

KIC 012305407

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})
012305407-01	OBS	No	1.335640	131.594527	184.2	3.000	8.1	-1.0	1.57	6534	2.14	6062.12
012305407-02	OBS	No	4.820349	132.586925	39.8	7.906	7.8	8.0	1.57	6534	1.16	1095.06
012305407-03	OBS	No	567.049083	273.392340	437.3	4.872	7.4	8.2	1.57	6534	3.67	1.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012305407-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS—HALO_GHOST
012305407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012305407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MOD_NONUNIQ_ALT

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

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

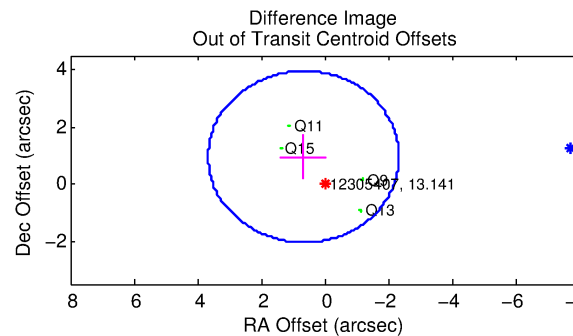
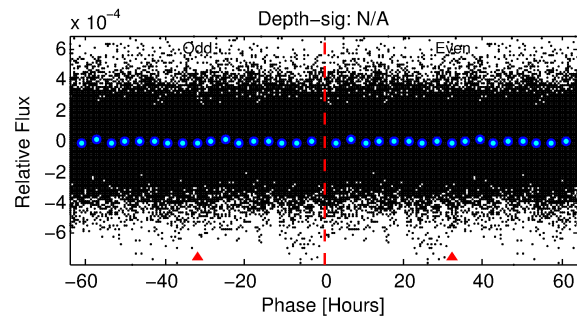
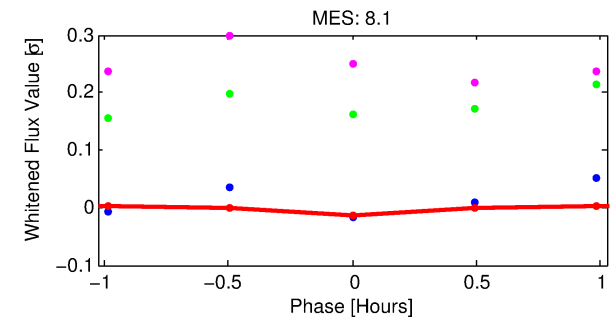
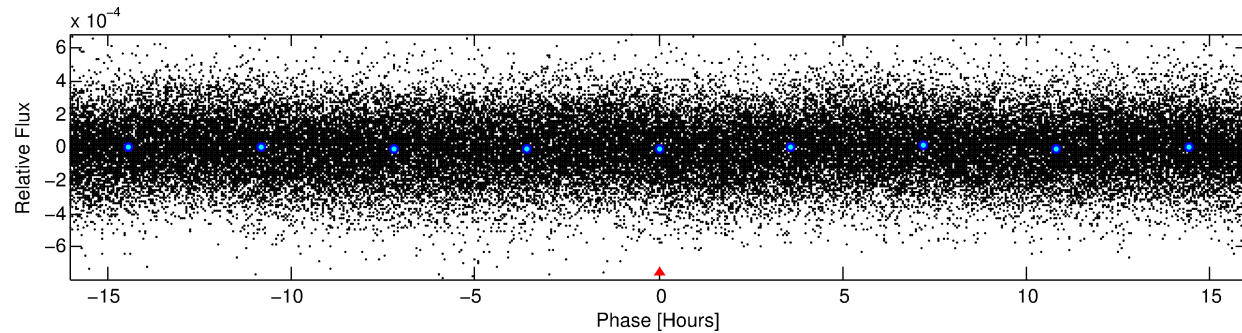
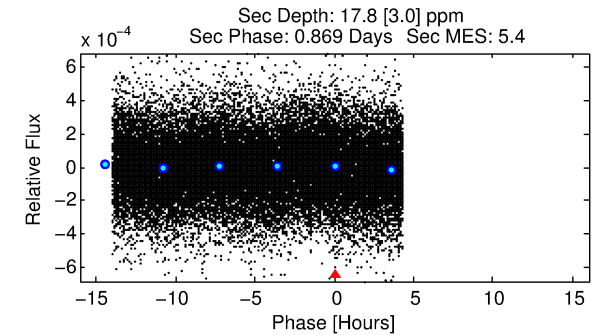
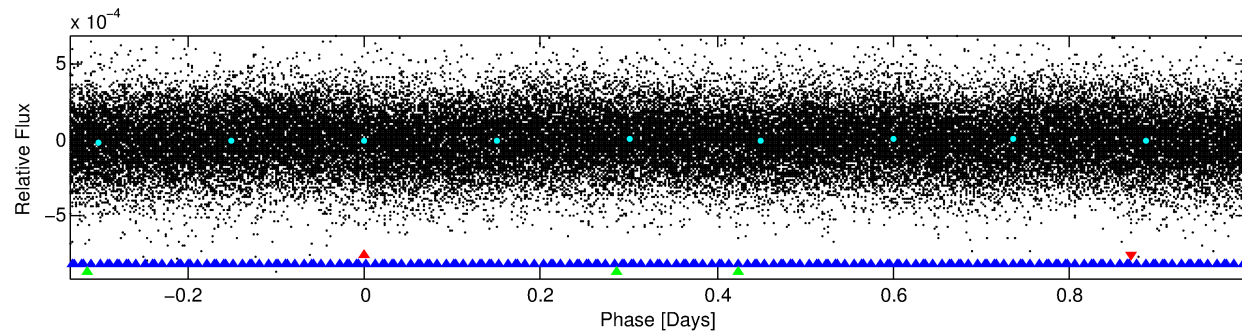
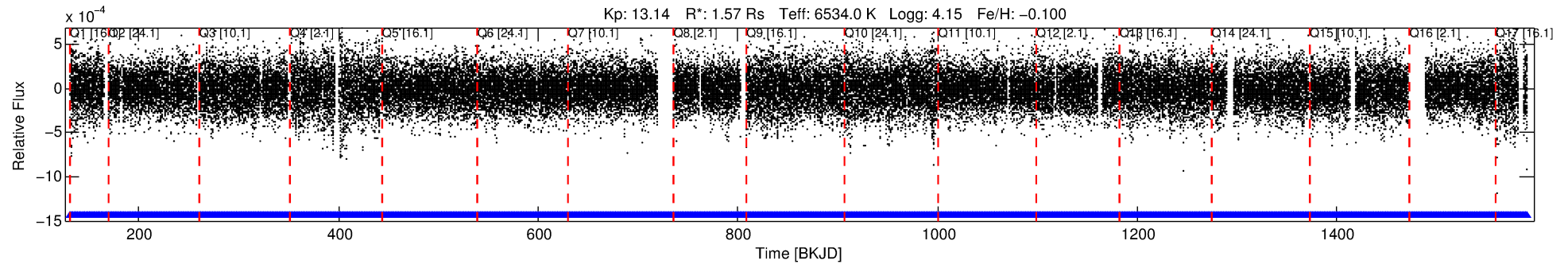
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012305407-01

No Significant Match Found

DV One-Page Summary

KIC: 12305407 Candidate: 1 of 3 Period: 1.336 d



TPS TCE Results:

Period = 1.33564 d
Epoch = 131.5945 BKJD

DV fit results are unavailable

DV Diagnostic Results:

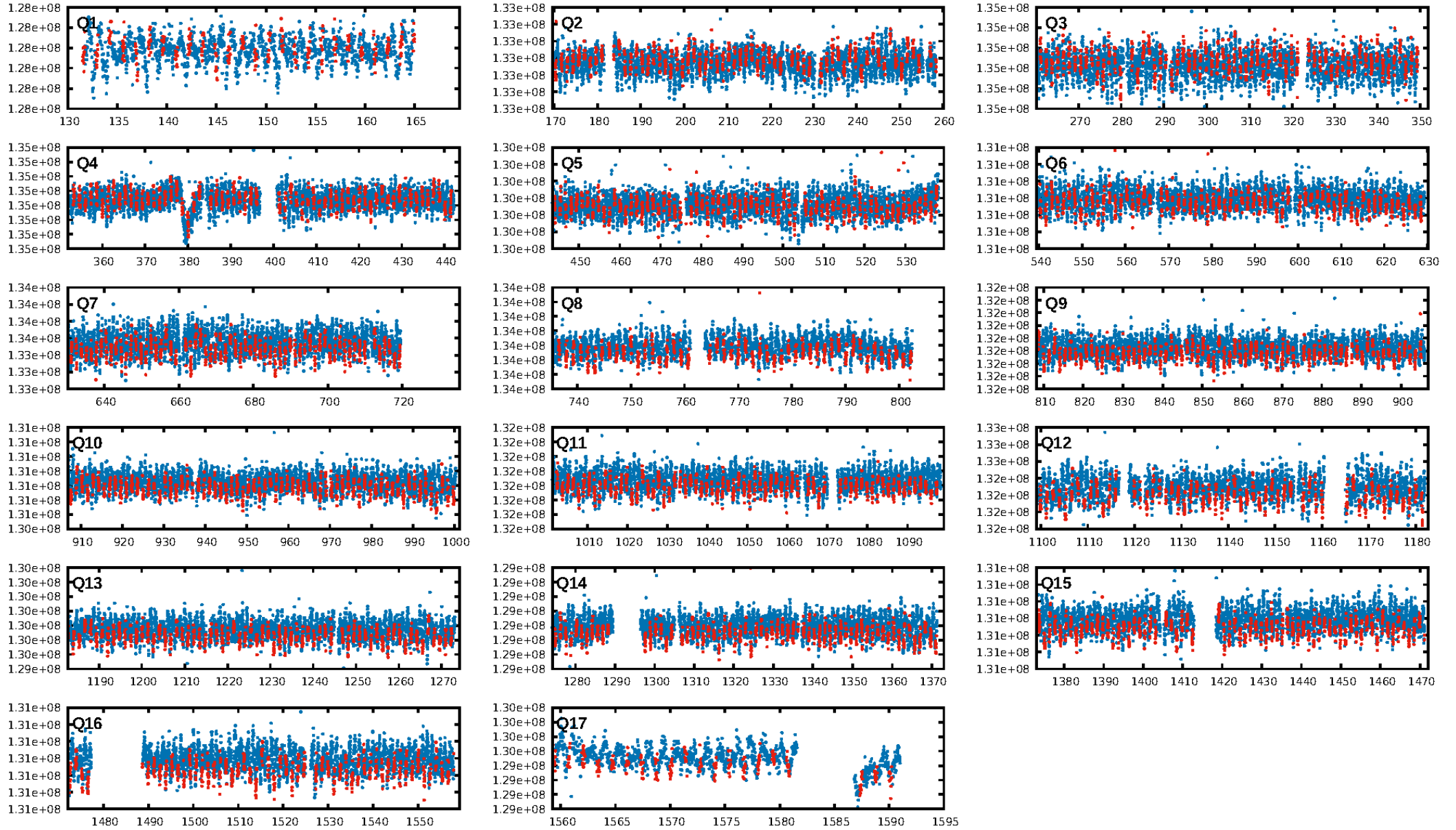
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [9.895]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.87e-13
RollingBand-fgt: 1.00 [978/978]
GhostDiagnostic-chr: 0.005625

Centroid-sig: 0.0%
Centroid-so: 0.625 arcsec [3.96]
OotOffset-rm: 1.162 arcsec [1.16]
KicOffset-rm: 1.169 arcsec [1.37]
OotOffset-st: 0/2/0/2 [4]
KicOffset-st: 0/2/0/2 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [17/17]

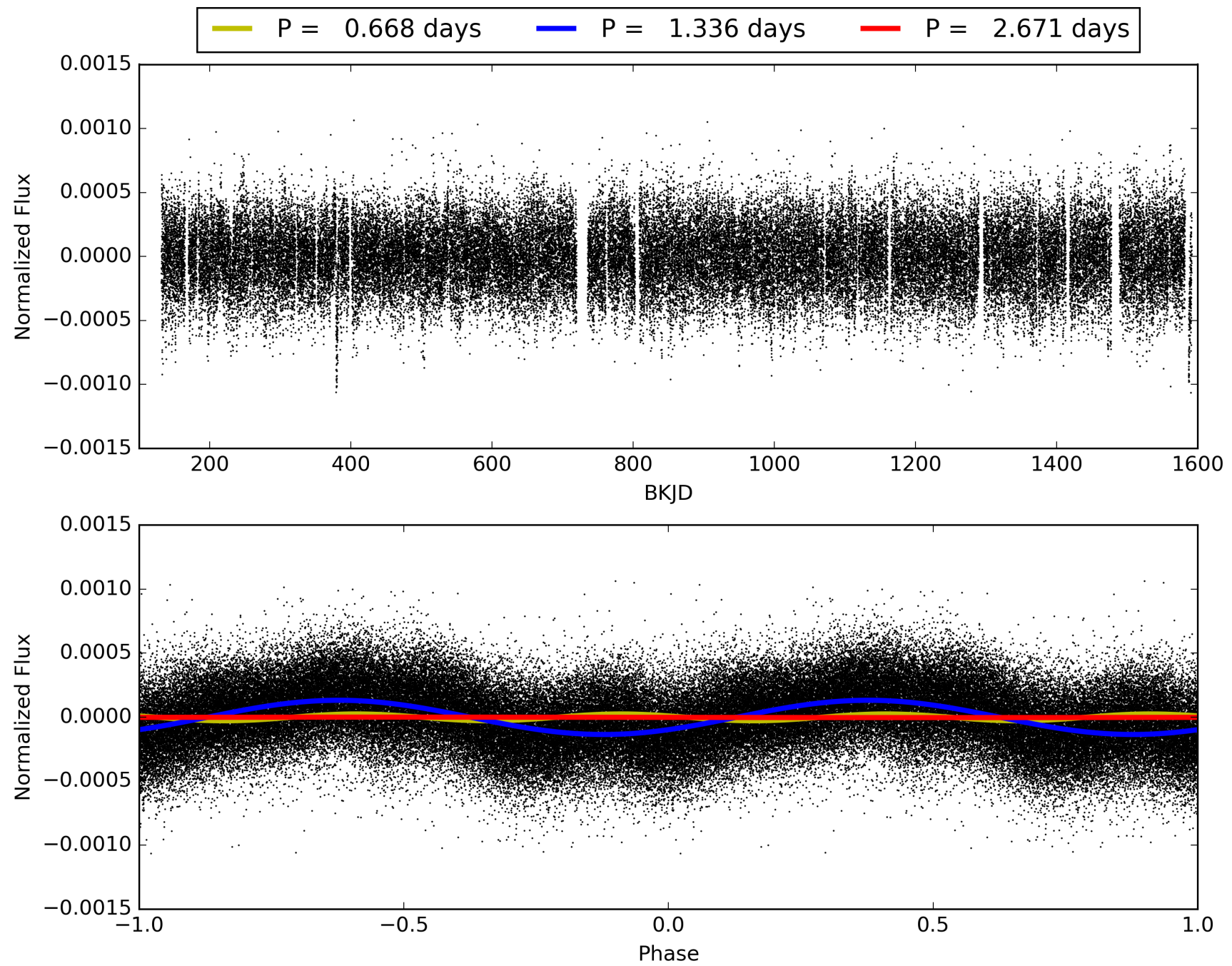
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:28:33 Z

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

TCE 012305407-01, PDC Light Curves

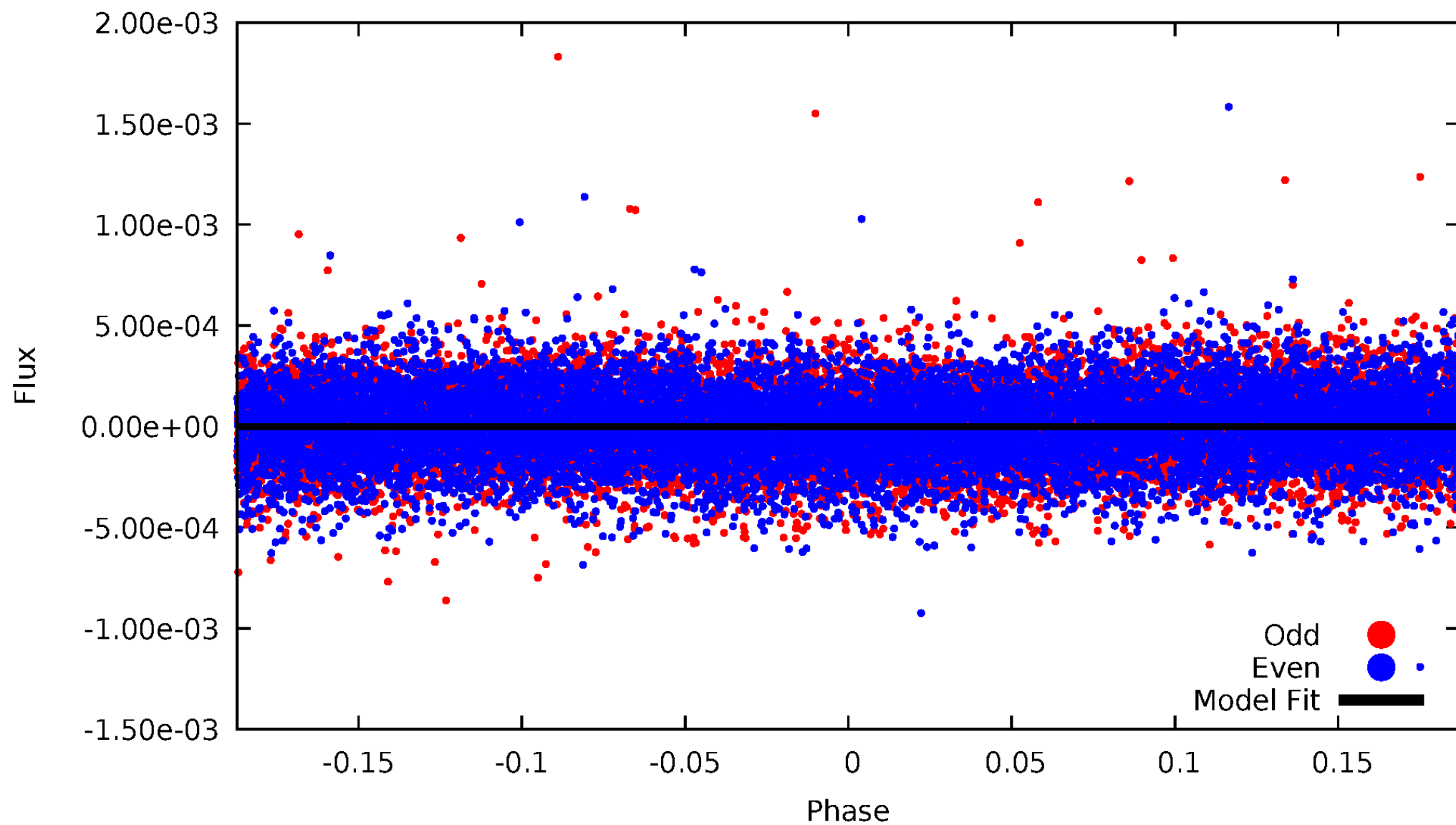


TCE 012305407-01



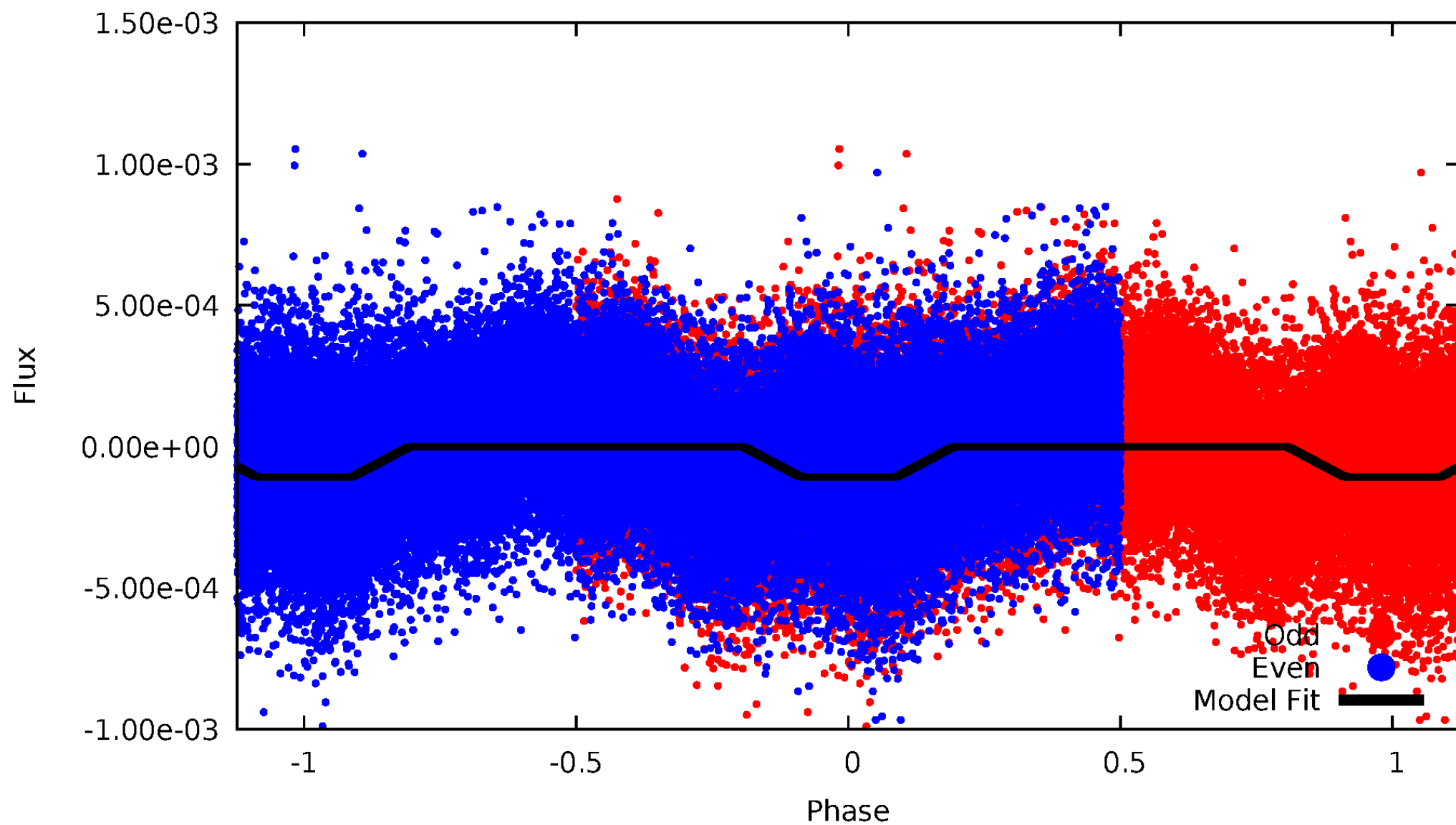
DV Odd/Even

TCE 012305407-01

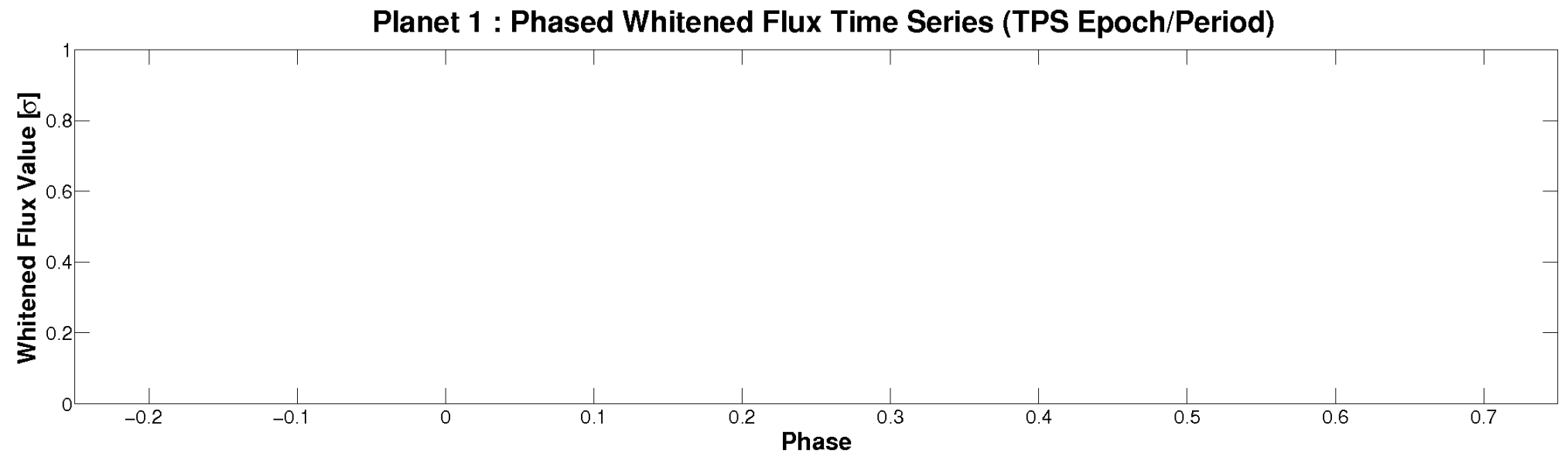
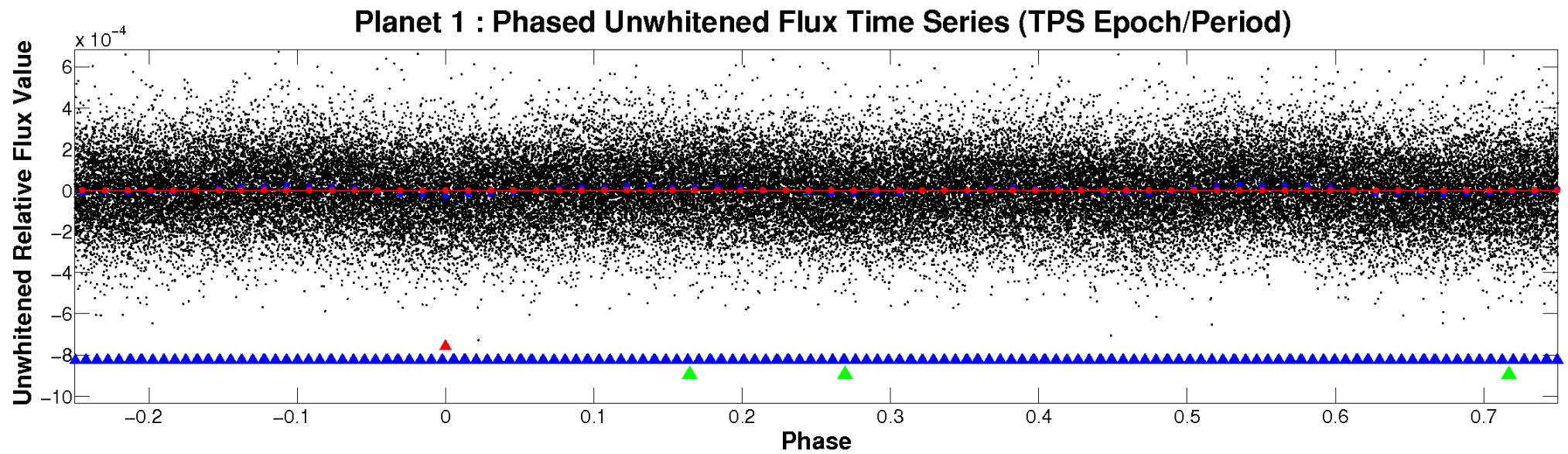


ALT Odd/Even

TCE 012305407-01

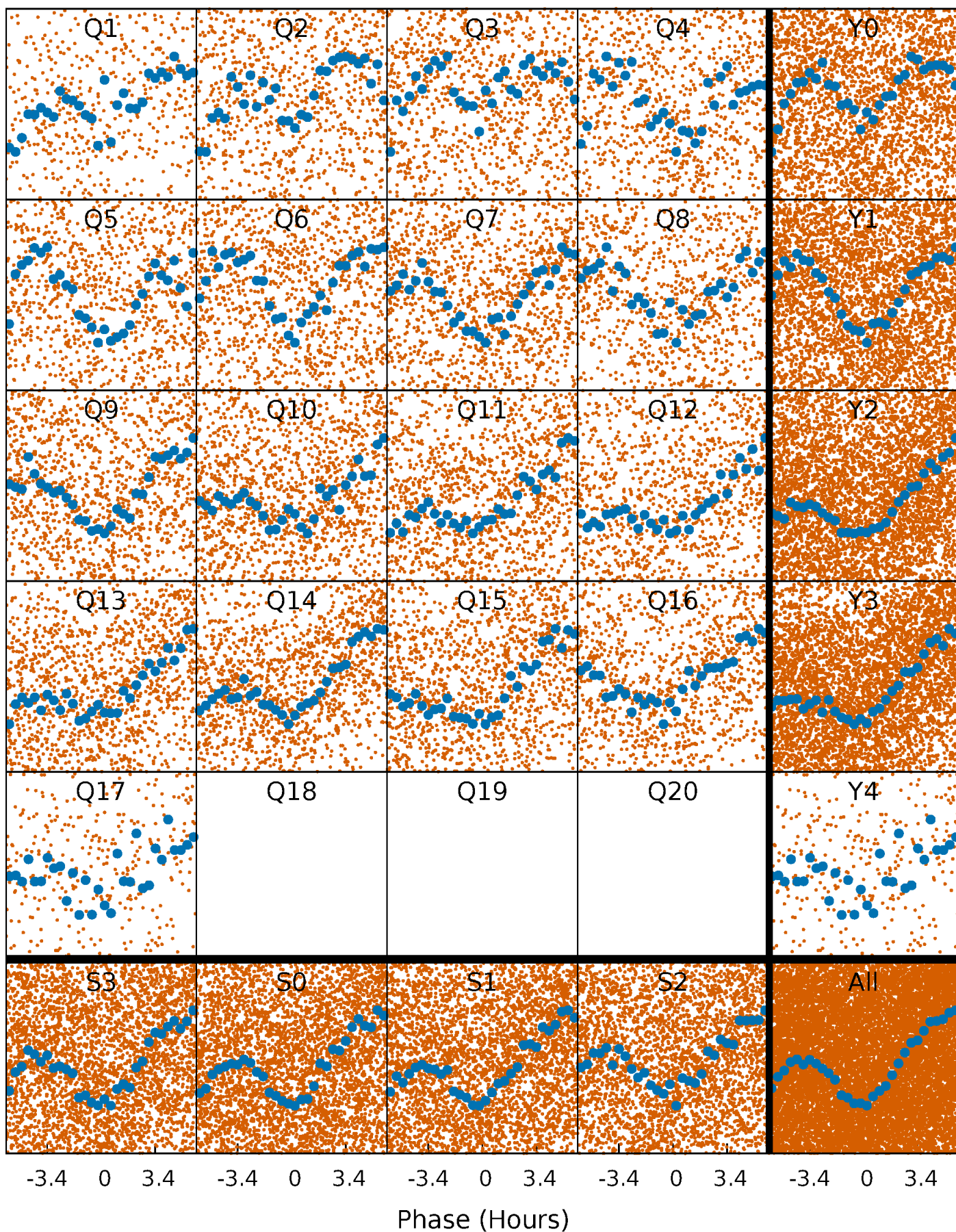


Non-Whitened Vs. Whitened Light Curve



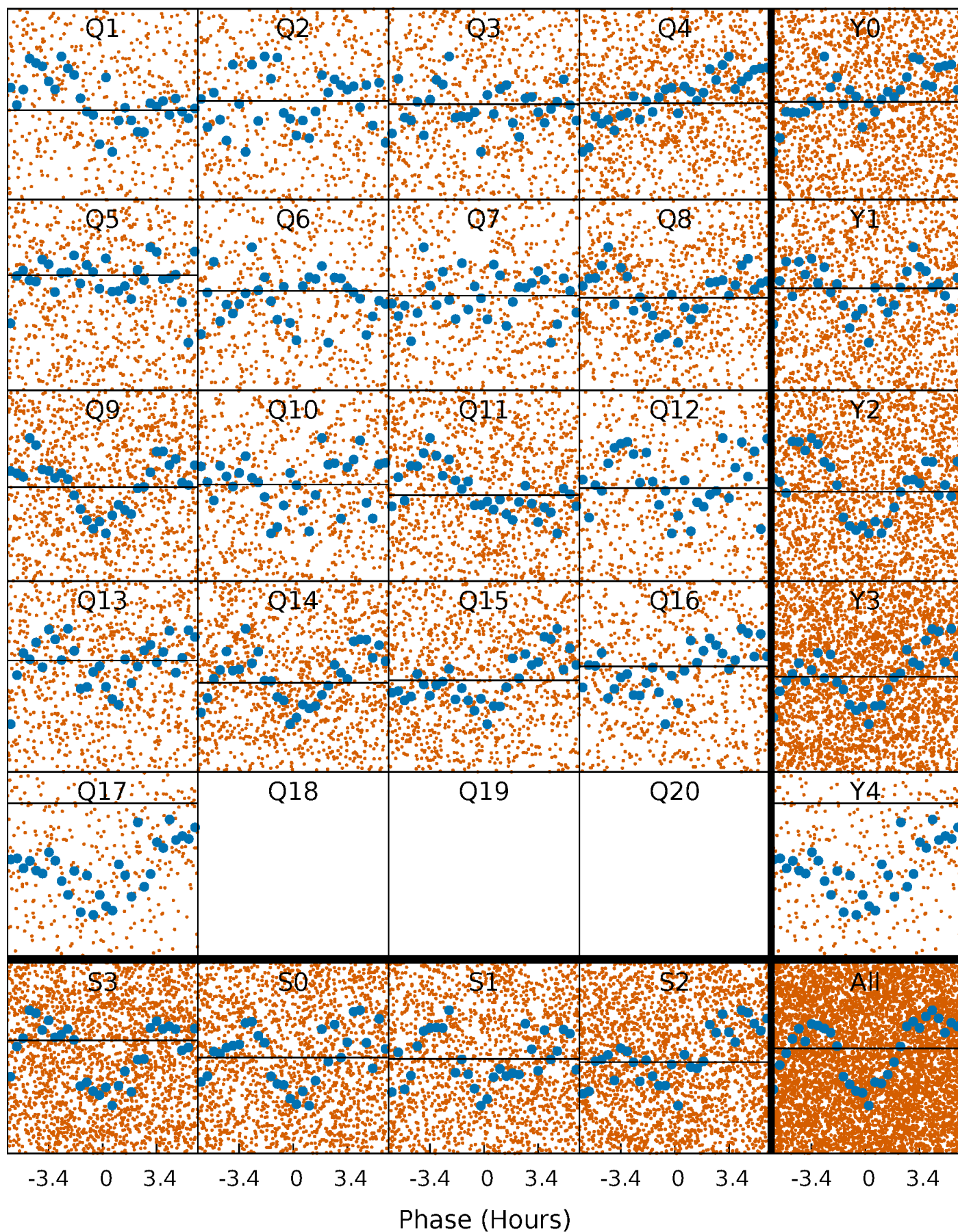
PDC Quarter-Phased Transit Curves

TCE 012305407-01 P= 1.335640 Days $T_0=131.594527$ (BKJD)



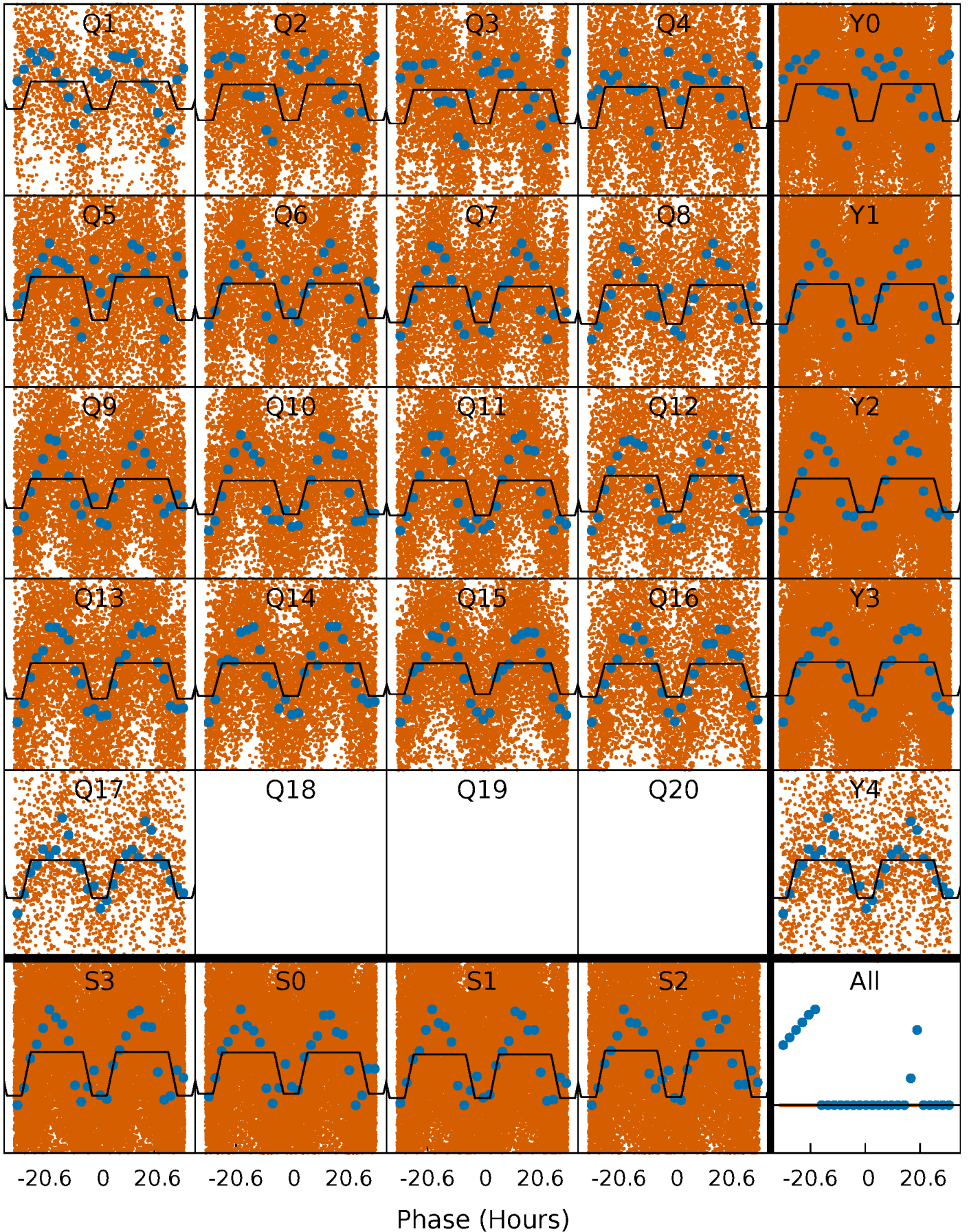
DV Quarter-Phased Transit Curves

TCE 012305407-01 P= 1.335640 Days $T_0=131.594527$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

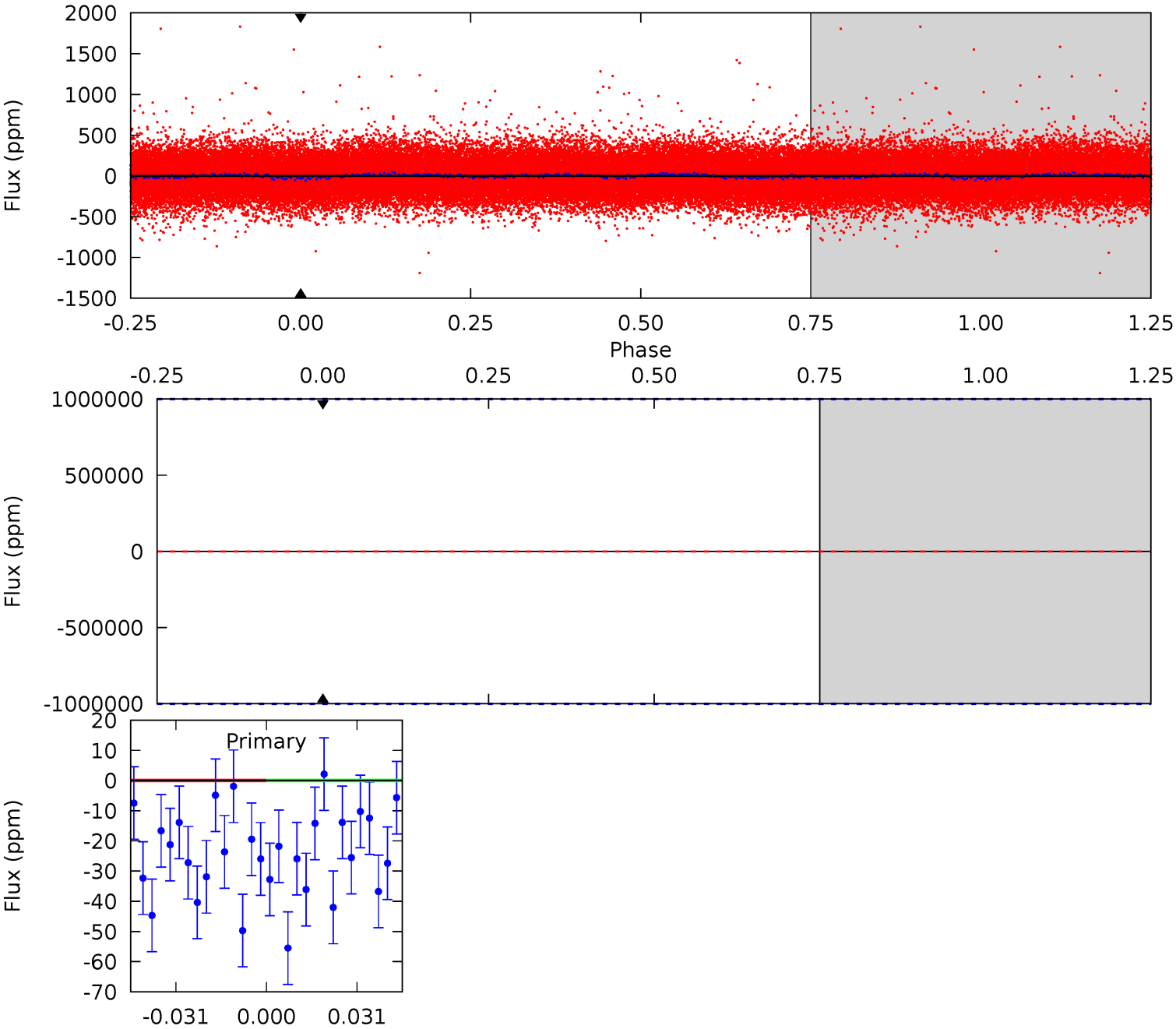
TCE 012305407-01 P= 1.335640 Days $T_0=131.529347$ (BKJD)



DV Model-Shift Uniqueness Test

012305407-01, P = 1.335640 Days, E = 130.258887 Days

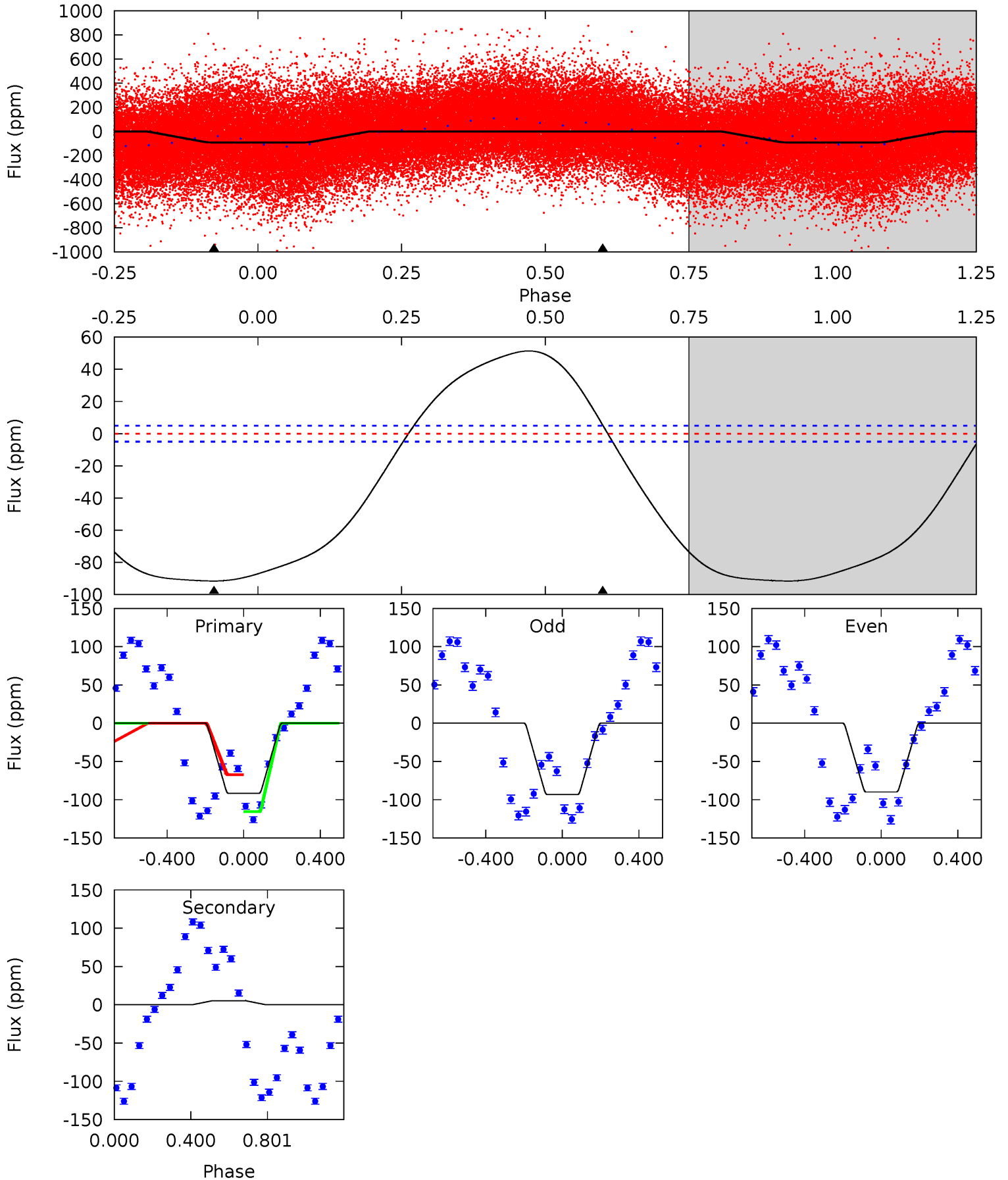
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

012305407-01, P = 1.335640 Days, E = 130.193707 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.5	-4.50	0	0	4.26	0.84	12.8	78.5	78.5	-4.50	-4.50	1.41	1.01	0.36	20.3



Stellar Parameters For KIC 012305407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6534^{+181}_{-227}	$4.153^{+0.185}_{-0.185}$	$-0.100^{+0.250}_{-0.300}$	$1.570^{+0.483}_{-0.395}$	$1.284^{+0.201}_{-0.221}$	$0.467^{+0.464}_{-0.230}$
	+3%/-3%	+4%/-4%	+250%/-300%	+31%/-25%	+16%/-17%	+99%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012305407-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$12.46^{+14.07}_{-8.34}$	3140^{+247}_{-225}	-3981^{+32747}_{-21288}	$-1.011^{+412.743}_{-341.185}$
Alt.	5 ± 1	$11.60^{+13.38}_{-7.65}$	3140^{+239}_{-219}	-3233^{+141}_{-237}	$-0.014^{+0.011}_{-0.102}$

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

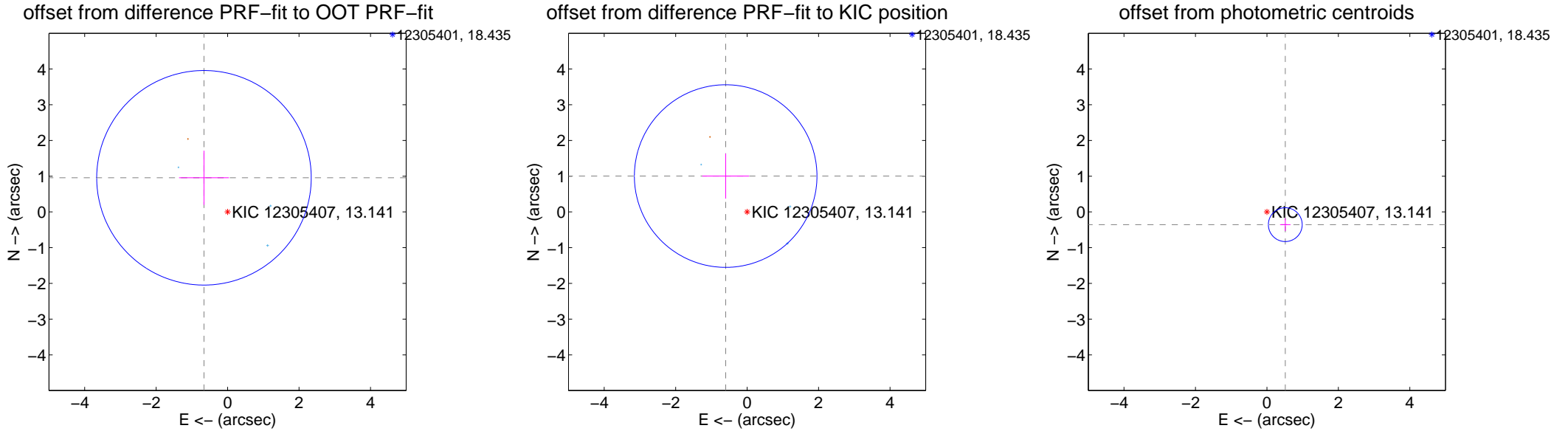
DV Centroid Data

Supplemental centroid analysis for 012305407-01. Kepler magnitude: 13.14. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

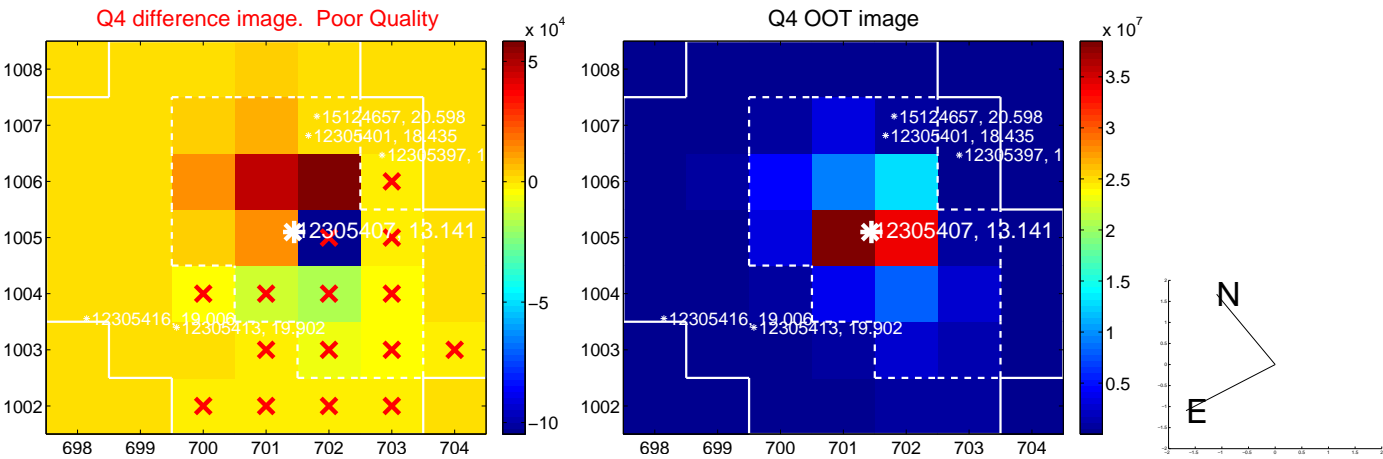
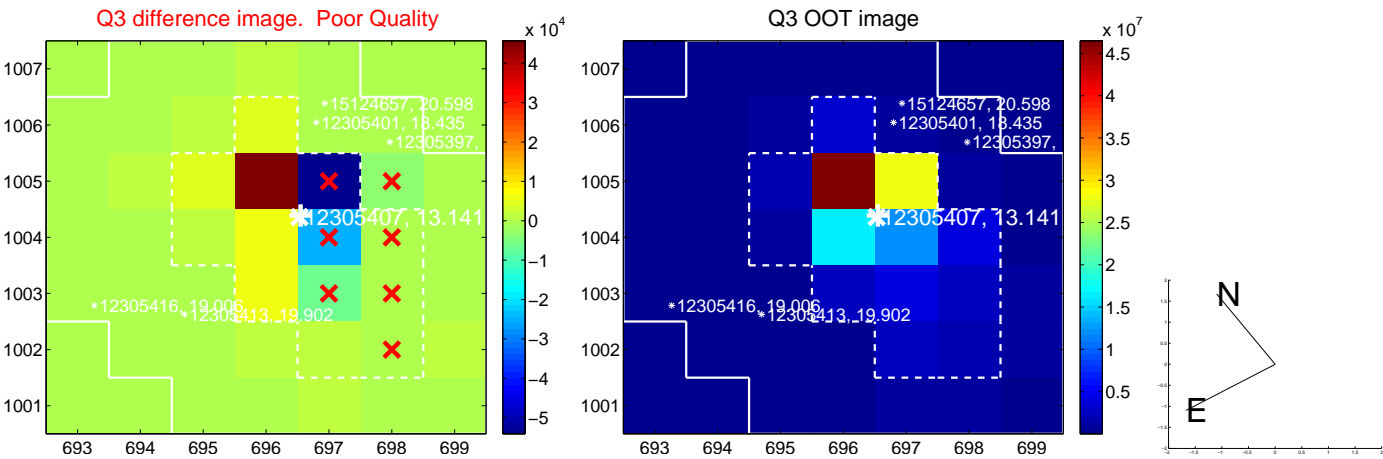
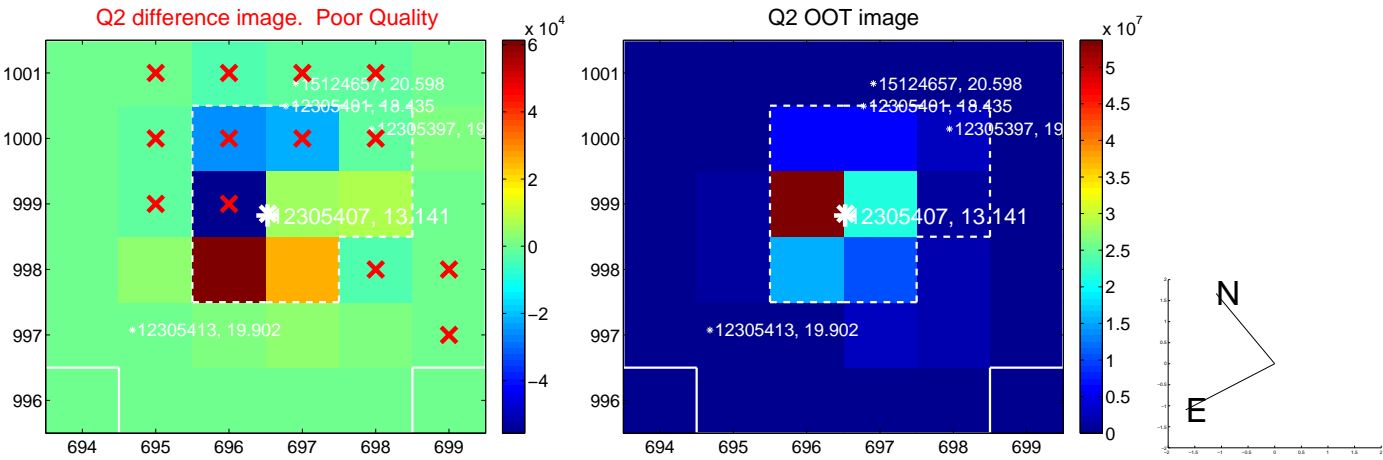
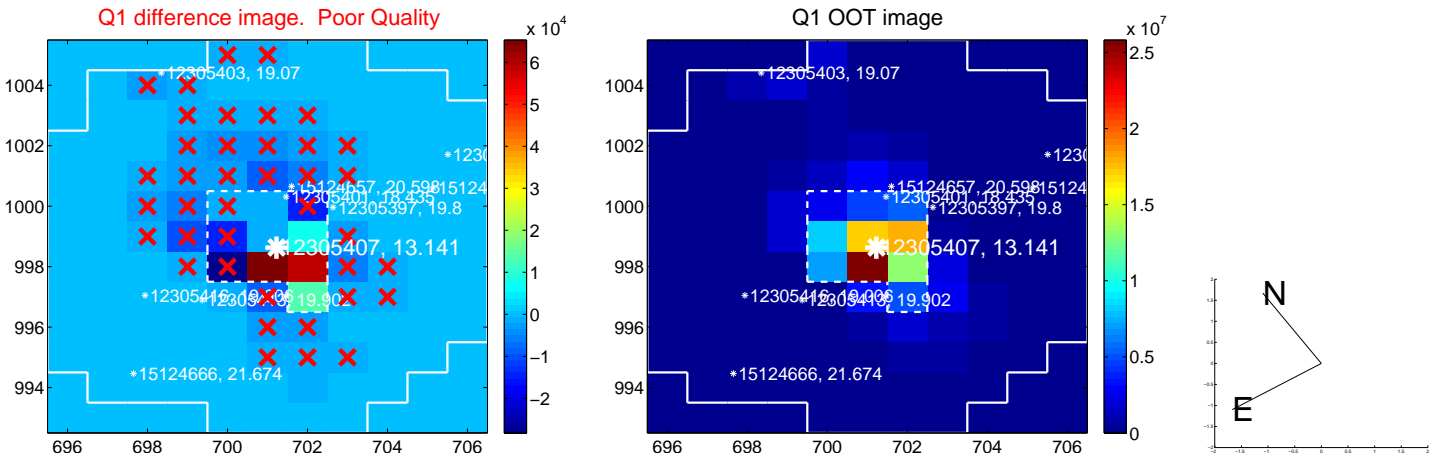
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.162 ± 1.001	1.16	0.661 ± 0.697	0.955 ± 0.758
PRF-fit source offset from KIC position	1.169 ± 0.852	1.37	0.600 ± 0.654	1.004 ± 0.630
photometric centroid source offset	0.63 ± 0.16	3.96	-0.51 ± 0.15	-0.36 ± 0.18

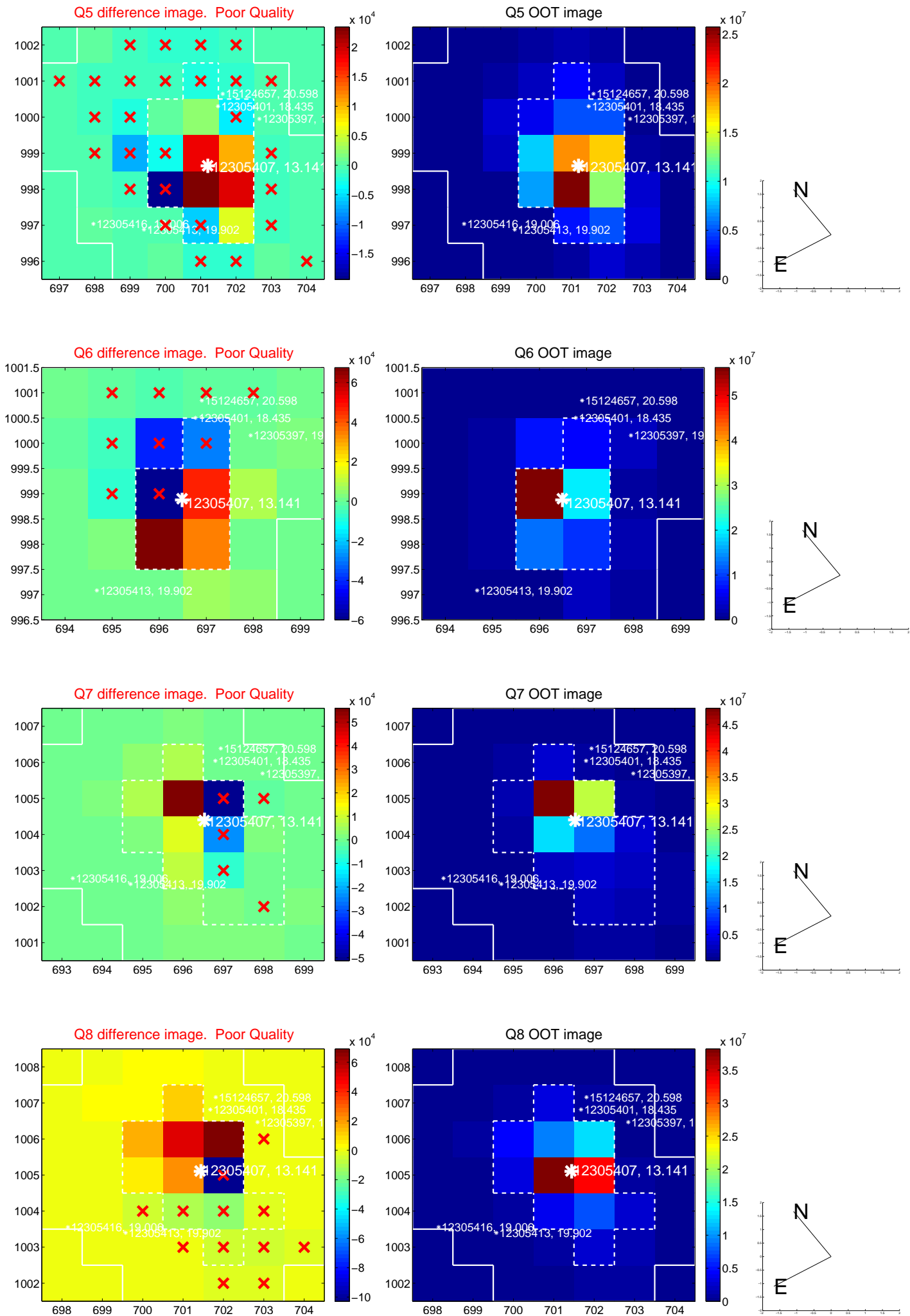


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

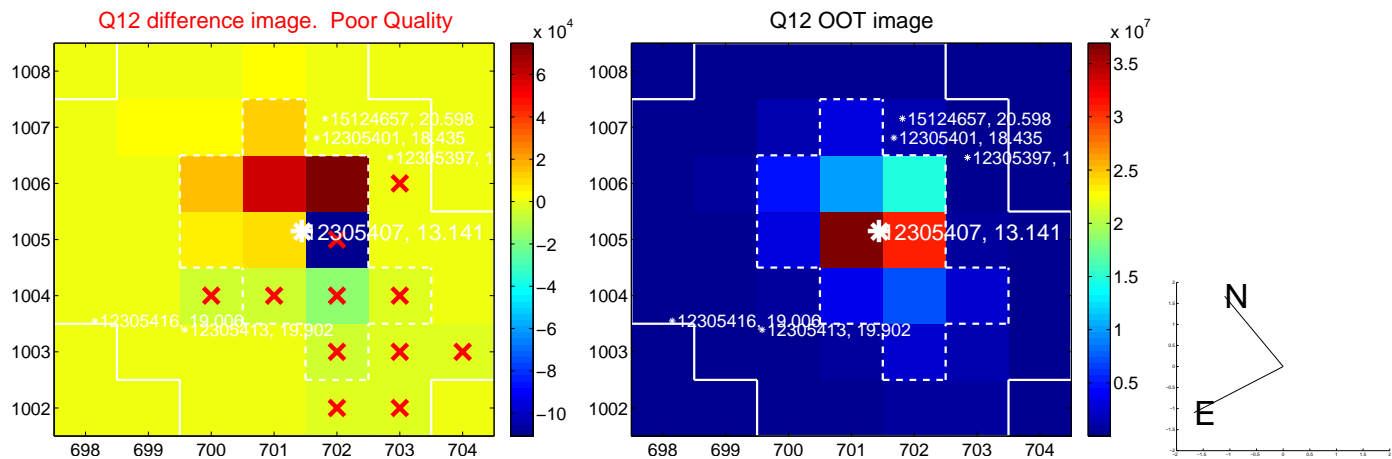
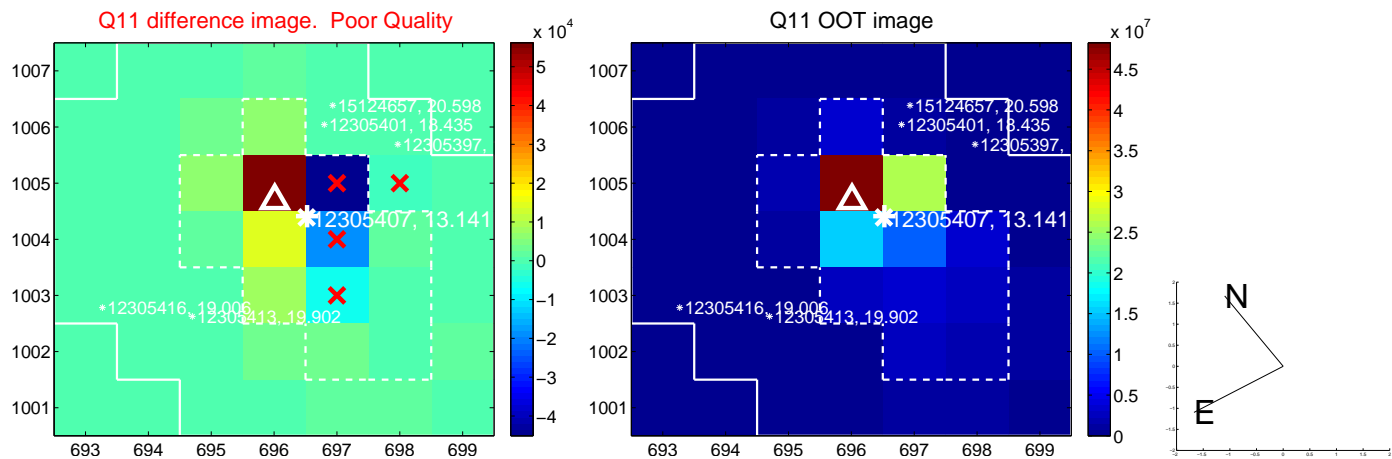
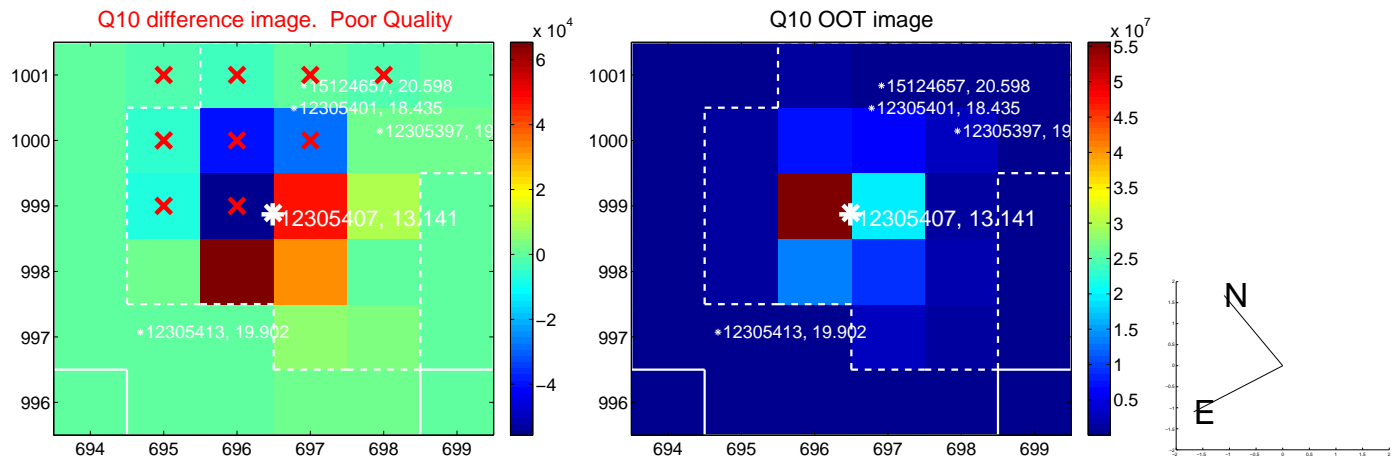
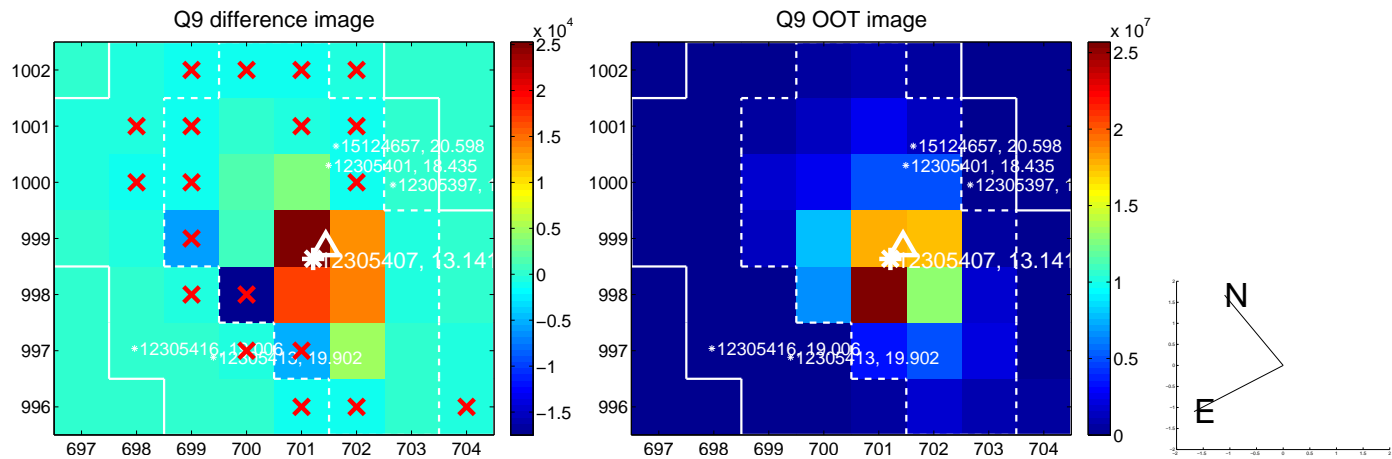
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



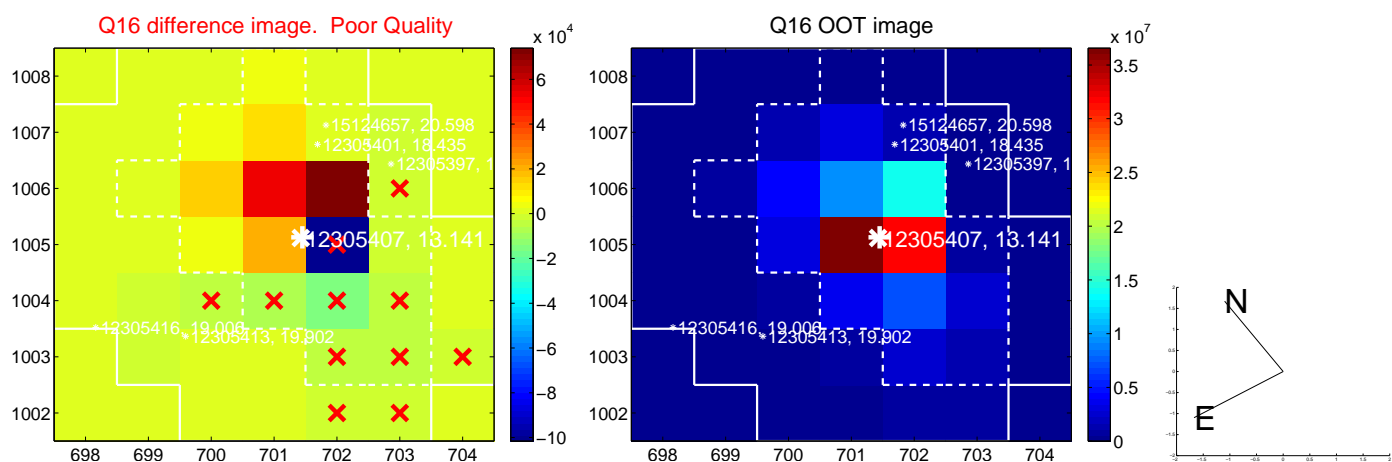
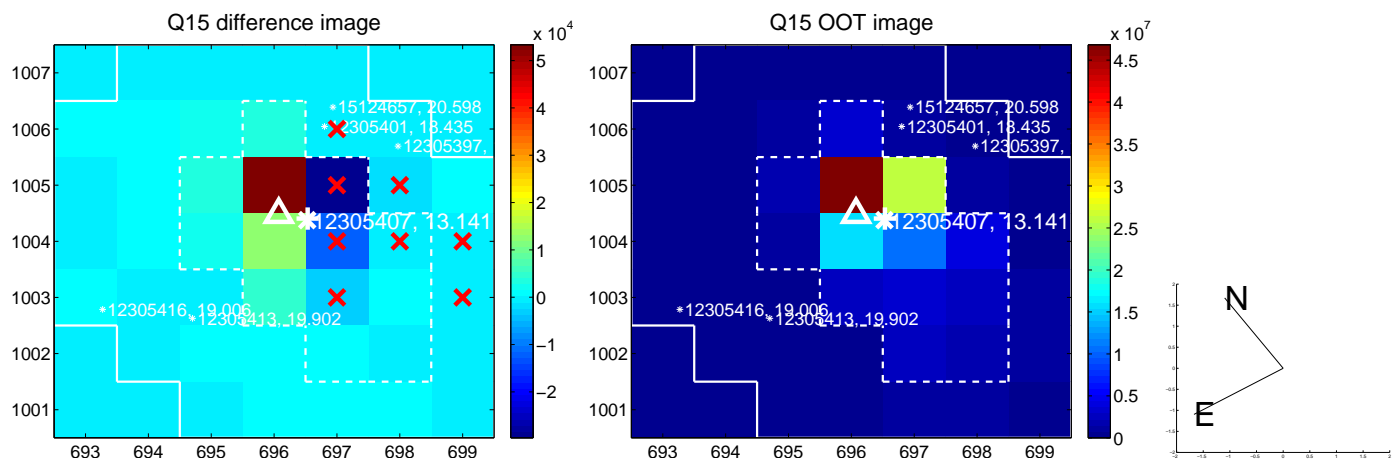
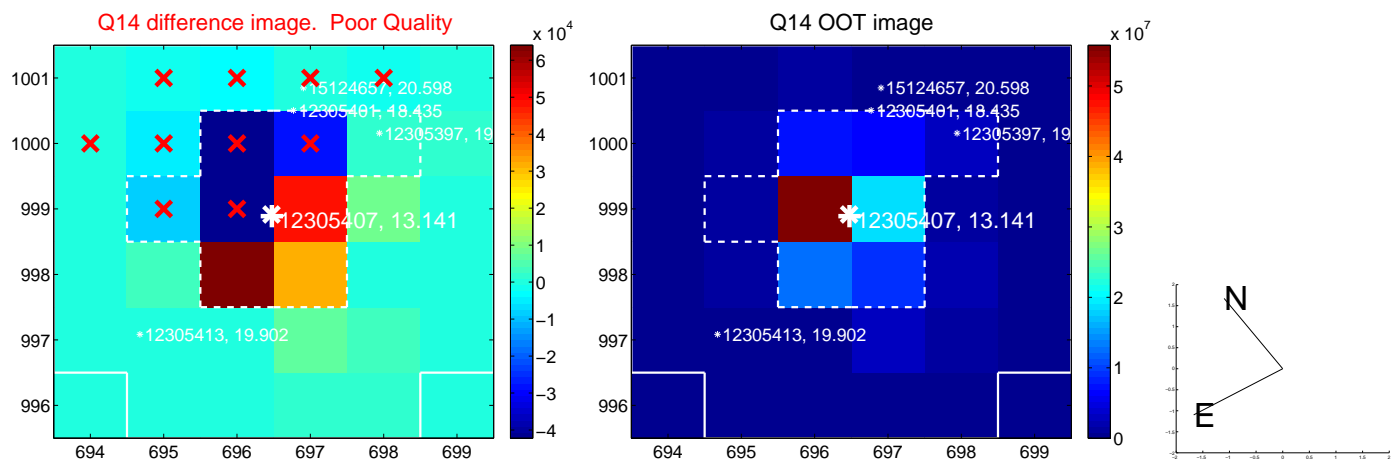
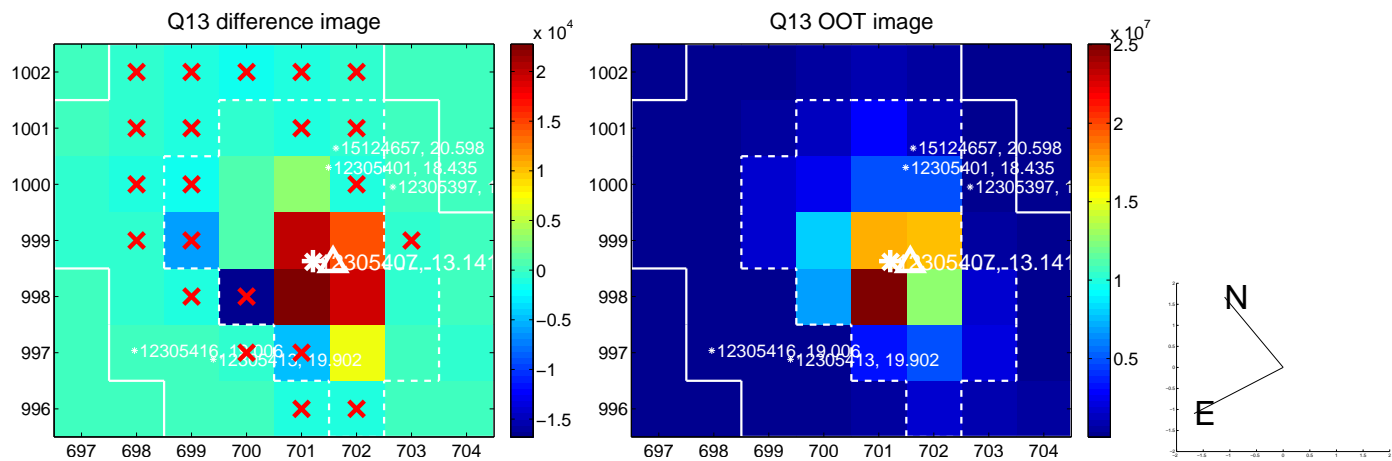
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



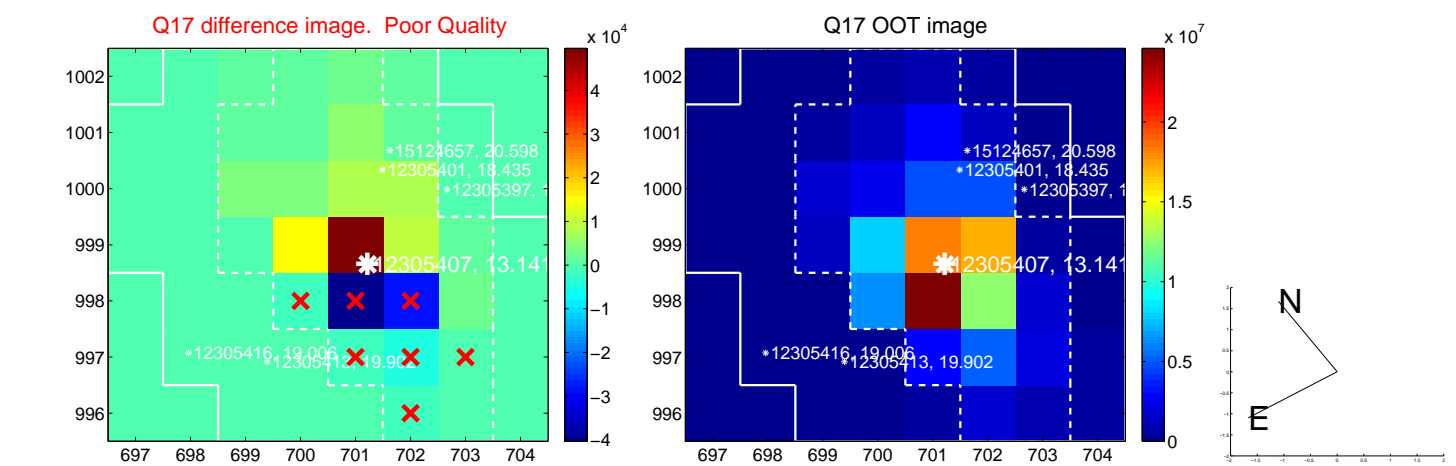
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



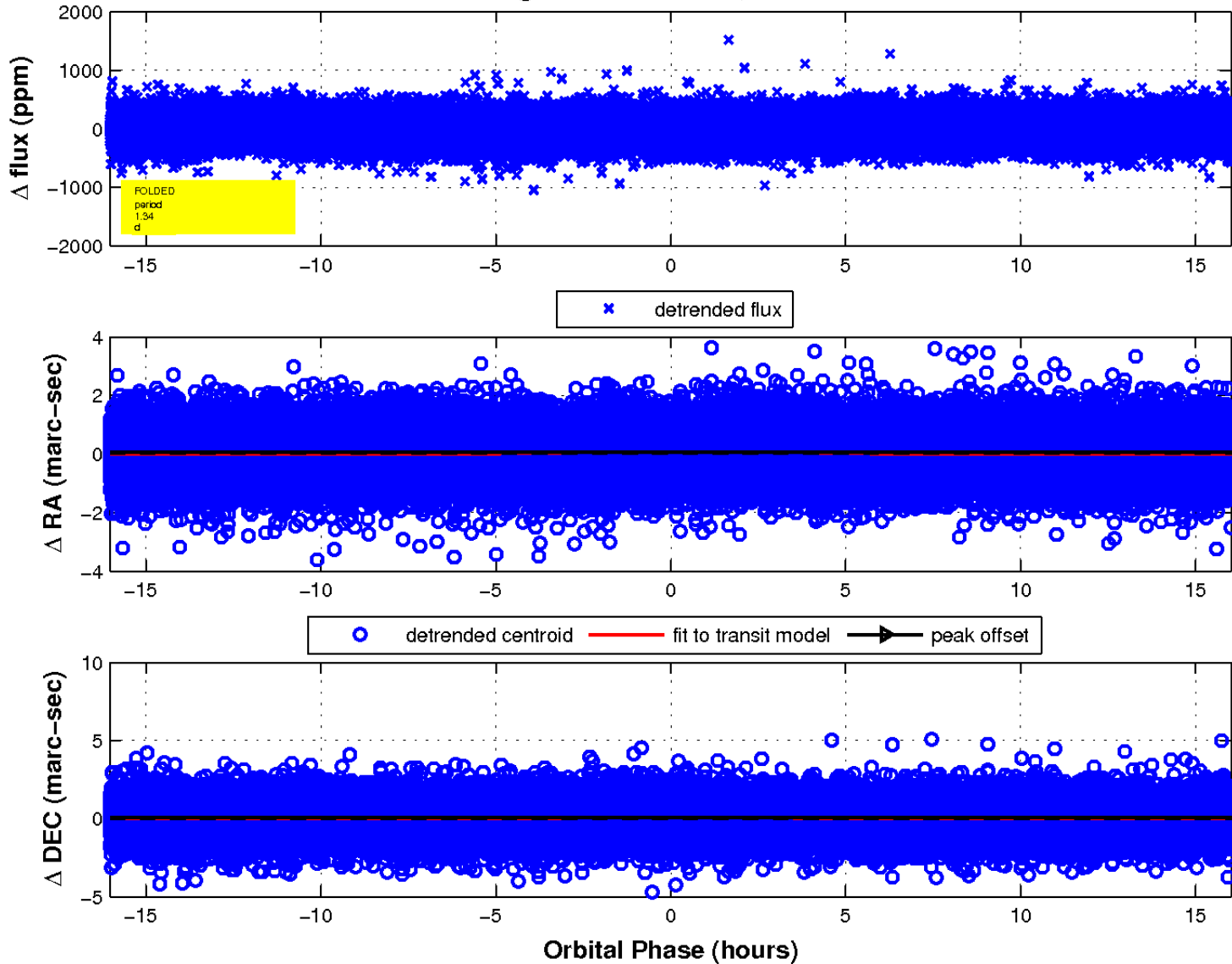
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

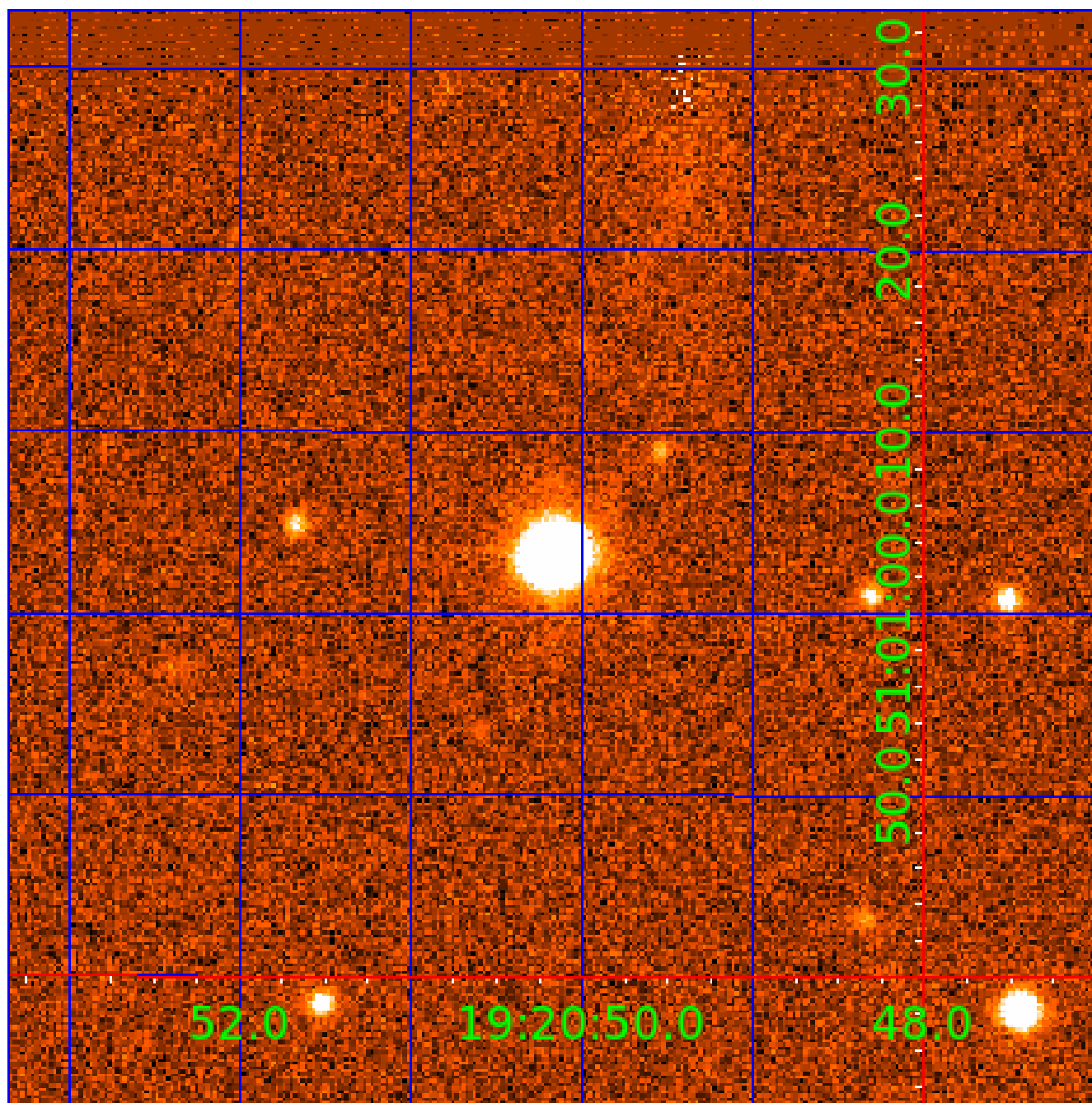


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 012305407

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})
012305407-01	OBS	No	1.335640	131.594527	184.2	3.000	8.1	-1.0	1.57	6534	2.14	6062.12
012305407-02	OBS	No	4.820349	132.586925	39.8	7.906	7.8	8.0	1.57	6534	1.16	1095.06
012305407-03	OBS	No	567.049083	273.392340	437.3	4.872	7.4	8.2	1.57	6534	3.67	1.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012305407-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS—HALO_GHOST
012305407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012305407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MOD_NONUNIQ_ALT

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

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

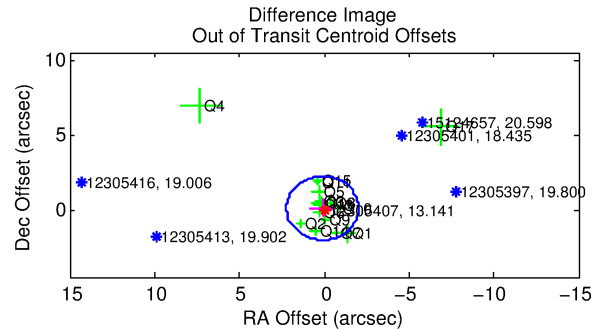
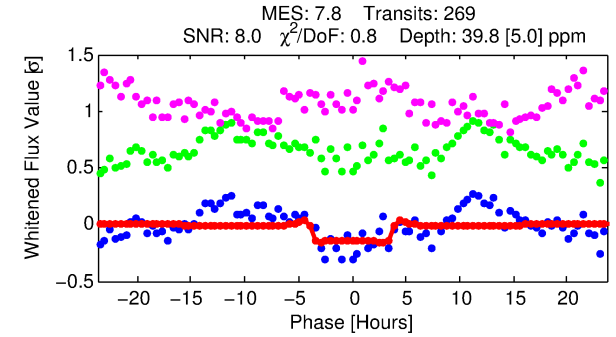
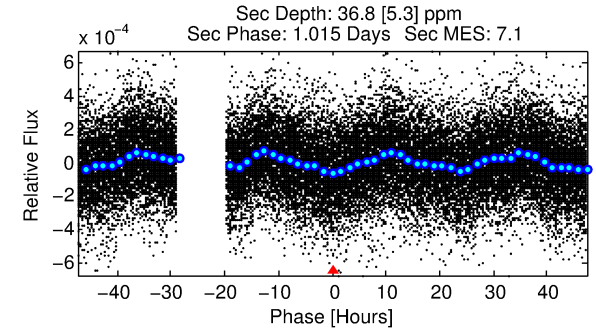
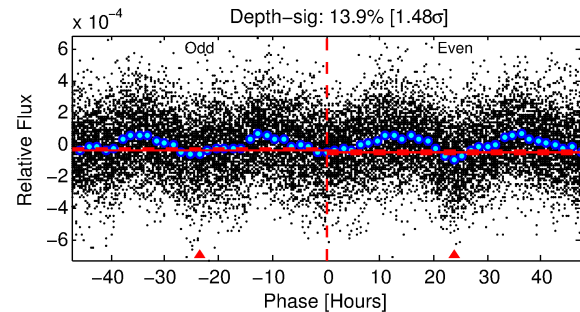
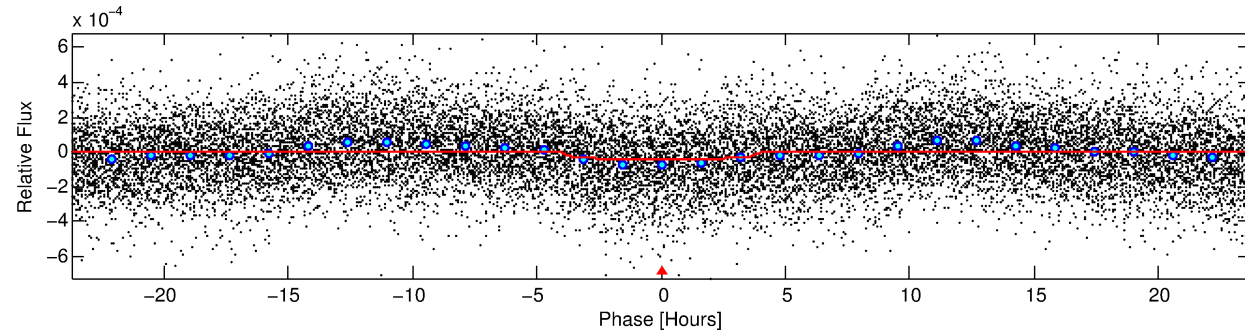
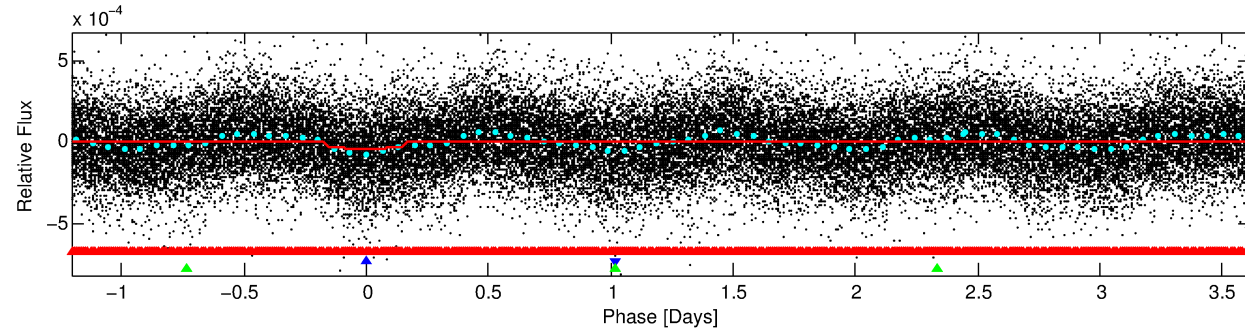
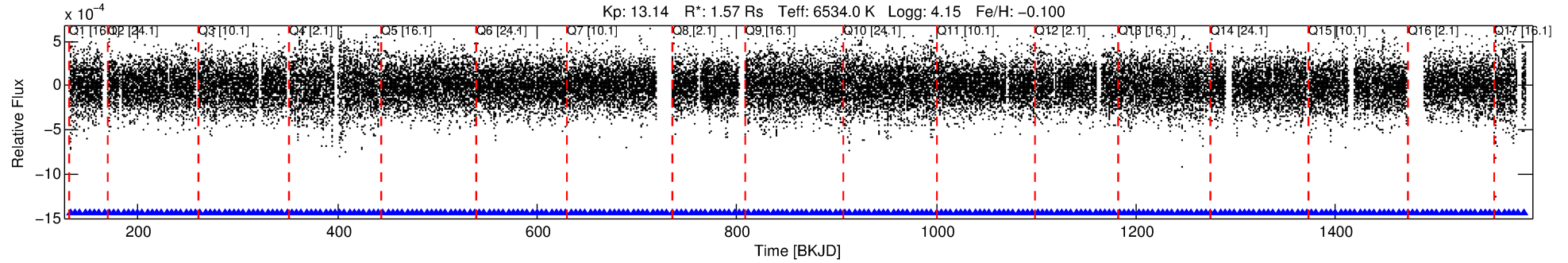
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012305407-02

No Significant Match Found

DV One-Page Summary

KIC: 12305407 Candidate: 2 of 3 Period: 4.820 d



DV Fit Results:

Period = 4.82035 [0.00006] d
Epoch = 132.5869 [0.0083] BKJD
Rp/R* = 0.0068 [0.0017]
a/R* = 2.30 [2.64]
b = 0.90 [0.30]
Seff = 1095.06 [412.69]
Teq = 1467 [138] K
Rp = 1.16 [0.46] Re
a = 0.0606 [0.0151] AU
Ag = 55.58 [34.92] [1.56 σ]
Teffp = 6192 [836] K [5.58 σ]

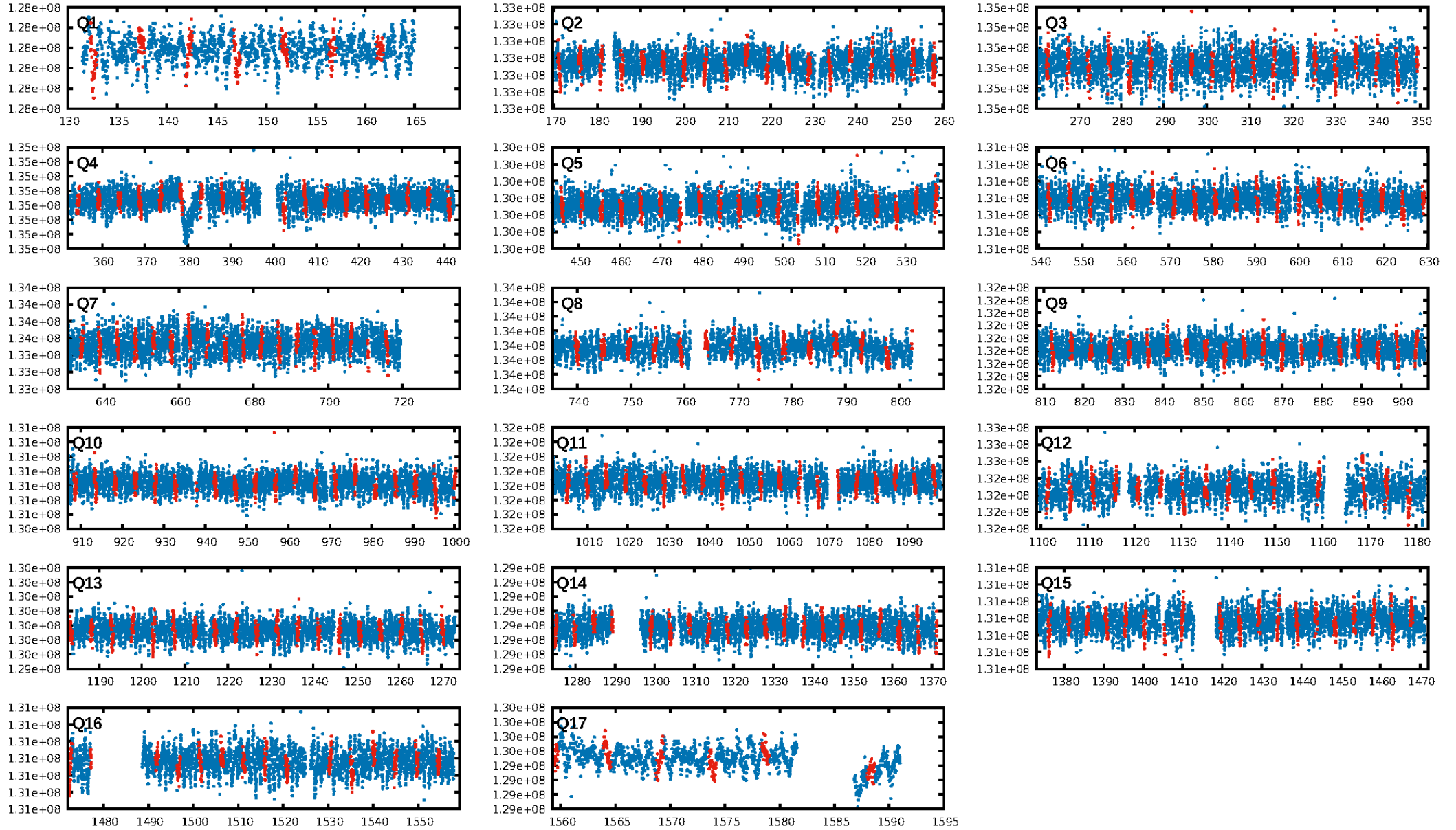
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.89 σ]
LongPeriod-sig: 100.0% [1452.98 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.54e-11
RollingBand-fgt: 1.00 [257/257]
GhostDiagnostic-chr: 1.595
Centroid-sig: 69.6%
Centroid-so: 0.498 arcsec [0.49 σ]
OotOffset-rm: 0.136 arcsec [0.19 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-rm: 0.029 arcsec [0.05 σ]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

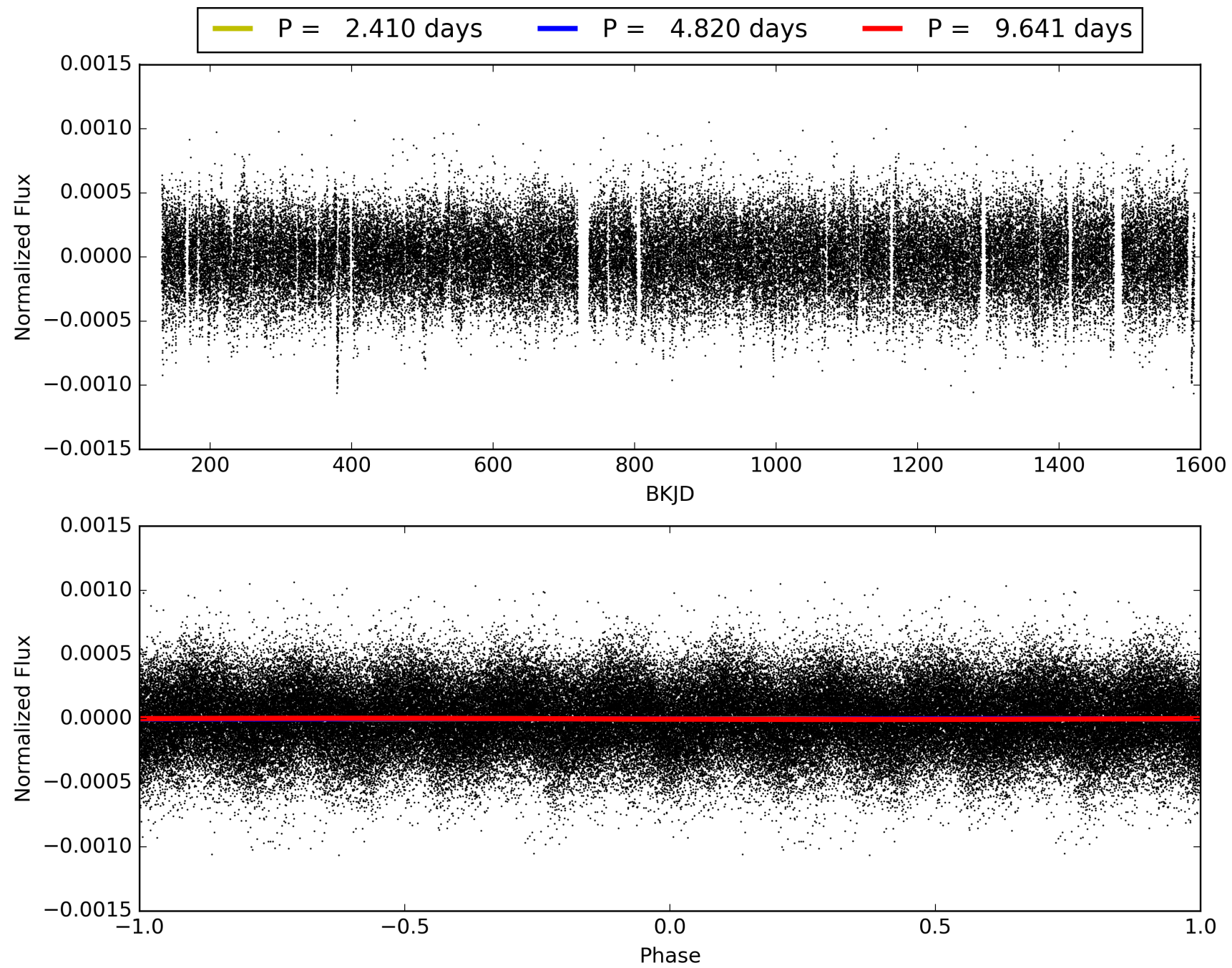
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:28:45 Z

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

TCE 012305407-02, PDC Light Curves

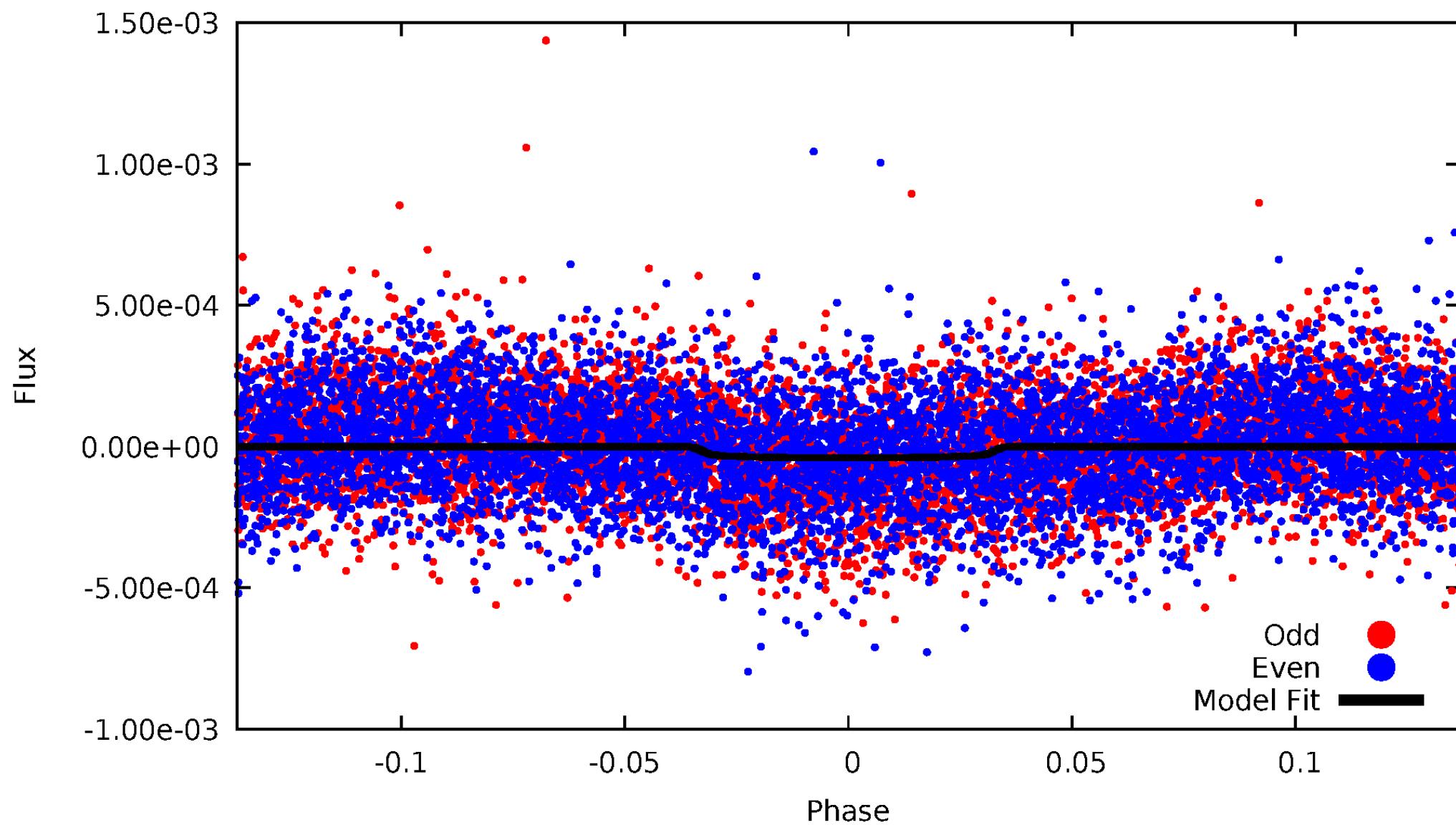


TCE 012305407-02



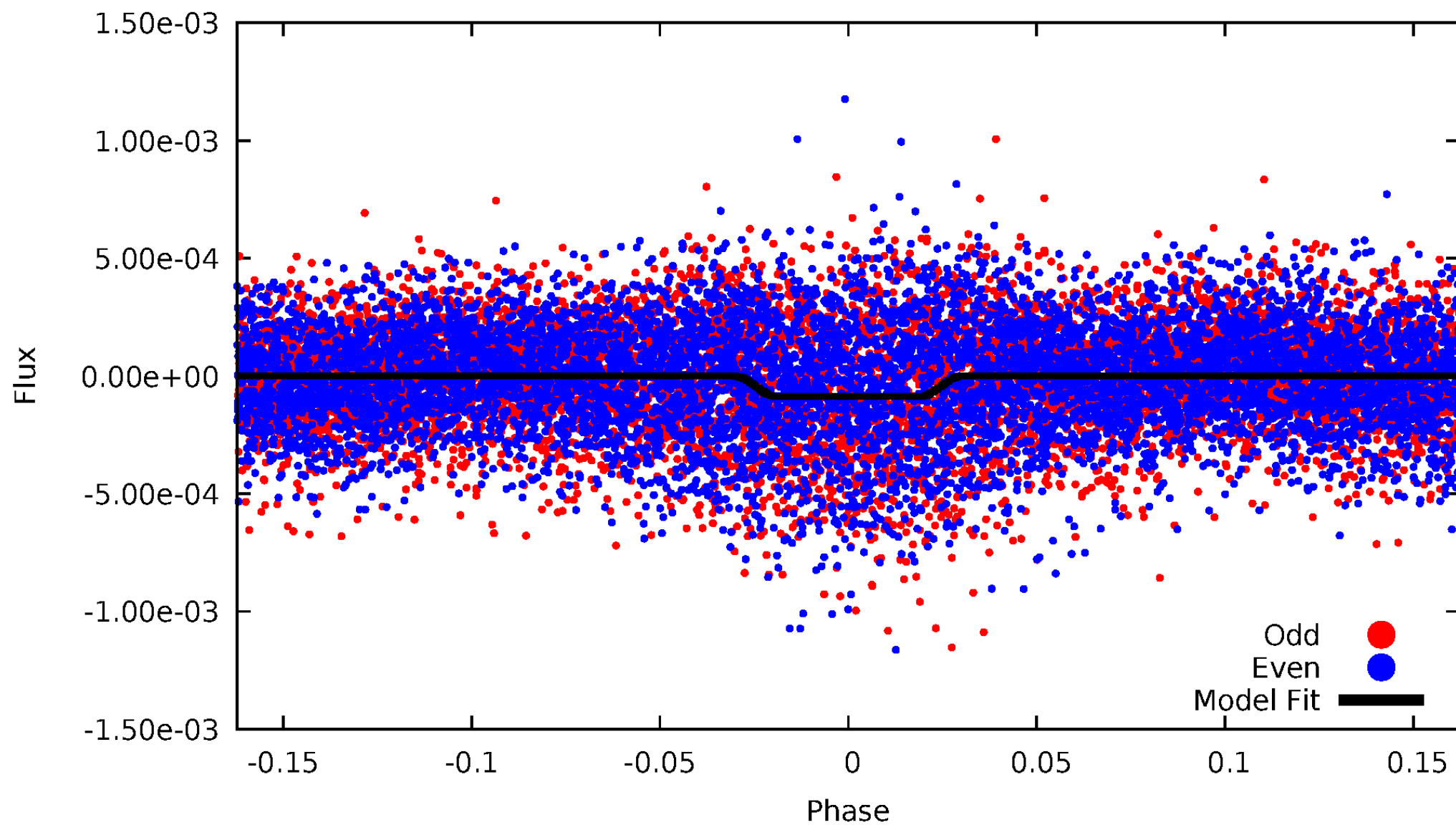
DV Odd/Even

TCE 012305407-02



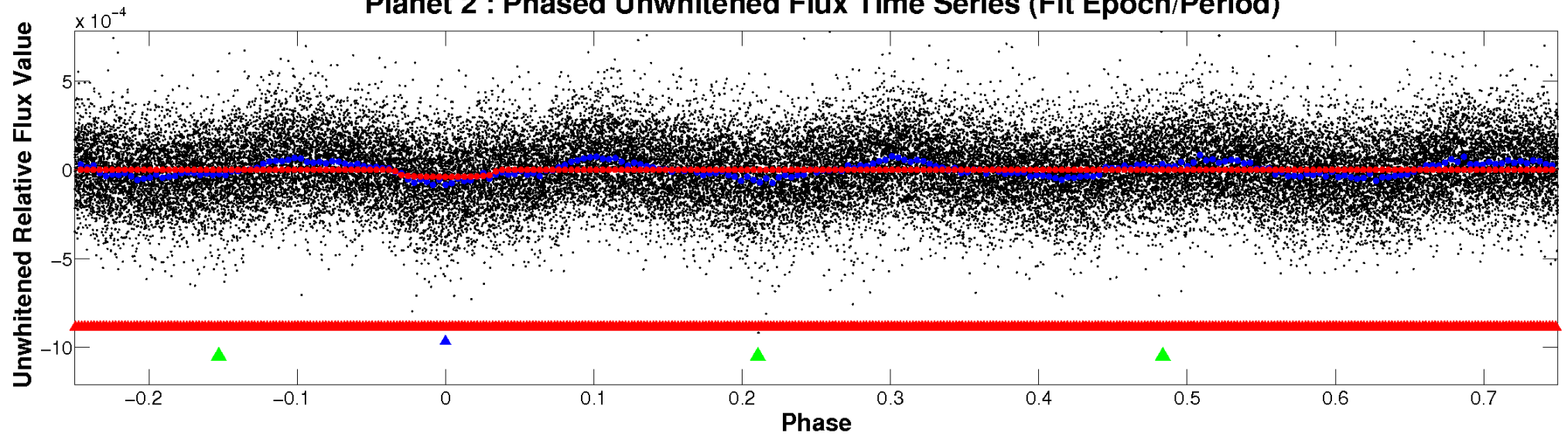
ALT Odd/Even

TCE 012305407-02

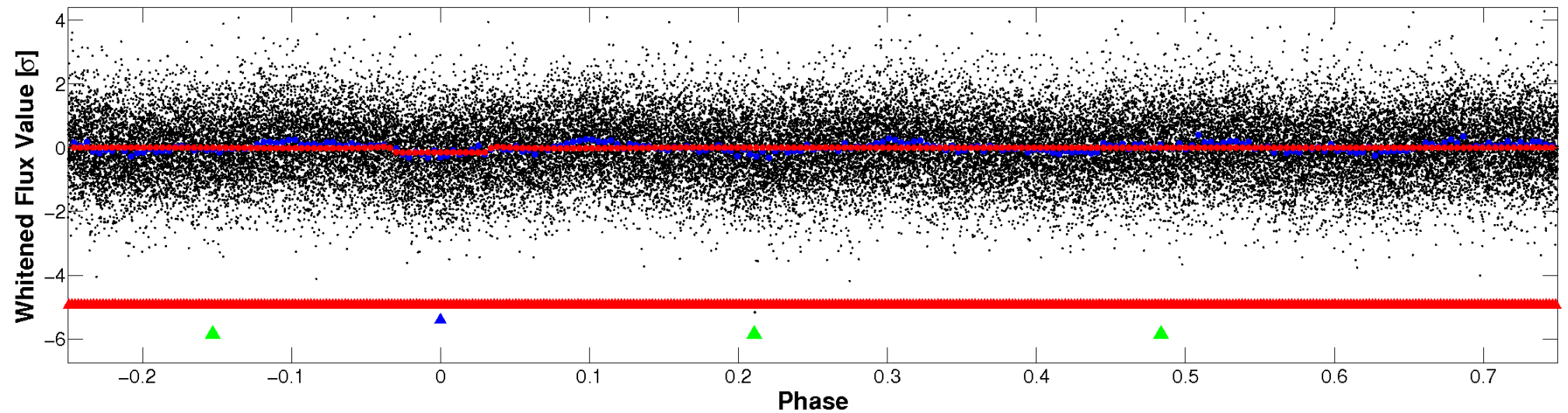


Non-Whitened Vs. Whitened Light Curve

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

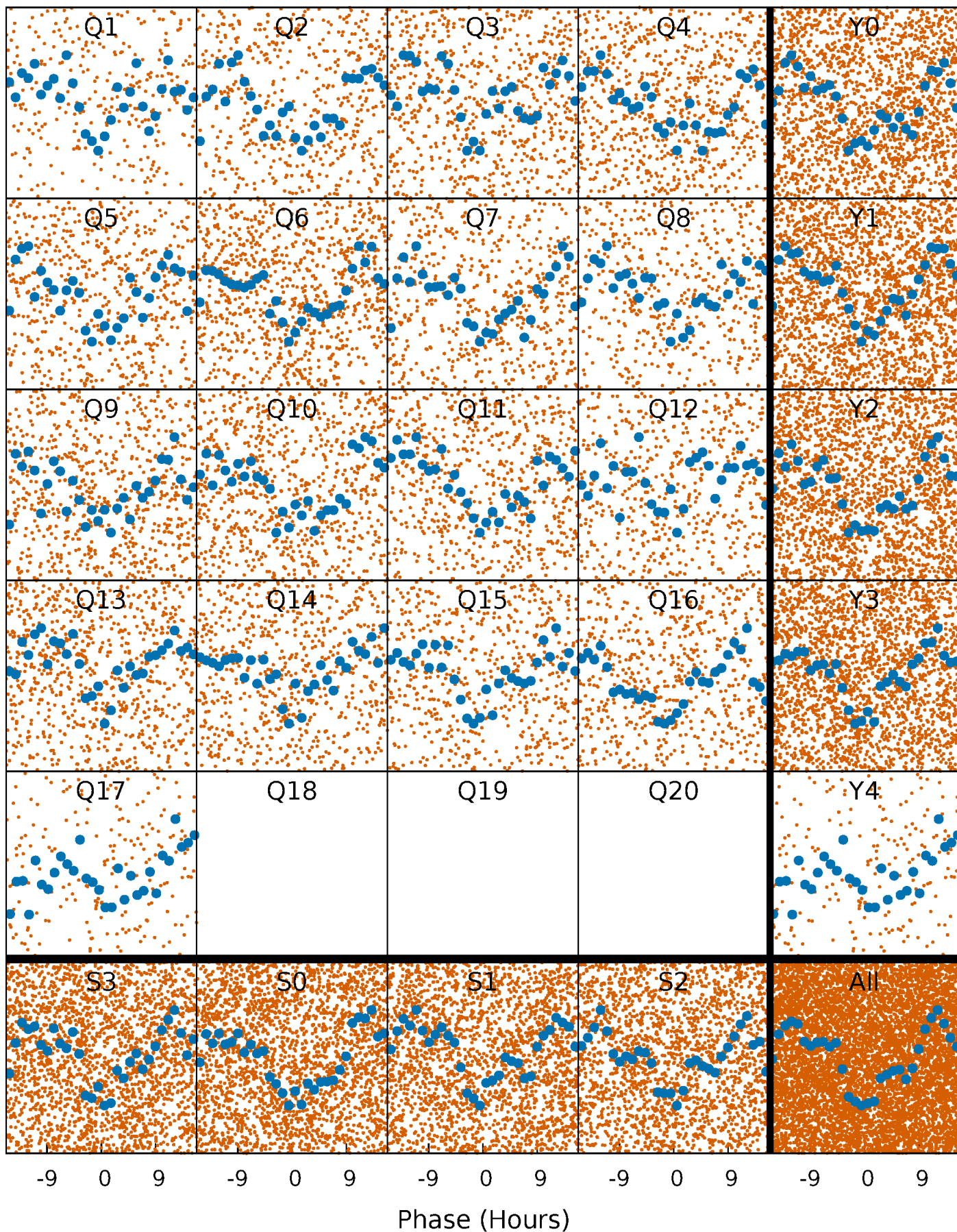


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



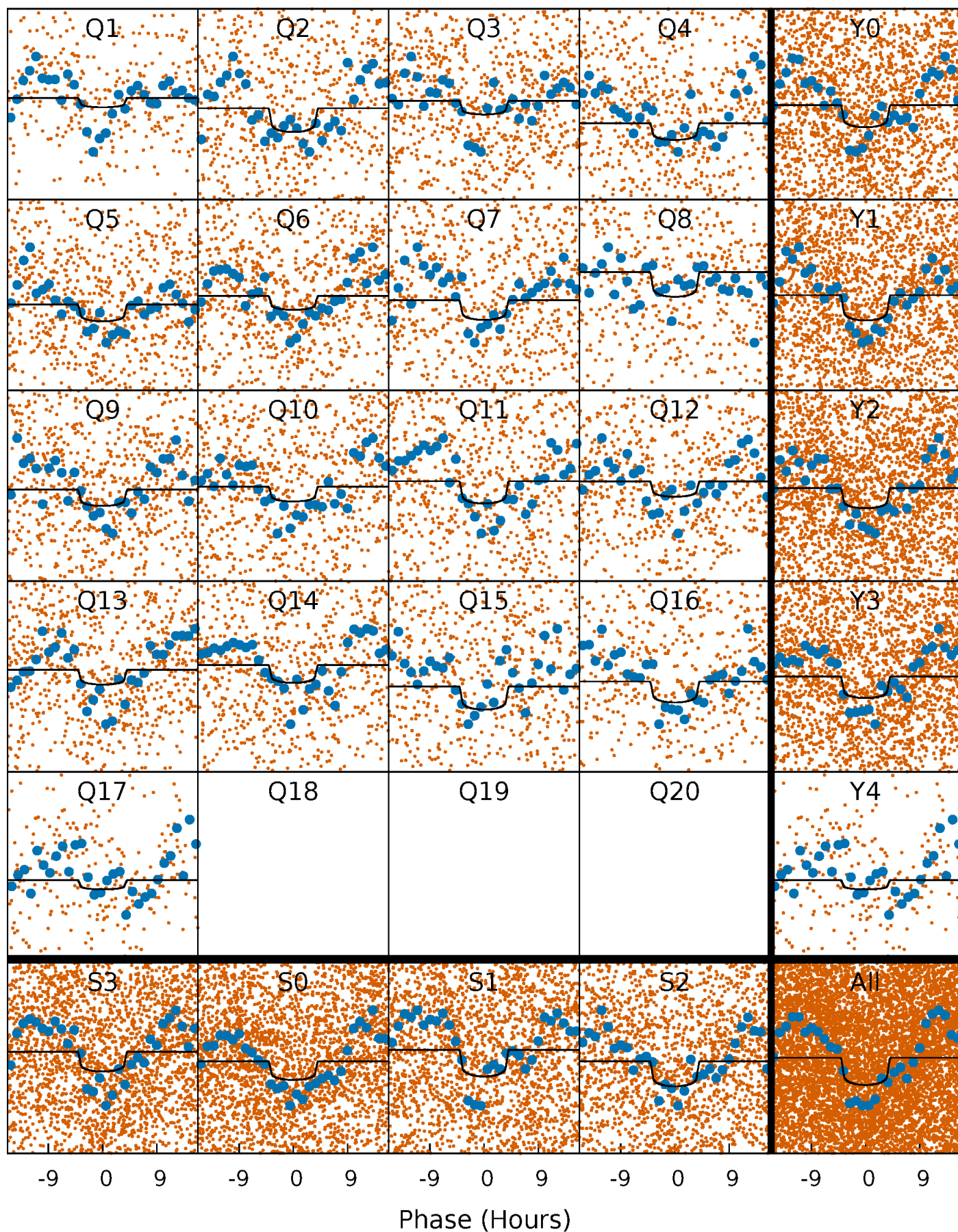
PDC Quarter-Phased Transit Curves

TCE 012305407-02 P= 4.820349 Days $T_0=132.586925$ (BKJD)



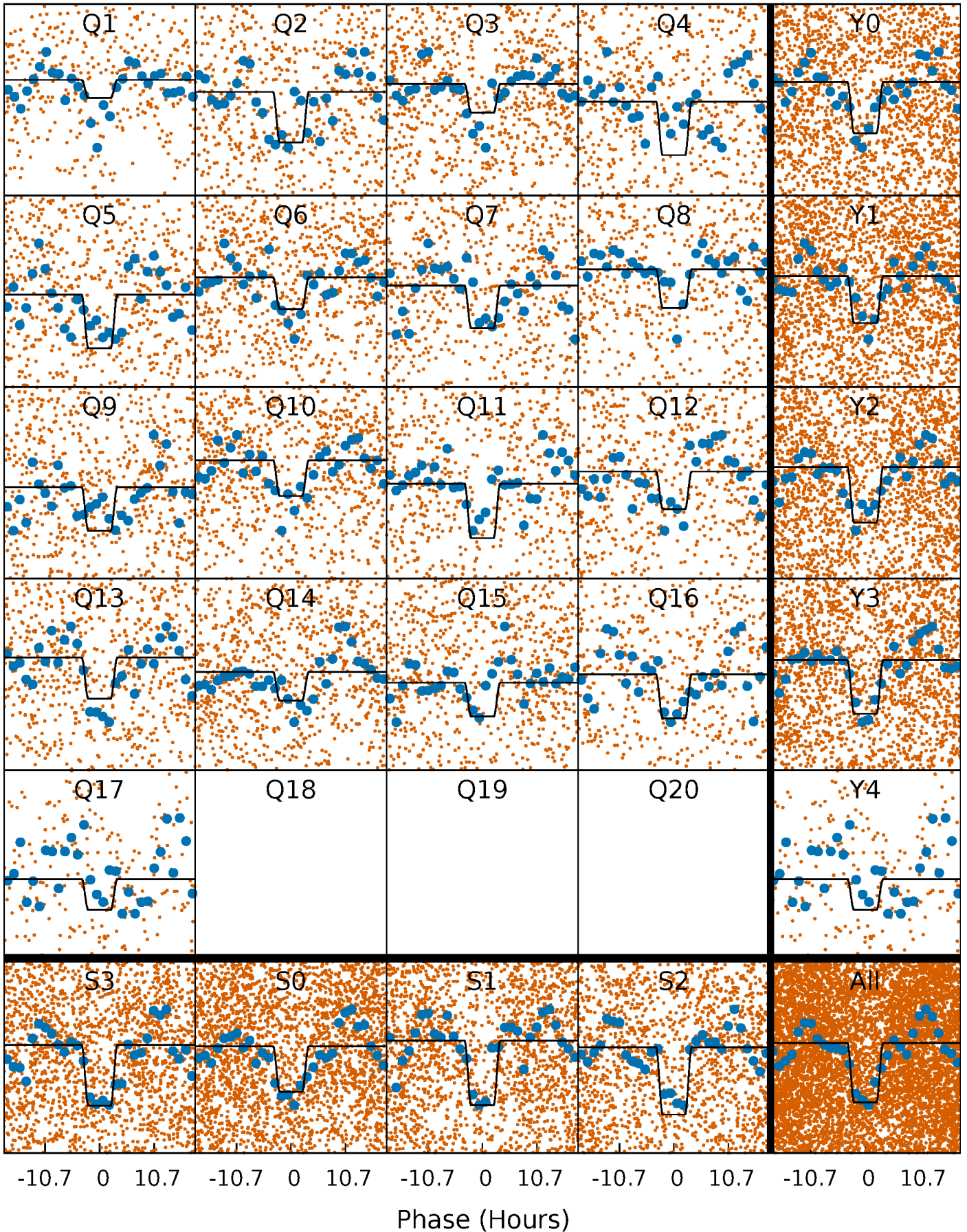
DV Quarter-Phased Transit Curves

TCE 012305407-02 P= 4.820349 Days $T_0=132.586925$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

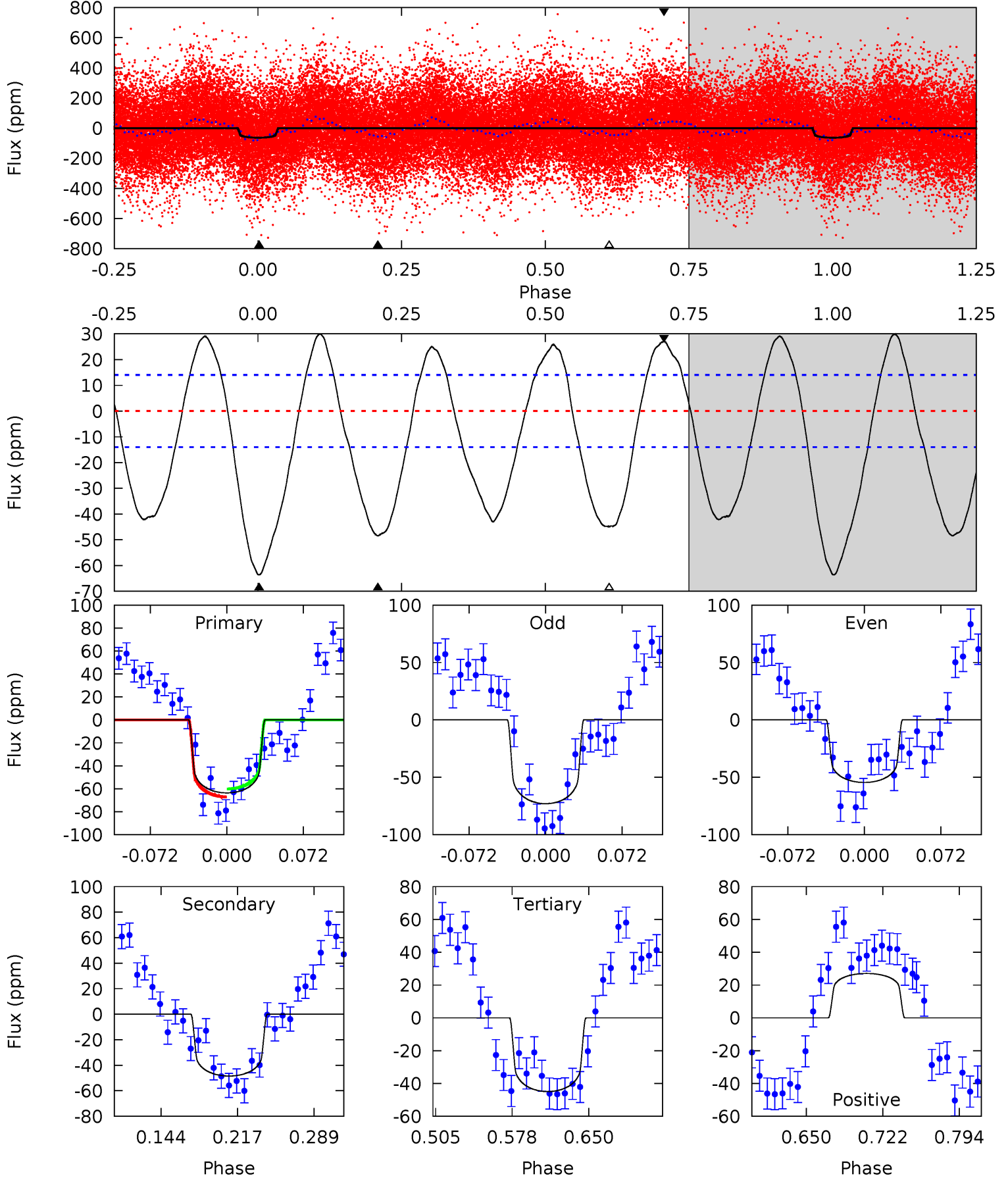
TCE 012305407-02 $P = 4.820339$ Days $T_0 = 132.554553$ (BKJD)



DV Model-Shift Uniqueness Test

012305407-02, P = 4.820349 Days, E = 127.766576 Days

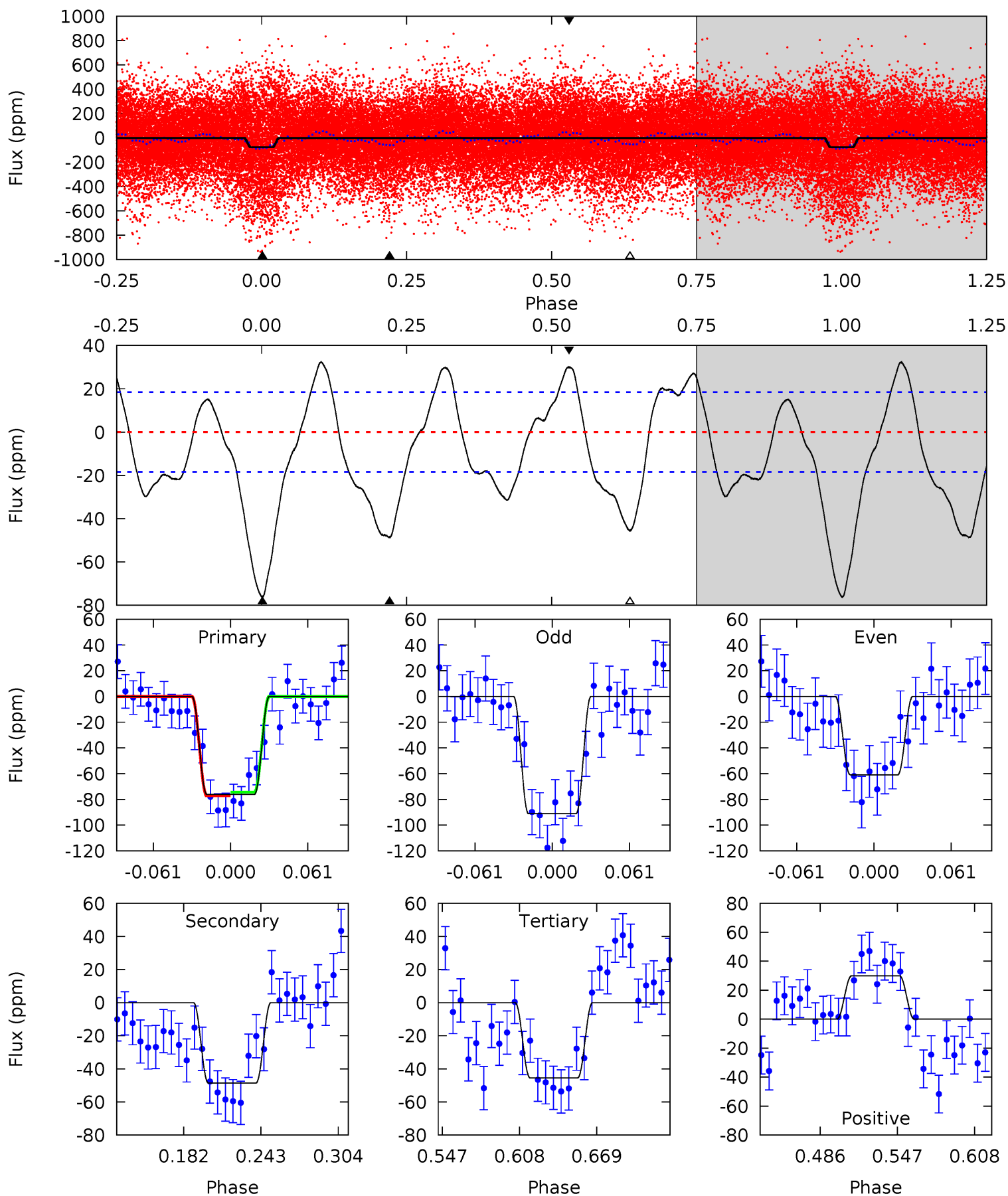
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	16.0	14.8	8.93	4.63	1.80	8.38	6.17	12.1	1.16	7.06	3.06	1.11	0.32	1.15



Alt Model-Shift Uniqueness Test

012305407-02, P = 4.820339 Days, E = 127.734214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	12.3	11.5	7.62	4.67	1.87	5.27	7.79	11.7	0.79	4.72	3.86	1.53	0.30	0.35



Stellar Parameters For KIC 012305407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6534^{+181}_{-227}	$4.153^{+0.185}_{-0.185}$	$-0.100^{+0.250}_{-0.300}$	$1.570^{+0.483}_{-0.395}$	$1.284^{+0.201}_{-0.221}$	$0.467^{+0.464}_{-0.230}$
	+3%/-3%	+4%/-4%	+250%/-300%	+31%/-25%	+16%/-17%	+99%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012305407-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-48 ± 3	$1.15^{+0.39}_{-0.33}$	2050^{+169}_{-156}	6677^{+1246}_{-806}	75^{+71}_{-33}
Alt.	-49 ± 4	$1.60^{+0.40}_{-0.37}$	2038^{+156}_{-149}	5616^{+576}_{-426}	39^{+26}_{-14}

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

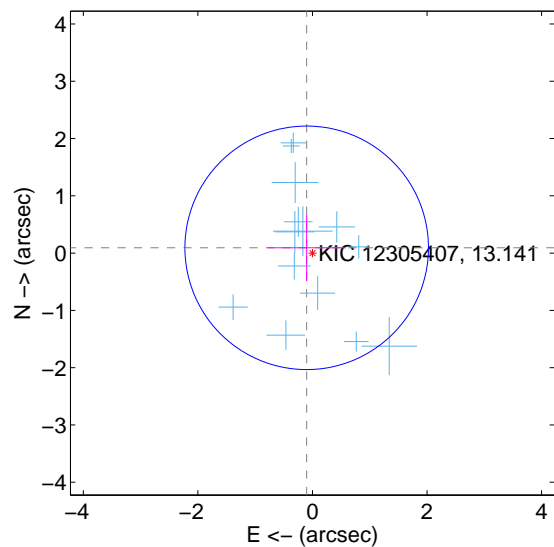
Supplemental centroid analysis for 012305407-02. Kepler magnitude: 13.14. Transit SNR 7.98

There are 14 quarters with good PRF difference image offsets

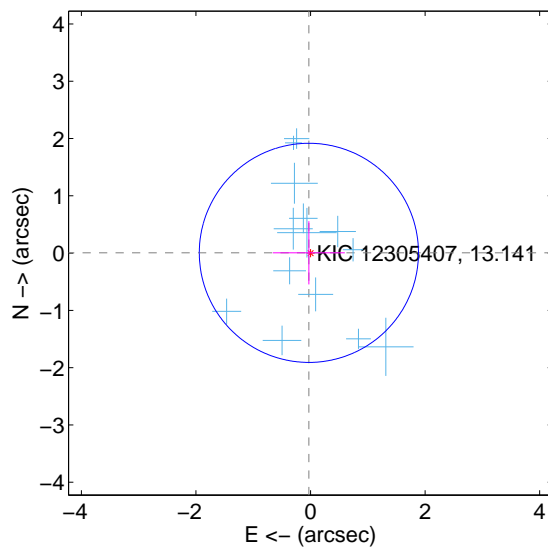
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.136 ± 0.708	0.19	0.100 ± 0.685	0.092 ± 0.581
PRF-fit source offset from KIC position	0.029 ± 0.638	0.05	0.029 ± 0.627	0.004 ± 0.552
photometric centroid source offset	0.50 ± 1.01	0.49	-0.18 ± 0.85	0.46 ± 1.03

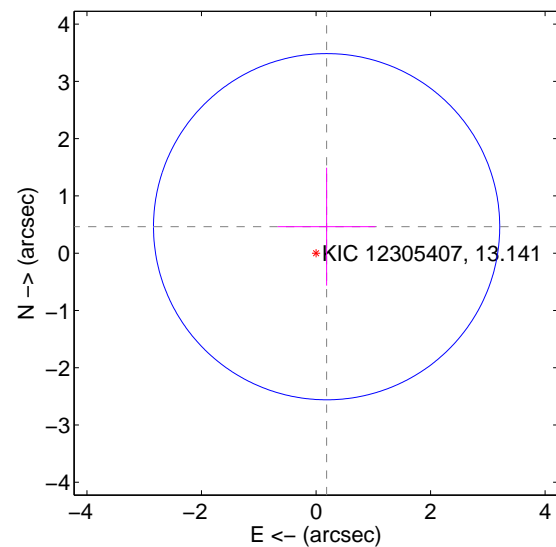
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

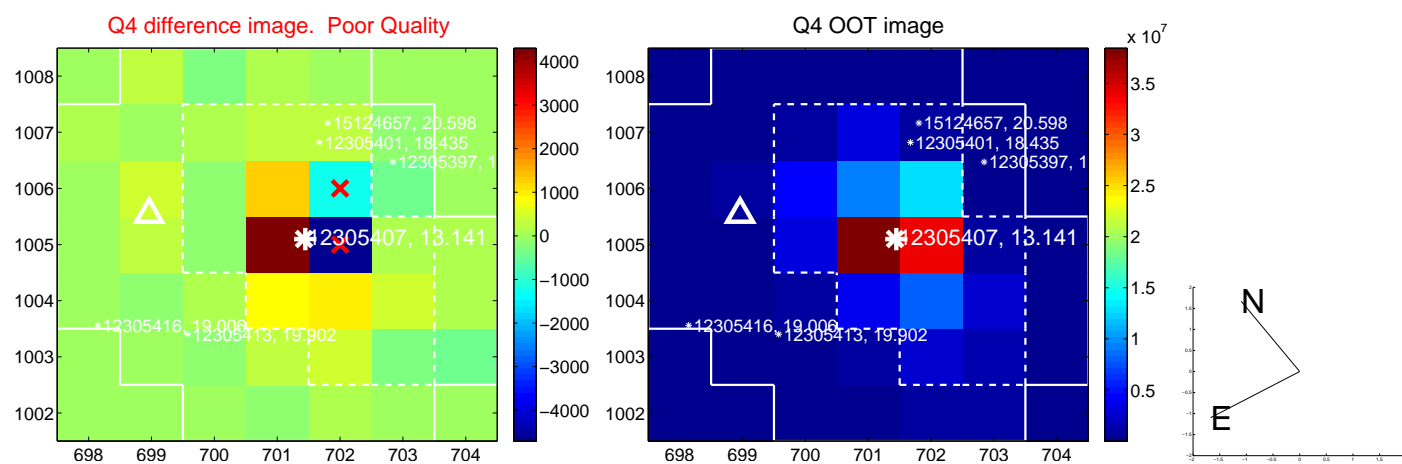
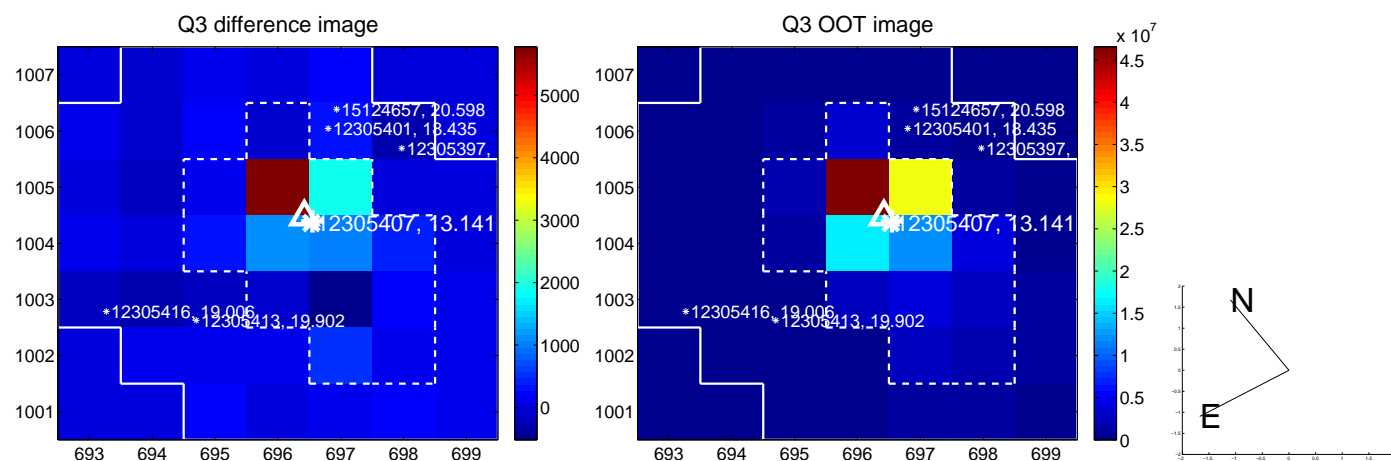
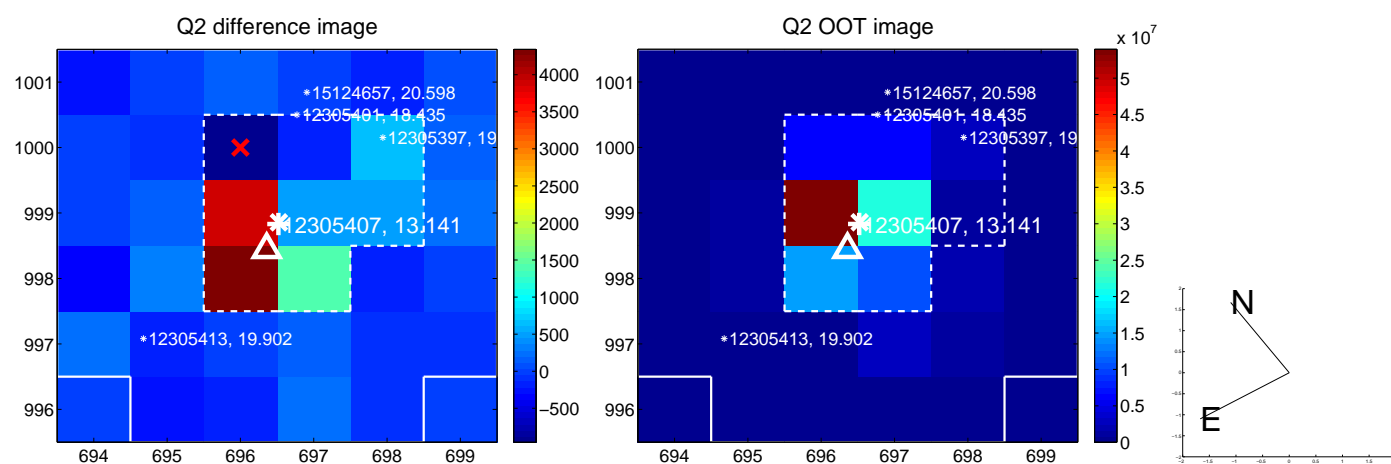
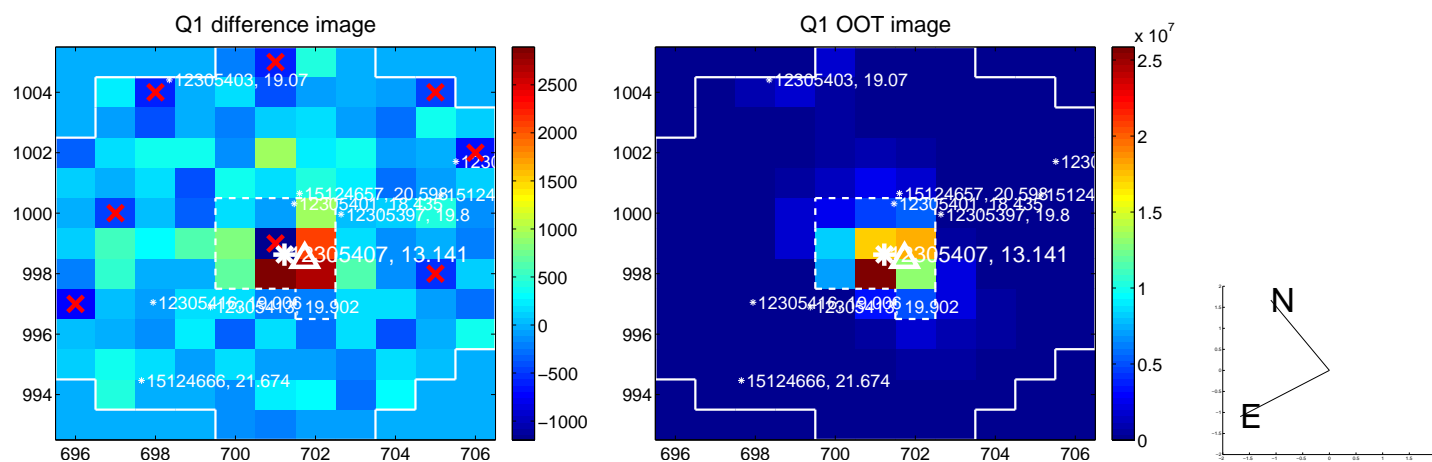


offset from photometric centroids

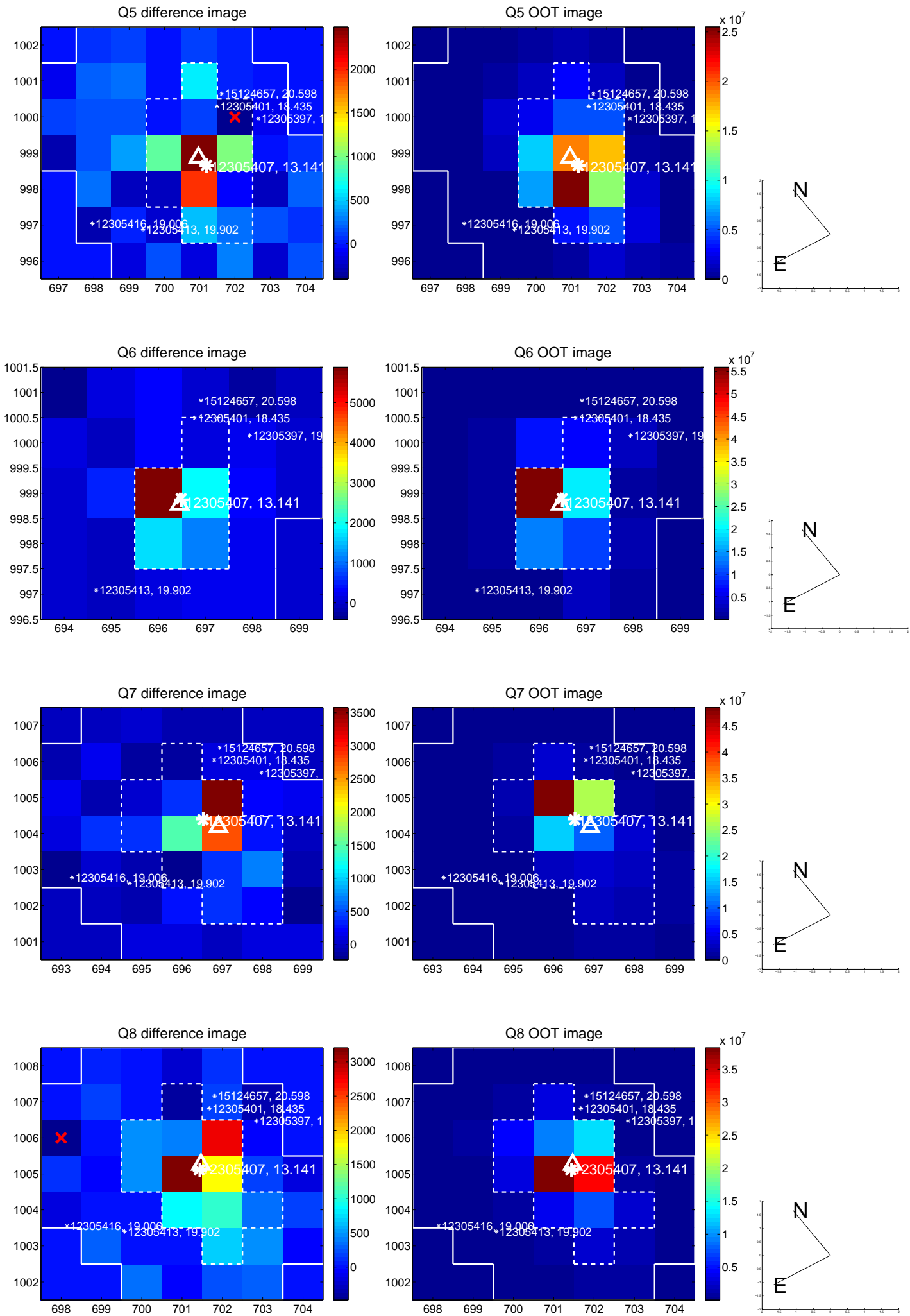


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

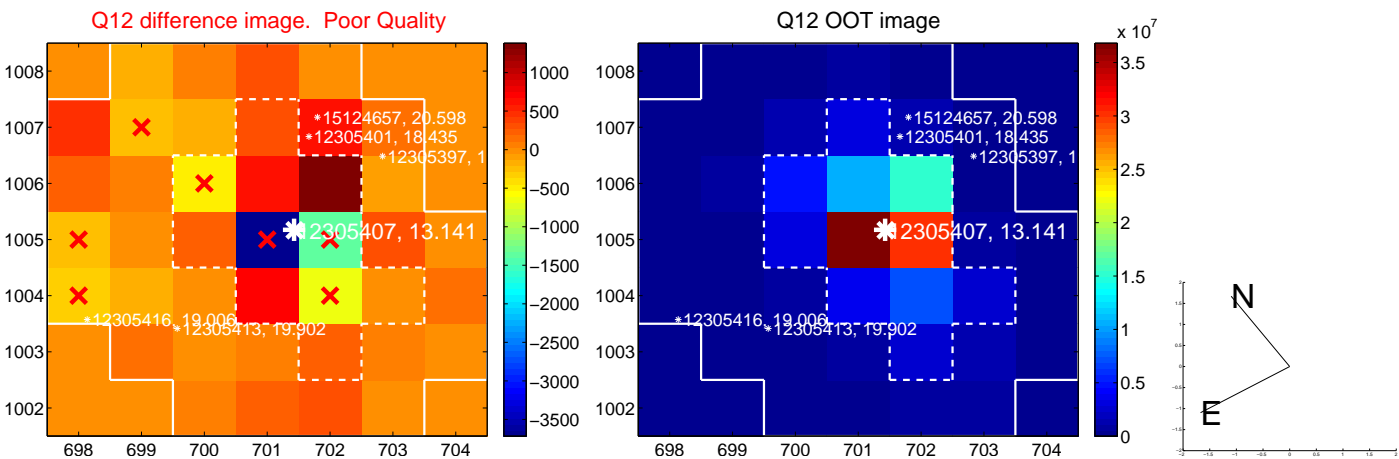
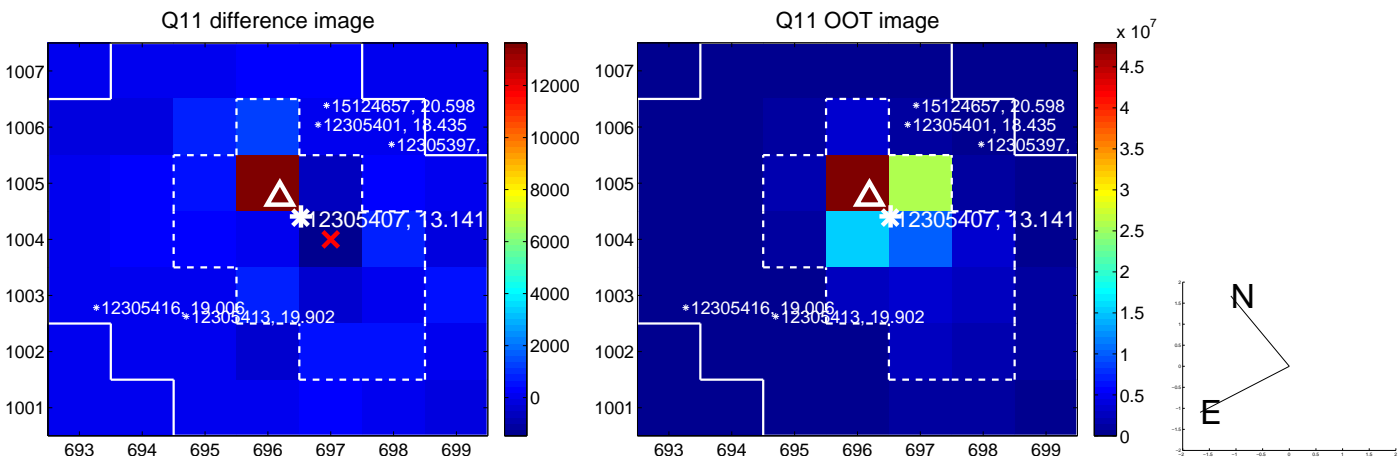
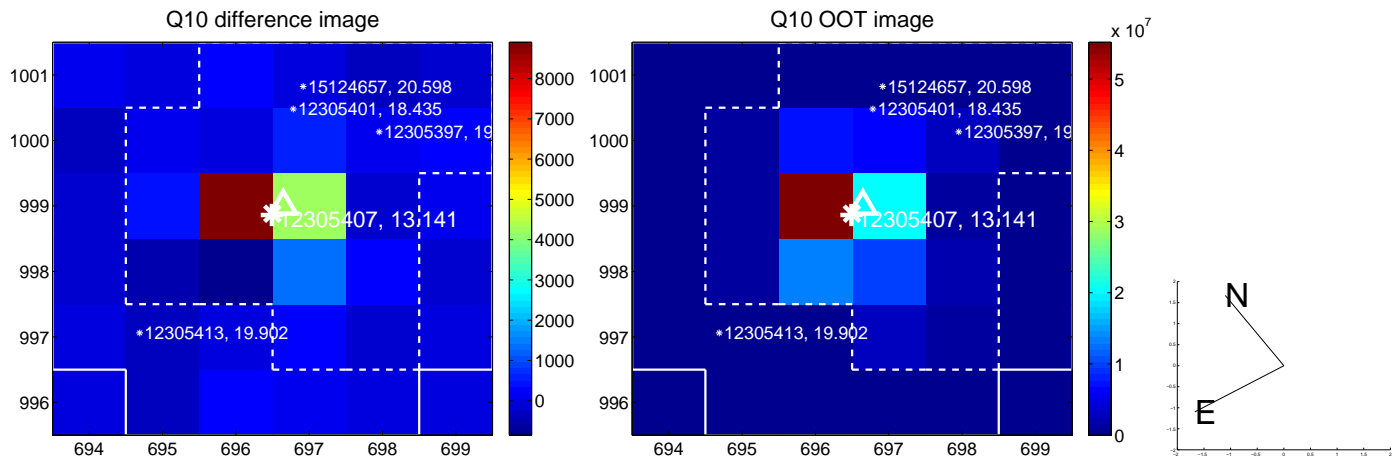
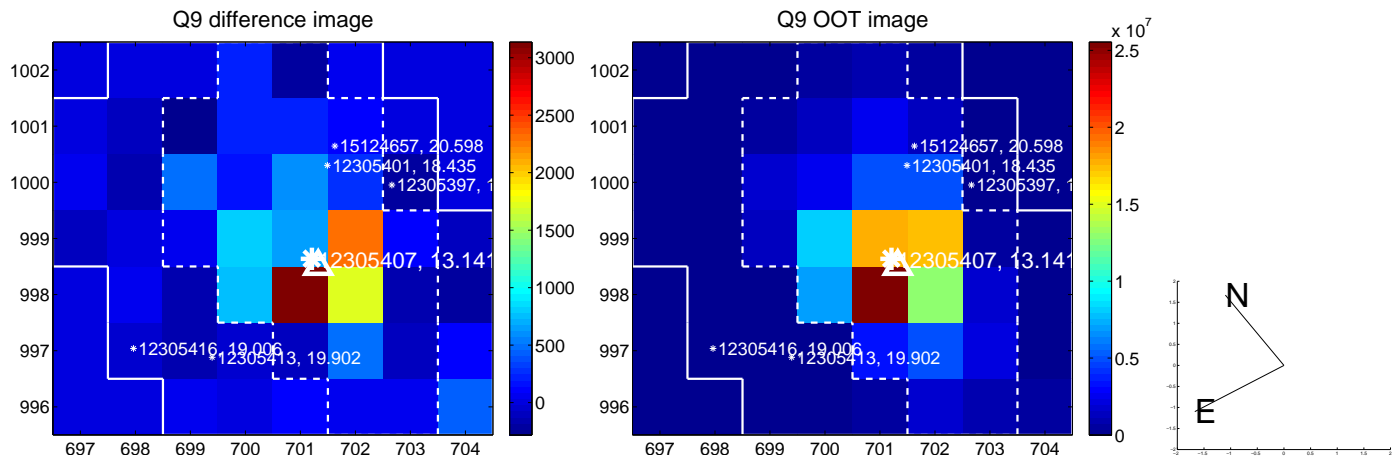
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



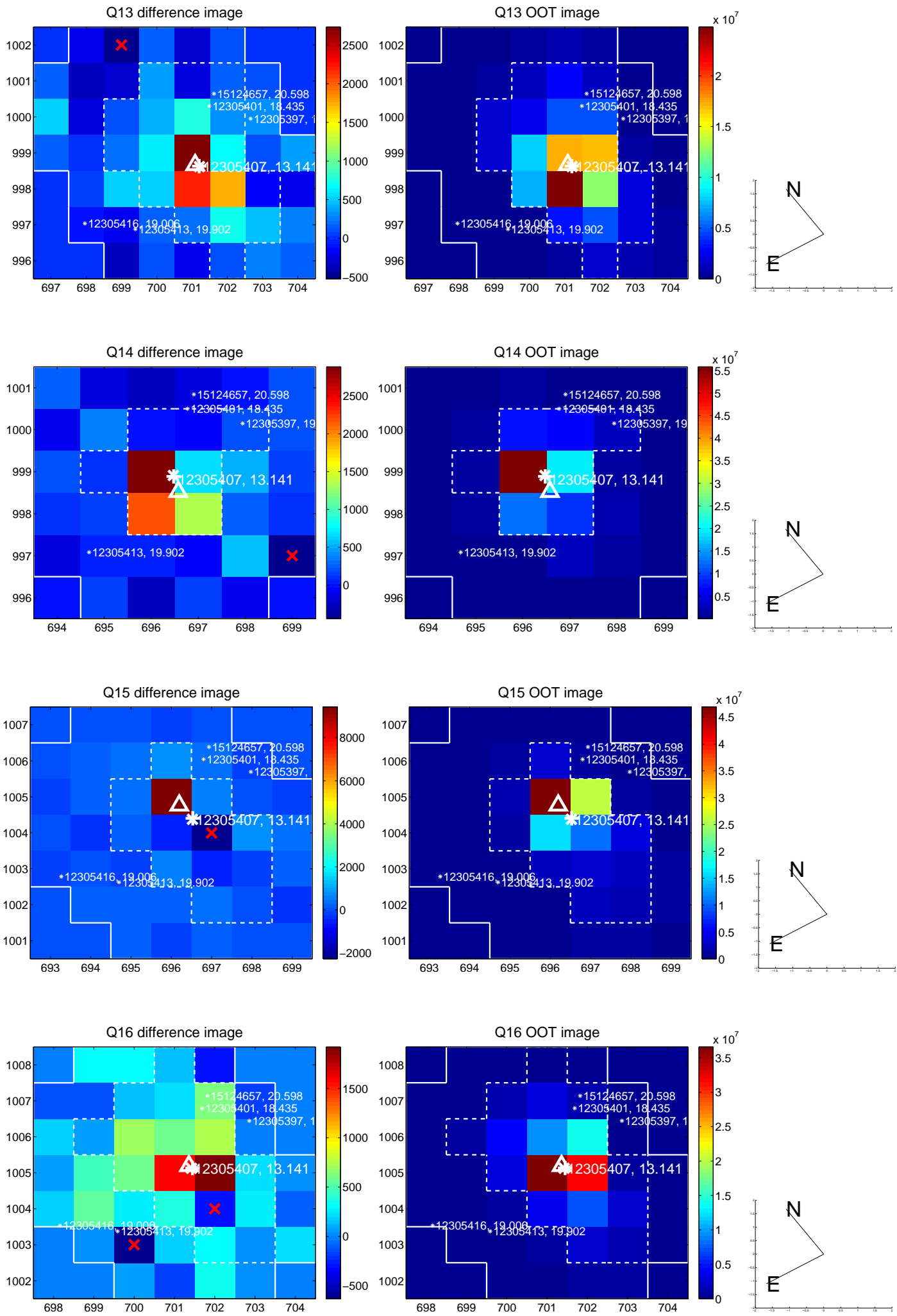
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



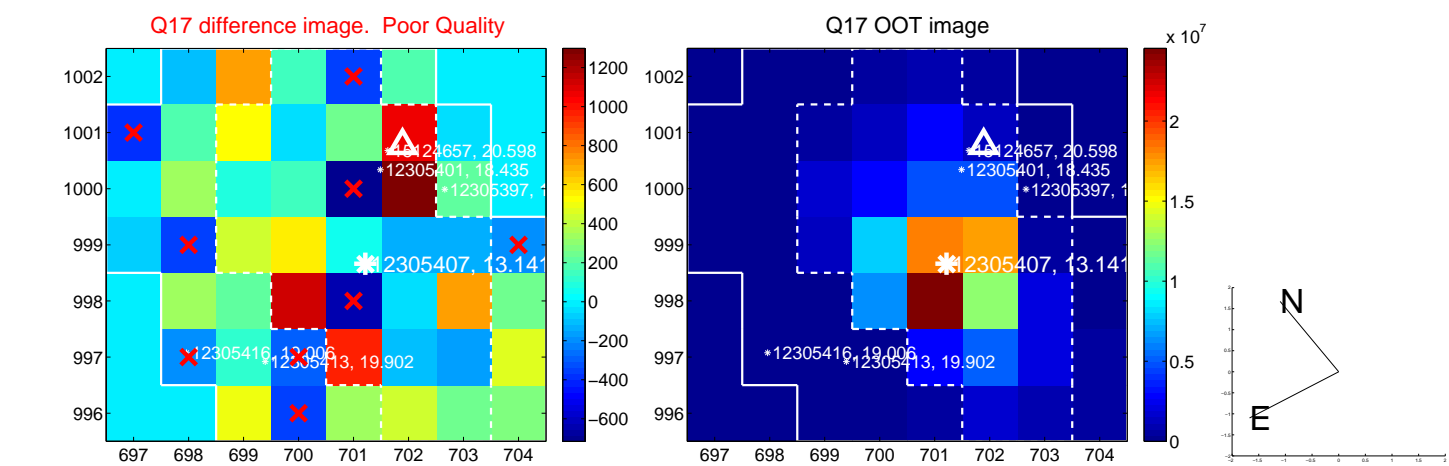
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



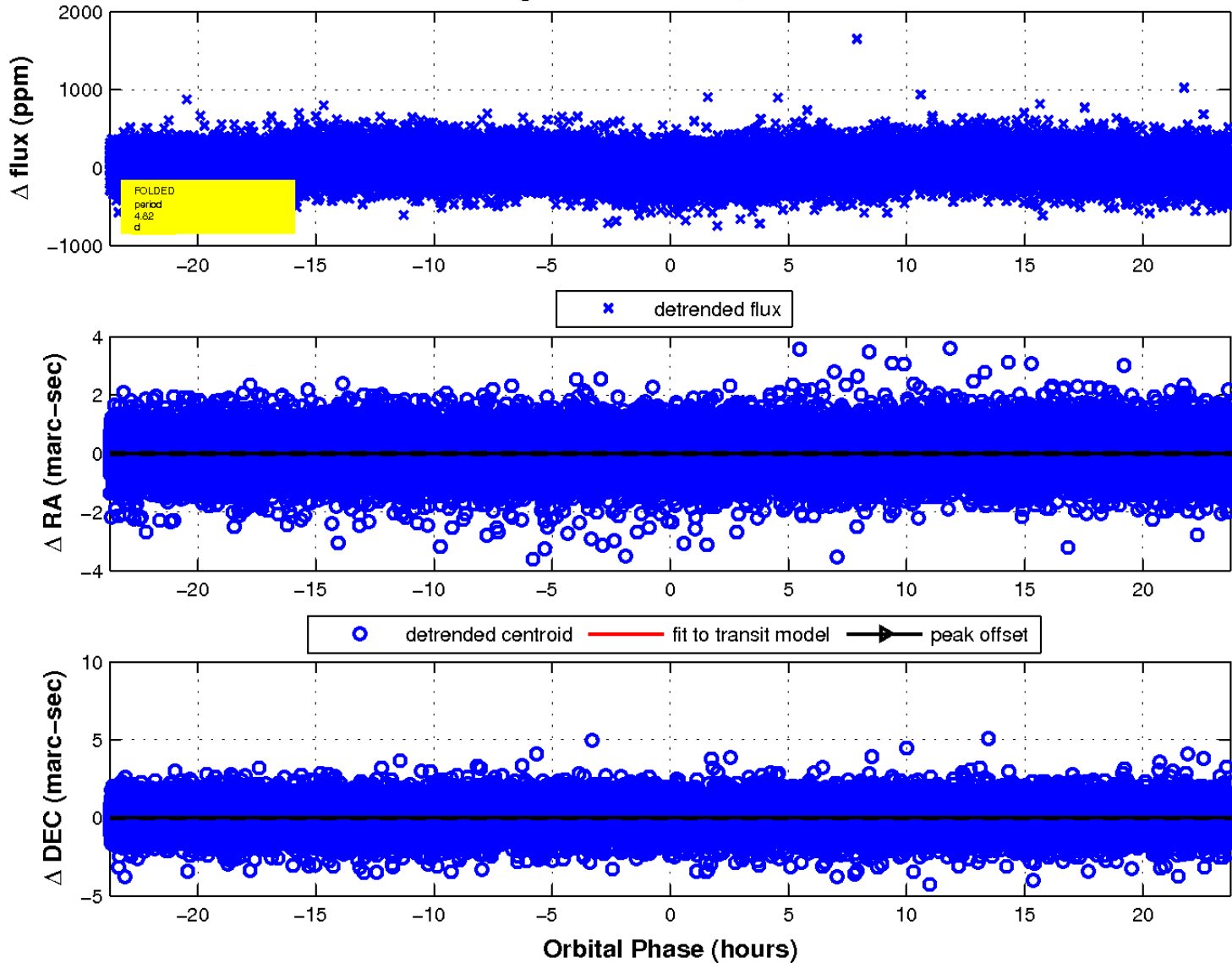
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

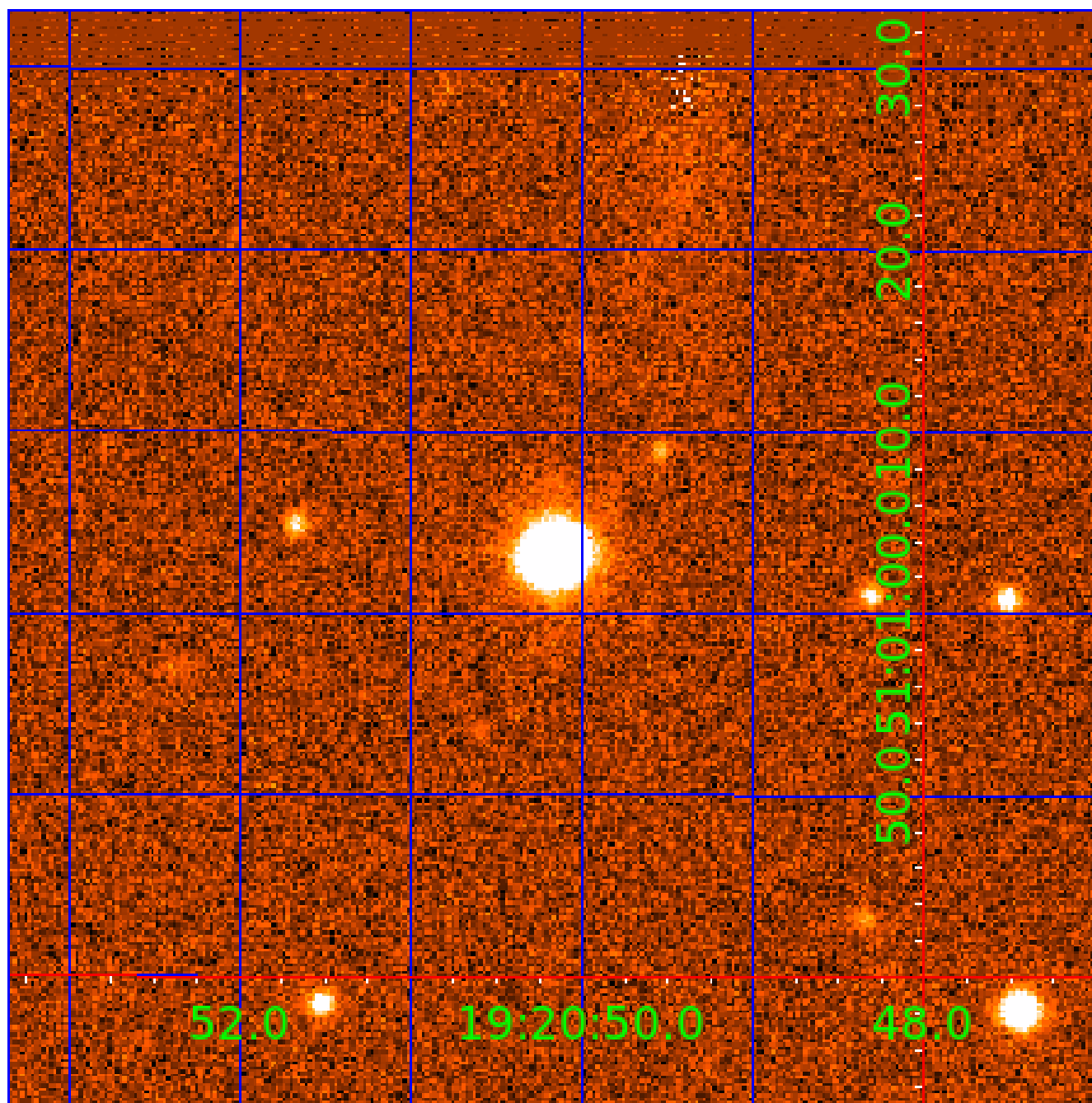


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 012305407

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})
012305407-01	OBS	No	1.335640	131.594527	184.2	3.000	8.1	-1.0	1.57	6534	2.14	6062.12
012305407-02	OBS	No	4.820349	132.586925	39.8	7.906	7.8	8.0	1.57	6534	1.16	1095.06
012305407-03	OBS	No	567.049083	273.392340	437.3	4.872	7.4	8.2	1.57	6534	3.67	1.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012305407-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS—HALO_GHOST
012305407-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012305407-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MOD_NONUNIQ_ALT

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

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

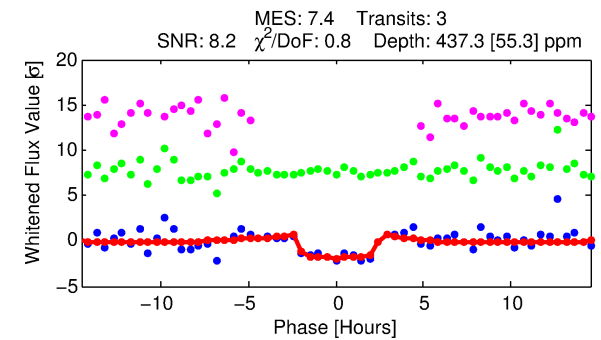
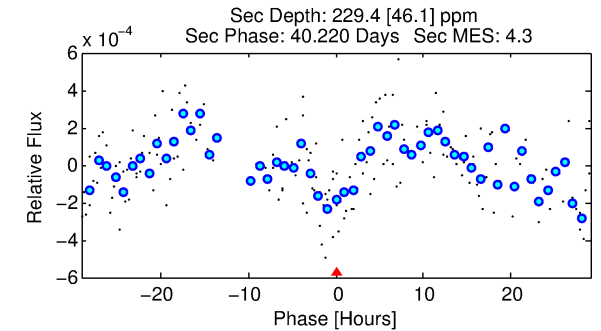
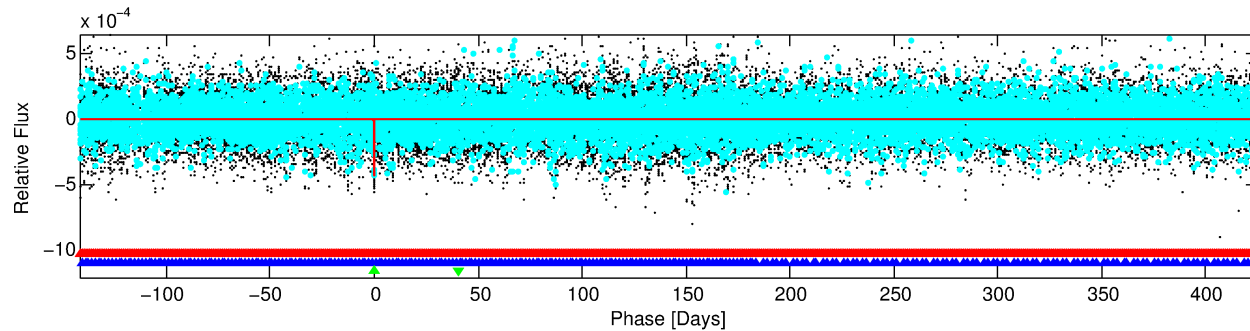
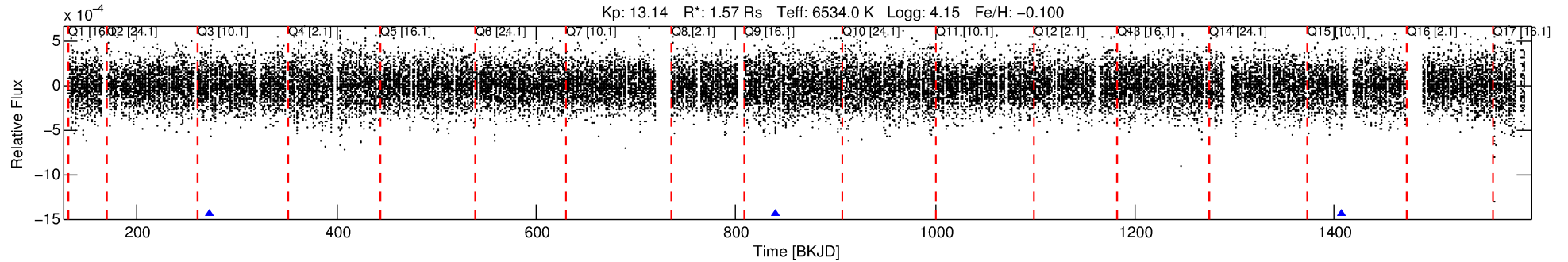
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012305407-03

No Significant Match Found

DV One-Page Summary

KIC: 12305407 Candidate: 3 of 3 Period: 567.049 d

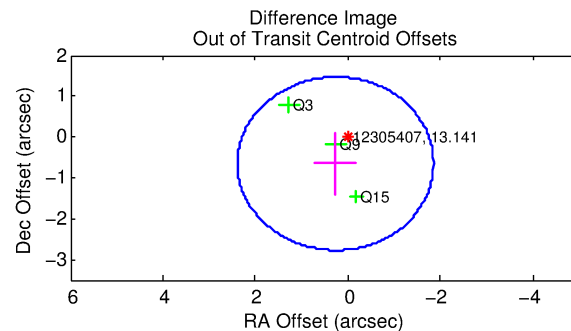
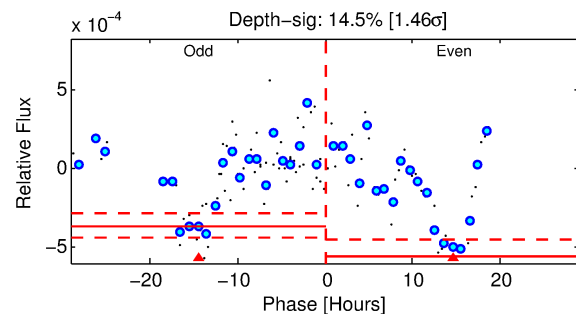
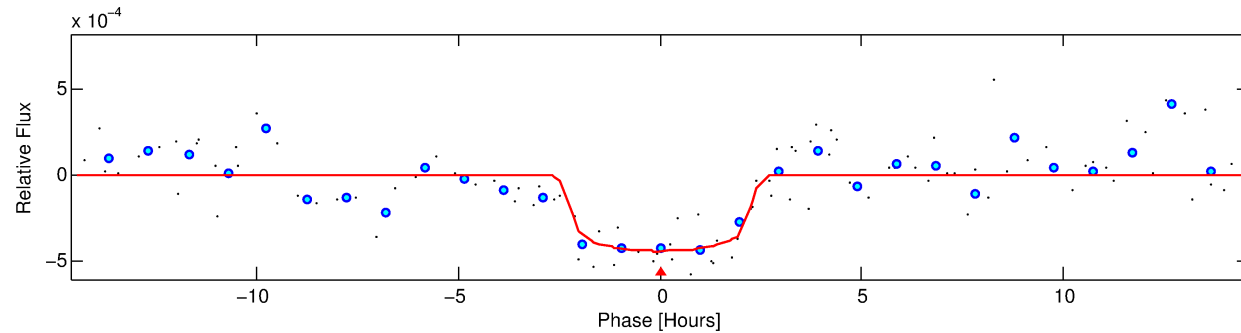


DV Fit Results:

Period = 567.04908 [0.00617] d
Epoch = 273.3923 [0.0087] BKJD
Rp/R* = 0.0214 [0.0074]
a/R* = 530.47 [986.03]
b = 0.83 [0.70]
Seff = 1.90 [0.72]
Teq = 299 [28] K
Rp = 3.67 [1.70] Re
a = 1.4556 [0.3631] AU
Ag = 19824.90 [15881.94] [1.25 σ]
Teffp = 5492 [1007] K [5.15 σ]

DV Diagnostic Results:

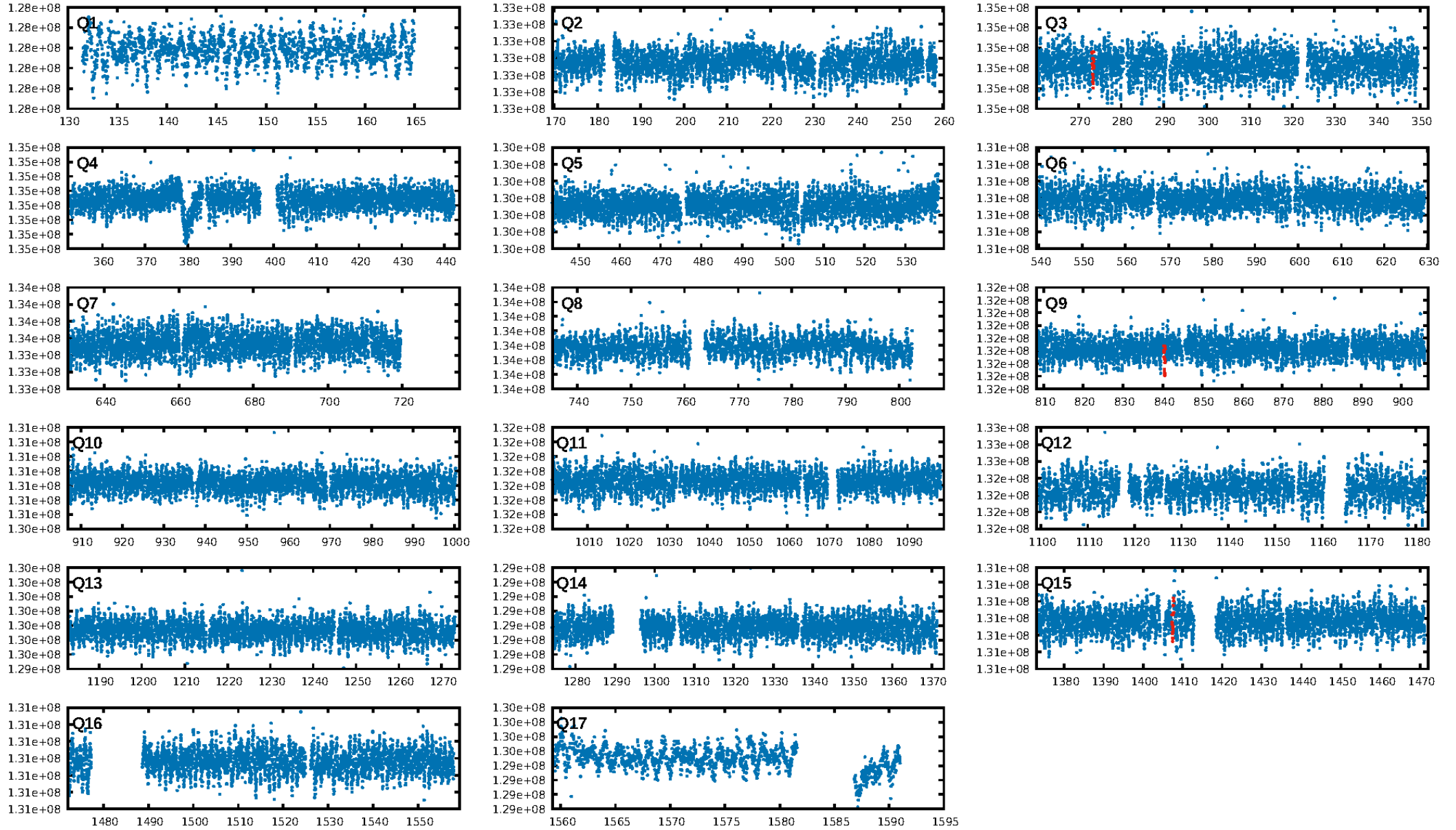
ShortPeriod-sig: 100.0% [1452.98 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.50e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.294
Centroid-sig: 72.6%
Centroid-so: 0.655 arcsec [0.46 σ]
OotOffset-rm: 0.706 arcsec [1.00 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-rm: 0.649 arcsec [0.91 σ]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]



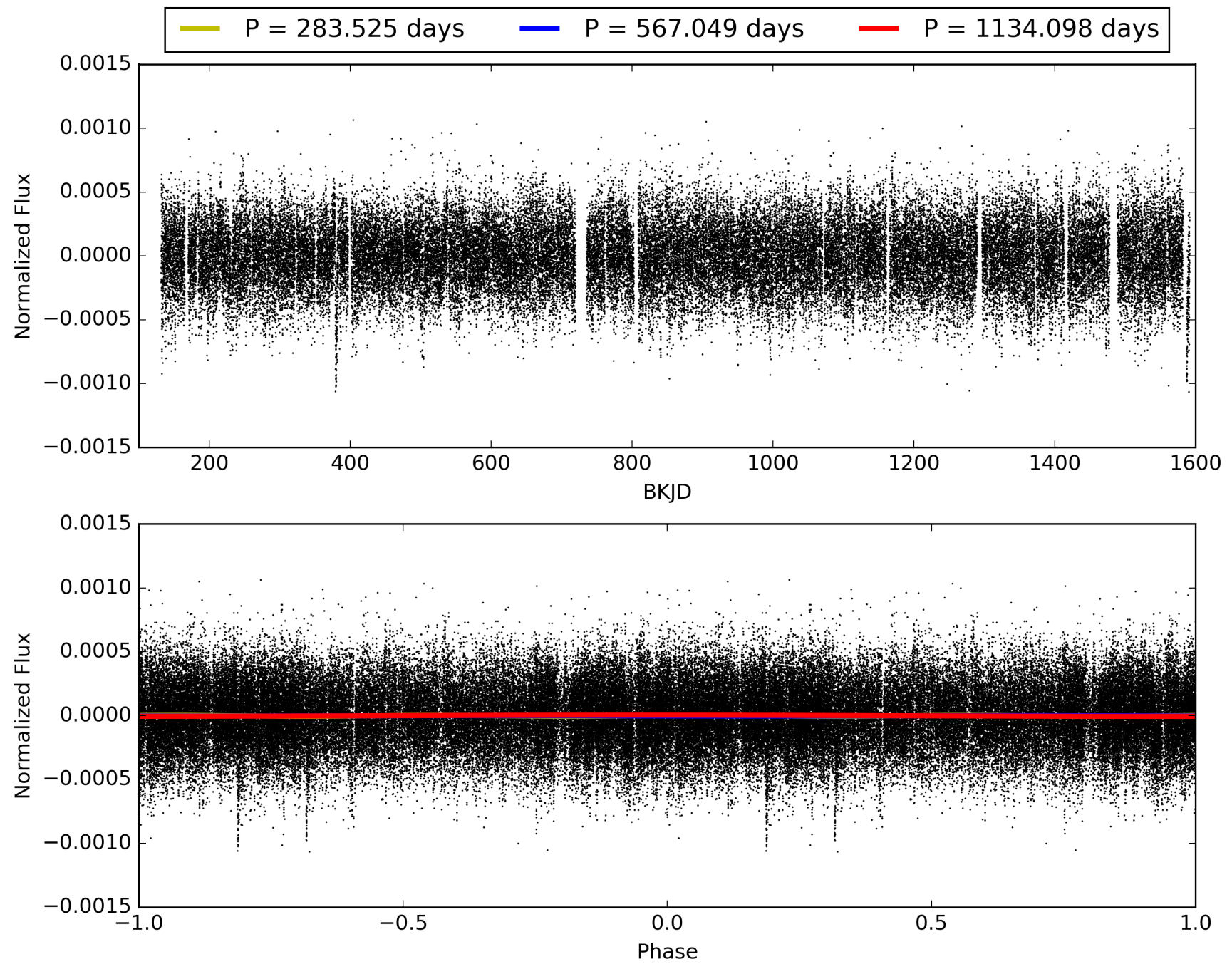
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:28:59 Z

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

TCE 012305407-03, PDC Light Curves

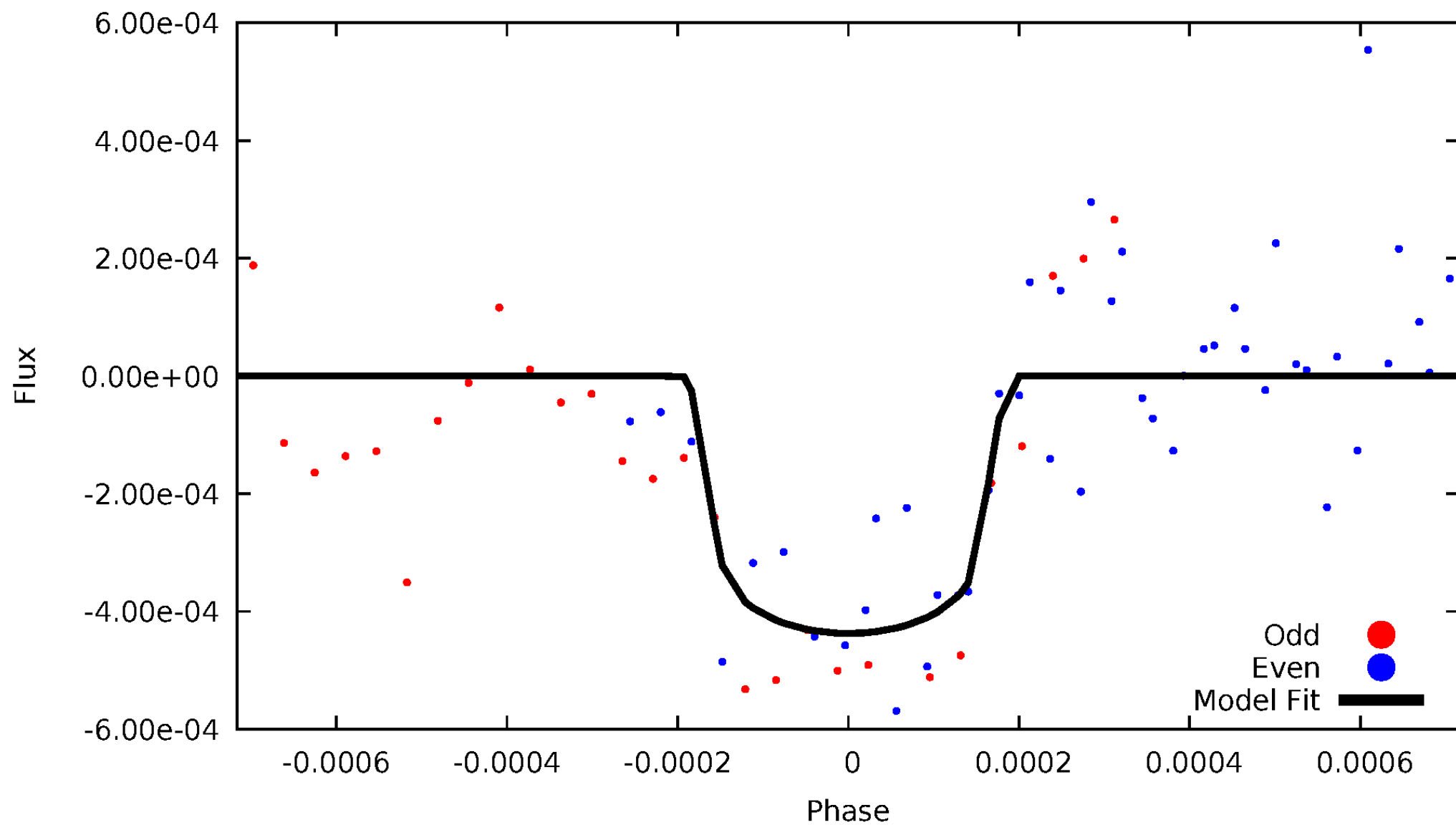


TCE 012305407-03



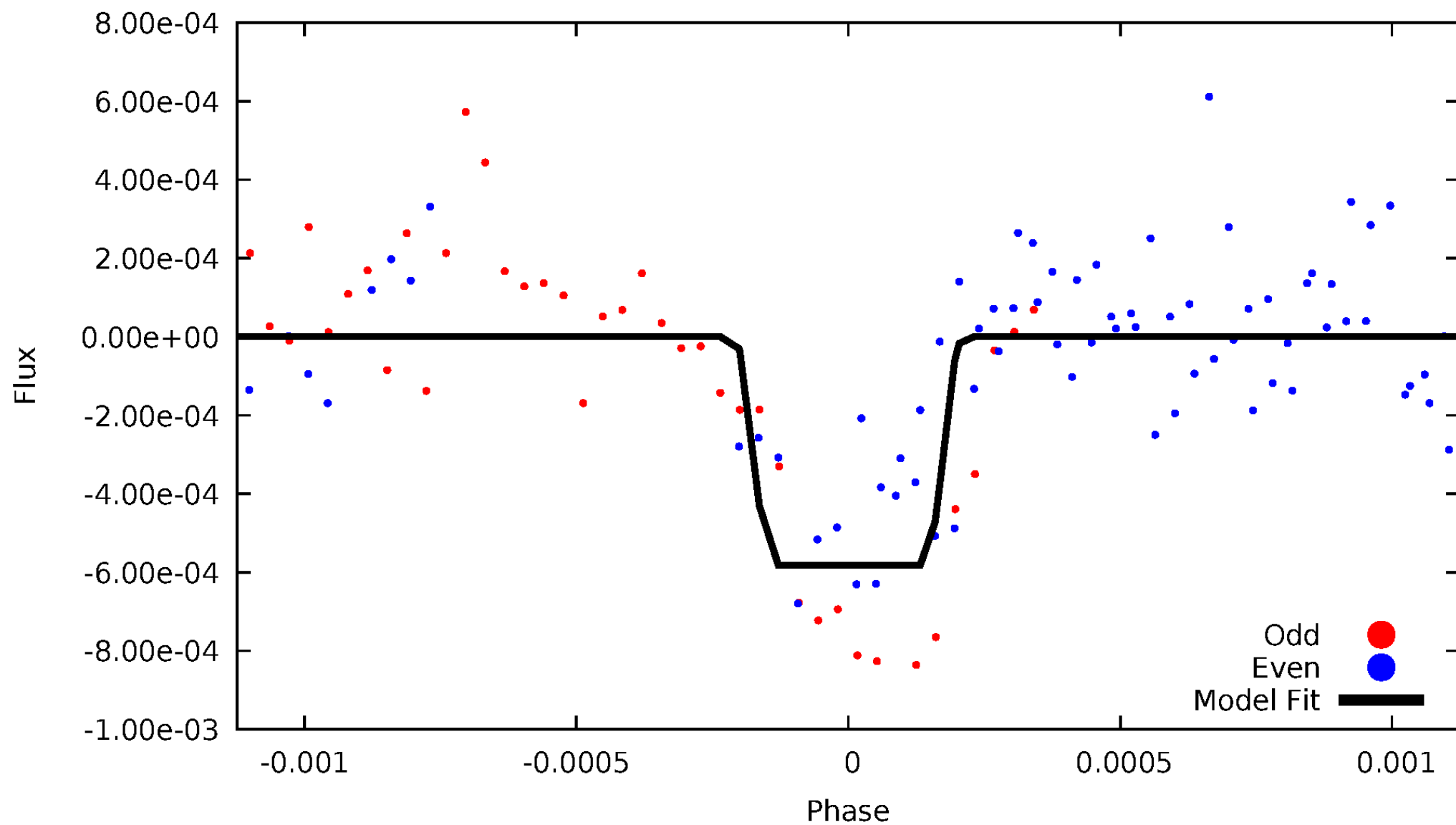
DV Odd/Even

TCE 012305407-03



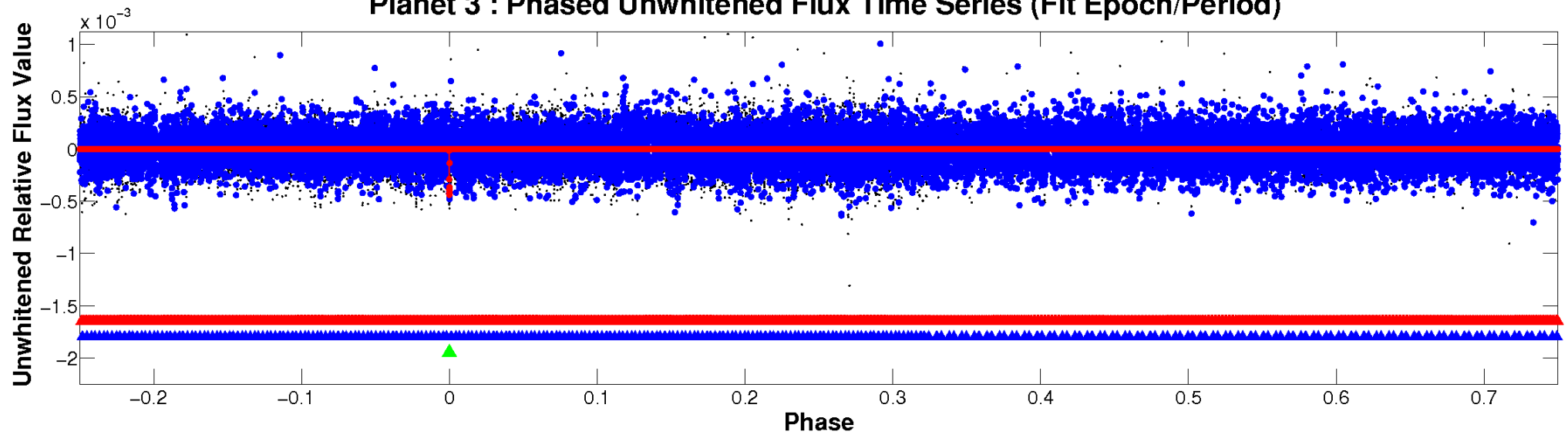
ALT Odd/Even

TCE 012305407-03

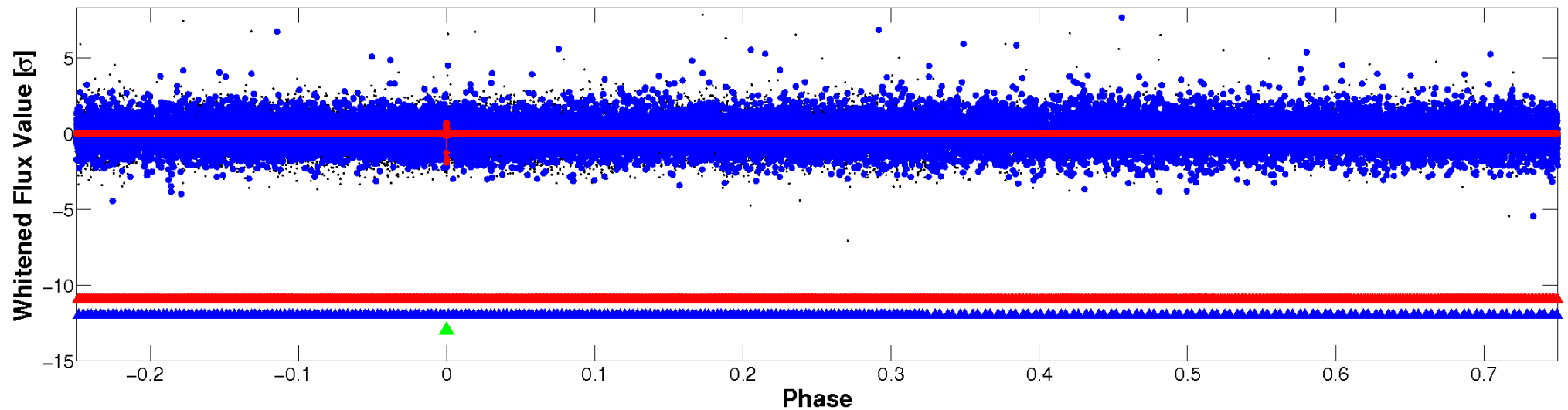


Non-Whitened Vs. Whitened Light Curve

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

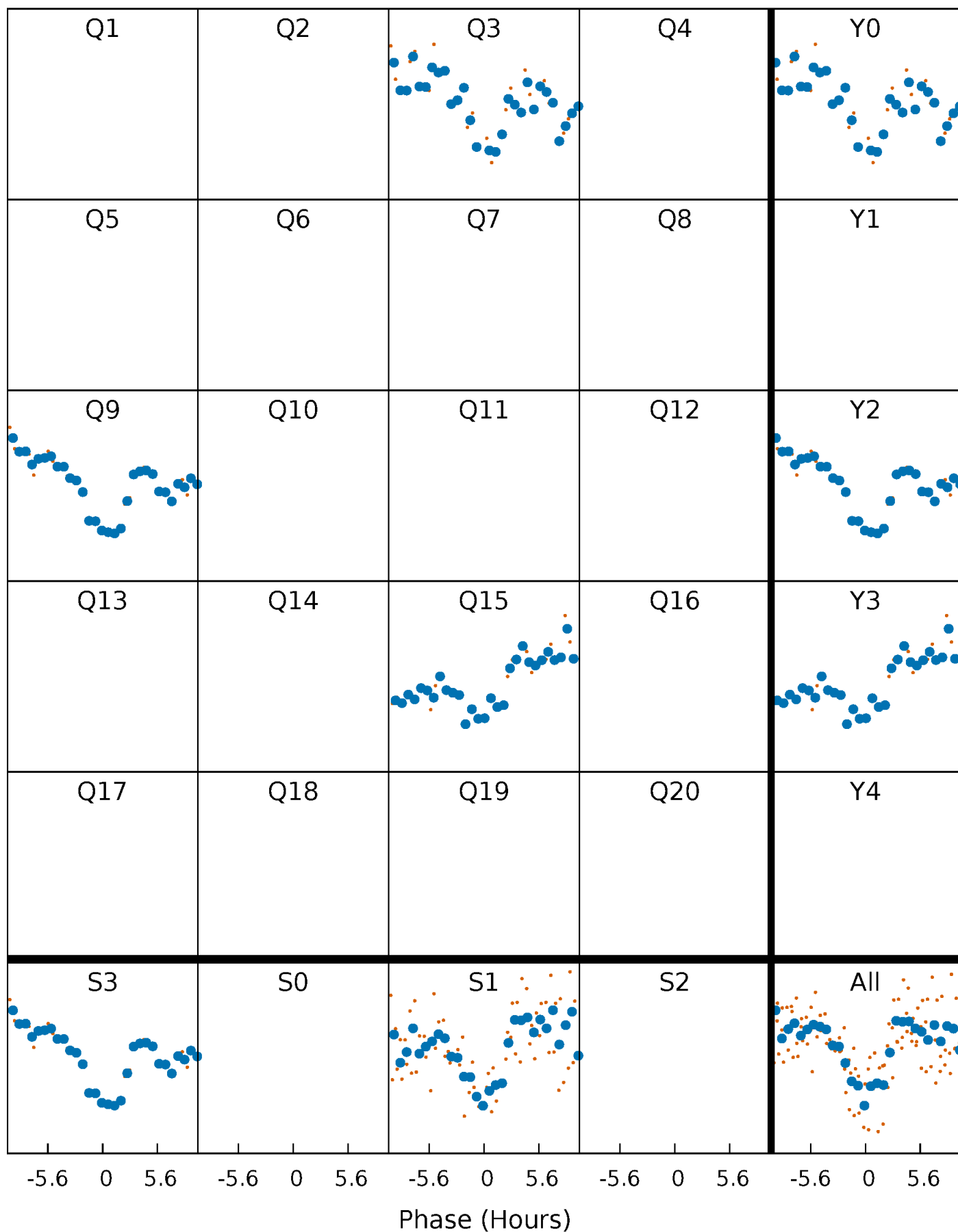


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



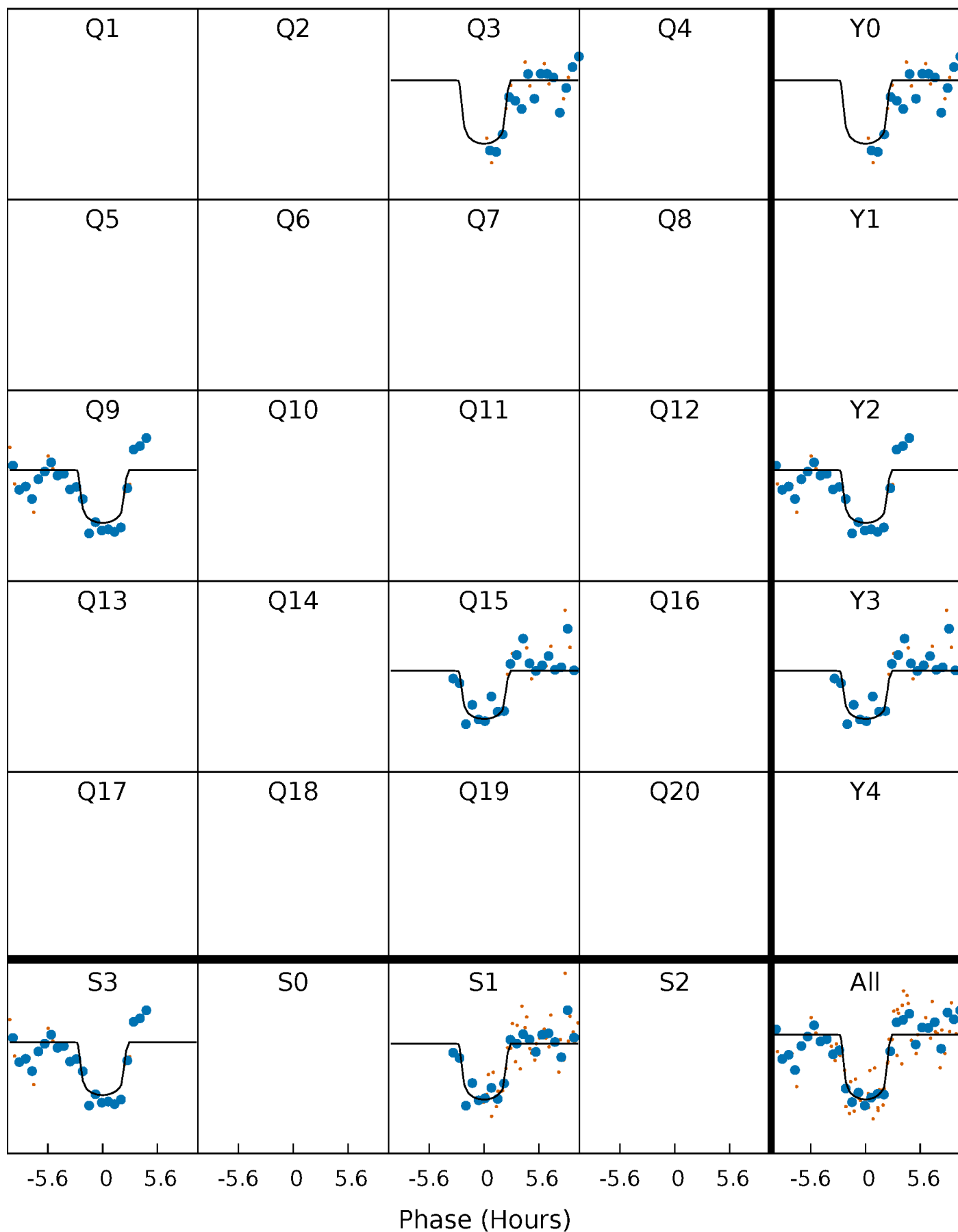
PDC Quarter-Phased Transit Curves

TCE 012305407-03 $P=567.049083$ Days $T_0=273.392340$ (BKJD)



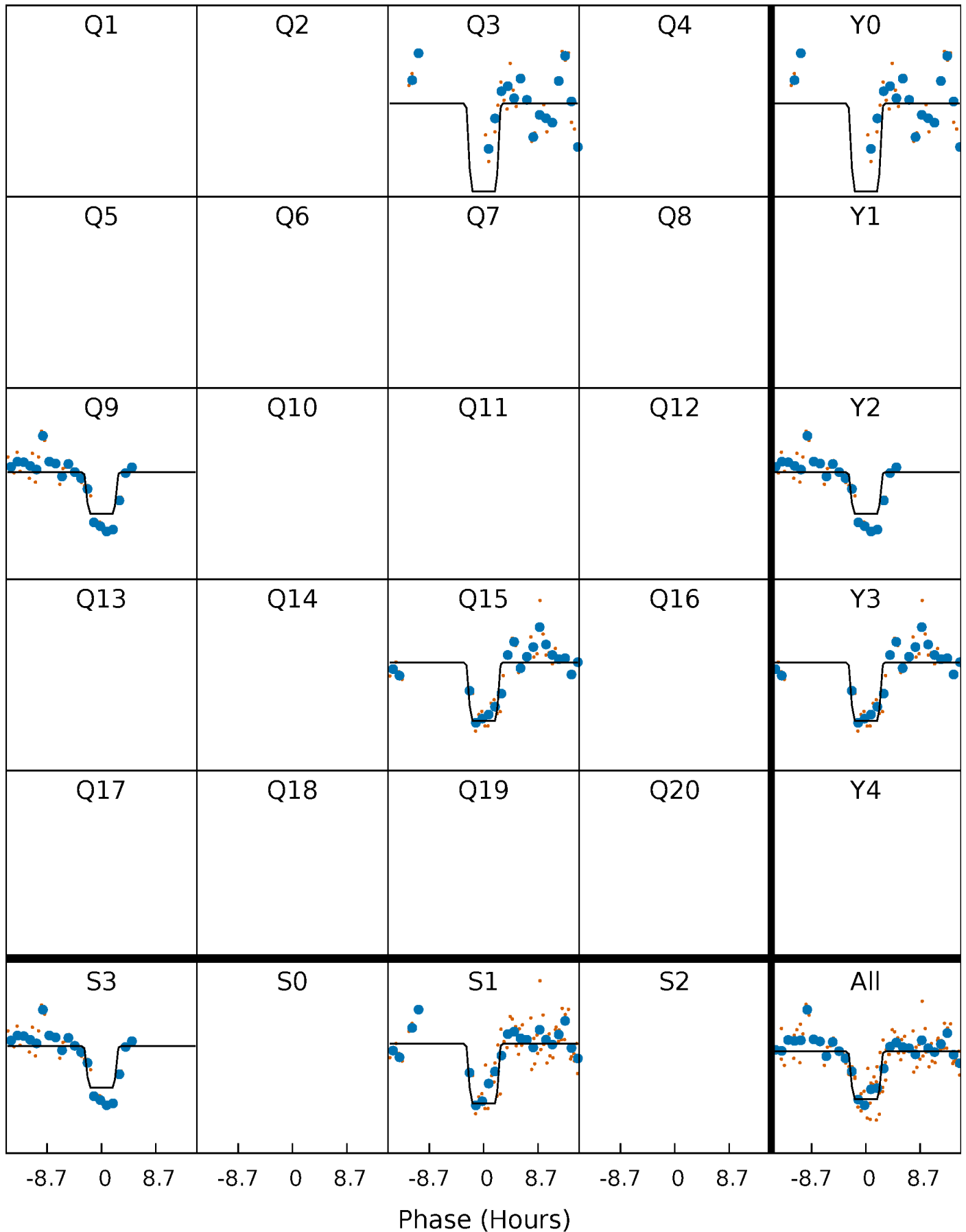
DV Quarter-Phased Transit Curves

TCE 012305407-03 $P=567.049083$ Days $T_0=273.392340$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

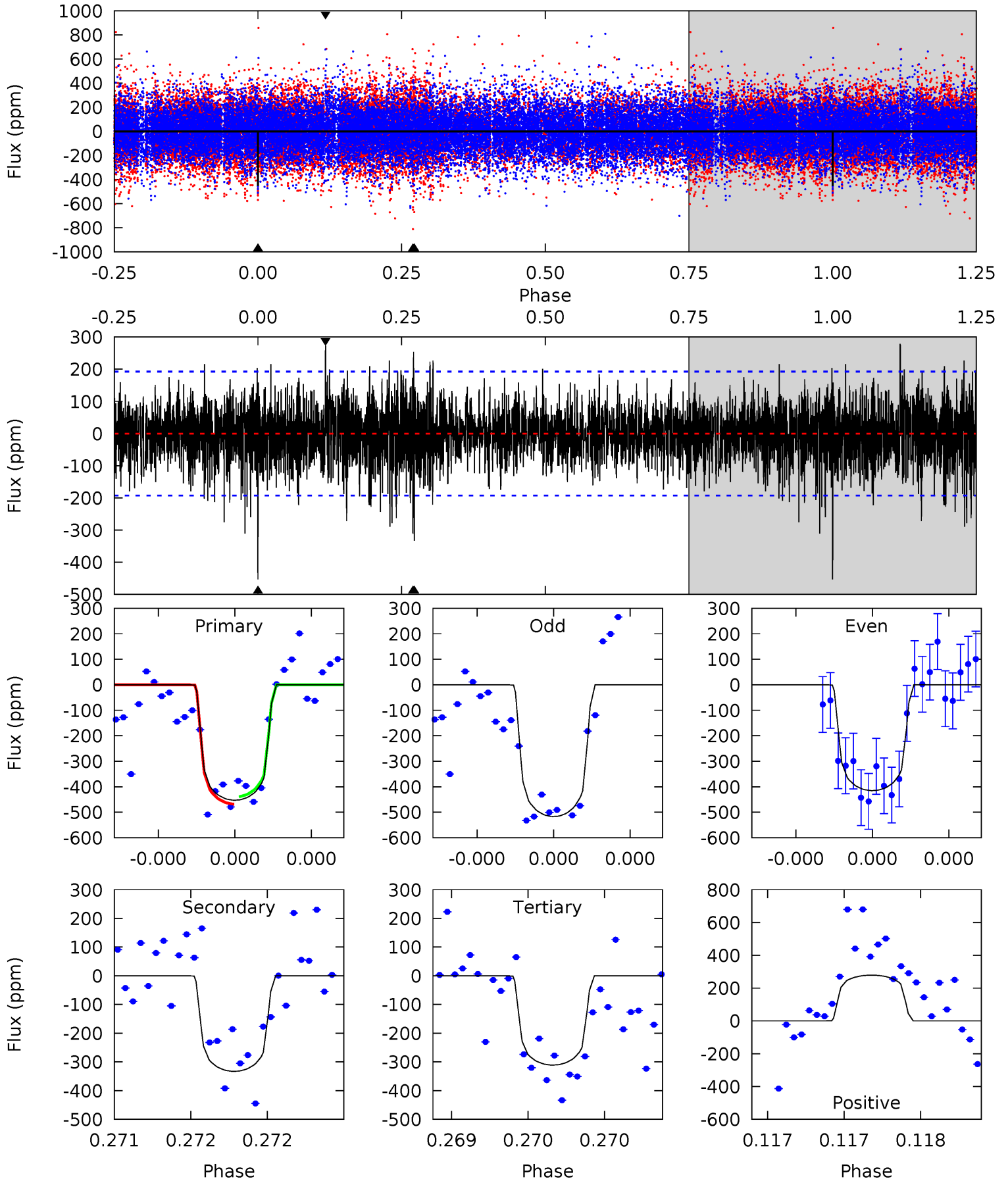
TCE 012305407-03 P=567.034607 Days $T_0=273.390200$ (BKJD)



DV Model-Shift Uniqueness Test

012305407-03, P = 567.049083 Days, E = 273.392340 Days

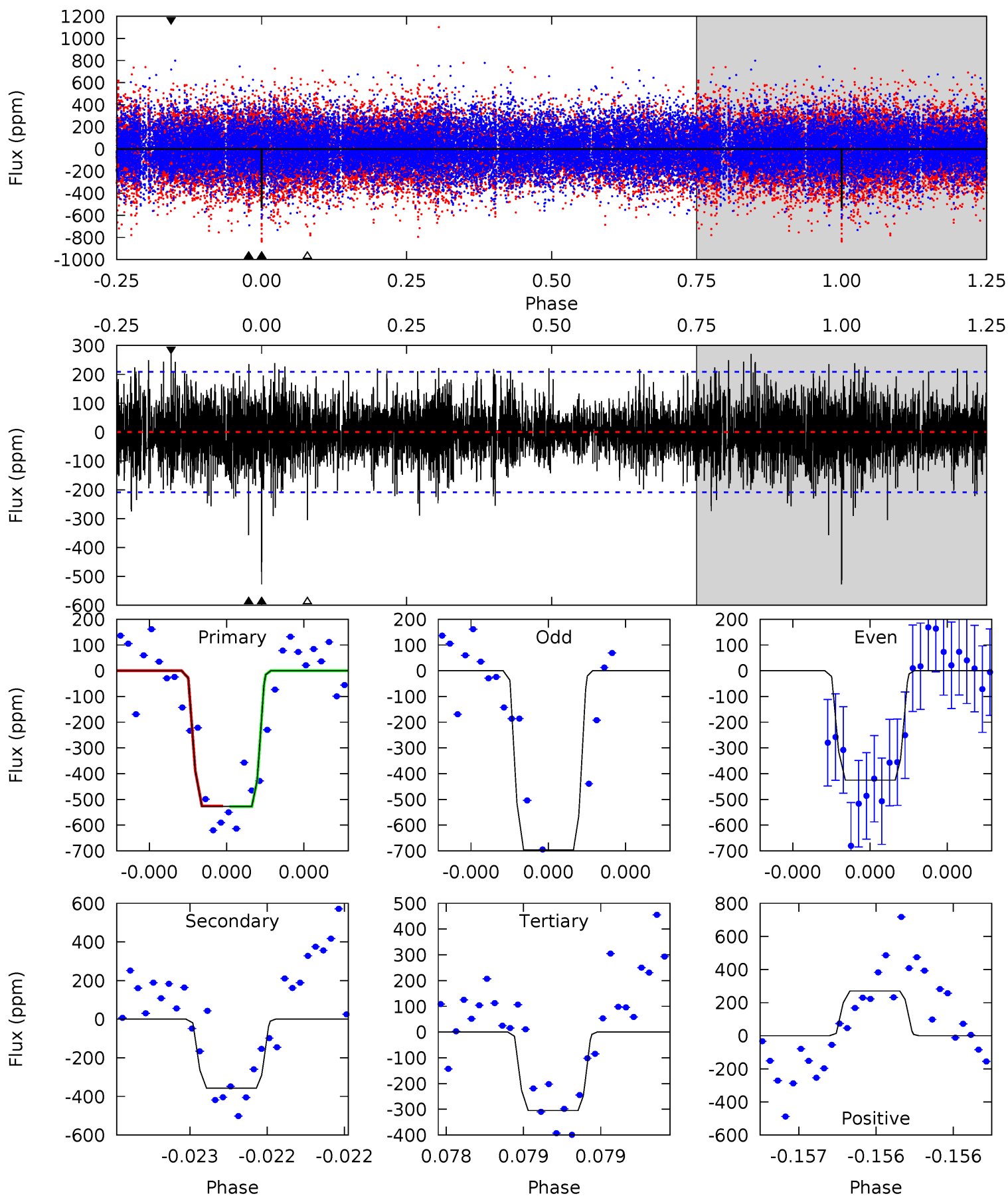
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	9.73	9.09	8.15	5.63	3.56	1.99	4.14	5.08	0.64	1.58	1.45	0.95	0.38	0.42



Alt Model-Shift Uniqueness Test

012305407-03, P = 567.034607 Days, E = 273.390200 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	9.59	8.19	7.27	5.61	3.54	1.97	5.96	6.89	1.39	2.32	3.54	0.95	0.34	0.03



Stellar Parameters For KIC 012305407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6534^{+181}_{-227}	$4.153^{+0.185}_{-0.185}$	$-0.100^{+0.250}_{-0.300}$	$1.570^{+0.483}_{-0.395}$	$1.284^{+0.201}_{-0.221}$	$0.467^{+0.464}_{-0.230}$
	+3%/-3%	+4%/-4%	+250%/-300%	+31%/-25%	+16%/-17%	+99%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012305407-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-333 ± 34	$3.67^{+1.55}_{-1.34}$	418^{+32}_{-33}	5977^{+1464}_{-803}	28976^{+38838}_{-14555}
Alt.	-357 ± 37	$4.16^{+1.42}_{-1.35}$	419^{+32}_{-30}	5740^{+1270}_{-663}	23673^{+29128}_{-10913}

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 $A_{obs} \gg 1.0$

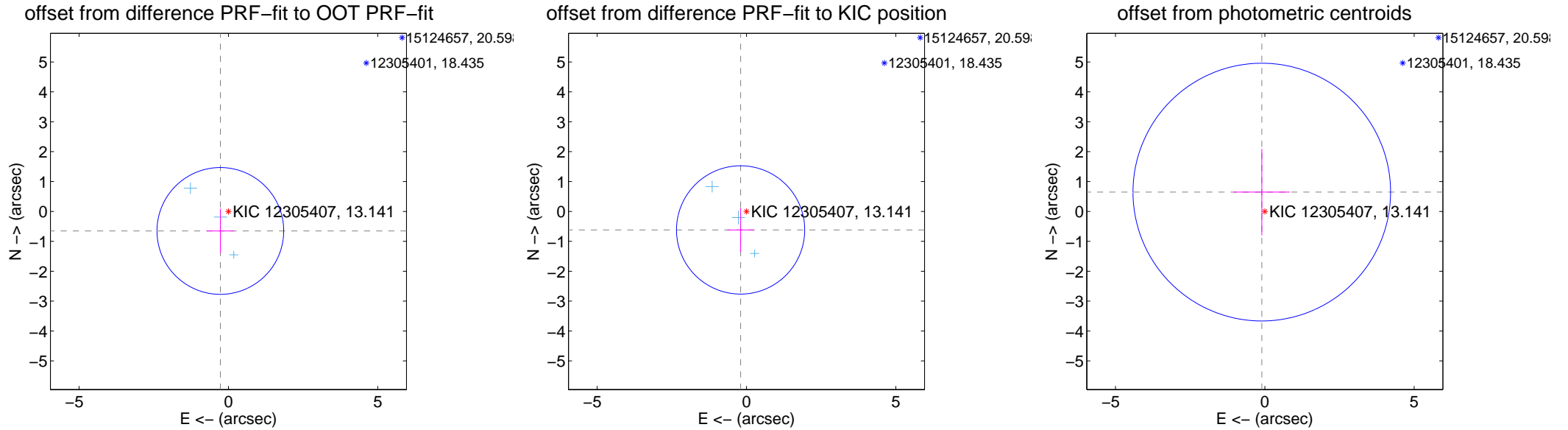
DV Centroid Data

Supplemental centroid analysis for 012305407-03. Kepler magnitude: 13.14. Transit SNR 8.24

There are 3 quarters with good PRF difference image offsets

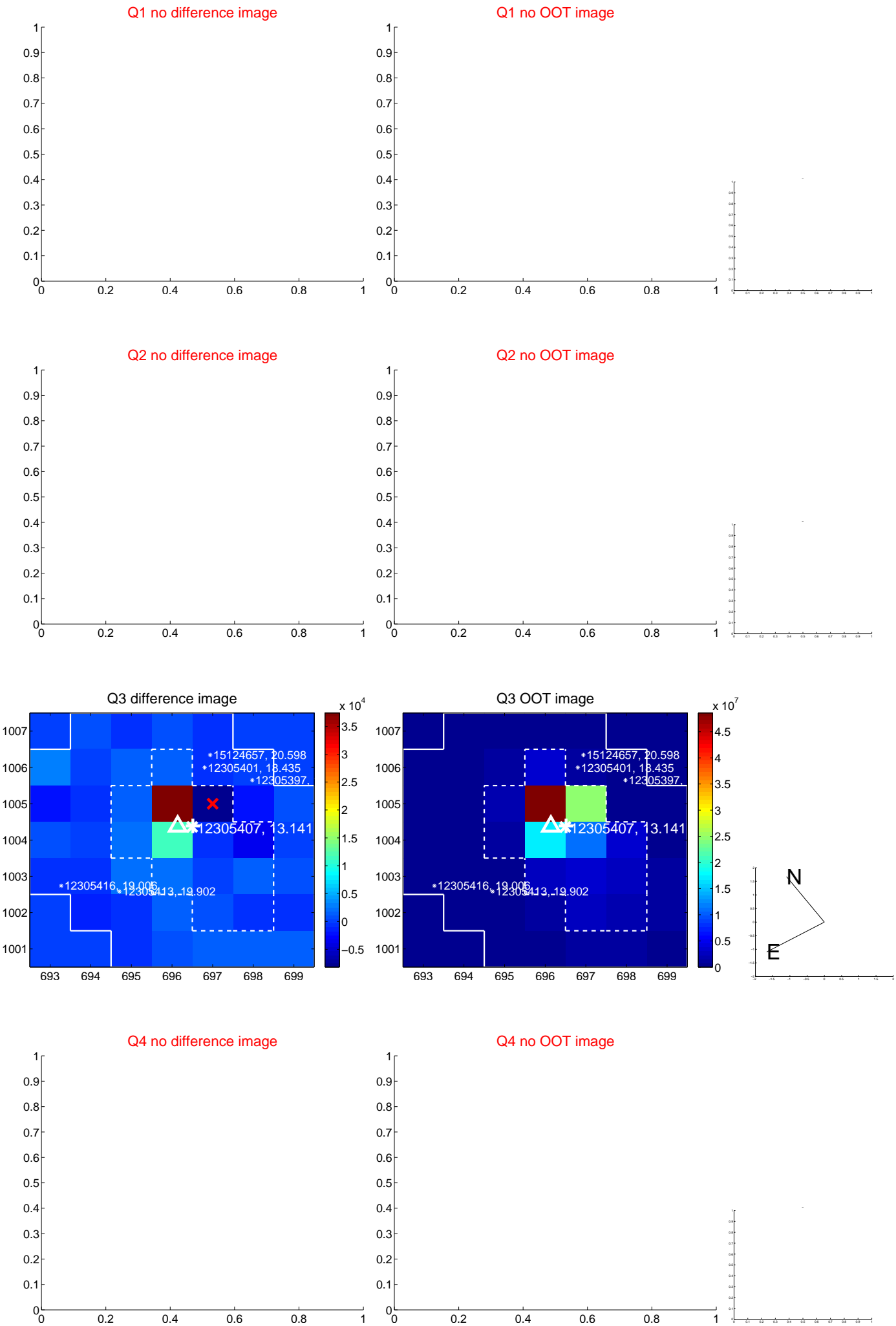
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.706 ± 0.707	1.00	0.271 ± 0.457	-0.652 ± 0.741
PRF-fit source offset from KIC position	0.649 ± 0.715	0.91	0.197 ± 0.446	-0.619 ± 0.737
photometric centroid source offset	0.66 ± 1.44	0.46	0.10 ± 0.94	0.65 ± 1.45



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

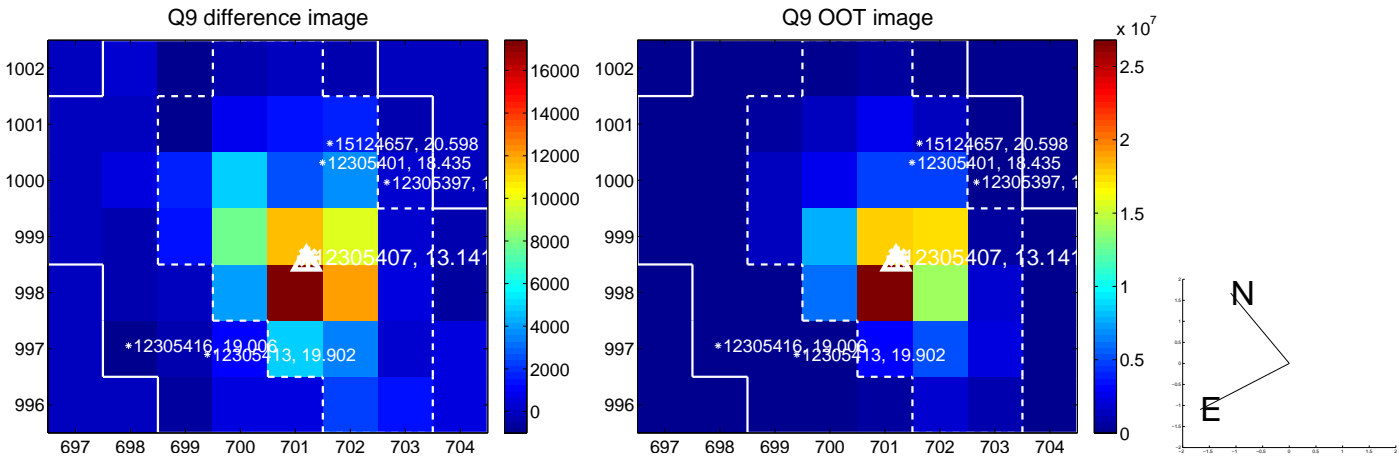
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



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

Q13 no difference image



Q13 no OOT image



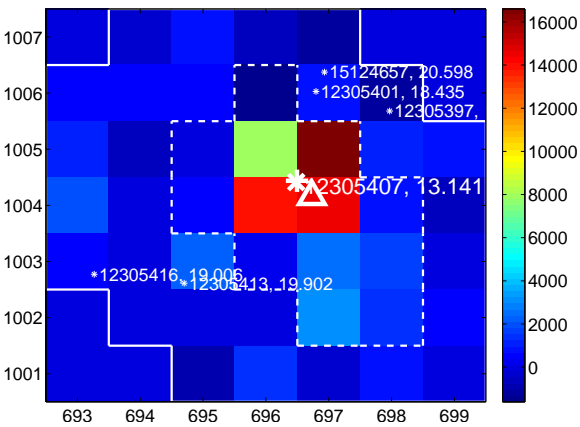
Q14 no difference image



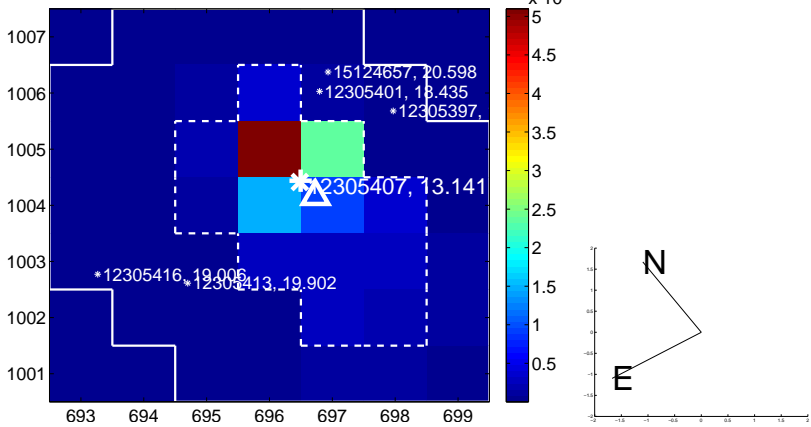
Q14 no OOT image



Q15 difference image



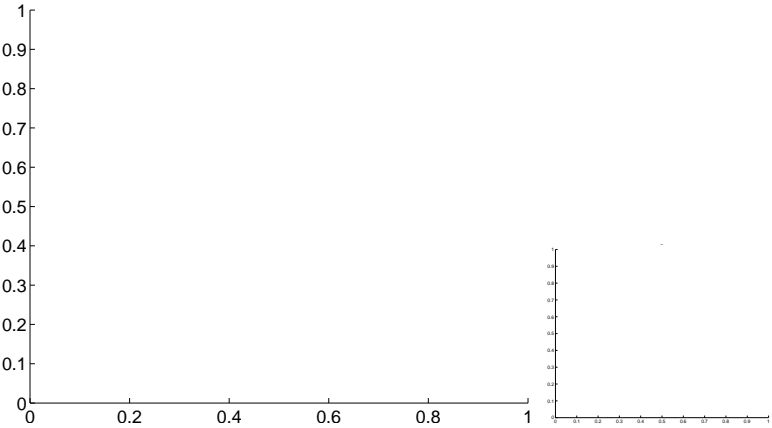
Q15 OOT image



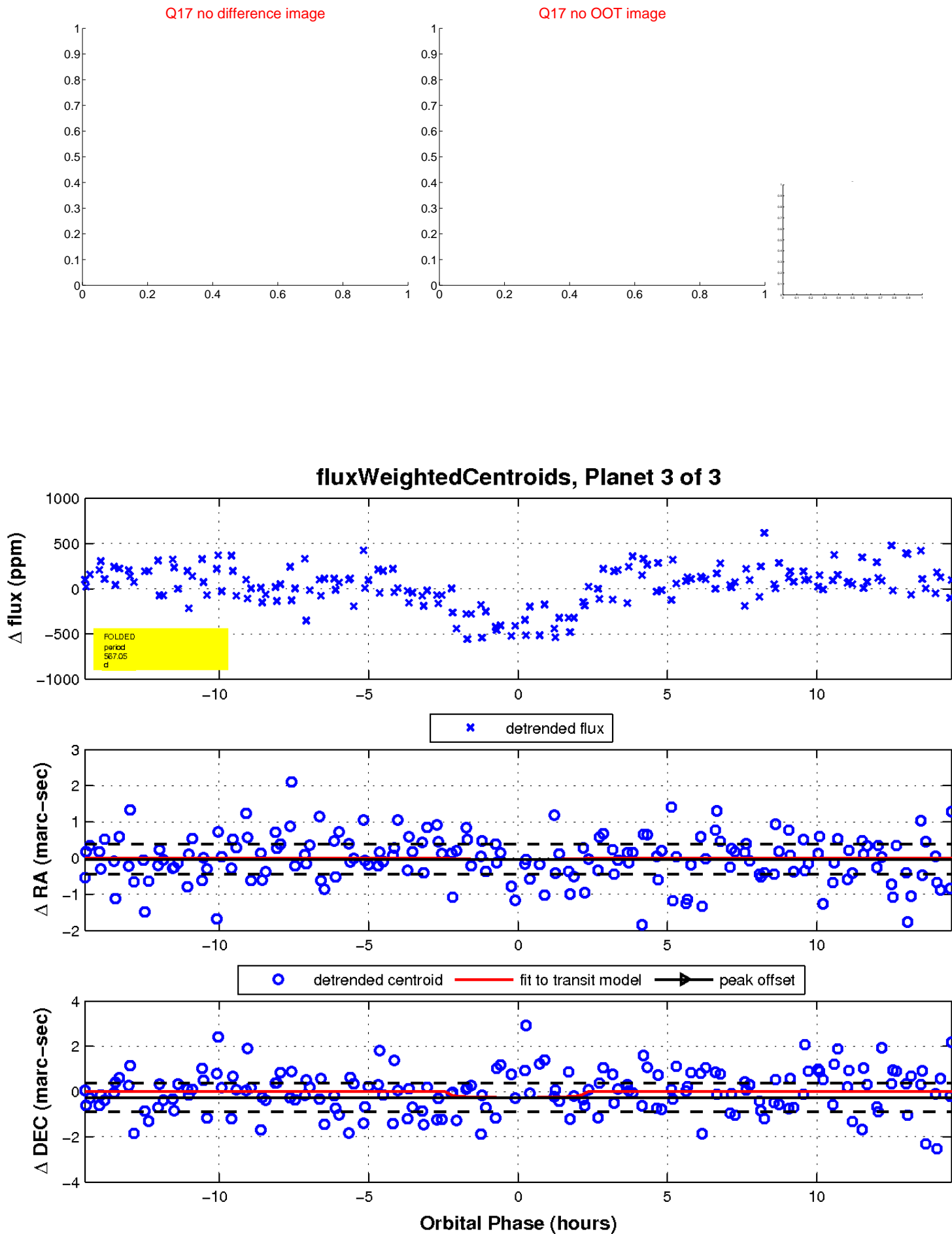
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

