

KIC 007135042

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})
007135042-01	OBS	No	480.356200	153.179454	301.8	7.082	16.8	3.2	1.47	6301	2.60	1.80
007135042-02	OBS	No	476.116846	159.031537	286.6	17.650	14.8	4.2	1.47	6301	2.60	1.82
007135042-03	OBS	No	3.556456	134.082932	30.8	14.299	8.8	7.4	1.47	6301	0.96	1245.06
007135042-04	OBS	No	7.112805	136.138068	74.2	20.772	12.8	15.0	1.47	6301	1.35	494.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007135042-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007135042-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS— CENT_SATURATED
007135042-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
007135042-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

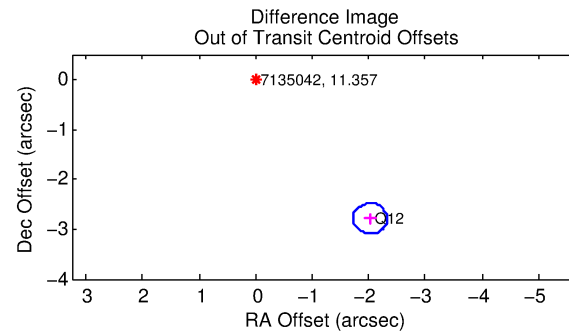
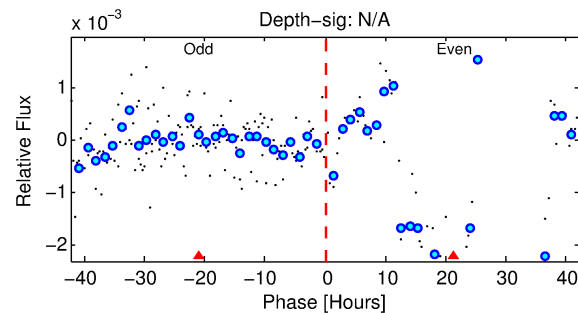
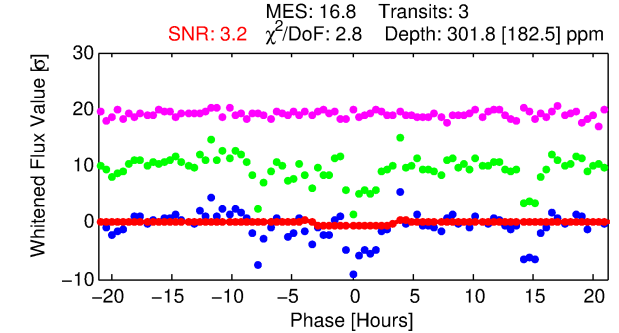
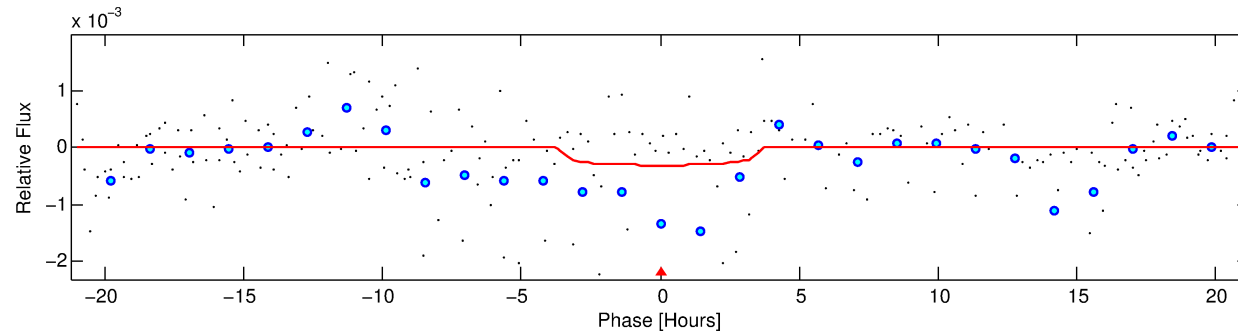
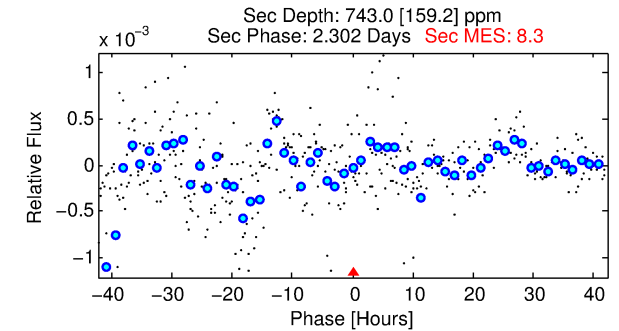
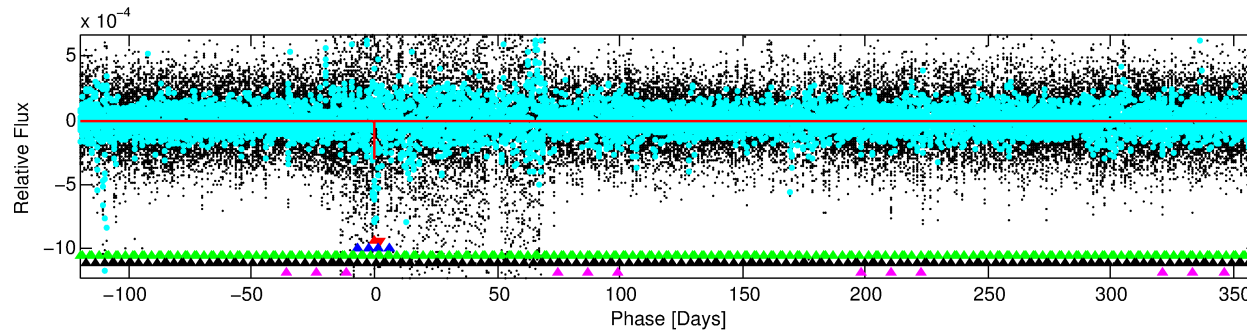
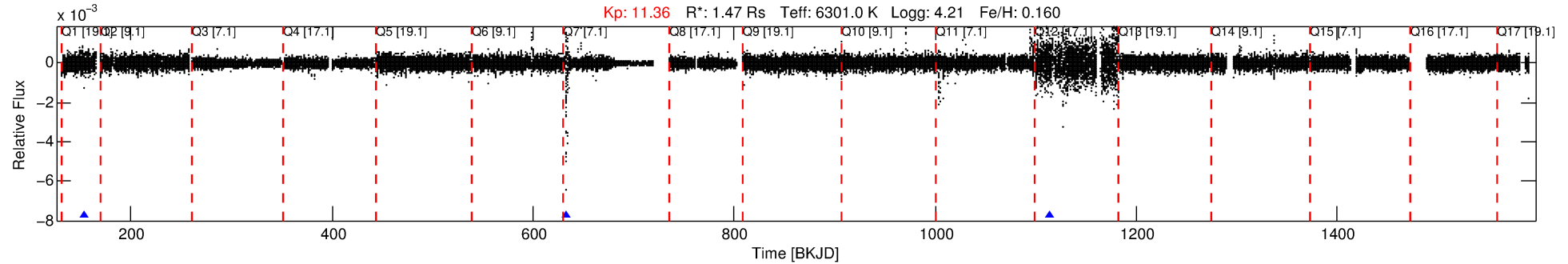
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007135042-01

No Significant Match Found

DV One-Page Summary

KIC: 7135042 Candidate: 1 of 5 Period: 480.356 d



DV Fit Results:

Period = 480.35620 [0.03120] d
Epoch = 153.1795 [0.0337] BKJD
 $R_p/R^* = 0.0162$ [0.0509]
 $a/R^* = 476.90$ [7349.77]
 $b = 0.43$ [29.16]
 $\text{Seff} = 1.80$ [0.71]
 $T_{\text{eq}} = 295$ [29] K
 $R_p = 2.60$ [8.20] R_e
 $a = 1.3024$ [0.3382] AU
 $A_g = 102273.77$ [642185.70] [0.16 σ]
 $T_{\text{effp}} = 8163$ [12795] K [0.6 σ]

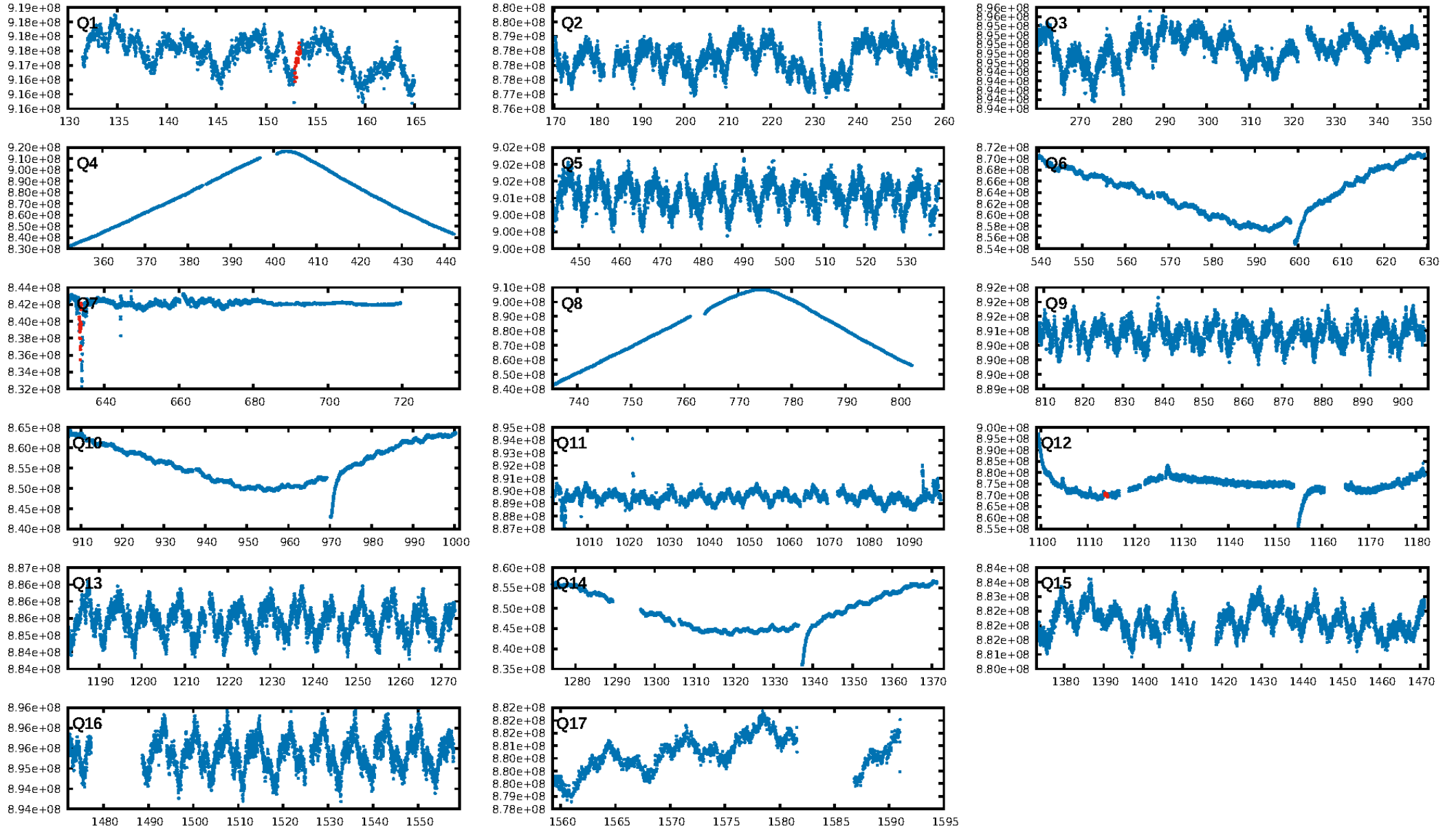
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.35 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: 5.09e-15
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.1045
Centroid-sig: 0.3%
Centroid-so: 1.216 arcsec [1.23 σ]
OotOffset-rm: 3.442 arcsec [34.01 σ]
KicOffset-rm: 2.915 arcsec [28.87 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

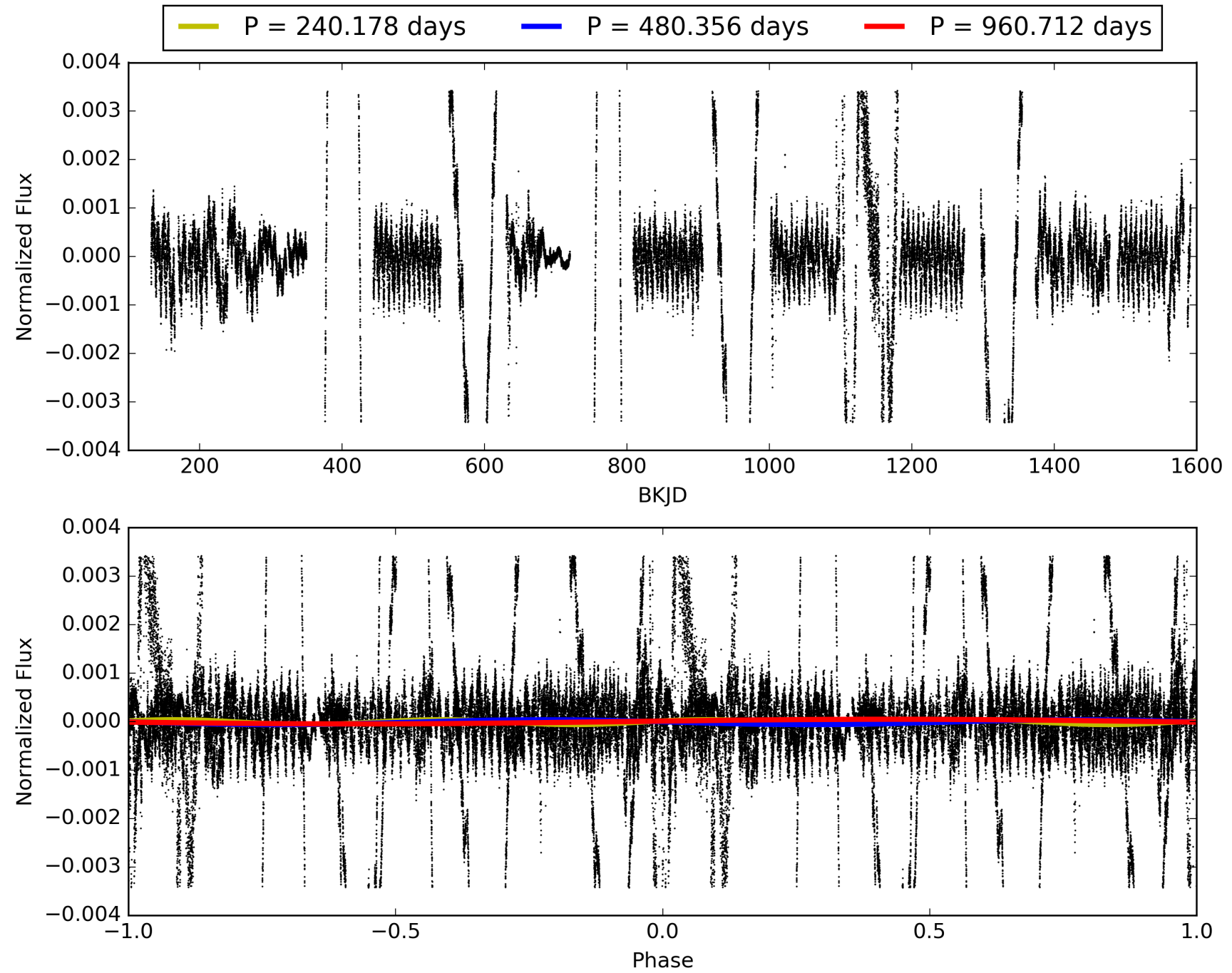
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:24:15 Z

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

TCE 007135042-01, PDC Light Curves

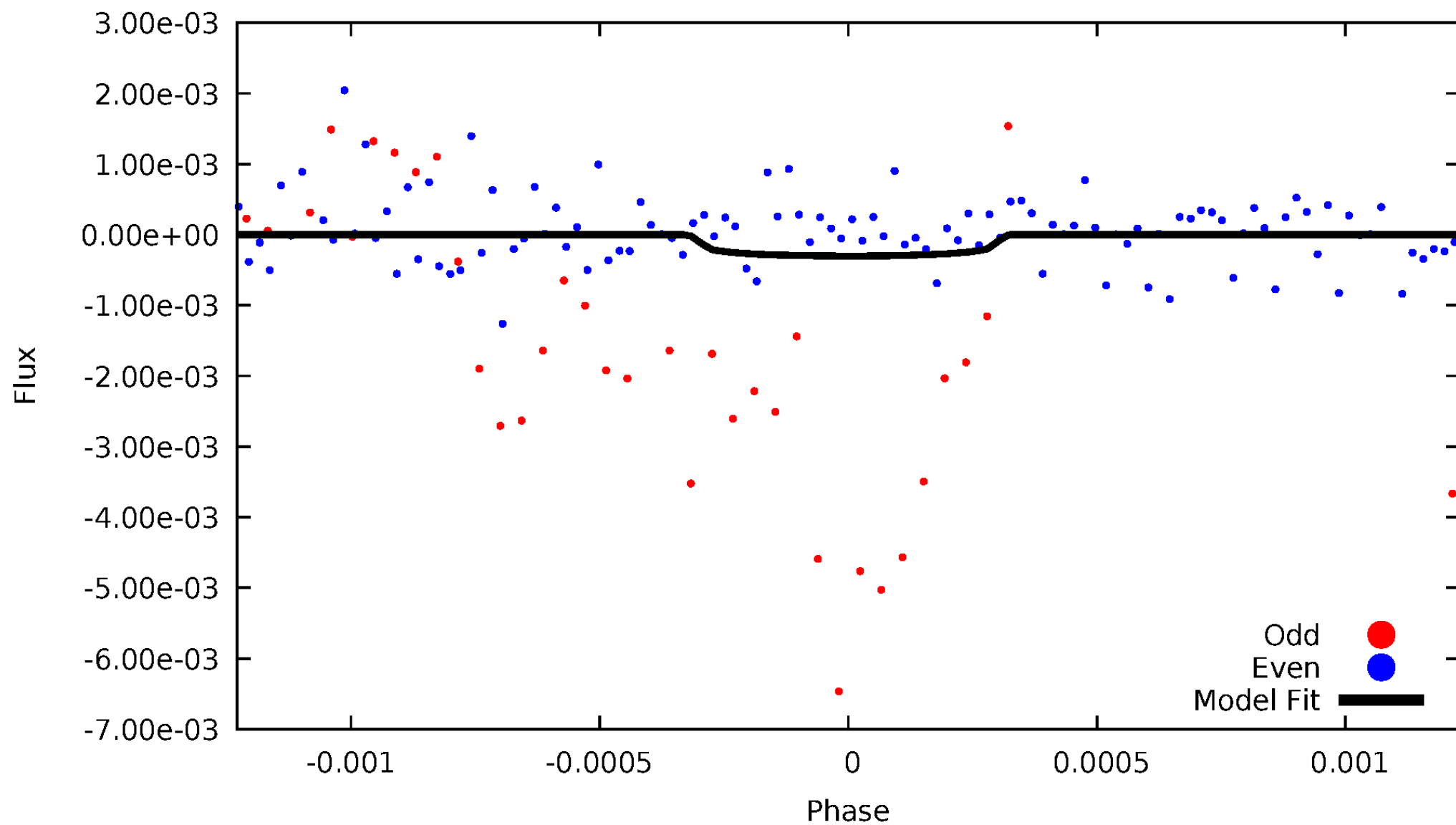


TCE 007135042-01



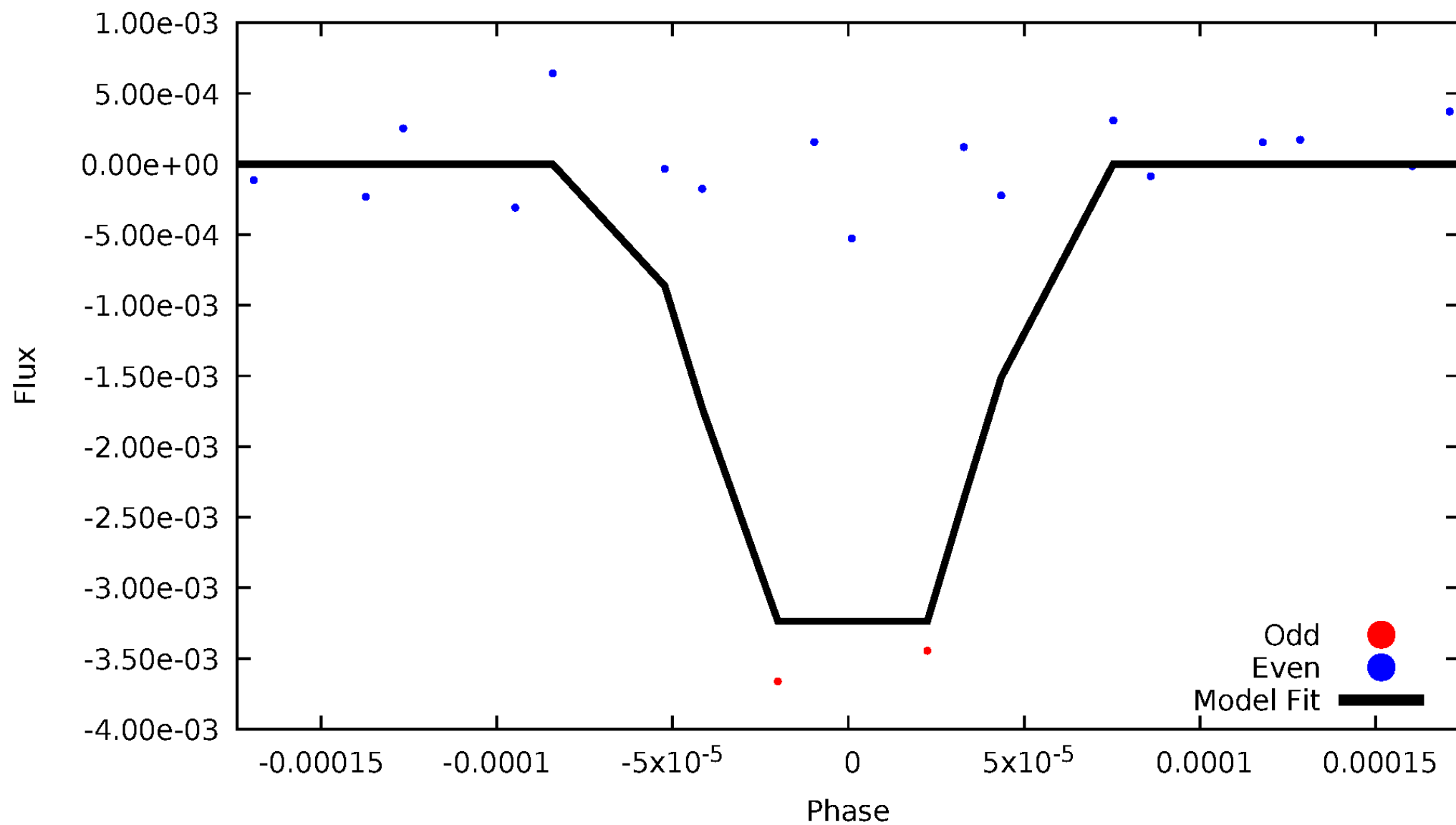
DV Odd/Even

TCE 007135042-01



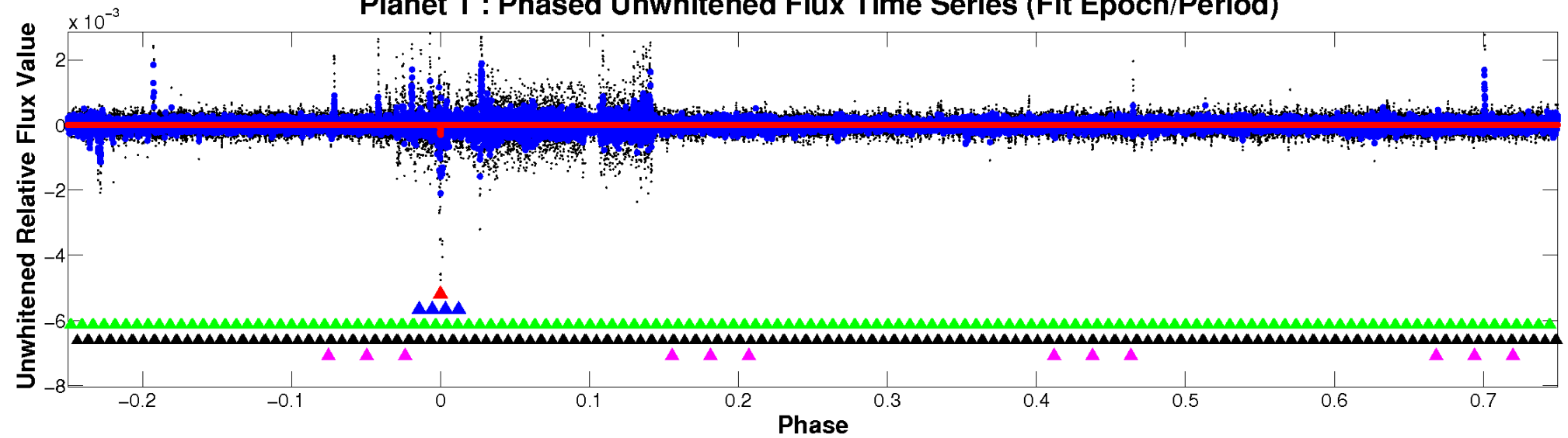
ALT Odd/Even

TCE 007135042-01

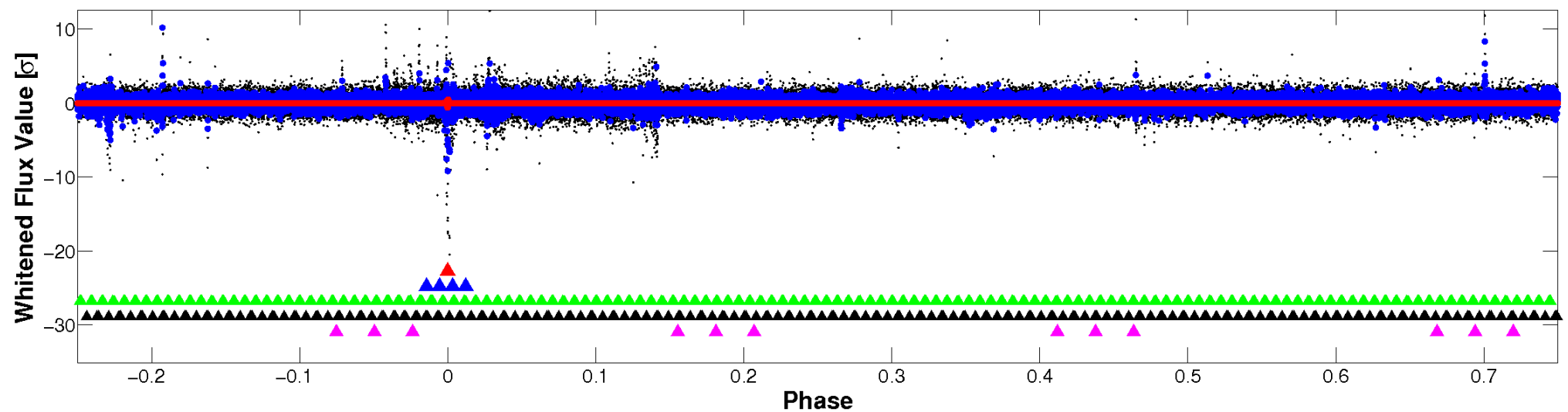


Non-Whitened Vs. Whitened Light Curve

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

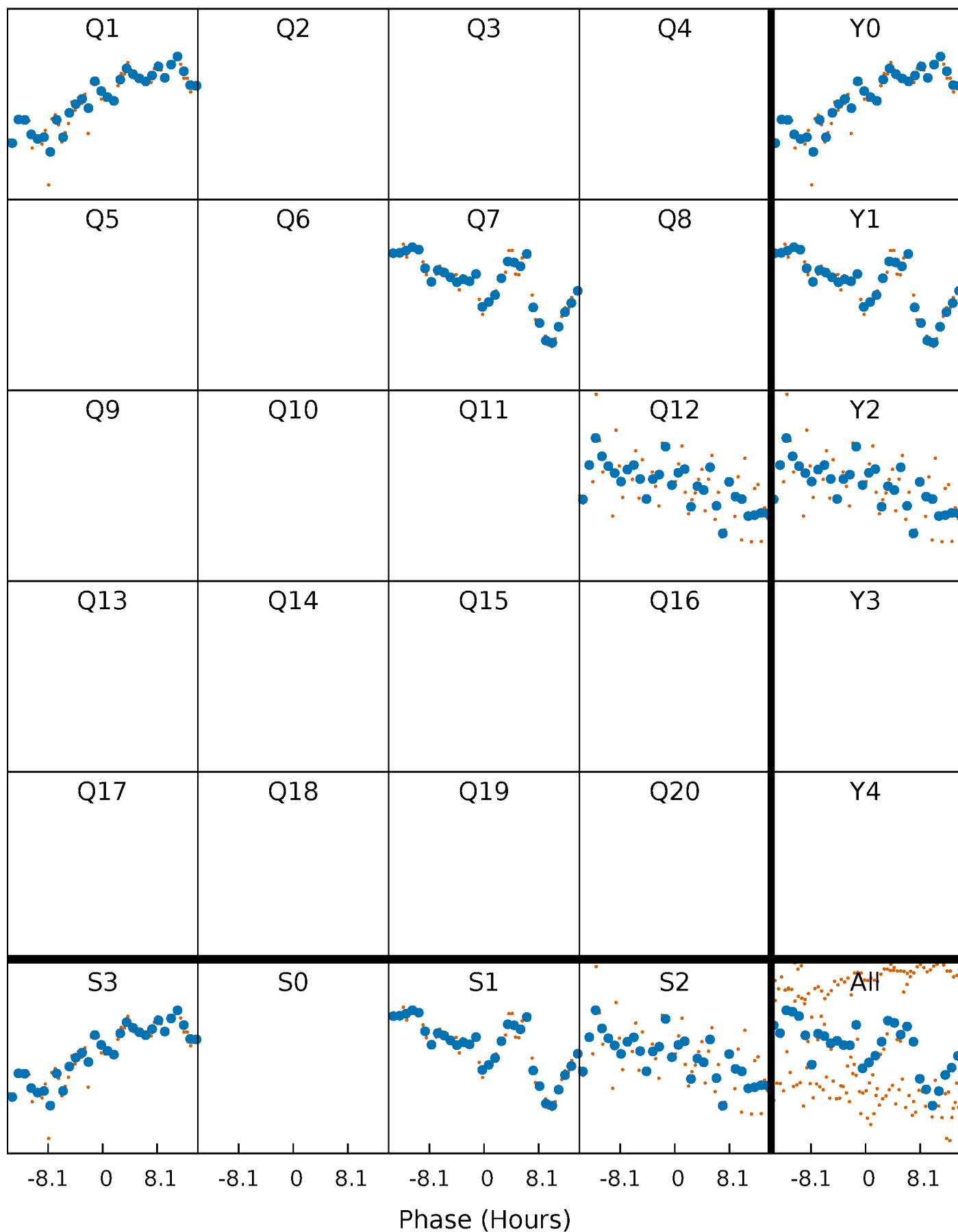


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 007135042-01 P=480.356200 Days $T_0=153.179454$ (BKJD)



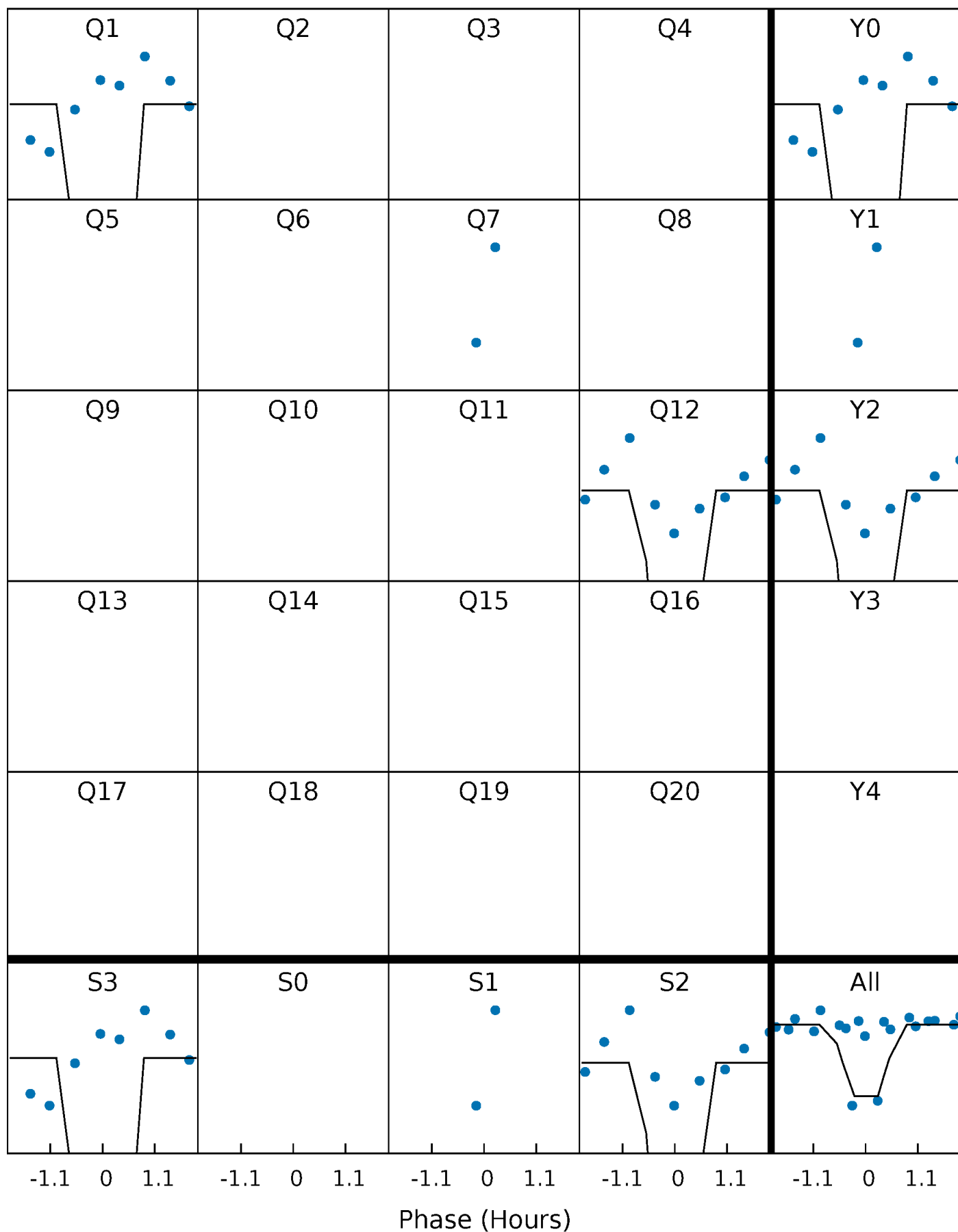
DV Quarter-Phased Transit Curves

TCE 007135042-01 P=480.356200 Days $T_0=153.179454$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

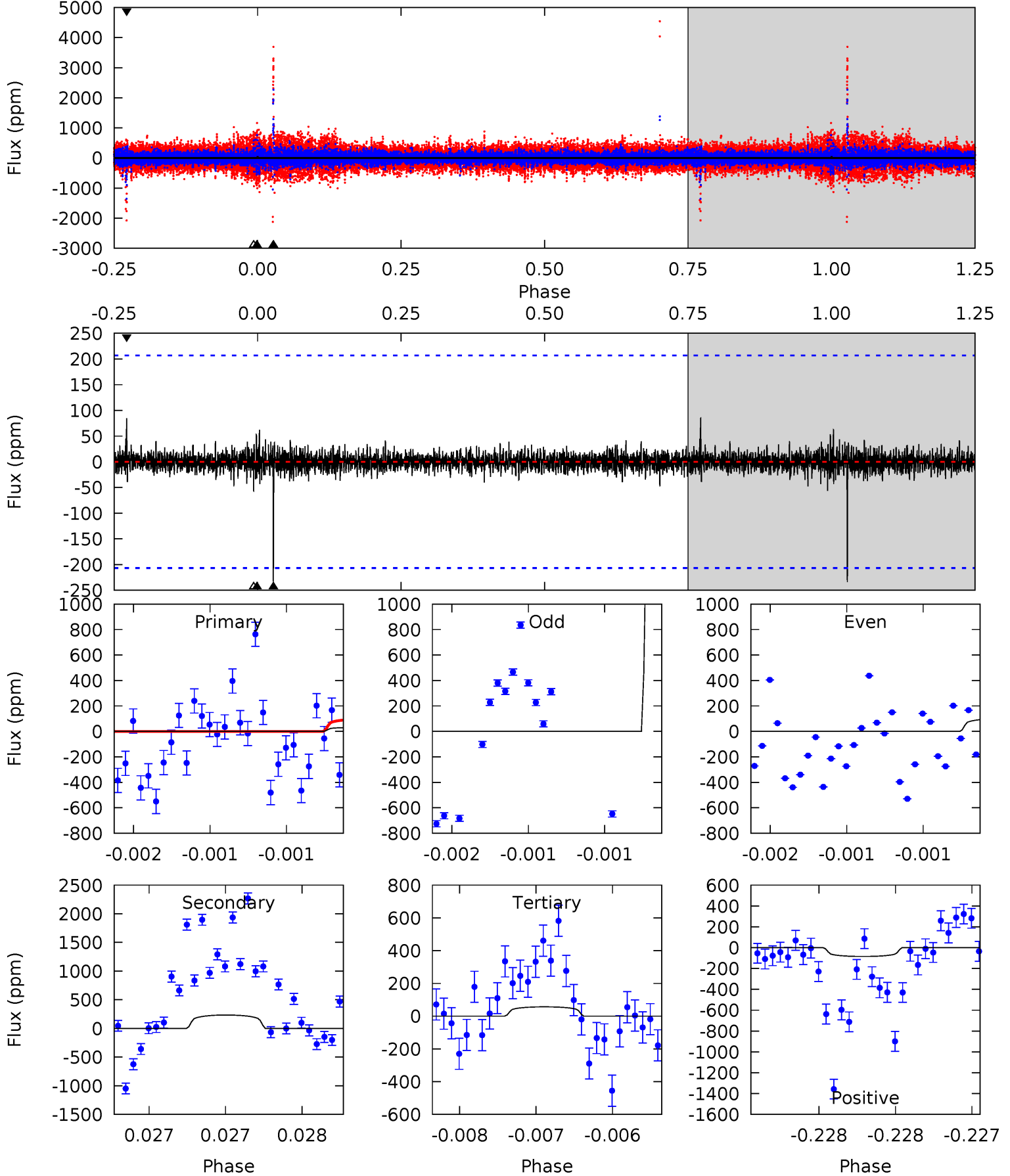
TCE 007135042-01 P=480.338506 Days $T_0=153.299850$ (BKJD)



DV Model-Shift Uniqueness Test

007135042-01, P = 480.356200 Days, E = 153.179454 Days

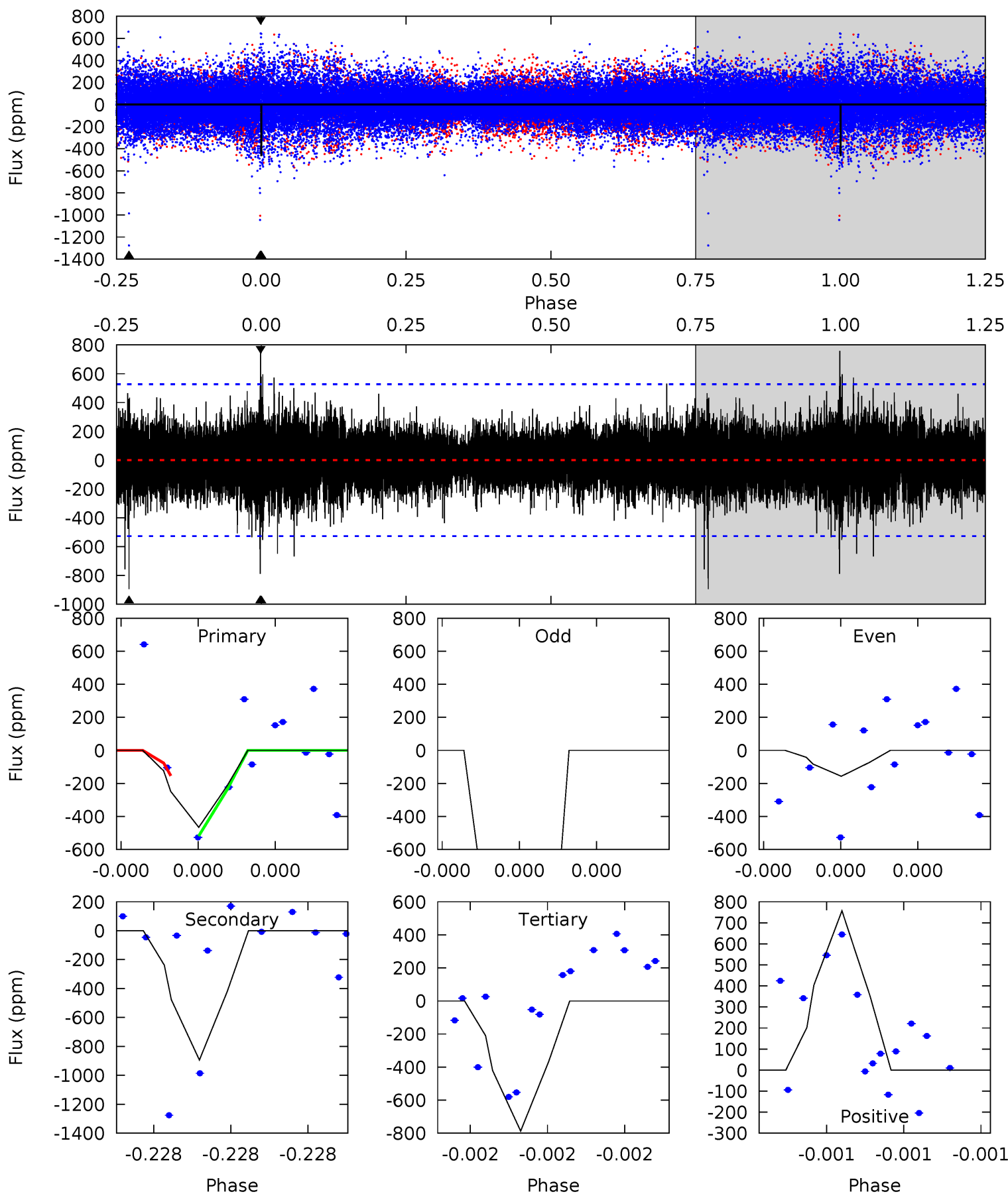
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.85	6.26	1.52	2.26	5.53	3.41	0.32	-0.66	-1.41	4.74	4.00	50.6	-46.9	0.27	0.87



Alt Model-Shift Uniqueness Test

007135042-01, P = 480.338506 Days, E = 153.299850 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.15	9.88	8.70	8.36	5.82	3.85	1.18	-3.55	-3.22	1.18	1.52	20.7	2.69	0.46	0



Stellar Parameters For KIC 007135042

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6301^{+177}_{-243}	$4.210^{+0.158}_{-0.193}$	$0.160^{+0.200}_{-0.300}$	$1.469^{+0.470}_{-0.353}$	$1.277^{+0.176}_{-0.196}$	$0.568^{+0.455}_{-0.287}$
	+3%/-4%	+4%/-5%	+125%/-188%	+32%/-24%	+14%/-15%	+80%/-51%
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 007135042-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-234 ± 37	$6.49^{+6.90}_{-4.54}$	413^{+37}_{-28}	4141^{+2890}_{-867}	5191^{+47984}_{-3947}
Alt.	-894 ± 91	$11.15^{+7.61}_{-7.04}$	414^{+33}_{-31}	4359^{+2563}_{-690}	6696^{+38687}_{-4342}

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

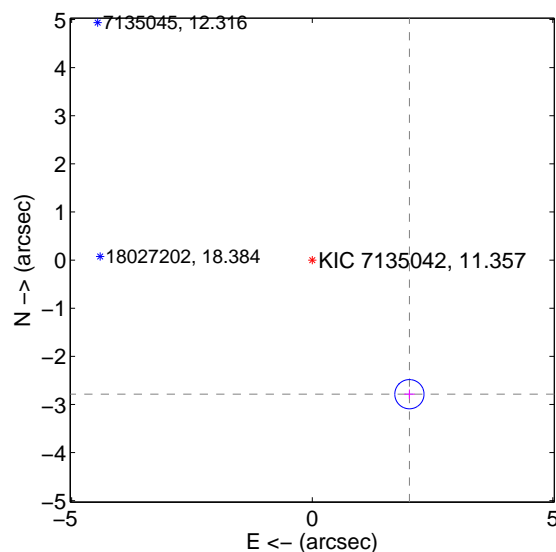
Supplemental centroid analysis for 007135042-01. **Kepler magnitude: 11.36.** Transit SNR 3.22

There are 1 quarters with good PRF difference image offsets

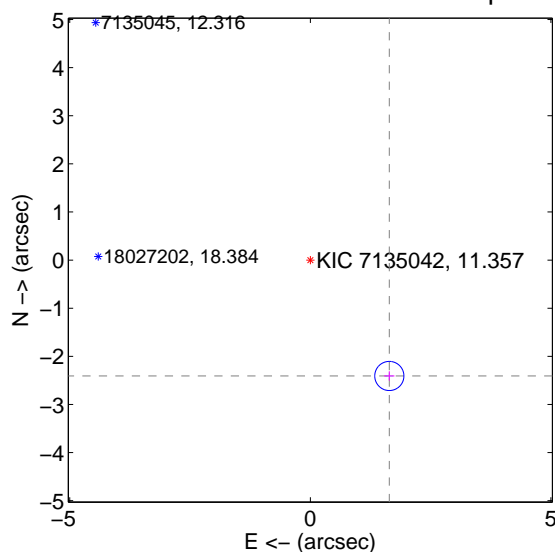
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.442 ± 0.101	34.01	-2.020 ± 0.107	-2.787 ± 0.098
PRF-fit source offset from KIC position	2.915 ± 0.101	28.87	-1.642 ± 0.107	-2.408 ± 0.098
photometric centroid source offset	1.22 ± 0.99	1.23	0.03 ± 1.25	-1.22 ± 0.99

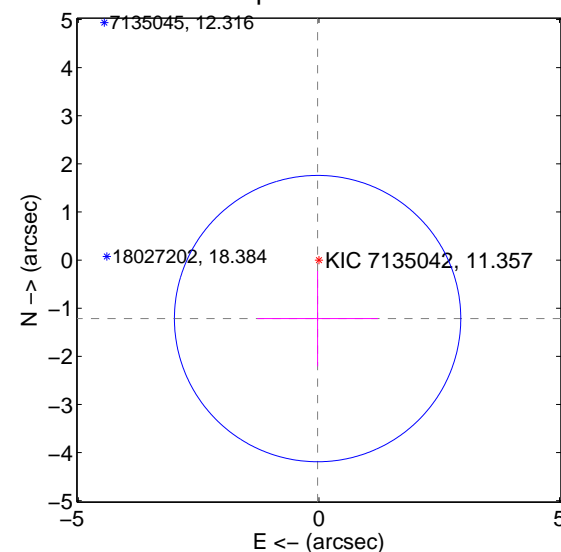
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

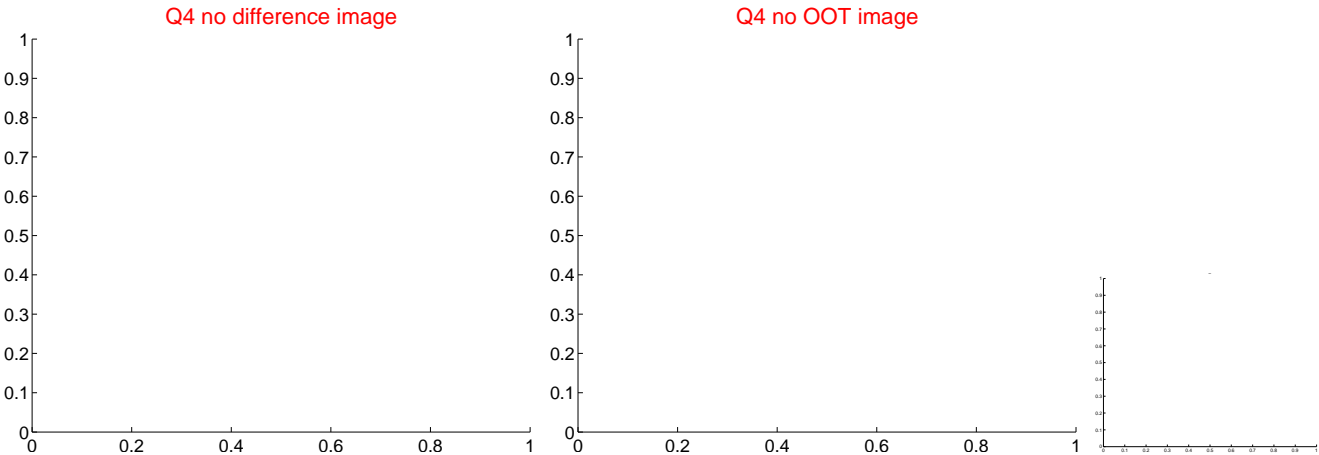
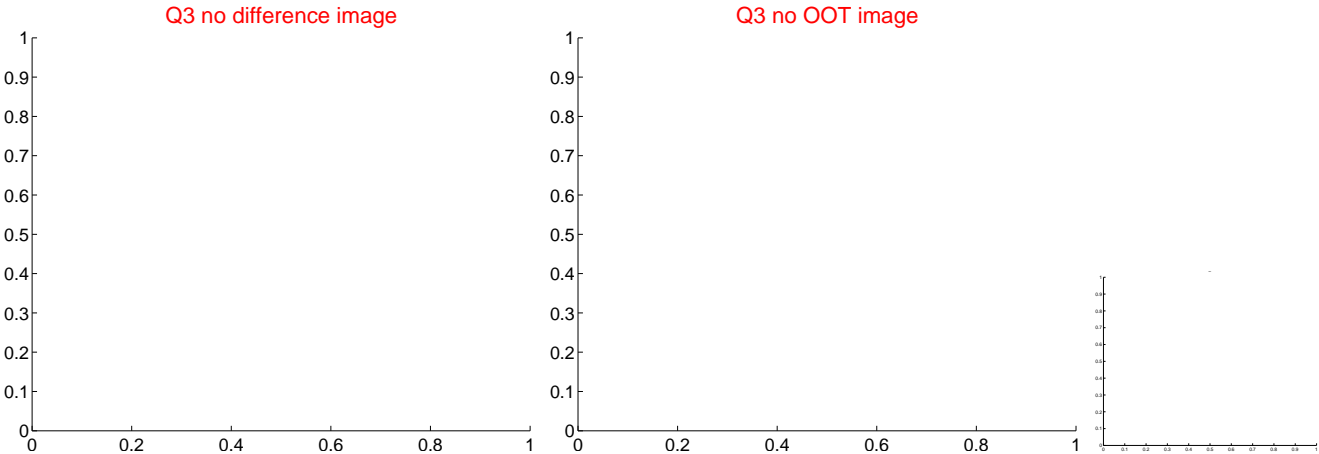
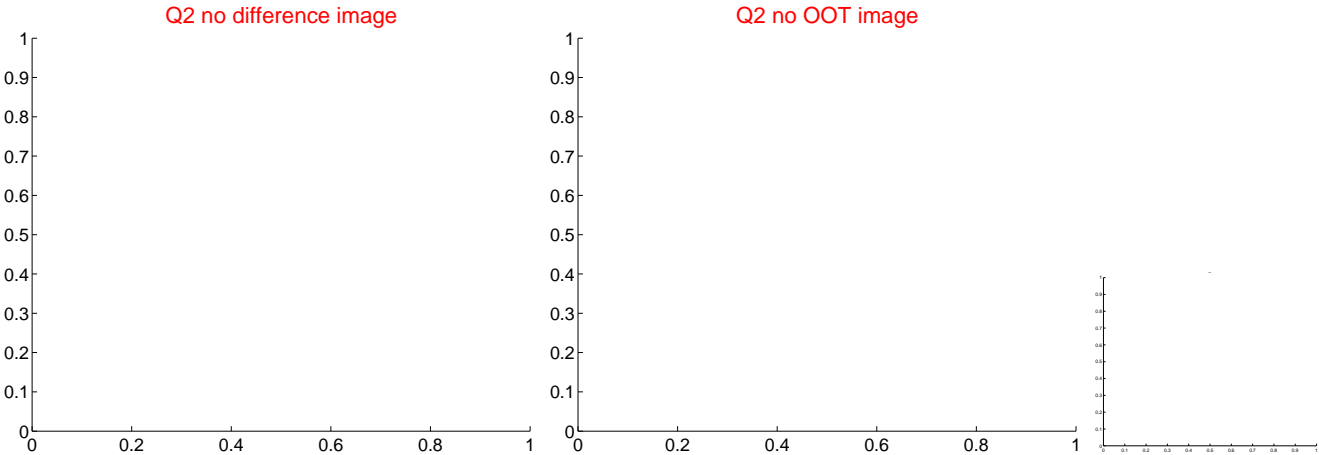
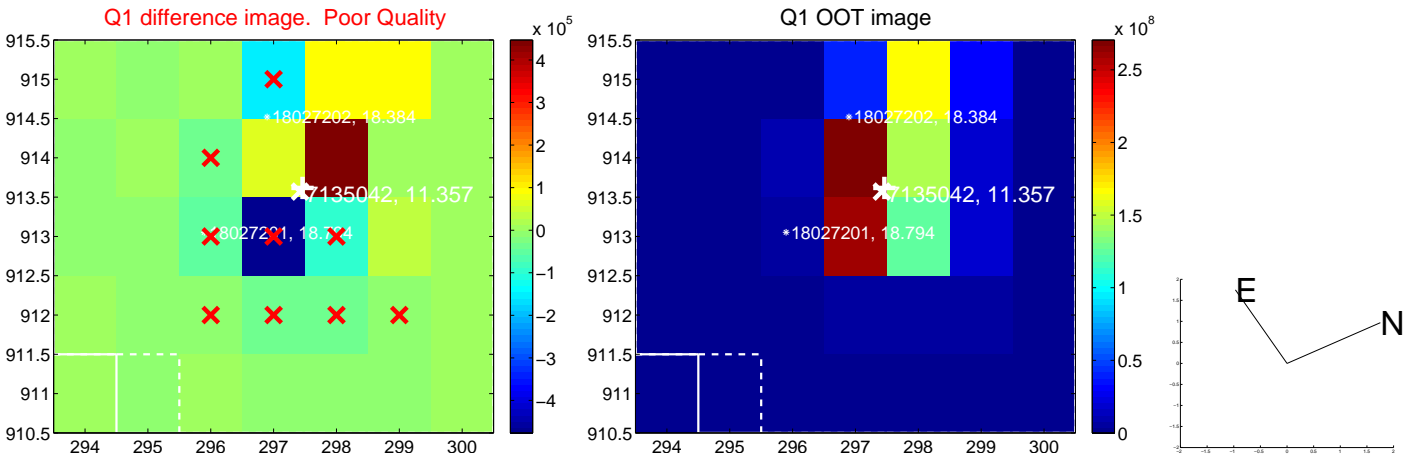


offset from photometric centroids



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.

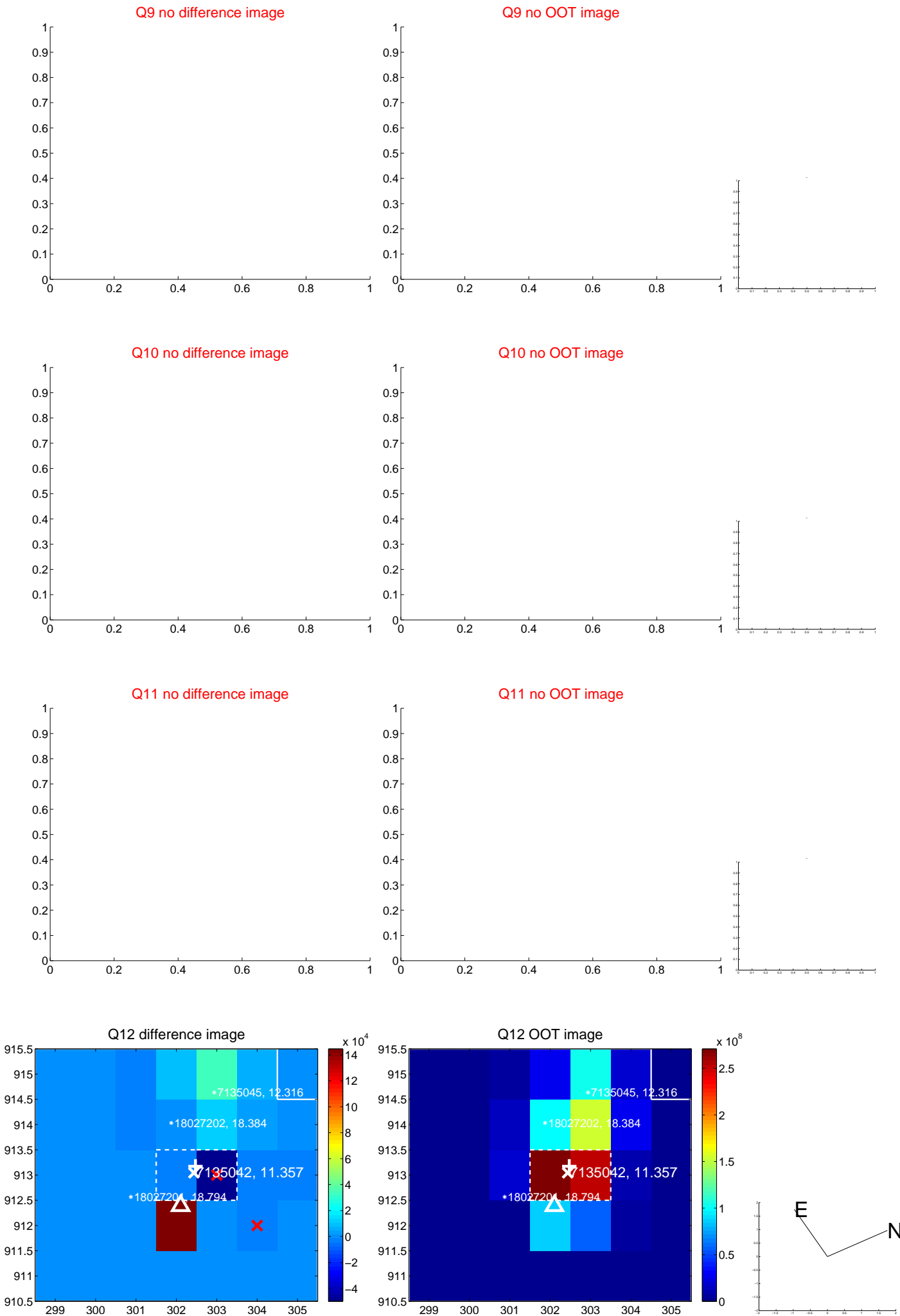
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



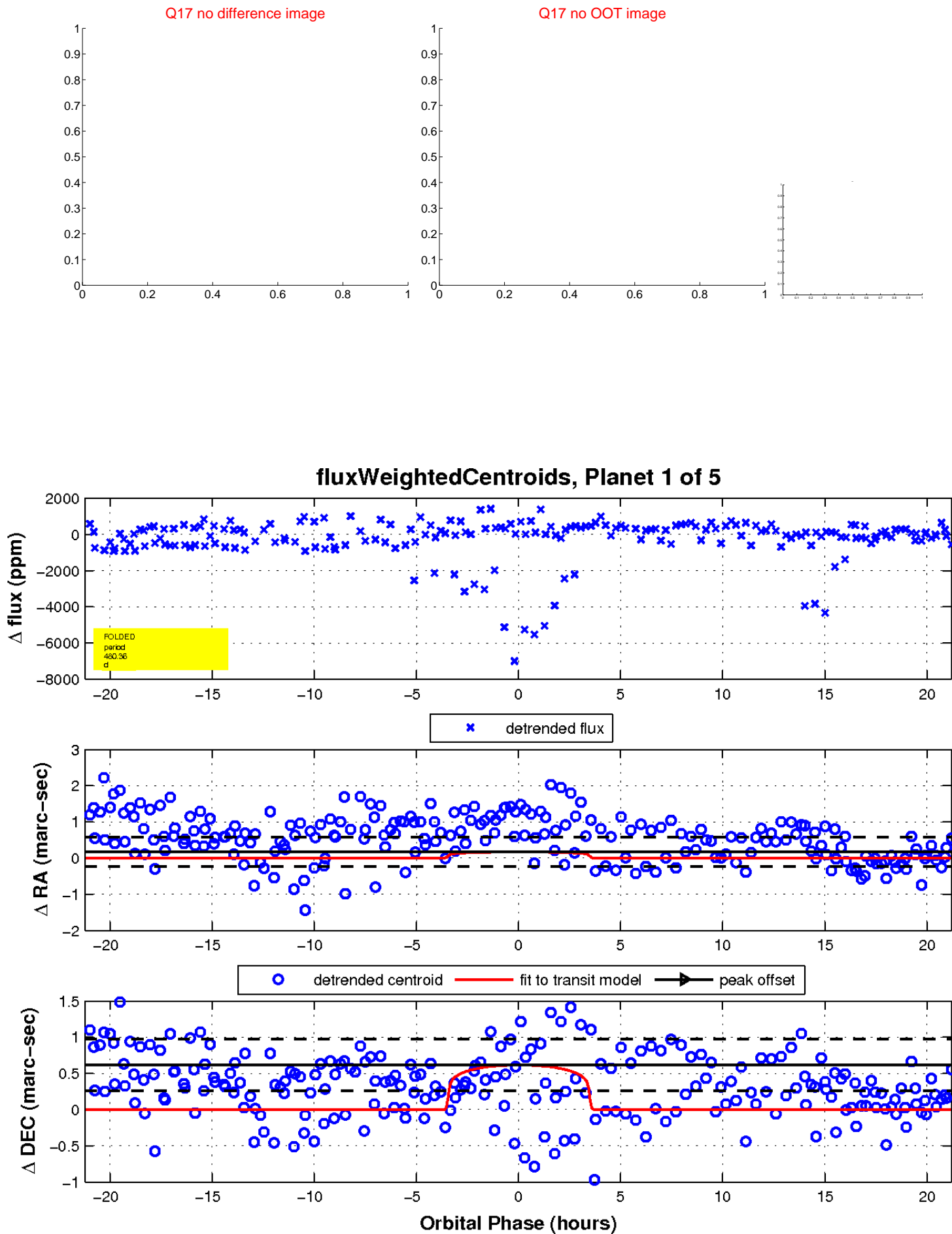
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

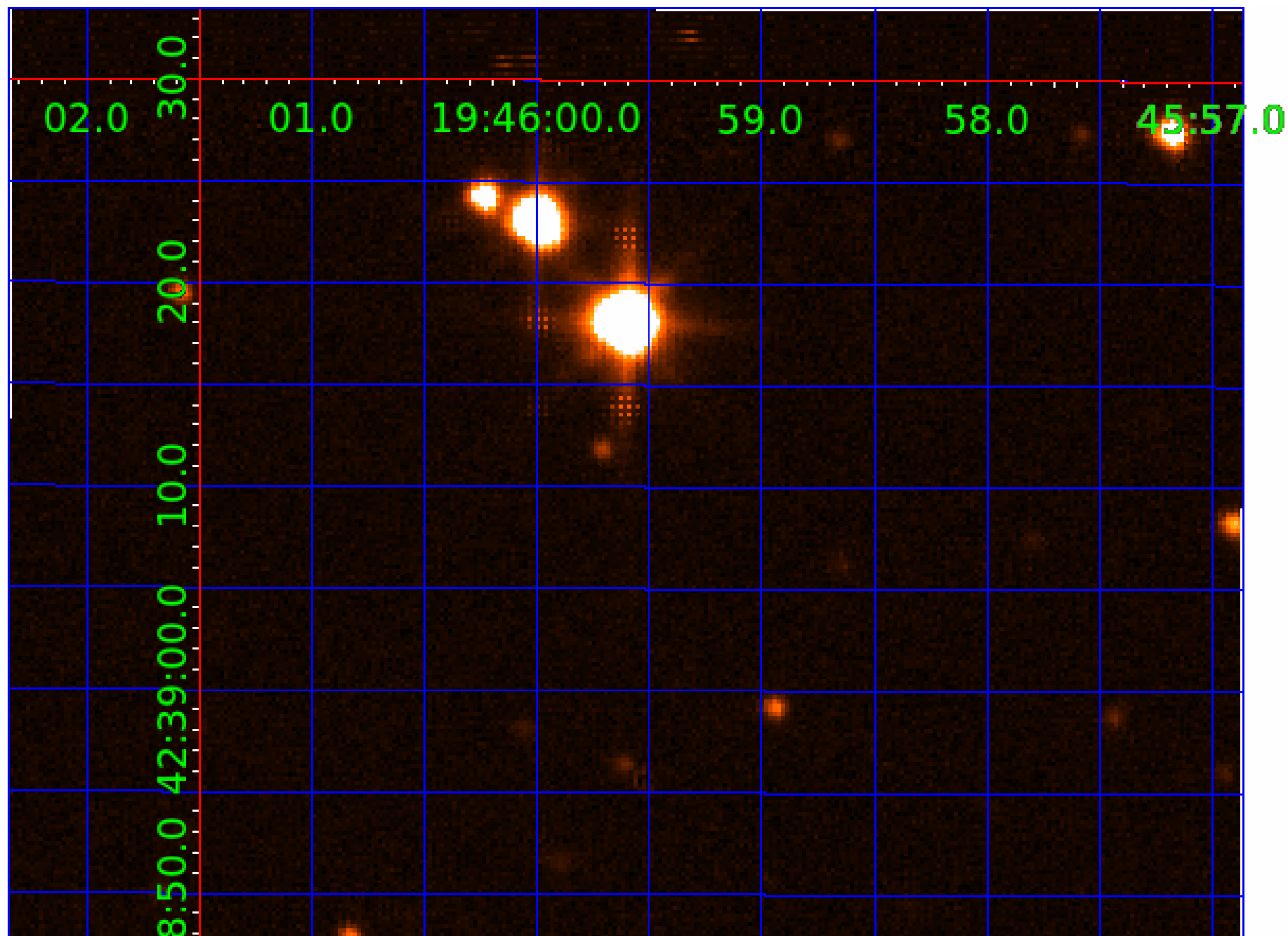


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007135042

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})
007135042-01	OBS	No	480.356200	153.179454	301.8	7.082	16.8	3.2	1.47	6301	2.60	1.80
007135042-02	OBS	No	476.116846	159.031537	286.6	17.650	14.8	4.2	1.47	6301	2.60	1.82
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007135042-04	OBS	No	7.112805	136.138068	74.2	20.772	12.8	15.0	1.47	6301	1.35	494.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007135042-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007135042-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS— CENT_SATURATED
007135042-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
007135042-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

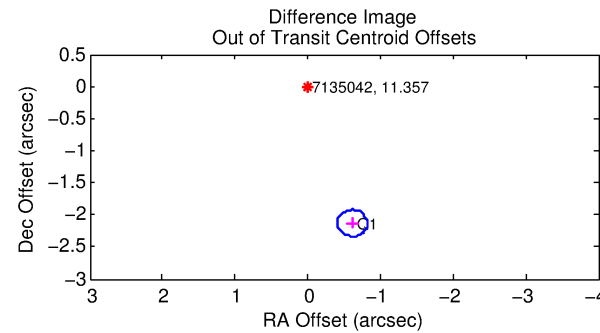
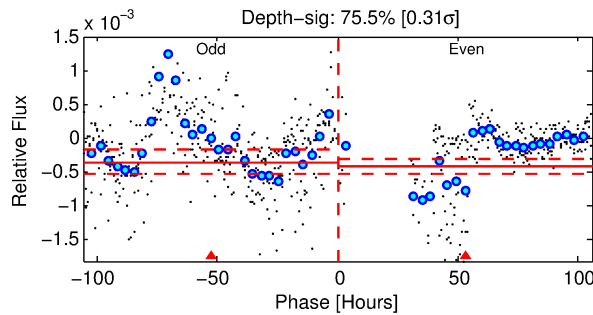
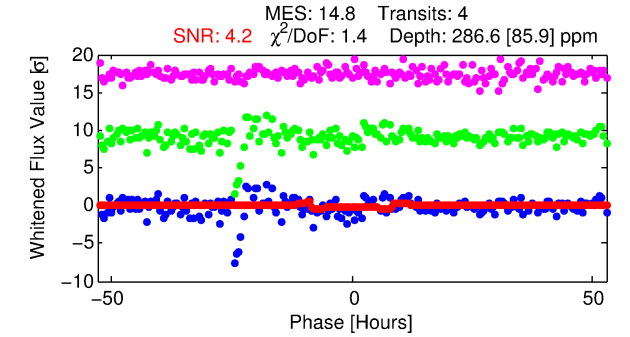
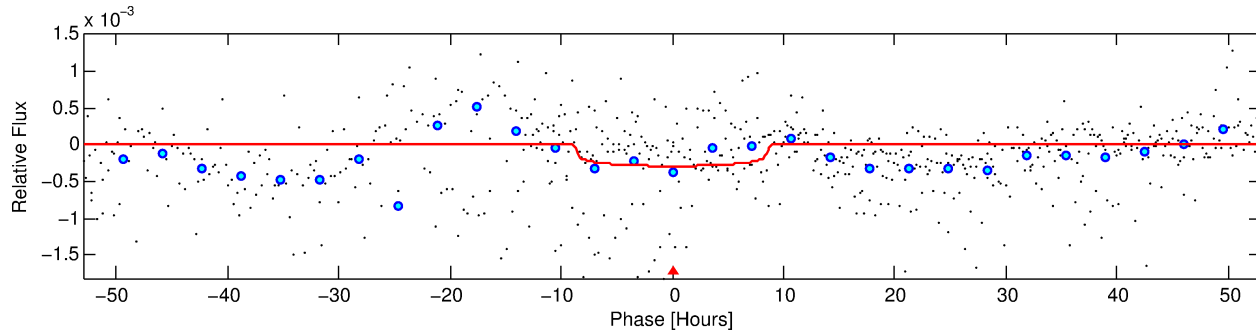
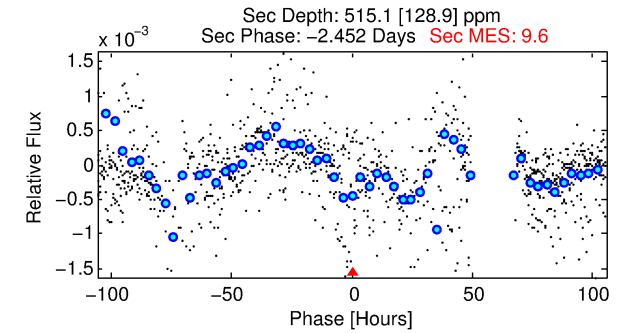
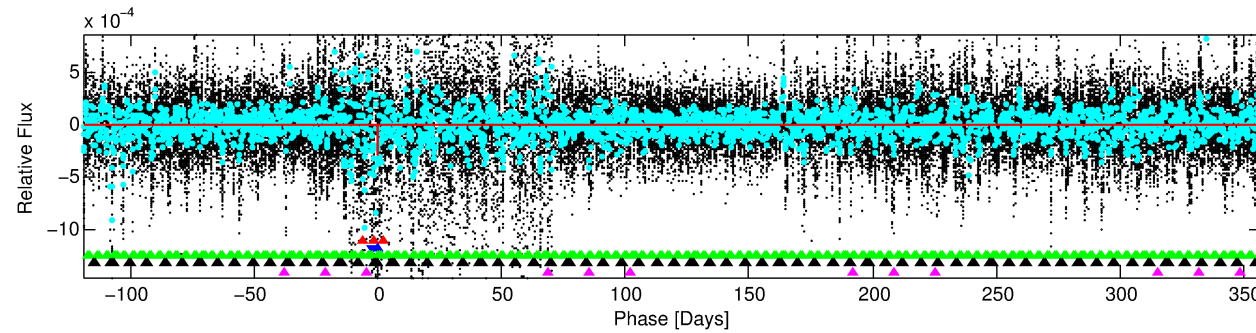
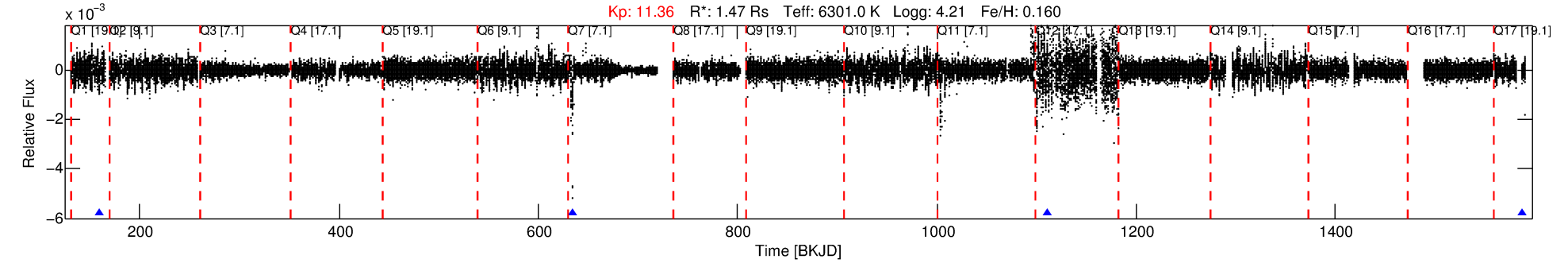
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007135042-02

No Significant Match Found

DV One-Page Summary

KIC: 7135042 Candidate: 2 of 5 Period: 476.117 d



DV Fit Results:

Period = 476.11685 [0.01073] d
Epoch = 159.0315 [0.0196] BKJD
 R_p/R^* = 0.0162 [0.0054]
 a/R^* = 167.60 [234.23]
 b = 0.61 [1.45]
 S_{eff} = 1.82 [0.72]
 T_{eq} = 296 [29] K
 R_p = 2.60 [1.21] R_e
 a = 1.2948 [0.3362] AU
 A_g = 70096.11 [56287.42] [1.25σ]
Teffp = 7449 [1363] K [5.25σ]

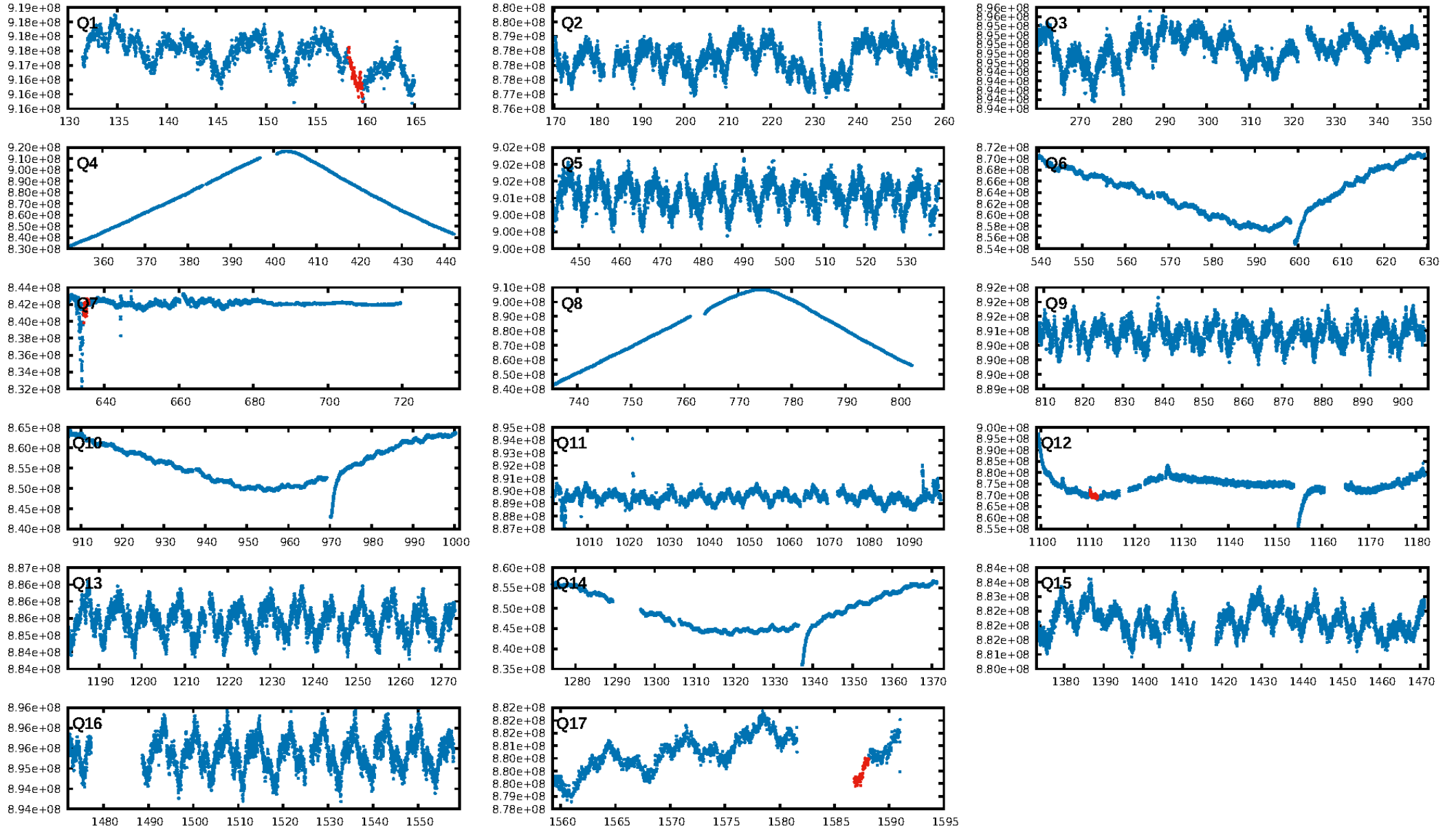
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [460.60σ]
LongPeriod-sig: 100.0% [5.35σ]
ModelChiSquare2-sig: 39.0%
ModelChiSquareGof-sig: 66.0%
Bootstrap-pfa: 2.05e-14
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -2.215
Centroid-sig: 5.1%
Centroid-so: 1.259 arcsec [1.44σ]
OotOffset-rm: 2.213 arcsec [31.95σ]
KicOffset-rm: 2.000 arcsec [28.87σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/1]

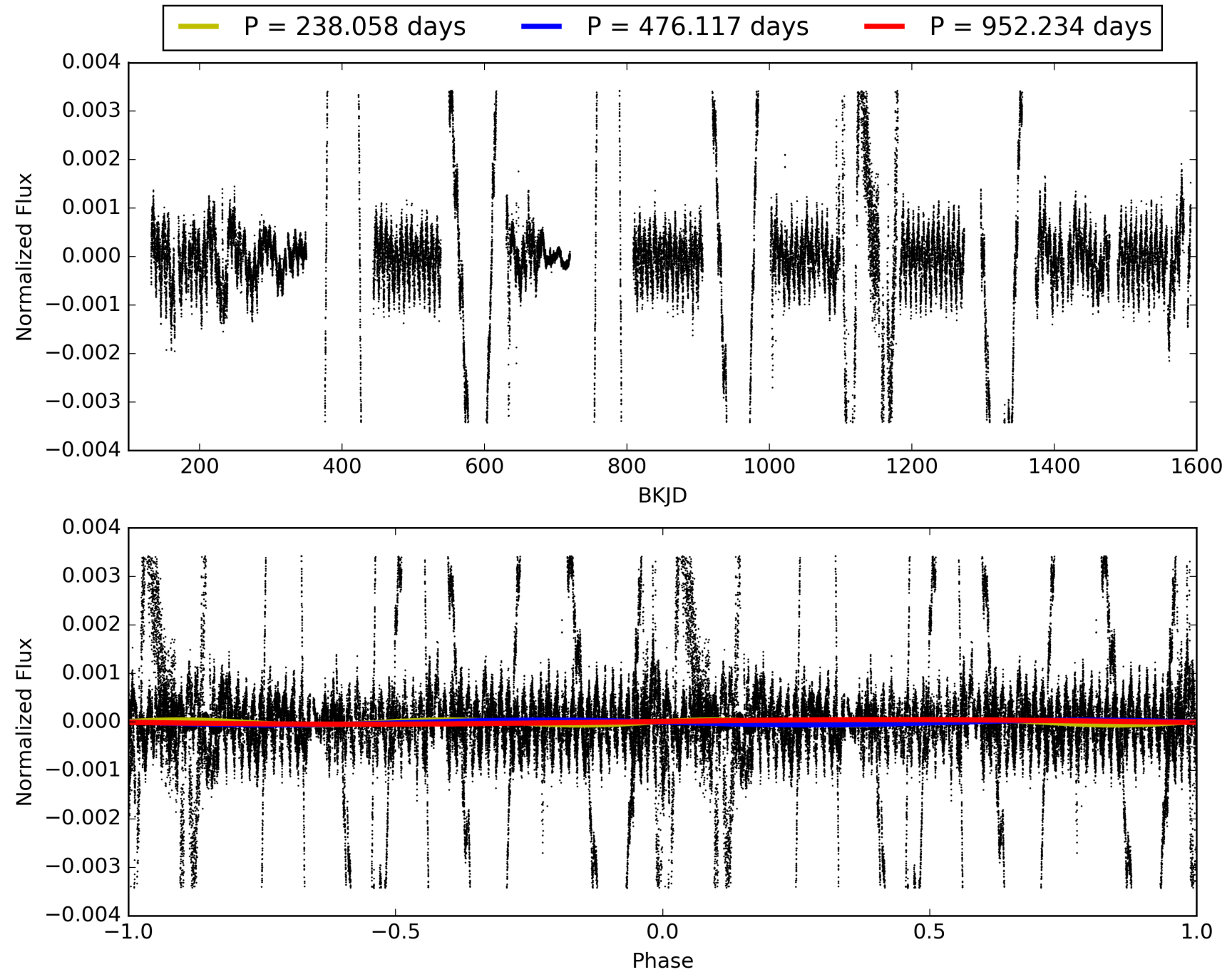
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:24:23 Z

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

TCE 007135042-02, PDC Light Curves

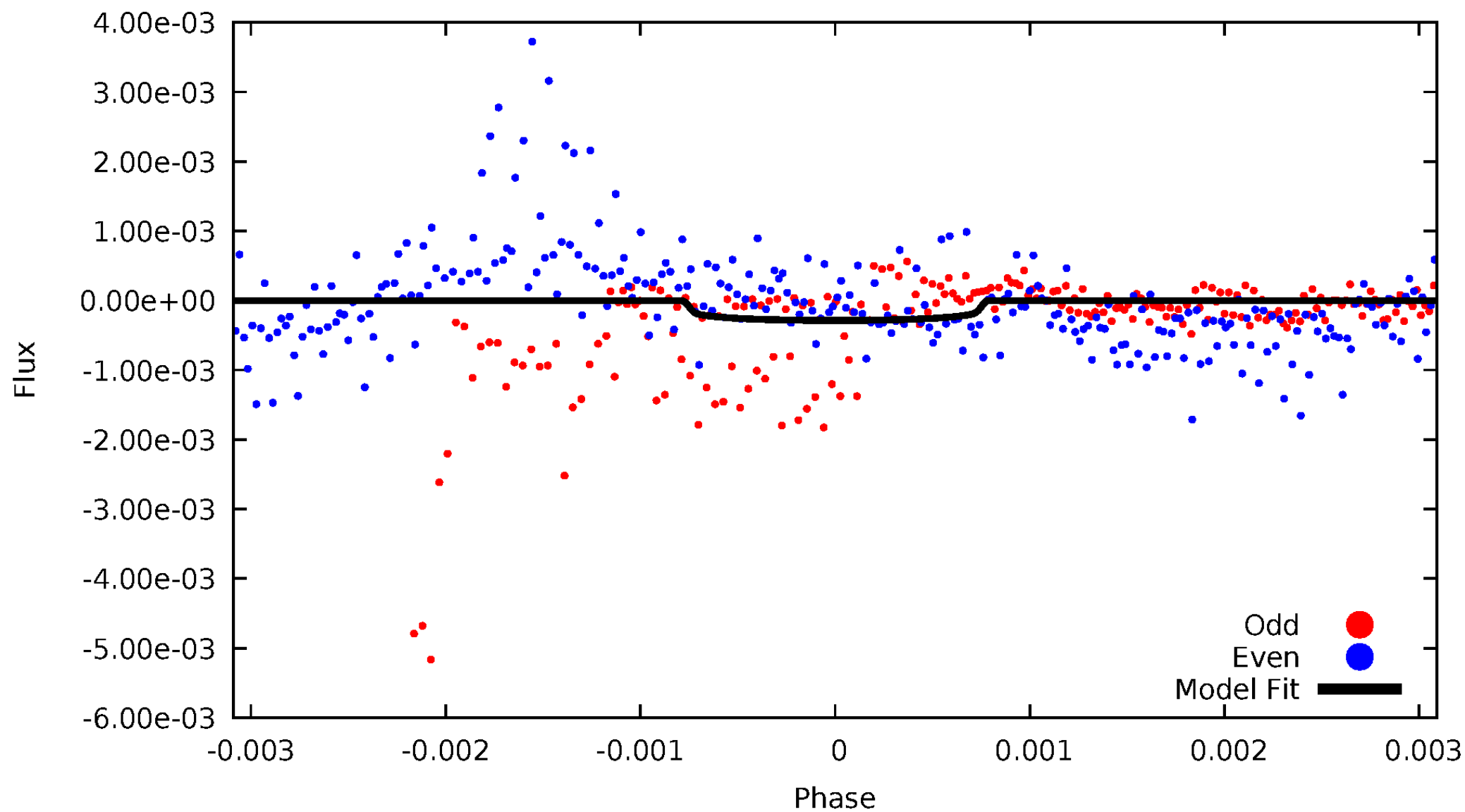


TCE 007135042-02



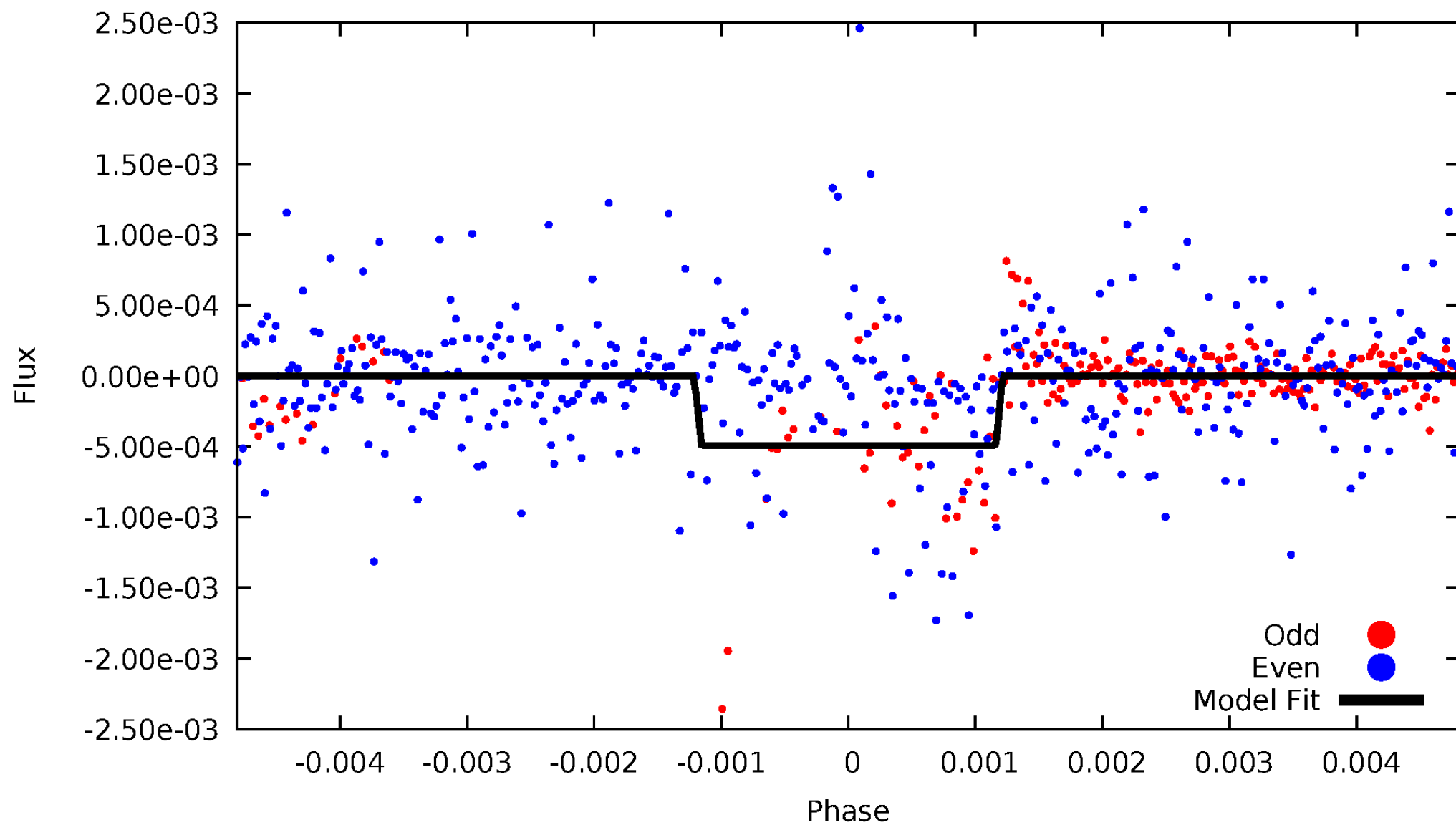
DV Odd/Even

TCE 007135042-02



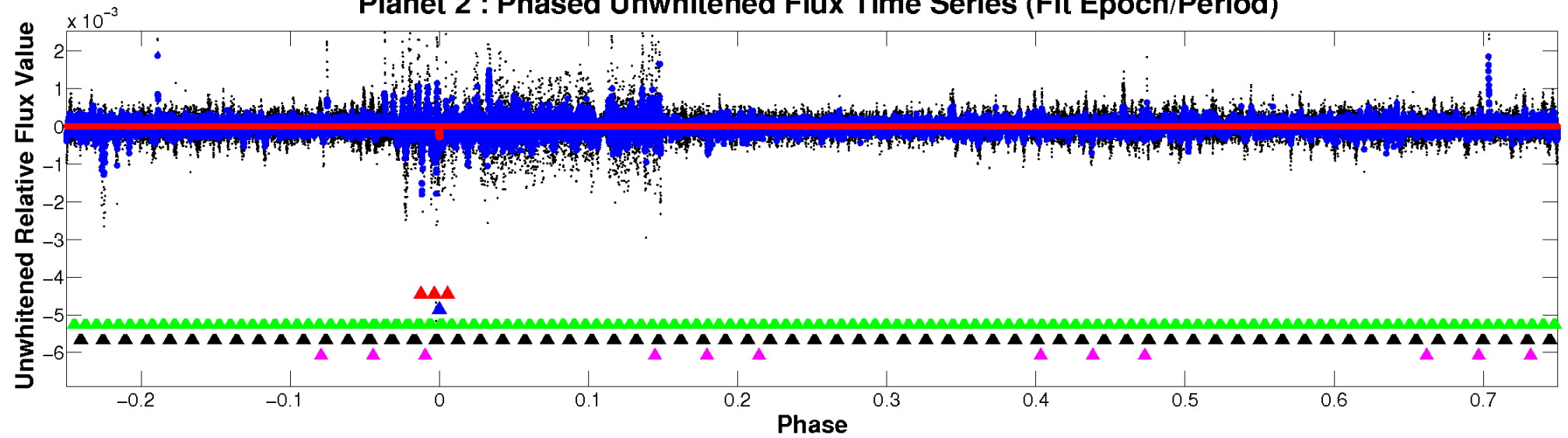
ALT Odd/Even

TCE 007135042-02

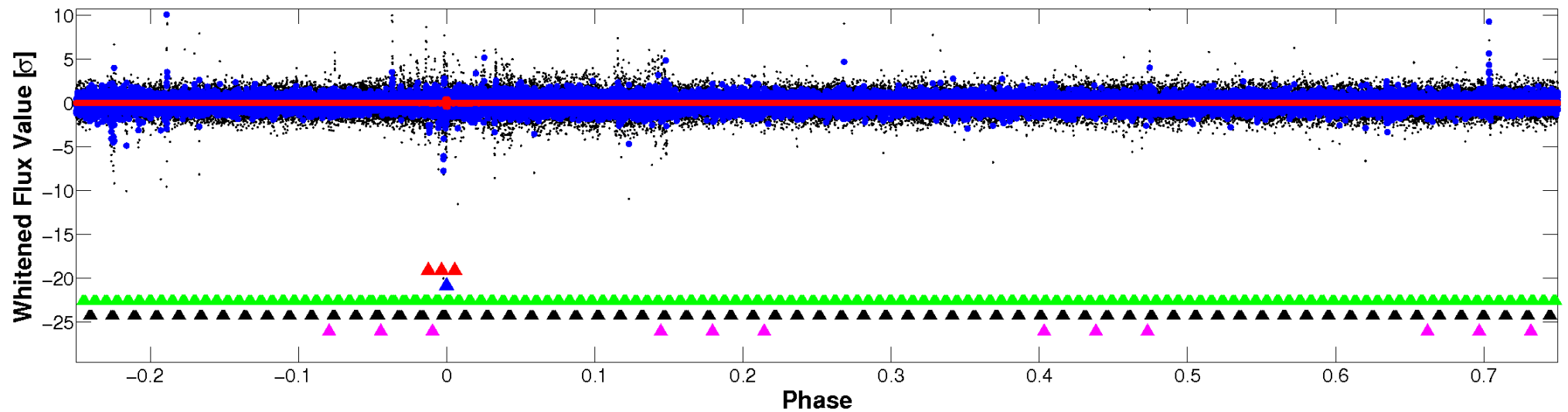


Non-Whitened Vs. Whitened Light Curve

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

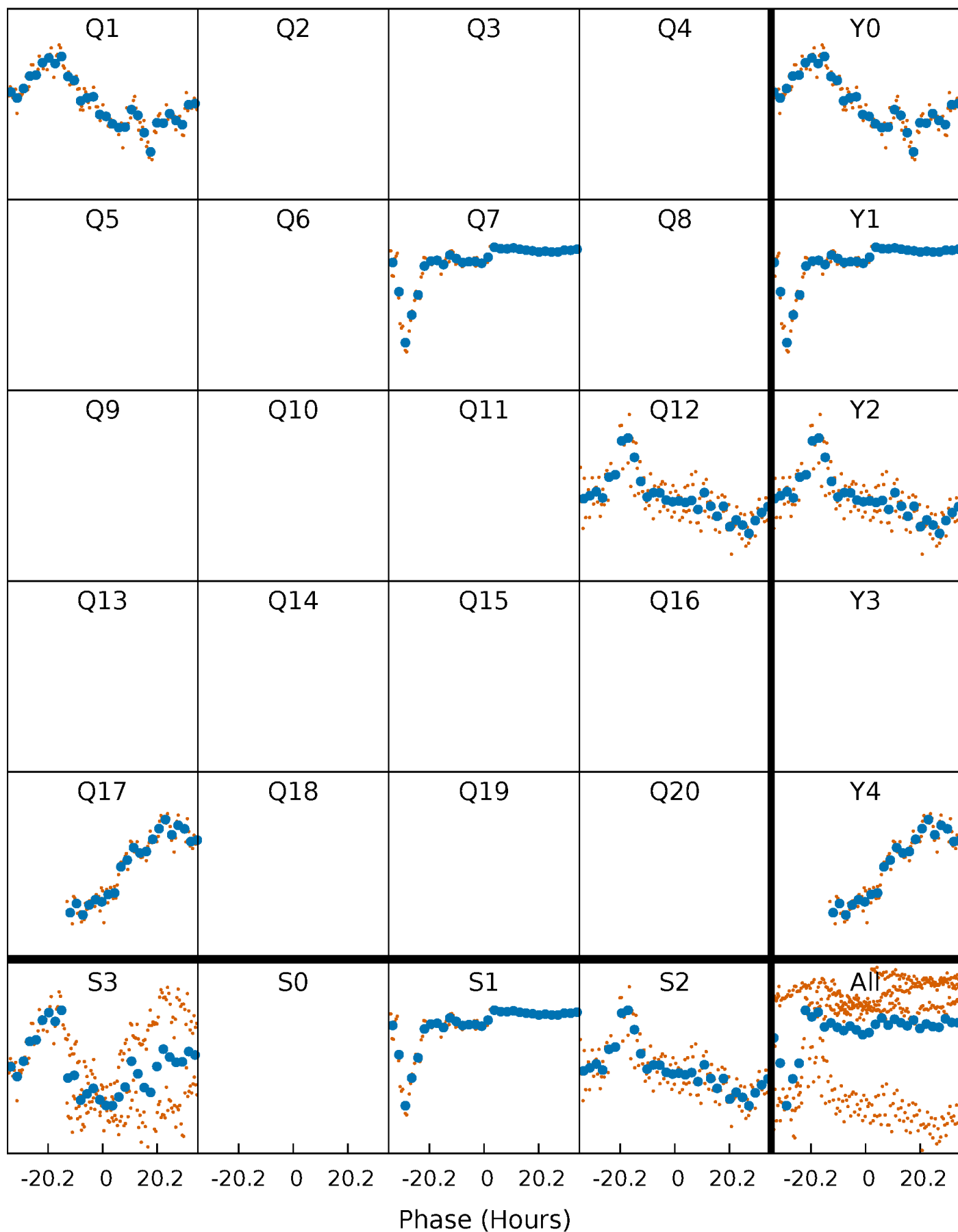


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 007135042-02 $P=476.116846$ Days $T_0=159.031537$ (BKJD)



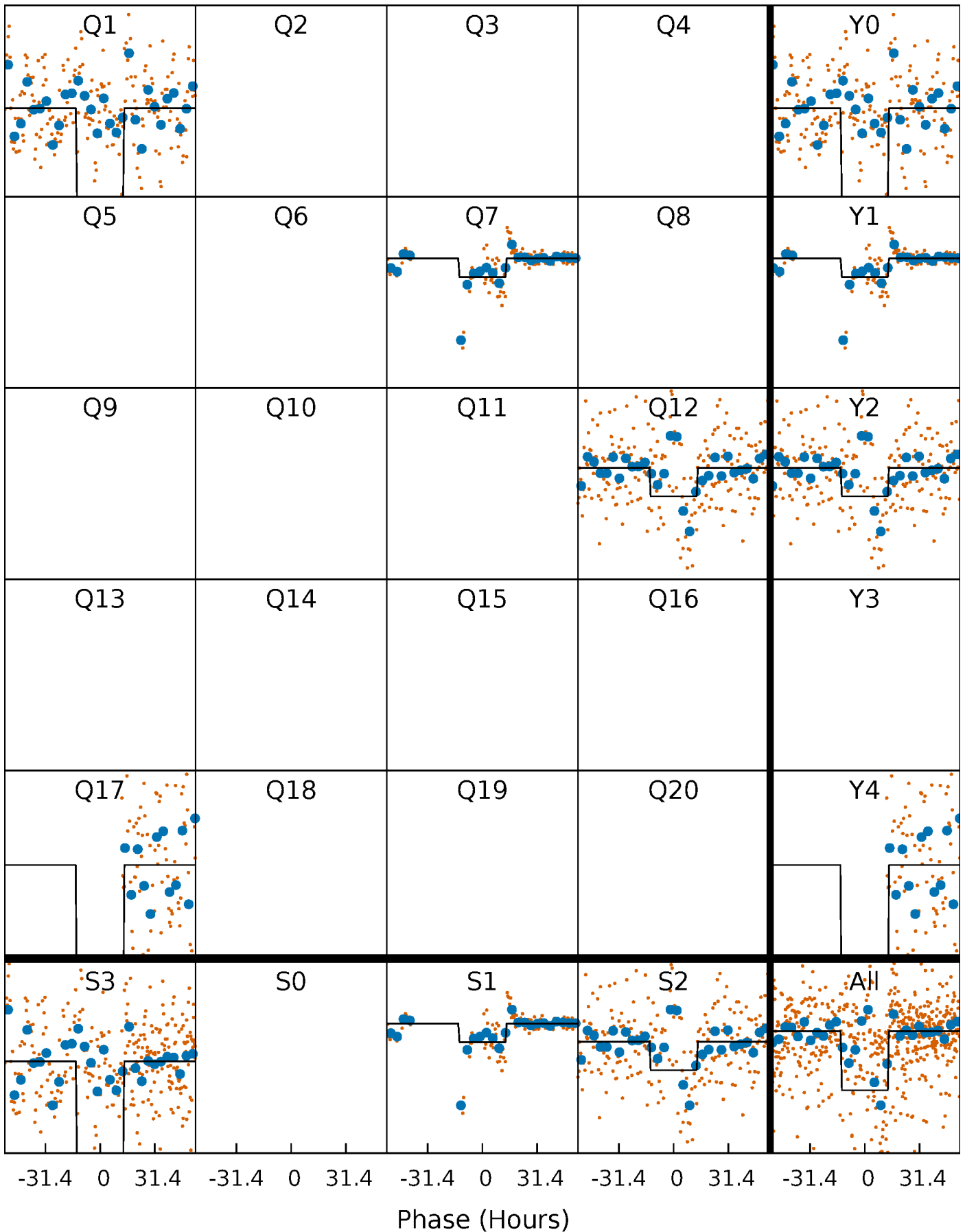
DV Quarter-Phased Transit Curves

TCE 007135042-02 $P=476.116846$ Days $T_0=159.031537$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

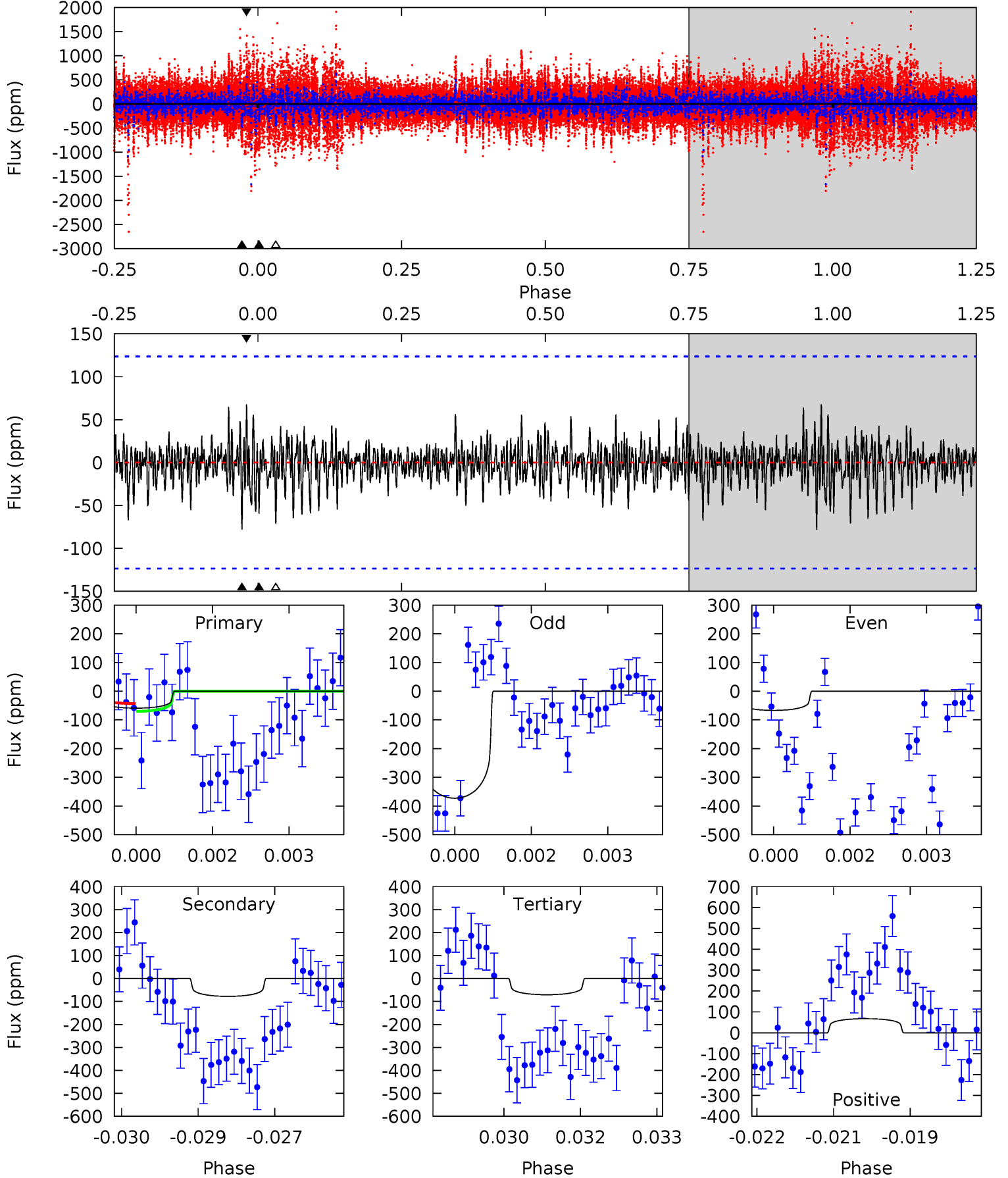
TCE 007135042-02 P=475.829500 Days $T_0=158.822383$ (BKJD)



DV Model-Shift Uniqueness Test

007135042-02, P = 476.116846 Days, E = 159.031537 Days

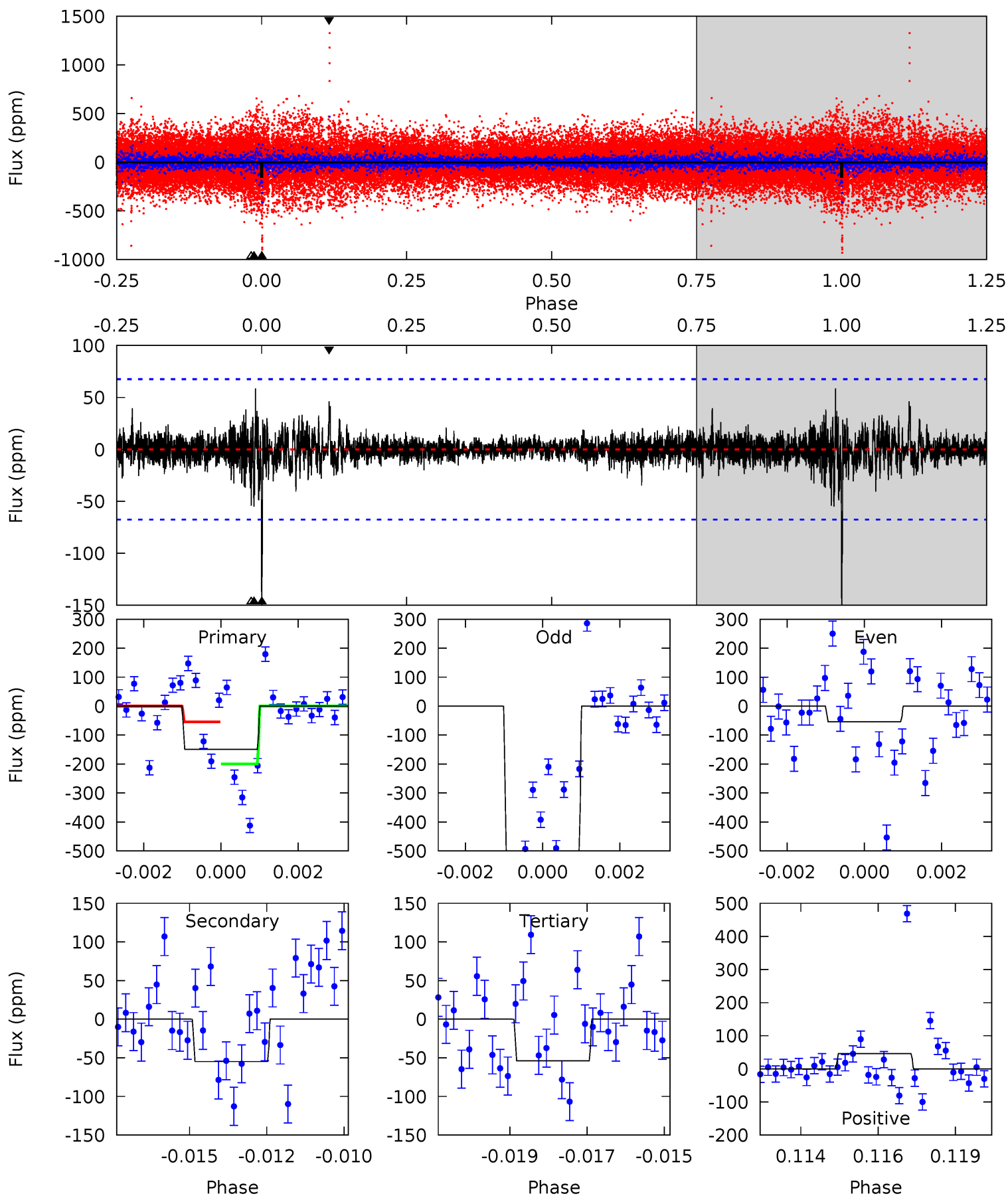
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.57	3.38	3.07	2.94	5.37	3.16	0.82	-0.50	-0.37	0.31	0.45	6.38	1.69	0.46	0.59



Alt Model-Shift Uniqueness Test

007135042-02, $P = 475.829500$ Days, $E = 158.822383$ 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	4.30	4.23	3.62	5.29	3.03	0.64	7.44	8.06	0.07	0.68	12.0	1.45	0.28	5.79



Stellar Parameters For KIC 007135042

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6301^{+177}_{-243}	$4.210^{+0.158}_{-0.193}$	$0.160^{+0.200}_{-0.300}$	$1.469^{+0.470}_{-0.353}$	$1.277^{+0.176}_{-0.196}$	$0.568^{+0.455}_{-0.287}$
	+3%/-4%	+4%/-5%	+125%/-188%	+32%/-24%	+14%/-15%	+80%/-51%
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 007135042-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-78 ± 23	$2.65^{+1.04}_{-0.91}$	415^{+34}_{-28}	4725^{+990}_{-607}	9854^{+14281}_{-5247}
Alt.	-55 ± 13	$3.53^{+1.10}_{-0.93}$	415^{+34}_{-31}	3974^{+455}_{-355}	3946^{+3710}_{-1811}

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

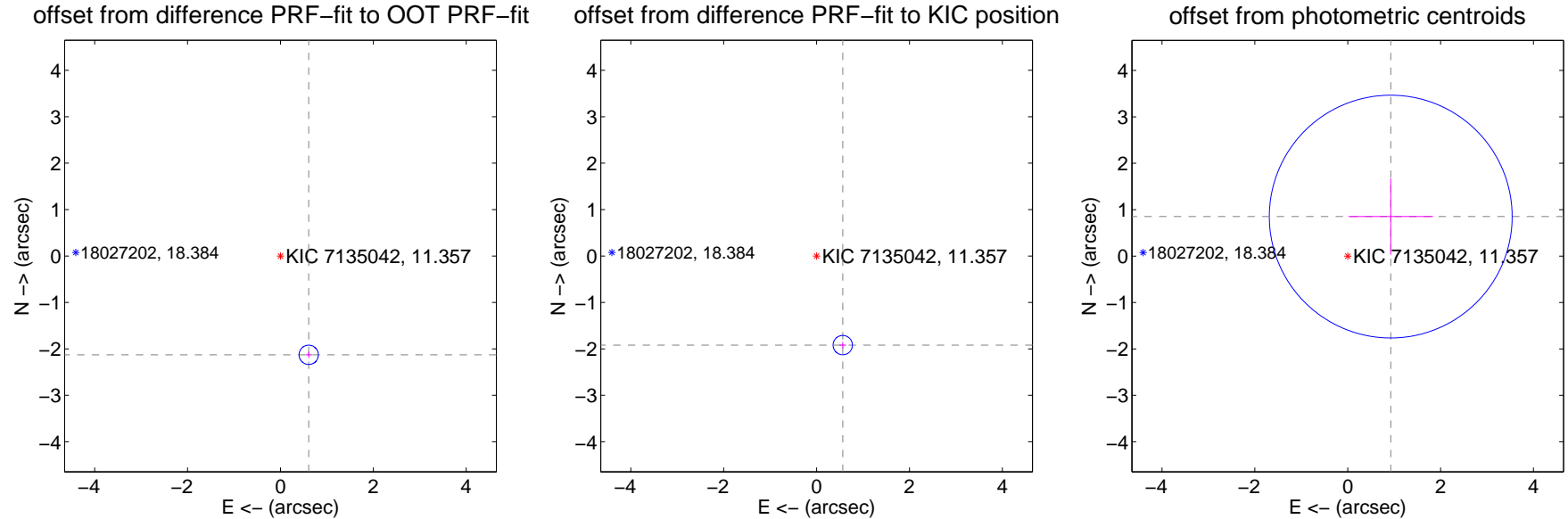
DV Centroid Data

Supplemental centroid analysis for 007135042-02. **Kepler magnitude: 11.36.** Transit SNR 4.22

There are 1 quarters with good PRF difference image offsets

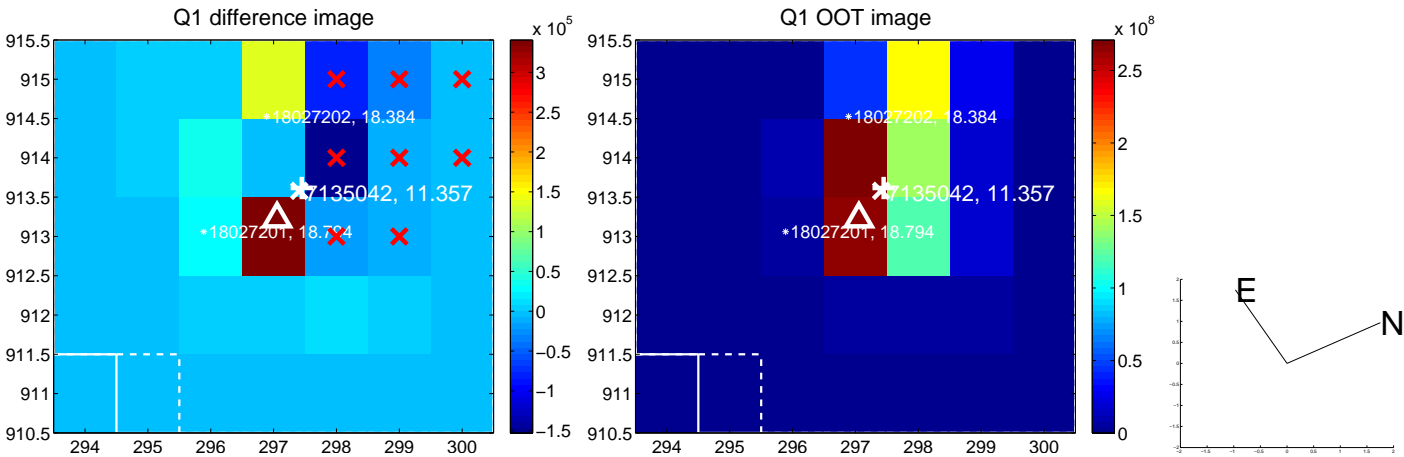
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.213 ± 0.069	31.95	-0.609 ± 0.074	-2.128 ± 0.069
PRF-fit source offset from KIC position	2.000 ± 0.069	28.87	-0.564 ± 0.074	-1.919 ± 0.069
photometric centroid source offset	1.26 ± 0.87	1.44	-0.93 ± 0.91	0.85 ± 0.82



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.



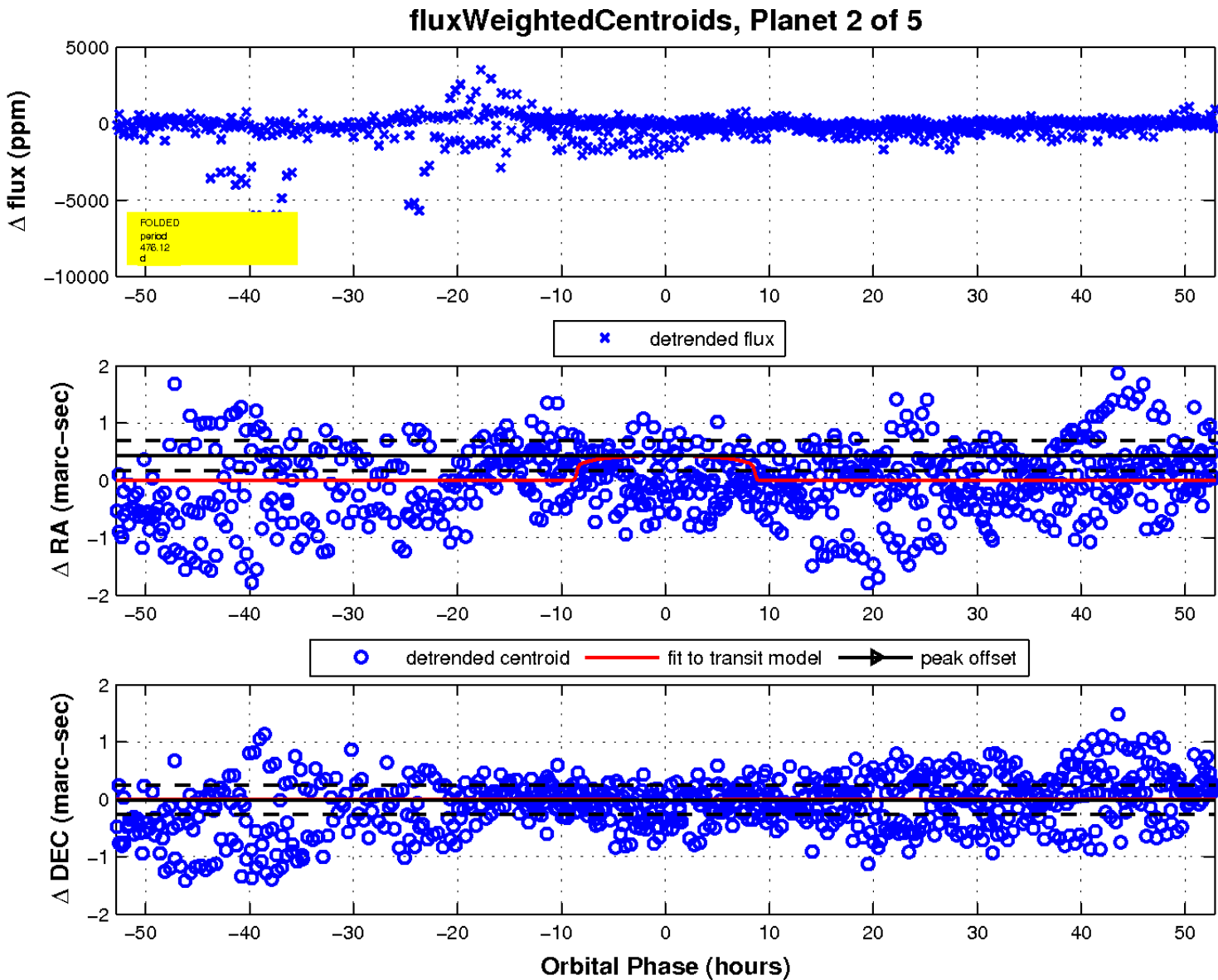
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

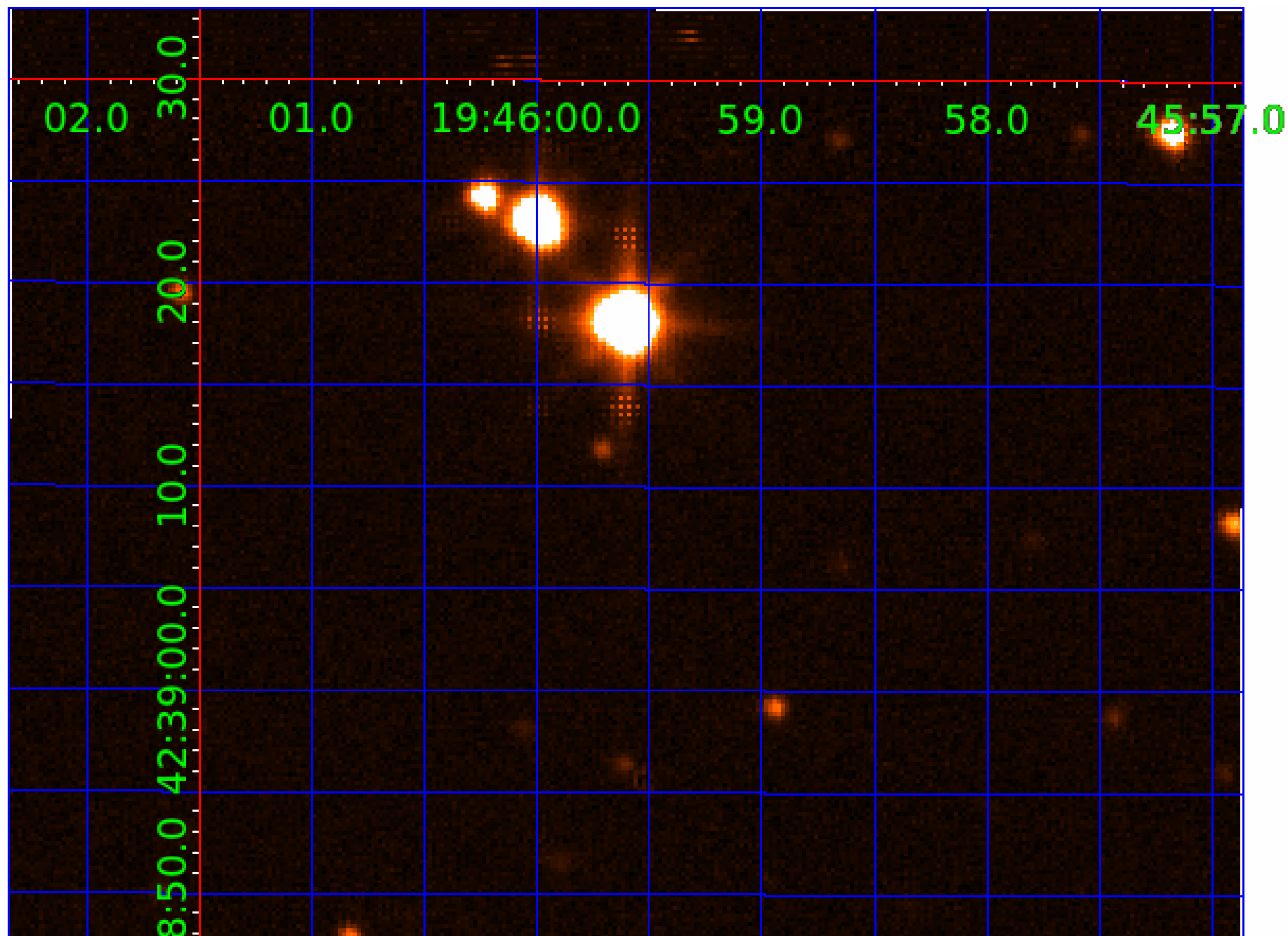
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 007135042

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})
007135042-01	OBS	No	480.356200	153.179454	301.8	7.082	16.8	3.2	1.47	6301	2.60	1.80
007135042-02	OBS	No	476.116846	159.031537	286.6	17.650	14.8	4.2	1.47	6301	2.60	1.82
007135042-03	OBS	No	3.556456	134.082932	30.8	14.299	8.8	7.4	1.47	6301	0.96	1245.06
007135042-04	OBS	No	7.112805	136.138068	74.2	20.772	12.8	15.0	1.47	6301	1.35	494.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007135042-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007135042-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS— CENT_SATURATED
007135042-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
007135042-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

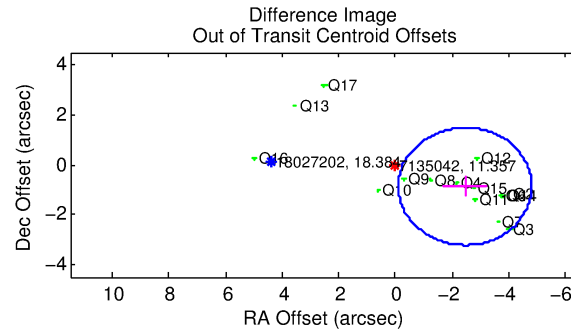
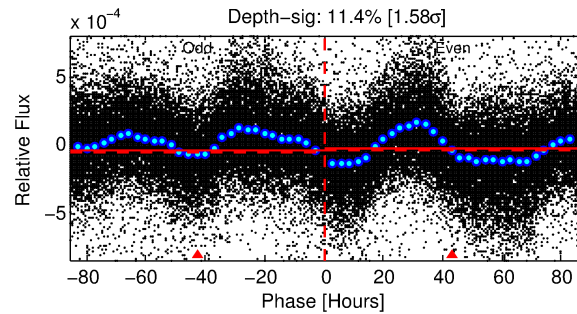
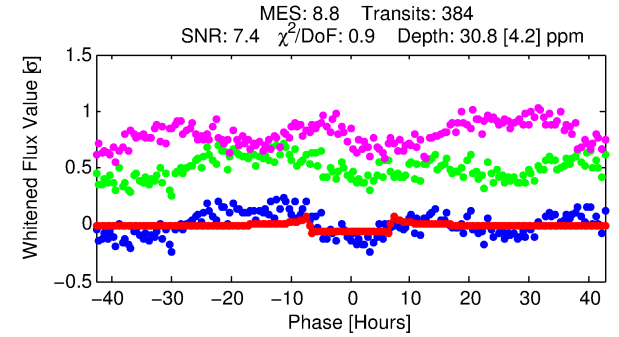
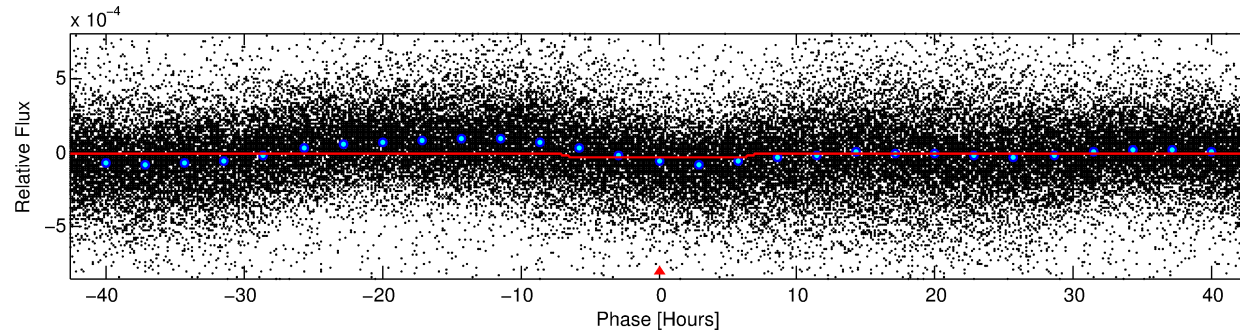
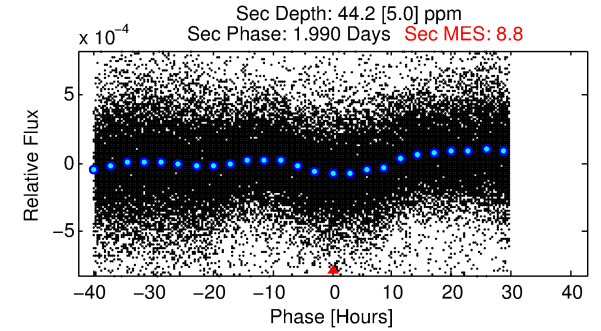
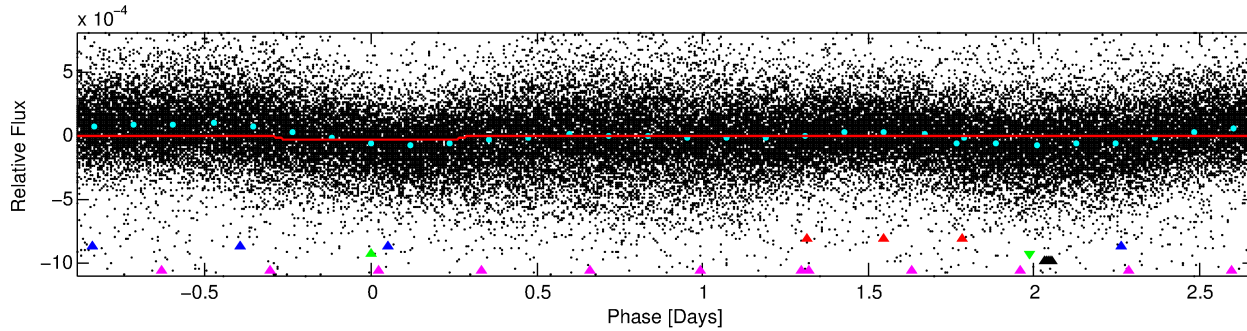
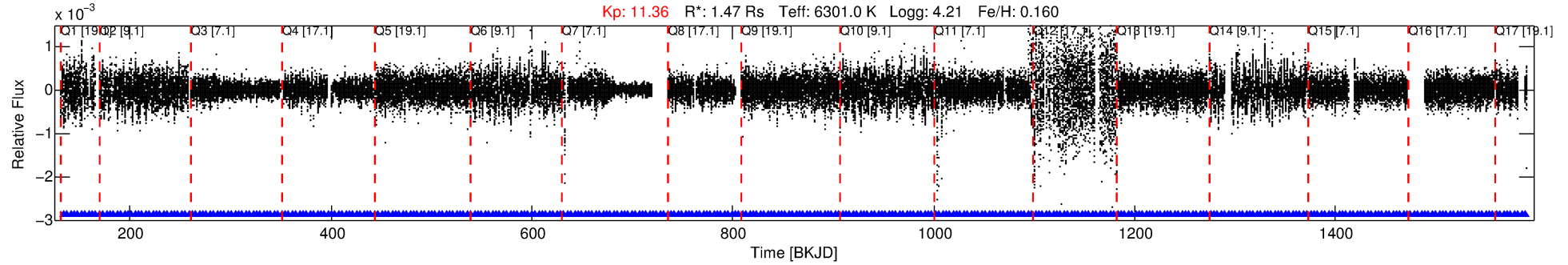
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007135042-03

No Significant Match Found

DV One-Page Summary

KIC: 7135042 Candidate: 3 of 5 Period: 3.556 d



DV Fit Results:

Period = 3.55646 [0.00005] d
Epoch = 134.0829 [0.0062] BKJD
Rp/R* = 0.0060 [0.0007]
a/R* = 1.27 [0.22]
b = 0.90 [0.10]
Seff = 1245.06 [493.44]
Teq = 1515 [150] K
Rp = 0.96 [0.32] Re
a = 0.0495 [0.0128] AU
Ag = 64.99 [28.87] [2.22σ]
Teffp = 6649 [493] K [9.97σ]

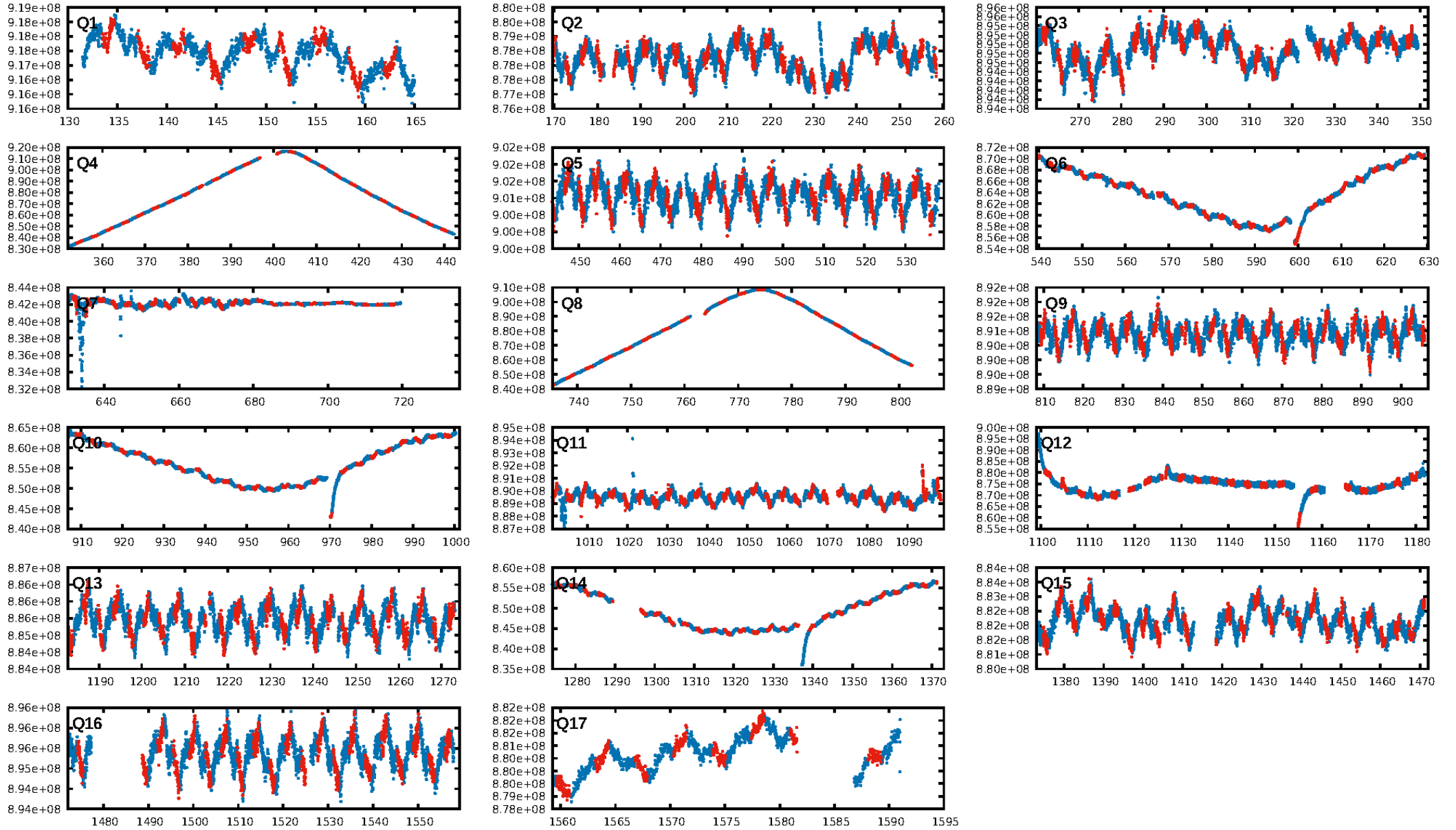
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.9% [3.38σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.50e-08
RollingBand-fgt: 1.00 [368/368]
GhostDiagnostic-chr: 0.9637
Centroid-sig: 0.0%
Centroid-so: 4.240 arcsec [3.70σ]
OotOffset-rm: 2.614 arcsec [3.33σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-rm: 2.231 arcsec [2.63σ]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

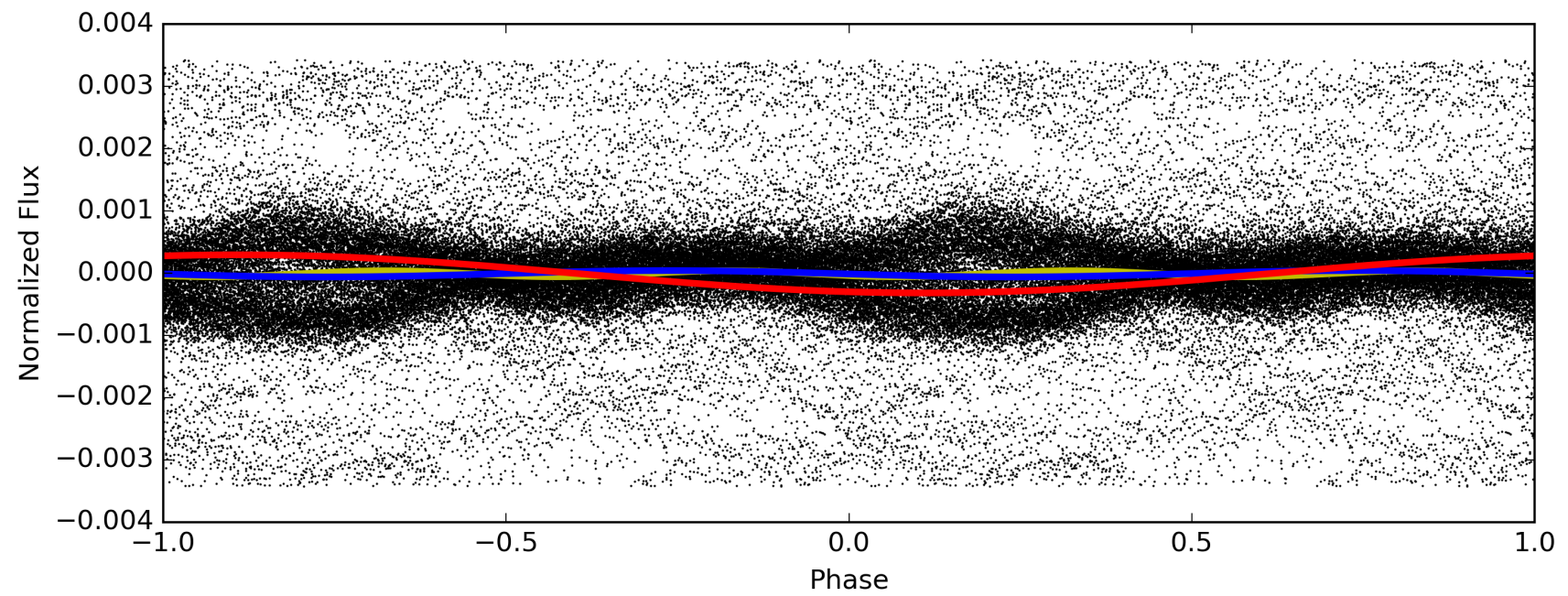
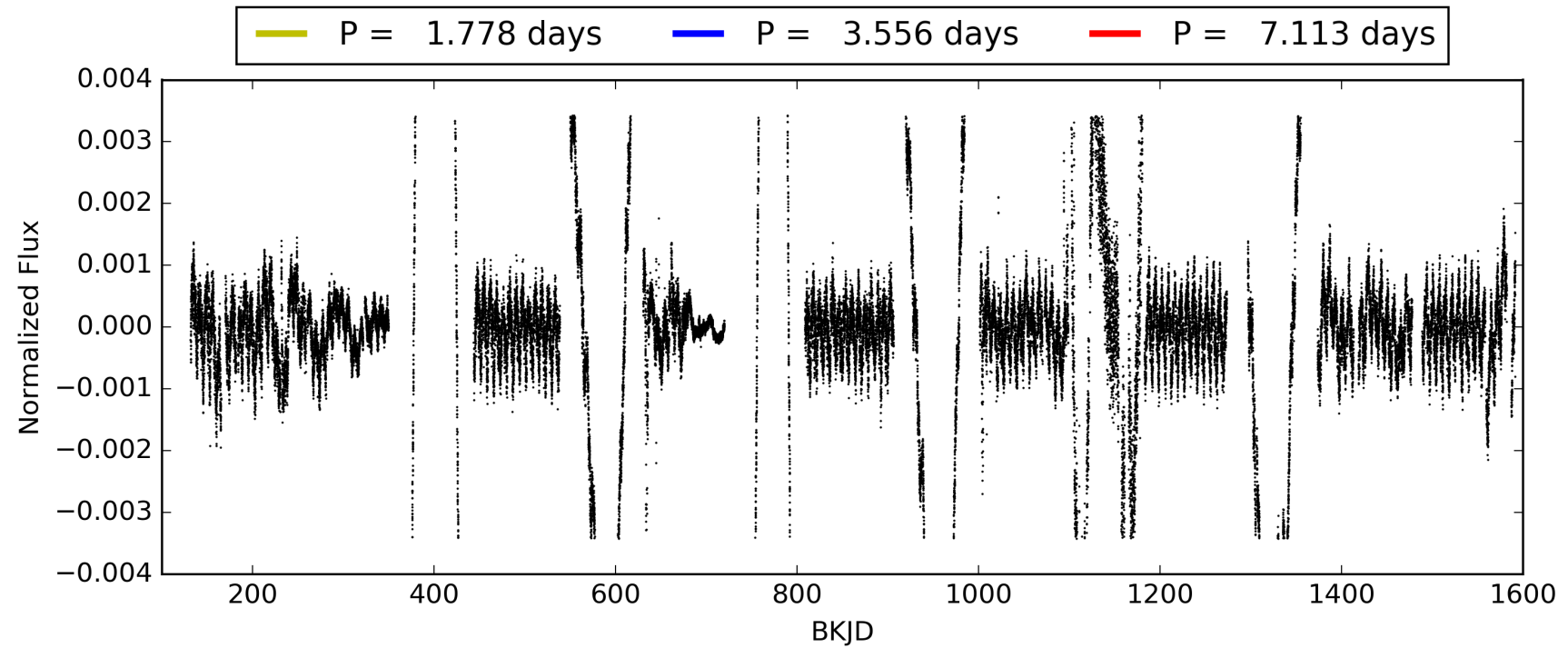
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:24:32 Z

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

TCE 007135042-03, PDC Light Curves

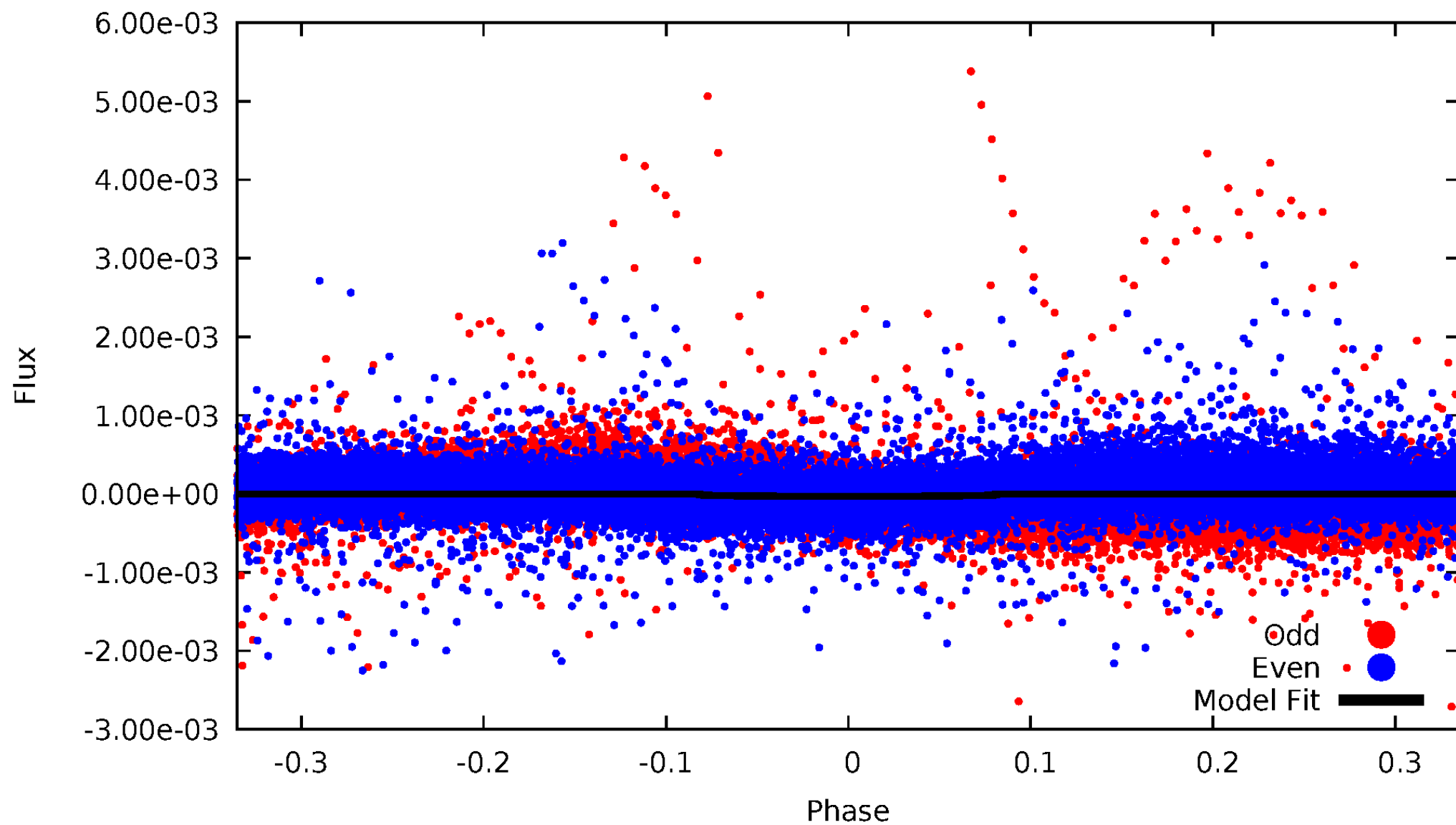


TCE 007135042-03



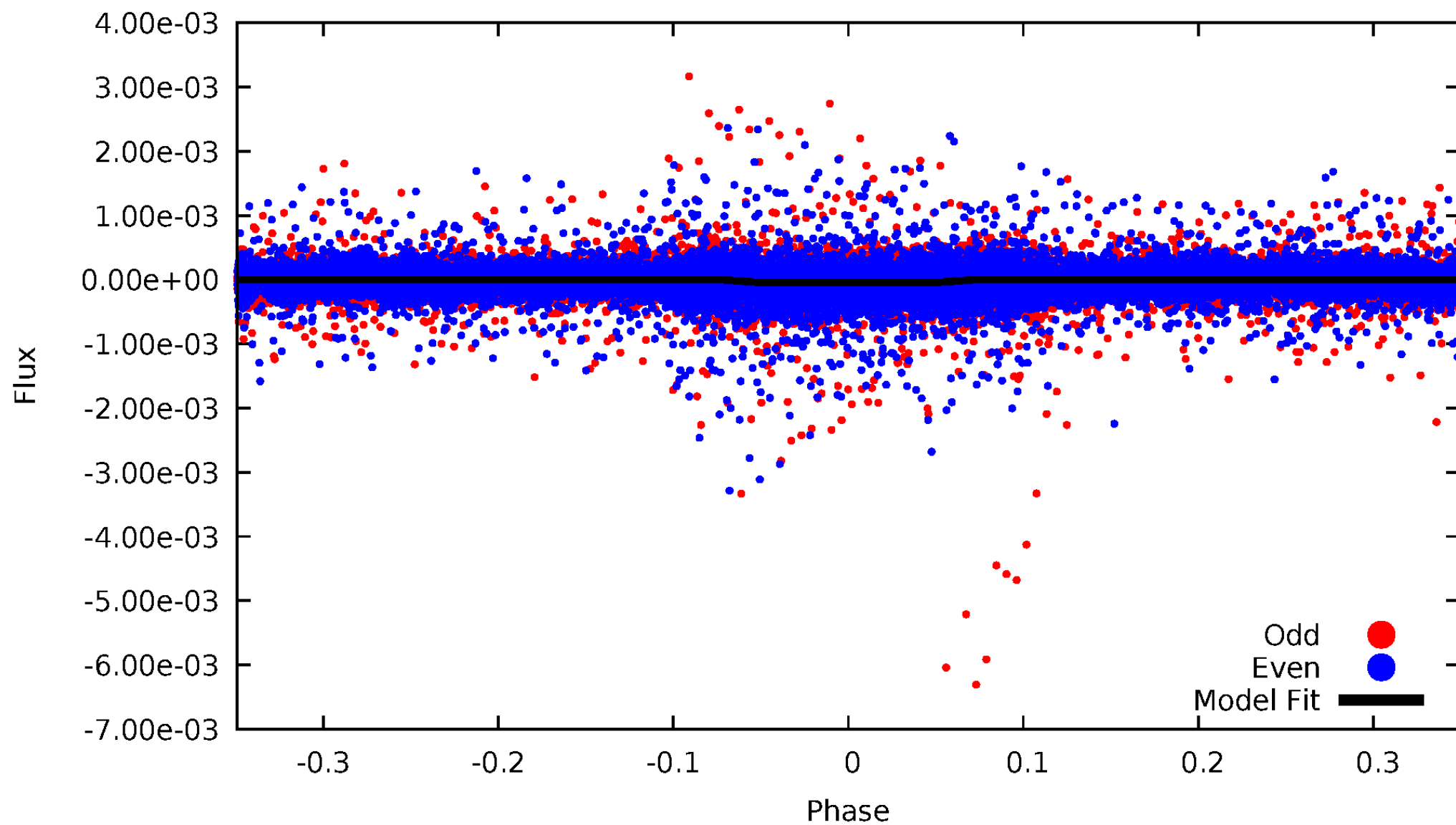
DV Odd/Even

TCE 007135042-03



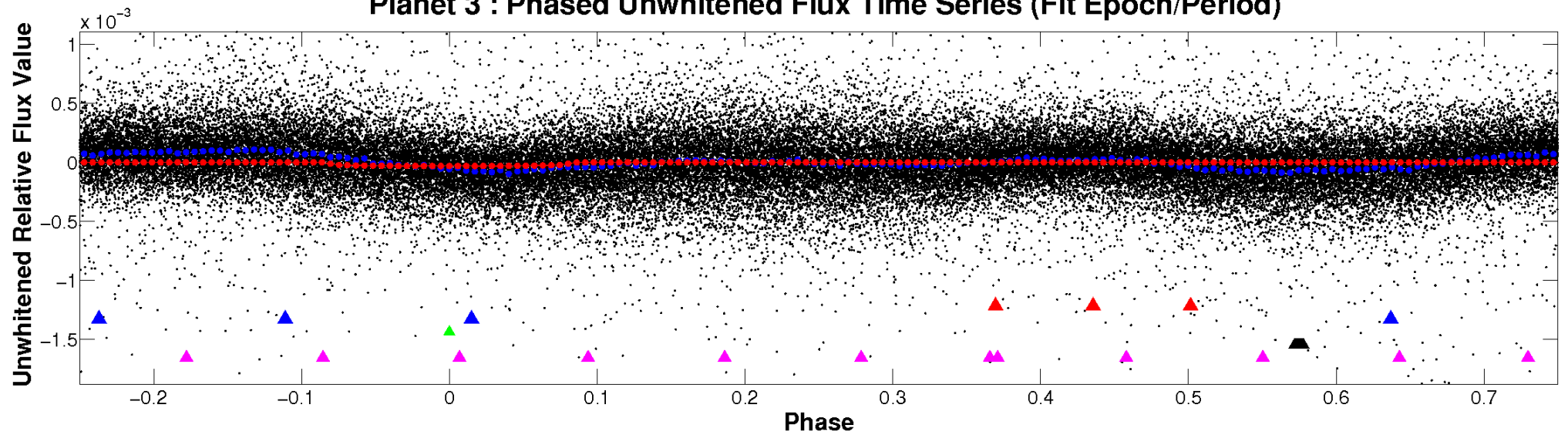
ALT Odd/Even

TCE 007135042-03

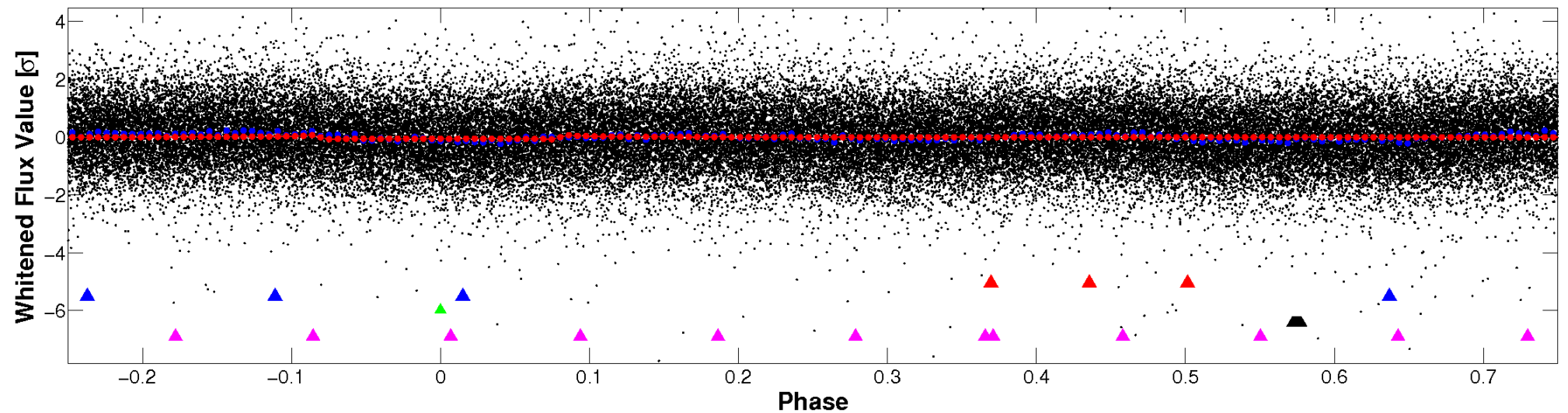


Non-Whitened Vs. Whitened Light Curve

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

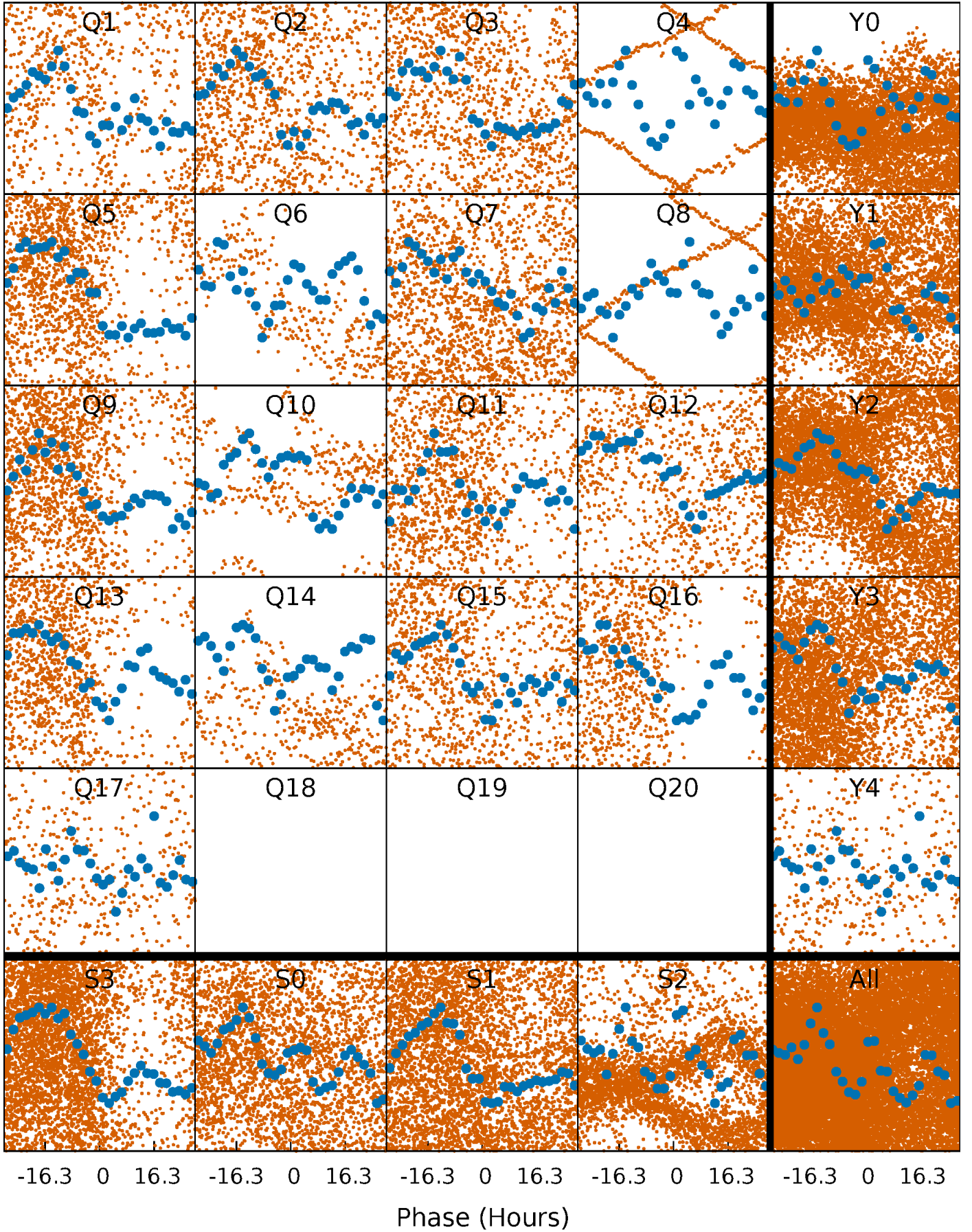


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



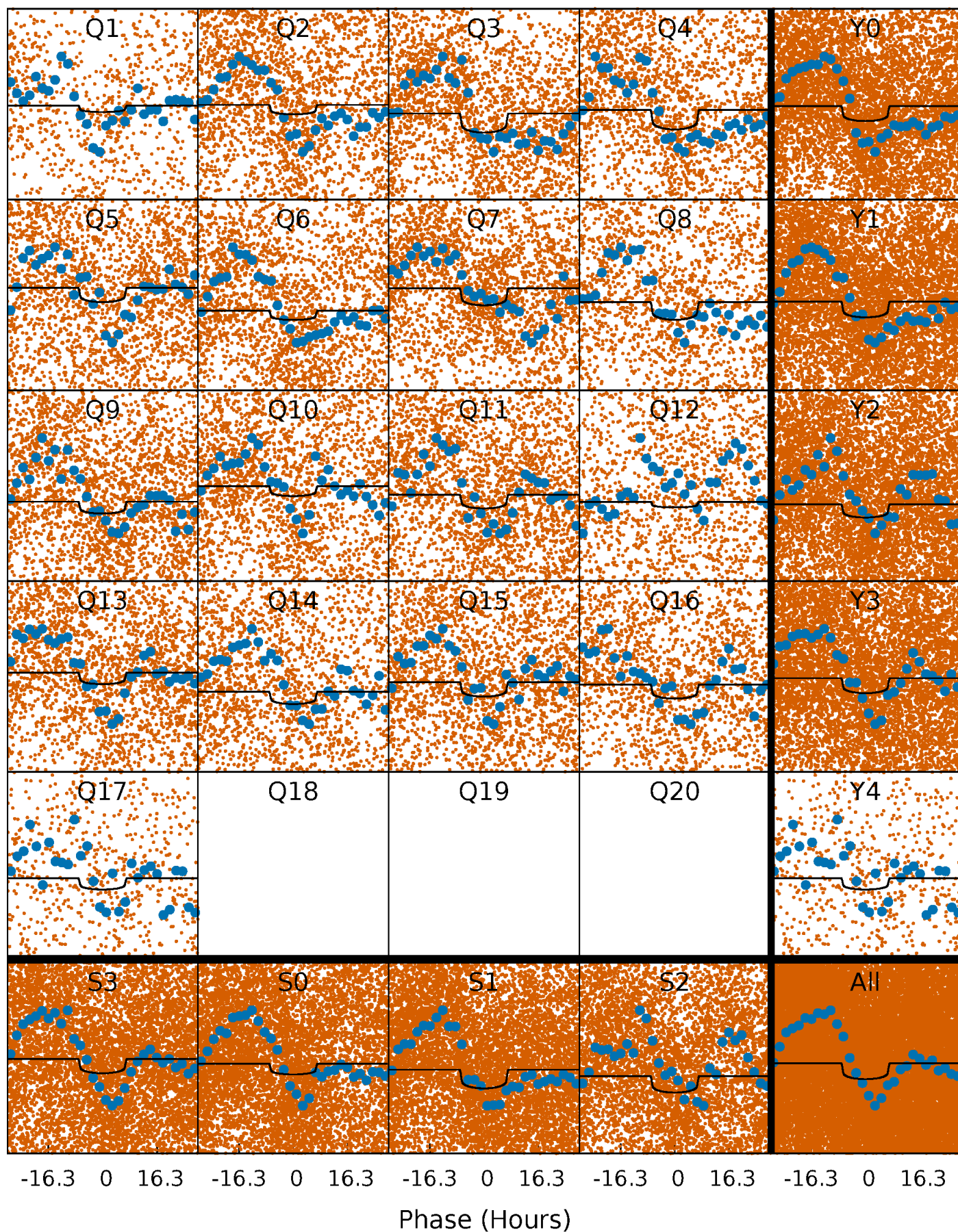
PDC Quarter-Phased Transit Curves

TCE 007135042-03 P= 3.556456 Days $T_0=134.082932$ (BKJD)



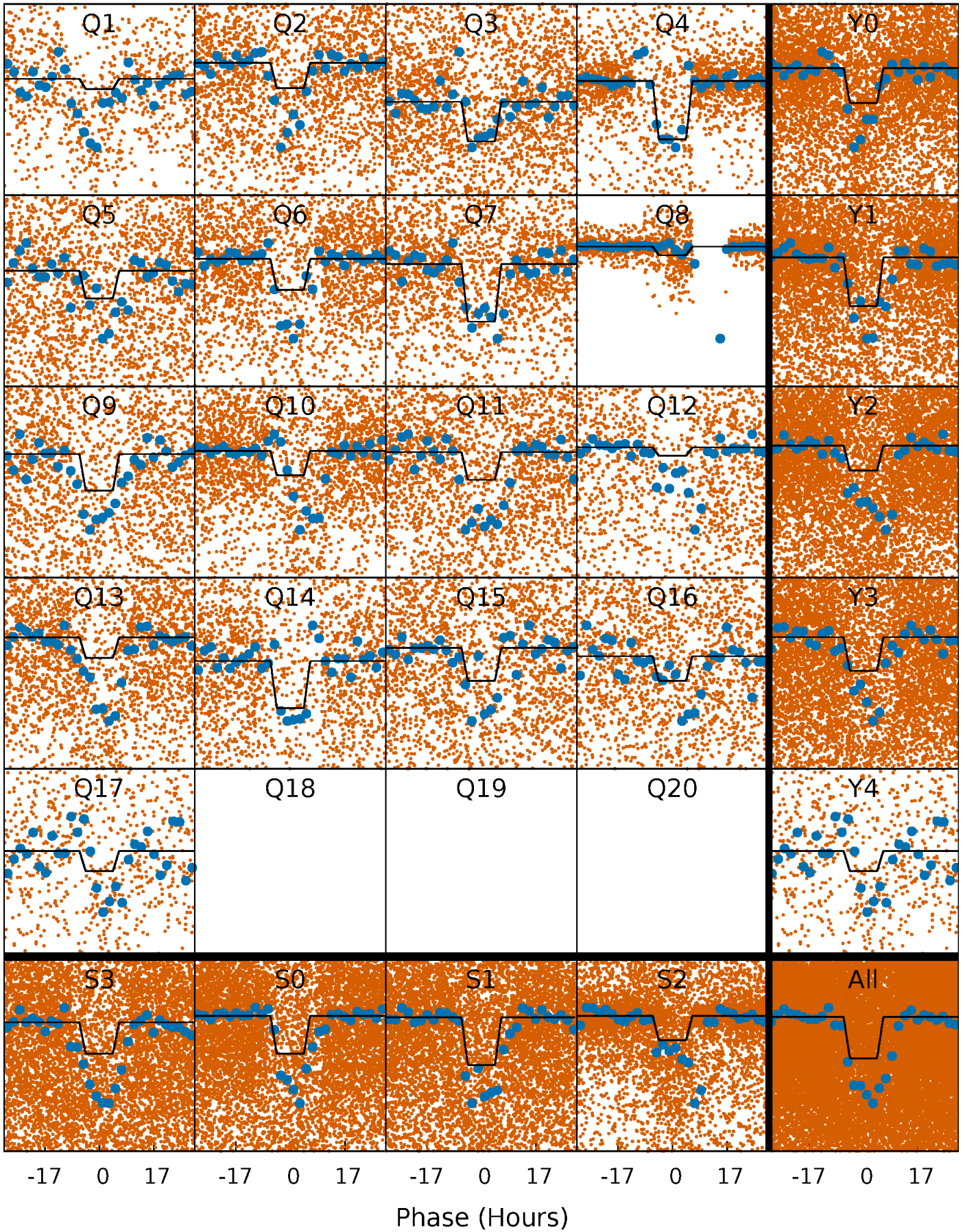
DV Quarter-Phased Transit Curves

TCE 007135042-03 P= 3.556456 Days $T_0=134.082932$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

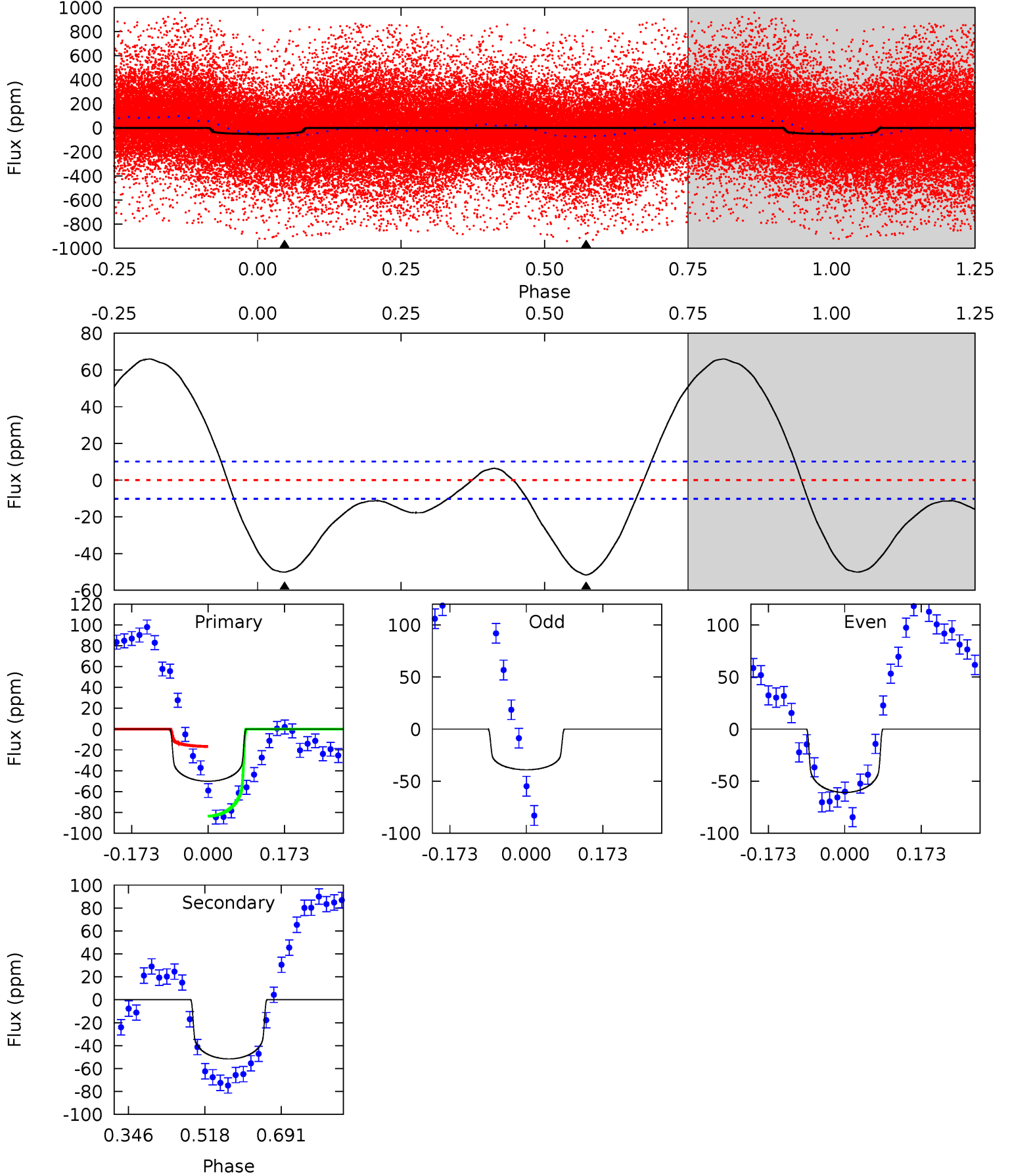
TCE 007135042-03 P= 3.556303 Days $T_0=134.109108$ (BKJD)



DV Model-Shift Uniqueness Test

007135042-03, P = 3.556456 Days, E = 130.526476 Days

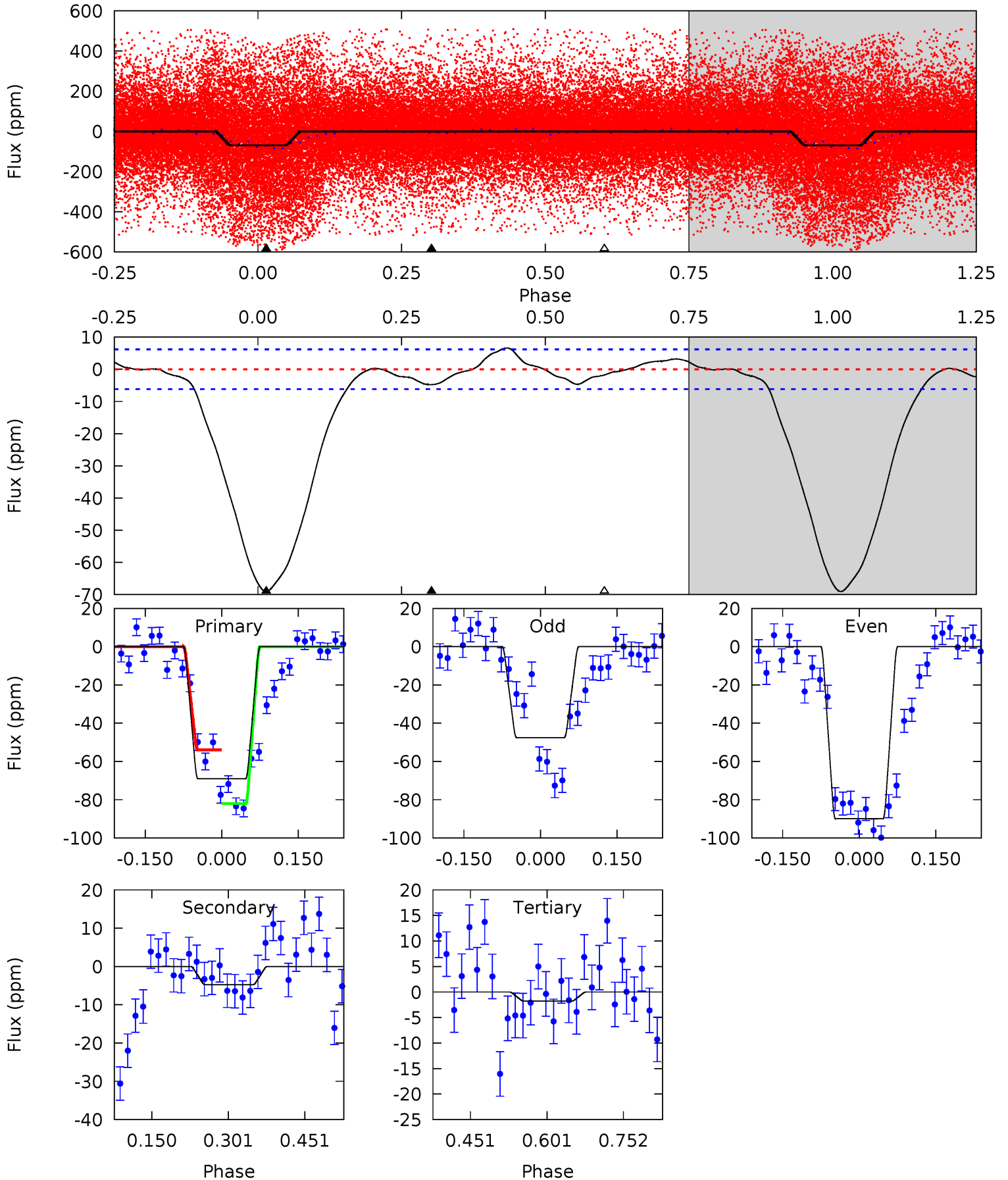
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	22.7	0	0	4.45	1.36	15.5	22.0	22.0	22.7	22.7	4.75	0.52	0.56	14.1



Alt Model-Shift Uniqueness Test

007135042-03, P = 3.556303 Days, E = 130.552805 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.2	3.46	1.30	0	4.48	1.44	1.53	48.9	50.2	2.17	3.46	15.3	1.77	0.09	10.1



Stellar Parameters For KIC 007135042

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6301^{+177}_{-243}	$4.210^{+0.158}_{-0.193}$	$0.160^{+0.200}_{-0.300}$	$1.469^{+0.470}_{-0.353}$	$1.277^{+0.176}_{-0.196}$	$0.568^{+0.455}_{-0.287}$
	+3%/-4%	+4%/-5%	+125%/-188%	+32%/-24%	+14%/-15%	+80%/-51%
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 007135042-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-52 ± 2	$0.96^{+0.21}_{-0.17}$	2127^{+167}_{-145}	6941^{+589}_{-489}	75^{+34}_{-23}
Alt.	-5 ± 1	$1.06^{+0.19}_{-0.15}$	2115^{+170}_{-150}	3884^{+293}_{-274}	$5.508^{+2.793}_{-2.077}$

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

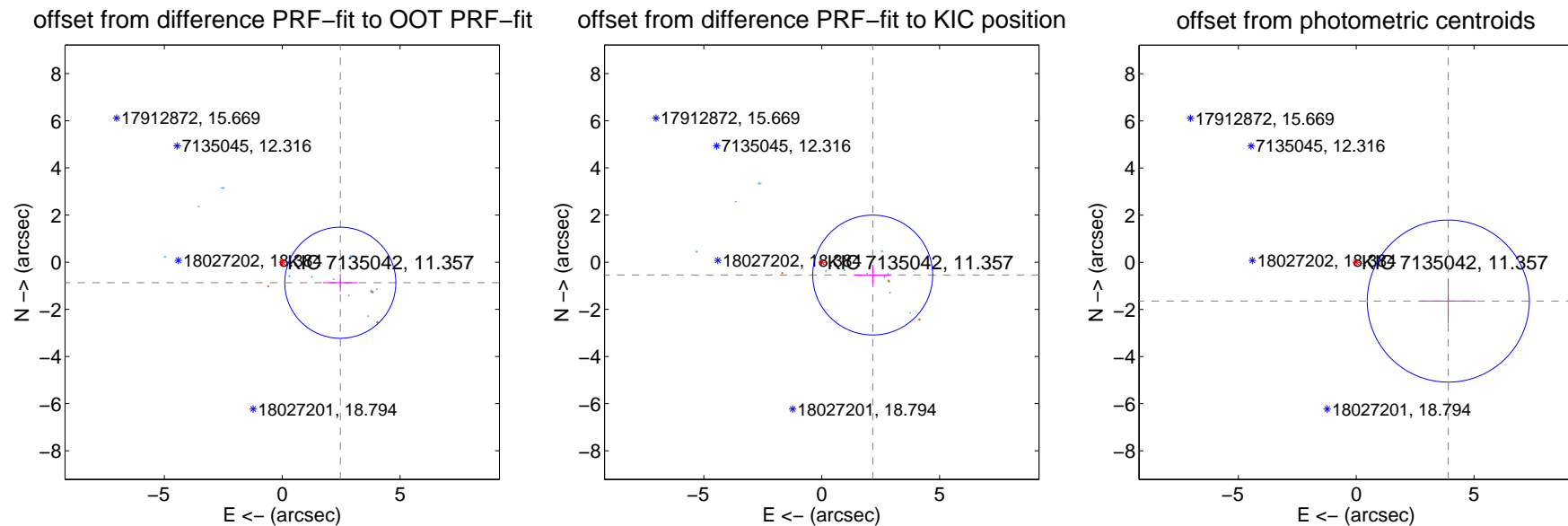
DV Centroid Data

Supplemental centroid analysis for 007135042-03. **Kepler magnitude: 11.36**. Transit SNR 7.43

There are 12 quarters with good PRF difference image offsets

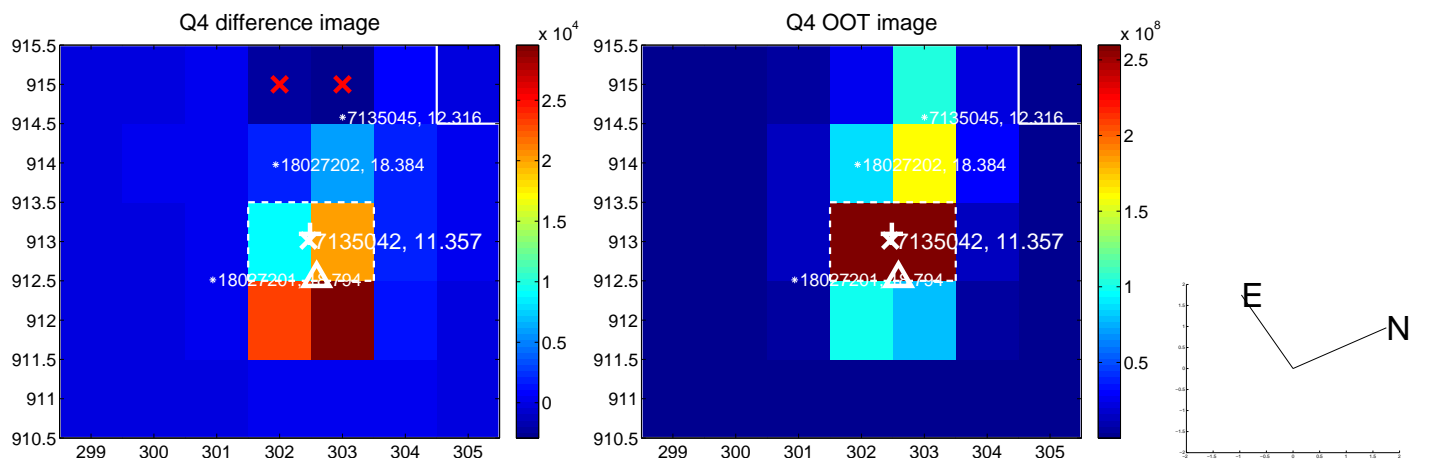
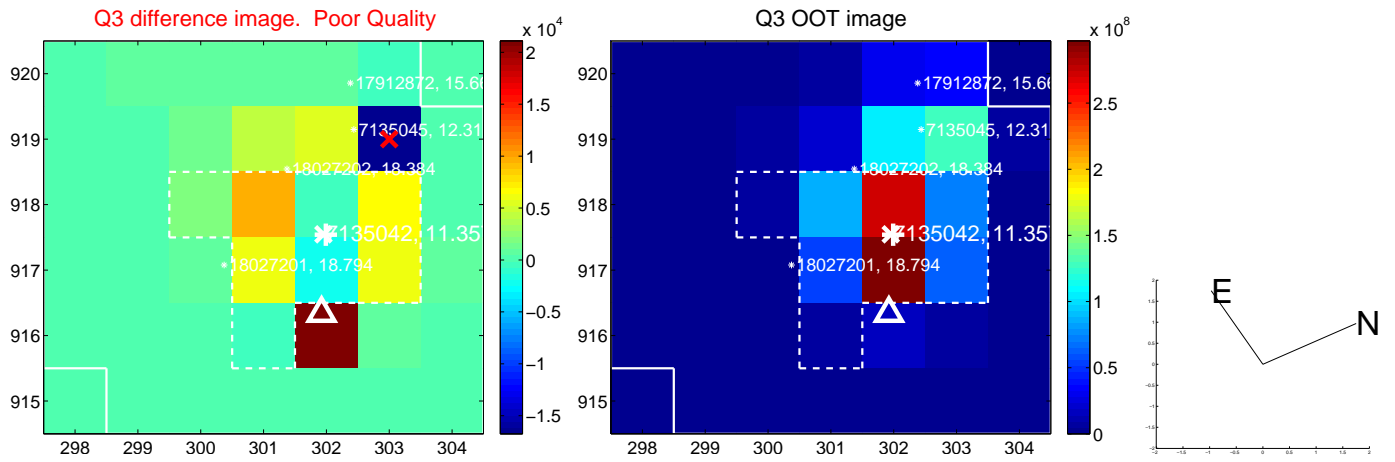
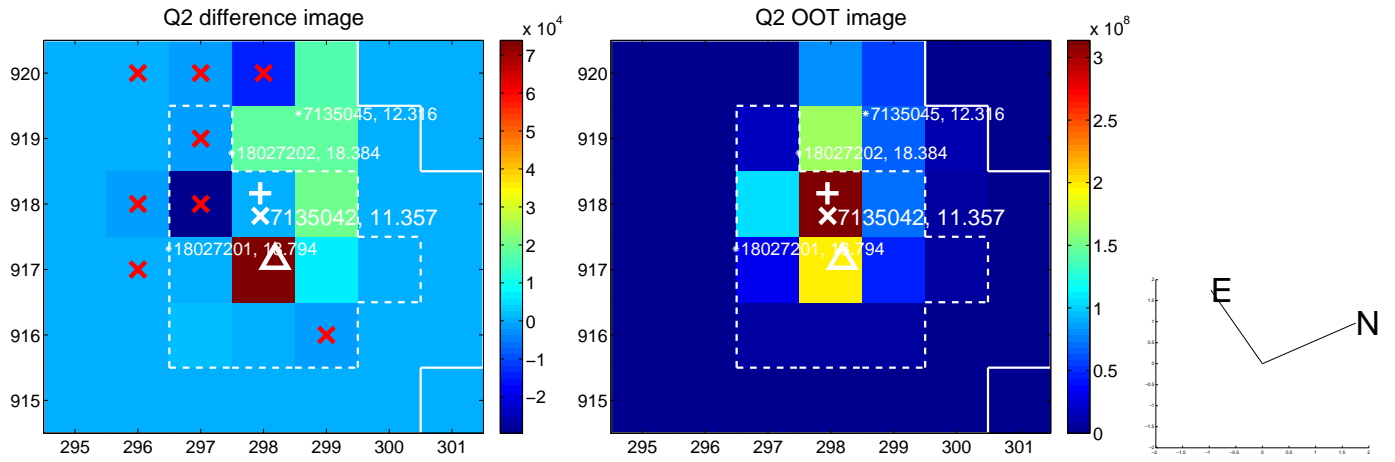
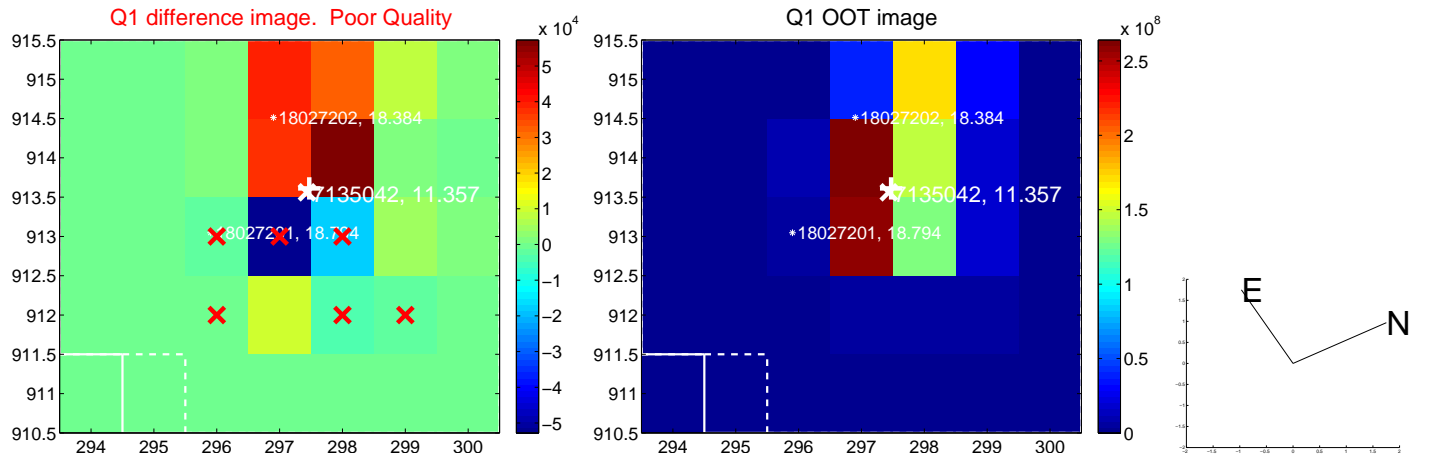
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.614 ± 0.785	3.33	-2.464 ± 0.730	-0.872 ± 0.379
PRF-fit source offset from KIC position	2.231 ± 0.848	2.63	-2.164 ± 0.792	-0.545 ± 0.403
photometric centroid source offset	4.24 ± 1.15	3.70	-3.91 ± 1.18	-1.65 ± 0.95

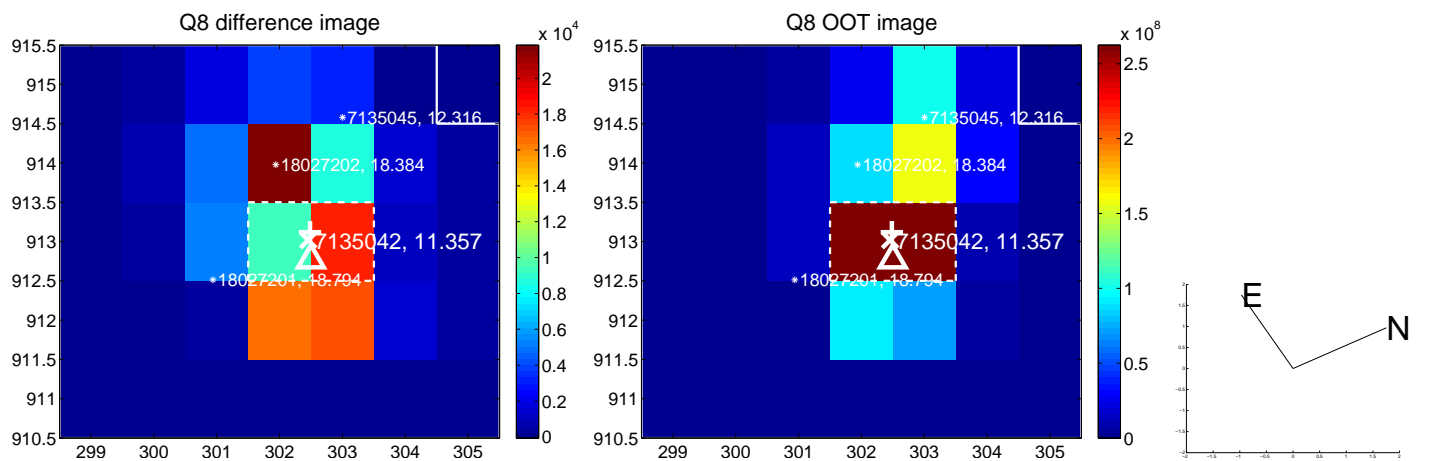
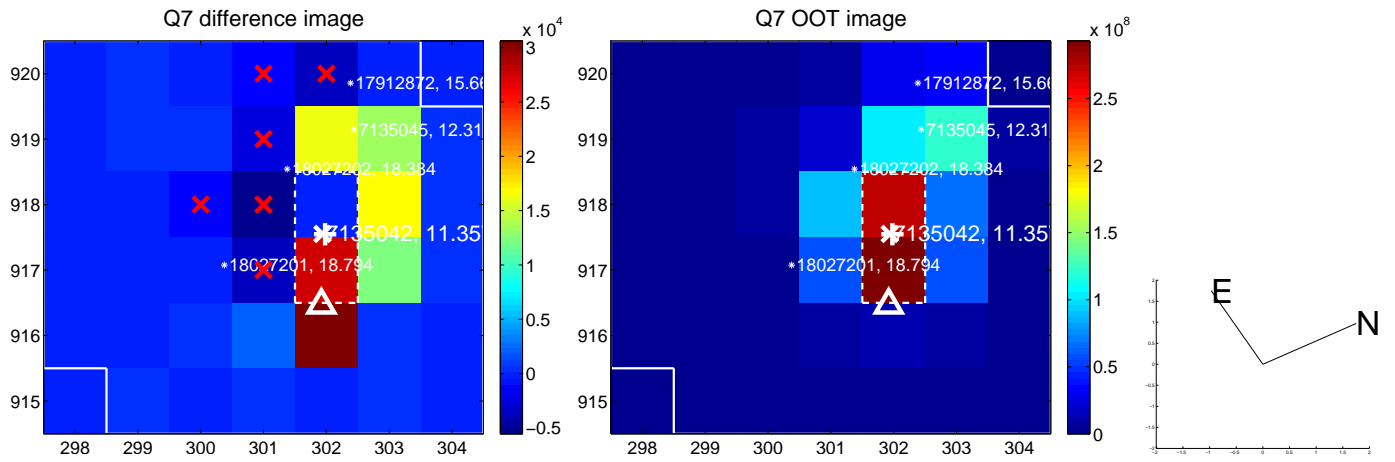
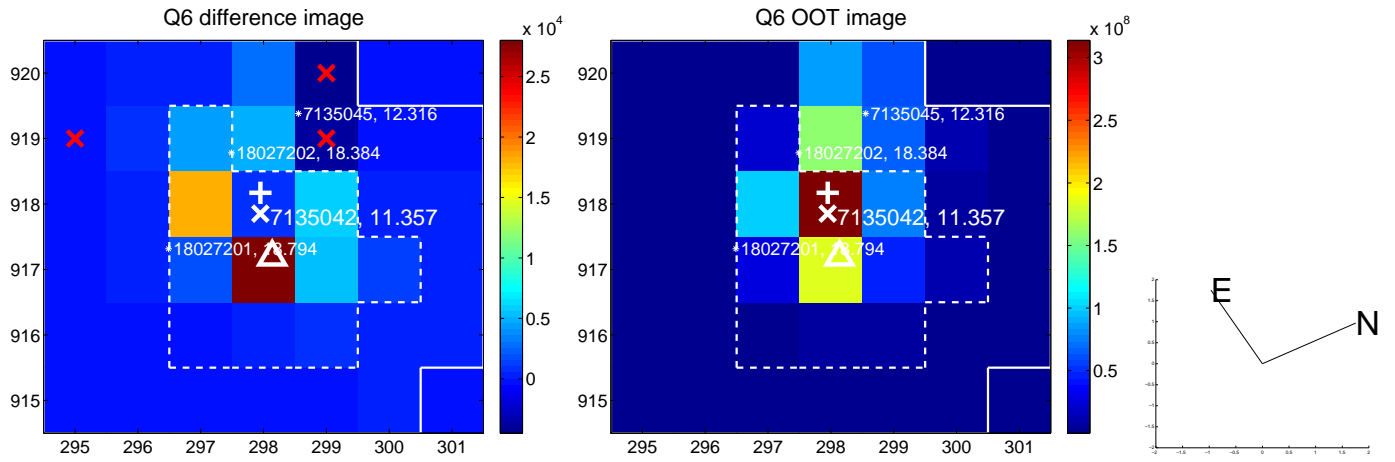
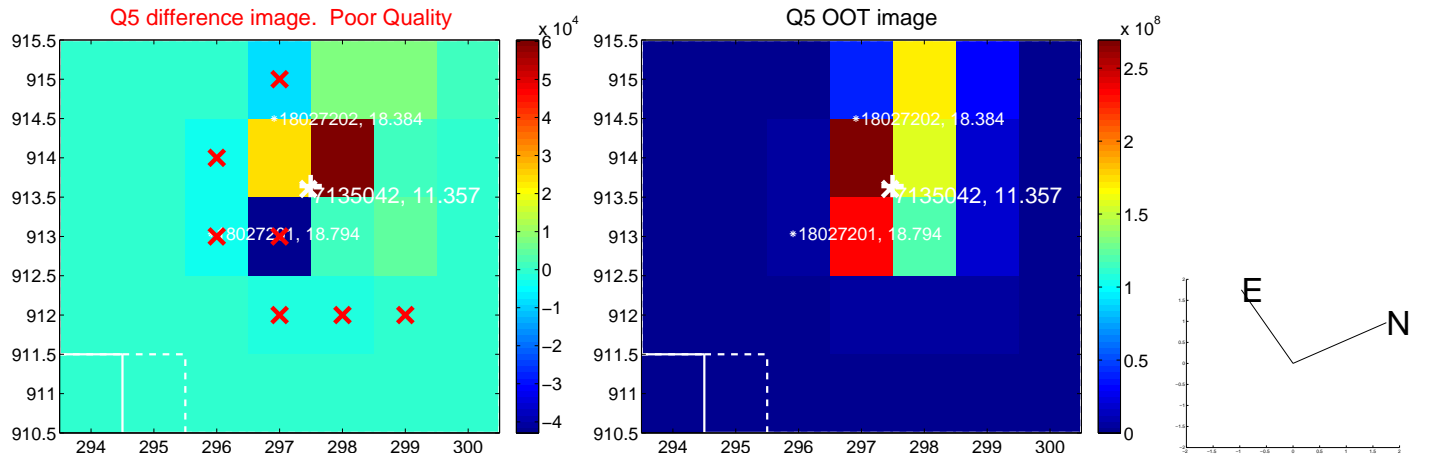


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

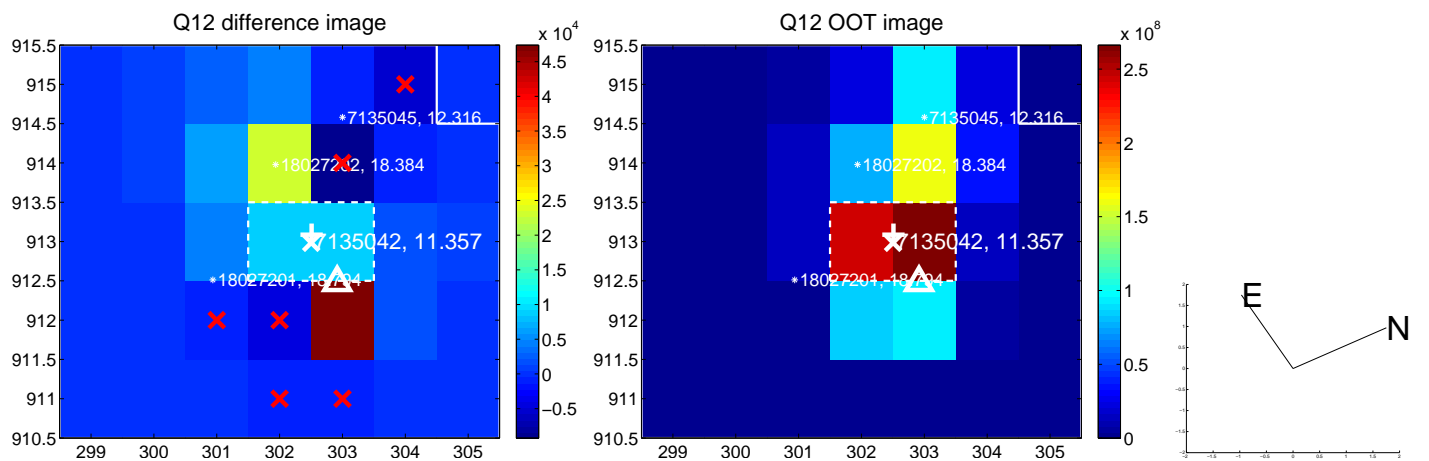
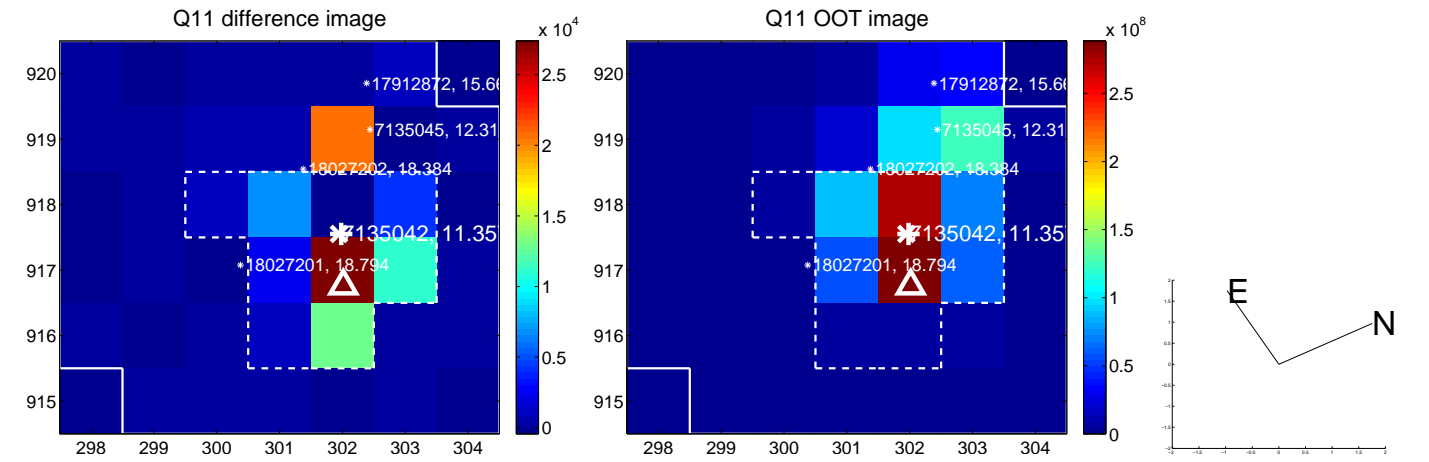
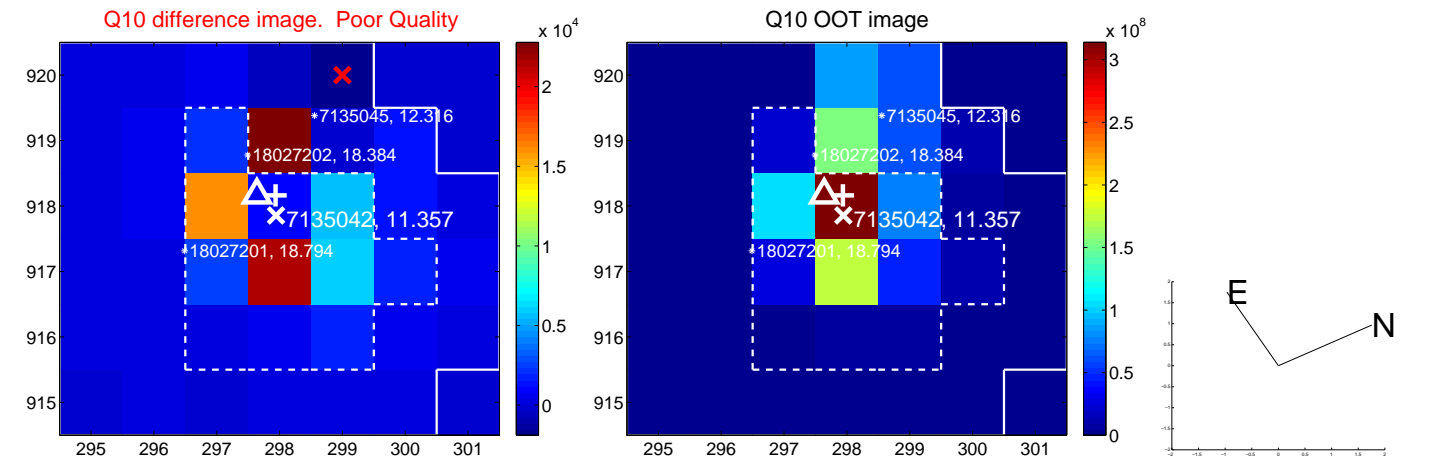
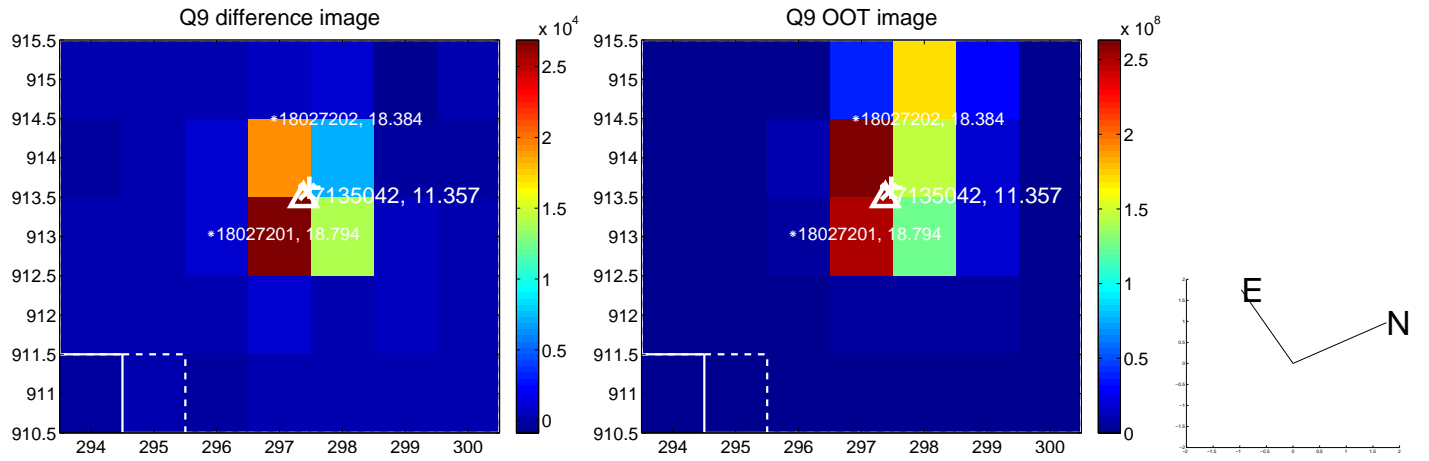
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



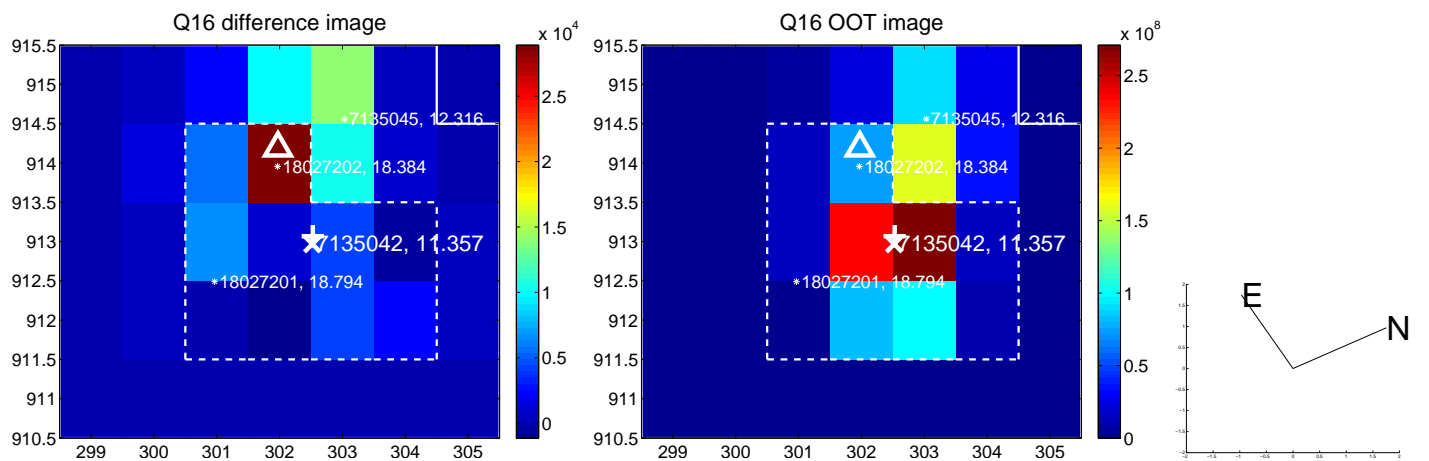
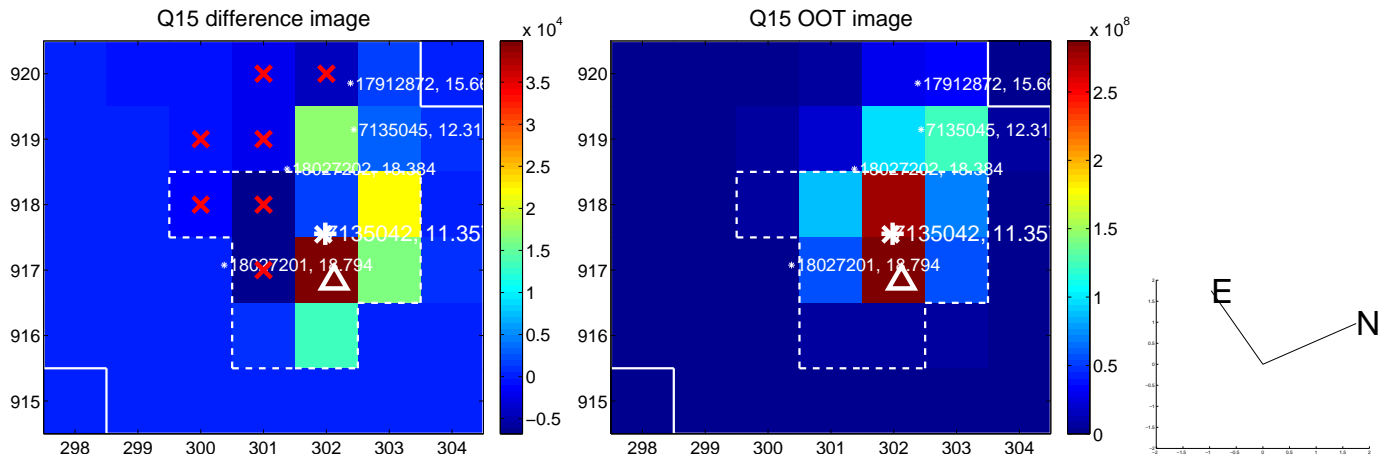
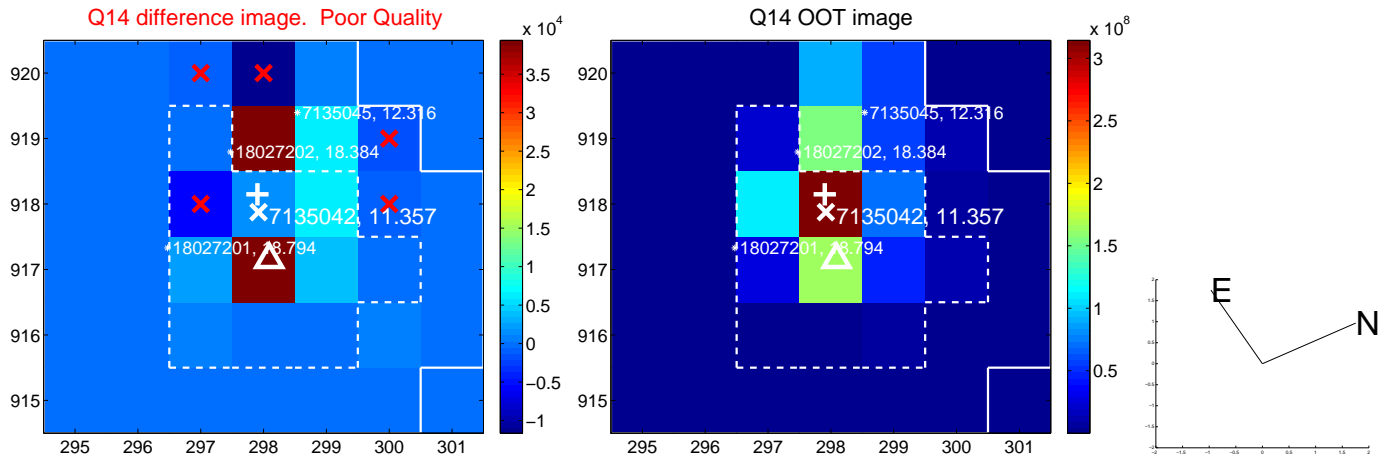
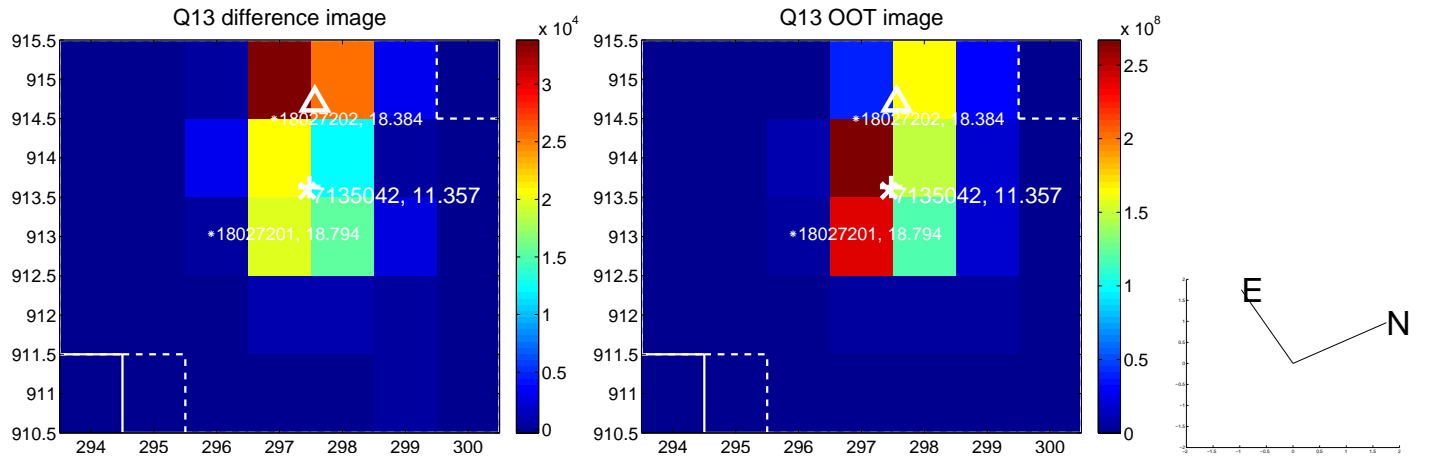
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



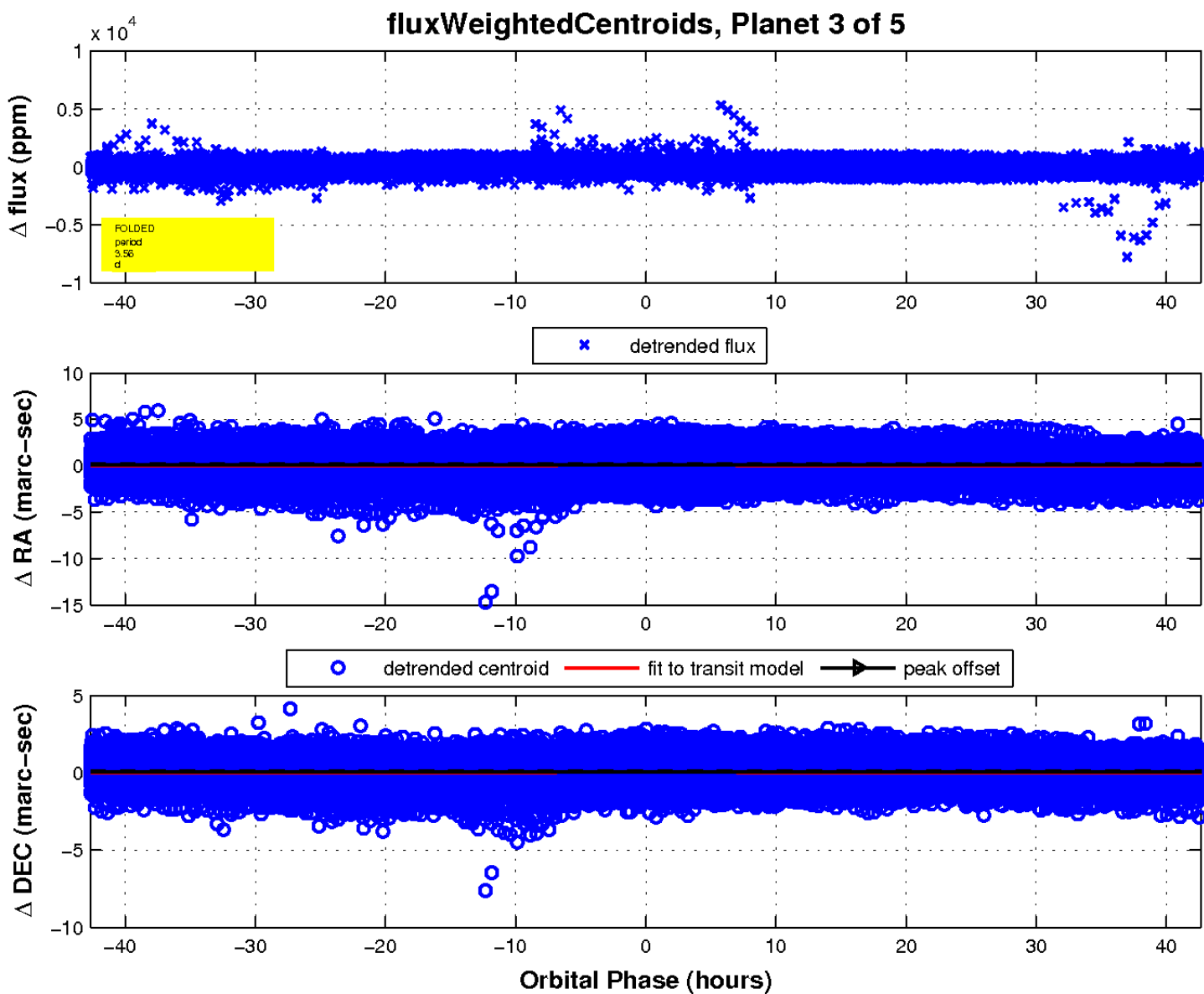
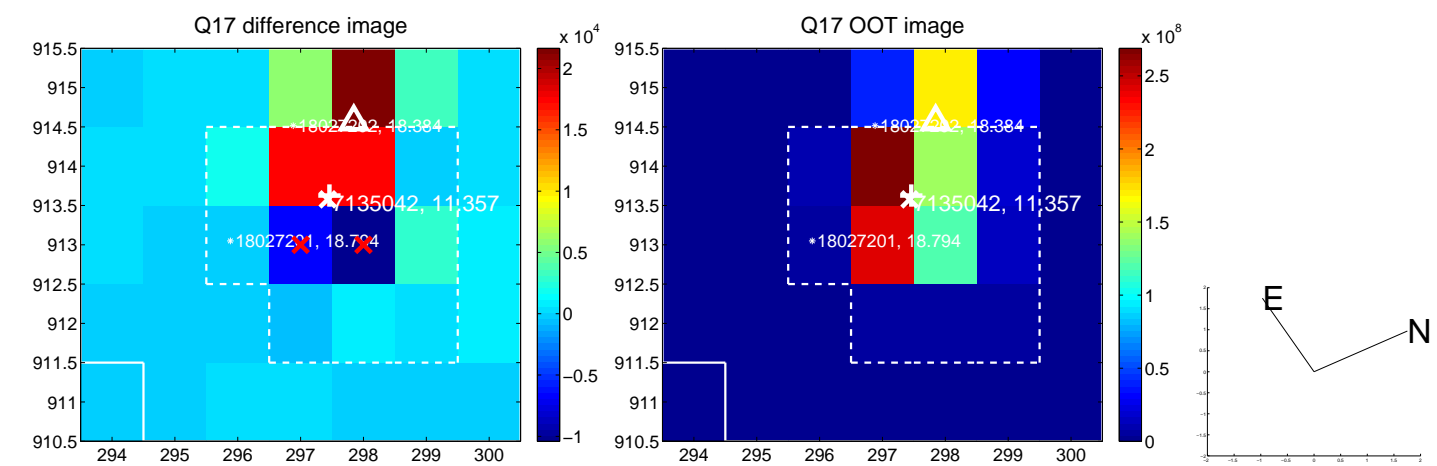
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

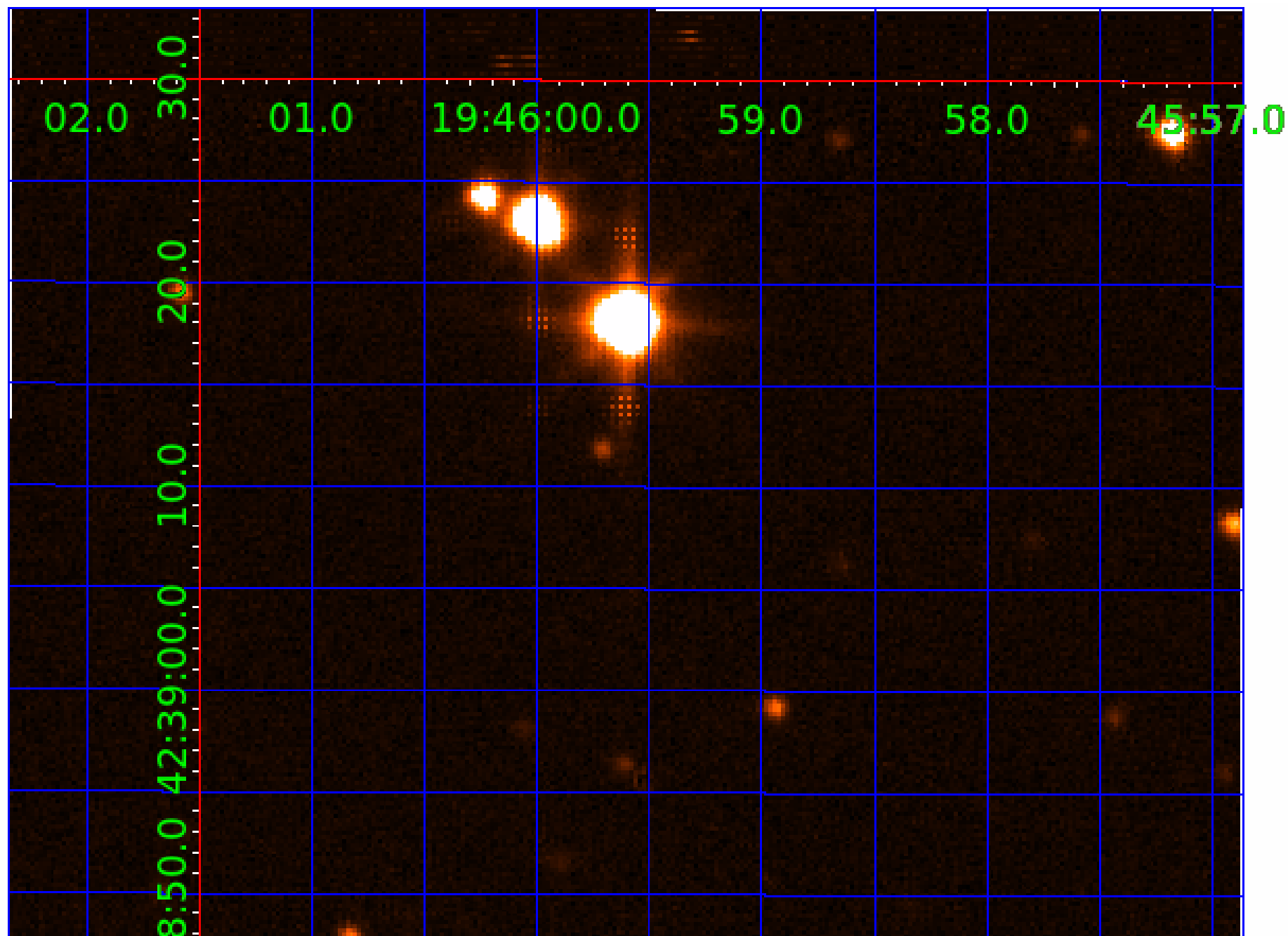


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007135042

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})
007135042-01	OBS	No	480.356200	153.179454	301.8	7.082	16.8	3.2	1.47	6301	2.60	1.80
007135042-02	OBS	No	476.116846	159.031537	286.6	17.650	14.8	4.2	1.47	6301	2.60	1.82
007135042-03	OBS	No	3.556456	134.082932	30.8	14.299	8.8	7.4	1.47	6301	0.96	1245.06
007135042-04	OBS	No	7.112805	136.138068	74.2	20.772	12.8	15.0	1.47	6301	1.35	494.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007135042-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
007135042-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS— CENT_SATURATED
007135042-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
007135042-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

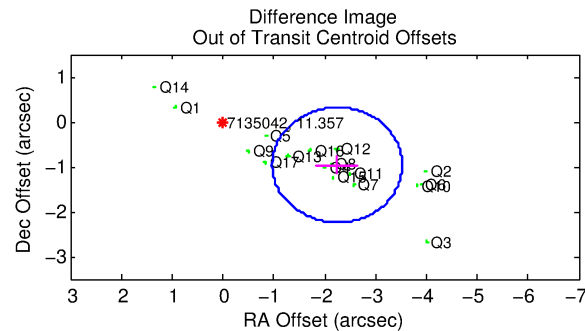
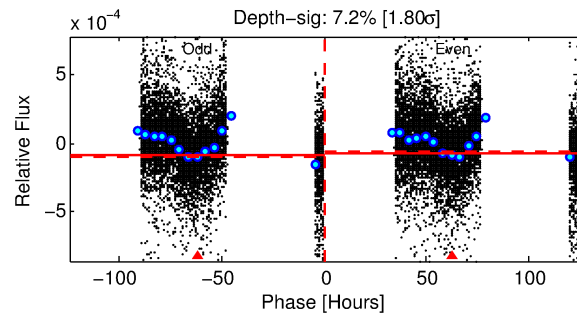
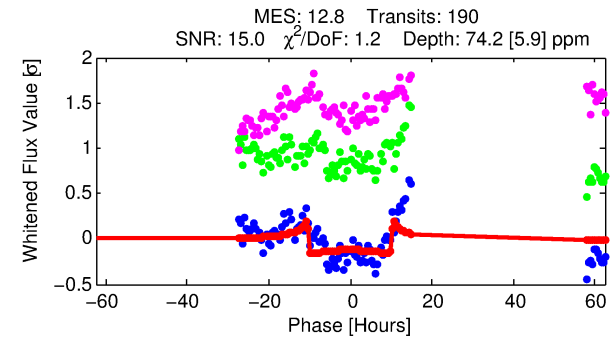
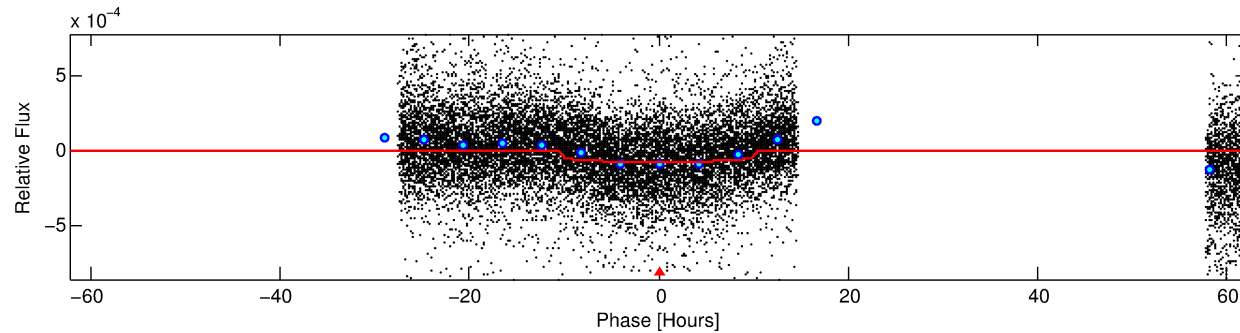
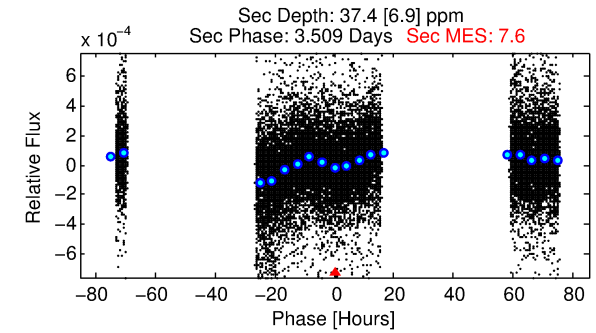
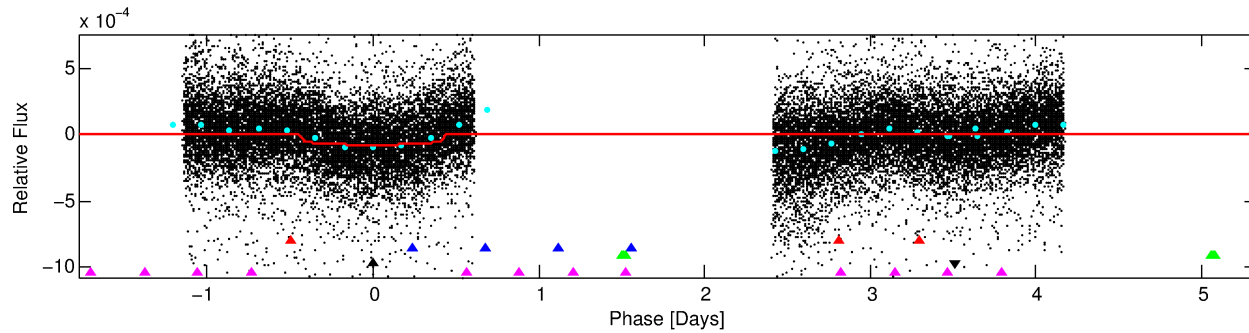
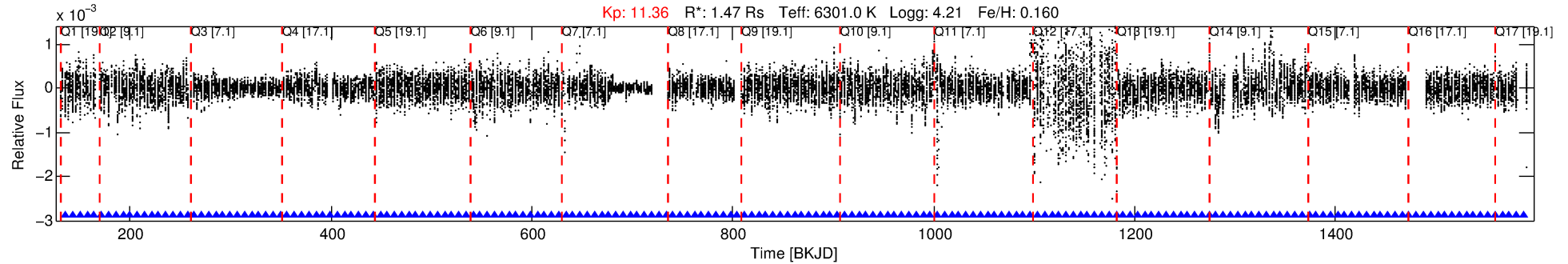
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007135042-04

No Significant Match Found

DV One-Page Summary

KIC: 7135042 Candidate: 4 of 5 Period: 7.113 d



DV Fit Results:

Period = 7.11281 [0.00006] d
Epoch = 136.1381 [0.0056] BKJD
Rp/R* = 0.0084 [0.0008]
a/R* = 2.08 [0.65]
b = 0.69 [0.31]
Seff = 494.11 [195.82]
Teq = 1202 [119] K
Rp = 1.35 [0.45] Re
a = 0.0785 [0.0204] AU
Ag = 69.57 [31.30] [2.19σ]
Teffp = 5368 [409] K [9.78σ]

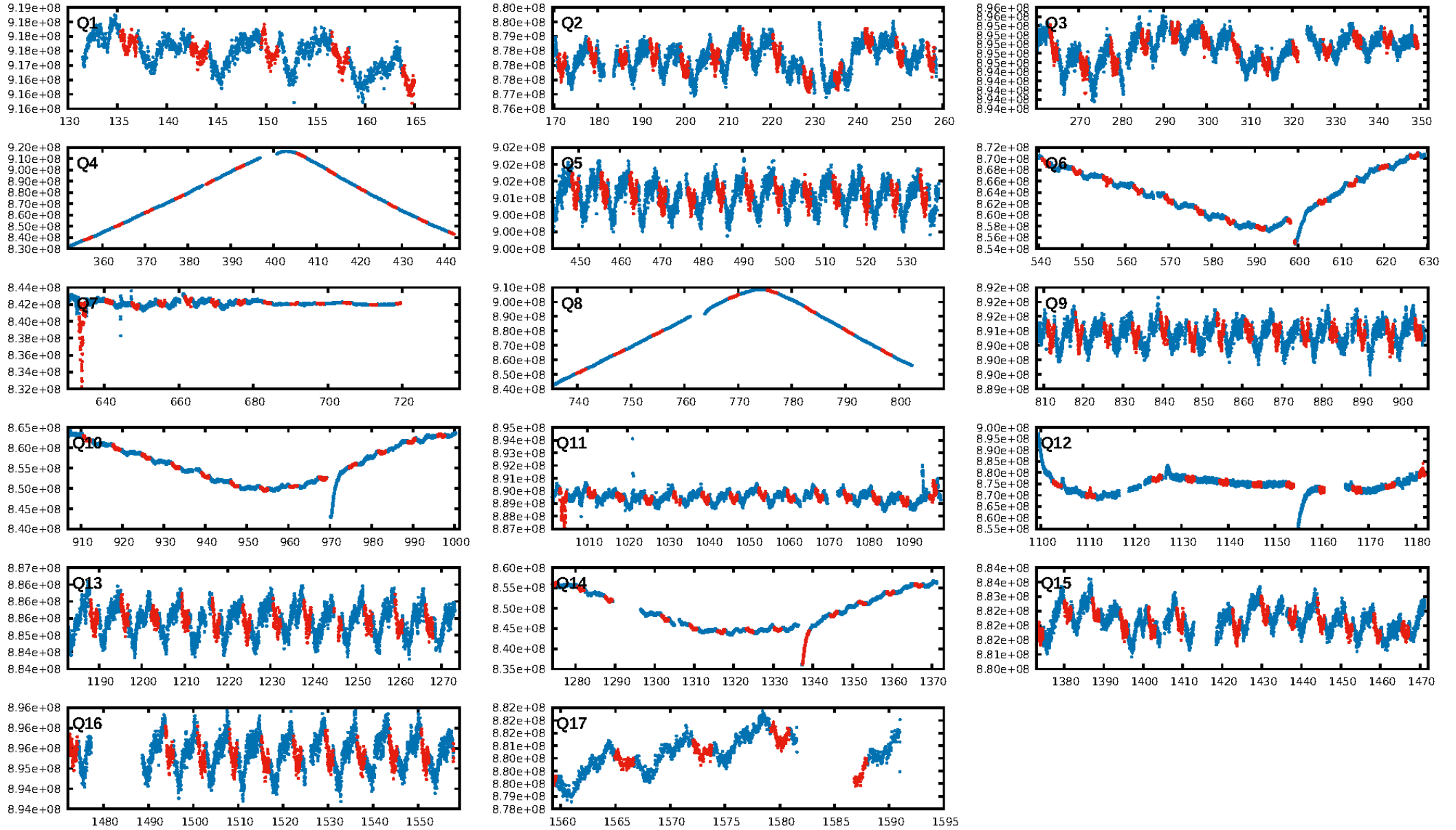
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.38σ]
LongPeriod-sig: 100.0% [130.14σ]
ModelChiSquare2-sig: 18.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.17e-14
RollingBand-fgt: 1.00 [182/182]
GhostDiagnostic-chr: 0.6017
Centroid-sig: 0.1%
Centroid-so: 0.309 arcsec [0.45σ]
OotOffset-rm: 2.443 arcsec [5.73σ]
KicOffset-rm: 2.144 arcsec [5.15σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.00 [0/17]

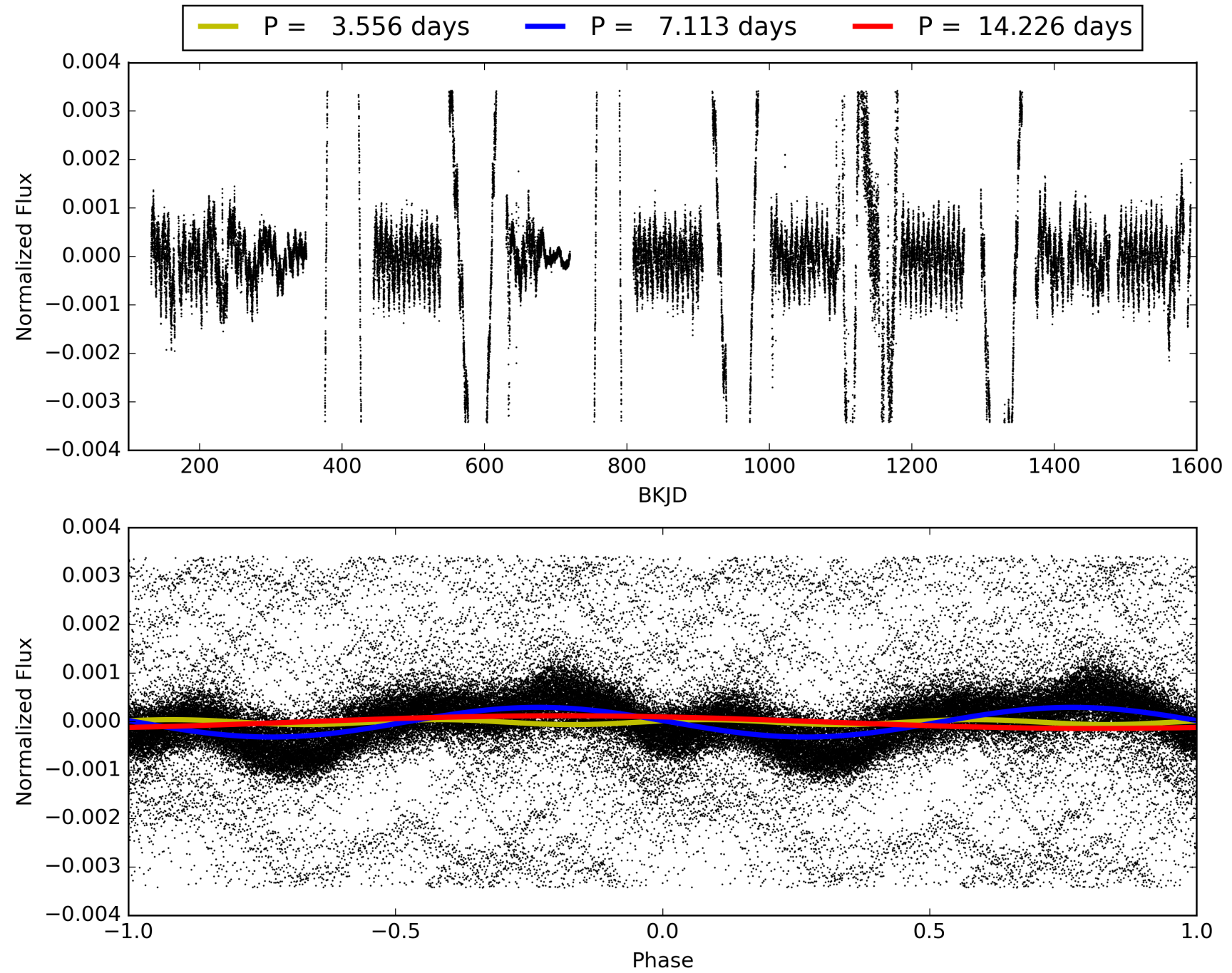
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:24:44 Z

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

TCE 007135042-04, PDC Light Curves

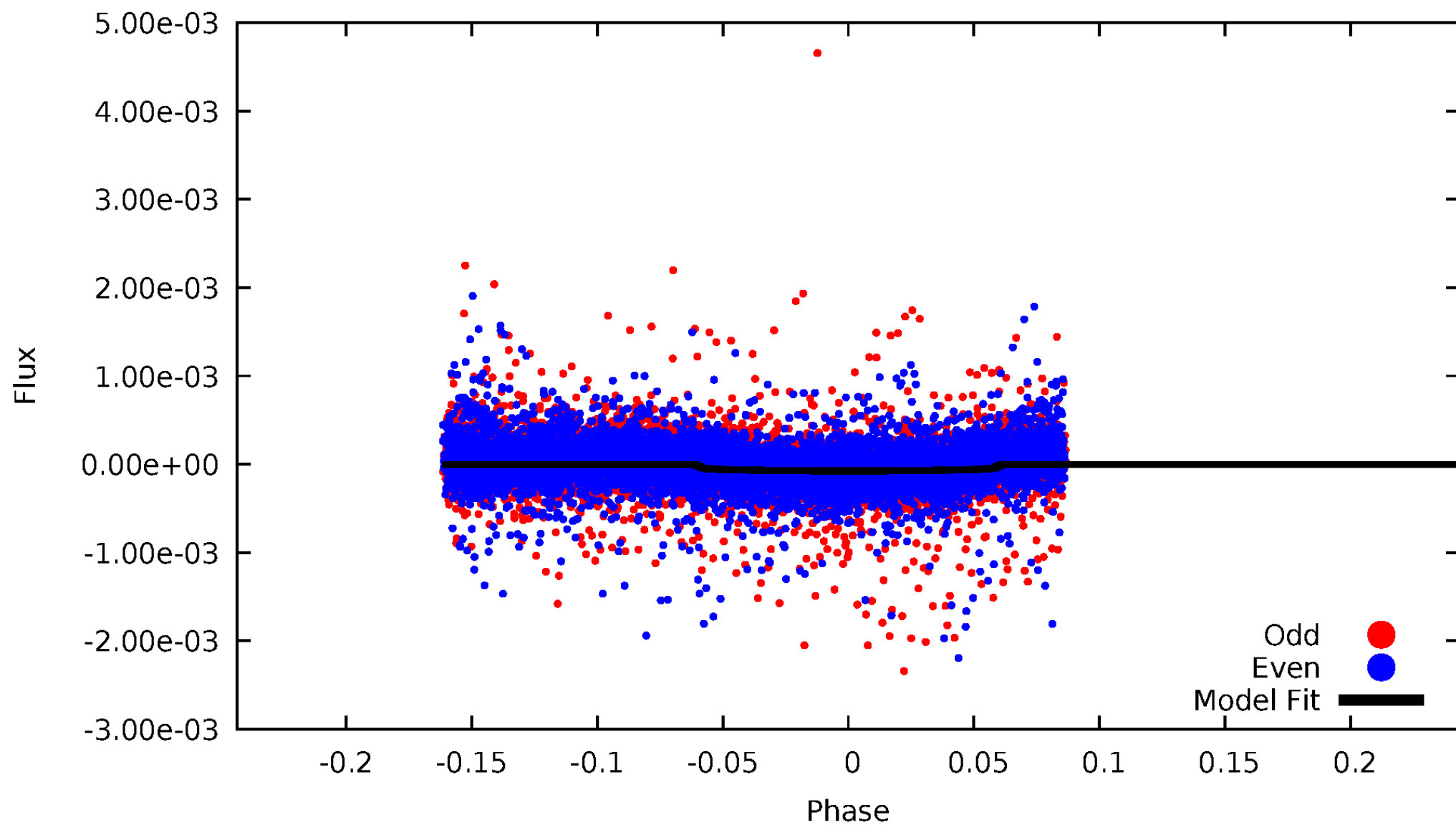


TCE 007135042-04



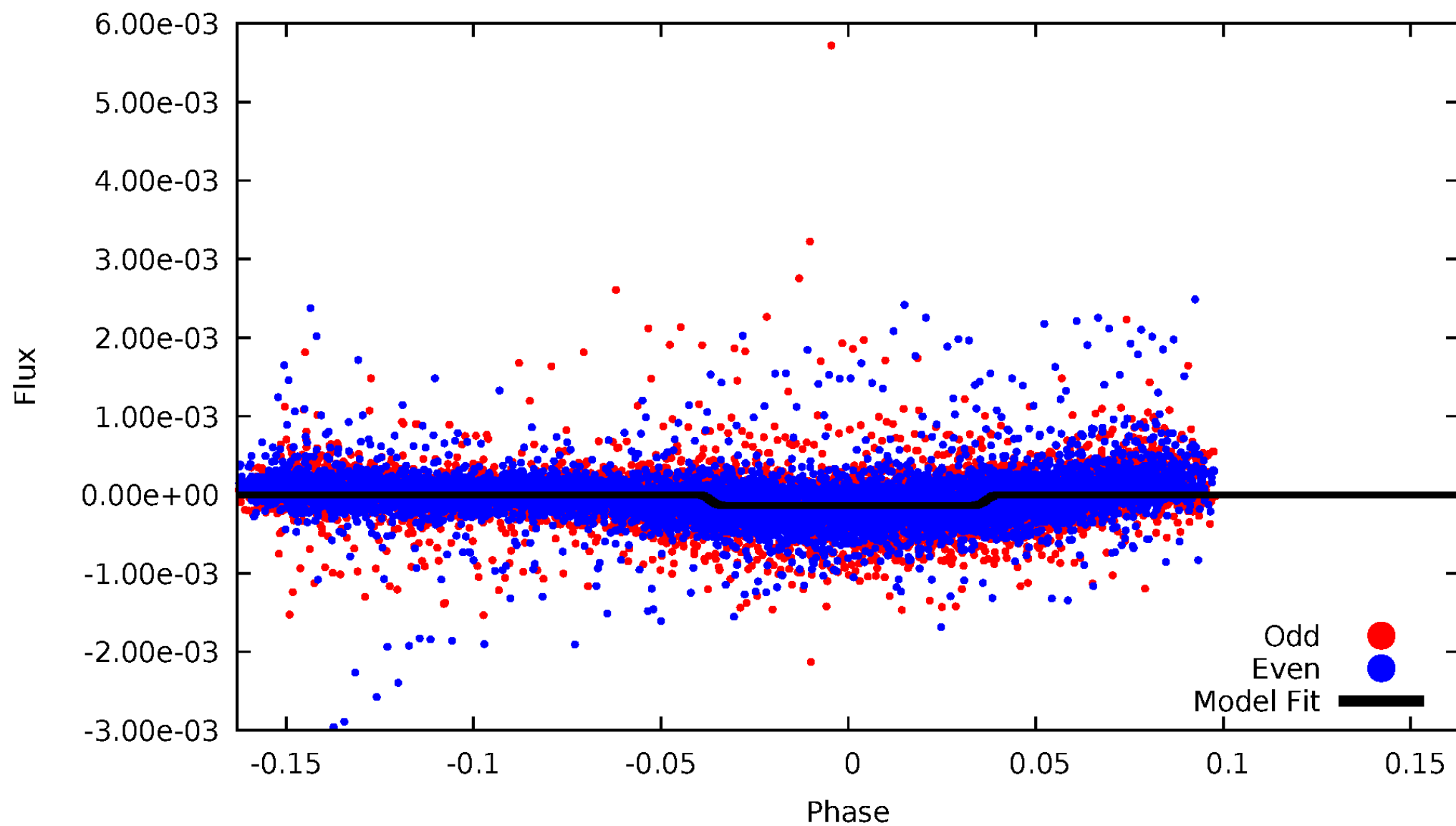
DV Odd/Even

TCE 007135042-04



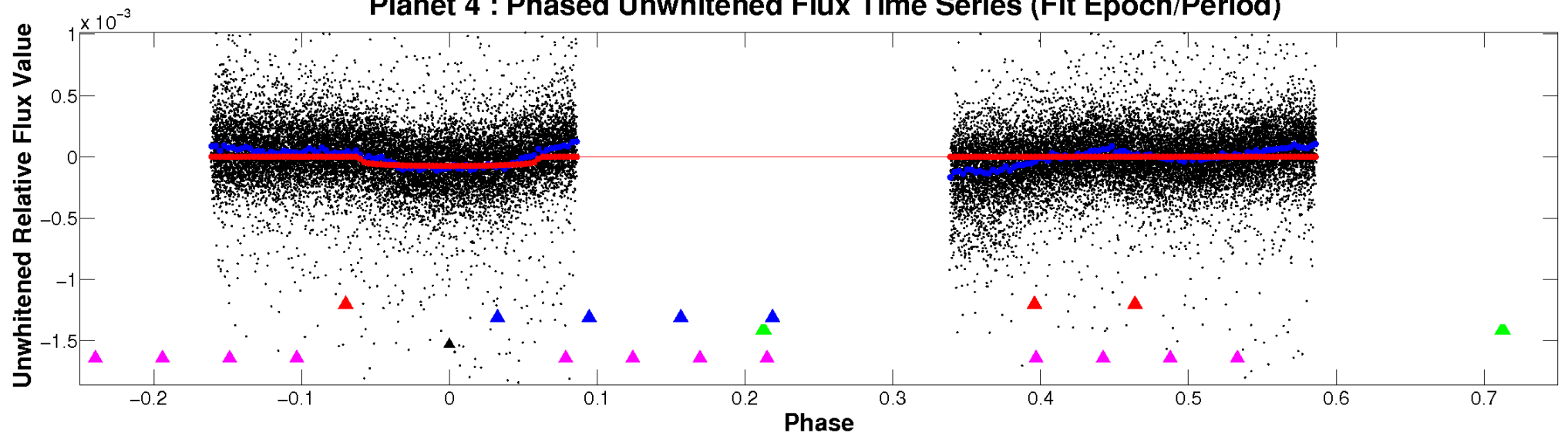
ALT Odd/Even

TCE 007135042-04

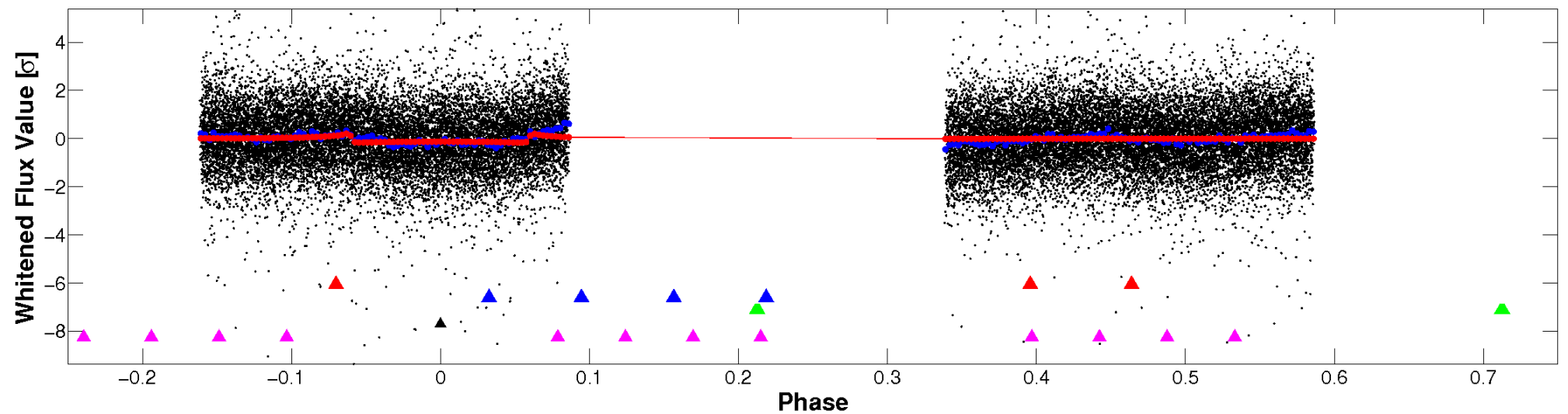


Non-Whitened Vs. Whitened Light Curve

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

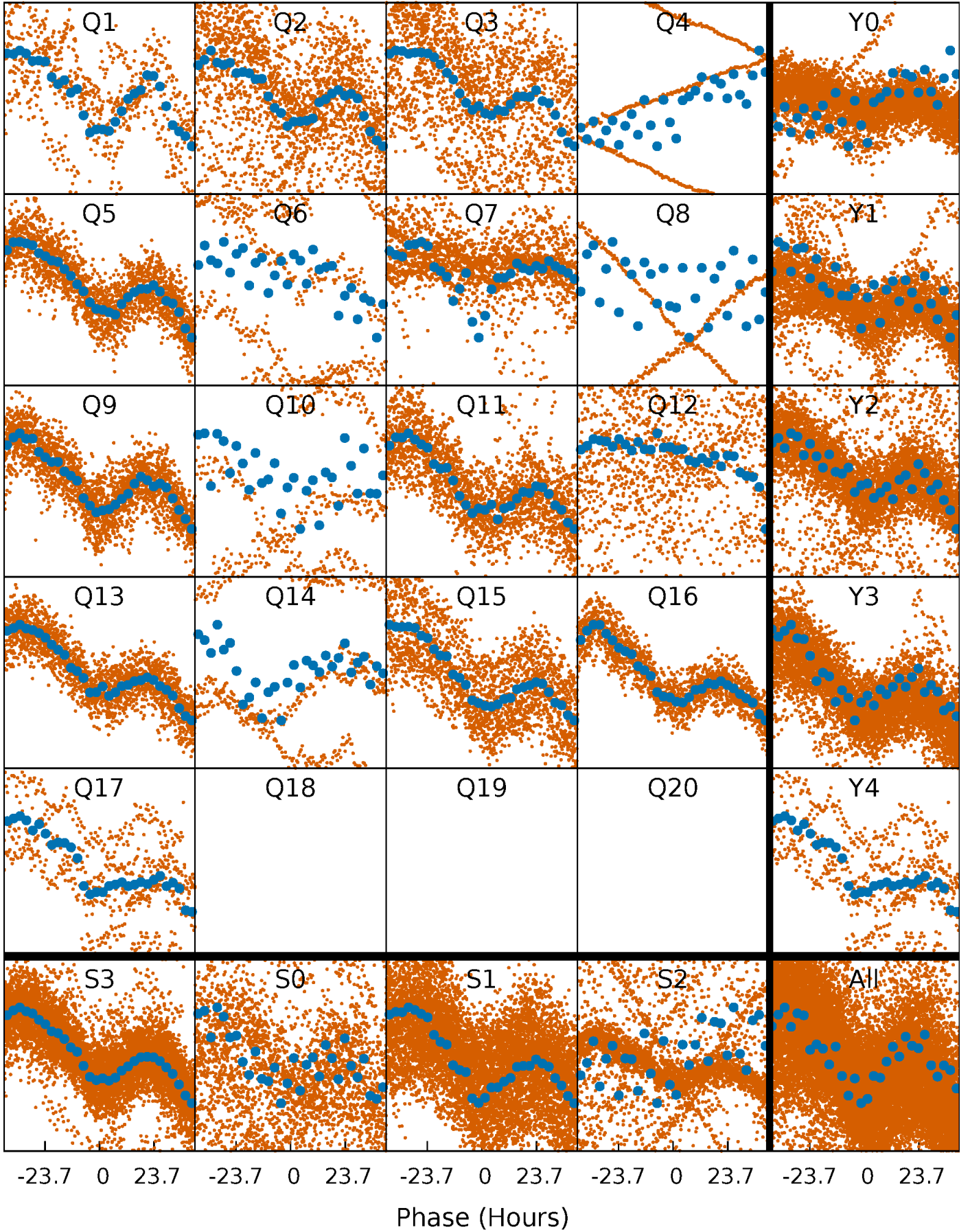


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



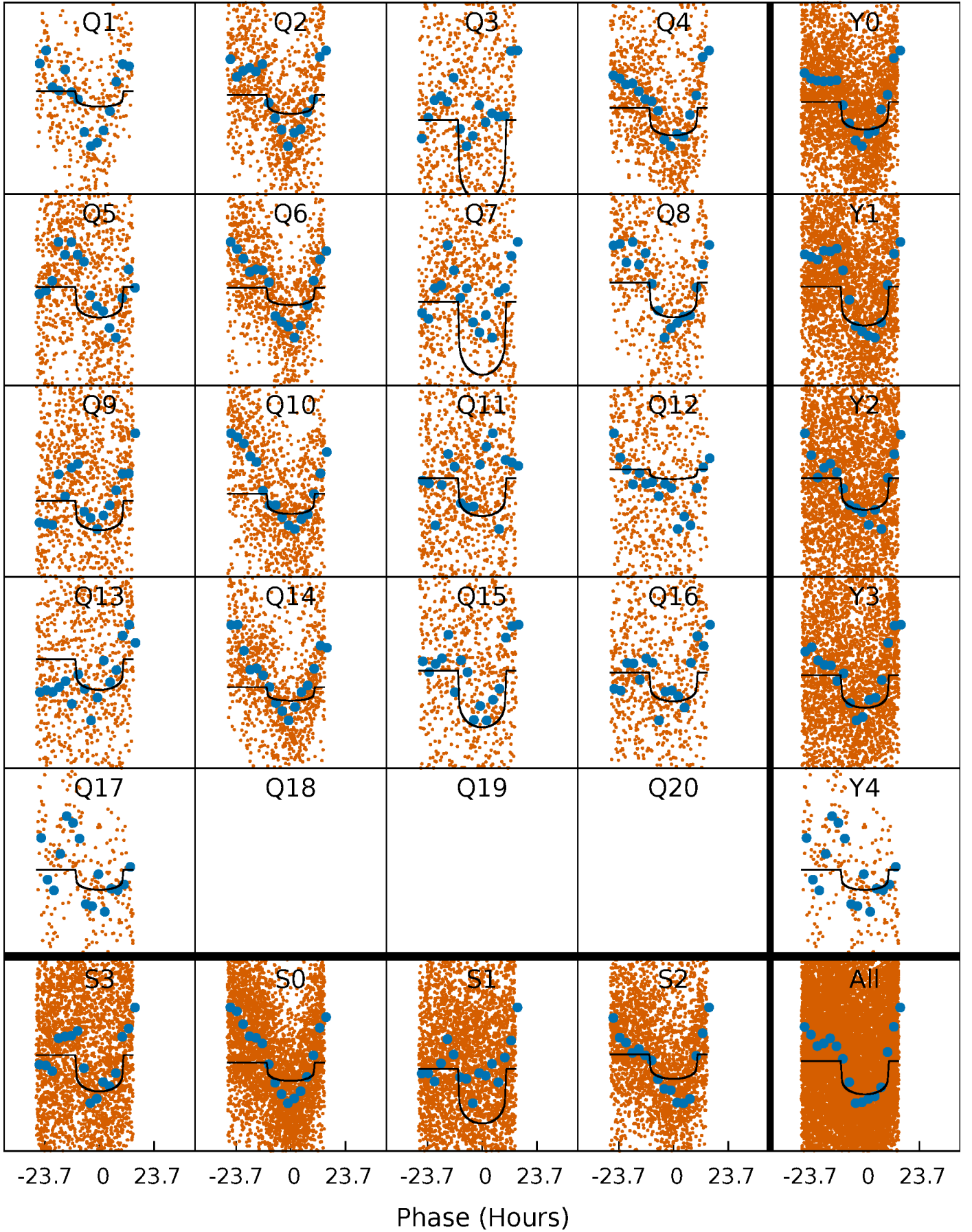
PDC Quarter-Phased Transit Curves

TCE 007135042-04 $P = 7.112805$ Days $T_0 = 136.138068$ (BKJD)



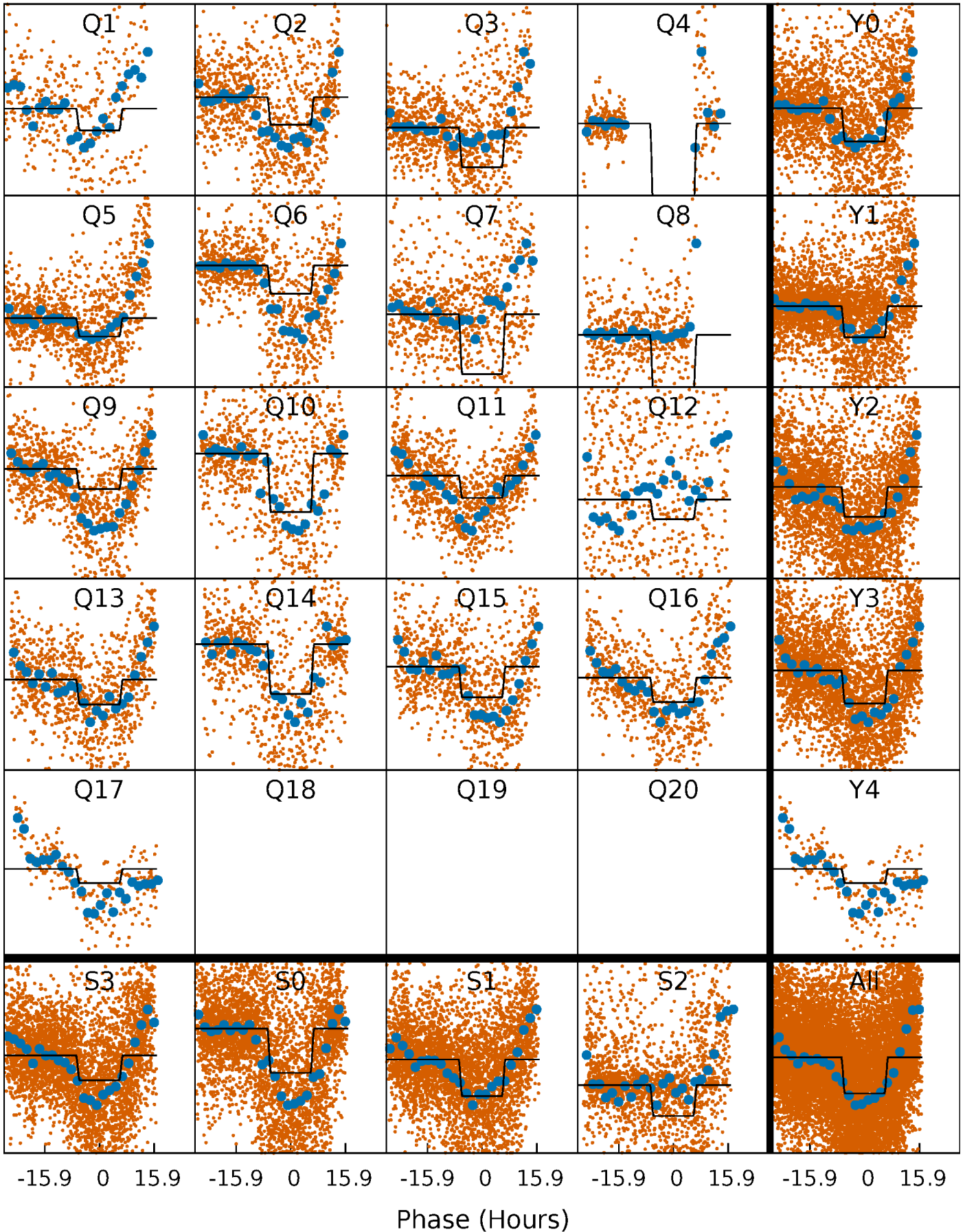
DV Quarter-Phased Transit Curves

TCE 007135042-04 P= 7.112805 Days $T_0=136.138068$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

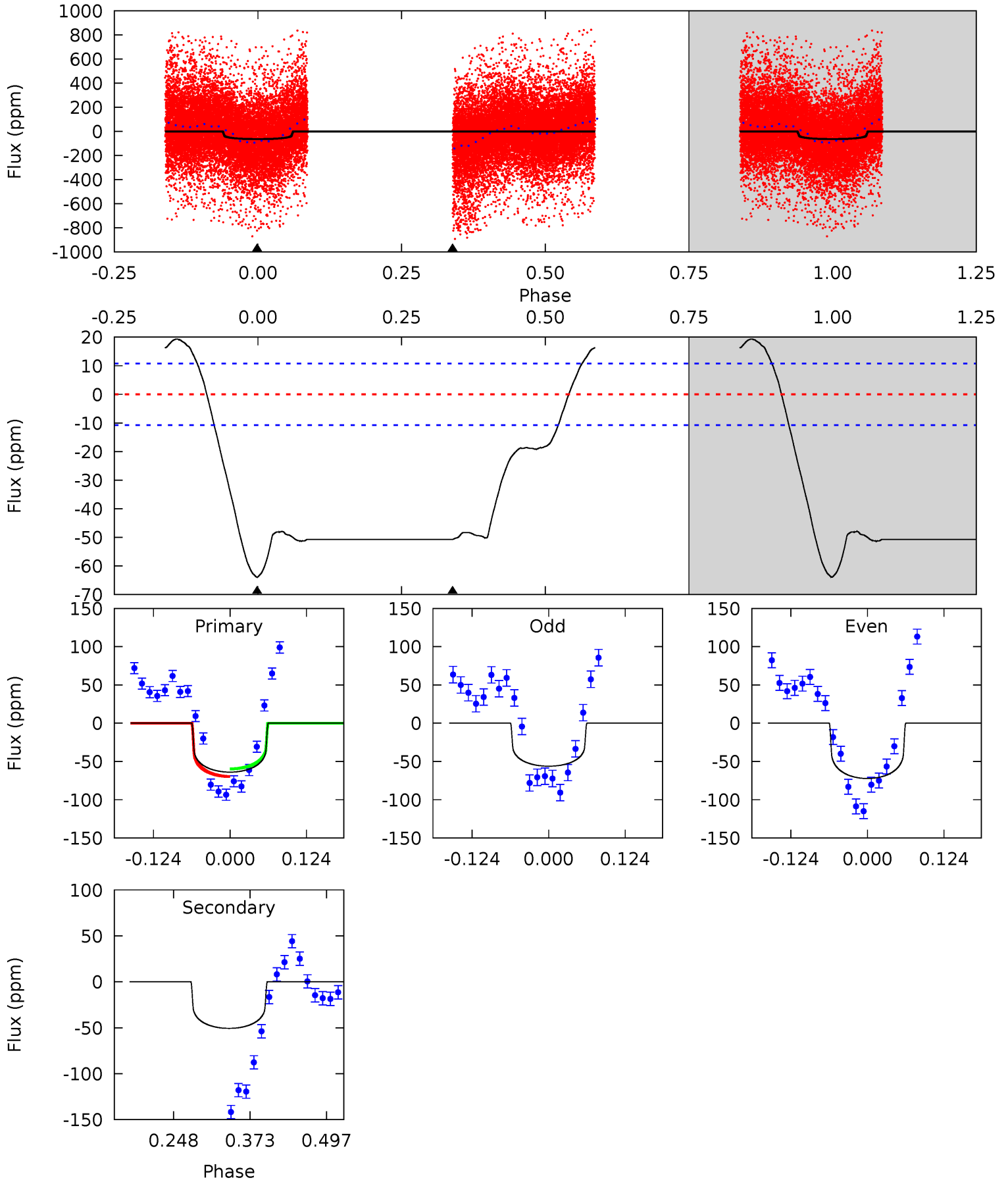
TCE 007135042-04 P= 7.112313 Days $T_0=136.155066$ (BKJD)



DV Model-Shift Uniqueness Test

007135042-04, P = 7.112805 Days, E = 129.025263 Days

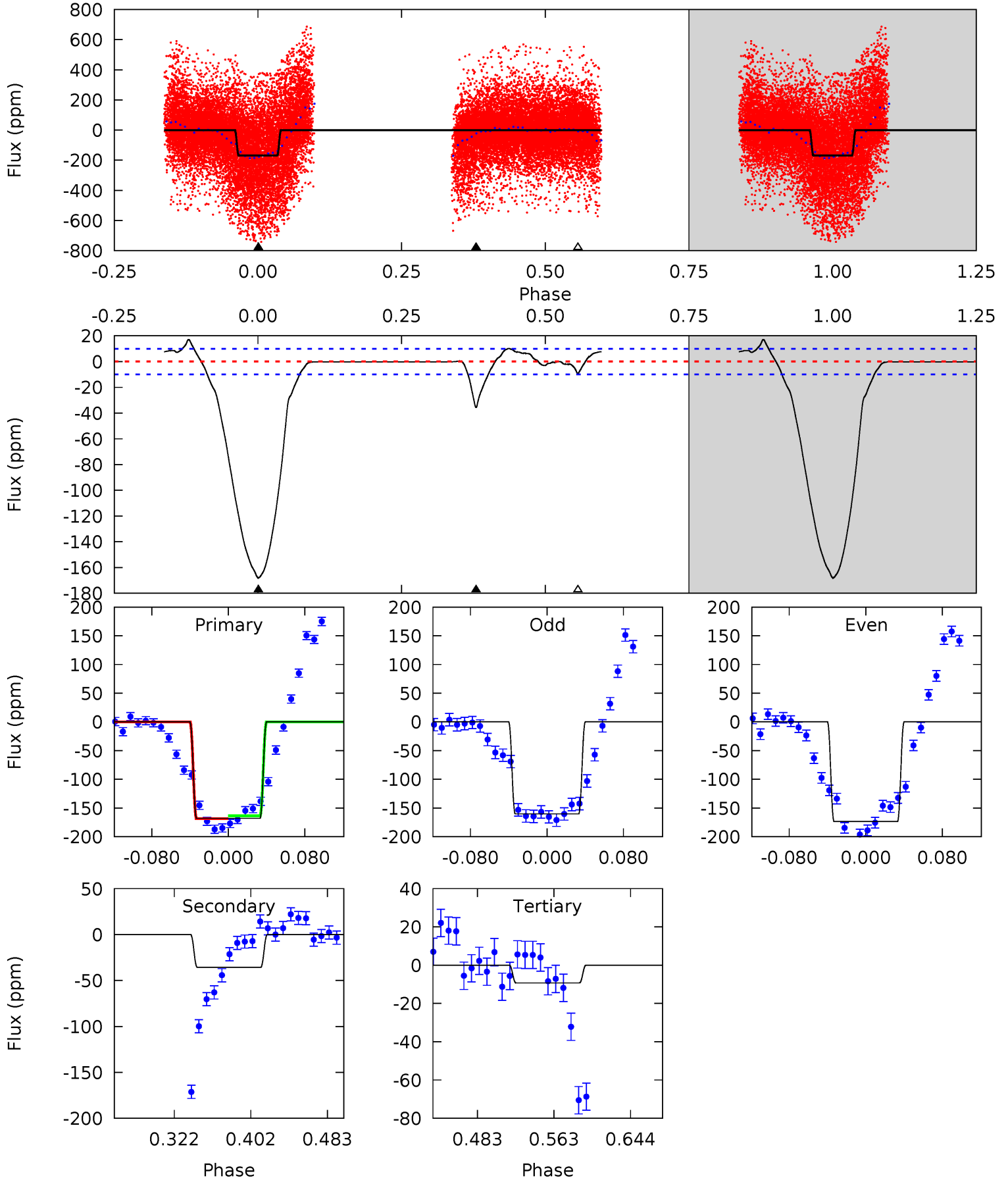
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	21.3	0	0	4.52	1.54	6.37	26.8	26.8	21.3	21.3	3.40	1.05	0.23	2.03



Alt Model-Shift Uniqueness Test

007135042-04, P = 7.112313 Days, E = 129.042753 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.2	16.6	4.32	0	4.61	1.75	3.12	73.9	78.2	12.3	16.6	3.12	0.92	0.09	1.03



Stellar Parameters For KIC 007135042

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6301^{+177}_{-243}	$4.210^{+0.158}_{-0.193}$	$0.160^{+0.200}_{-0.300}$	$1.469^{+0.470}_{-0.353}$	$1.277^{+0.176}_{-0.196}$	$0.568^{+0.455}_{-0.287}$
	+3%/-4%	+4%/-5%	+125%/-188%	+32%/-24%	+14%/-15%	+80%/-51%
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 007135042-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-51 ± 2	$1.36^{+0.25}_{-0.20}$	1678^{+130}_{-110}	5795^{+322}_{-338}	92^{+34}_{-26}
Alt.	-36 ± 2	$1.88^{+0.33}_{-0.27}$	1679^{+138}_{-121}	4628^{+204}_{-182}	34^{+11}_{-10}

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 $A_{obs} \gg 1.0$

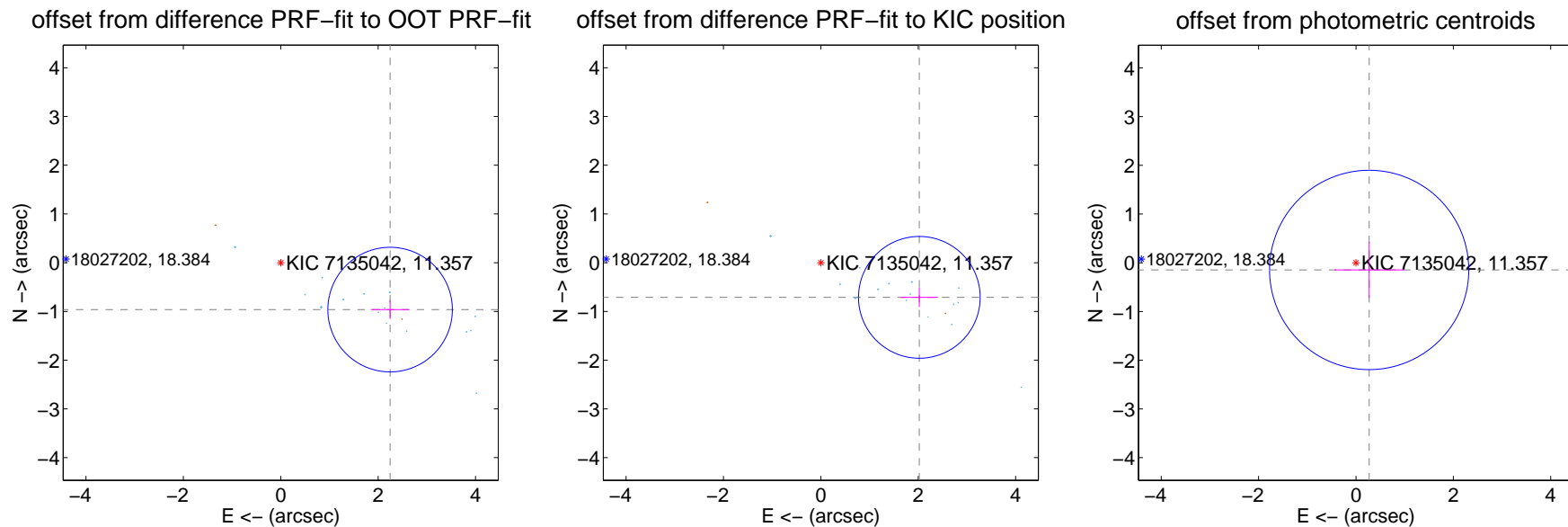
DV Centroid Data

Supplemental centroid analysis for 007135042-04. **Kepler magnitude: 11.36.** Transit SNR 15.00

There are 15 quarters with good PRF difference image offsets

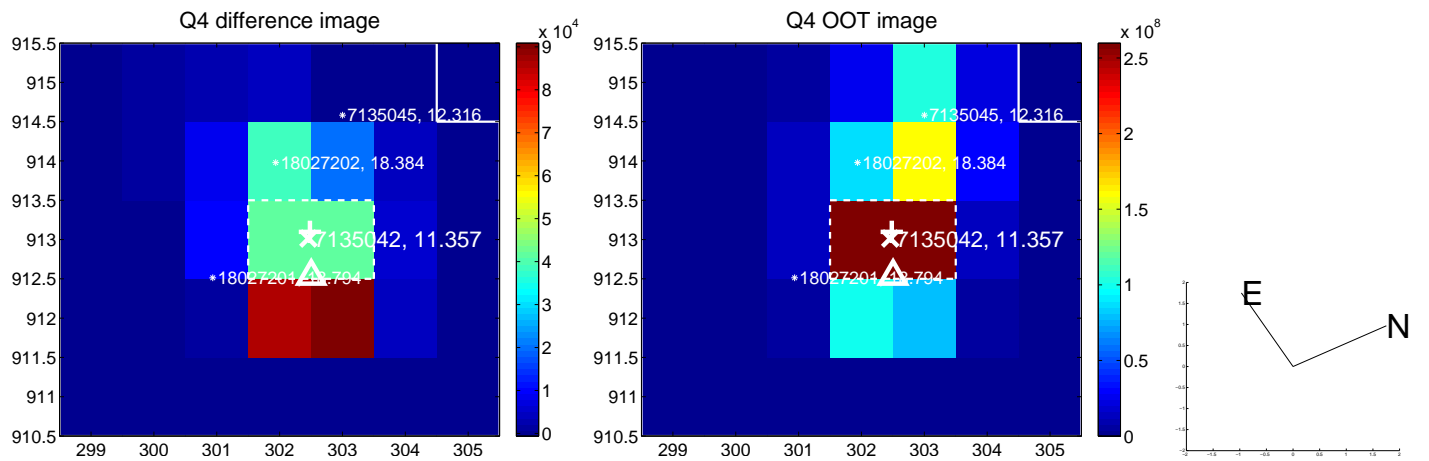
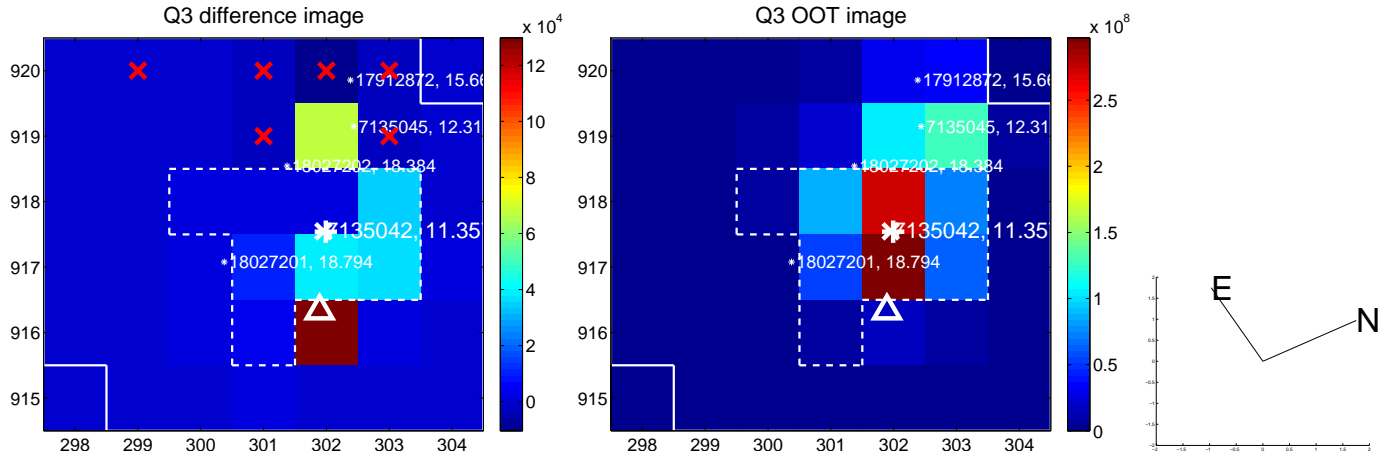
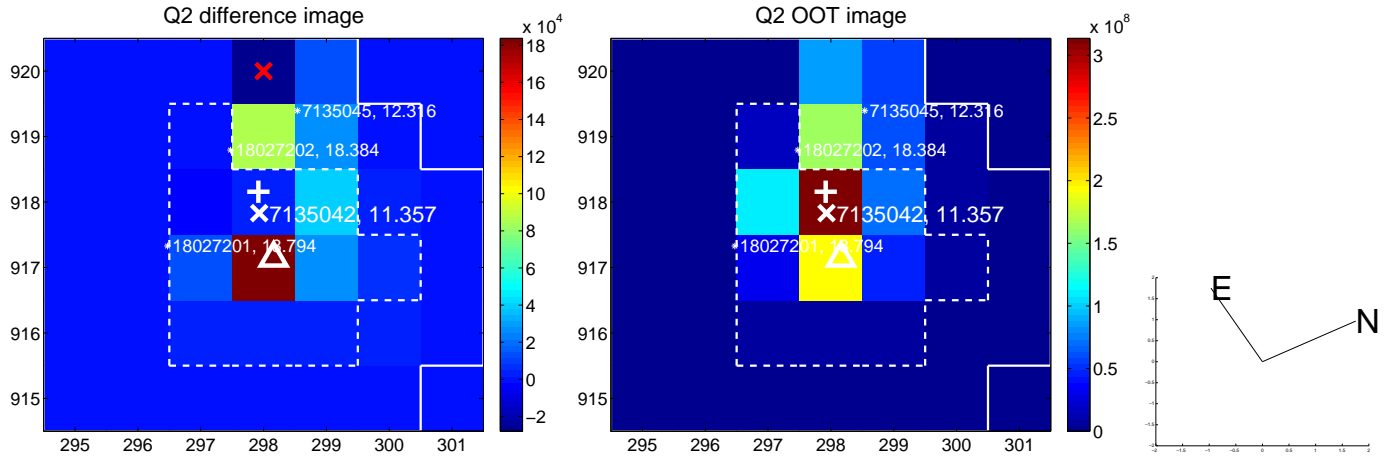
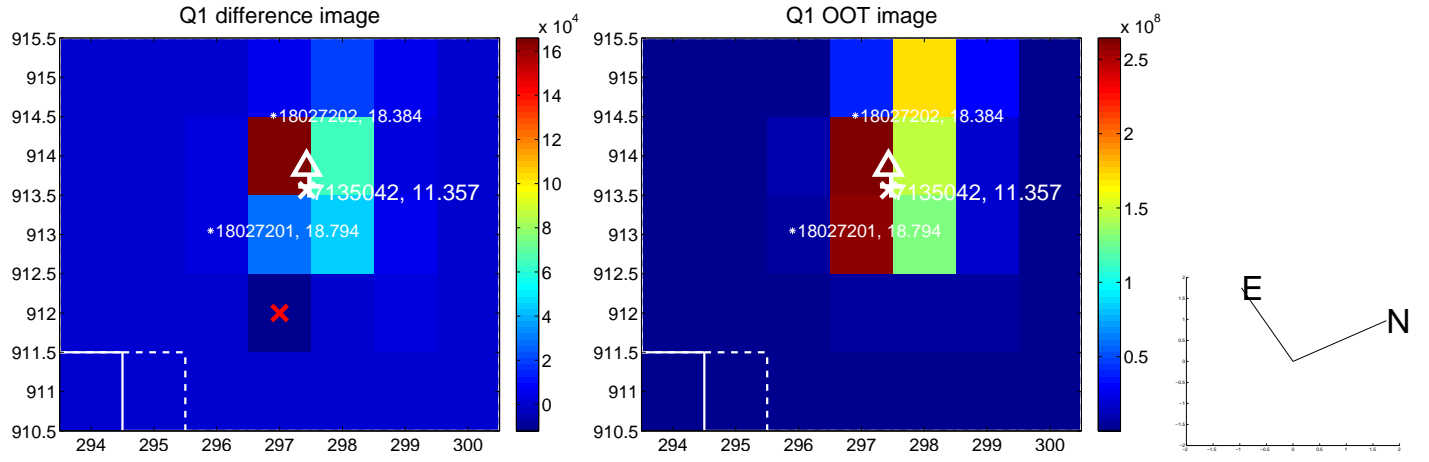
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.443 ± 0.426	5.73	-2.246 ± 0.394	-0.962 ± 0.194
PRF-fit source offset from KIC position	2.144 ± 0.416	5.15	-2.022 ± 0.383	-0.711 ± 0.198
photometric centroid source offset	0.31 ± 0.68	0.45	-0.27 ± 0.71	-0.15 ± 0.58

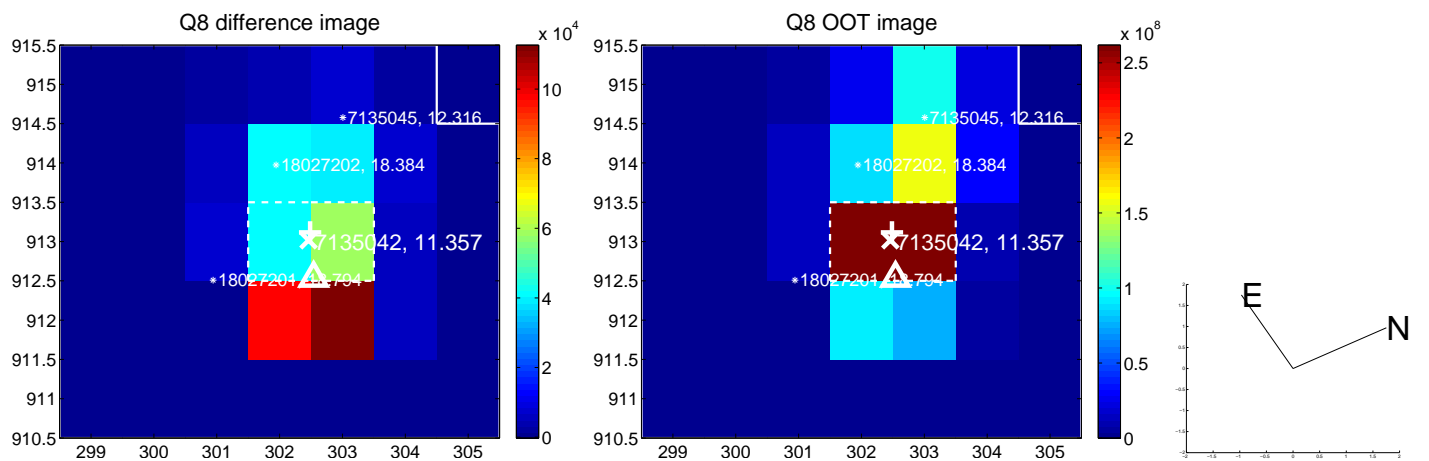
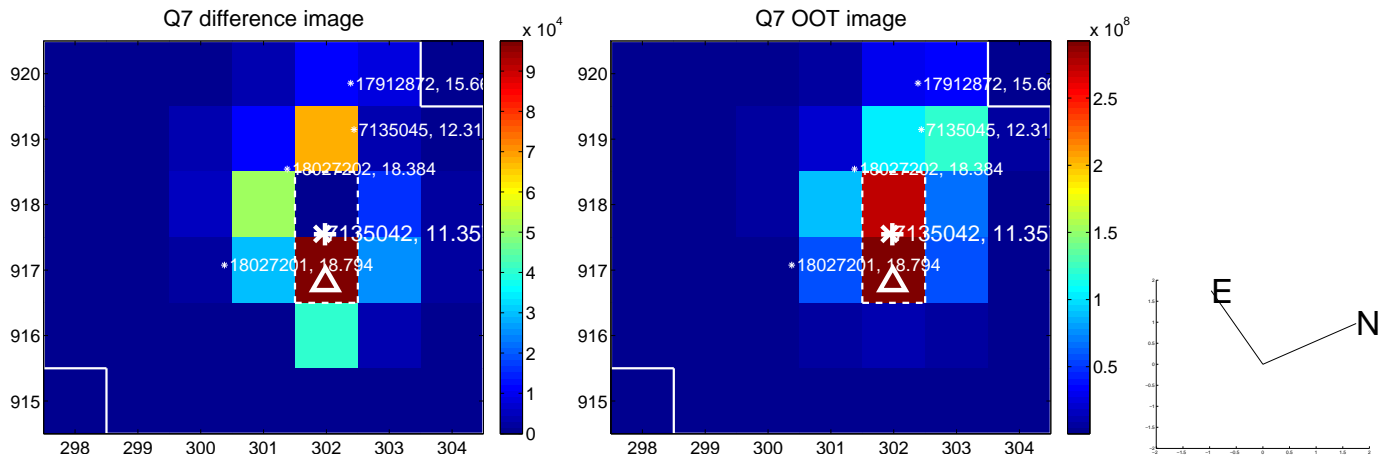
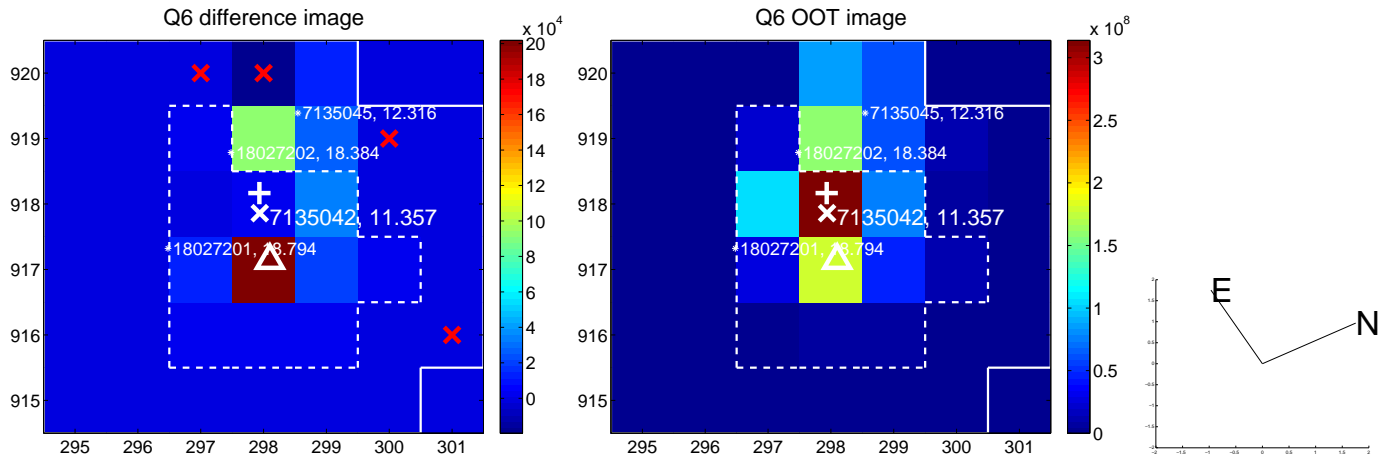
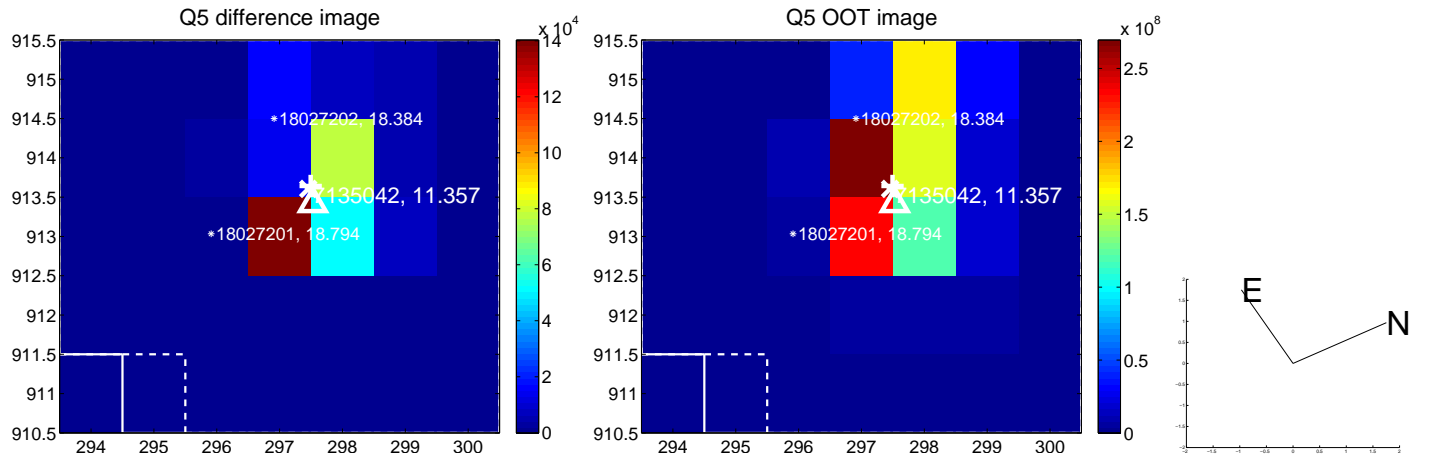


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

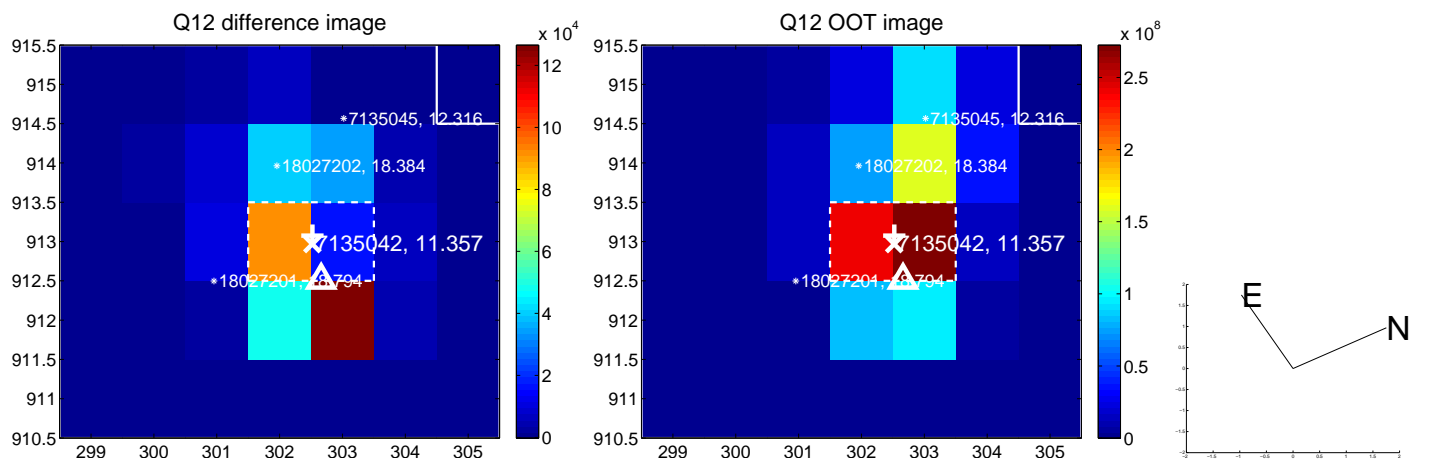
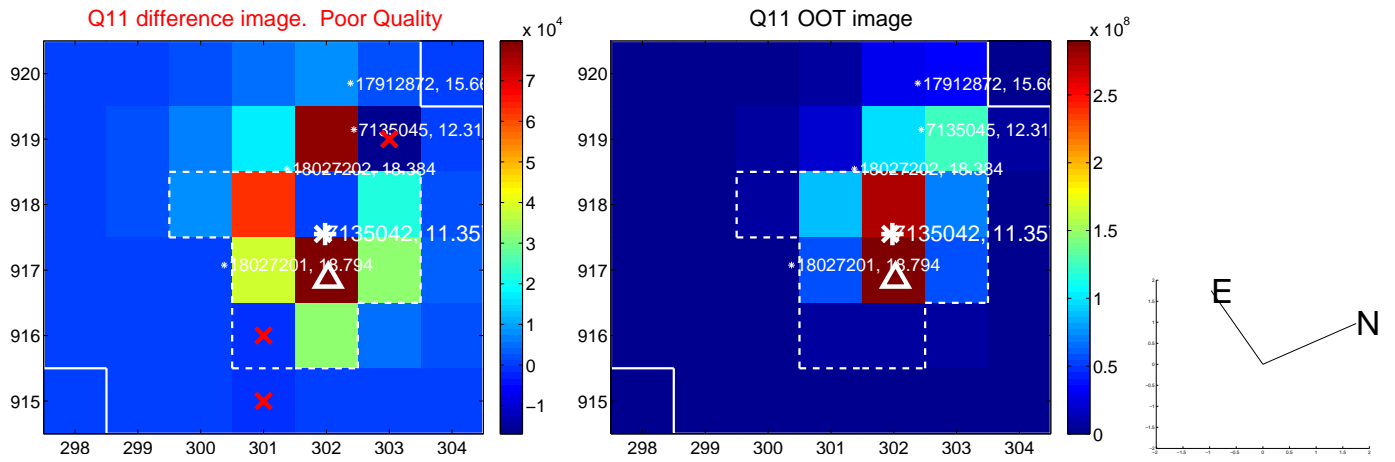
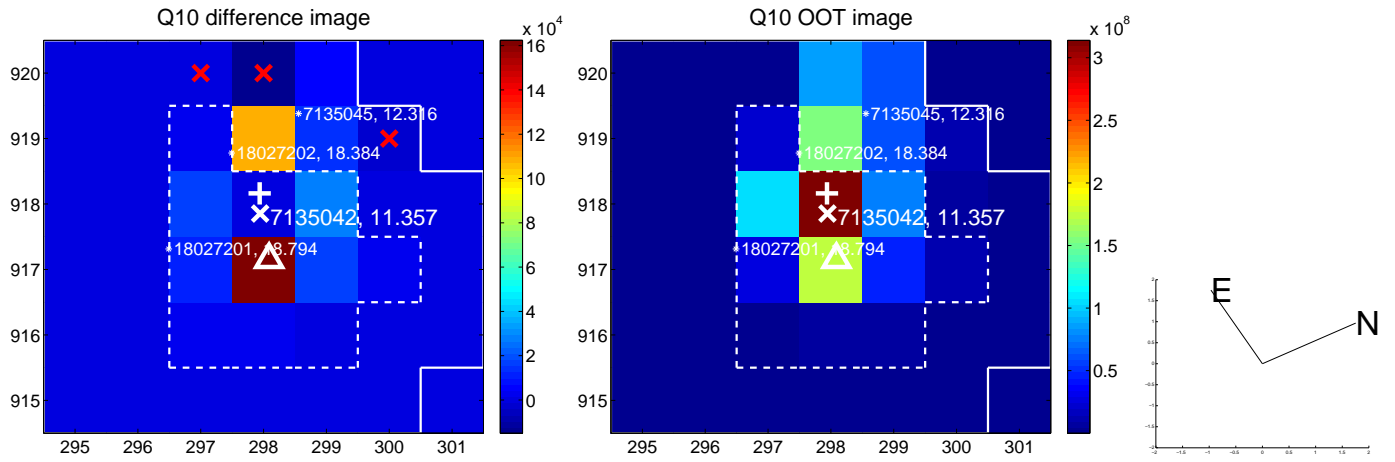
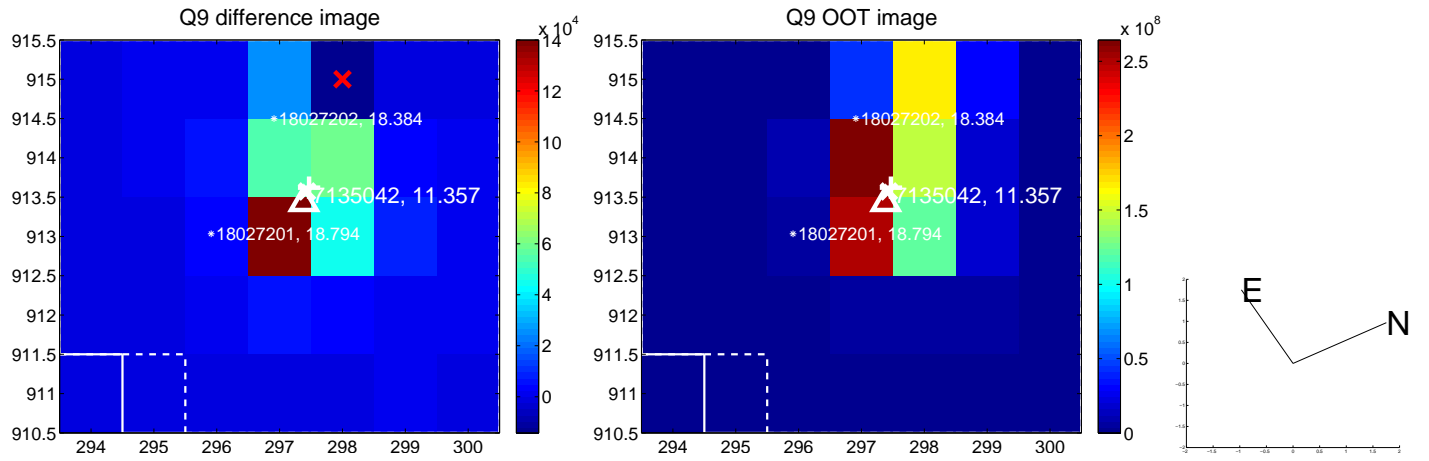
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



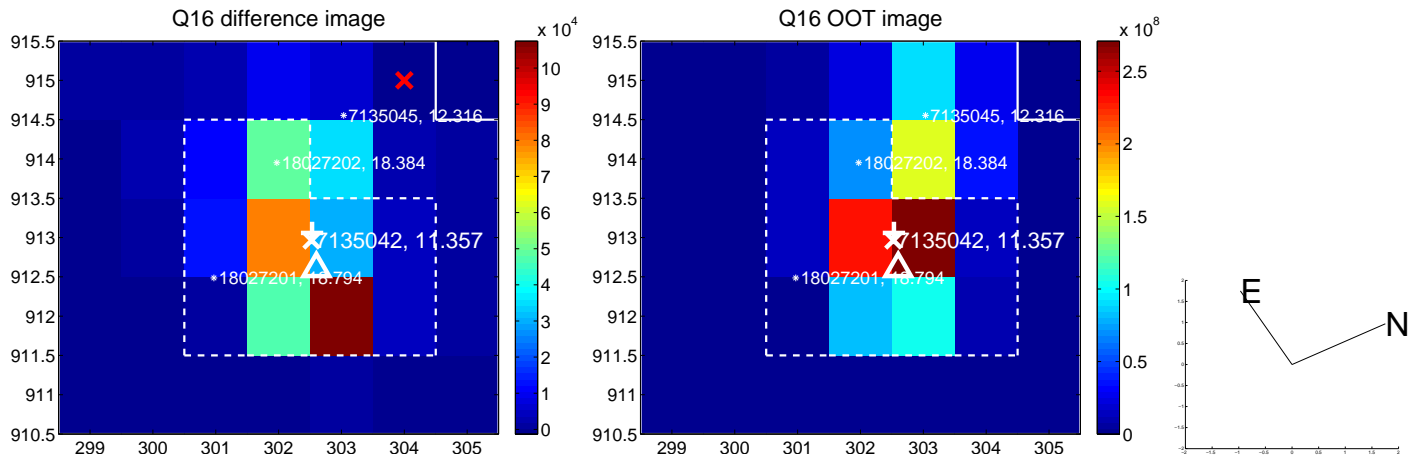
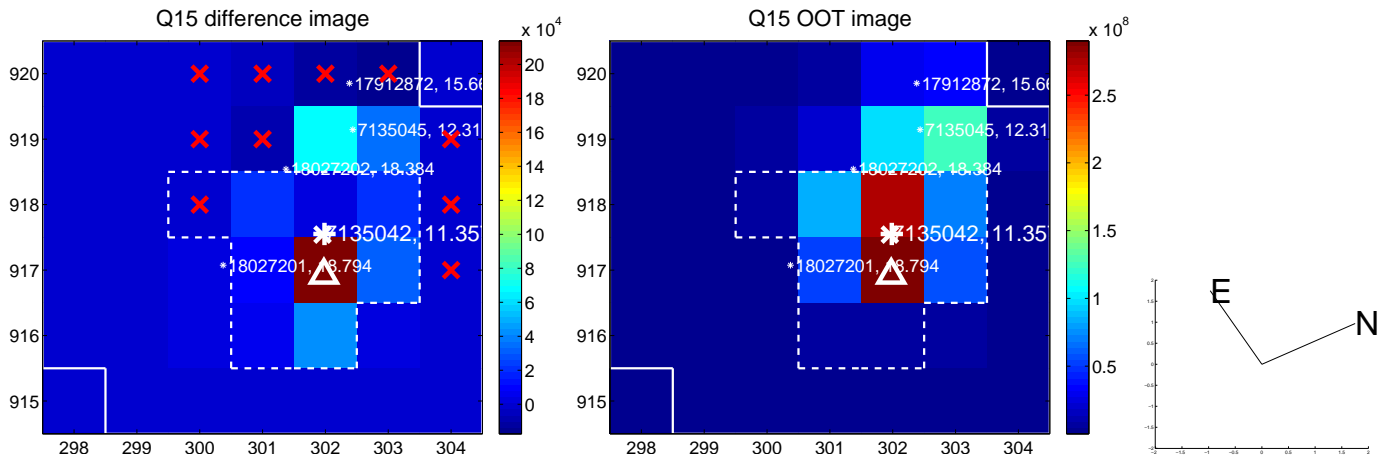
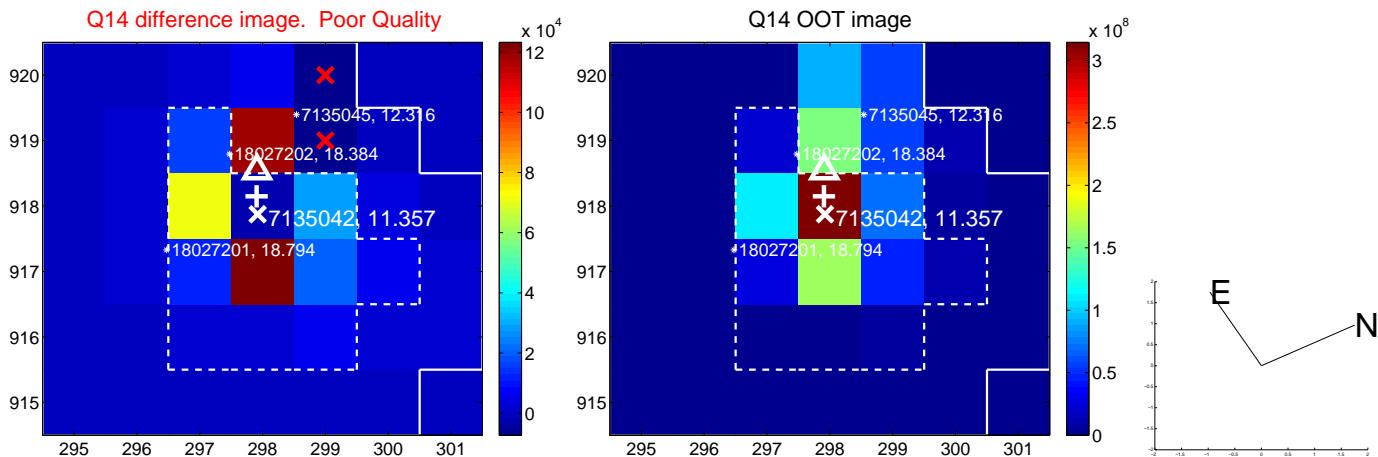
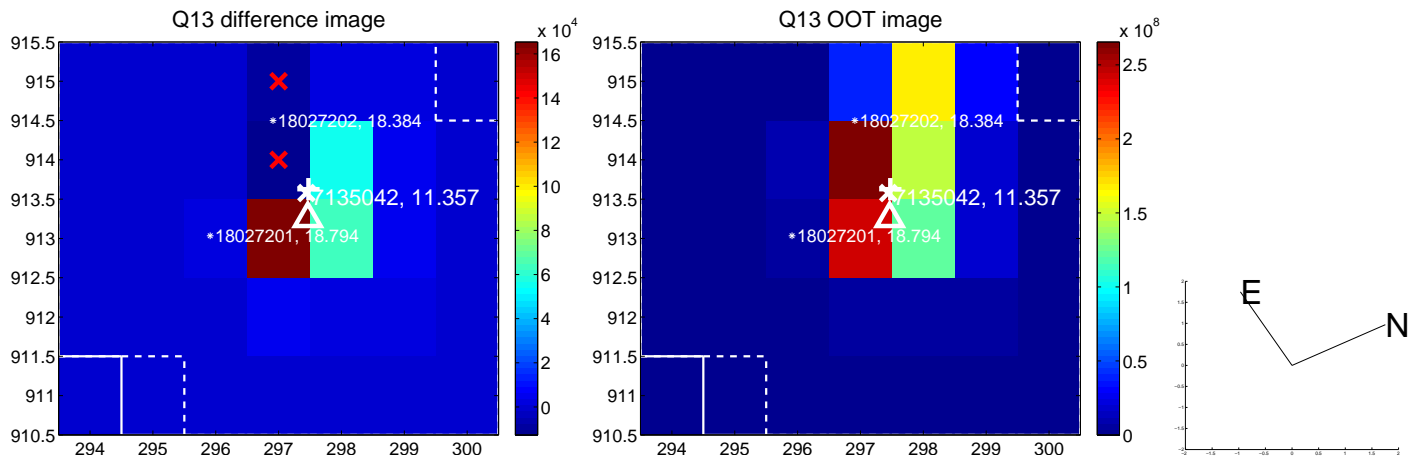
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



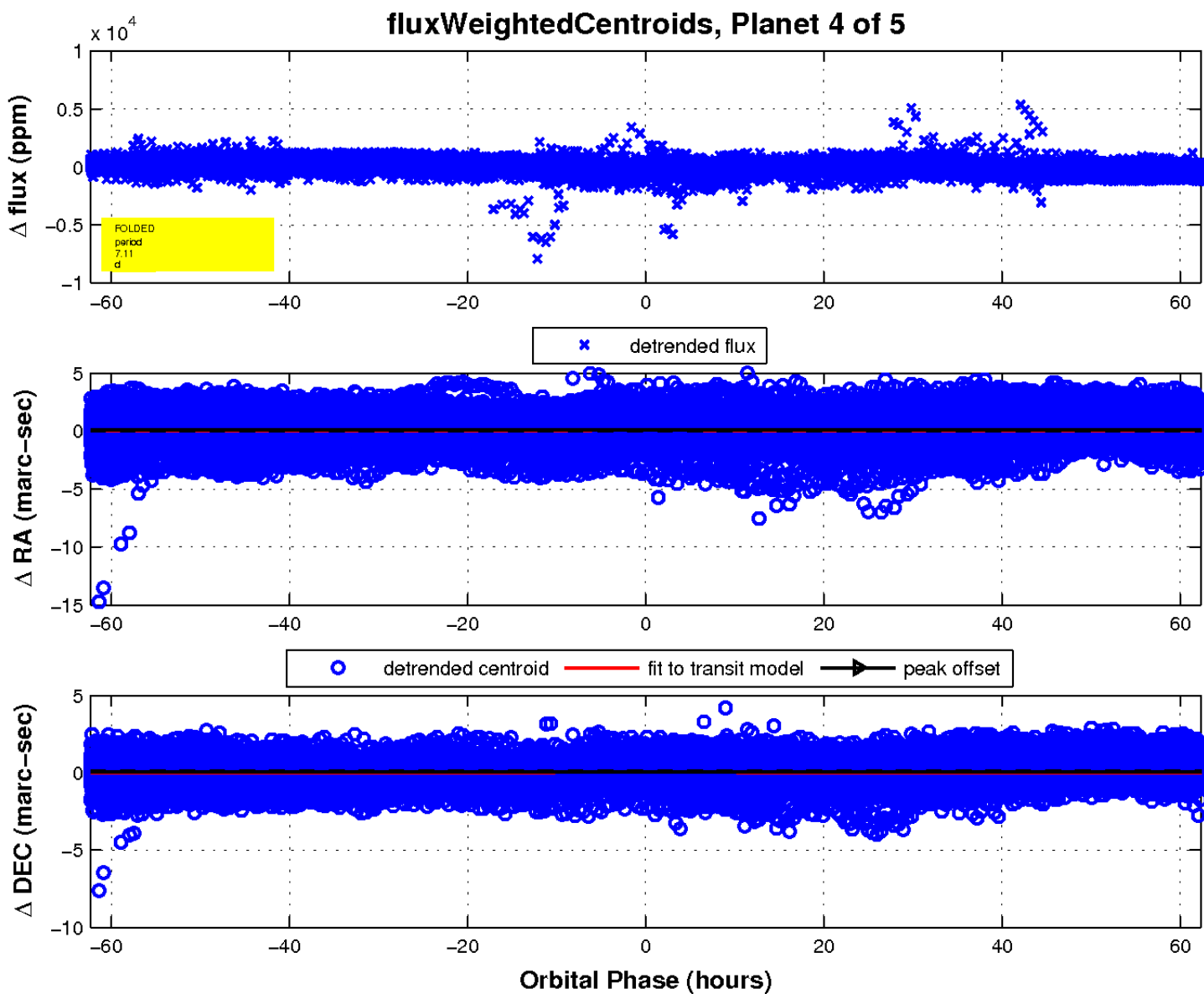
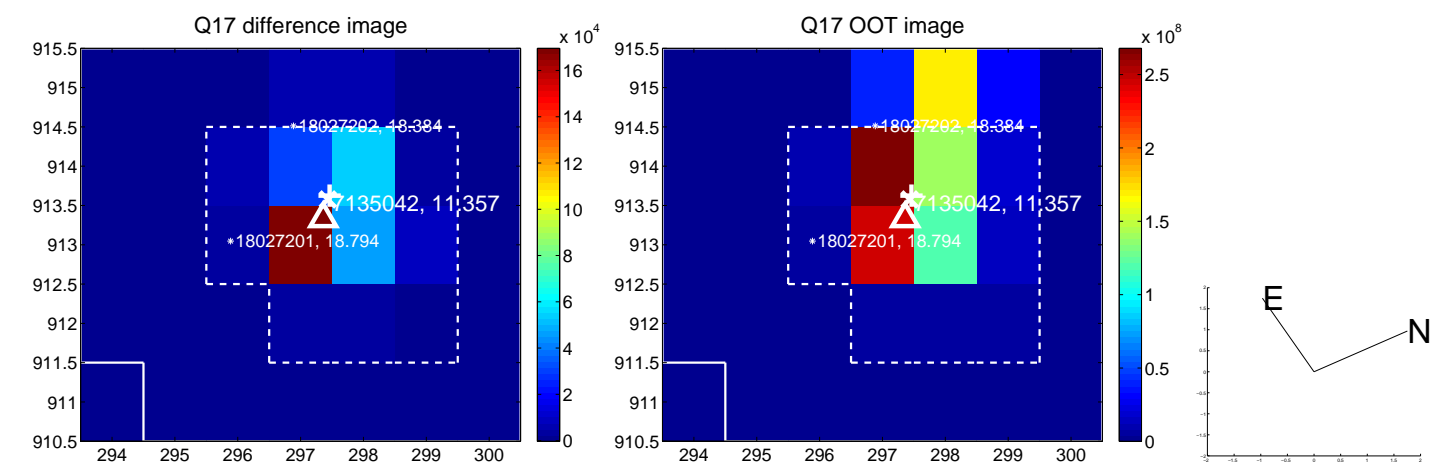
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

