

KIC 005725087

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})
005725087-01	OBS	0033.01	0.732392	131.726671	20.2	1.191	13.8	15.6	31.50	4448	17.60	0.00
005725087-02	OBS	No	528.791160	329.956315	1493.0	24.183	15.0	5.1	31.50	4448	146.29	144.12
005725087-03	OBS	No	0.732422	132.072454	20.9	1.678	12.8	13.6	31.50	4448	17.83	0.00
005725087-05	OBS	No	119.907233	179.488993	156.2	4.500	14.4	-1.0	31.50	4448	37.67	1042.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005725087-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_DV—HAS_SEC_TCE—CENT_SATURATED
005725087-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
005725087-03	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_SATURATED—HALO_GHOST
005725087-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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 005725087-01

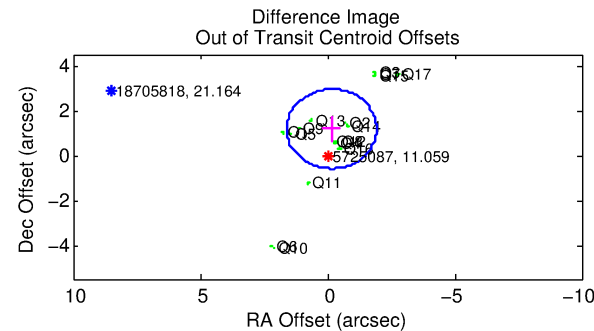
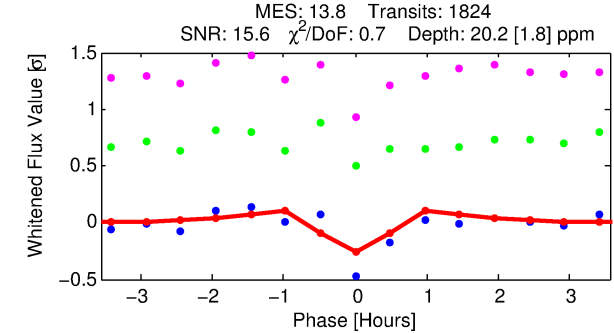
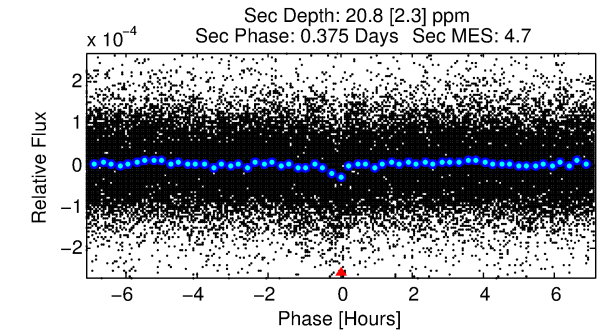
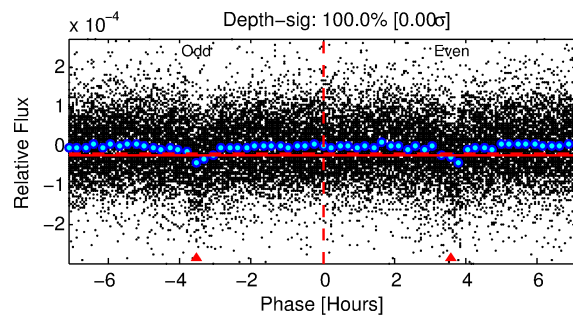
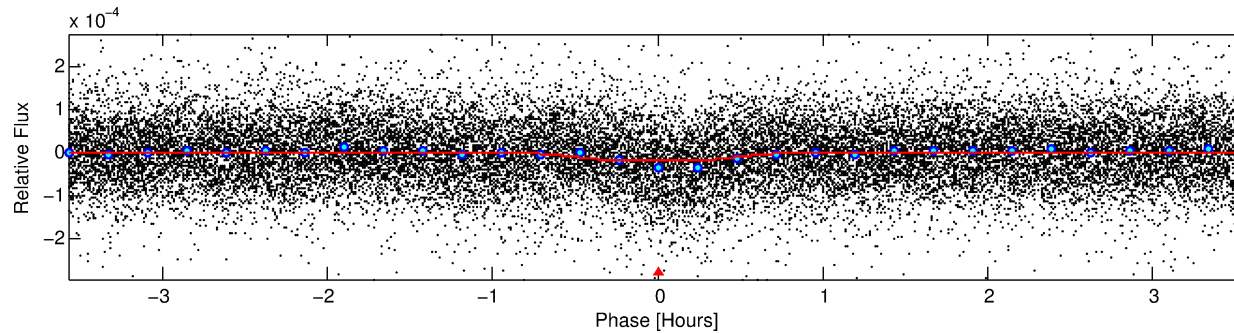
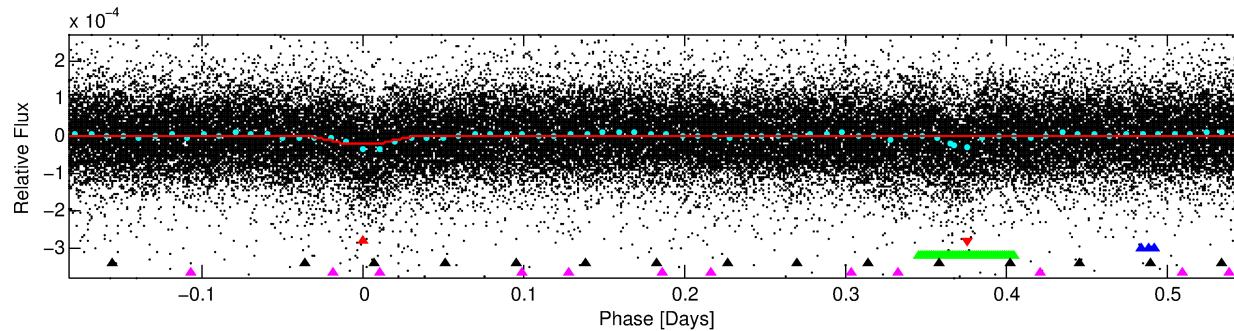
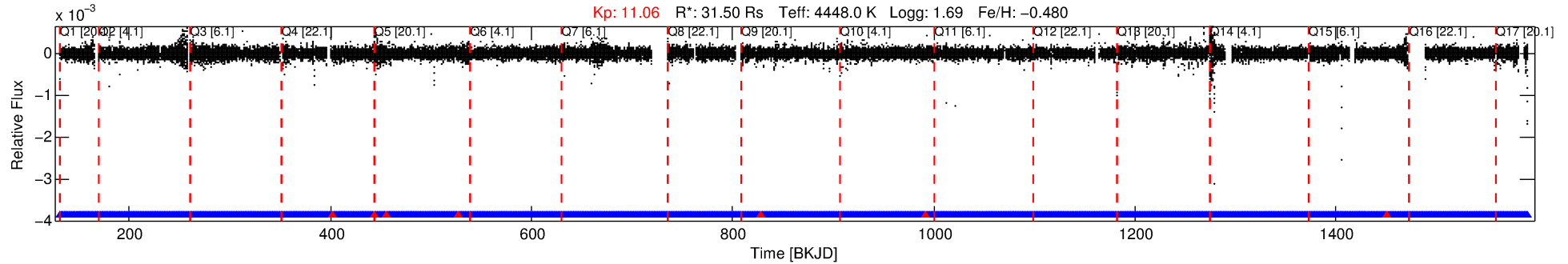
No Significant Match Found

DV One-Page Summary

KIC: 5725087 Candidate: 1 of 5 Period: 0.732 d

KOI: K00033 Corr: No Ephemeris Match

Kp: 11.06 R*: 31.50 Rs Teff: 4448.0 K Logg: 1.69 Fe/H: -0.480



DV Fit Results:

Period = 0.73239 [0.00001] d
Epoch = 131.7267 [0.0009] BKJD
Rp/R* = 0.0051 [0.0009]
a/R* = 2.30 [1.13]
b = 0.90 [0.13]
Seff = N/A
Teq = N/A
Rp = 17.60 [4.93] Re
a = N/A
Ag = N/A
Teffp = N/A

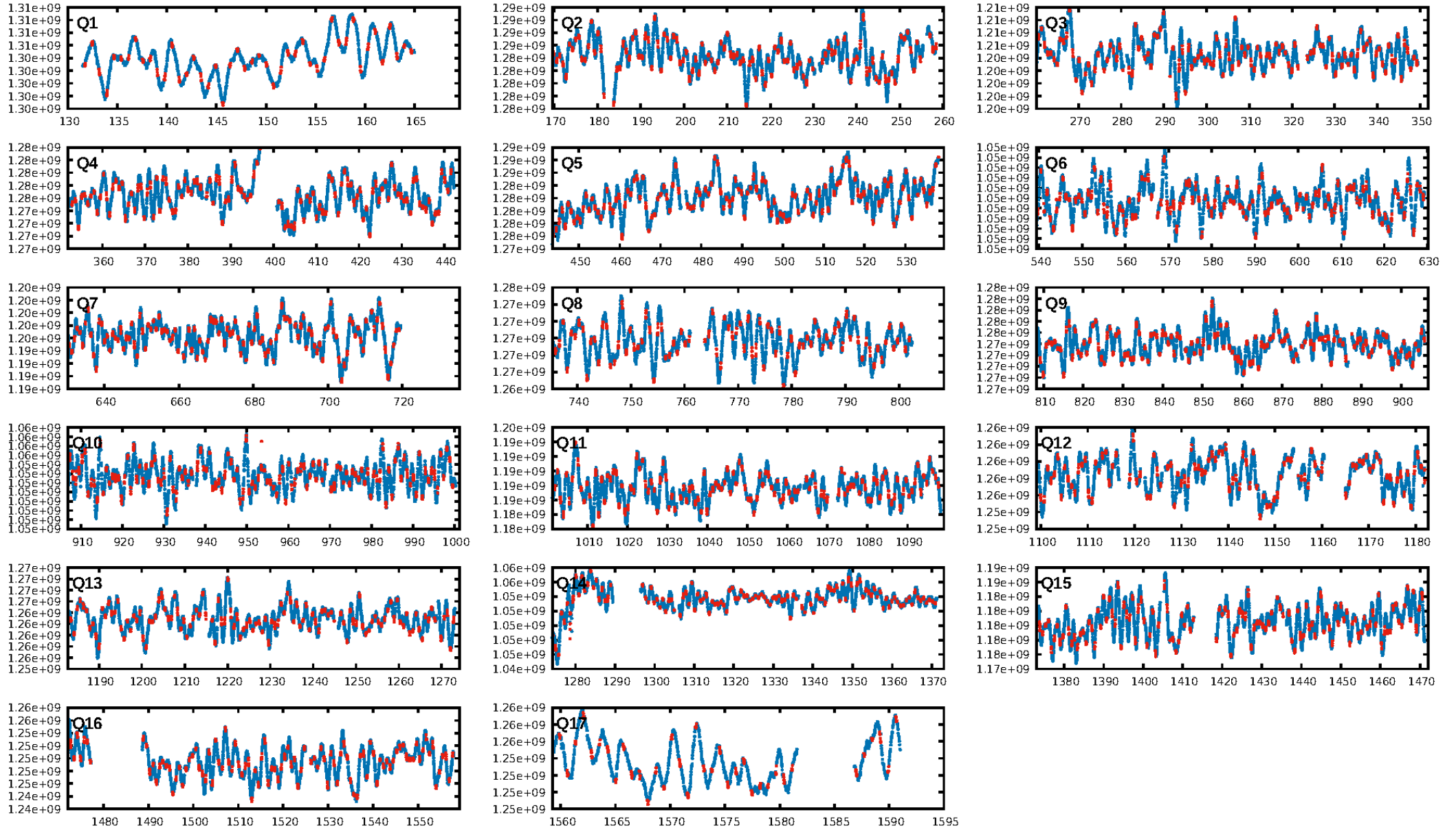
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1735/1742]
GhostDiagnostic-chr: 0.4394
Centroid-sig: 0.0%
Centroid-so: 3.460 arcsec [4.80σ]
OotOffset-rm: 1.188 arcsec [2.02σ]
KicOffset-rm: 1.296 arcsec [2.43σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

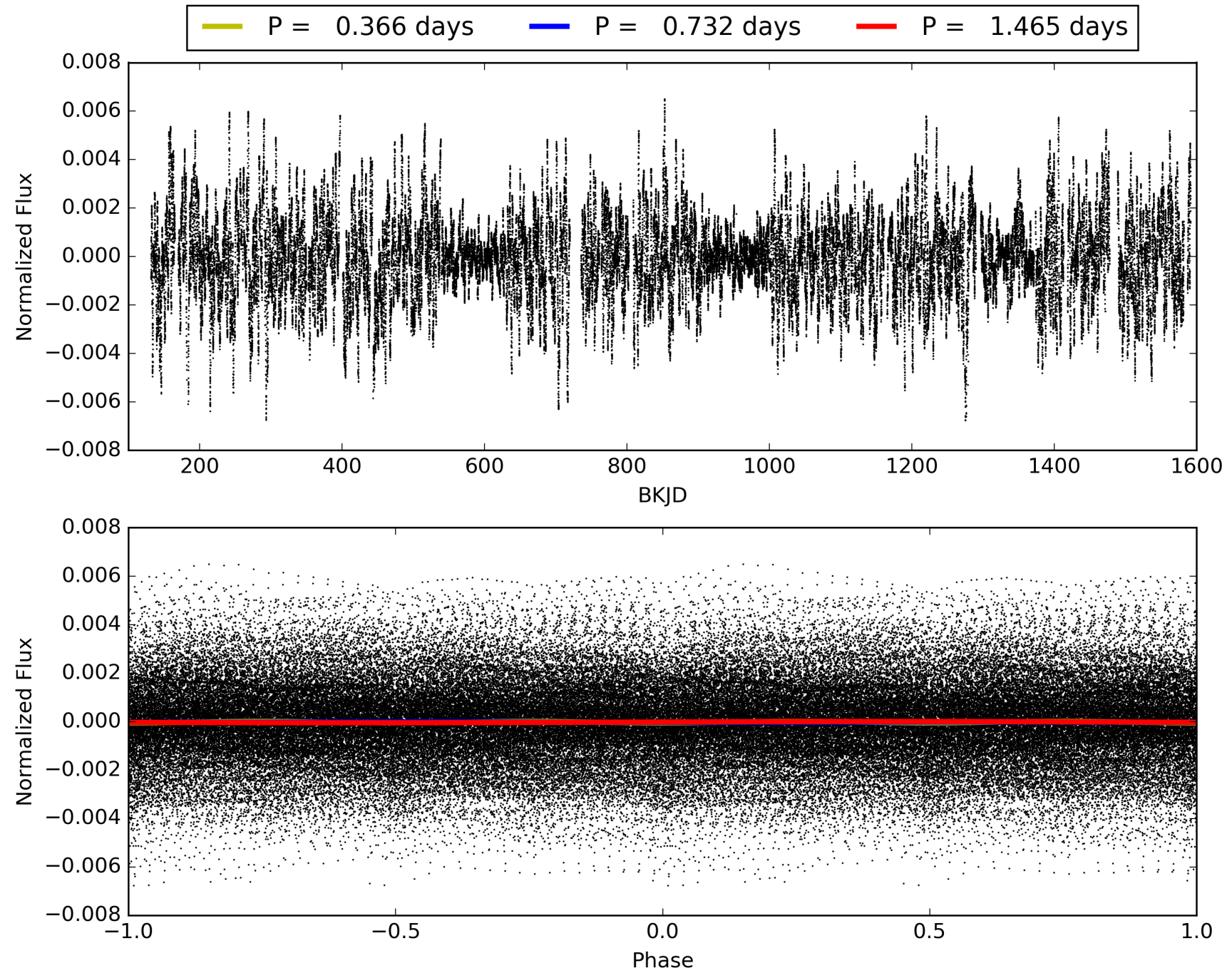
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:43:33 Z

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

TCE 005725087-01, PDC Light Curves

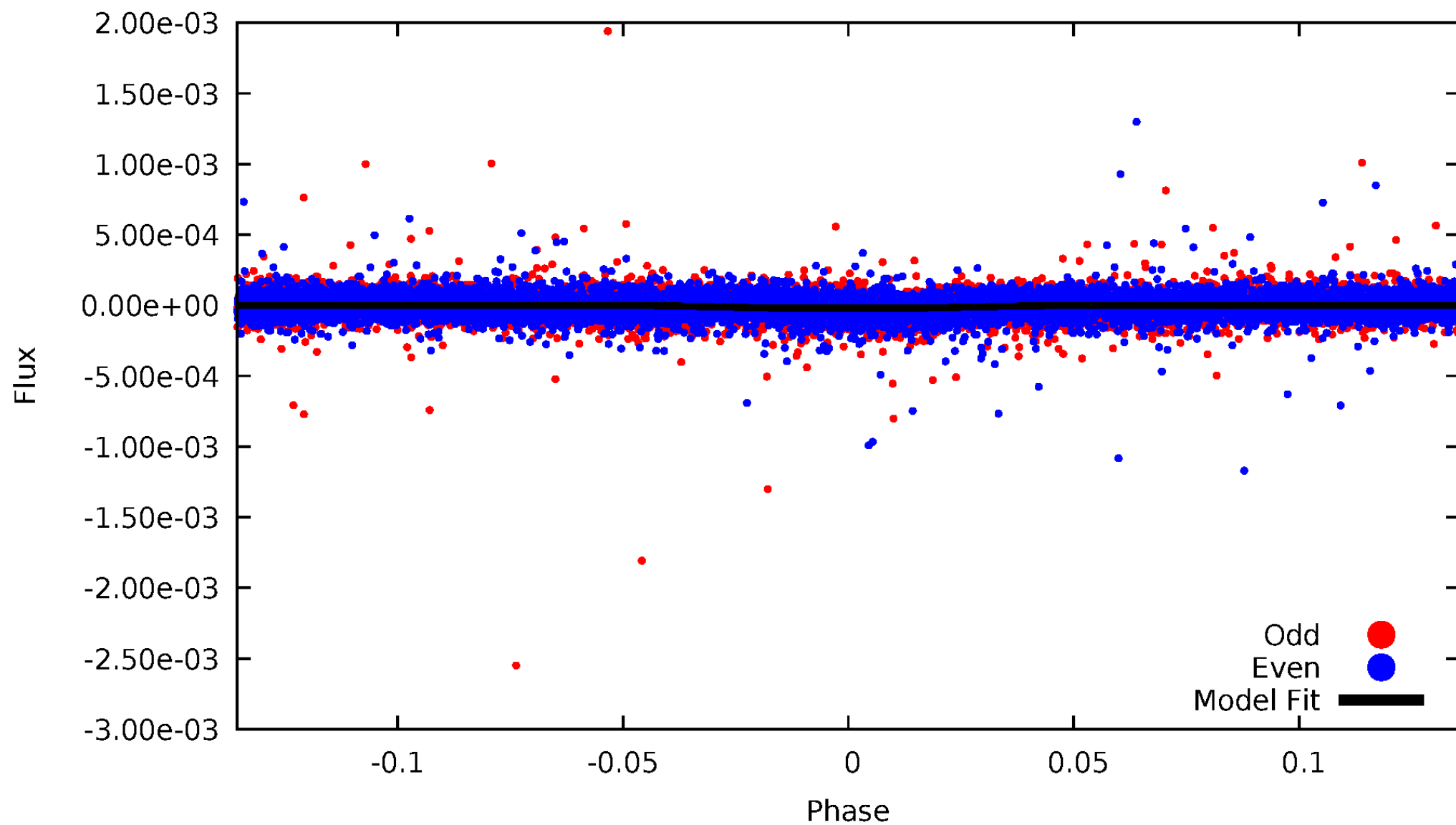


TCE 005725087-01



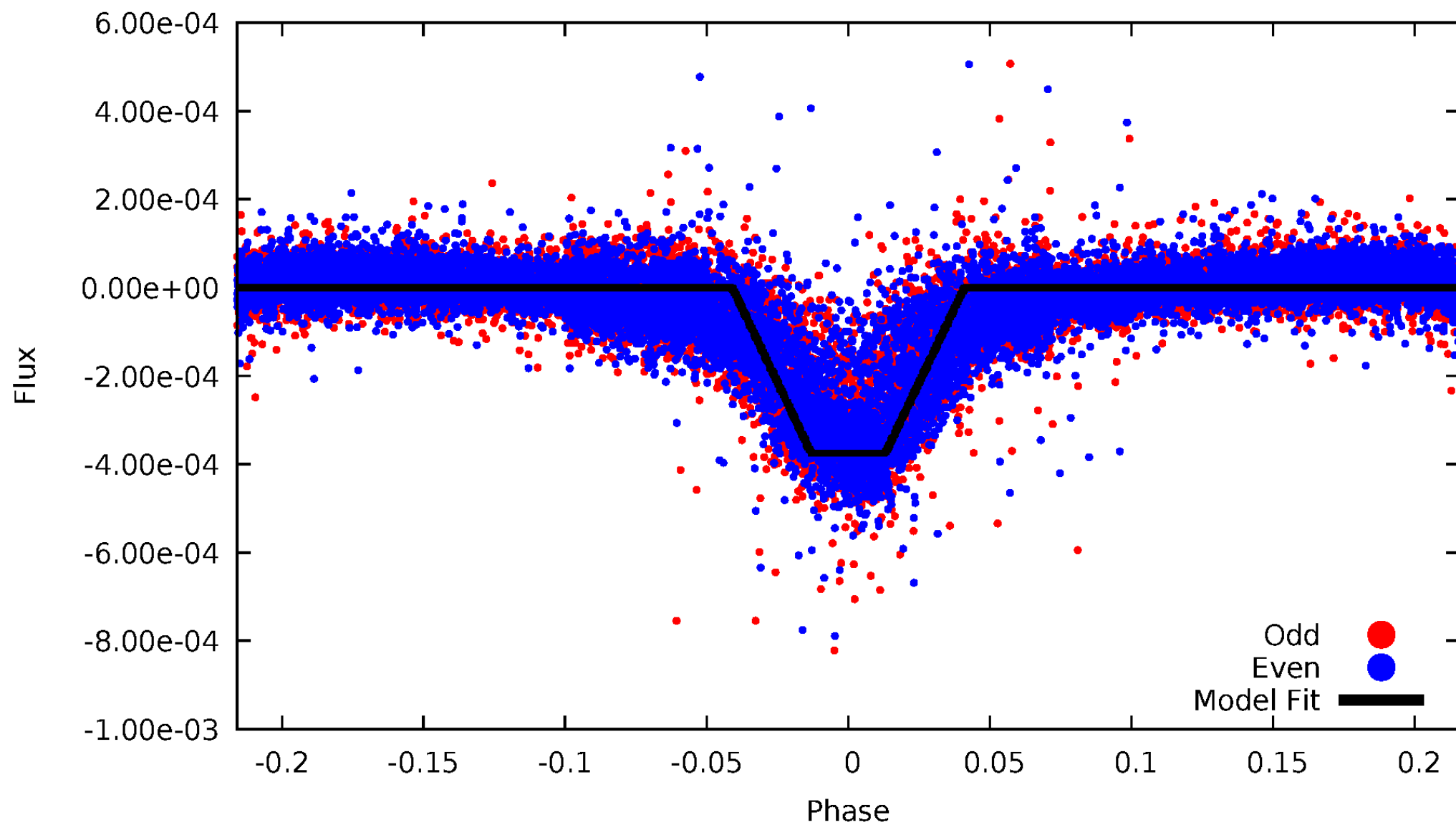
DV Odd/Even

TCE 005725087-01



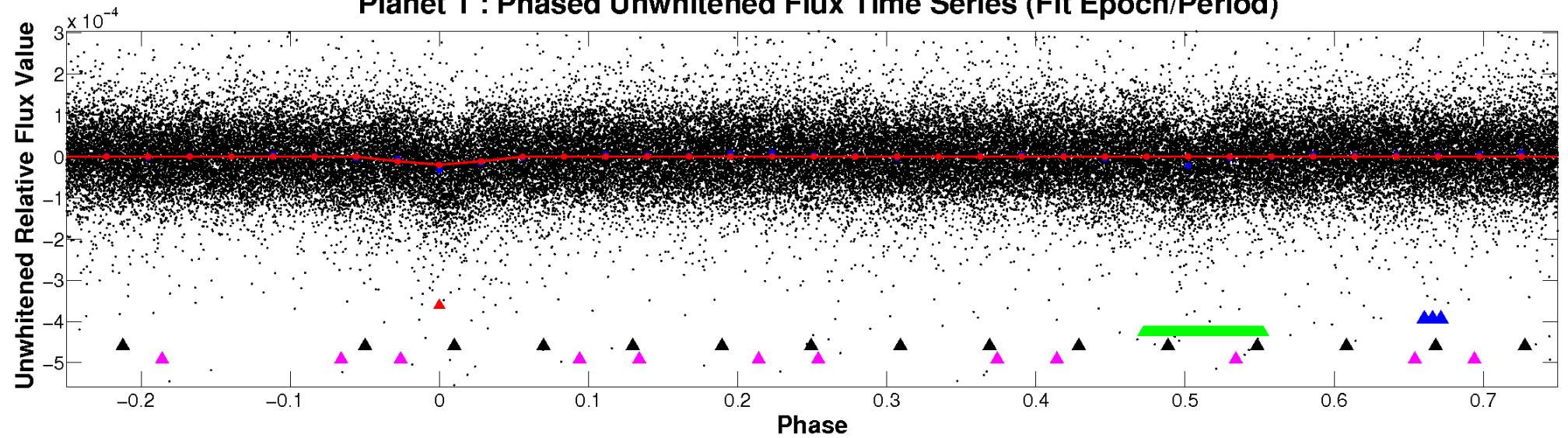
ALT Odd/Even

TCE 005725087-01

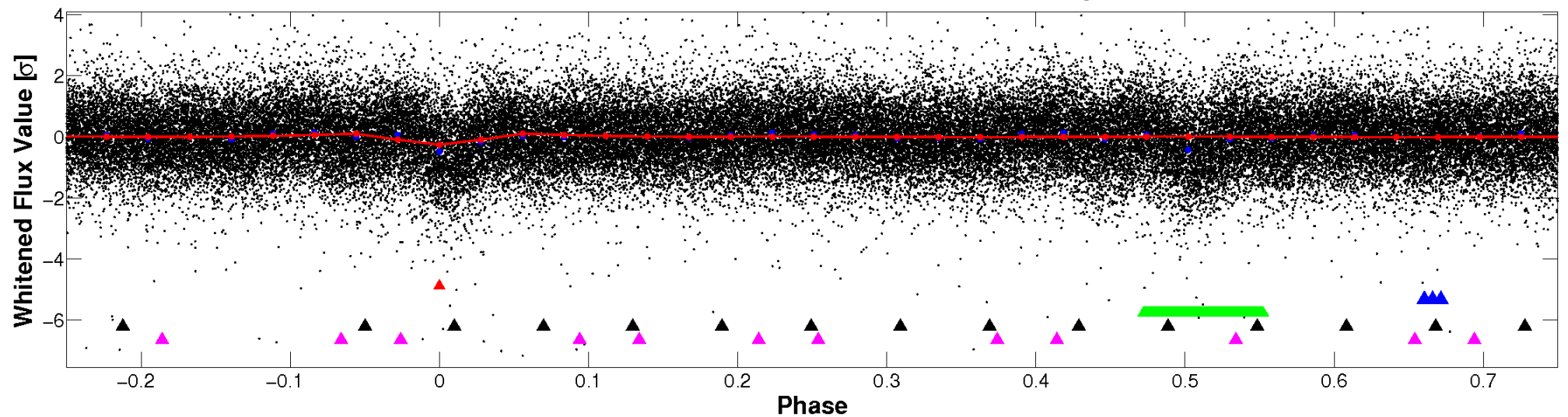


Non-Whitened Vs. Whitened Light Curve

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

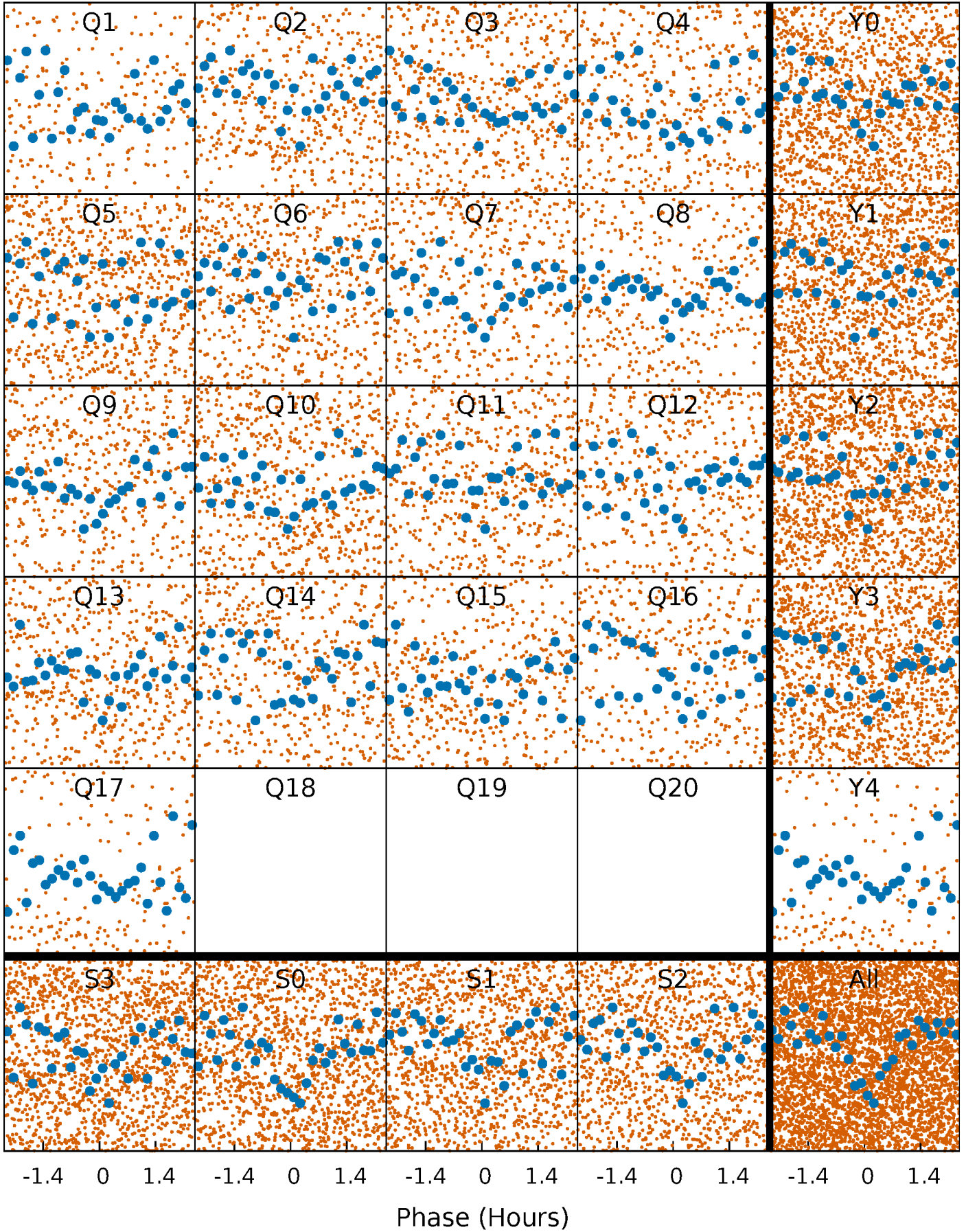


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



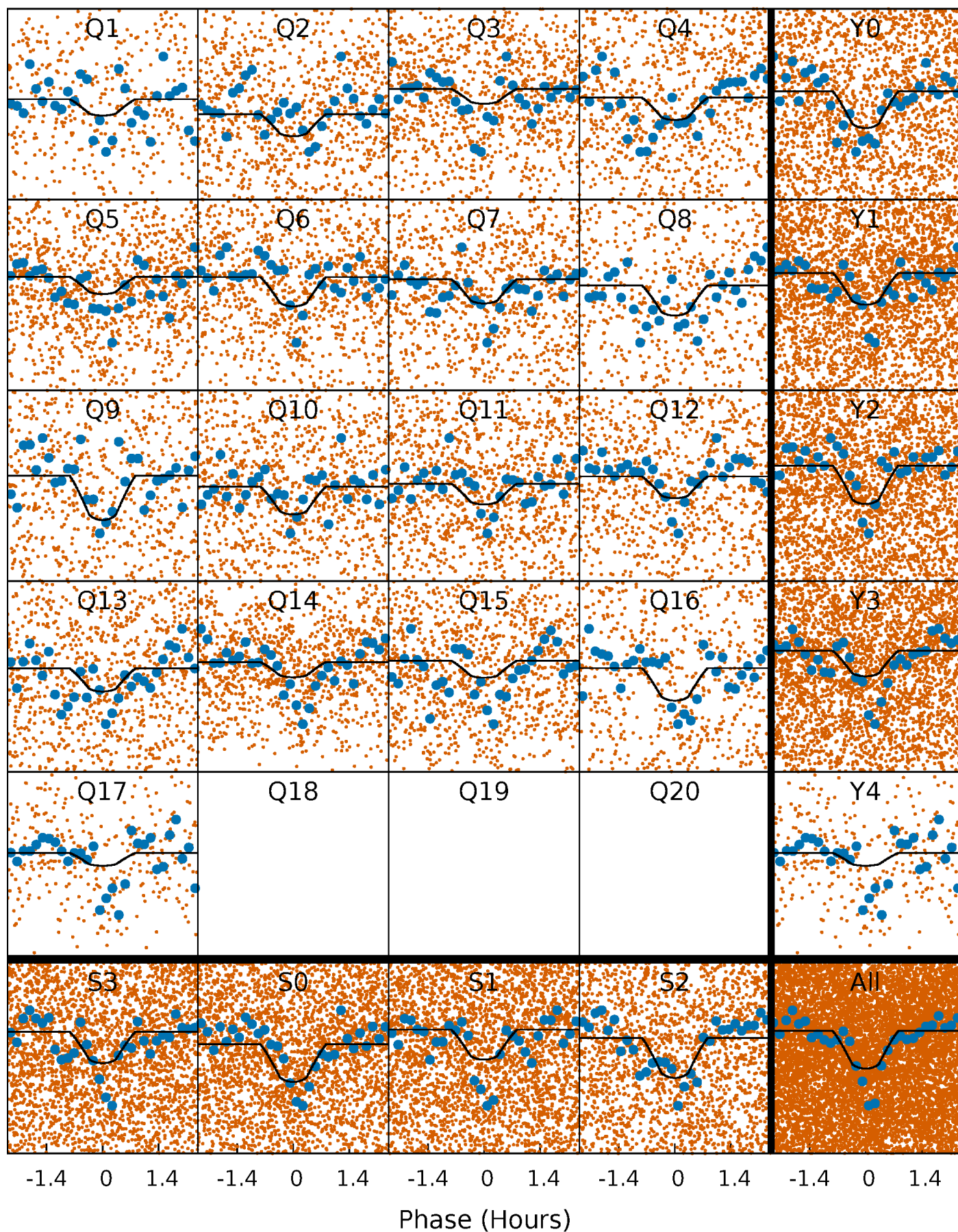
PDC Quarter-Phased Transit Curves

TCE 005725087-01 P= 0.732392 Days $T_0=131.726671$ (BKJD)



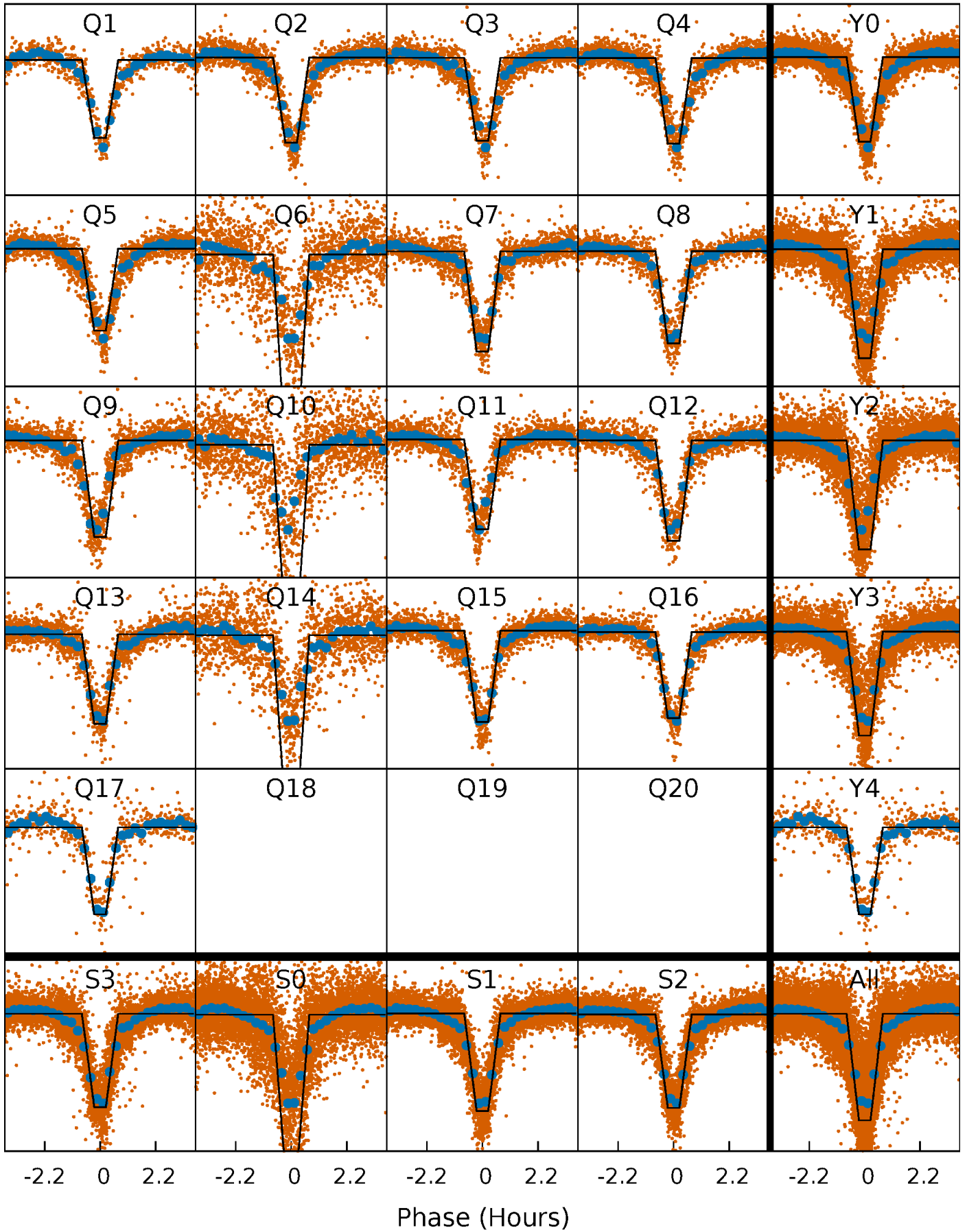
DV Quarter-Phased Transit Curves

TCE 005725087-01 P= 0.732392 Days $T_0=131.726671$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

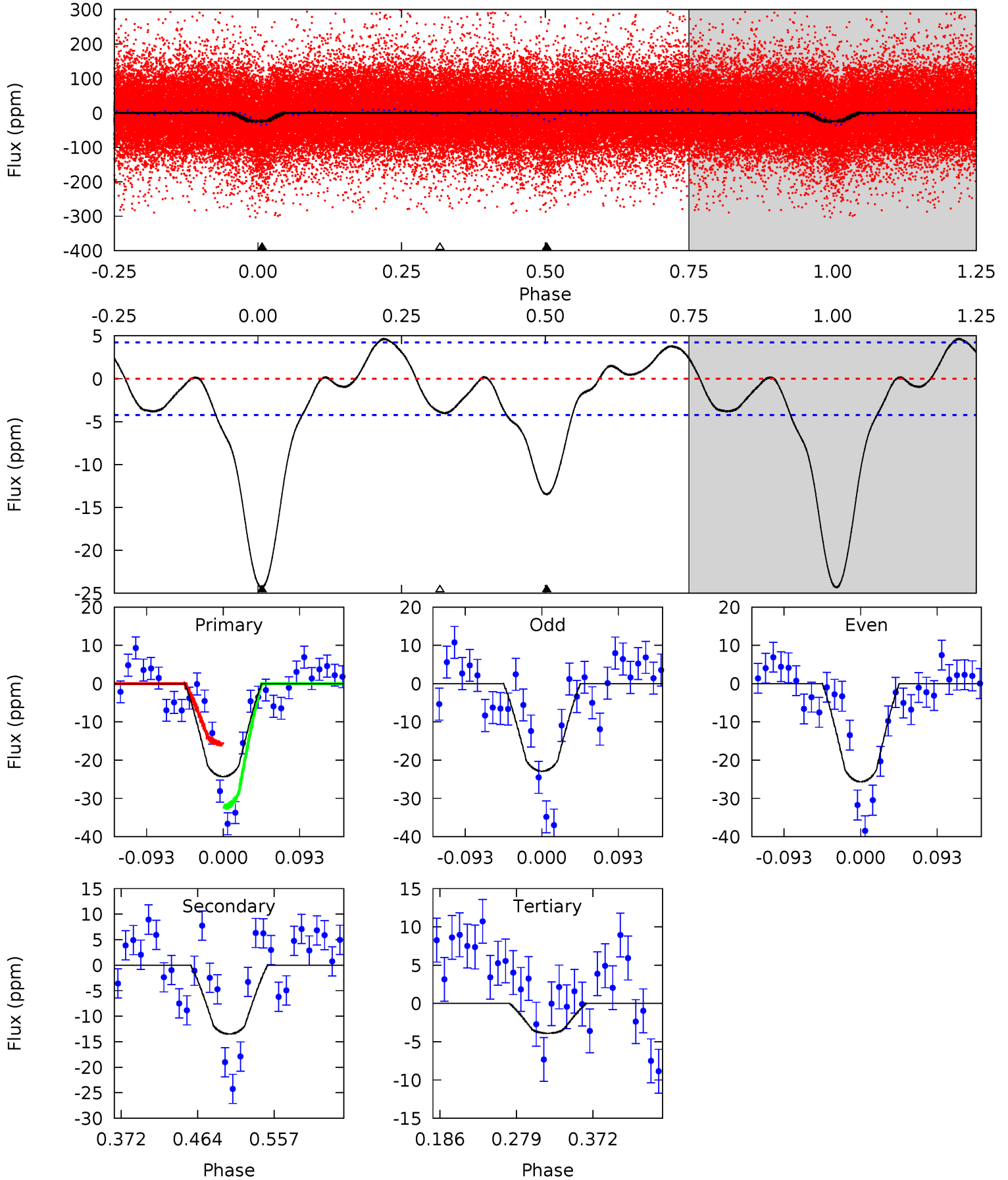
TCE 005725087-01 $P = 0.732400$ Days $T_0 = 131.723775$ (BKJD)



DV Model-Shift Uniqueness Test

005725087-01, P = 0.732392 Days, E = 130.994279 Days

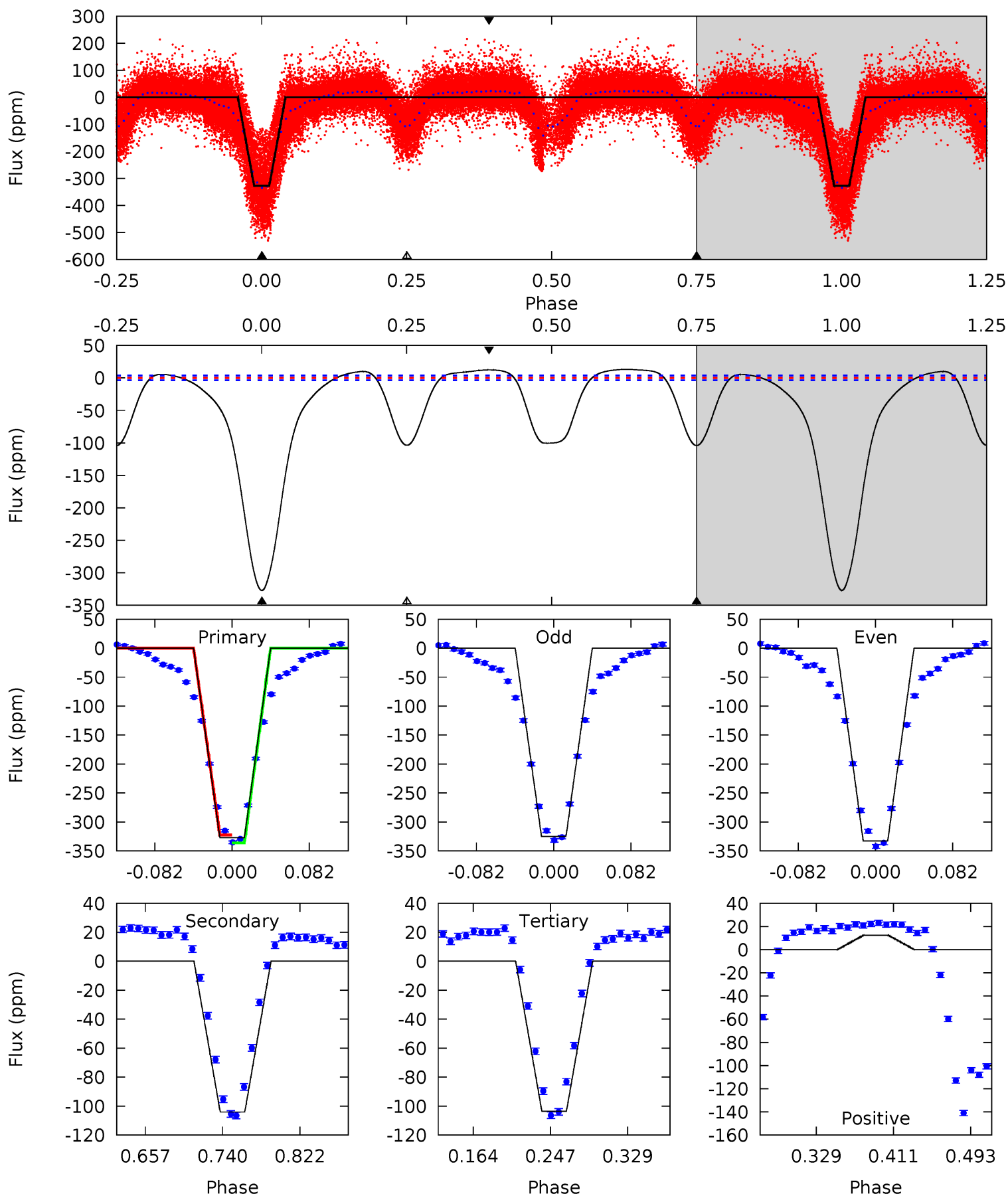
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	14.6	4.22	0	4.58	1.68	2.60	22.1	26.3	10.4	14.6	1.51	1.28	0.16	9.00



Alt Model-Shift Uniqueness Test

005725087-01, P = 0.732400 Days, E = 130.991375 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
417.3	132.7	132.2	15.9	4.61	1.74	44.4	285.1	401.4	0.52	116.8	4.91	0.95	0.04	8.88



Stellar Parameters For KIC 005725087

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4448^{+88}_{-122}	$1.694^{+0.033}_{-0.027}$	$-0.480^{+0.200}_{-0.250}$	$31.500^{+1.323}_{-7.056}$	$1.789^{+0.079}_{-0.708}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+42%/-52%	+4%/-22%	+4%/-40%	+32%/-9%
Source	PHO54	AST54	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 005725087-01 / KOI 0033.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 1	$17.44^{+3.11}_{-2.95}$	11073^{+282}_{-328}	-9068^{+444}_{-385}	$0.009^{+0.004}_{-0.003}$
Alt.	-104 ± 1	$67.06^{+3.61}_{-4.49}$	11060^{+277}_{-303}	-9107^{+419}_{-380}	$0.005^{+0.001}_{-0.000}$

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

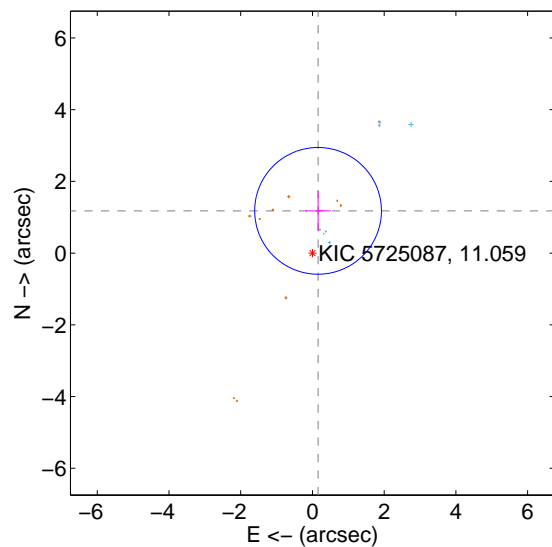
Supplemental centroid analysis for 005725087-01. **Kepler magnitude: 11.06.** Transit SNR 15.55

There are 7 quarters with good PRF difference image offsets

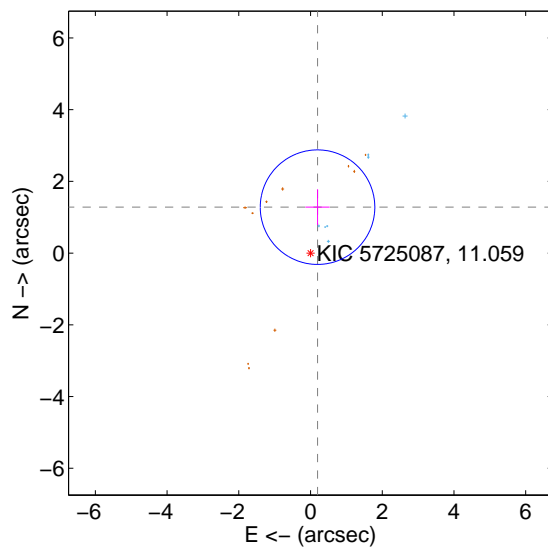
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.188 ± 0.589	2.02	-0.157 ± 0.357	1.178 ± 0.557
PRF-fit source offset from KIC position	1.296 ± 0.532	2.43	-0.195 ± 0.336	1.281 ± 0.500
photometric centroid source offset	3.46 ± 0.72	4.80	-2.05 ± 0.68	2.79 ± 0.74

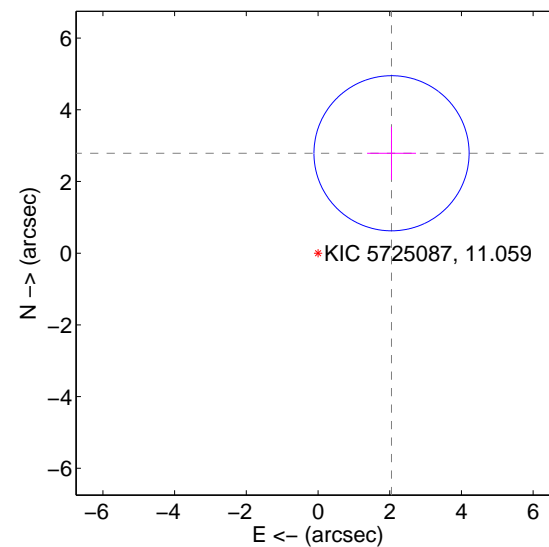
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

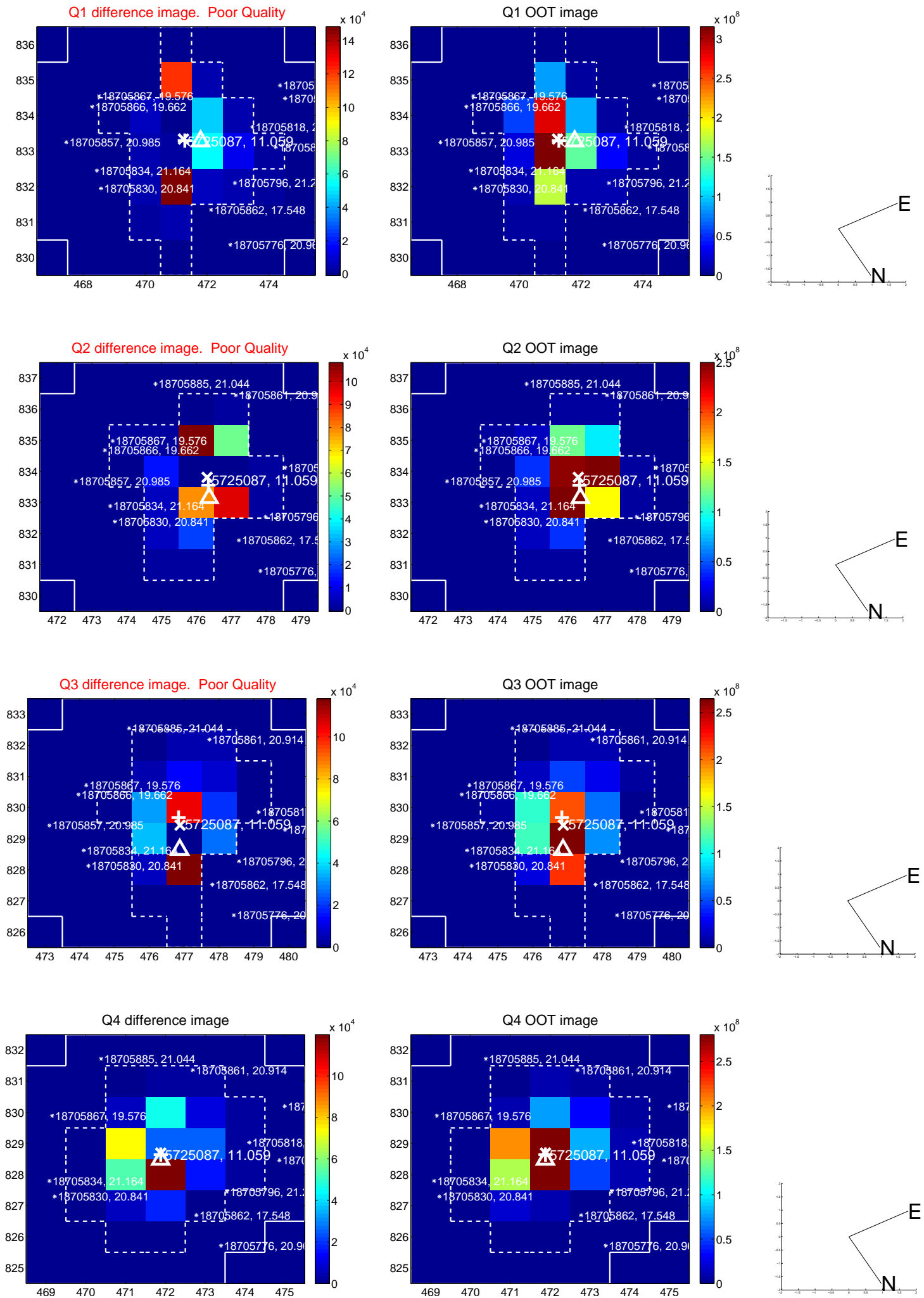


offset from photometric centroids

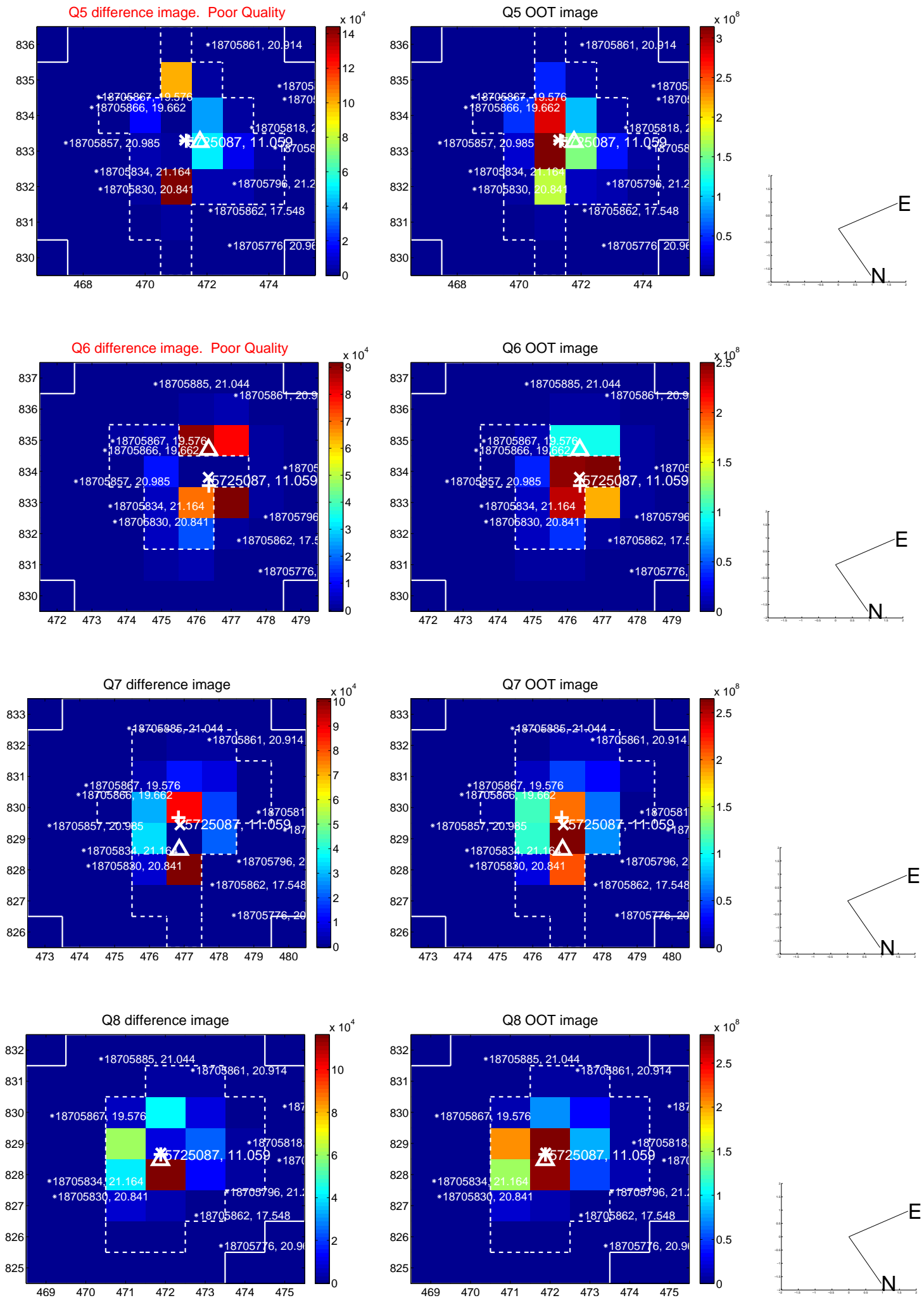


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

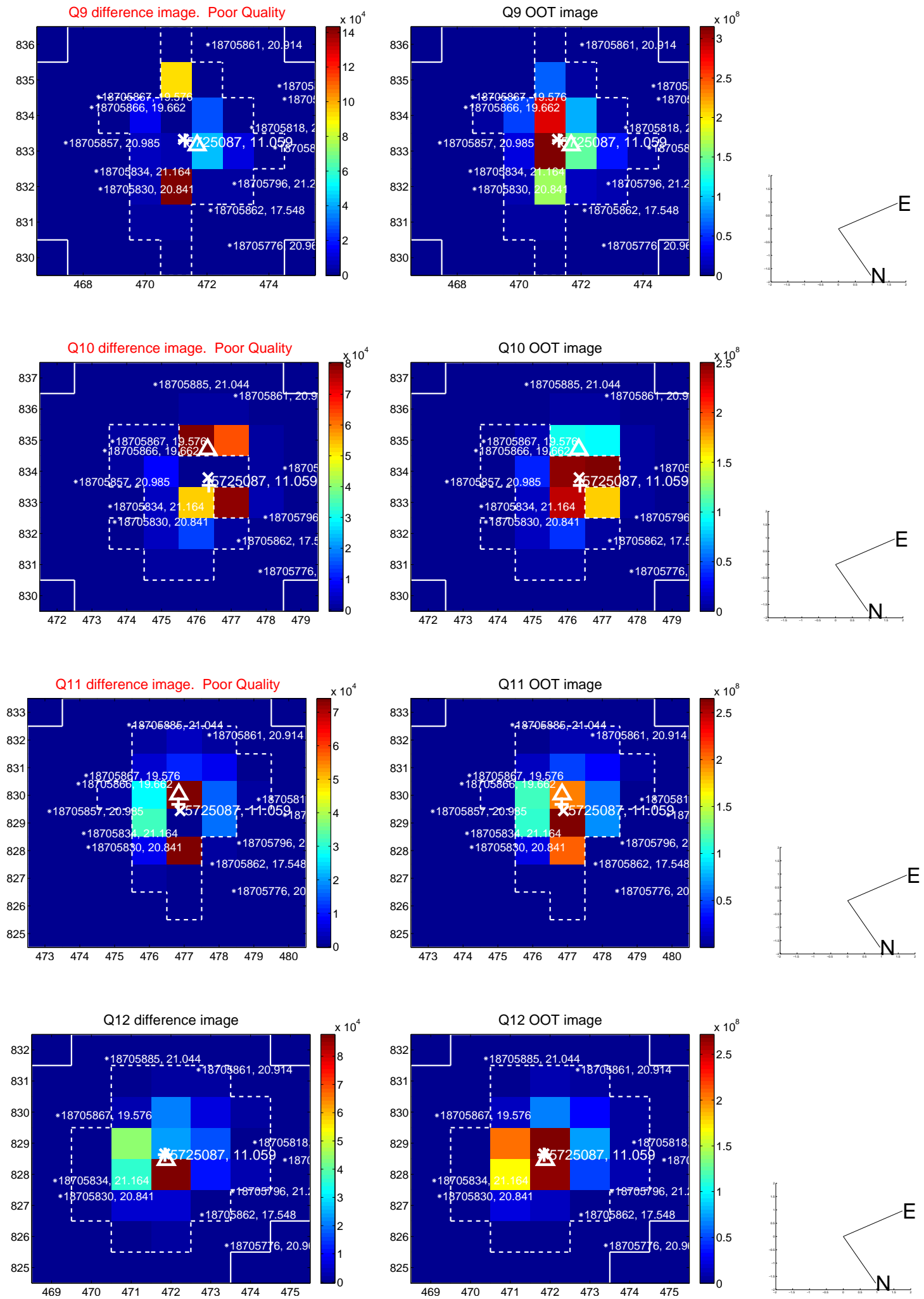
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



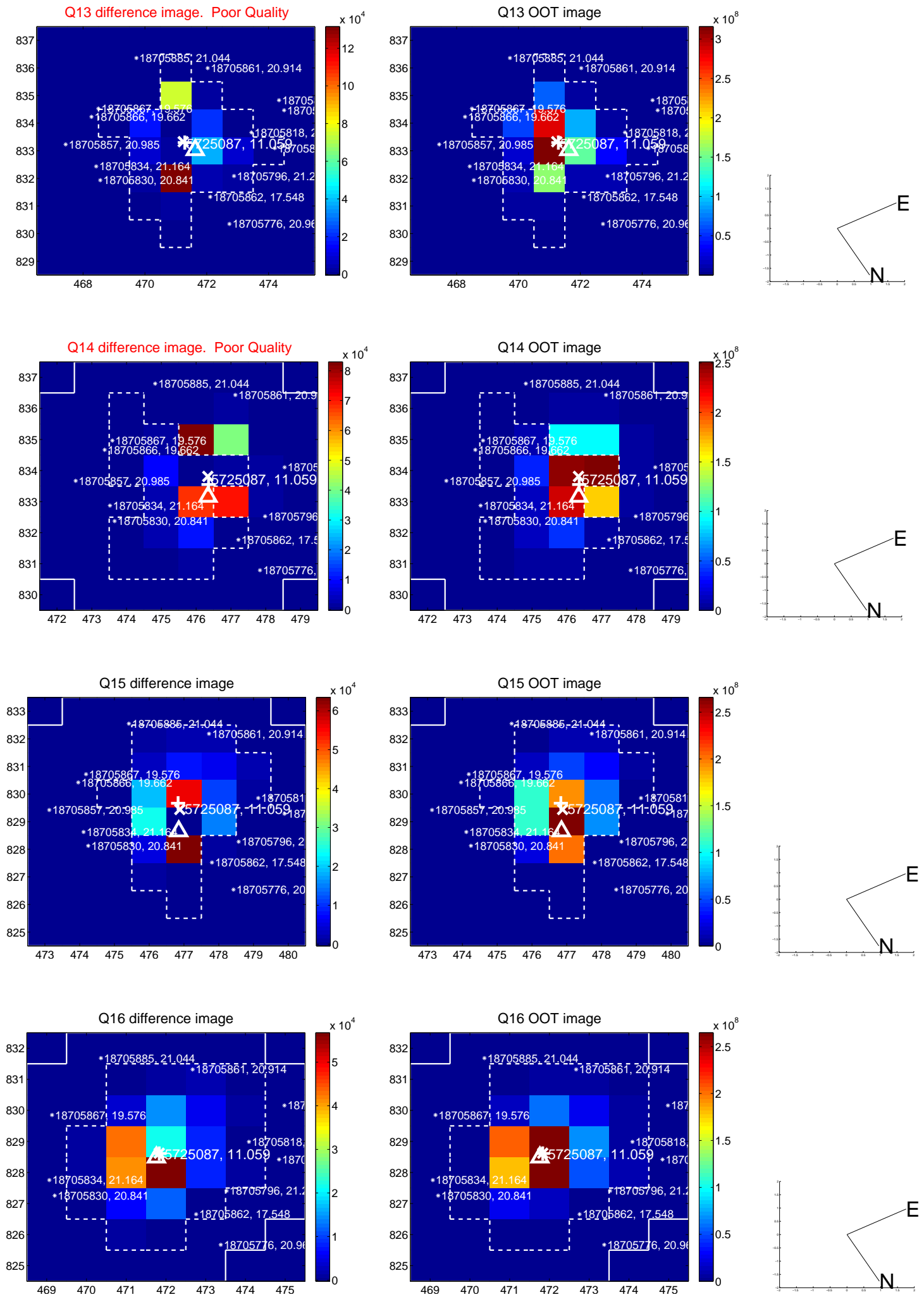
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



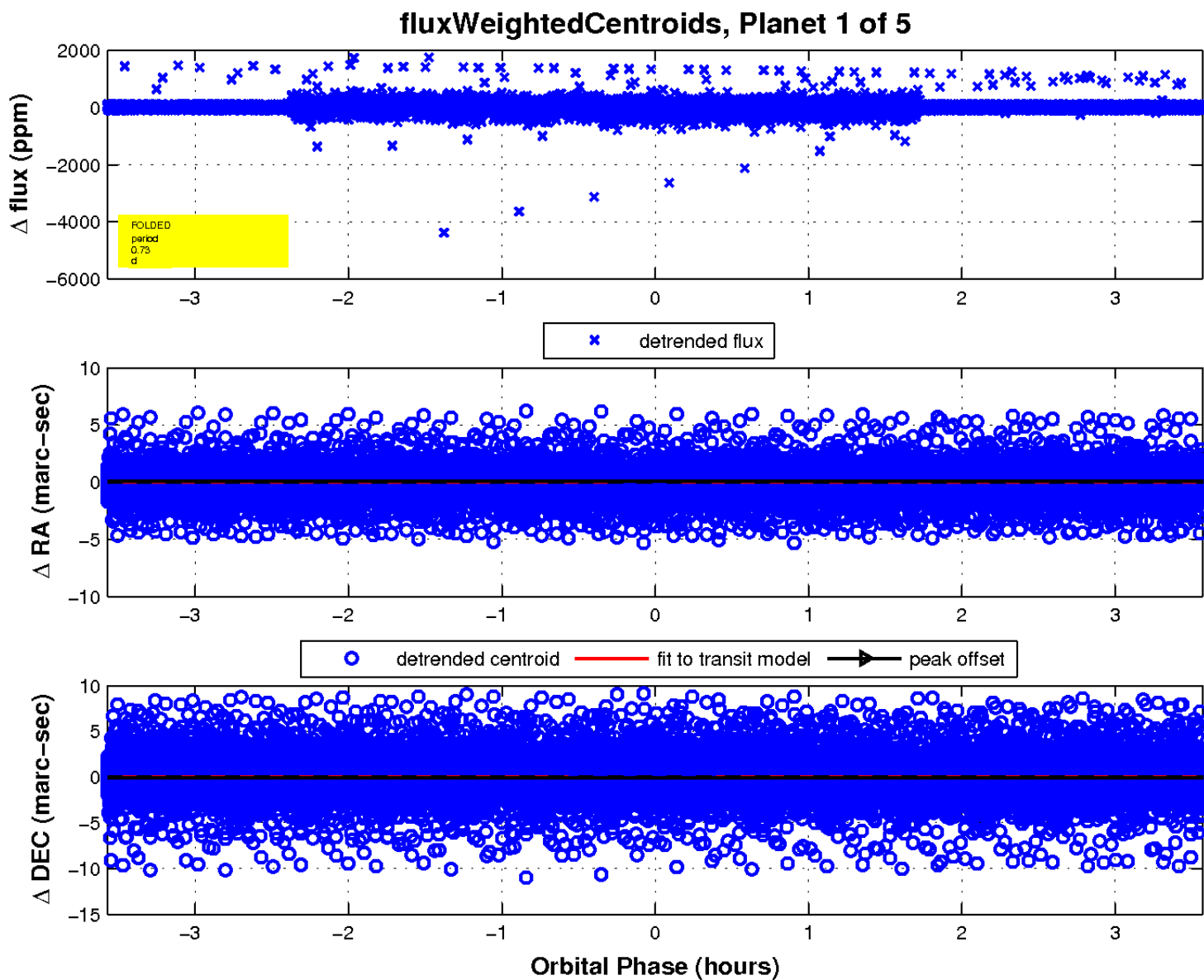
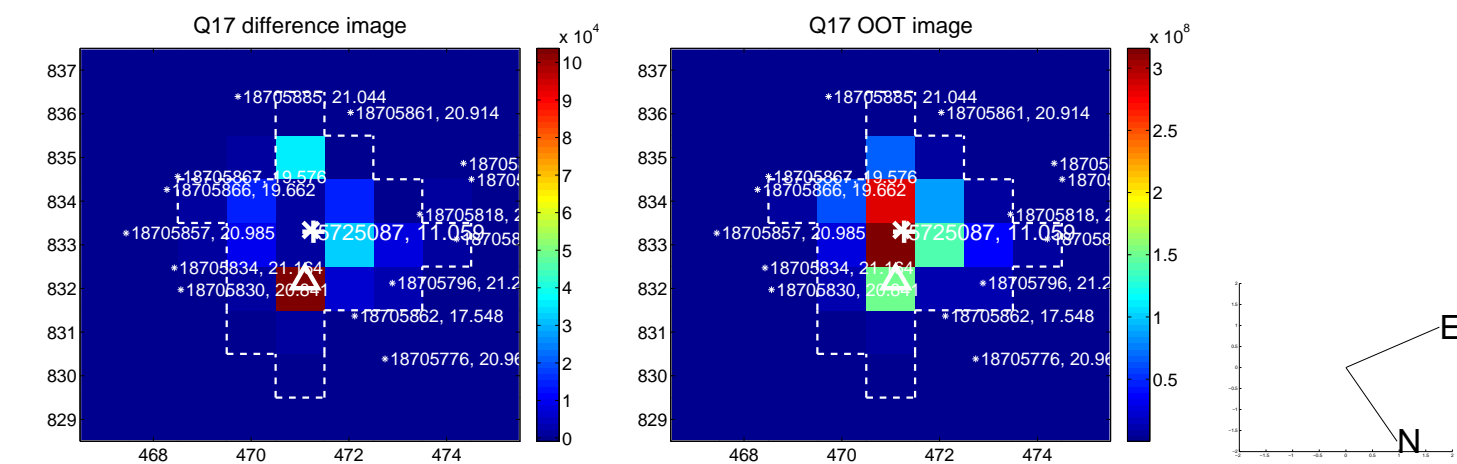
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

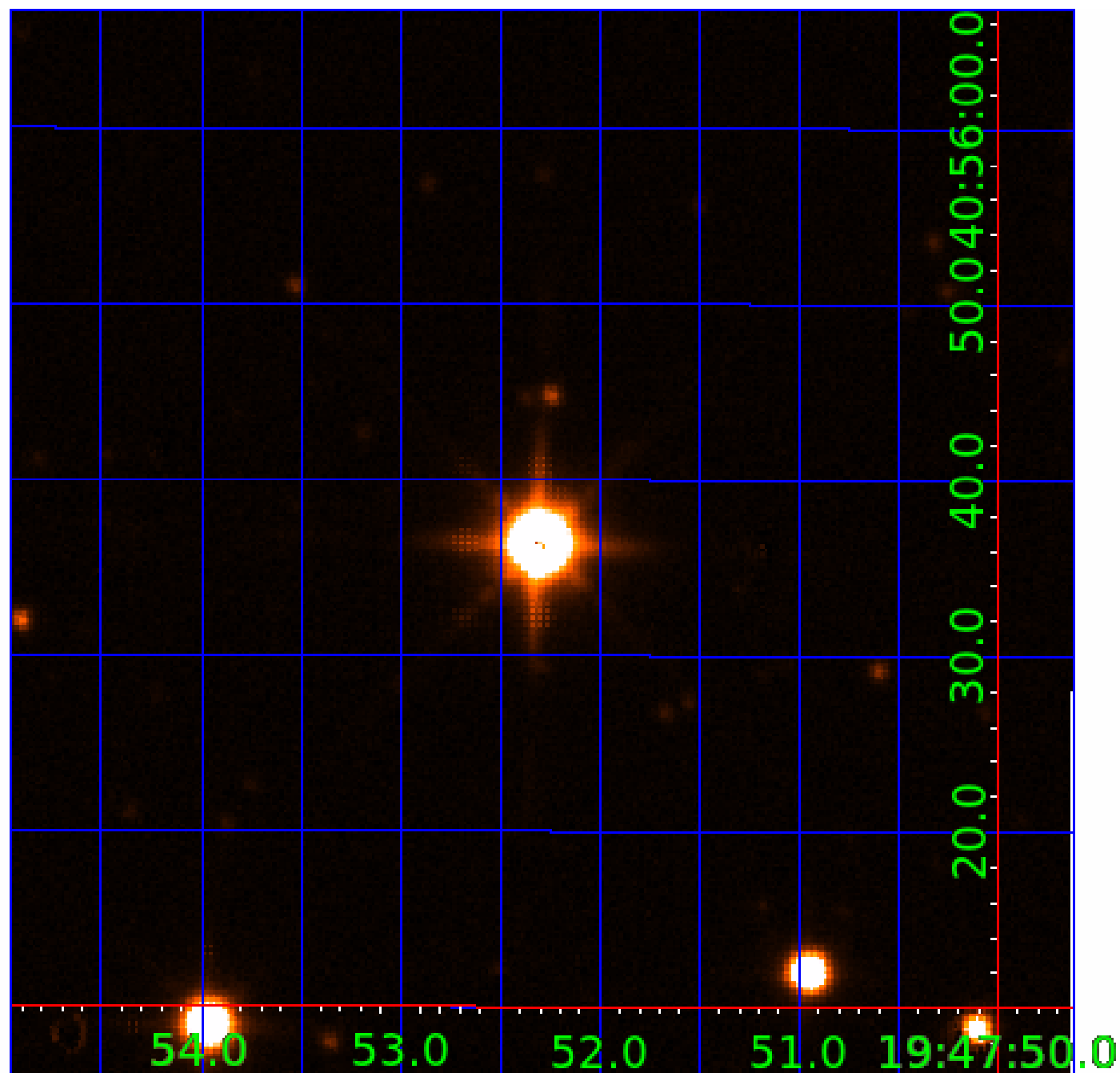


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005725087

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})
005725087-01	OBS	0033.01	0.732392	131.726671	20.2	1.191	13.8	15.6	31.50	4448	17.60	0.00
005725087-02	OBS	No	528.791160	329.956315	1493.0	24.183	15.0	5.1	31.50	4448	146.29	144.12
005725087-03	OBS	No	0.732422	132.072454	20.9	1.678	12.8	13.6	31.50	4448	17.83	0.00
005725087-05	OBS	No	119.907233	179.488993	156.2	4.500	14.4	-1.0	31.50	4448	37.67	1042.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005725087-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_DV—HAS_SEC_TCE—CENT_SATURATED
005725087-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
005725087-03	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_SATURATED—HALO_GHOST
005725087-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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 005725087-02

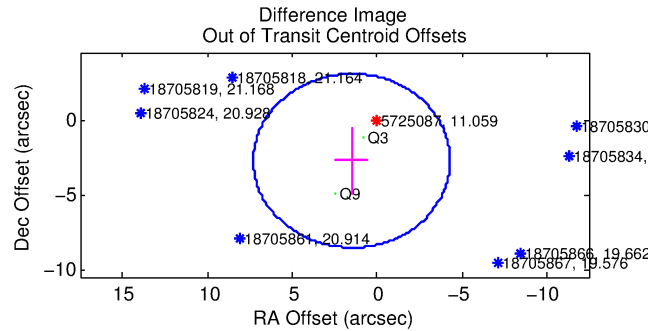
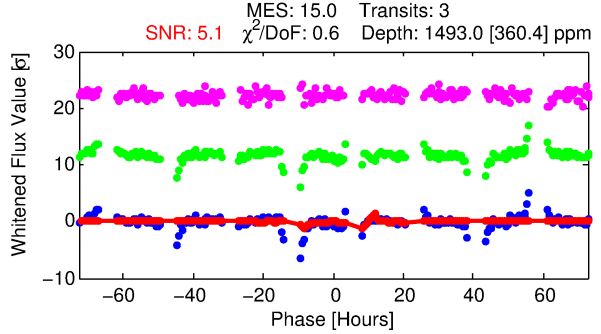
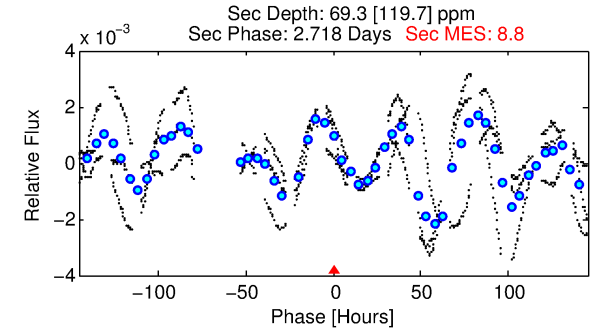
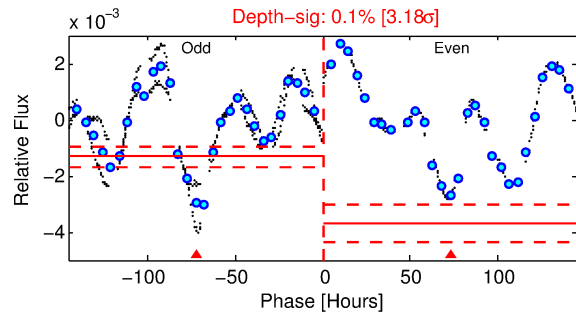
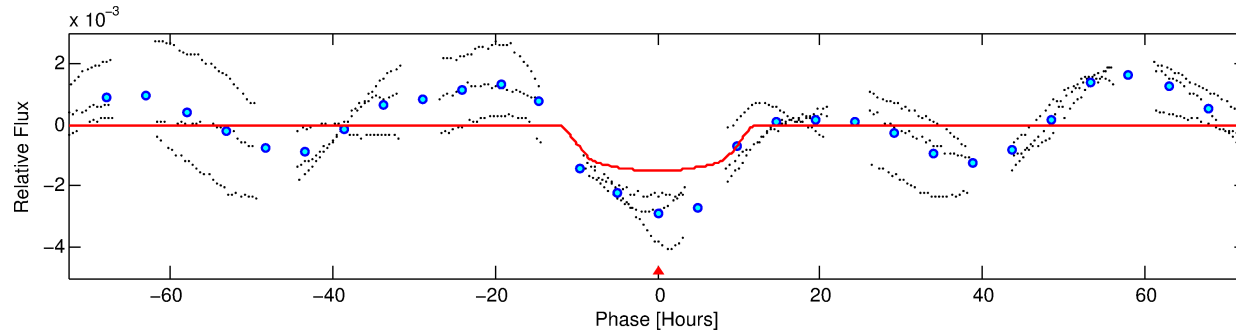
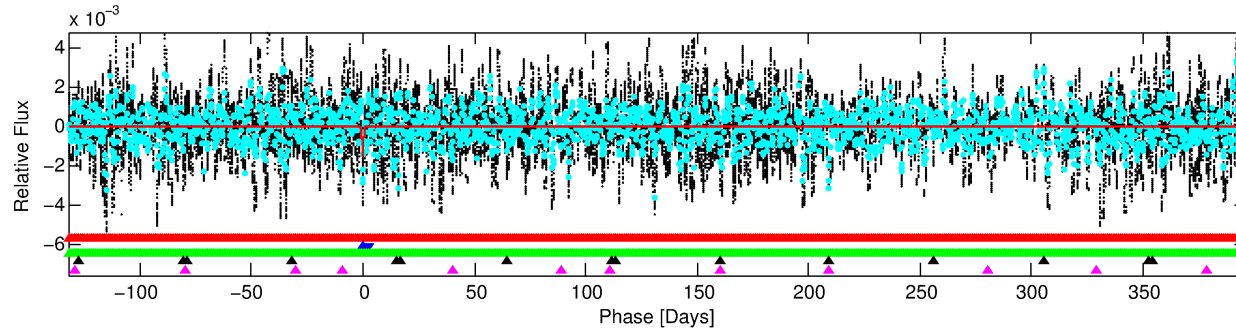
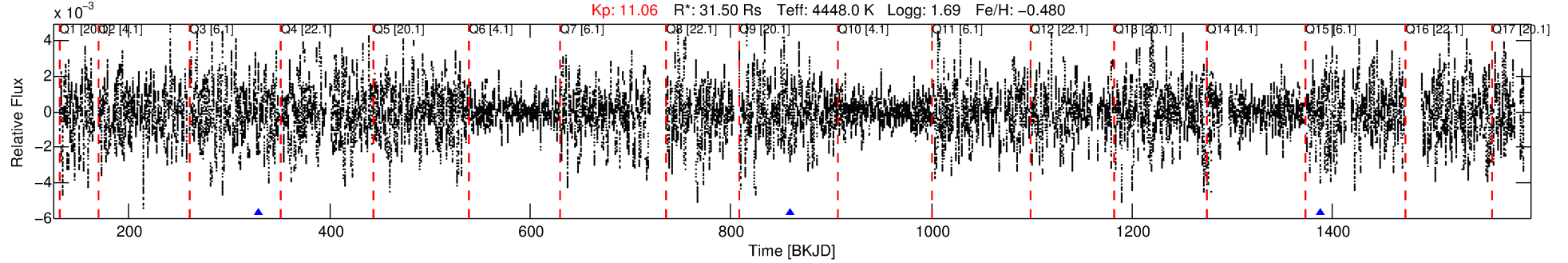
No Significant Match Found

DV One-Page Summary

KIC: 5725087 Candidate: 2 of 5 Period: 528.791 d

KOI: K00033 Corr: No Ephemeris Match

Kp: 11.06 R*: 31.50 Rs Teff: 4448.0 K Logg: 1.69 Fe/H: -0.480



DV Fit Results:

Period = 528.79116 [0.01054] d
Epoch = 329.9563 [0.0169] BKJD
Rp/R* = 0.0426 [0.0052]
a/R* = 94.05 [5.40]
b = 0.88 [0.01]
Seff = 144.12 [27.69]
Teq = 883 [42] K
Rp = 146.29 [37.32] Re
a = 1.5539 [0.2354] AU
Ag = 4.30 [7.53] [0.44σ]
Teff = 1967 [860] K [1.26σ]

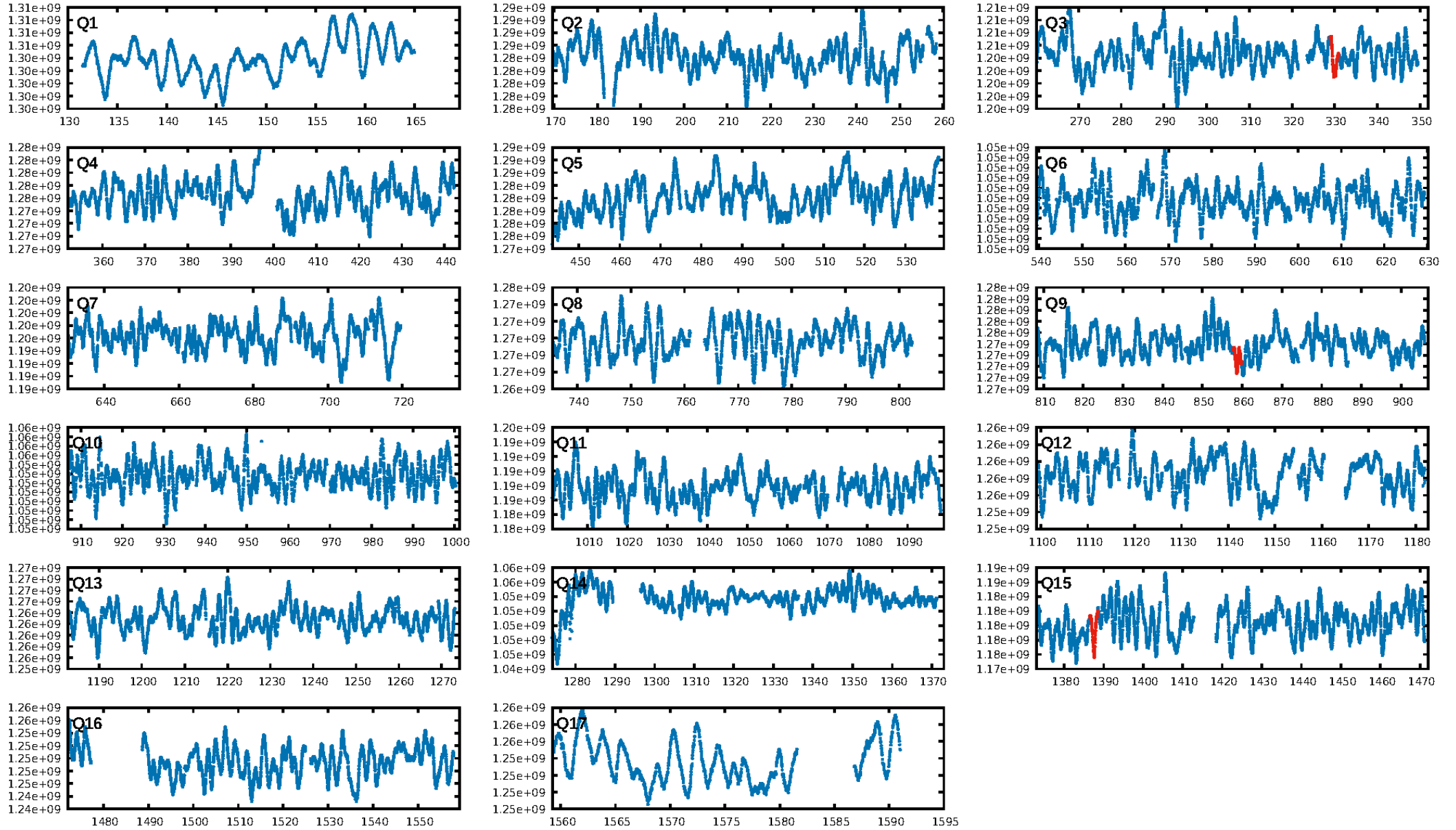
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [398.93σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 61.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1002
Centroid-sig: 53.2%
Centroid-so: 0.302 arcsec [1.86σ]
OotOffset-rm: 3.118 arcsec [1.61σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 3.670 arcsec [2.60σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

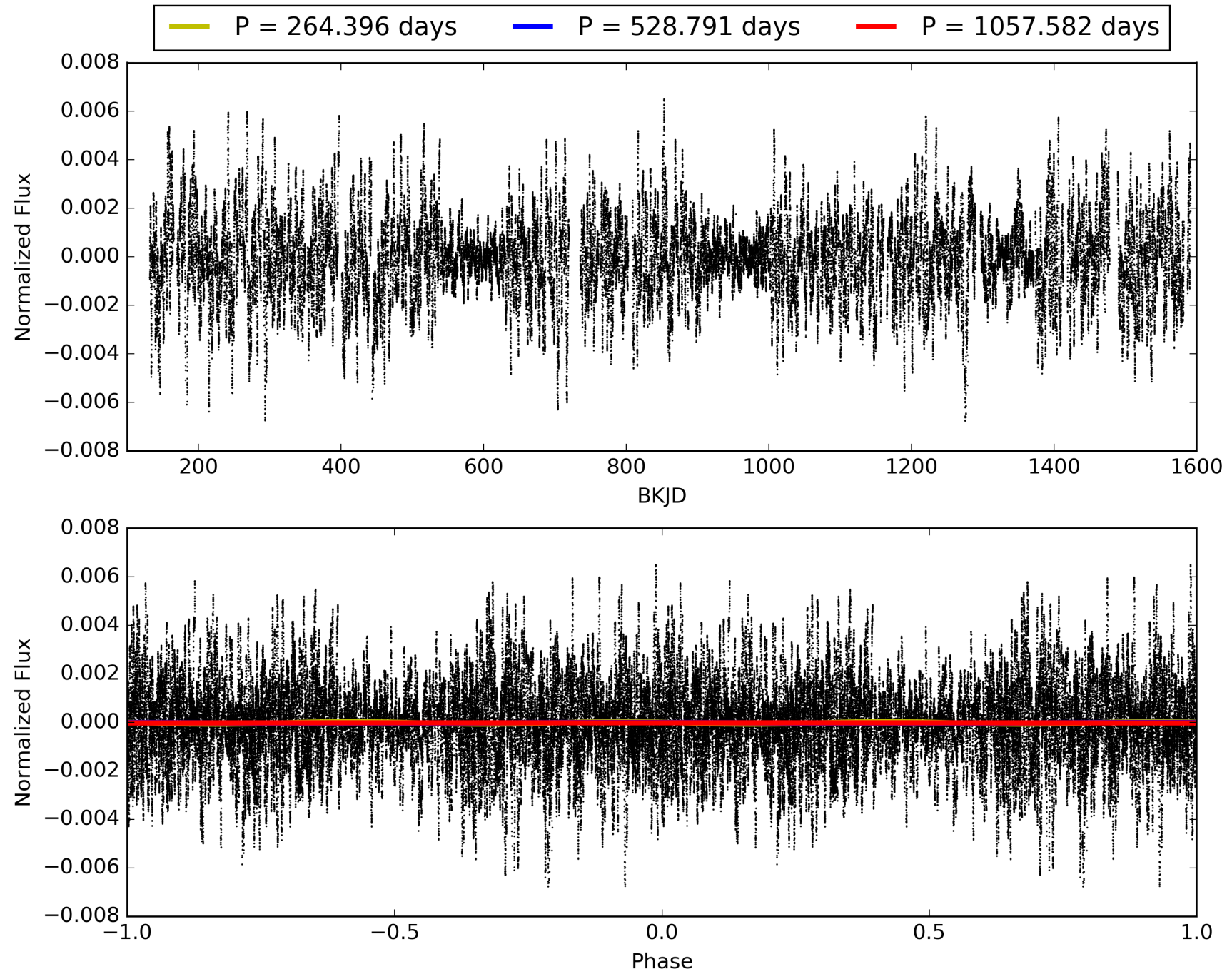
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:43:43 Z

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

TCE 005725087-02, PDC Light Curves

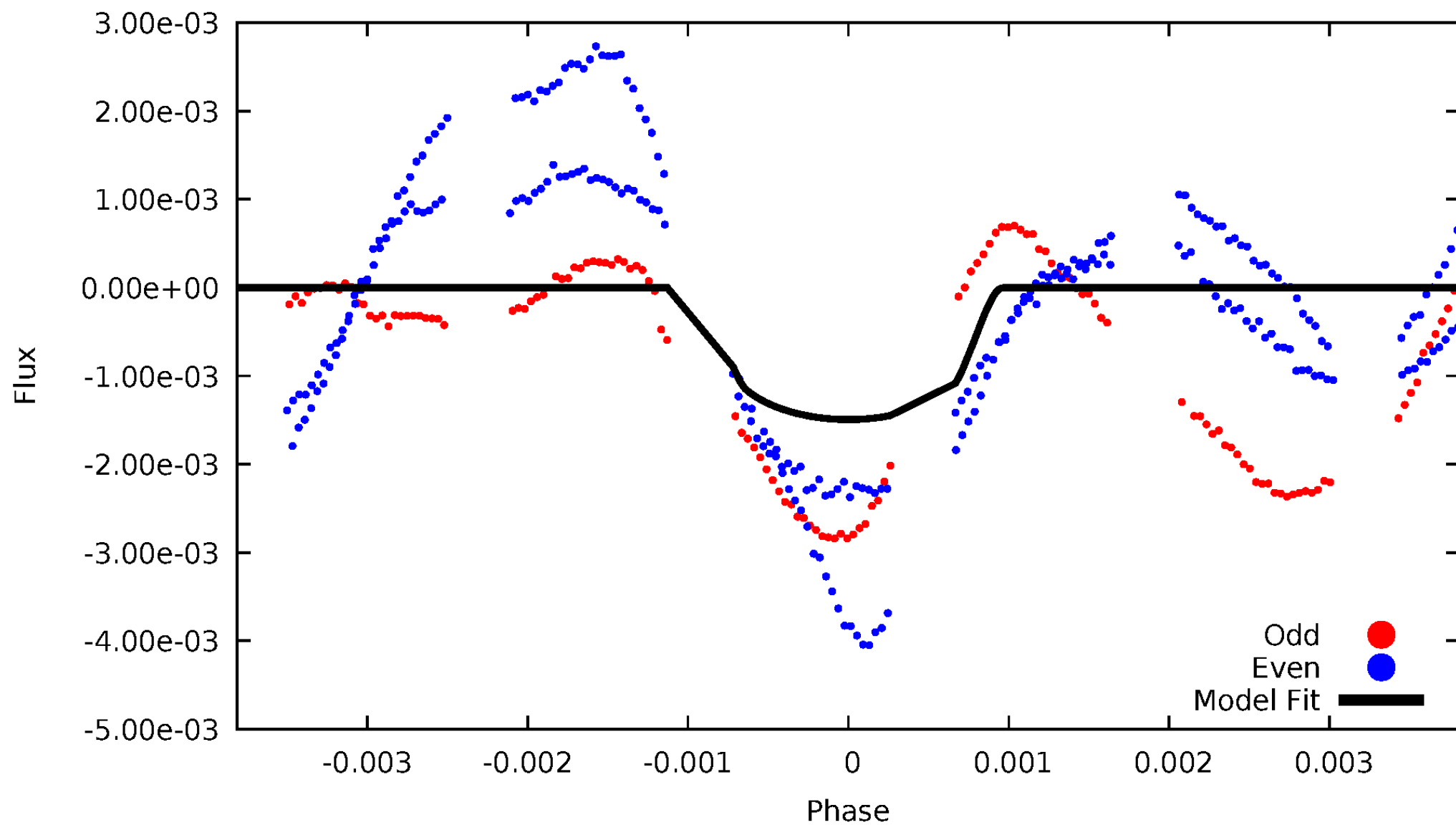


TCE 005725087-02



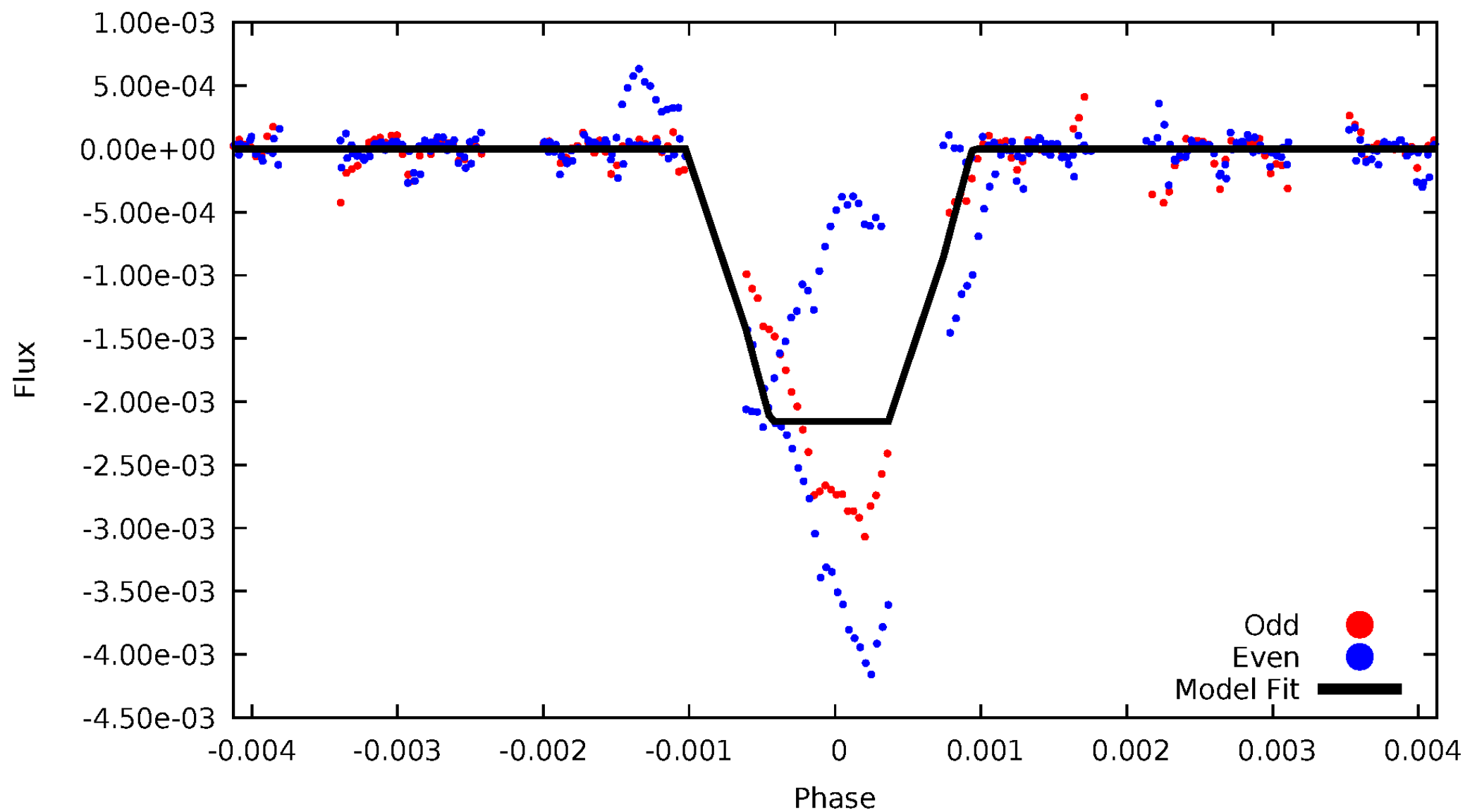
DV Odd/Even

TCE 005725087-02



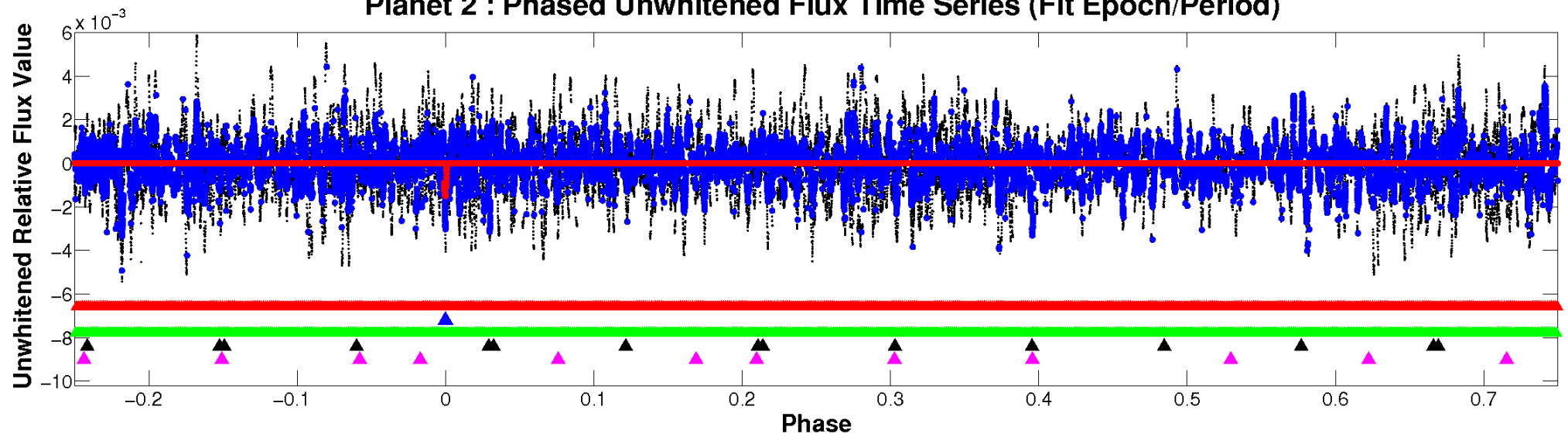
ALT Odd/Even

TCE 005725087-02

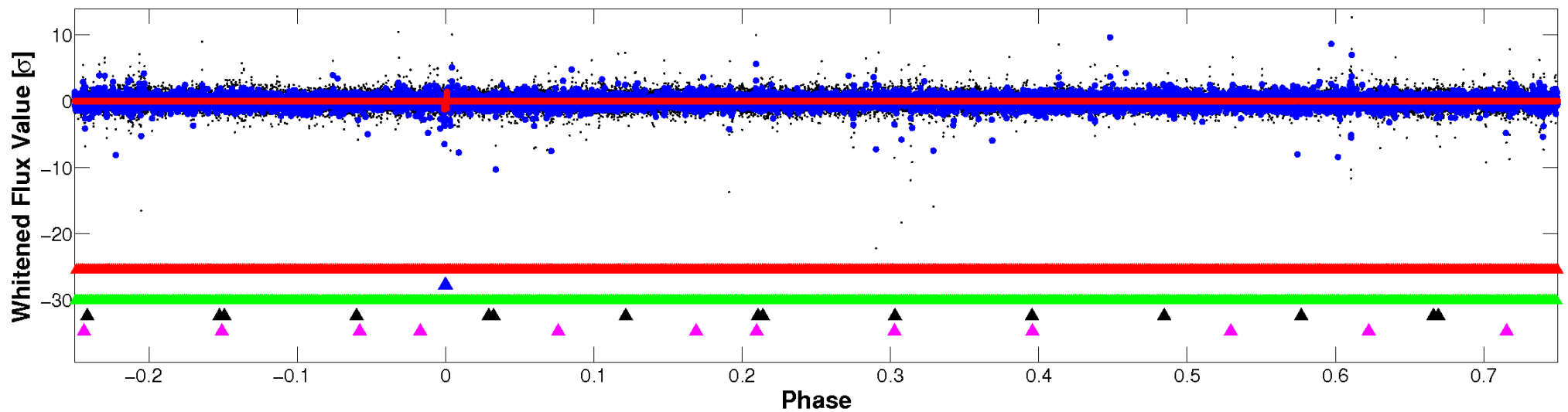


Non-Whitened Vs. Whitened Light Curve

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

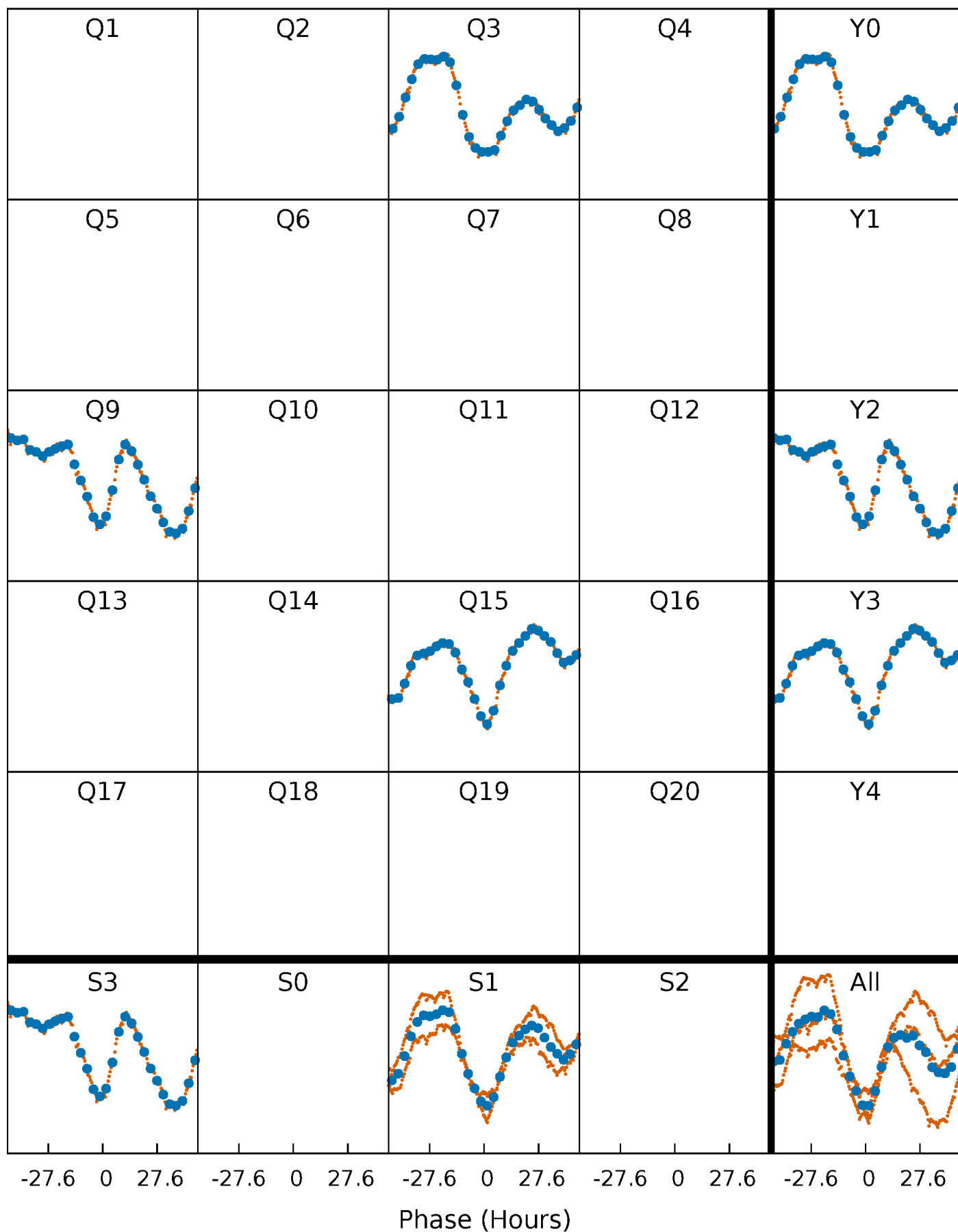


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



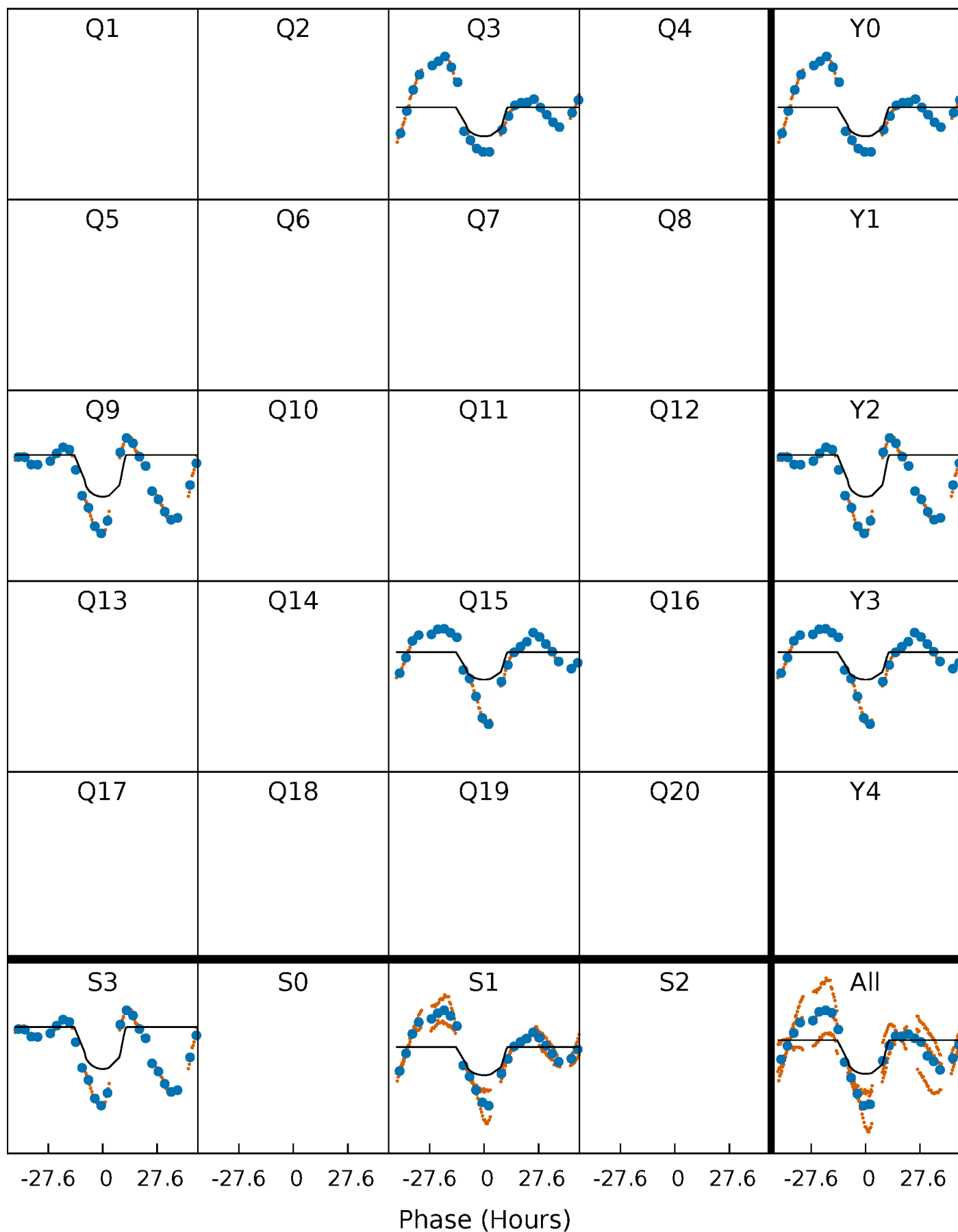
PDC Quarter-Phased Transit Curves

TCE 005725087-02 P=528.791160 Days $T_0=329.956315$ (BKJD)



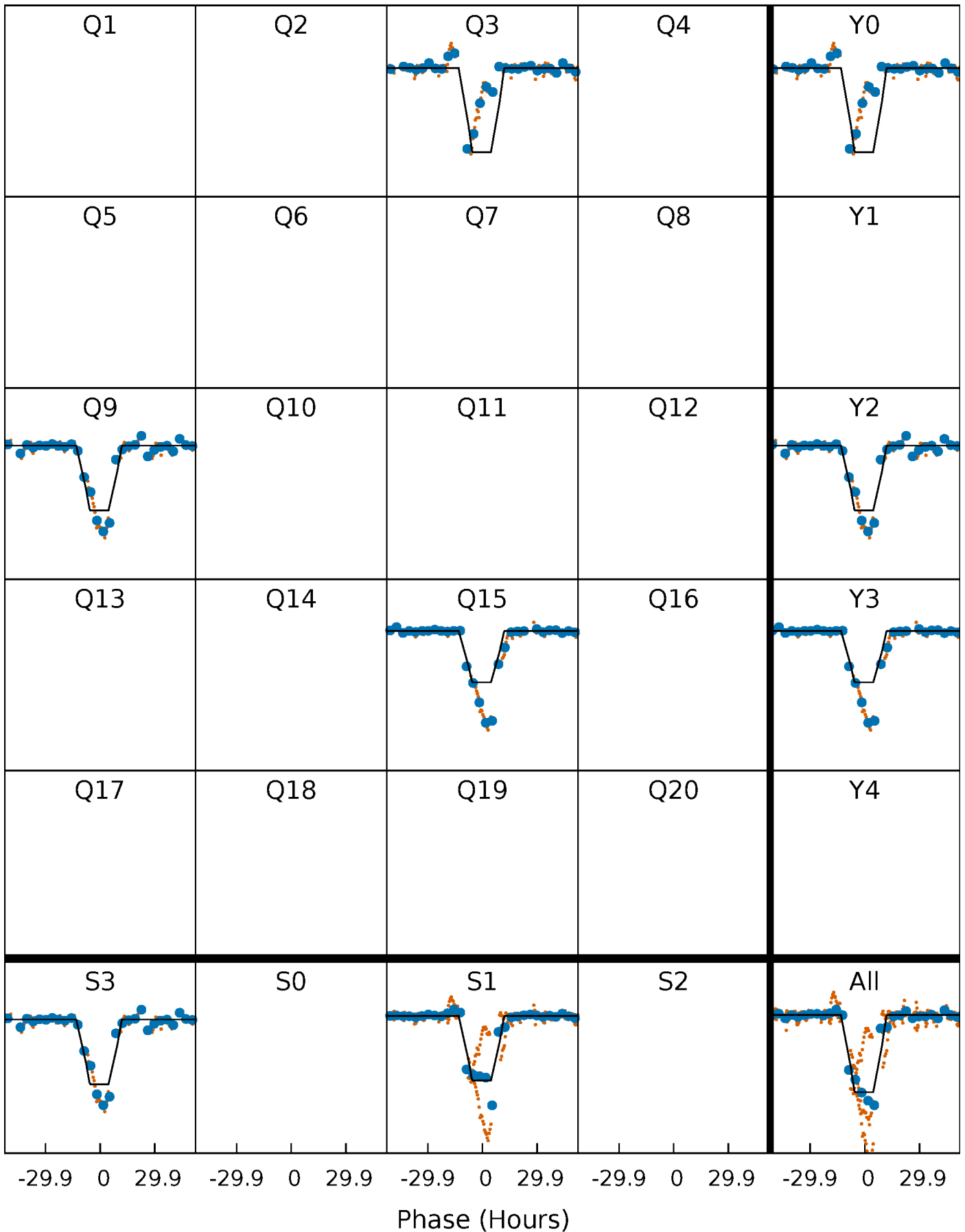
DV Quarter-Phased Transit Curves

TCE 005725087-02 P=528.791160 Days $T_0=329.956315$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

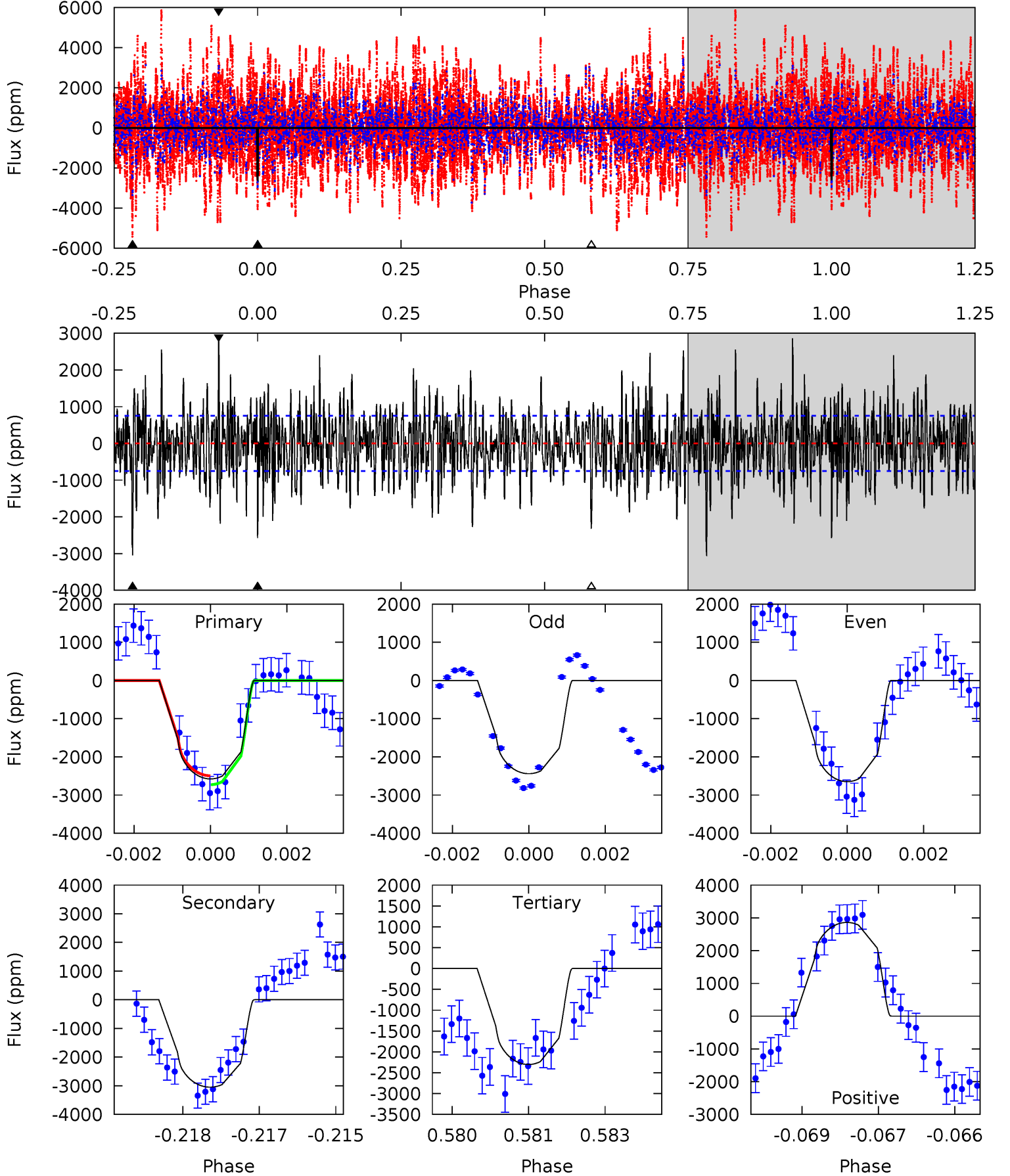
TCE 005725087-02 P=528.779666 Days $T_0=329.917035$ (BKJD)



DV Model-Shift Uniqueness Test

005725087-02, P = 528.791160 Days, E = 329.956315 Days

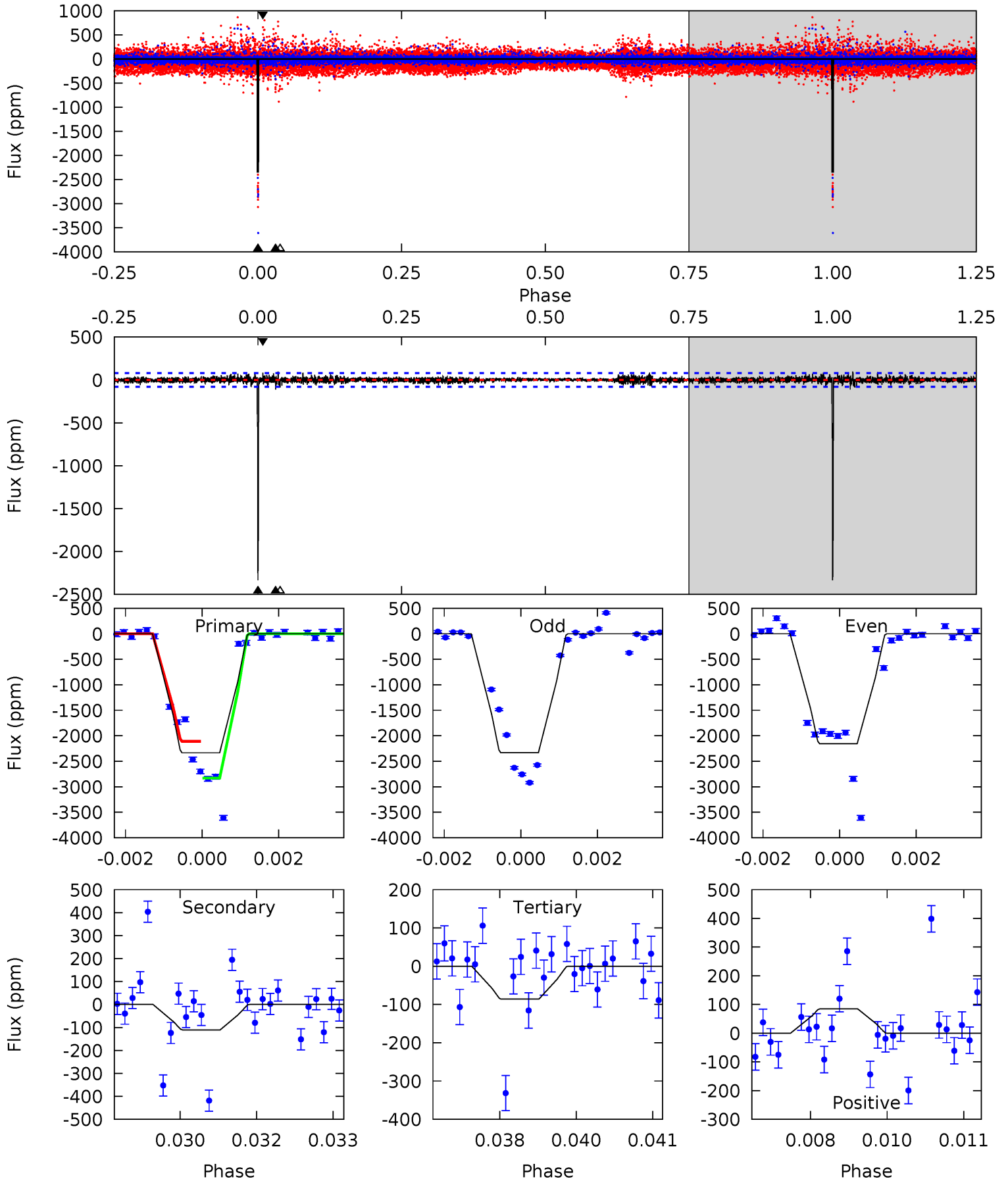
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	21.7	16.4	20.3	5.36	3.14	5.33	1.95	-2.02	5.31	1.34	0.72	1.06	0.48	0.82



Alt Model-Shift Uniqueness Test

005725087-02, P = 528.779666 Days, E = 329.917035 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
159.4	7.55	5.87	5.78	5.37	3.16	1.19	153.5	153.6	1.68	1.76	7.95	0.95	0.04	0



Stellar Parameters For KIC 005725087

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4448^{+88}_{-122}	$1.694^{+0.033}_{-0.027}$	$-0.480^{+0.200}_{-0.250}$	$31.500^{+1.323}_{-7.056}$	$1.789^{+0.079}_{-0.708}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+42%/-52%	+4%/-22%	+4%/-40%	+32%/-9%
Source	PHO54	AST54	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 005725087-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3050 ± 141	$145.85^{+19.36}_{-20.11}$	1233^{+29}_{-38}	4920^{+337}_{-252}	193^{+57}_{-43}
Alt.	-111 ± 15	$160.27^{+19.18}_{-19.28}$	1236^{+29}_{-40}	2748^{+111}_{-107}	$5.595^{+1.910}_{-1.222}$

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

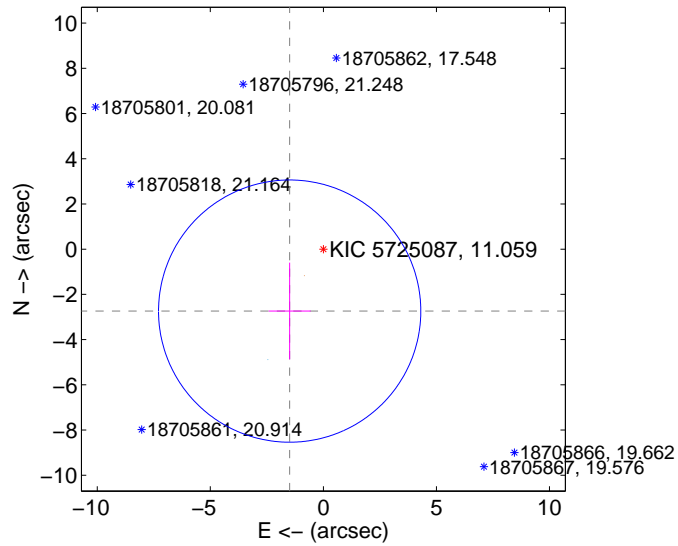
Supplemental centroid analysis for 005725087-02. **Kepler magnitude: 11.06.** Transit SNR 5.11

There are 1 quarters with good PRF difference image offsets

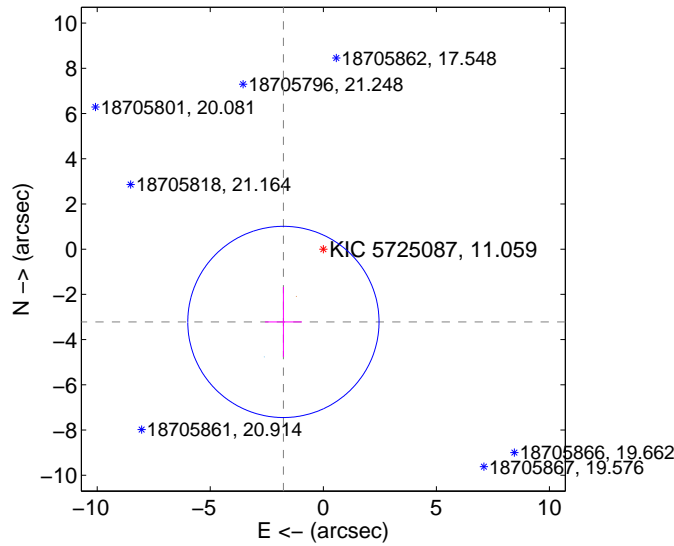
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.118 ± 1.933	1.61	1.490 ± 0.928	-2.739 ± 2.142
PRF-fit source offset from KIC position	3.670 ± 1.410	2.60	1.765 ± 0.815	-3.218 ± 1.544
photometric centroid source offset	0.30 ± 0.16	1.86	-0.18 ± 0.16	0.24 ± 0.16

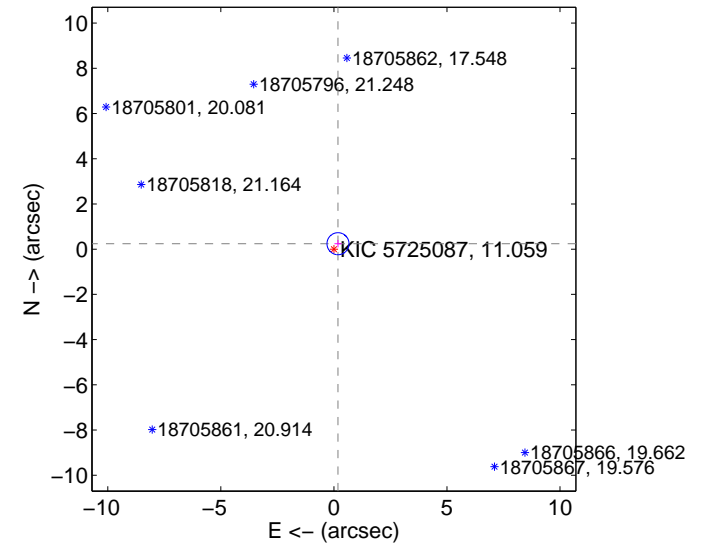
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image

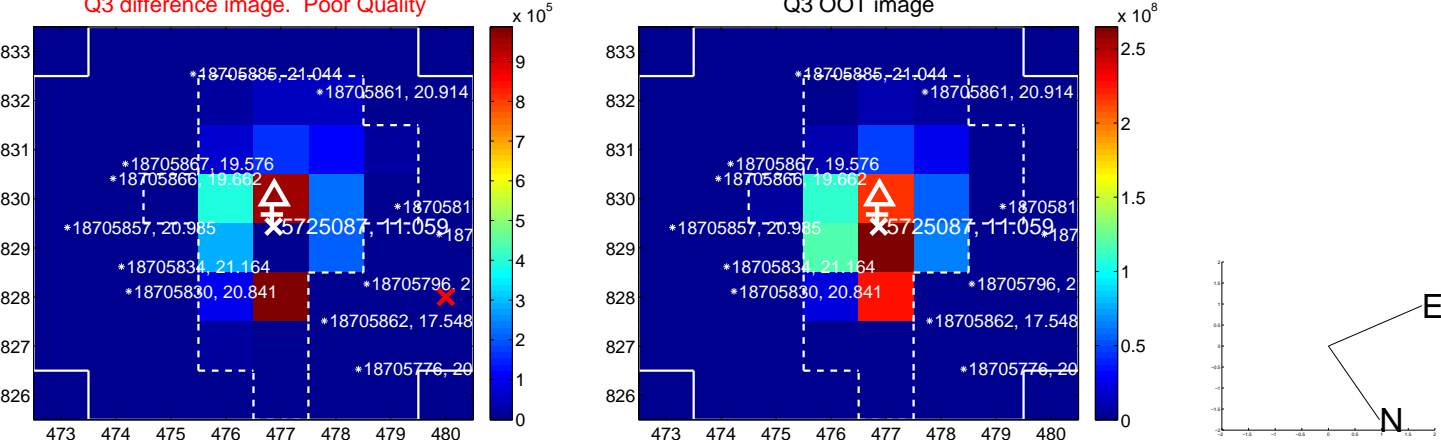


Q2 no OOT image

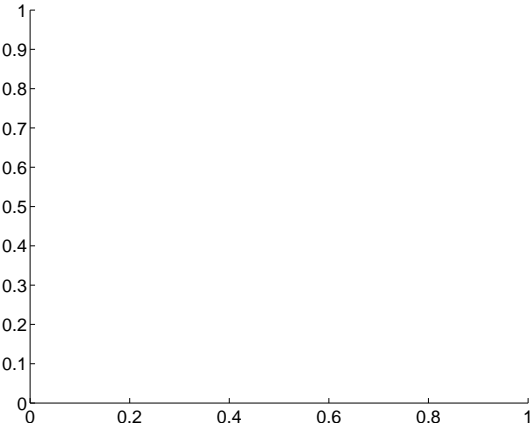


Q3 difference image. Poor Quality

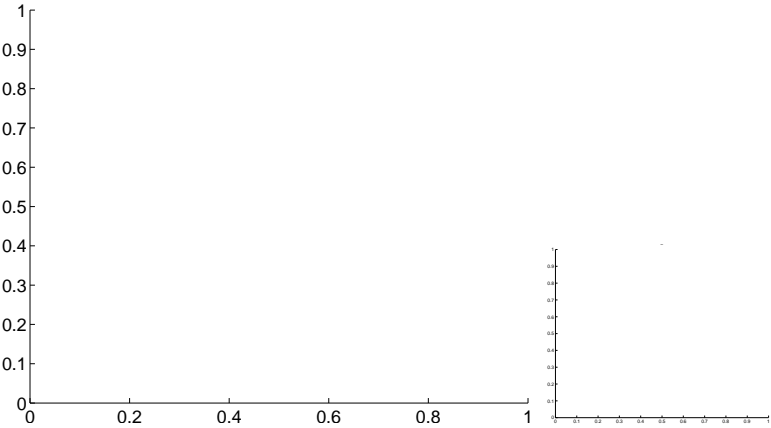
Q3 OOT image



Q4 no difference image



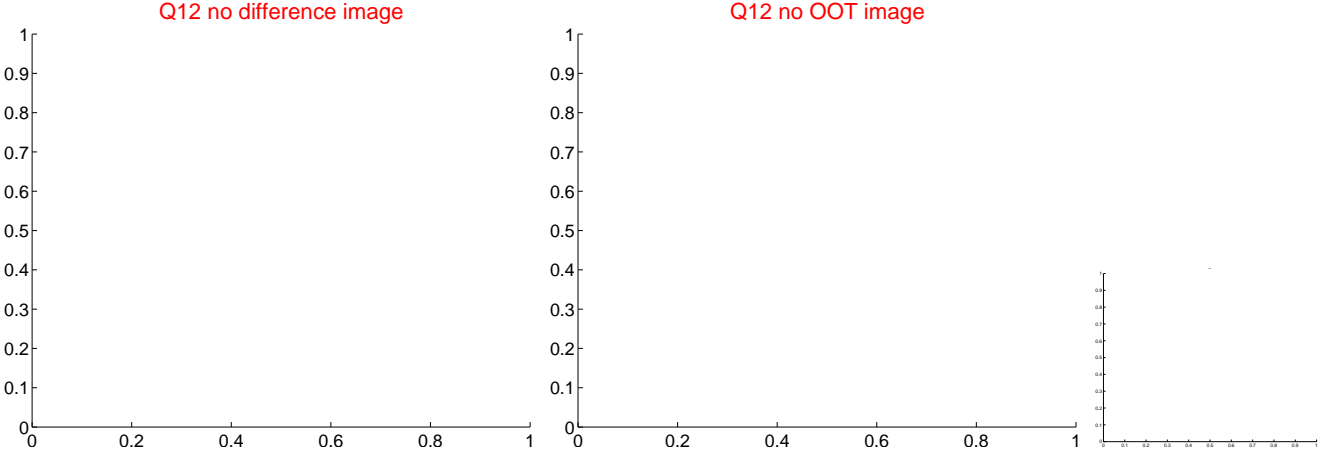
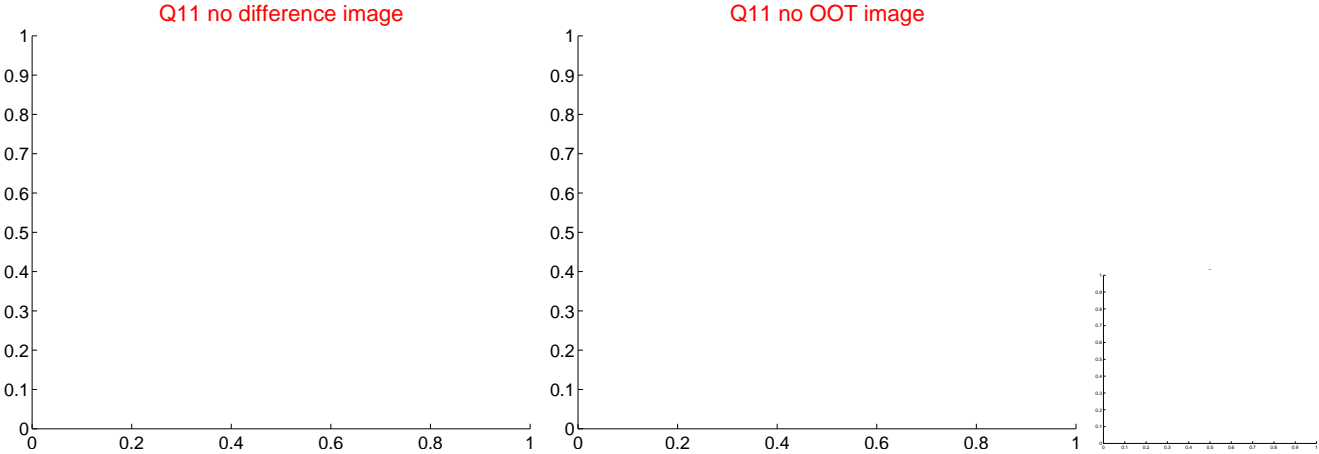
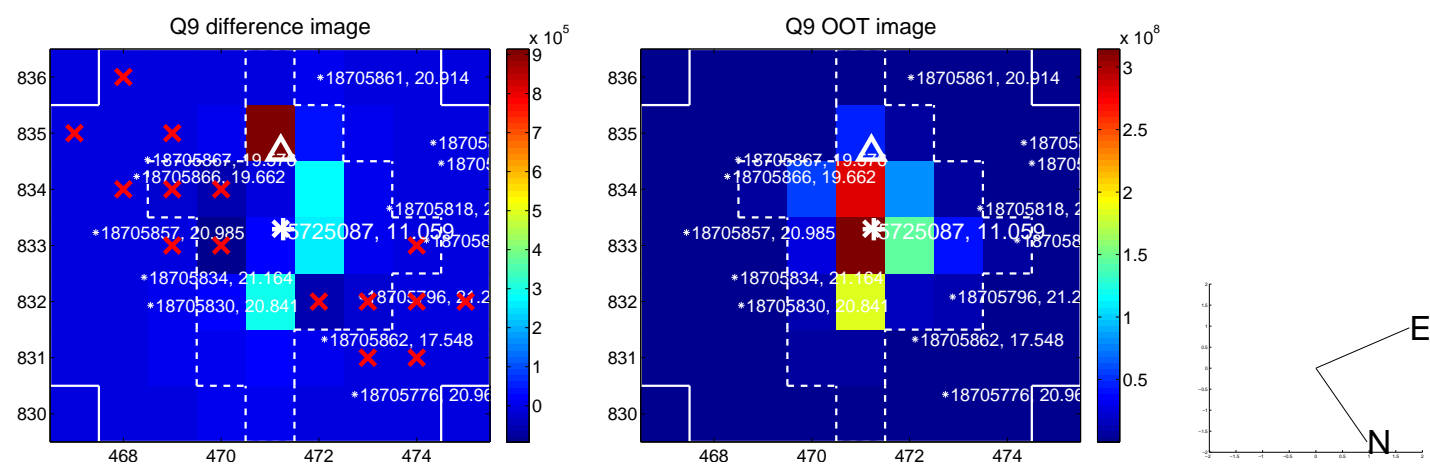
Q4 no OOT image



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



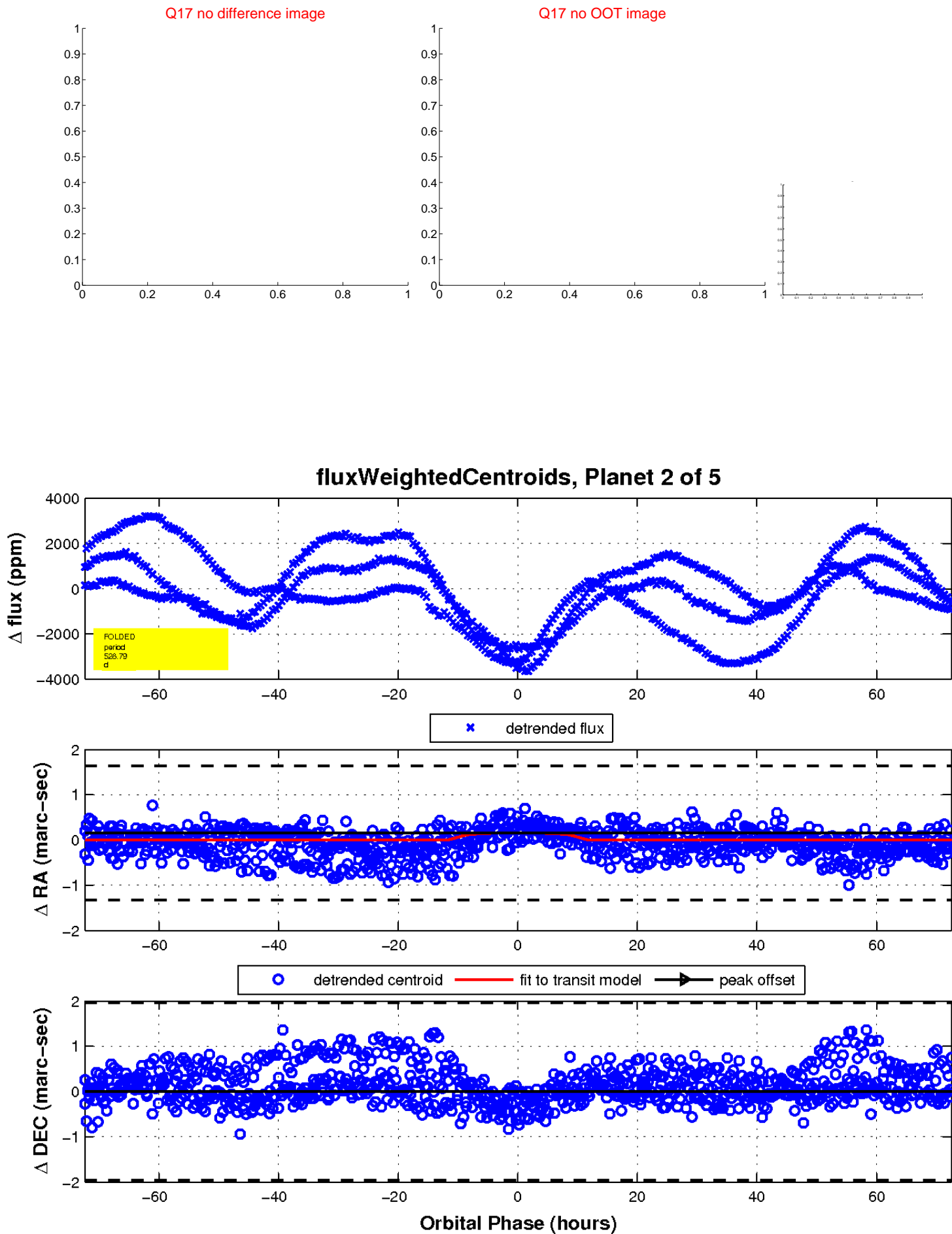
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

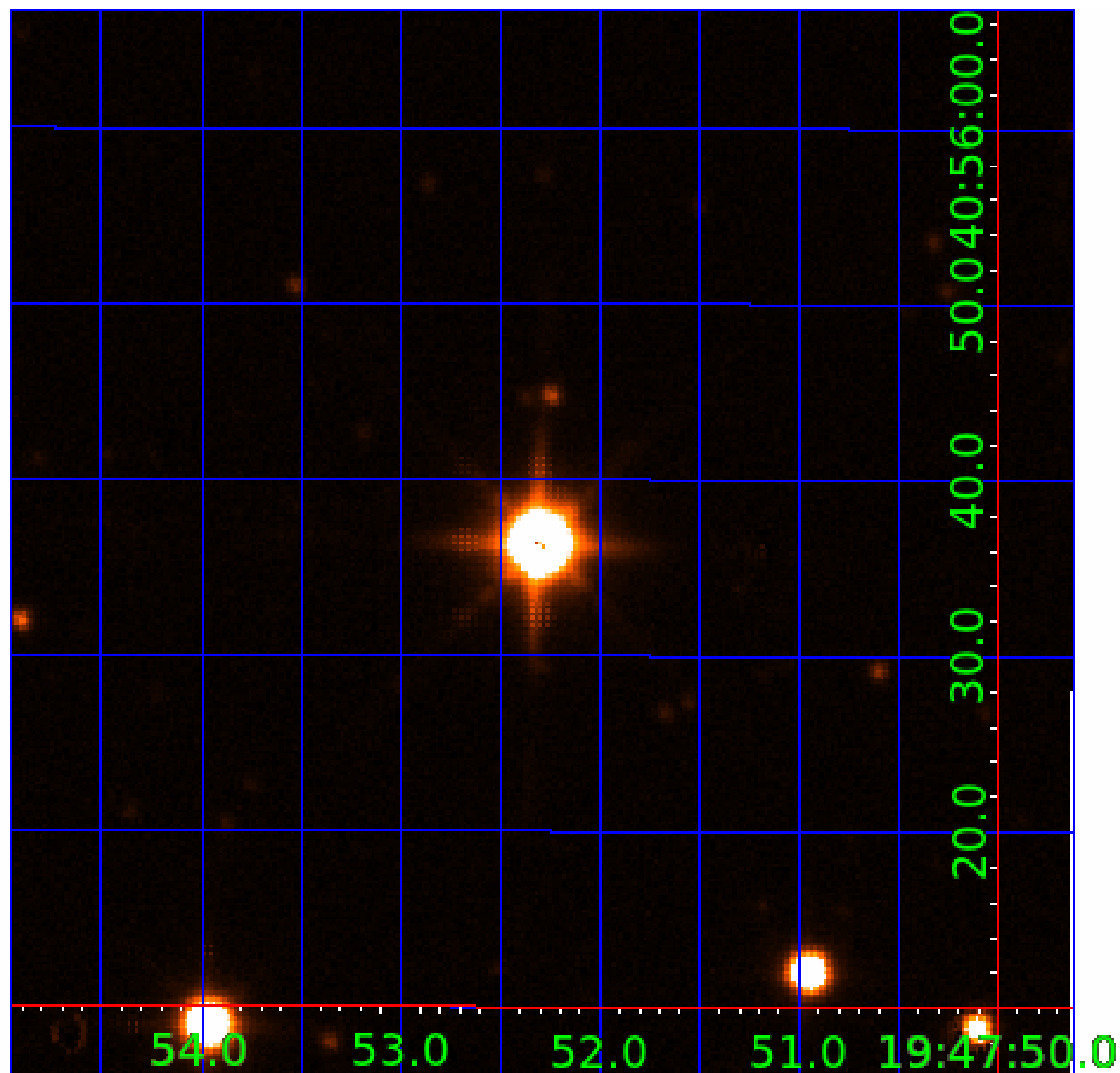


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005725087

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})
005725087-01	OBS	0033.01	0.732392	131.726671	20.2	1.191	13.8	15.6	31.50	4448	17.60	0.00
005725087-02	OBS	No	528.791160	329.956315	1493.0	24.183	15.0	5.1	31.50	4448	146.29	144.12
005725087-03	OBS	No	0.732422	132.072454	20.9	1.678	12.8	13.6	31.50	4448	17.83	0.00
005725087-05	OBS	No	119.907233	179.488993	156.2	4.500	14.4	-1.0	31.50	4448	37.67	1042.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005725087-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_DV—HAS_SEC_TCE—CENT_SATURATED
005725087-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
005725087-03	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_SATURATED—HALO_GHOST
005725087-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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.

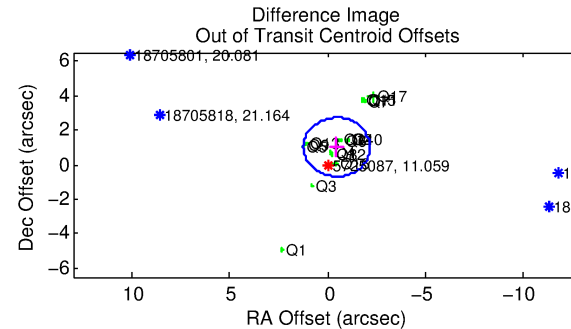
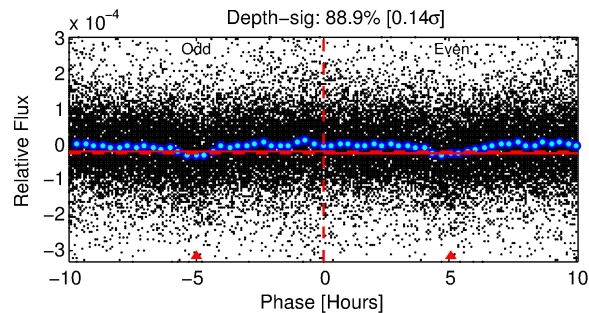
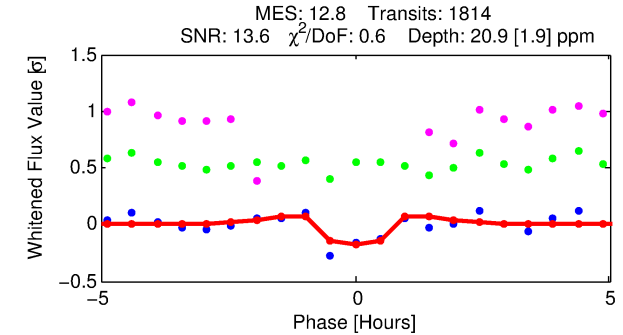
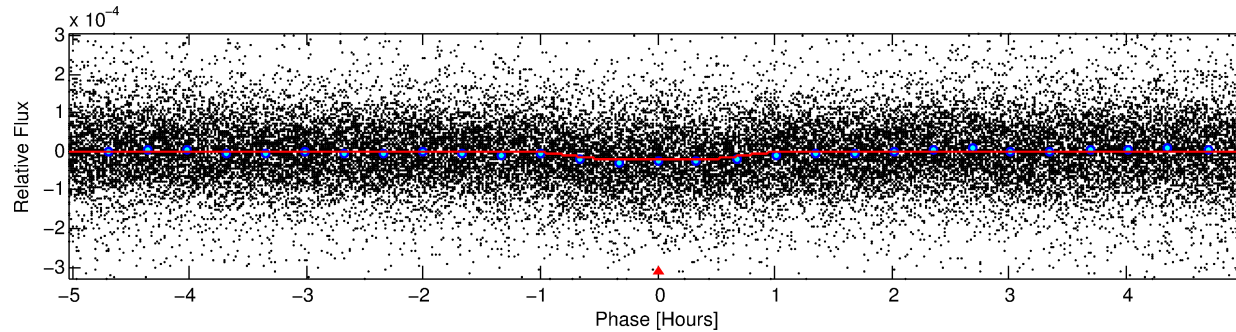
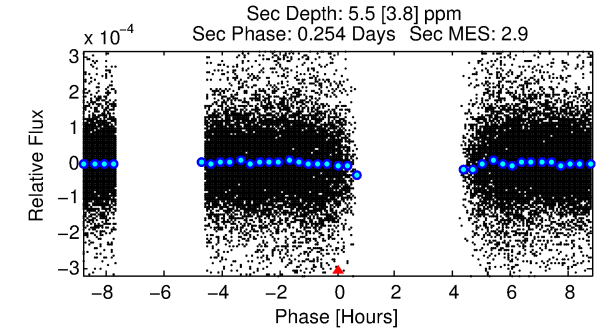
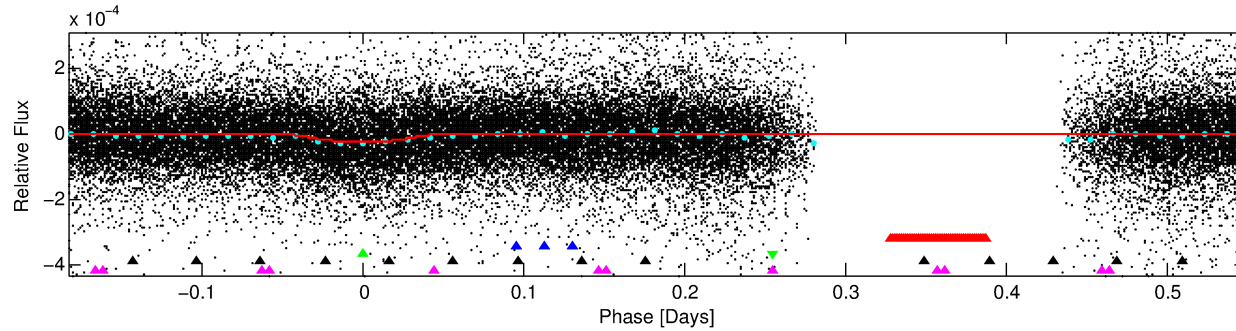
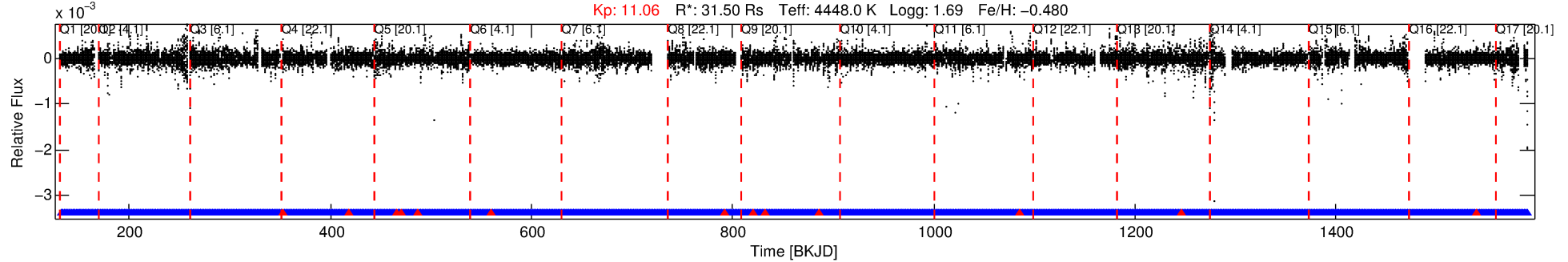
Ephemeris Match Information For 005725087-03

No Significant Match Found

DV One-Page Summary

KIC: 5725087 Candidate: 3 of 5 Period: 0.732 d
KOI: K00033 Corr: No Ephemeris Match

Kp: 11.06 R*: 31.50 Rs Teff: 4448.0 K Logg: 1.69 Fe/H: -0.480



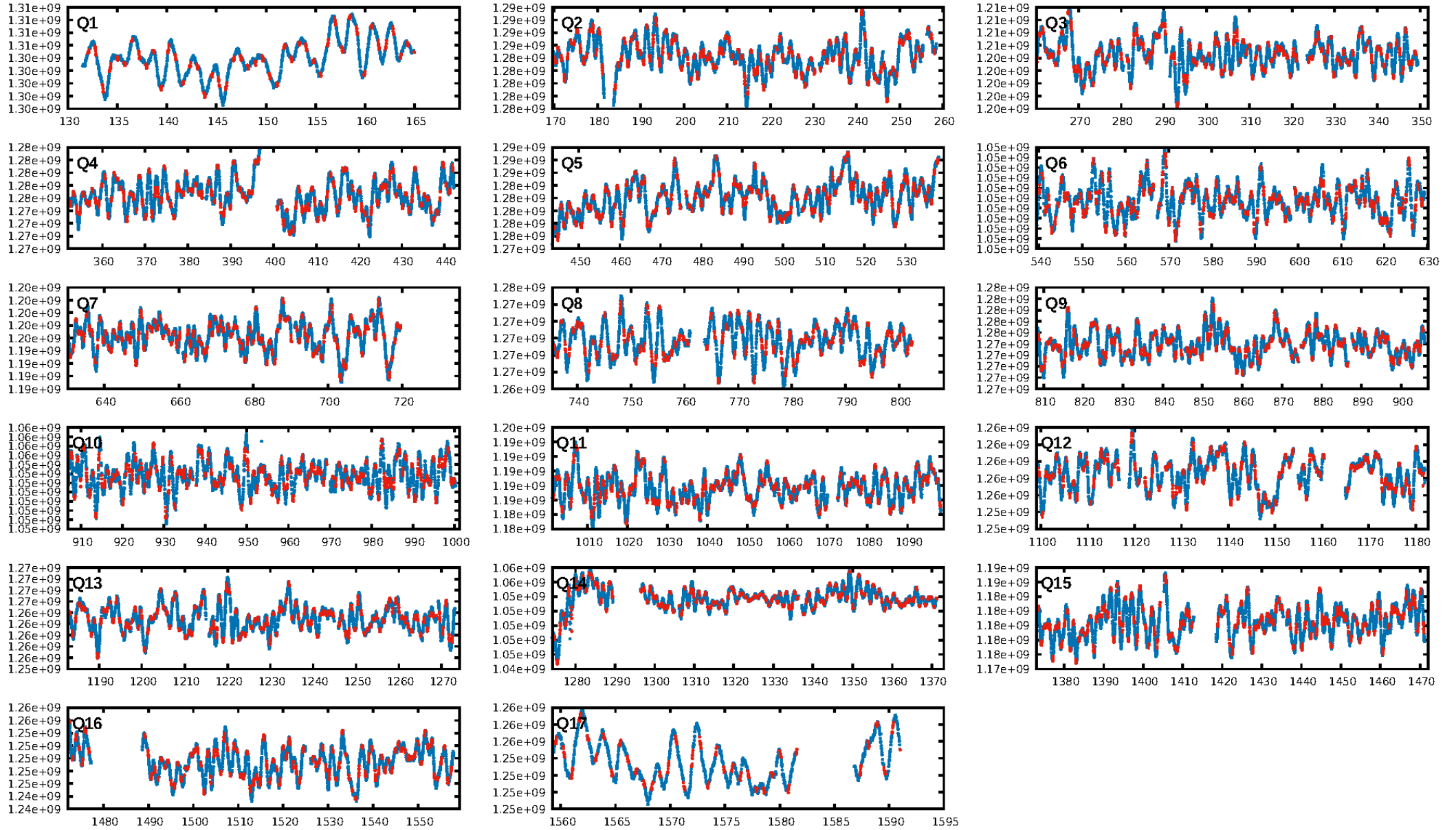
DV Fit Results:

Period = 0.73242 [0.00001] d
Epoch = 132.0725 [0.0010] BKJD
Rp/R* = 0.0052 [0.0009]
a/R* = 1.76 [0.78]
b = 0.90 [0.14]
Seff = N/A
Teq = N/A
Rp = 17.83 [5.11] Re
a = N/A
Ag = N/A
Teffp = N/A

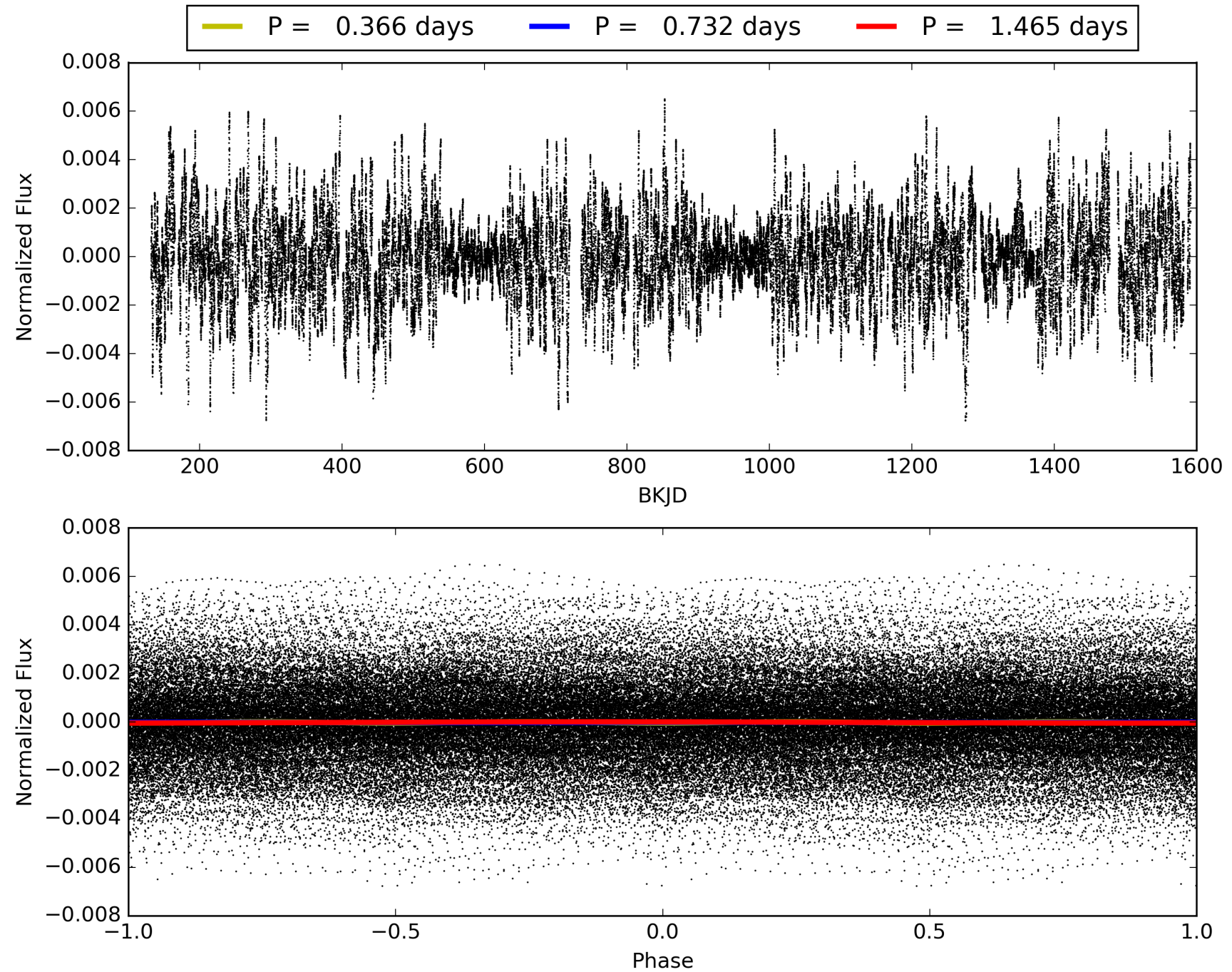
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [791.12σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1720/1733]
GhostDiagnostic-chr: 0.104
Centroid-sig: 0.0%
Centroid-so: 2.013 arcsec [3.29σ]
OotOffset-rm: 1.119 arcsec [1.97σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.666 arcsec [3.03σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005725087-03, PDC Light Curves

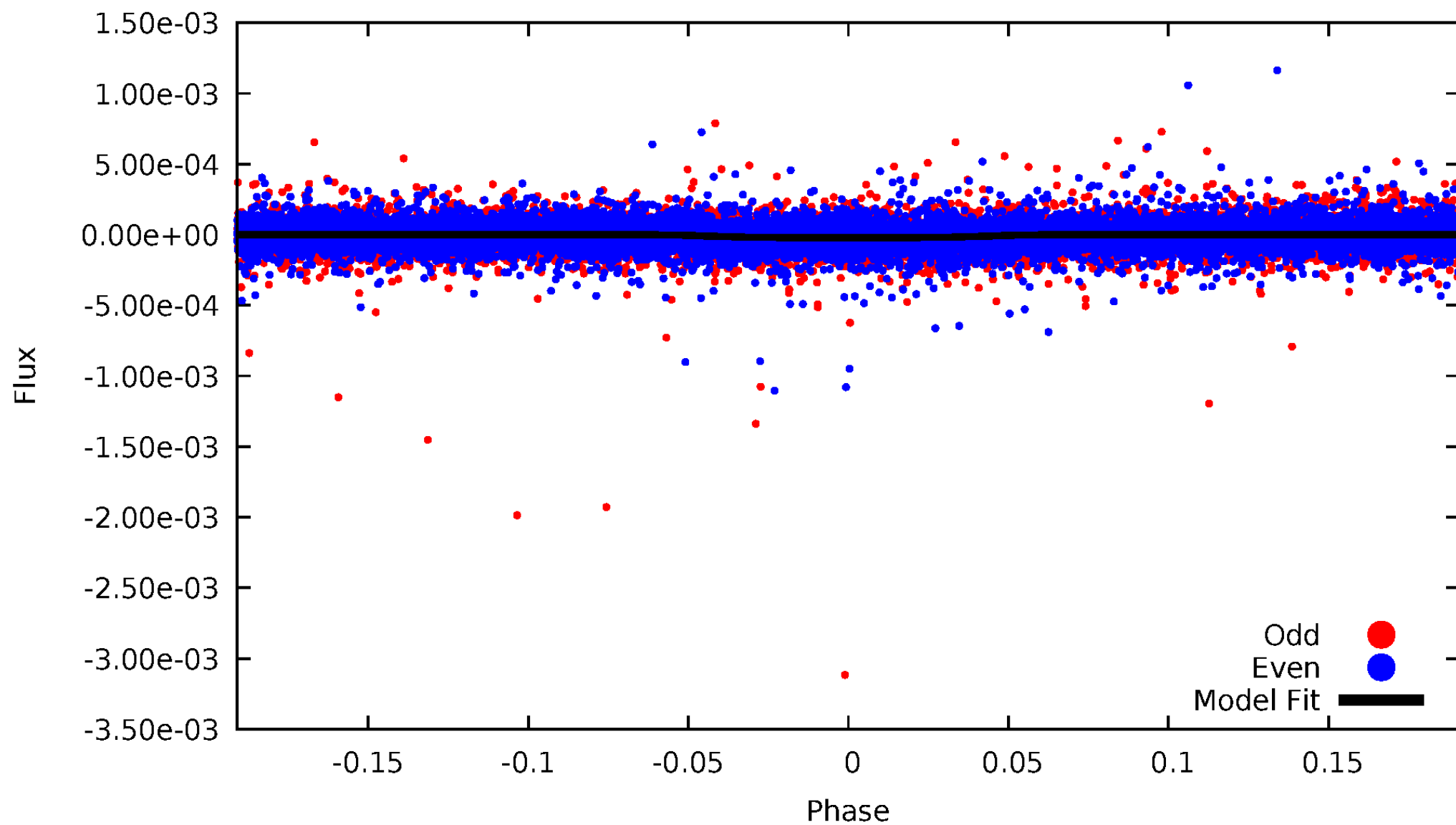


TCE 005725087-03



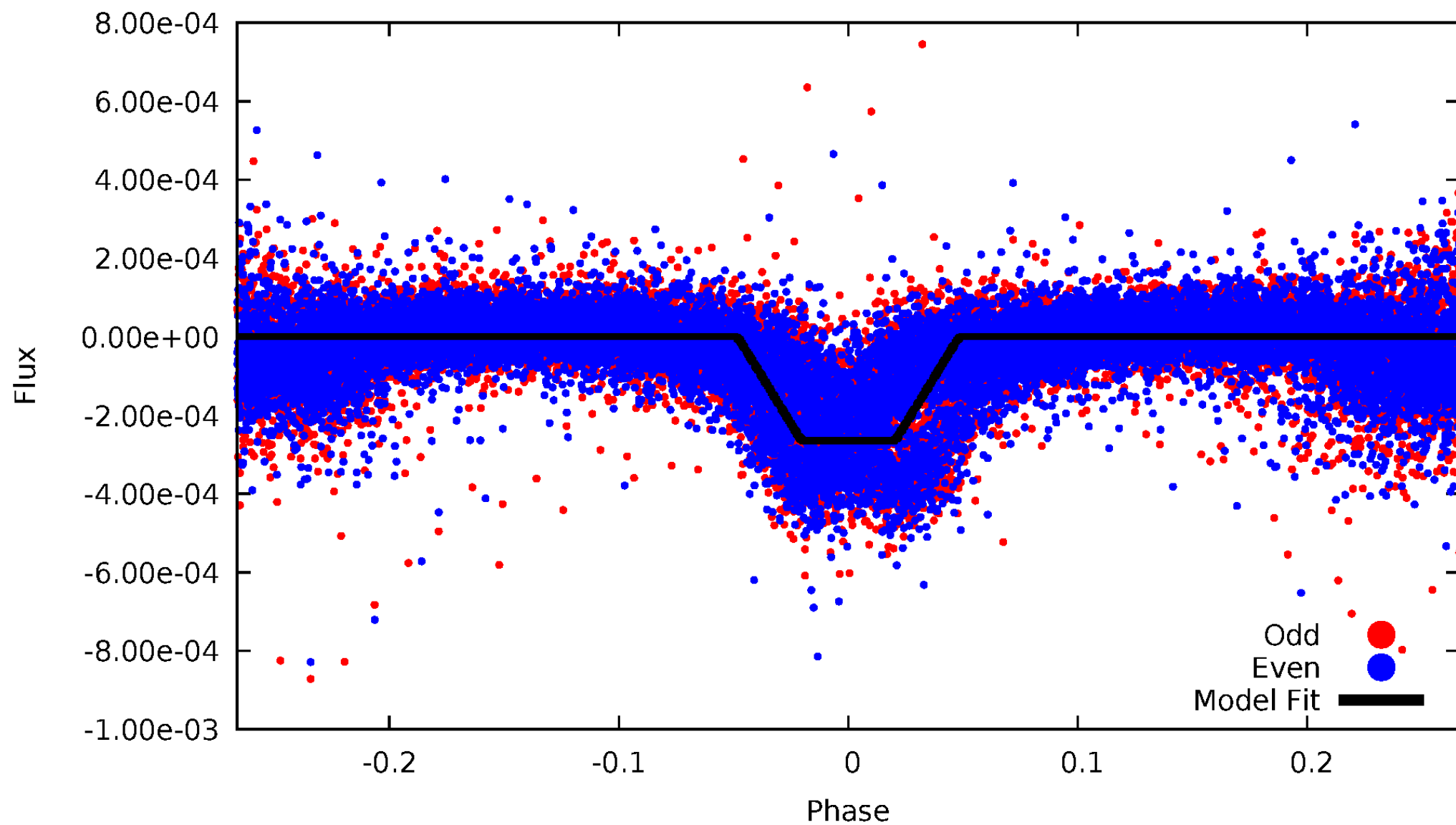
DV Odd/Even

TCE 005725087-03



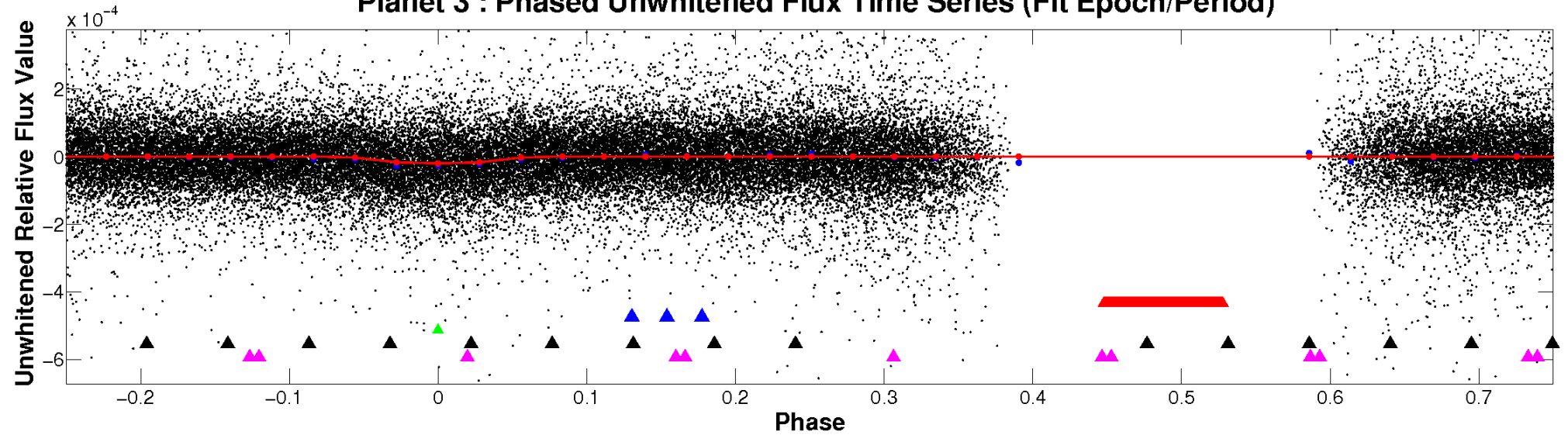
ALT Odd/Even

TCE 005725087-03

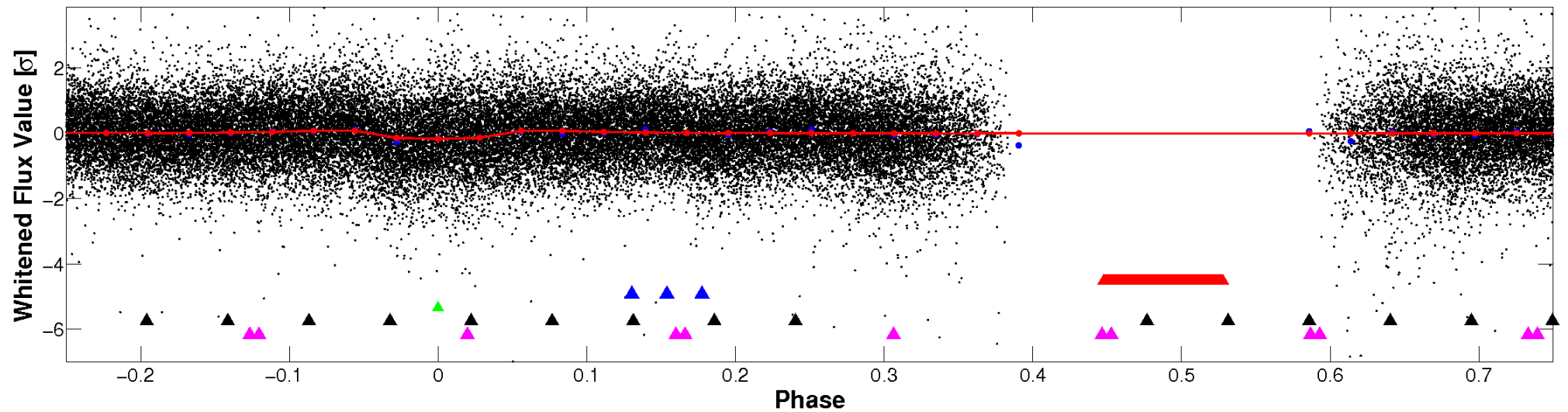


Non-Whitened Vs. Whitened Light Curve

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

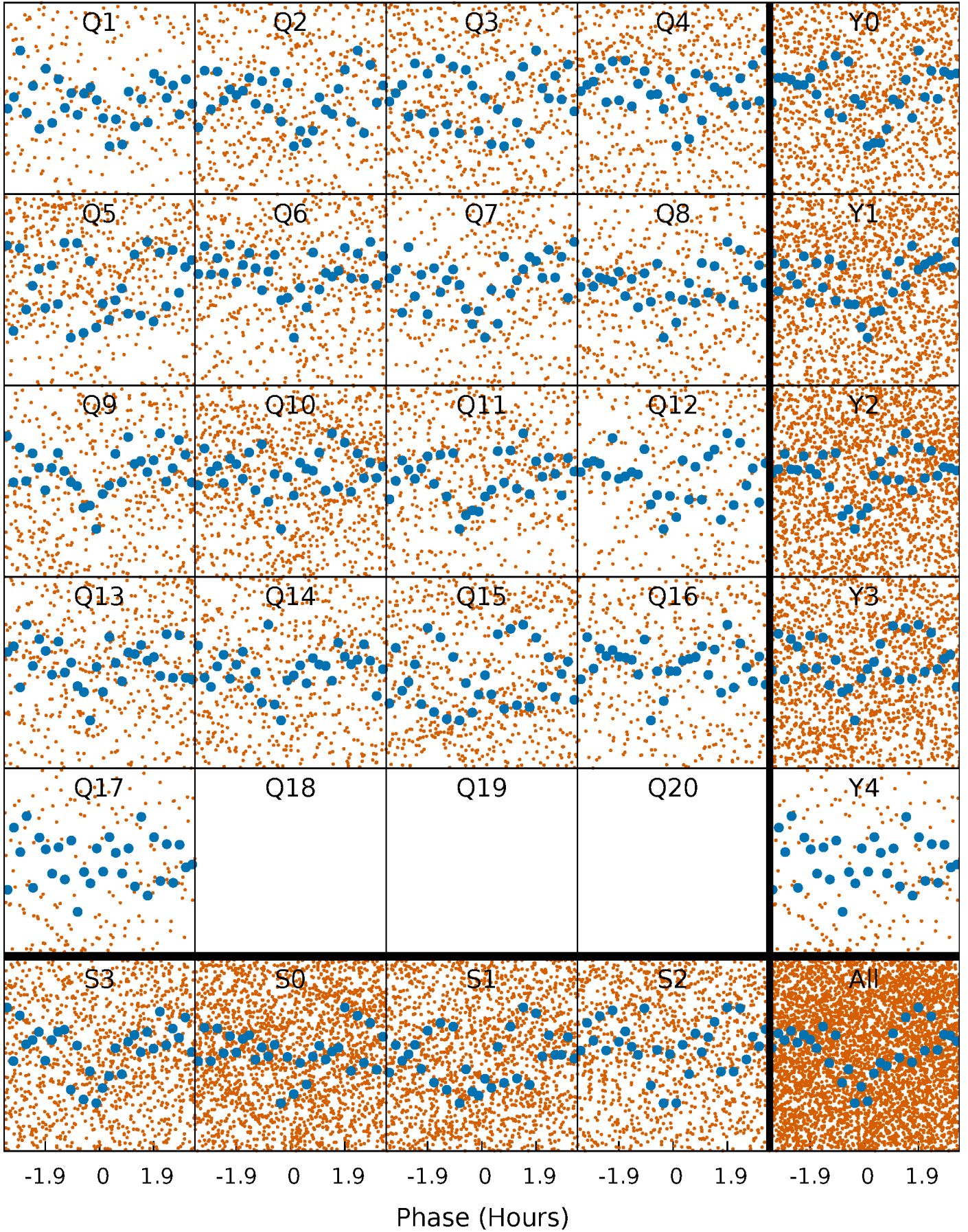


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



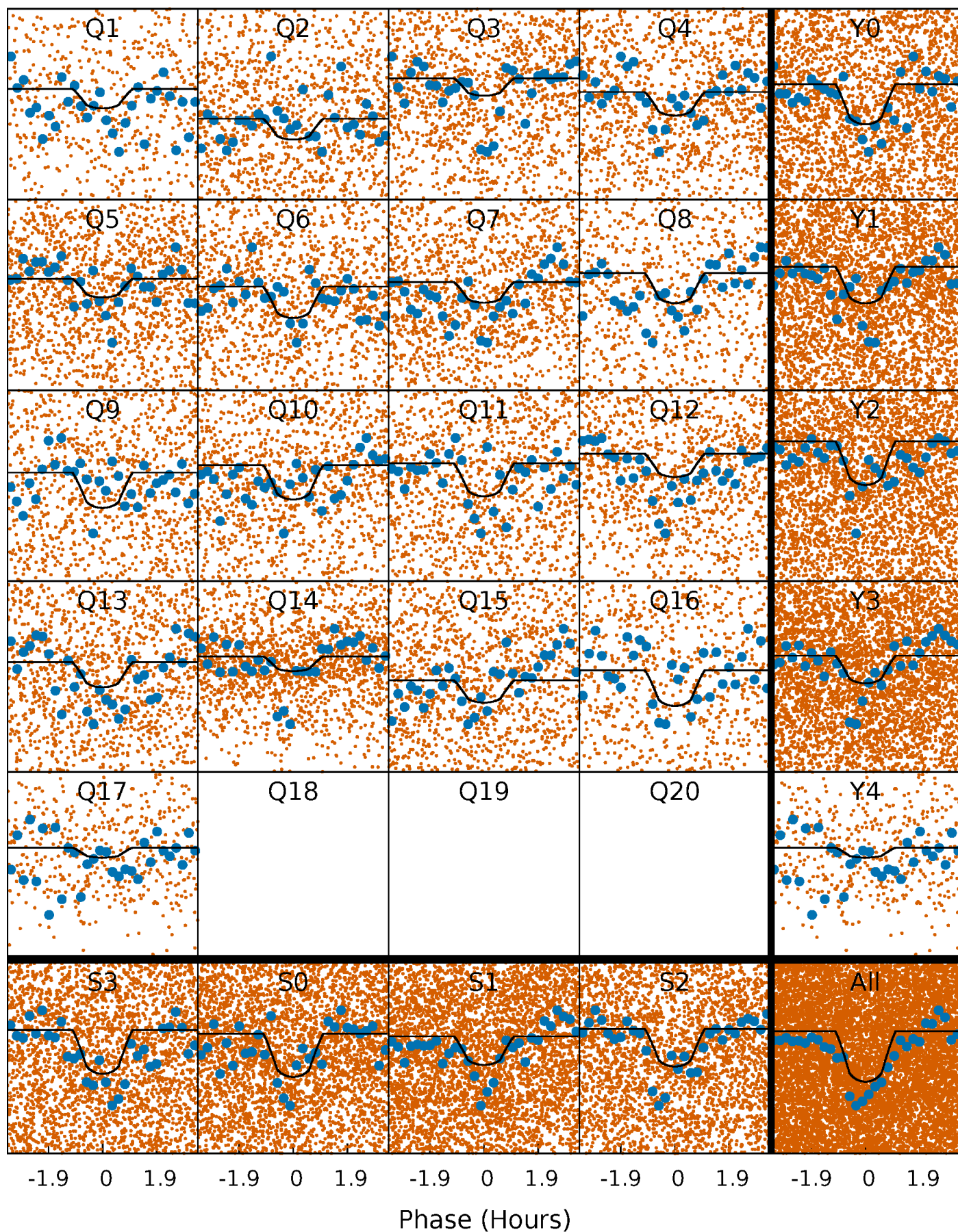
PDC Quarter-Phased Transit Curves

TCE 005725087-03 $P = 0.732422$ Days $T_0 = 132.072454$ (BKJD)



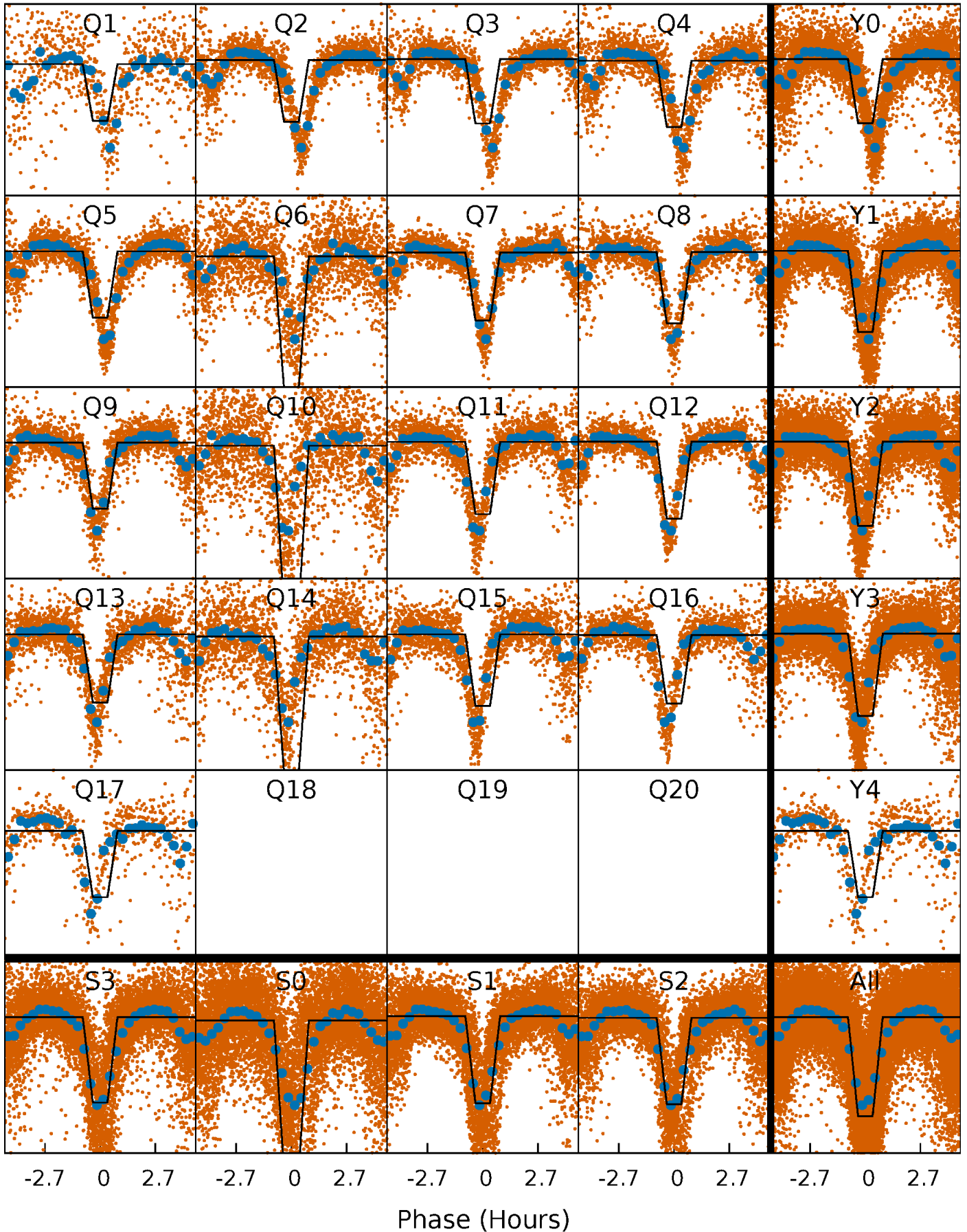
DV Quarter-Phased Transit Curves

TCE 005725087-03 P= 0.732422 Days $T_0=132.072454$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

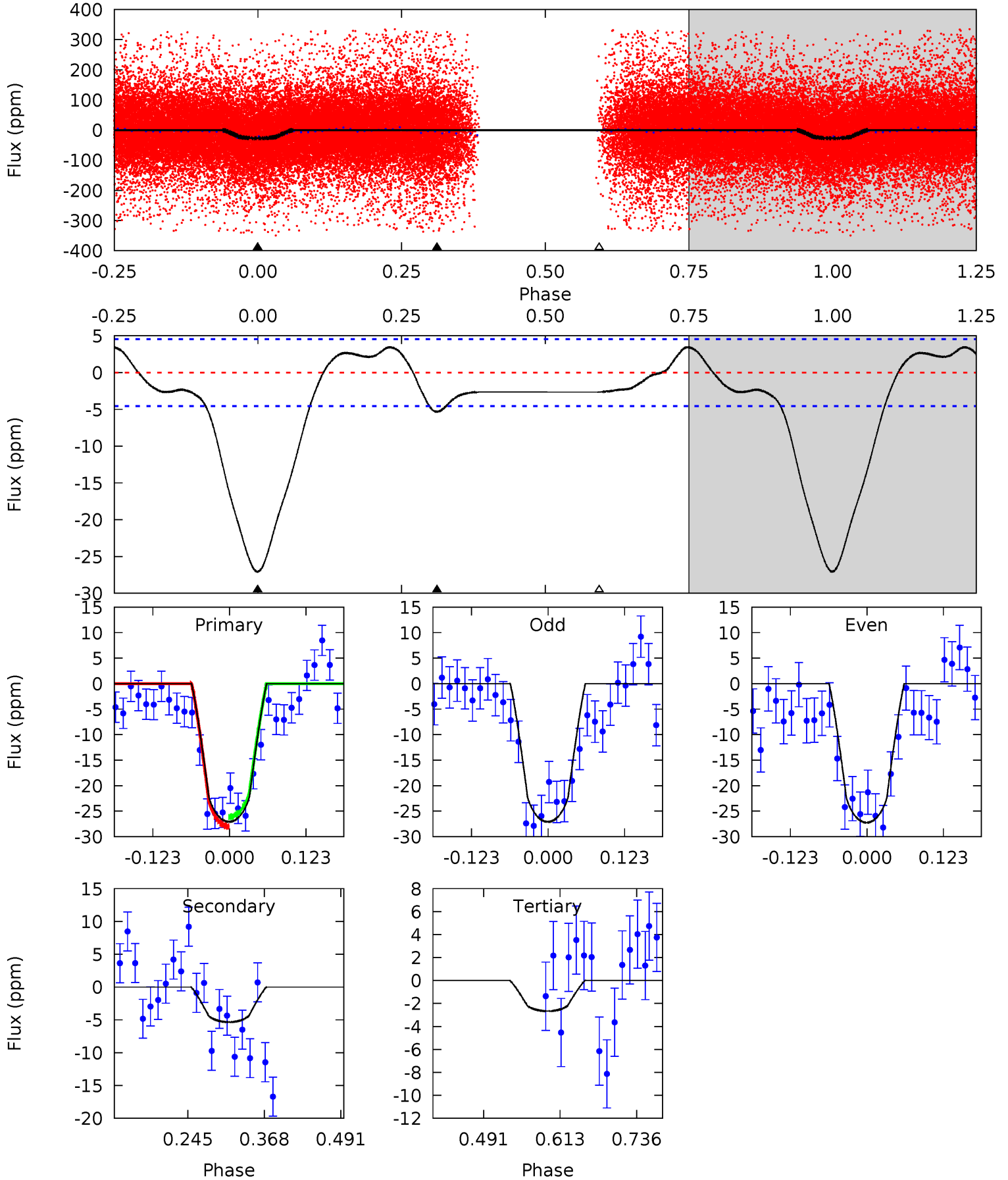
TCE 005725087-03 P= 0.732418 Days $T_0=132.073055$ (BKJD)



DV Model-Shift Uniqueness Test

005725087-03, P = 0.732422 Days, E = 131.340032 Days

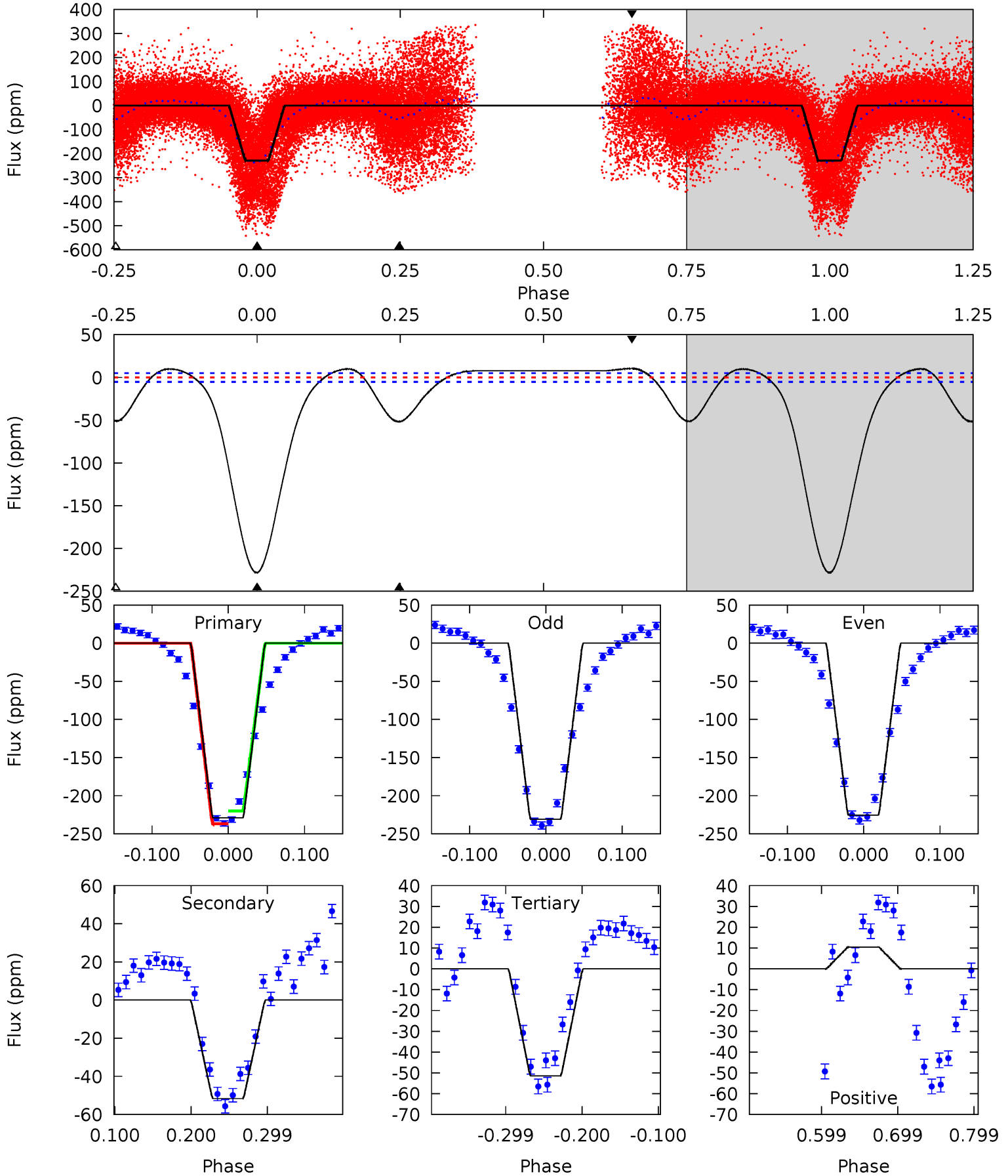
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	5.31	2.65	0	4.52	1.54	2.09	24.3	26.9	2.66	5.31	0.07	1.01	0.11	0.97



Alt Model-Shift Uniqueness Test

005725087-03, P = 0.732418 Days, E = 131.340637 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
204.8	46.2	45.9	9.36	4.57	1.65	17.9	158.9	195.5	0.24	36.8	2.32	0.96	0.04	8.18



Stellar Parameters For KIC 005725087

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4448^{+88}_{-122}	$1.694^{+0.033}_{-0.027}$	$-0.480^{+0.200}_{-0.250}$	$31.500^{+1.323}_{-7.056}$	$1.789^{+0.079}_{-0.708}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+42%/-52%	+4%/-22%	+4%/-40%	+32%/-9%
Source	PHO54	AST54	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 005725087-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5 ± 1	$17.83^{+3.33}_{-3.40}$	11056^{+267}_{-325}	-9104^{+450}_{-390}	$0.003^{+0.002}_{-0.001}$
Alt.	-52 ± 1	$56.43^{+3.78}_{-4.59}$	11065^{+264}_{-340}	-9130^{+475}_{-363}	$0.003^{+0.000}_{-0.000}$

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

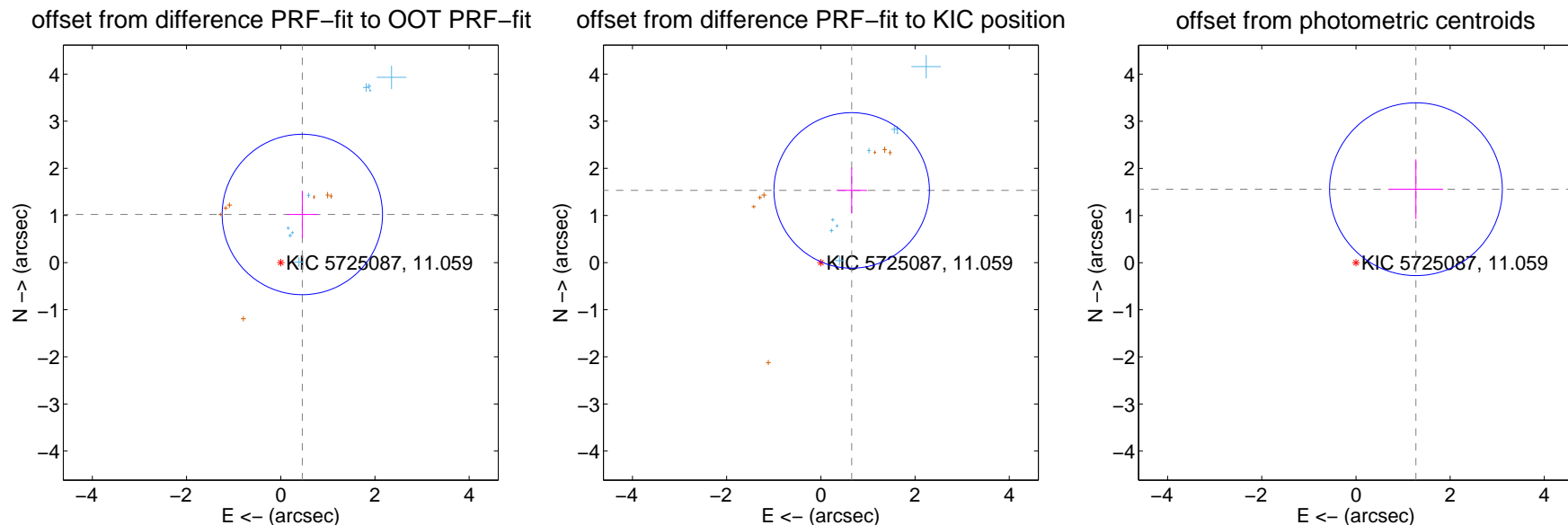
DV Centroid Data

Supplemental centroid analysis for 005725087-03. **Kepler magnitude: 11.06.** Transit SNR 13.57

There are 10 quarters with good PRF difference image offsets

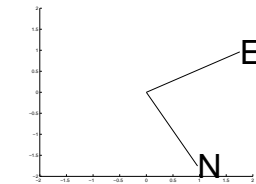
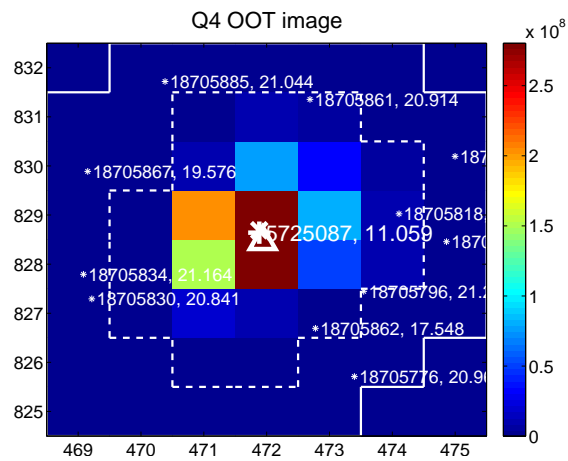
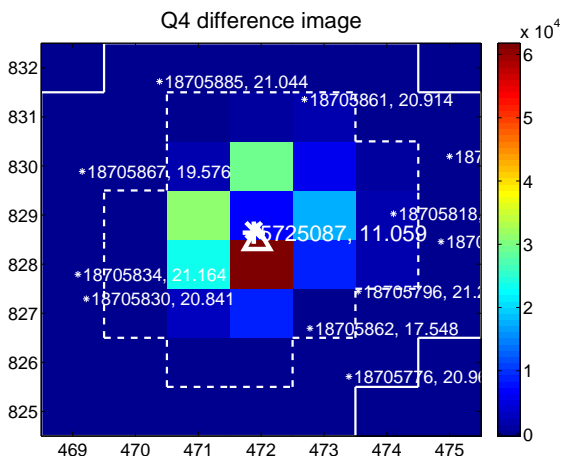
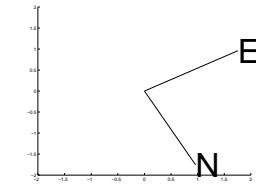
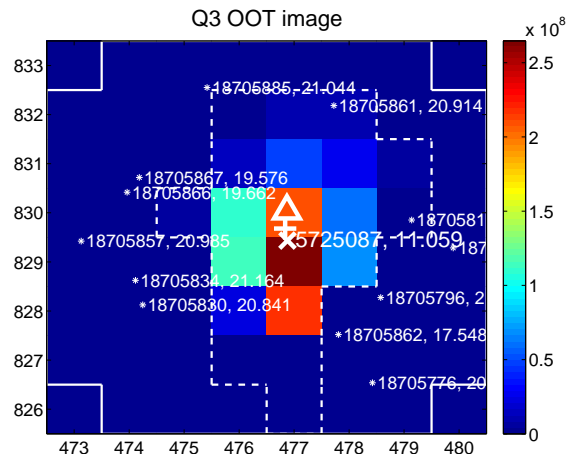
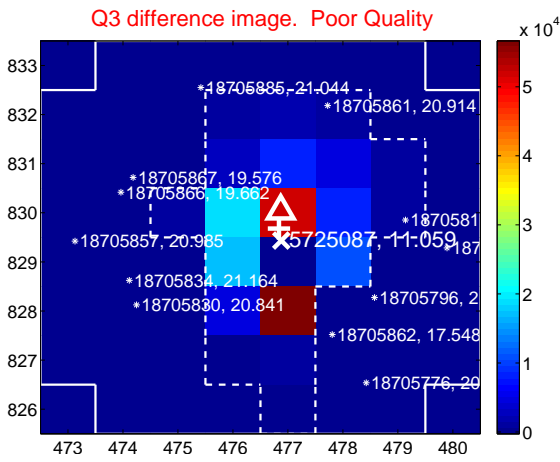
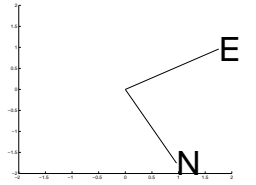
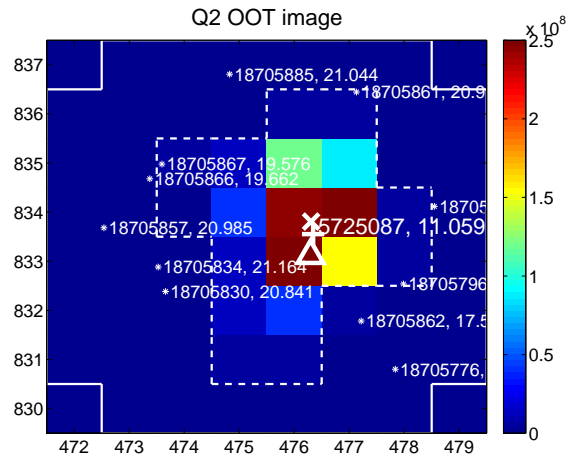
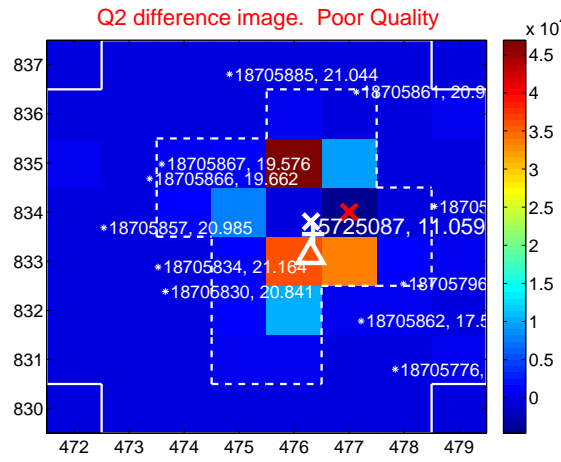
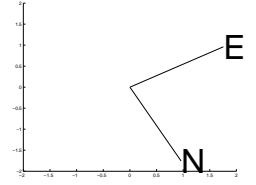
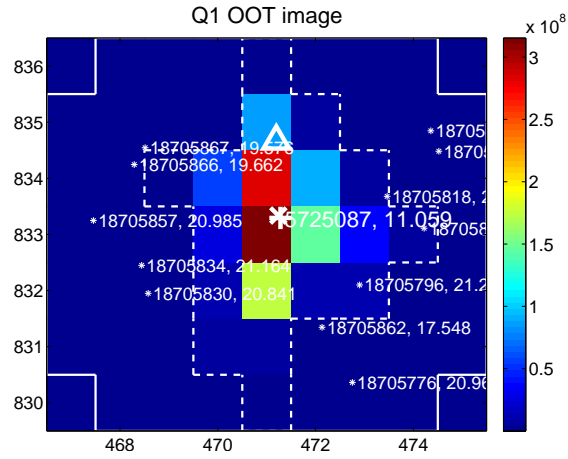
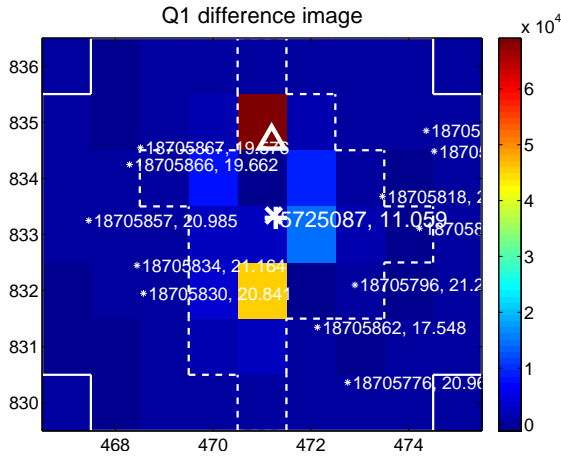
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.119 ± 0.567	1.97	-0.458 ± 0.324	1.021 ± 0.502
PRF-fit source offset from KIC position	1.666 ± 0.550	3.03	-0.654 ± 0.325	1.532 ± 0.485
photometric centroid source offset	2.01 ± 0.61	3.29	-1.27 ± 0.58	1.56 ± 0.63

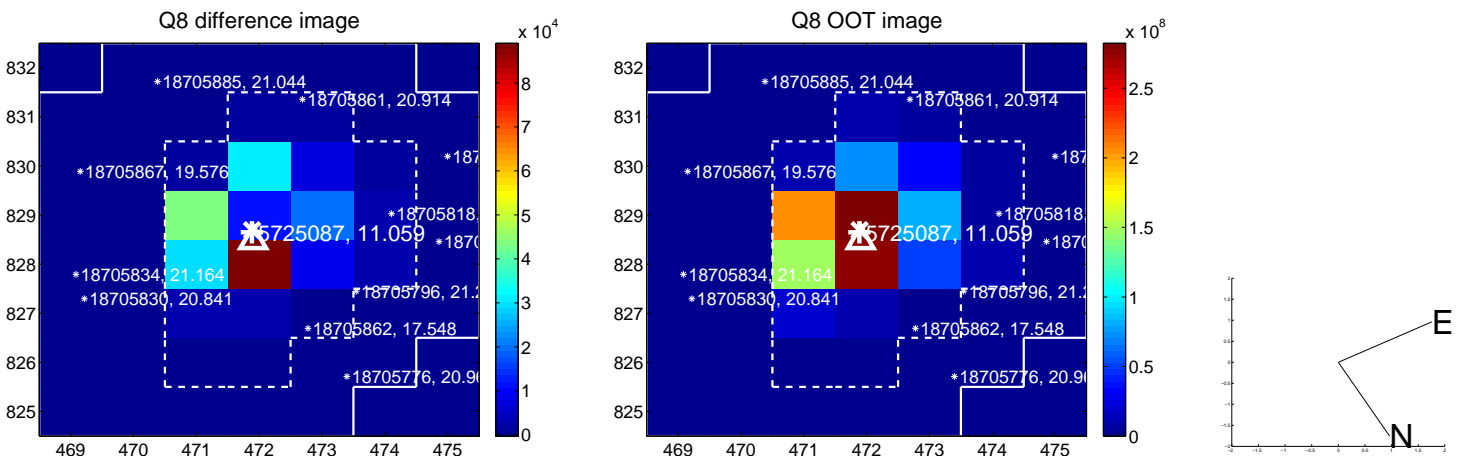
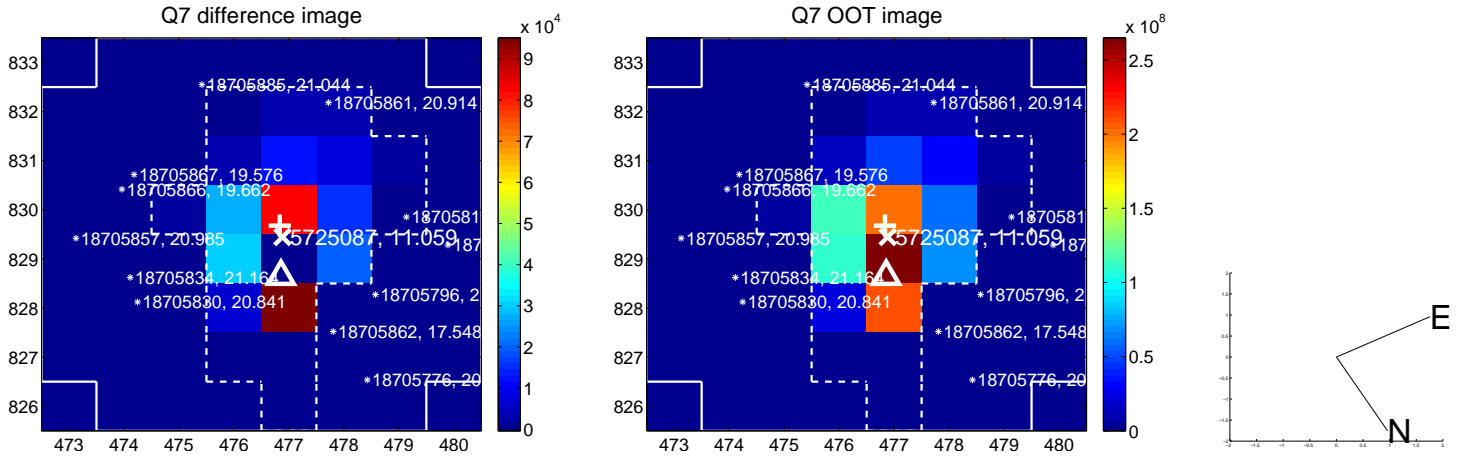
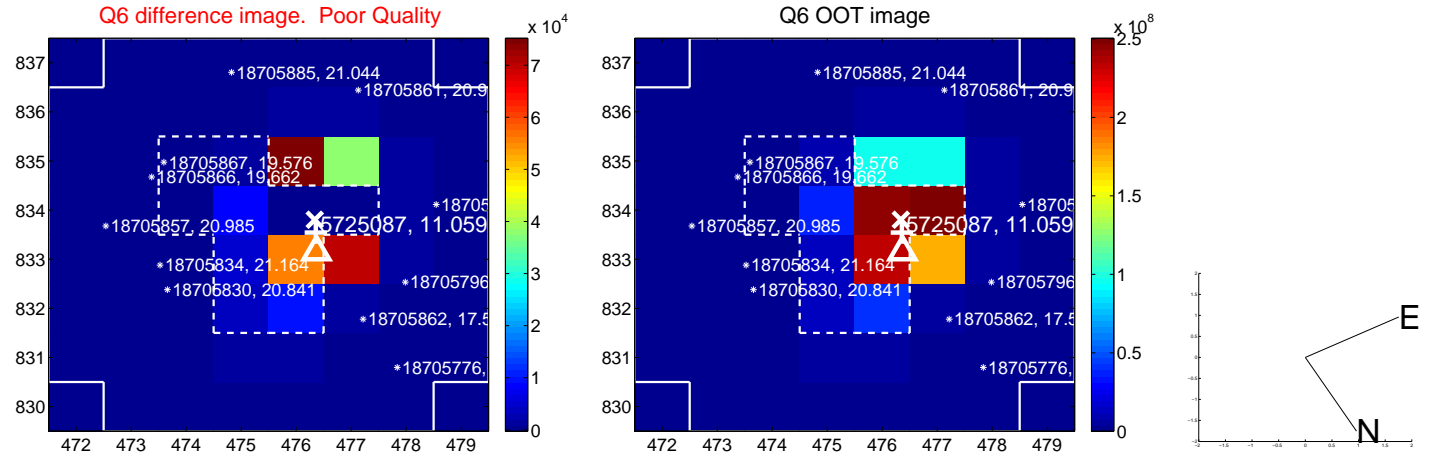
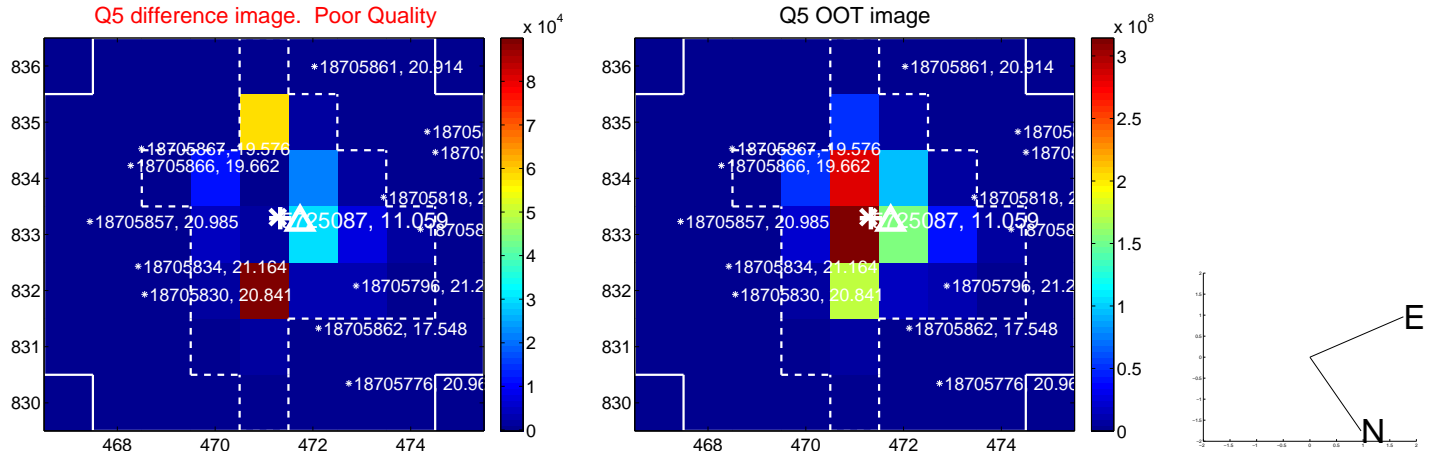


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

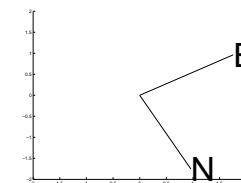
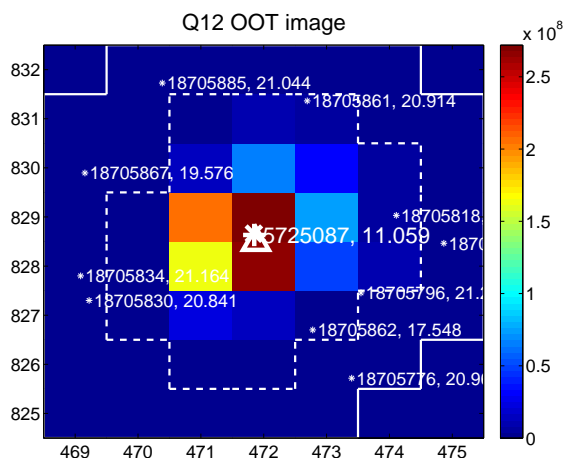
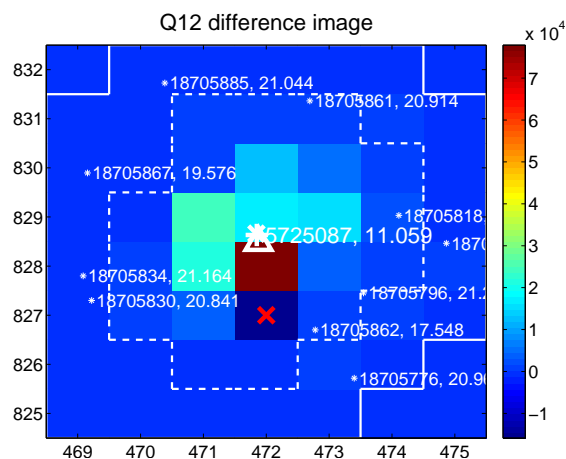
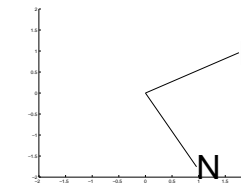
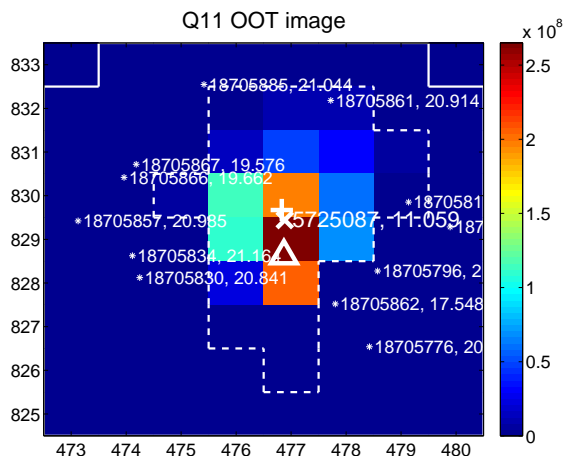
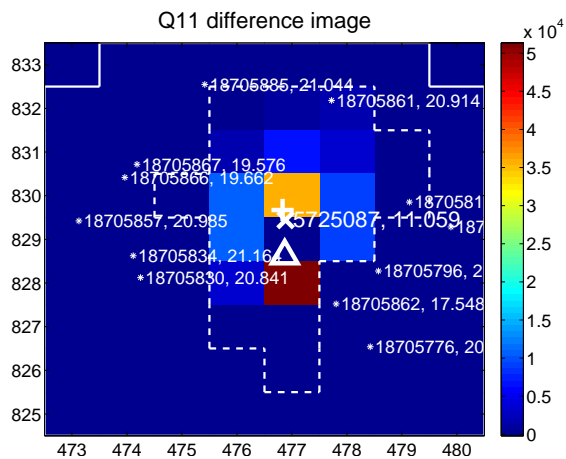
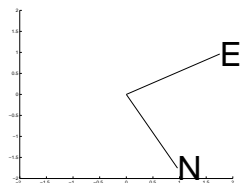
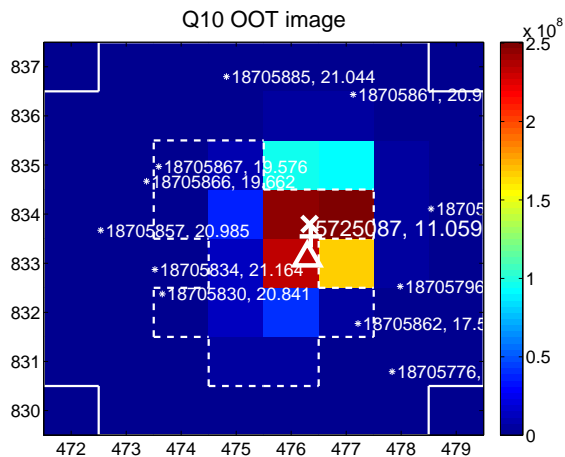
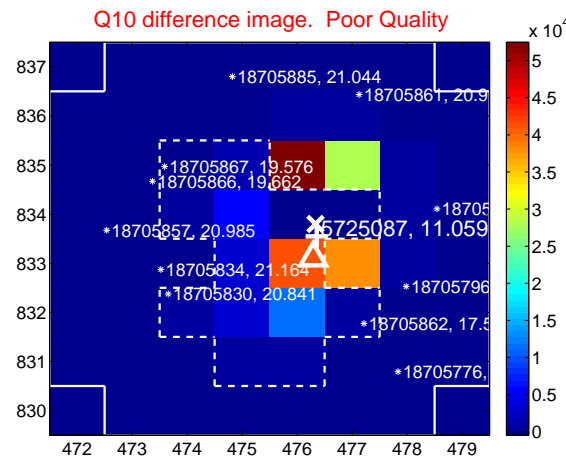
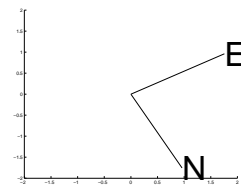
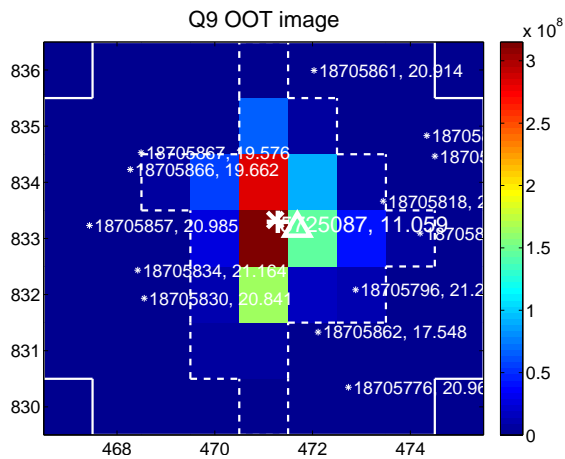
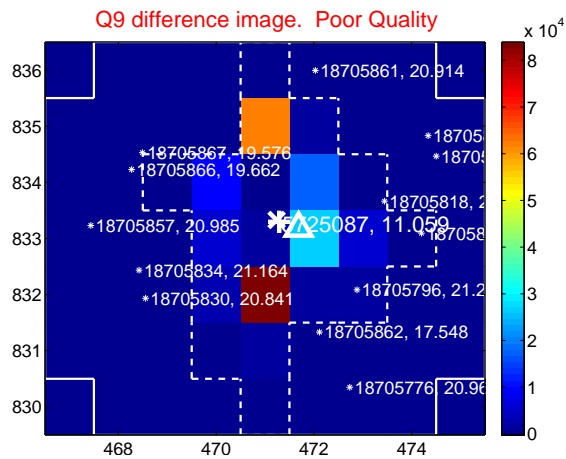
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



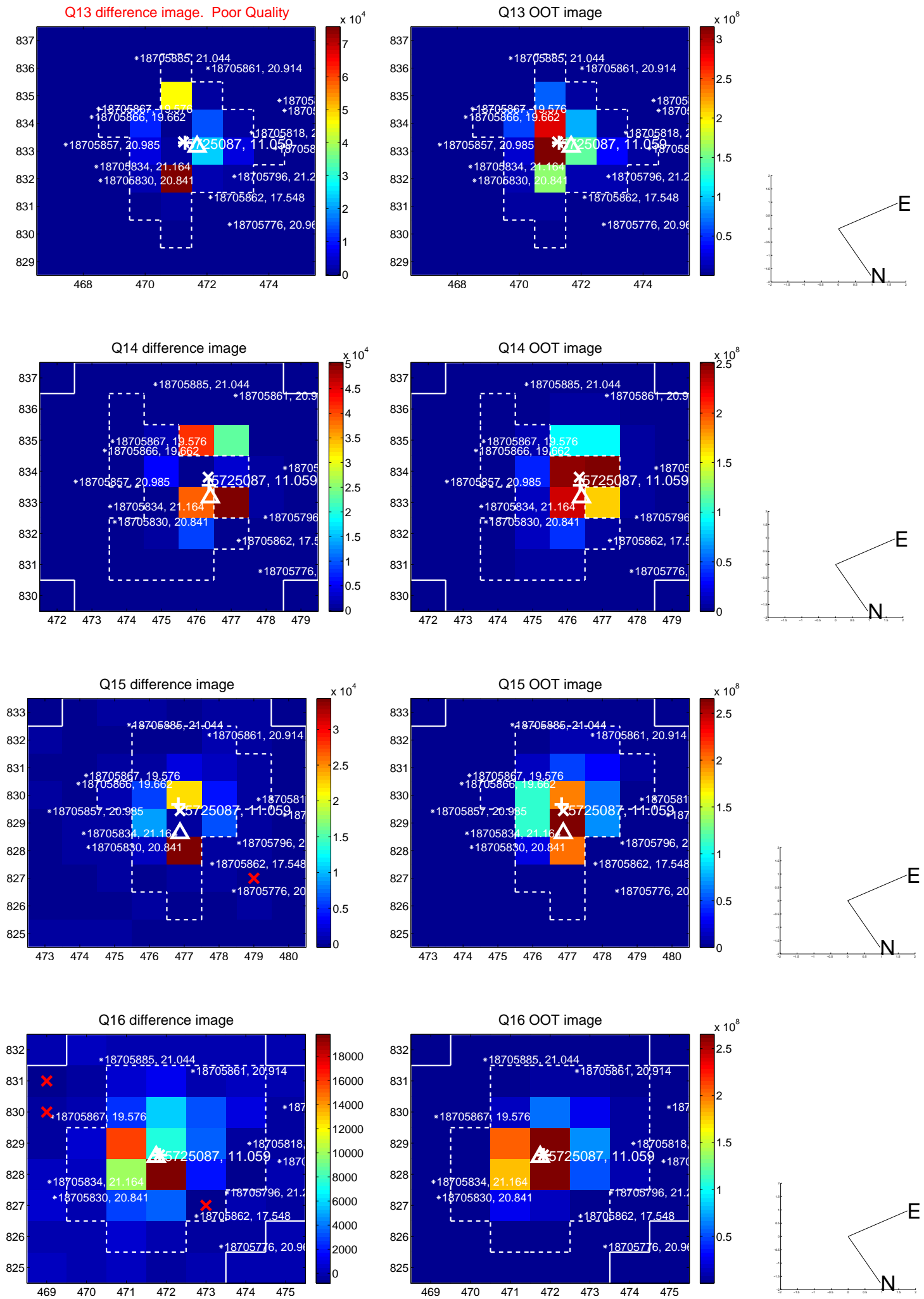
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



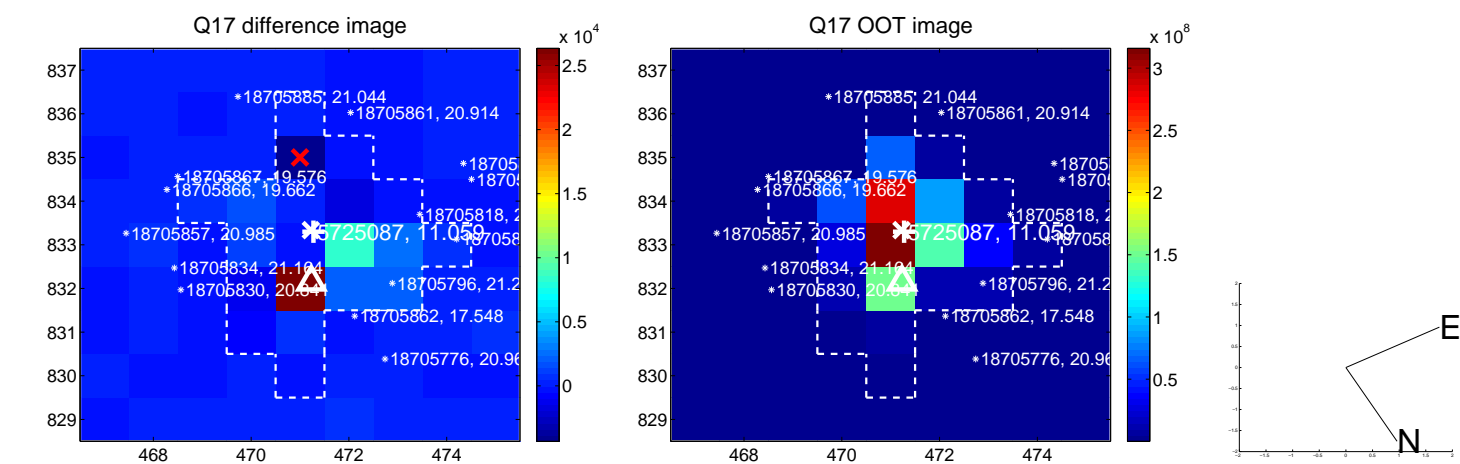
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



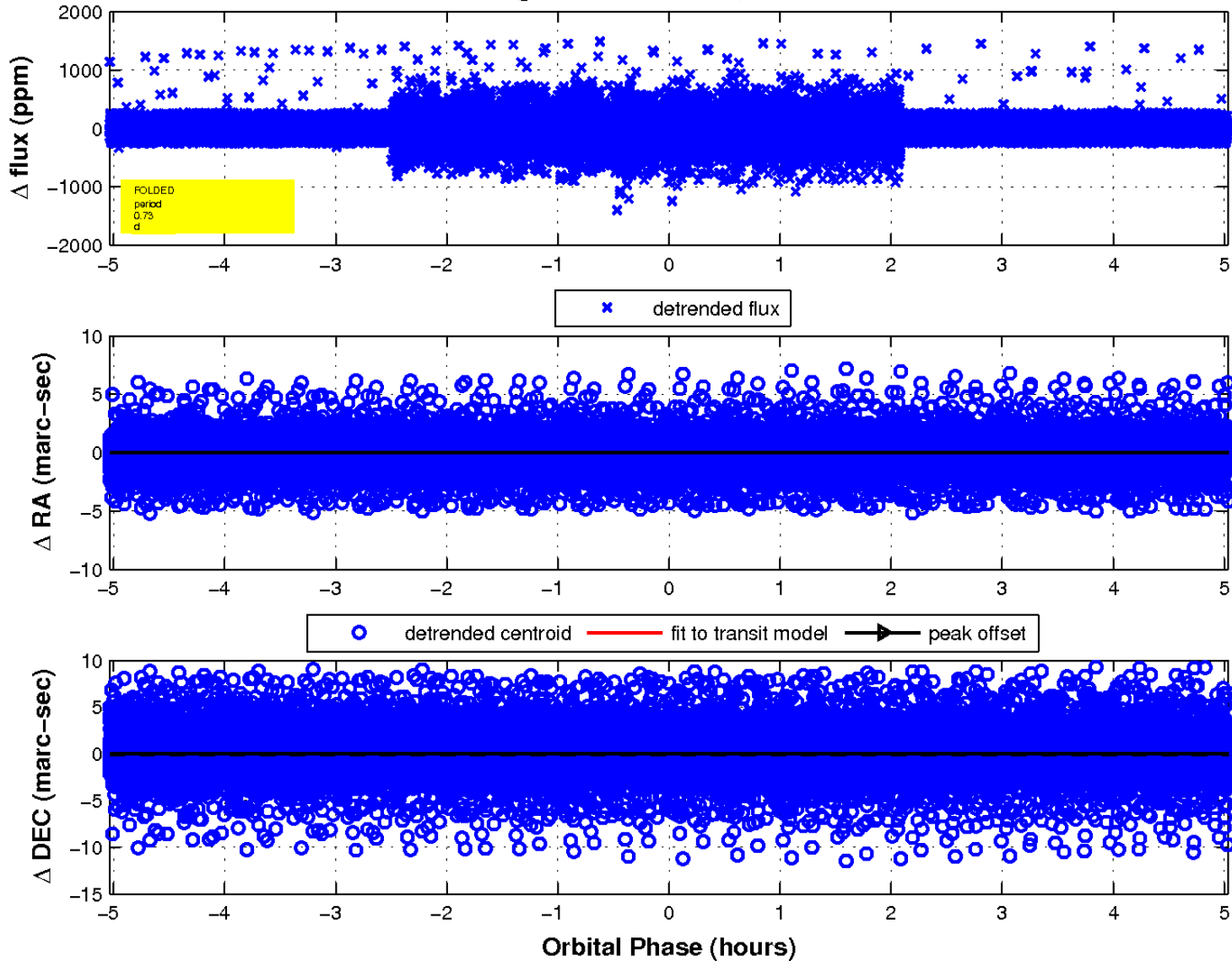
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

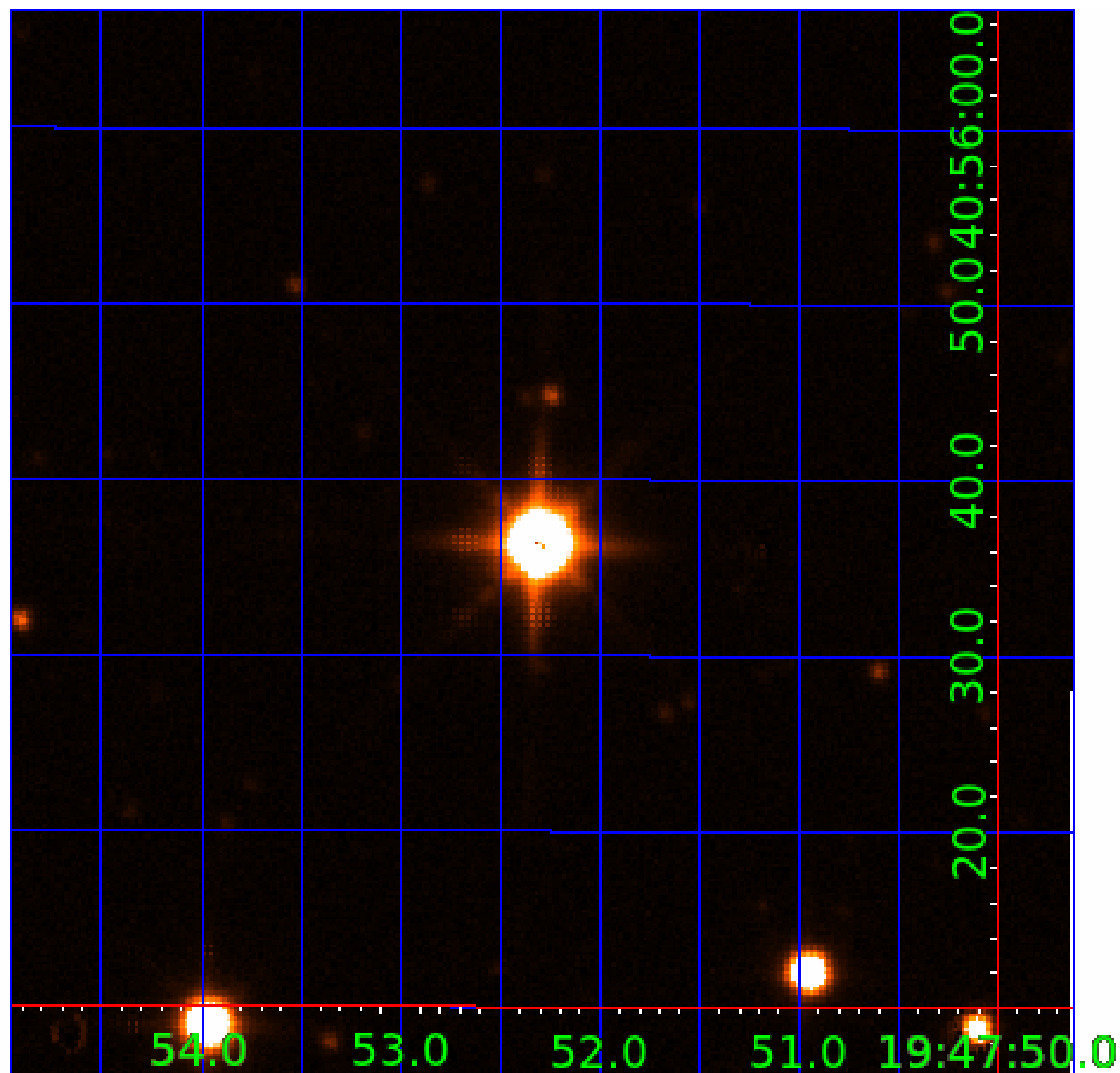


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 005725087

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})
005725087-01	OBS	0033.01	0.732392	131.726671	20.2	1.191	13.8	15.6	31.50	4448	17.60	0.00
005725087-02	OBS	No	528.791160	329.956315	1493.0	24.183	15.0	5.1	31.50	4448	146.29	144.12
005725087-03	OBS	No	0.732422	132.072454	20.9	1.678	12.8	13.6	31.50	4448	17.83	0.00
005725087-05	OBS	No	119.907233	179.488993	156.2	4.500	14.4	-1.0	31.50	4448	37.67	1042.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005725087-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_DV—HAS_SEC_TCE—CENT_SATURATED
005725087-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQU_DV—MOD_POS_DV—CENT_SATURATED—HALO_GHOST
005725087-03	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_SATURATED—HALO_GHOST
005725087-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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.

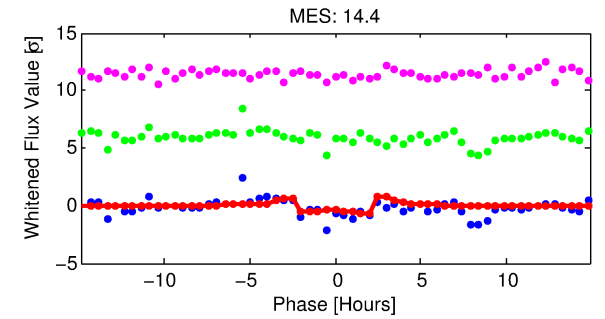
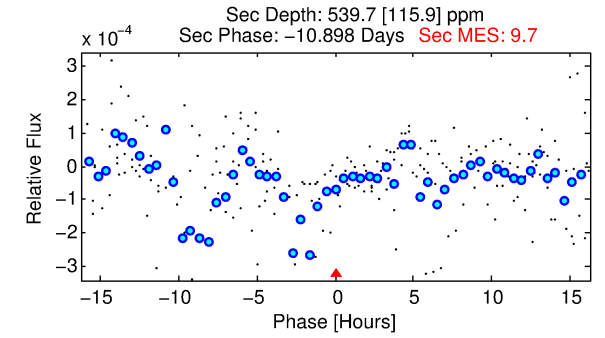
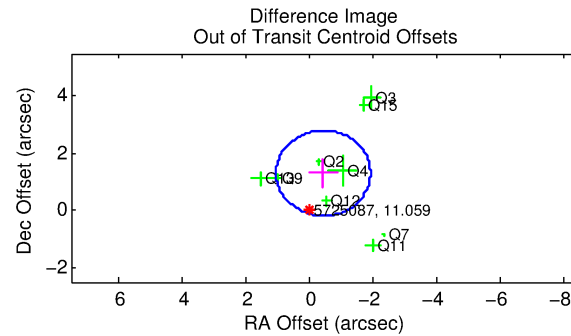
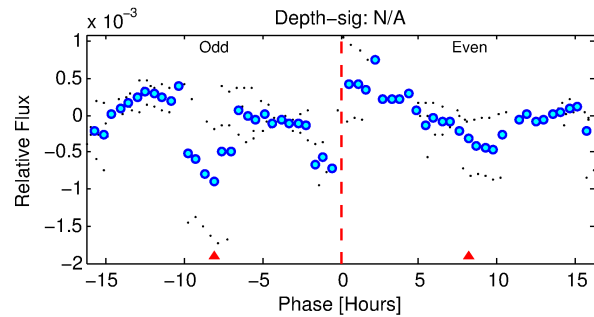
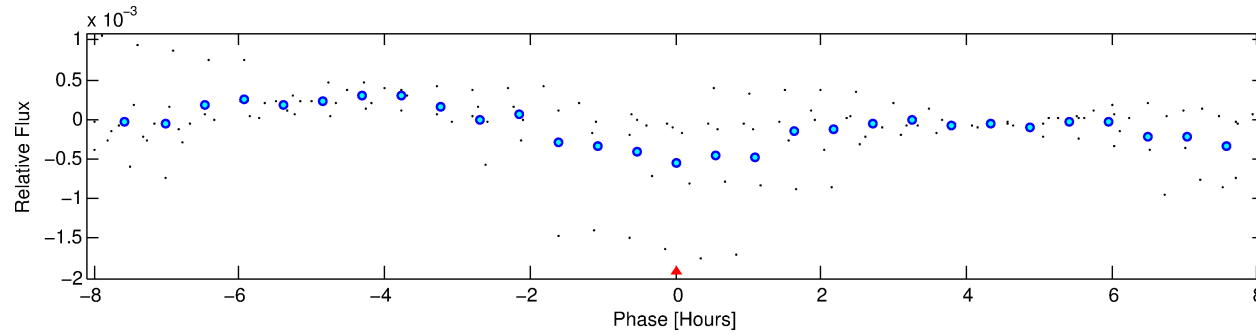
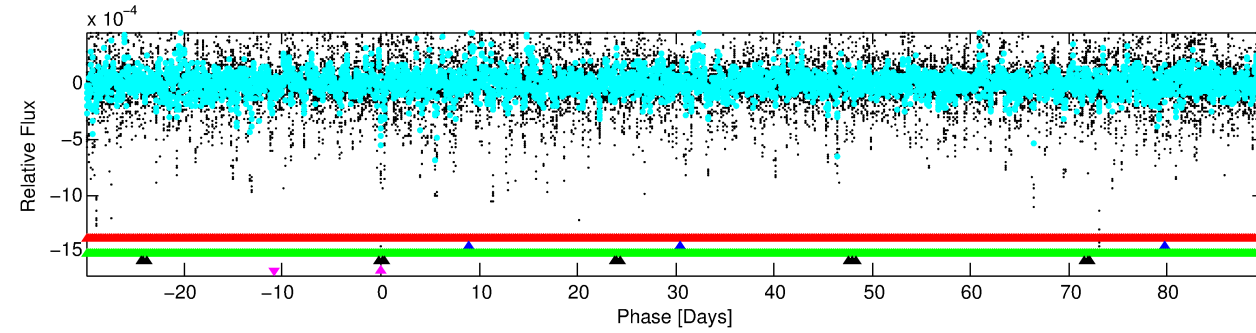
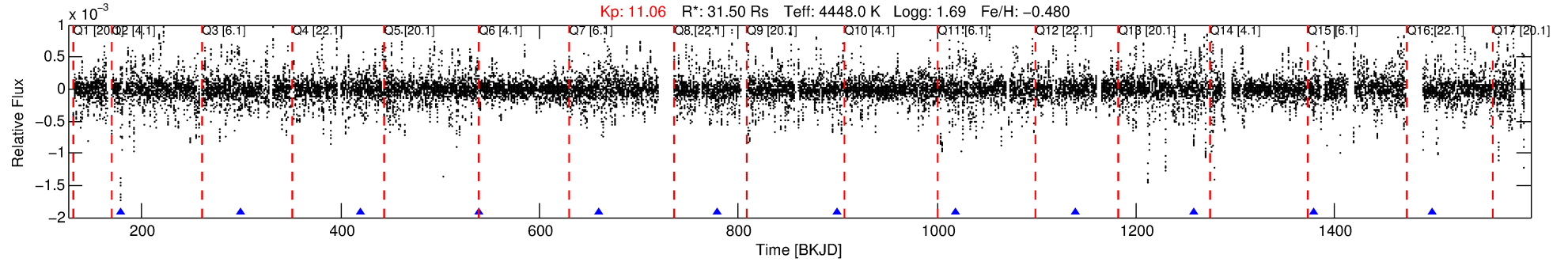
Ephemeris Match Information For 005725087-05

No Significant Match Found

DV One-Page Summary

KIC: 5725087 Candidate: 5 of 5 Period: 119.907 d
KOI: K00033 Corr: No Ephemeris Match

Kp: 11.06 R*: 31.50 Rs Teff: 4448.0 K Logg: 1.69 Fe/H: -0.480



TPS TCE Results:

Period = 119.90723 d
Epoch = 179.4890 BKJD

DV fit results are unavailable

DV Diagnostic Results:

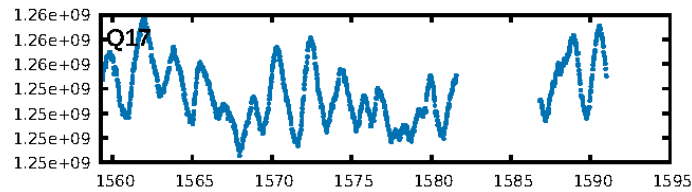
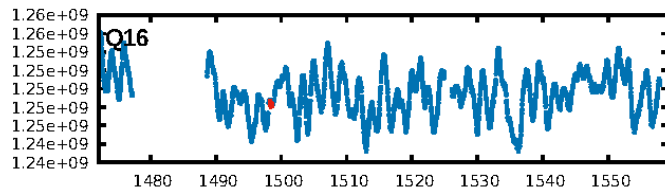
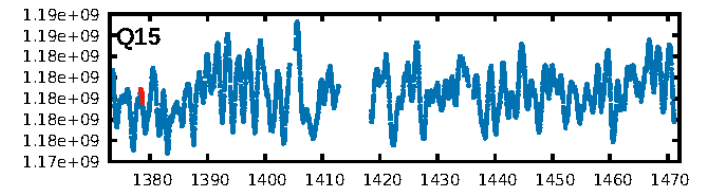
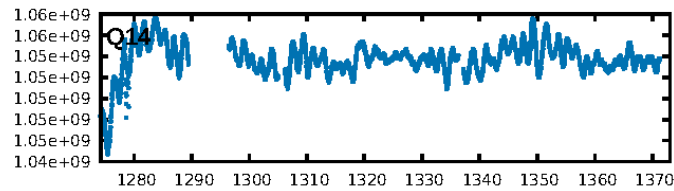
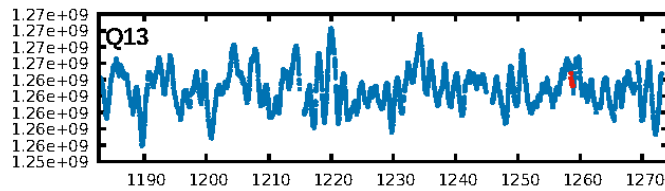
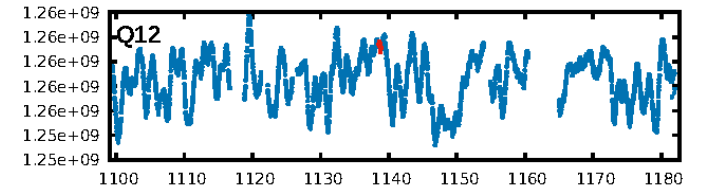
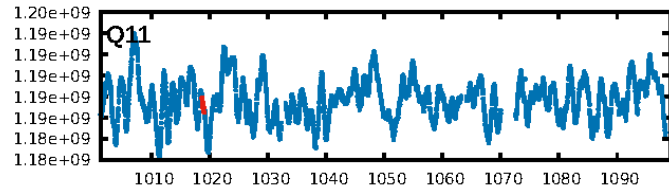
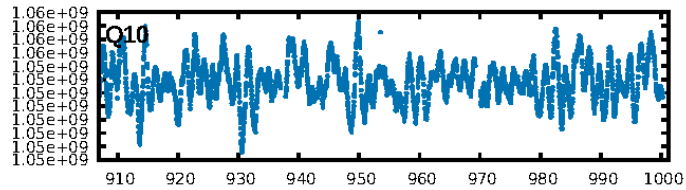
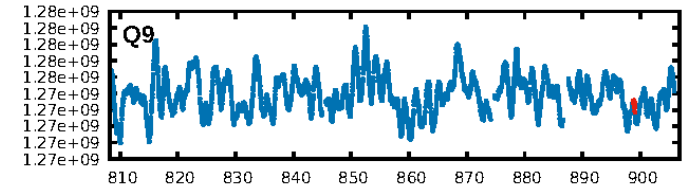
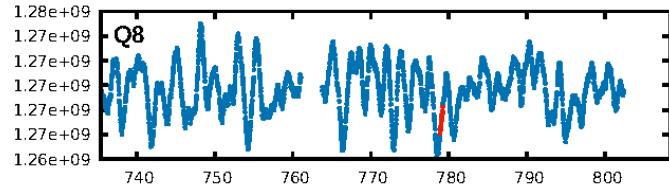
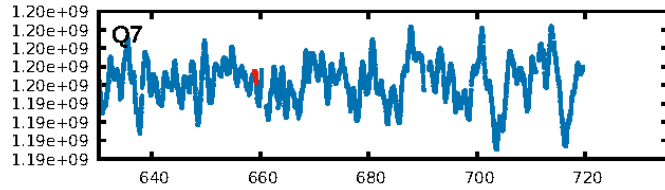
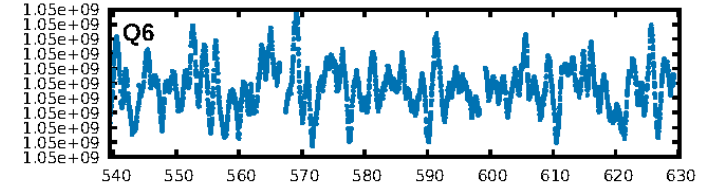
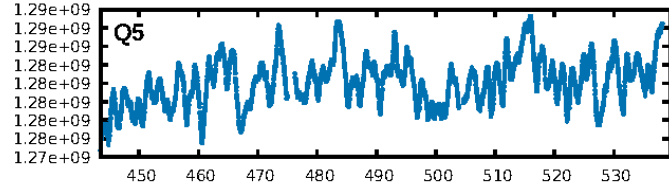
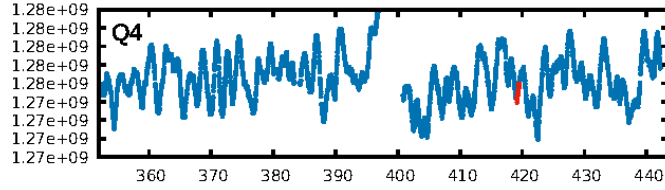
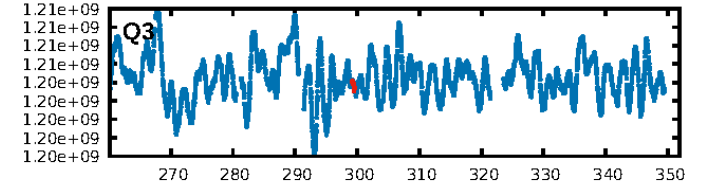
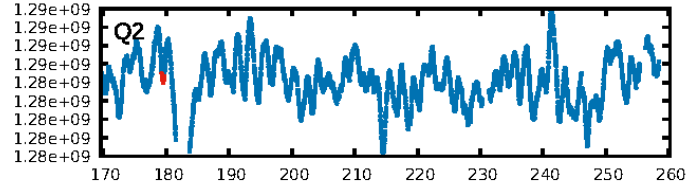
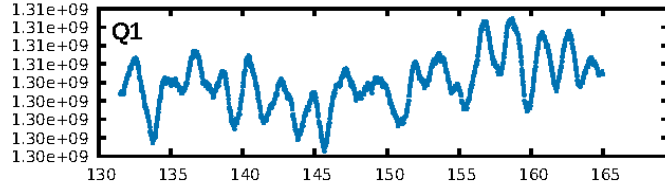
ShortPeriod-sig: 100.0% [113.06σ]
LongPeriod-sig: 100.0% [398.93σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.557

Centroid-sig: 45.9%
Centroid-so: 0.365 arcsec [2.15σ]
OotOffset-rm: 1.380 arcsec [2.78σ]
KicOffset-rm: 1.577 arcsec [2.84σ]
OotOffset-st: 1/4/2/2 [9]
KicOffset-st: 1/4/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/10]

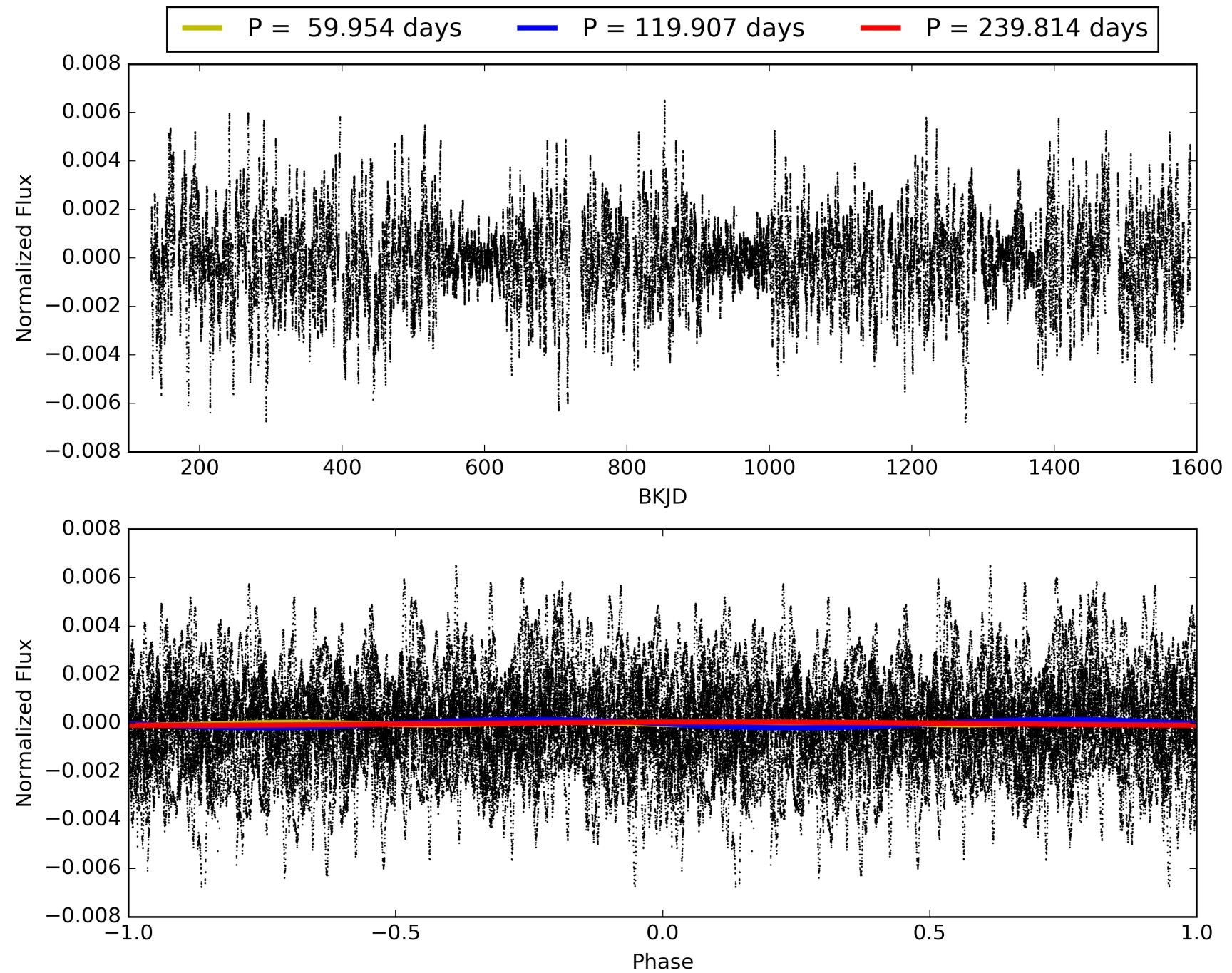
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:44:05 Z

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

TCE 005725087-05, PDC Light Curves

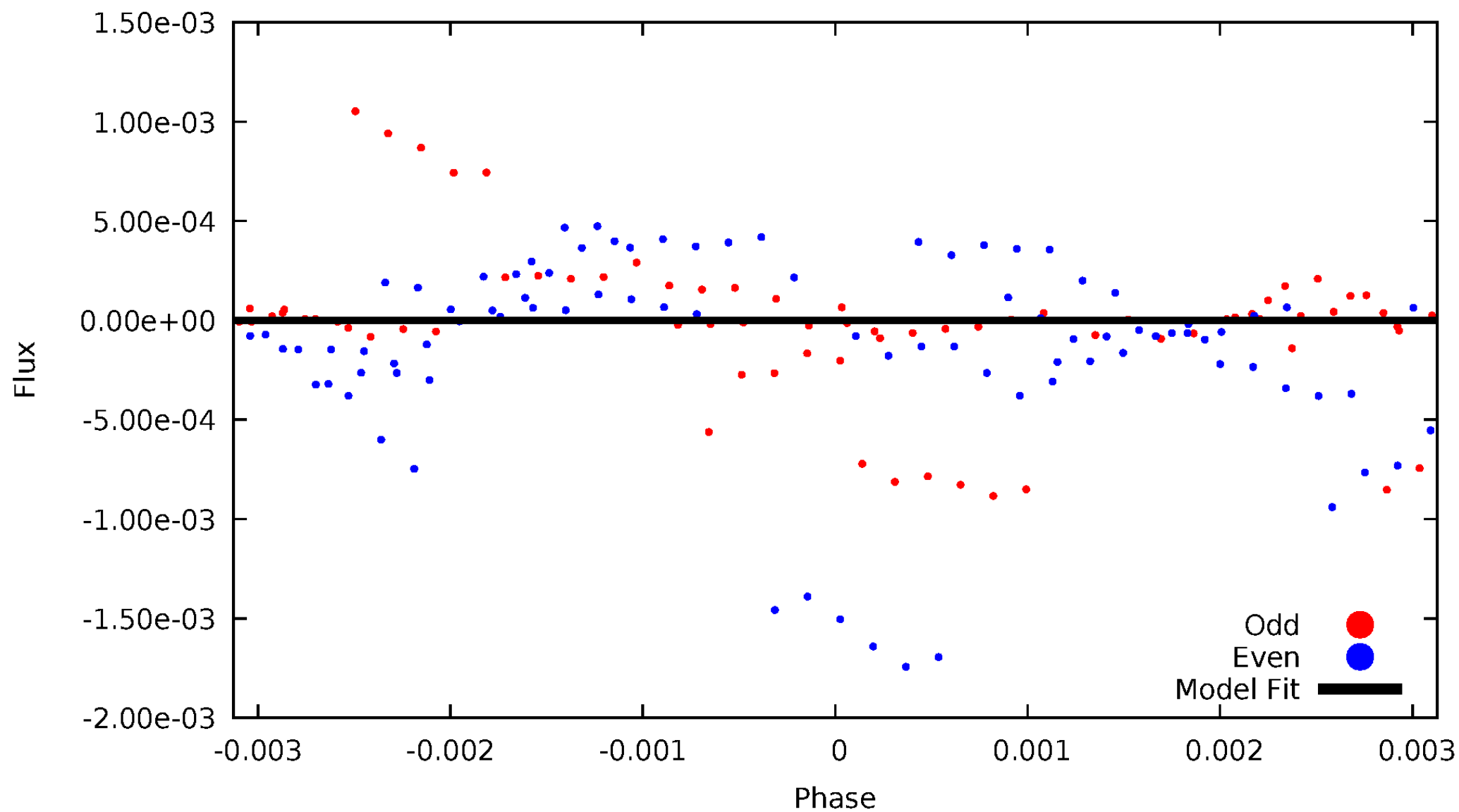


TCE 005725087-05



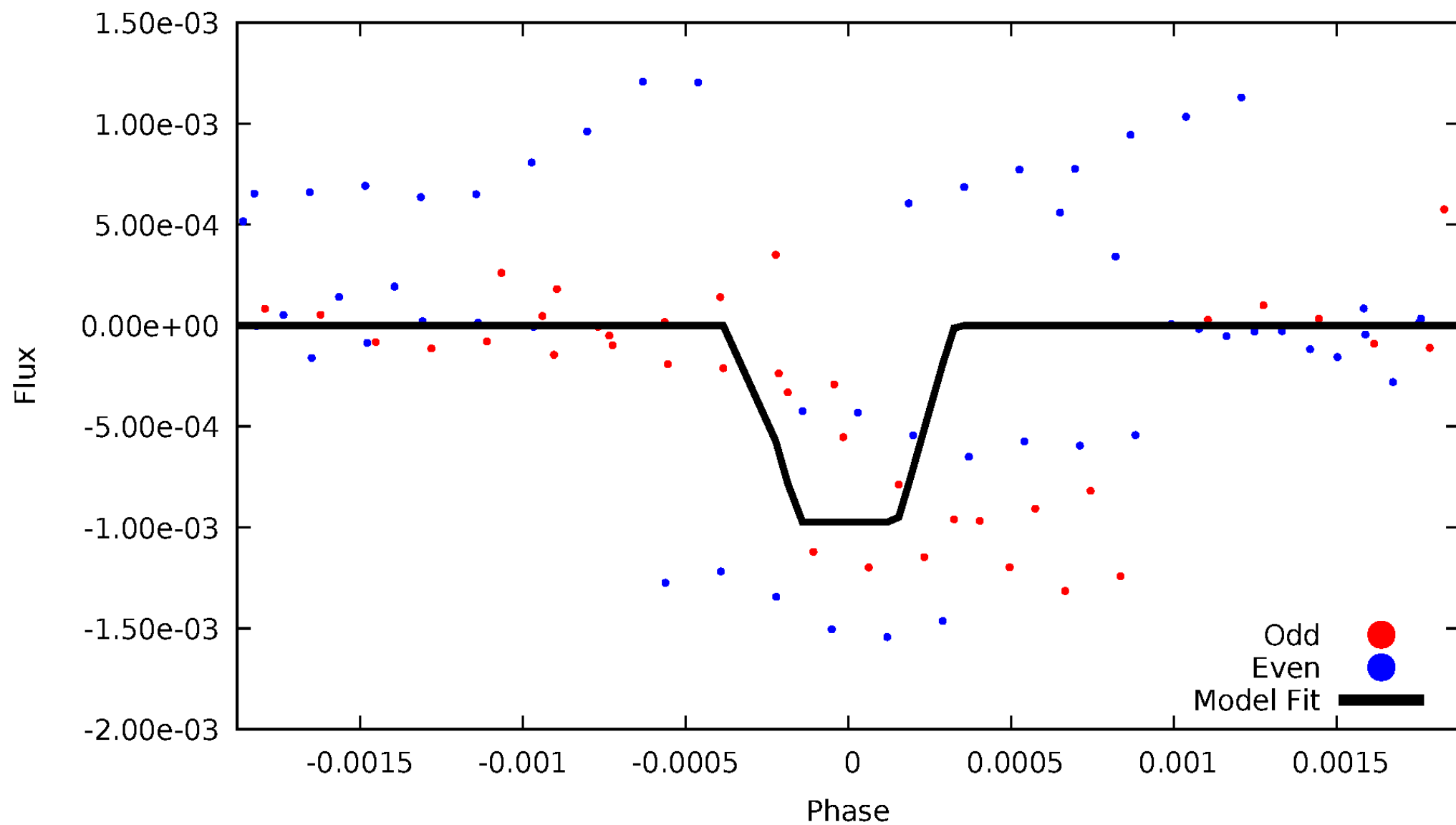
DV Odd/Even

TCE 005725087-05

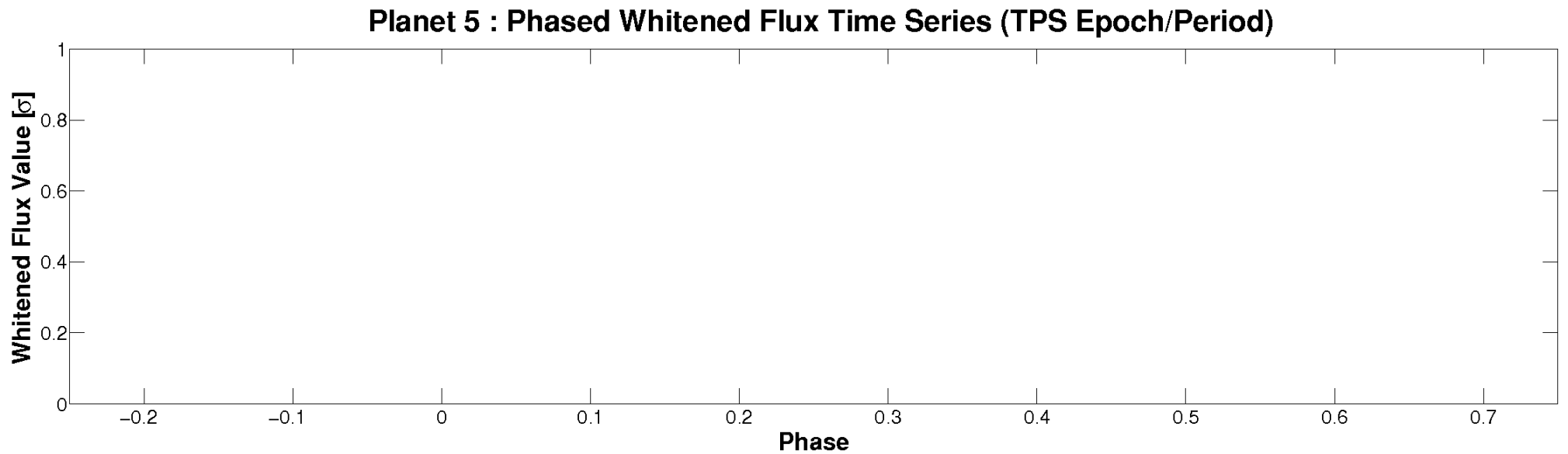
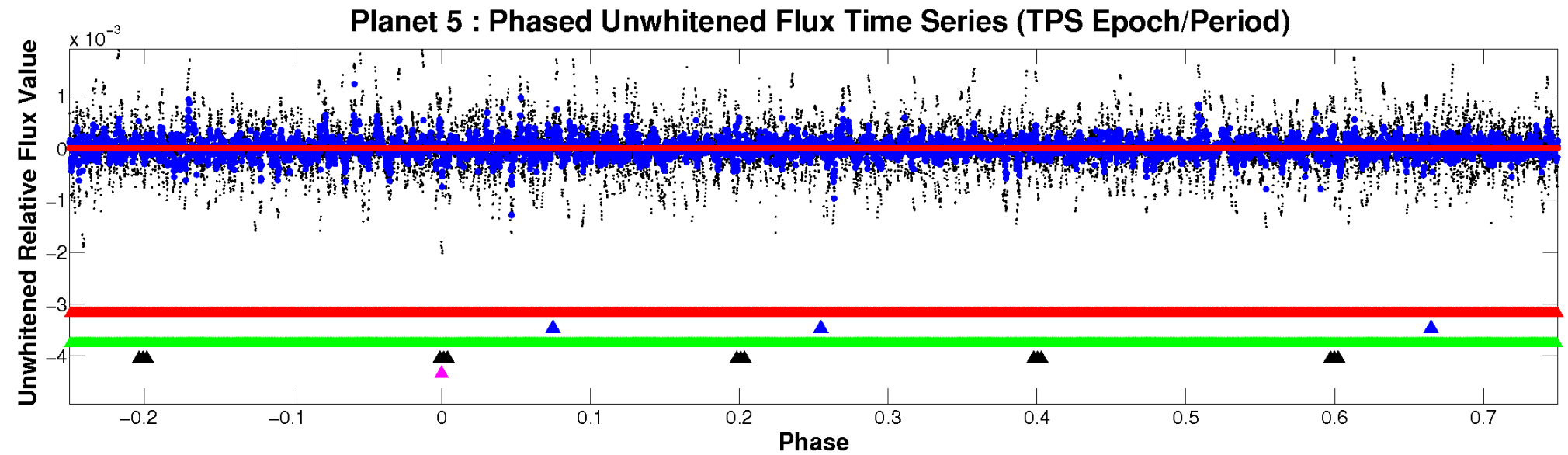


ALT Odd/Even

TCE 005725087-05

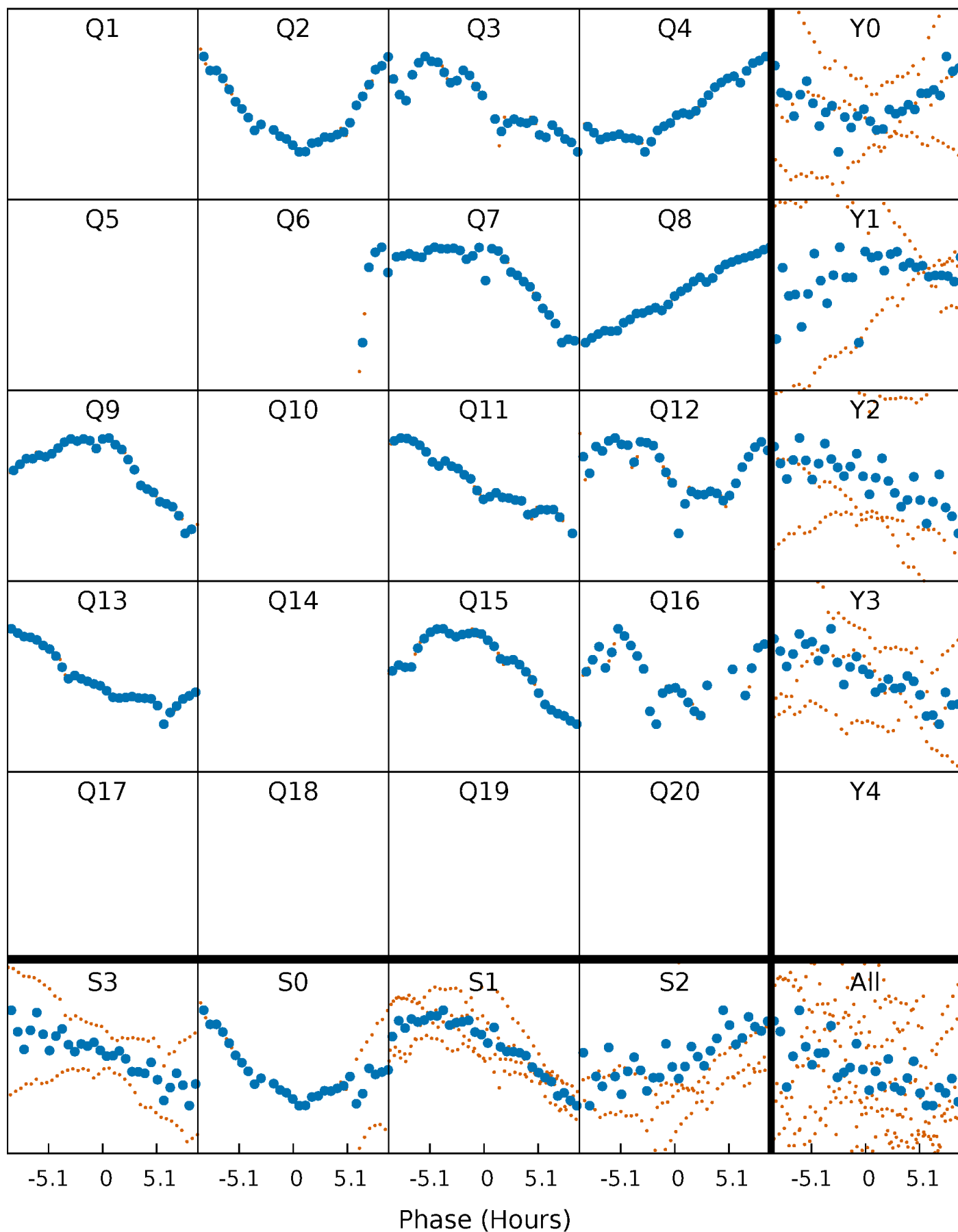


Non-Whitened Vs. Whitened Light Curve



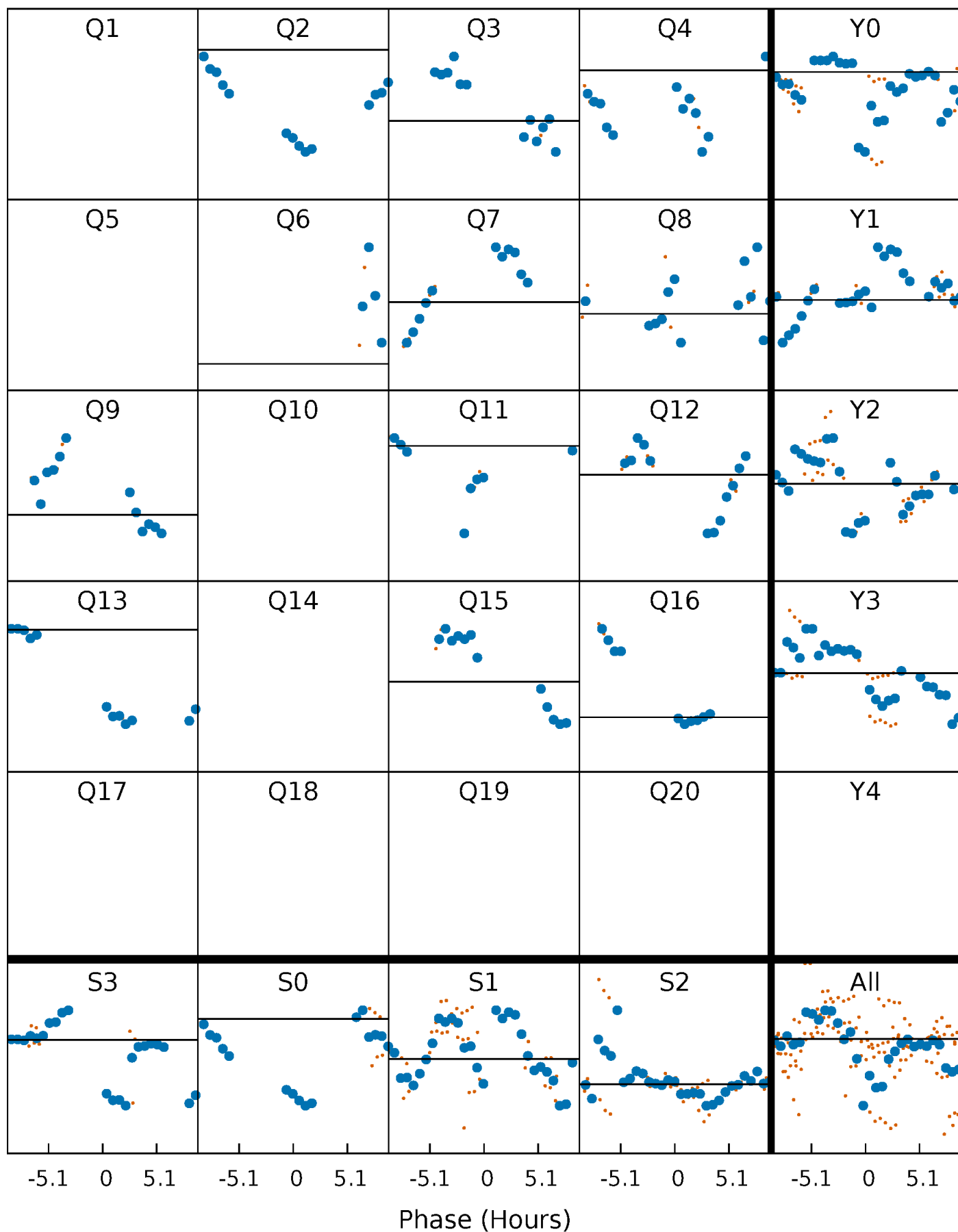
PDC Quarter-Phased Transit Curves

TCE 005725087-05 $P=119.907233$ Days $T_0=179.488993$ (BKJD)



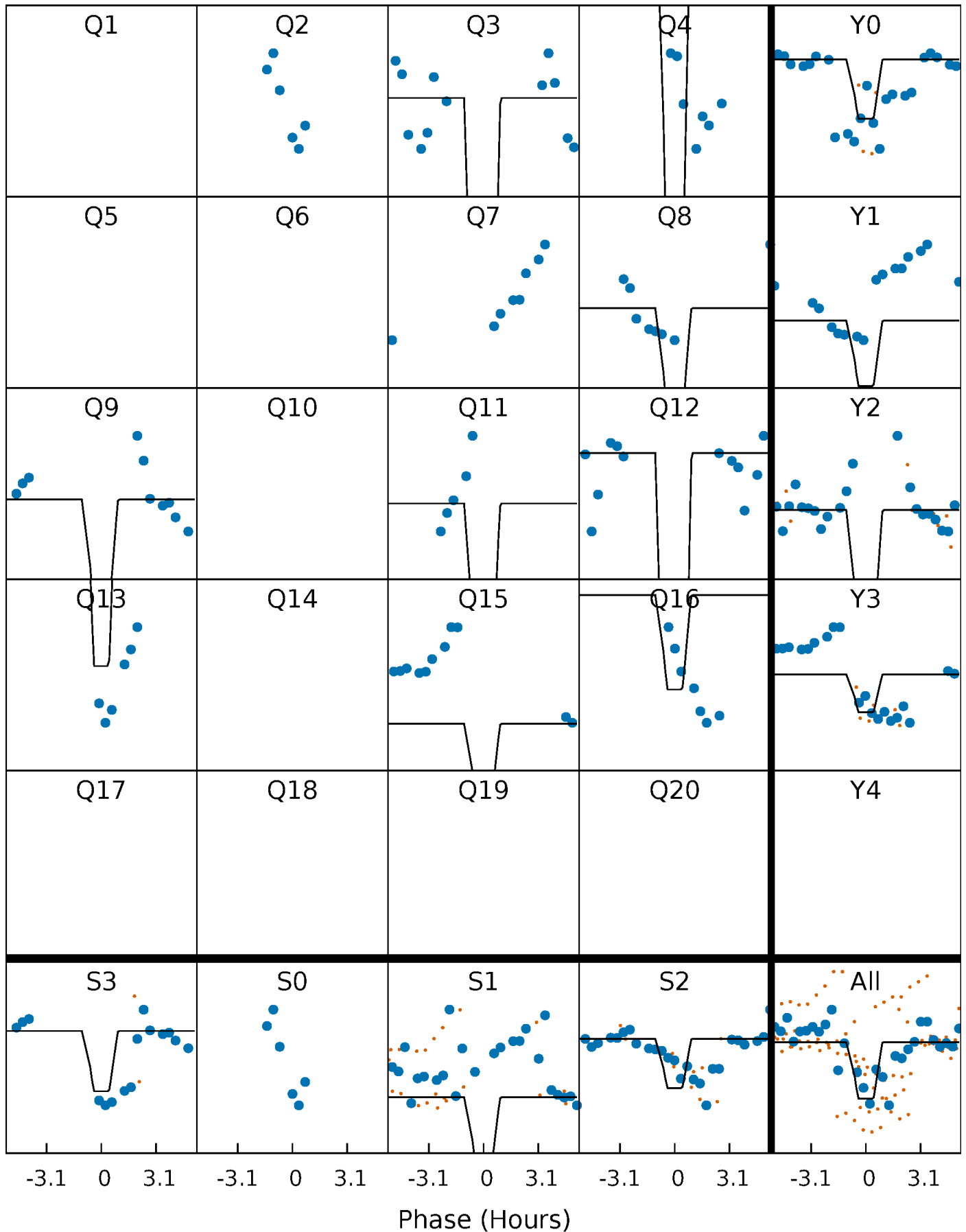
DV Quarter-Phased Transit Curves

TCE 005725087-05 $P=119.907233$ Days $T_0=179.488993$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

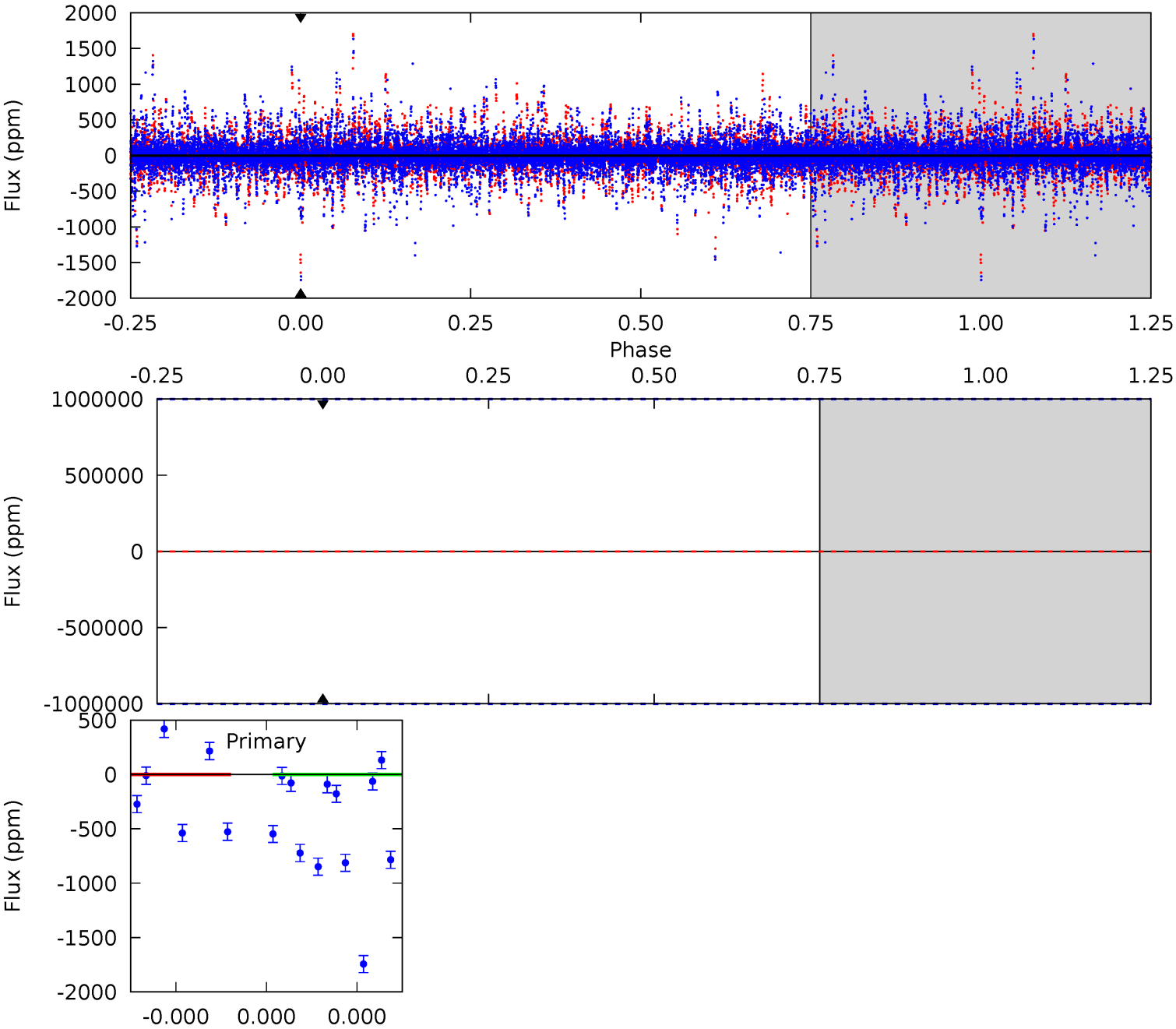
TCE 005725087-05 $P=119.907233$ Days $T_0=179.518667$ (BKJD)



DV Model-Shift Uniqueness Test

005725087-05, P = 119.907233 Days, E = 59.581760 Days

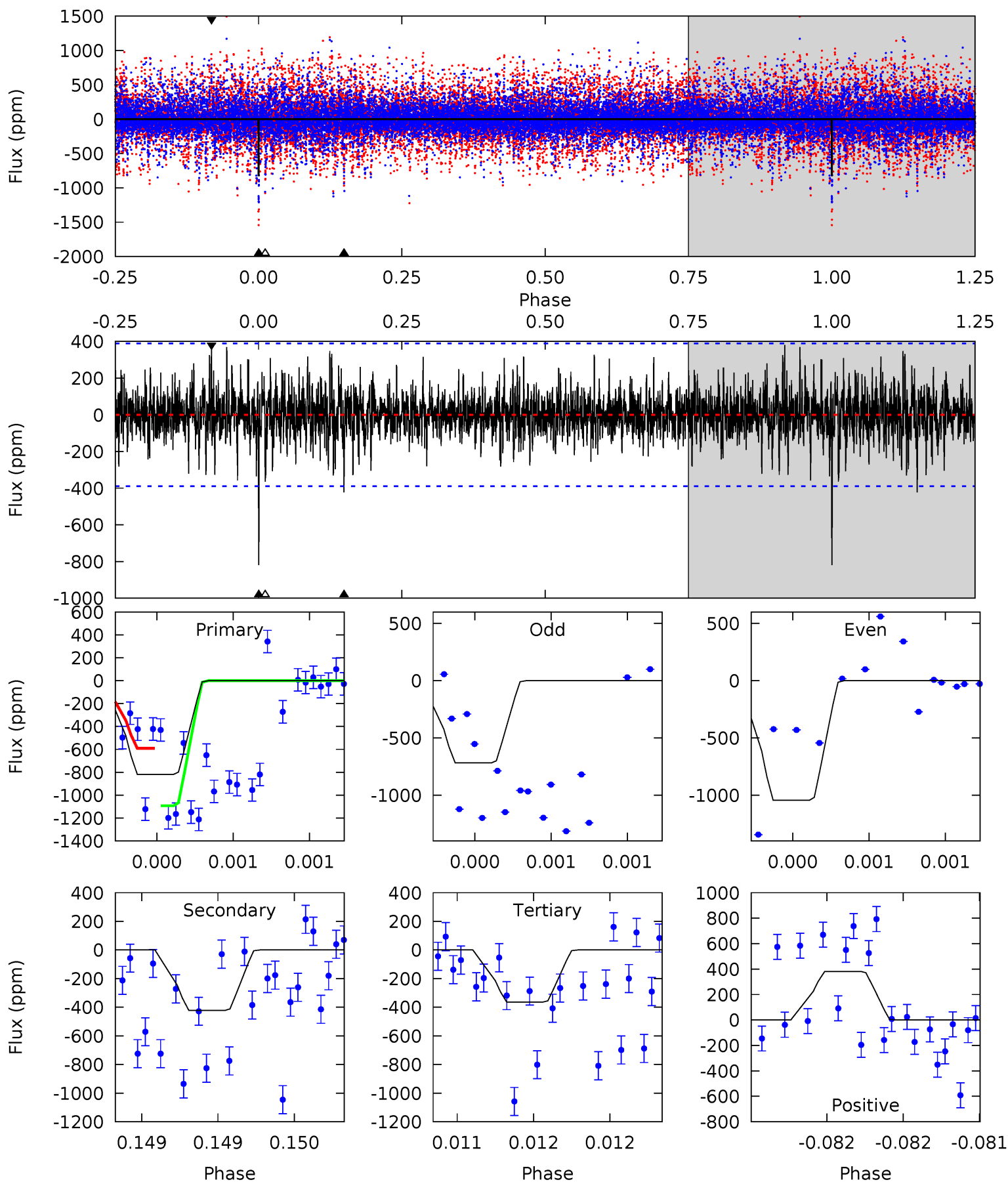
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005725087-05, P = 119.907233 Days, E = 59.611434 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	6.02	5.19	5.44	5.56	3.46	1.30	6.50	6.25	0.83	0.58	2.13	1.44	0.32	3.64



Stellar Parameters For KIC 005725087

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4448^{+88}_{-122}	$1.694^{+0.033}_{-0.027}$	$-0.480^{+0.200}_{-0.250}$	$31.500^{+1.323}_{-7.056}$	$1.789^{+0.079}_{-0.708}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+42%/-52%	+4%/-22%	+4%/-40%	+32%/-9%
Source	PHO54	AST54	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 005725087-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$232.30^{+248.94}_{-155.11}$	2022^{+53}_{-56}	-3406^{+16434}_{-8501}	$-3.829^{+646.286}_{-547.757}$
Alt.	-422 ± 70	$280.38^{+262.60}_{-191.67}$	2020^{+54}_{-61}	2728^{+1308}_{-4715}	$0.996^{+9.176}_{-0.745}$

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 $A_{obs} \gg 1.0$

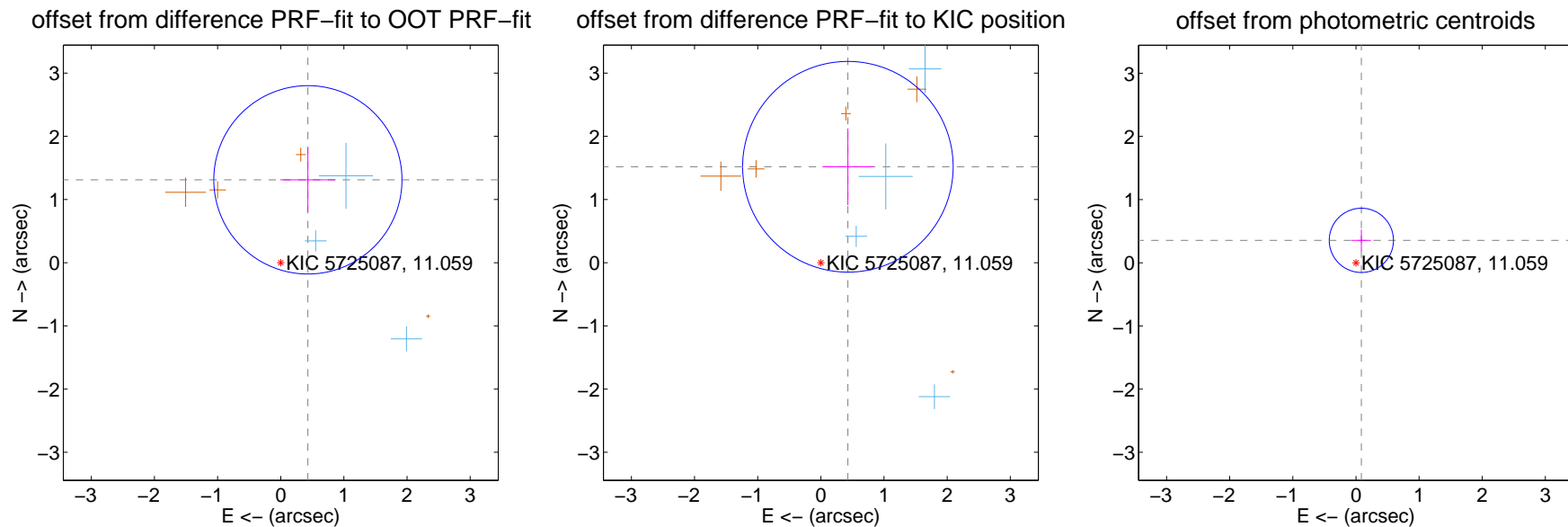
DV Centroid Data

Supplemental centroid analysis for 005725087-05. **Kepler magnitude: 11.06.** Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

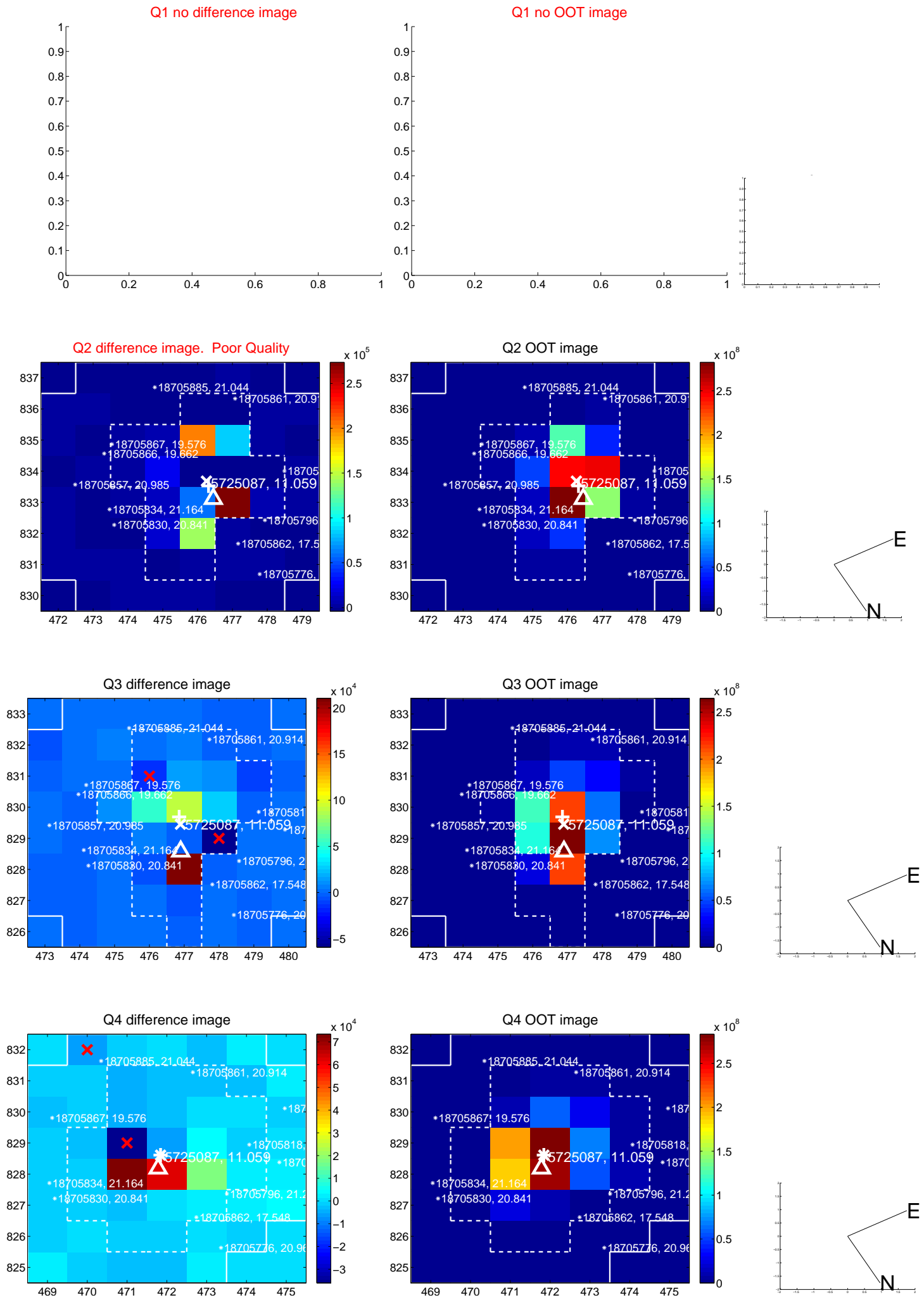
The direct PRF centroid is offset from the target star catalog position by about 0.98 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.380 ± 0.497	2.78	-0.430 ± 0.437	1.311 ± 0.511
PRF-fit source offset from KIC position	1.577 ± 0.556	2.84	-0.428 ± 0.403	1.518 ± 0.606
photometric centroid source offset	0.36 ± 0.17	2.15	-0.09 ± 0.15	0.35 ± 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.



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

Q5 no difference image



Q5 no OOT image



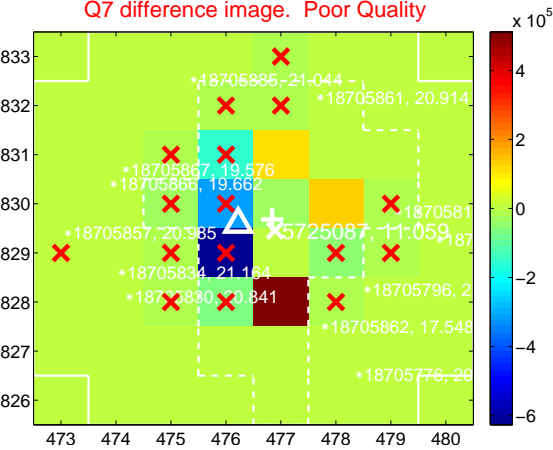
Q6 no difference image



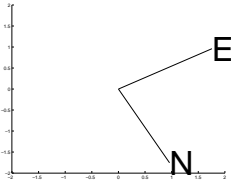
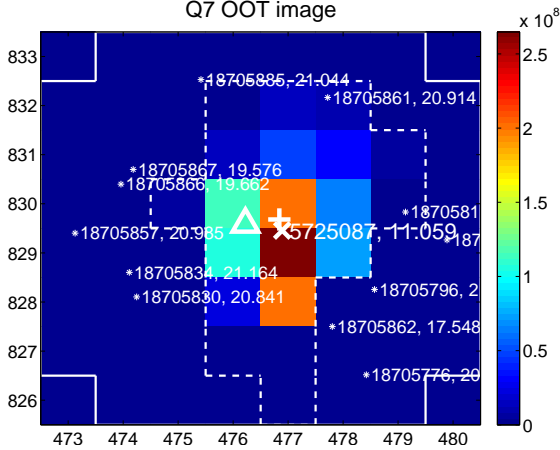
Q6 no OOT image



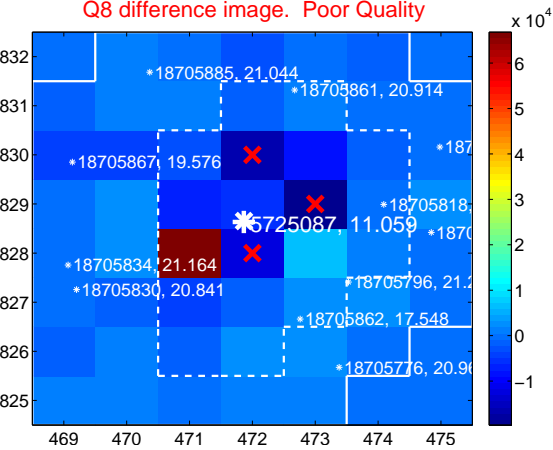
Q7 difference image. Poor Quality



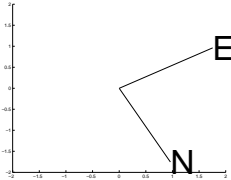
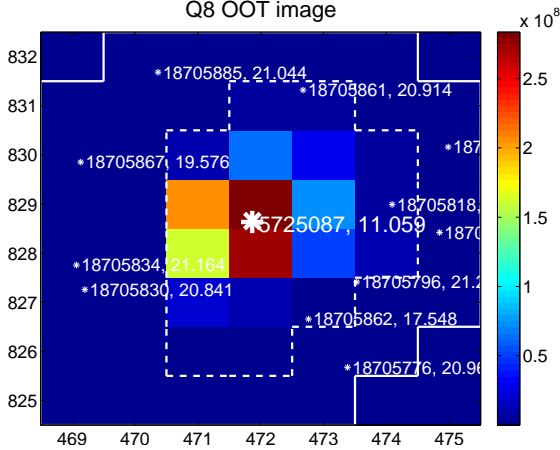
Q7 OOT image



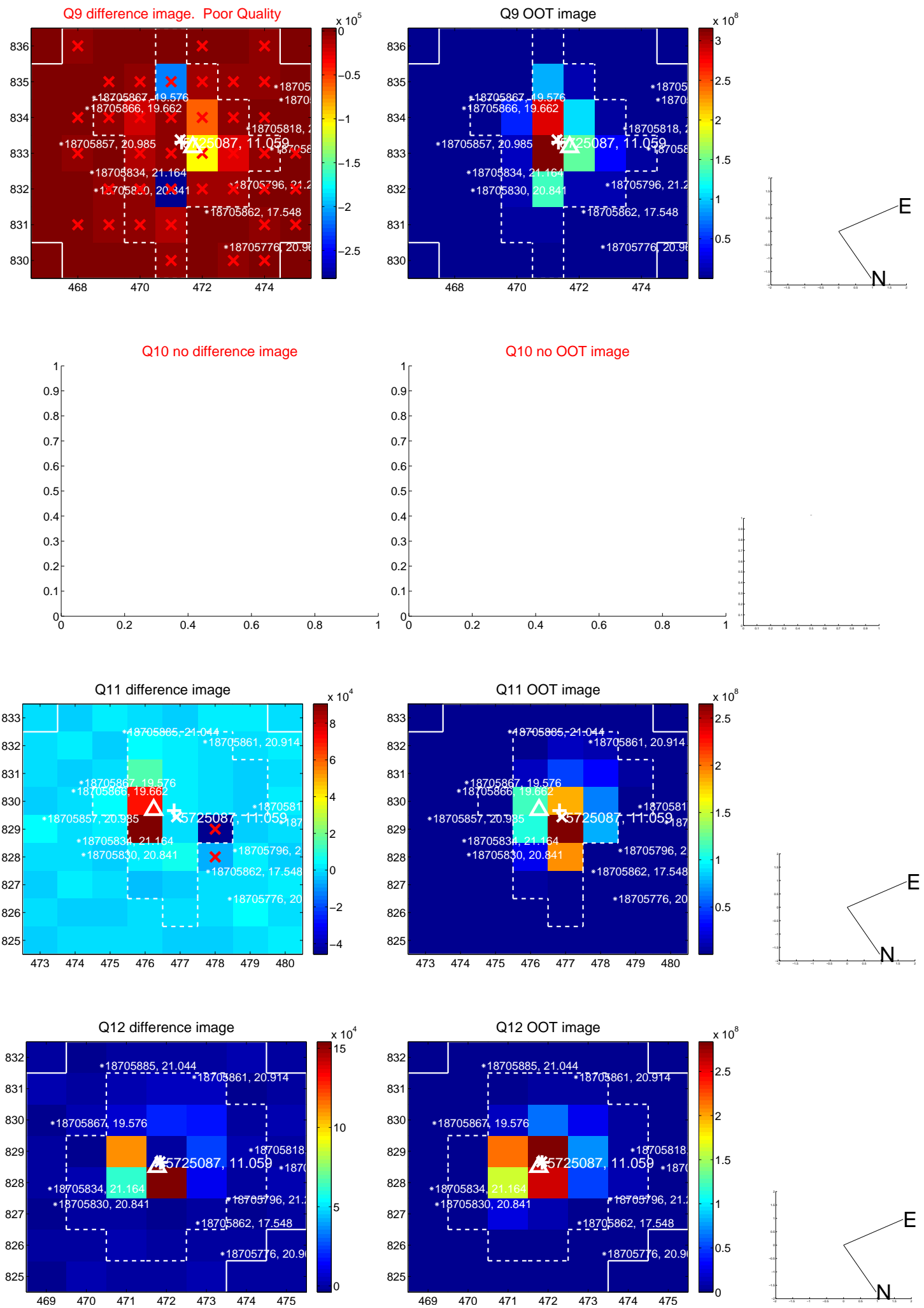
Q8 difference image. Poor Quality



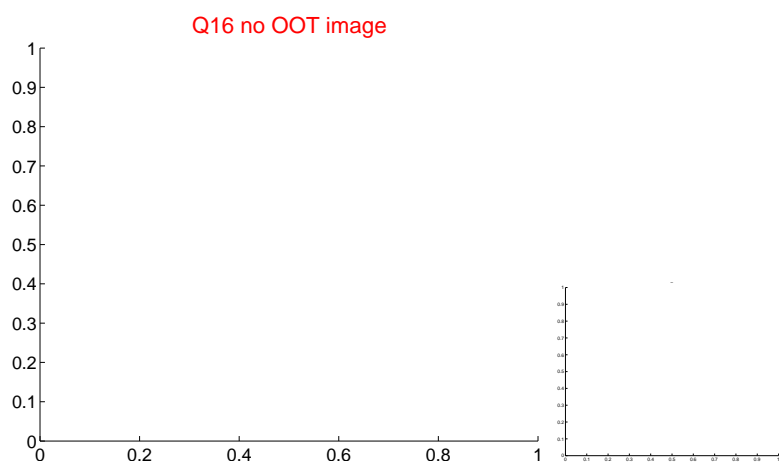
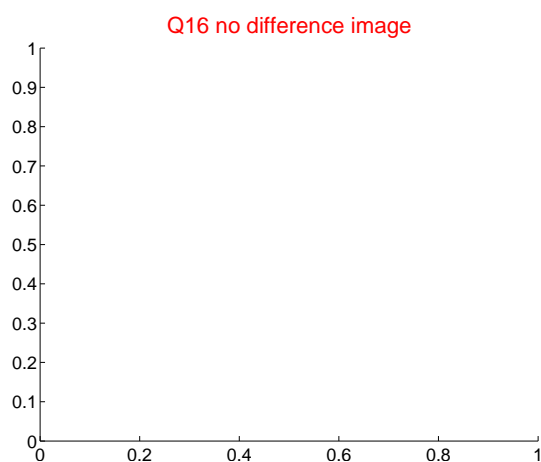
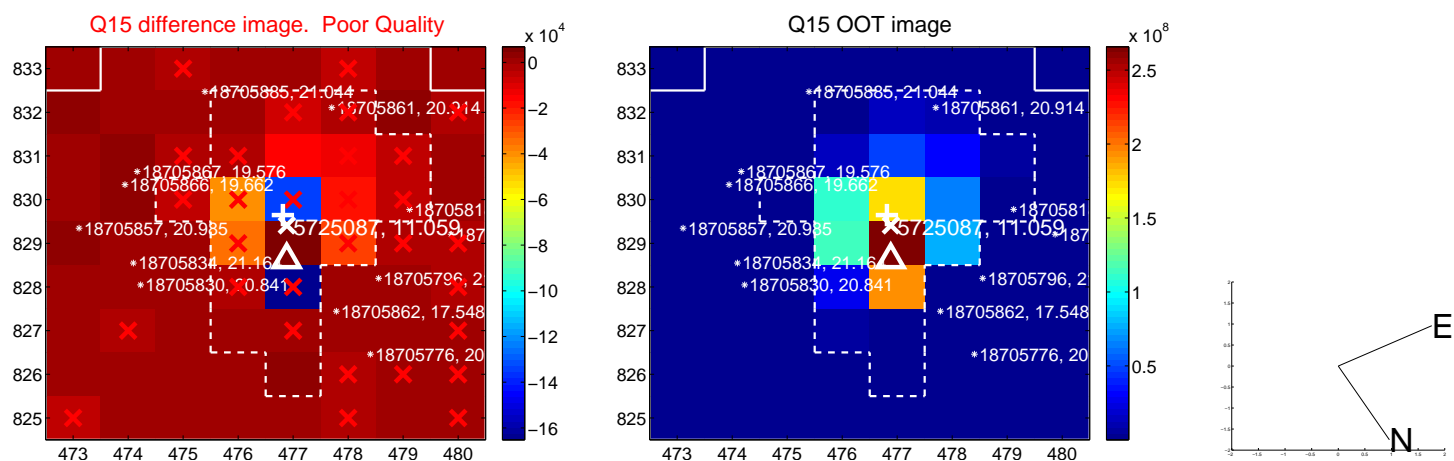
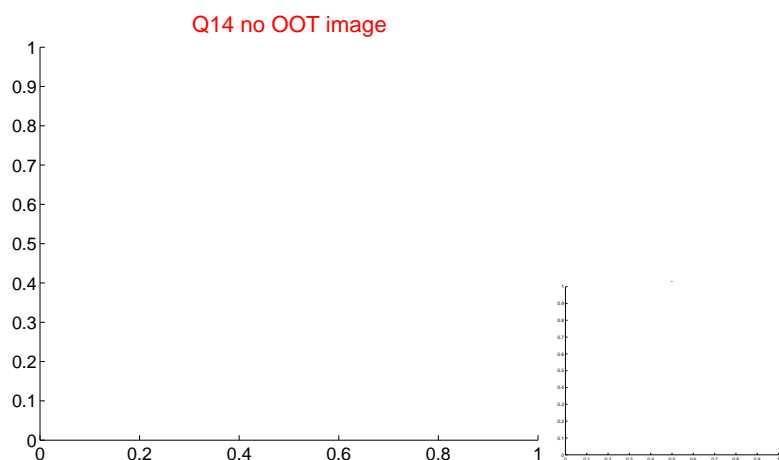
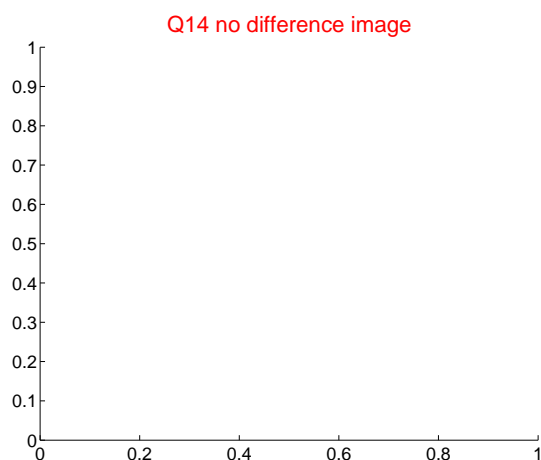
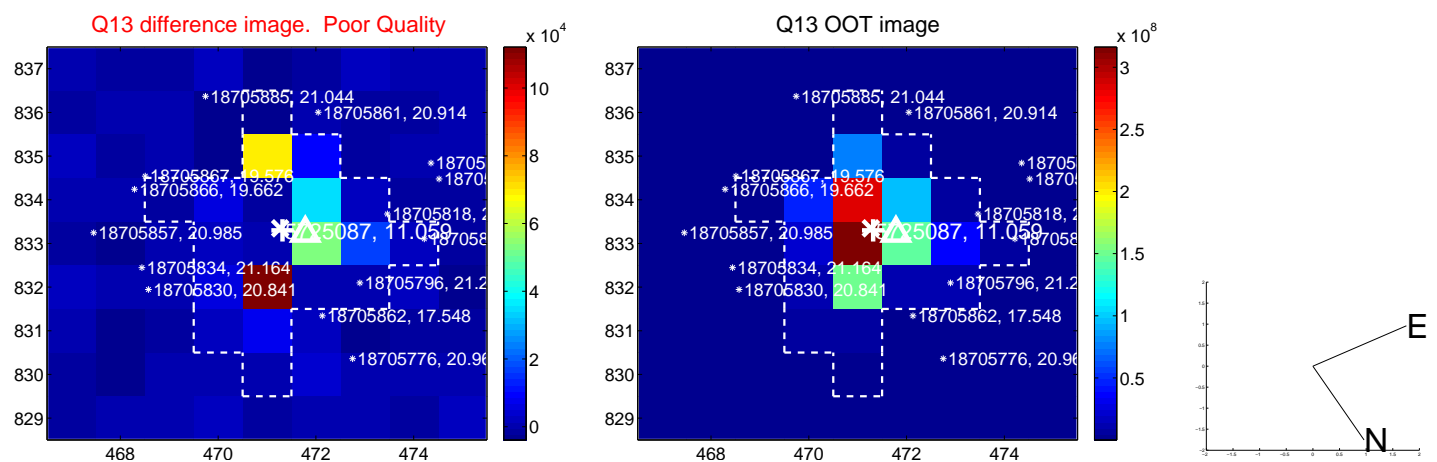
Q8 OOT image



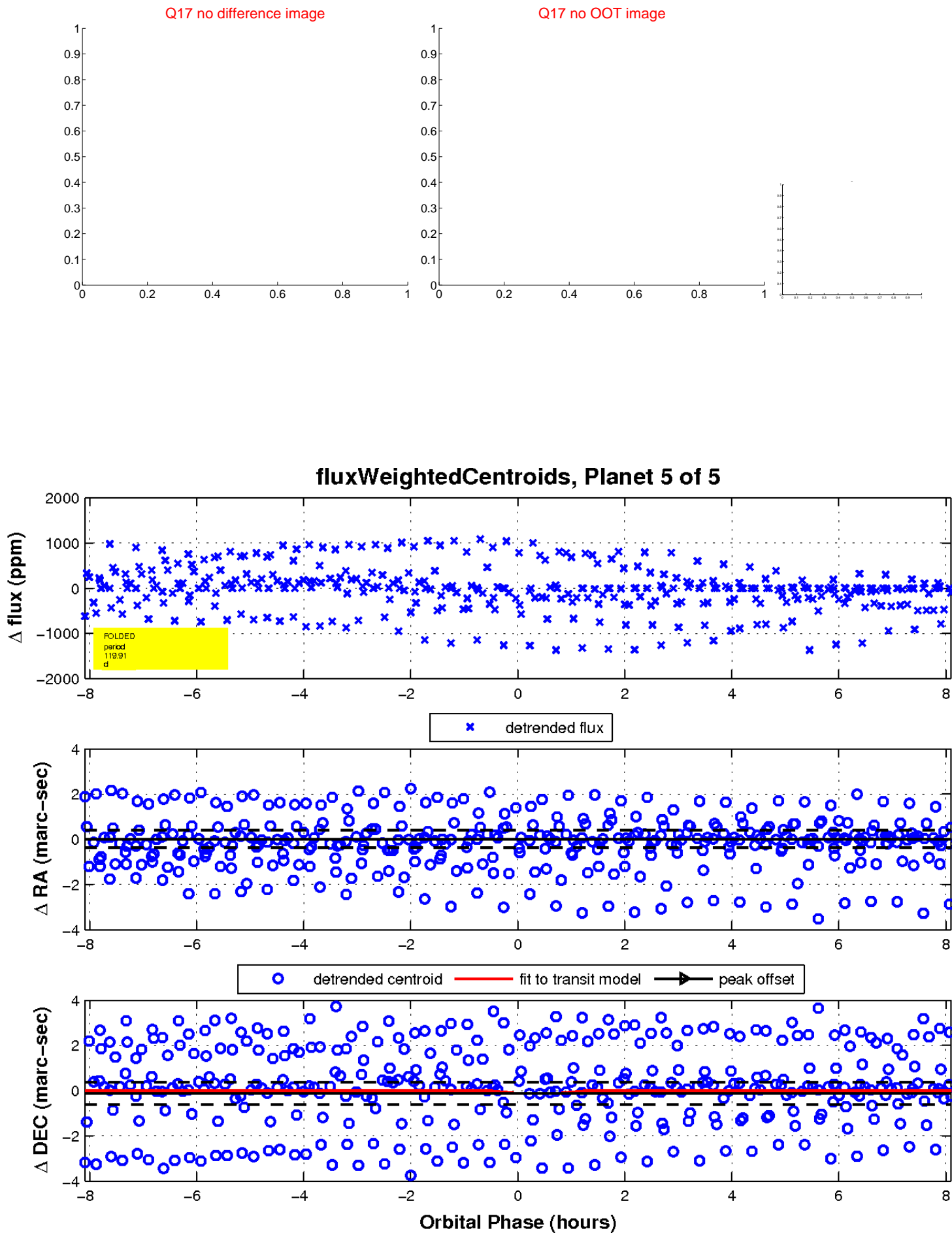
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

