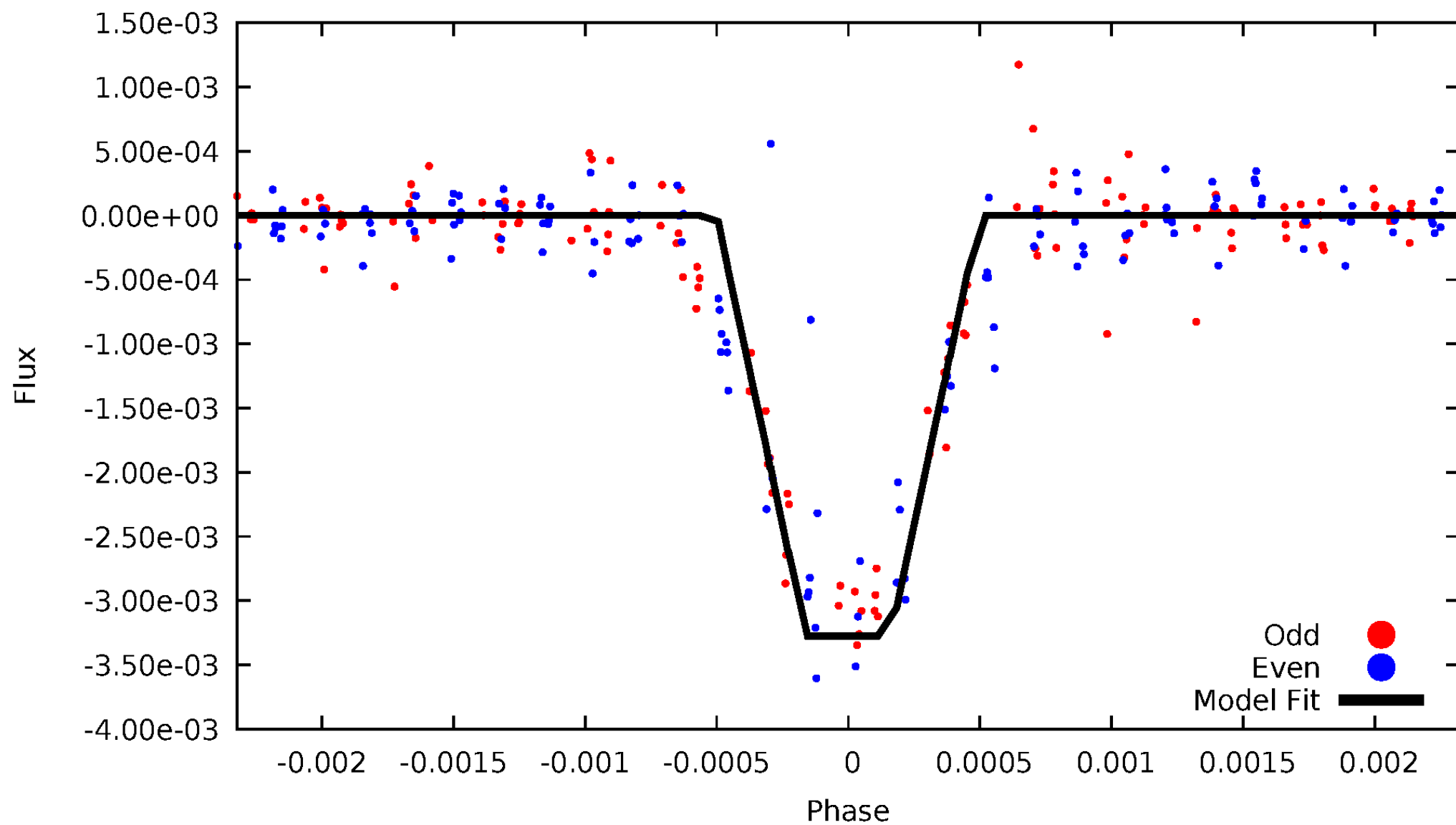
DV Odd/Even

TCE 005384713-01



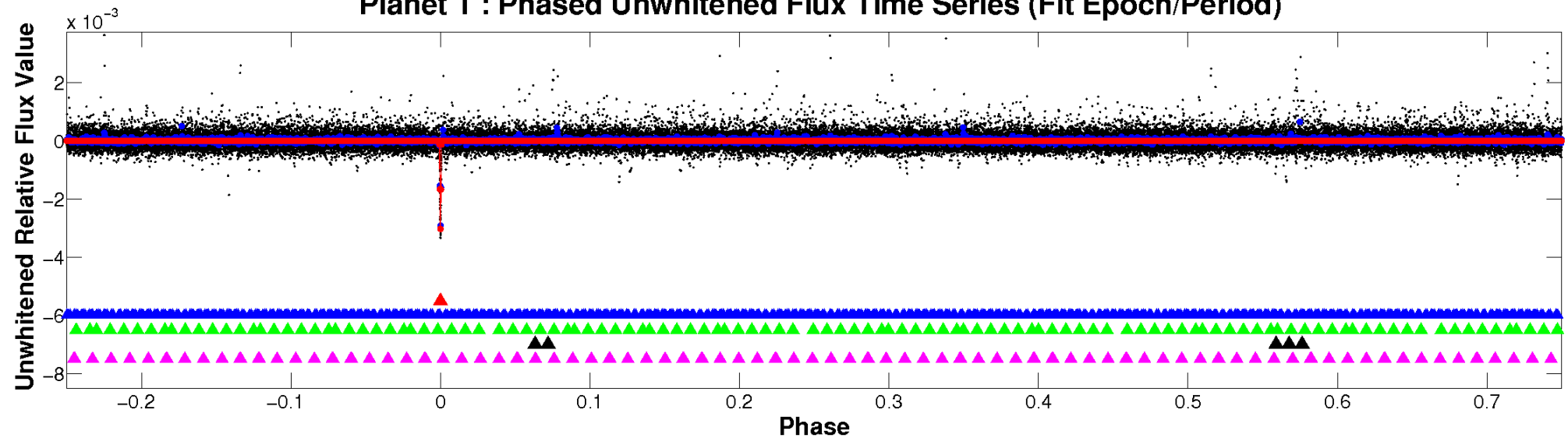
ALT Odd/Even

TCE 005384713-01

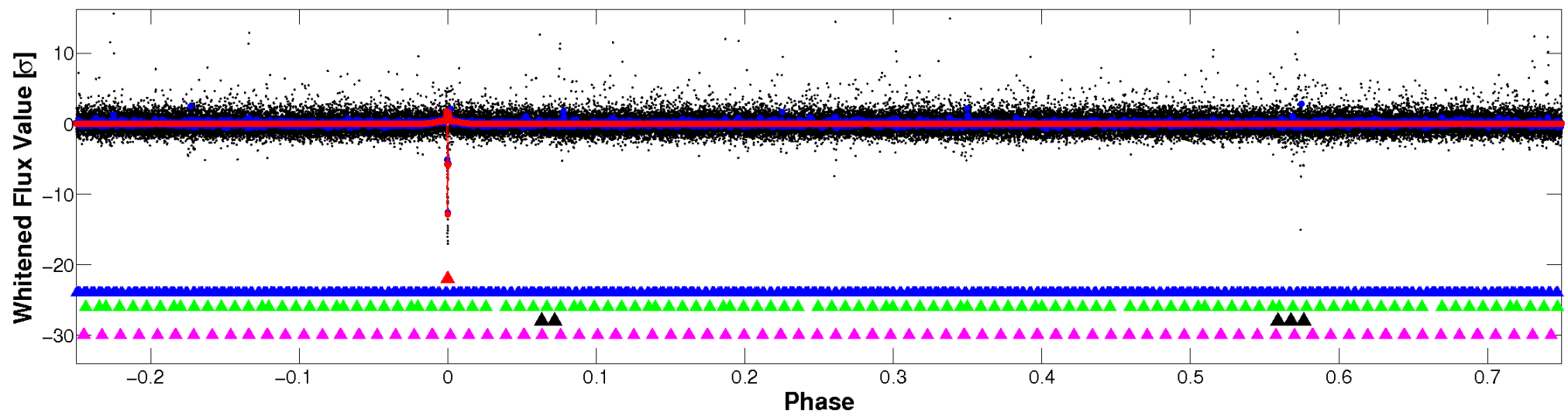


Non-Whitened Vs. Whitened Light Curve

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

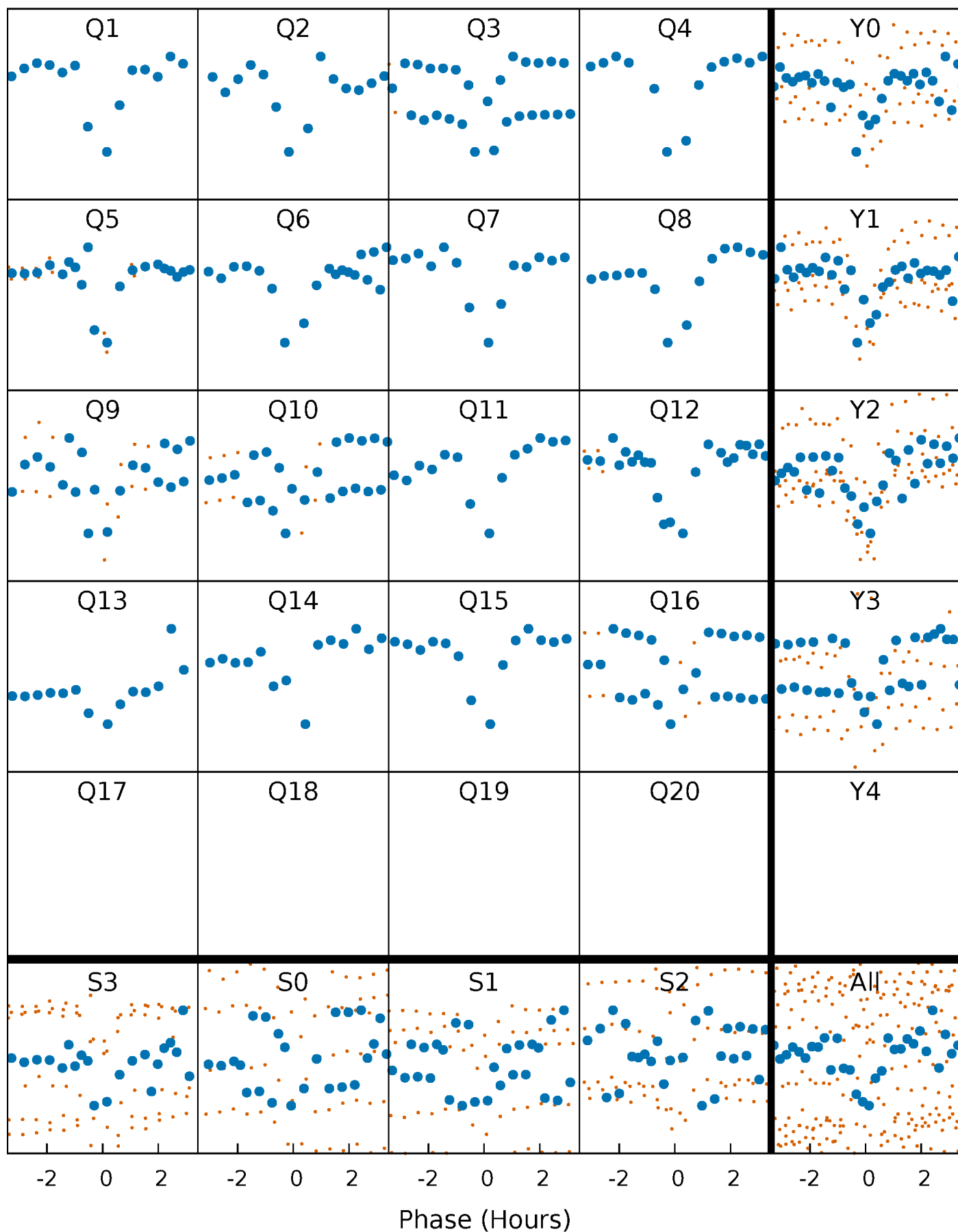


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



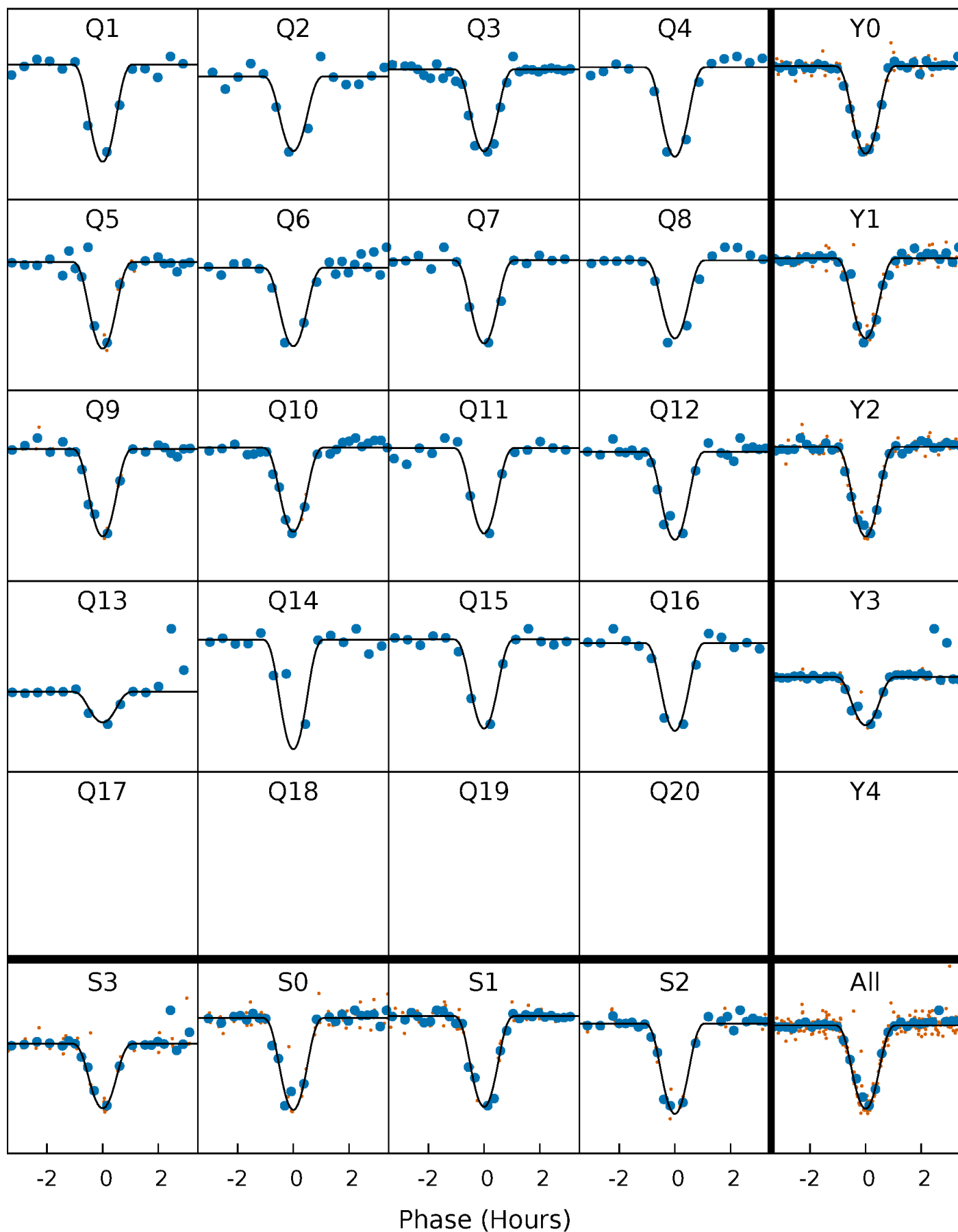
PDC Quarter-Phased Transit Curves

TCE 005384713-01 P= 60.326652 Days $T_0=145.058087$ (BKJD)



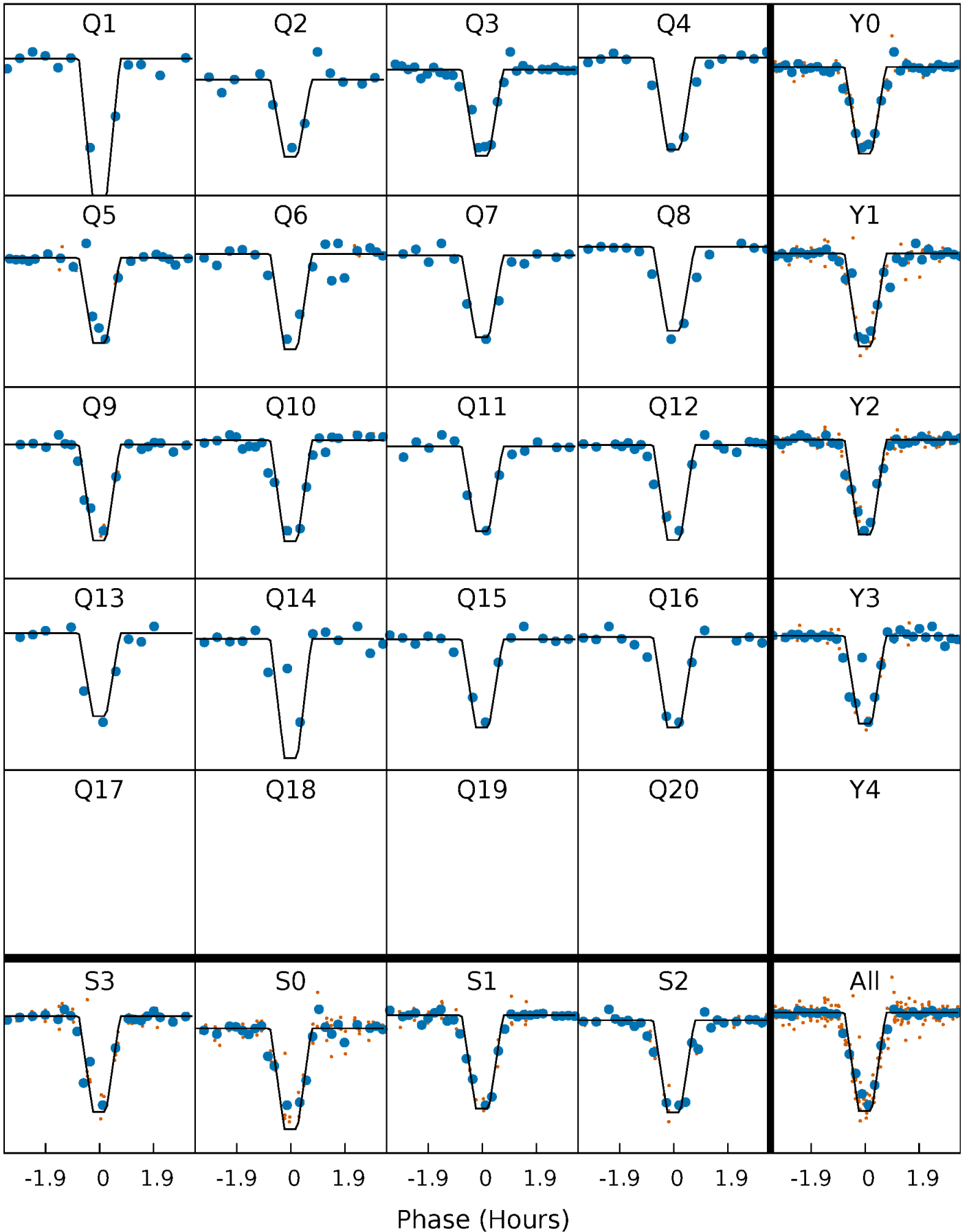
DV Quarter-Phased Transit Curves

TCE 005384713-01 P= 60.326652 Days $T_0=145.058087$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

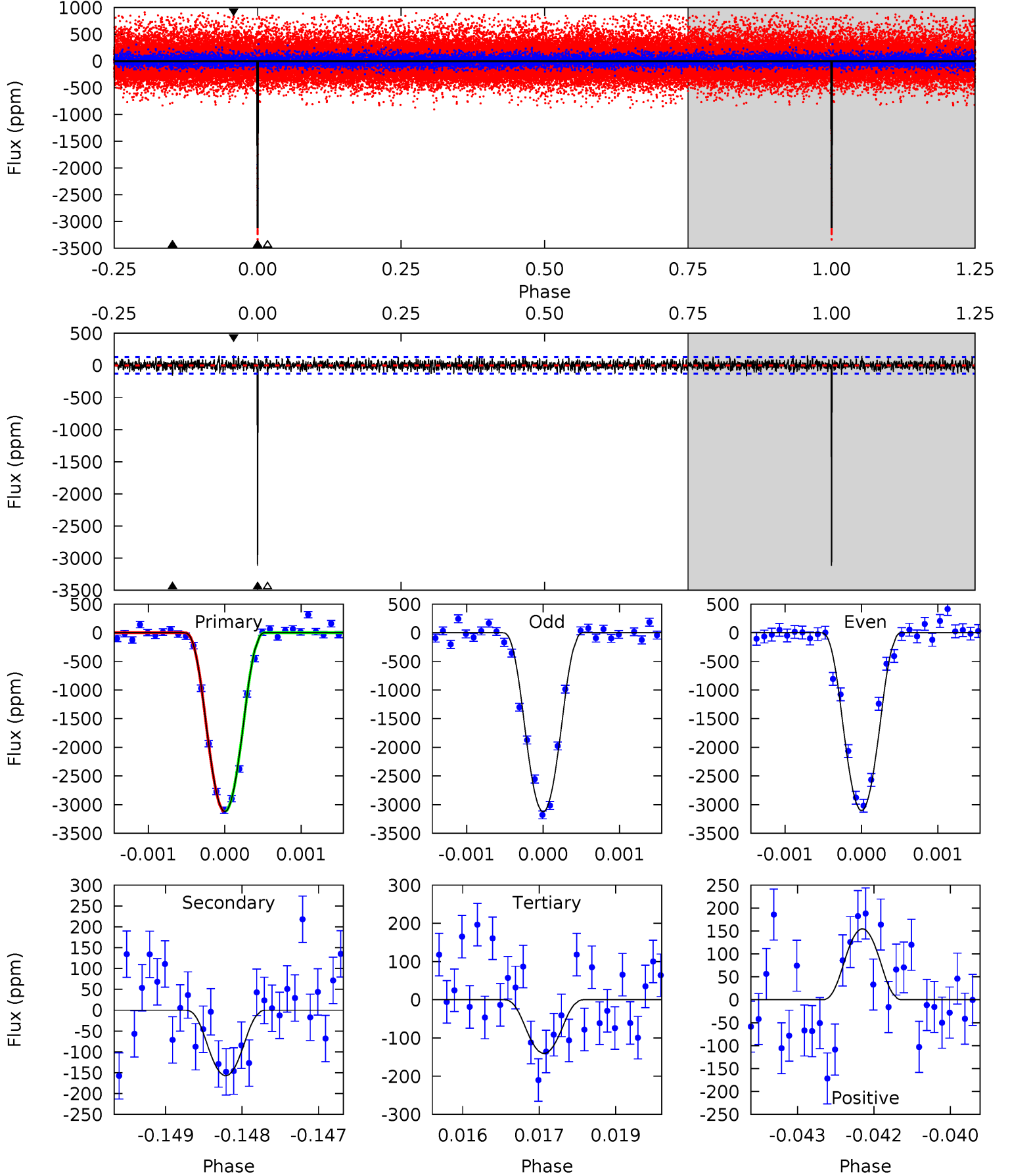
TCE 005384713-01 P= 60.326797 Days $T_0=145.057111$ (BKJD)



DV Model-Shift Uniqueness Test

005384713-01, P = 60.326652 Days, E = 84.731435 Days

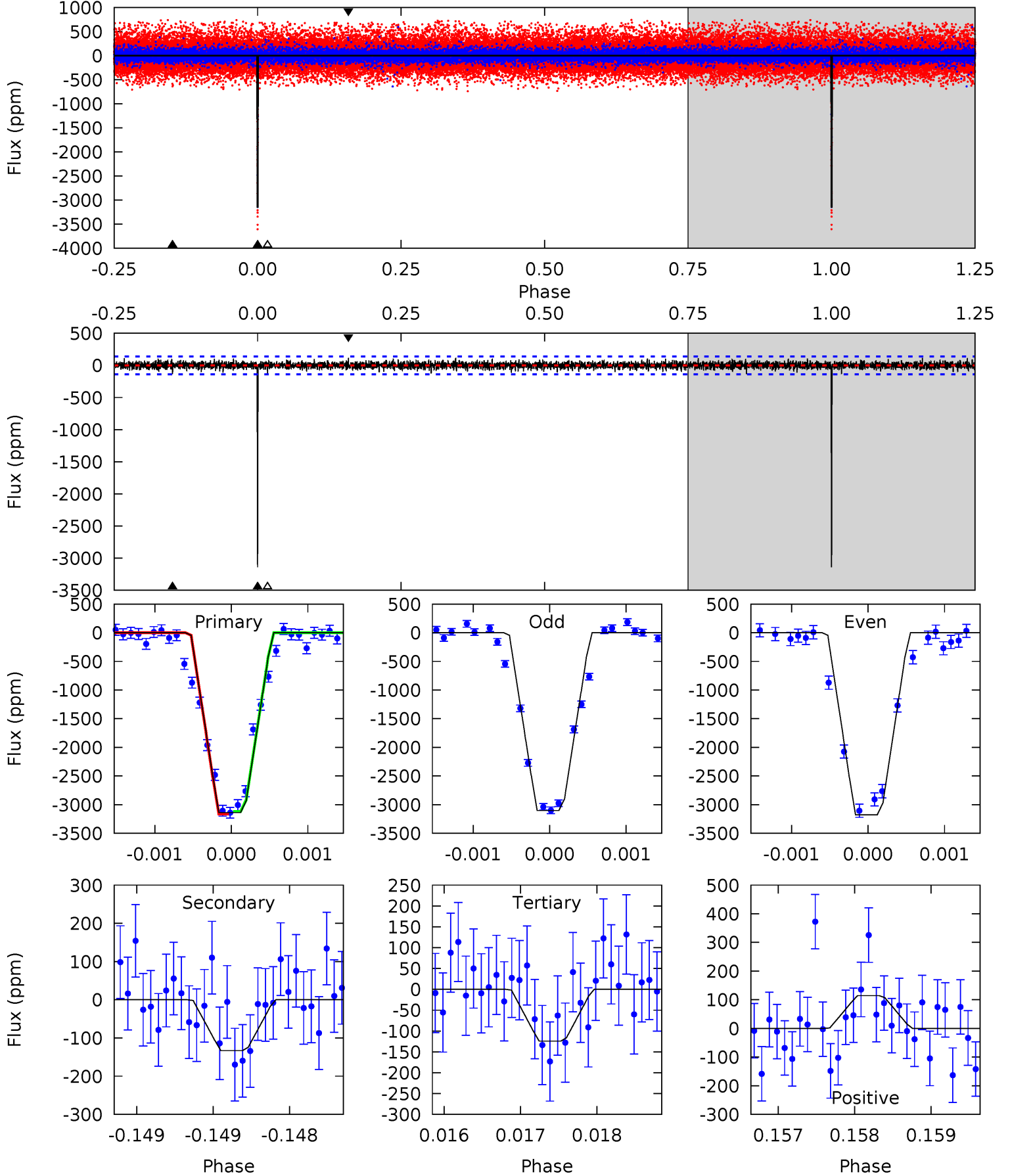
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
130.1	6.55	5.85	6.44	5.39	3.19	1.77	124.2	123.6	0.70	0.11	0.44	0.96	0.05	0.16



Alt Model-Shift Uniqueness Test

005384713-01, P = 60.326797 Days, E = 84.730314 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
123.7	5.25	4.89	4.51	5.46	3.31	1.24	118.8	119.1	0.36	0.73	1.52	0.99	0.04	0.80



Stellar Parameters For KIC 005384713

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3705^{+74}_{-74}	$4.721^{+0.039}_{-0.021}$	$0.210^{+0.150}_{-0.150}$	$0.529^{+0.030}_{-0.038}$	$0.536^{+0.034}_{-0.034}$	$5.115^{+0.917}_{-0.494}$
	+2%/-2%	+1%/-0%	+71%/-71%	+6%/-7%	+6%/-6%	+18%/-10%
Source	SPE70	SPE90	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 005384713-01 / KOI 3444.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-157 ± 24	$5.55^{+3.80}_{-3.18}$	335^{+8}_{-9}	2151^{+455}_{-224}	168^{+701}_{-109}
Alt.	-133 ± 25	$4.14^{+3.70}_{-2.64}$	334^{+8}_{-8}	2243^{+653}_{-297}	248^{+1717}_{-183}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

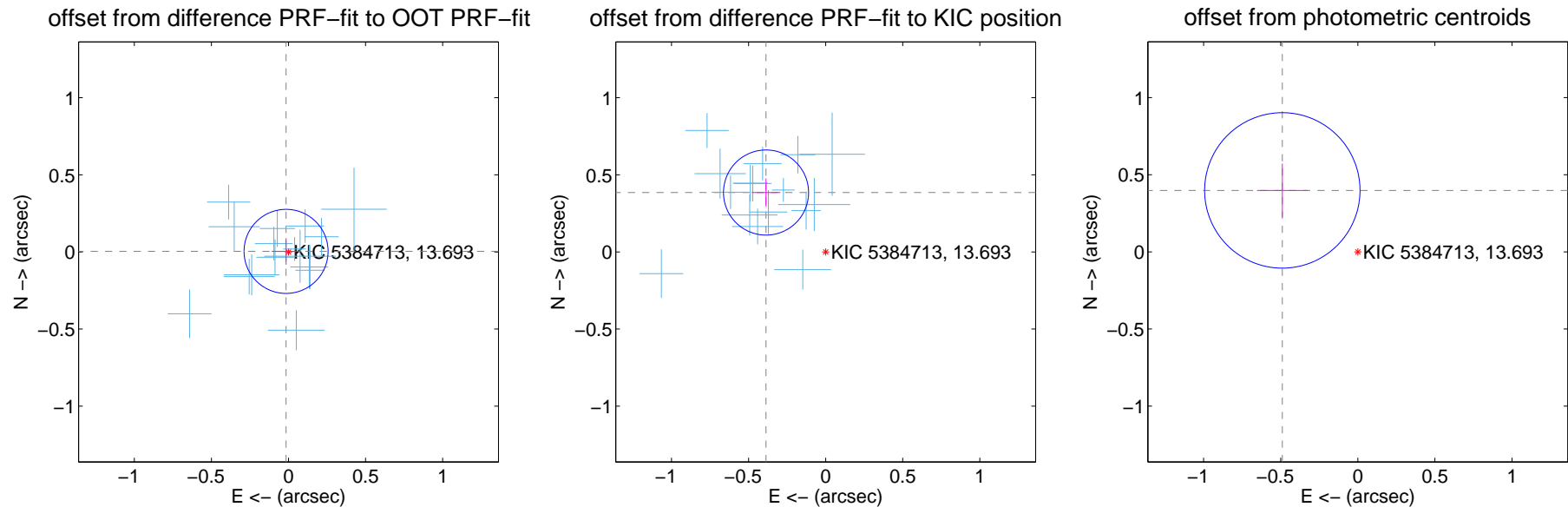
DV Centroid Data

Supplemental centroid analysis for 005384713-01. Kepler magnitude: 13.69. Transit SNR 70.47

There are 16 quarters with good PRF difference image offsets

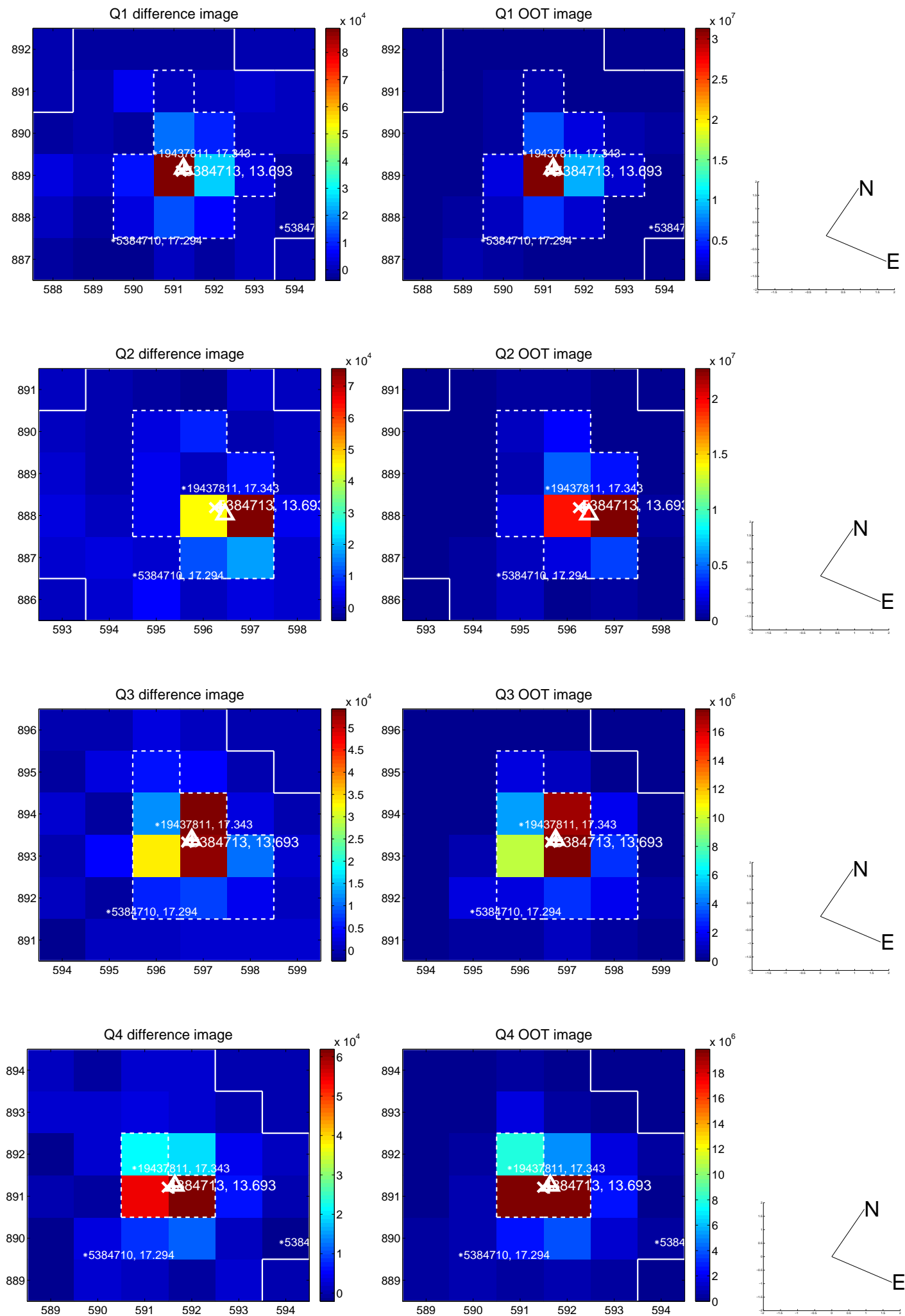
The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.016 ± 0.091	0.18	0.016 ± 0.093	0.003 ± 0.086
PRF-fit source offset from KIC position	0.546 ± 0.092	5.93	0.387 ± 0.093	0.385 ± 0.091
photometric centroid source offset	0.63 ± 0.17	3.76	0.49 ± 0.16	0.40 ± 0.17

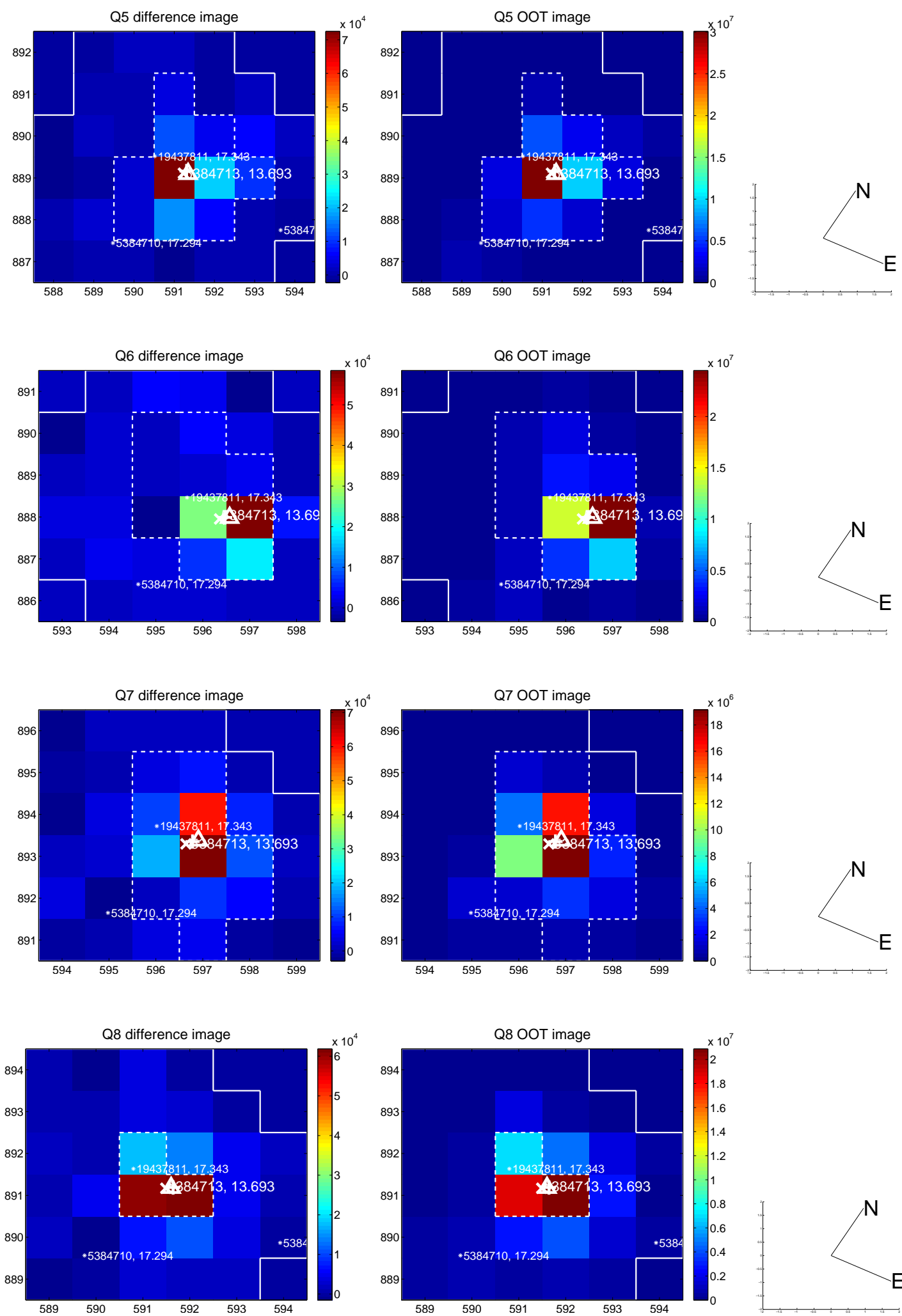


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

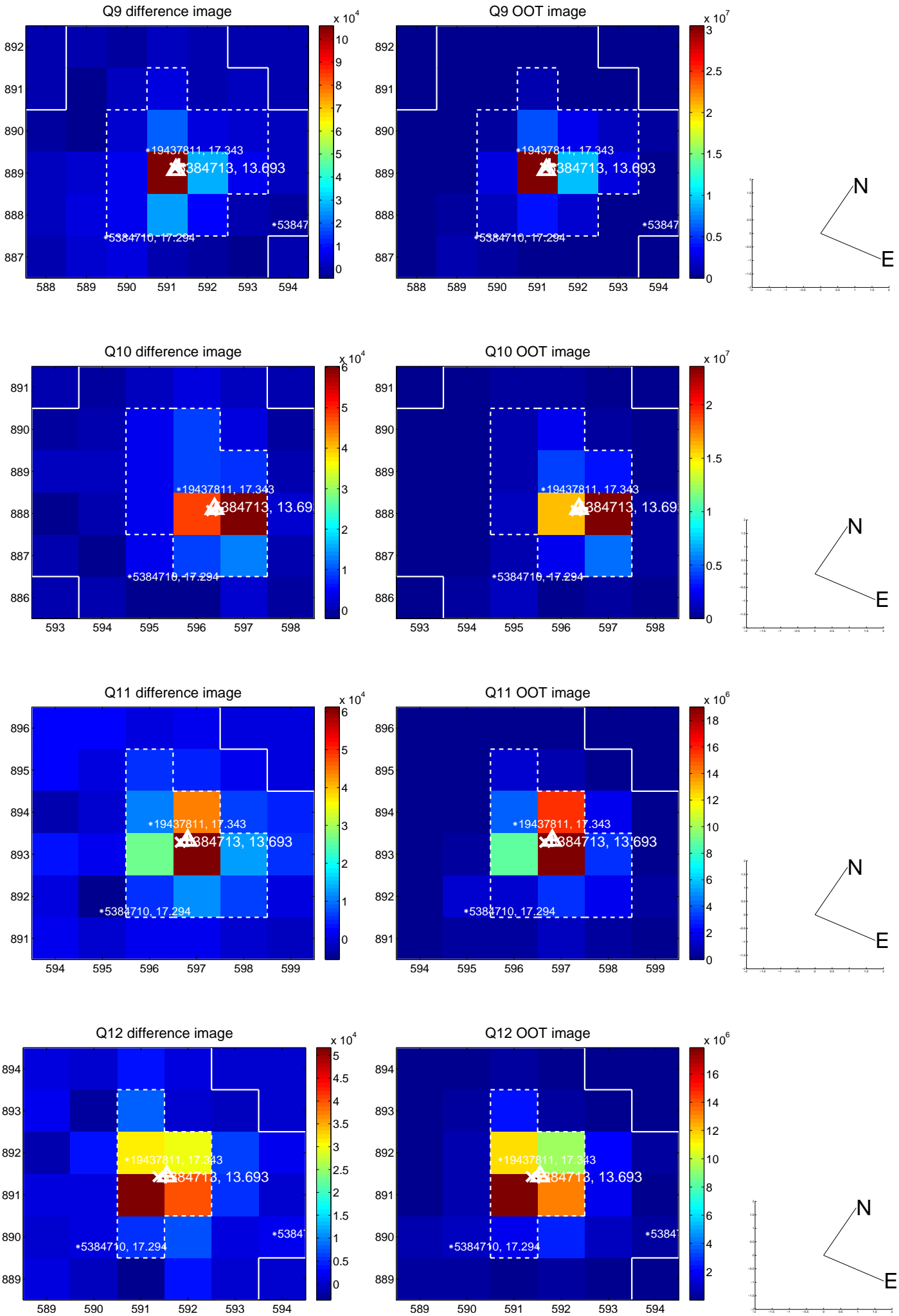
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



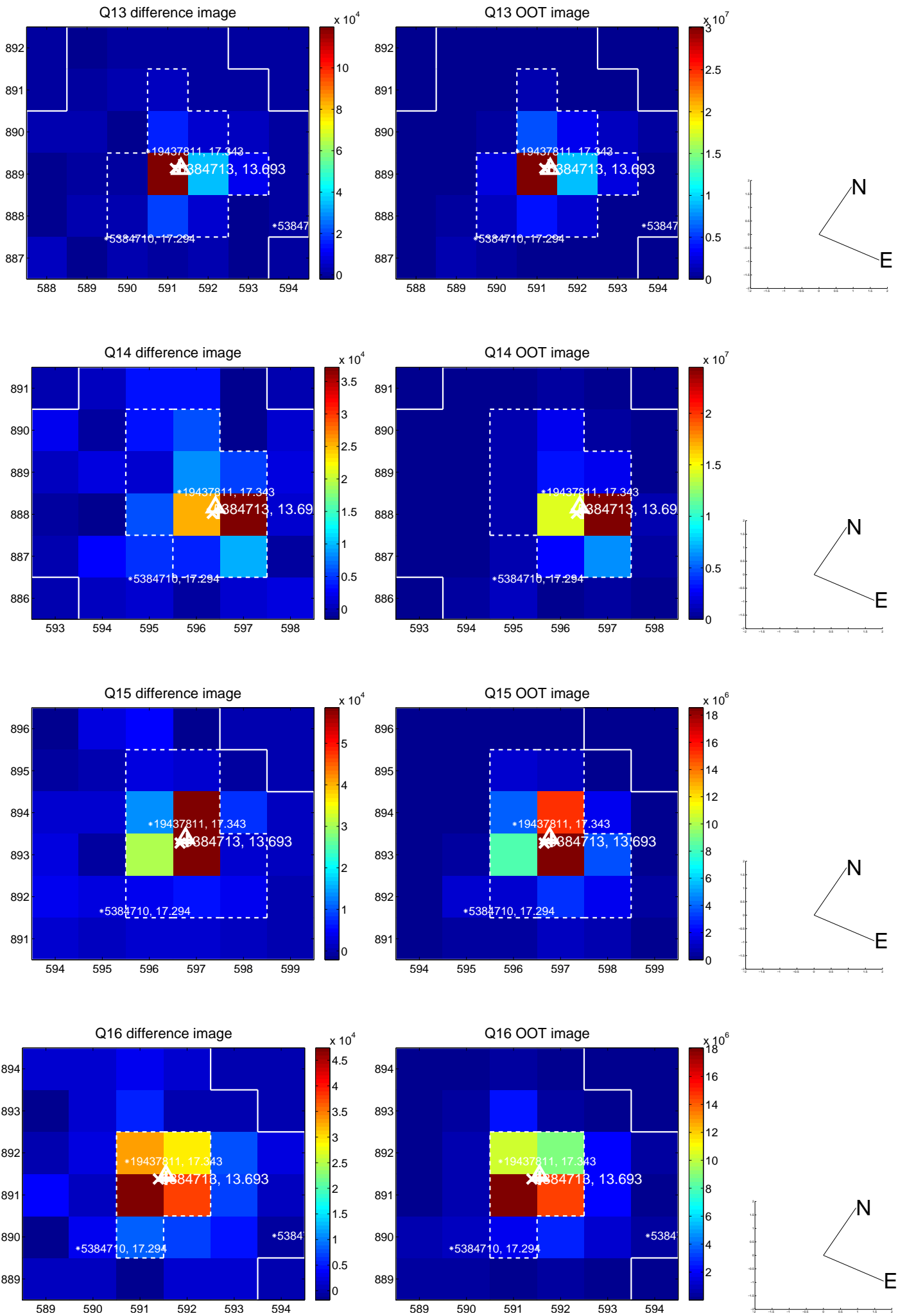
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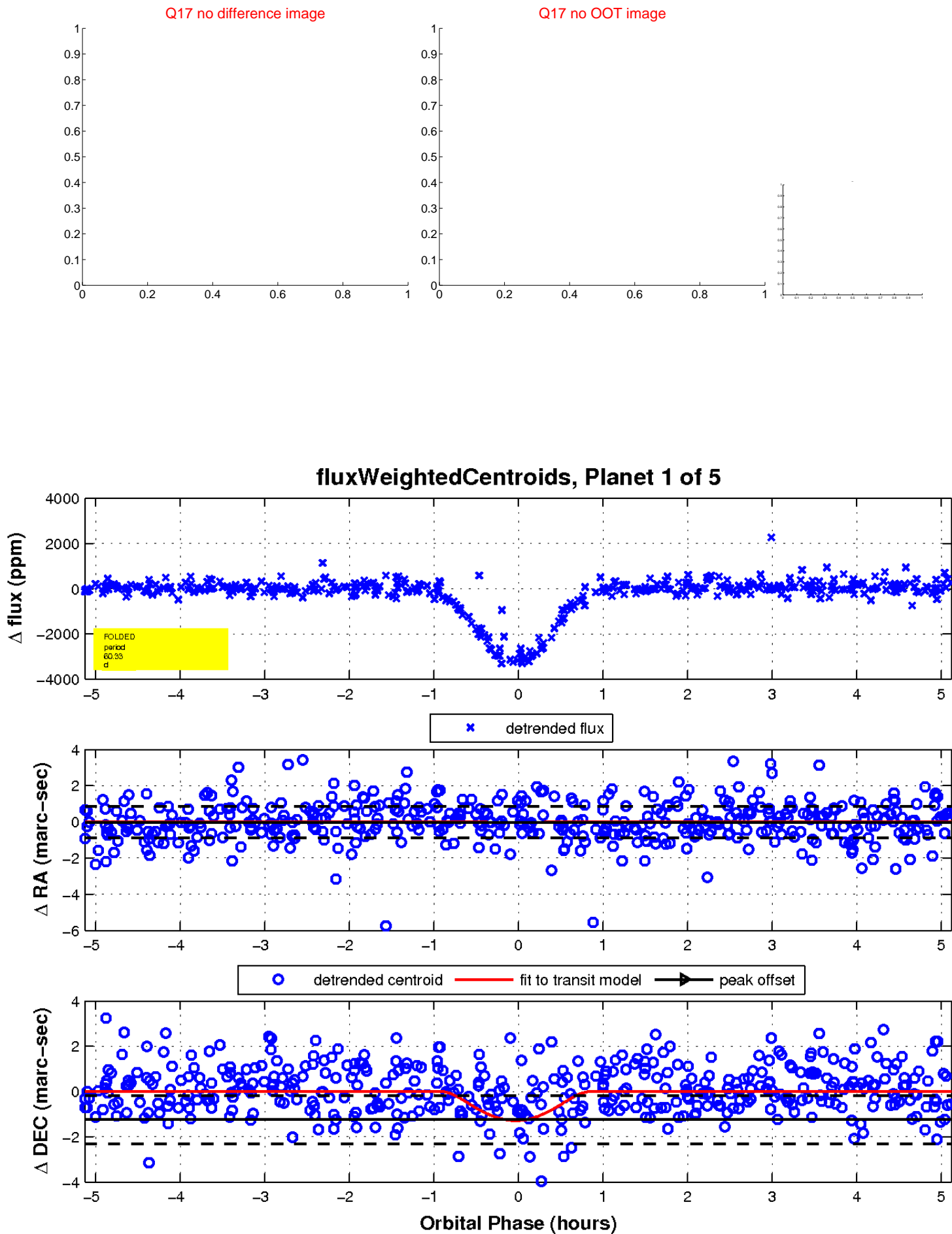
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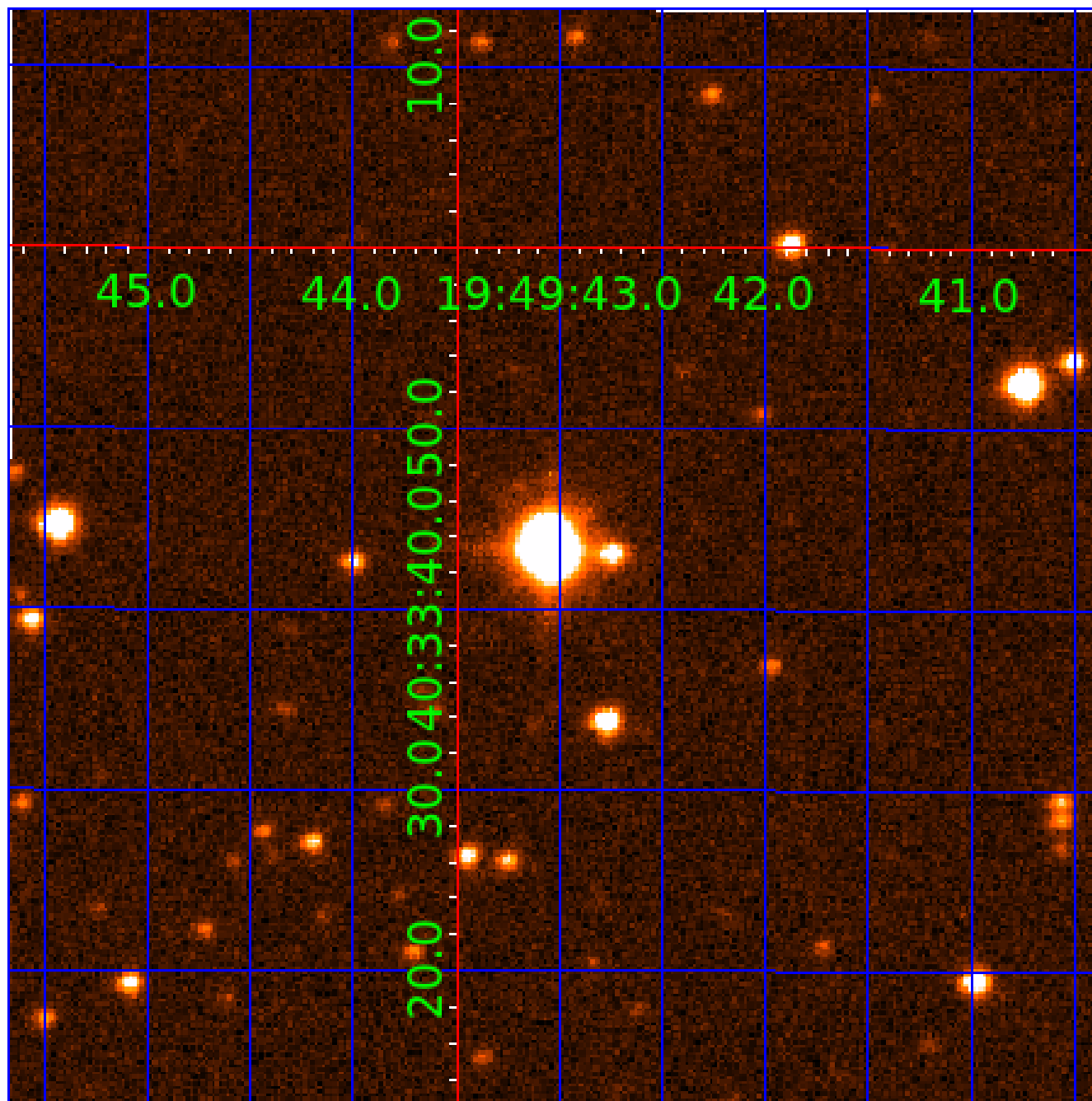


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005384713

Q1-17 DR25 TCE Parameters

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Robovetter Results

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005384713-05	OBS	FP	0.00	0	0	1	0	CENT_KIC_POS—HALO_GHOST

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

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

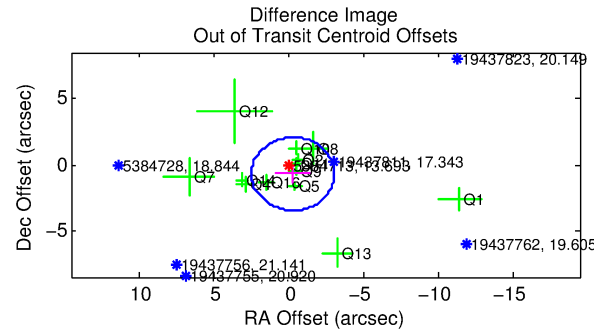
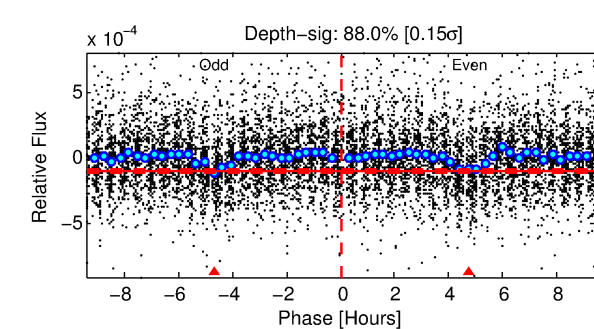
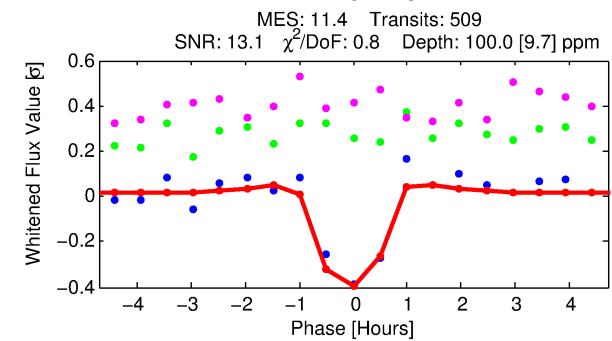
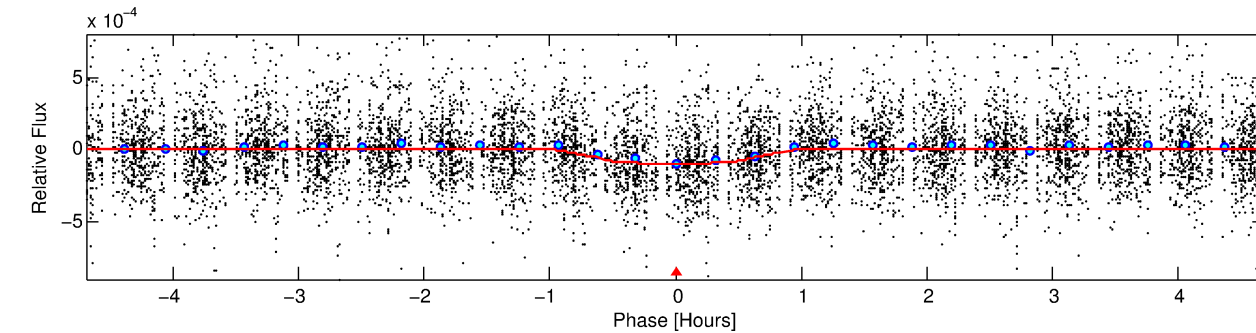
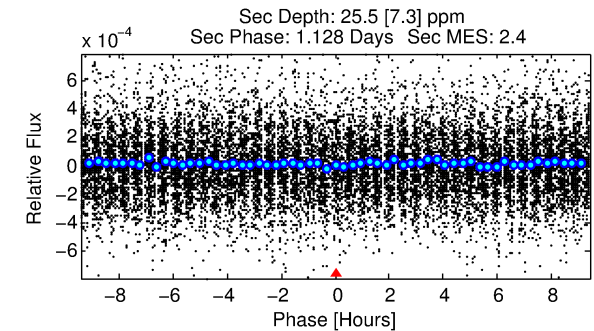
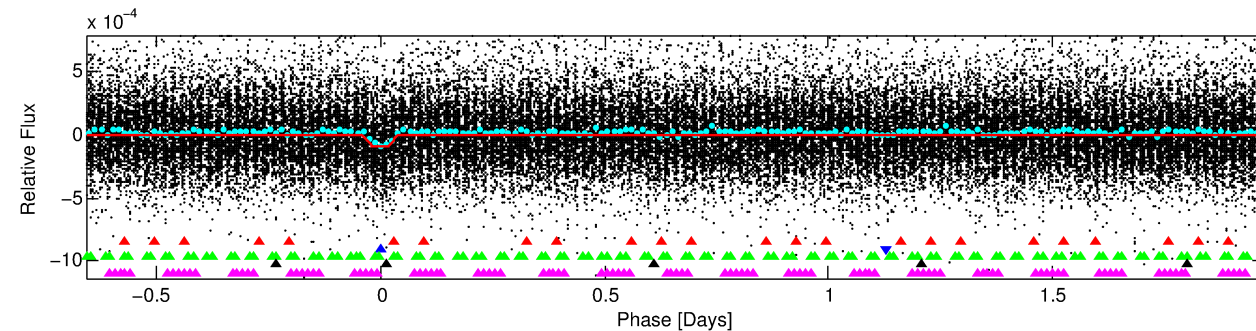
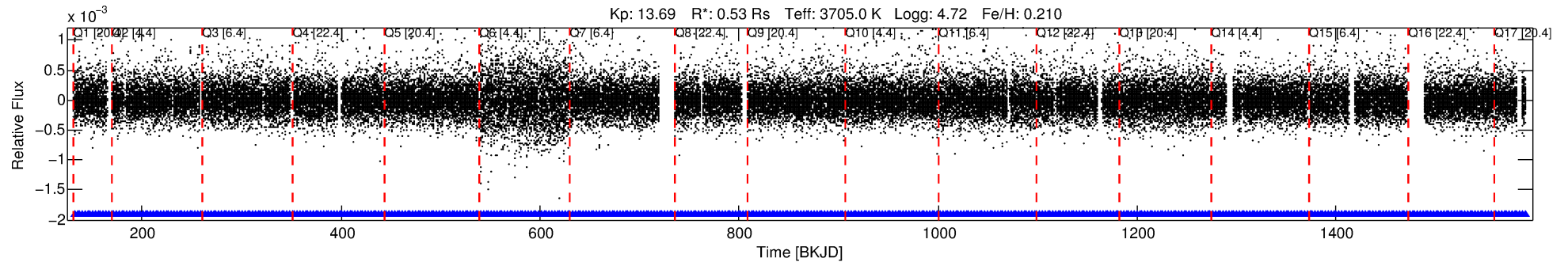
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005384713-02

No Significant Match Found

DV One-Page Summary

KIC: 5384713 Candidate: 2 of 5 Period: 2.636 d
KOI: K03444.03 Corr: 0.950



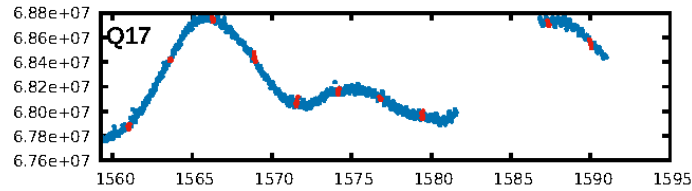
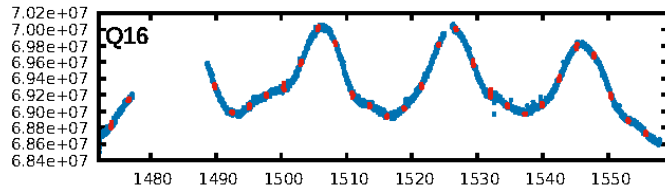
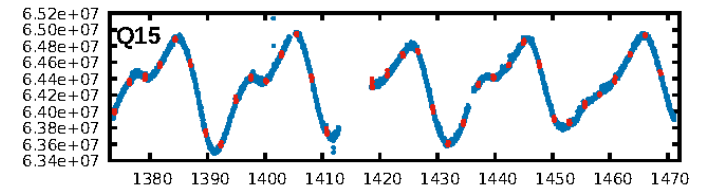
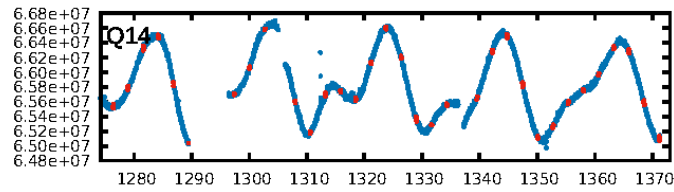
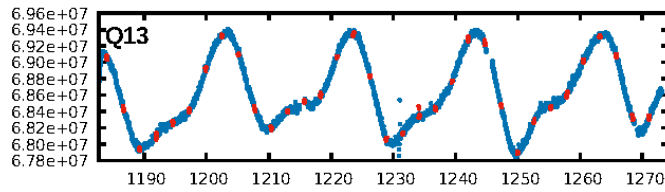
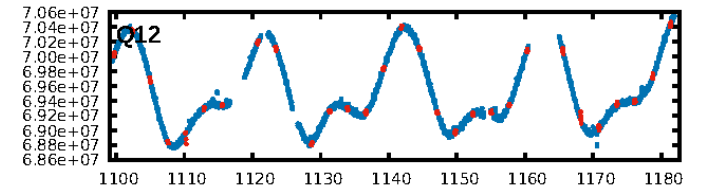
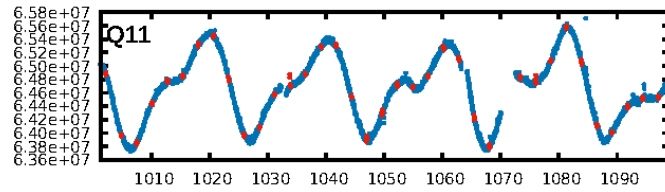
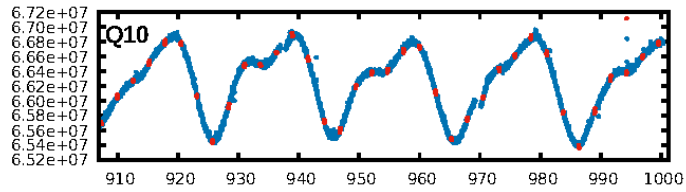
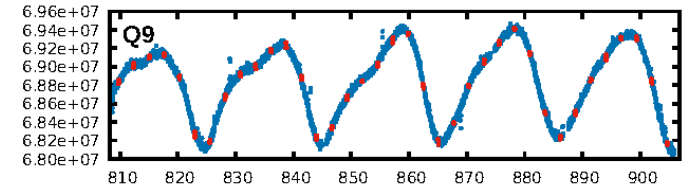
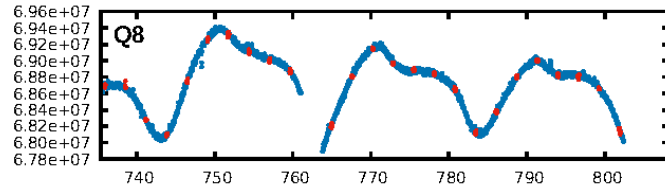
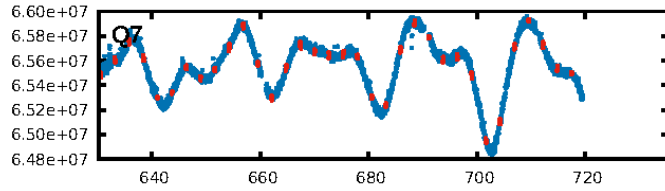
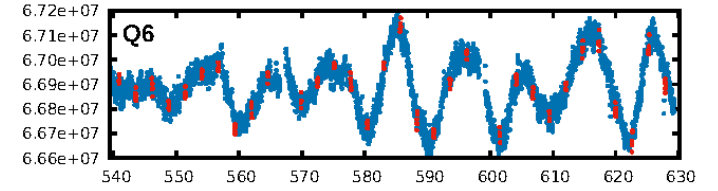
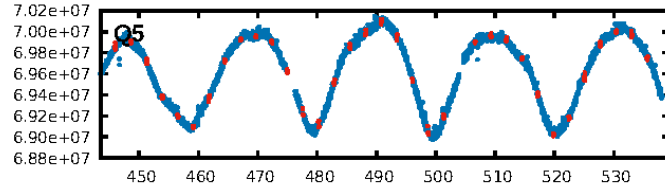
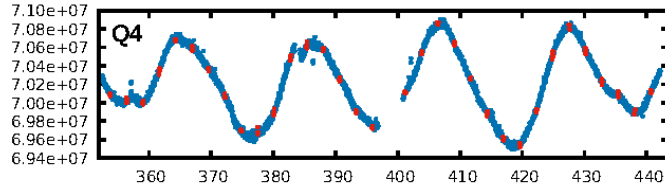
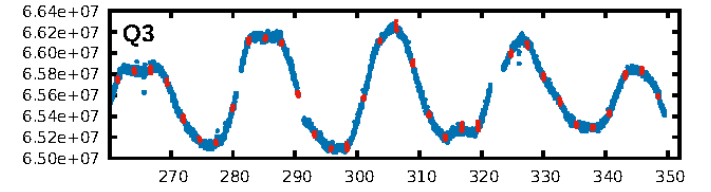
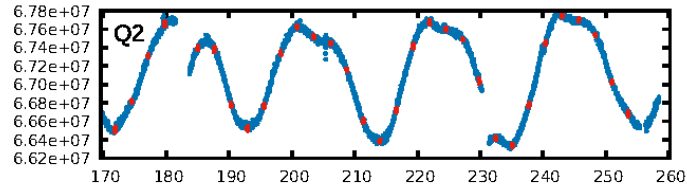
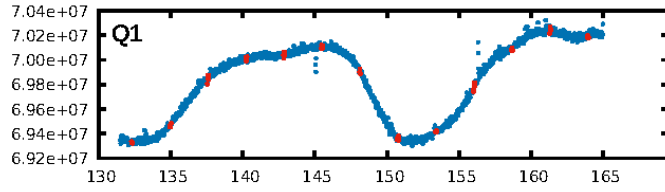
DV Fit Results:

Period = 2.63596 [0.00001] d
Epoch = 132.3171 [0.0018] BKJD
Rp/R* = 0.0112 [0.0064]
a/R* = 5.85 [13.80]
b = 0.91 [0.49]
Seff = 51.26 [5.68]
Teff = 682 [19] K
Rp = 0.64 [0.37] Re
a = 0.0304 [0.0017] AU
Ag = 31.13 [37.01] [0.81σ]
Teffp = 2492 [741] K [2.44σ]

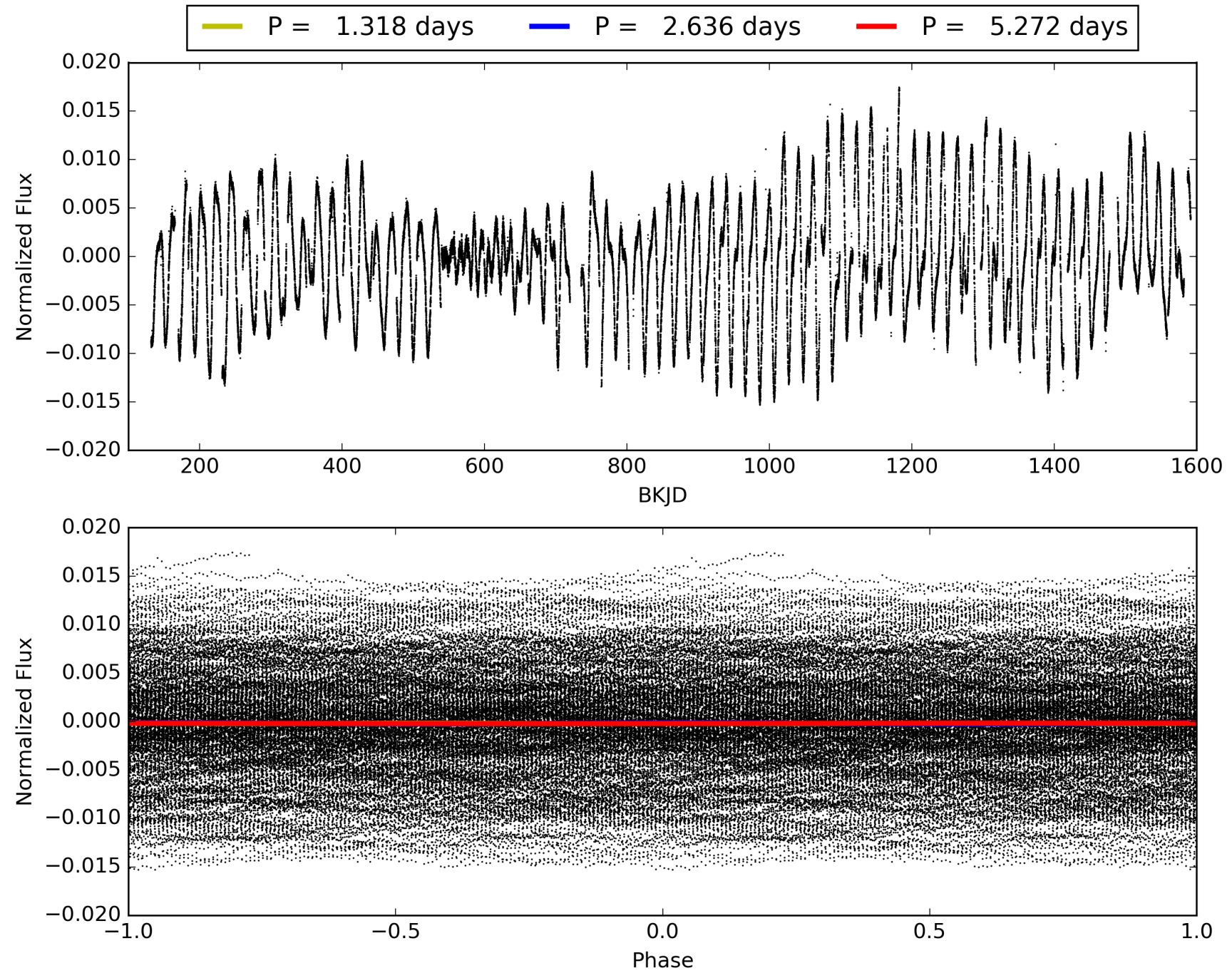
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [76.48σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.49e-25
RollingBand-fgt: 1.00 [486/486]
GhostDiagnostic-chr: -5.514
Centroid-sig: 20.9%
Centroid-so: 1.327 arcsec [1.55σ]
OotOffset-rm: 0.769 arcsec [0.84σ]
KicOffset-rm: 0.347 arcsec [0.56σ]
OotOffset-st: 3/2/4/4 [13]
KicOffset-st: 3/2/4/4 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005384713-02, PDC Light Curves

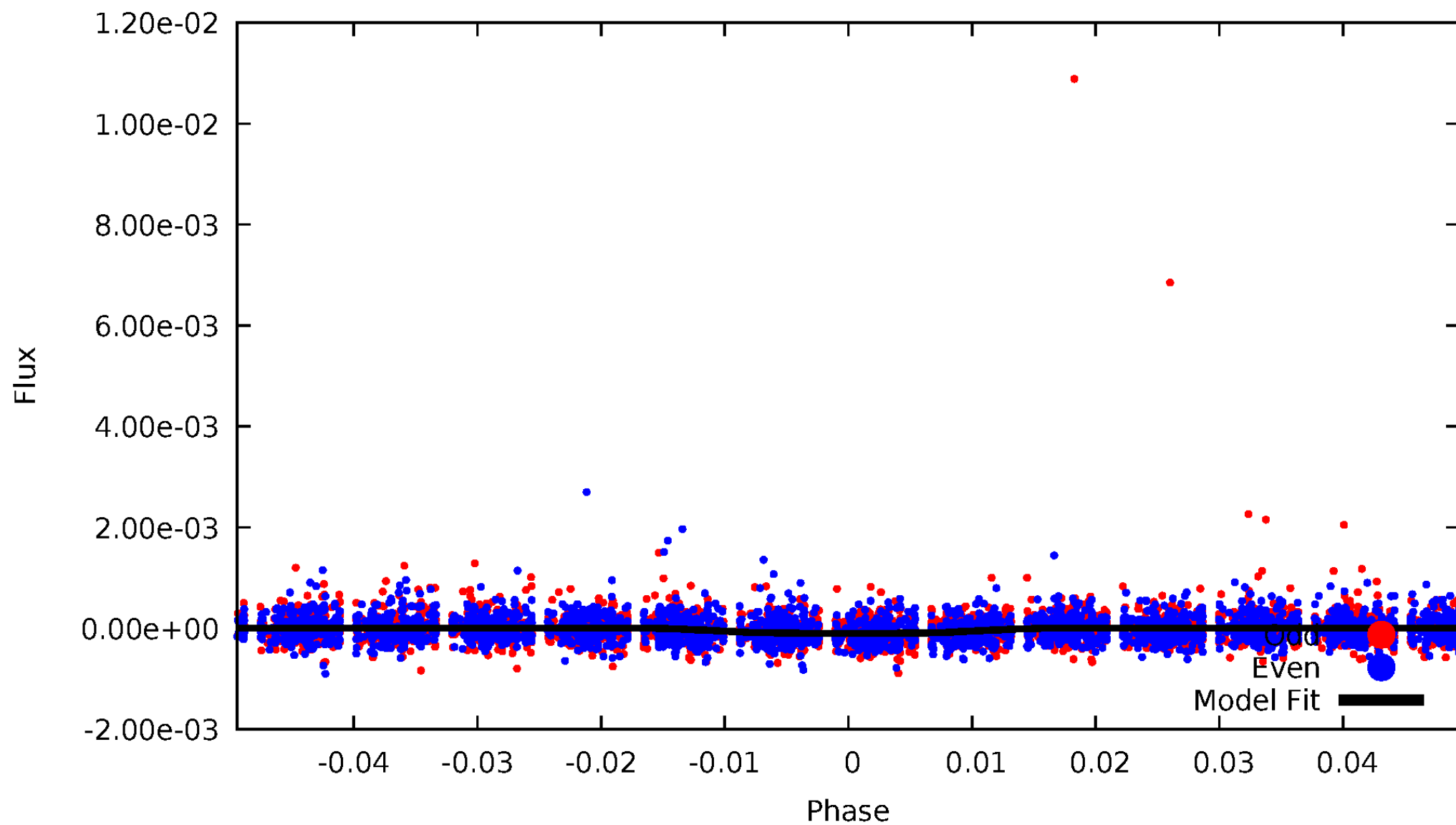


TCE 005384713-02



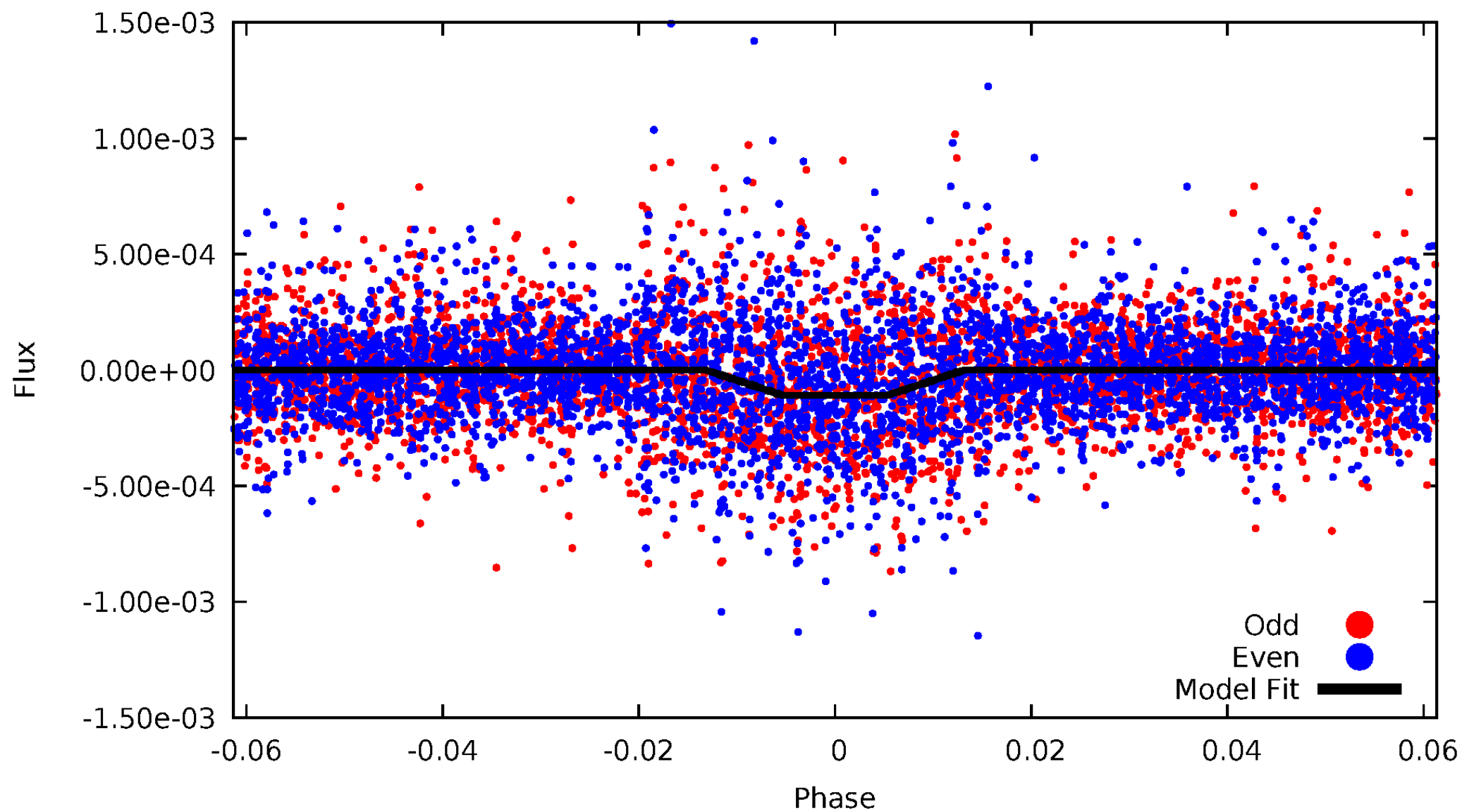
DV Odd/Even

TCE 005384713-02



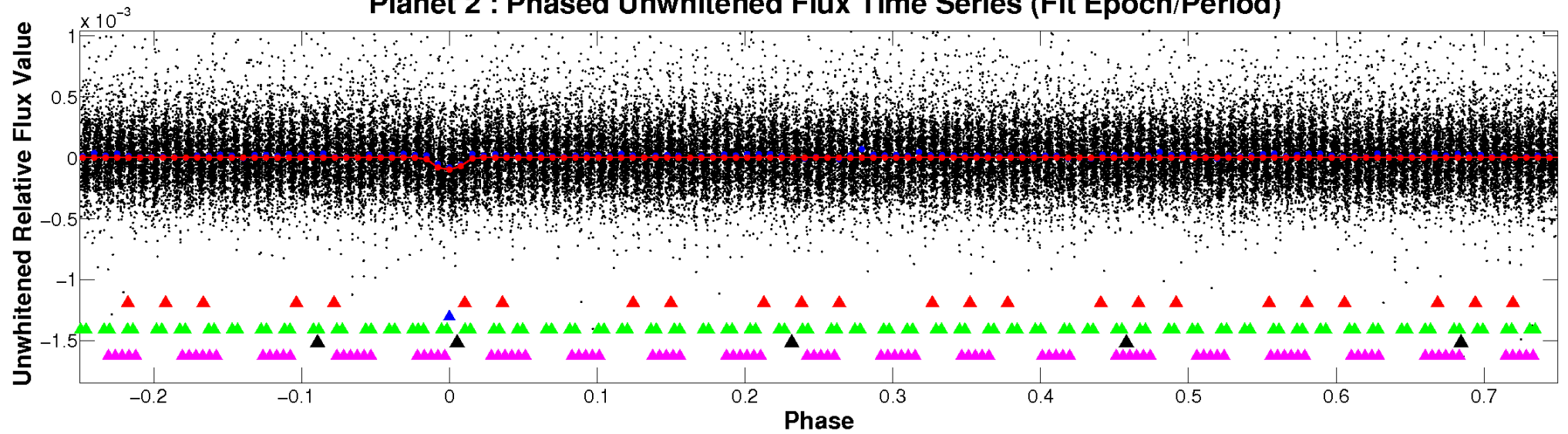
ALT Odd/Even

TCE 005384713-02

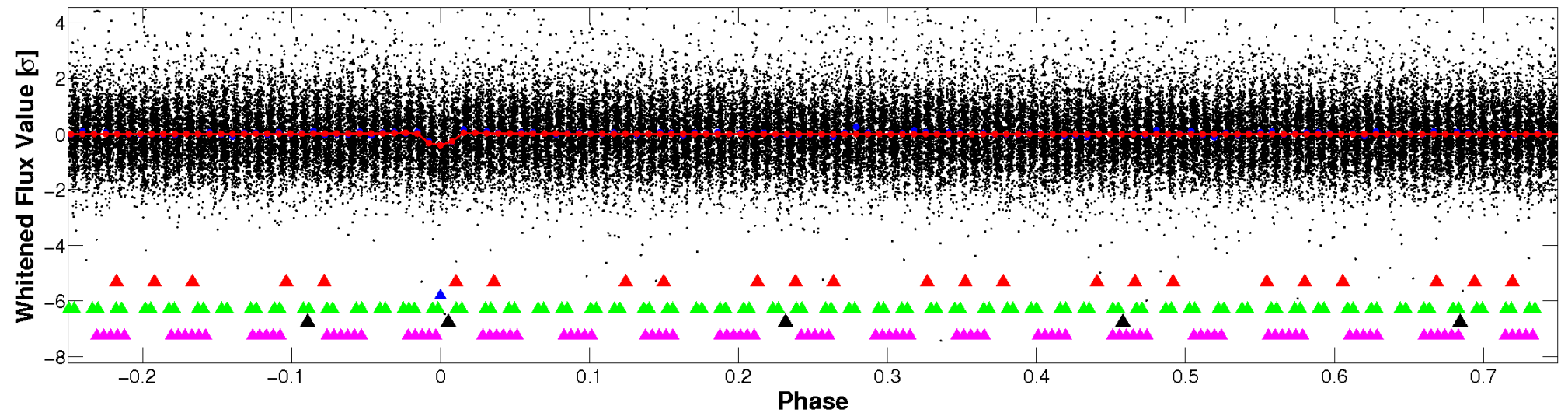


Non-Whitened Vs. Whitened Light Curve

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



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



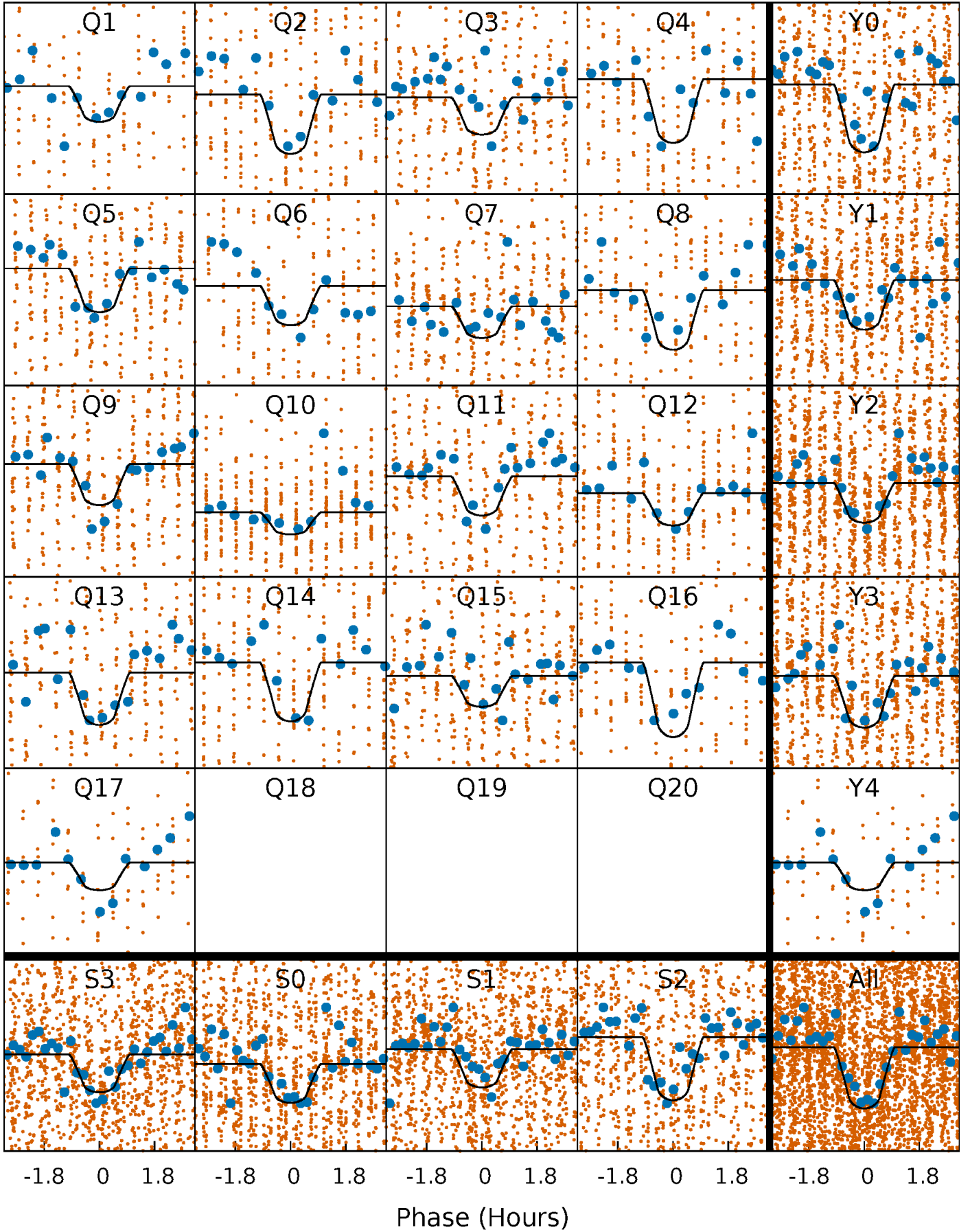
PDC Quarter-Phased Transit Curves

TCE 005384713-02 P= 2.635957 Days $T_0=132.317098$ (BKJD)



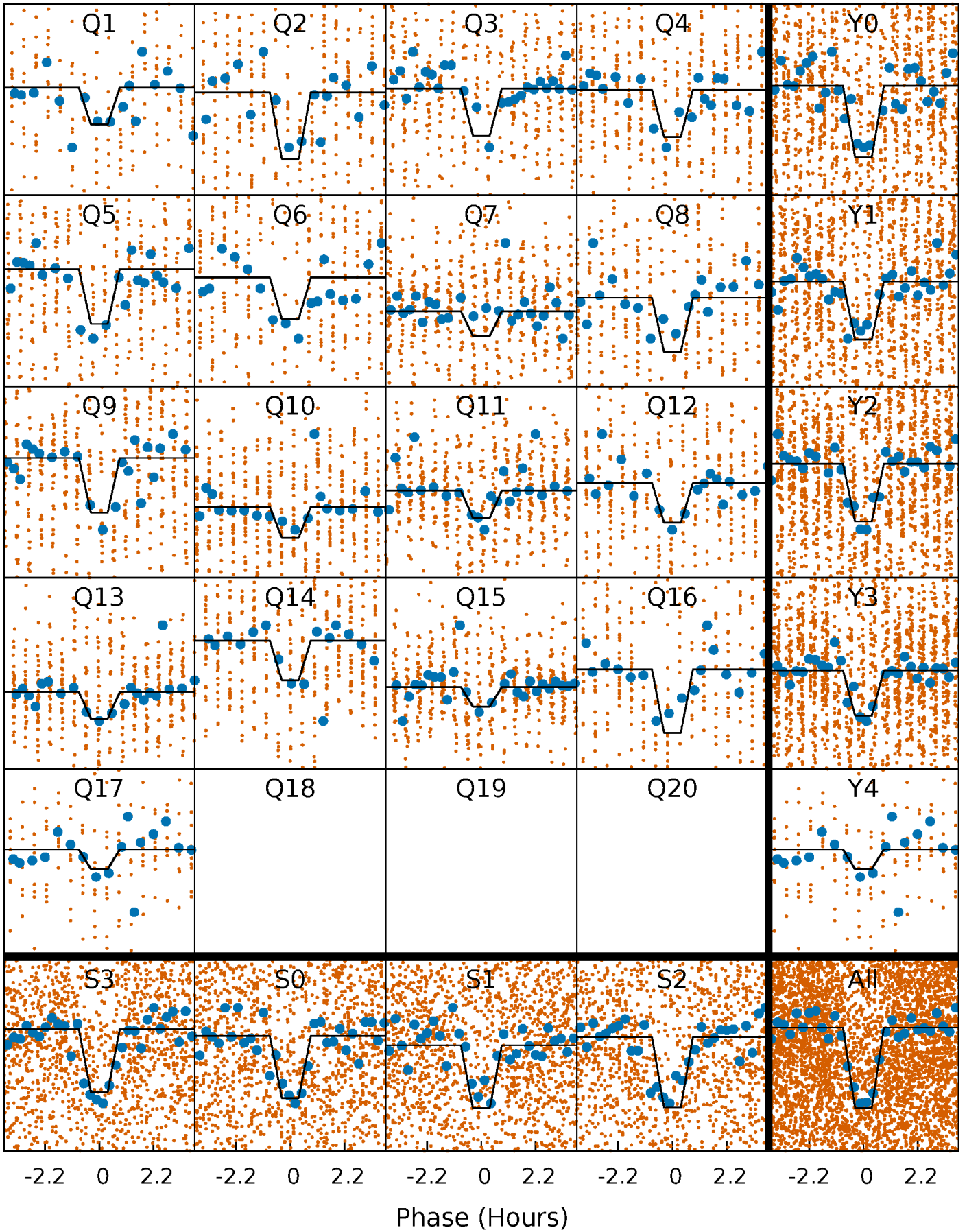
DV Quarter-Phased Transit Curves

TCE 005384713-02 P= 2.635957 Days $T_0=132.317098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

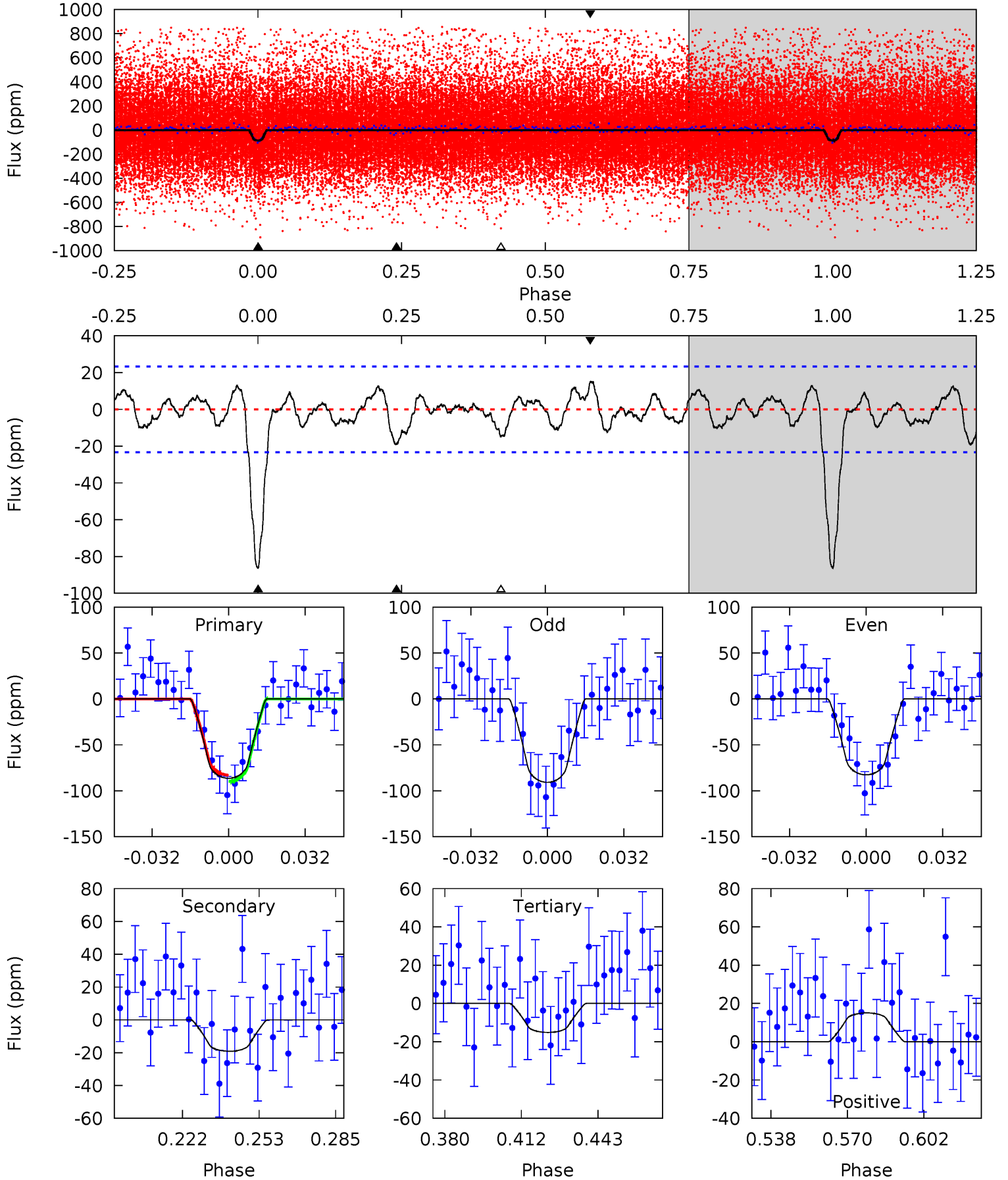
TCE 005384713-02 P= 2.635972 Days $T_0=132.314326$ (BKJD)



DV Model-Shift Uniqueness Test

005384713-02, P = 2.635957 Days, E = 129.681141 Days

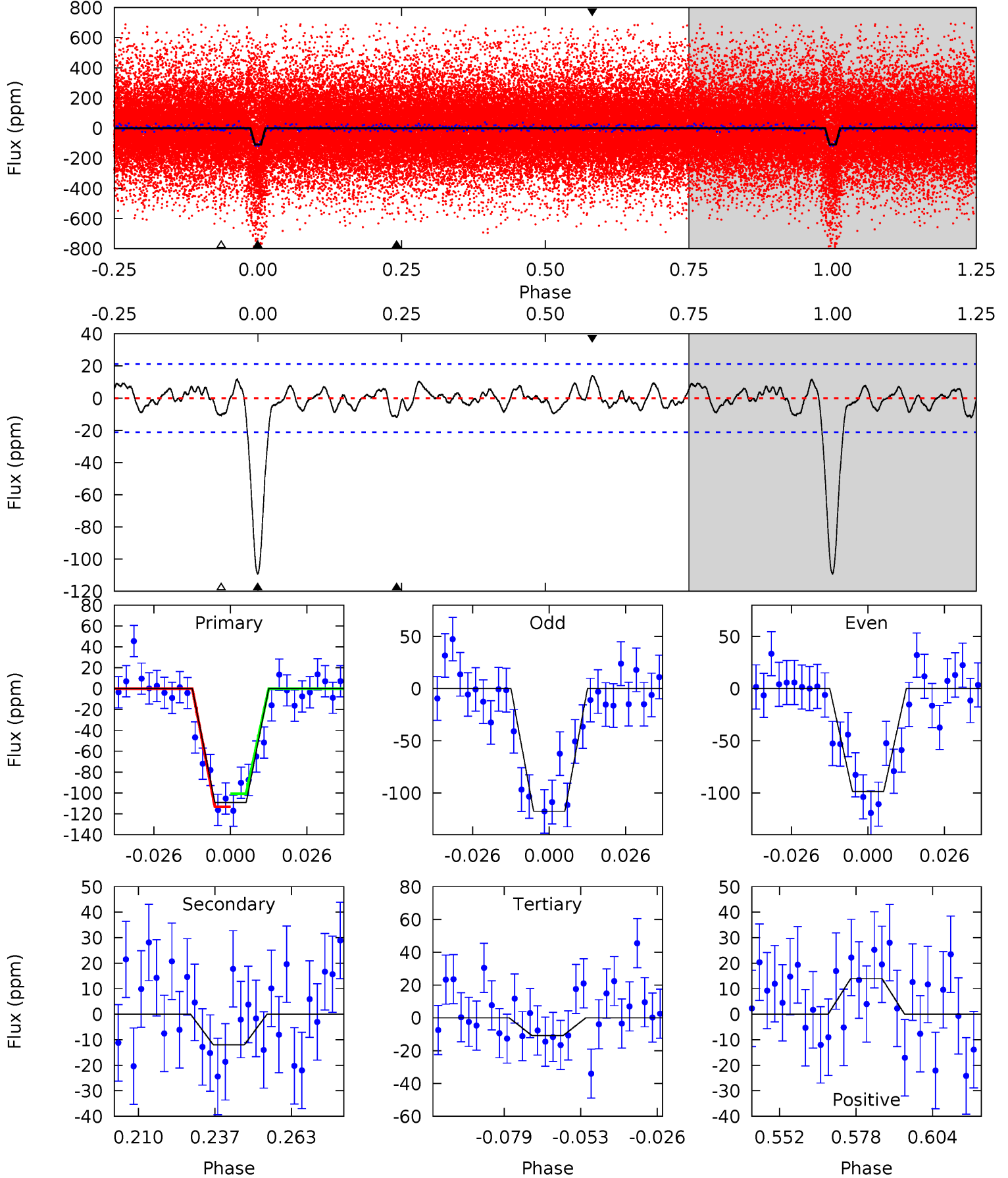
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	3.95	3.12	3.10	4.80	2.15	1.23	14.7	14.7	0.82	0.84	0.85	0.84	0.15	0.71



Alt Model-Shift Uniqueness Test

005384713-02, P = 2.635972 Days, E = 129.678354 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	2.72	2.45	3.19	4.84	2.22	1.11	22.5	21.7	0.27	-0.46	2.17	0.90	0.11	1.44



Stellar Parameters For KIC 005384713

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	3705^{+74}_{-74}	$4.721^{+0.039}_{-0.021}$	$0.210^{+0.150}_{-0.150}$	$0.529^{+0.030}_{-0.038}$	$0.536^{+0.034}_{-0.034}$	$5.115^{+0.917}_{-0.494}$
	+2%/-2%	+1%/-0%	+71%/-71%	+6%/-7%	+6%/-6%	+18%/-10%
Source	SPE70	SPE90	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 005384713-02 / KOI 3444.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 5	$0.65^{+0.40}_{-0.31}$	948^{+25}_{-22}	2784^{+623}_{-333}	23^{+65}_{-14}
Alt.	-12 ± 4	$0.62^{+0.33}_{-0.34}$	950^{+21}_{-25}	2644^{+655}_{-304}	15^{+57}_{-9}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

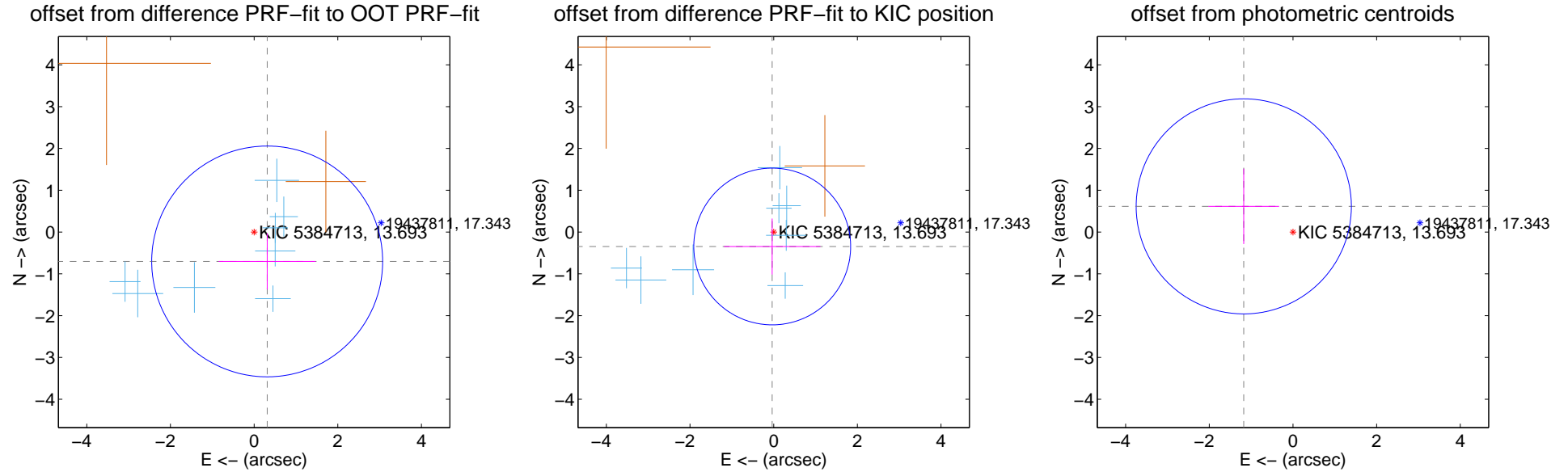
DV Centroid Data

Supplemental centroid analysis for 005384713-02. Kepler magnitude: 13.69. Transit SNR 13.13

There are 8 quarters with good PRF difference image offsets

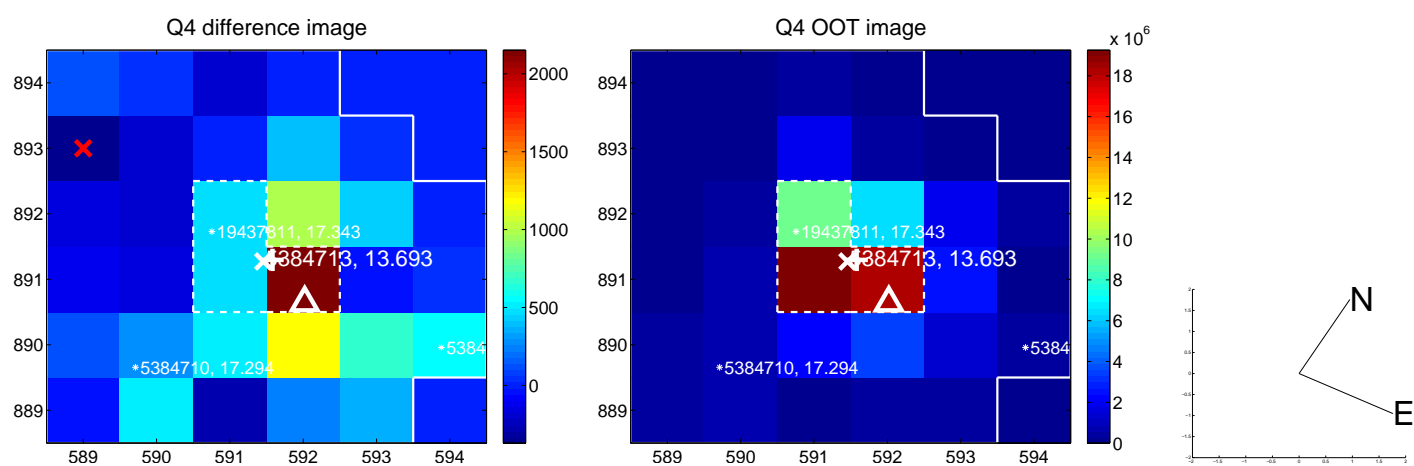
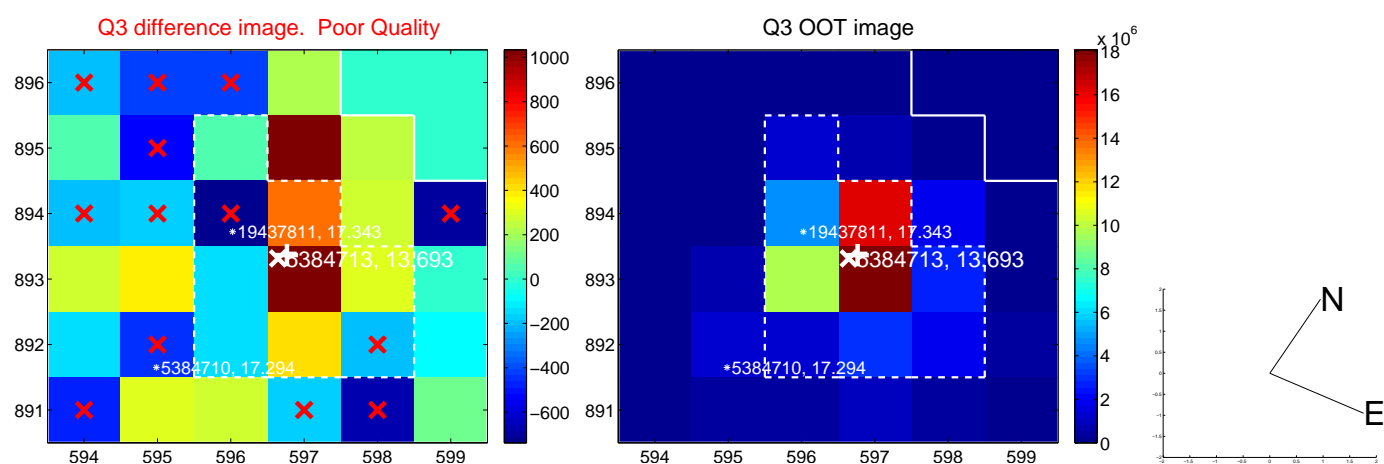
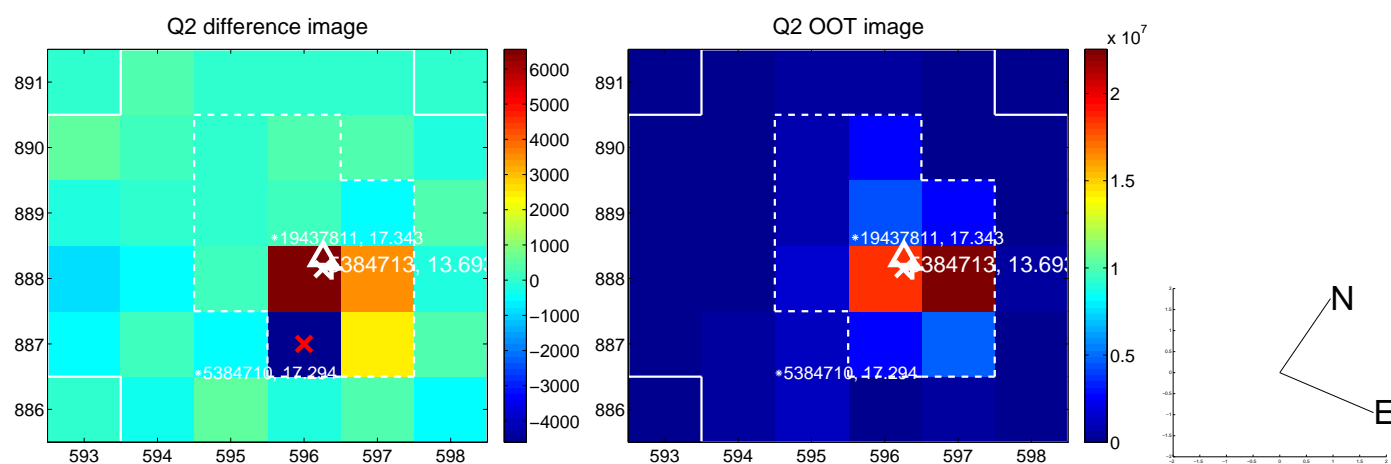
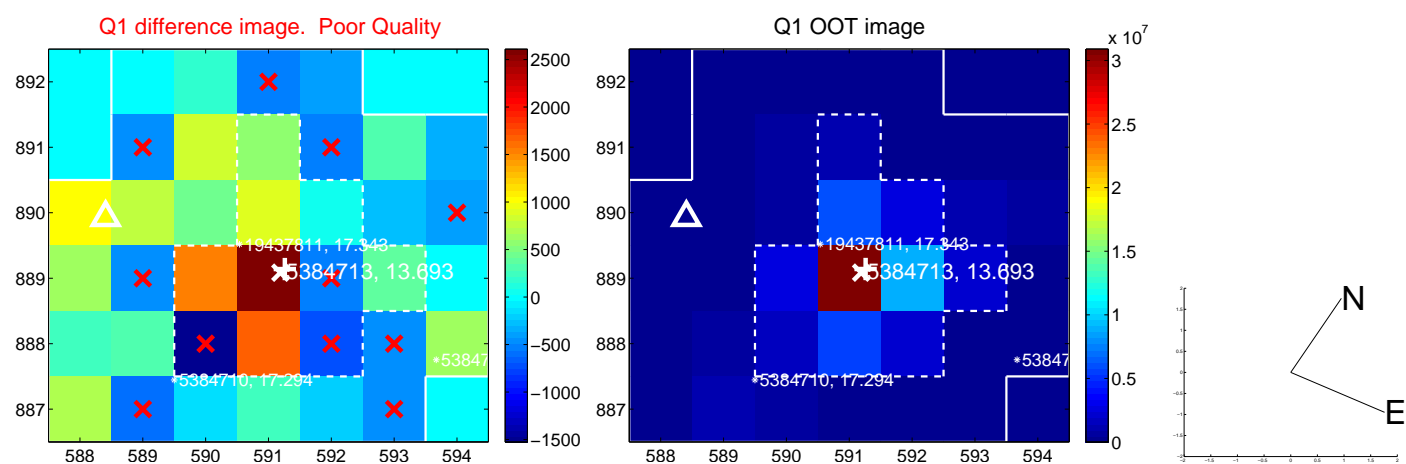
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.769 ± 0.920	0.84	-0.312 ± 1.157	-0.703 ± 0.670
PRF-fit source offset from KIC position	0.347 ± 0.625	0.56	0.035 ± 1.153	-0.346 ± 0.669
photometric centroid source offset	1.33 ± 0.86	1.55	1.18 ± 0.84	0.61 ± 0.90

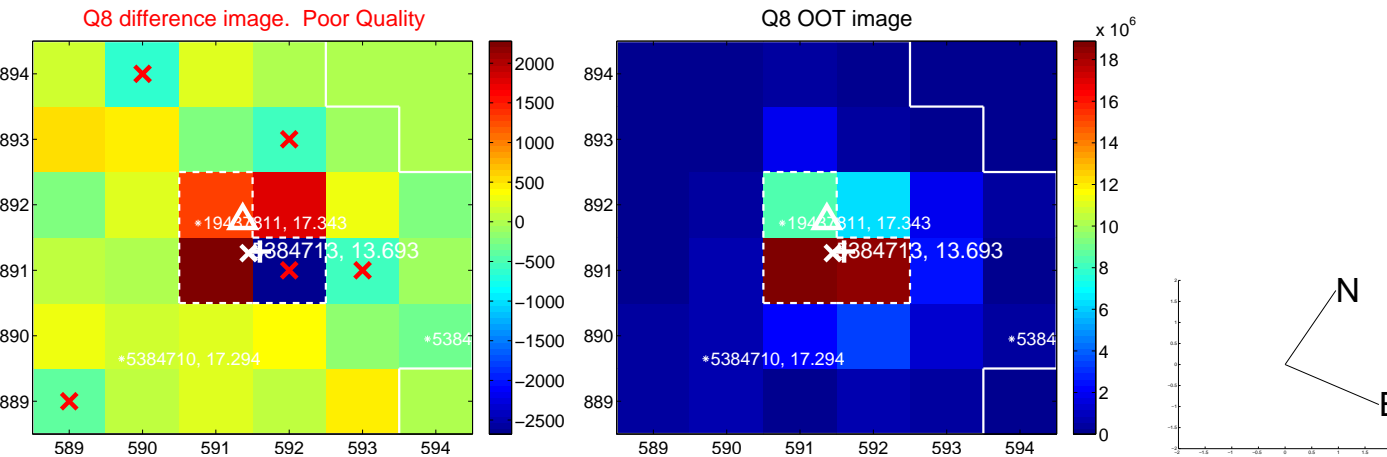
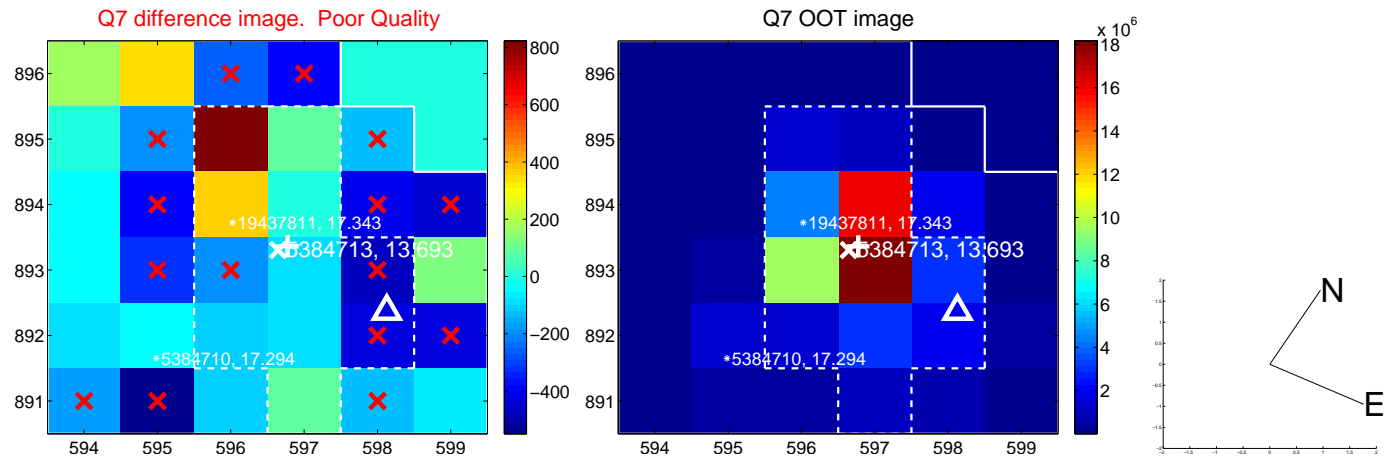
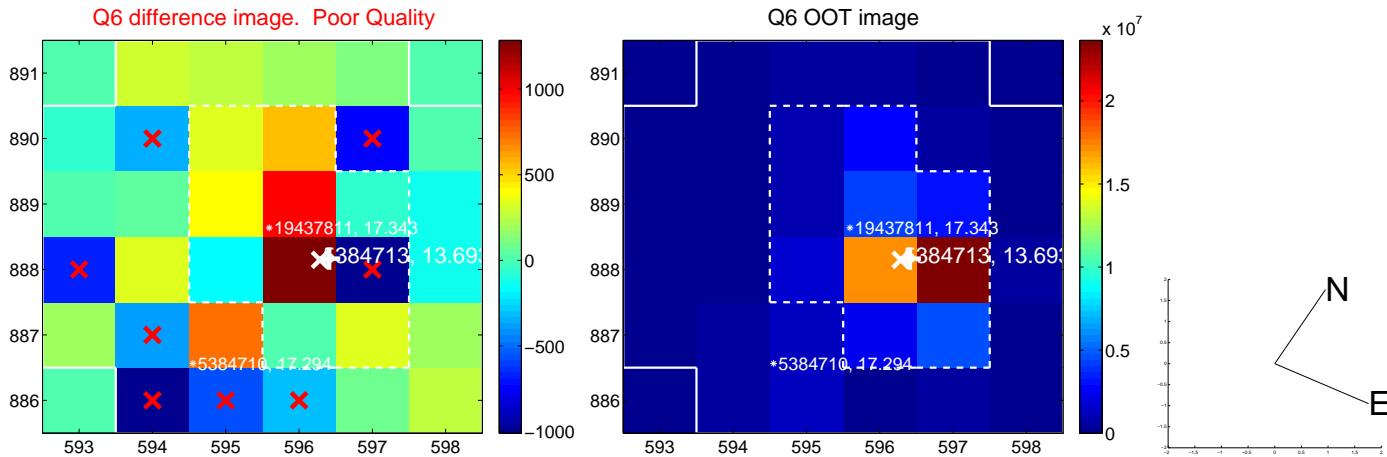
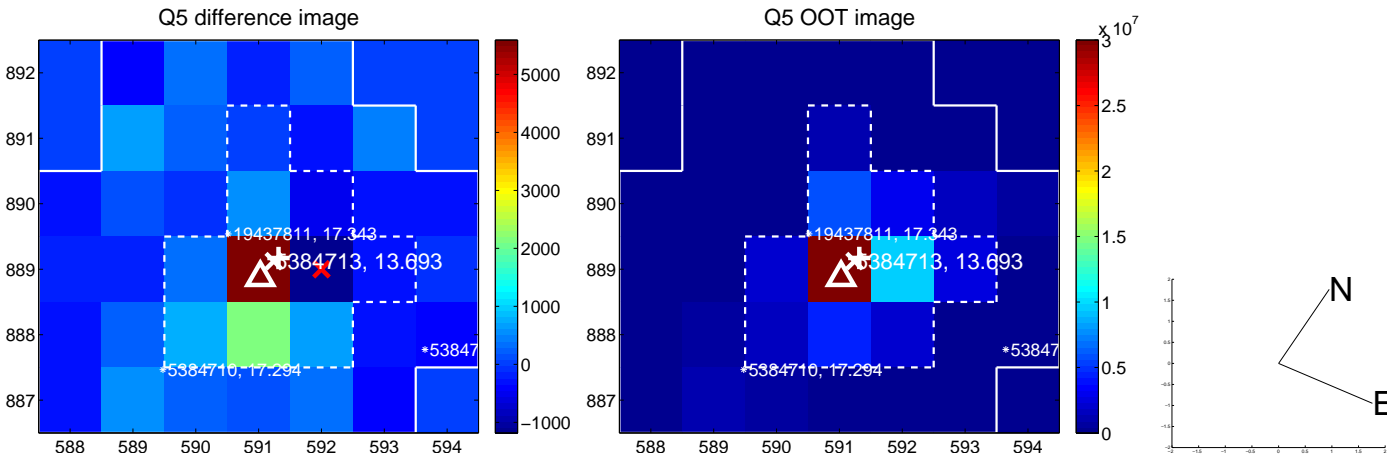


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

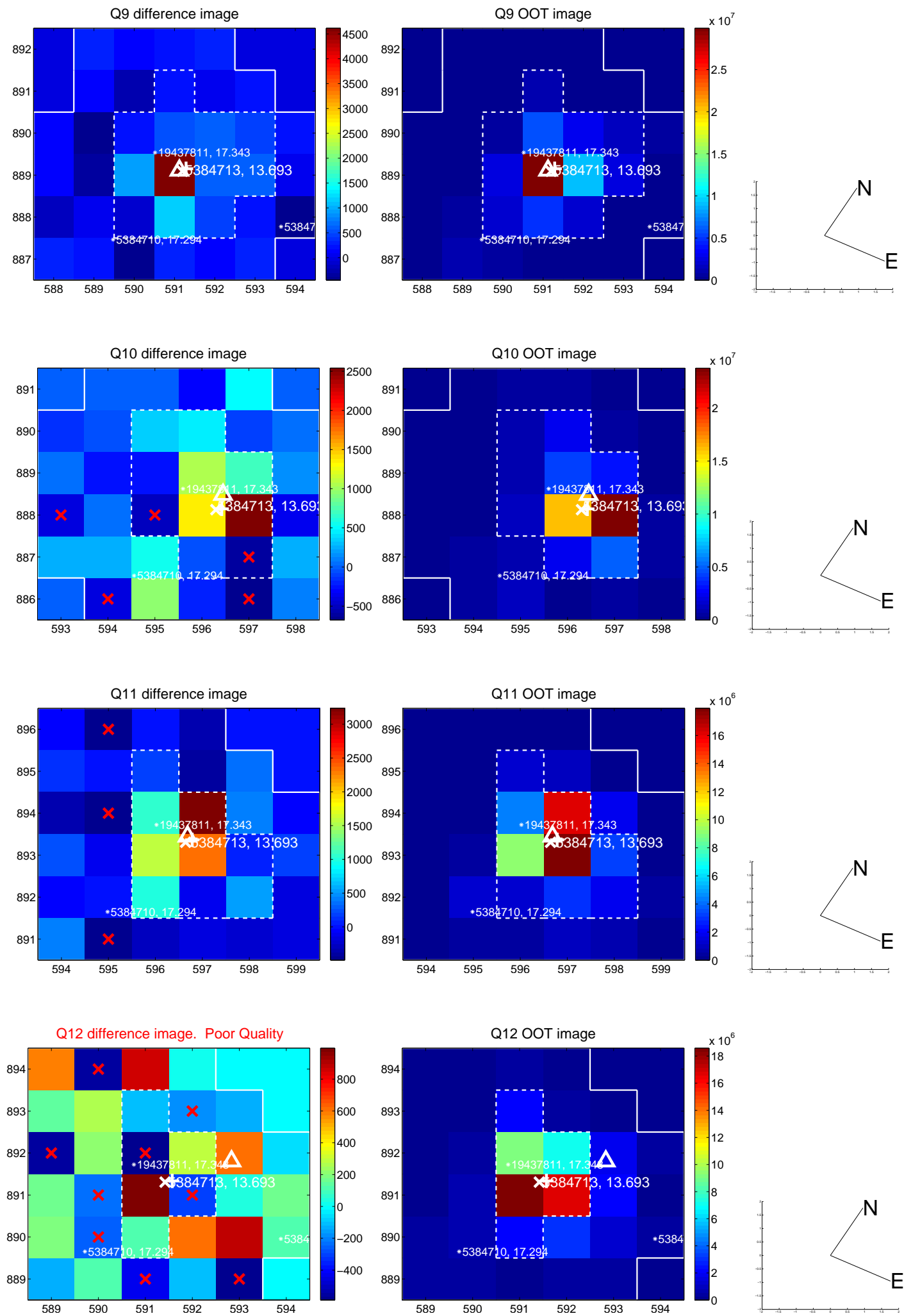
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



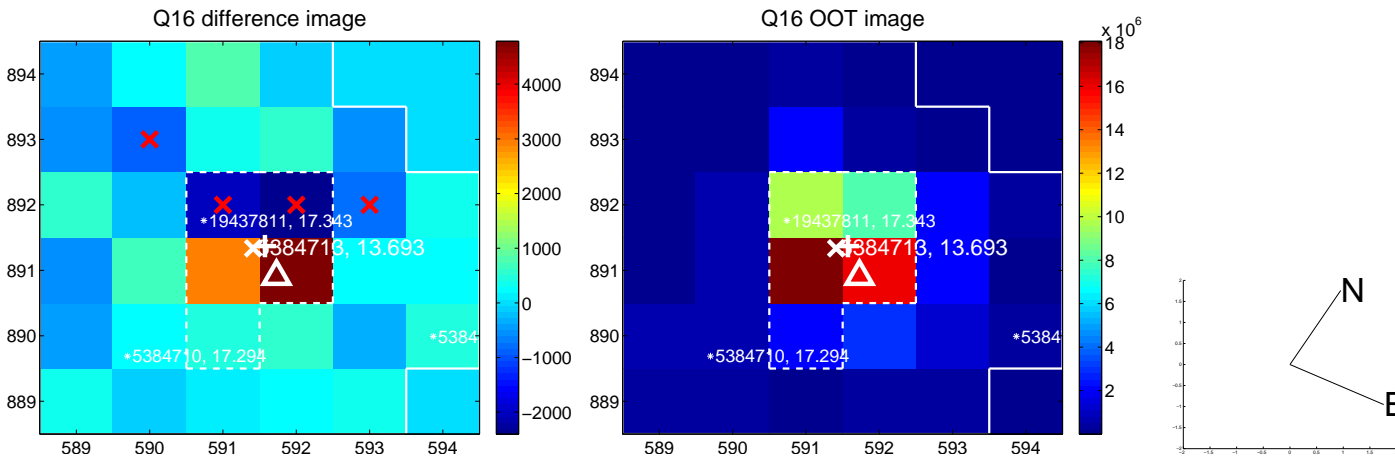
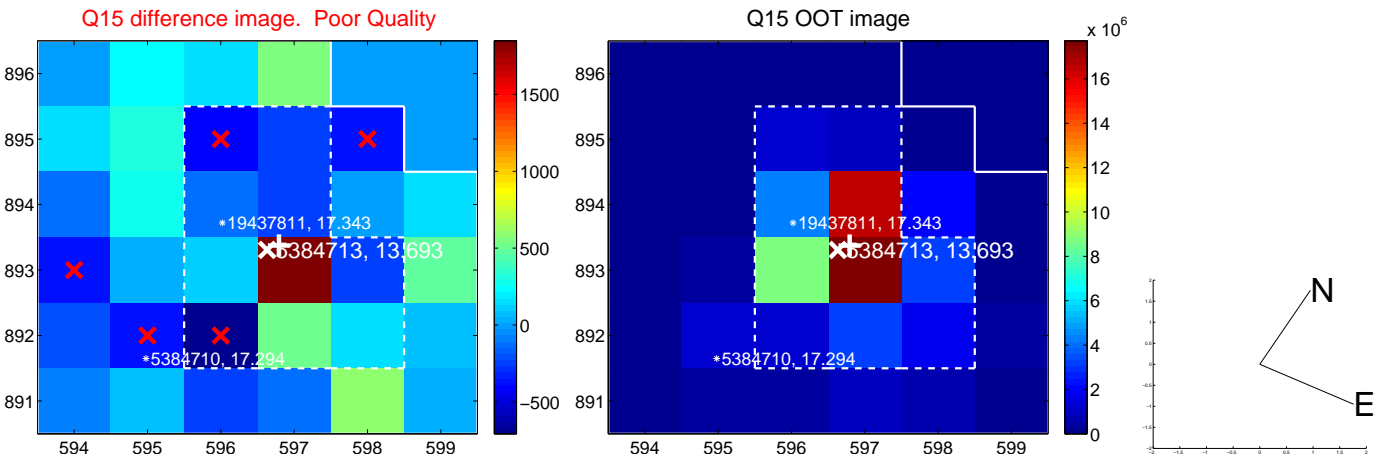
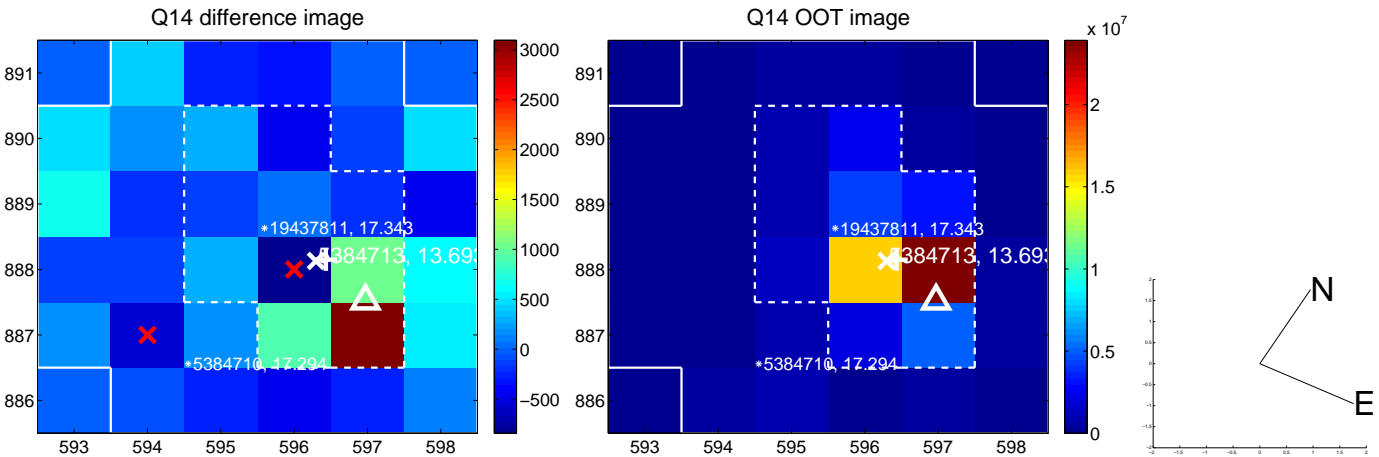
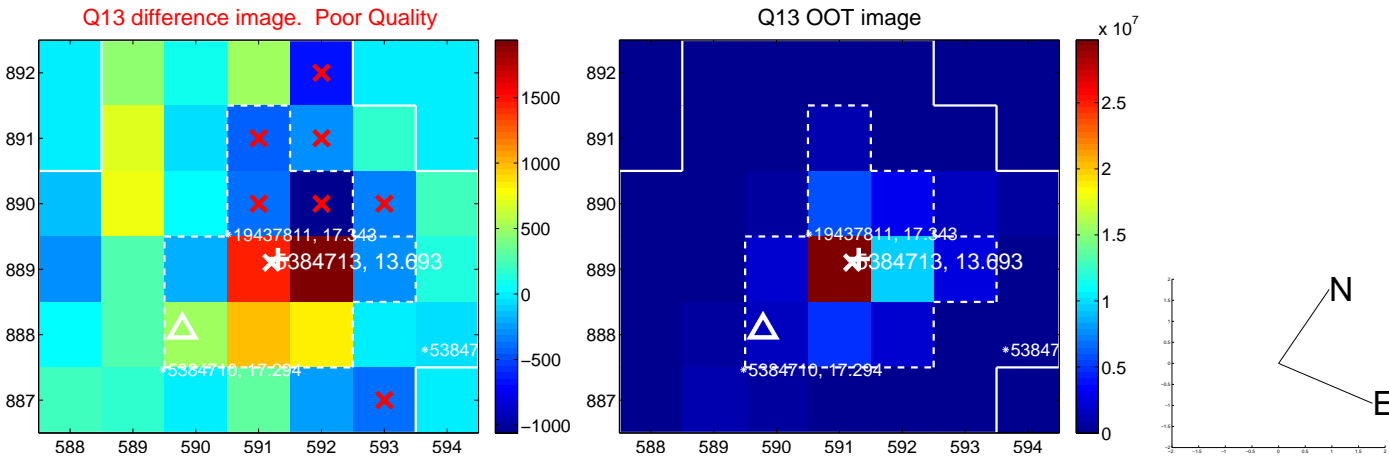
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



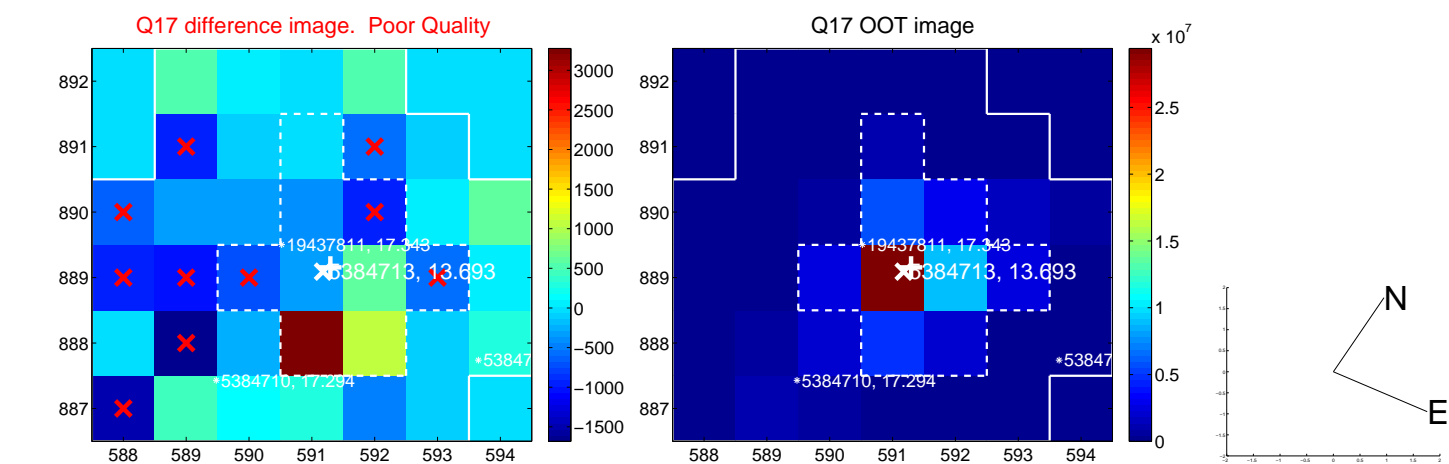
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



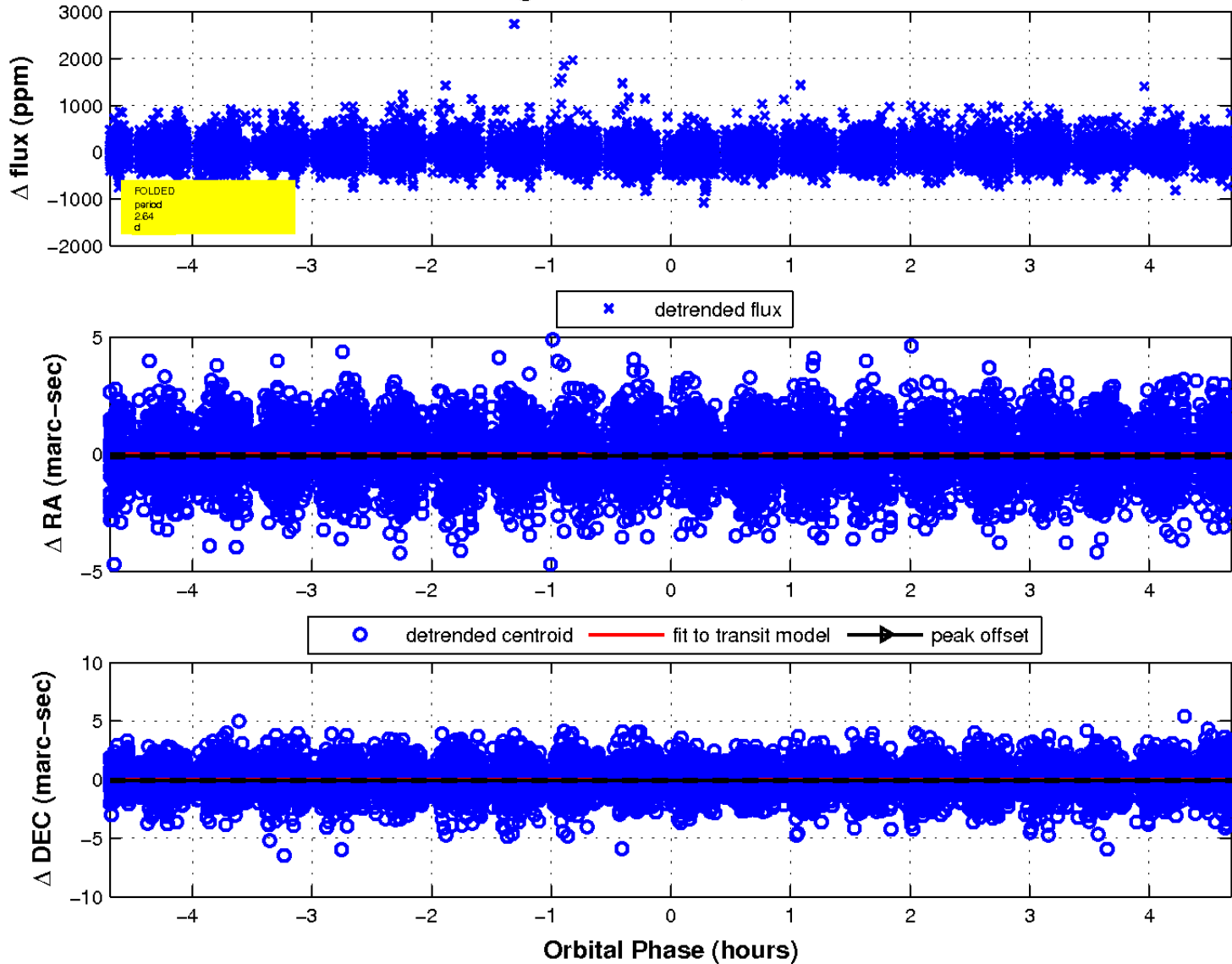
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

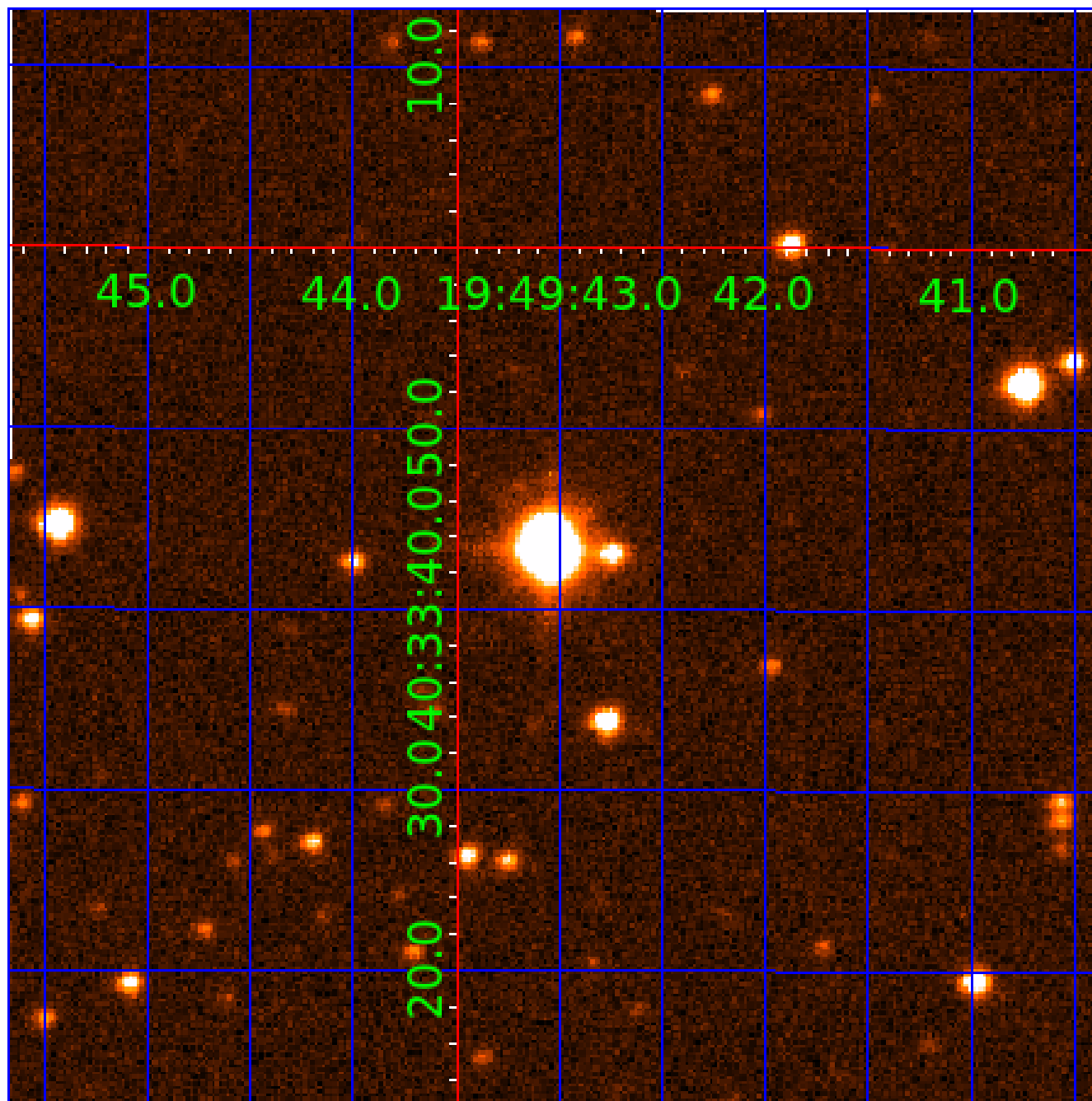


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 005384713

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})
005384713-01	OBS	3444.02	60.326652	145.058087	3156.3	1.711	59.2	70.5	0.53	3705	5.25	0.79
005384713-02	OBS	3444.03	2.635957	132.317098	100.0	1.563	11.4	13.1	0.53	3705	0.64	51.26
005384713-03	OBS	3444.01	12.671259	137.523630	165.0	2.734	10.2	11.1	0.53	3705	0.84	6.32
005384713-04	OBS	No	331.533765	240.156346	483.6	7.332	9.7	7.4	0.53	3705	1.32	0.08
005384713-05	OBS	3444.04	14.150286	141.474977	185.8	2.377	8.0	9.5	0.53	3705	1.20	5.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005384713-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS
005384713-02	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
005384713-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005384713-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005384713-05	OBS	FP	0.00	0	0	1	0	CENT_KIC_POS—HALO_GHOST

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

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

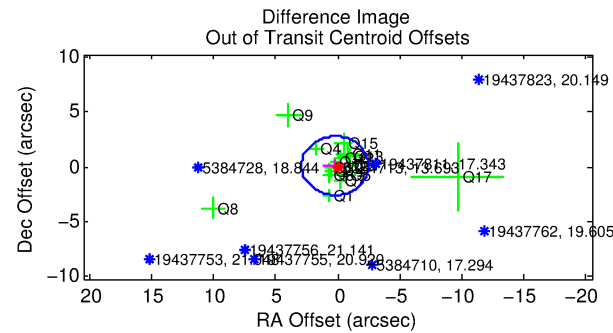
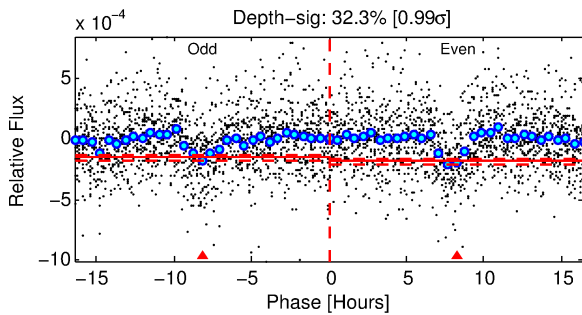
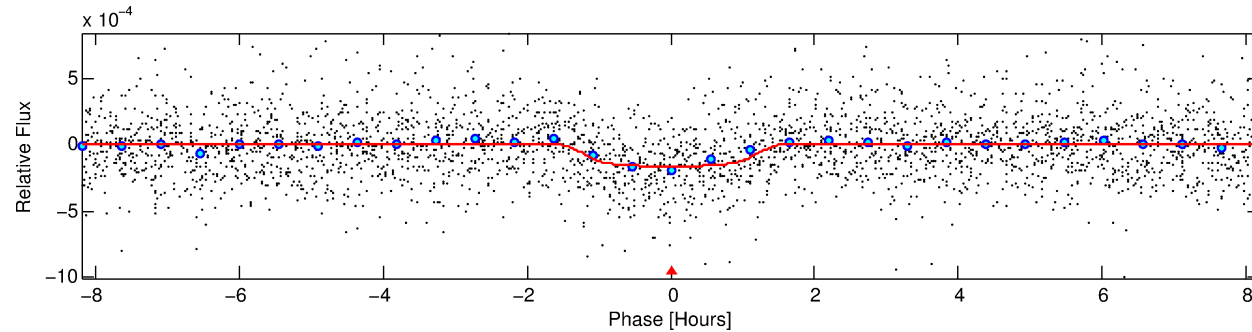
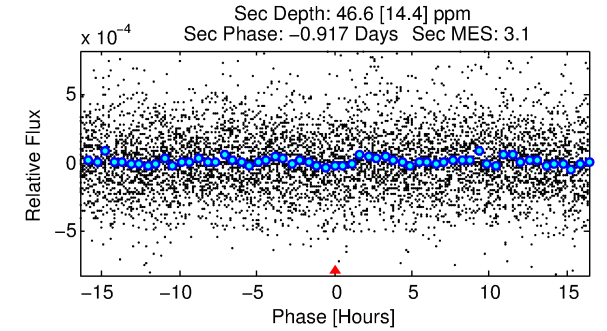
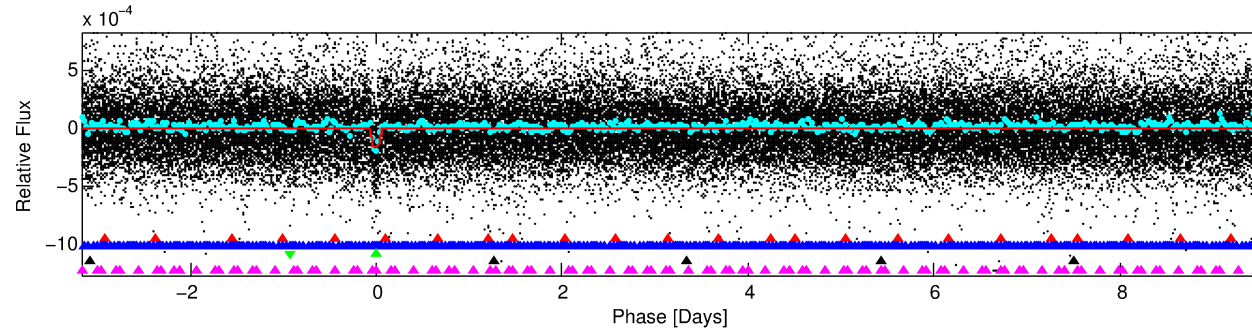
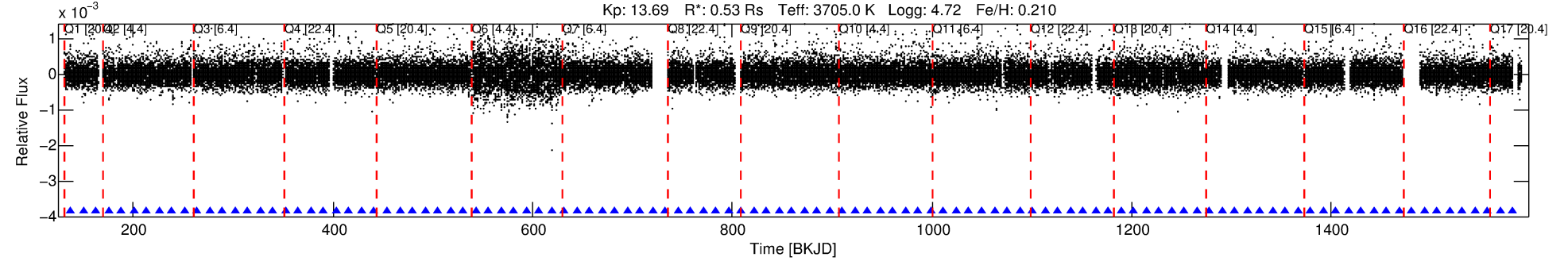
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005384713-03

No Significant Match Found

DV One-Page Summary

KIC: 5384713 Candidate: 3 of 5 Period: 12.671 d
KOI: K03444.01 Corr: 0.928



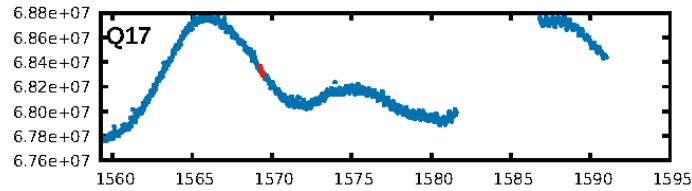
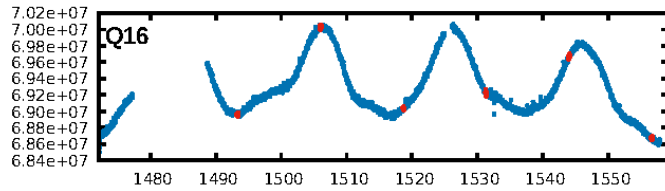
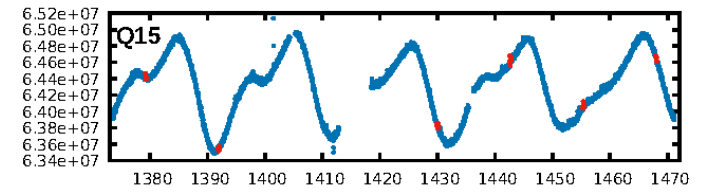
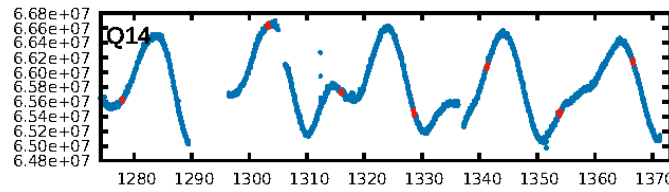
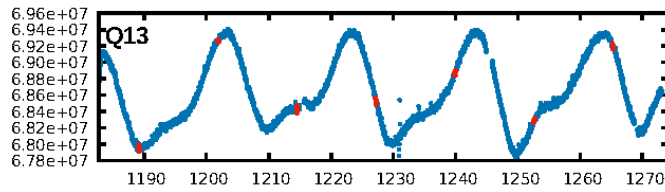
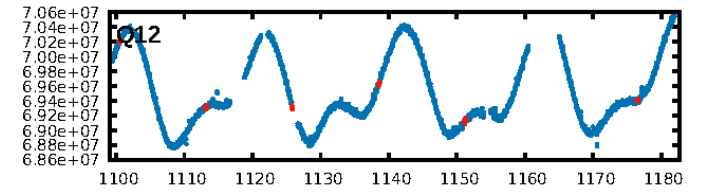
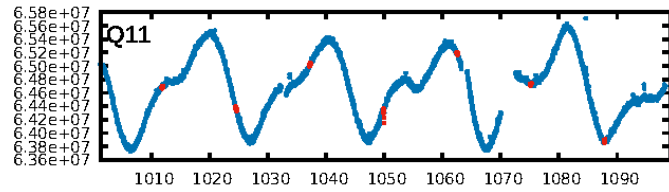
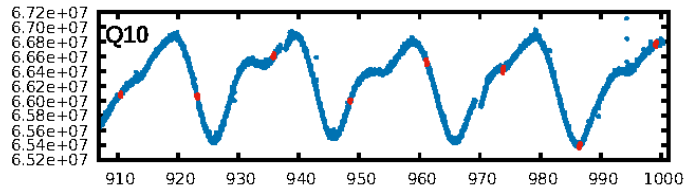
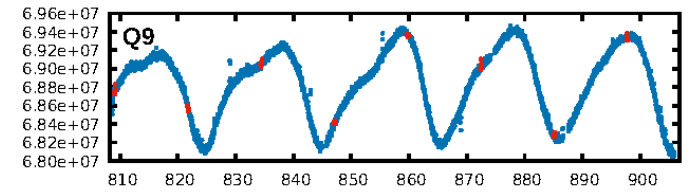
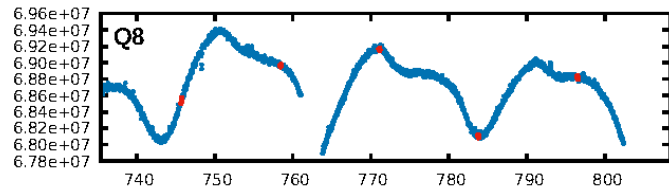
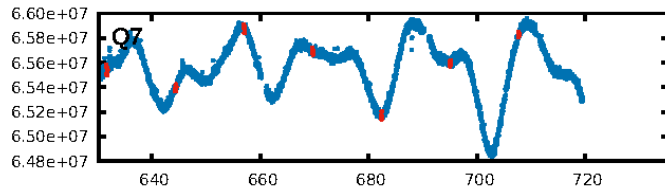
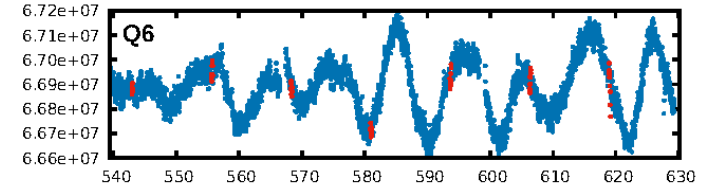
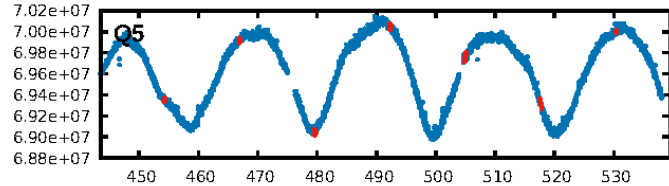
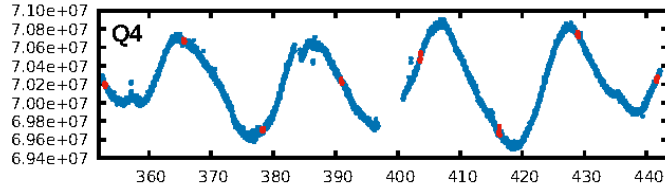
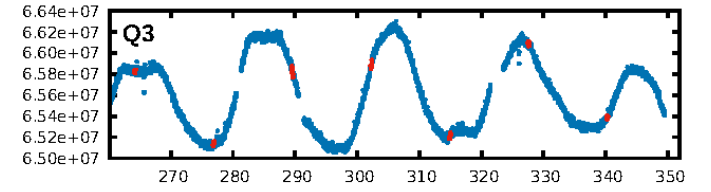
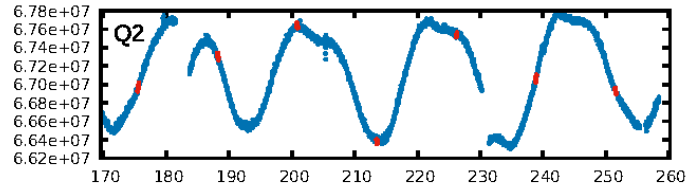
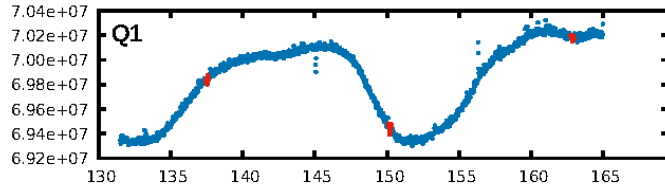
DV Fit Results:

Period = 12.67126 [0.00007] d
Epoch = 137.5236 [0.0045] BKJD
Rp/R* = 0.0145 [0.0065]
a/R* = 15.33 [28.51]
b = 0.92 [0.33]
Seff = 6.32 [0.70]
Teq = 404 [11] K
Rp = 0.84 [0.38] Re
a = 0.0865 [0.0049] AU
Ag = 273.19 [258.33] [1.05 σ]
Teffp = 2541 [601] K [3.56 σ]

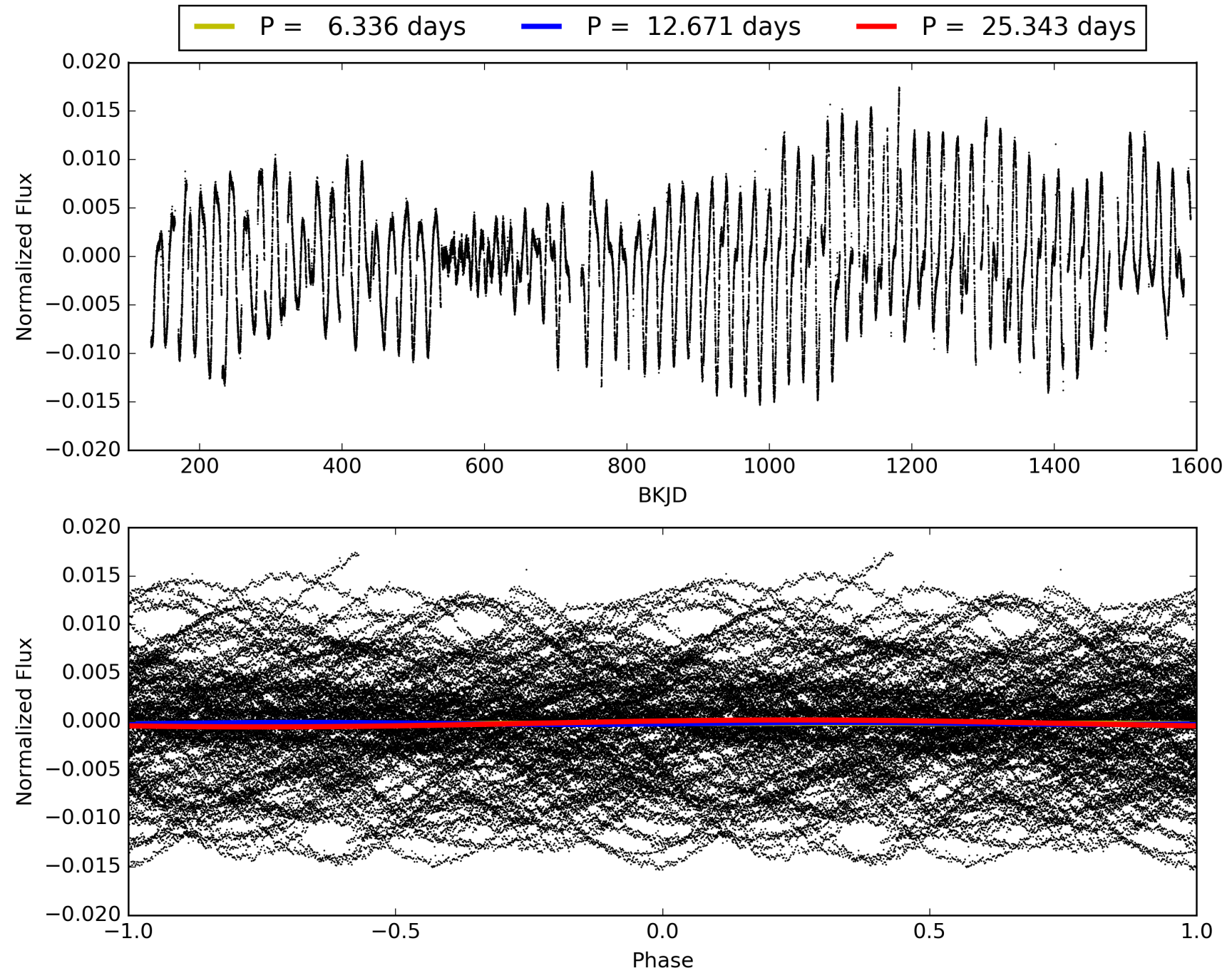
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [76.48 σ]
LongPeriod-sig: 100.0% [9.80 σ]
ModelChiSquare2-sig: 98.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.26e-21
RollingBand-fgt: 1.00 [99/99]
GhostDiagnostic-chr: 2.189
Centroid-sig: 0.8%
Centroid-so: 1.607 arcsec [1.74 σ]
OotOffset-rm: 0.240 arcsec [0.27 σ]
KicOffset-rm: 0.760 arcsec [0.90 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005384713-03, PDC Light Curves

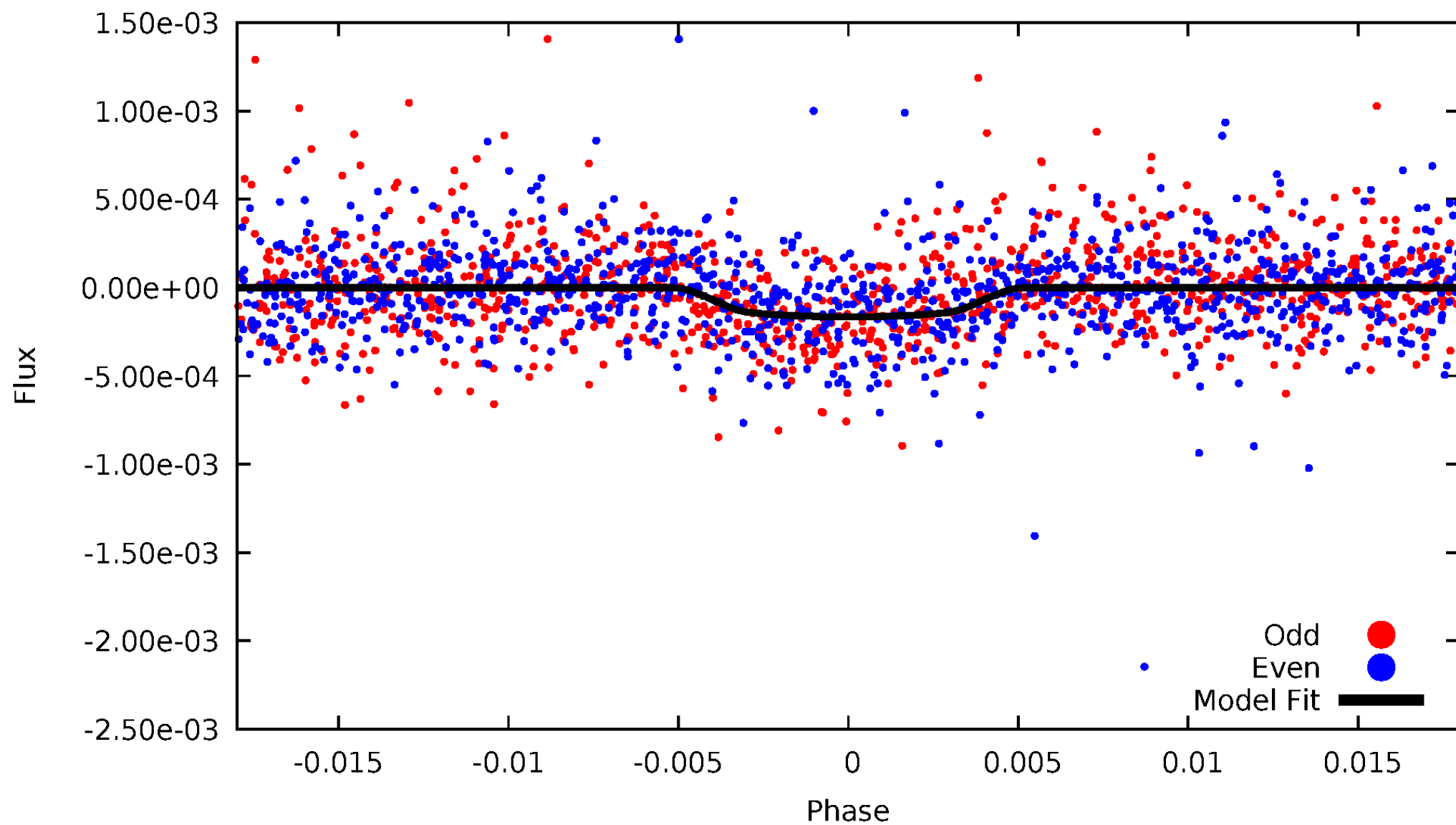


TCE 005384713-03



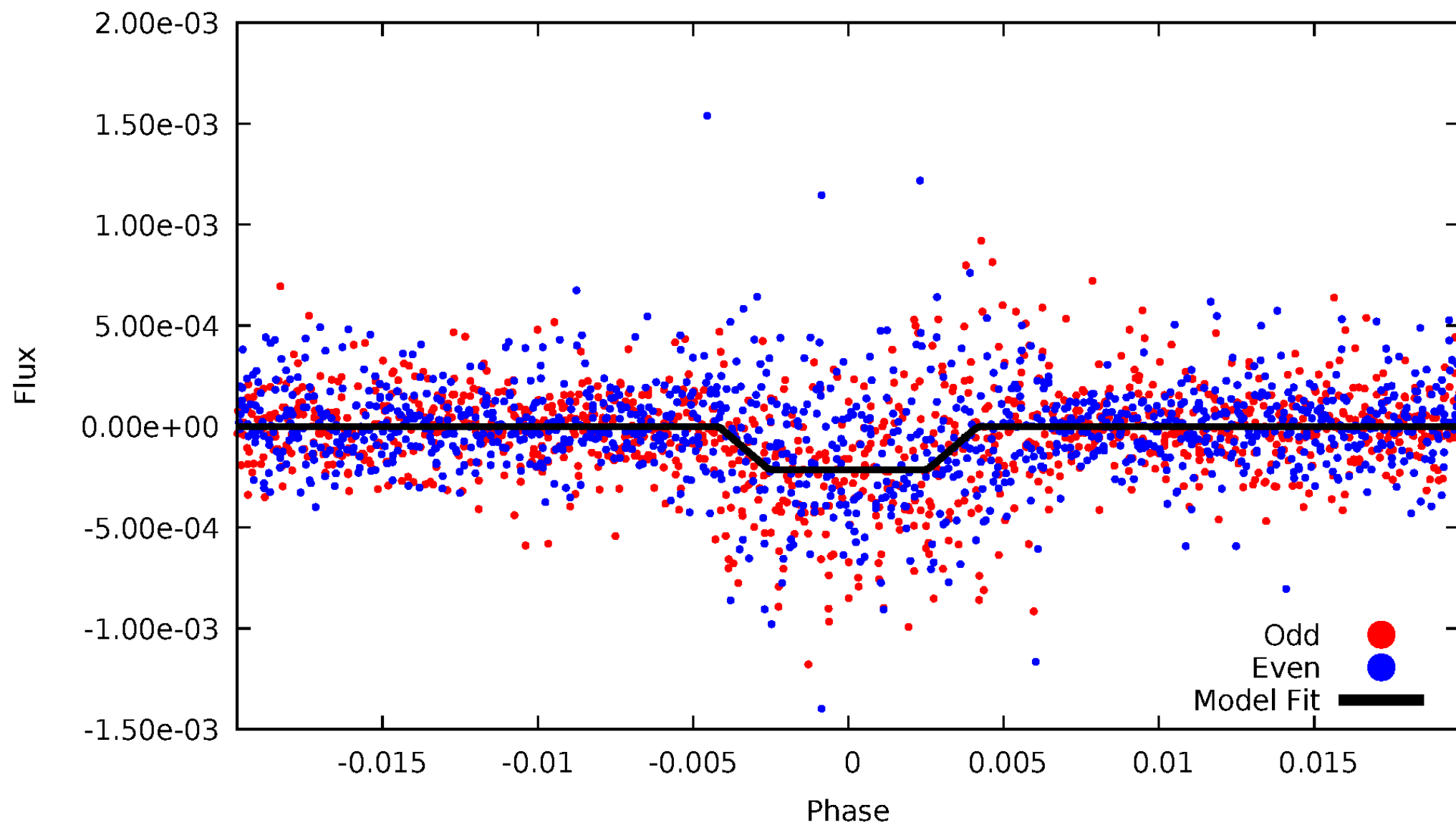
DV Odd/Even

TCE 005384713-03



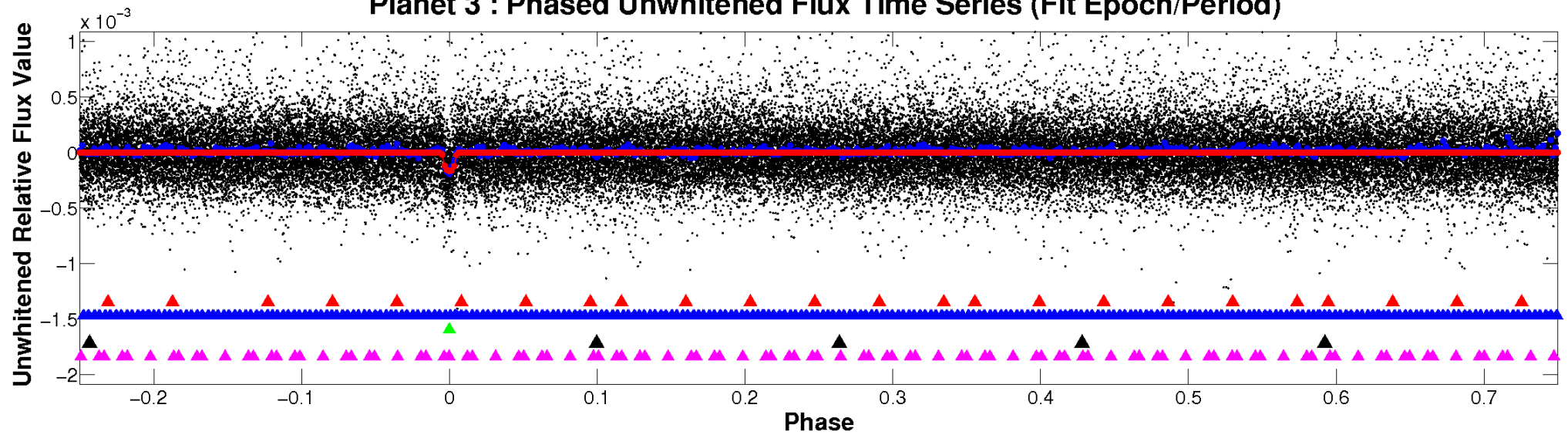
ALT Odd/Even

TCE 005384713-03

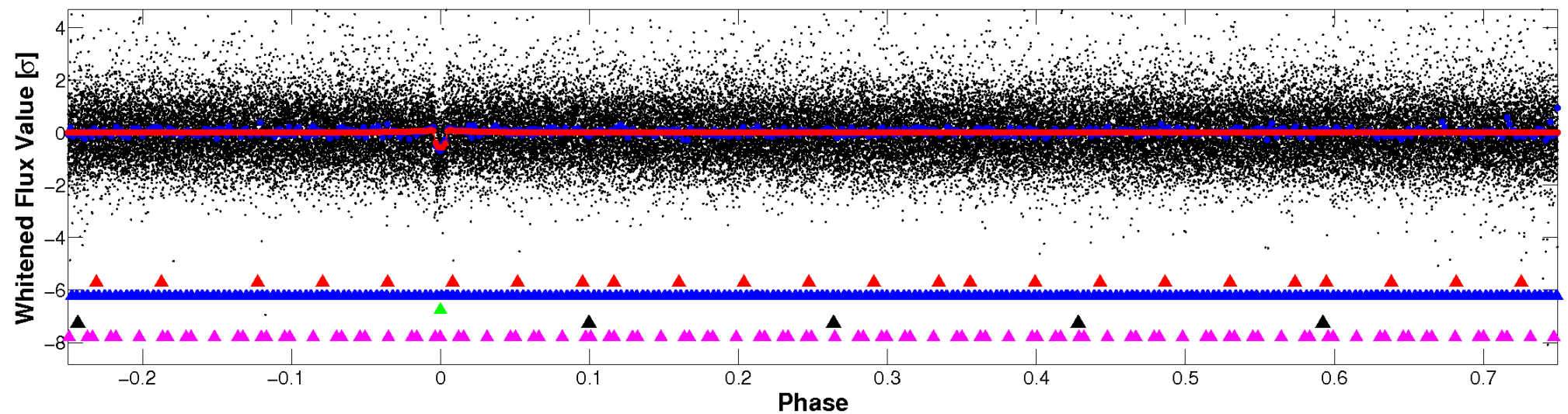


Non-Whitened Vs. Whitened Light Curve

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

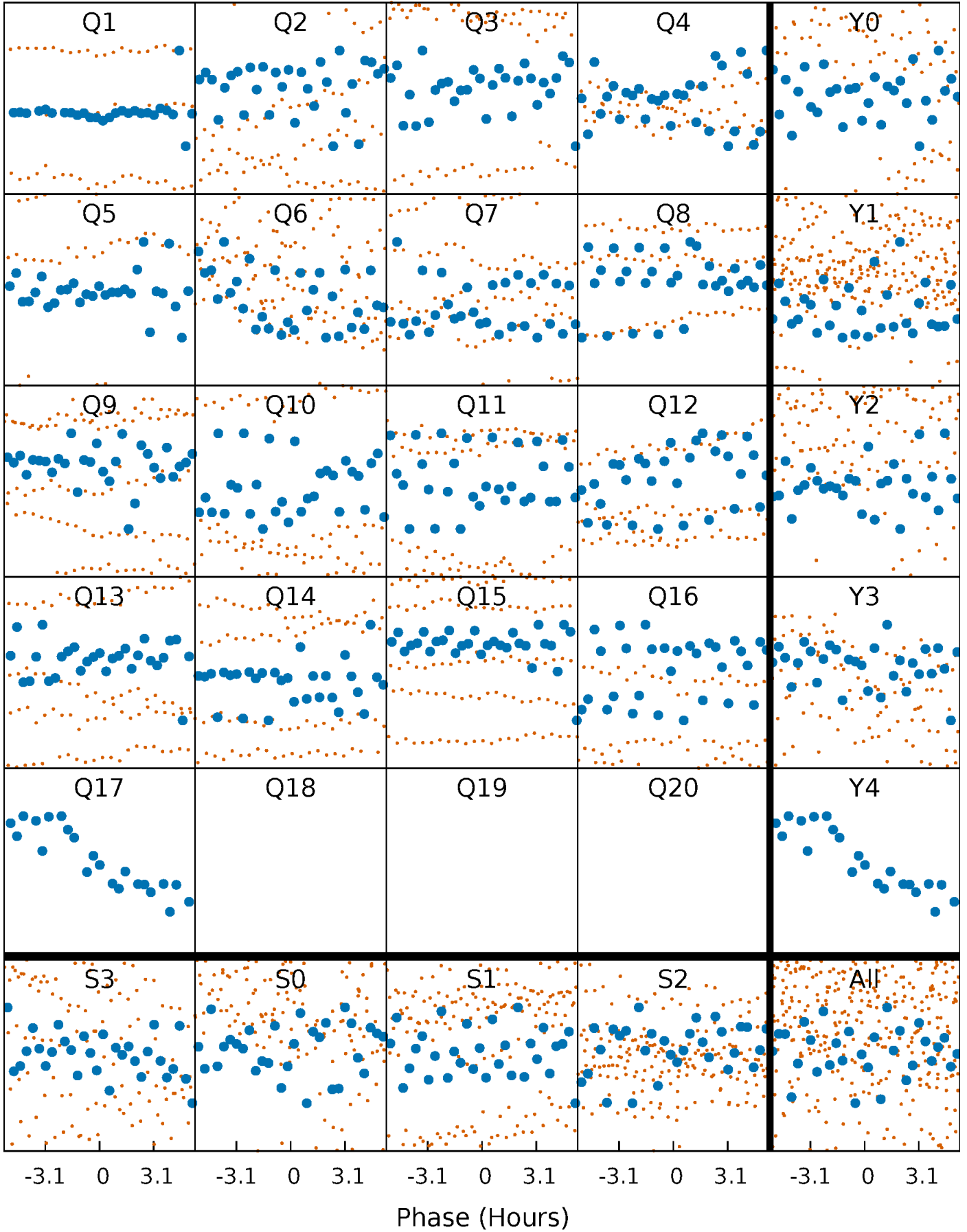


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



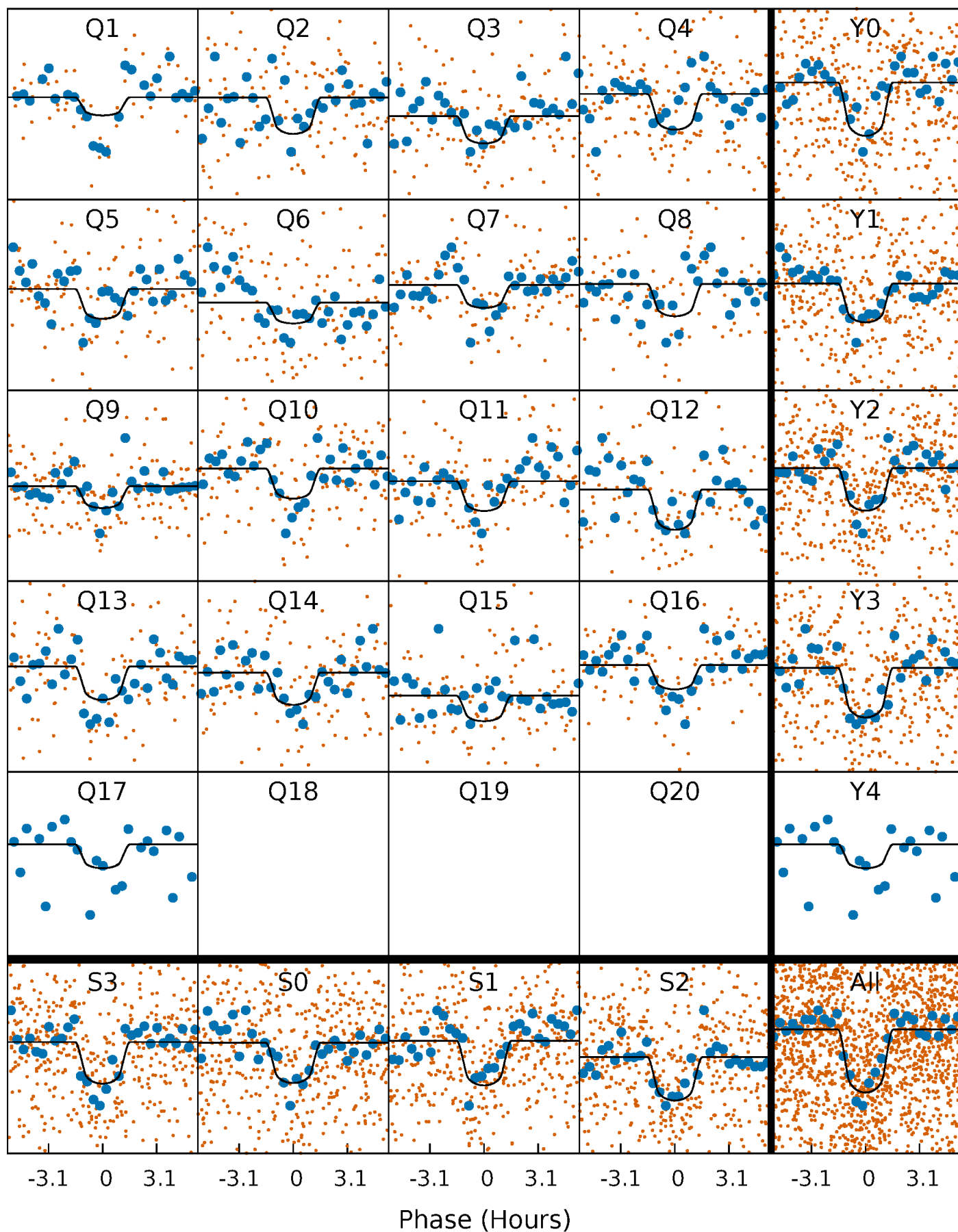
PDC Quarter-Phased Transit Curves

TCE 005384713-03 P= 12.671259 Days $T_0=137.523630$ (BKJD)



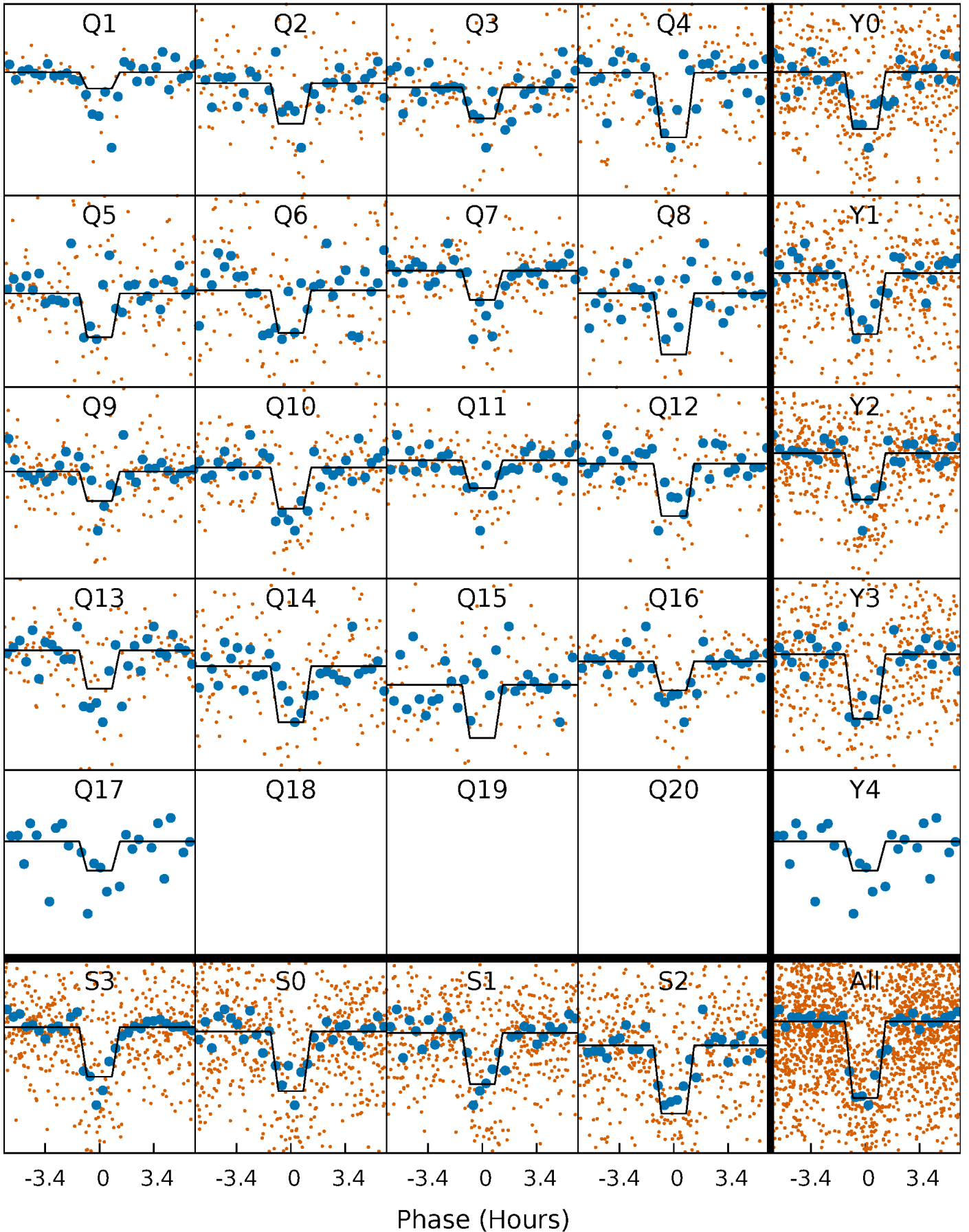
DV Quarter-Phased Transit Curves

TCE 005384713-03 P= 12.671259 Days $T_0=137.523630$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

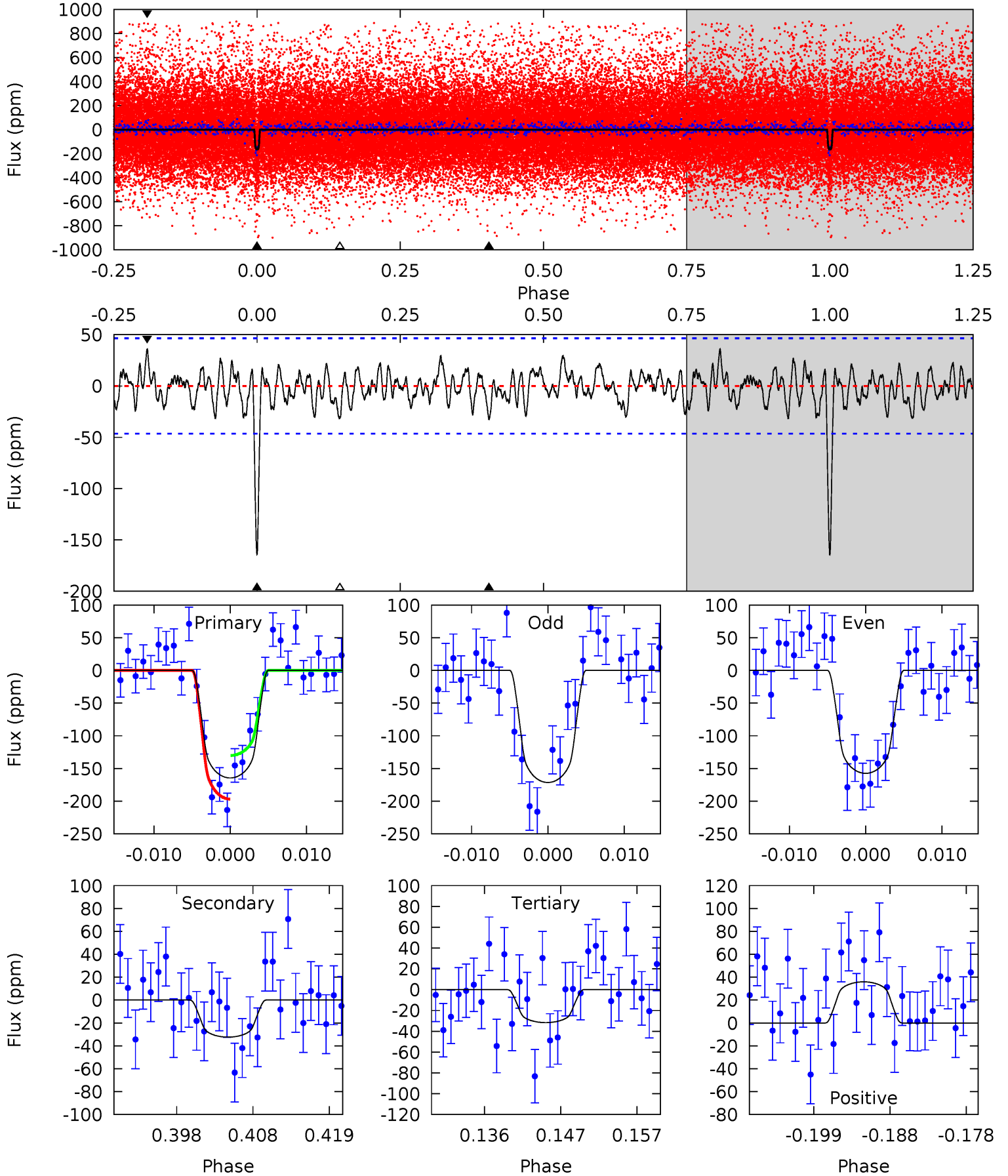
TCE 005384713-03 P= 12.671334 Days $T_0=137.513762$ (BKJD)



DV Model-Shift Uniqueness Test

005384713-03, $P = 12.671259$ Days, $E = 124.852371$ Days

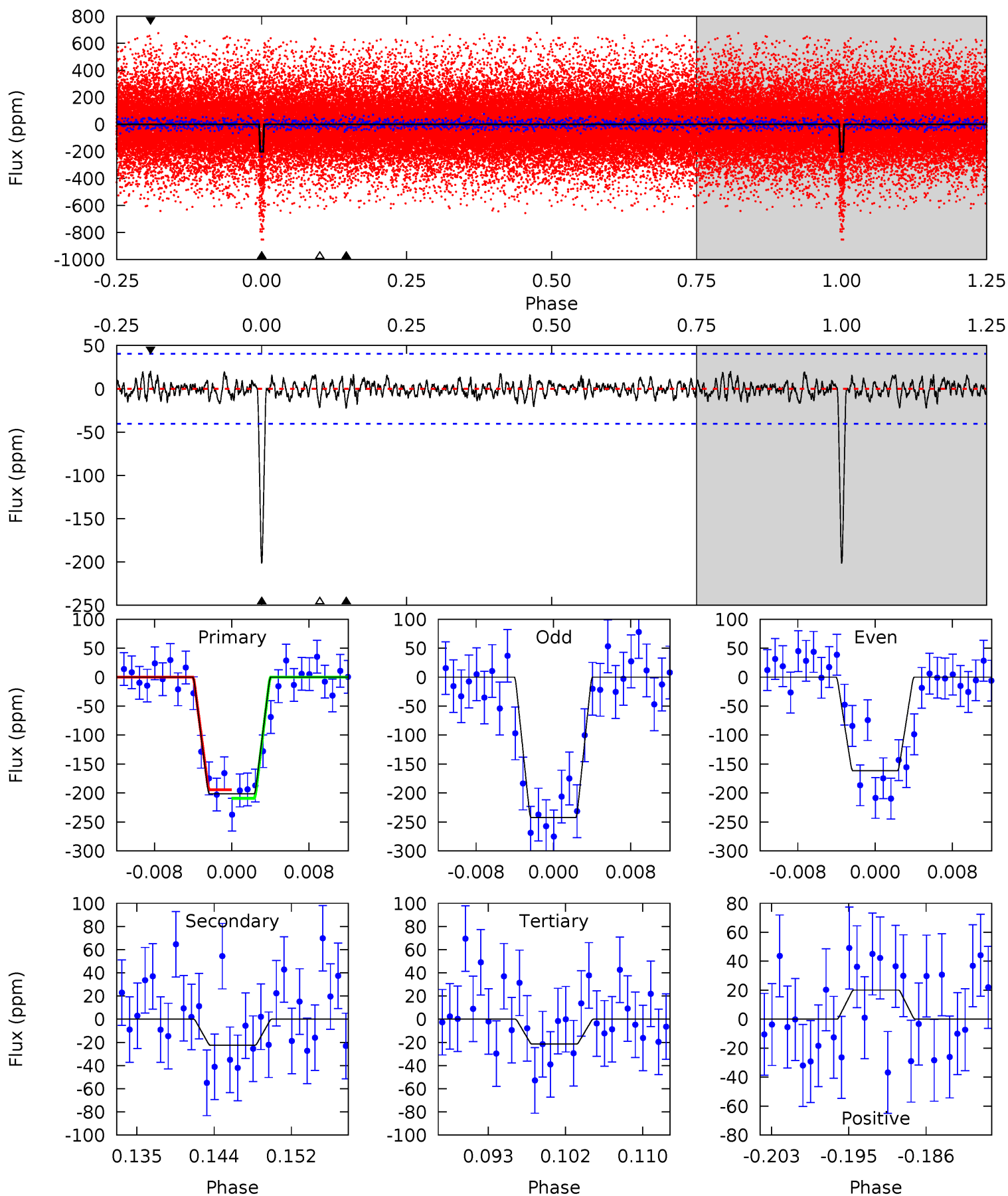
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	3.50	3.42	3.88	5.02	2.56	1.35	14.3	13.9	0.08	-0.38	0.76	0.93	0.18	3.62



Alt Model-Shift Uniqueness Test

005384713-03, P = 12.671334 Days, E = 124.842428 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	2.81	2.68	2.51	5.06	2.63	0.84	22.5	22.7	0.13	0.30	5.06	1.27	0.09	0.93



Stellar Parameters For KIC 005384713

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3705^{+74}_{-74}	$4.721^{+0.039}_{-0.021}$	$0.210^{+0.150}_{-0.150}$	$0.529^{+0.030}_{-0.038}$	$0.536^{+0.034}_{-0.034}$	$5.115^{+0.917}_{-0.494}$
	+2%/-2%	+1%/-0%	+71%/-71%	+6%/-7%	+6%/-6%	+18%/-10%
Source	SPE70	SPE90	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 005384713-03 / KOI 3444.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 9	$0.85^{+0.36}_{-0.35}$	562^{+14}_{-14}	2767^{+470}_{-253}	174^{+358}_{-94}
Alt.	-22 ± 8	$0.83^{+0.38}_{-0.36}$	562^{+13}_{-13}	2660^{+470}_{-269}	130^{+293}_{-75}

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 $A_{obs} \gg 1.0$

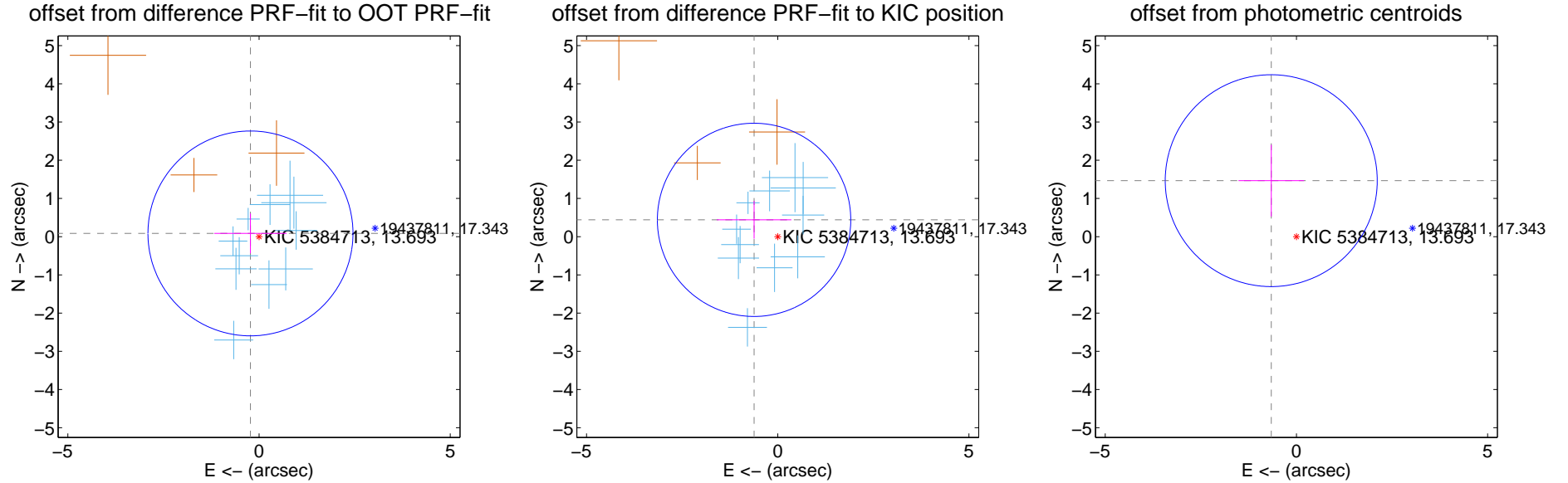
DV Centroid Data

Supplemental centroid analysis for 005384713-03. Kepler magnitude: 13.69. Transit SNR 11.08

There are 12 quarters with good PRF difference image offsets

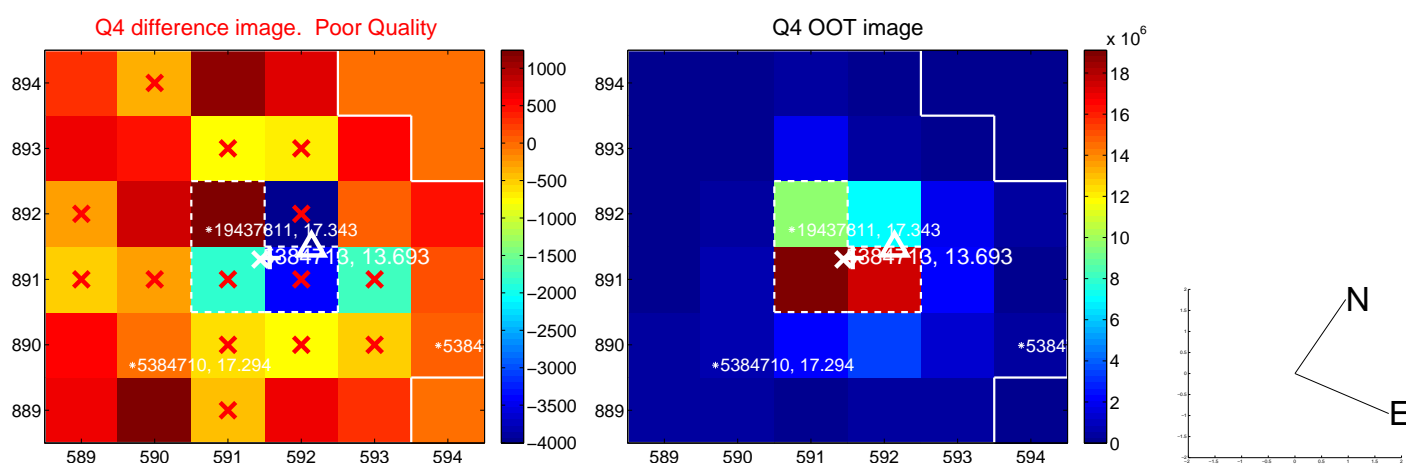
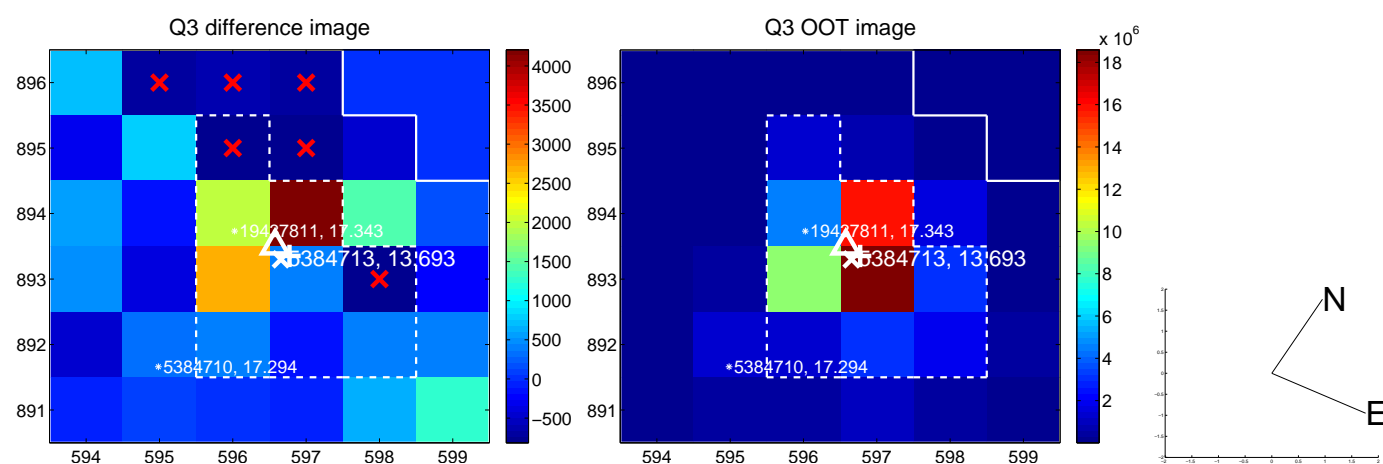
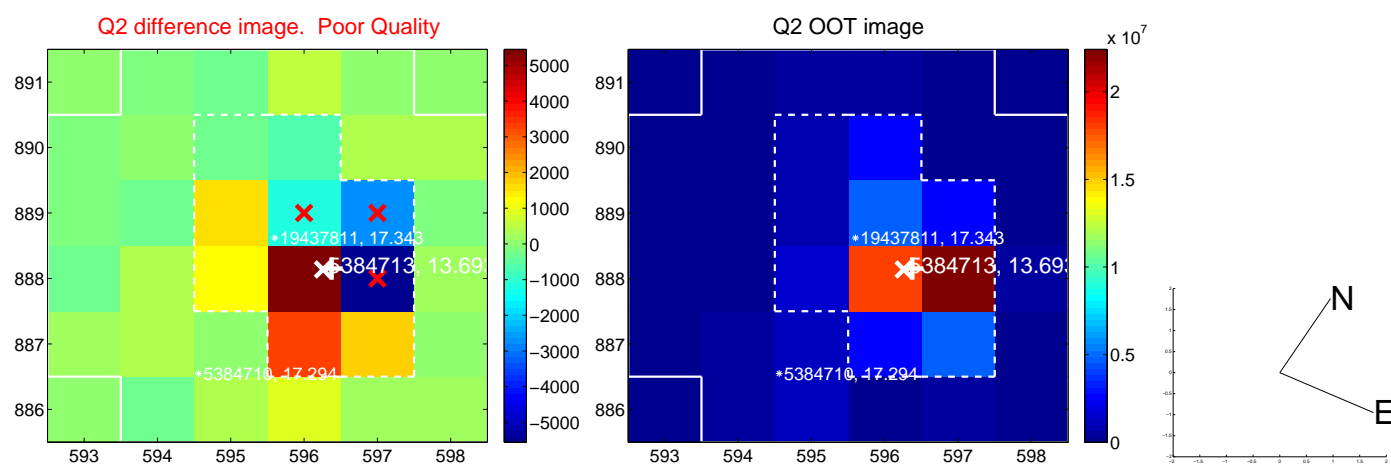
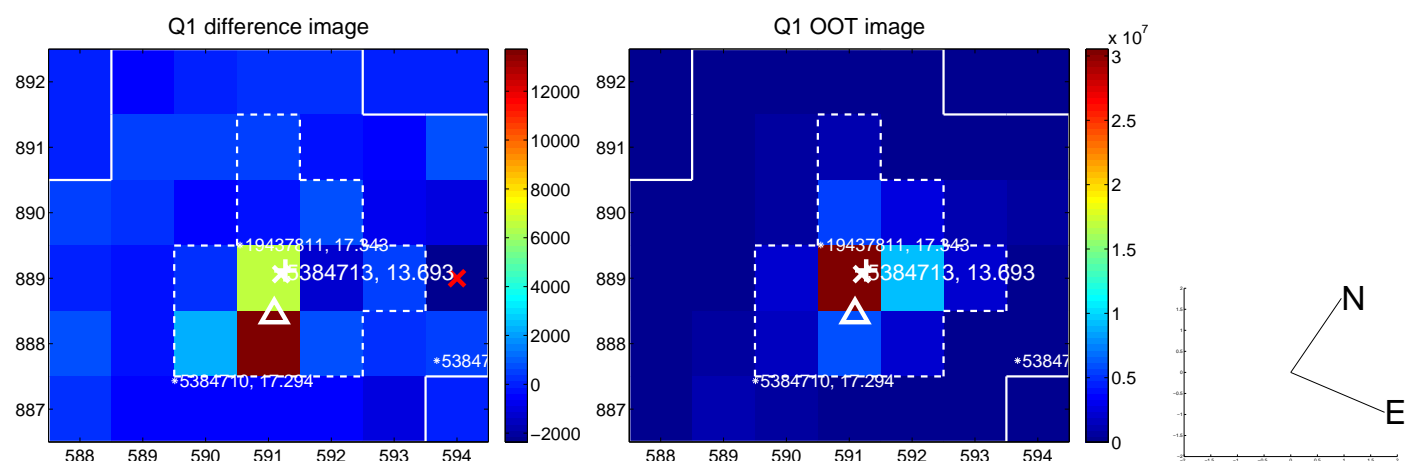
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.240 ± 0.893	0.27	0.225 ± 0.946	0.085 ± 0.522
PRF-fit source offset from KIC position	0.760 ± 0.843	0.90	0.619 ± 0.977	0.440 ± 0.493
photometric centroid source offset	1.61 ± 0.92	1.74	0.66 ± 0.86	1.47 ± 0.94

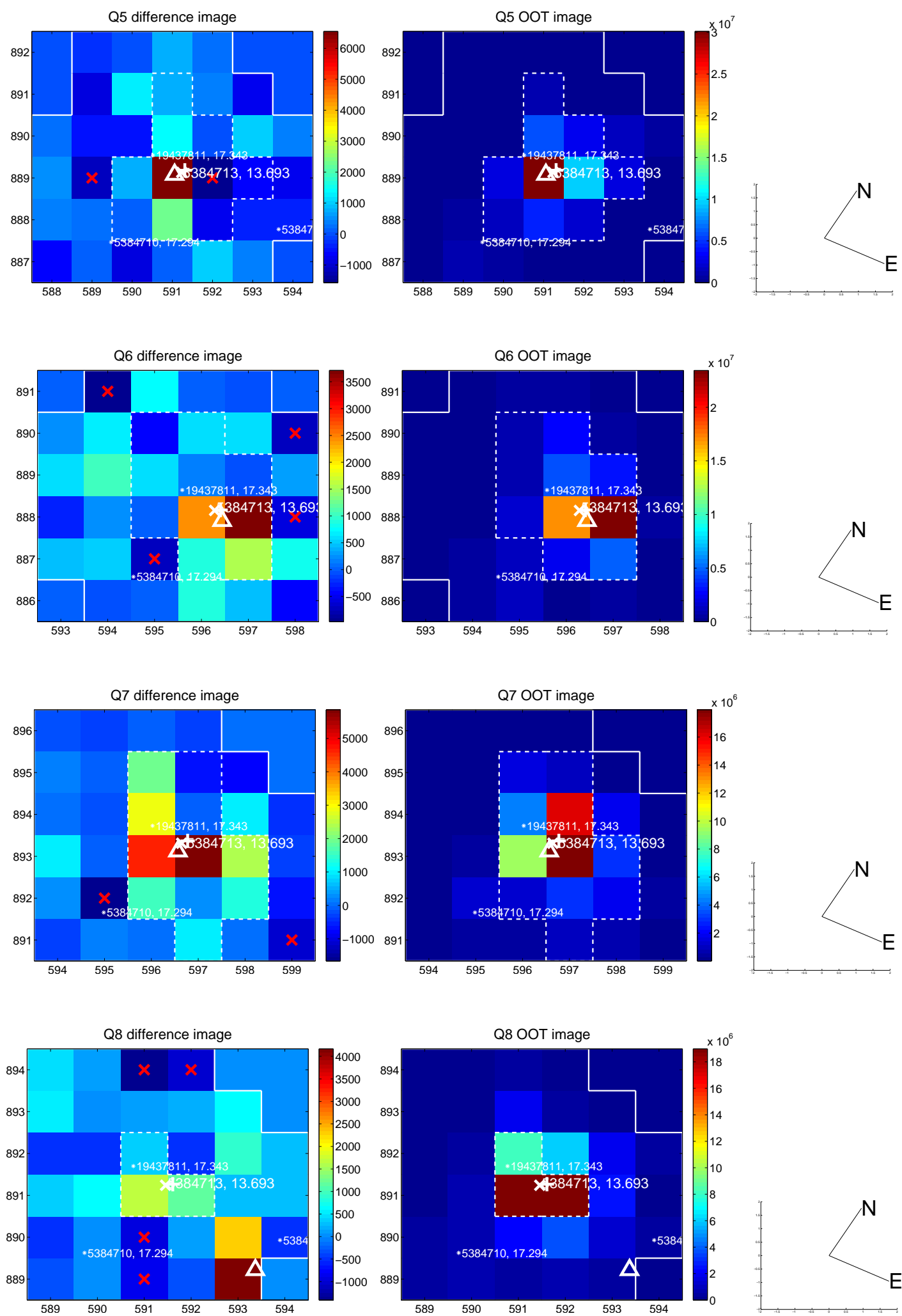


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

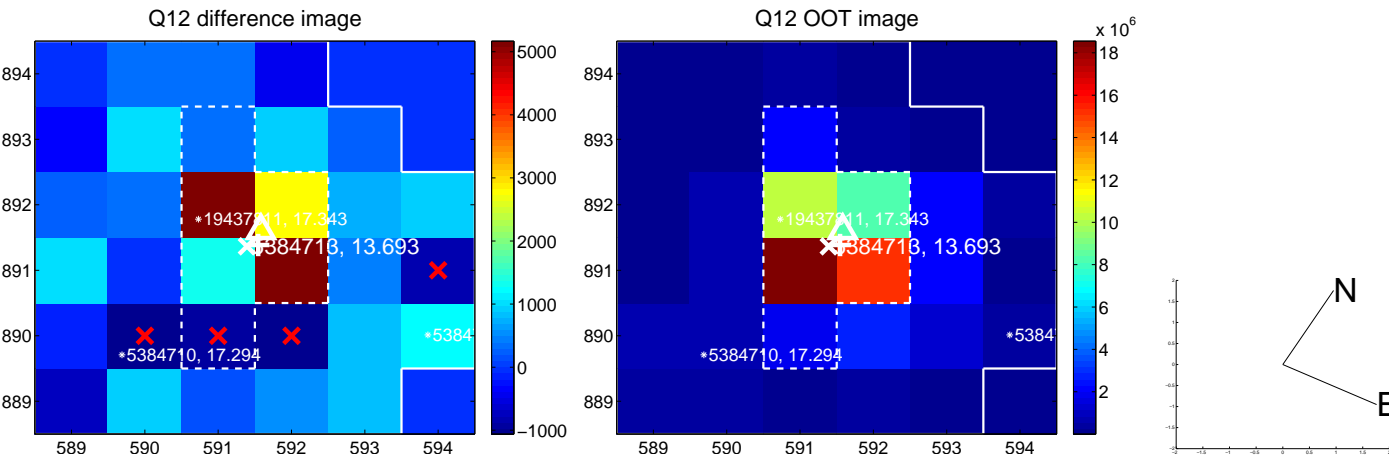
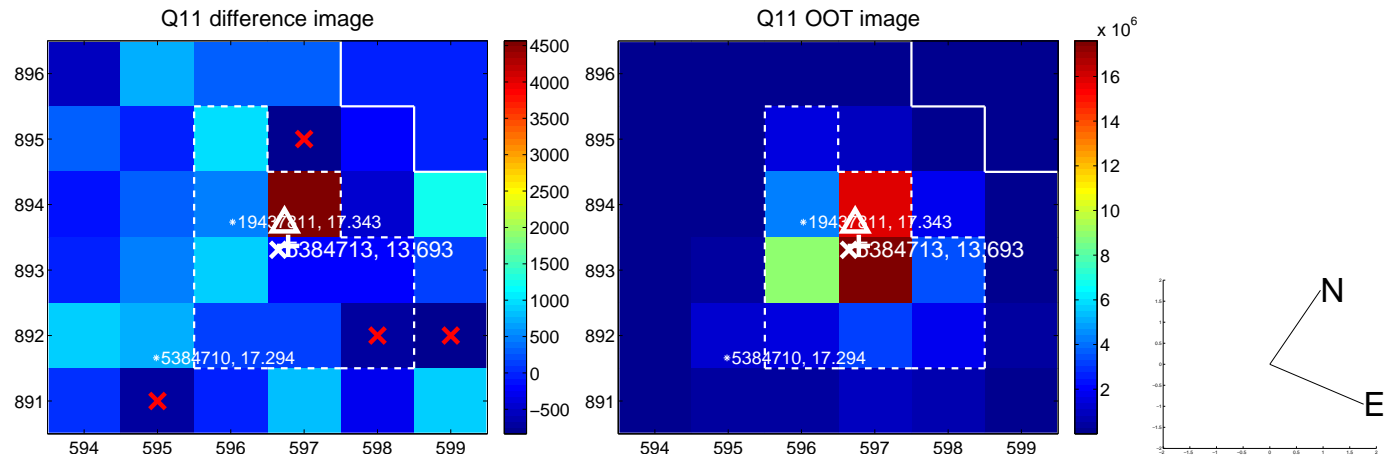
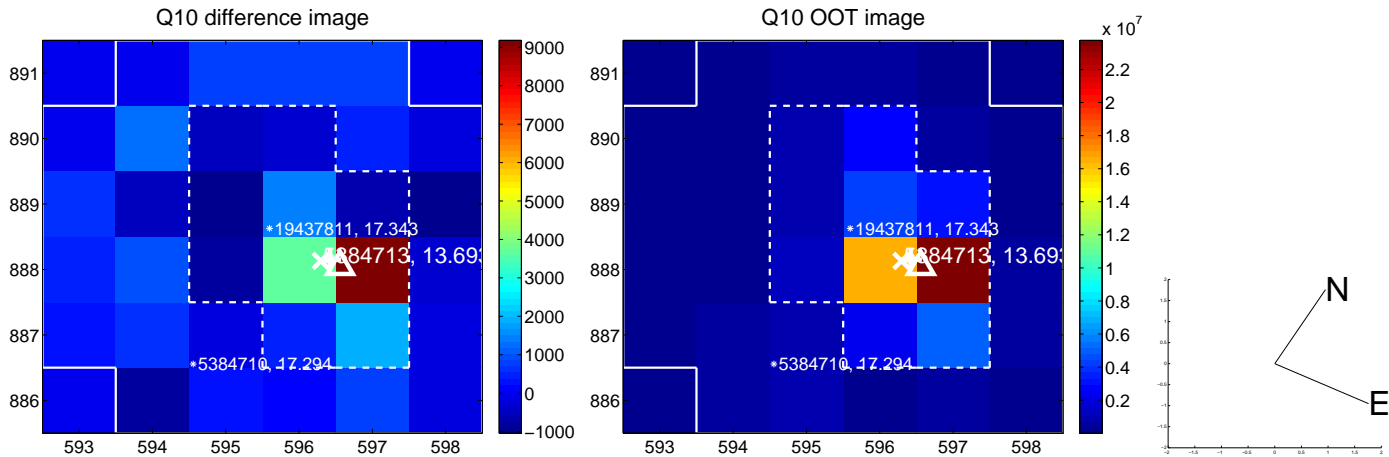
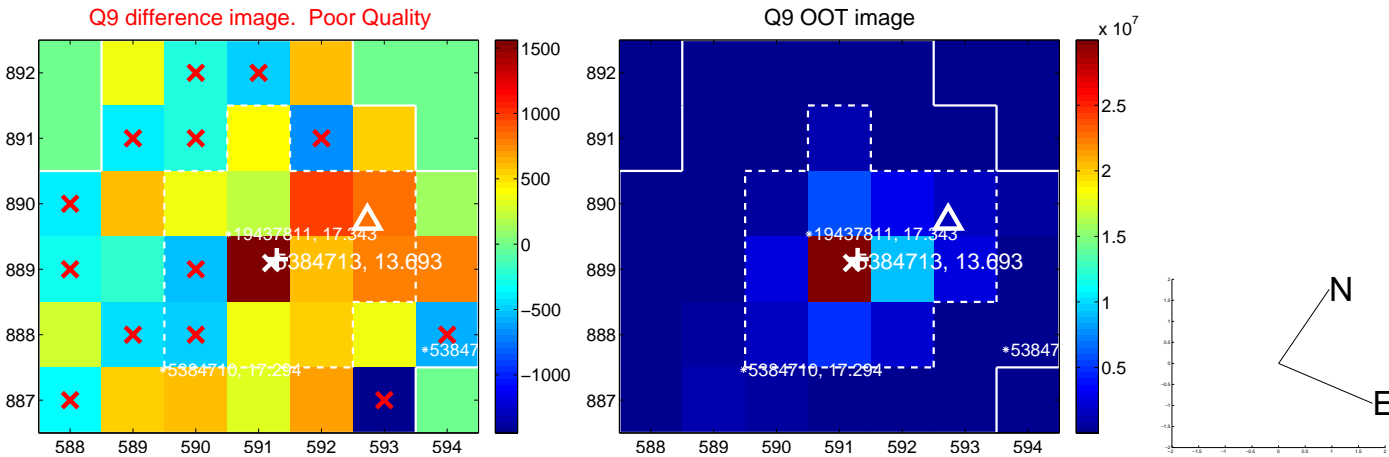
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



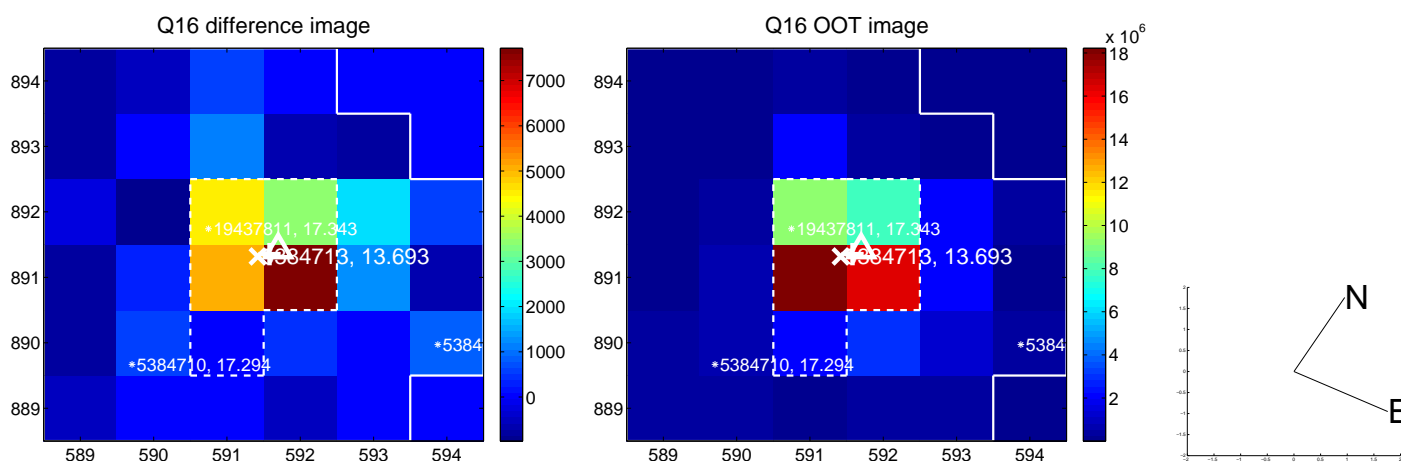
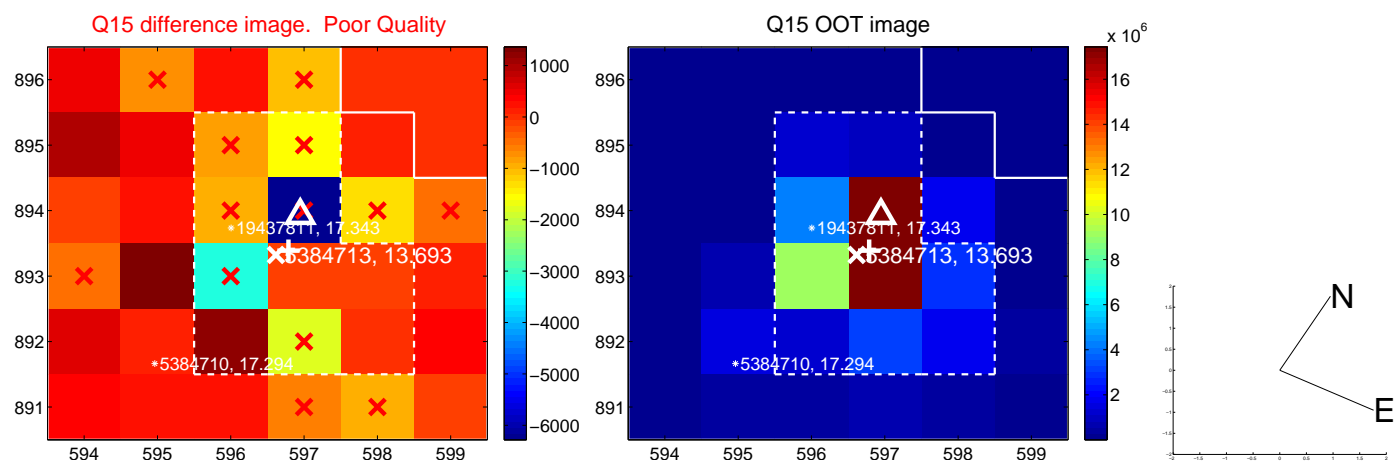
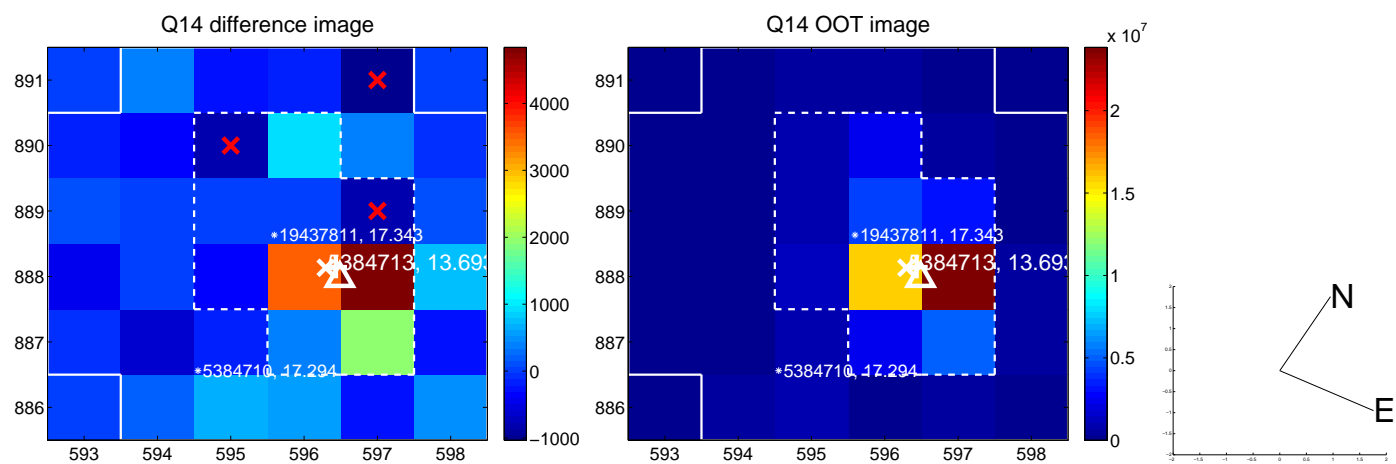
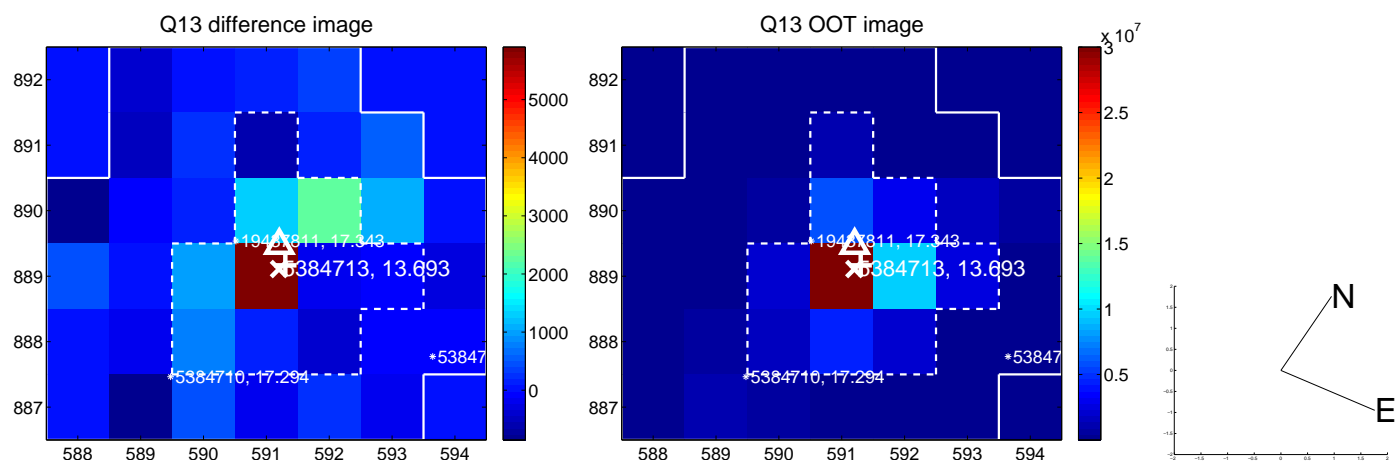
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



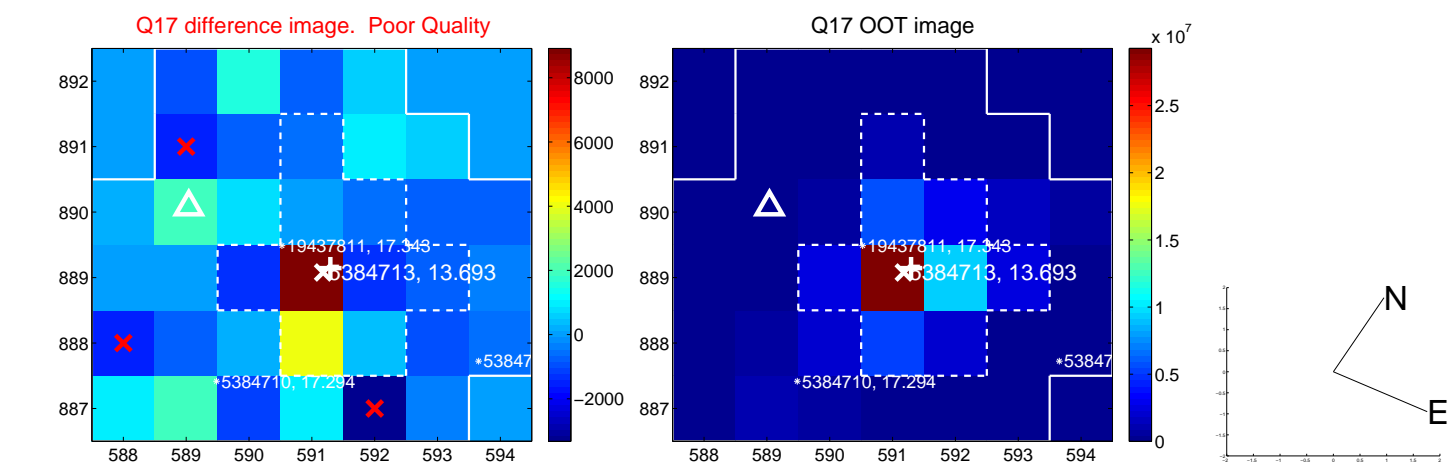
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



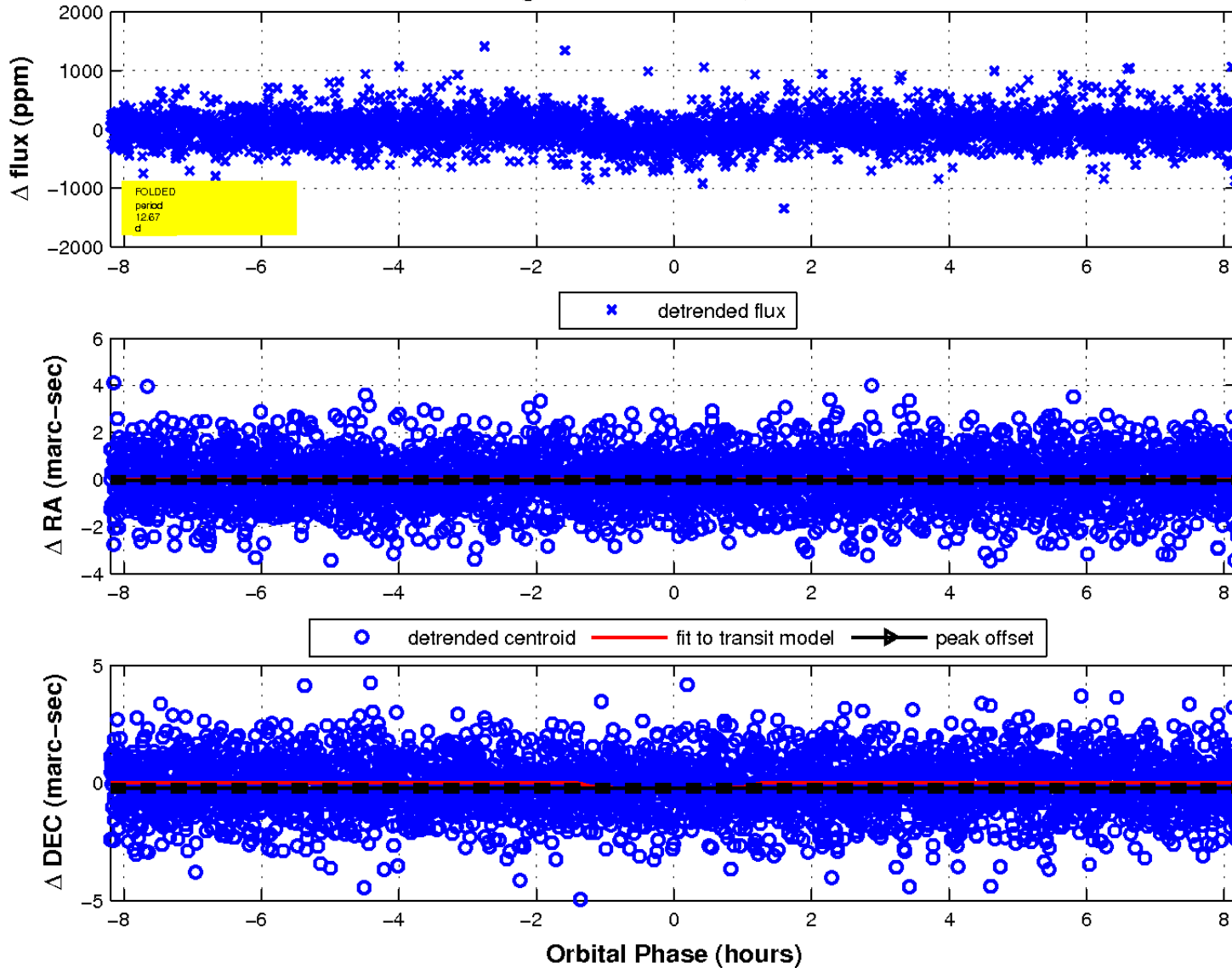
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

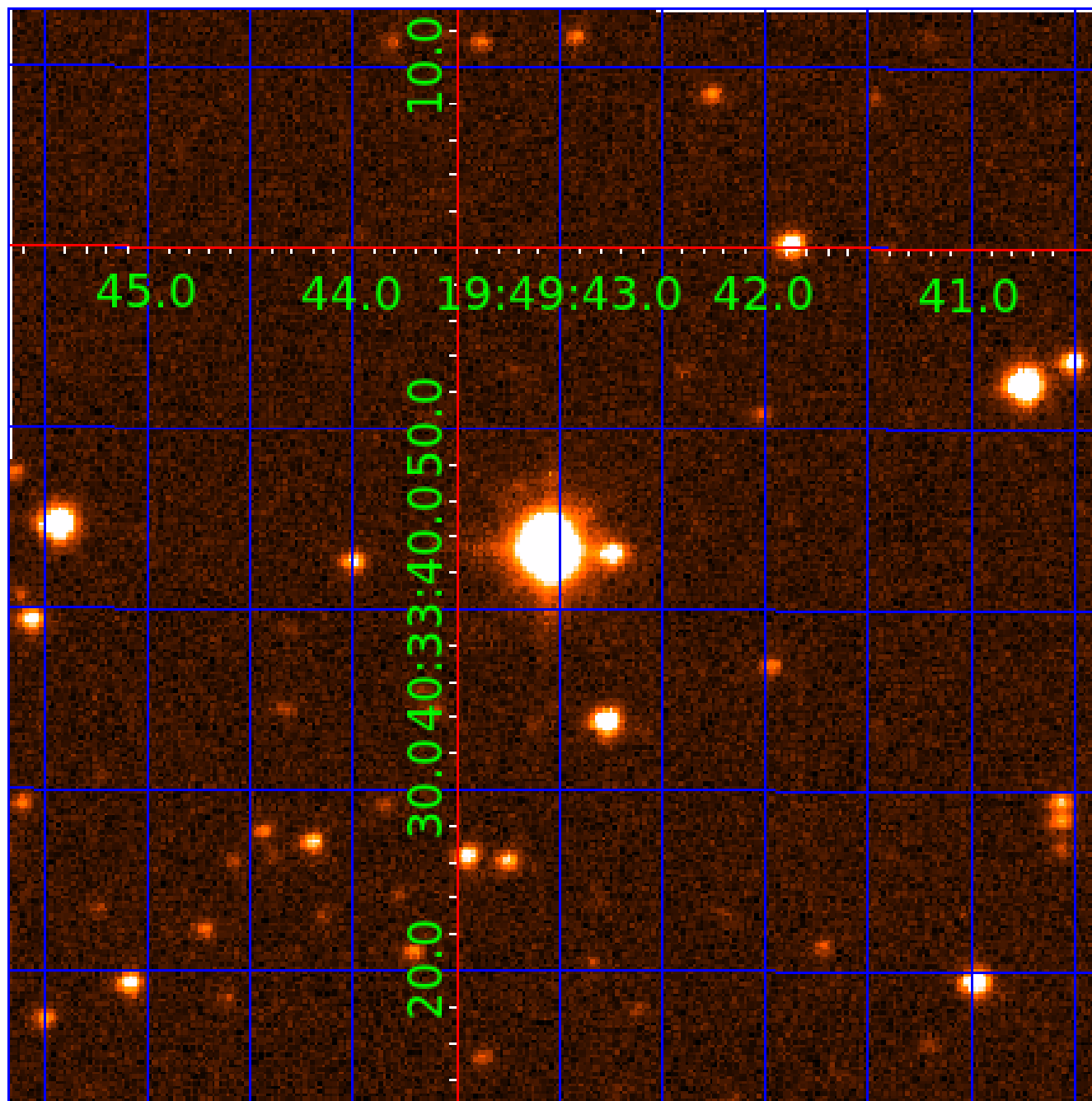


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 005384713

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})
005384713-01	OBS	3444.02	60.326652	145.058087	3156.3	1.711	59.2	70.5	0.53	3705	5.25	0.79
005384713-02	OBS	3444.03	2.635957	132.317098	100.0	1.563	11.4	13.1	0.53	3705	0.64	51.26
005384713-03	OBS	3444.01	12.671259	137.523630	165.0	2.734	10.2	11.1	0.53	3705	0.84	6.32
005384713-04	OBS	No	331.533765	240.156346	483.6	7.332	9.7	7.4	0.53	3705	1.32	0.08
005384713-05	OBS	3444.04	14.150286	141.474977	185.8	2.377	8.0	9.5	0.53	3705	1.20	5.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005384713-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS
005384713-02	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
005384713-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005384713-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005384713-05	OBS	FP	0.00	0	0	1	0	CENT_KIC_POS—HALO_GHOST

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.

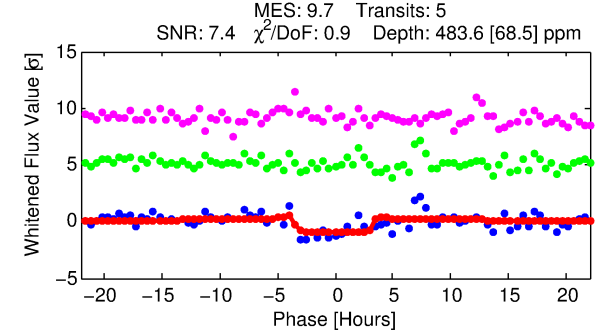
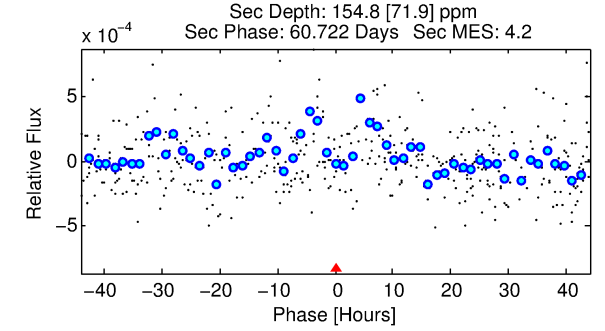
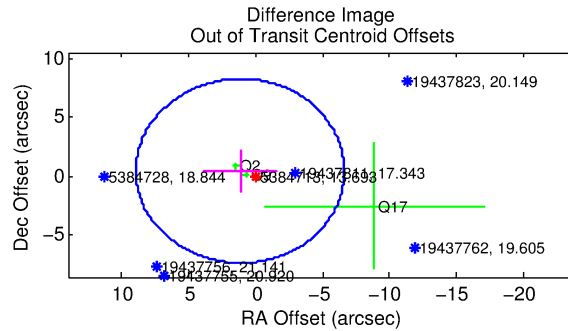
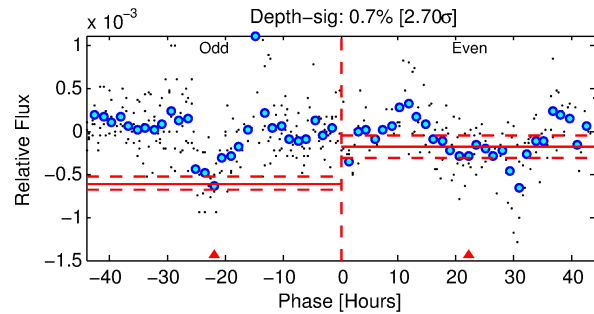
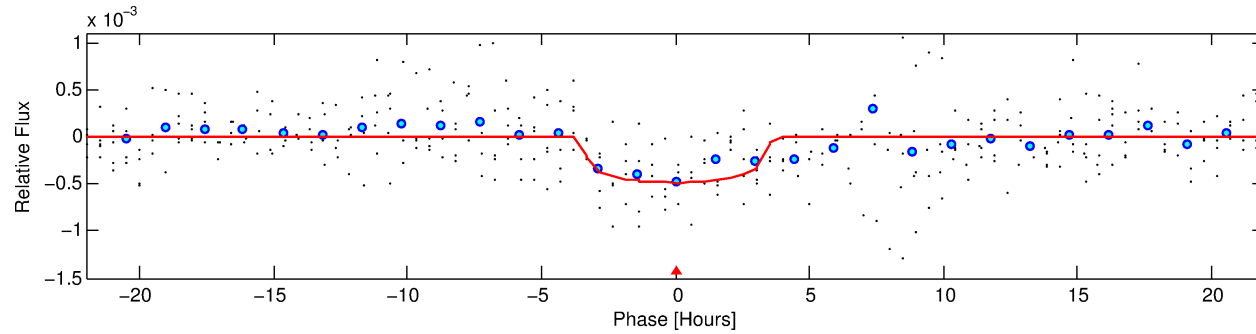
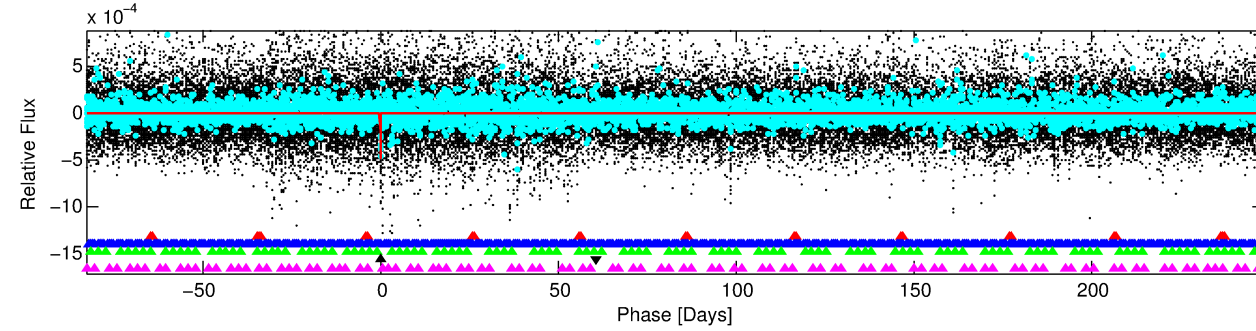
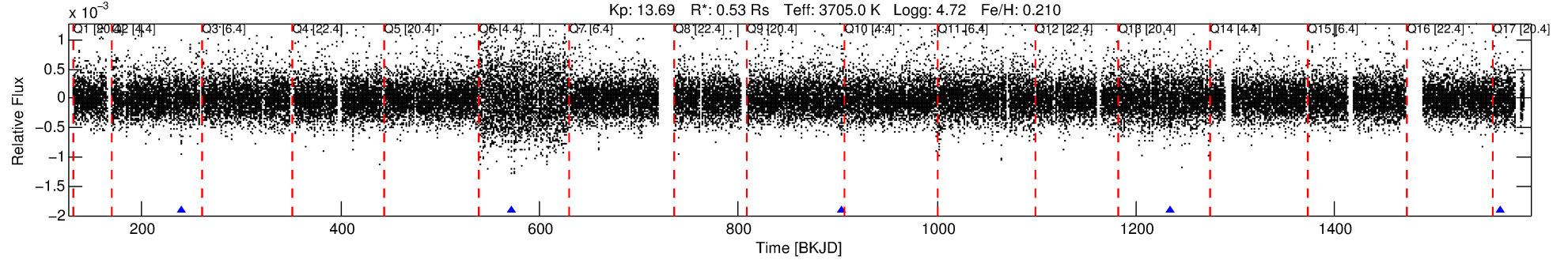
Ephemeris Match Information For 005384713-04

No Significant Match Found

DV One-Page Summary

KIC: 5384713 Candidate: 4 of 5 Period: 331.534 d
KOI: K03444 Corr: No Ephemeris Match

Kp: 13.69 R*: 0.53 Rs Teff: 3705.0 K Logg: 4.72 Fe/H: 0.210



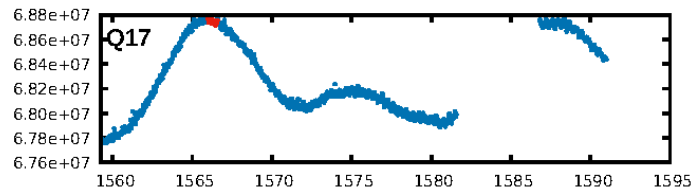
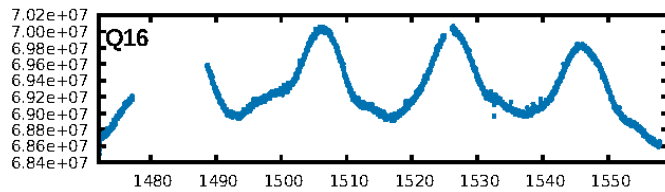
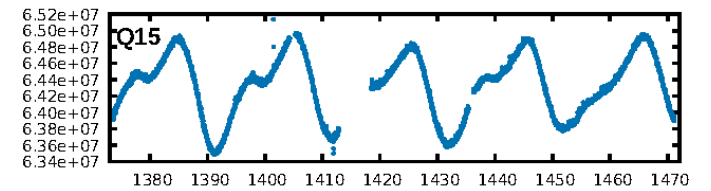
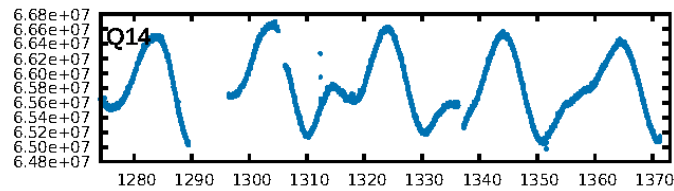
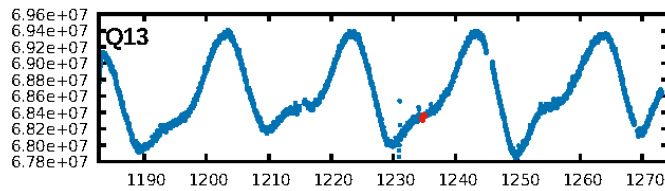
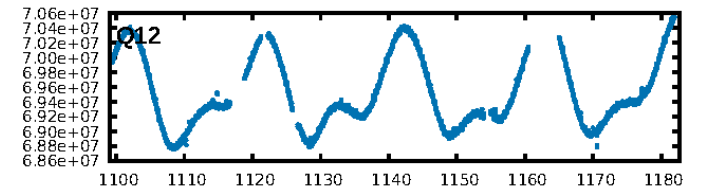
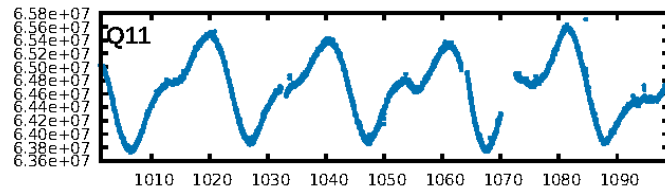
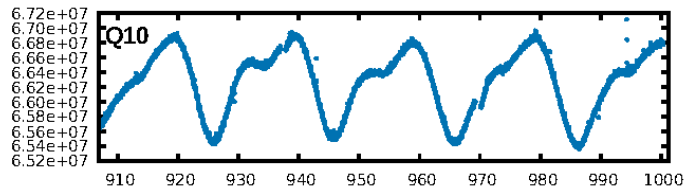
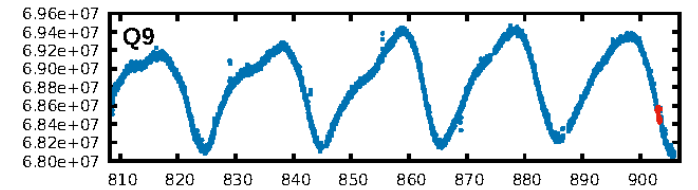
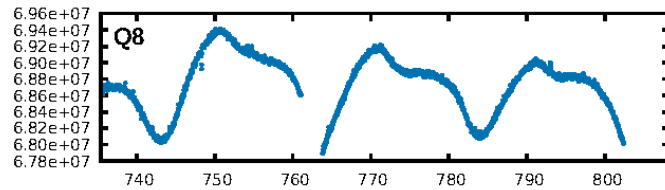
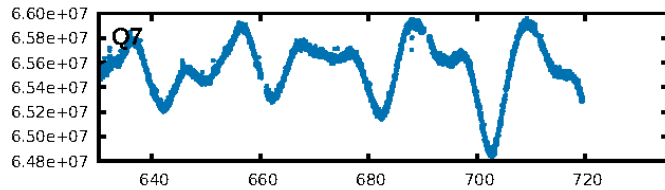
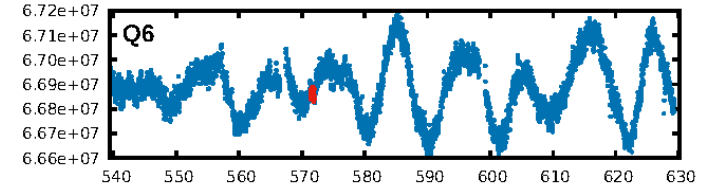
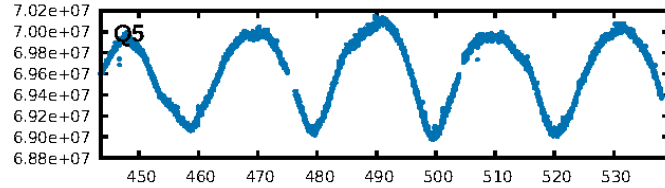
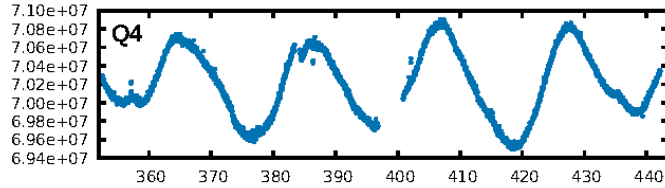
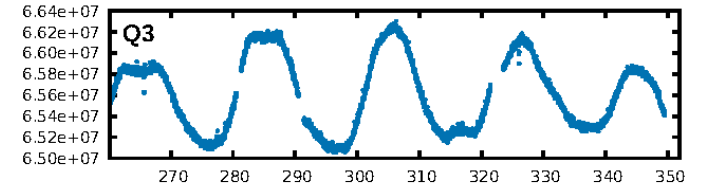
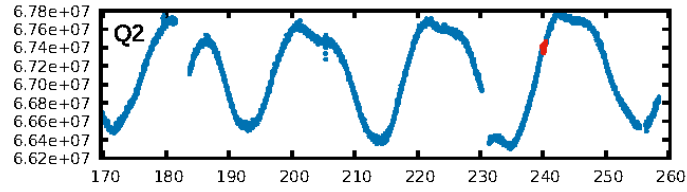
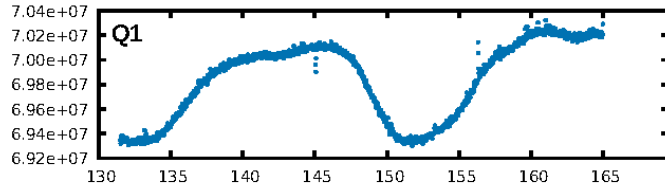
DV Fit Results:

Period = 331.53377 [0.00602] d
Epoch = 240.1563 [0.0174] BKJD
Rp/R* = 0.0229 [0.0085]
a/R* = 206.66 [295.11]
b = 0.83 [0.54]
Seff = 0.08 [0.01]
Teq = 136 [4] K
Rp = 1.32 [0.50] Re
a = 0.7621 [0.0430] AU
Ag = 28415.80 [25070.81] [1.13σ]
Teff = 2734 [603] K [4.31σ]

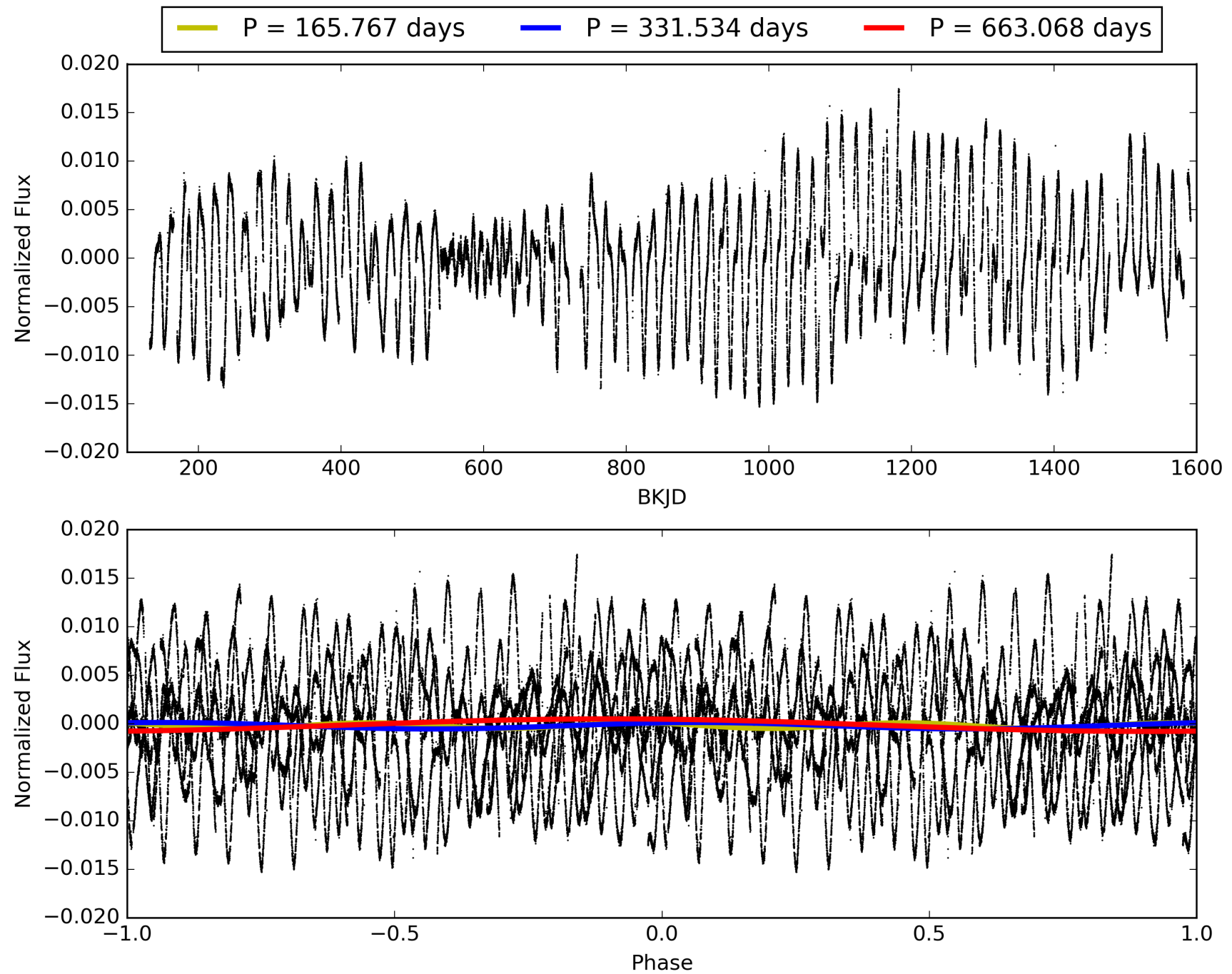
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [864.51σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.0%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 2.57e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4669
Centroid-sig: 4.7%
Centroid-so: 1.371 arcsec [1.24σ]
OotOffset-rm: 1.235 arcsec [0.48σ]
KicOffset-rm: 1.643 arcsec [0.65σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.40 [2/5]

TCE 005384713-04, PDC Light Curves

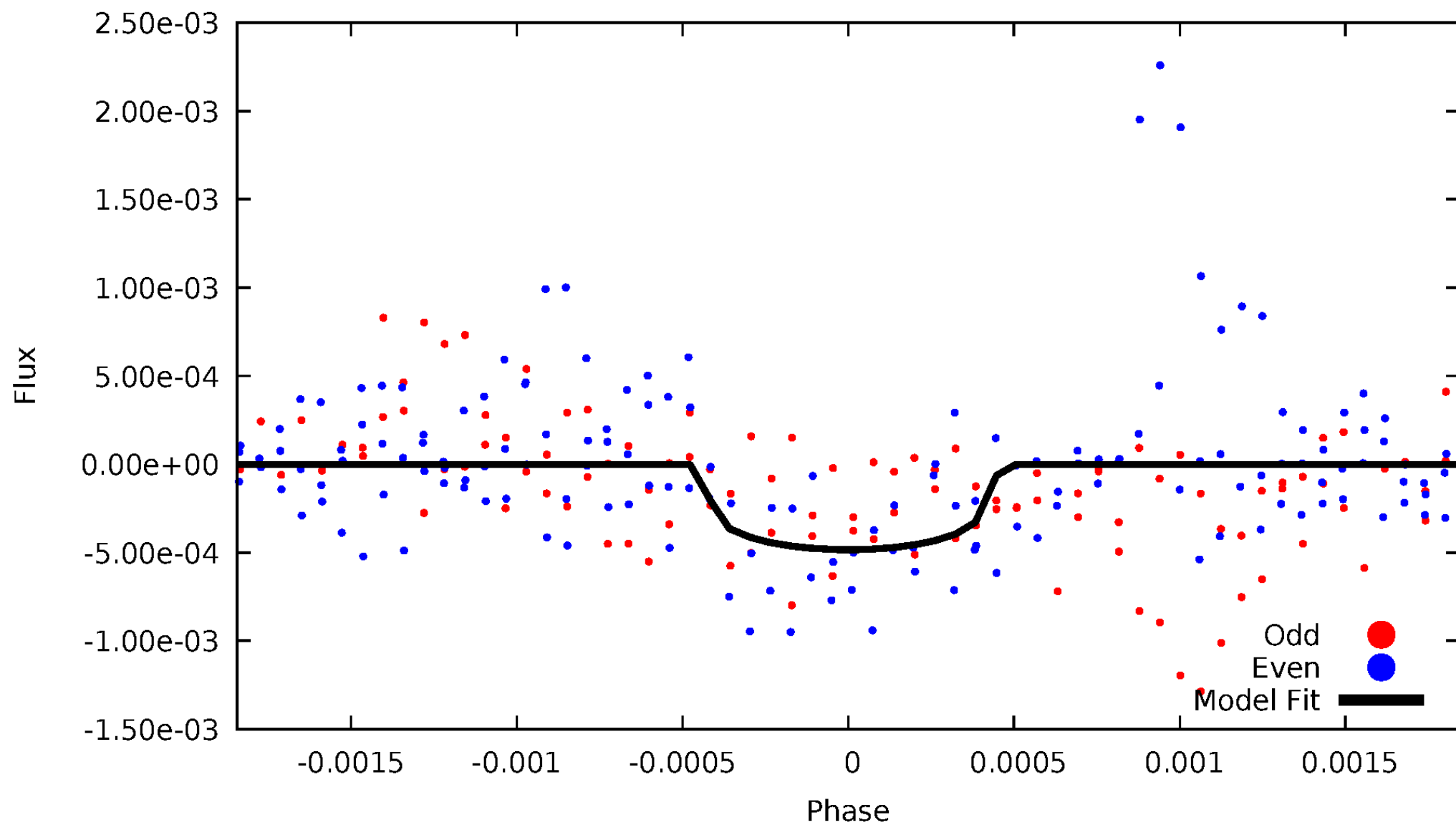


TCE 005384713-04



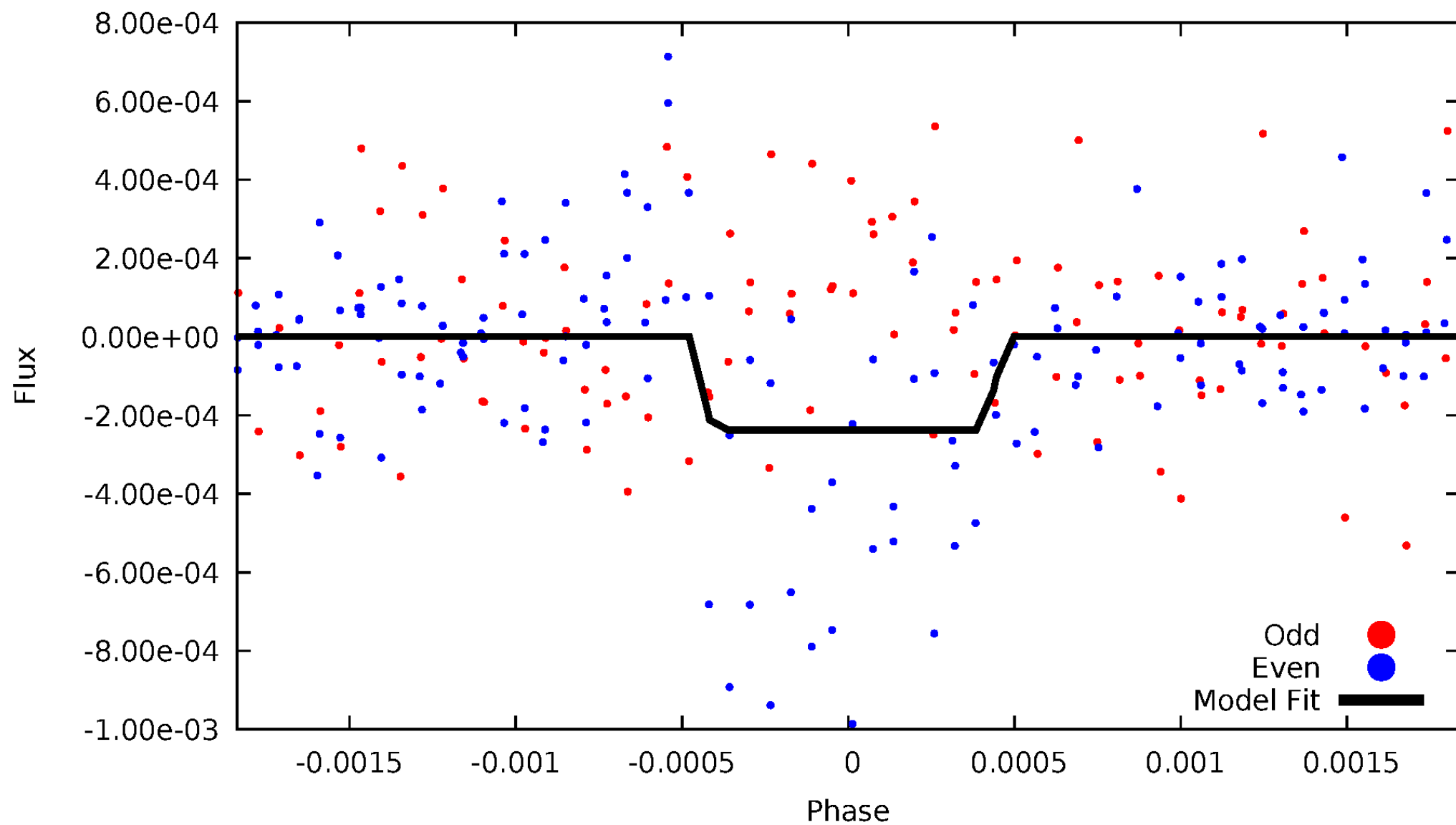
DV Odd/Even

TCE 005384713-04



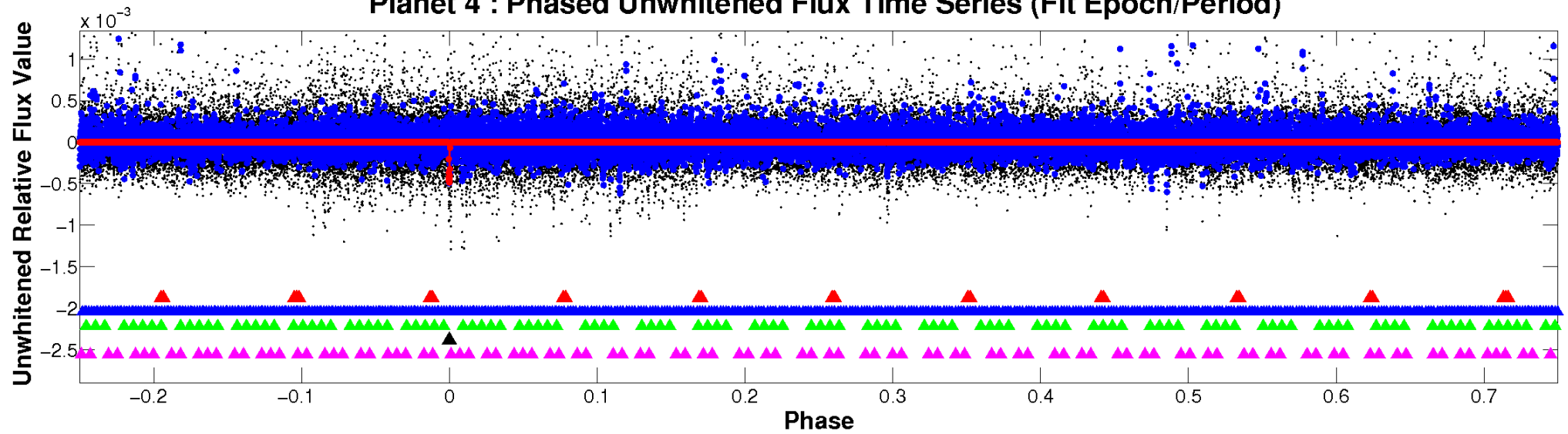
ALT Odd/Even

TCE 005384713-04

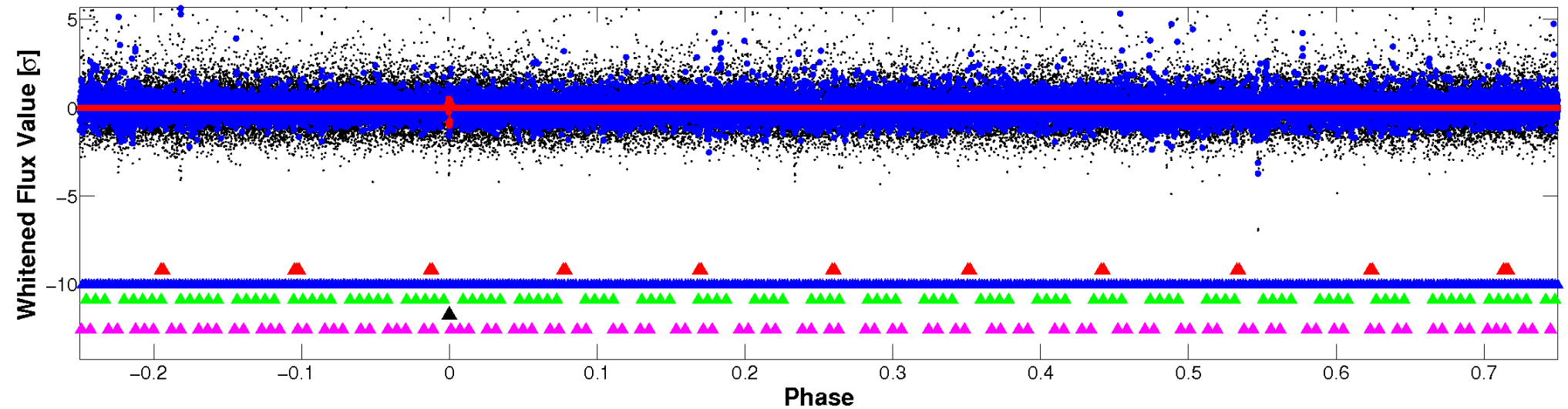


Non-Whitened Vs. Whitened Light Curve

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

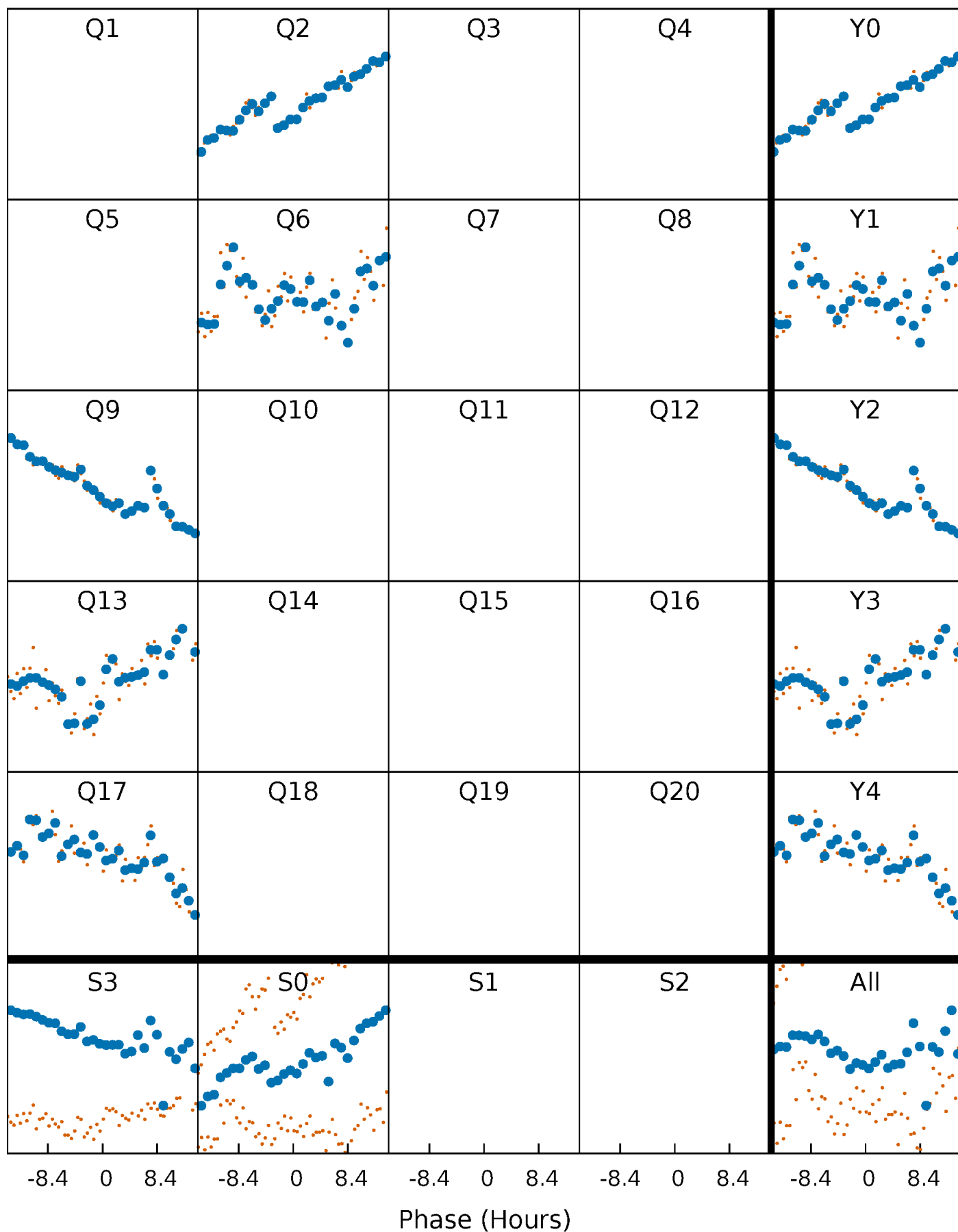


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



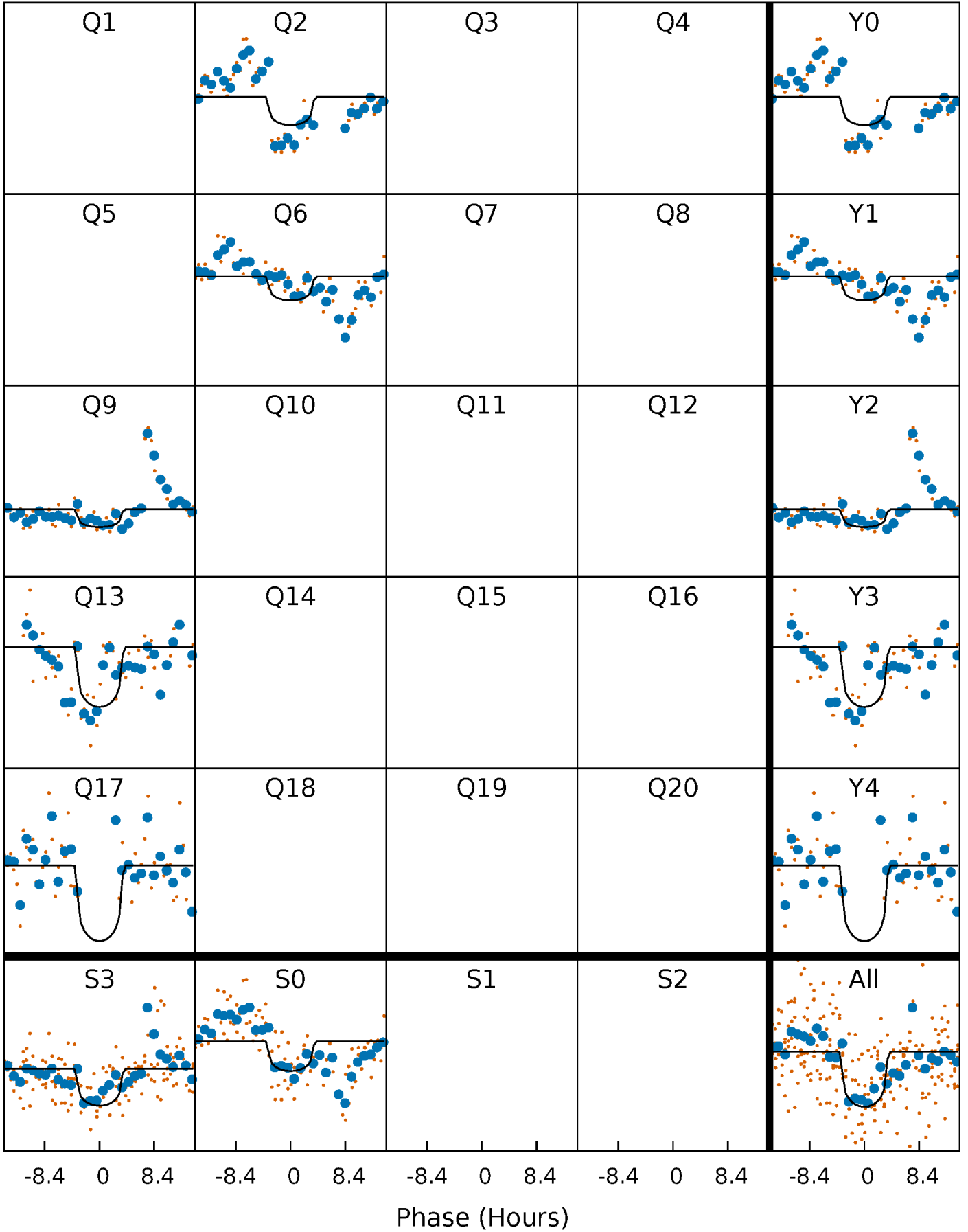
PDC Quarter-Phased Transit Curves

TCE 005384713-04 $P=331.533765$ Days $T_0=240.156346$ (BKJD)



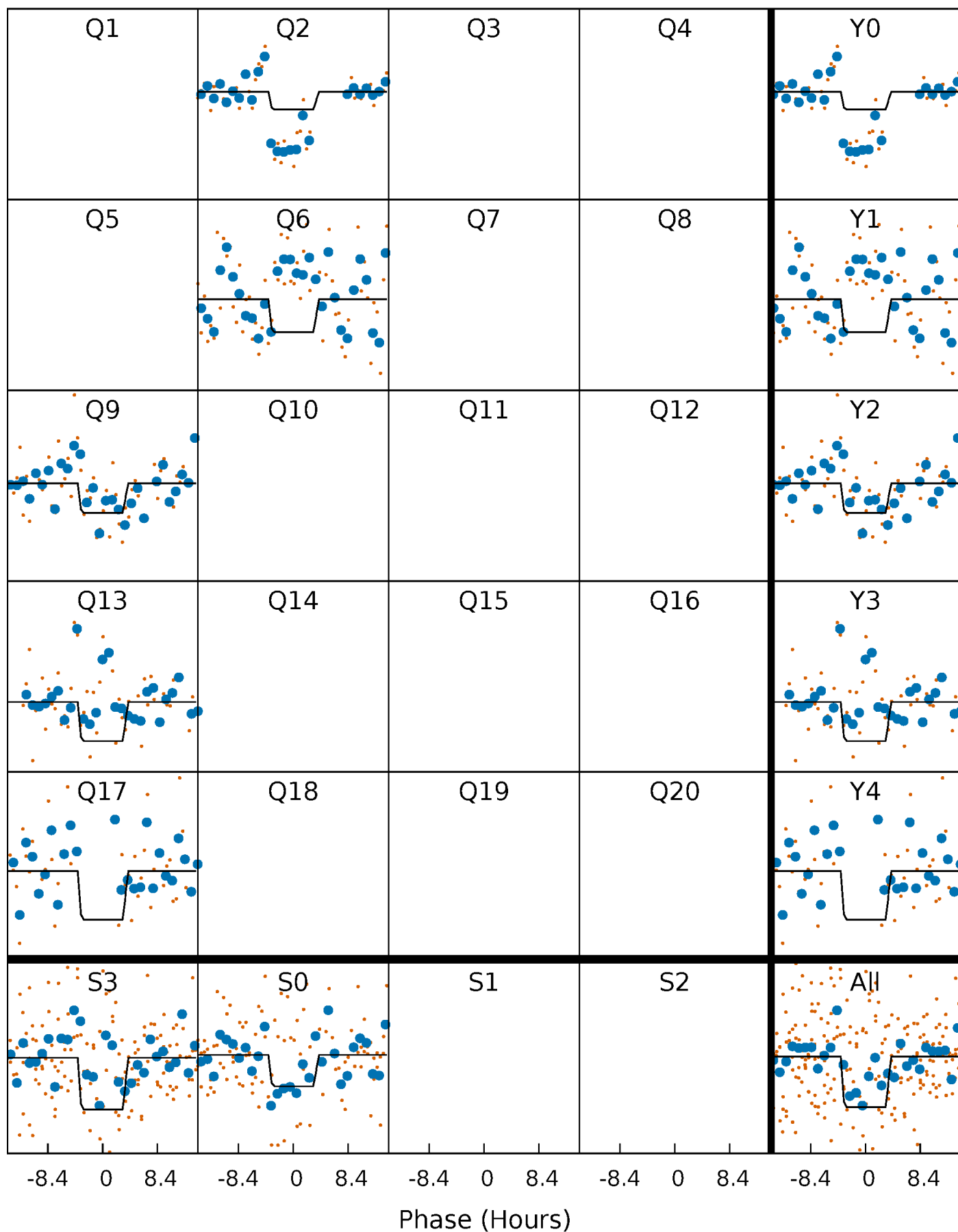
DV Quarter-Phased Transit Curves

TCE 005384713-04 $P=331.533765$ Days $T_0=240.156346$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

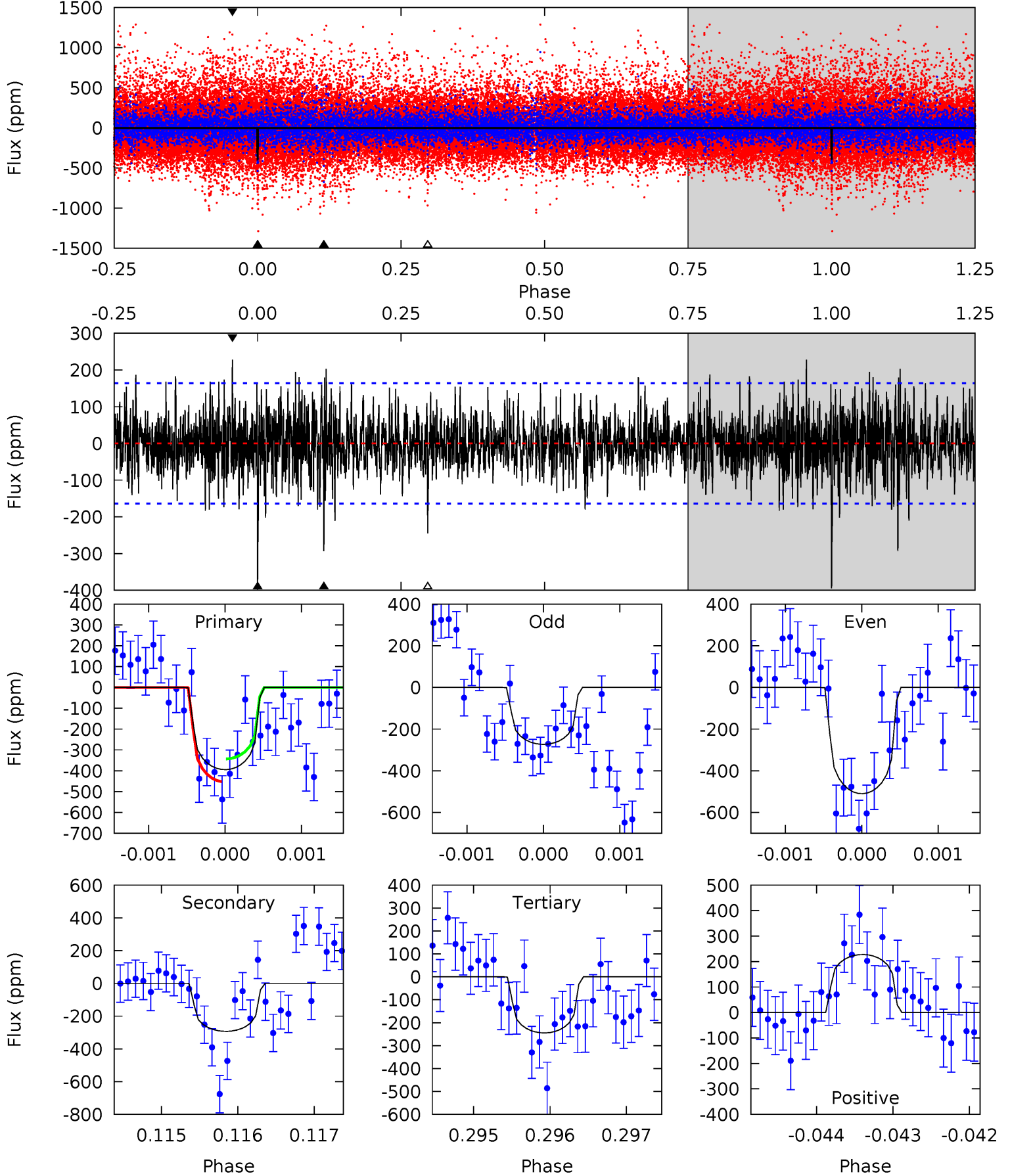
TCE 005384713-04 P=331.534511 Days $T_0=240.176328$ (BKJD)



DV Model-Shift Uniqueness Test

005384713-04, P = 331.533765 Days, E = 240.156346 Days

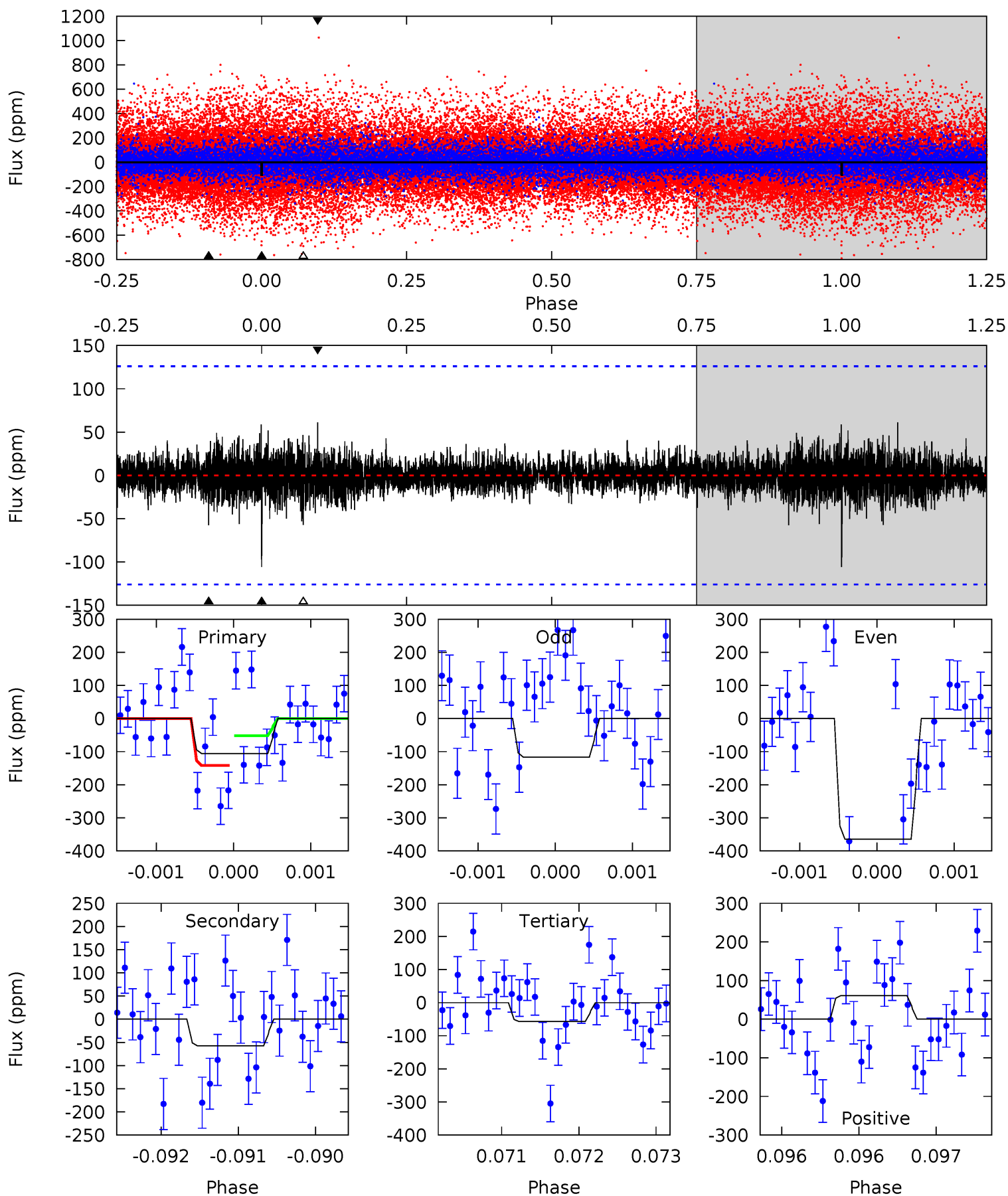
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	9.74	8.14	7.57	5.45	3.29	1.87	4.98	5.55	1.60	2.17	3.84	0.92	0.37	1.82



Alt Model-Shift Uniqueness Test

005384713-04, P = 331.534511 Days, E = 240.176328 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.60	2.50	2.47	2.65	5.48	3.33	0.52	2.12	1.95	0.02	-0.16	5.51	-12.9	0.37	1.94



Stellar Parameters For KIC 005384713

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3705^{+74}_{-74}	$4.721^{+0.039}_{-0.021}$	$0.210^{+0.150}_{-0.150}$	$0.529^{+0.030}_{-0.038}$	$0.536^{+0.034}_{-0.034}$	$5.115^{+0.917}_{-0.494}$
	+2%/-2%	+1%/-0%	+71%/-71%	+6%/-7%	+6%/-6%	+18%/-10%
Source	SPE70	SPE90	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 005384713-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-293 ± 30	$1.31^{+0.49}_{-0.53}$	189^{+4}_{-4}	3374^{+614}_{-306}	55033^{+97116}_{-25764}
Alt.	-57 ± 23	$0.90^{+0.52}_{-0.43}$	190^{+5}_{-4}	2924^{+697}_{-354}	20629^{+59872}_{-13052}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

DV Centroid Data

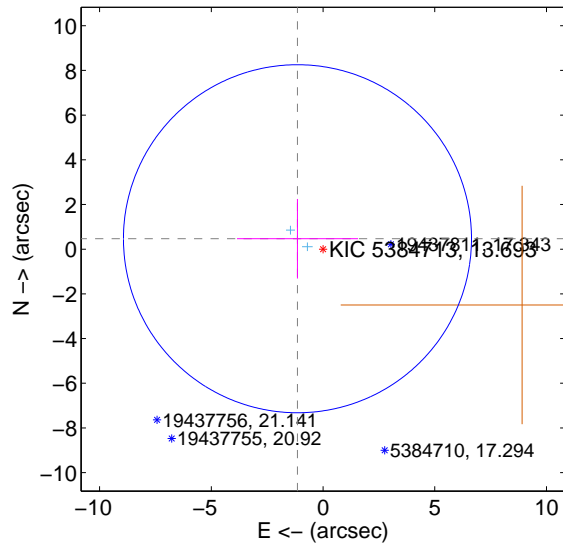
Supplemental centroid analysis for 005384713-04. Kepler magnitude: 13.69. Transit SNR 7.39

There are 2 quarters with good PRF difference image offsets

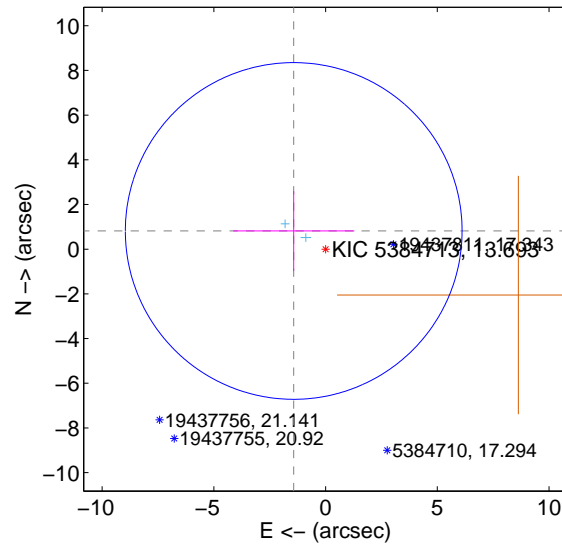
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.235 ± 2.596	0.48	1.144 ± 2.708	0.467 ± 1.781
PRF-fit source offset from KIC position	1.643 ± 2.511	0.65	1.426 ± 2.708	0.815 ± 1.781
photometric centroid source offset	1.37 ± 1.10	1.24	0.25 ± 1.05	1.35 ± 1.10

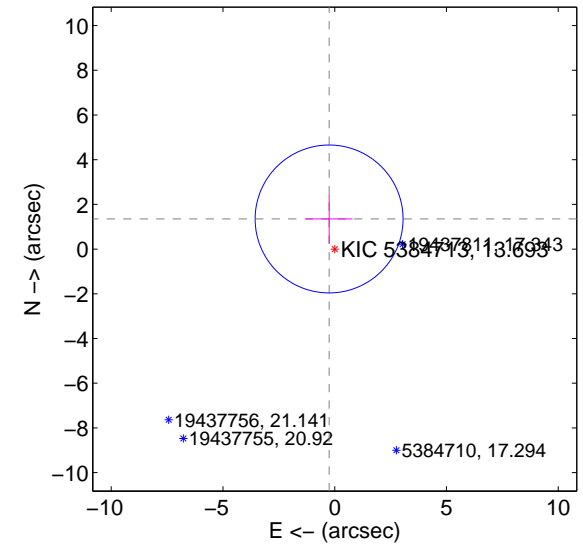
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

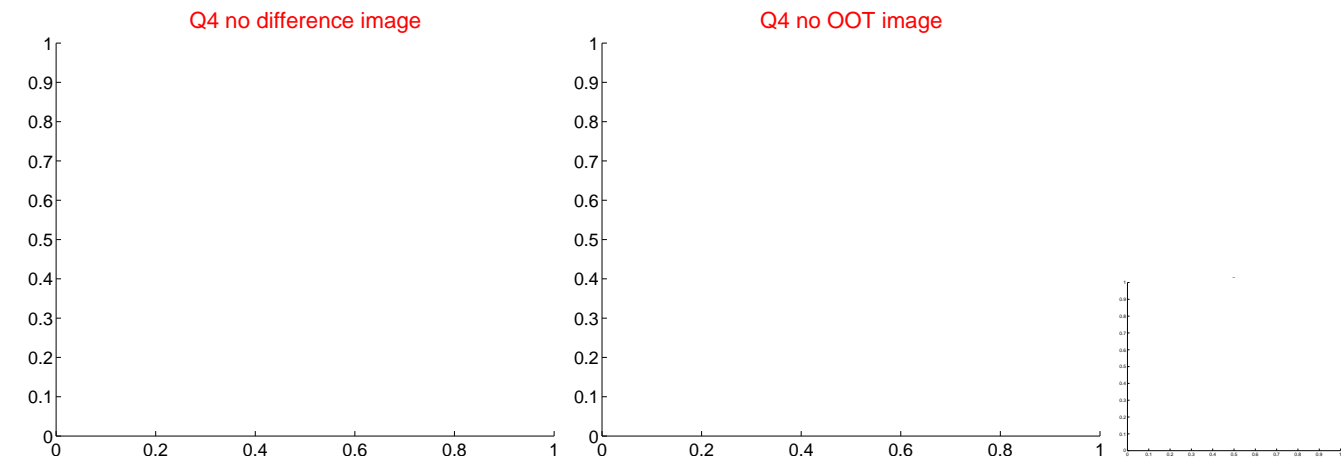
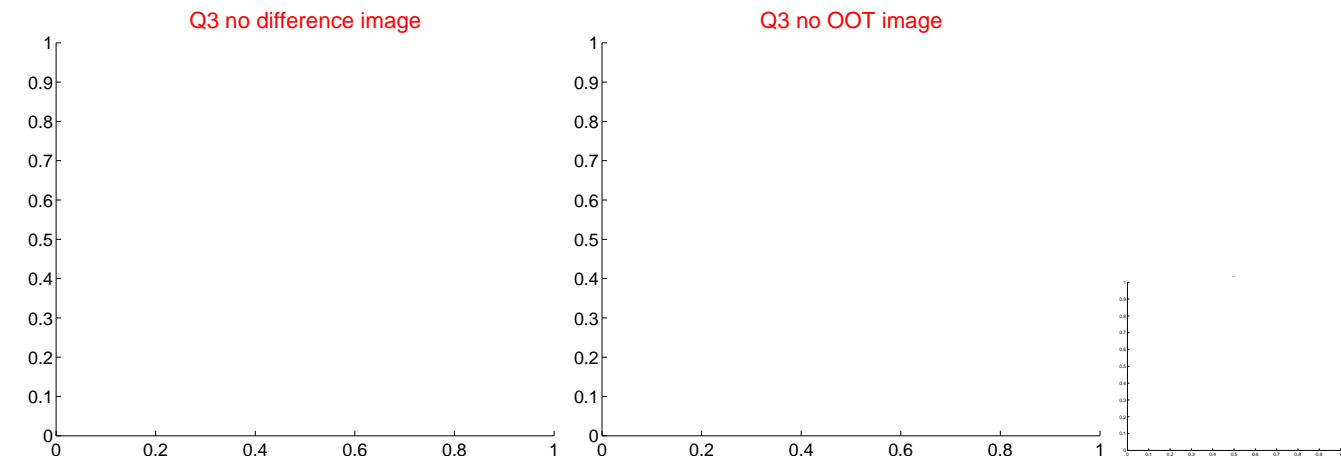
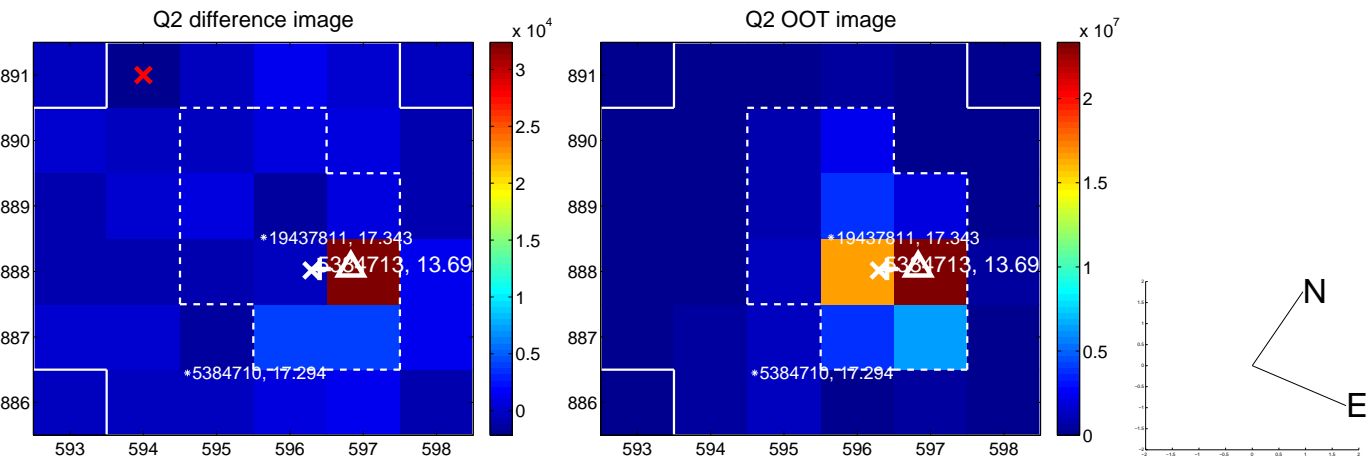
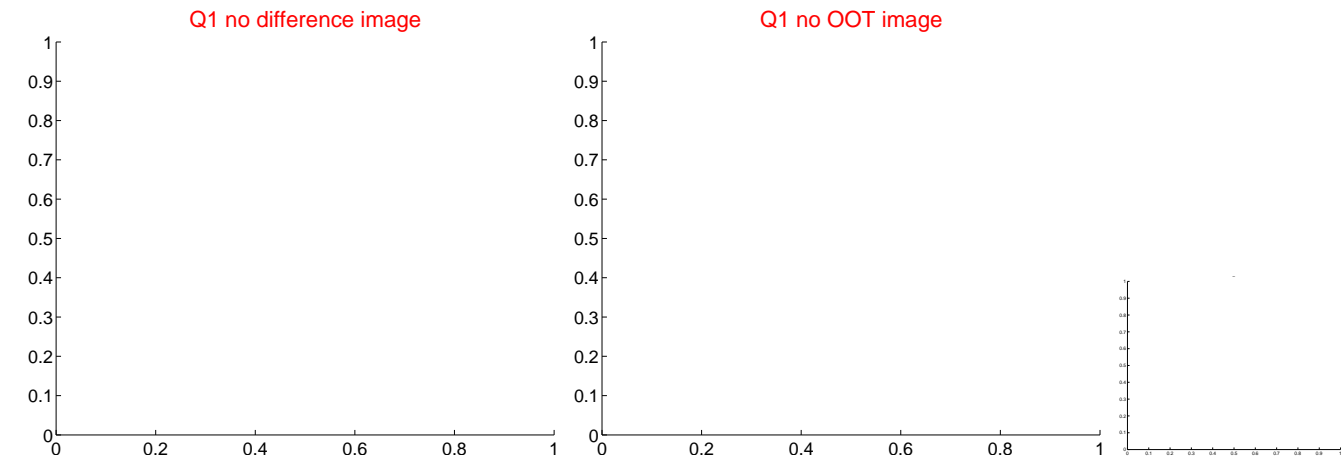


offset from photometric centroids



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.

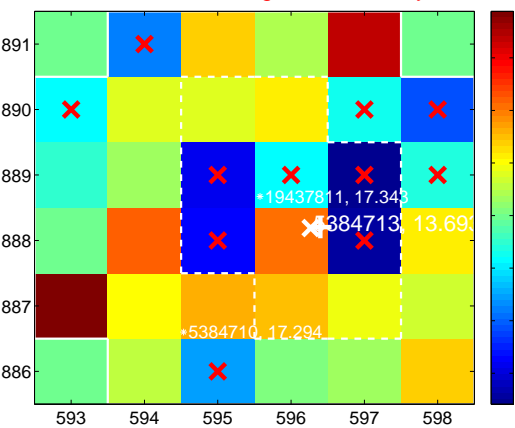
Q5 no difference image



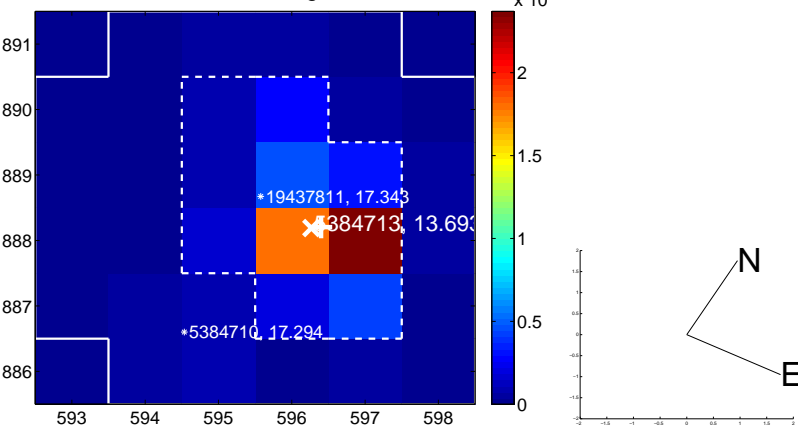
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



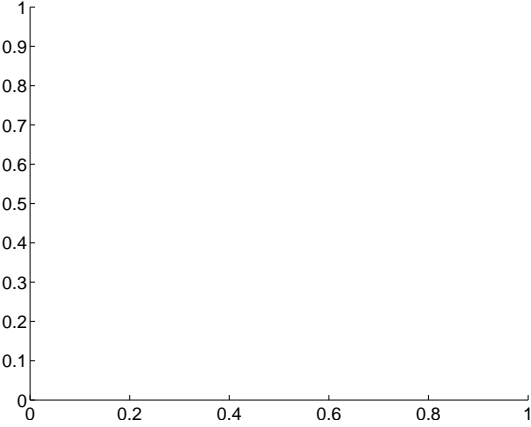
Q7 no difference image



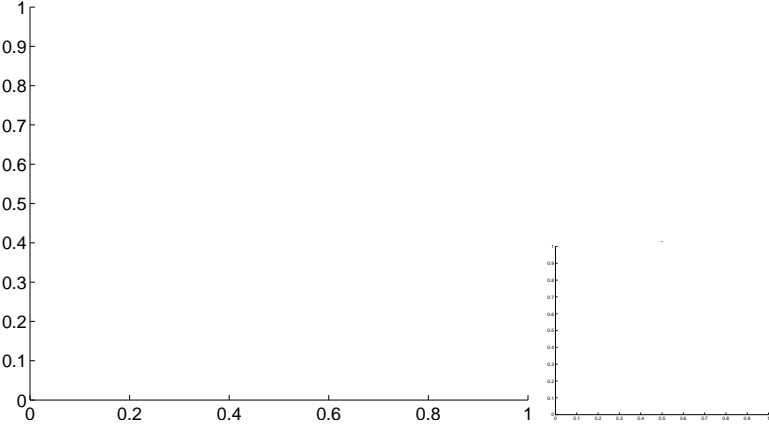
Q7 no OOT image



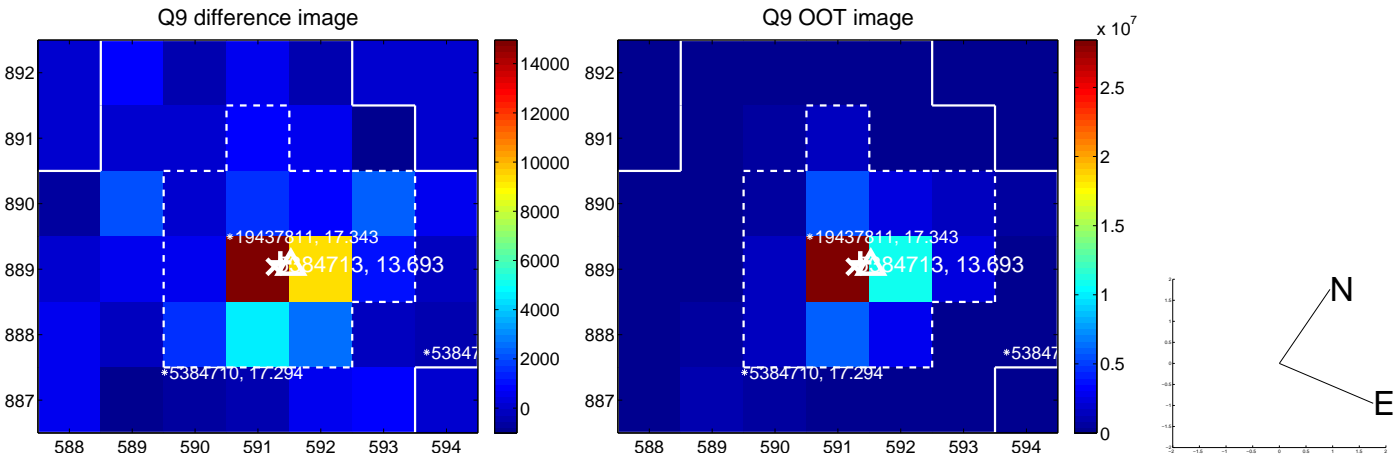
Q8 no difference image



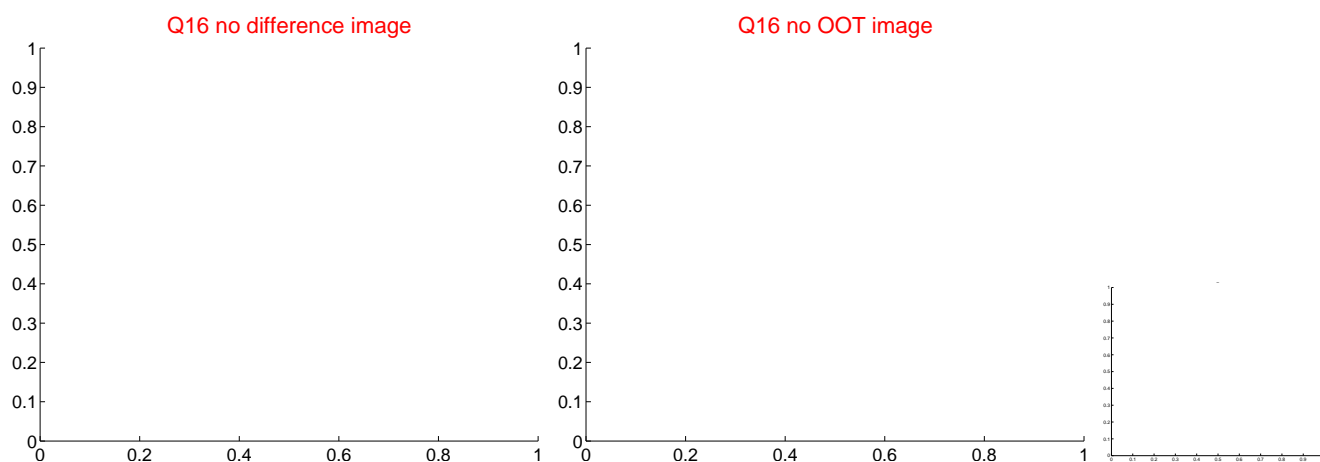
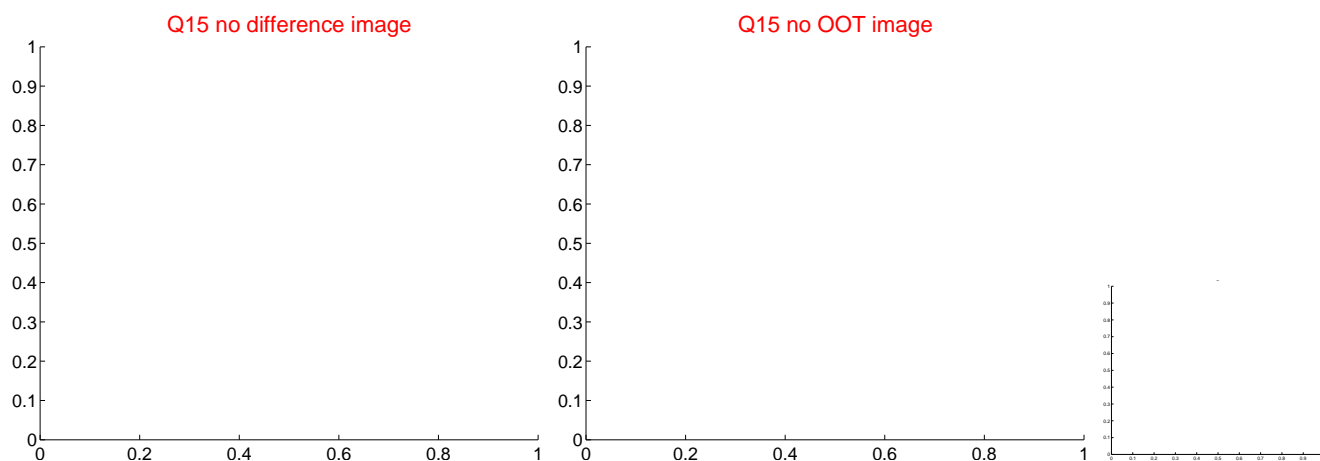
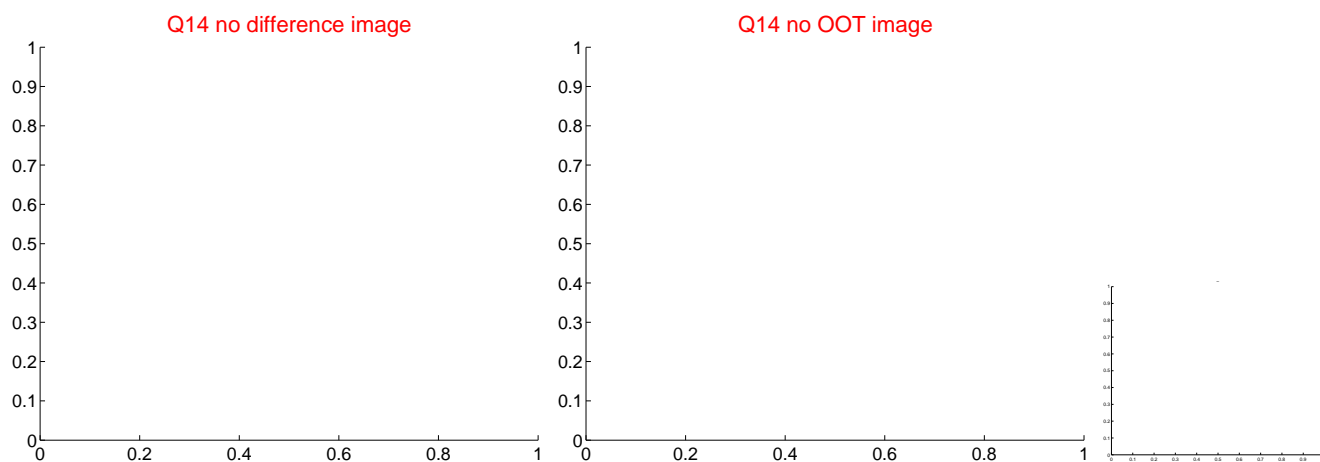
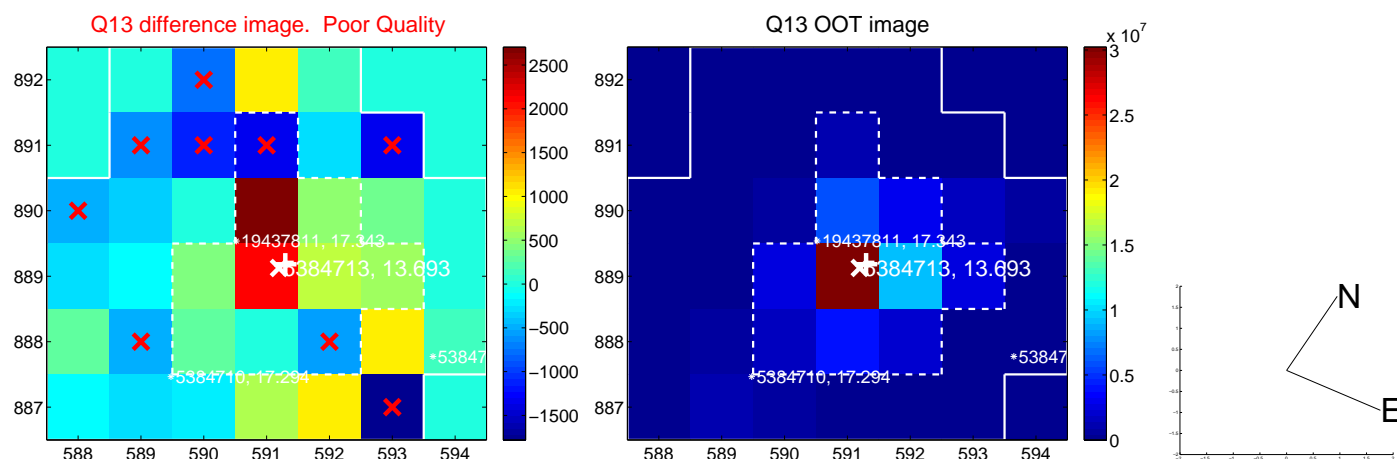
Q8 no OOT image



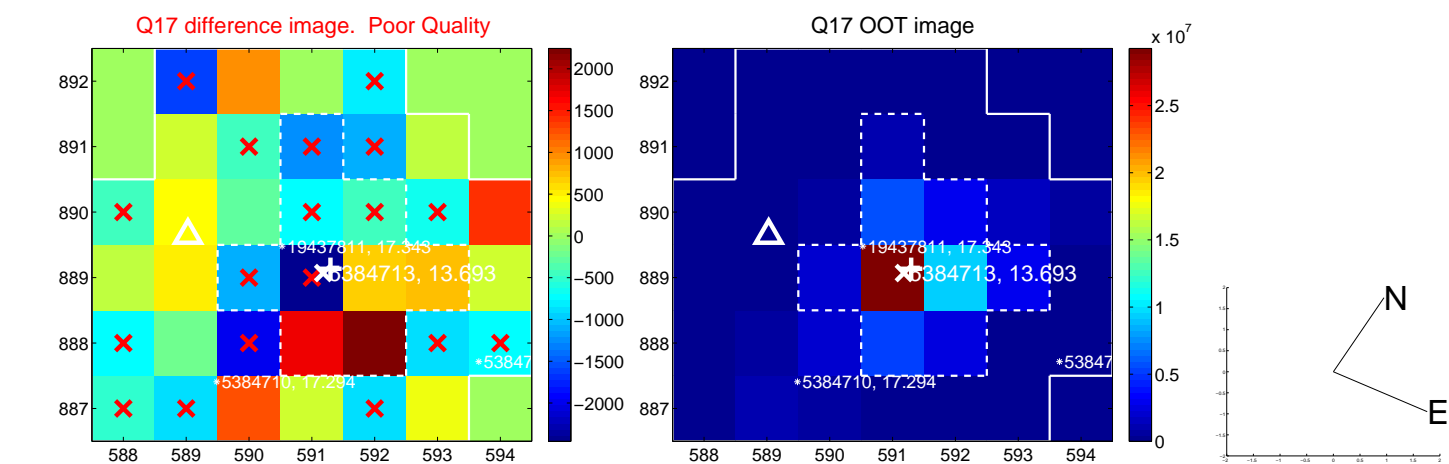
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



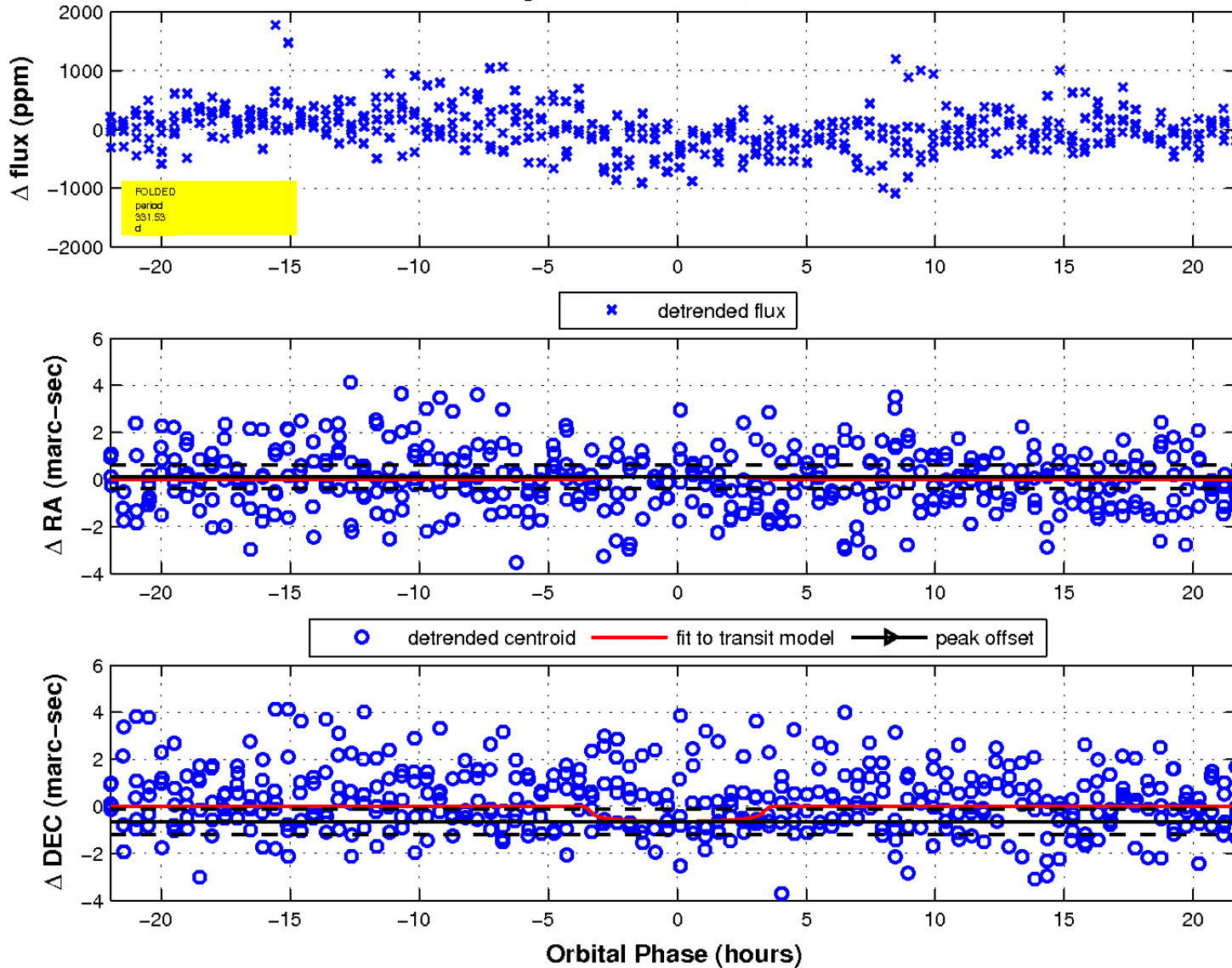
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

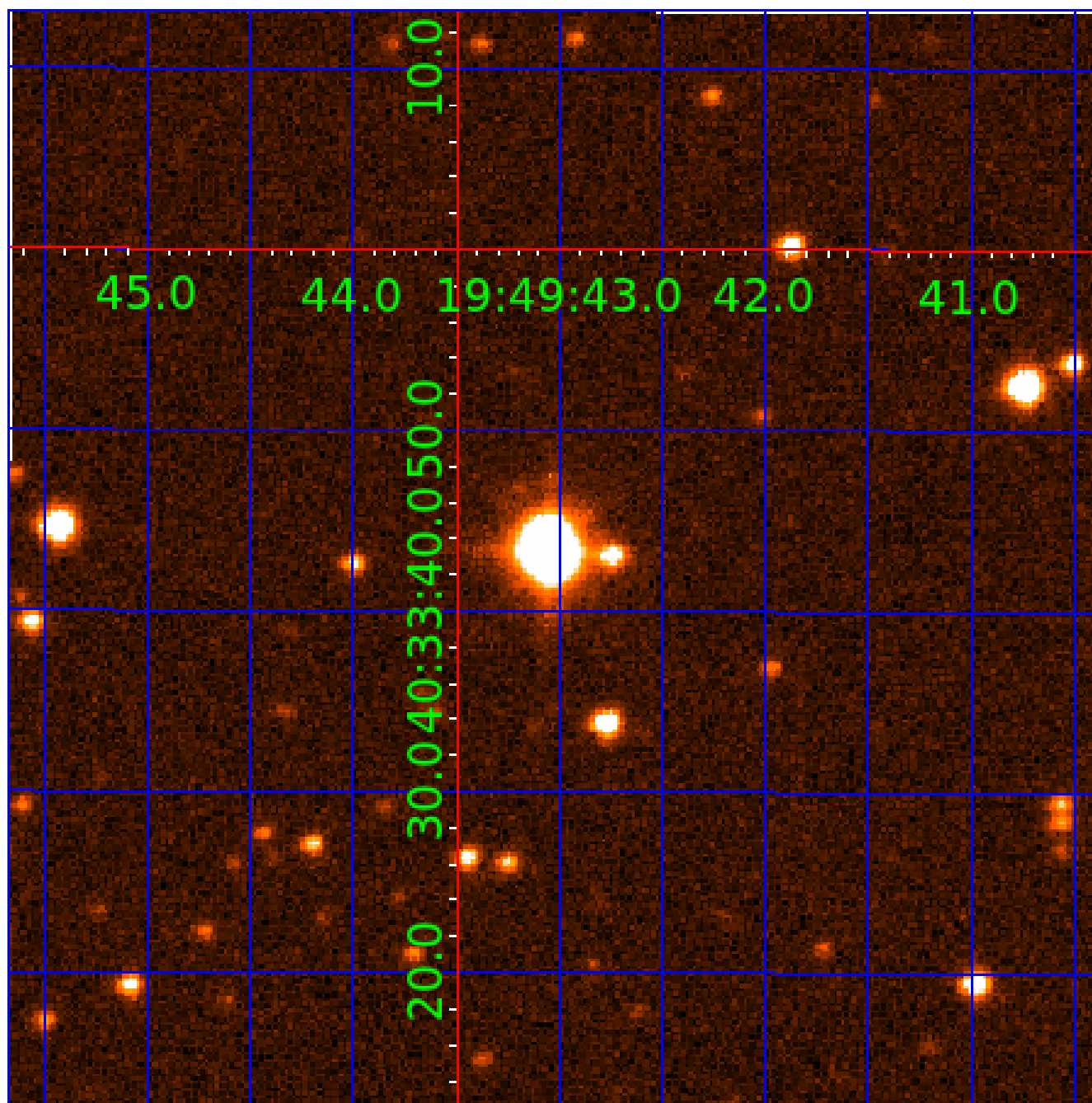


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 005384713

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})
005384713-01	OBS	3444.02	60.326652	145.058087	3156.3	1.711	59.2	70.5	0.53	3705	5.25	0.79
005384713-02	OBS	3444.03	2.635957	132.317098	100.0	1.563	11.4	13.1	0.53	3705	0.64	51.26
005384713-03	OBS	3444.01	12.671259	137.523630	165.0	2.734	10.2	11.1	0.53	3705	0.84	6.32
005384713-04	OBS	No	331.533765	240.156346	483.6	7.332	9.7	7.4	0.53	3705	1.32	0.08
005384713-05	OBS	3444.04	14.150286	141.474977	185.8	2.377	8.0	9.5	0.53	3705	1.20	5.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005384713-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS
005384713-02	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
005384713-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
005384713-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005384713-05	OBS	FP	0.00	0	0	1	0	CENT_KIC_POS—HALO_GHOST

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 005384713-05

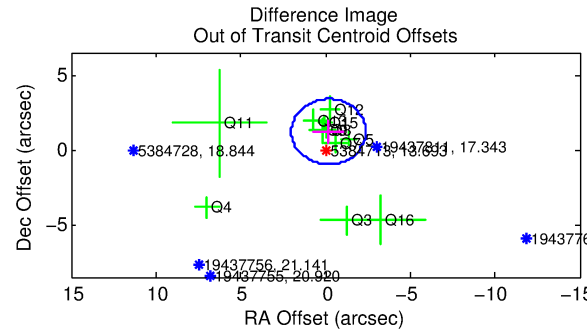
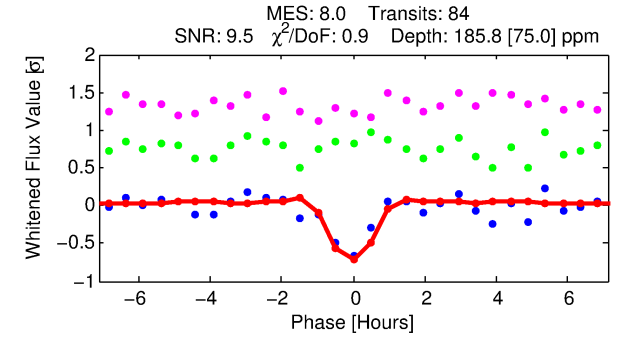
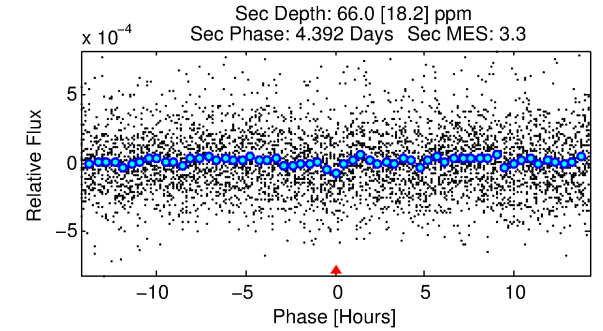
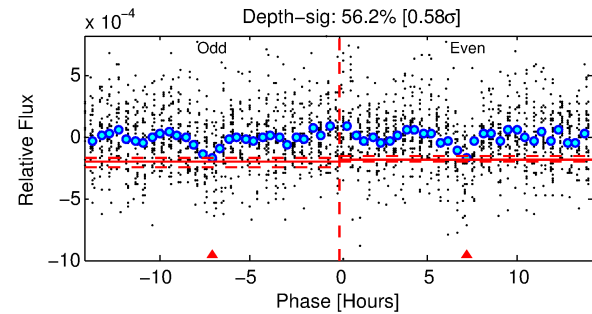
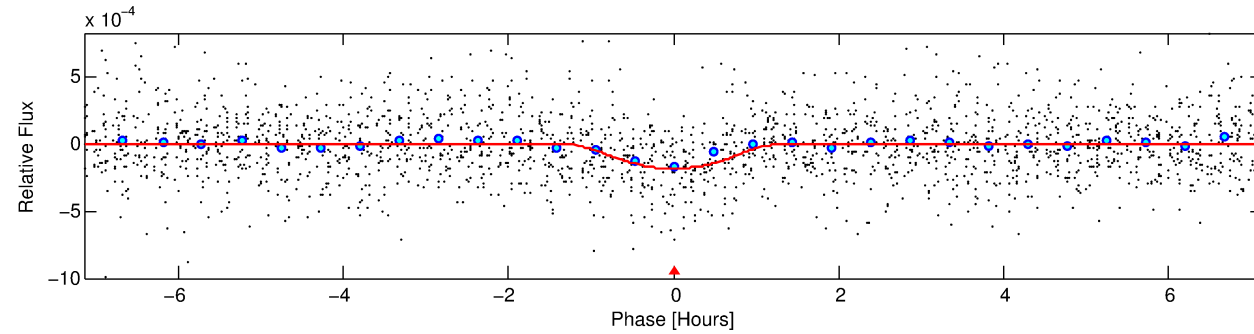
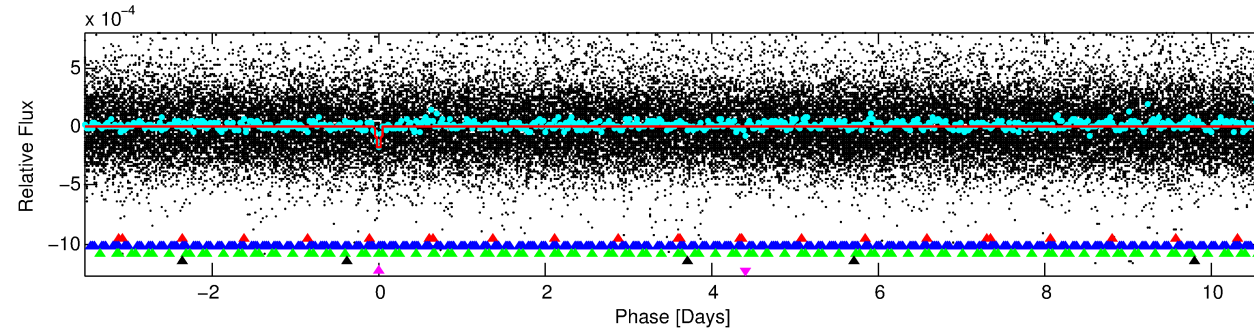
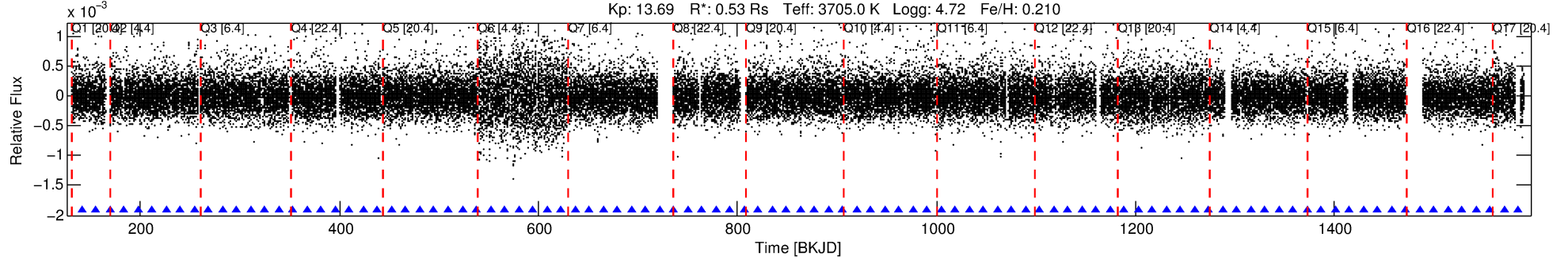
No Significant Match Found

DV One-Page Summary

KIC: 5384713 Candidate: 5 of 5 Period: 14.150 d

KOI: K03444 Corr: No Ephemeris Match

Kp: 13.69 R*: 0.53 Rs Teff: 3705.0 K Logg: 4.72 Fe/H: 0.210



DV Fit Results:

Period = 14.15029 [0.00010] d
Epoch = 141.4750 [0.0054] BKJD
Rp/R* = 0.0208 [0.0280]
a/R* = 11.51 [6.94]
b = 0.99 [0.06]
Seff = 5.45 [0.60]
Teq = 390 [11] K
Rp = 1.20 [1.62] Re
a = 0.0931 [0.0053] AU
Ag = 217.46 [588.56] [0.37σ]
Teff = 2314 [1565] K [1.23σ]

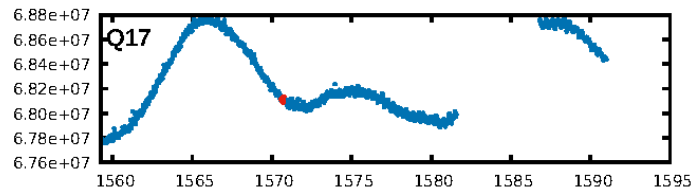
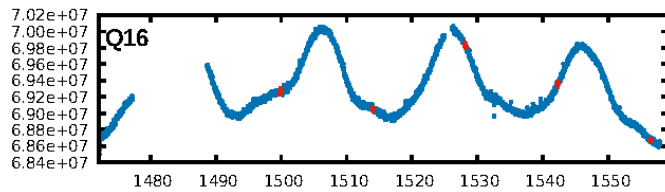
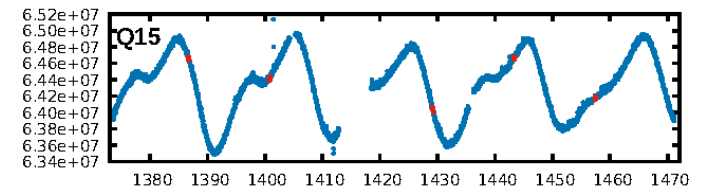
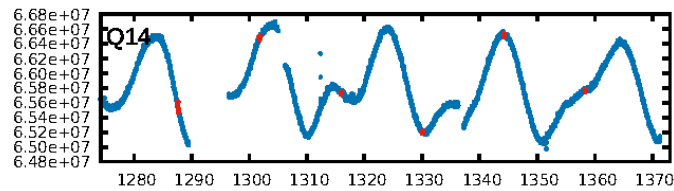
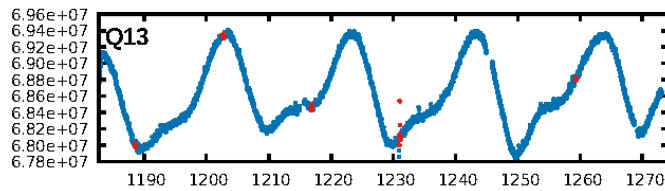
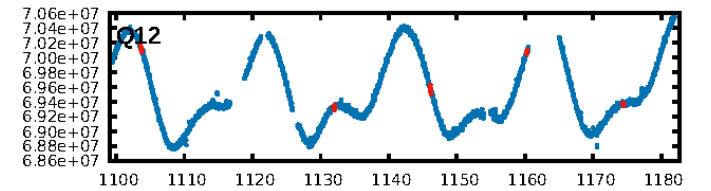
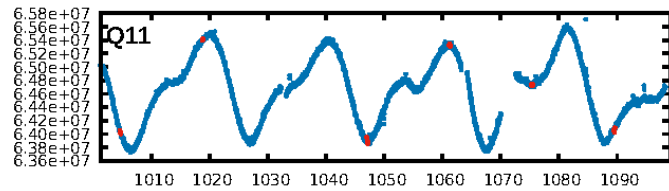
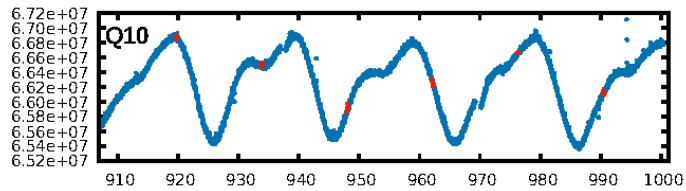
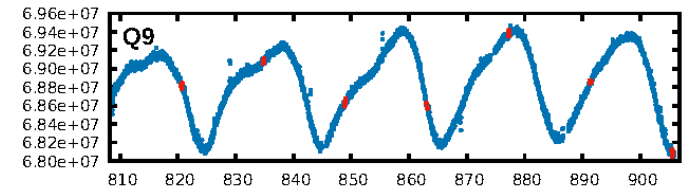
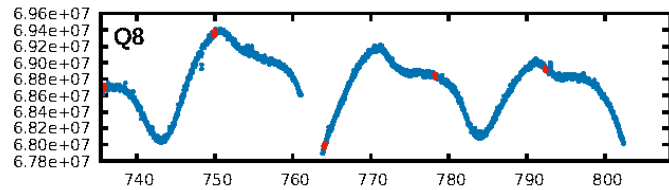
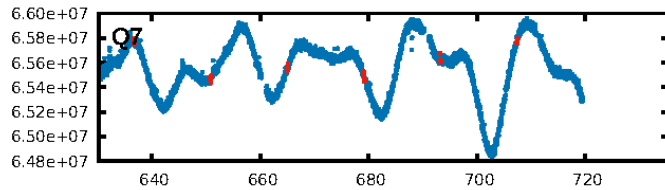
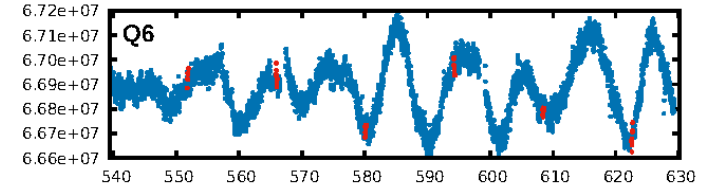
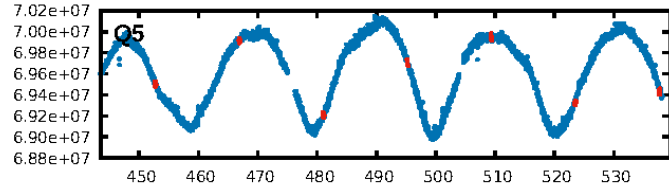
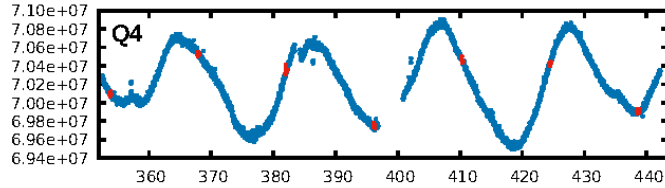
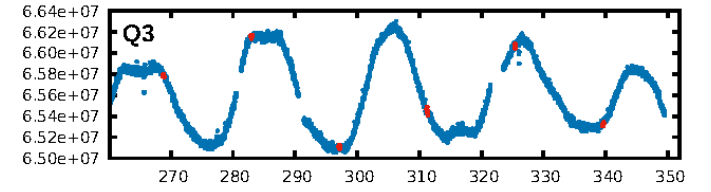
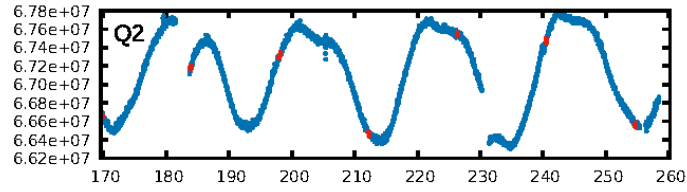
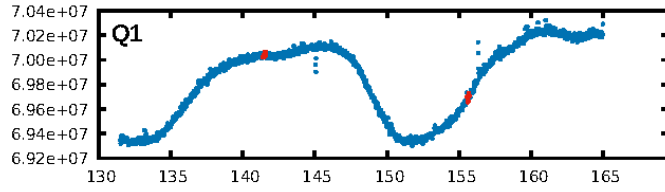
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.80σ]
LongPeriod-sig: 100.0% [378.34σ]
ModelChiSquare2-sig: 96.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.92e-14
RollingBand-fgt: 1.00 [81/81]
GhostDiagnostic-chr: 0.1836
Centroid-sig: 95.0%
Centroid-so: 0.326 arcsec [0.30σ]
OotOffset-rm: 1.209 arcsec [1.66σ]
KicOffset-rm: 1.580 arcsec [1.74σ]
OotOffset-st: 0/4/4/3 [11]
KicOffset-st: 0/4/4/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 1.00 [17/17]

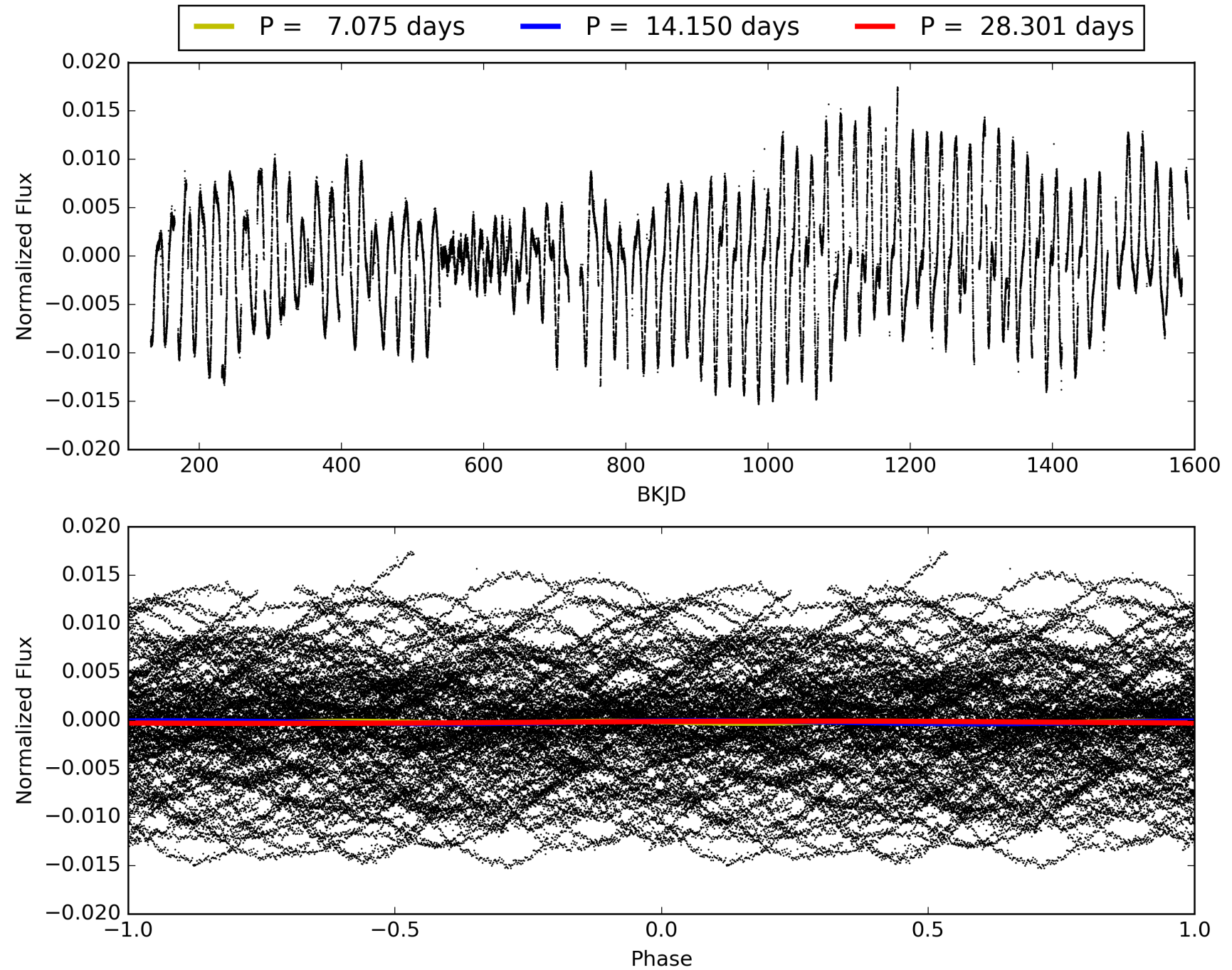
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:43:20 Z

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

TCE 005384713-05, PDC Light Curves

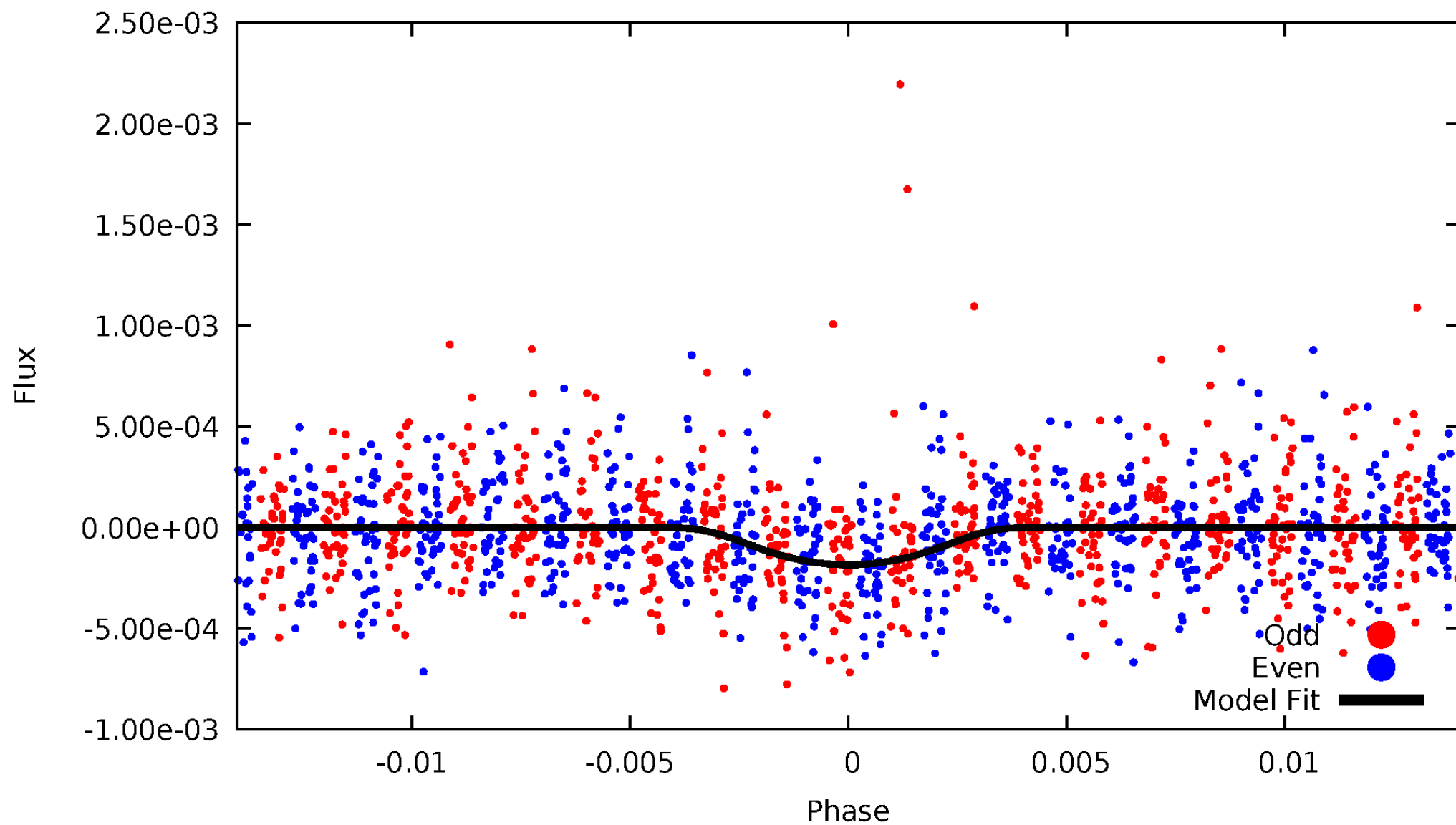


TCE 005384713-05



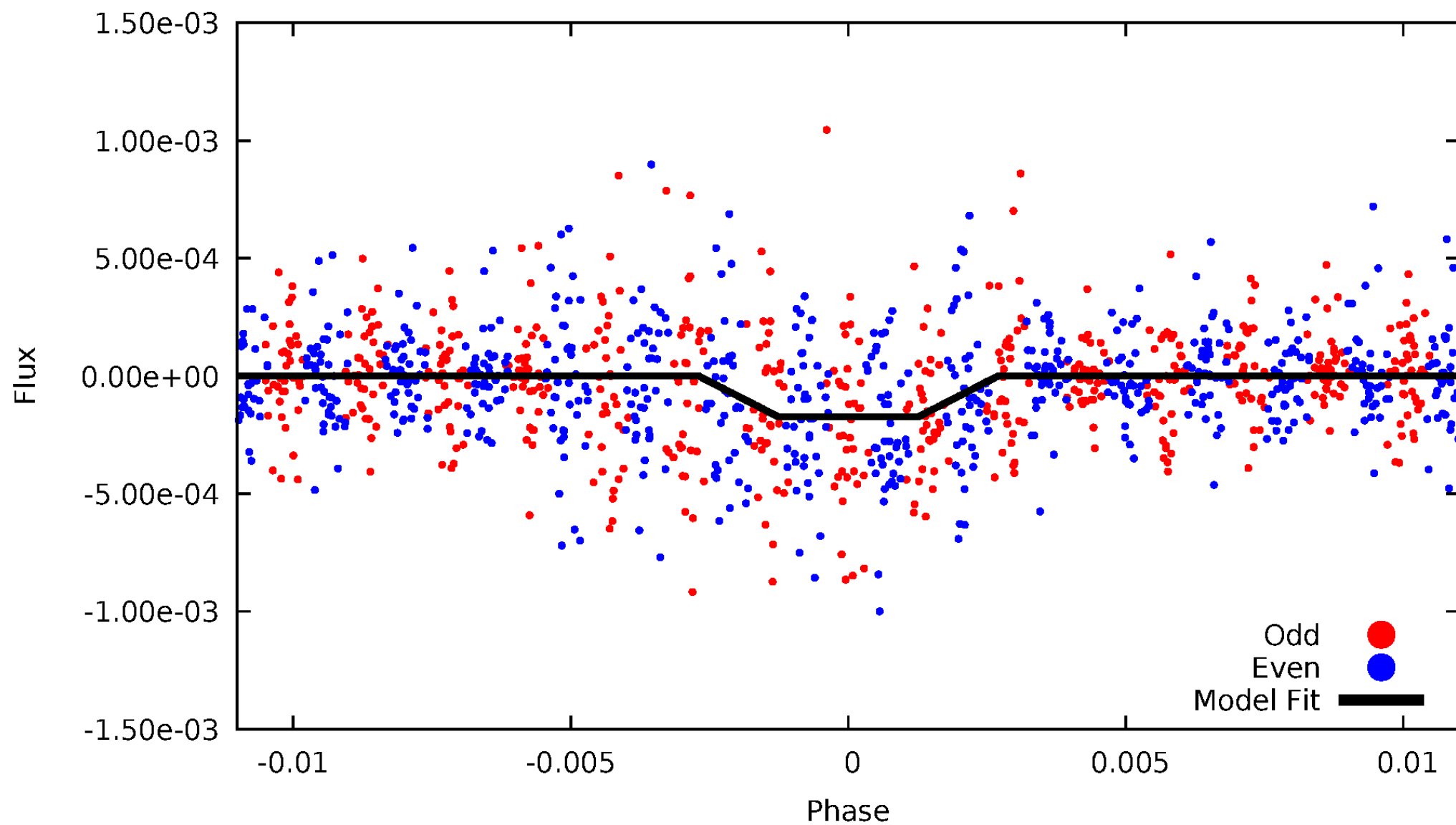
DV Odd/Even

TCE 005384713-05



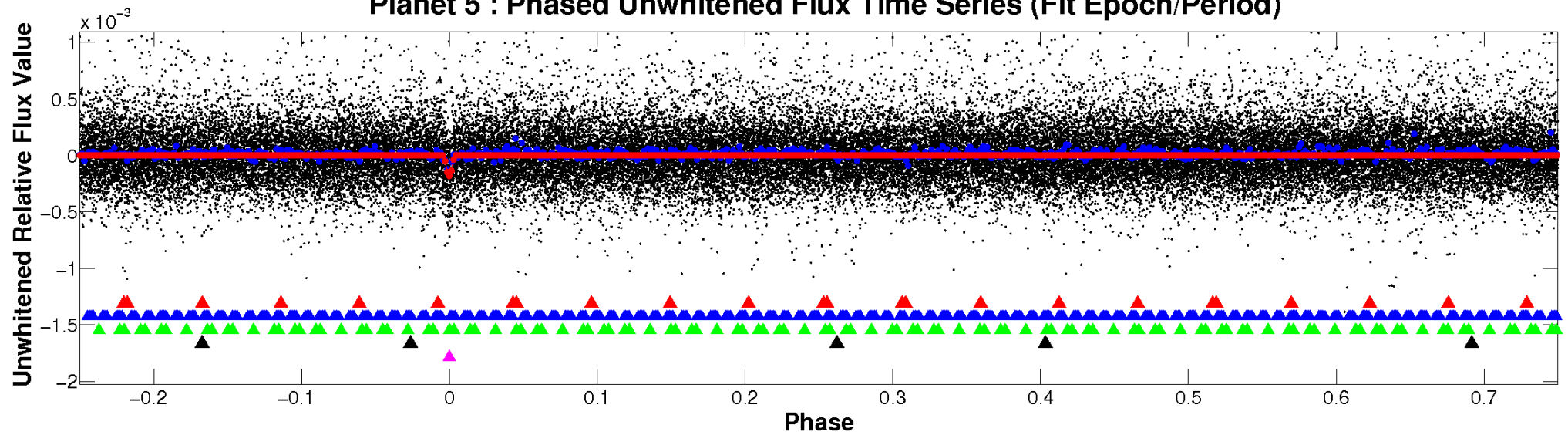
ALT Odd/Even

TCE 005384713-05

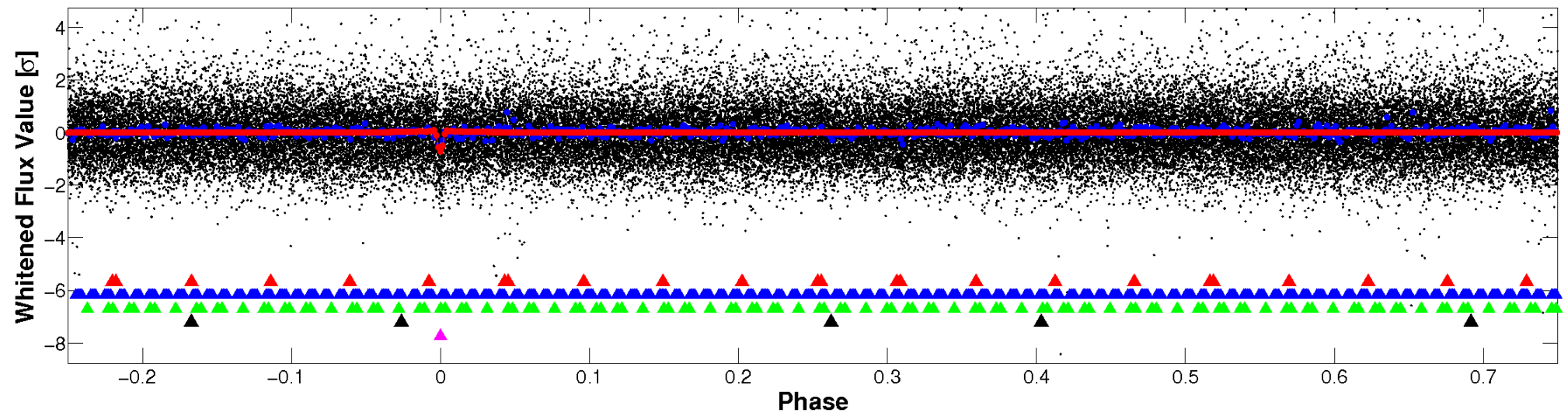


Non-Whitened Vs. Whitened Light Curve

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

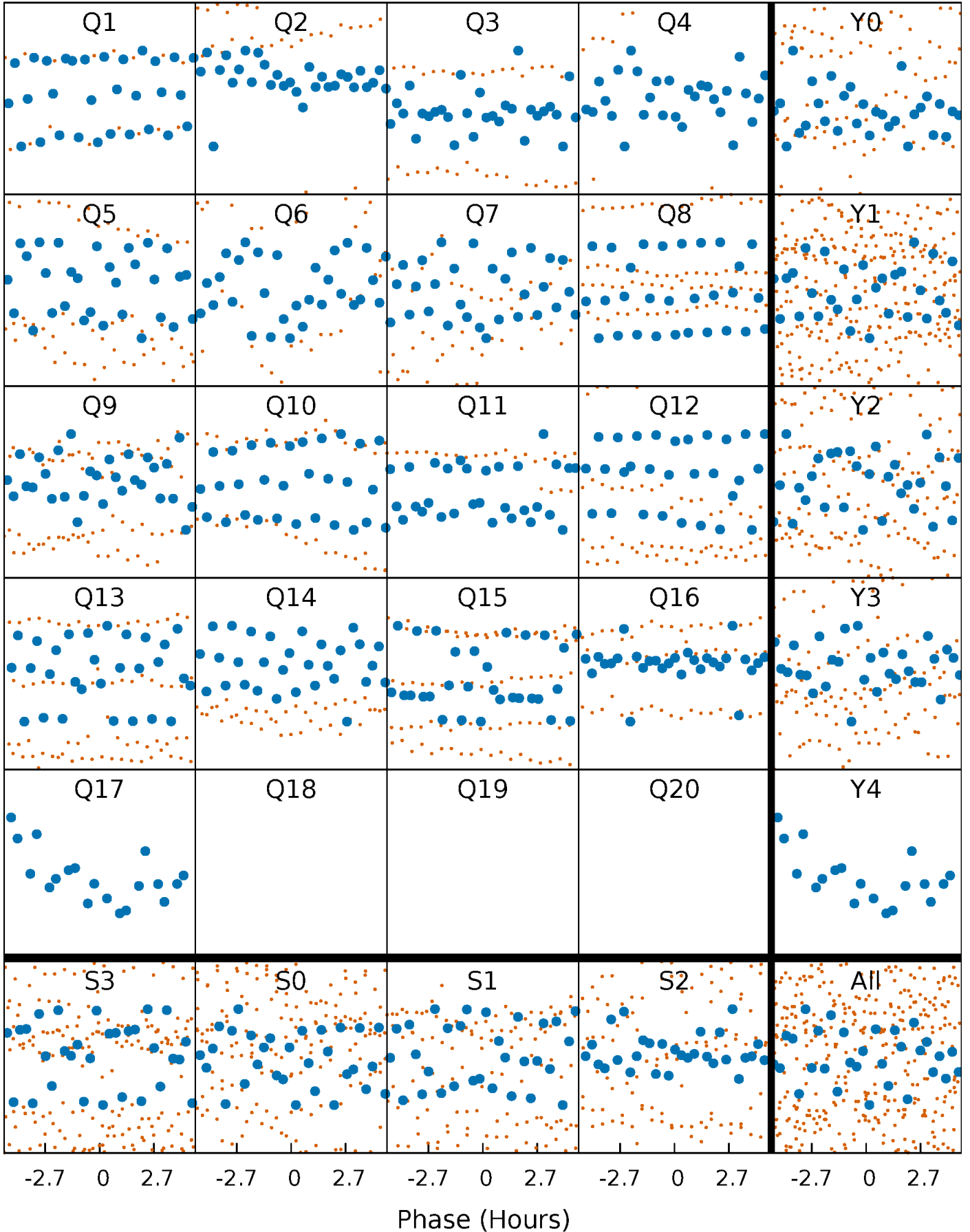


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



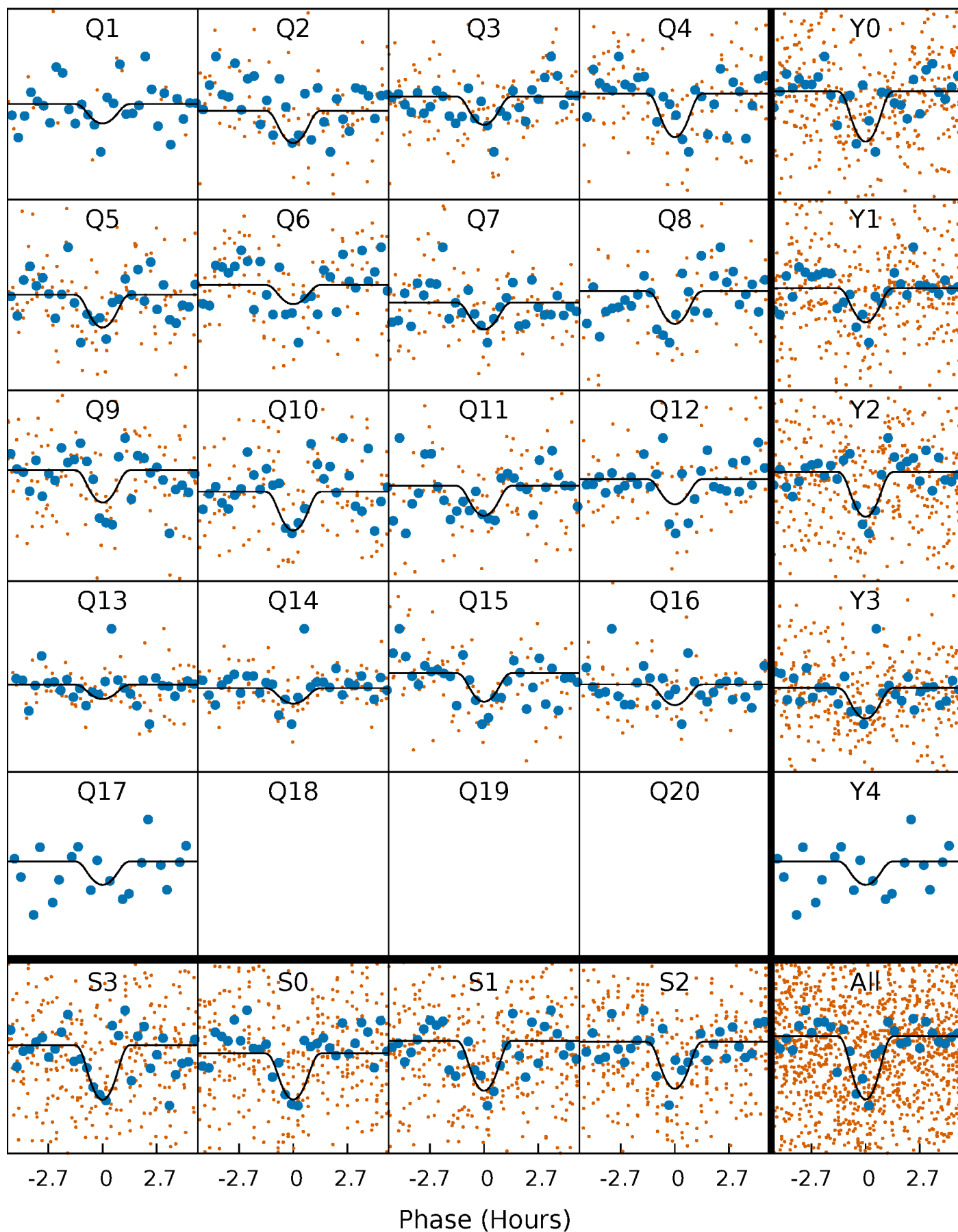
PDC Quarter-Phased Transit Curves

TCE 005384713-05 P= 14.150286 Days $T_0=141.474977$ (BKJD)



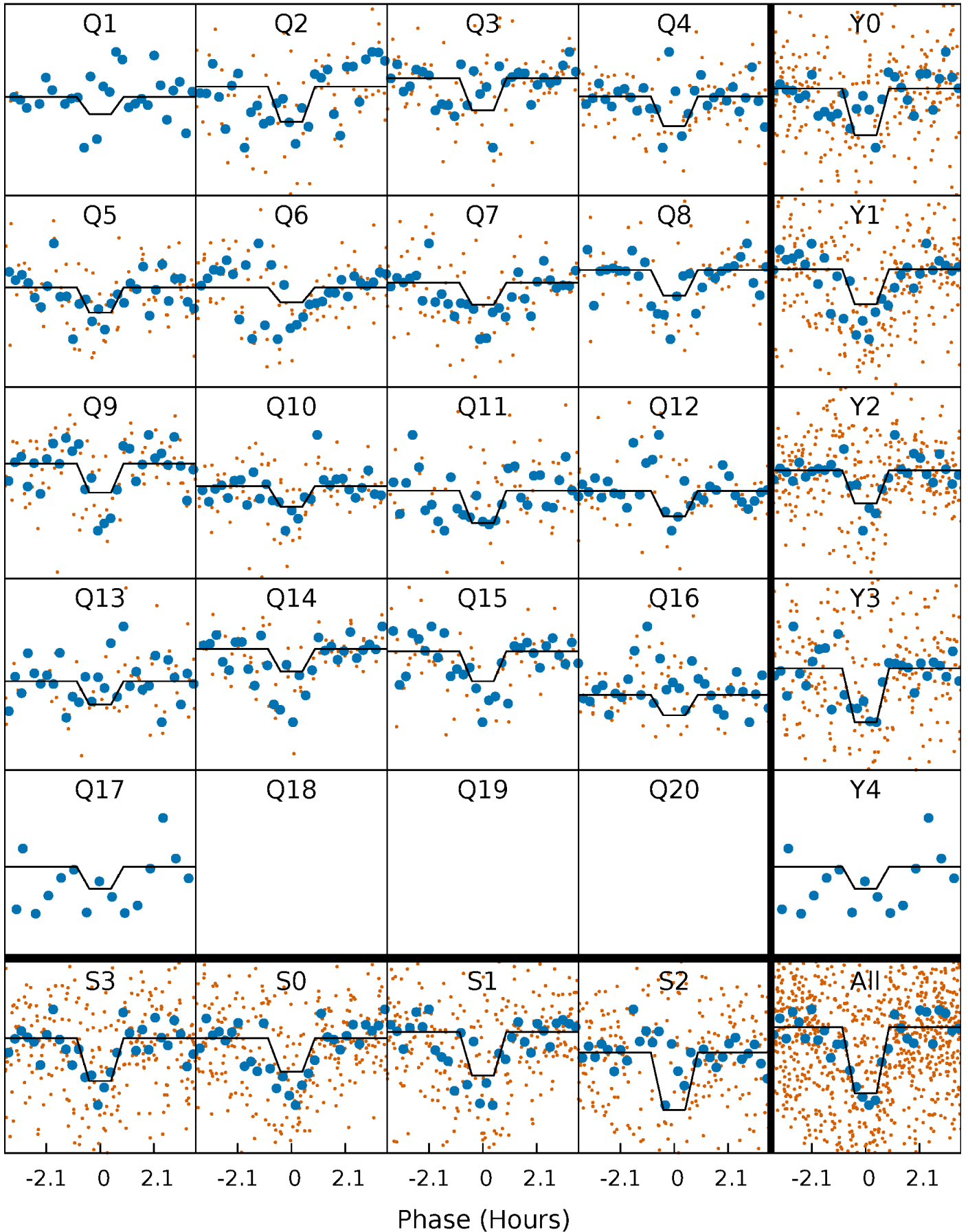
DV Quarter-Phased Transit Curves

TCE 005384713-05 P= 14.150286 Days $T_0=141.474977$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

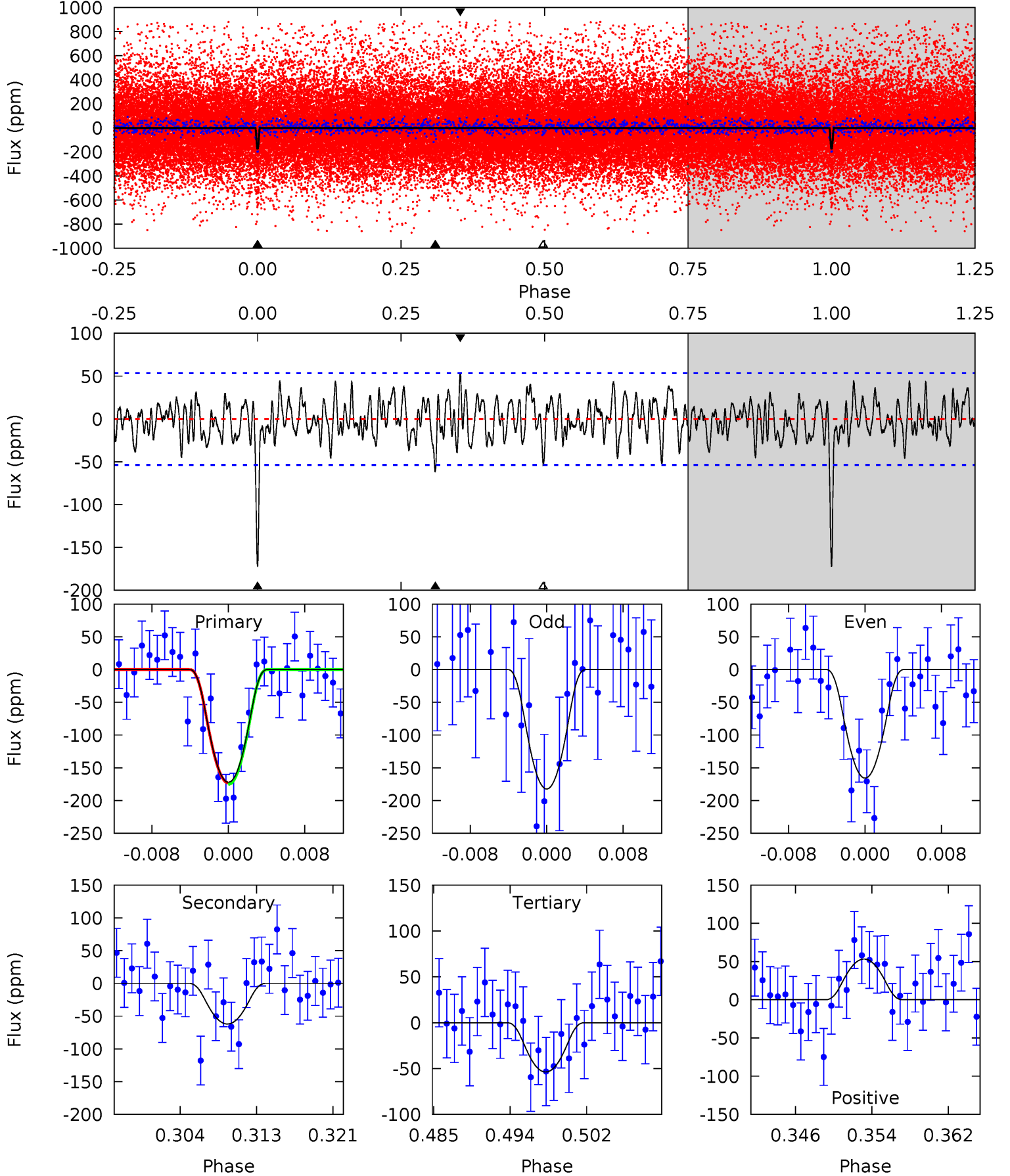
TCE 005384713-05 P= 14.150193 Days $T_0=141.477197$ (BKJD)



DV Model-Shift Uniqueness Test

005384713-05, P = 14.150286 Days, E = 127.324691 Days

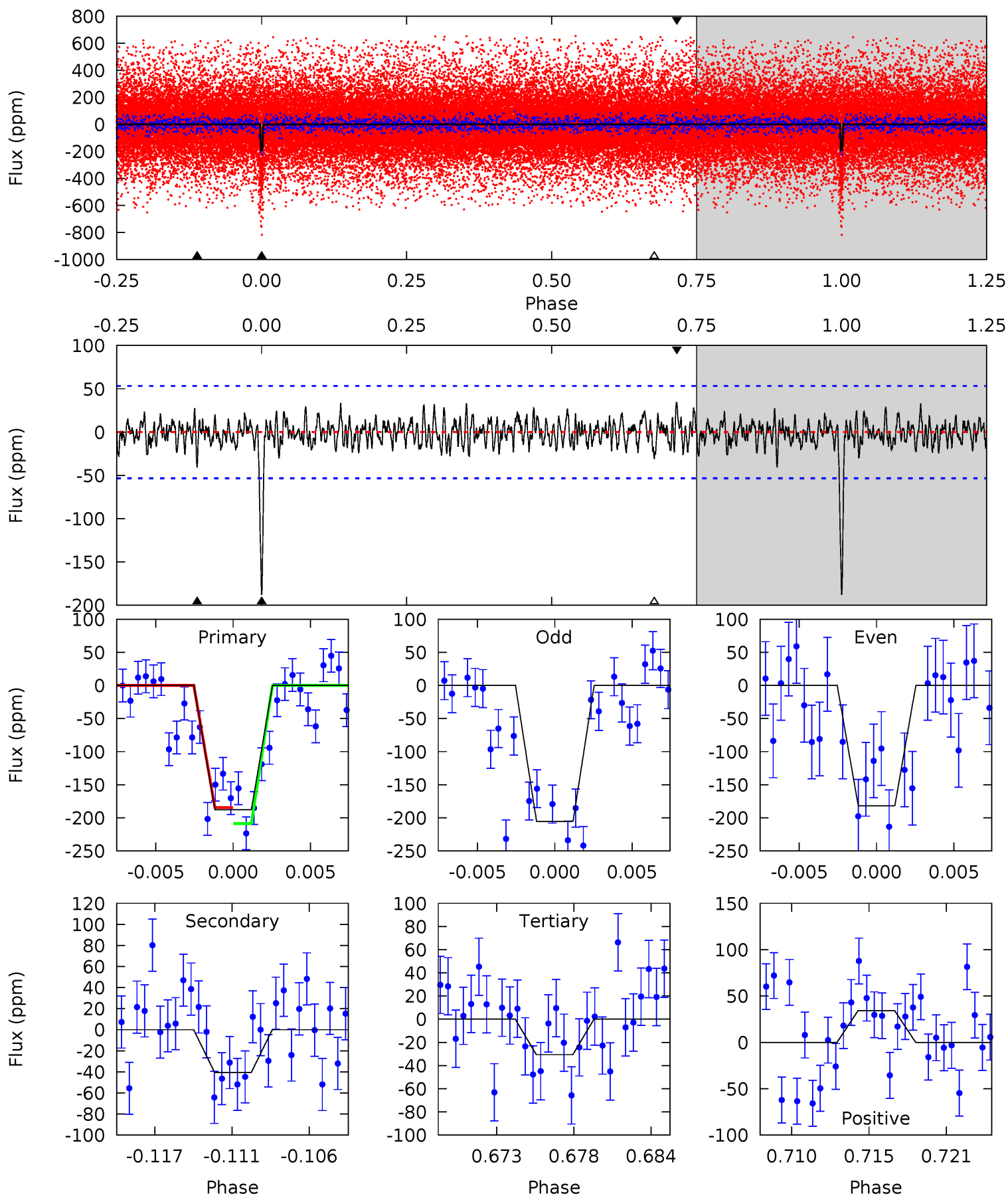
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	5.85	5.08	5.03	5.06	2.64	1.78	11.2	11.2	0.78	0.82	0.79	0.76	0.24	0.11



Alt Model-Shift Uniqueness Test

005384713-05, $P = 14.150193$ Days, $E = 127.327004$ 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	3.93	2.96	3.31	5.15	2.79	1.12	15.2	14.8	0.98	0.62	1.11	0.92	0.15	1.17



Stellar Parameters For KIC 005384713

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3705^{+74}_{-74}	$4.721^{+0.039}_{-0.021}$	$0.210^{+0.150}_{-0.150}$	$0.529^{+0.030}_{-0.038}$	$0.536^{+0.034}_{-0.034}$	$5.115^{+0.917}_{-0.494}$
	+2%/-2%	+1%/-0%	+71%/-71%	+6%/-7%	+6%/-6%	+18%/-10%
Source	SPE70	SPE90	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 005384713-05 / KOI 3444.04

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-62 ± 11	$1.70^{+1.25}_{-1.10}$	542^{+13}_{-13}	2536^{+866}_{-322}	101^{+735}_{-69}
Alt.	-41 ± 10	$1.46^{+1.31}_{-1.01}$	542^{+12}_{-12}	2505^{+952}_{-363}	92^{+815}_{-67}

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

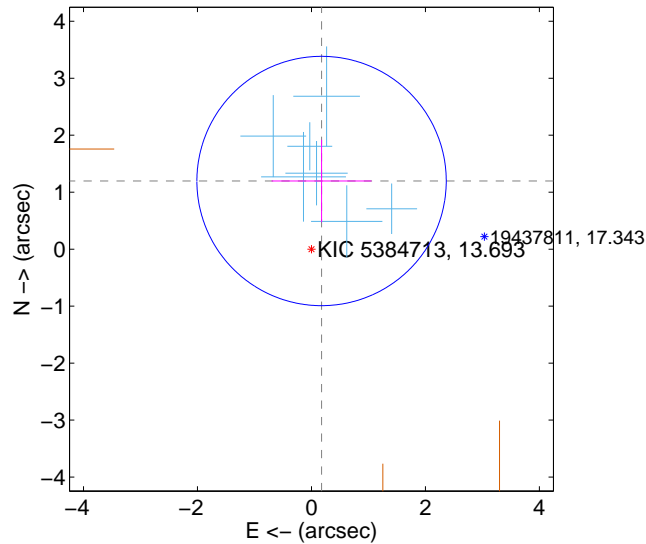
Supplemental centroid analysis for 005384713-05. Kepler magnitude: 13.69. Transit SNR 9.49

There are 7 quarters with good PRF difference image offsets

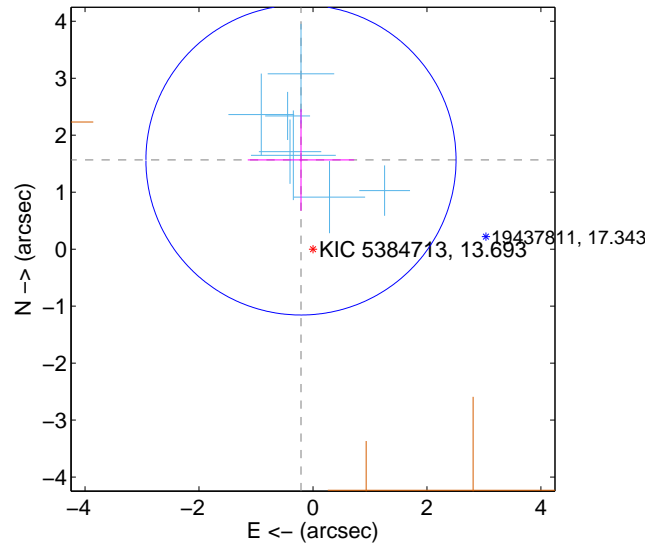
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.209 ± 0.729	1.66	-0.178 ± 0.877	1.196 ± 0.724
PRF-fit source offset from KIC position	1.580 ± 0.907	1.74	0.210 ± 0.933	1.566 ± 0.891
photometric centroid source offset	0.33 ± 1.07	0.30	0.30 ± 1.06	0.12 ± 1.13

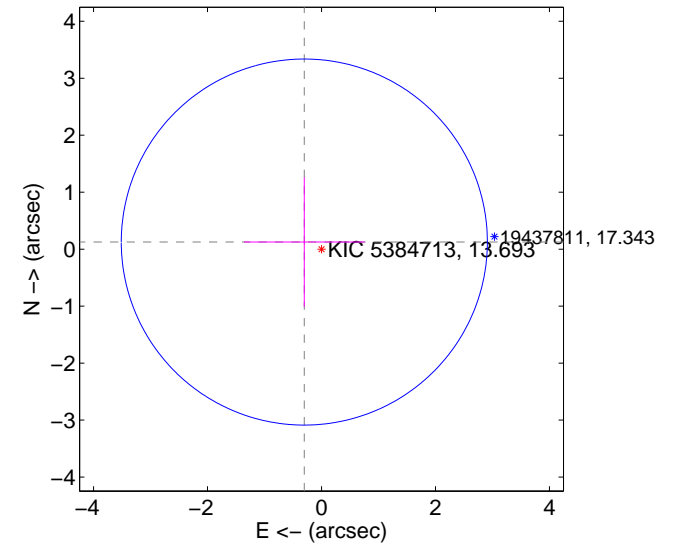
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

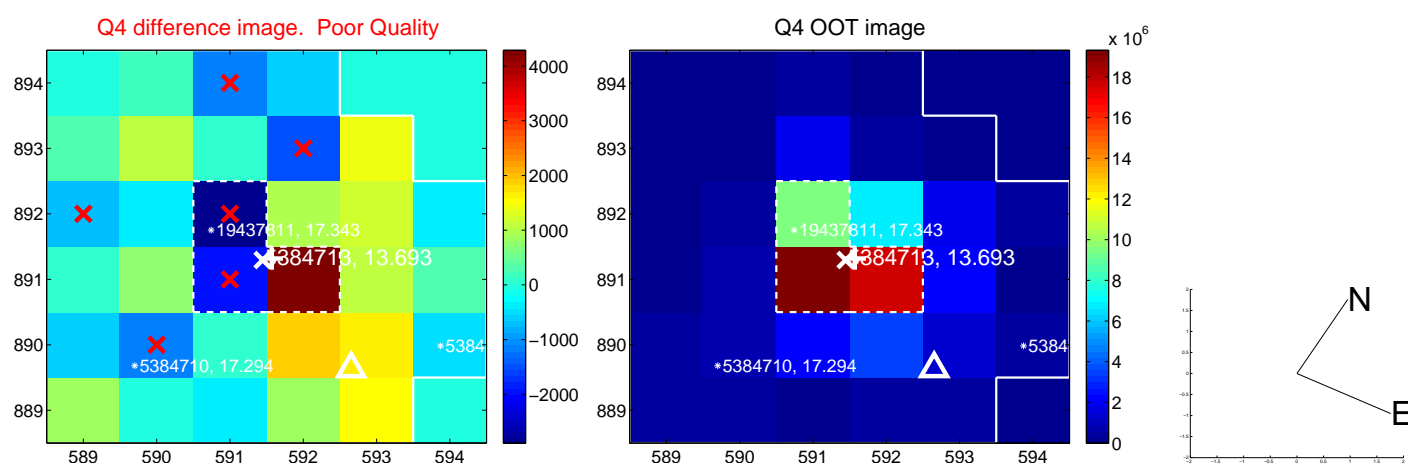
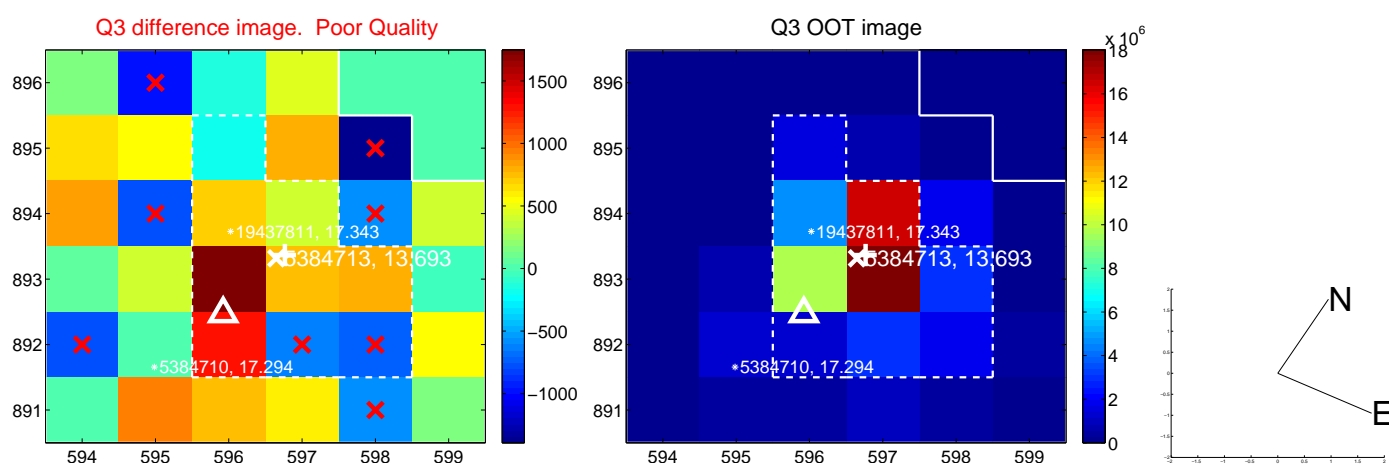
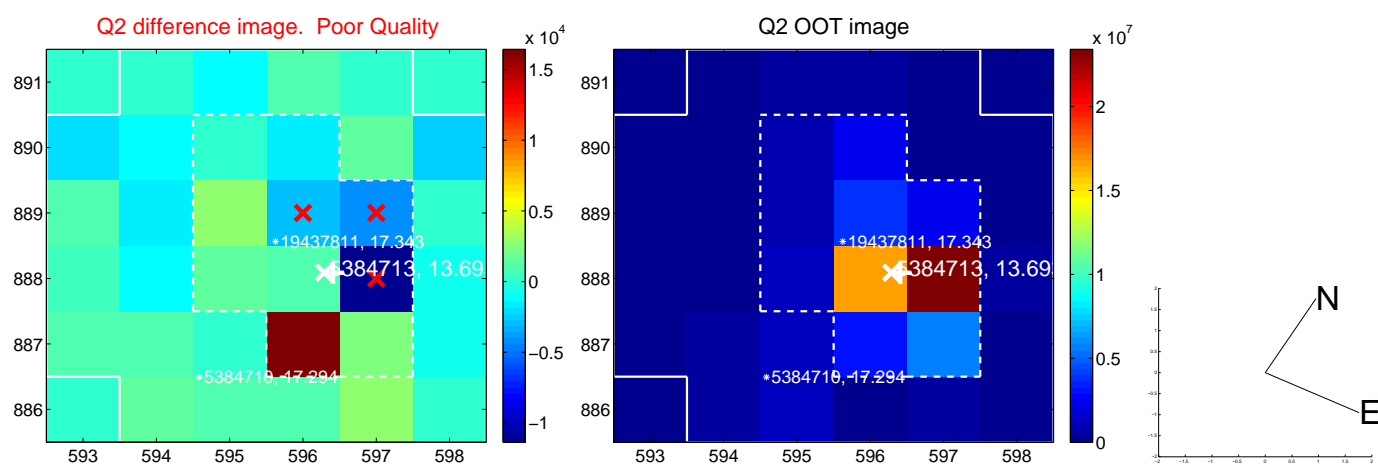
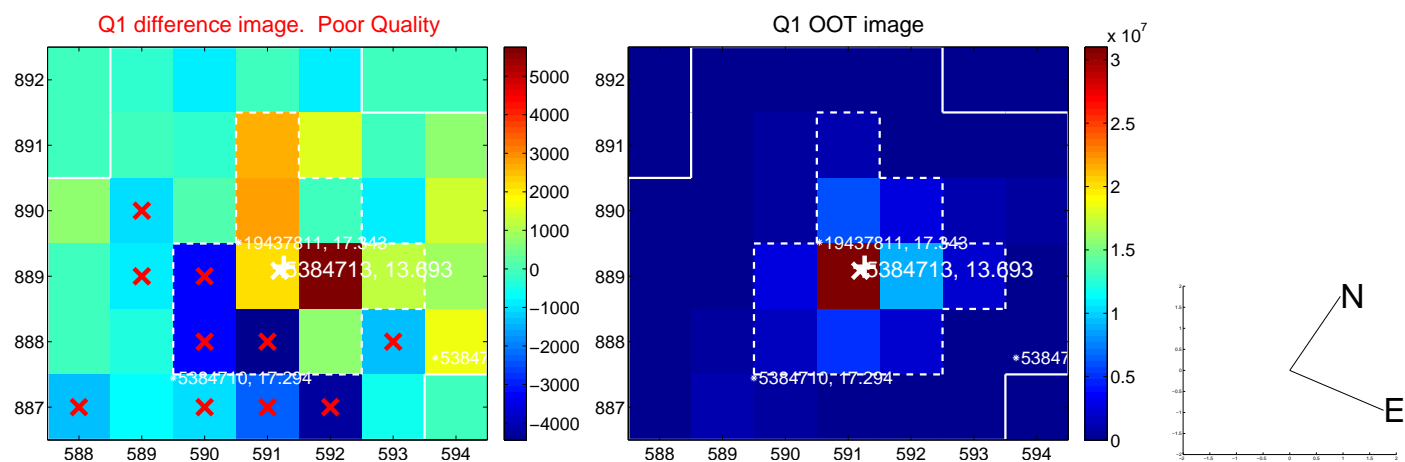


offset from photometric centroids

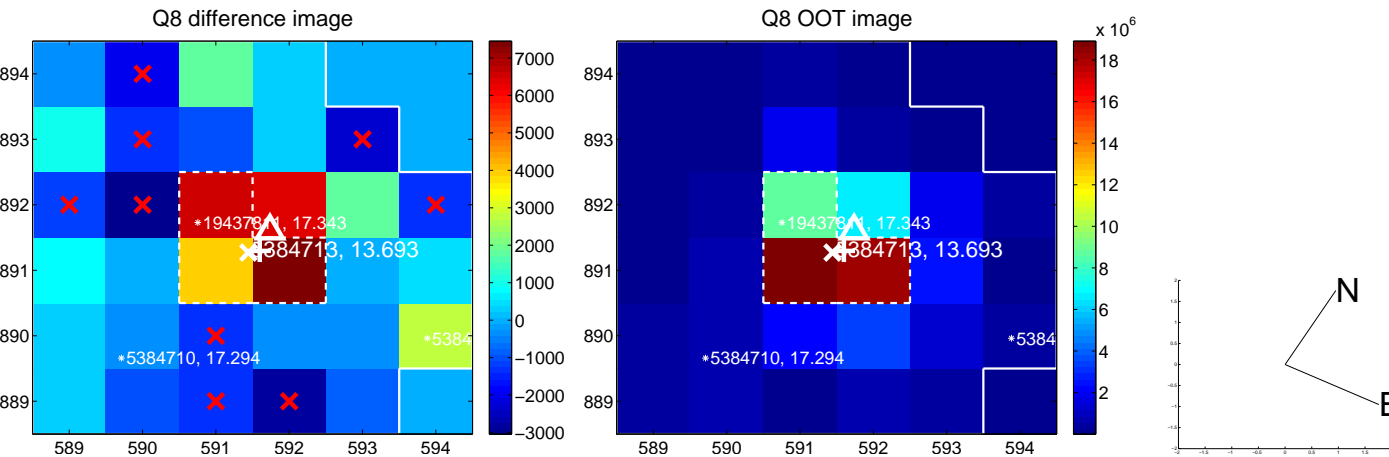
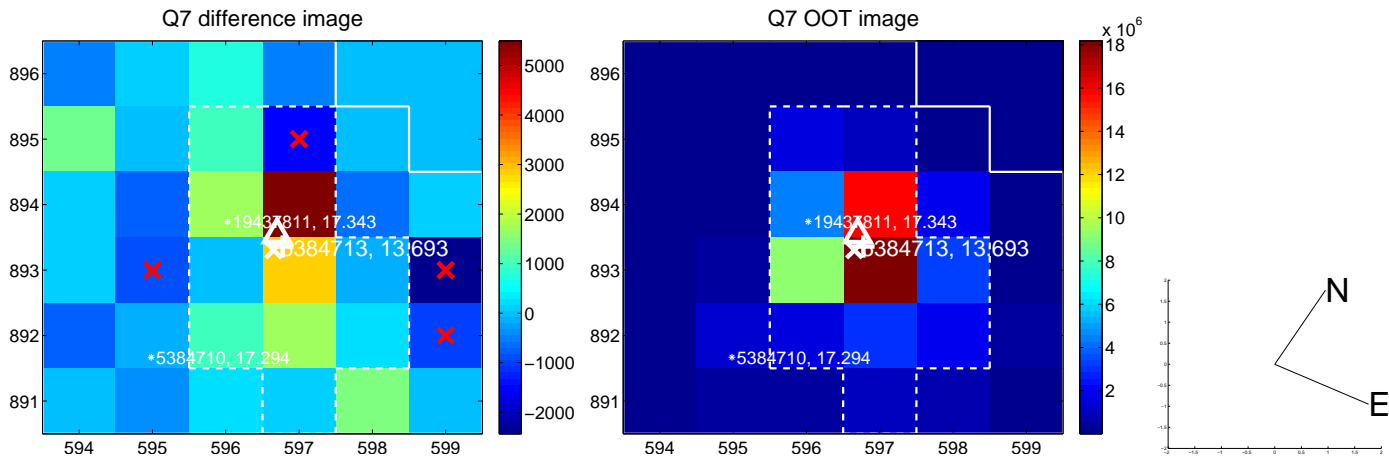
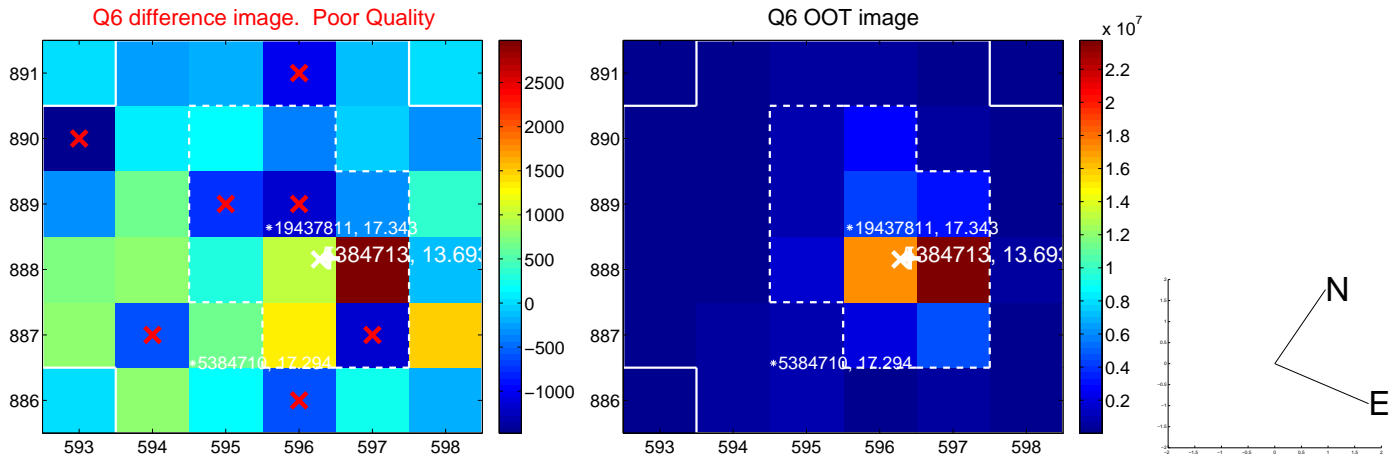
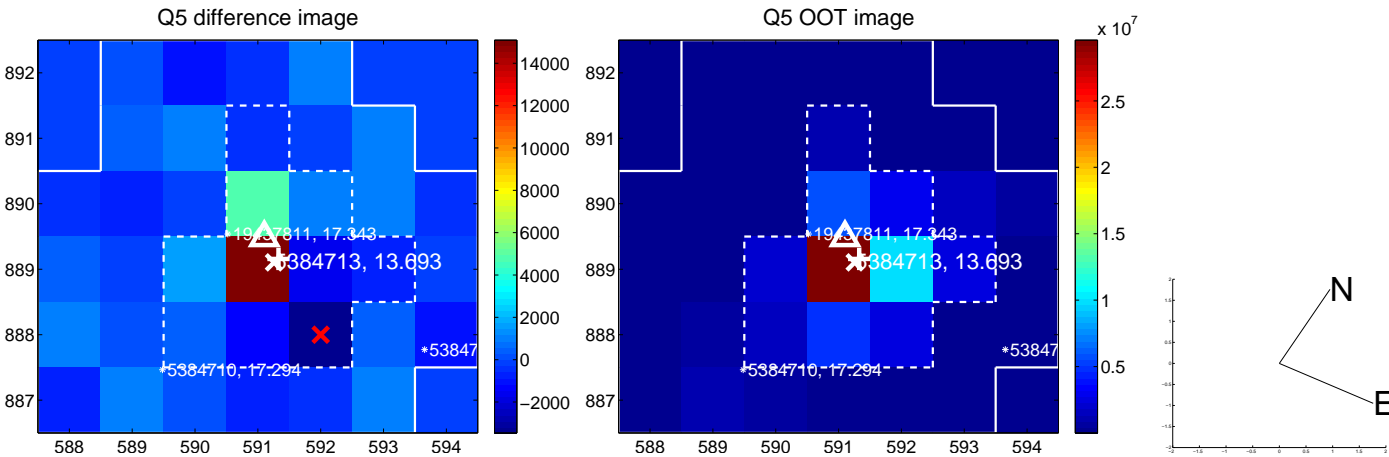


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

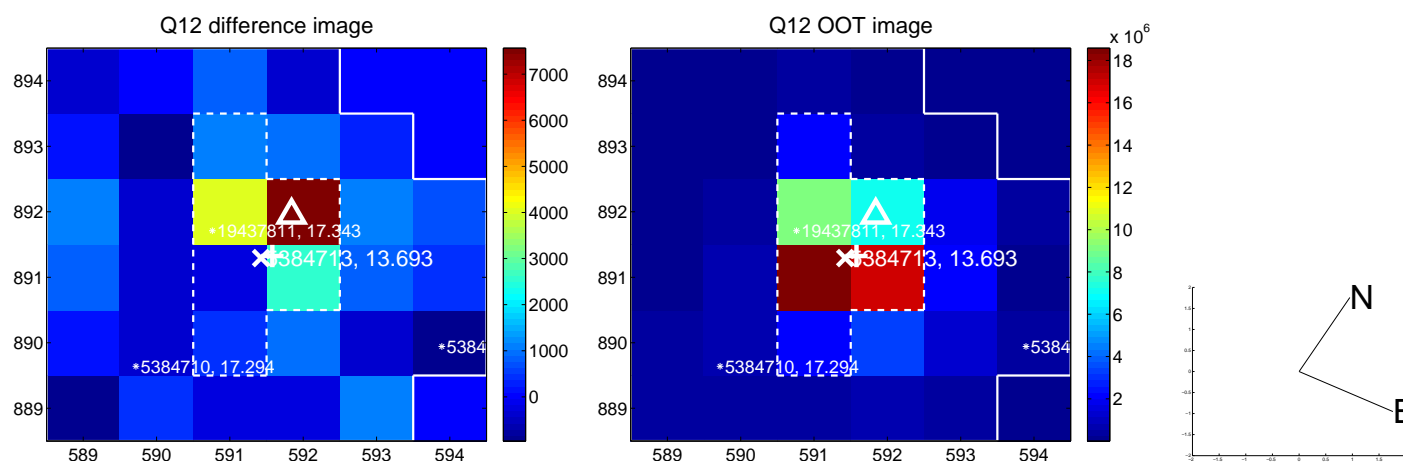
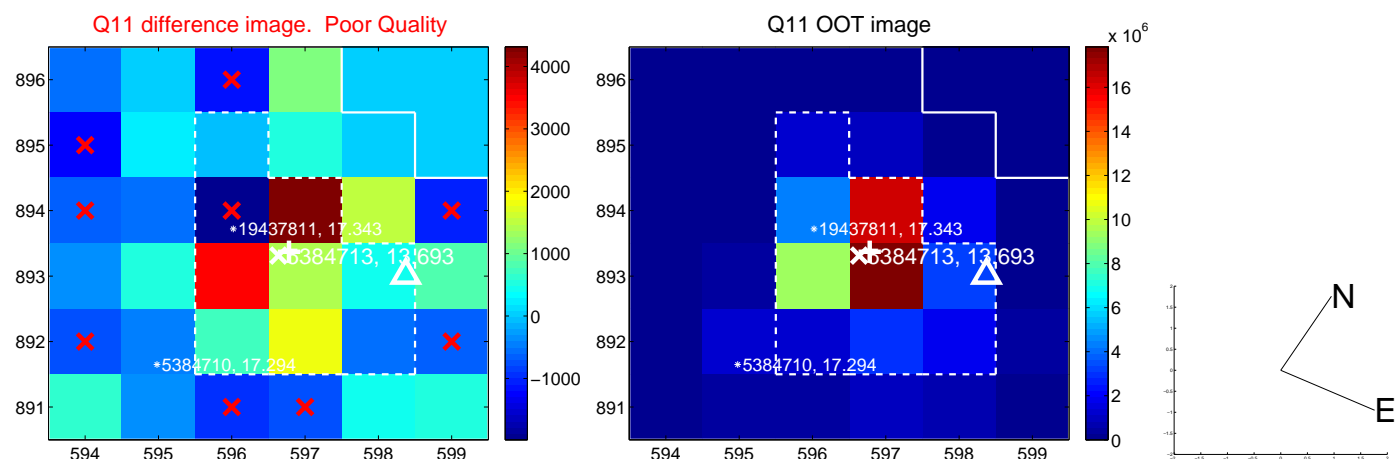
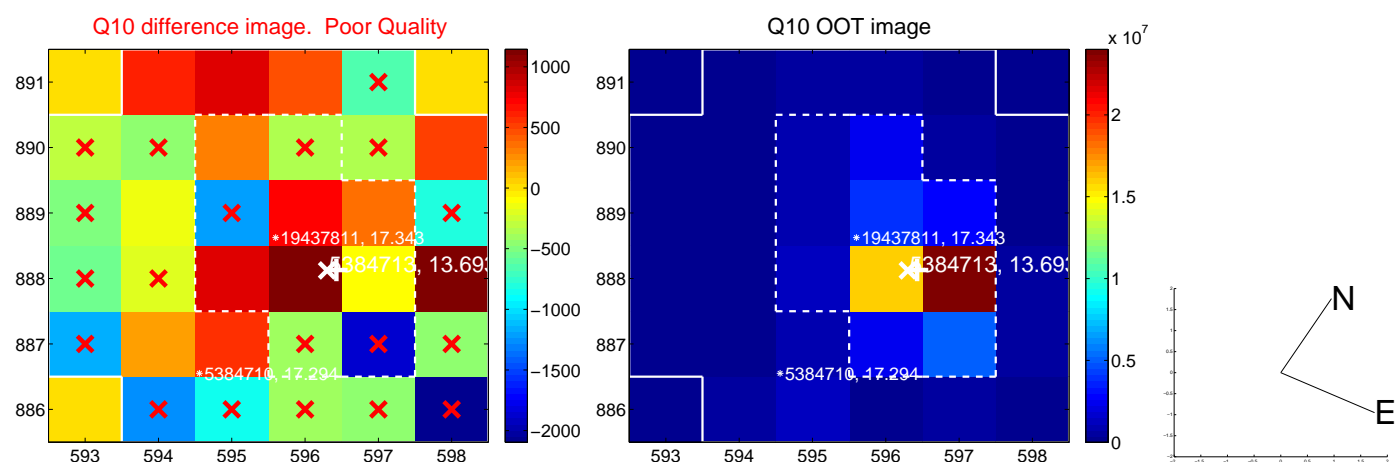
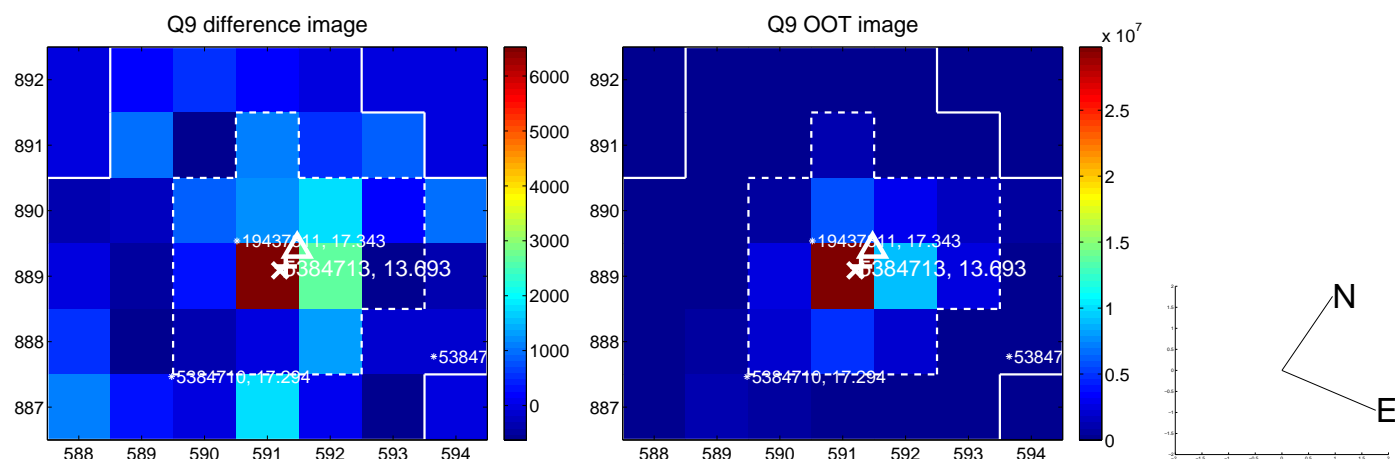
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



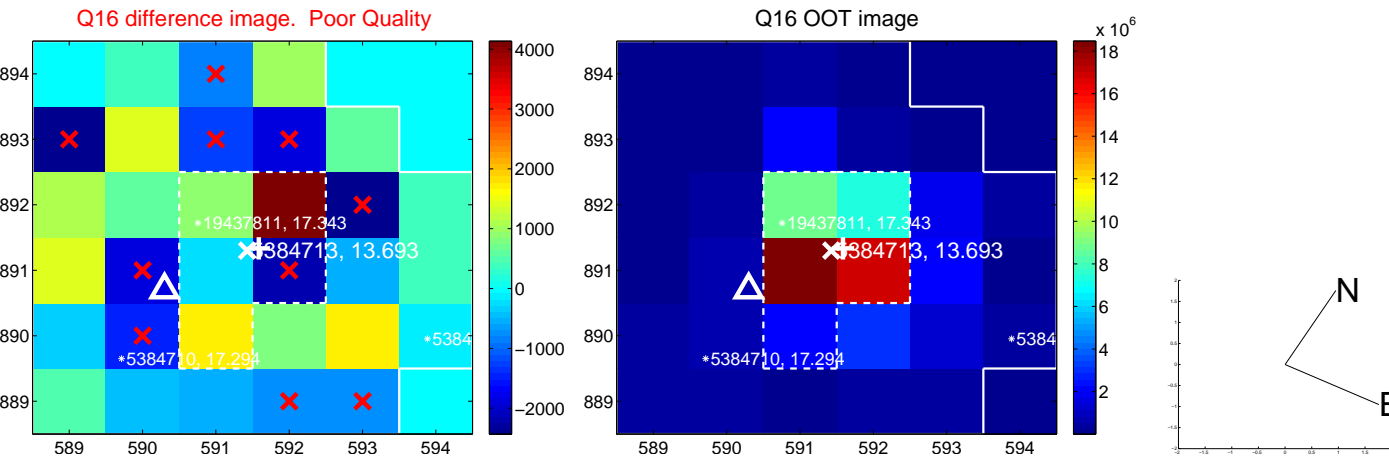
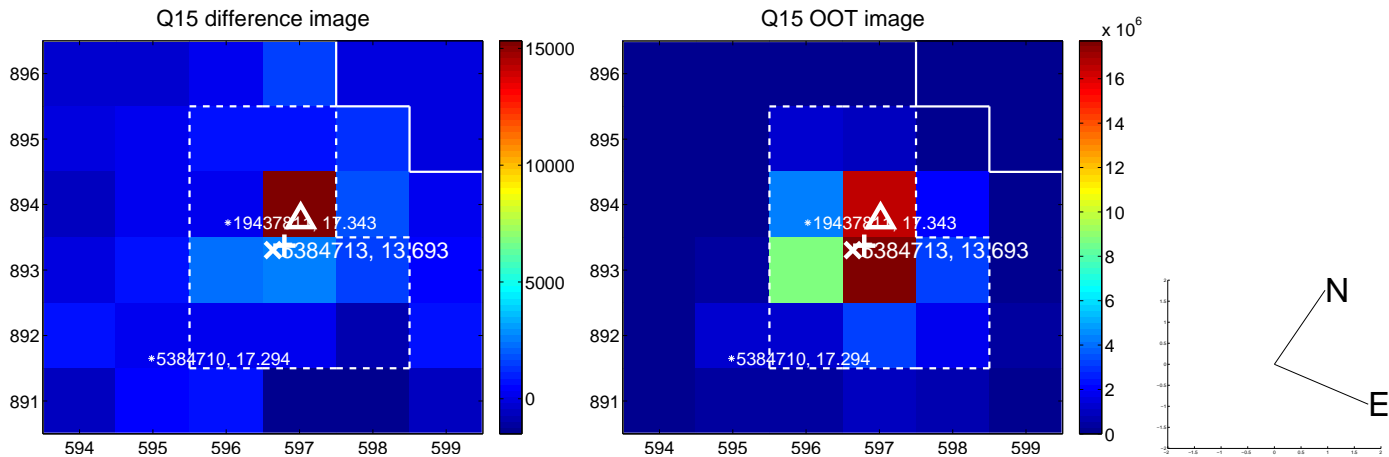
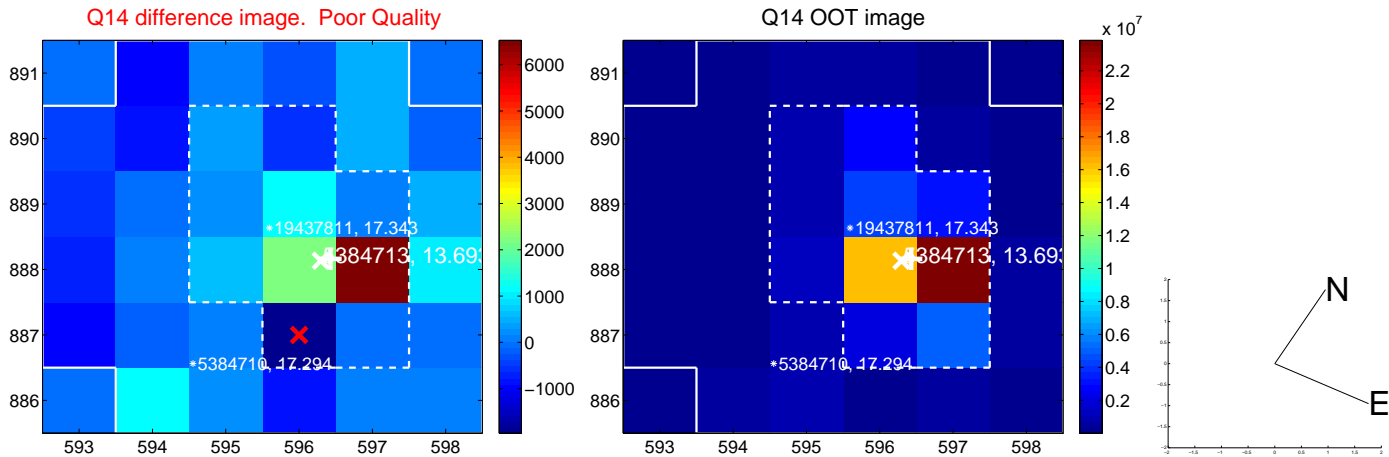
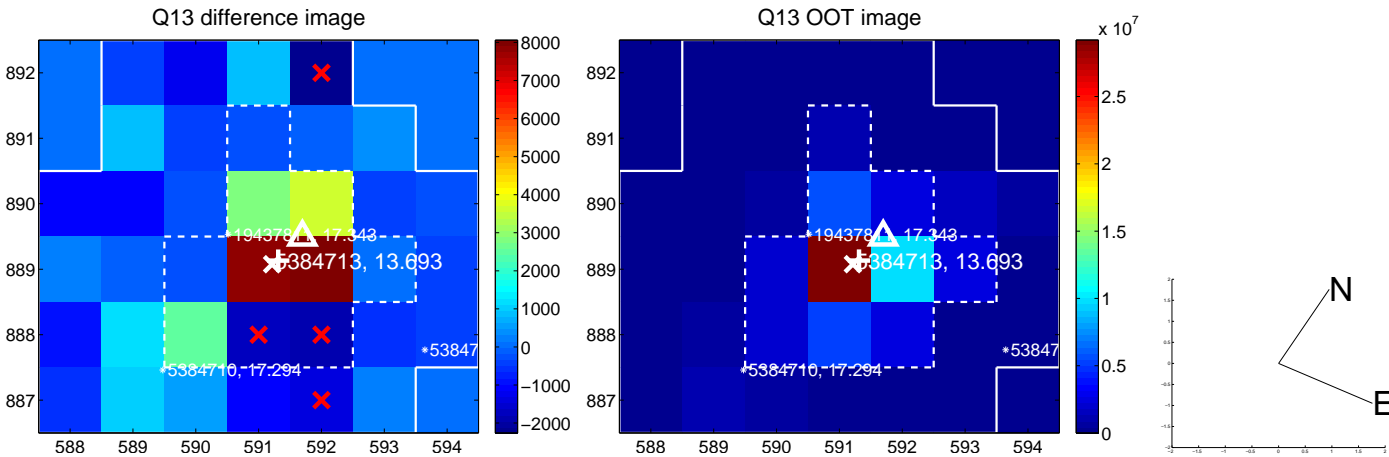
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



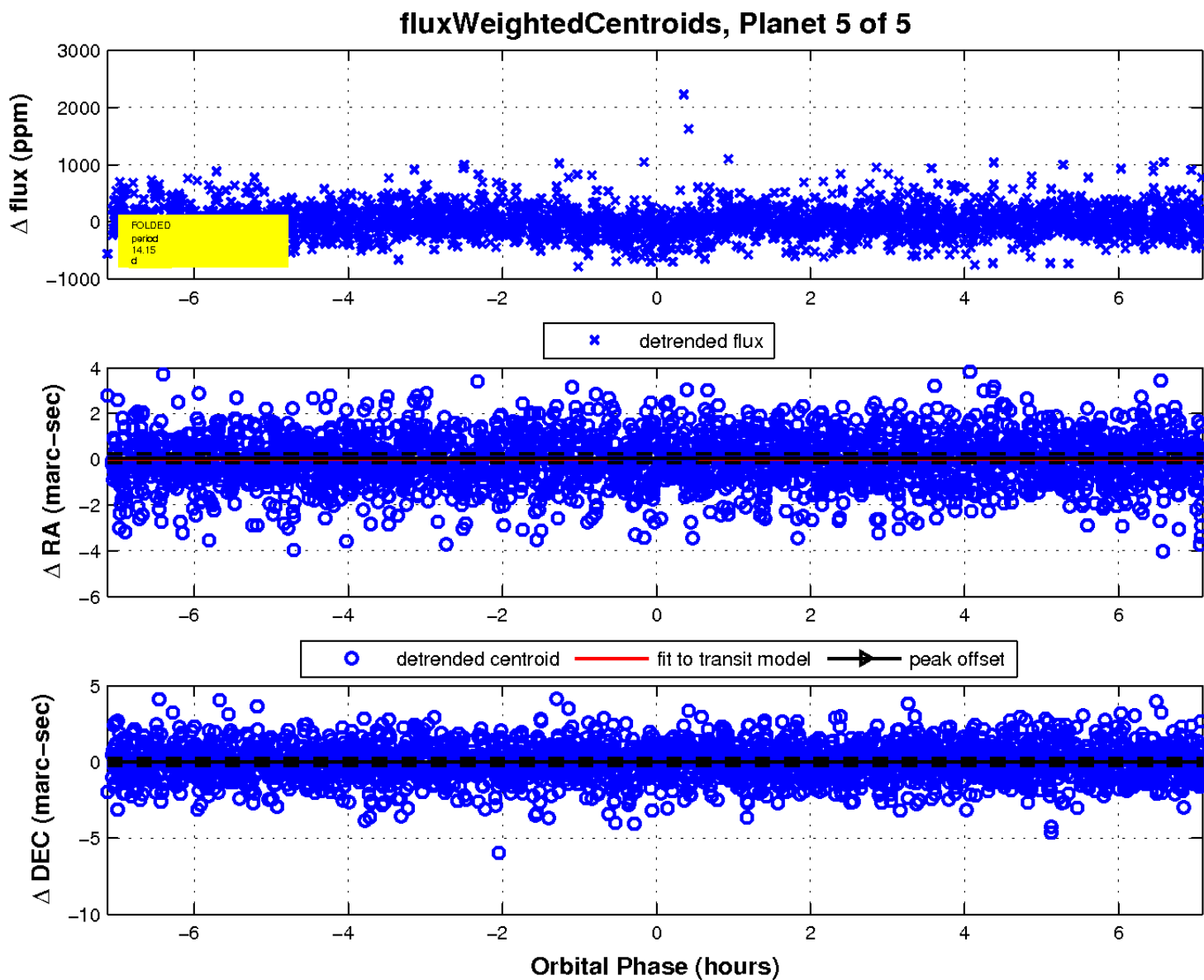
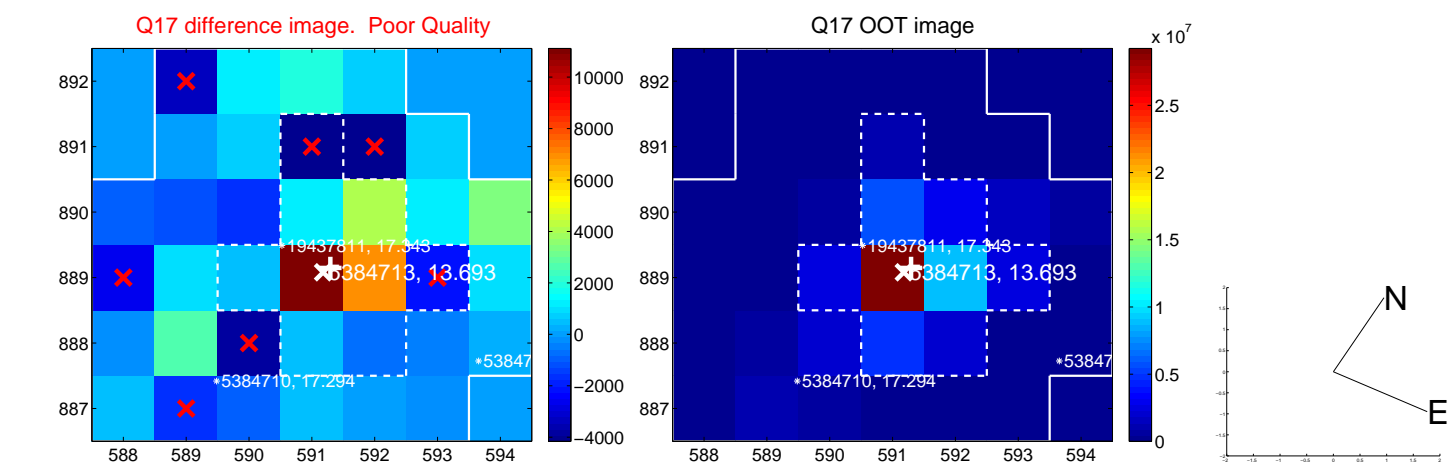
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

