

KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

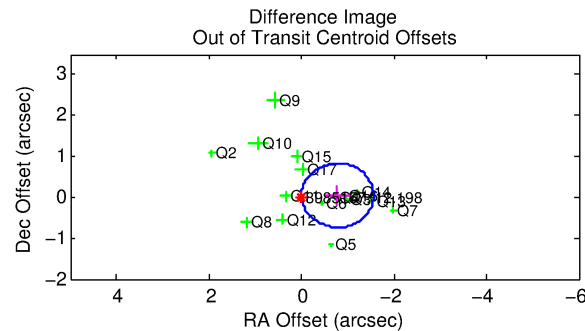
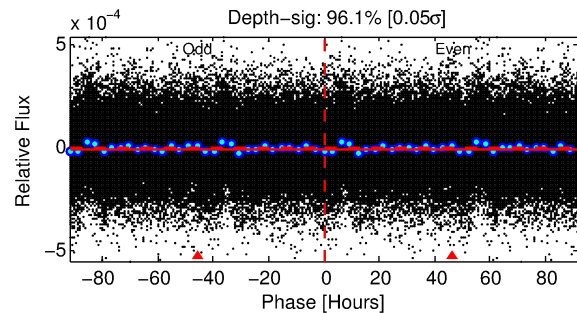
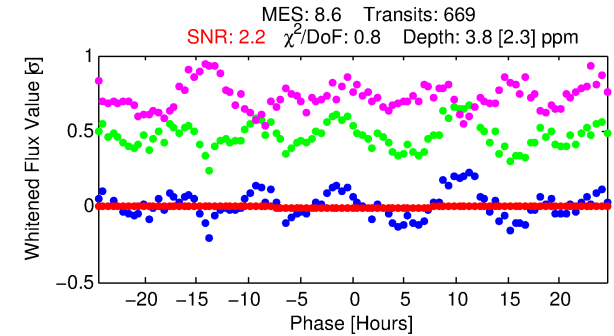
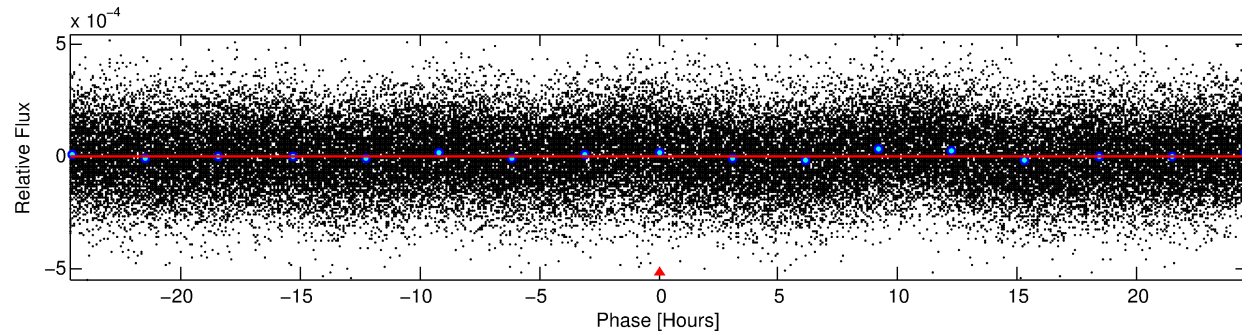
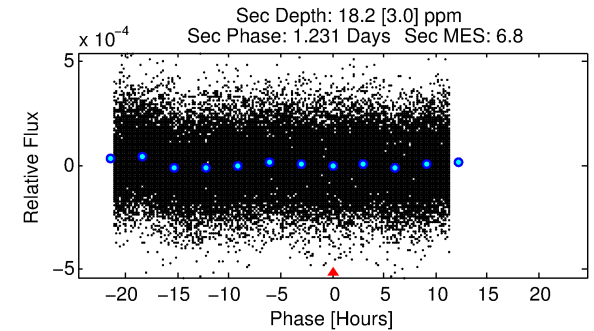
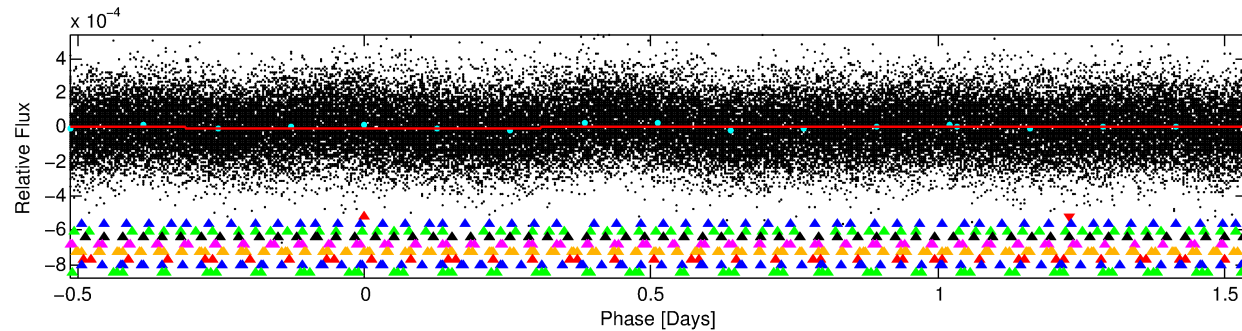
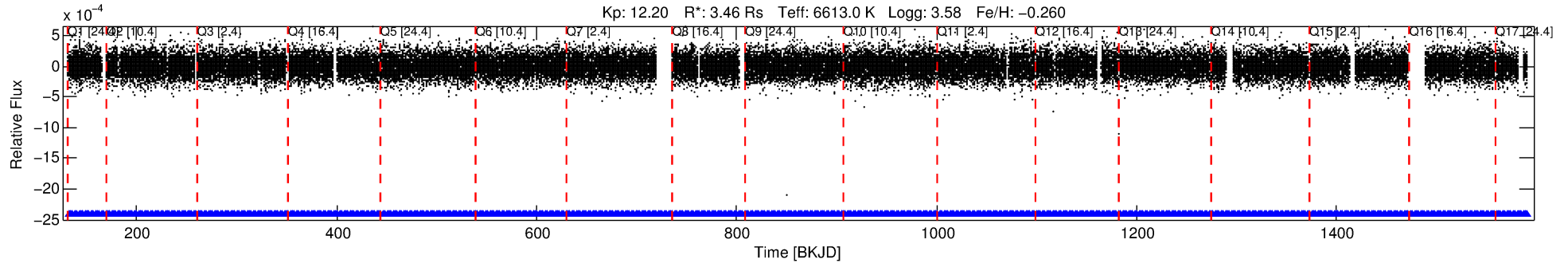
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-01

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 1 of 9 Period: 2.055 d



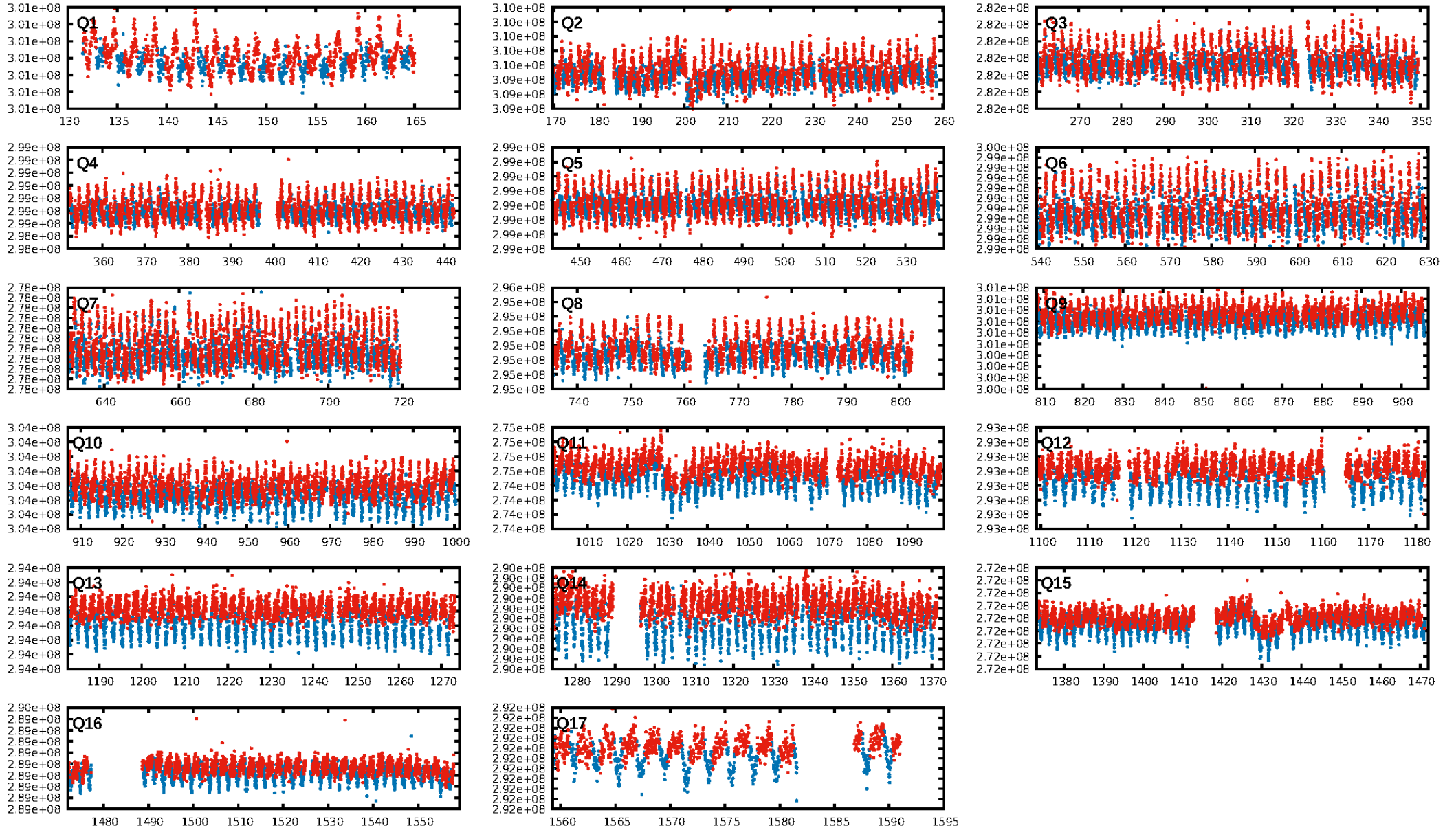
DV Fit Results:

Period = 2.05453 [0.00017] d
Epoch = 132.2199 [0.0369] BKJD
Rp/R* = 0.0018 [0.0066]
a/R* = 1.21 [7.66]
b = 0.02 [850.80]
Seff = 14726.15 [8639.05]
Teq = 2809 [412] K
Rp = 0.67 [2.50] Re
a = 0.0373 [0.0134] AU
Ag = 30.61 [226.86] [0.13σ]
Teffp = 10216 [18871] K [0.39σ]

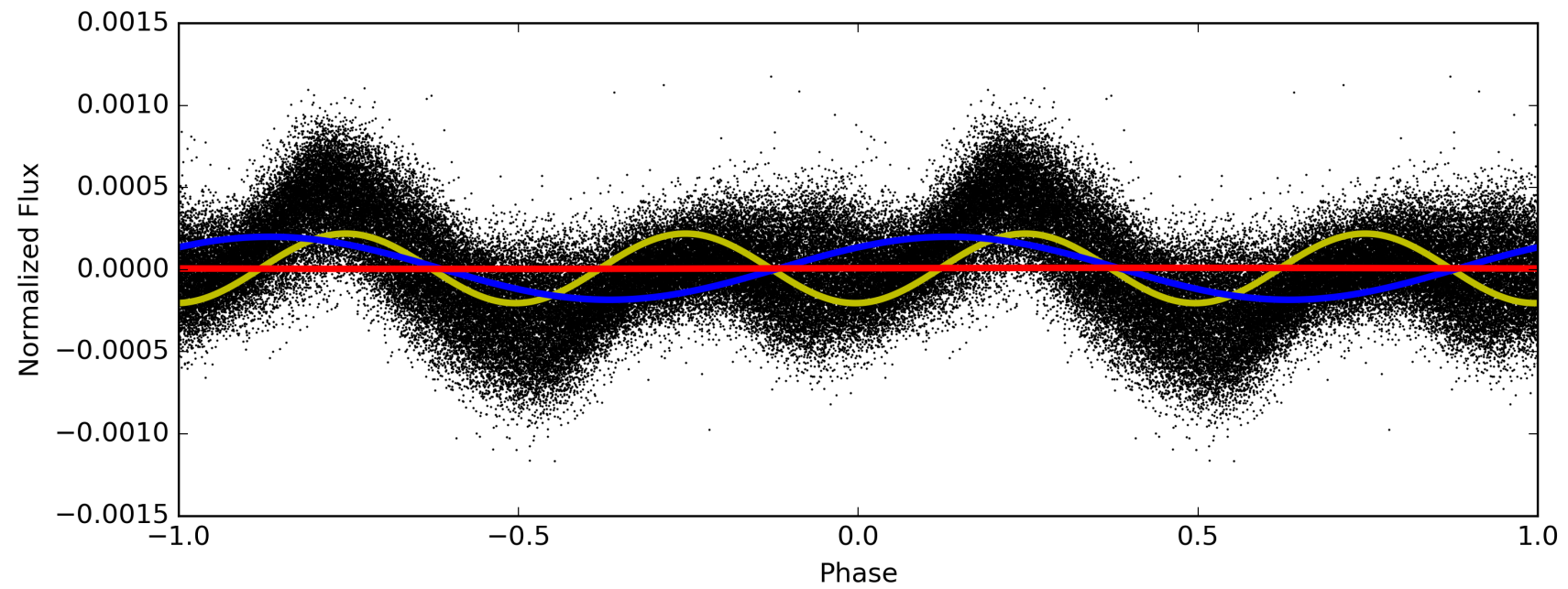
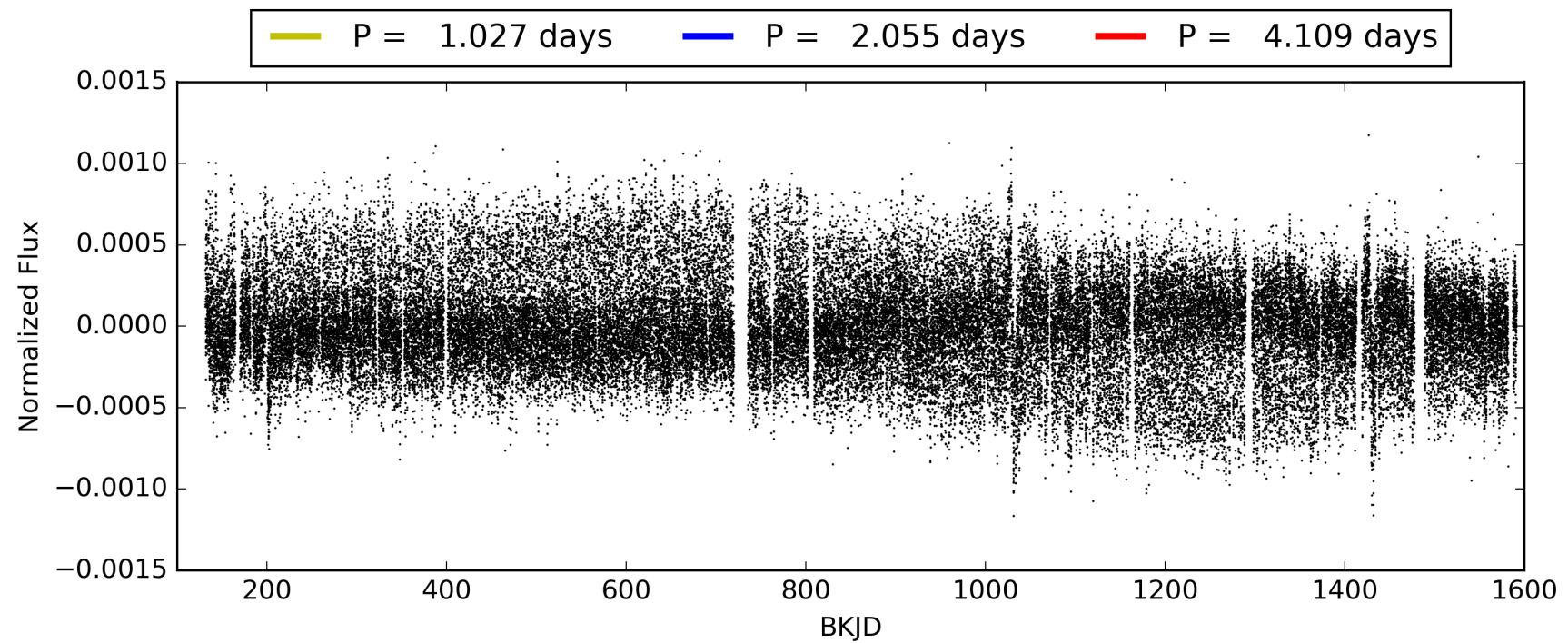
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.67σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [638/638]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.780 arcsec [3.00σ]
KicOffset-rm: 0.850 arcsec [3.34σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008985157-01, PDC Light Curves

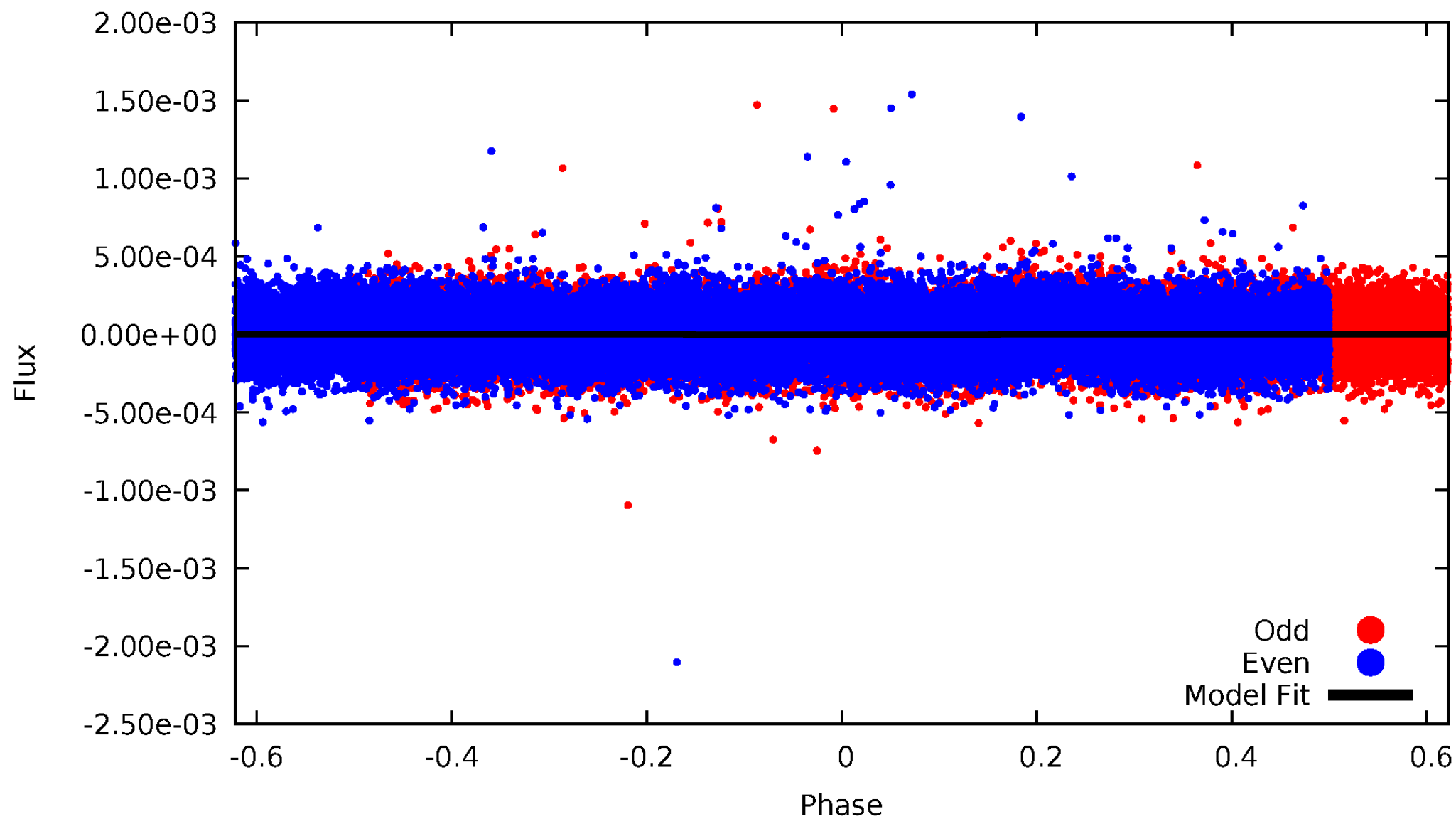


TCE 008985157-01



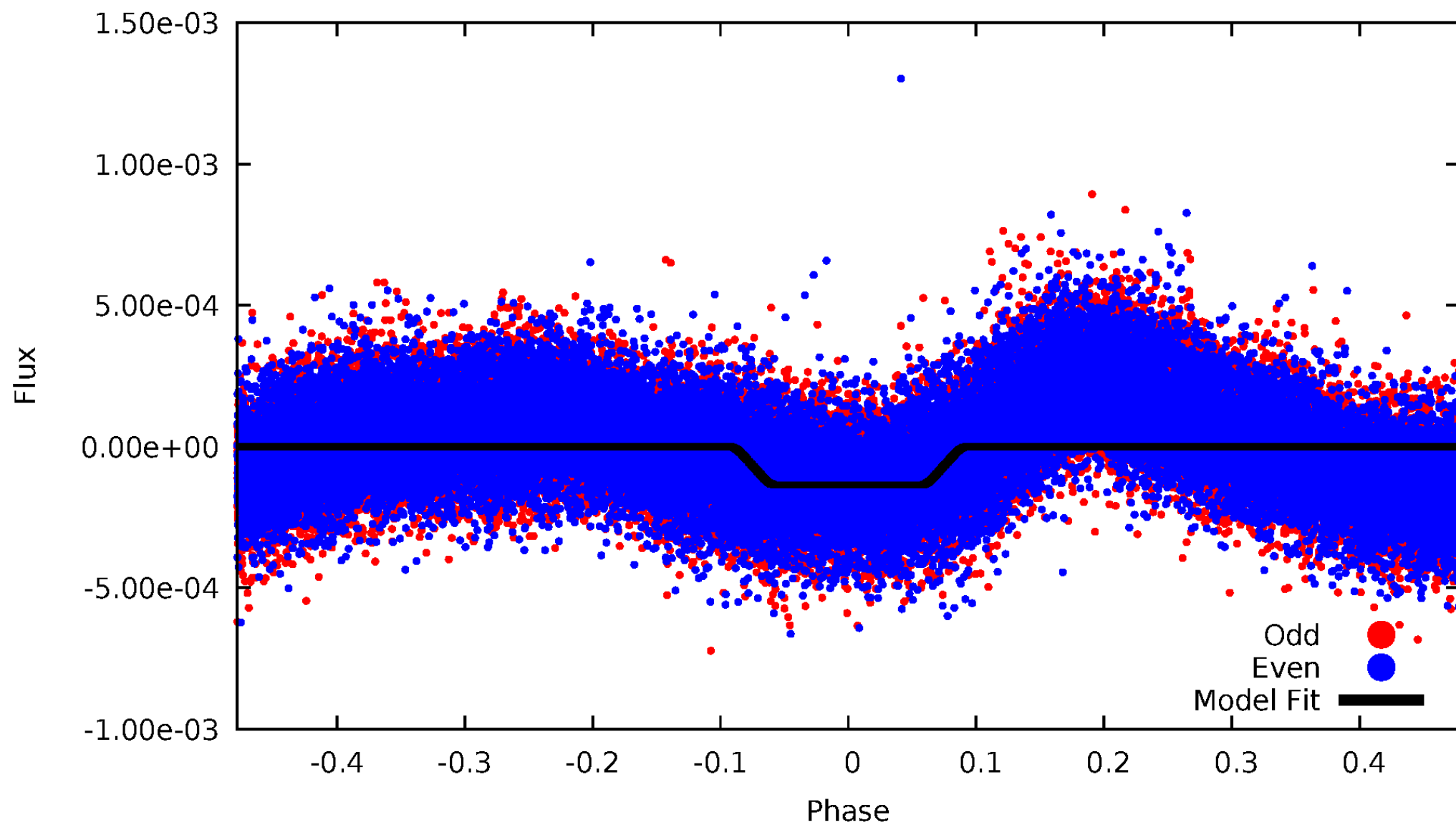
DV Odd/Even

TCE 008985157-01



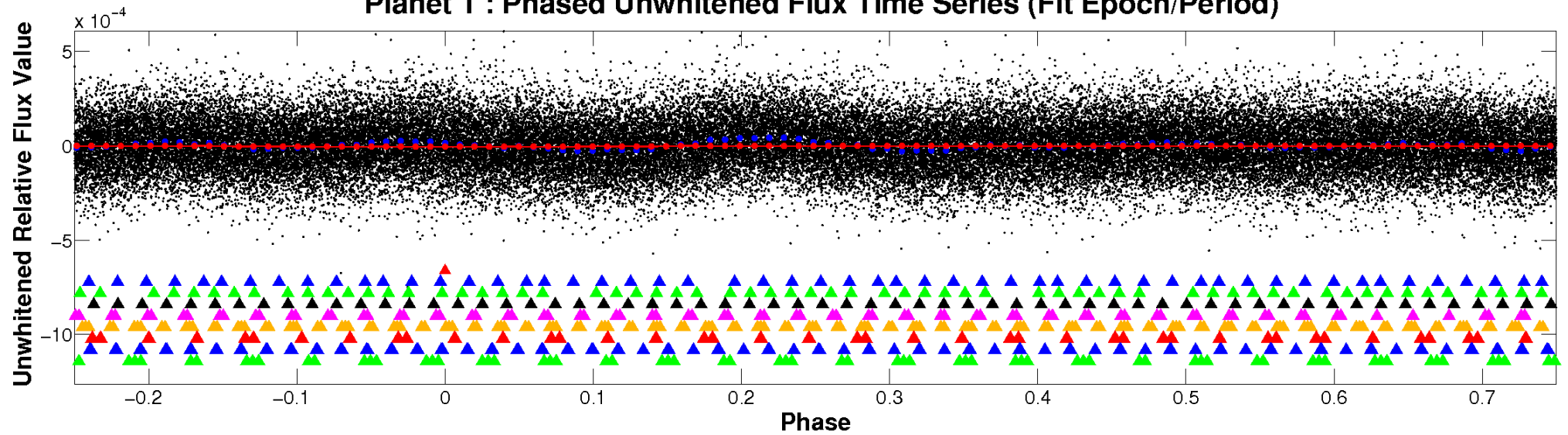
ALT Odd/Even

TCE 008985157-01

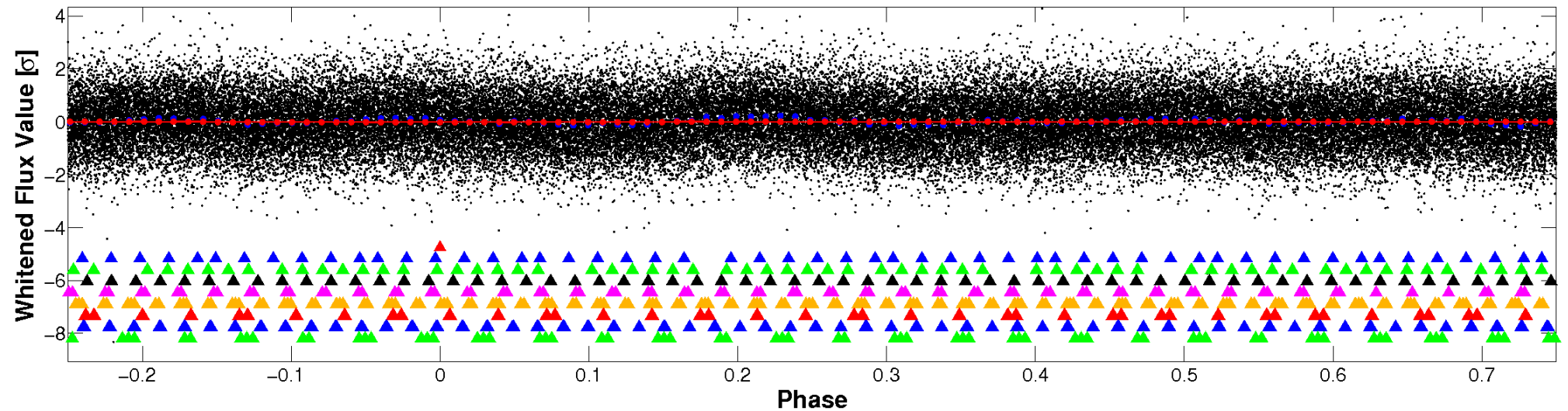


Non-Whitened Vs. Whitened Light Curve

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

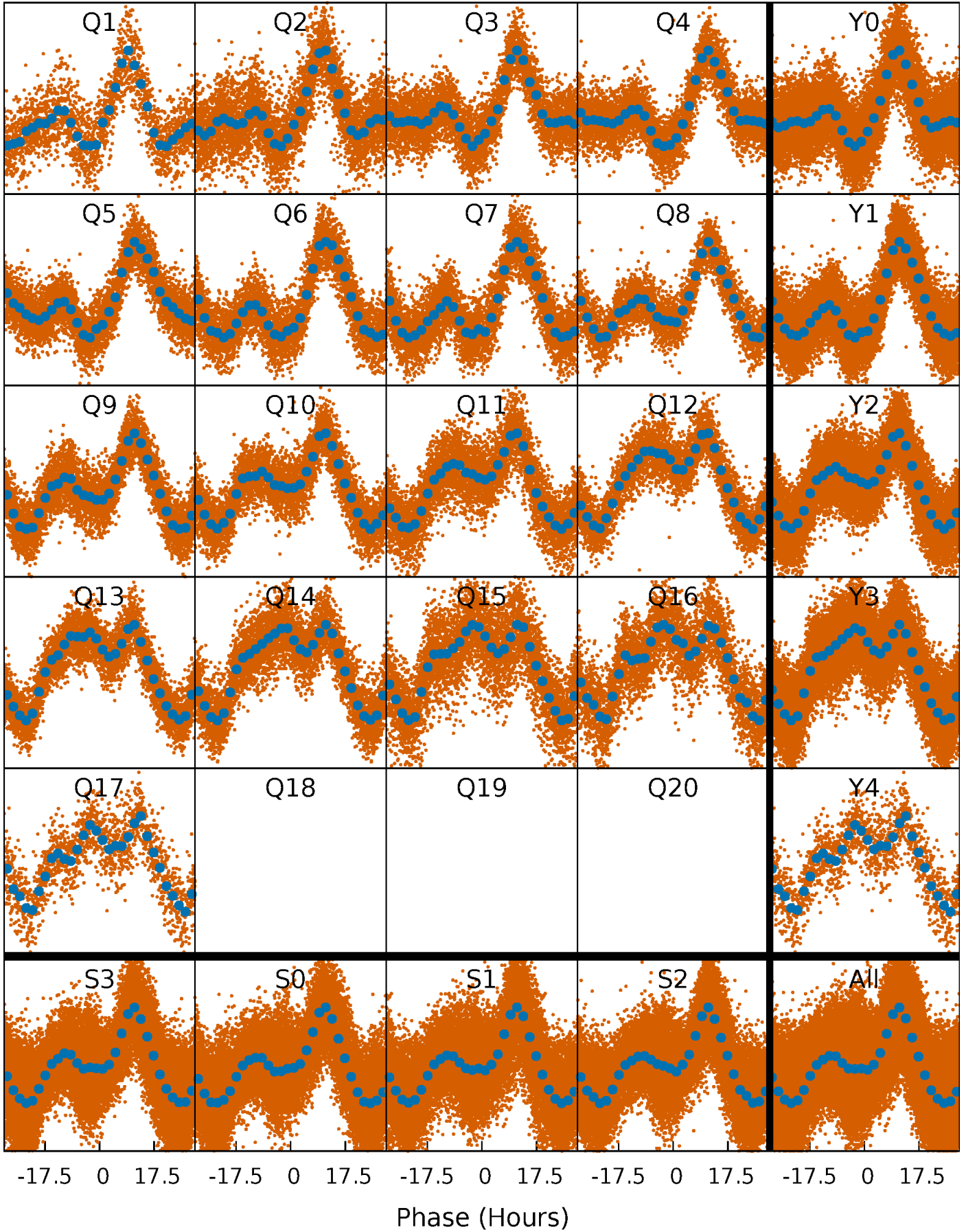


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



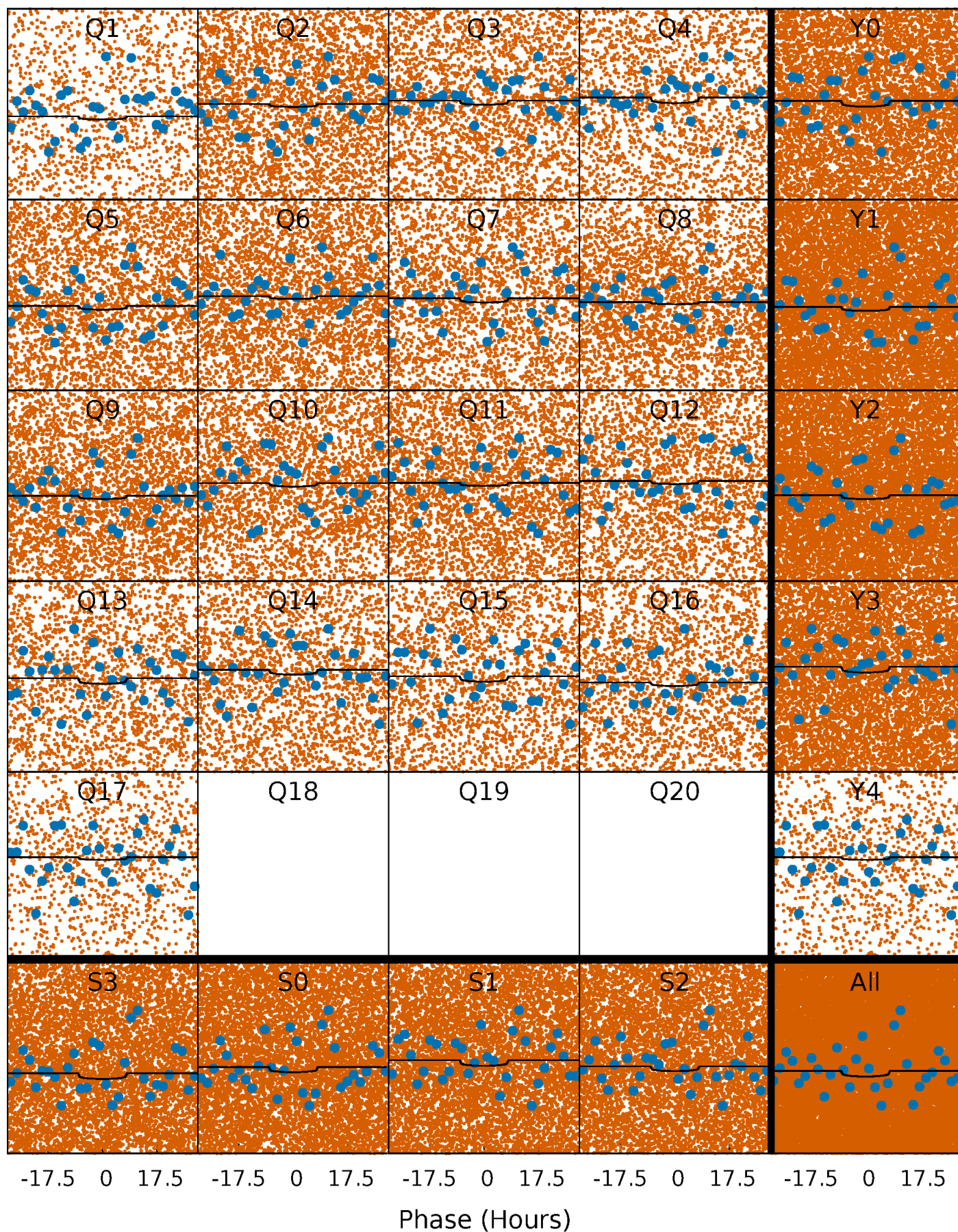
PDC Quarter-Phased Transit Curves

TCE 008985157-01 P= 2.054528 Days $T_0=132.219855$ (BKJD)



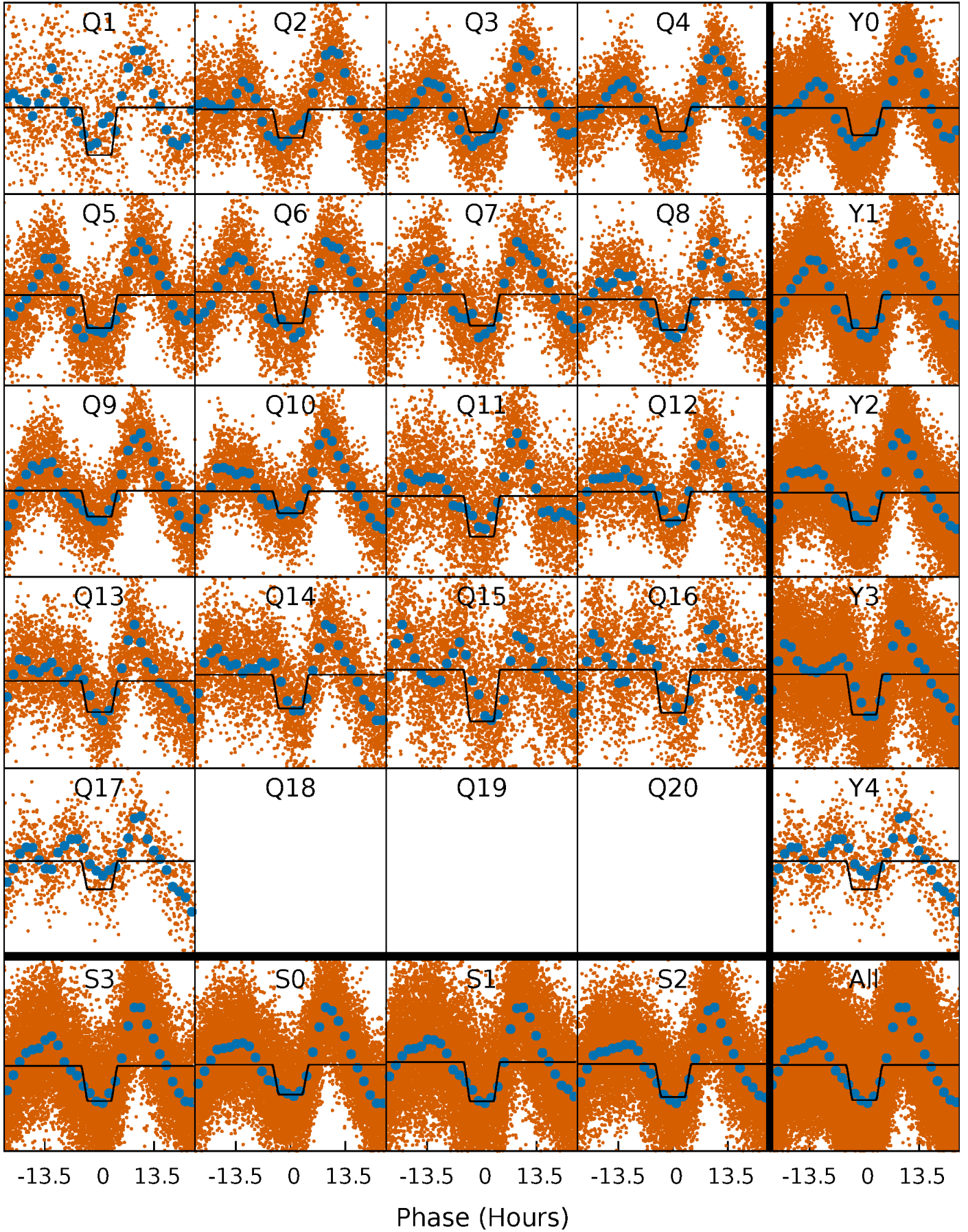
DV Quarter-Phased Transit Curves

TCE 008985157-01 P= 2.054528 Days $T_0=132.219855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

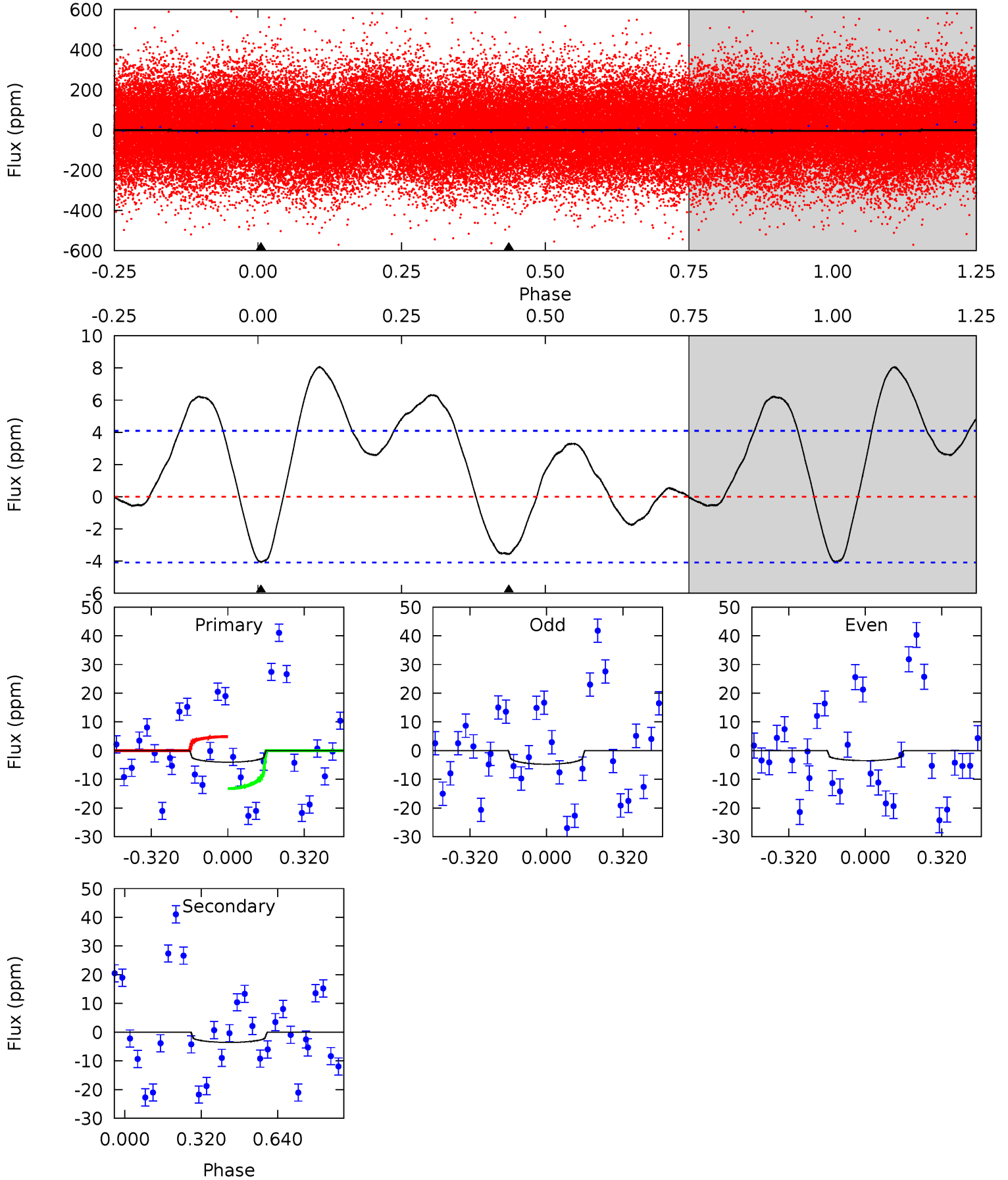
TCE 008985157-01 P= 2.054753 Days $T_0=132.209061$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-01, P = 2.054528 Days, E = 130.165327 Days

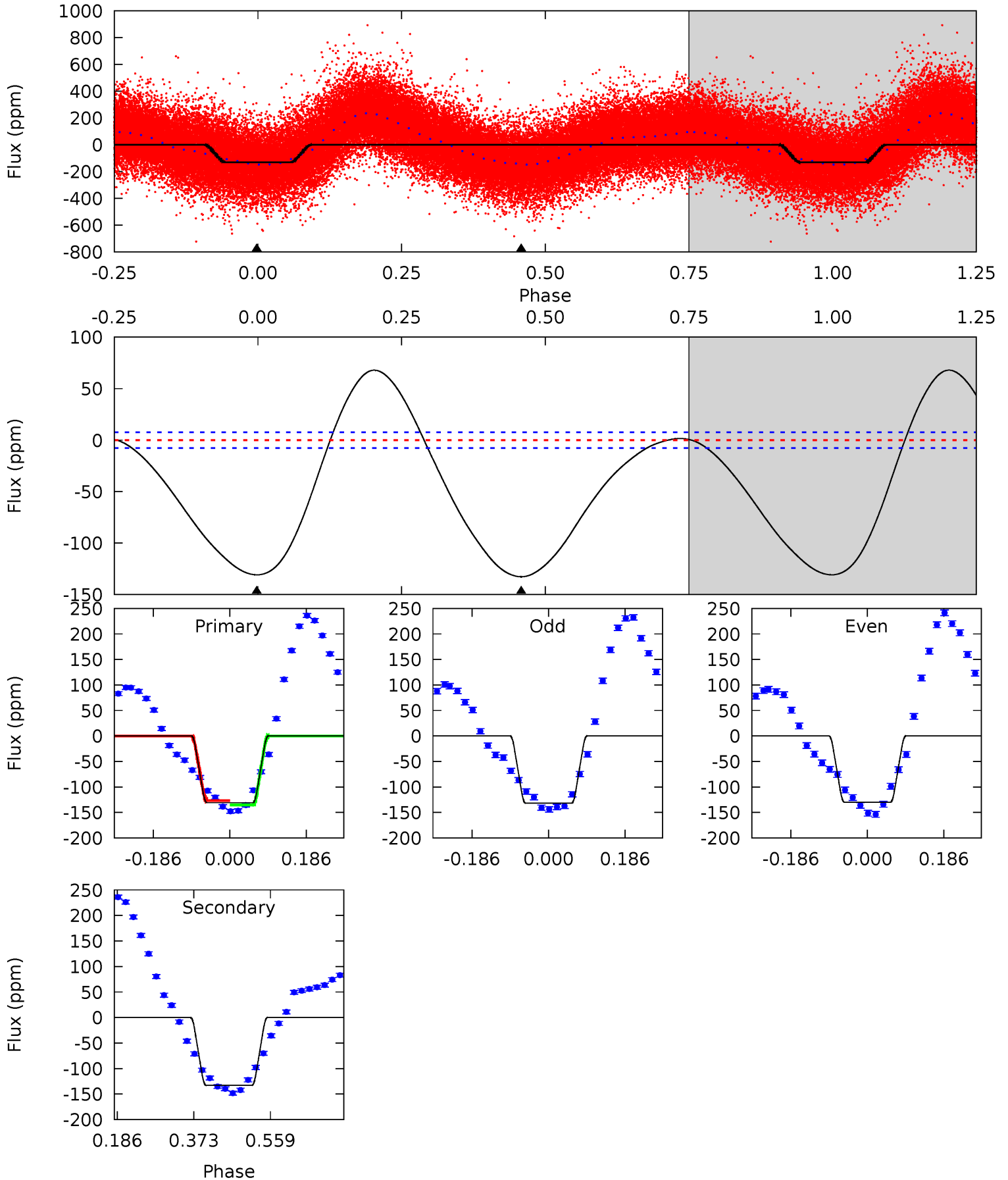
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.28	3.76	0	0	4.31	0.99	0.52	4.28	4.28	3.76	3.76	0.65	0.43	0.67	4.36



Alt Model-Shift Uniqueness Test

008985157-01, P = 2.054753 Days, E = 130.154308 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.1	77.2	0	0	4.43	1.32	17.6	76.1	76.1	77.2	77.2	0.57	1.01	0.34	2.31



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$1.78^{+1.99}_{-1.22}$	3850^{+238}_{-398}	3915^{+2919}_{-7009}	$0.827^{+7.824}_{-0.645}$
Alt.	-133 ± 2	$4.23^{+2.56}_{-2.26}$	3876^{+217}_{-349}	6356^{+3731}_{-1292}	$5.667^{+20.642}_{-3.422}$

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

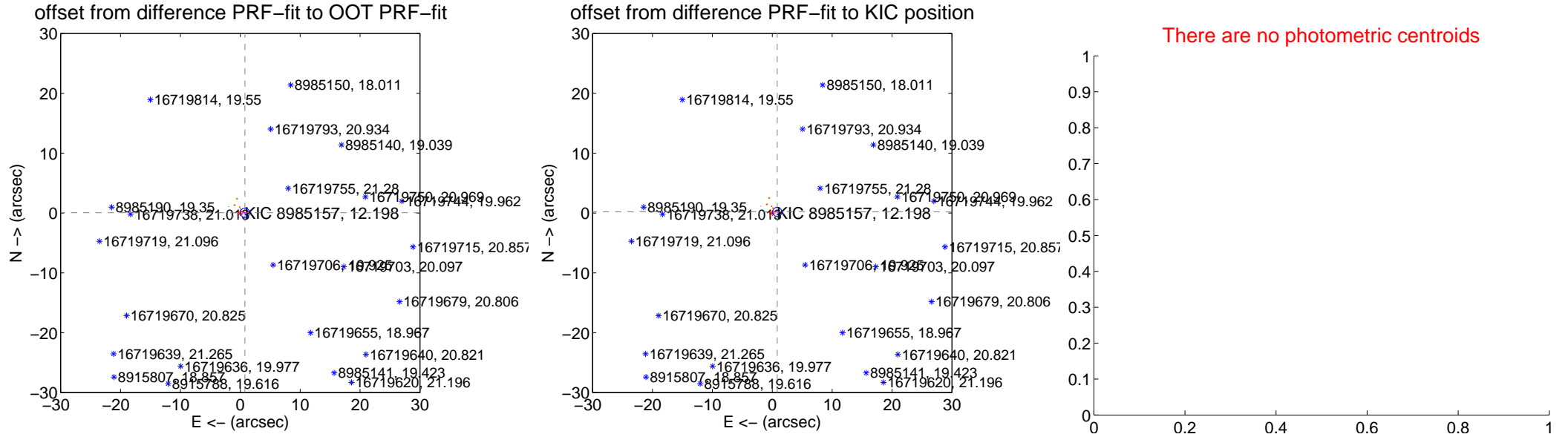
DV Centroid Data

Supplemental centroid analysis for 008985157-01. Kepler magnitude: 12.20. Transit SNR 2.19

There are 7 quarters with good PRF difference image offsets

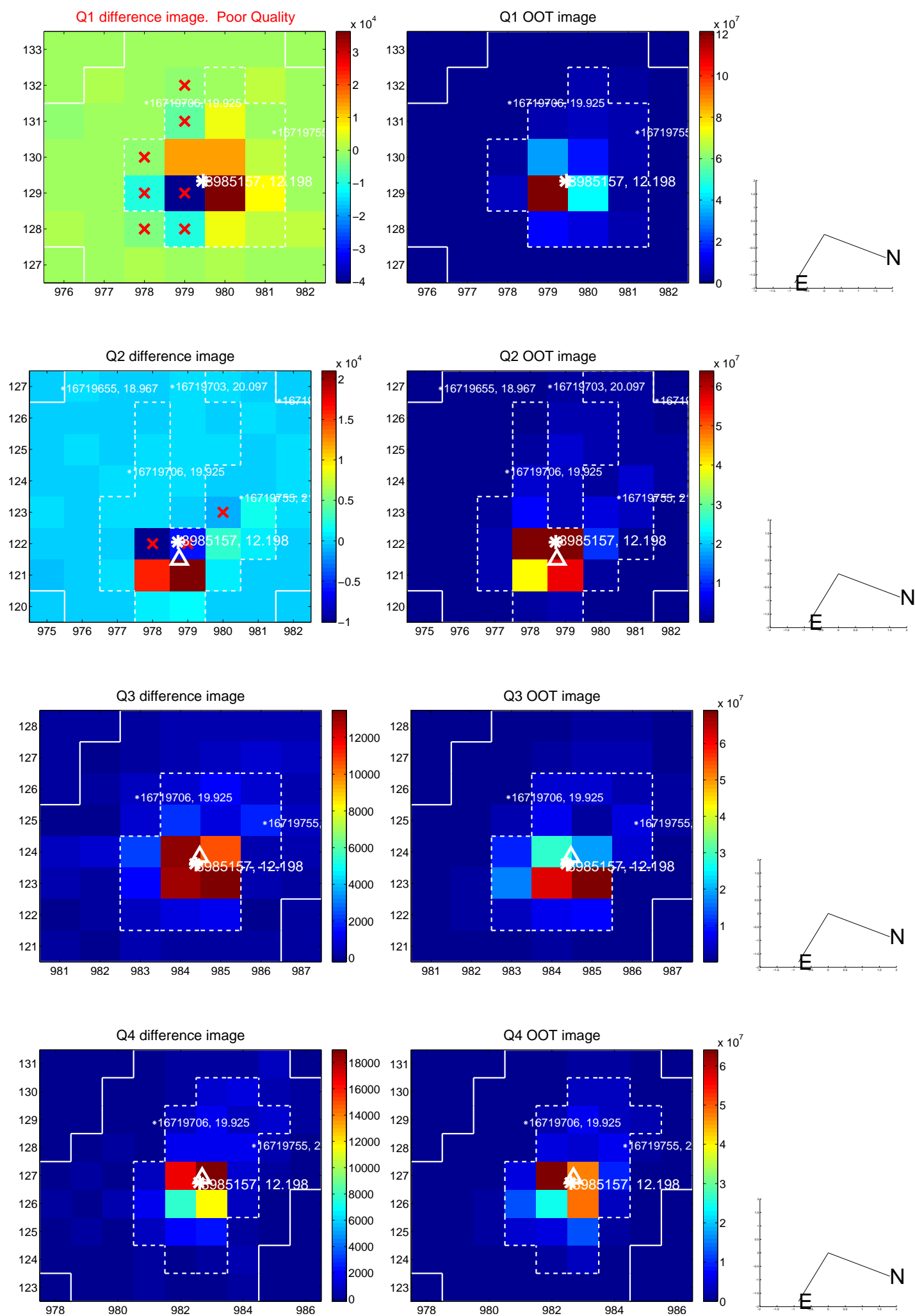
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.780 \pm 0.260	3.00	-0.779 \pm 0.265	0.044 \pm 0.216
PRF-fit source offset from KIC position	0.850 \pm 0.255	3.34	-0.829 \pm 0.278	0.188 \pm 0.227
photometric centroid source offset	—	—	—	—

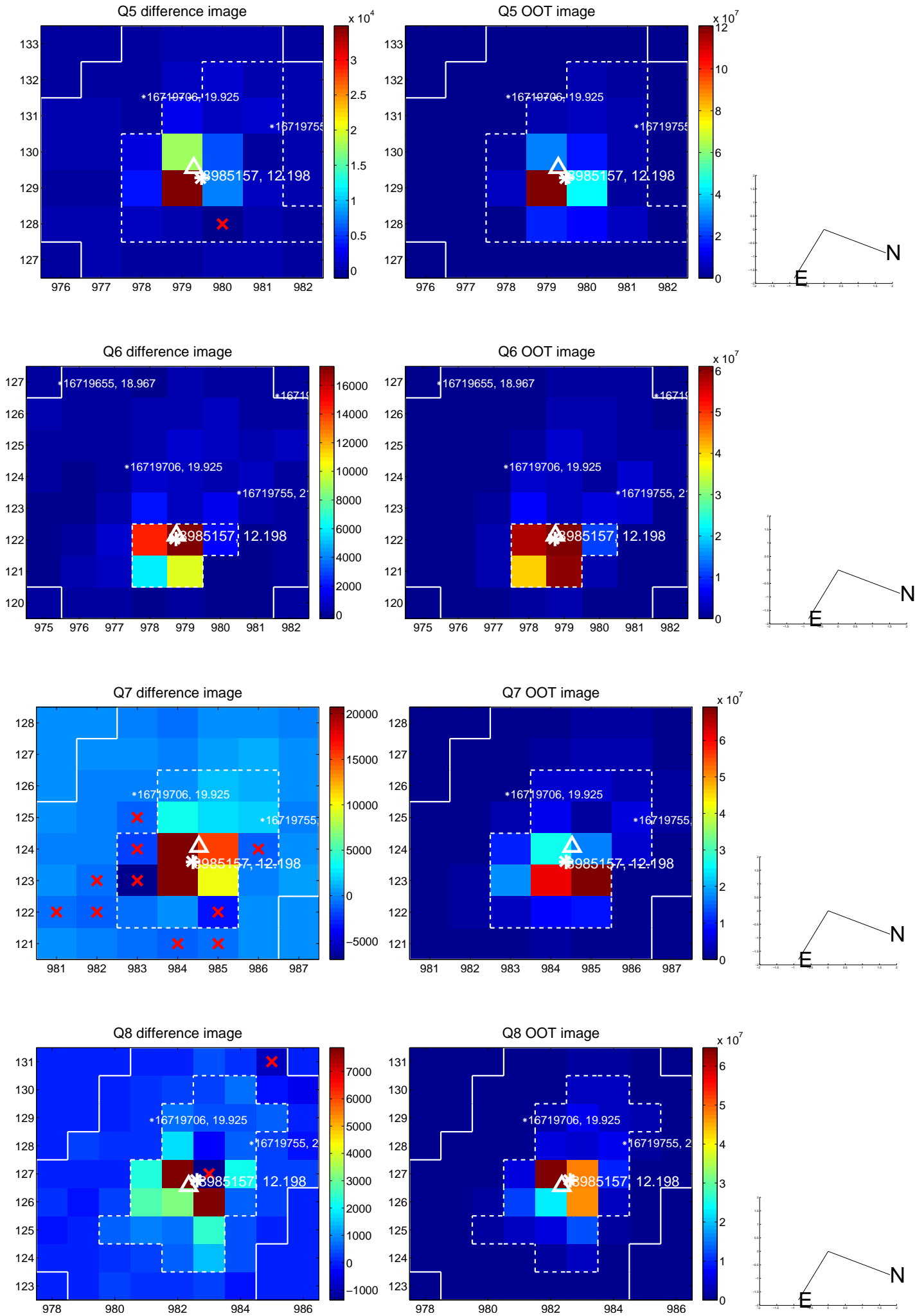


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

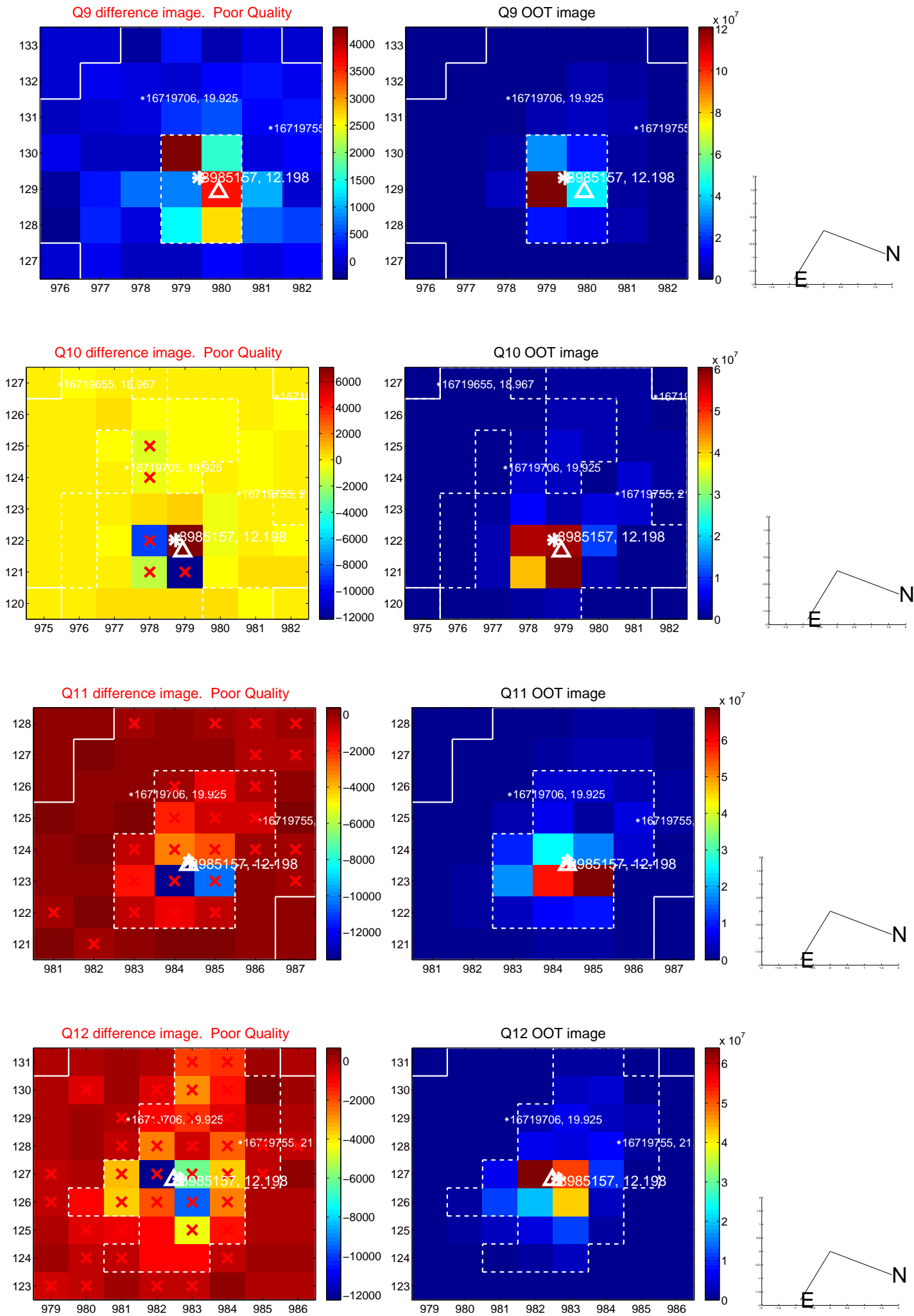
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



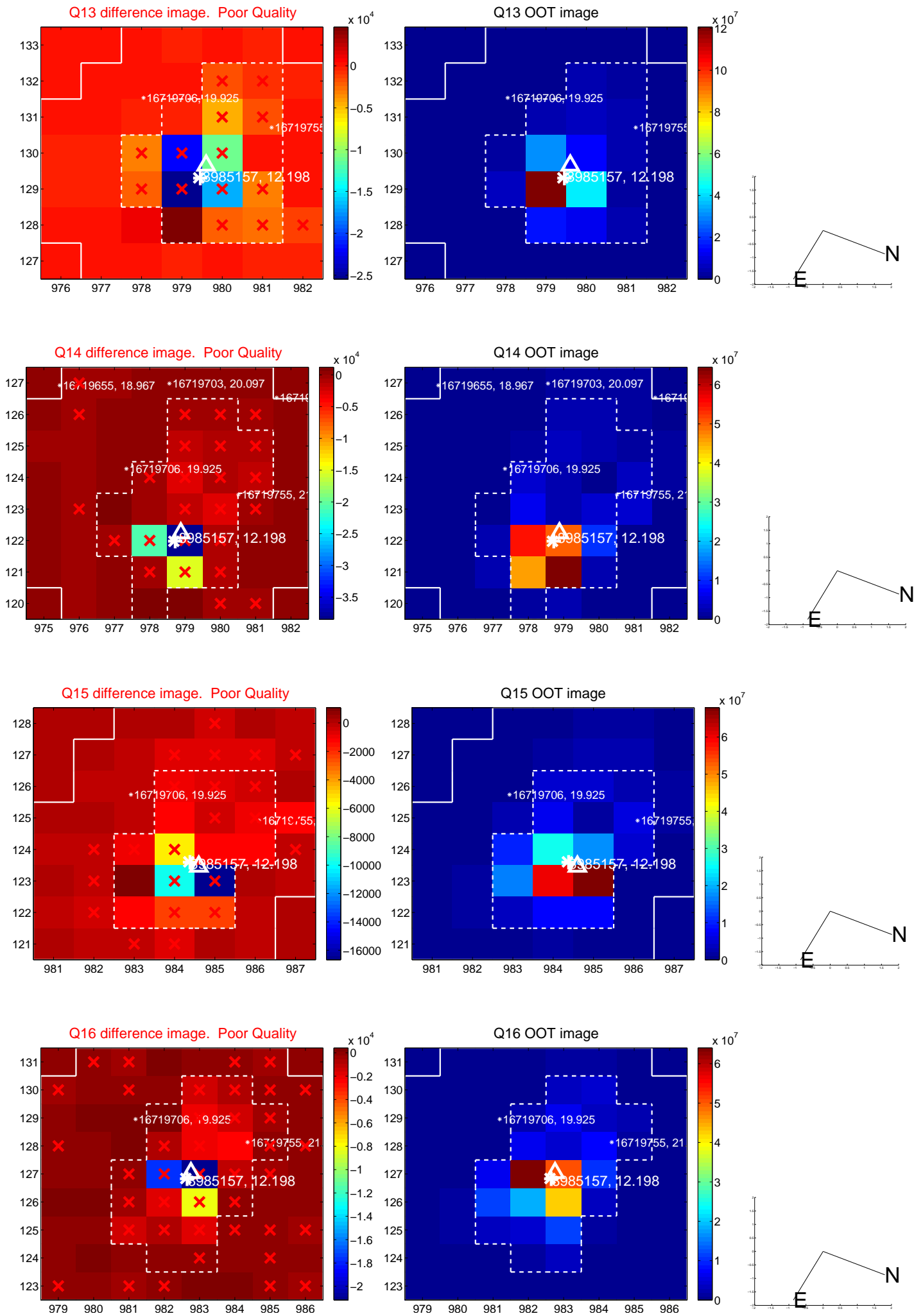
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



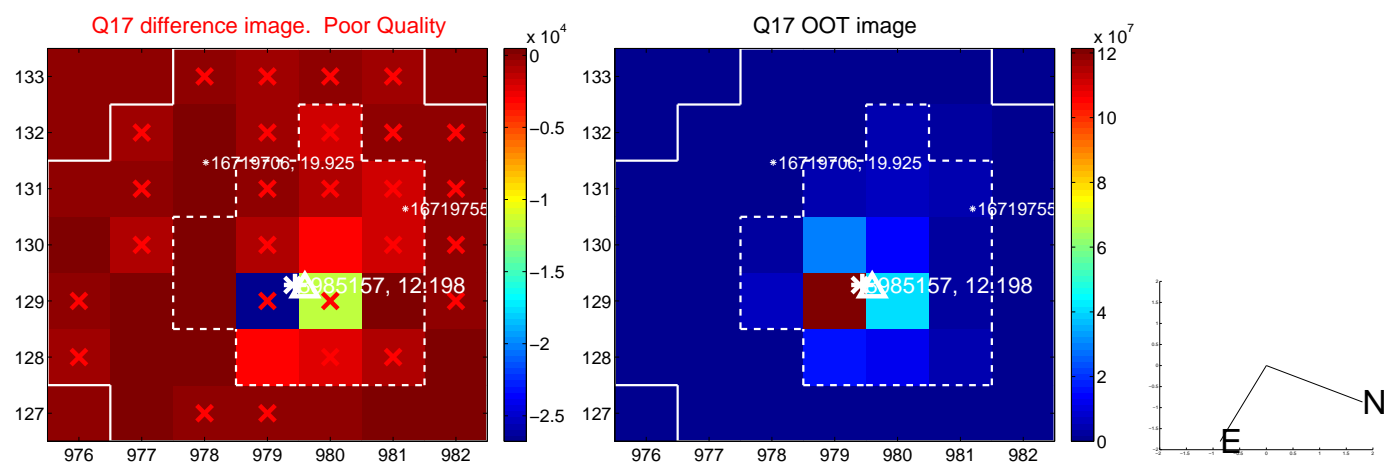
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

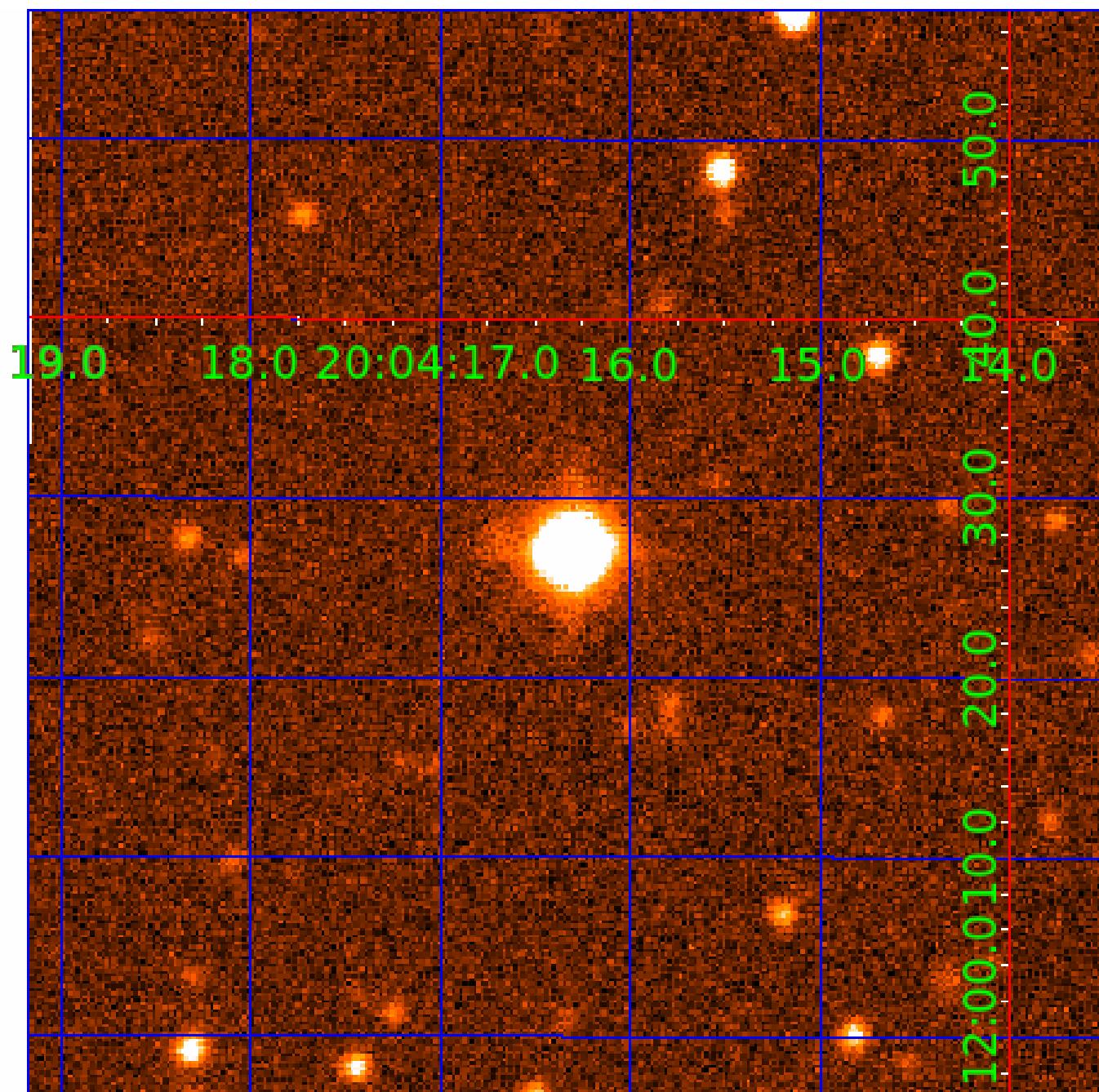


folded centroid time series figure for this object.



UKIRT Image

Declination



KIC 008985157

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

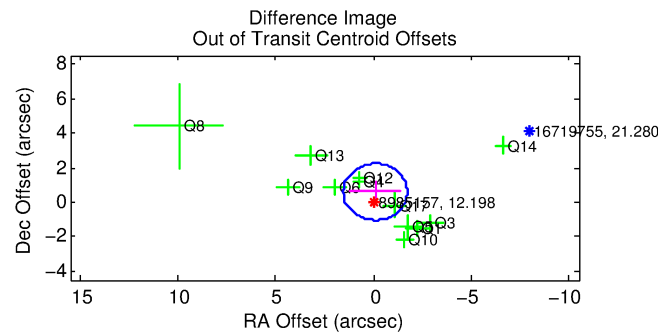
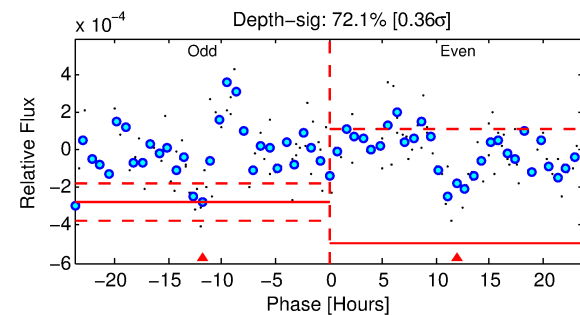
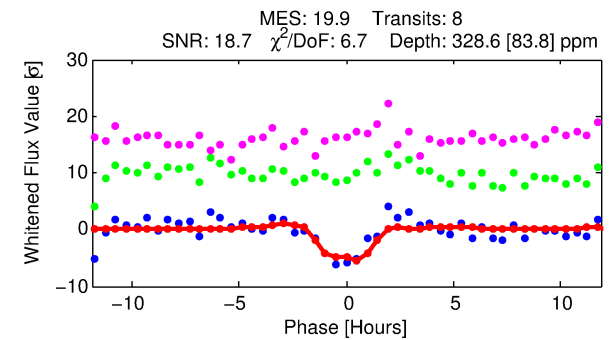
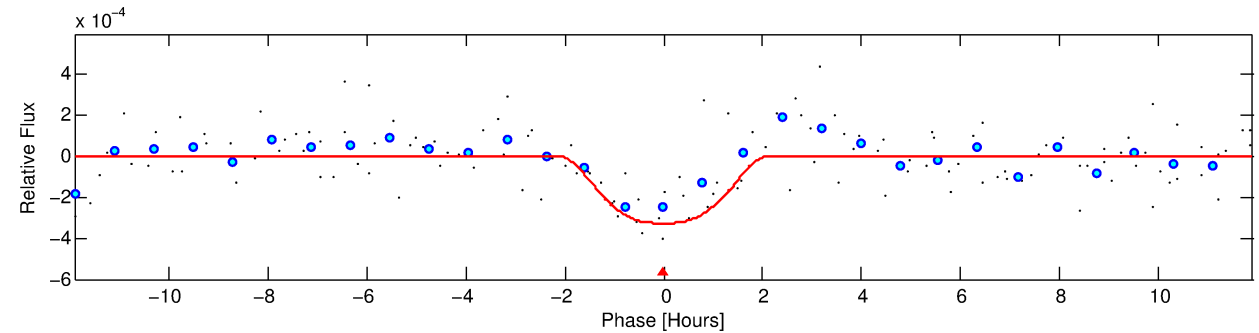
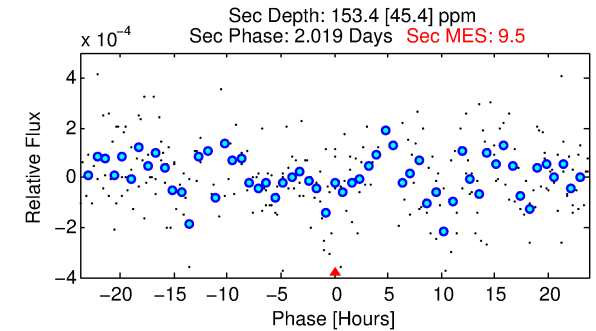
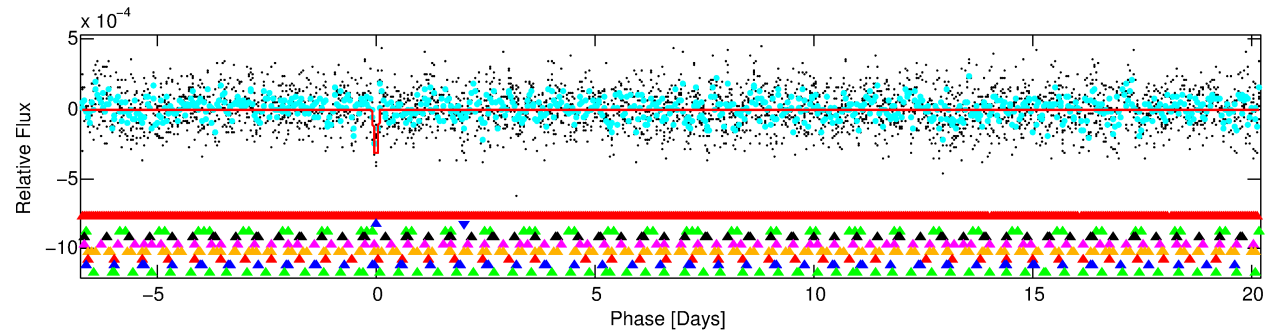
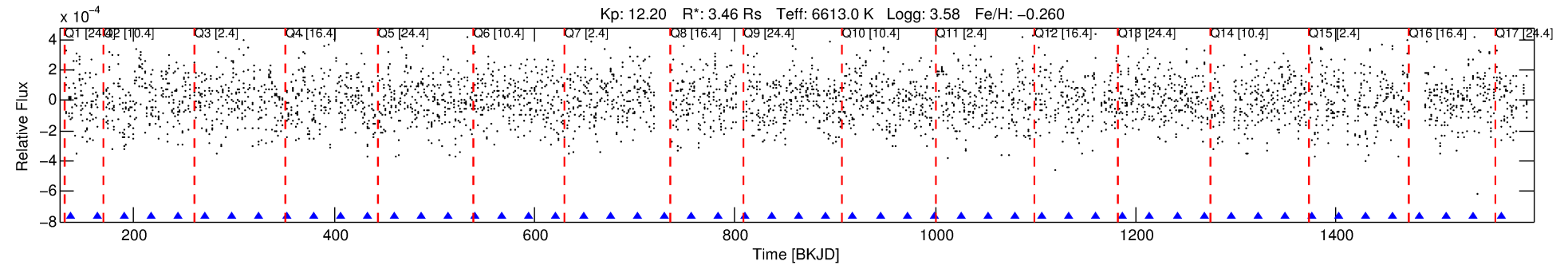
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-02

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 2 of 9 Period: 26.933 d



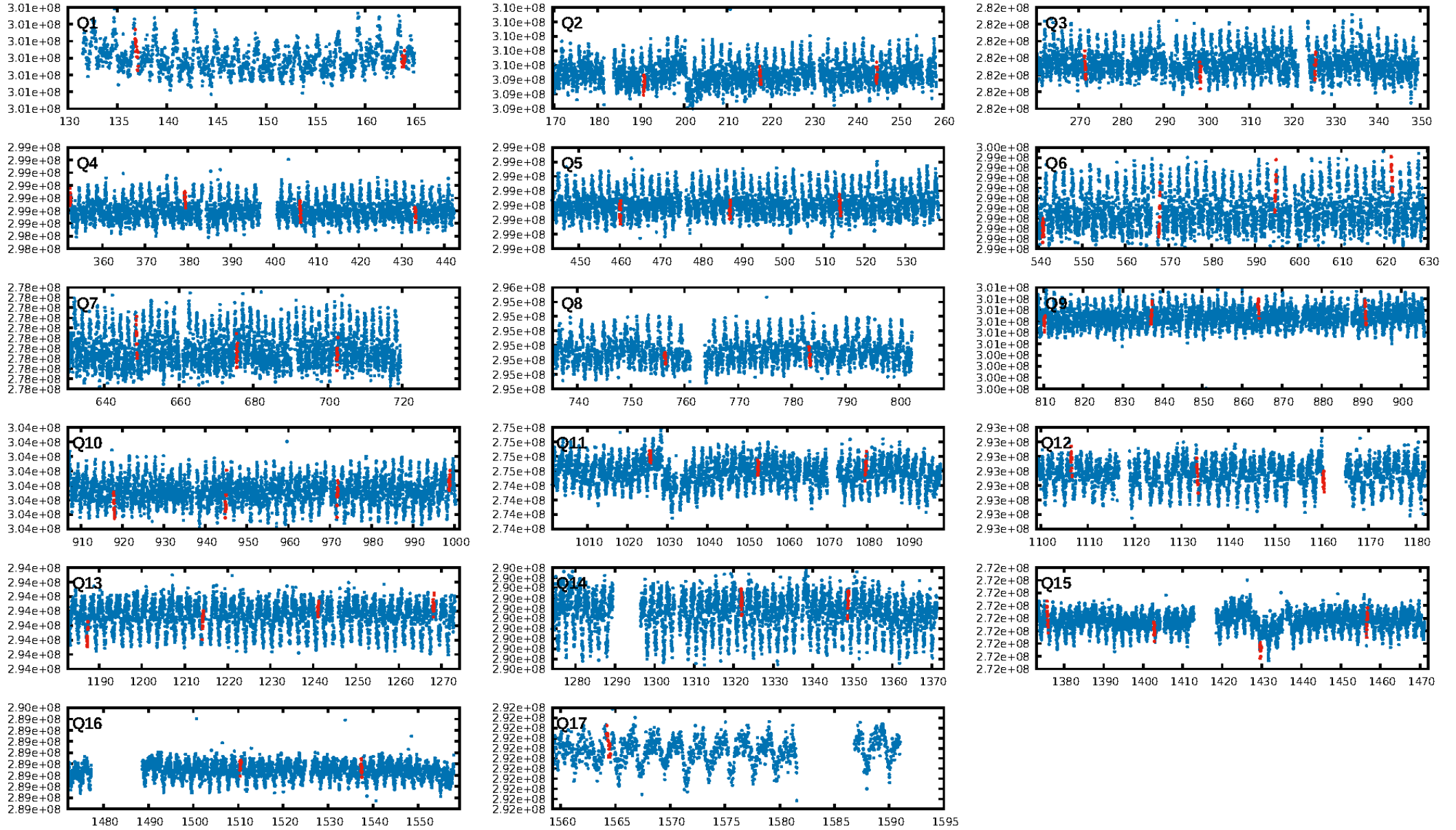
DV Fit Results:

Period = 26.93272 [0.00047] d
Epoch = 136.9295 [0.0129] BKJD
Rp/R* = 0.0218 [0.0038]
a/R* = 15.51 [4.25]
b = 0.98 [0.02]
Seff = 476.43 [279.50]
Teq = 1191 [175] K
Rp = 8.24 [3.43] Re
a = 0.2074 [0.0748] AU
Ag = 53.52 [39.32] [1.34 σ]
Teffp = 4982 [591] K [6.15 σ]

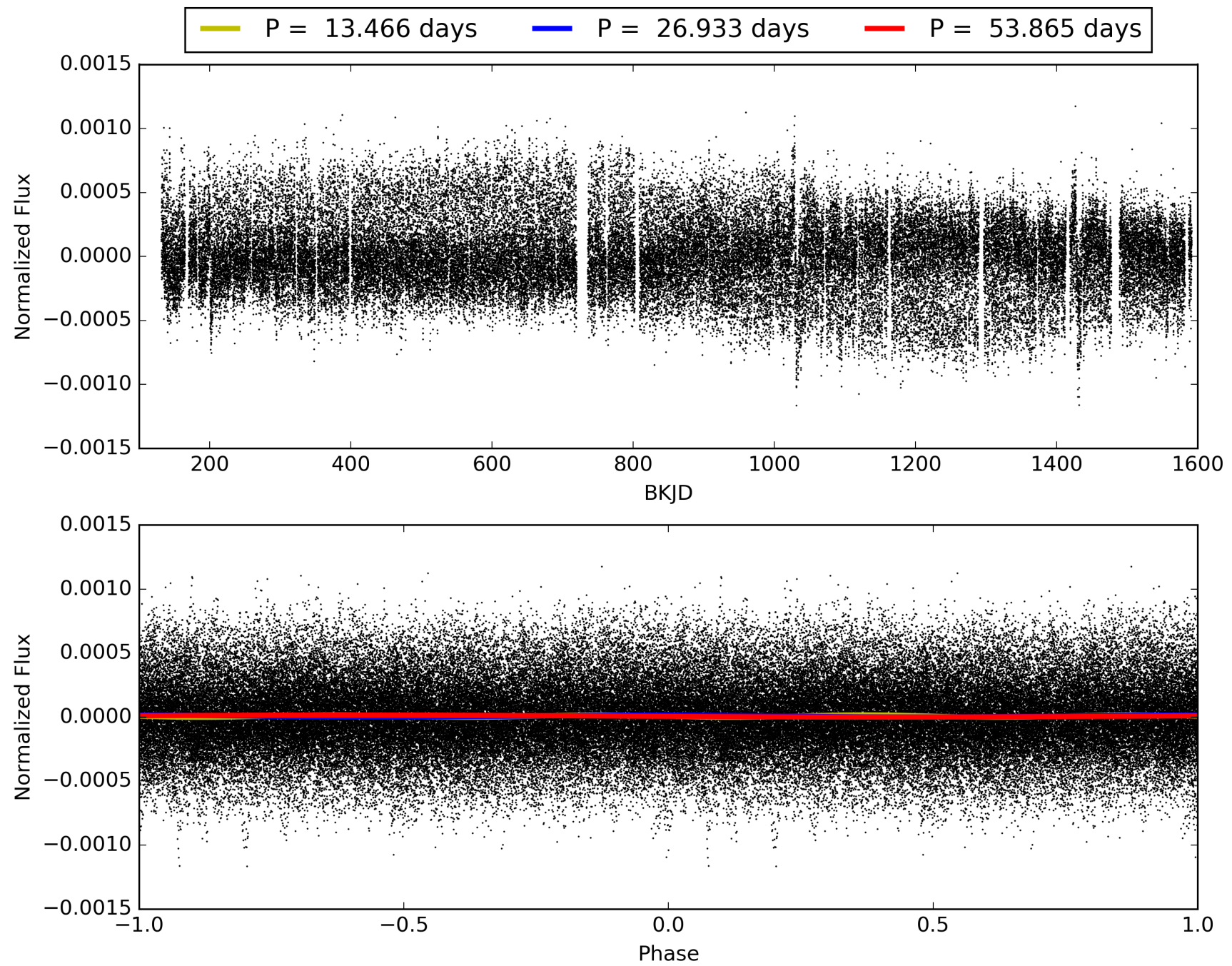
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.19 σ]
LongPeriod-sig: 100.0% [44.08 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -0.3608
Centroid-sig: 2.7%
Centroid-so: 0.581 arcsec [1.63 σ]
OotOffset-rm: 0.601 arcsec [1.10 σ]
KicOffset-rm: 0.724 arcsec [1.39 σ]
OotOffset-st: 3/1/3/5 [12]
KicOffset-st: 3/1/3/5 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.24 [4/17]

TCE 008985157-02, PDC Light Curves

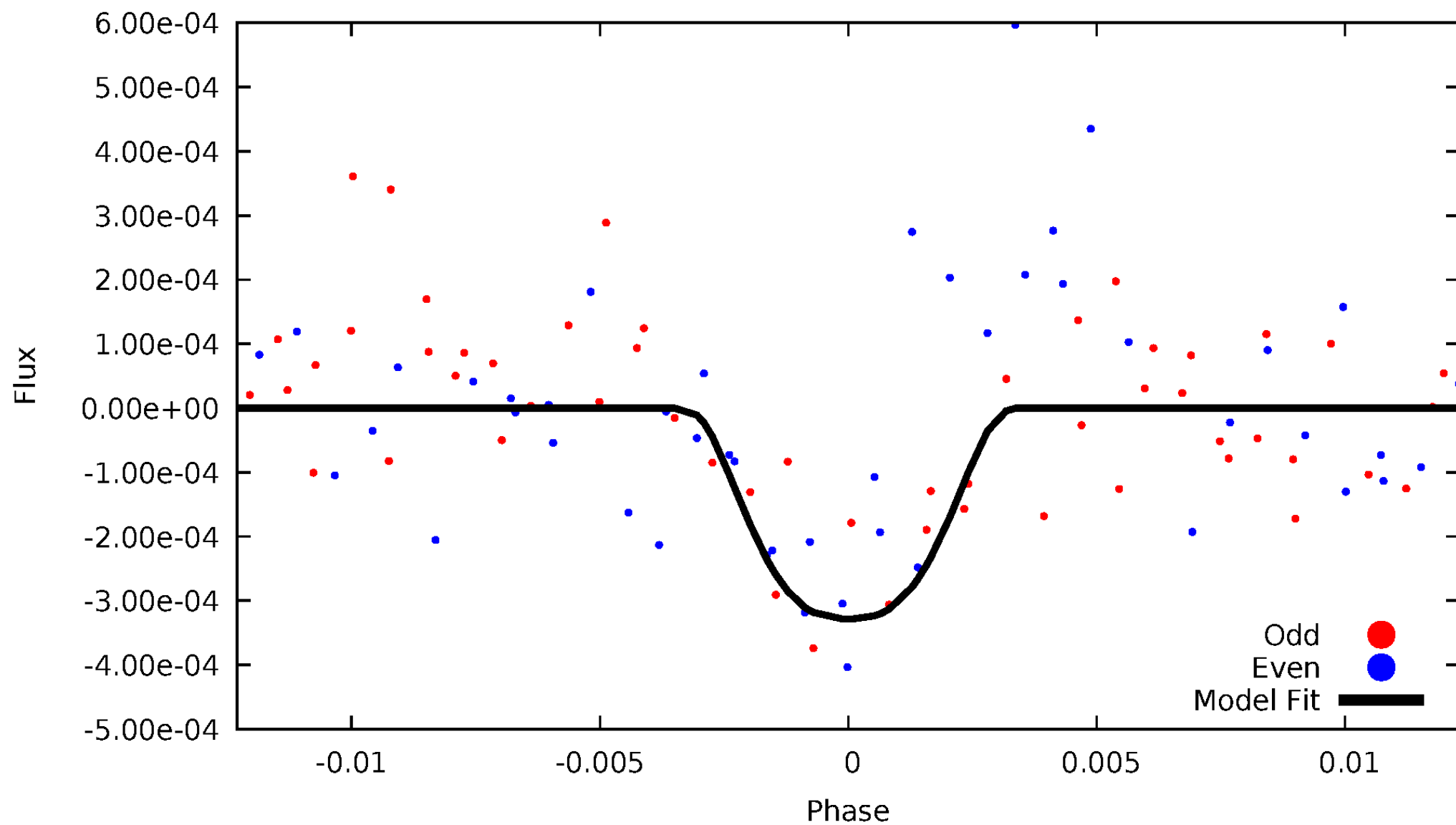


TCE 008985157-02



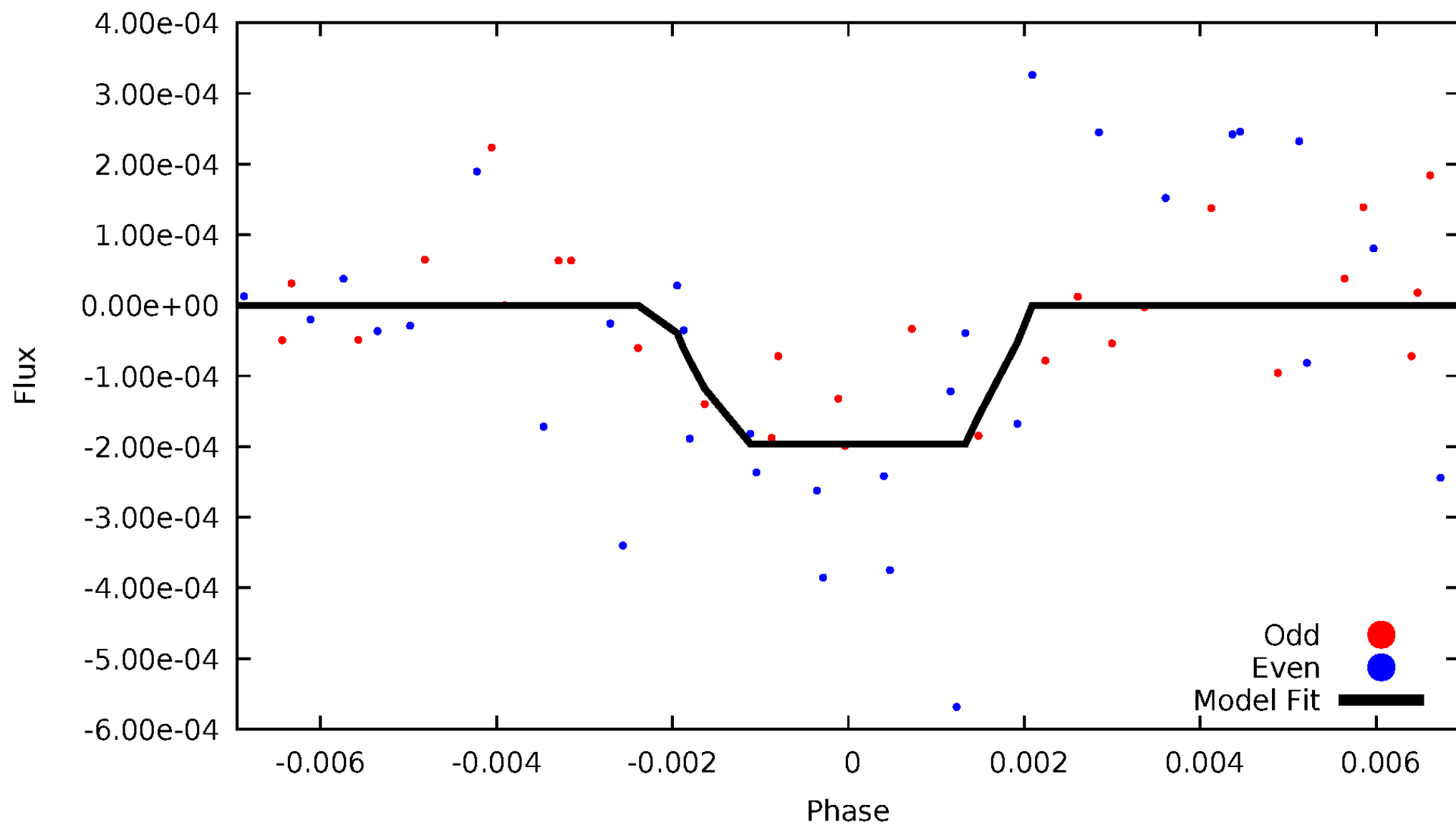
DV Odd/Even

TCE 008985157-02



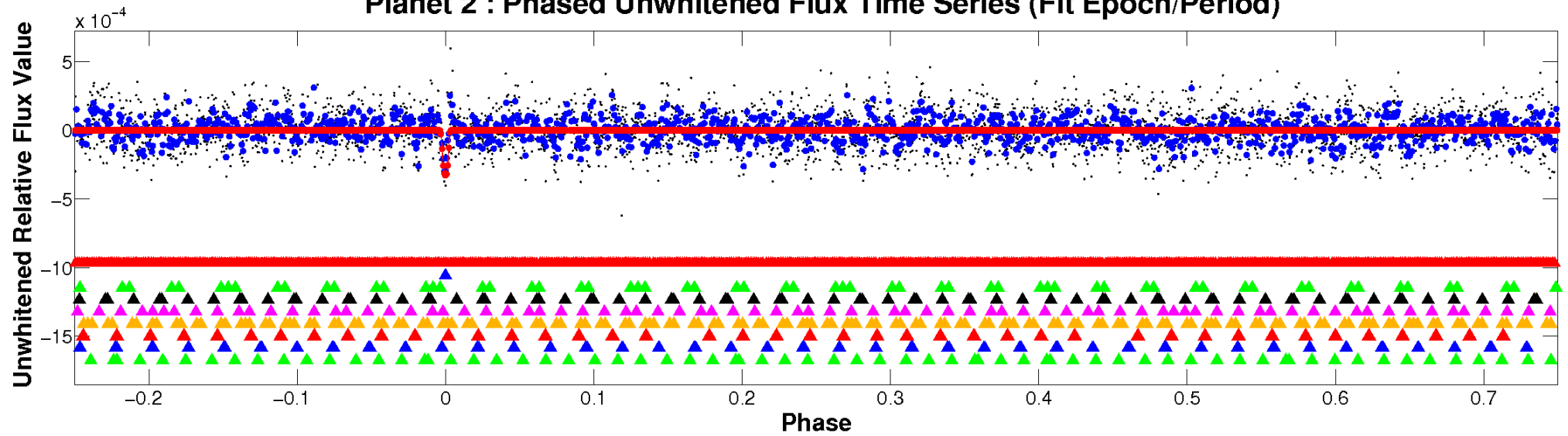
ALT Odd/Even

TCE 008985157-02

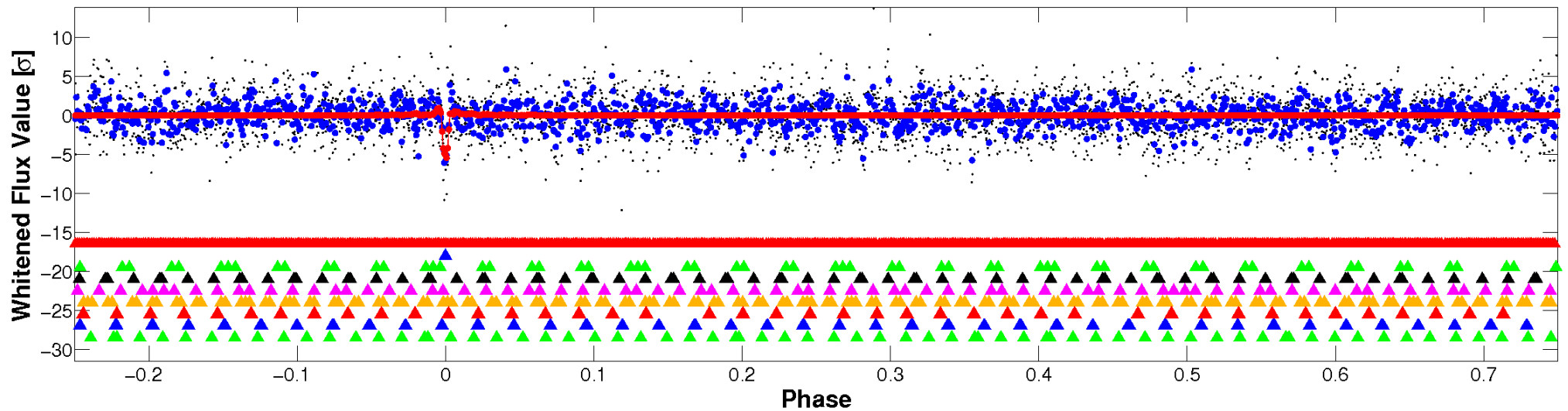


Non-Whitened Vs. Whitened Light Curve

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

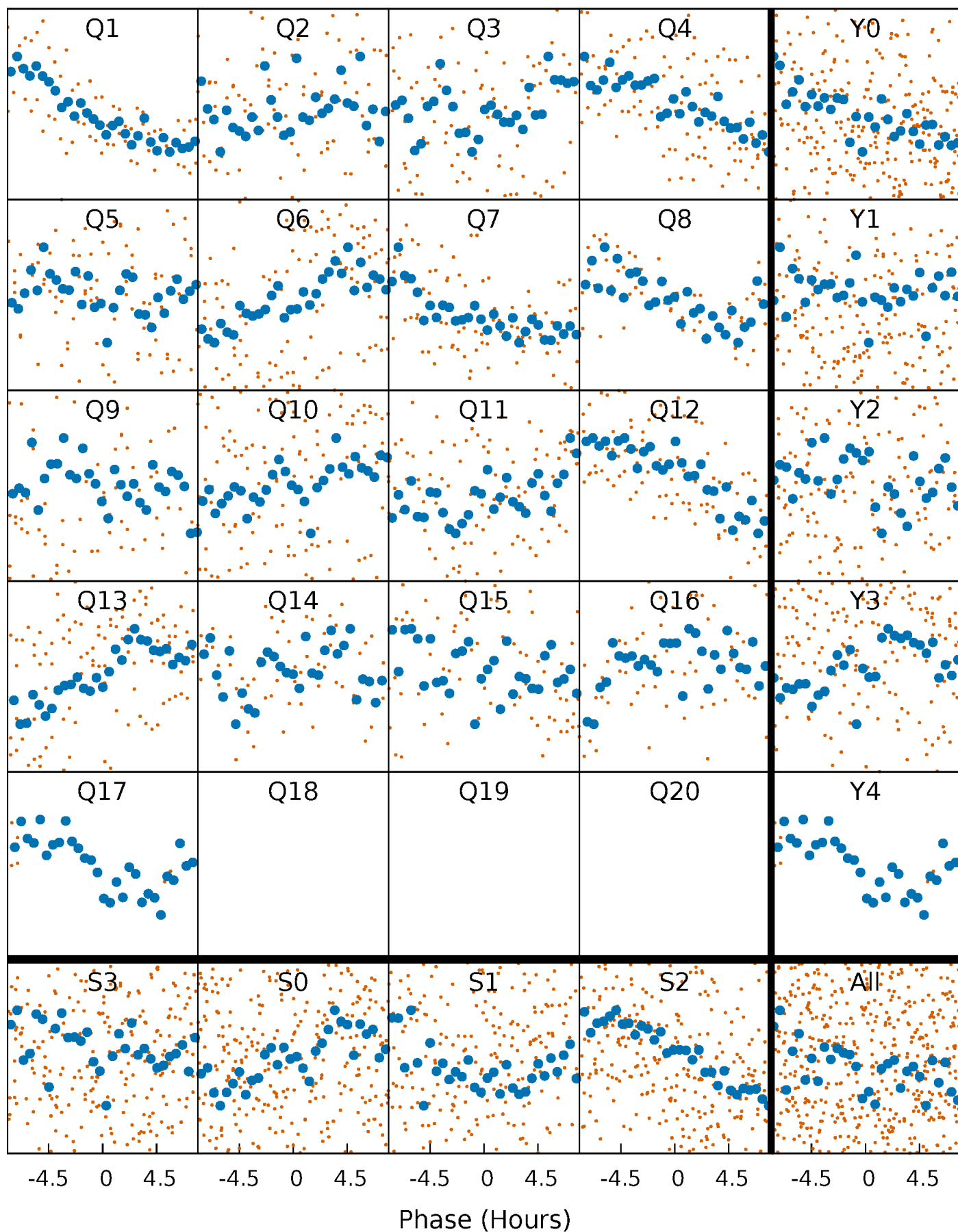


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



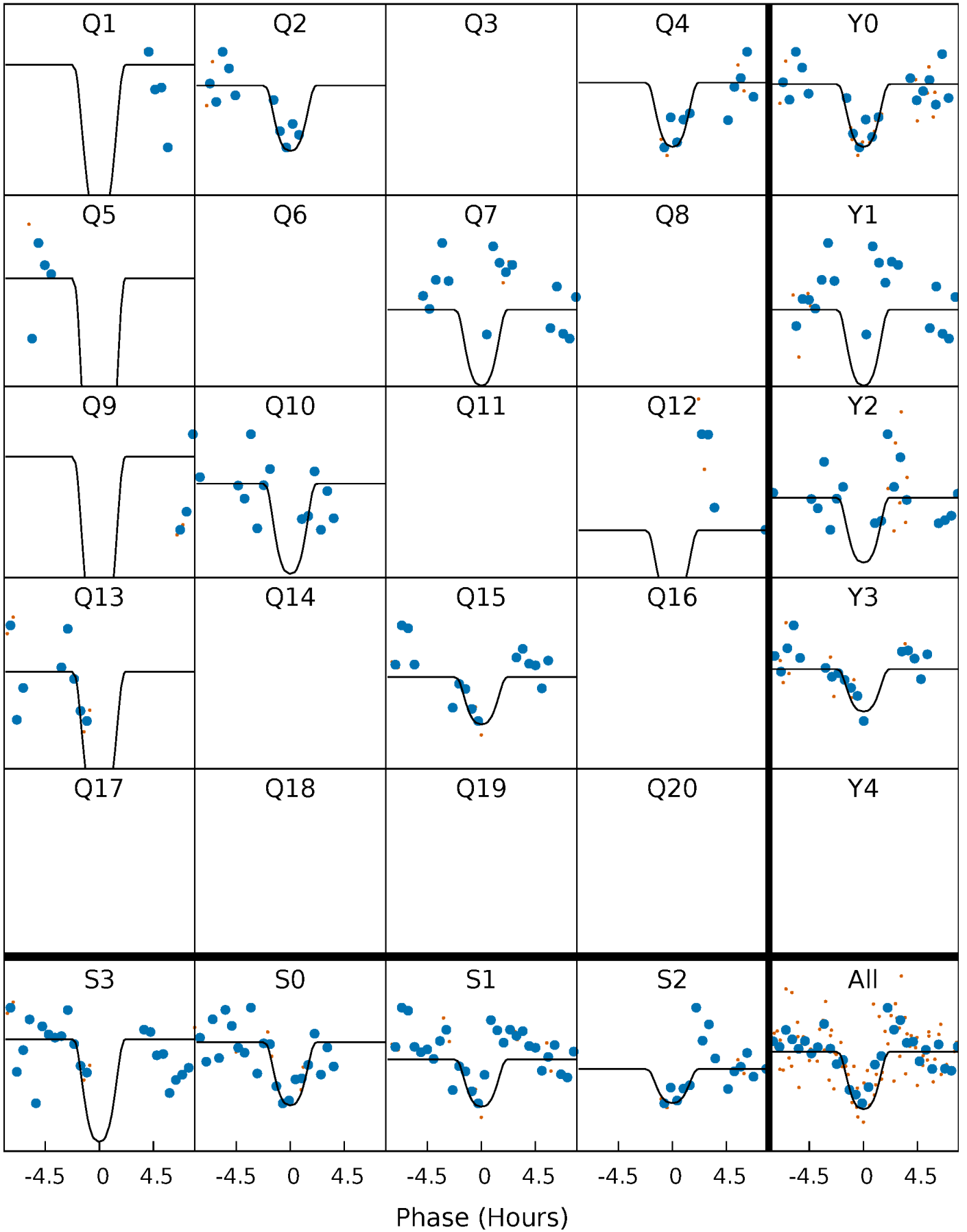
PDC Quarter-Phased Transit Curves

TCE 008985157-02 P= 26.932718 Days $T_0=136.929506$ (BKJD)



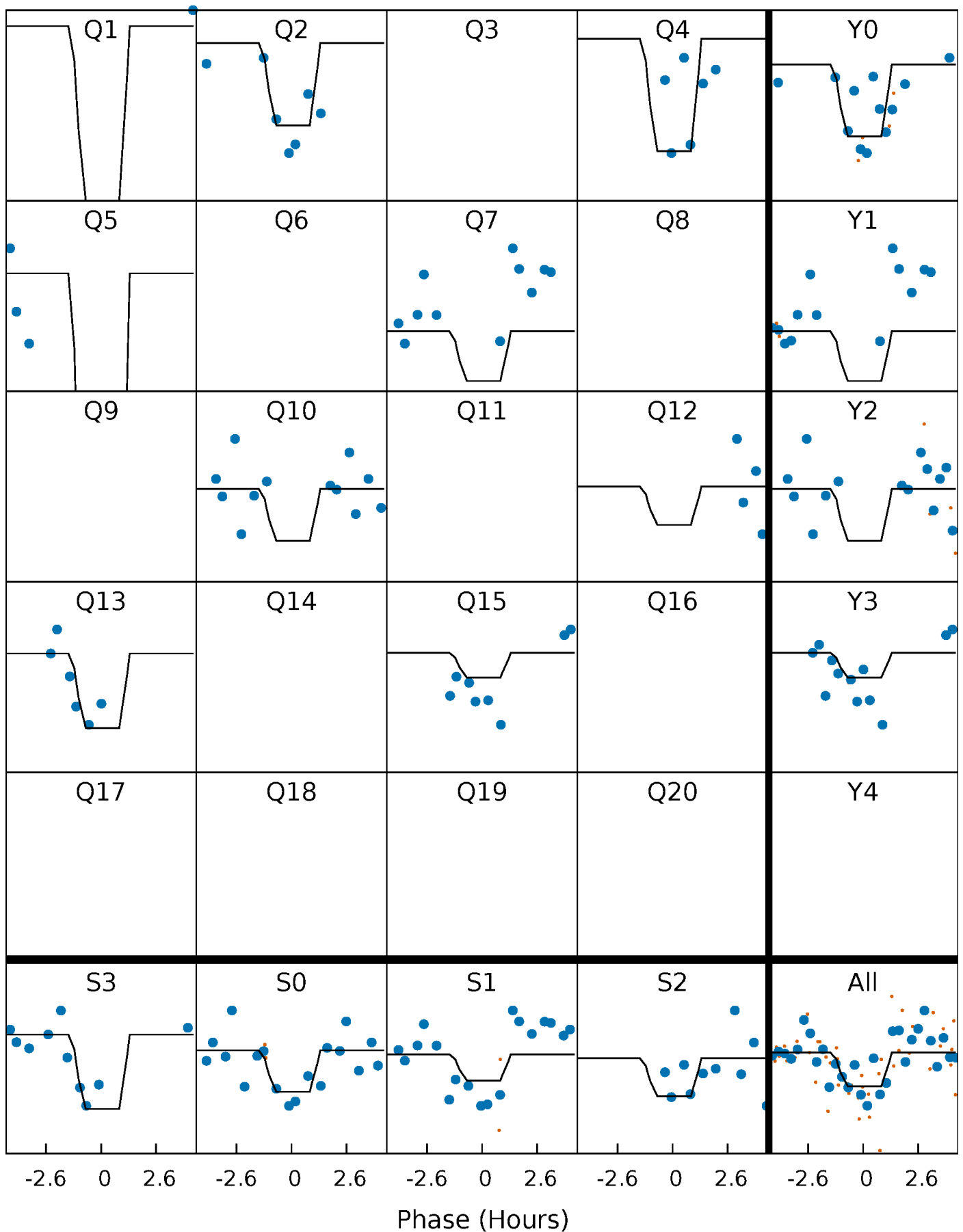
DV Quarter-Phased Transit Curves

TCE 008985157-02 P= 26.932718 Days $T_0=136.929506$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

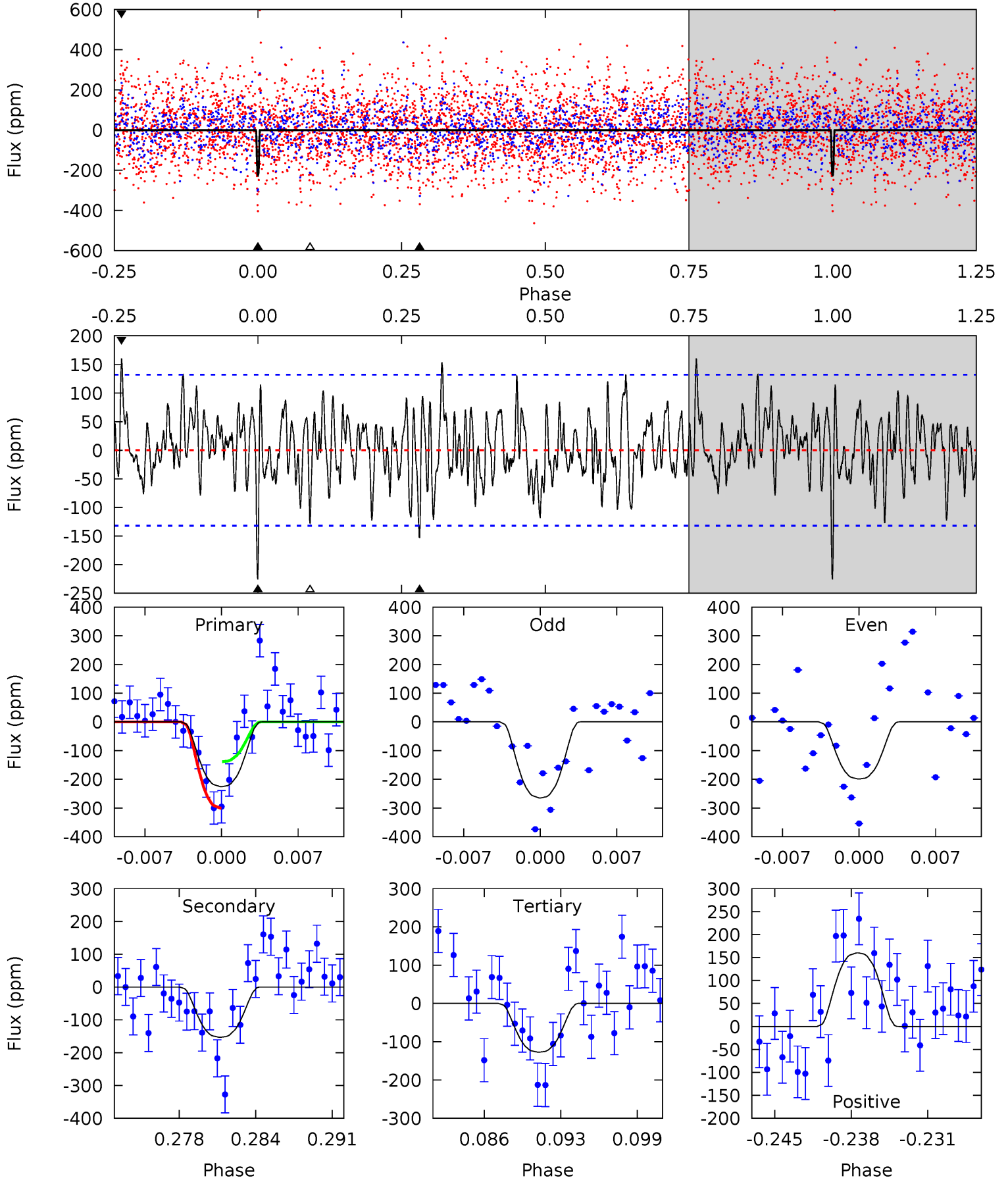
TCE 008985157-02 P= 26.932294 Days $T_0=136.916269$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-02, P = 26.932718 Days, E = 109.996788 Days

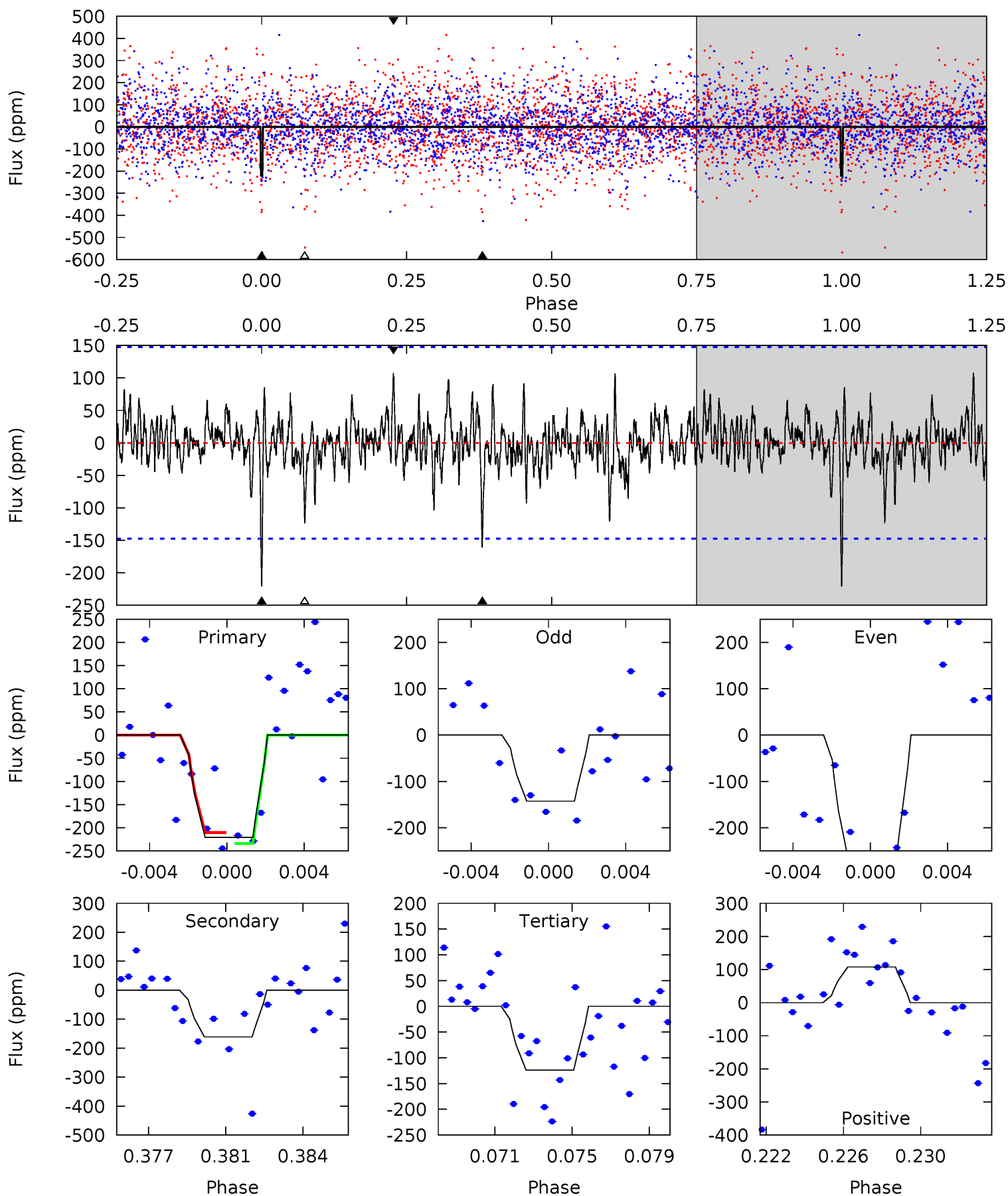
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.72	5.92	4.92	6.19	5.11	2.72	1.91	3.80	2.52	1.00	-0.27	1.26	0.75	0.42	3.13



Alt Model-Shift Uniqueness Test

008985157-02, P = 26.932294 Days, E = 109.983975 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.79	5.69	4.37	3.80	5.20	2.88	1.11	3.42	3.99	1.32	1.89	2.23	1.19	0.33	0.42



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-153 ± 26	$7.81^{+1.93}_{-1.94}$	1639^{+104}_{-158}	5034^{+498}_{-381}	60^{+44}_{-22}
Alt.	-161 ± 28	$4.96^{+1.70}_{-1.51}$	1644^{+91}_{-145}	6297^{+1246}_{-763}	156^{+175}_{-69}

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 $A_{obs} \gg 1.0$

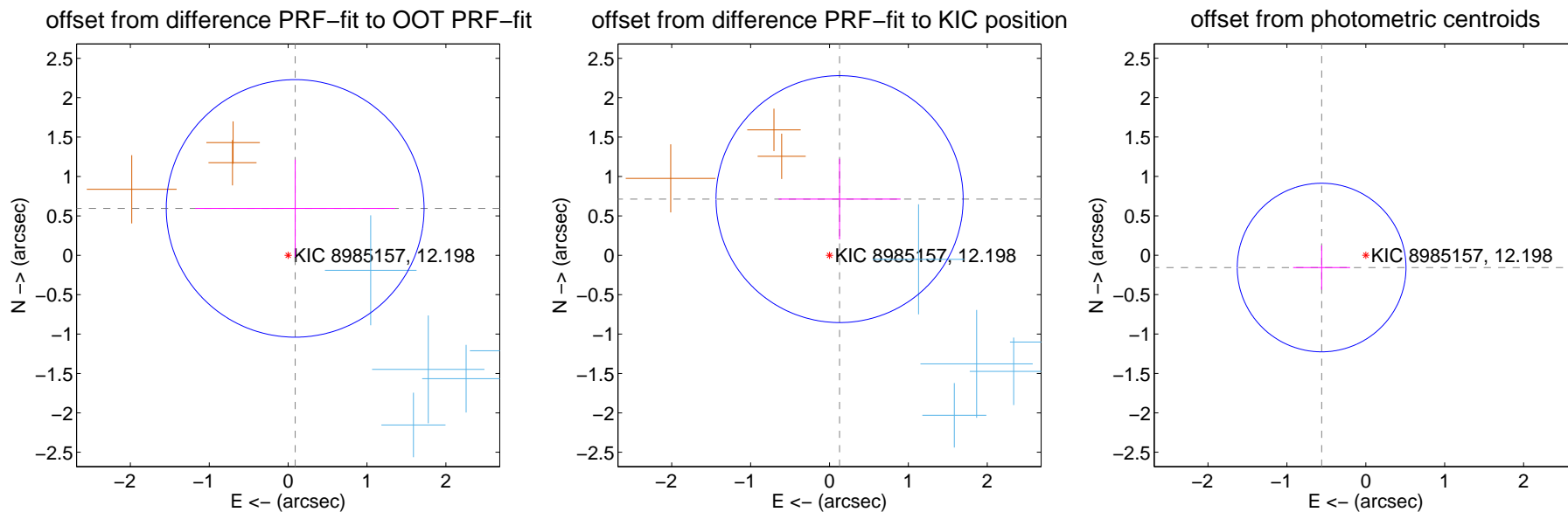
DV Centroid Data

Supplemental centroid analysis for 008985157-02. Kepler magnitude: 12.20. Transit SNR 18.69

There are 6 quarters with good PRF difference image offsets

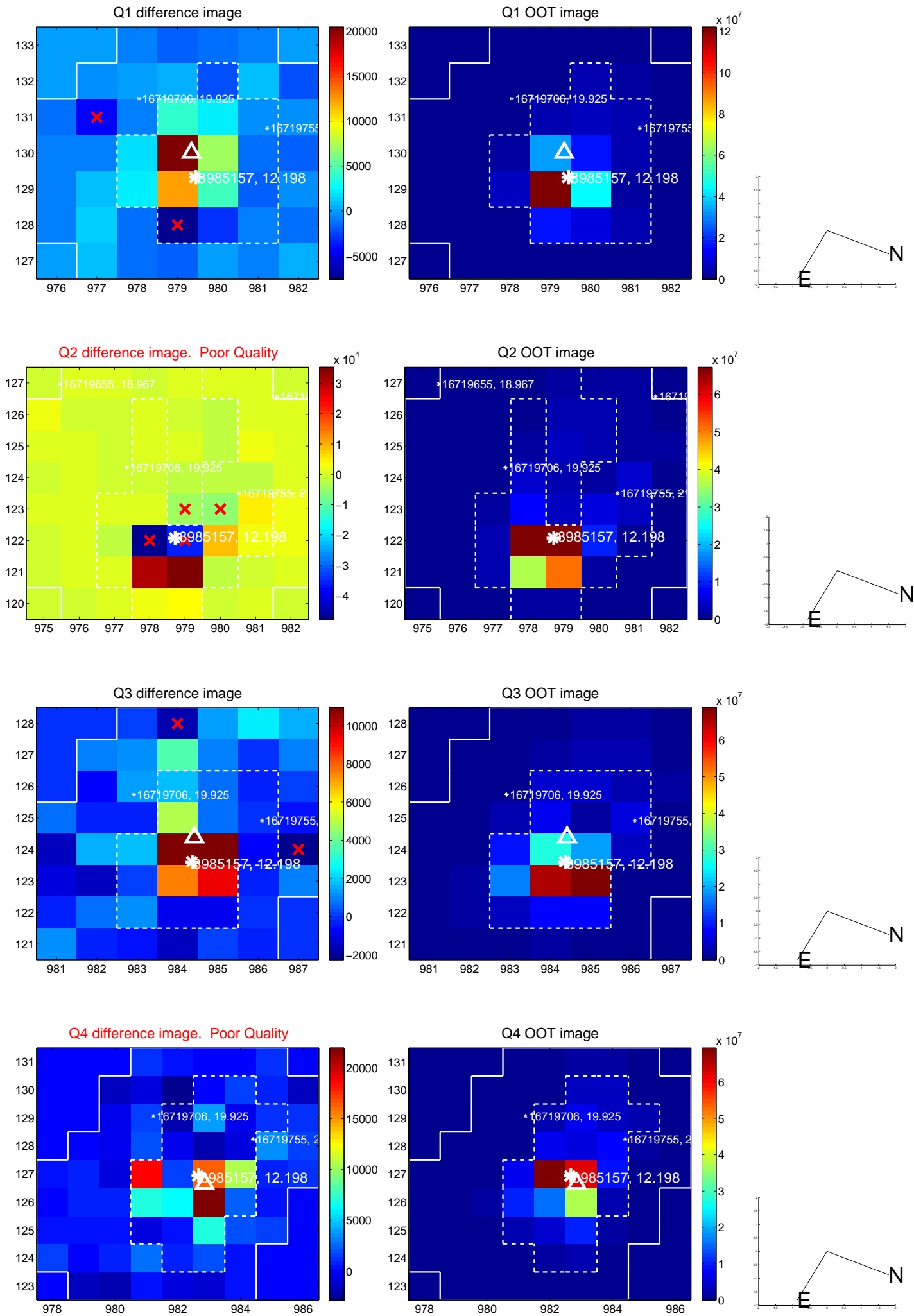
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.601 ± 0.545	1.10	-0.089 ± 1.266	0.595 ± 0.618
PRF-fit source offset from KIC position	0.724 ± 0.522	1.39	-0.128 ± 0.774	0.713 ± 0.512
photometric centroid source offset	0.58 ± 0.36	1.63	0.56 ± 0.36	-0.16 ± 0.28

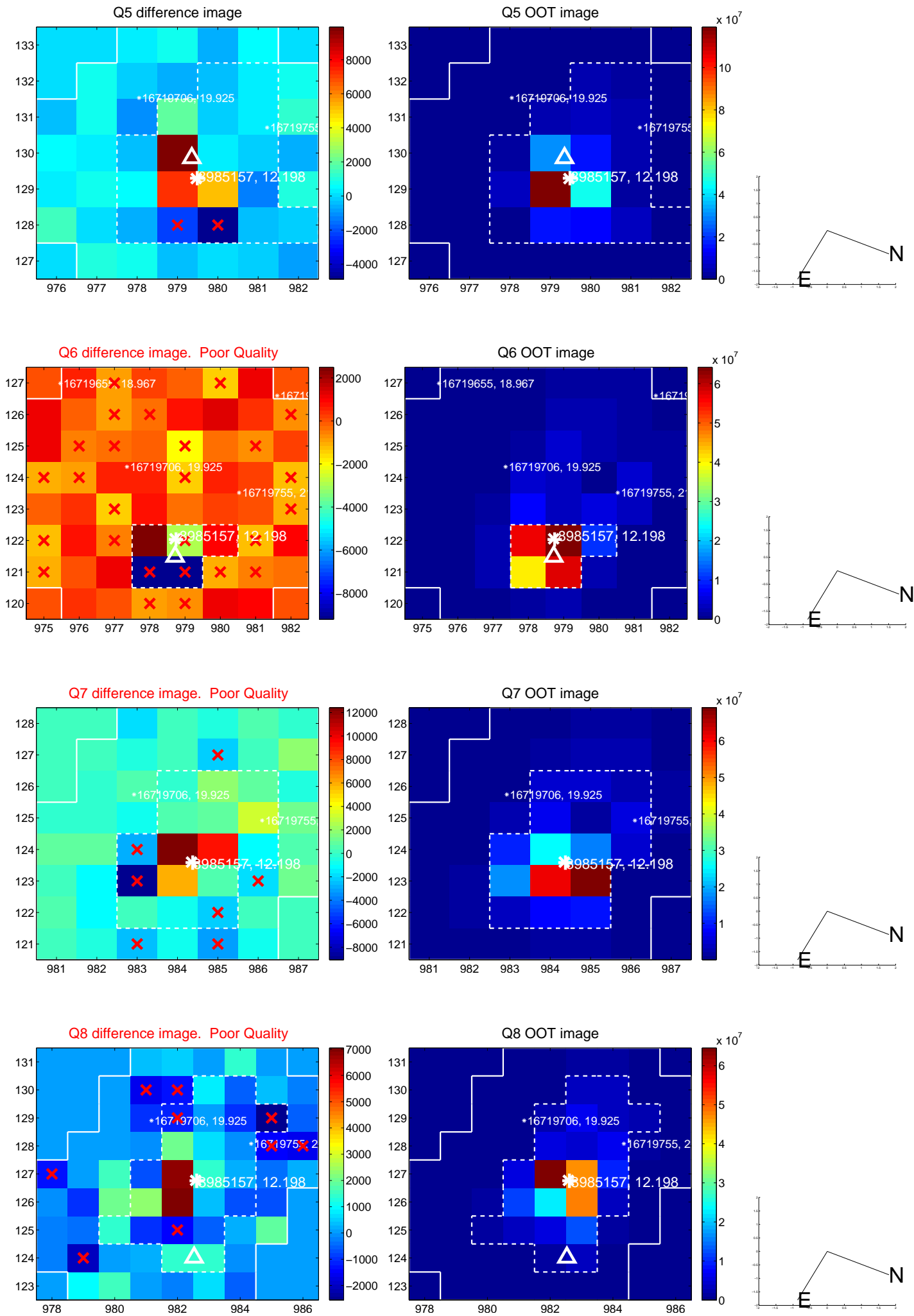


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

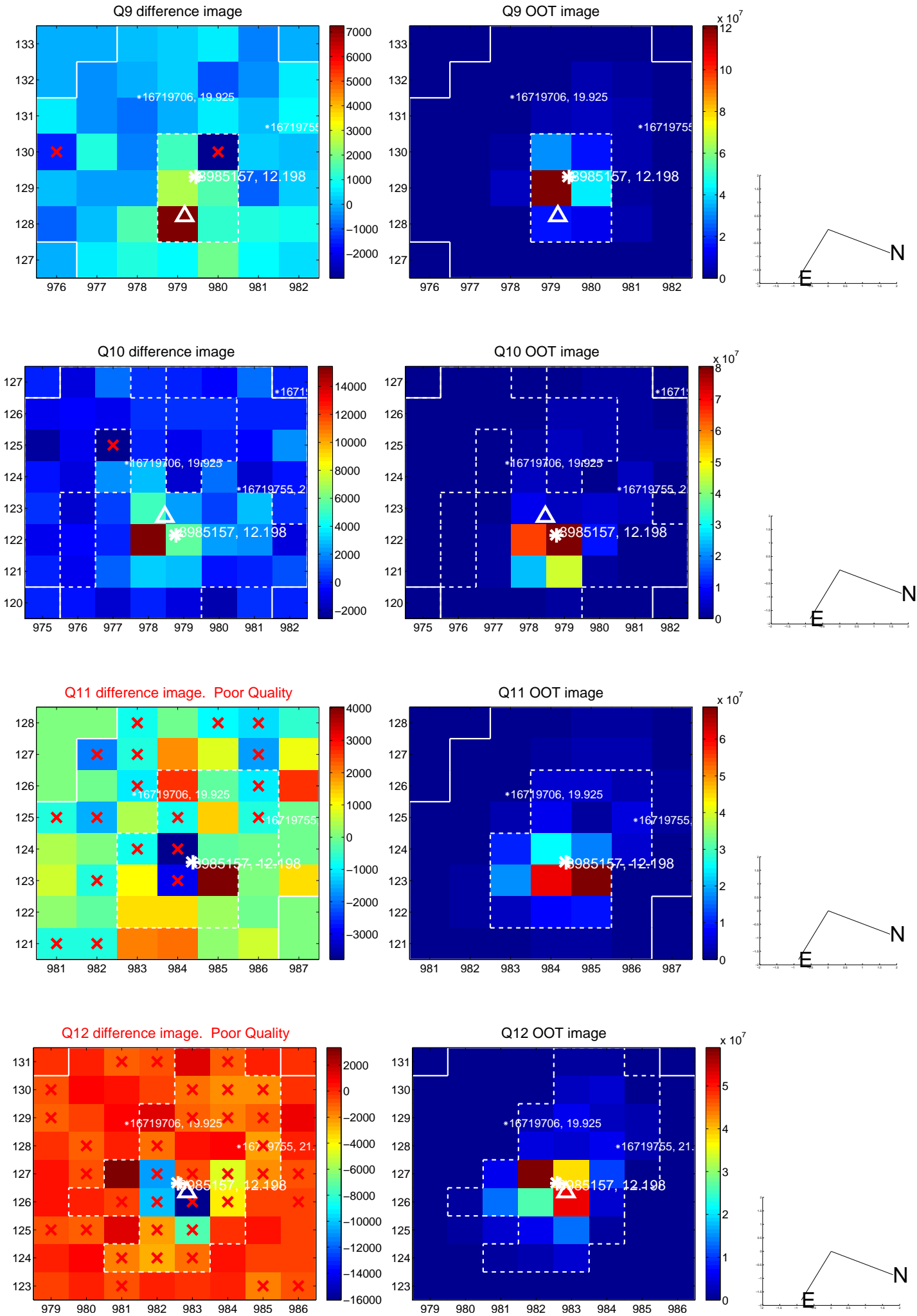
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



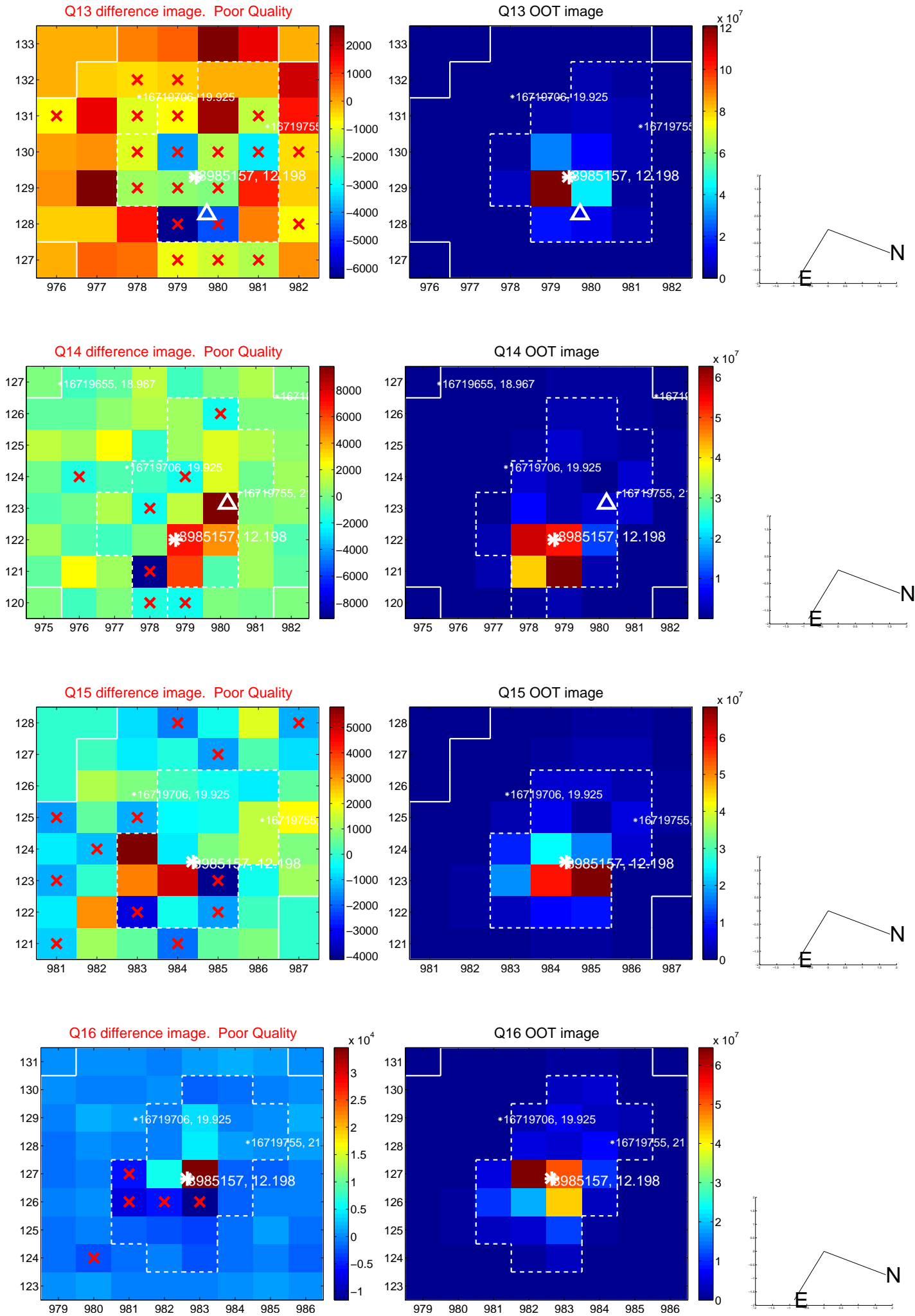
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



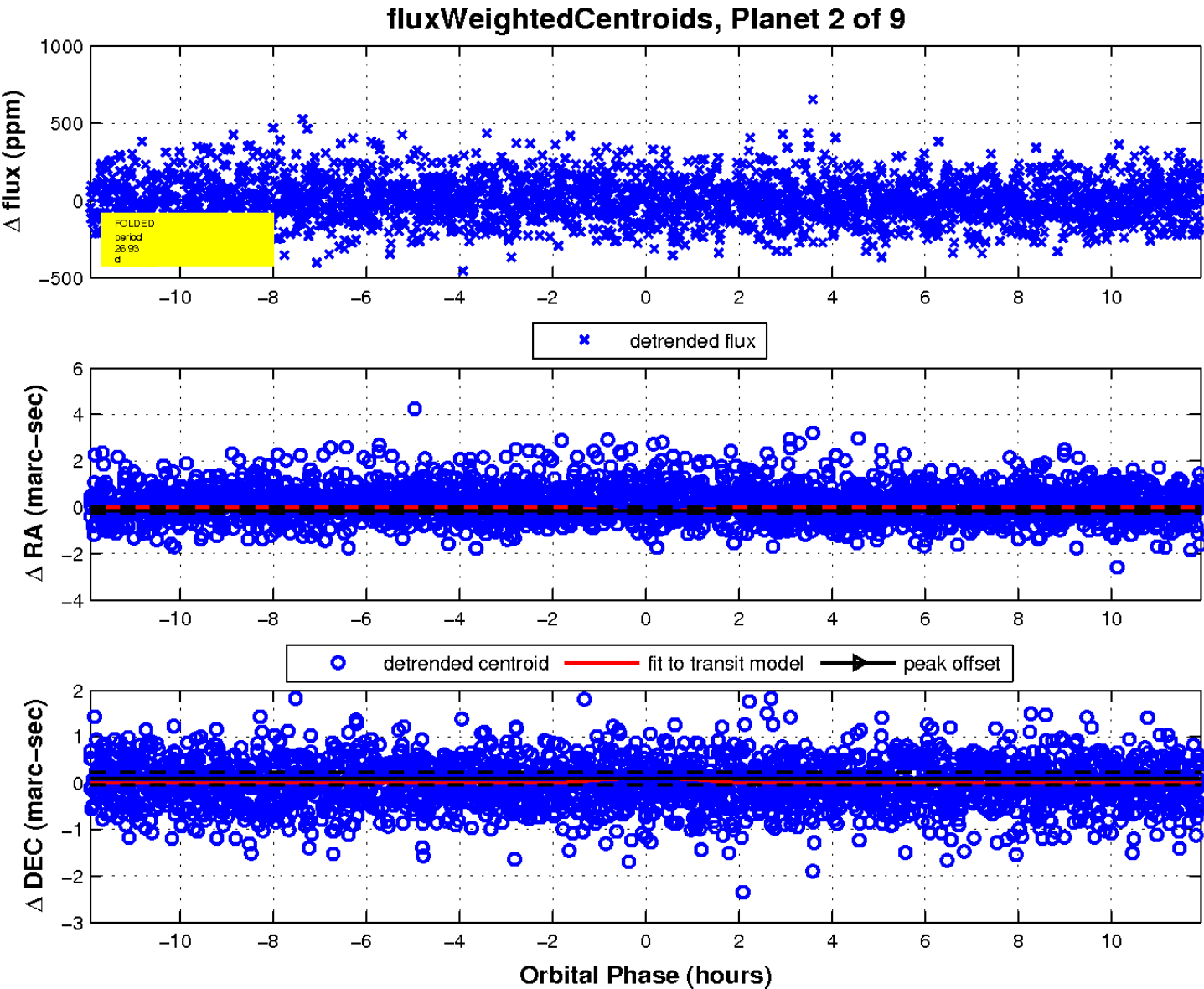
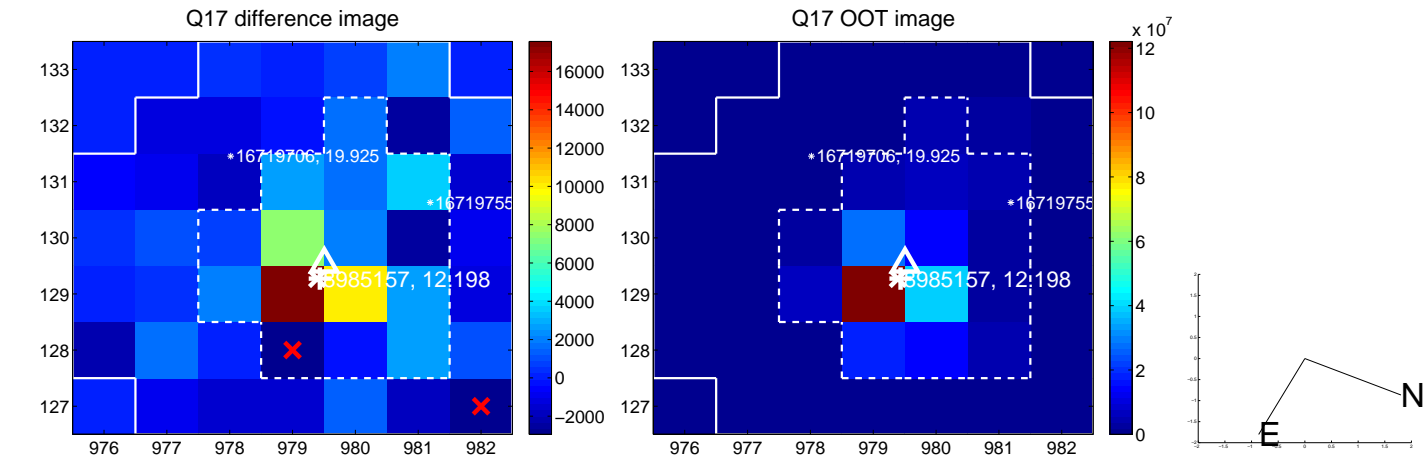
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

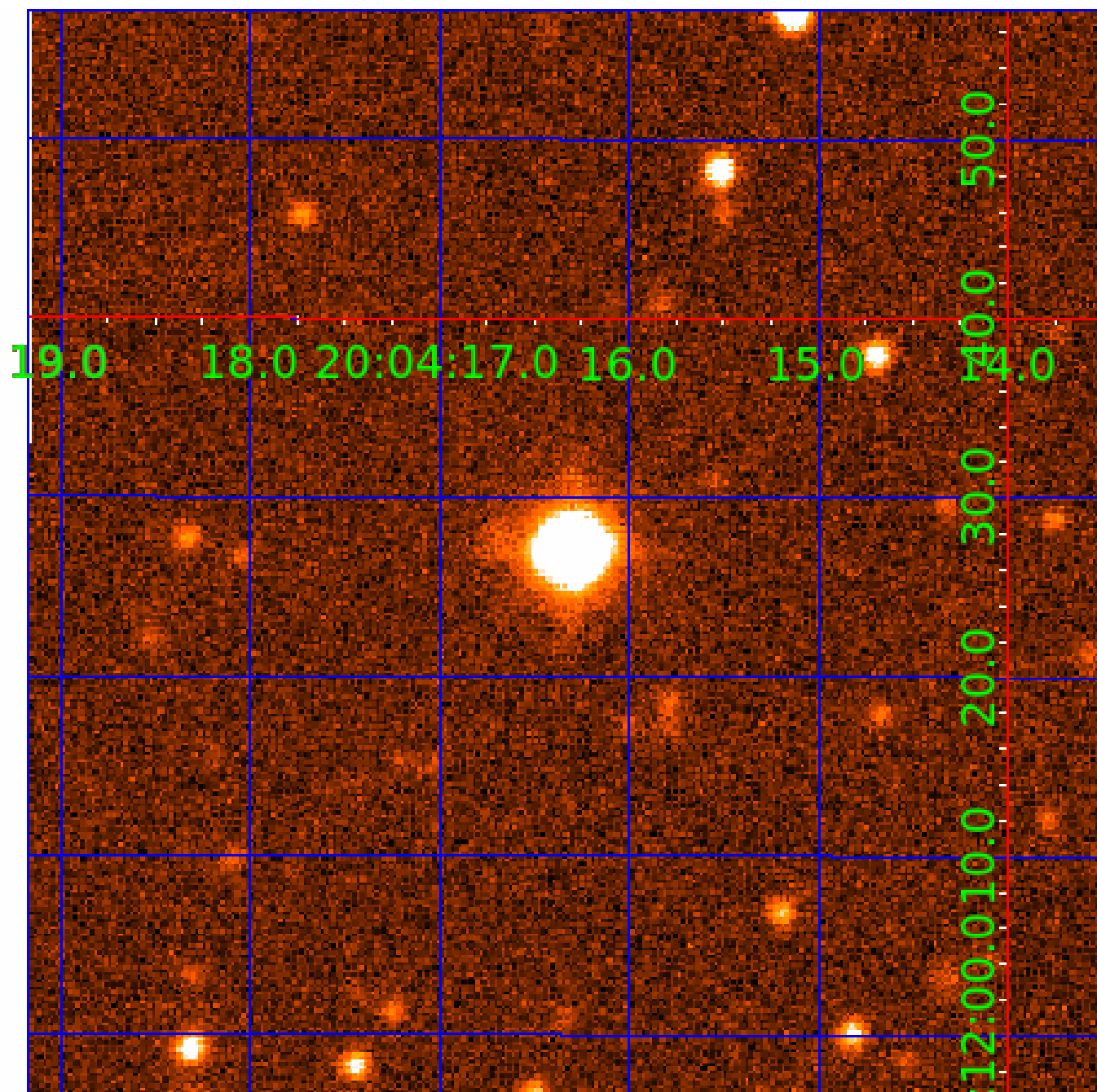


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

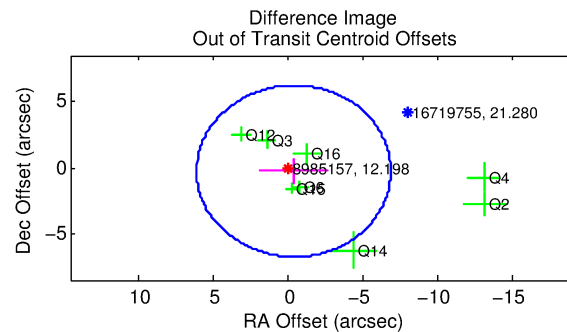
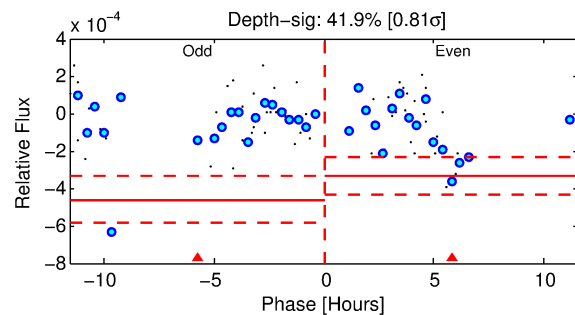
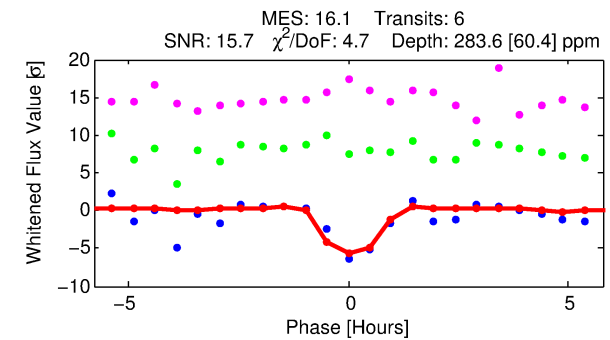
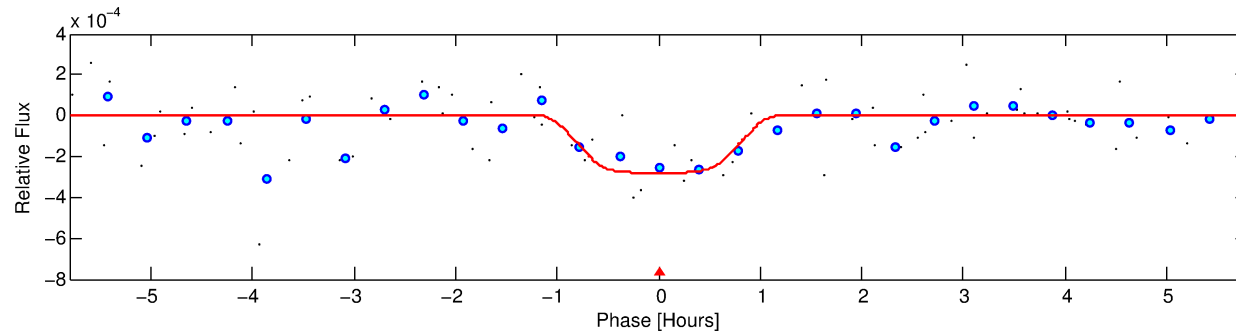
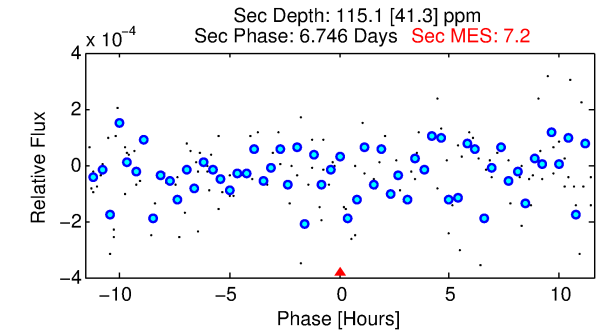
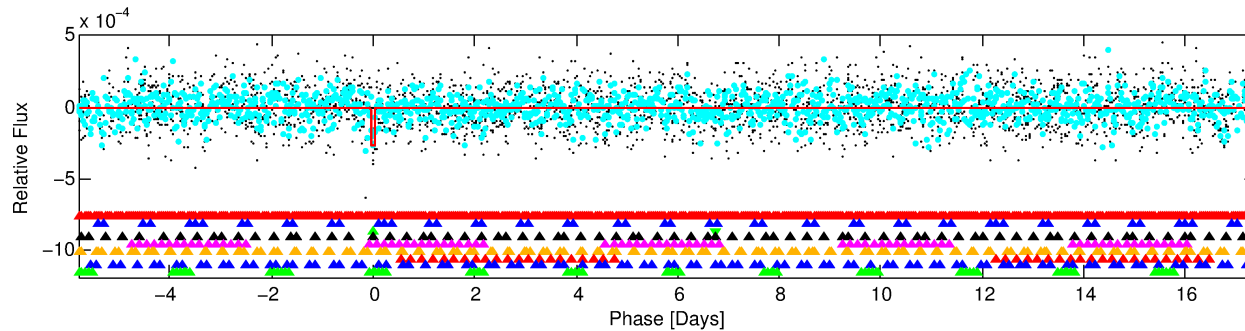
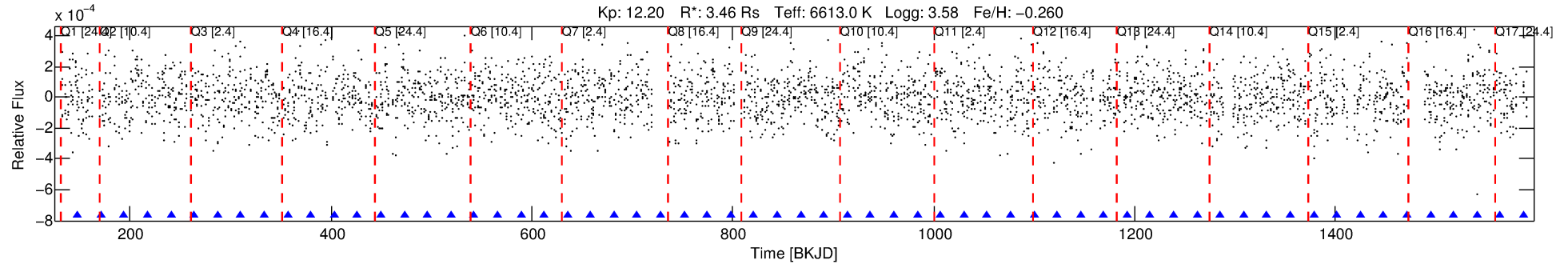
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-03

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 3 of 9 Period: 23.213 d



DV Fit Results:

Period = 23.21337 [0.00029] d
Epoch = 147.9920 [0.0117] BKJD
Rp/R* = 0.0188 [0.0136]
a/R* = 36.10 [151.66]
b = 0.94 [0.53]
Seff = 580.84 [340.75]
Teq = 1252 [184] K
Rp = 7.08 [5.80] Re
a = 0.1878 [0.0677] AU
Ag = 44.57 [71.44] [0.61 σ]
Teffp = 5001 [1877] K [1.99 σ]

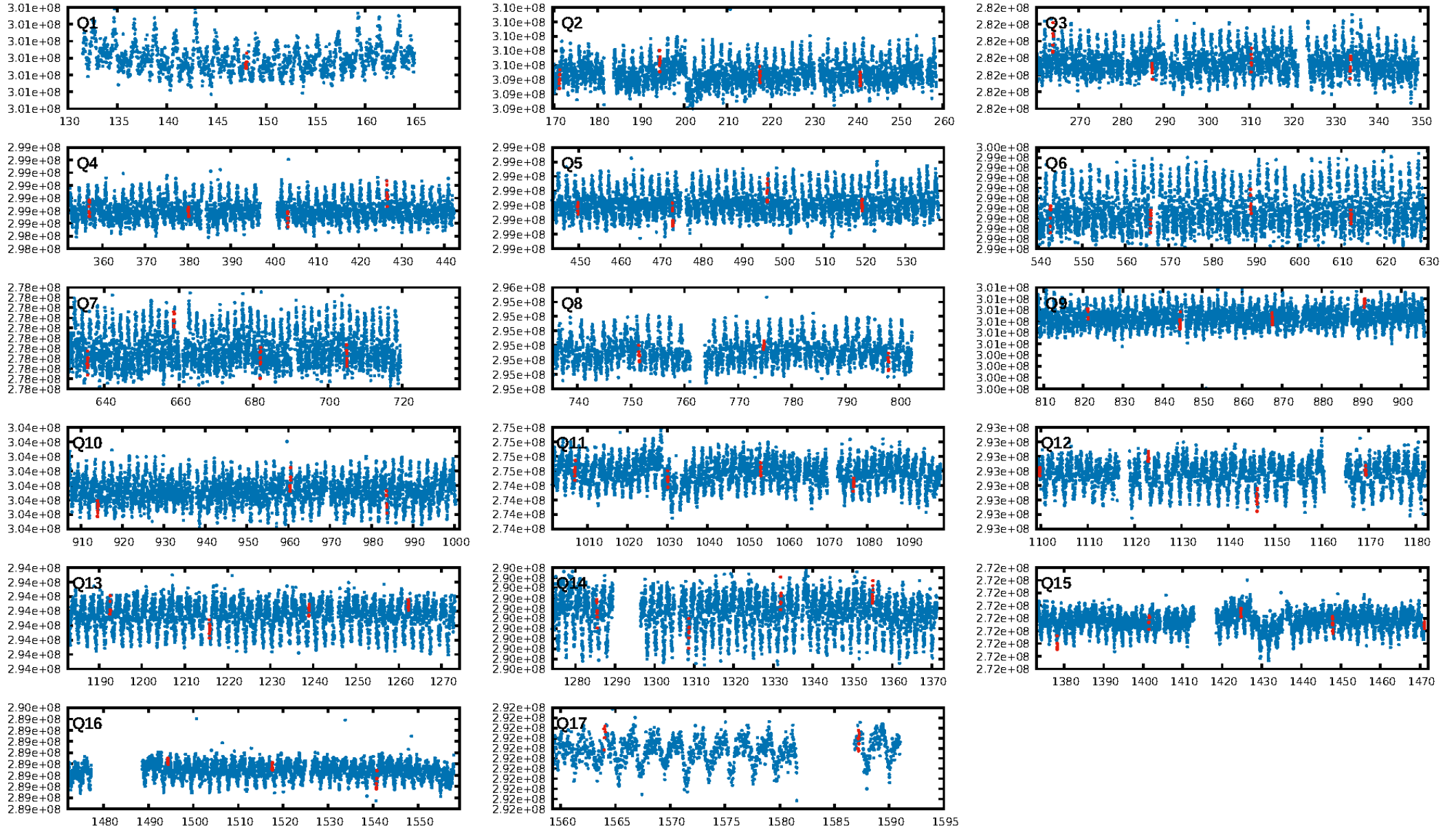
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.75 σ]
LongPeriod-sig: 100.0% [20.19 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 10.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -29.49
Centroid-sig: 0.0%
Centroid-so: 0.707 arcsec [1.96 σ]
OotOffset-rm: 0.506 arcsec [0.23 σ]
KicOffset-rm: 0.541 arcsec [0.27 σ]
OotOffset-st: 3/2/3/0 [8]
KicOffset-st: 3/2/3/0 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.82 [14/17]

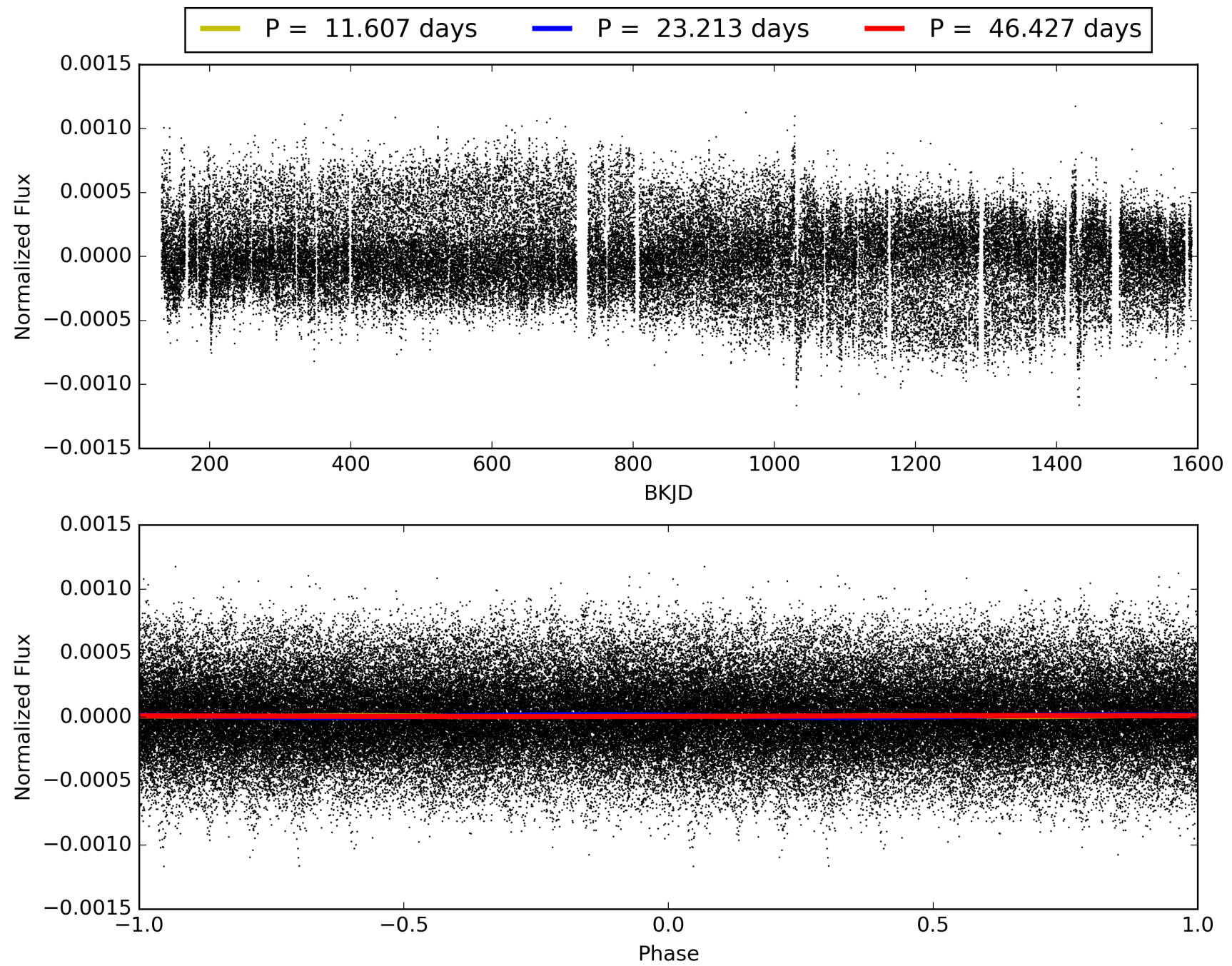
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:10 Z

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

TCE 008985157-03, PDC Light Curves

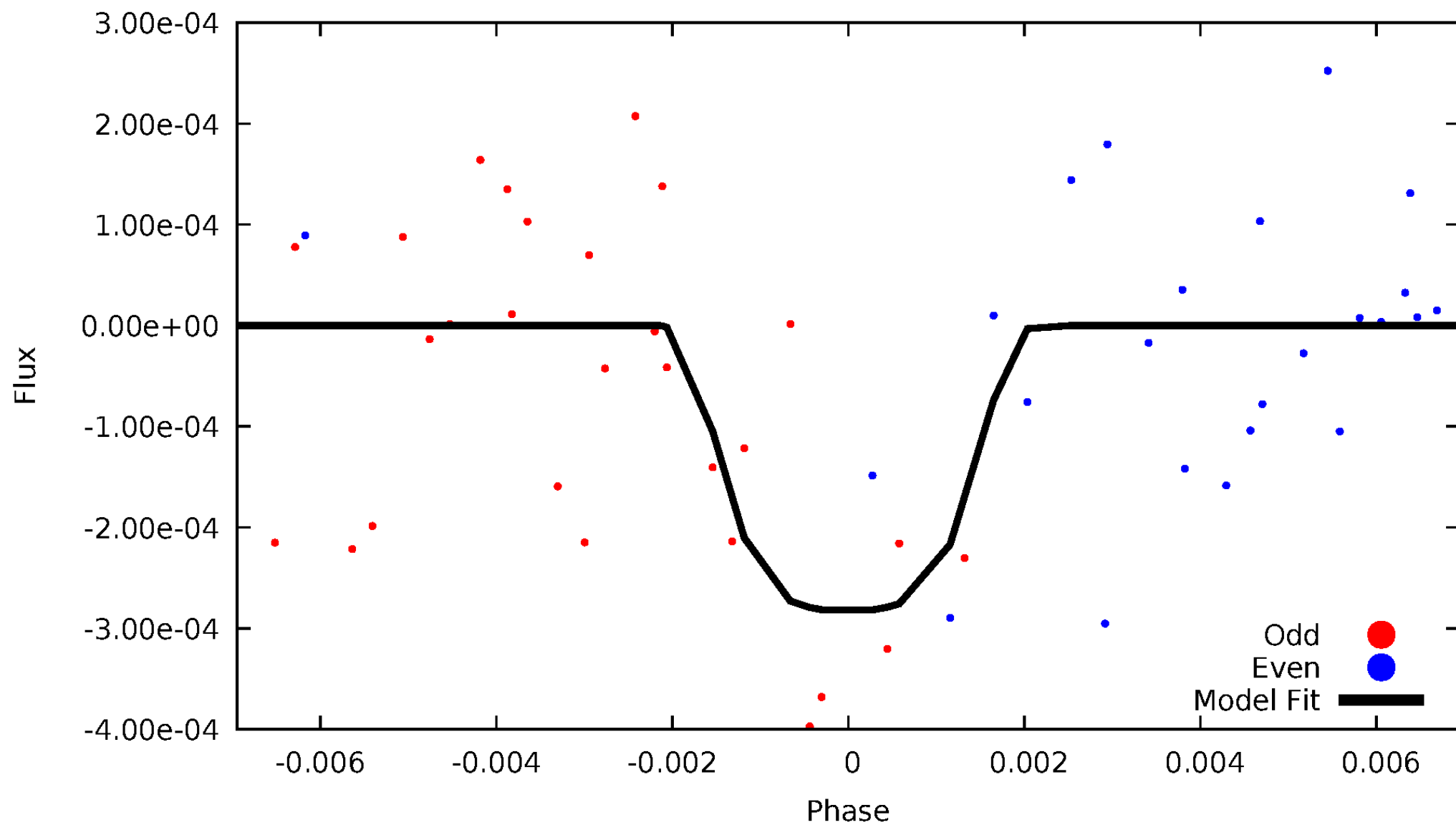


TCE 008985157-03



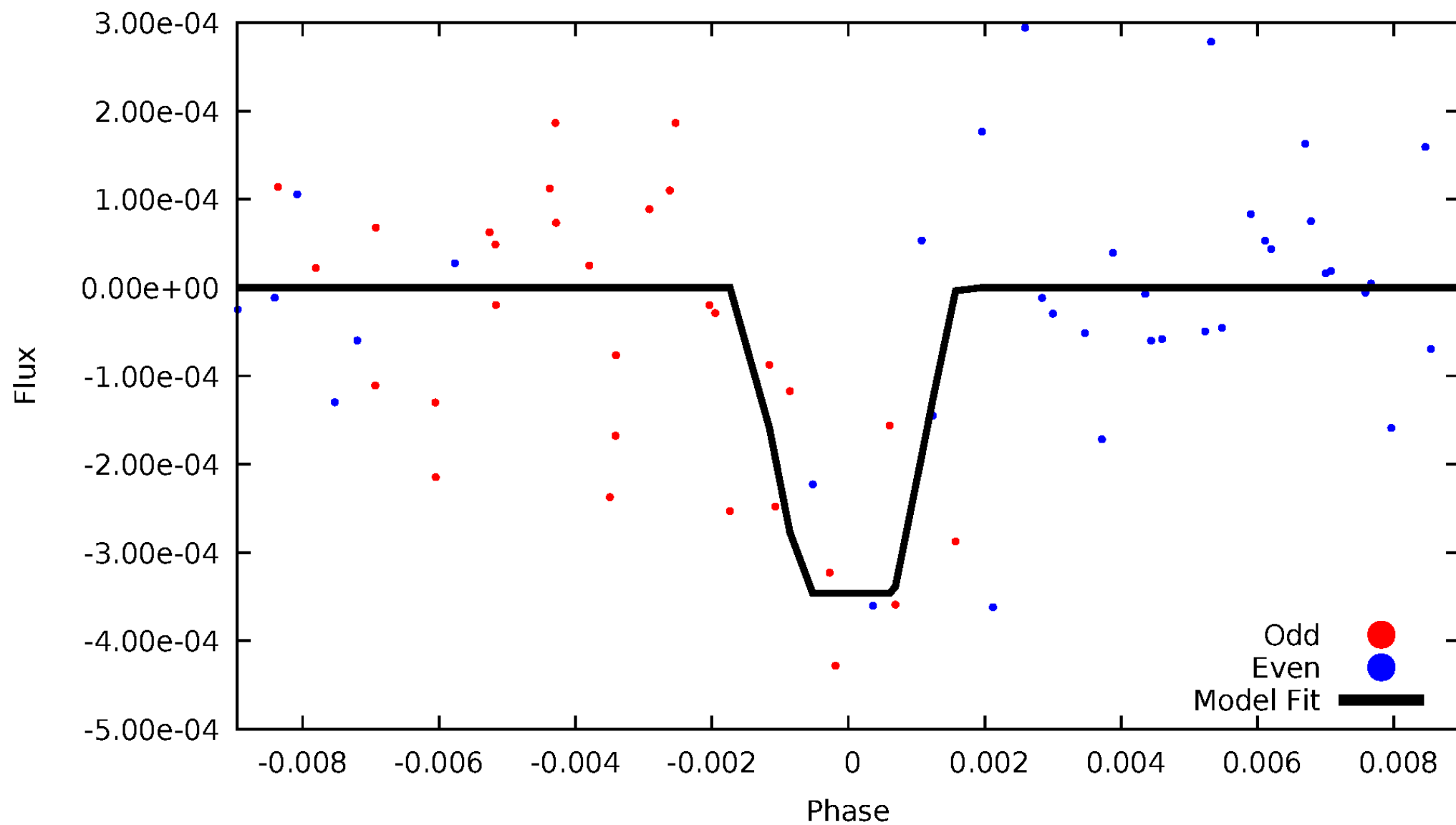
DV Odd/Even

TCE 008985157-03



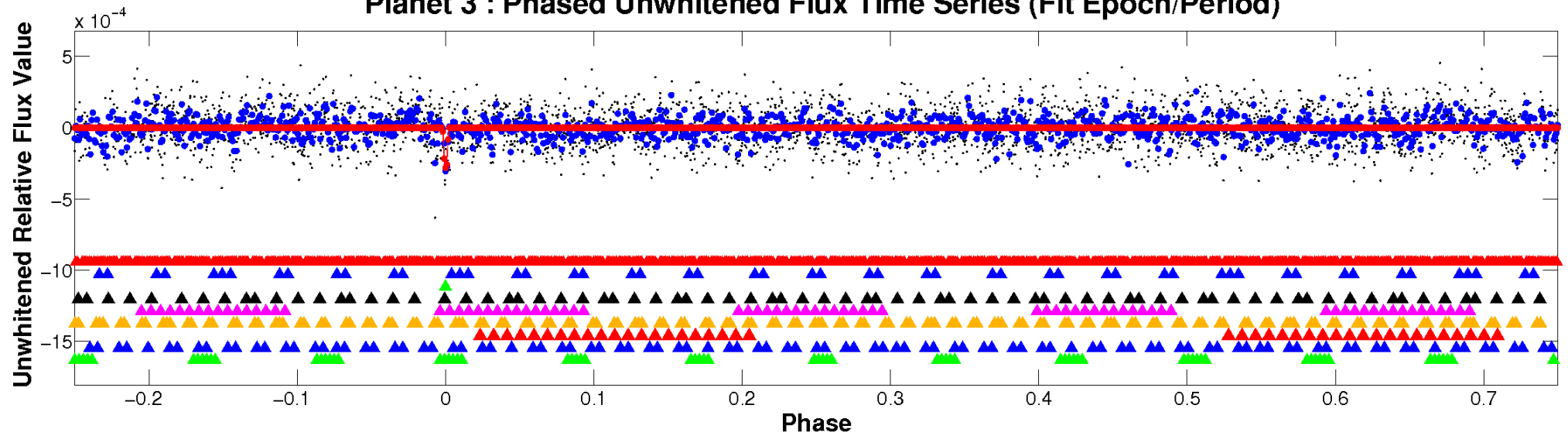
ALT Odd/Even

TCE 008985157-03

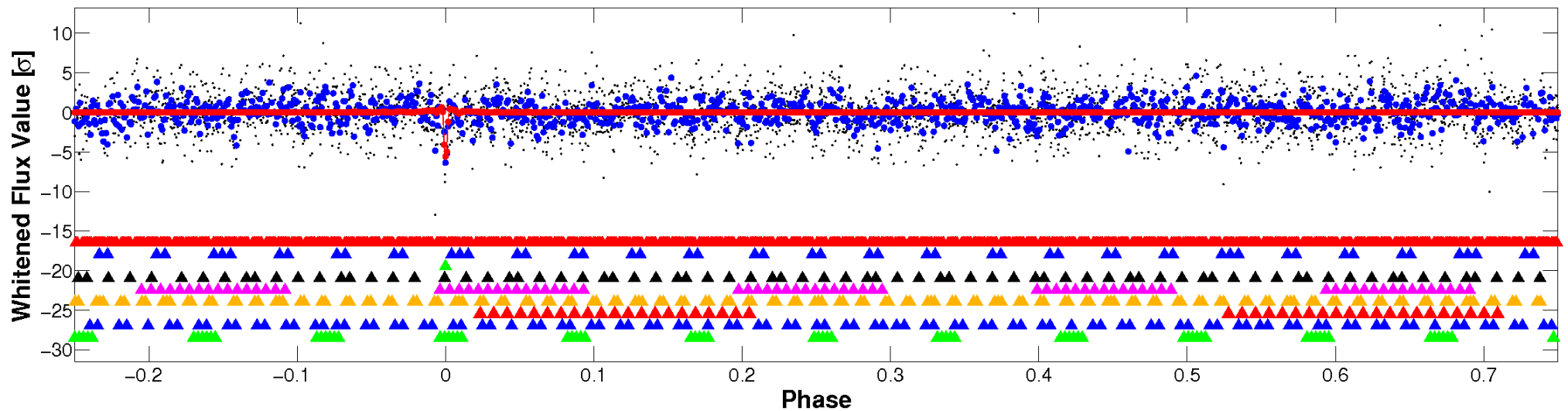


Non-Whitened Vs. Whitened Light Curve

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

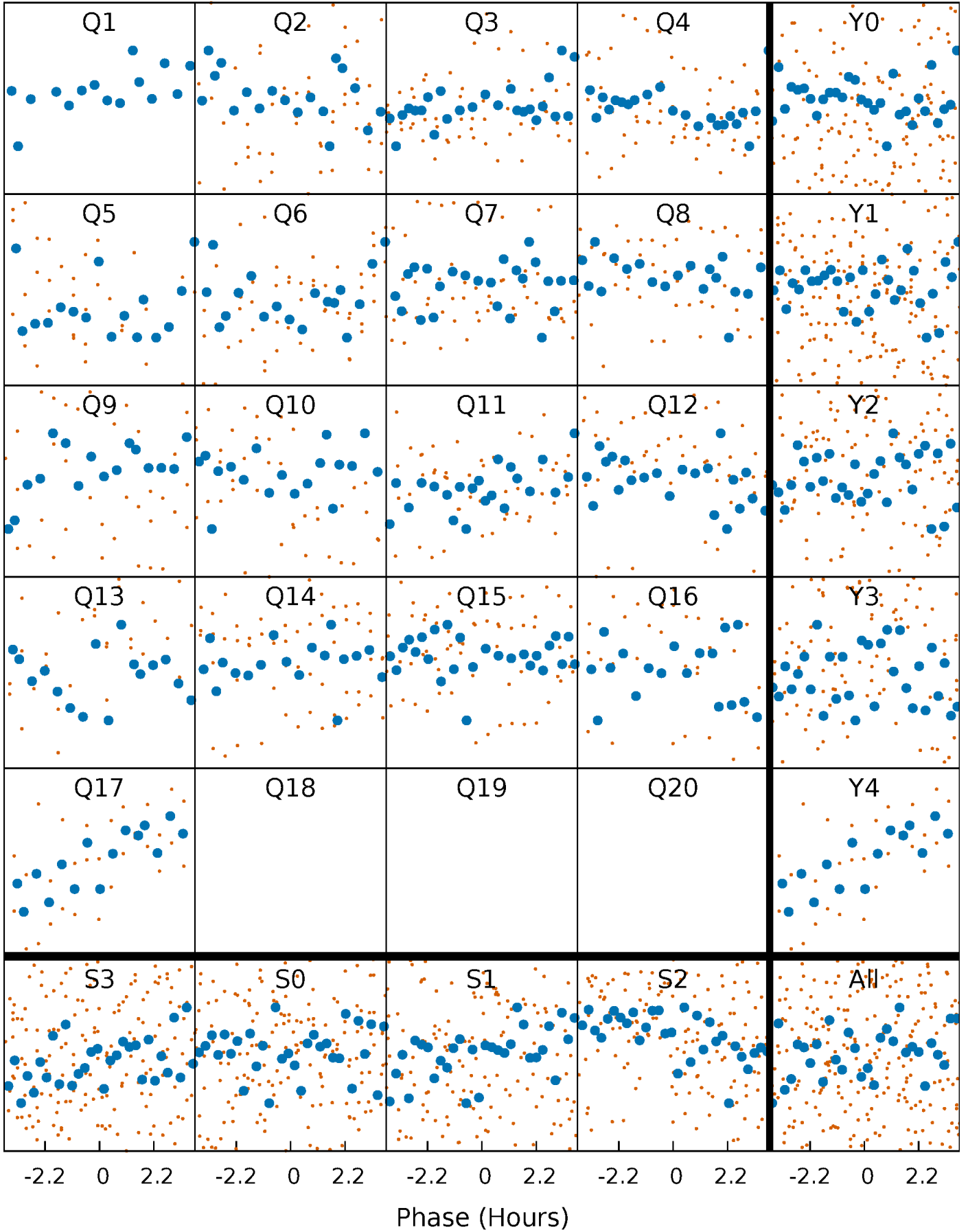


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



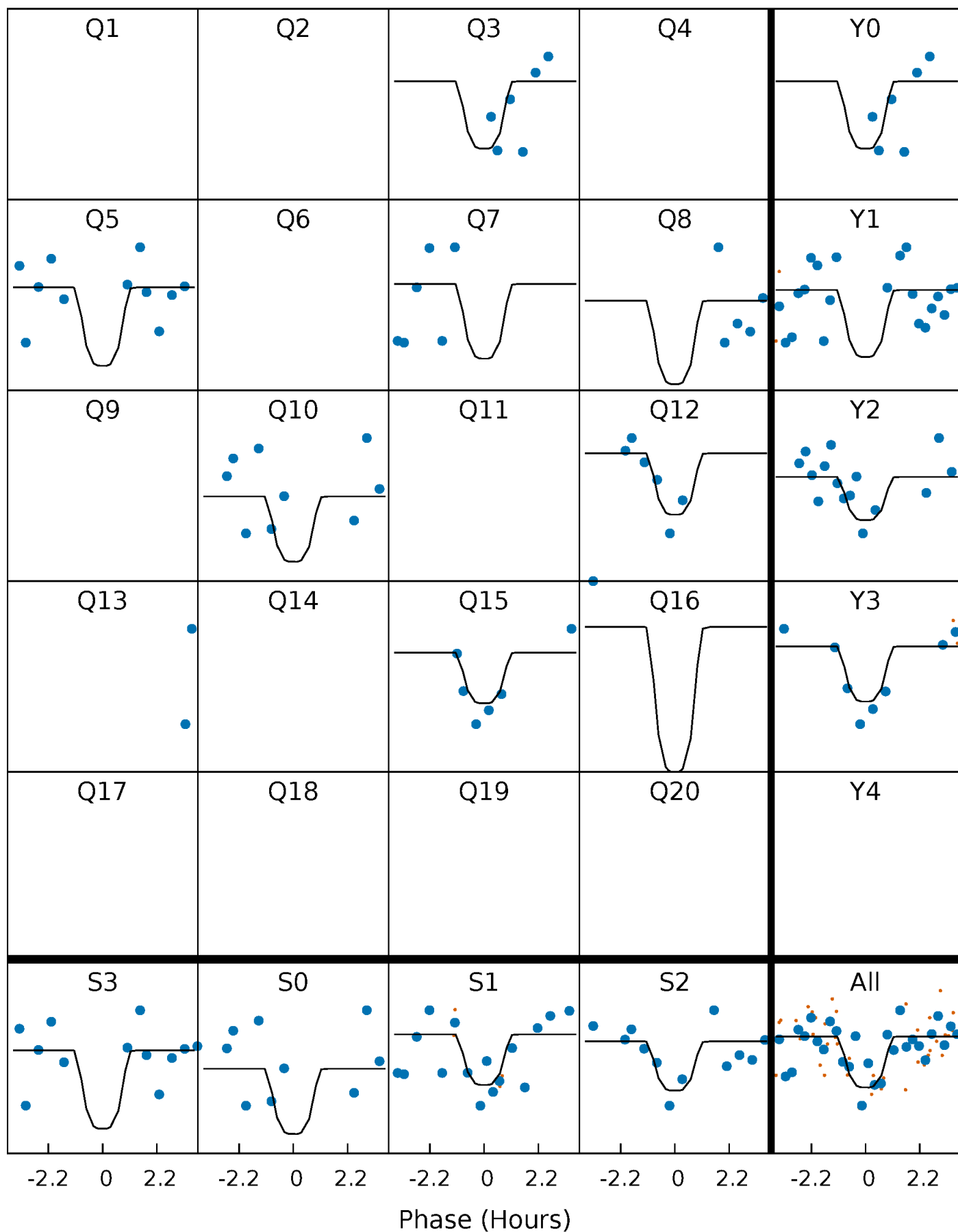
PDC Quarter-Phased Transit Curves

TCE 008985157-03 P= 23.213372 Days $T_0=147.991970$ (BKJD)



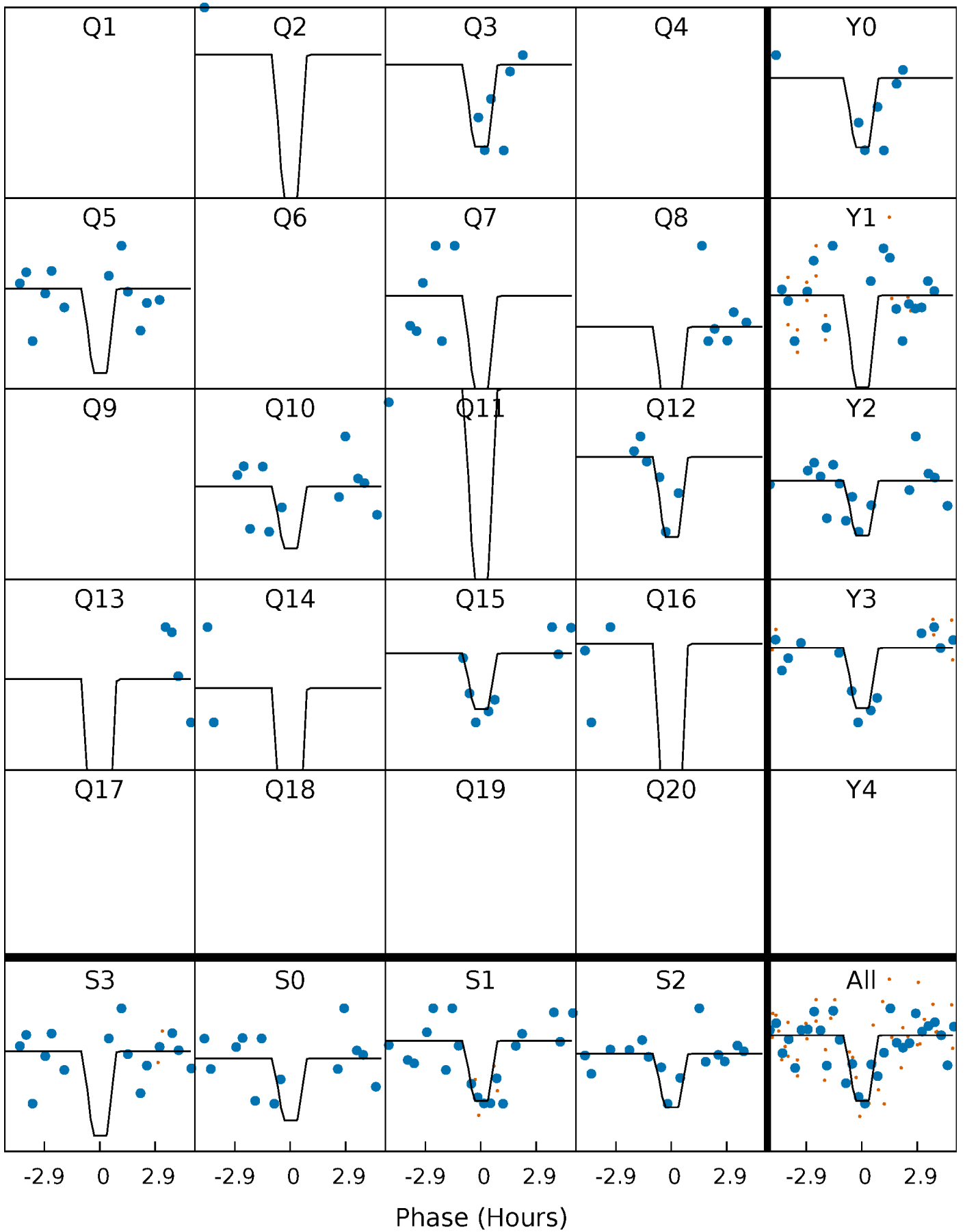
DV Quarter-Phased Transit Curves

TCE 008985157-03 P= 23.213372 Days $T_0=147.991970$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

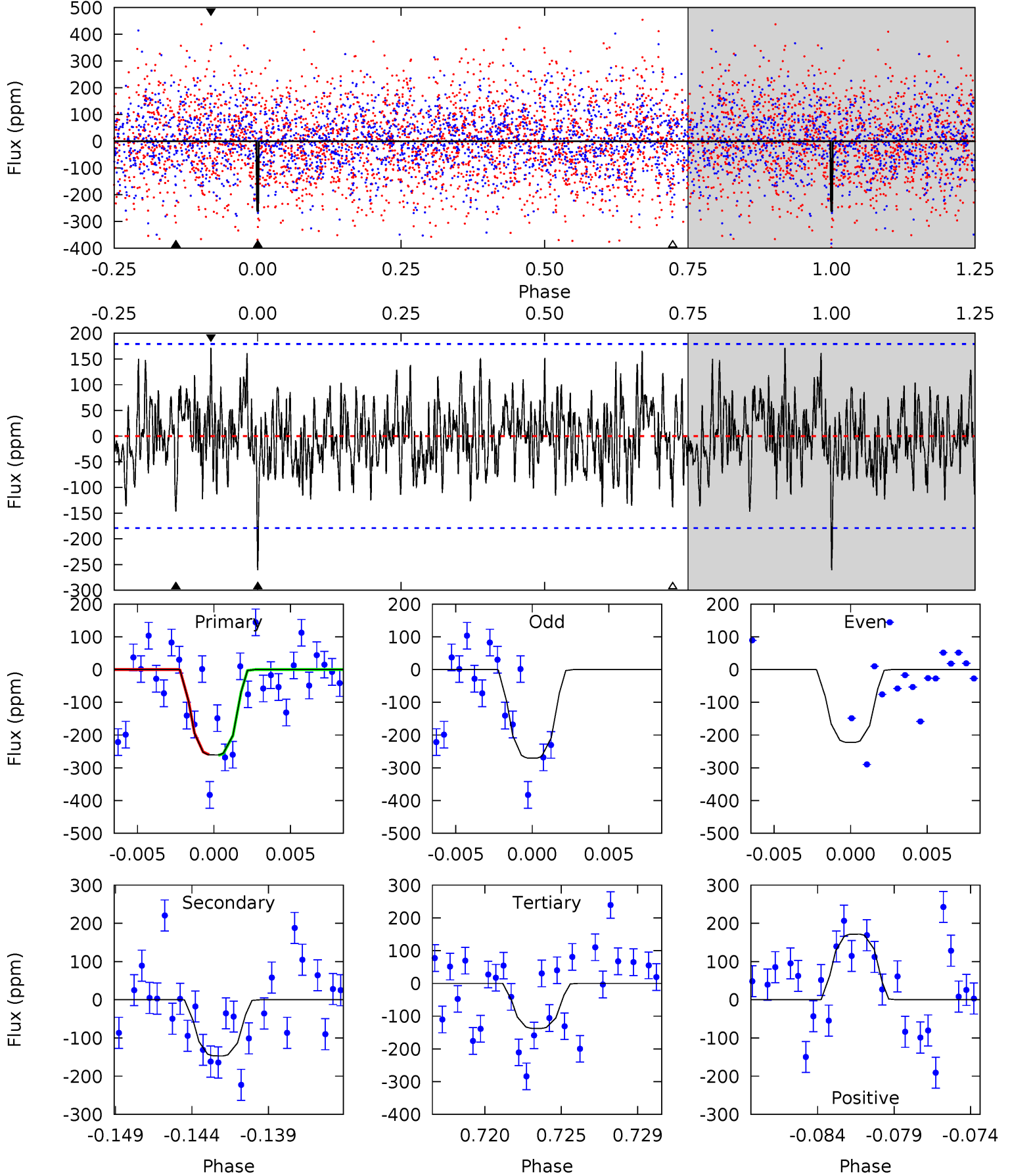
TCE 008985157-03 P= 23.212855 Days $T_0=148.013559$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-03, P = 23.213372 Days, E = 124.778598 Days

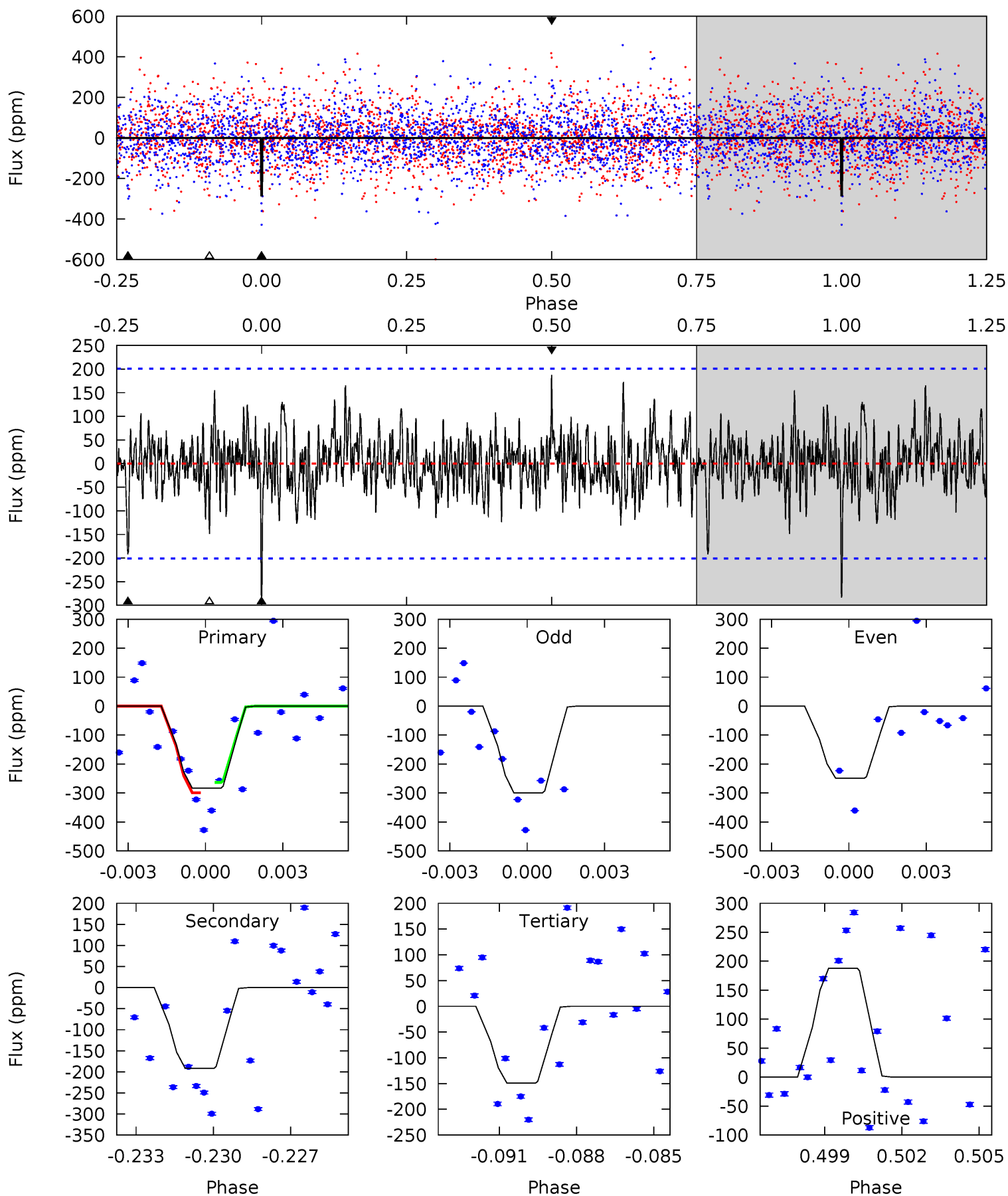
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.54	4.25	3.98	4.97	5.17	2.83	1.58	3.56	2.57	0.28	-0.71	0.67	0.91	0.40	0.04



Alt Model-Shift Uniqueness Test

008985157-03, P = 23.212855 Days, E = 124.800704 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.40	5.01	3.89	4.91	5.25	2.97	1.28	3.51	2.49	1.12	0.10	0.69	1.05	0.40	0.46



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-147 ± 35	$7.17^{+4.80}_{-4.05}$	1729^{+89}_{-144}	5193^{+2650}_{-976}	55^{+237}_{-35}
Alt.	-192 ± 38	$7.01^{+5.01}_{-4.17}$	1716^{+97}_{-170}	5519^{+3609}_{-1087}	78^{+362}_{-53}

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

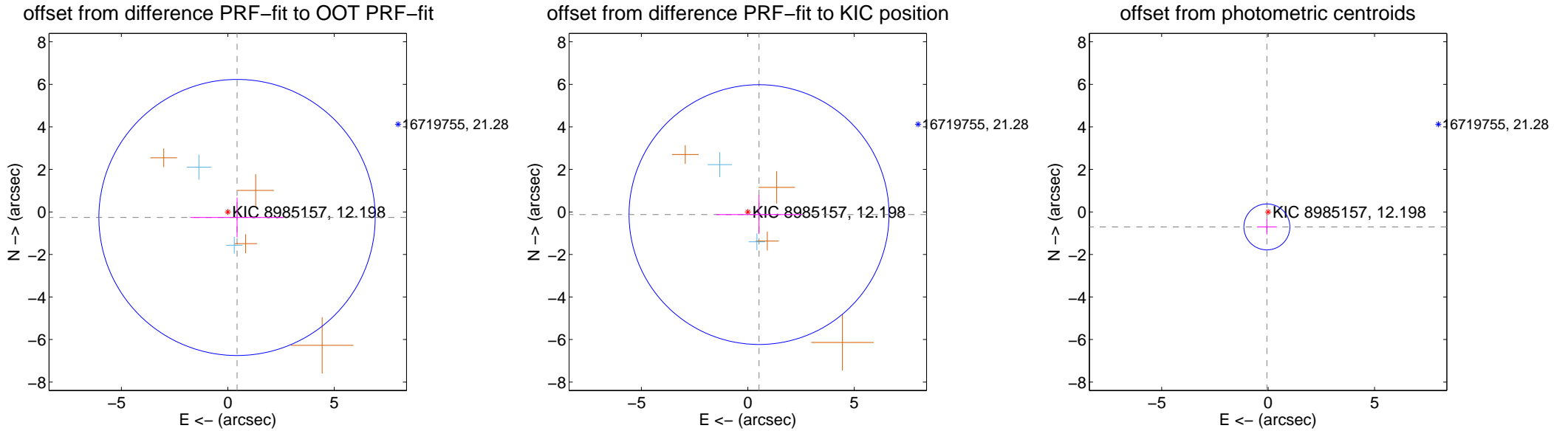
DV Centroid Data

Supplemental centroid analysis for 008985157-03. Kepler magnitude: 12.20. Transit SNR 15.70

There are 2 quarters with good PRF difference image offsets

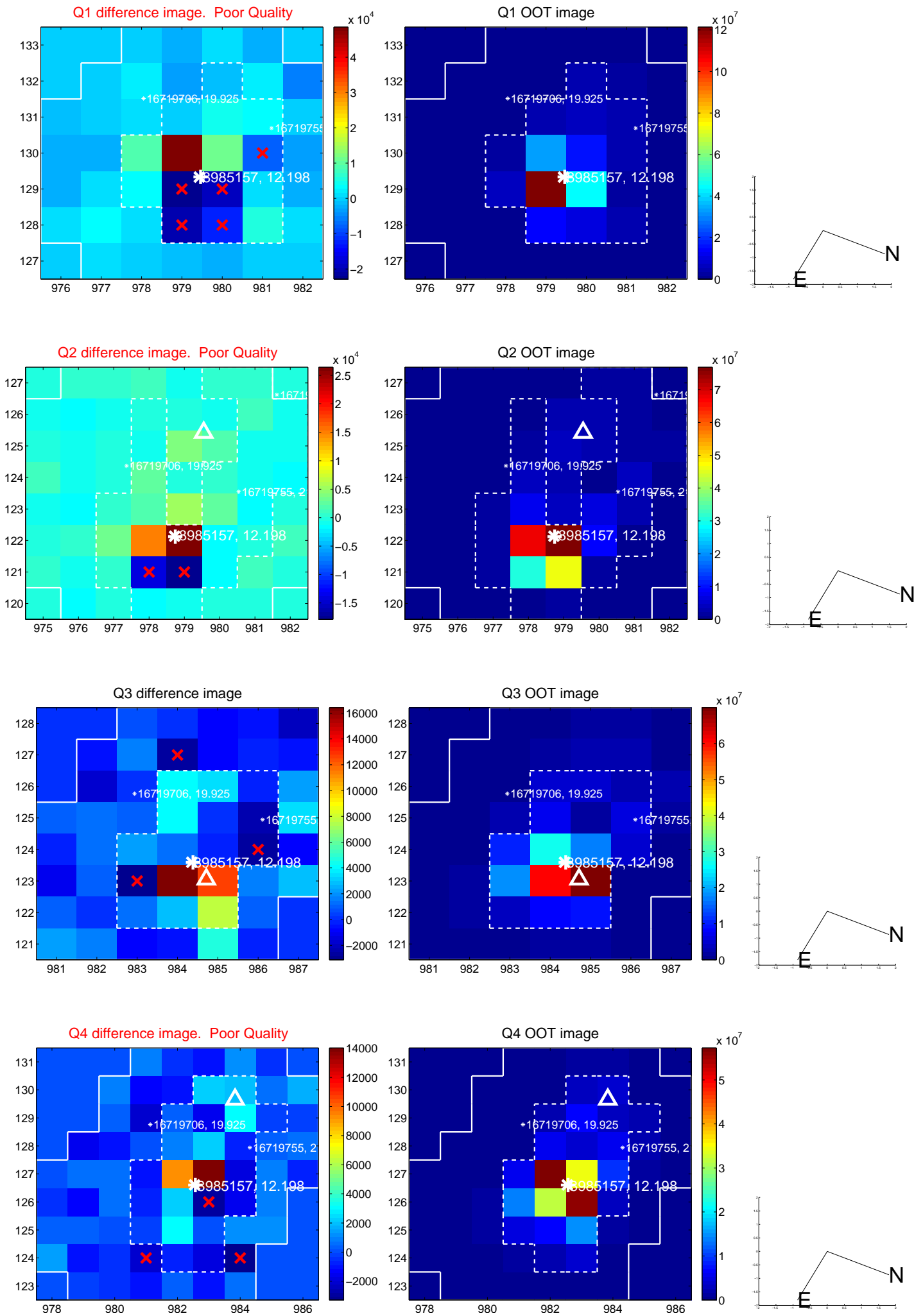
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.506 ± 2.164	0.23	-0.434 ± 2.196	-0.261 ± 0.935
PRF-fit source offset from KIC position	0.541 ± 2.036	0.27	-0.527 ± 2.010	-0.125 ± 0.913
photometric centroid source offset	0.71 ± 0.36	1.96	0.06 ± 0.46	-0.70 ± 0.36

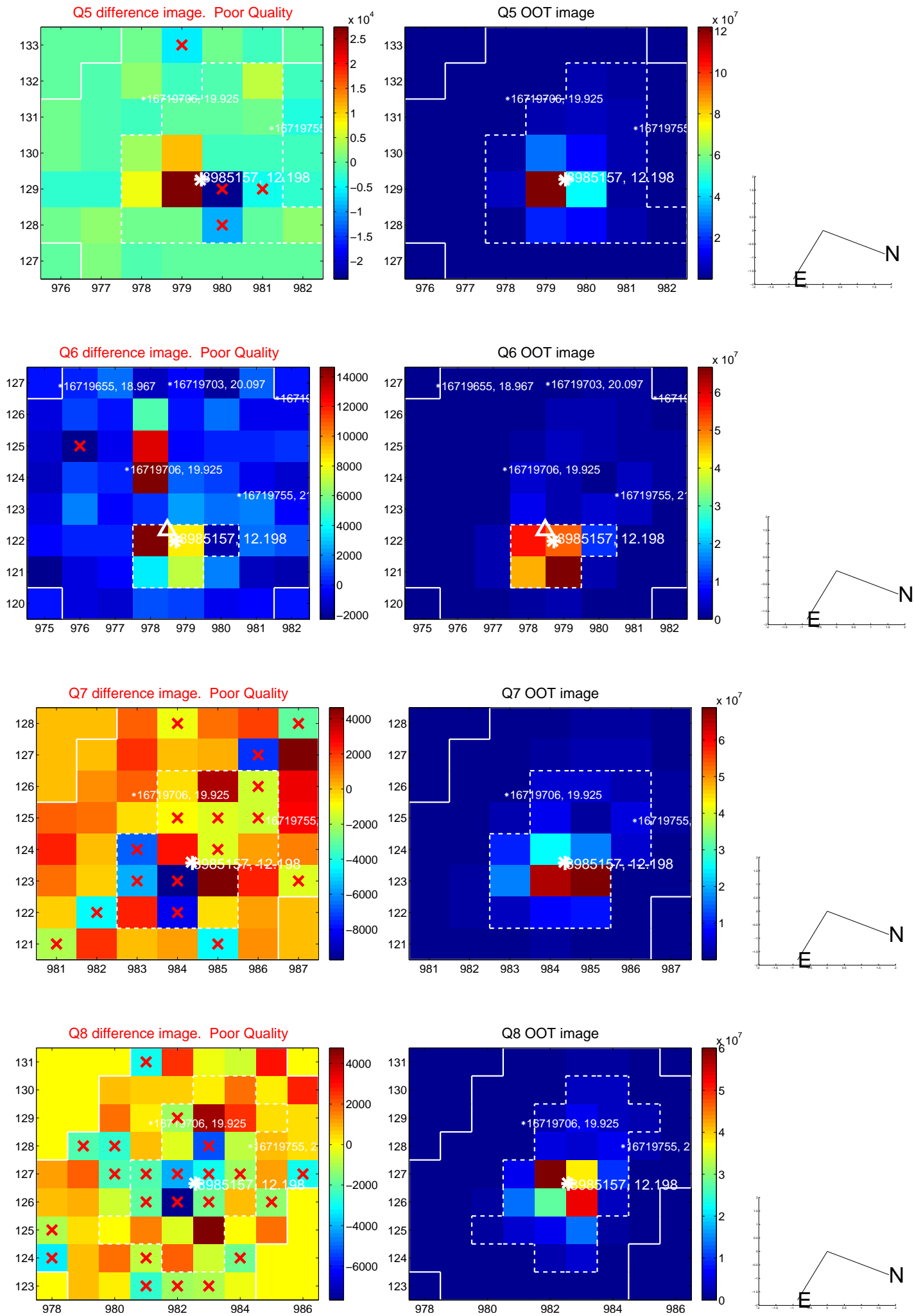


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

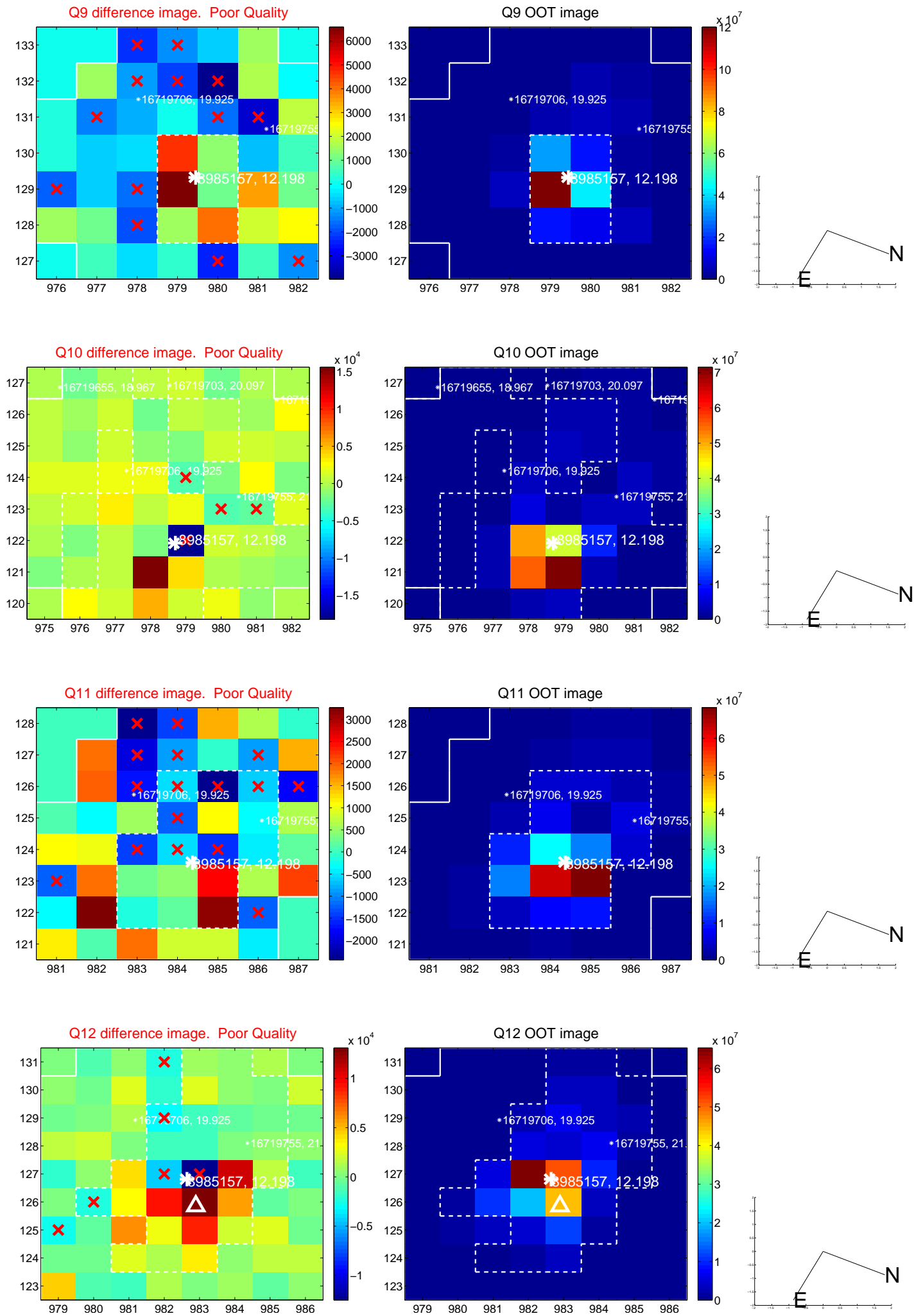
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



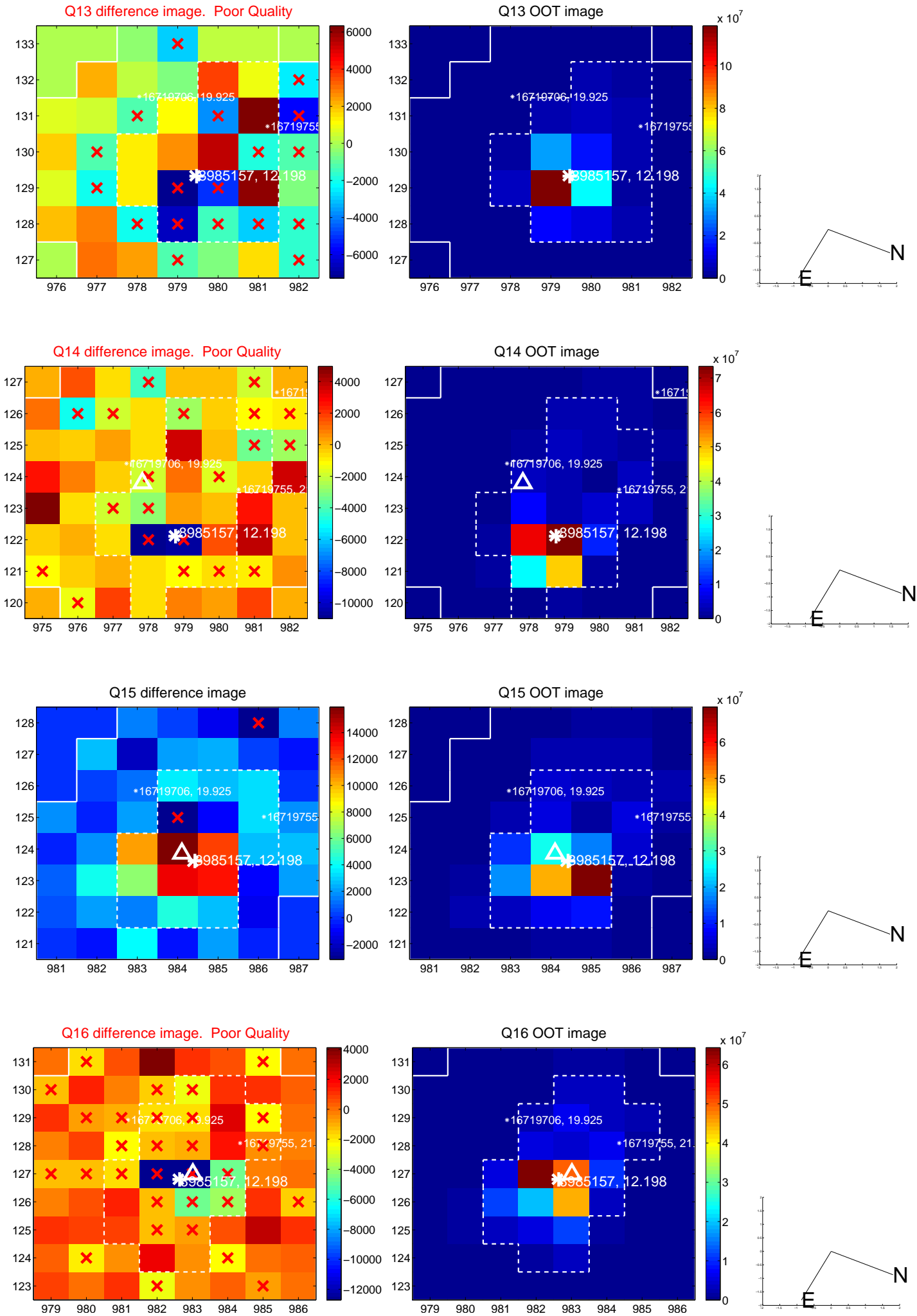
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



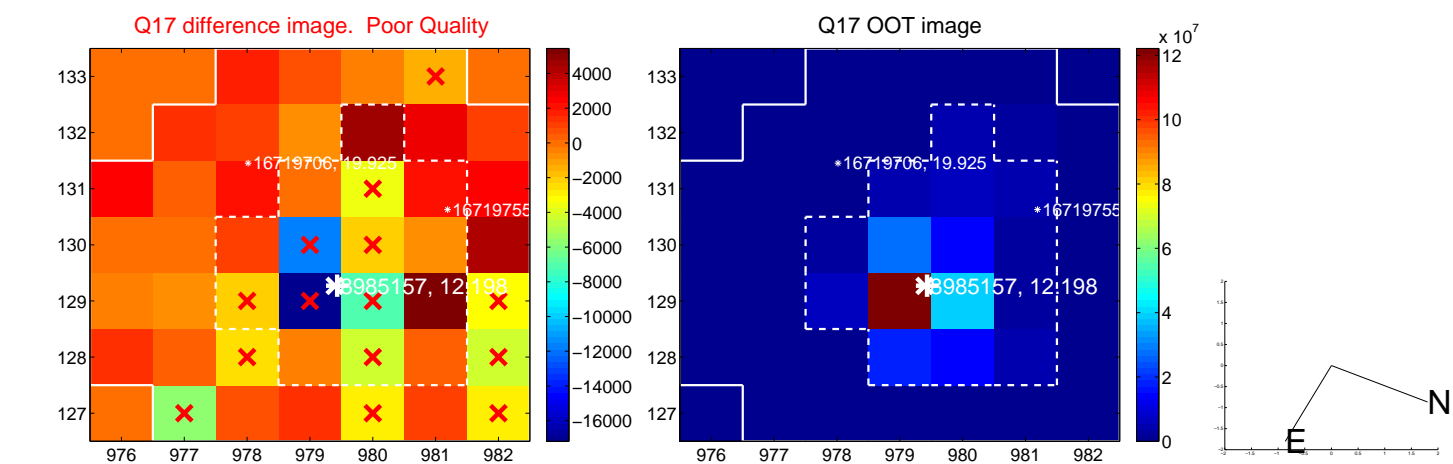
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



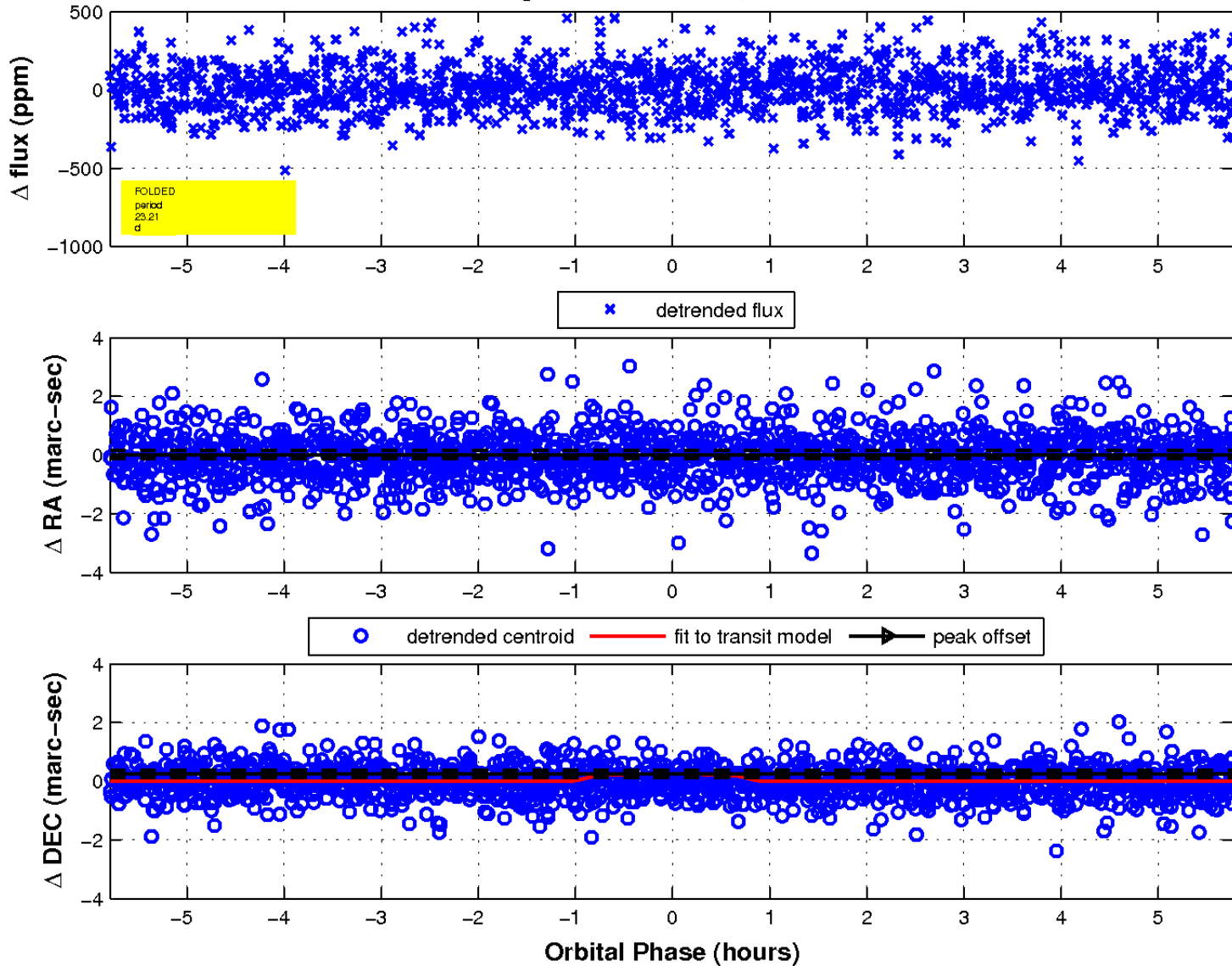
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

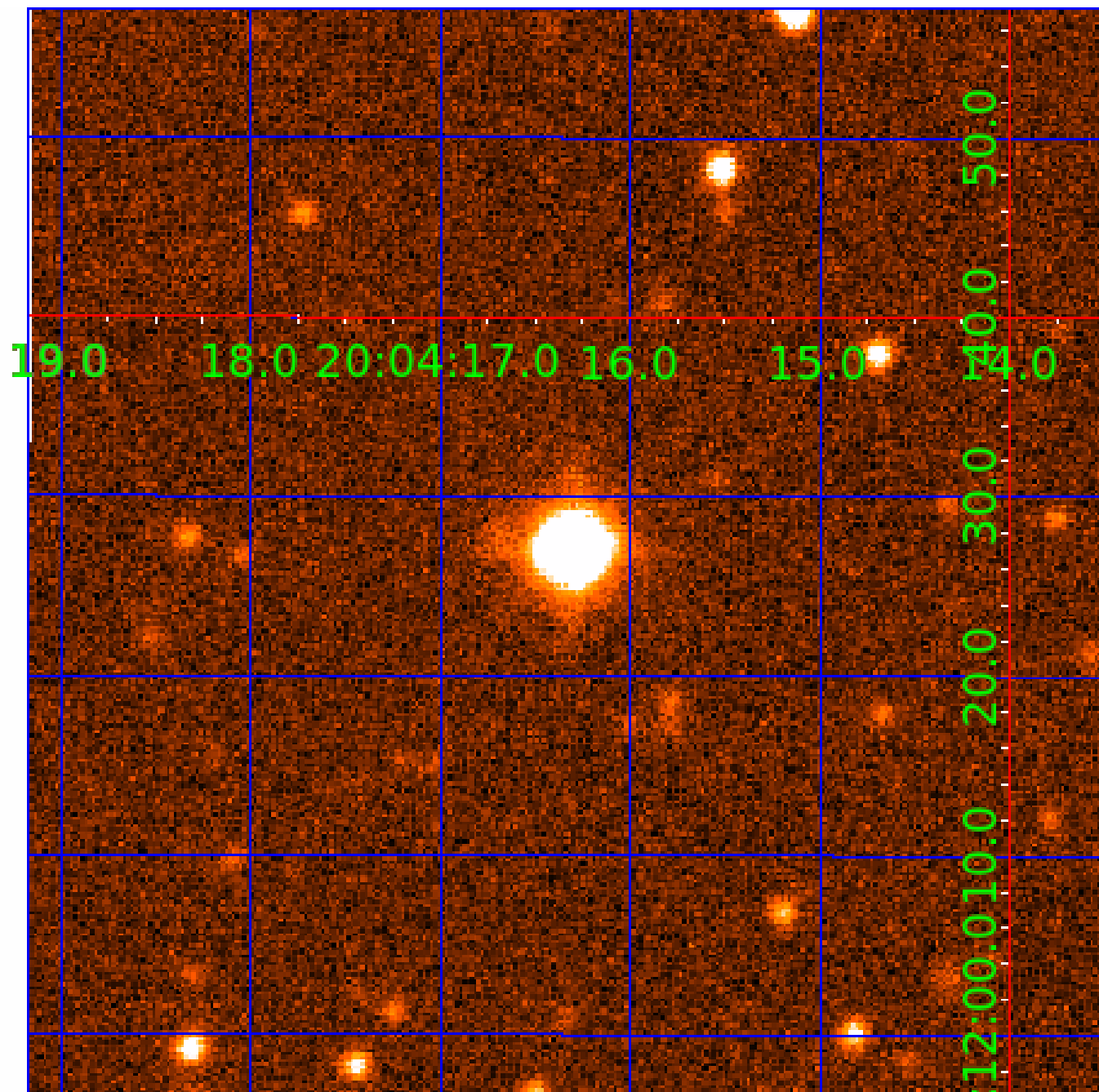


fluxWeightedCentroids, Planet 3 of 9



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

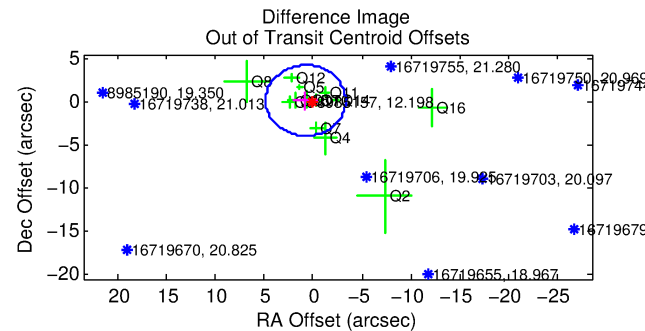
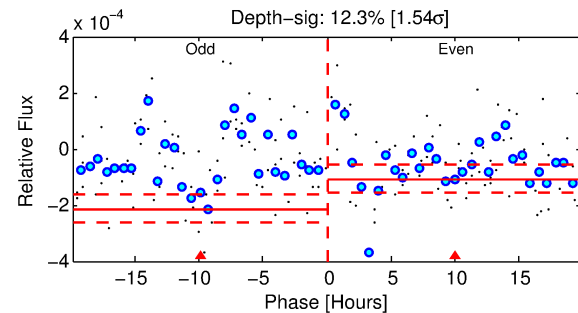
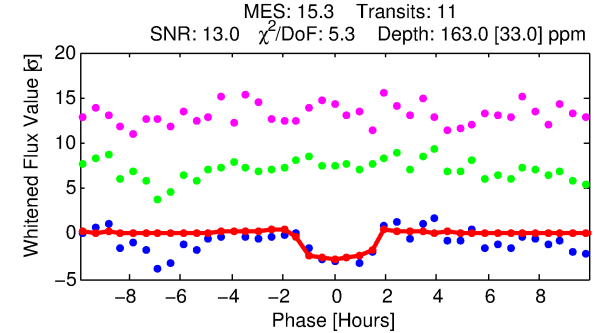
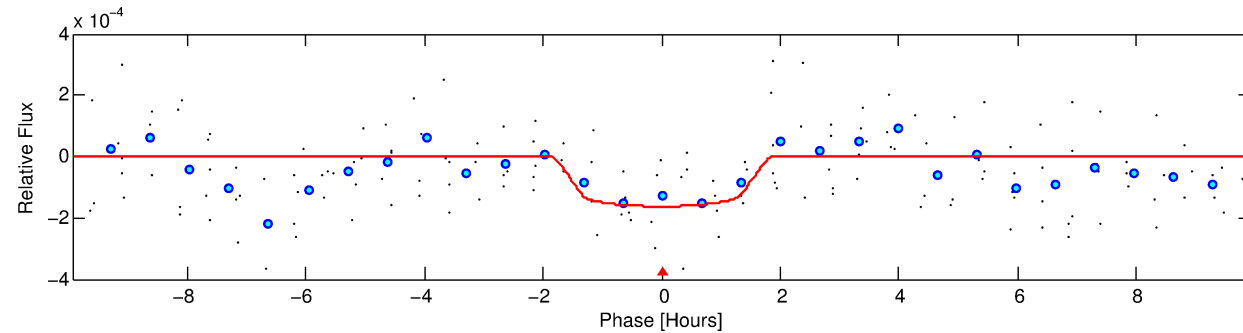
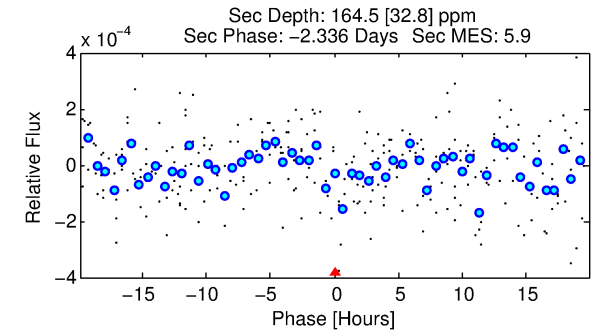
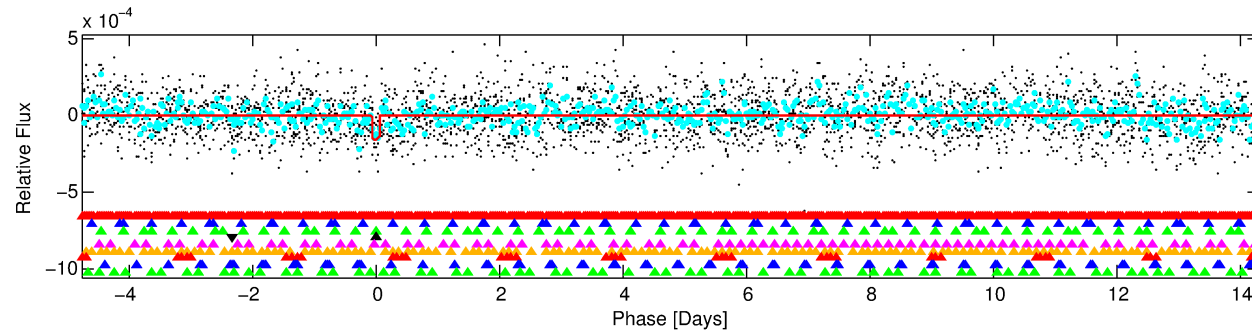
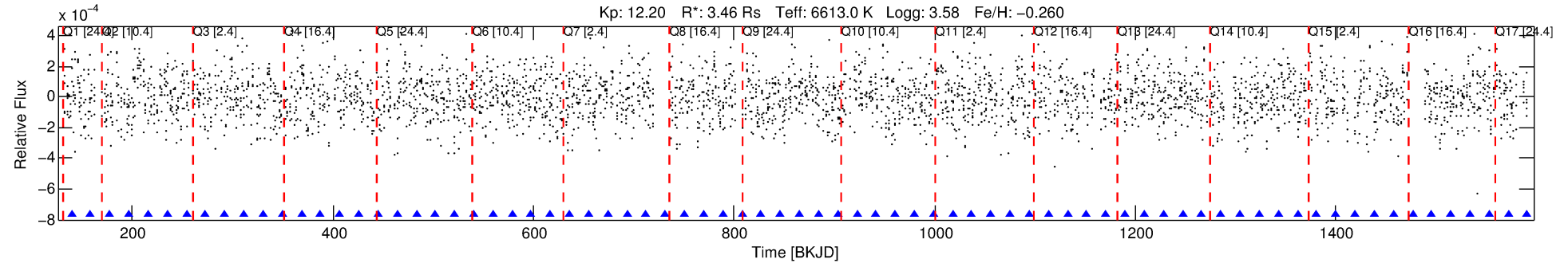
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-04

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 4 of 9 Period: 19.097 d



DV Fit Results:

Period = 19.09701 [0.00032] d
Epoch = 139.6137 [0.0144] BKJD
Rp/R* = 0.0132 [0.0127]
a/R* = 24.65 [136.88]
b = 0.85 [1.90]
Seff = 753.50 [442.04]
Teq = 1336 [196] K
Rp = 4.97 [5.16] Re
a = 0.1649 [0.0595] AU
Ag = 99.50 [201.57] [0.49σ]
Teffp = 6524 [3175] K [1.63σ]

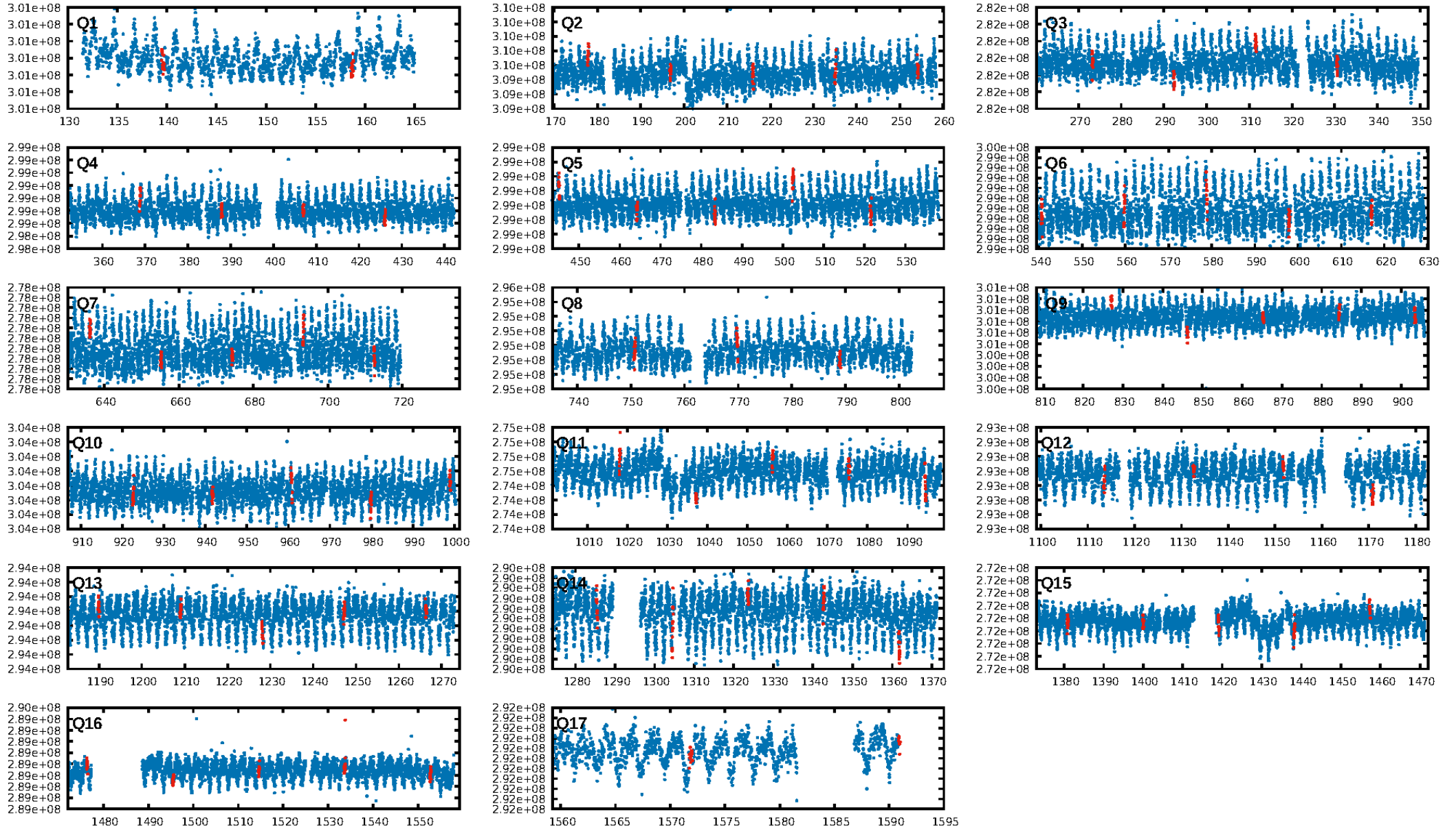
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.50σ]
LongPeriod-sig: 100.0% [12.19σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 12.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -2.415
Centroid-sig: 1.8%
Centroid-so: 0.865 arcsec [1.79σ]
OotOffset-rm: 0.799 arcsec [0.59σ]
KicOffset-rm: 0.788 arcsec [0.56σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 0.88 [15/17]

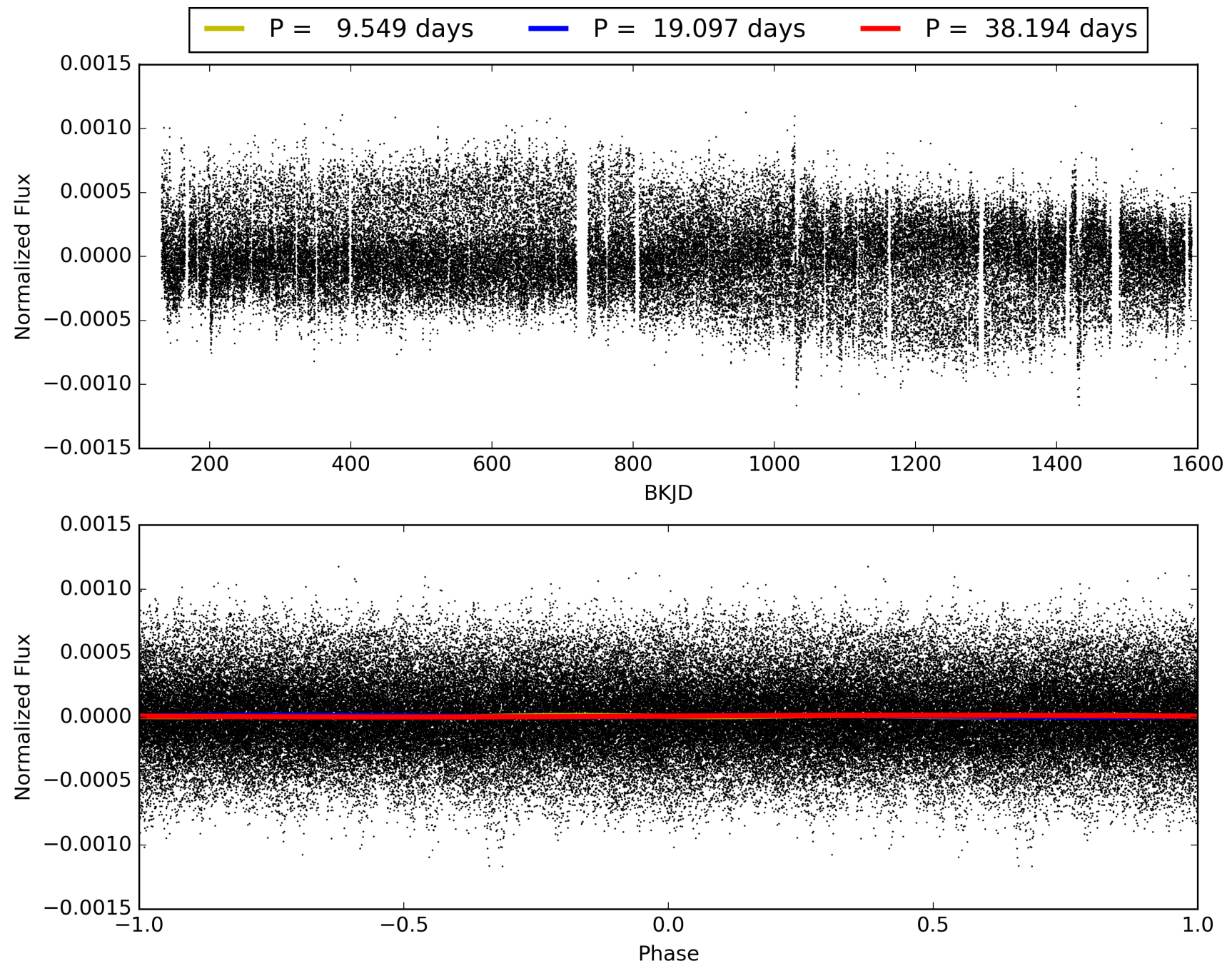
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:13 Z

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

TCE 008985157-04, PDC Light Curves

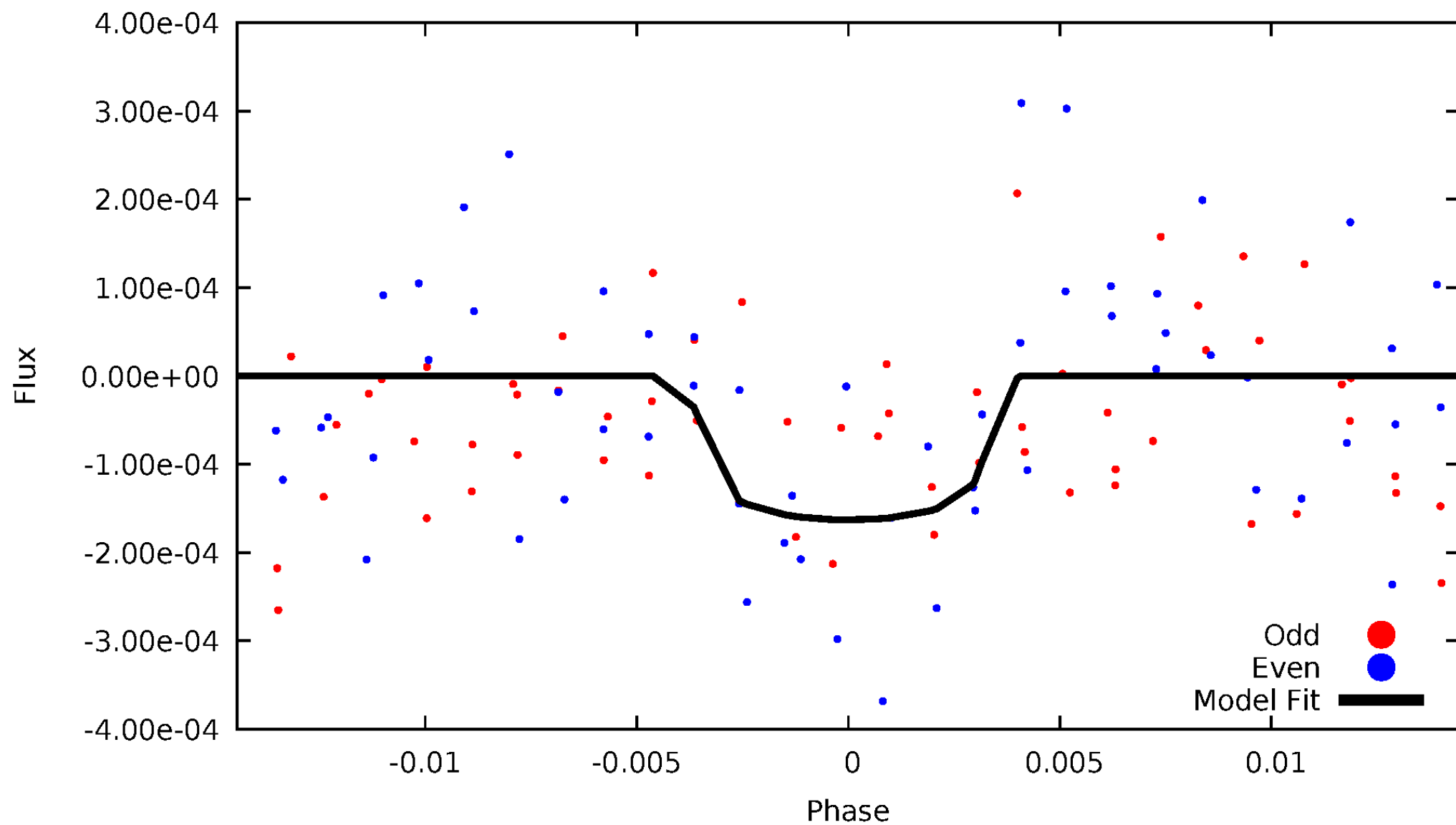


TCE 008985157-04



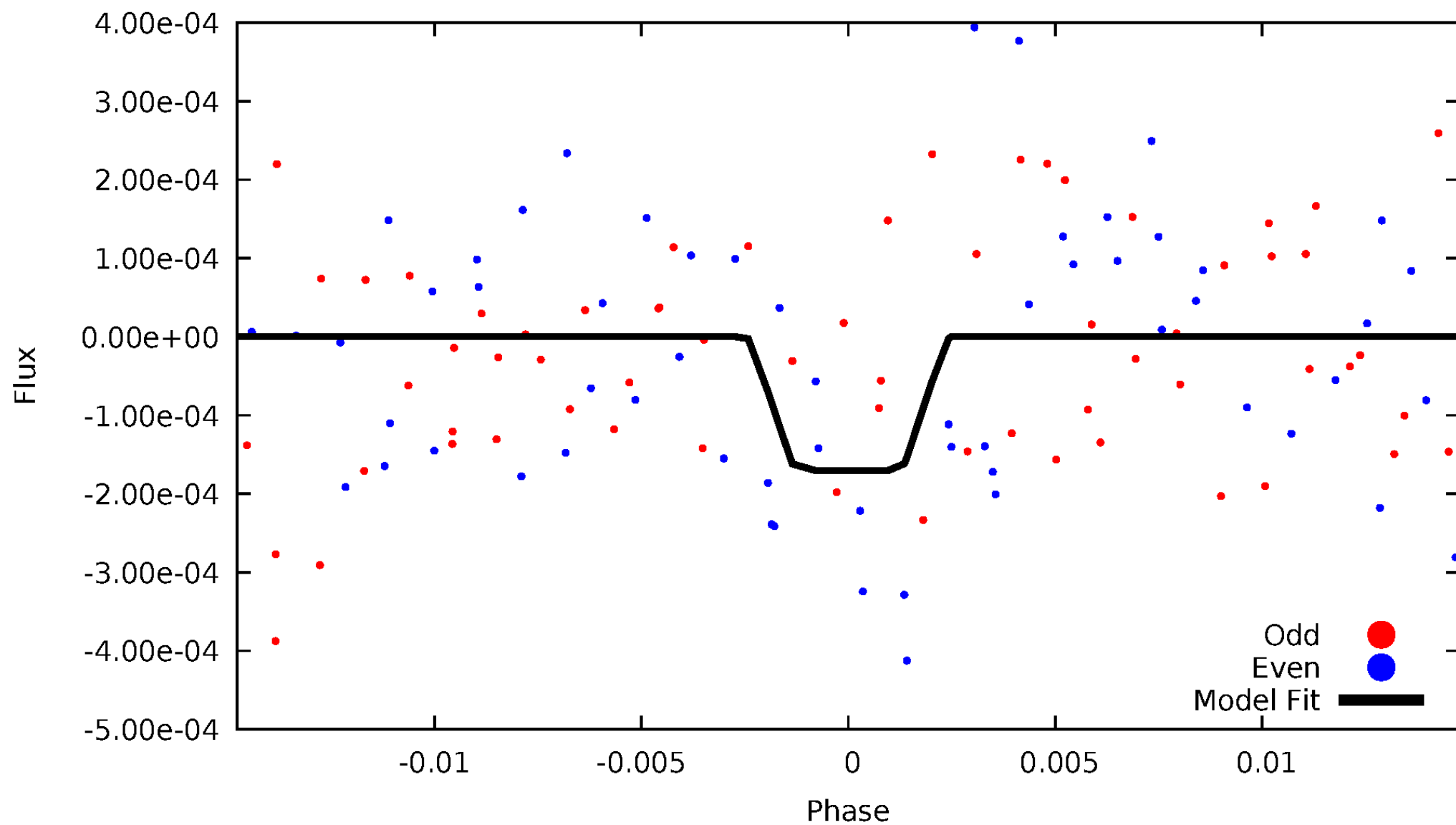
DV Odd/Even

TCE 008985157-04



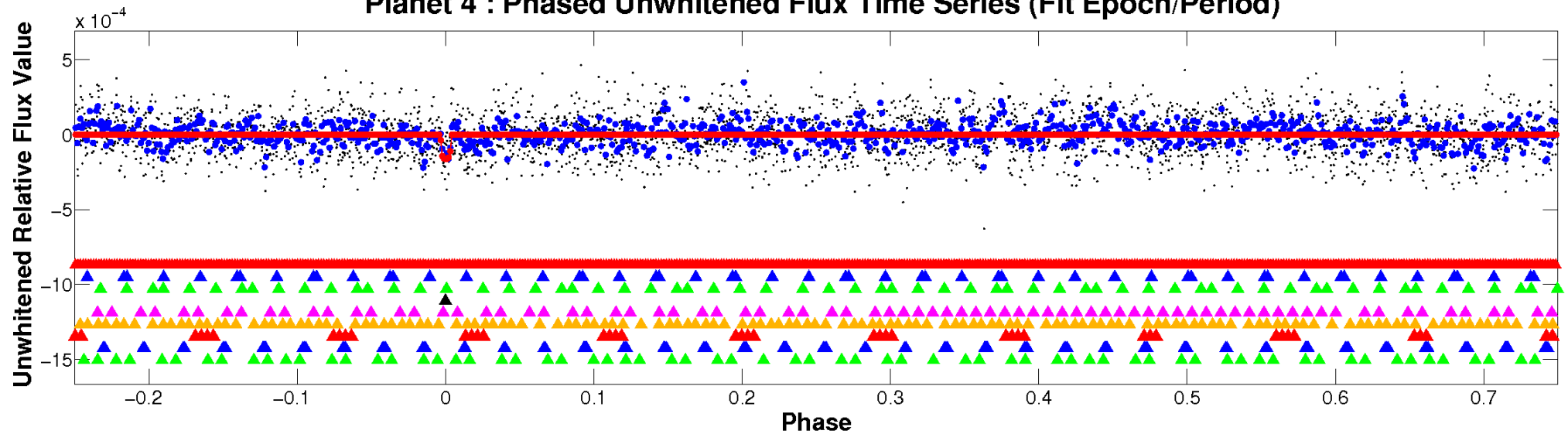
ALT Odd/Even

TCE 008985157-04

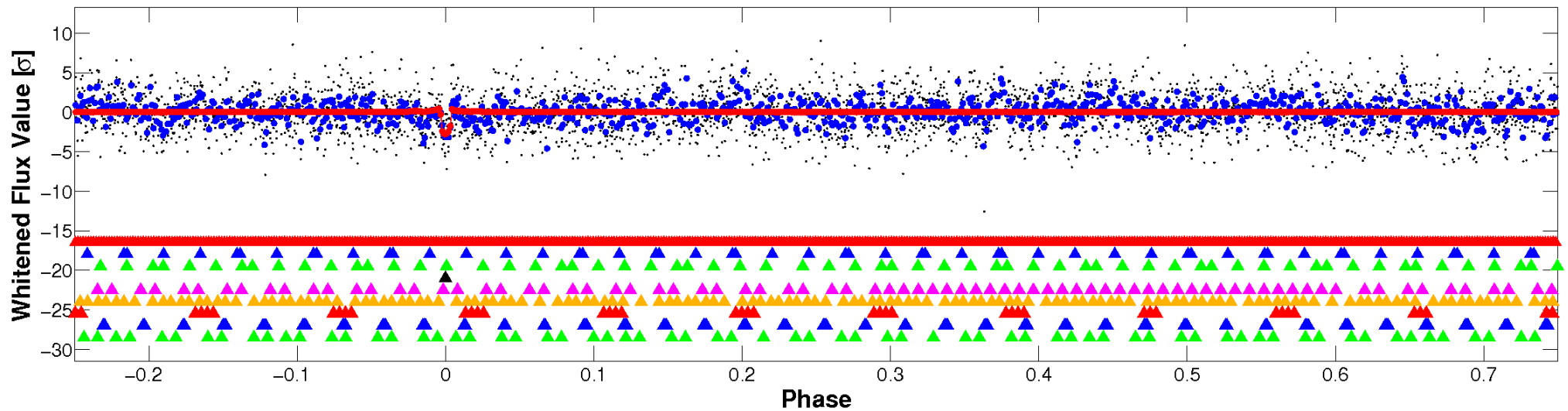


Non-Whitened Vs. Whitened Light Curve

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

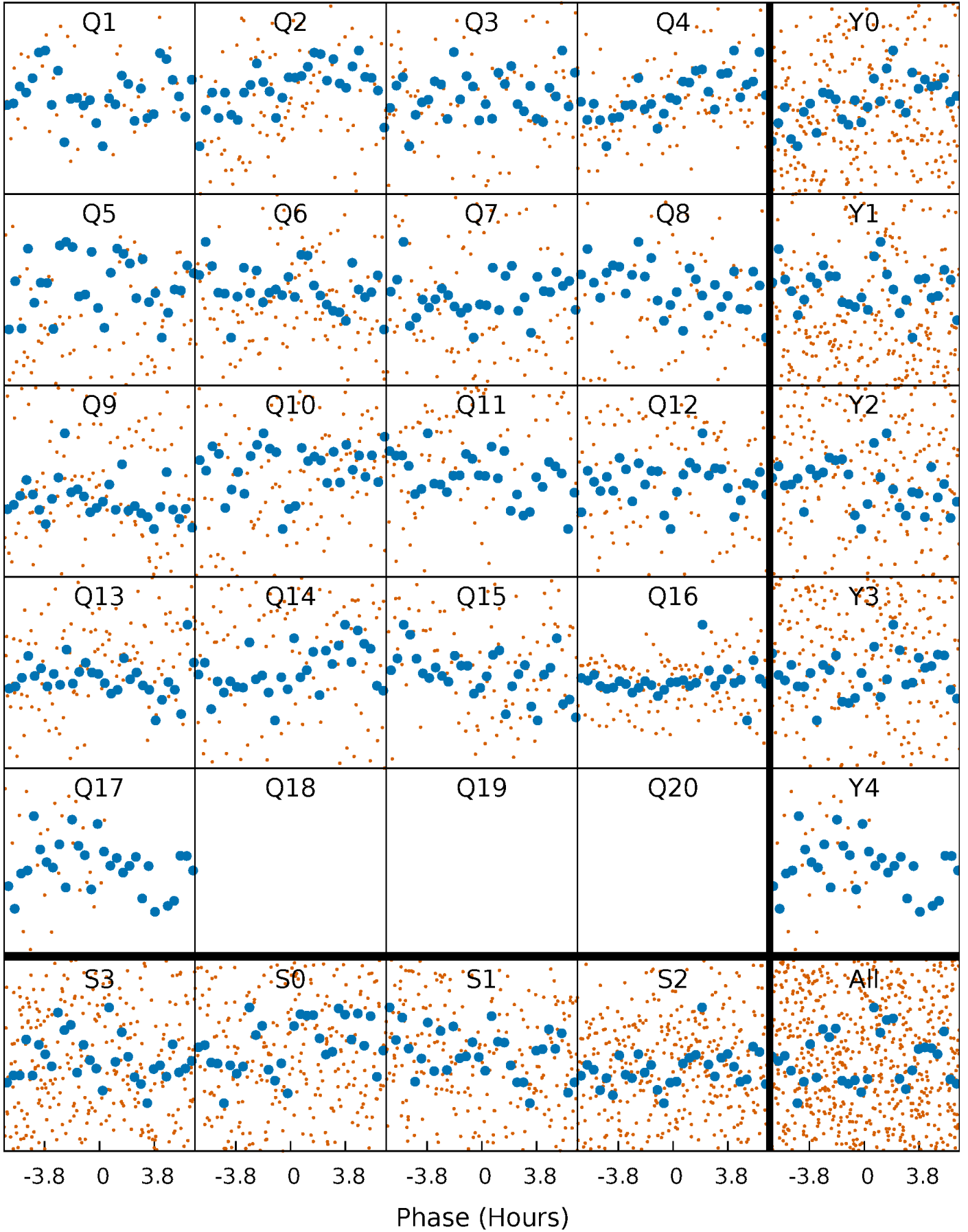


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



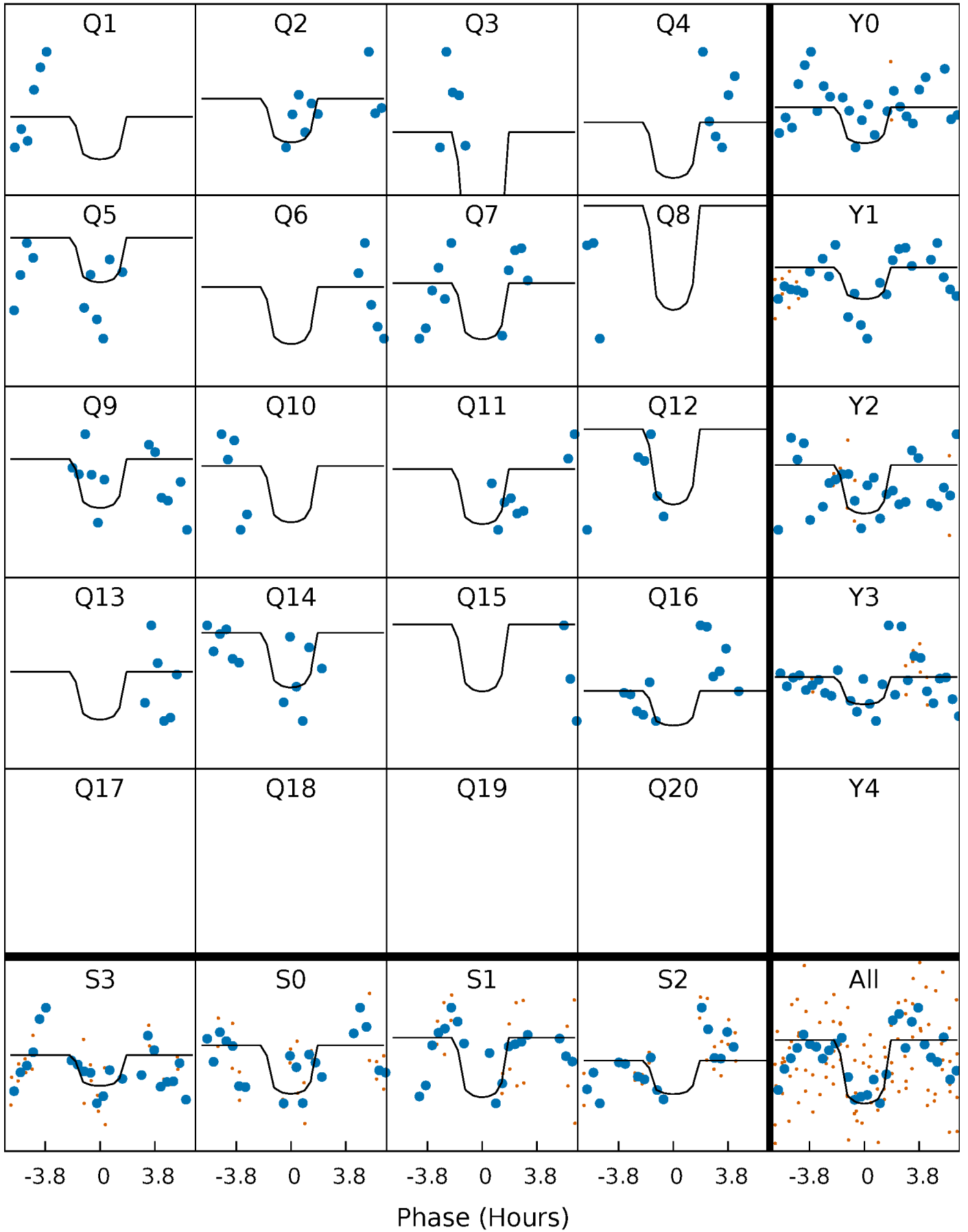
PDC Quarter-Phased Transit Curves

TCE 008985157-04 P= 19.097009 Days $T_0=139.613701$ (BKJD)



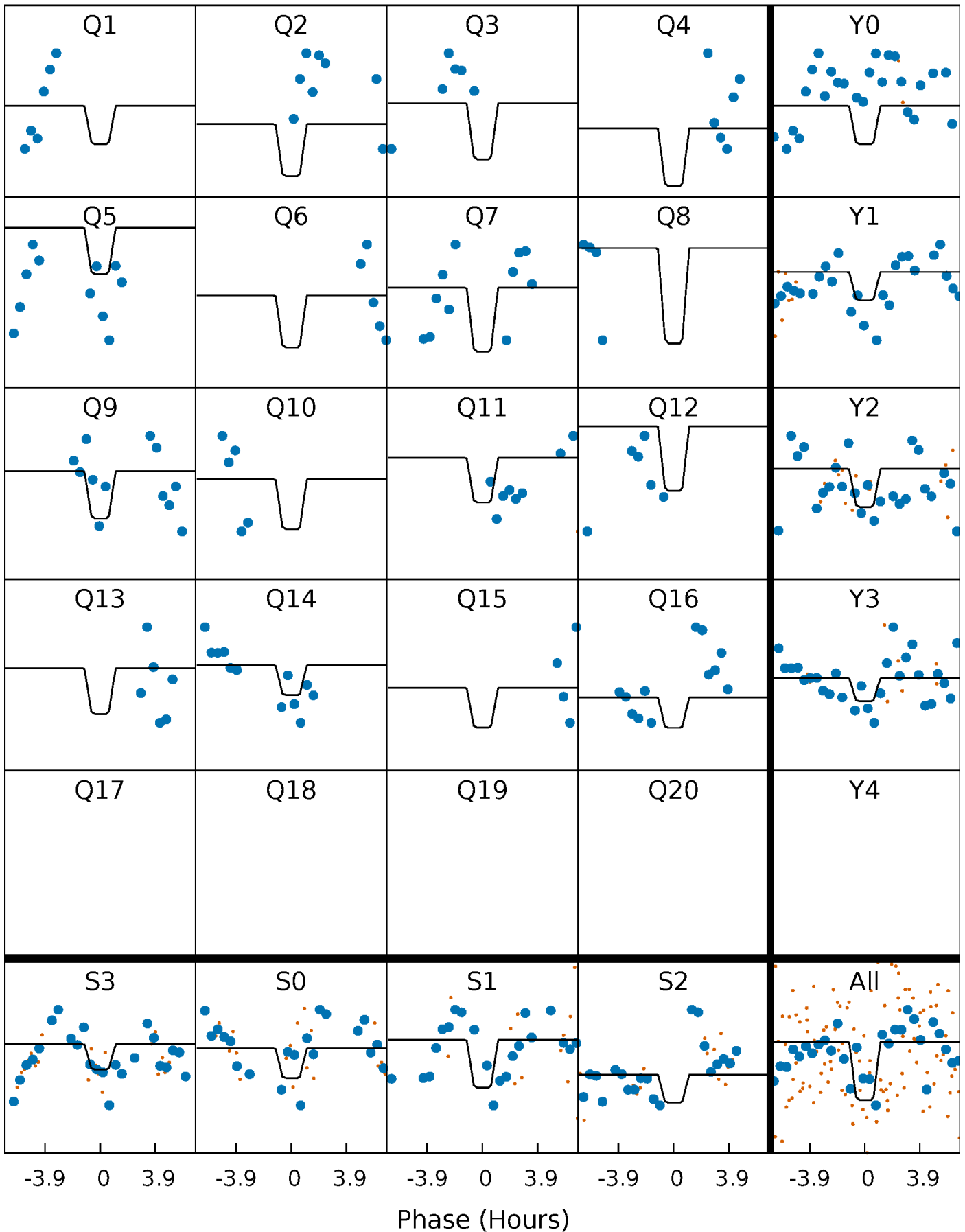
DV Quarter-Phased Transit Curves

TCE 008985157-04 P= 19.097009 Days $T_0=139.613701$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

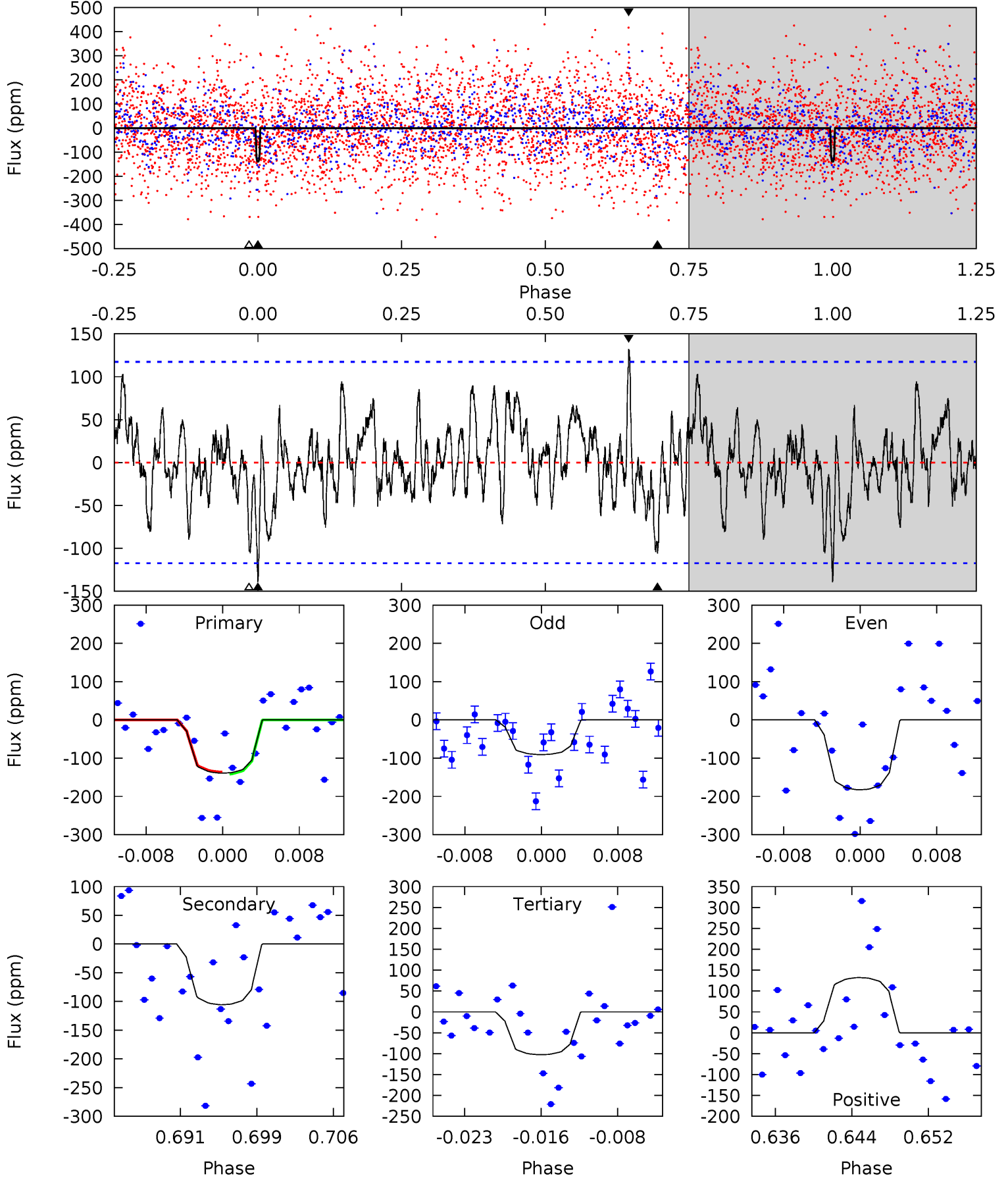
TCE 008985157-04 P= 19.097591 Days $T_0=139.590488$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-04, P = 19.097009 Days, E = 120.516692 Days

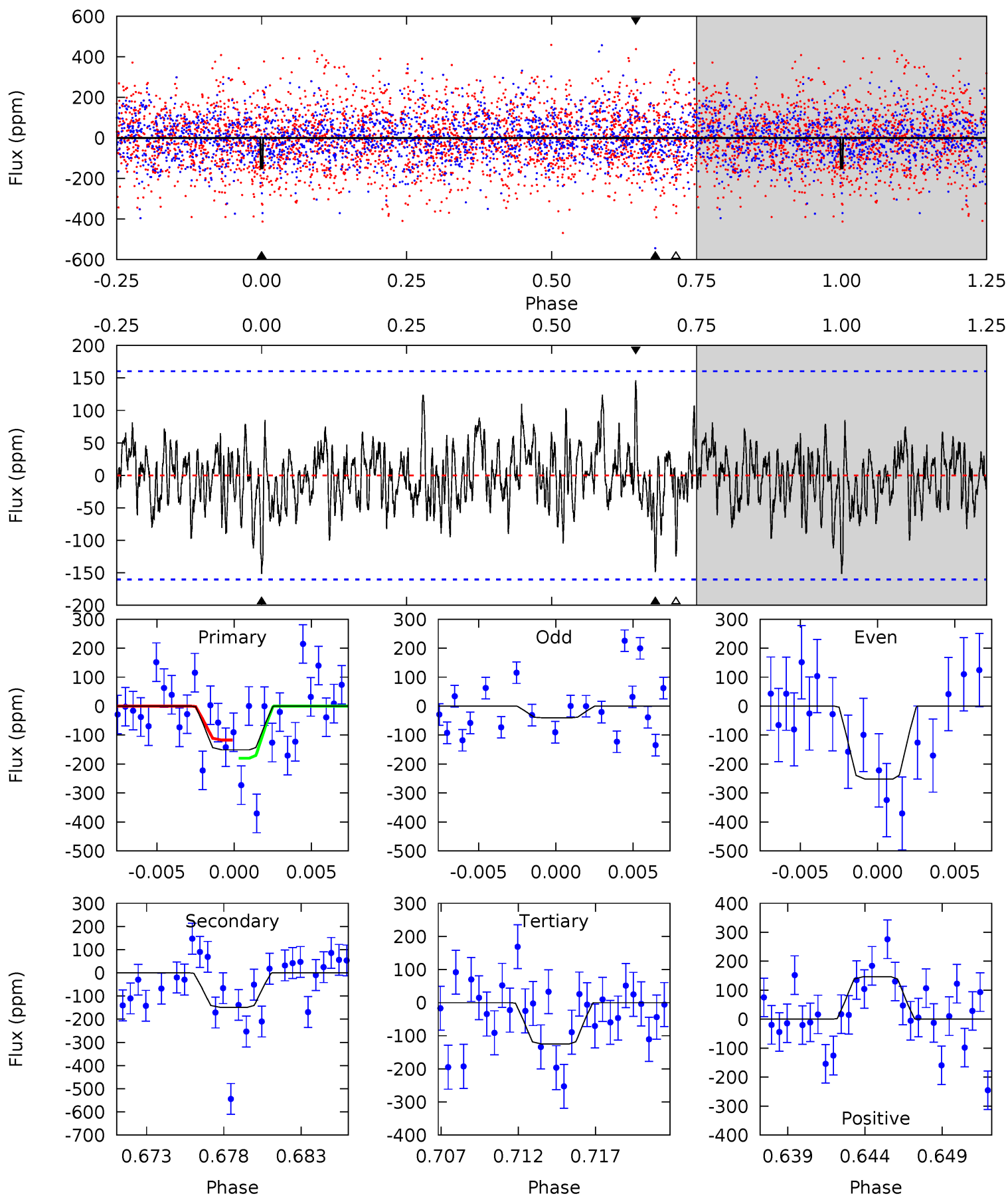
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.02	4.57	4.44	5.72	5.07	2.66	1.58	1.59	0.31	0.14	-1.14	1.99	0.94	0.49	0.11



Alt Model-Shift Uniqueness Test

008985157-04, $P = 19.097591$ Days, $E = 120.492897$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.86	4.79	4.02	4.72	5.16	2.82	1.30	0.84	0.14	0.76	0.07	3.39	0.82	0.49	1.01



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-106 ± 23	$5.58^{+4.37}_{-3.40}$	1832^{+115}_{-173}	5294^{+3637}_{-1090}	50^{+287}_{-35}
Alt.	-149 ± 31	$5.69^{+4.02}_{-3.64}$	1829^{+116}_{-166}	5728^{+4656}_{-1202}	71^{+460}_{-49}

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

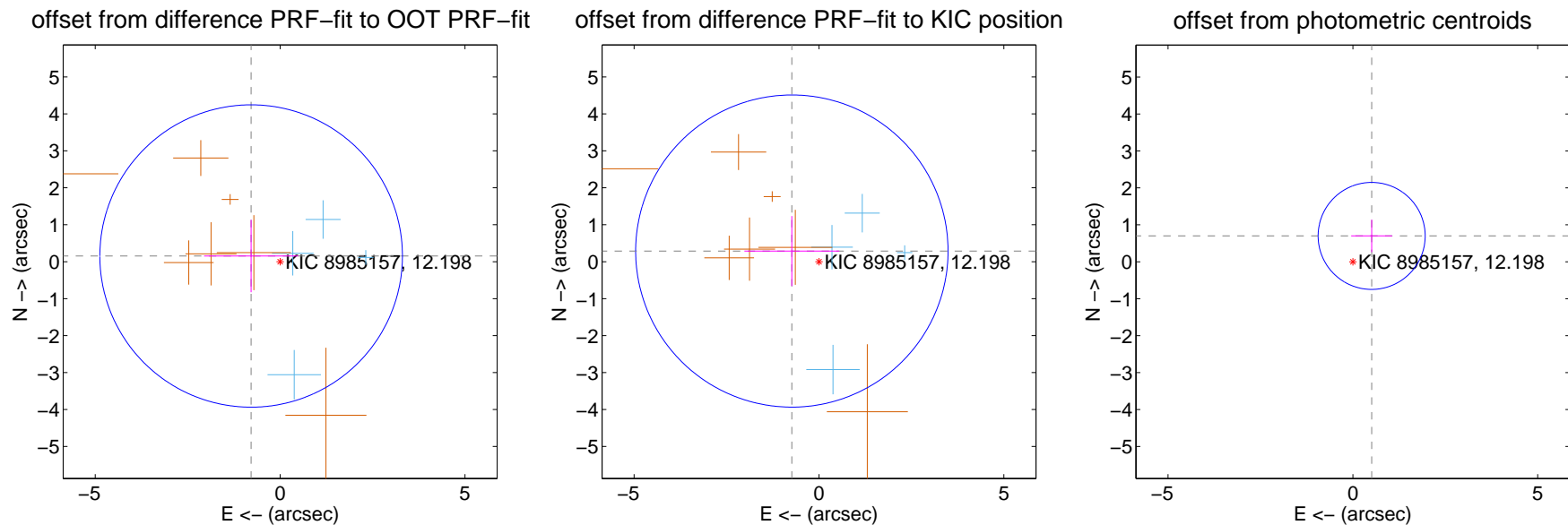
DV Centroid Data

Supplemental centroid analysis for 008985157-04. Kepler magnitude: 12.20. Transit SNR 12.97

There are 4 quarters with good PRF difference image offsets

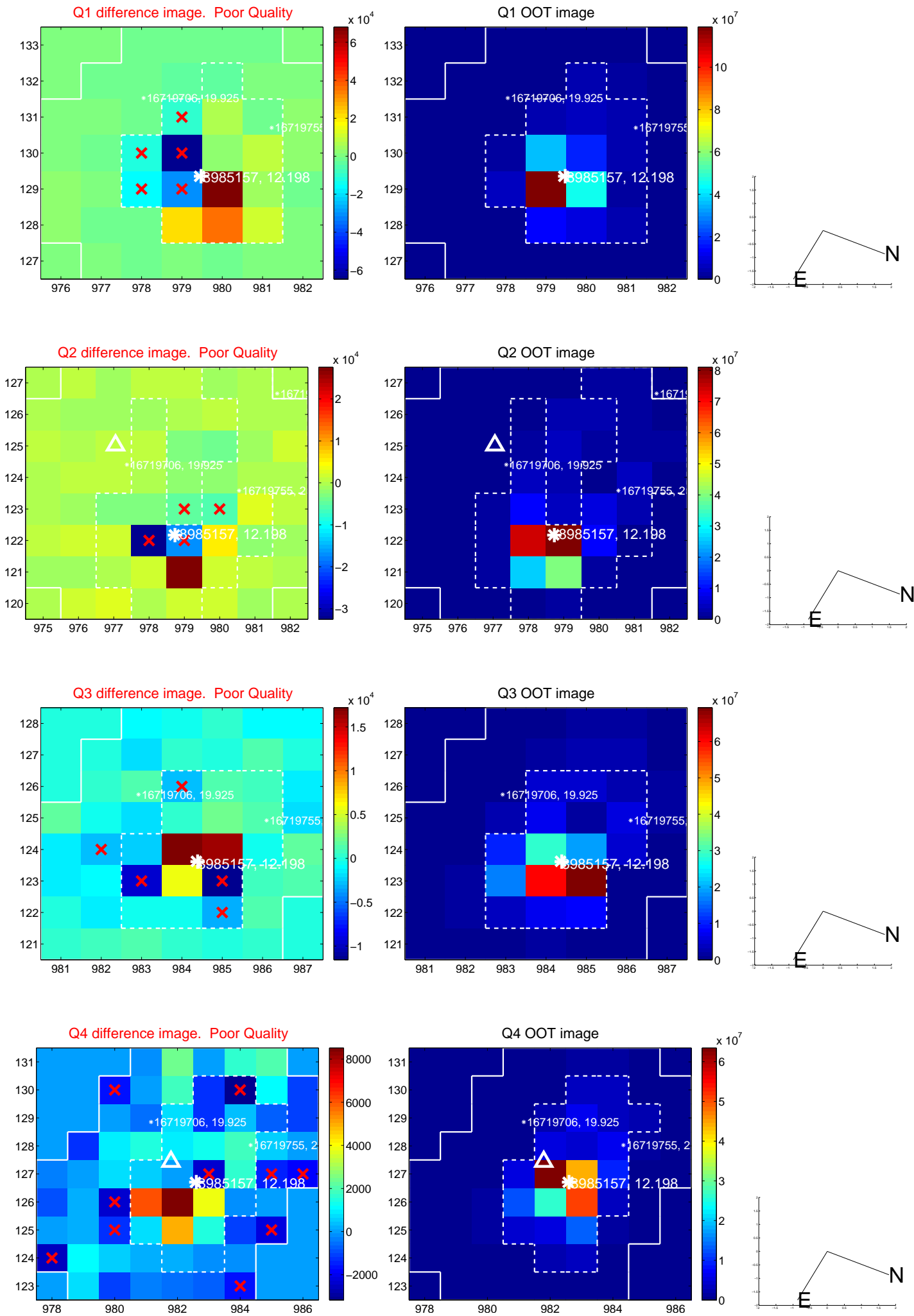
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.799 ± 1.364	0.59	0.784 ± 1.273	0.154 ± 0.980
PRF-fit source offset from KIC position	0.788 ± 1.408	0.56	0.734 ± 1.285	0.288 ± 0.948
photometric centroid source offset	0.87 ± 0.48	1.79	-0.51 ± 0.55	0.70 ± 0.44

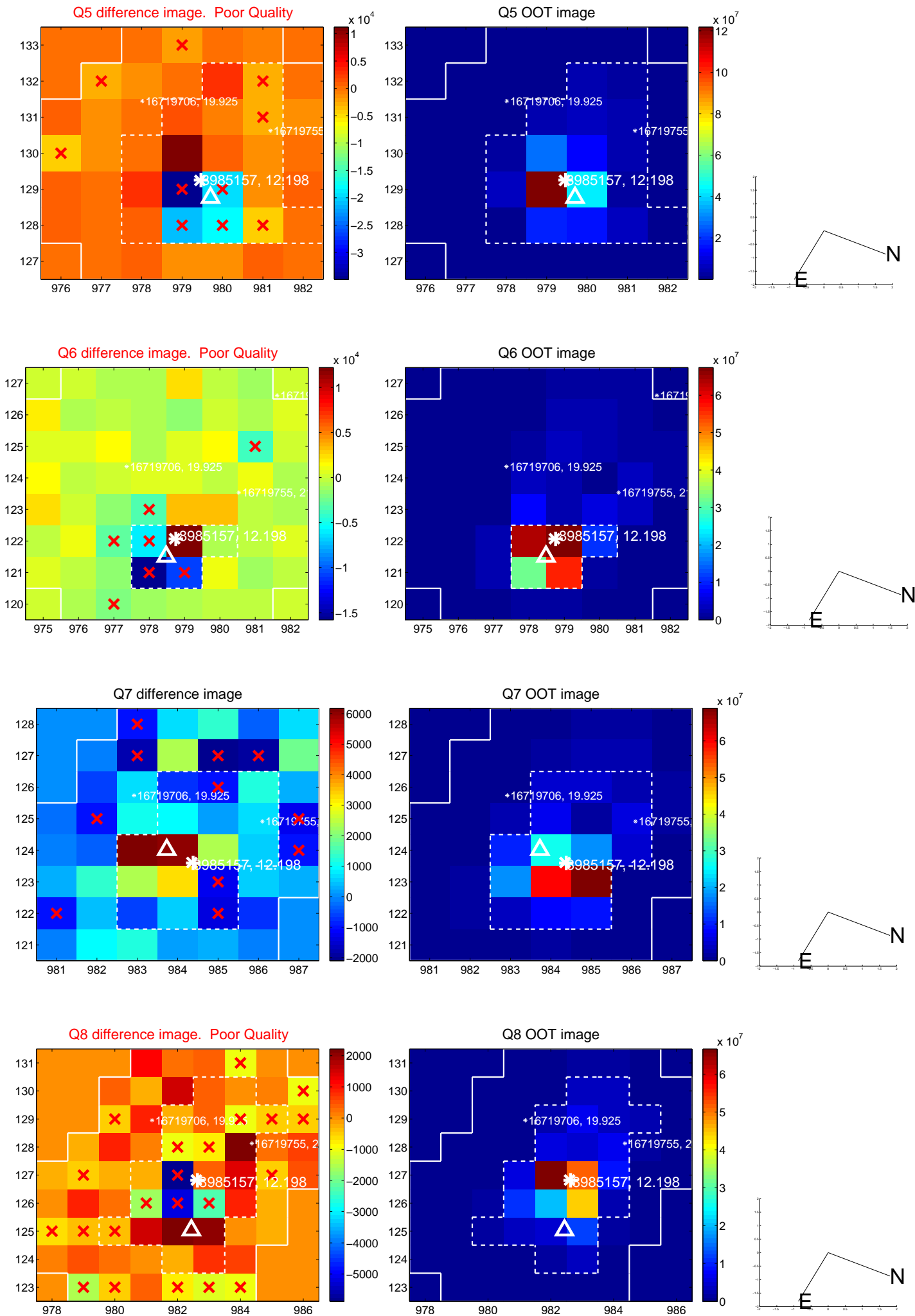


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

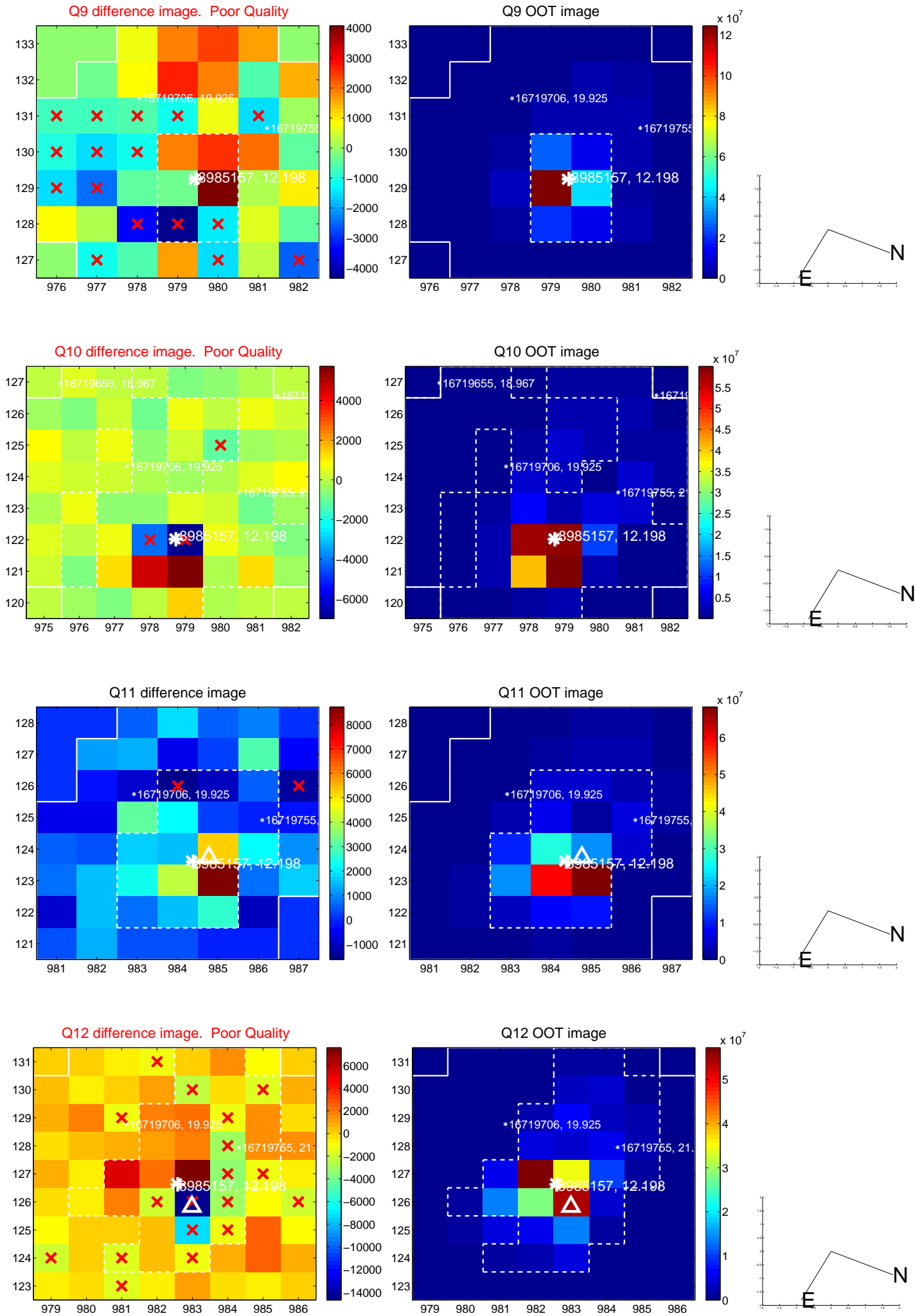
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



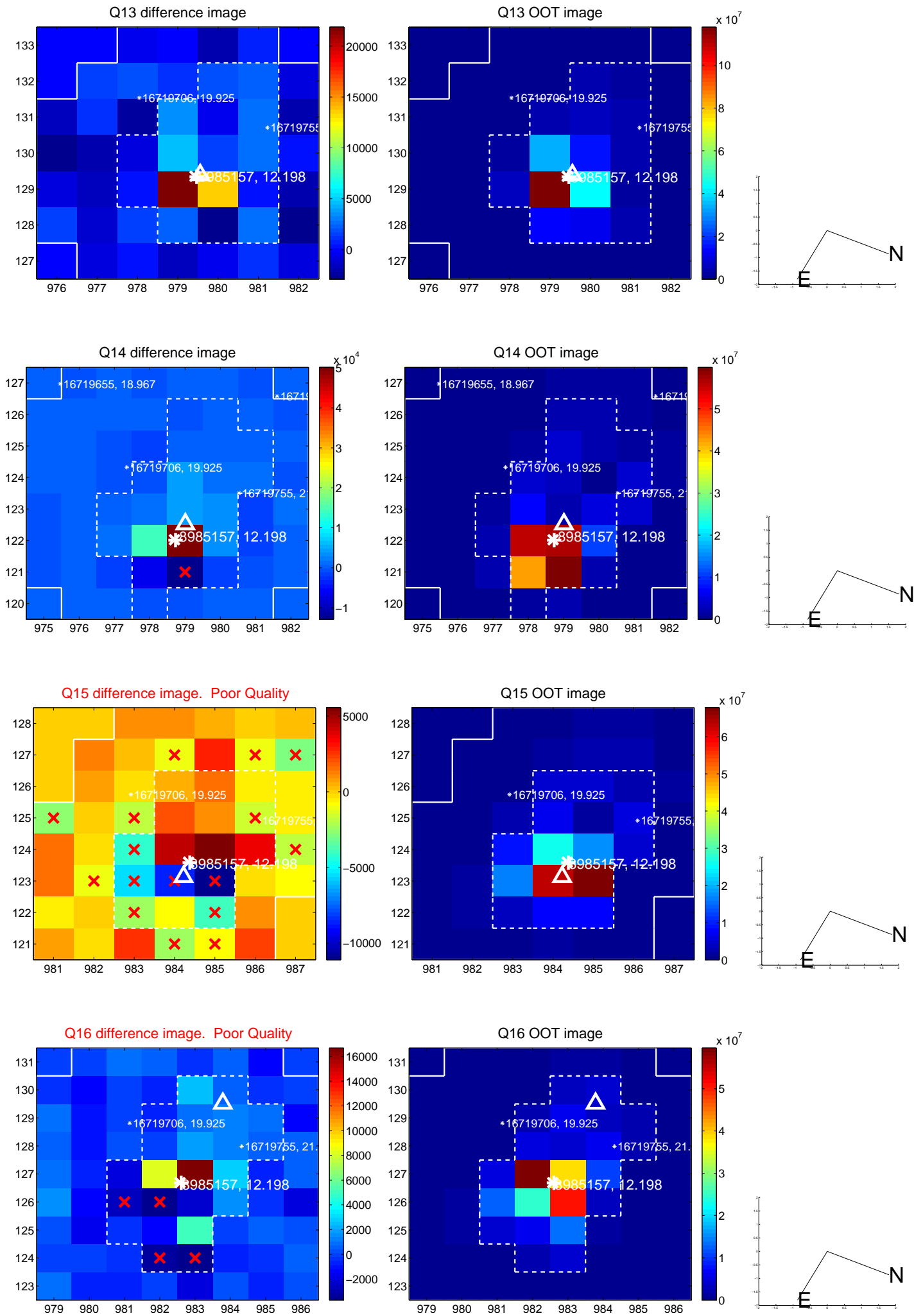
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



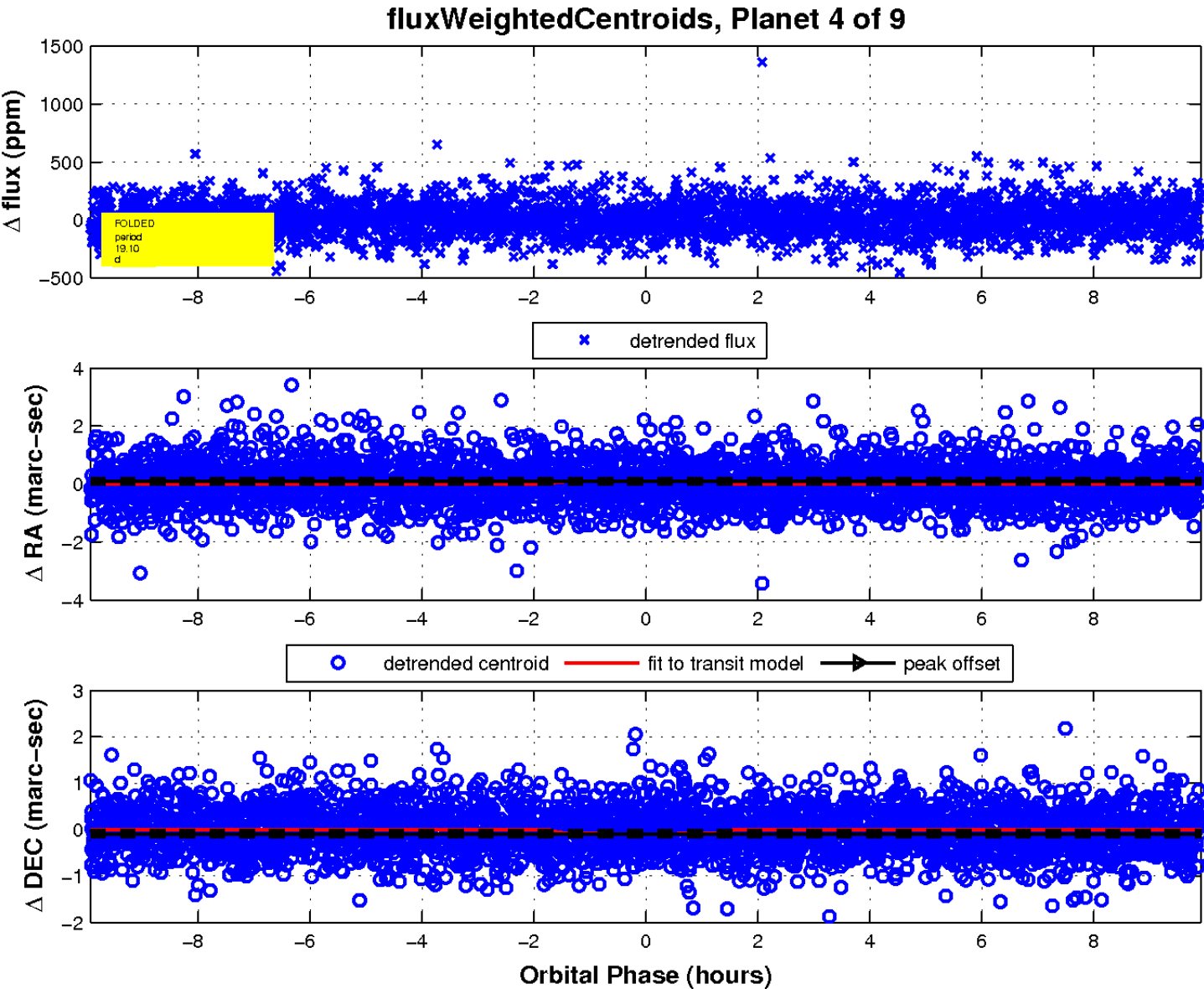
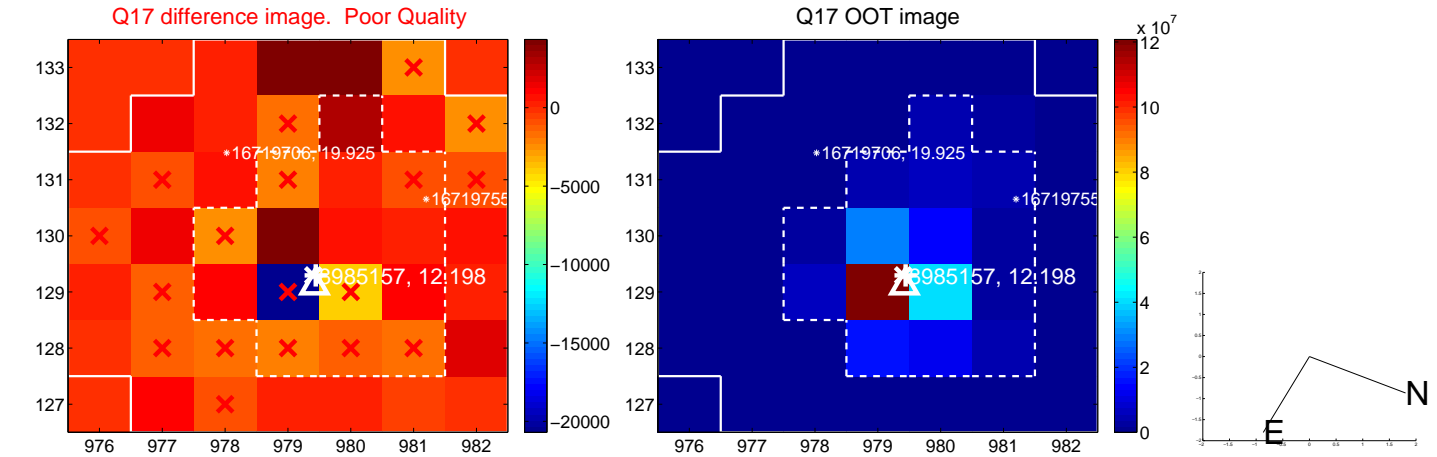
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

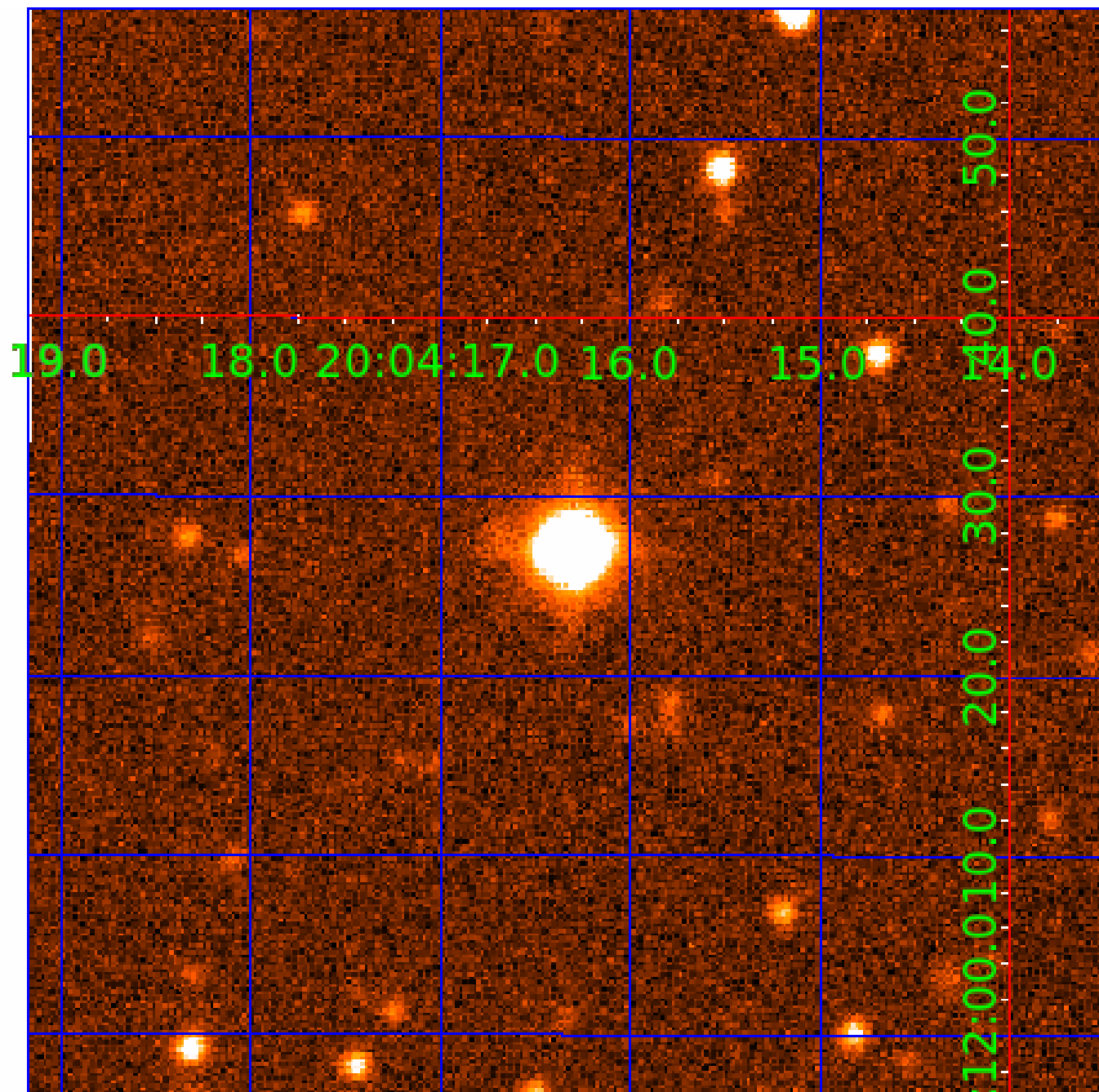


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
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008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

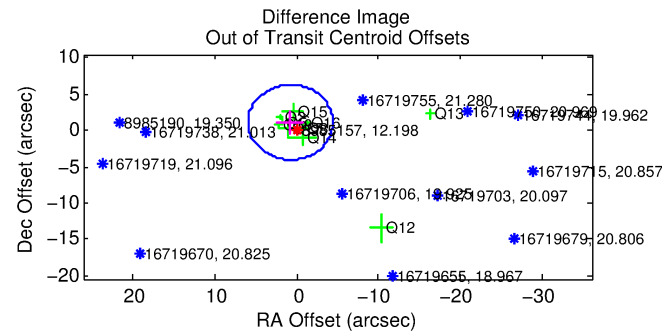
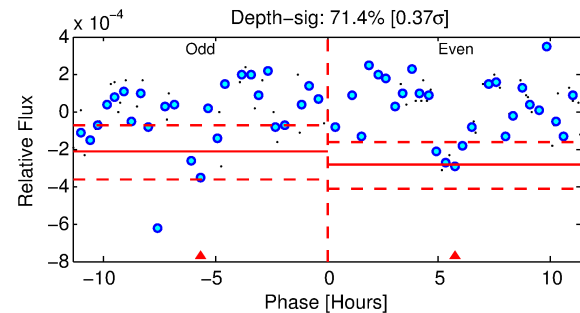
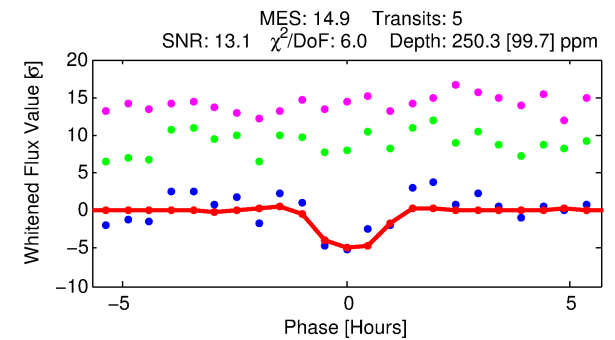
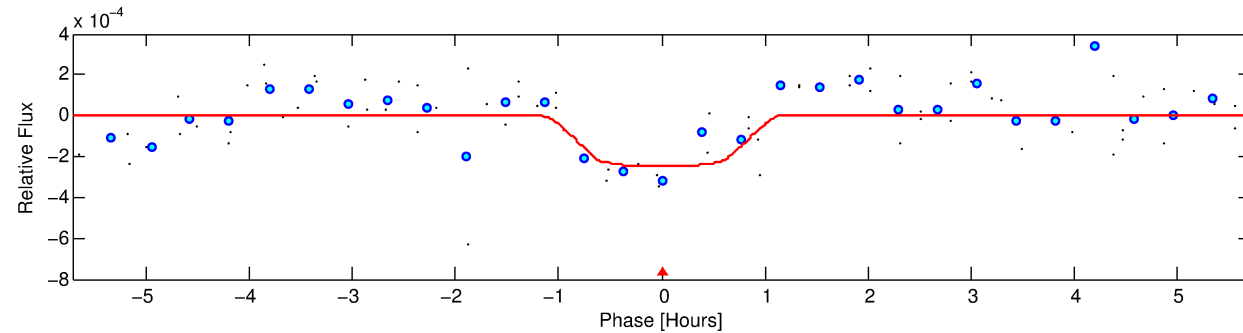
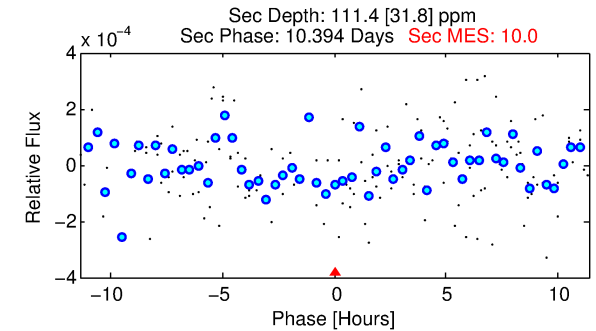
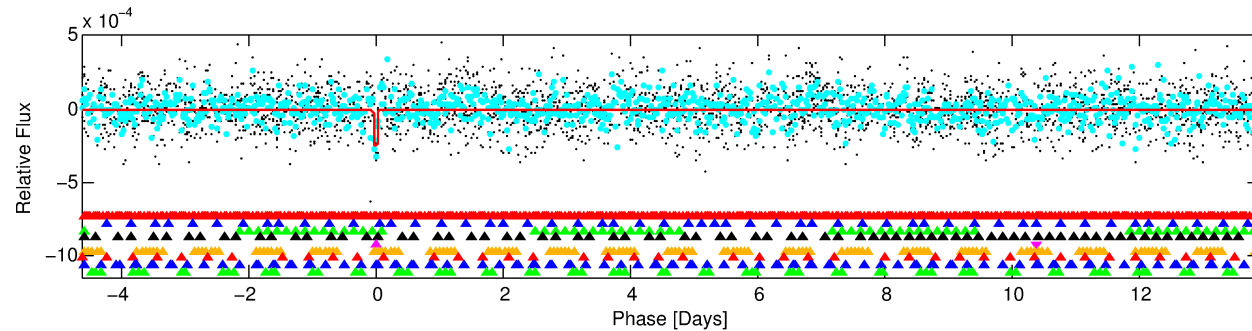
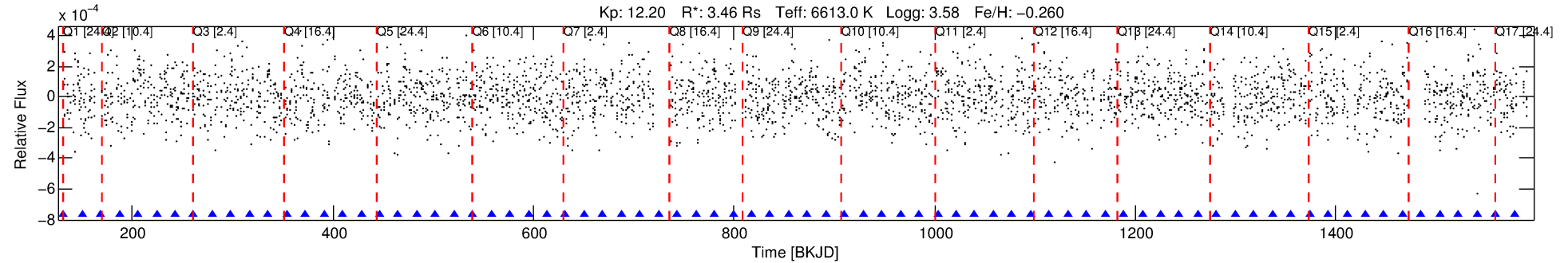
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-05

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 5 of 9 Period: 18.541 d



DV Fit Results:

Period = 18.54074 [0.00027] d
Epoch = 131.6125 [0.0146] BKJD
Rp/R* = 0.0170 [0.1118]
a/R* = 34.96 [1381.73]
b = 0.90 [8.25]
Seff = 783.79 [459.81]
Teq = 1349 [198] K
Rp = 6.40 [42.26] Re
a = 0.1617 [0.0583] AU
Ag = 39.09 [516.00] [0.07 σ]
Teffp = 5216 [17197] K [0.22 σ]

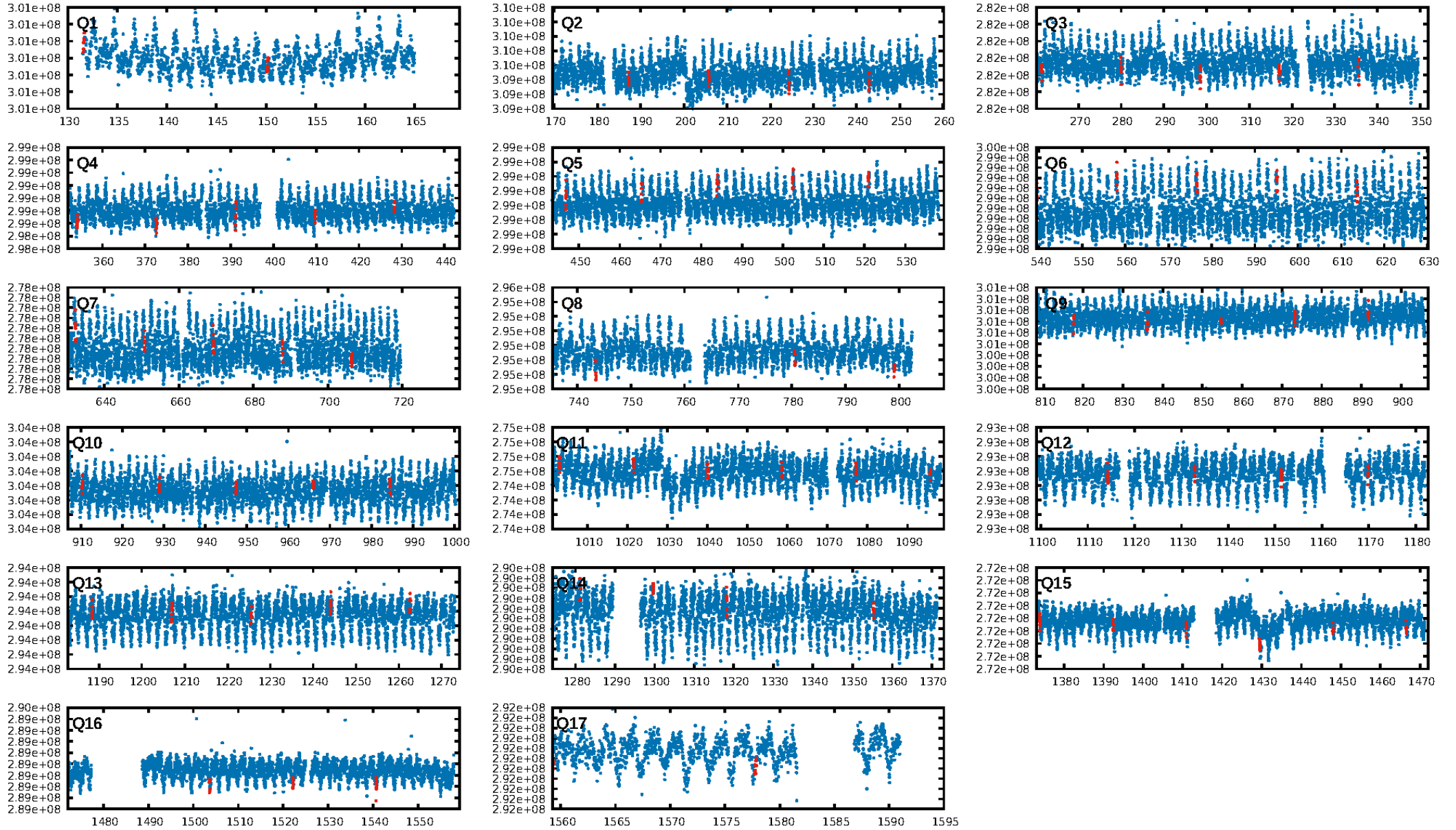
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.02 σ]
LongPeriod-sig: 100.0% [3.50 σ]
ModelChiSquare2-sig: 12.9%
ModelChiSquareGof-sig: 12.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.1825
Centroid-sig: 24.2%
Centroid-so: 0.232 arcsec [0.57 σ]
OotOffset-rm: 1.361 arcsec [0.79 σ]
KicOffset-rm: 1.435 arcsec [0.86 σ]
OotOffset-st: 3/1/3/3 [10]
KicOffset-st: 3/1/3/3 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.41 [7/17]

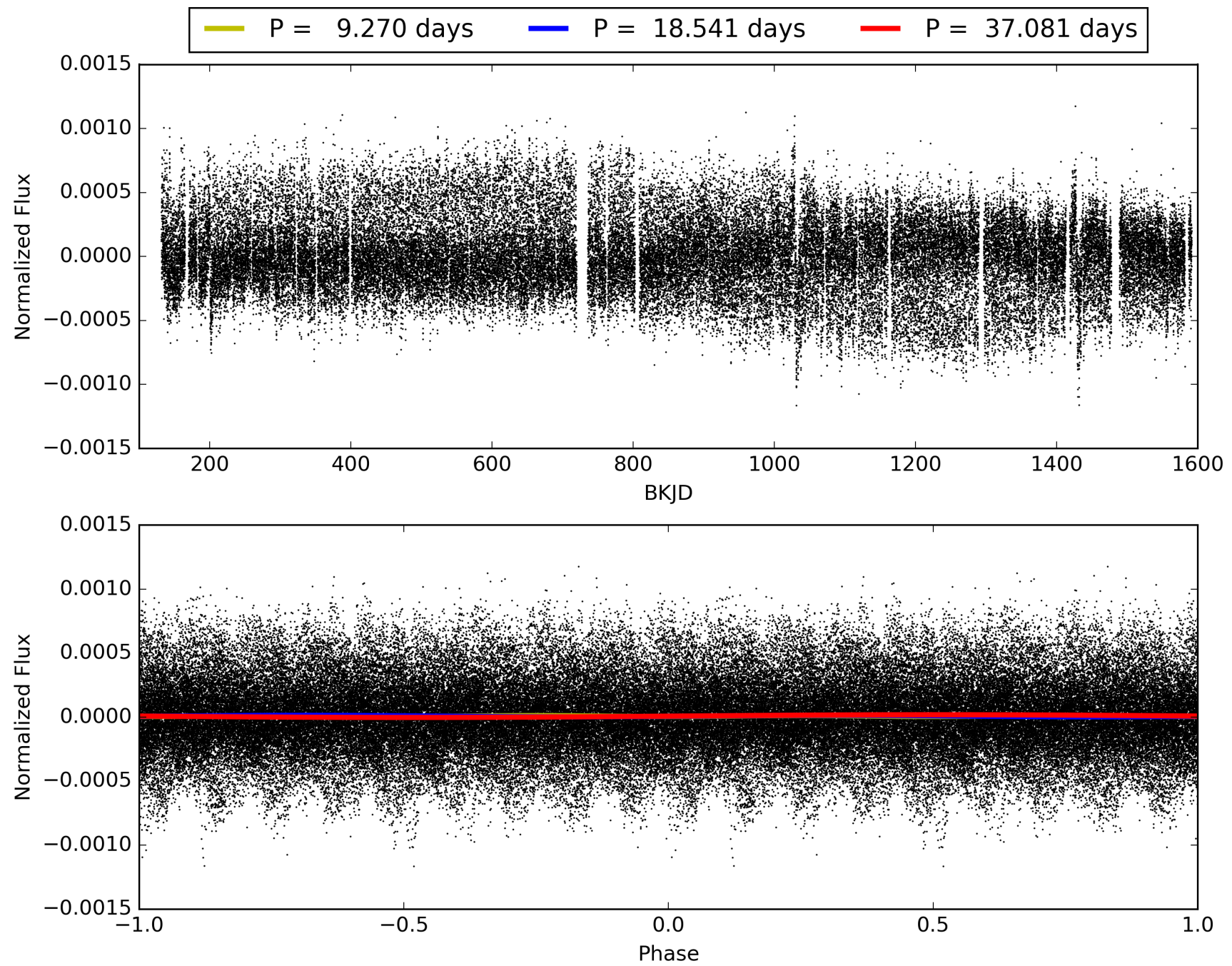
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:15 Z

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

TCE 008985157-05, PDC Light Curves

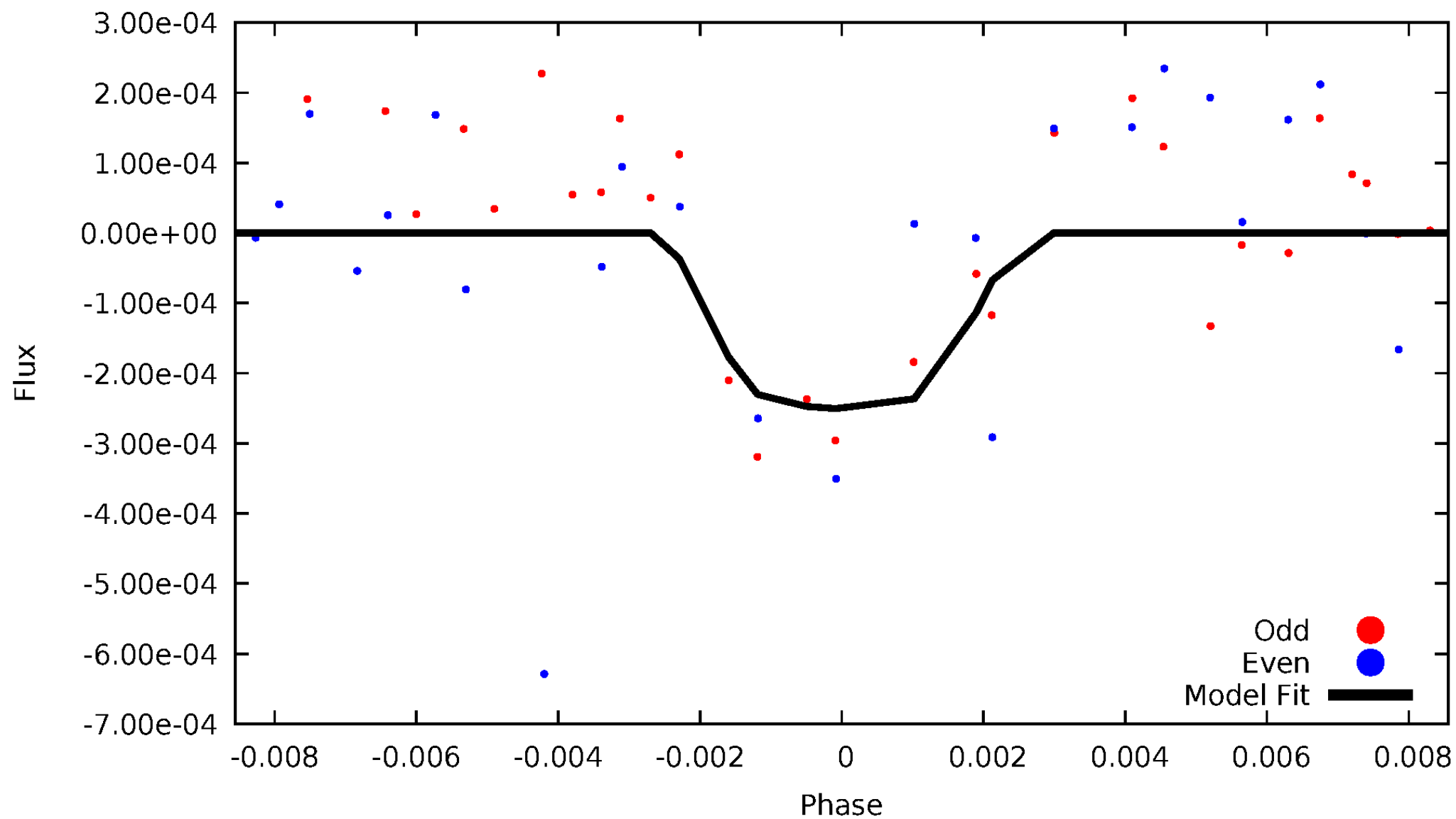


TCE 008985157-05



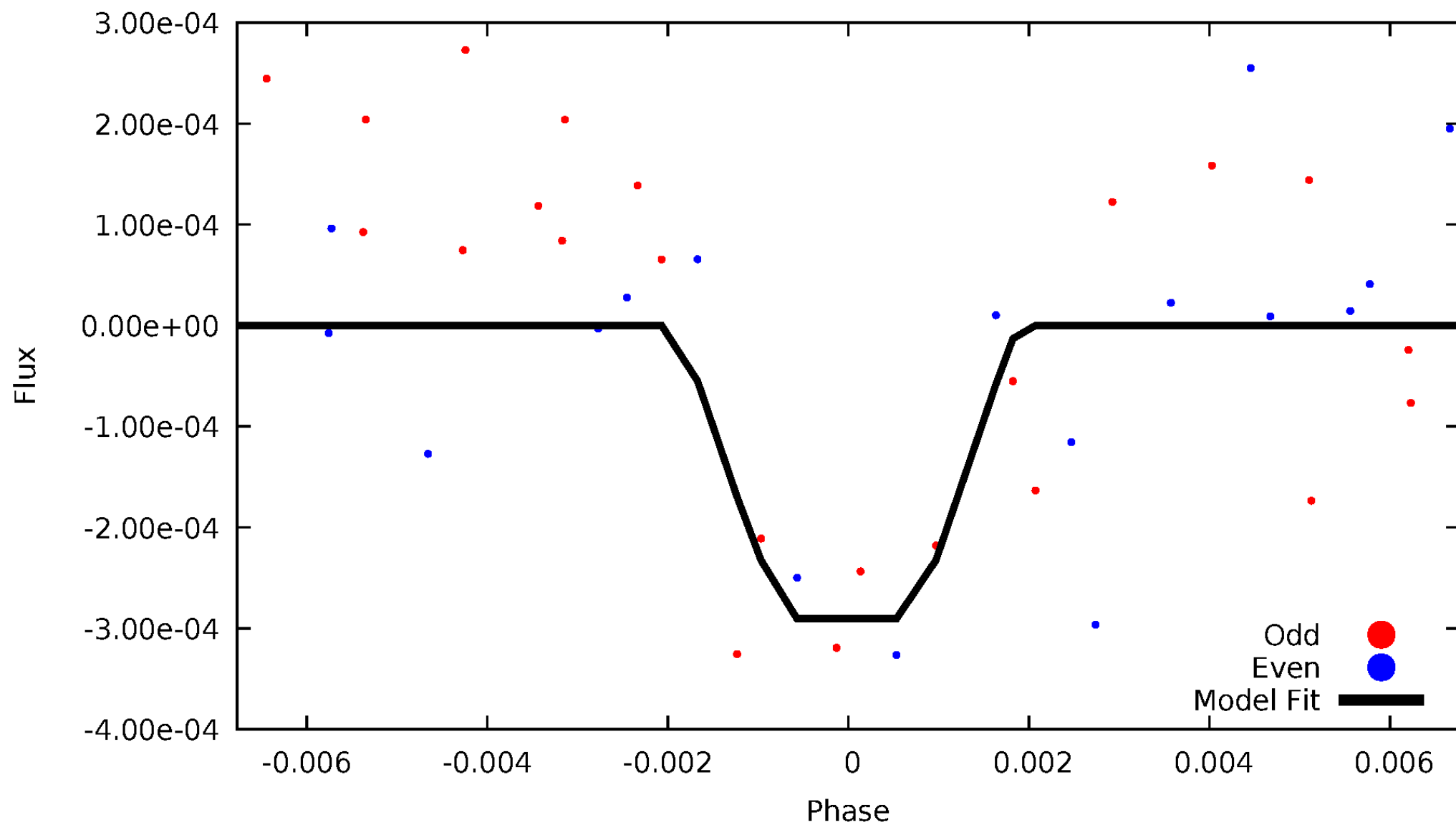
DV Odd/Even

TCE 008985157-05



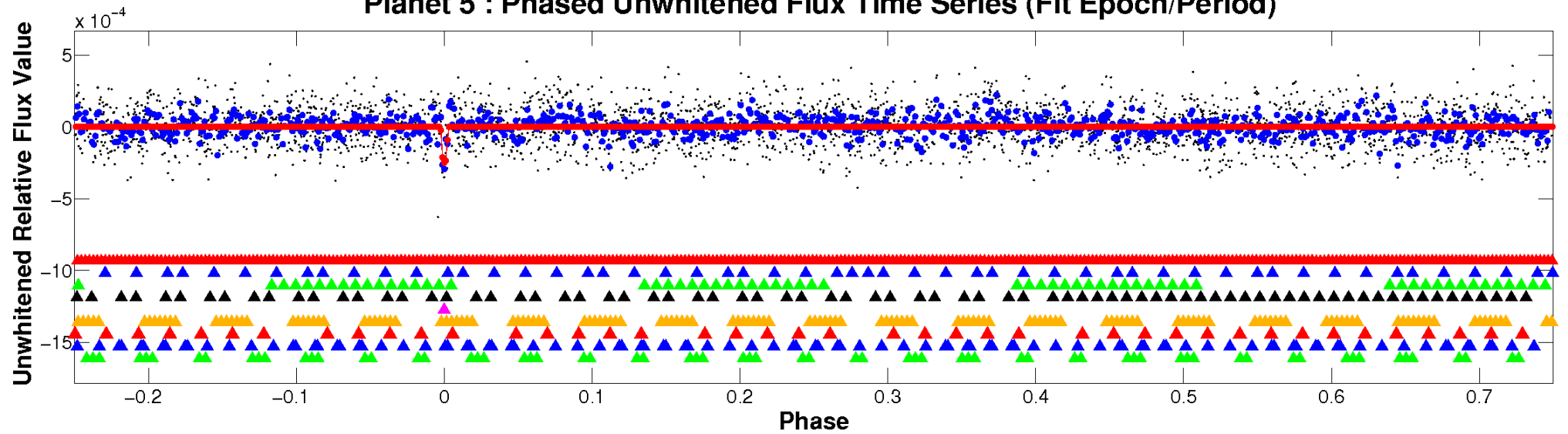
ALT Odd/Even

TCE 008985157-05

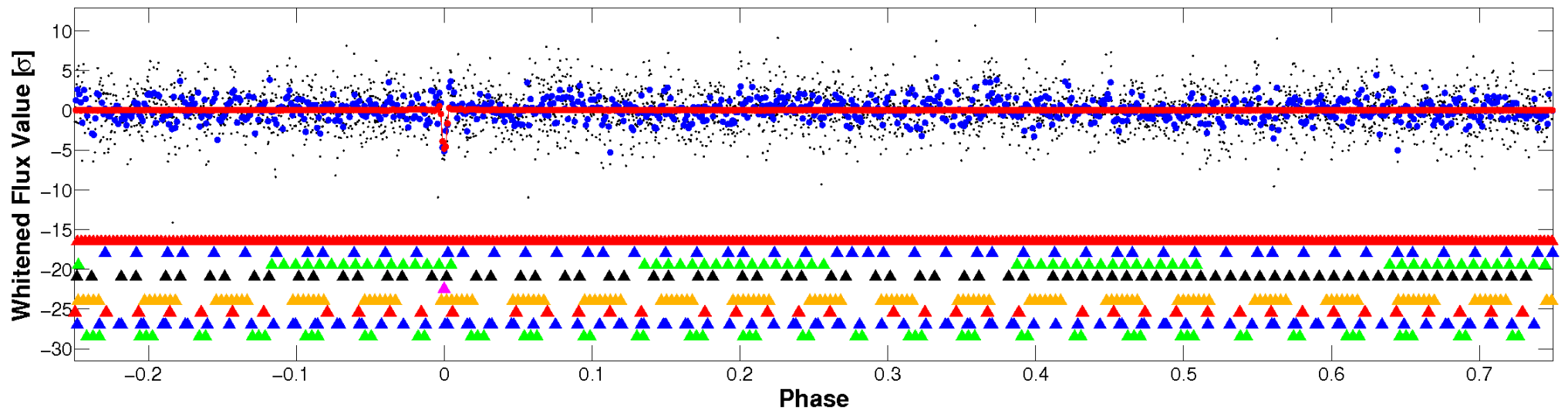


Non-Whitened Vs. Whitened Light Curve

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

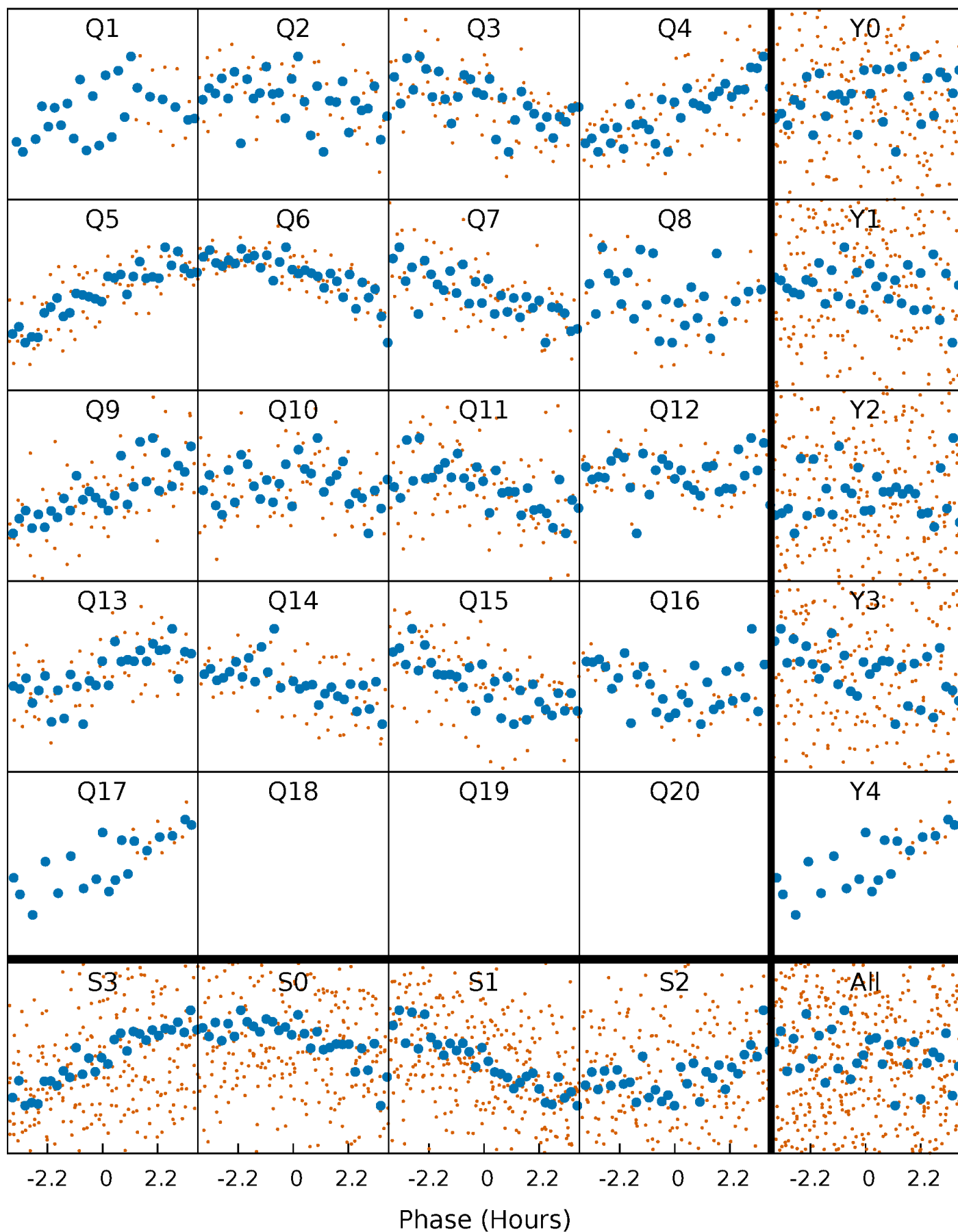


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



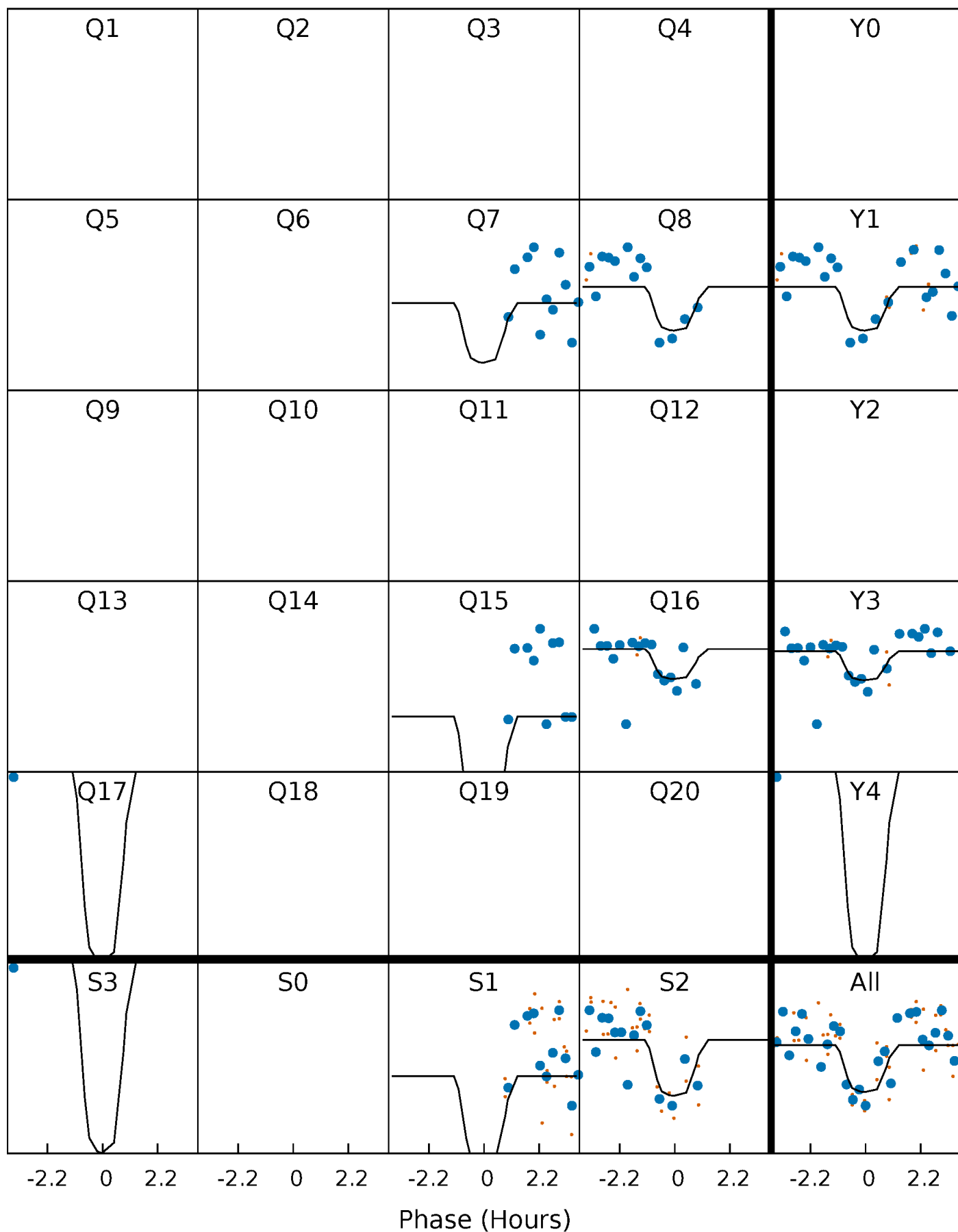
PDC Quarter-Phased Transit Curves

TCE 008985157-05 $P = 18.540736$ Days $T_0 = 131.612505$ (BKJD)



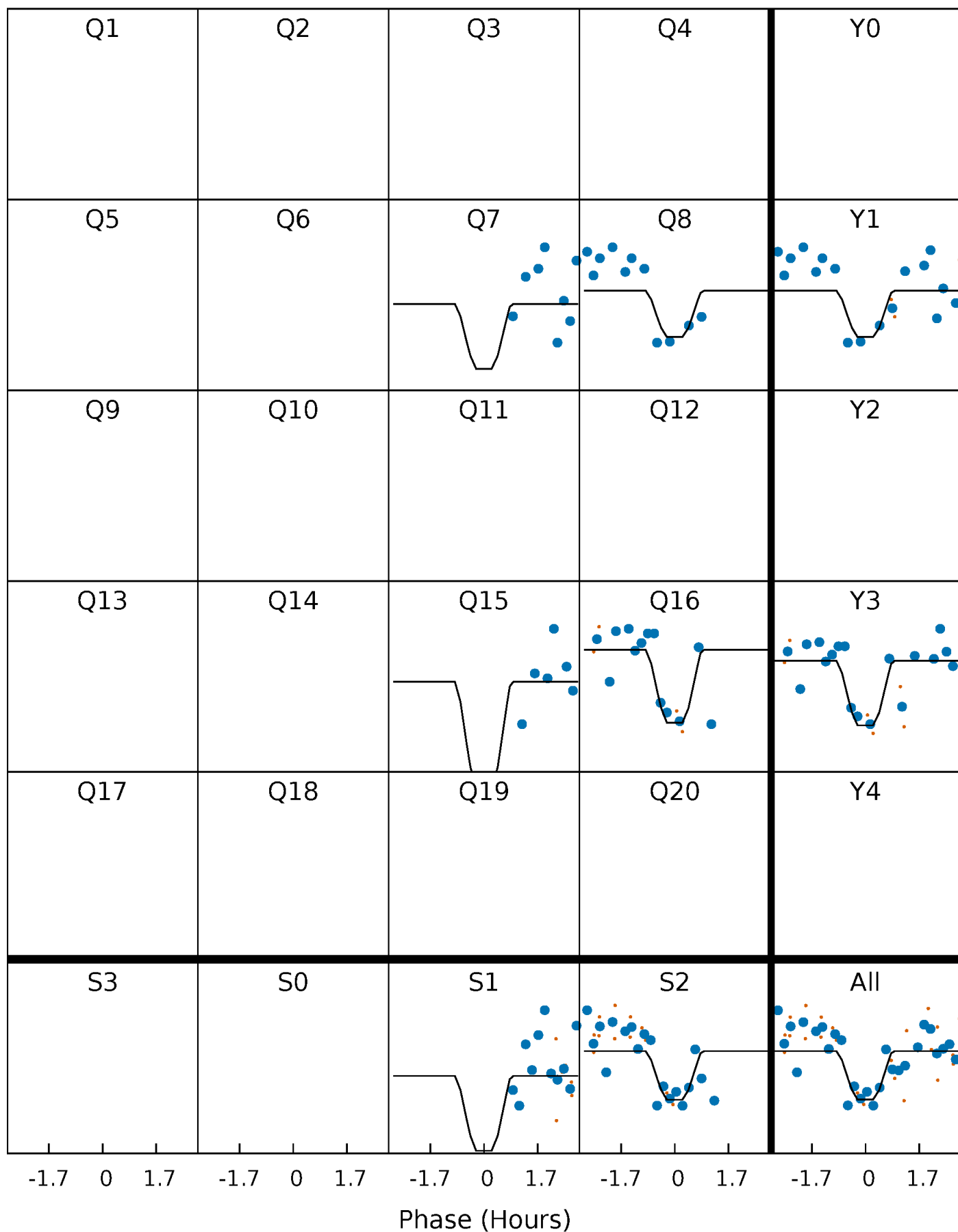
DV Quarter-Phased Transit Curves

TCE 008985157-05 P= 18.540736 Days $T_0=131.612505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

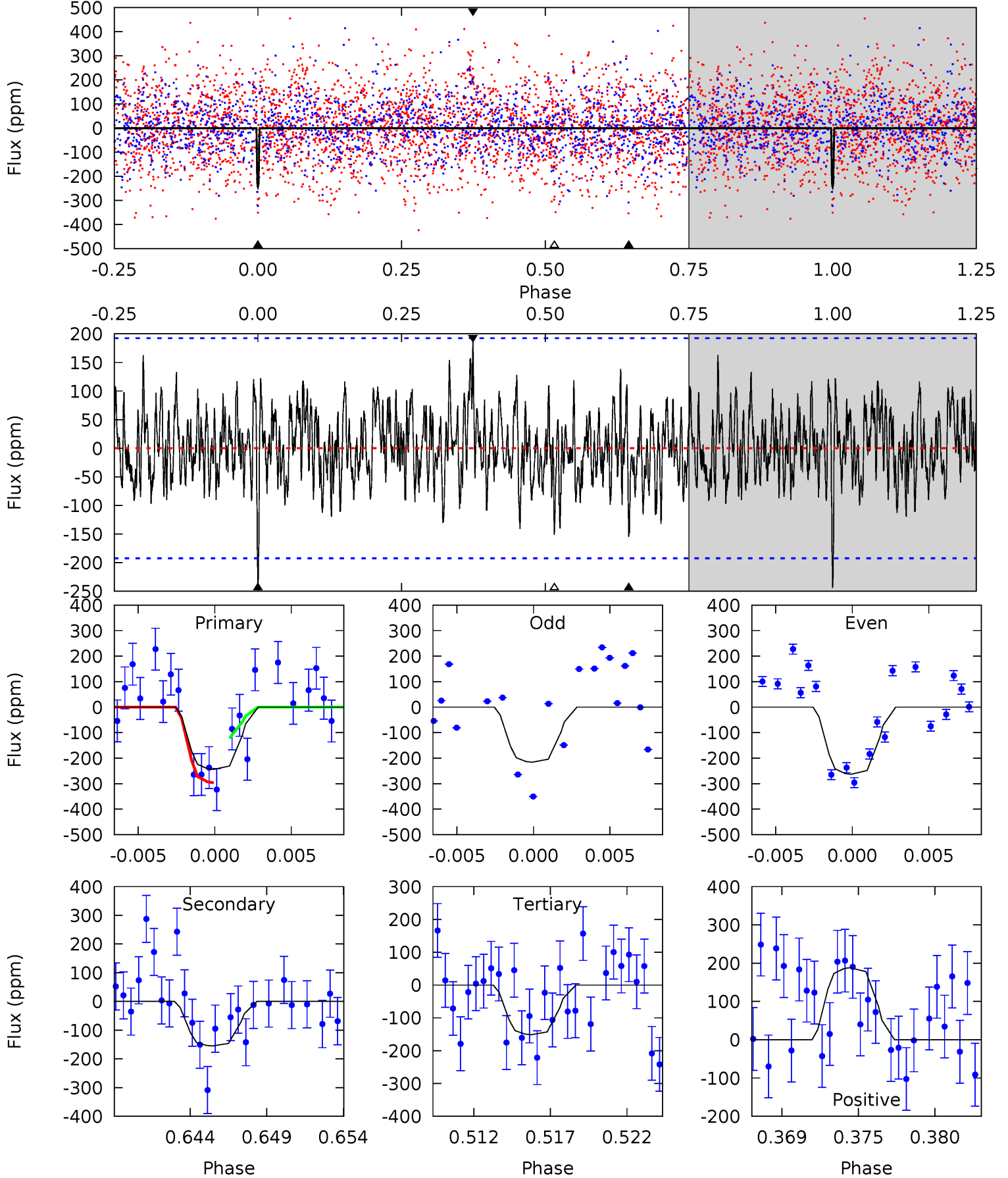
TCE 008985157-05 $P = 18.540440$ Days $T_0 = 131.623064$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-05, $P = 18.540736$ Days, $E = 131.612505$ Days

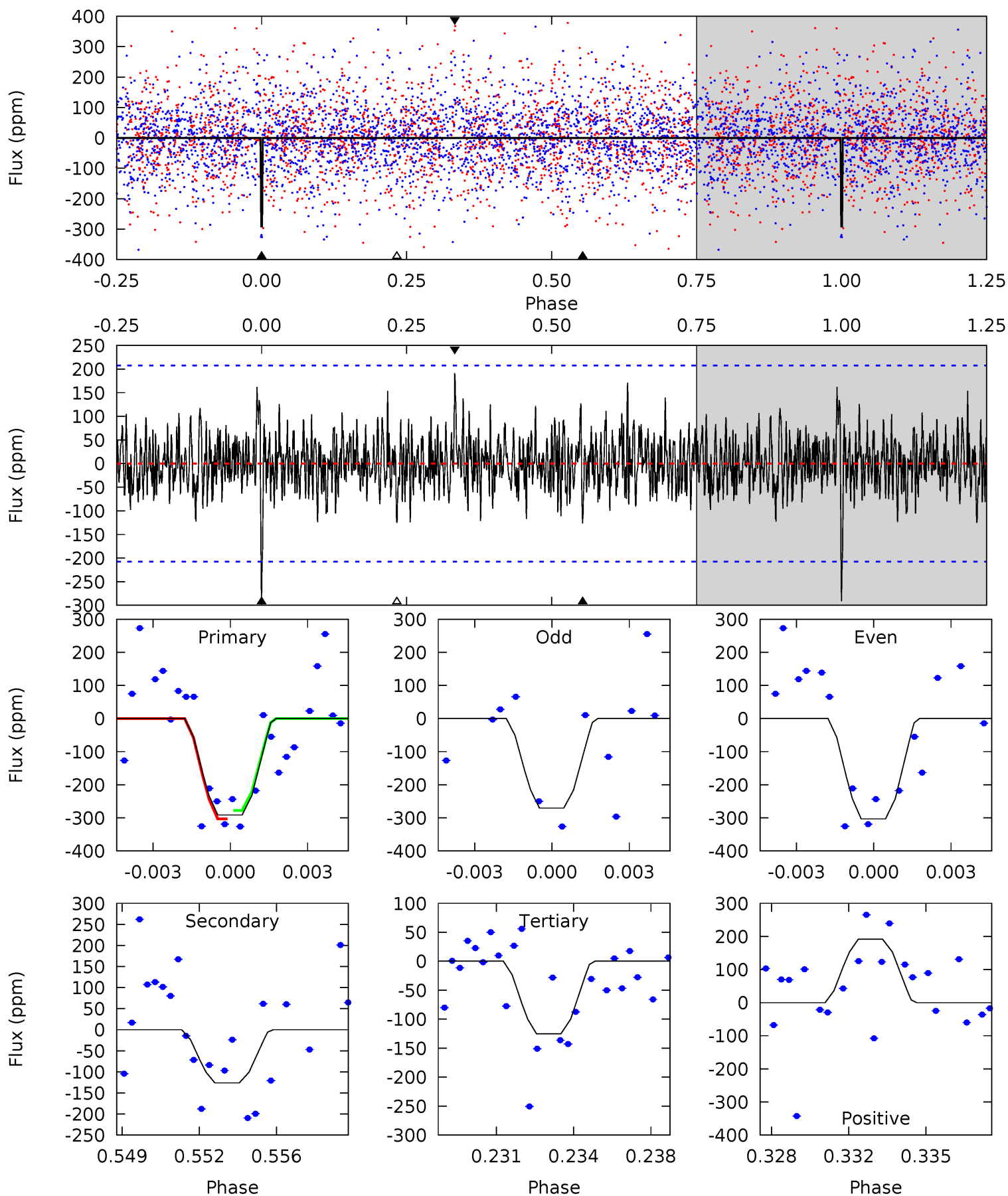
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.53	4.14	4.05	5.04	5.15	2.79	1.41	2.48	1.49	0.10	-0.89	0.62	0.98	0.44	2.35



Alt Model-Shift Uniqueness Test

008985157-05, P = 18.540440 Days, E = 131.623064 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.33	3.17	3.15	4.81	5.22	2.92	1.17	4.18	2.52	0.02	-1.64	0.40	1.07	0.40	0.33



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-155 ± 37	$27.63^{+33.15}_{-19.41}$	1857^{+113}_{-167}	3135^{+1785}_{-754}	$2.888^{+31.130}_{-2.315}$
Alt.	-126 ± 40	$28.89^{+31.82}_{-20.18}$	1859^{+111}_{-171}	3003^{+1551}_{-749}	$2.347^{+20.093}_{-1.877}$

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

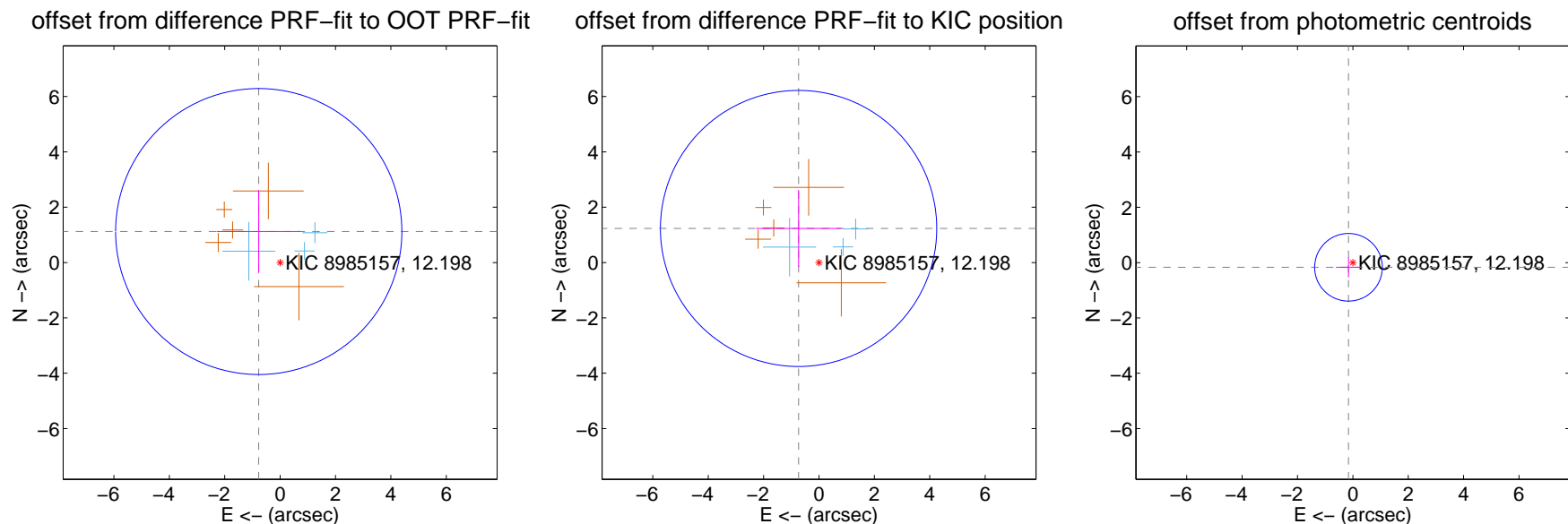
DV Centroid Data

Supplemental centroid analysis for 008985157-05. Kepler magnitude: 12.20. Transit SNR 13.06

There are 3 quarters with good PRF difference image offsets

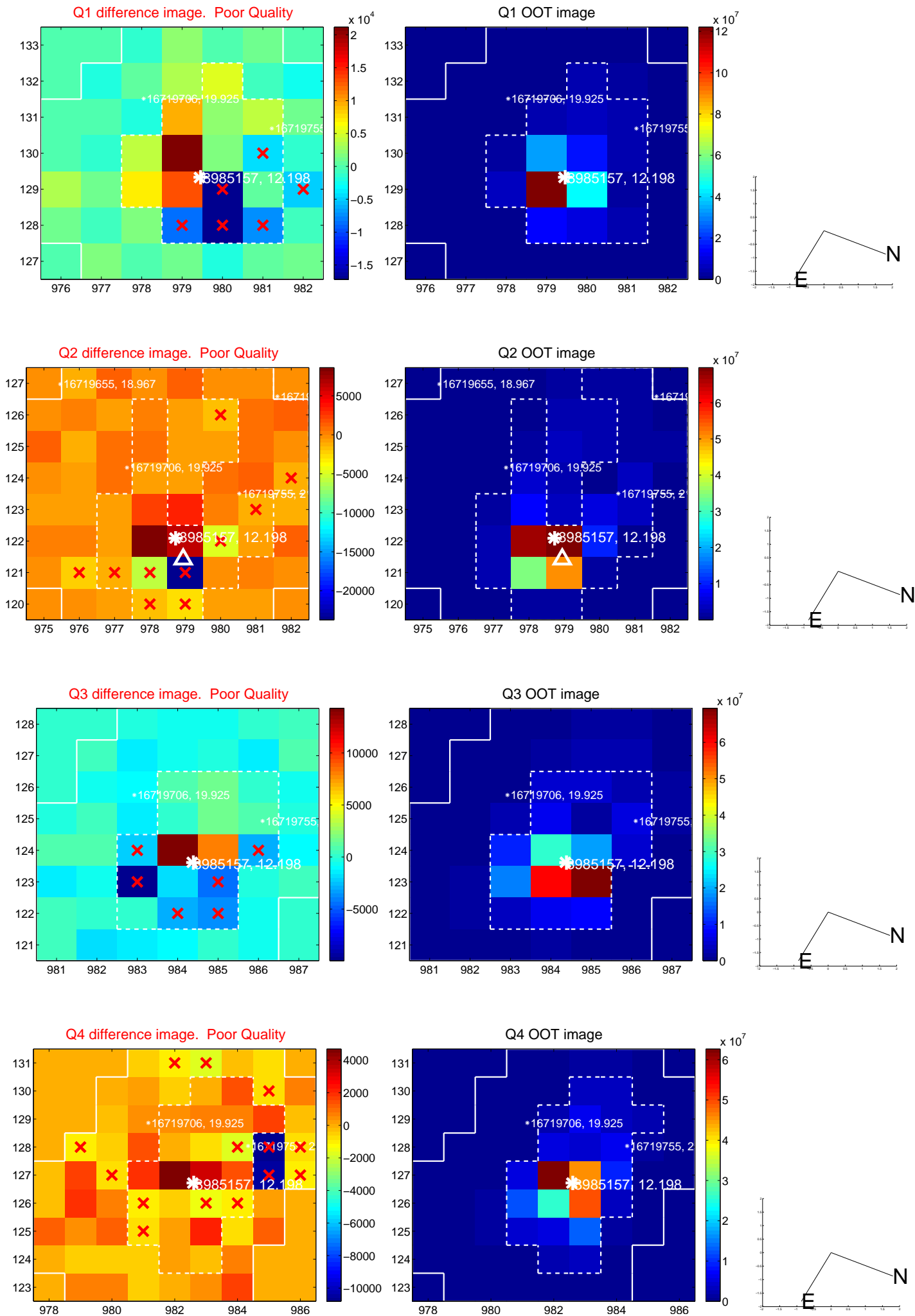
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.361 ± 1.723	0.79	0.772 ± 1.523	1.121 ± 1.502
PRF-fit source offset from KIC position	1.435 ± 1.663	0.86	0.737 ± 1.538	1.232 ± 1.393
photometric centroid source offset	0.23 ± 0.41	0.57	0.16 ± 0.45	-0.17 ± 0.36

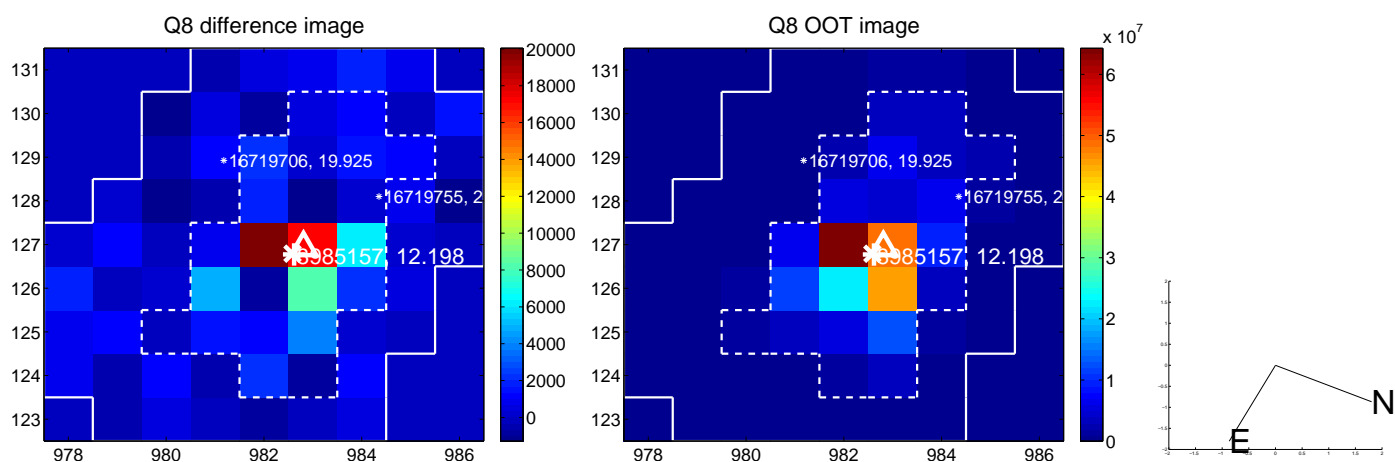
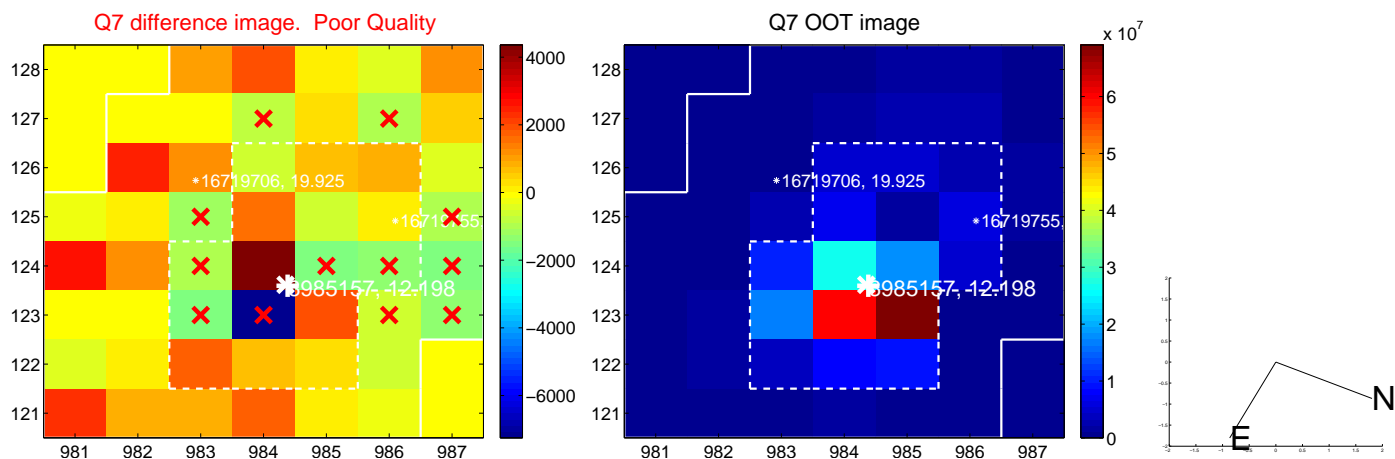
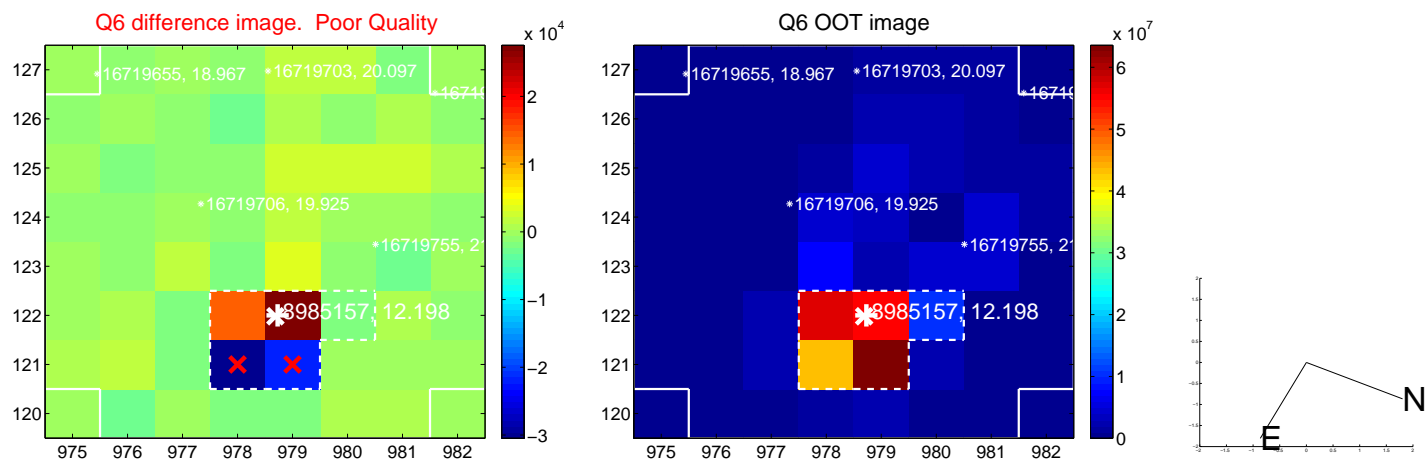
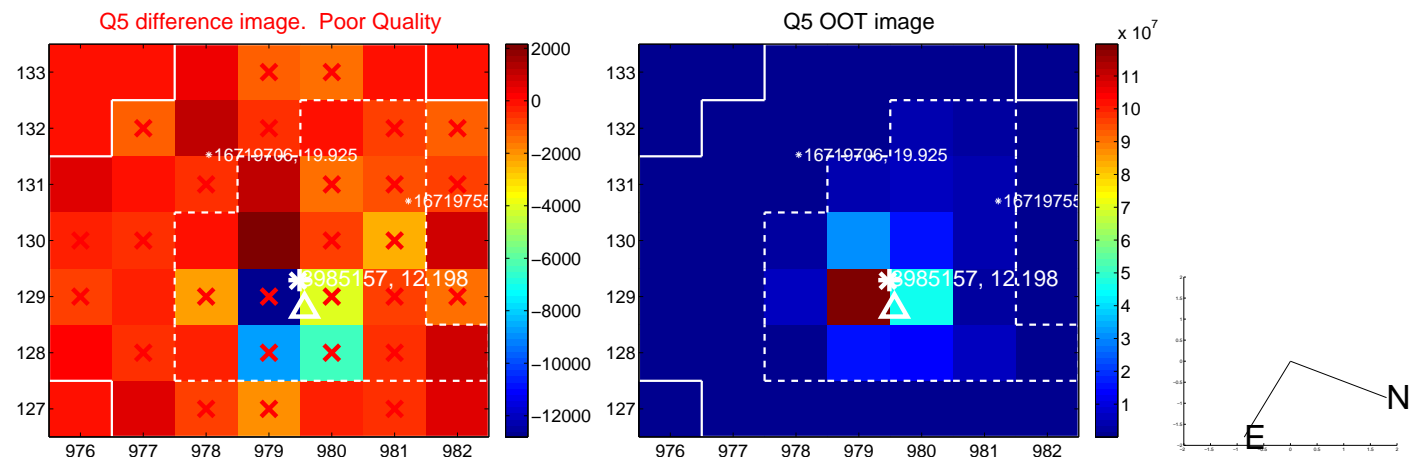


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

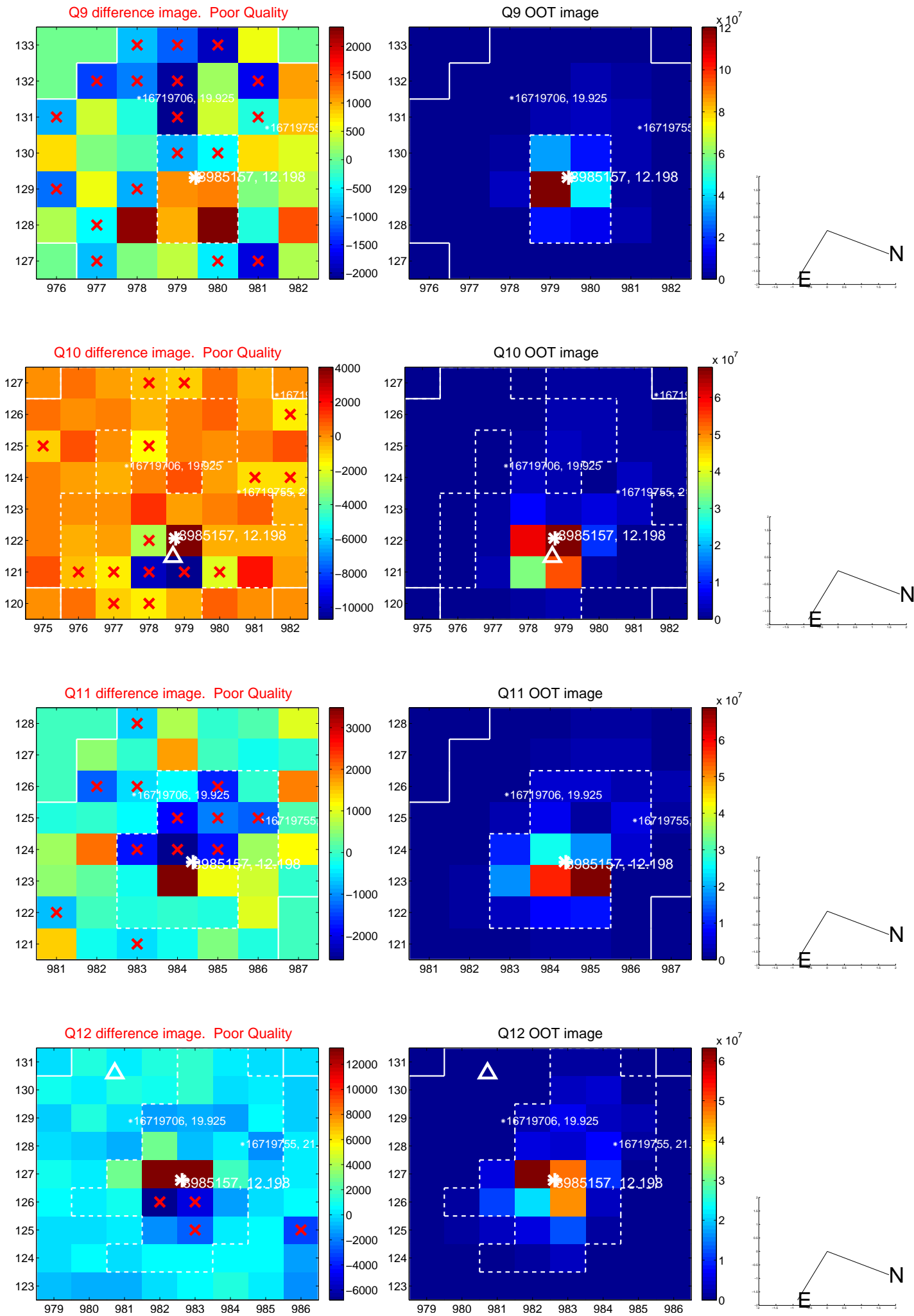
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



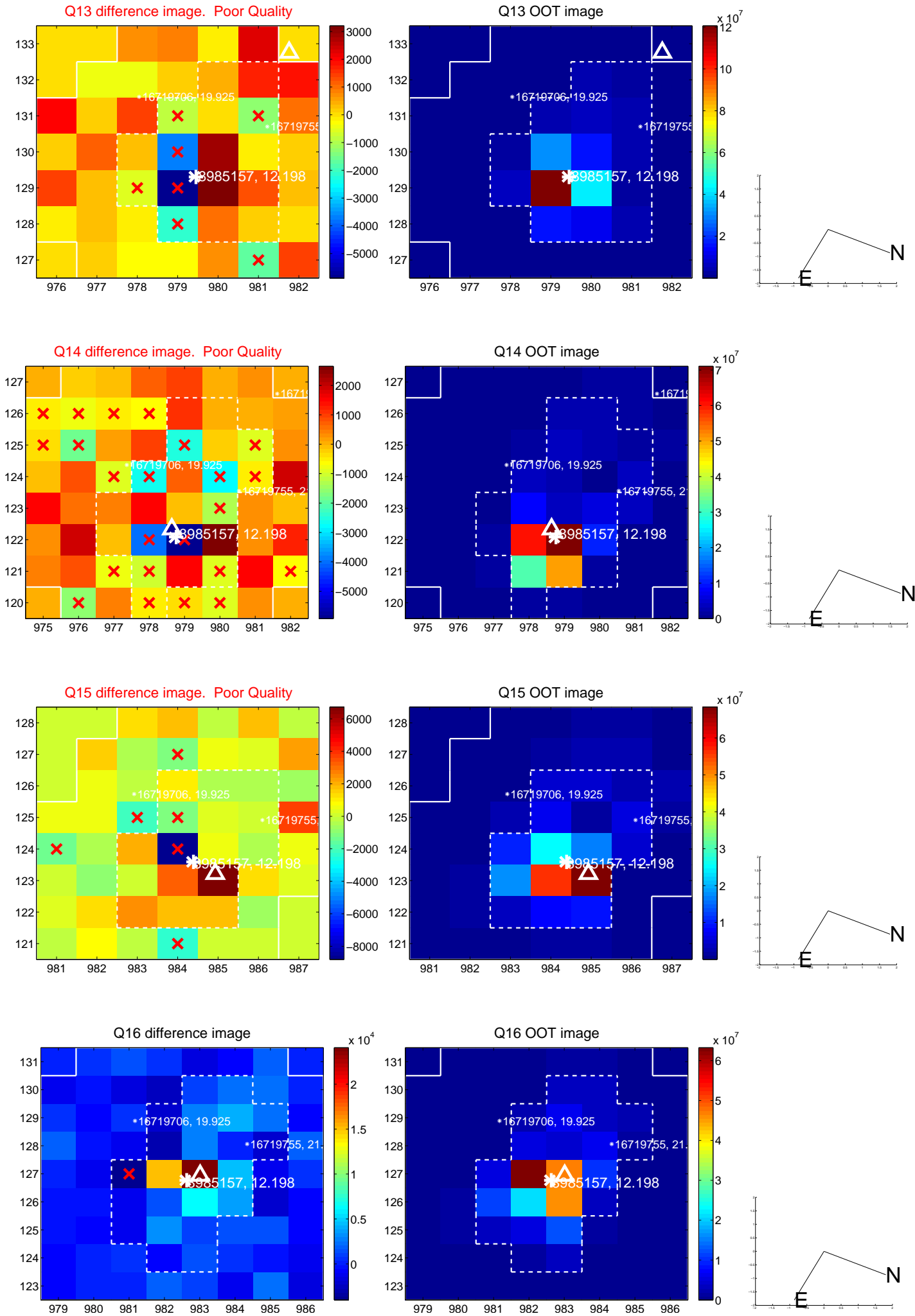
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



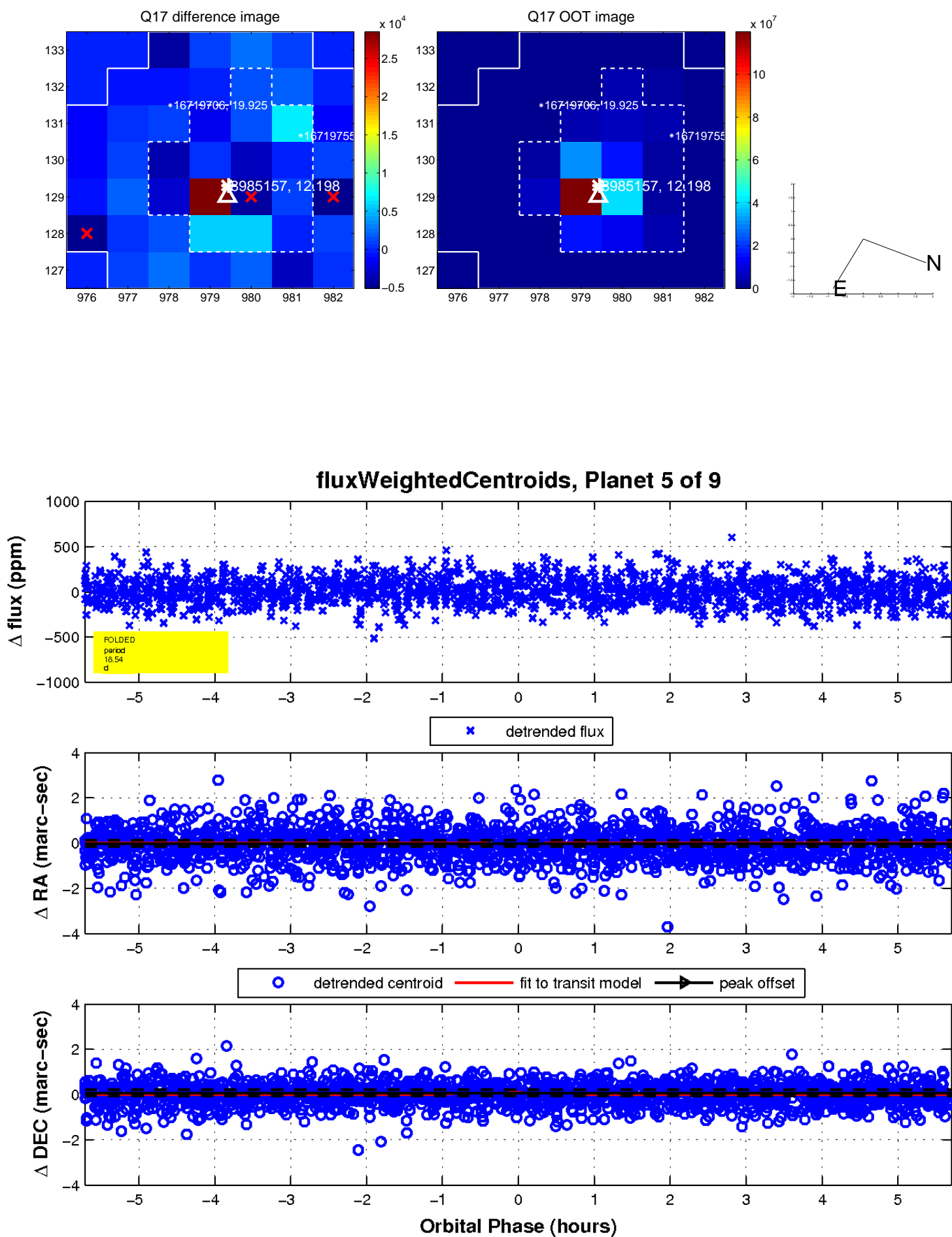
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

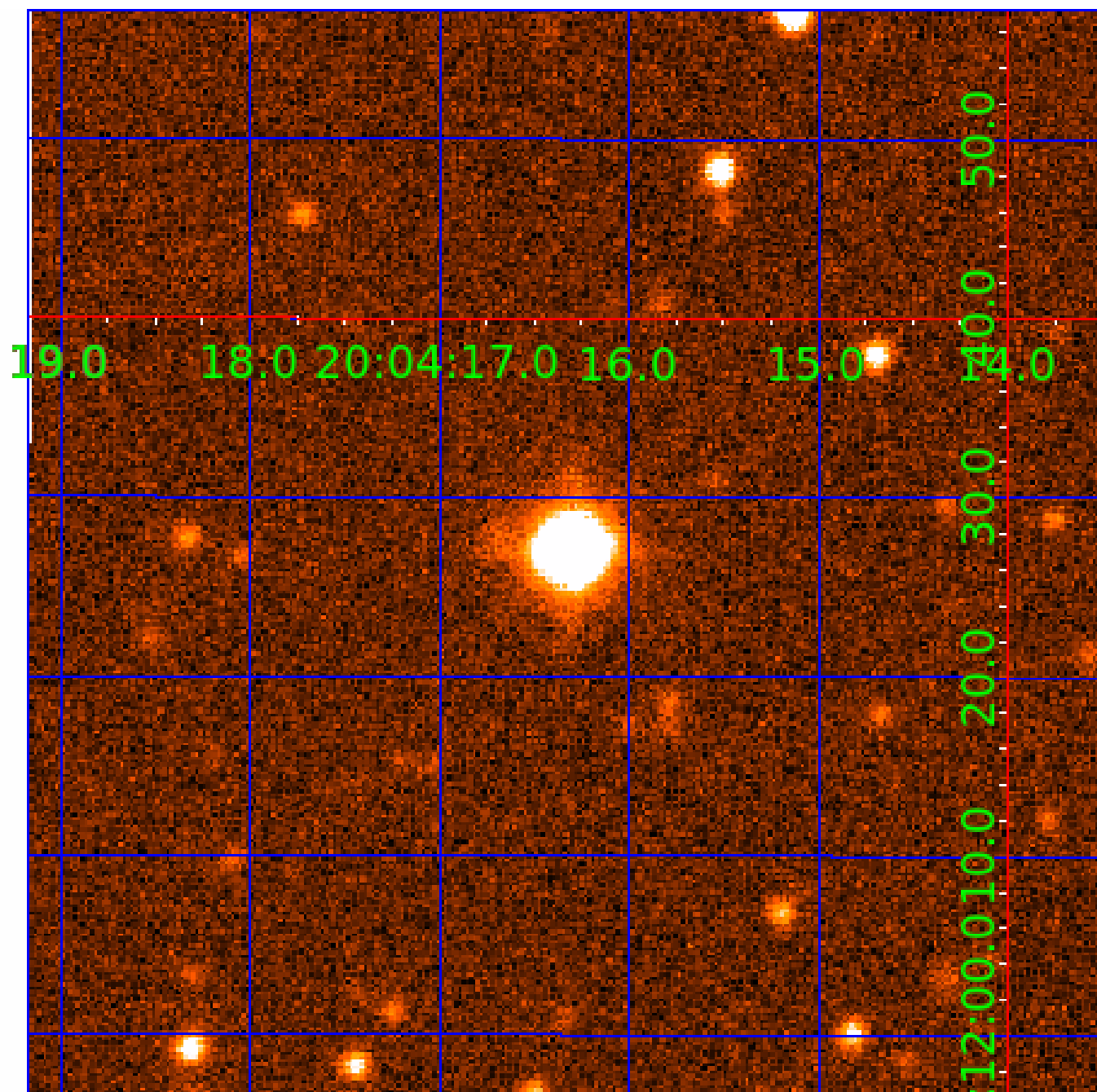


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

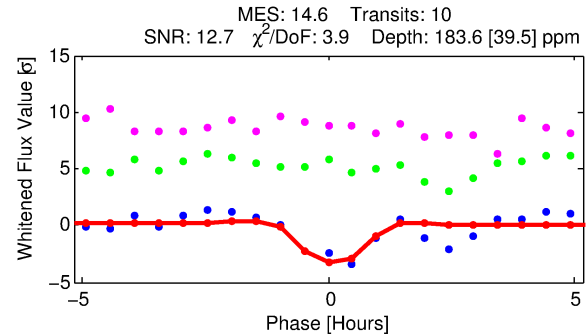
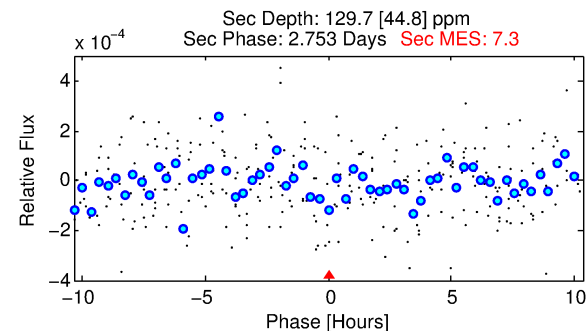
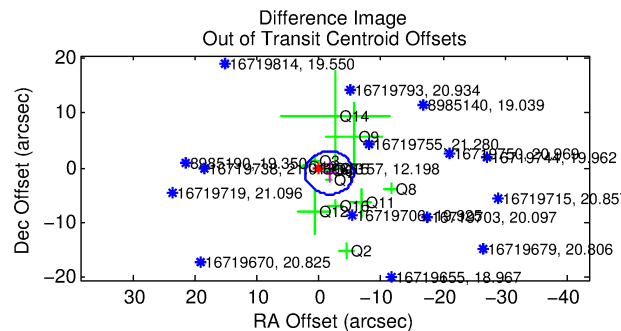
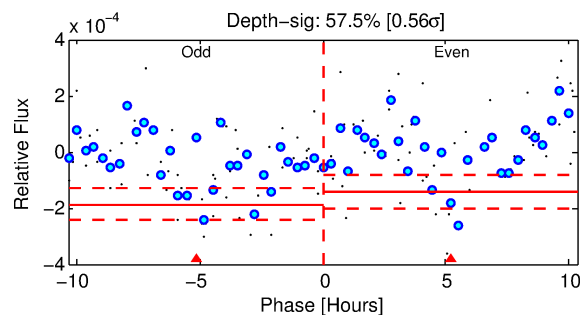
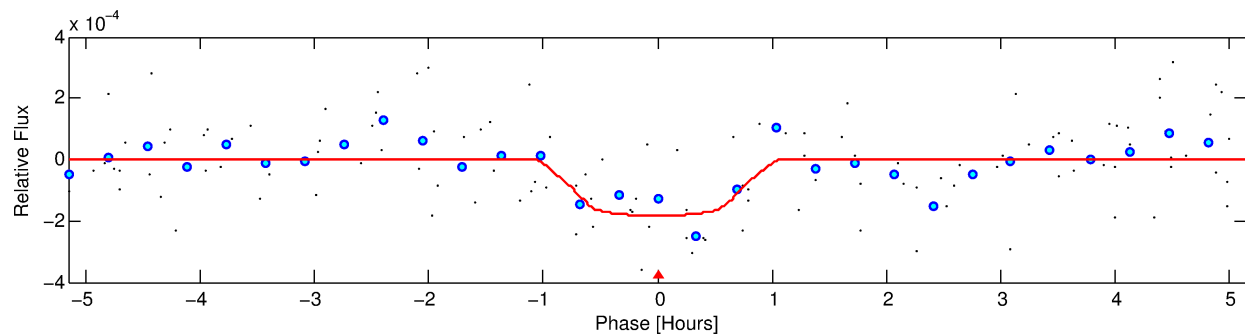
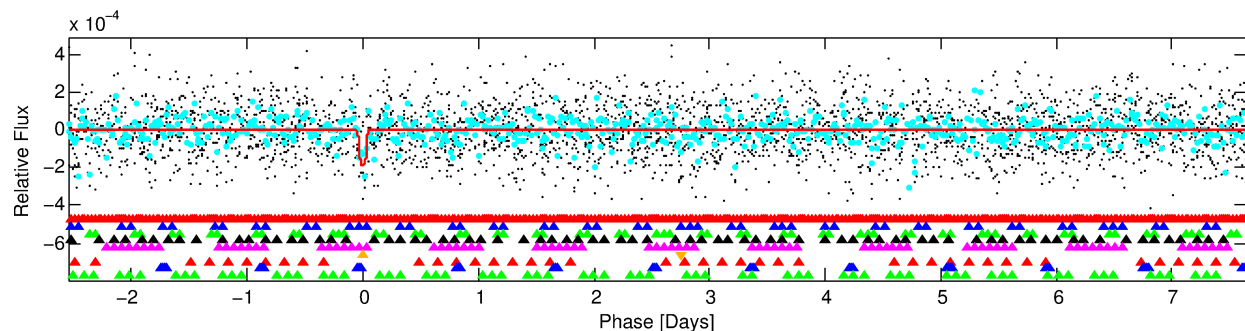
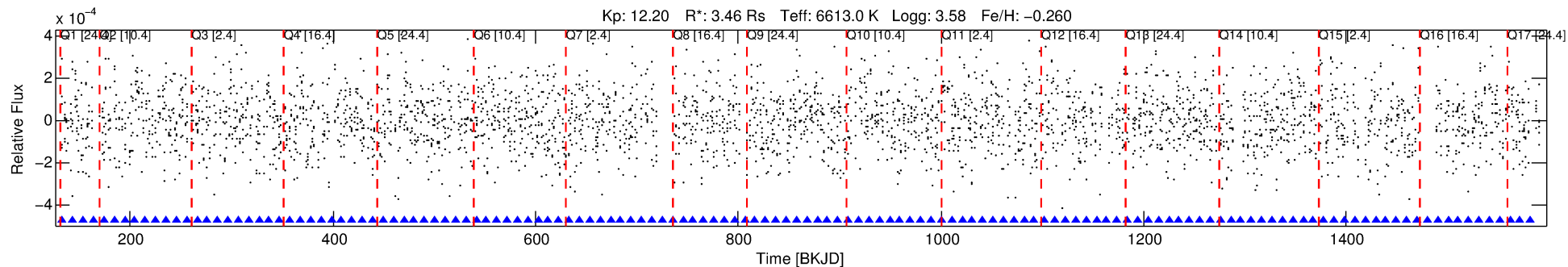
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-06

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 6 of 9 Period: 10.201 d



DV Fit Results:

Period = 10.20063 [0.00010] d
Epoch = 133.3731 [0.0066] BKJD
Rp/R* = 0.0143 [0.0206]
a/R* = 22.48 [188.70]
b = 0.89 [2.09]
Seff = 1738.61 [1019.95]
Teq = 1647 [241] K
Rp = 5.41 [8.03] Re
a = 0.1086 [0.0391] AU
Ag = 28.68 [84.47] [0.33σ]
Teffp = 5891 [4258] K [1.00σ]

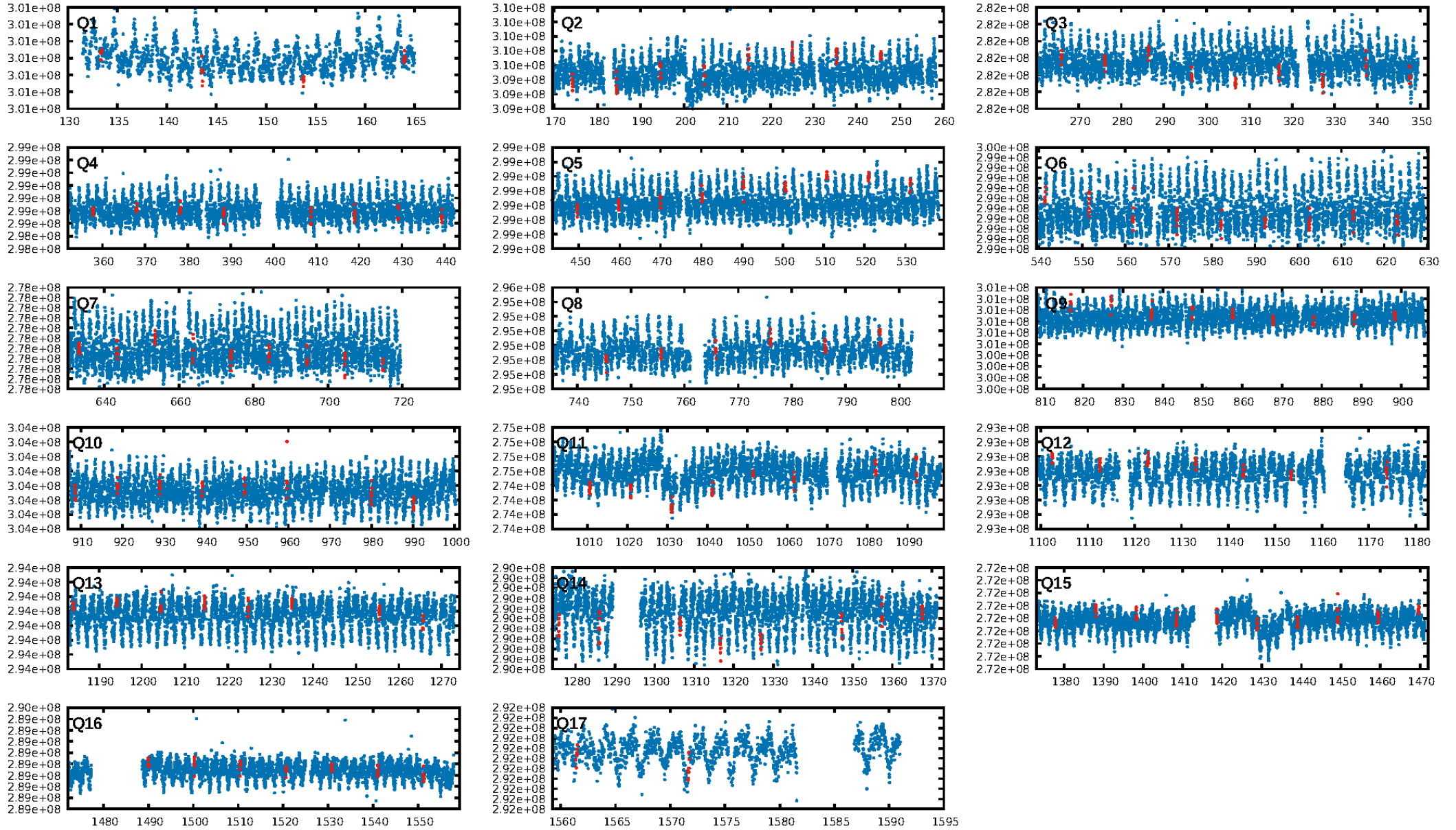
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.67σ]
LongPeriod-sig: 100.0% [32.23σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 1.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -1880
Centroid-sig: 0.4%
Centroid-so: 0.903 arcsec [1.91σ]
OotOffset-rm: 1.912 arcsec [1.47σ]
KicOffset-rm: 1.914 arcsec [1.77σ]
OotOffset-st: 4/3/3/3 [13]
KicOffset-st: 4/3/3/3 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 0.76 [13/17]

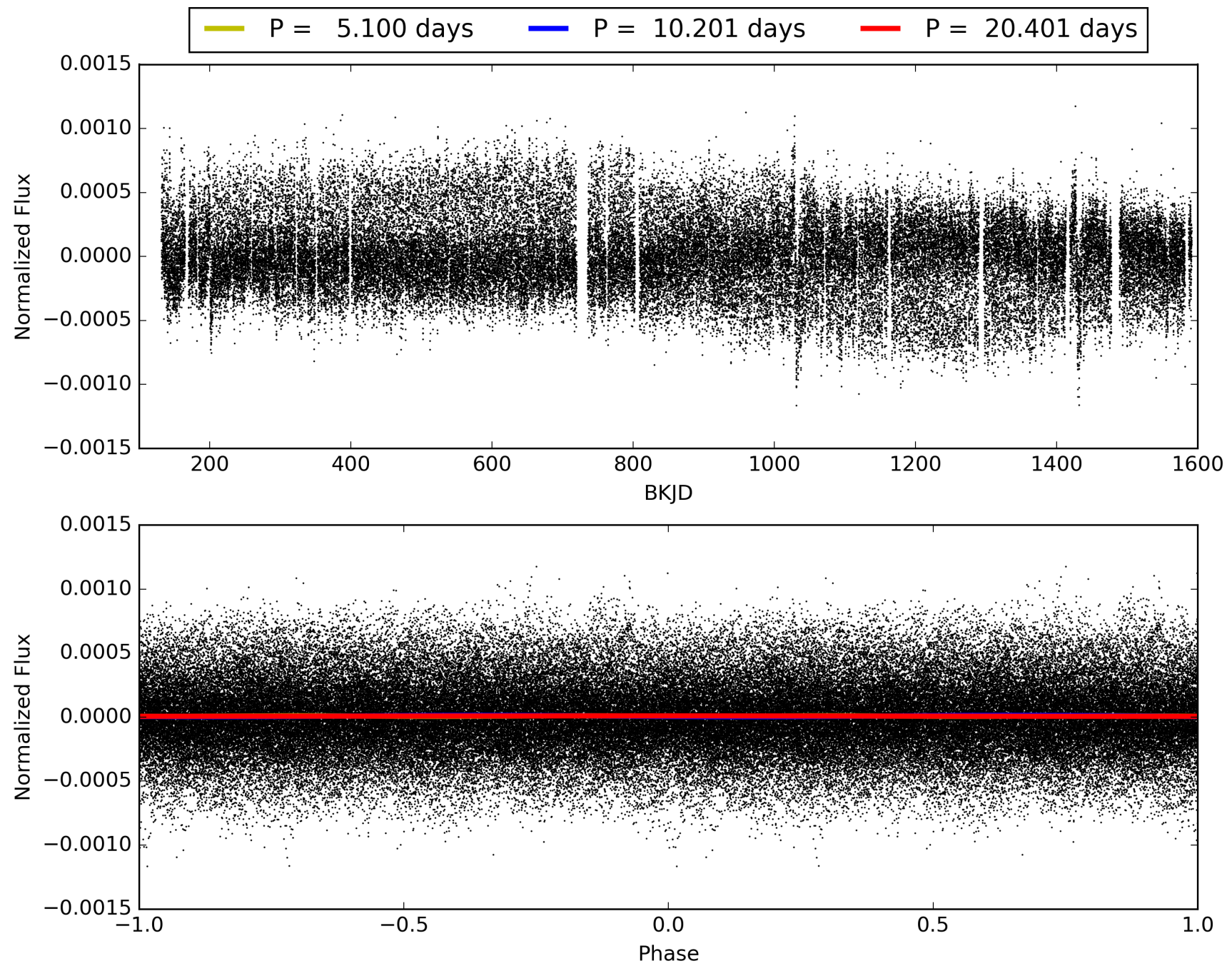
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:18 Z

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

TCE 008985157-06, PDC Light Curves

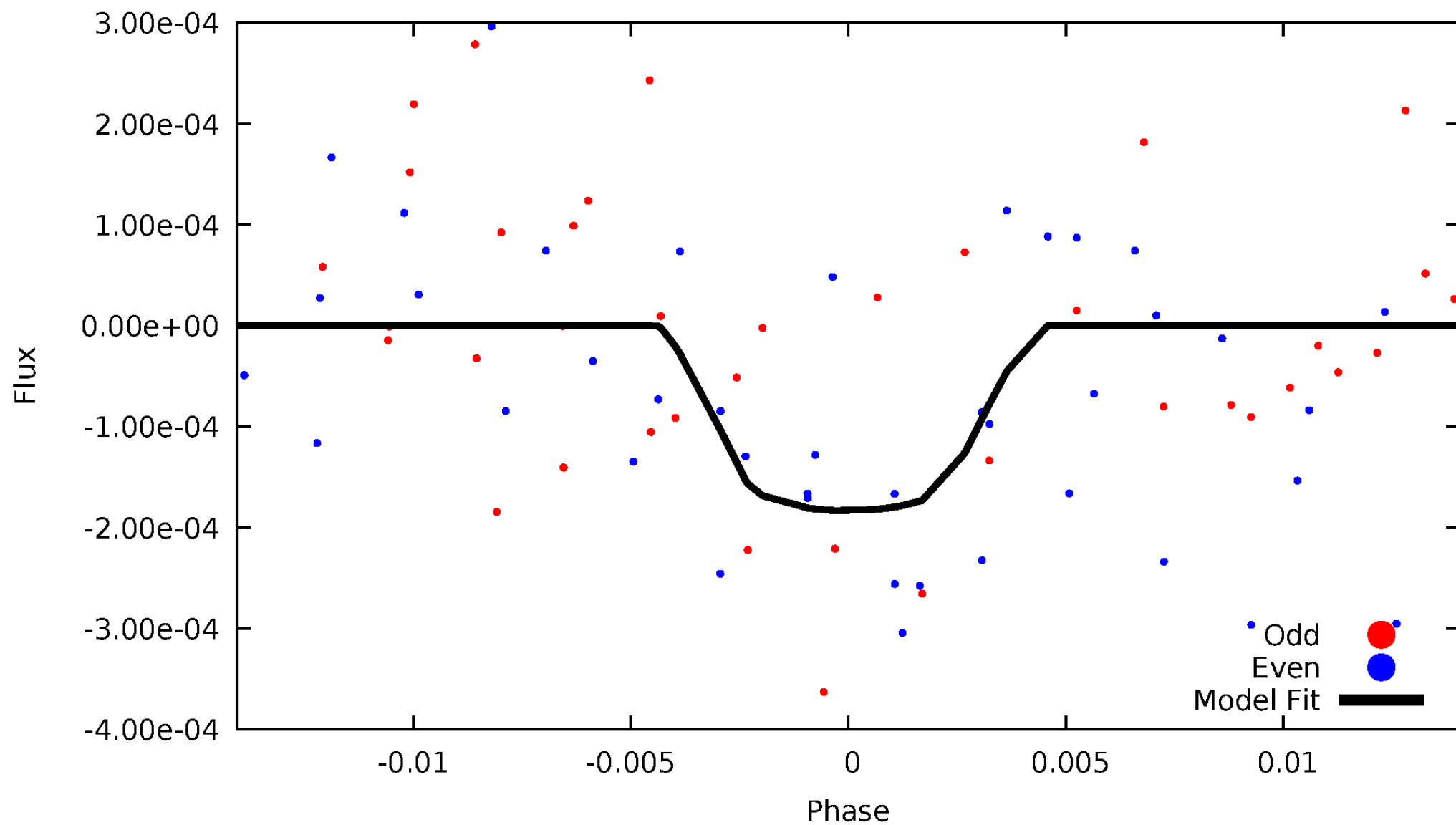


TCE 008985157-06



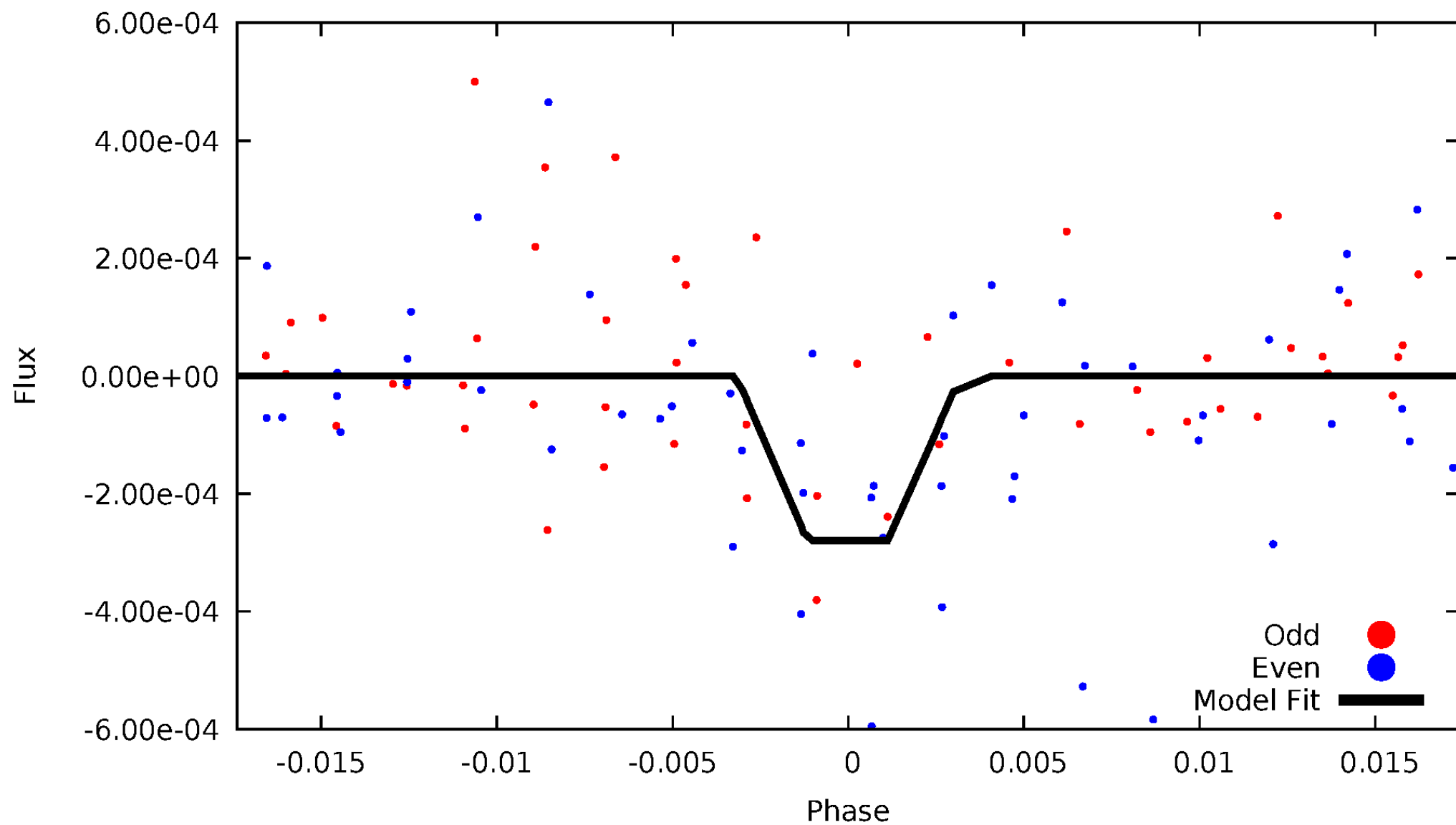
DV Odd/Even

TCE 008985157-06



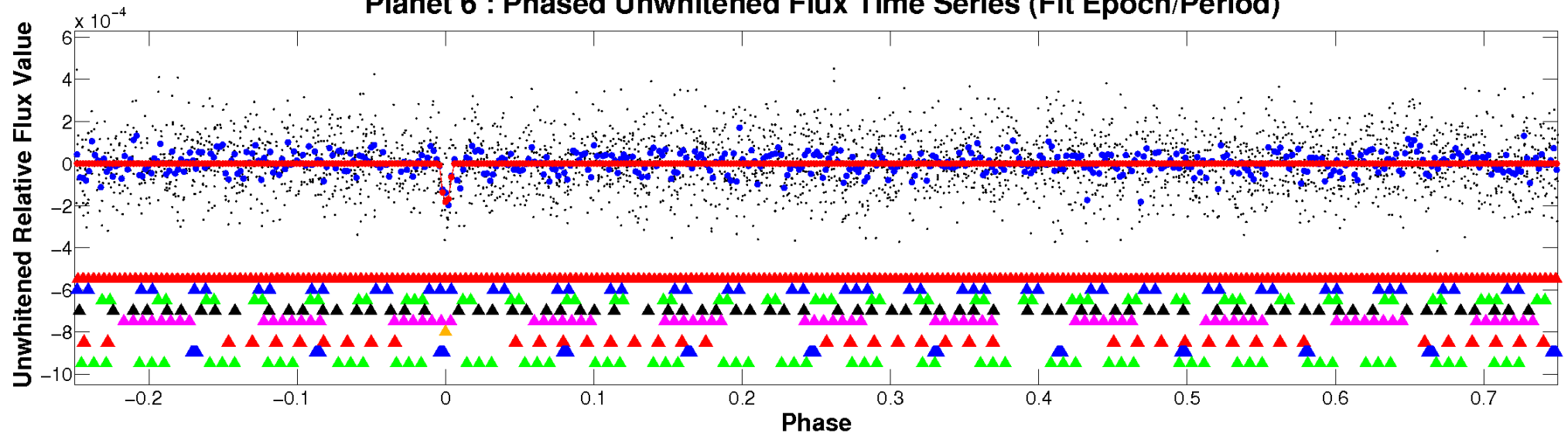
ALT Odd/Even

TCE 008985157-06

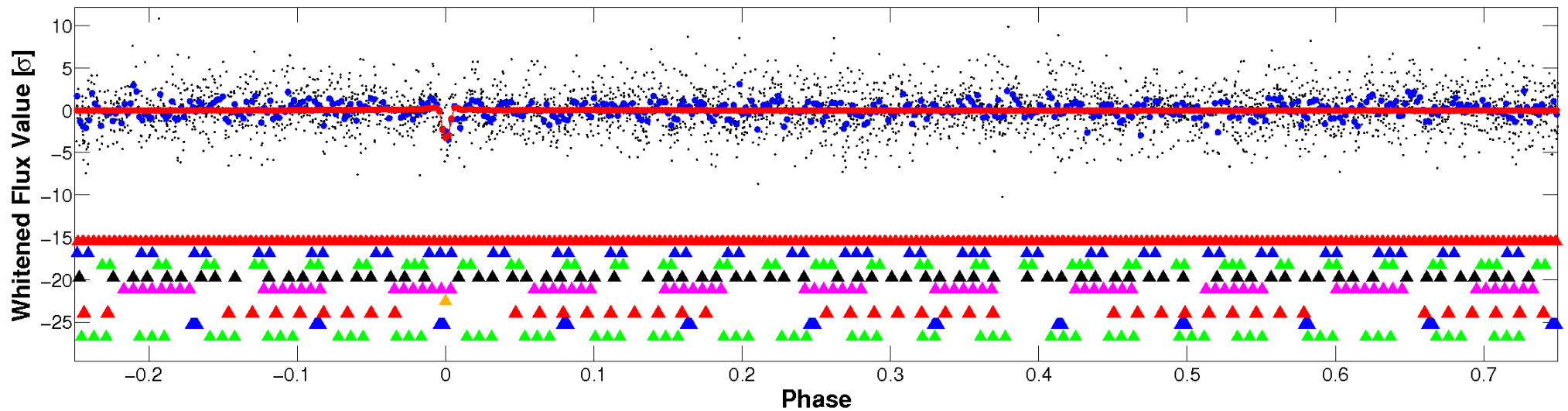


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

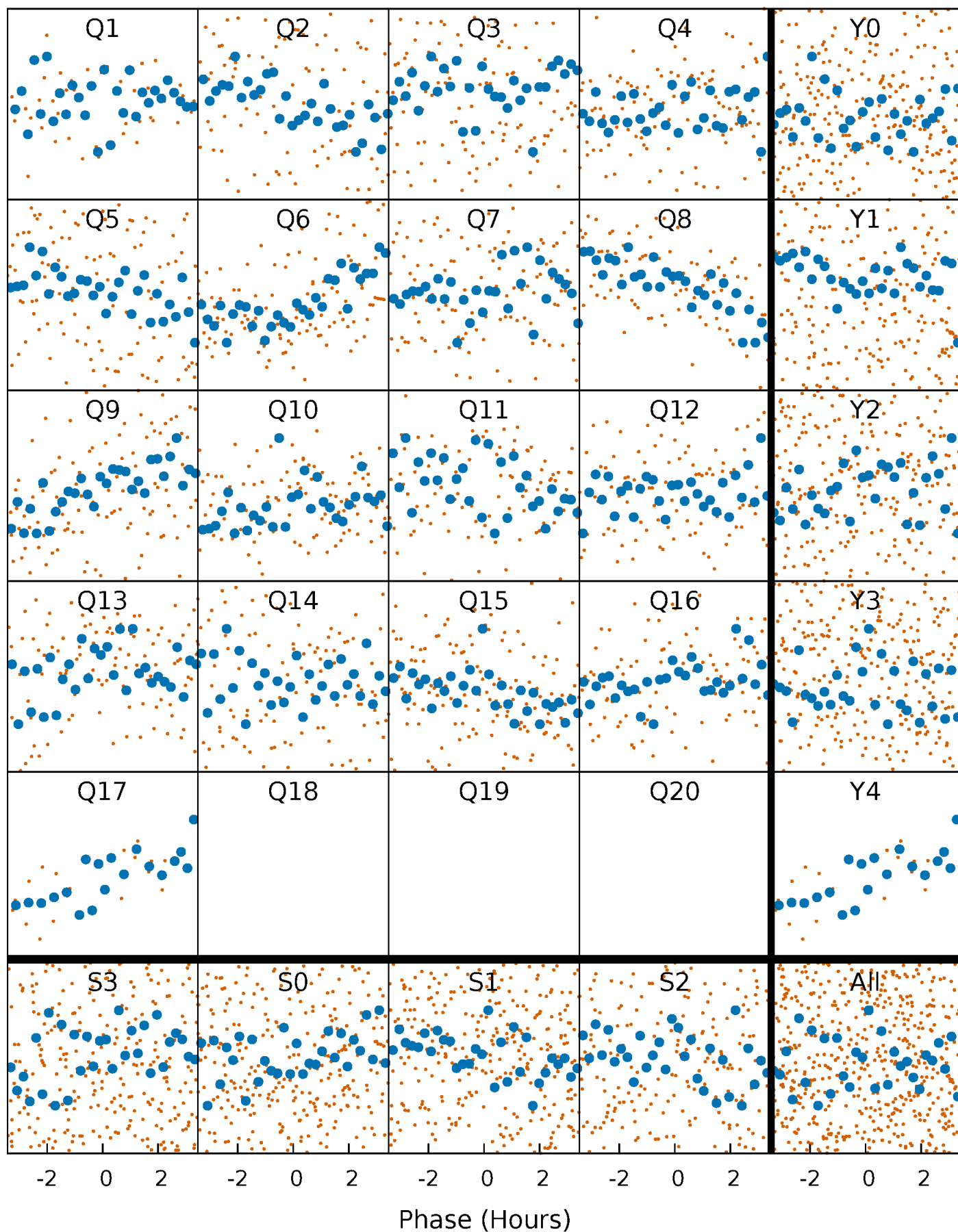


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



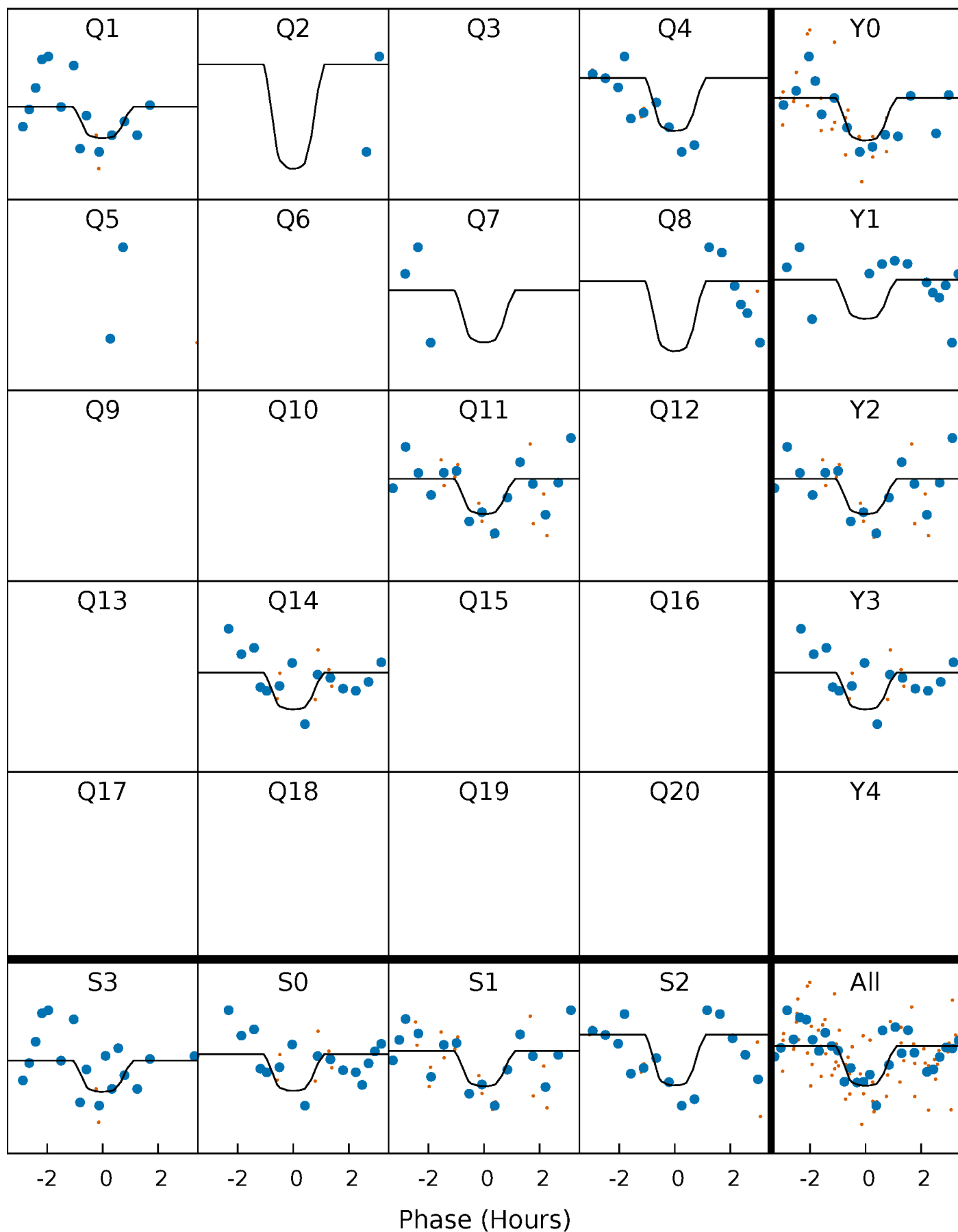
PDC Quarter-Phased Transit Curves

TCE 008985157-06 P= 10.200629 Days $T_0=133.373077$ (BKJD)



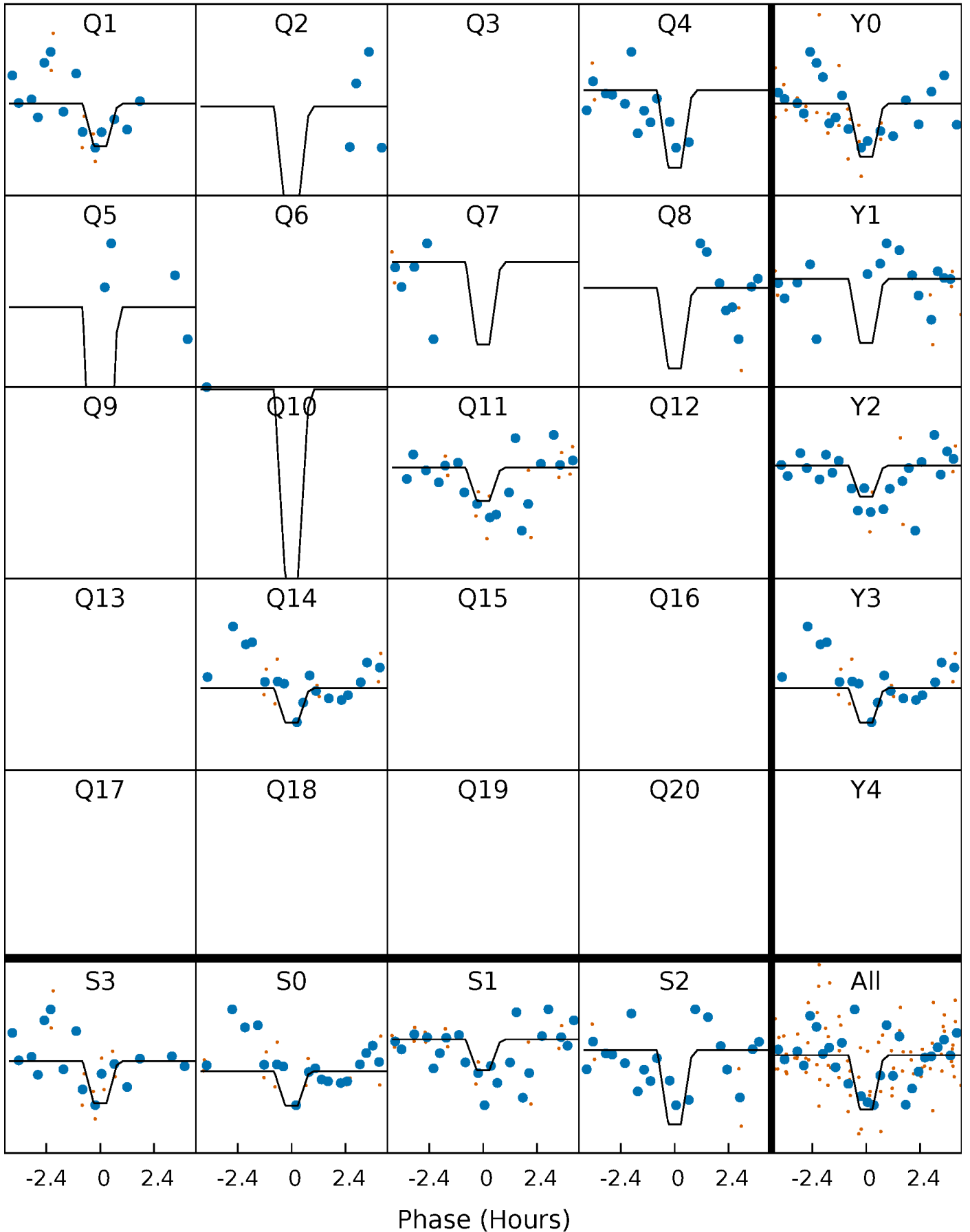
DV Quarter-Phased Transit Curves

TCE 008985157-06 P= 10.200629 Days $T_0=133.373077$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

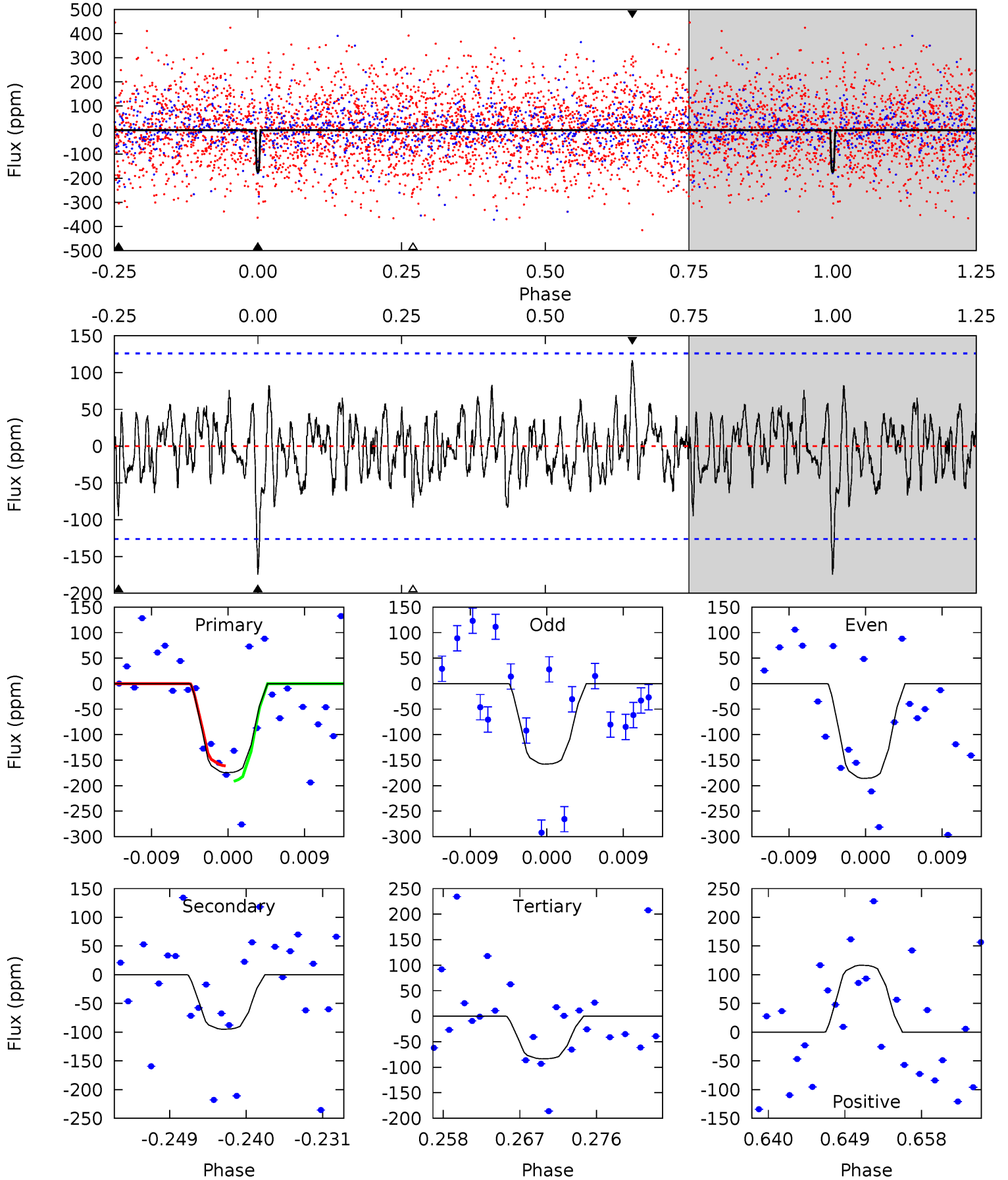
TCE 008985157-06 P= 10.200658 Days $T_0=133.376511$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-06, P = 10.200629 Days, E = 123.172448 Days

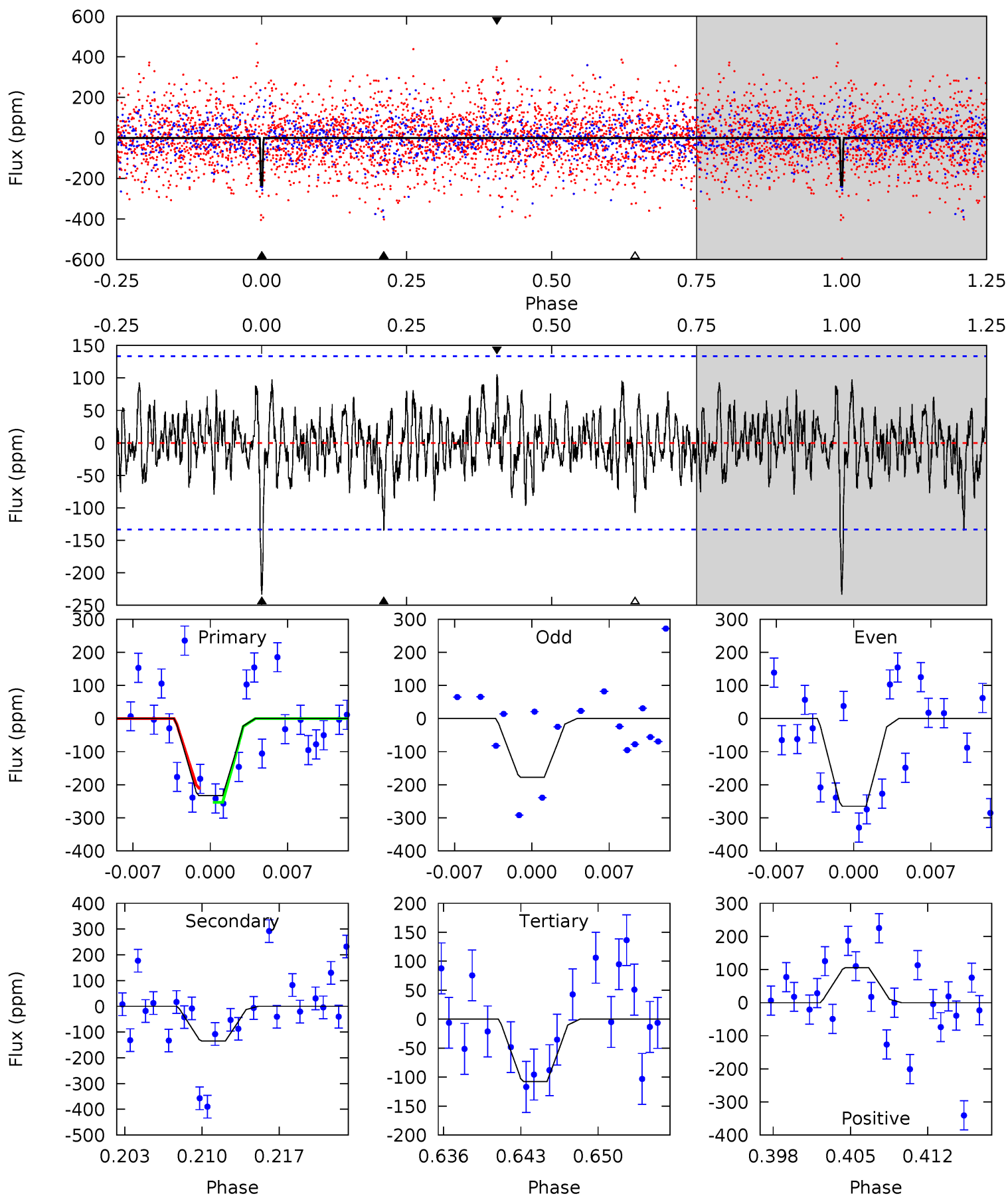
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.99	3.80	3.34	4.67	5.05	2.62	1.31	3.65	2.32	0.46	-0.87	0.54	0.73	0.40	0.60



Alt Model-Shift Uniqueness Test

008985157-06, P = 10.200658 Days, E = 123.175853 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	5.15	4.11	4.02	5.09	2.70	1.32	4.80	4.89	1.04	1.13	1.64	1.16	0.31	0.81



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-95 ± 25	$7.12^{+7.37}_{-4.95}$	2263^{+127}_{-235}	4699^{+3487}_{-1120}	12^{+119}_{-9}
Alt.	-135 ± 26	$7.90^{+6.82}_{-5.40}$	2274^{+123}_{-212}	4807^{+3776}_{-969}	14^{+115}_{-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 $A_{obs} \gg 1.0$

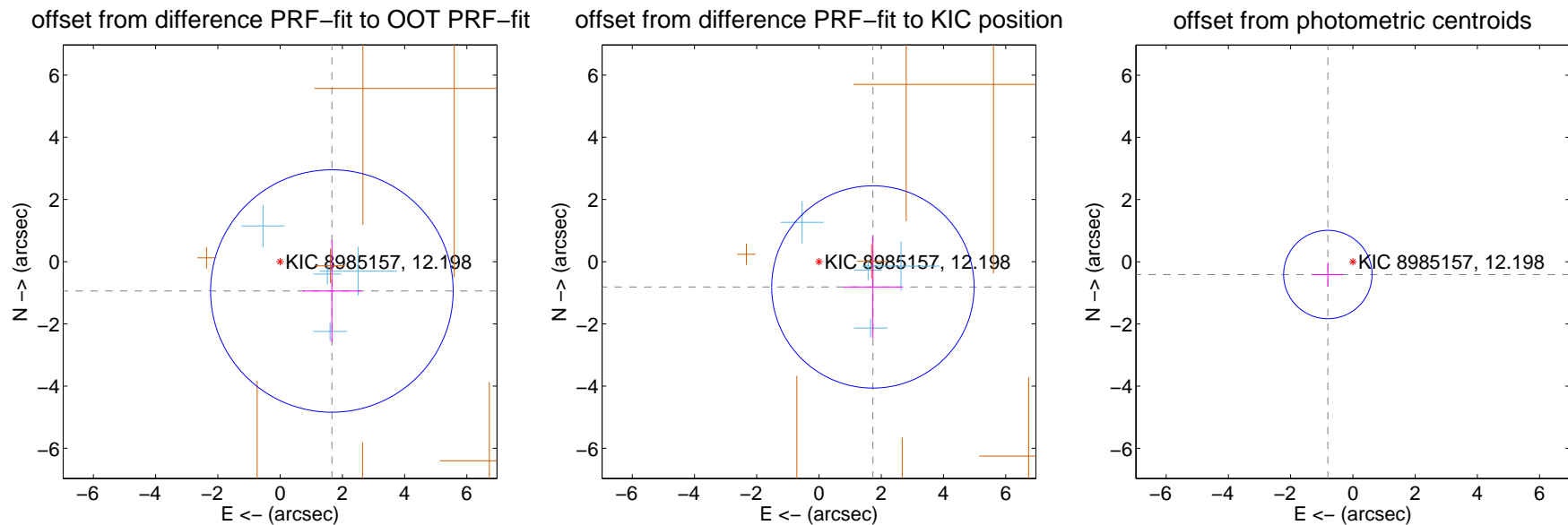
DV Centroid Data

Supplemental centroid analysis for 008985157-06. Kepler magnitude: 12.20. Transit SNR 12.69

There are 4 quarters with good PRF difference image offsets

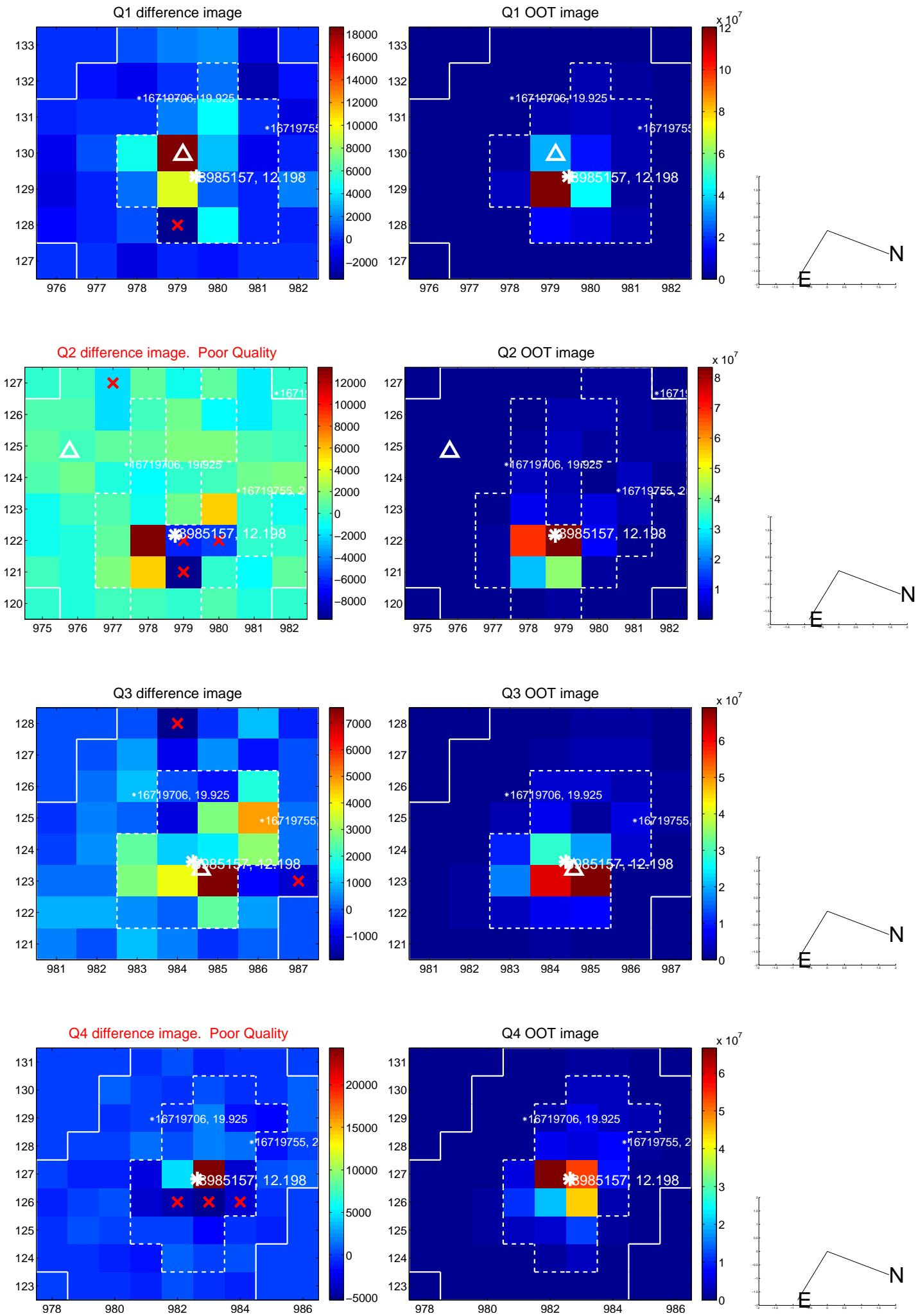
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.912 ± 1.299	1.47	-1.664 ± 0.950	-0.942 ± 1.649
PRF-fit source offset from KIC position	1.914 ± 1.084	1.77	-1.733 ± 0.955	-0.812 ± 1.643
photometric centroid source offset	0.90 ± 0.47	1.91	0.80 ± 0.49	-0.41 ± 0.39

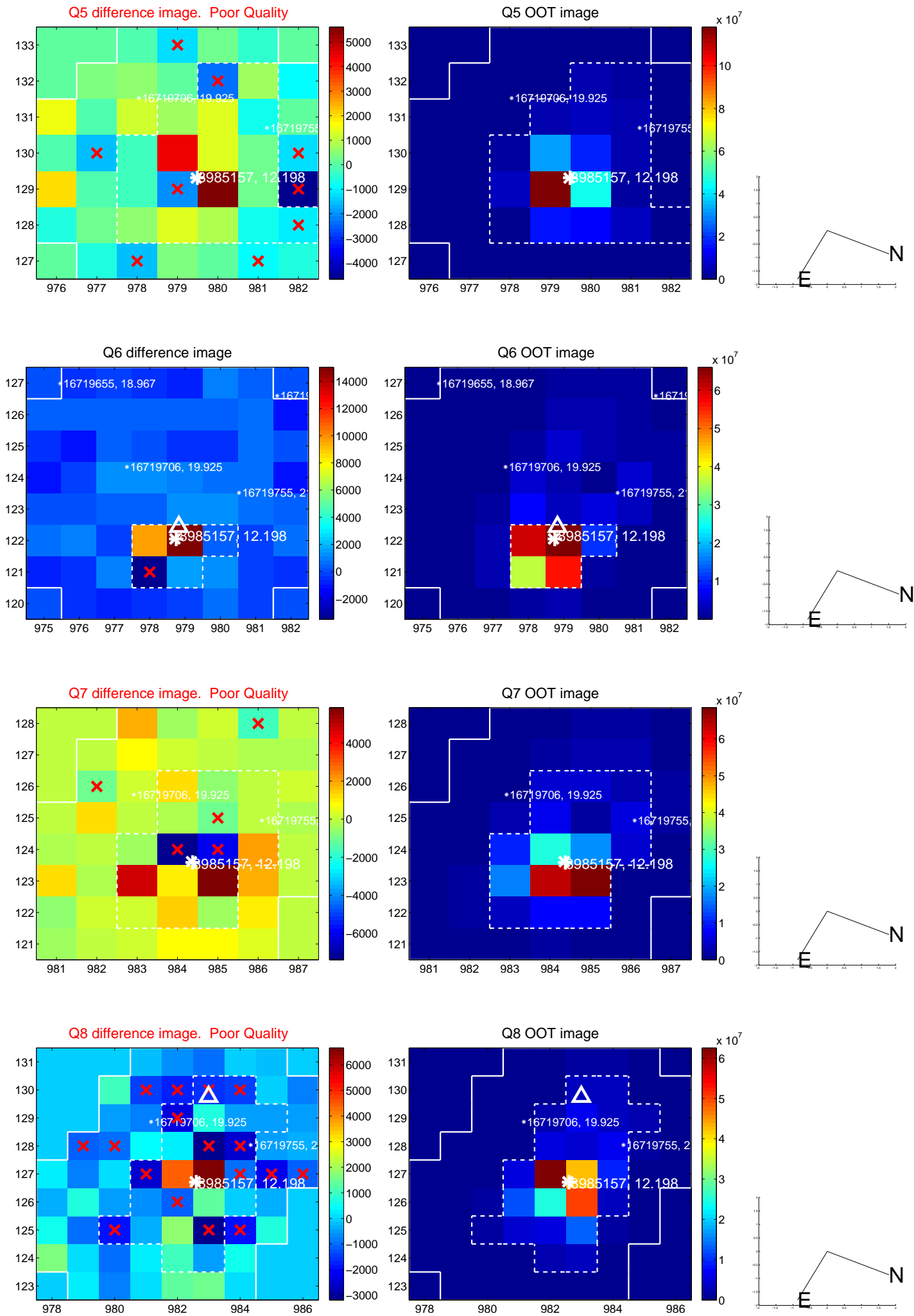


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

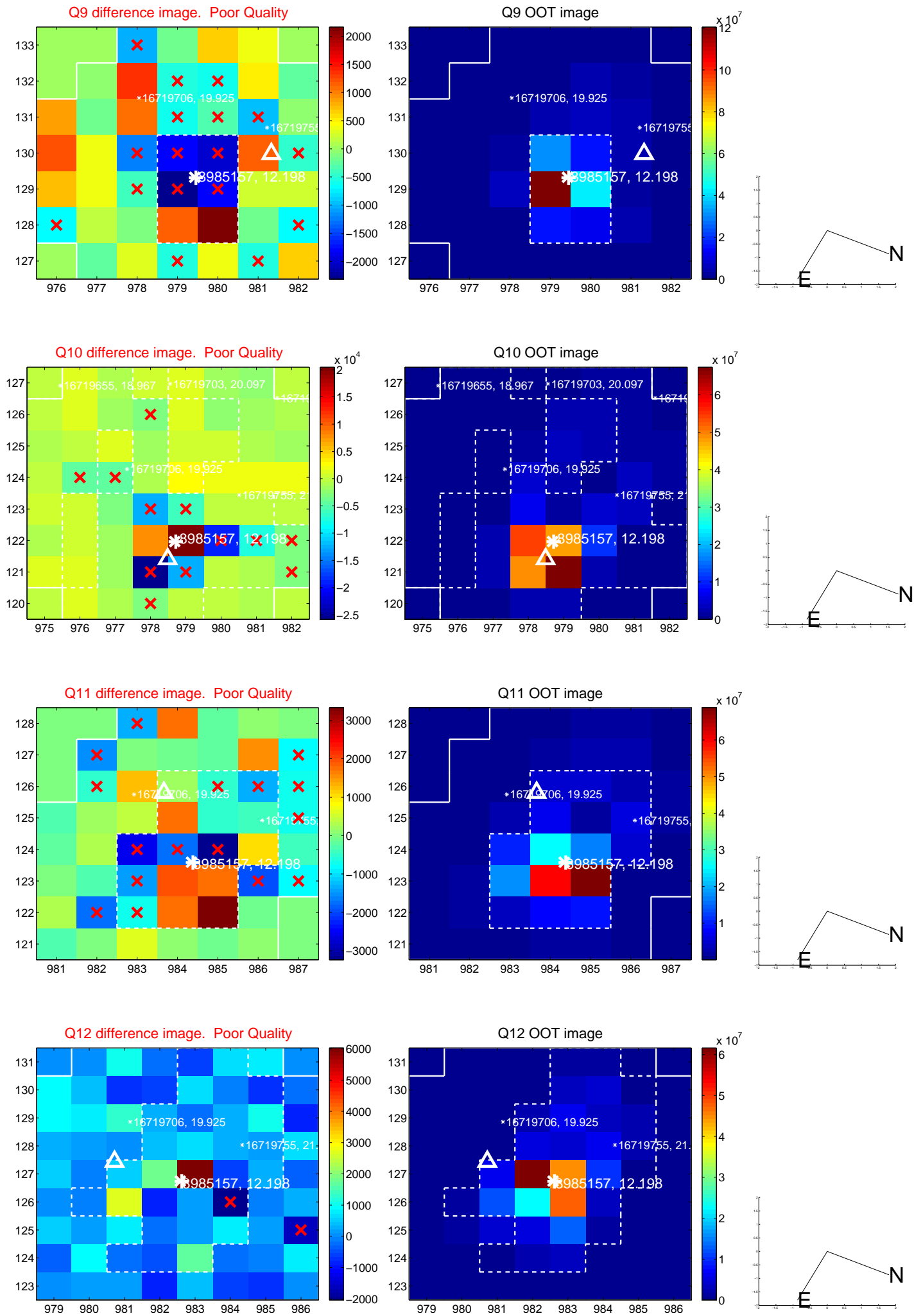
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



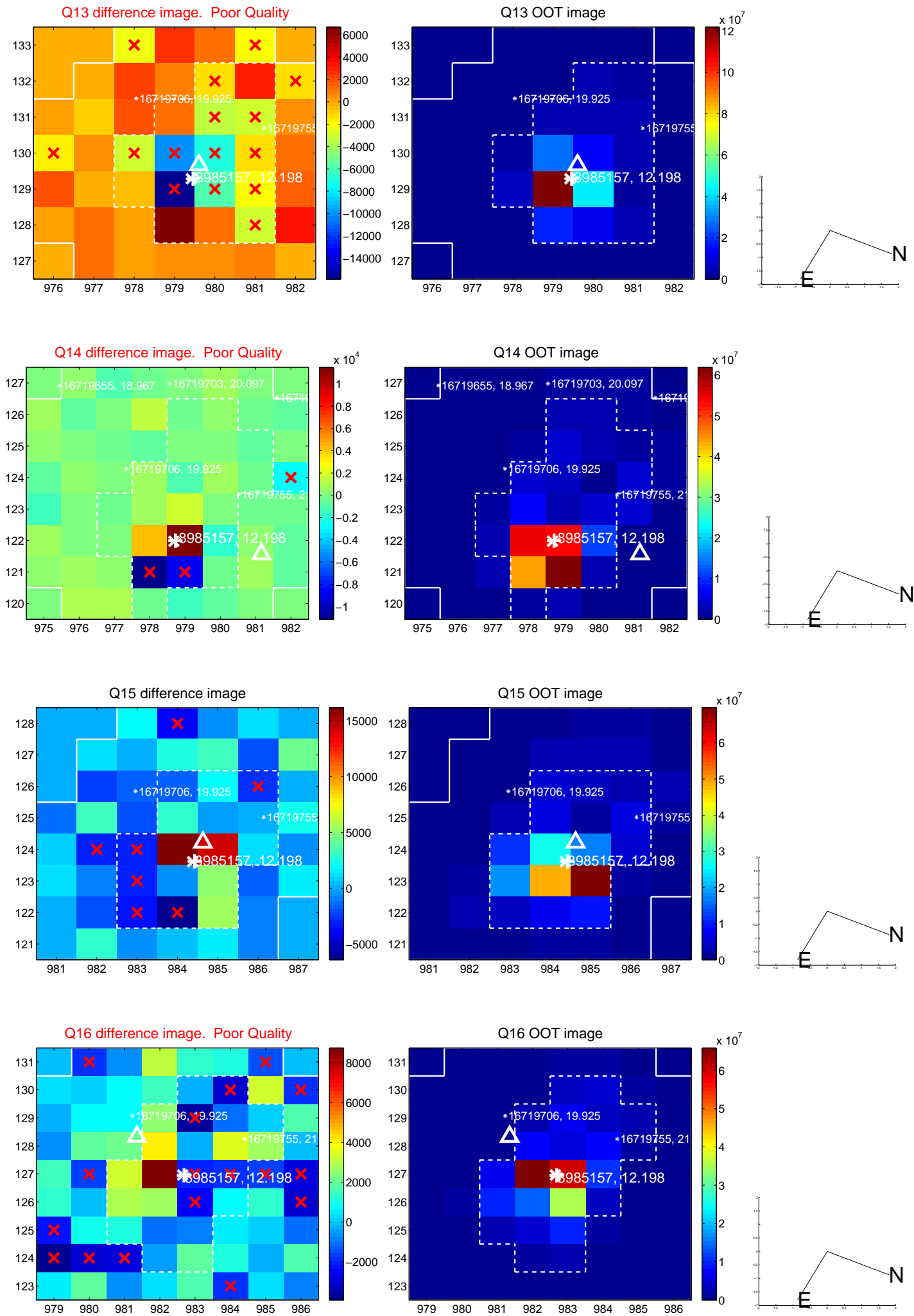
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



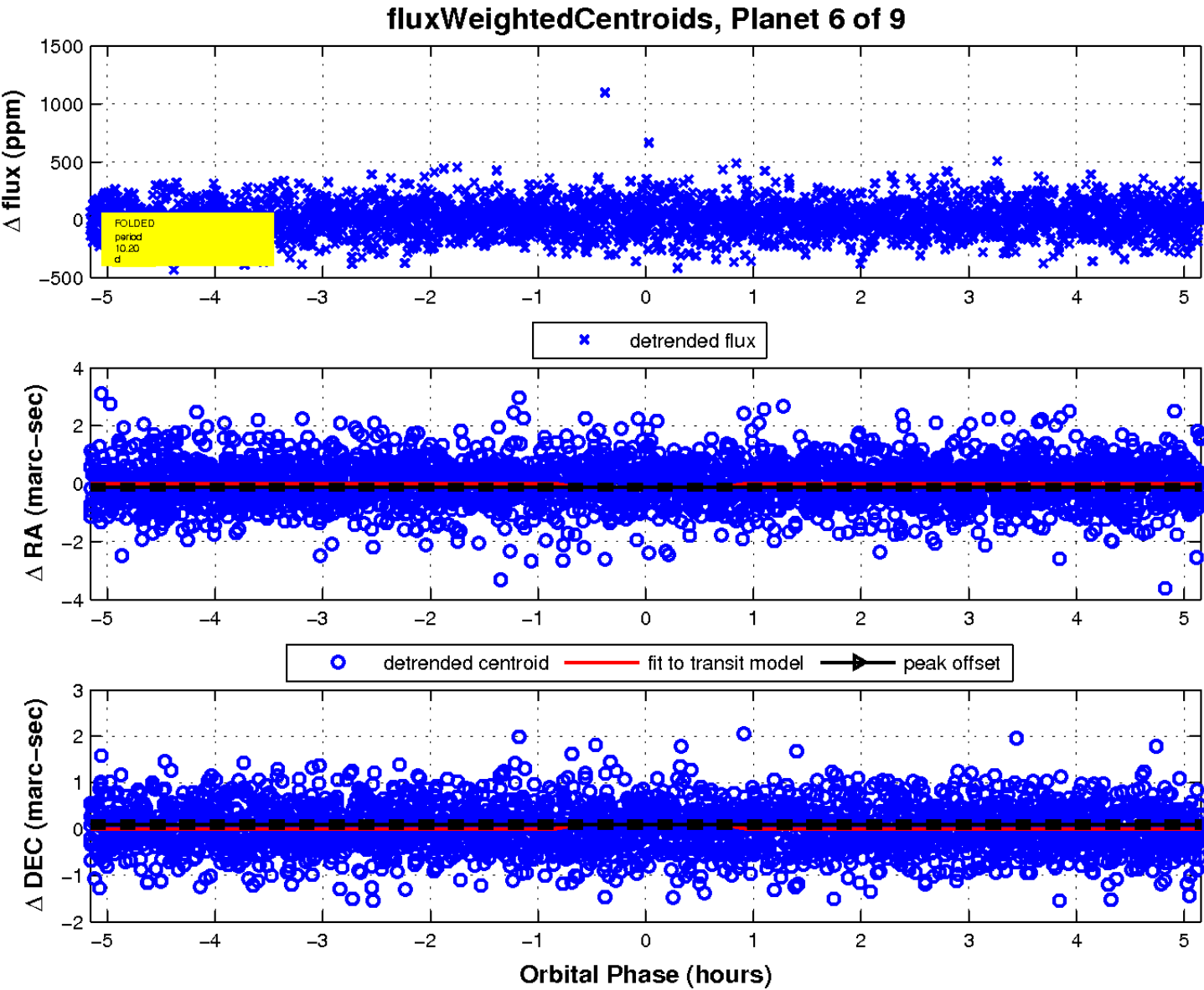
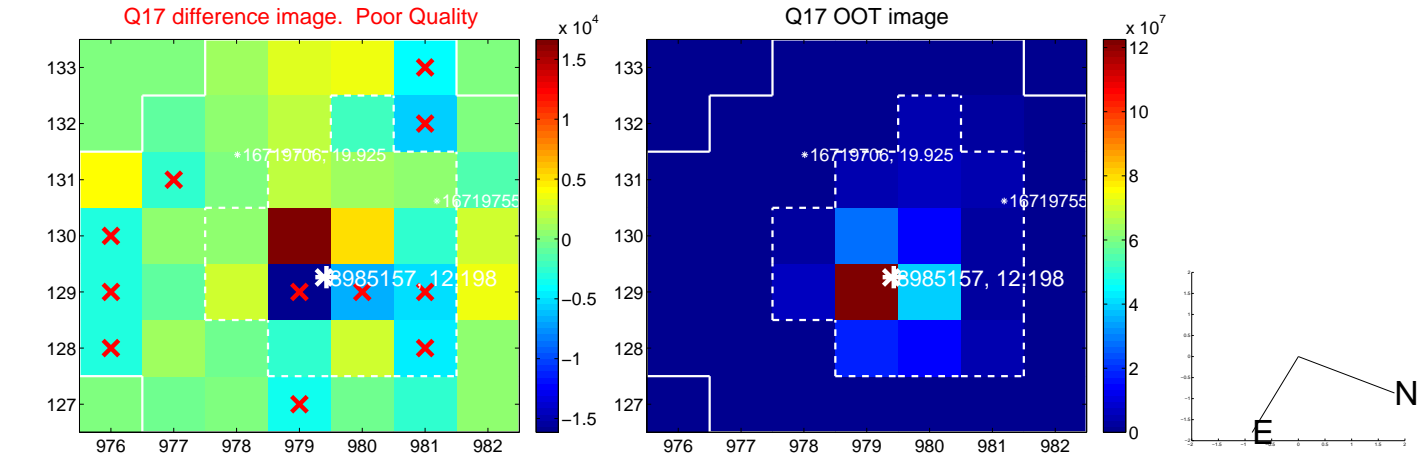
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

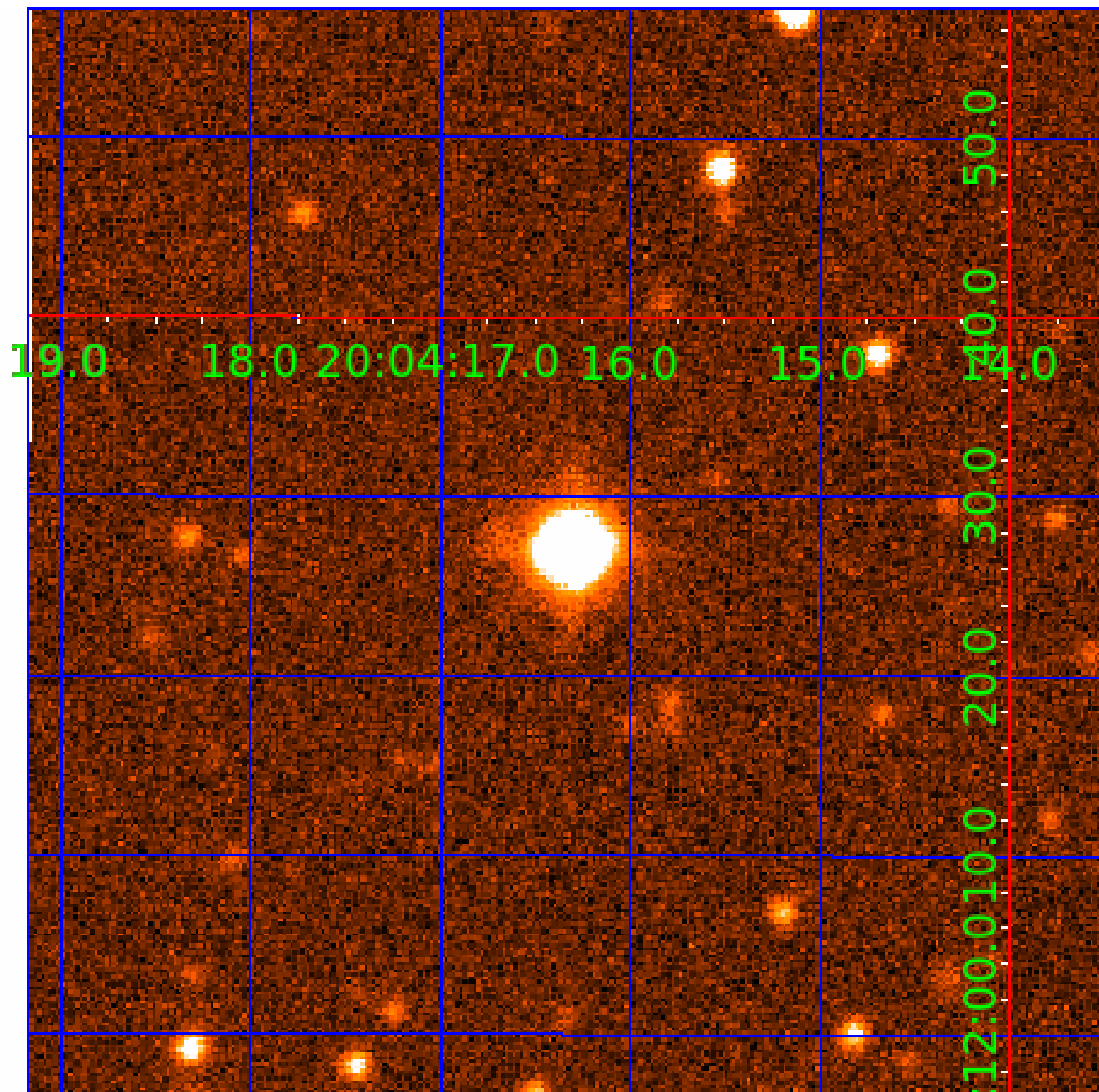


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

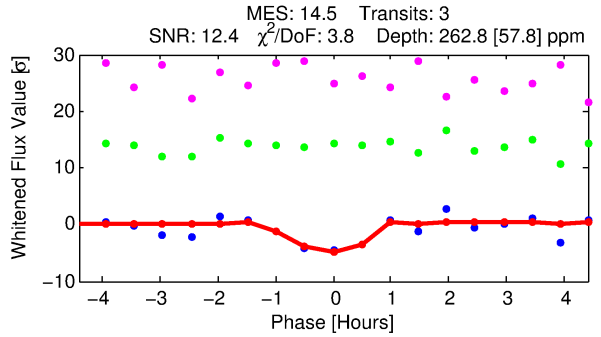
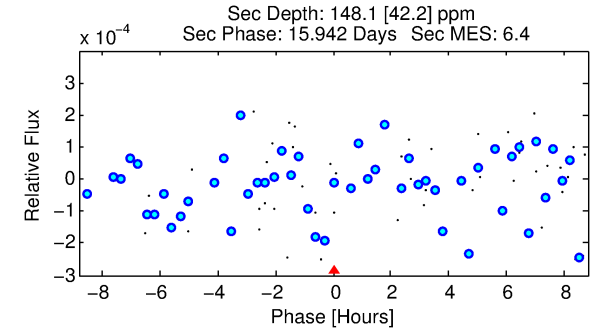
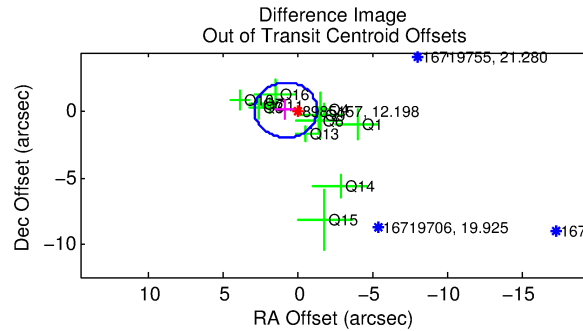
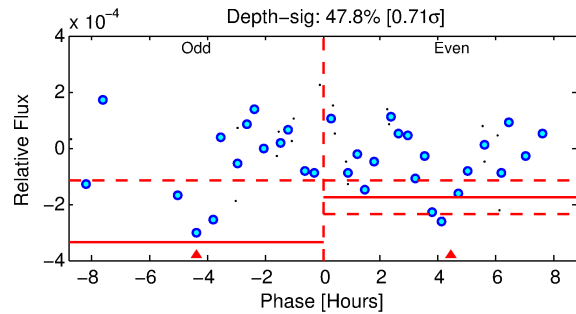
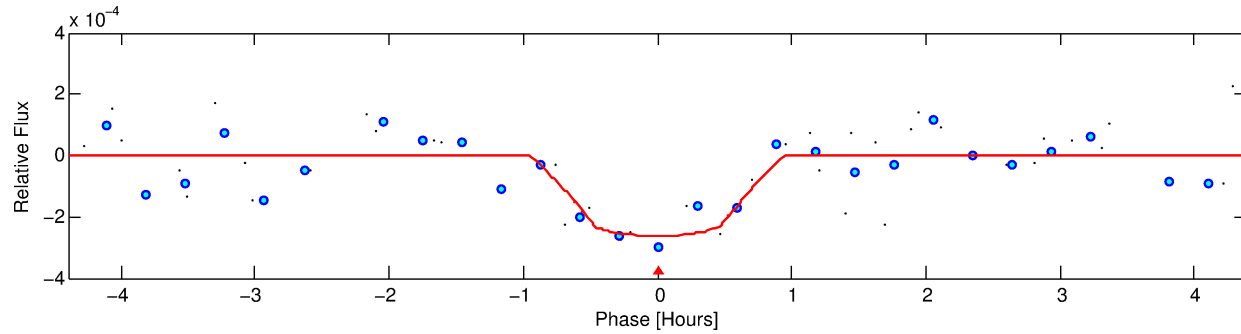
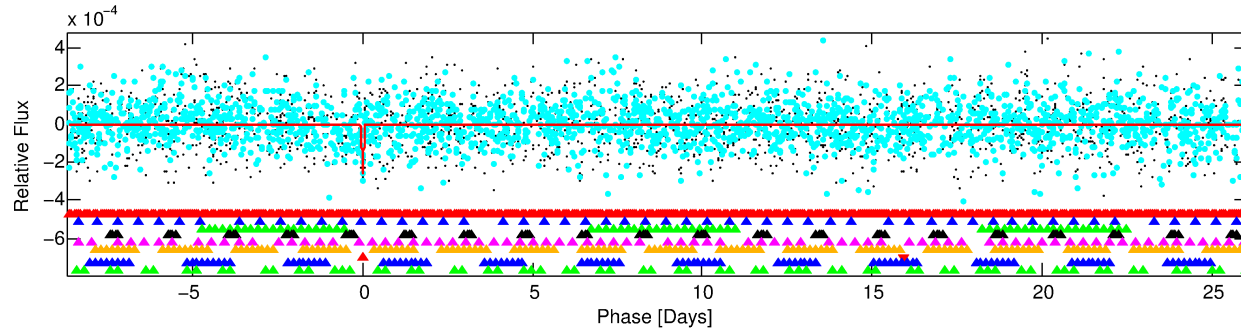
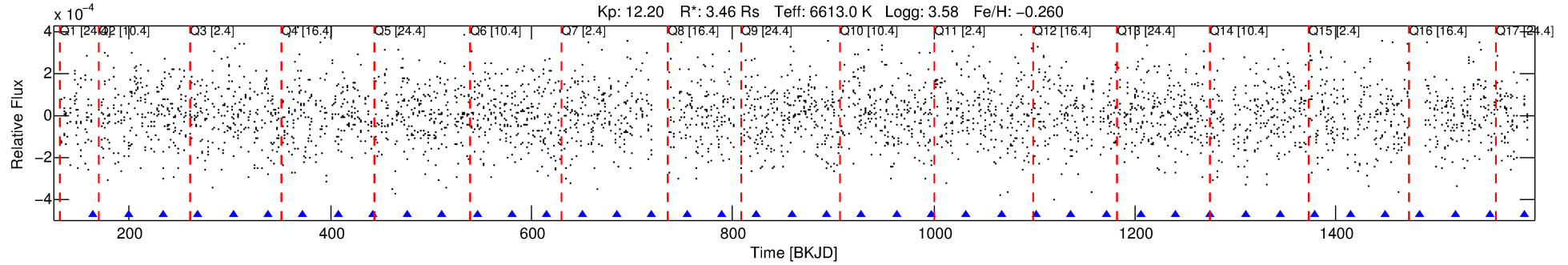
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-07

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 7 of 9 Period: 34.715 d



DV Fit Results:

Period = 34.71482 [0.00034] d
Epoch = 164.4580 [0.0074] BKJD
Rp/R* = 0.0160 [0.0169]
a/R* = 133.32 [785.47]
b = 0.70 [4.29]
Seff = 339.64 [199.25]
Teq = 1095 [161] K
Rp = 6.02 [6.77] Re
a = 0.2456 [0.0886] AU
Ag = 135.52 [299.54] [0.45 σ]
Teffp = 5775 [3086] K [1.51 σ]

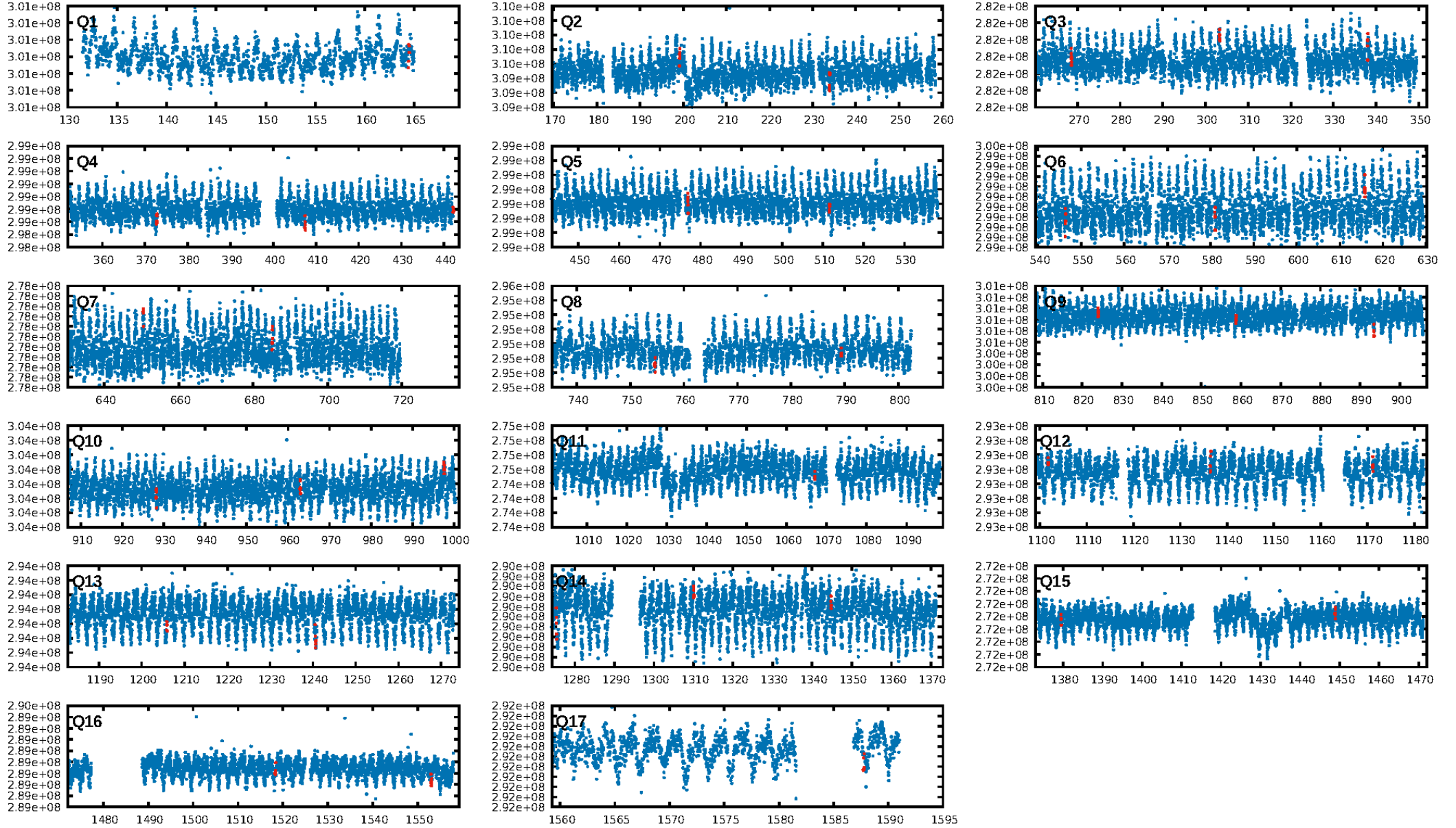
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.08 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.8%
ModelChiSquareGof-sig: 59.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 8.559
Centroid-sig: 64.1%
Centroid-so: 0.276 arcsec [0.43 σ]
OotOffset-rm: 0.770 arcsec [1.11 σ]
OotOffset-st: 3/4/2/3 [12]
KicOffset-rm: 0.792 arcsec [1.00 σ]
KicOffset-st: 3/4/2/3 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 0.69 [11/16]

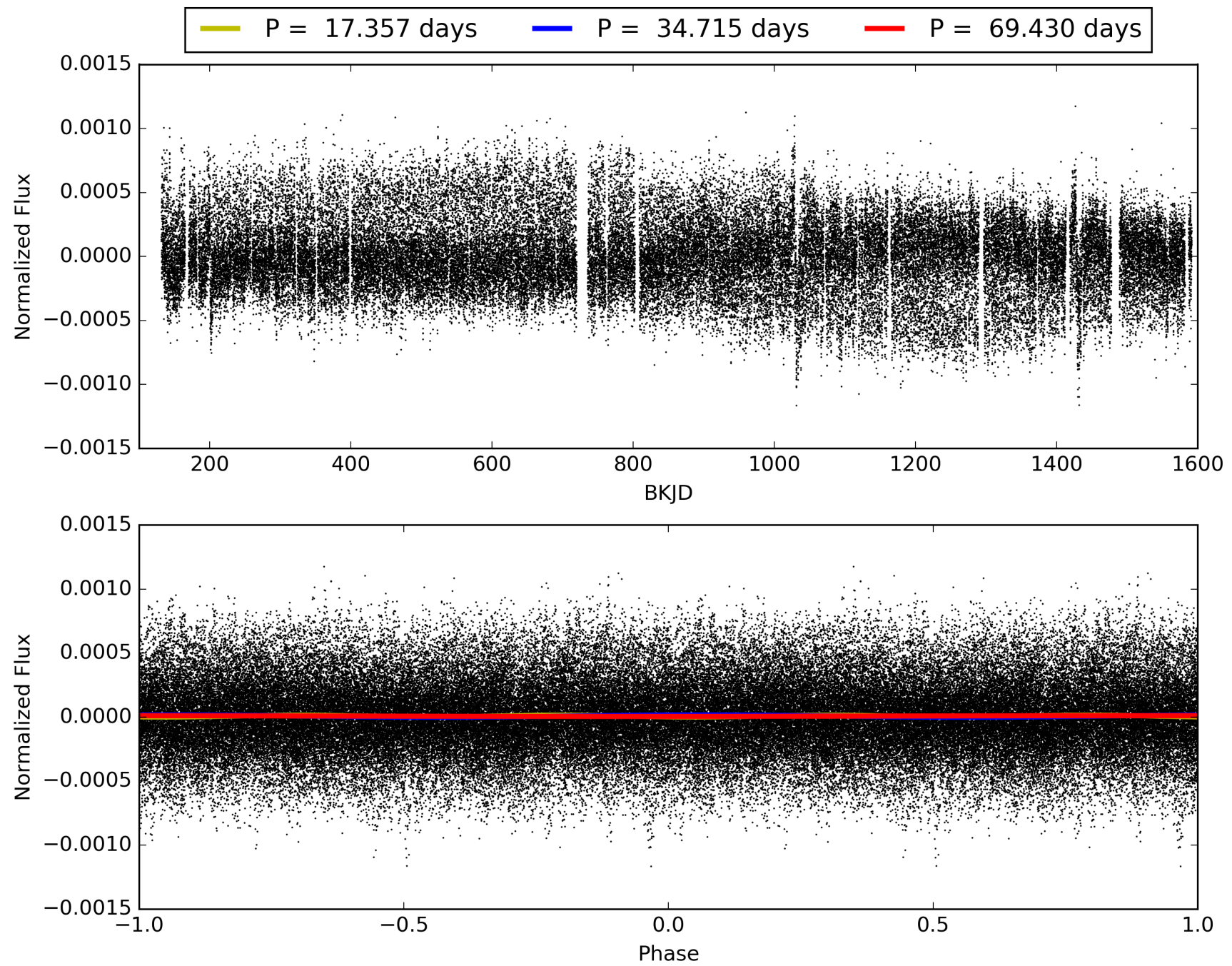
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:21 Z

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

TCE 008985157-07, PDC Light Curves

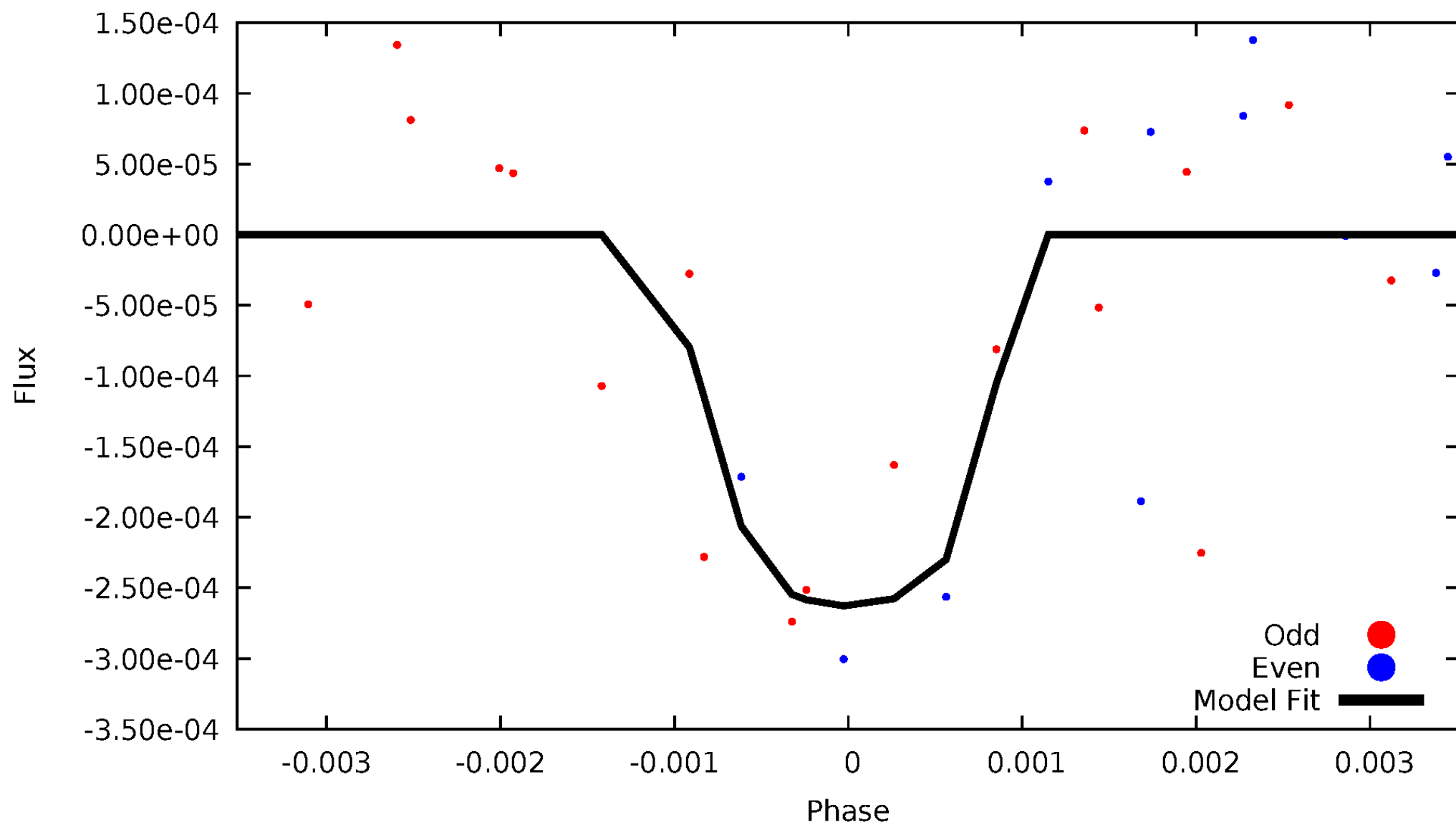


TCE 008985157-07



DV Odd/Even

TCE 008985157-07

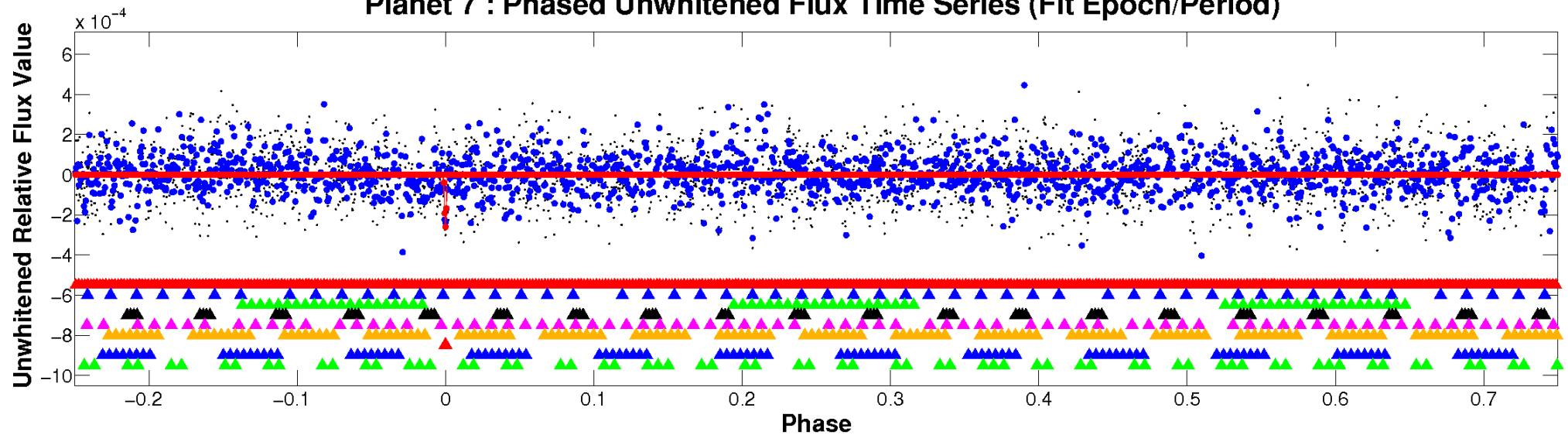


ALT Odd/Even

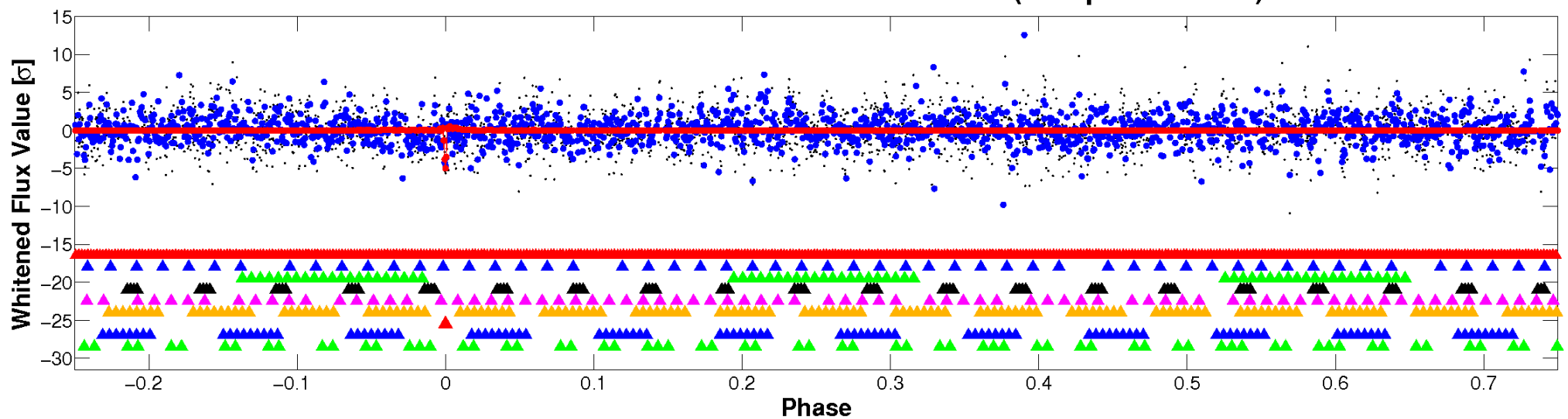
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

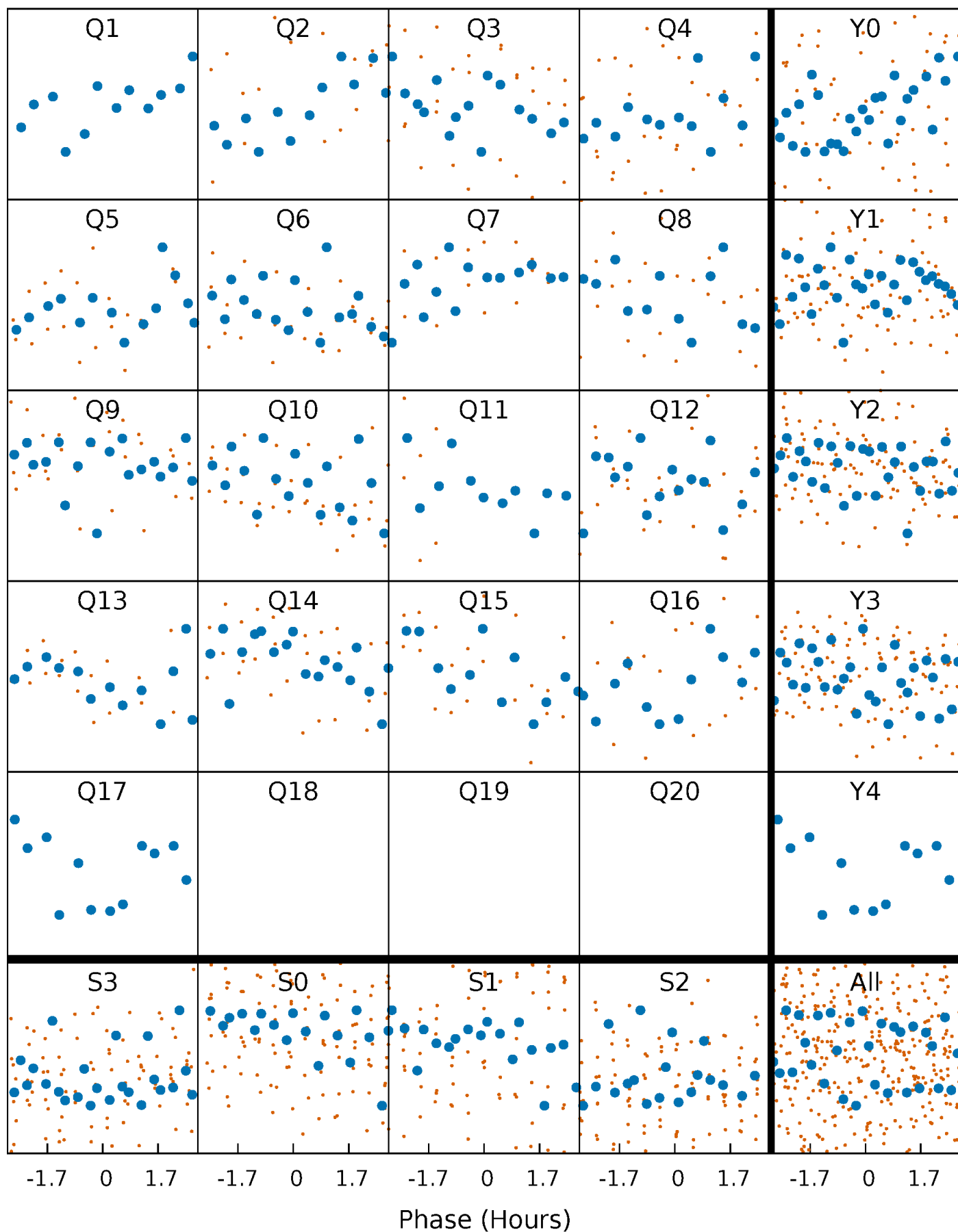


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



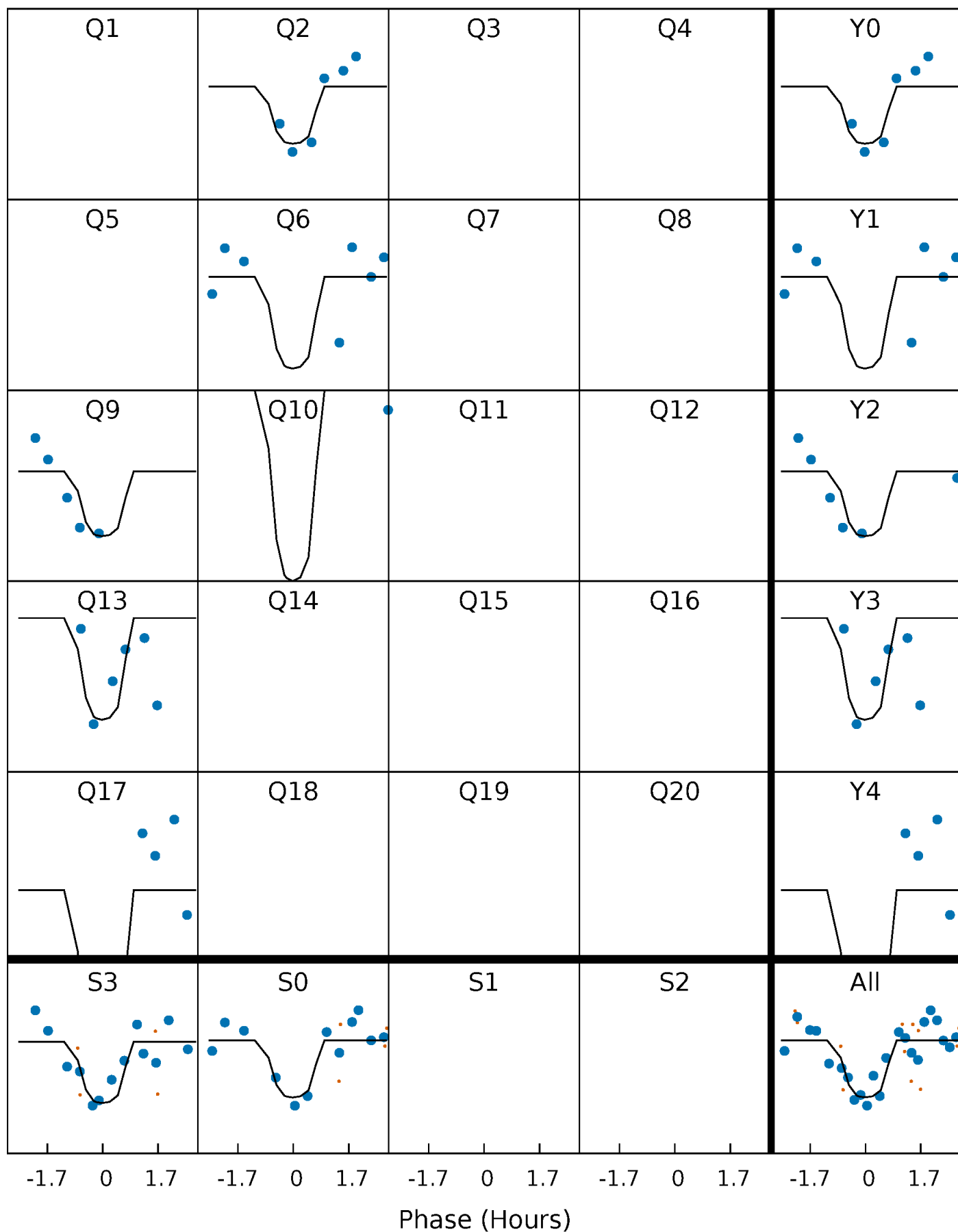
PDC Quarter-Phased Transit Curves

TCE 008985157-07 $P = 34.714824$ Days $T_0 = 164.458005$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008985157-07 P= 34.714824 Days $T_0=164.458005$ (BKJD)

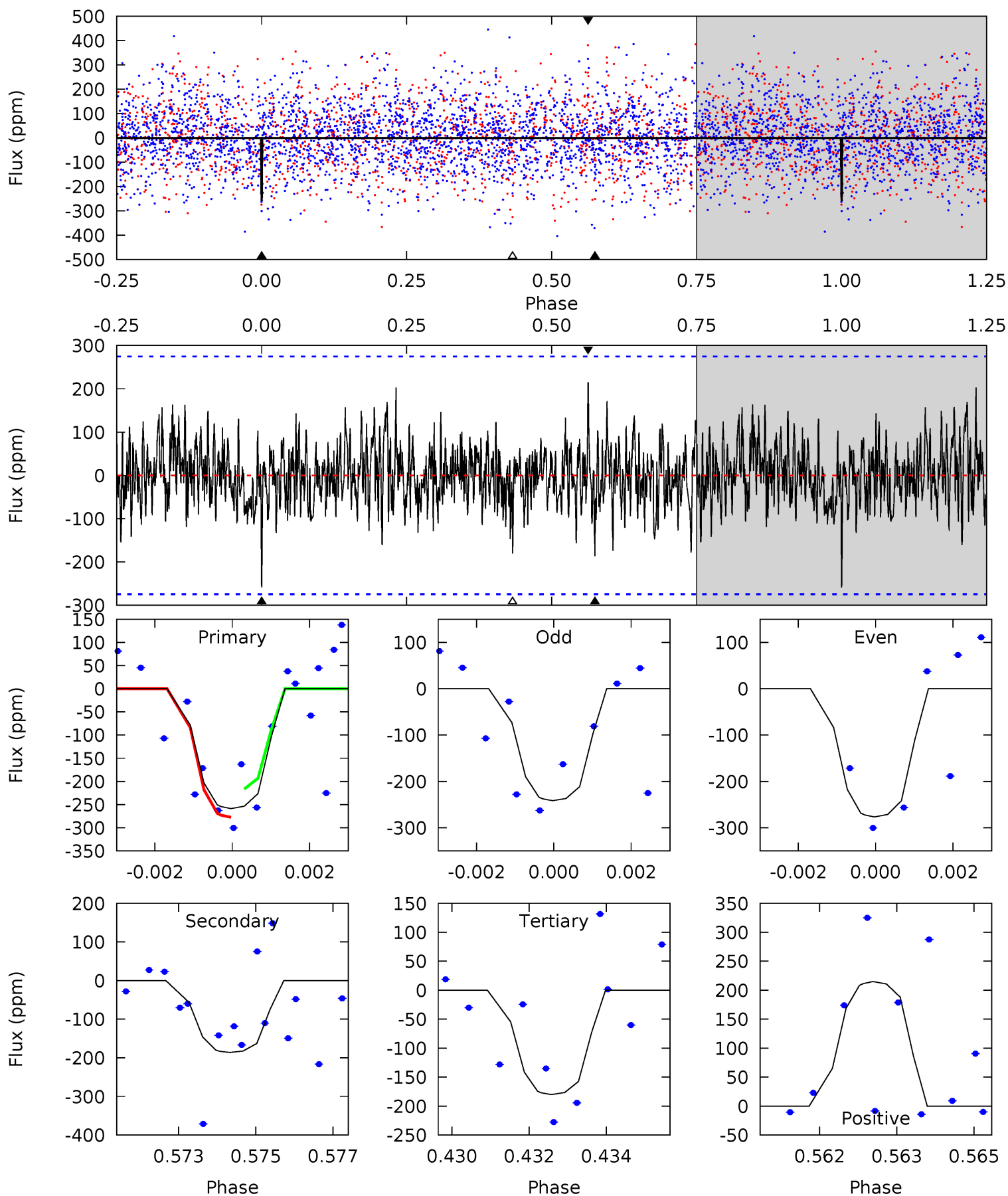


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008985157-07, $P = 34.714824$ Days, $E = 129.743181$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.05	3.63	3.51	4.19	5.36	3.14	1.14	1.53	0.85	0.12	-0.56	0.34	0.95	0.45	0.56



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-186 ± 51	$6.83^{+5.75}_{-4.34}$	1511^{+89}_{-143}	5488^{+4318}_{-1222}	131^{+918}_{-96}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

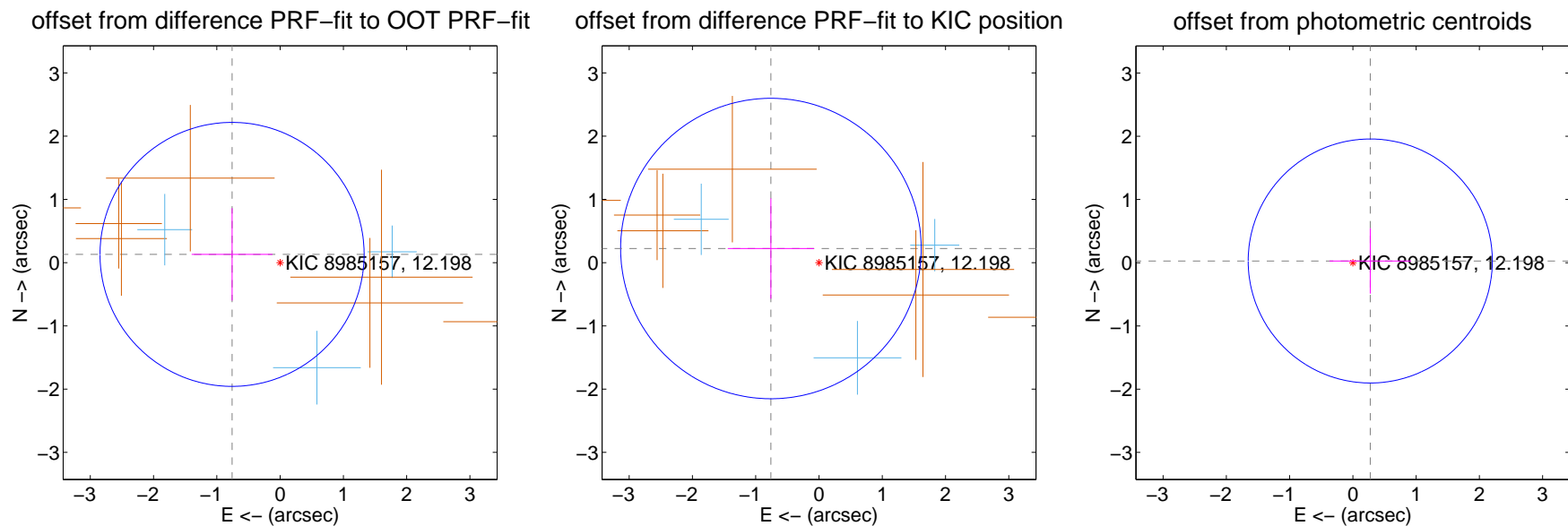
DV Centroid Data

Supplemental centroid analysis for 008985157-07. Kepler magnitude: 12.20. Transit SNR 12.39

There are 3 quarters with good PRF difference image offsets

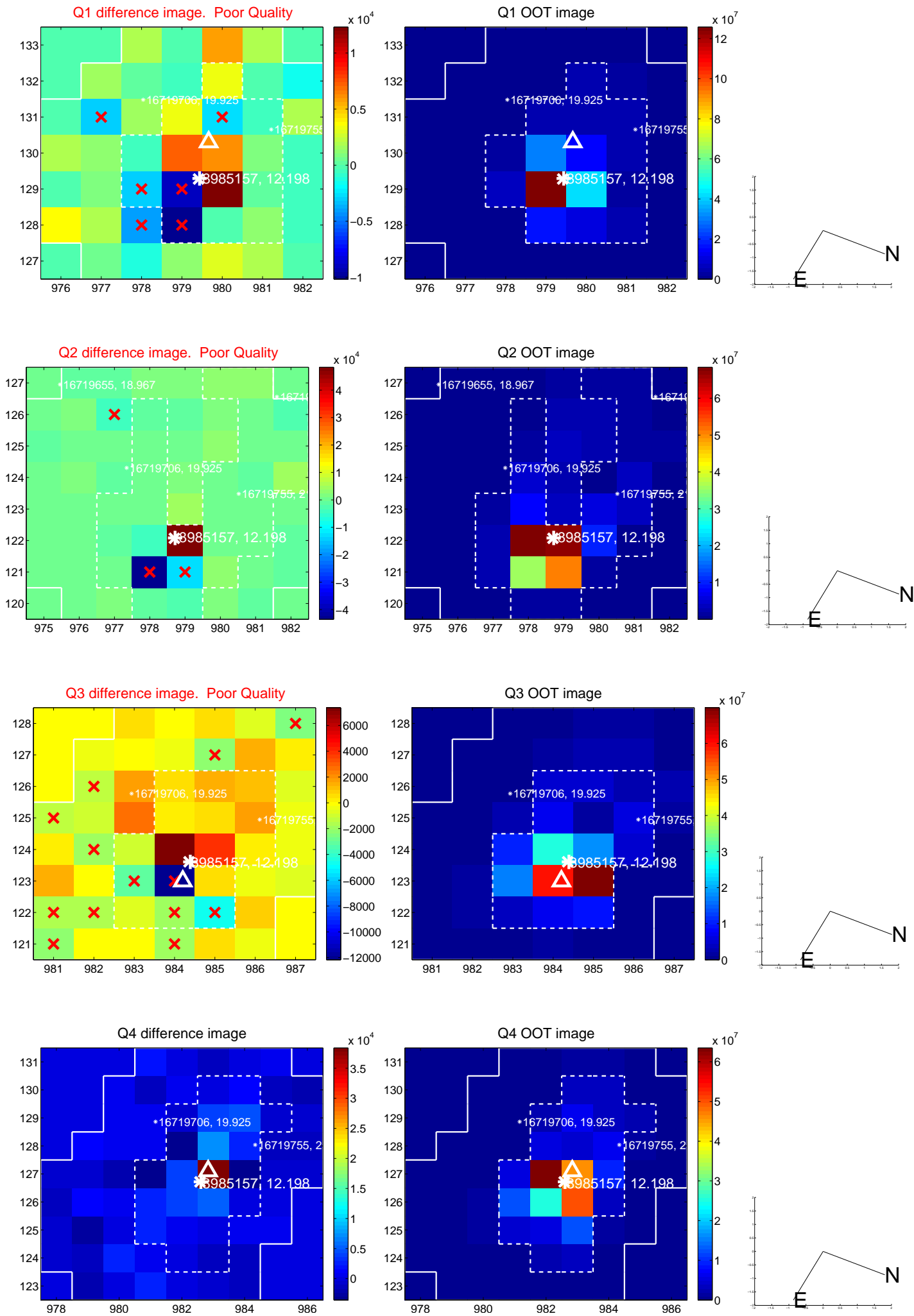
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.770 ± 0.696	1.11	0.759 ± 0.639	0.131 ± 0.730
PRF-fit source offset from KIC position	0.792 ± 0.792	1.00	0.760 ± 0.683	0.223 ± 0.793
photometric centroid source offset	0.28 ± 0.64	0.43	-0.28 ± 0.64	0.03 ± 0.52

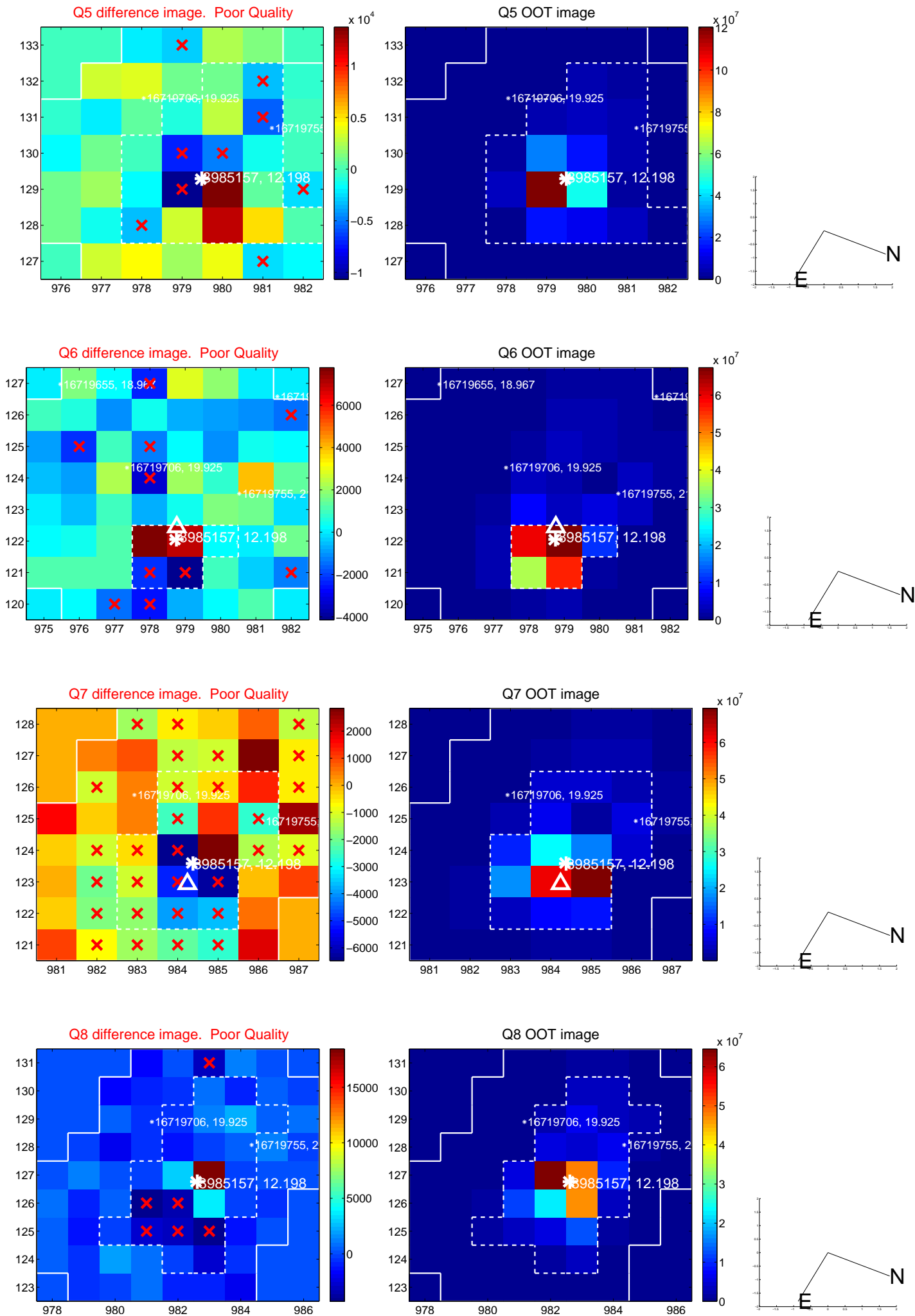


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

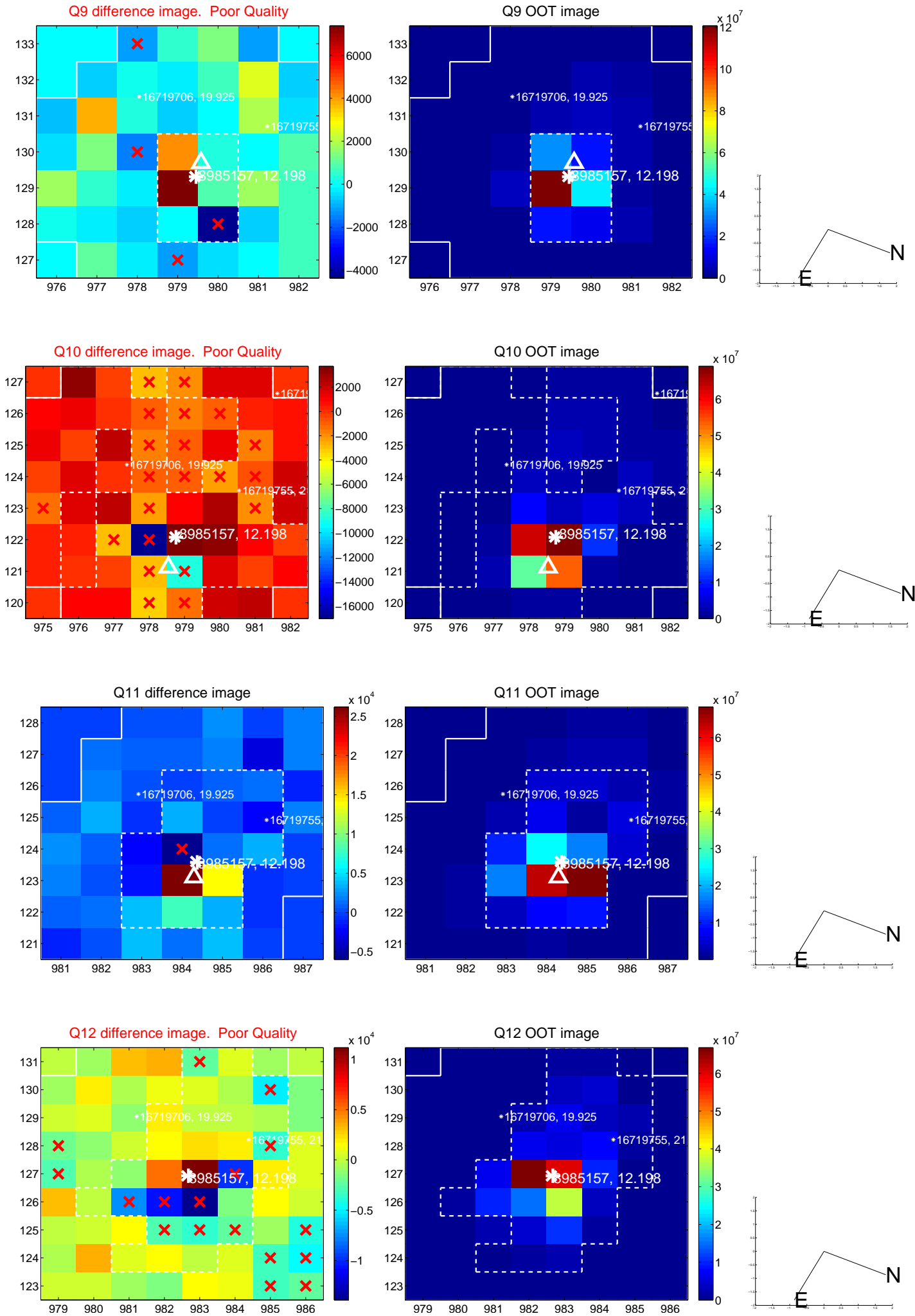
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



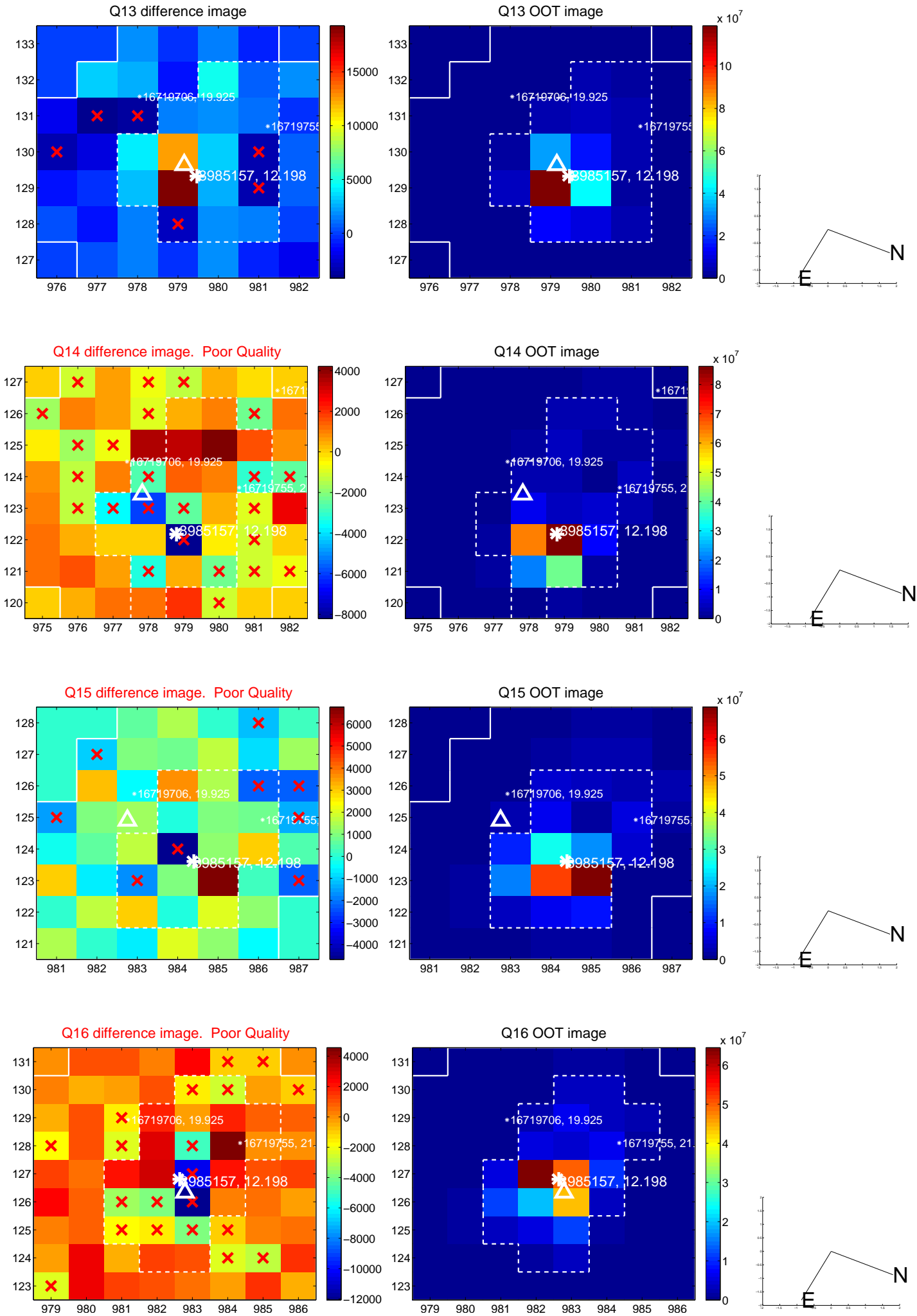
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



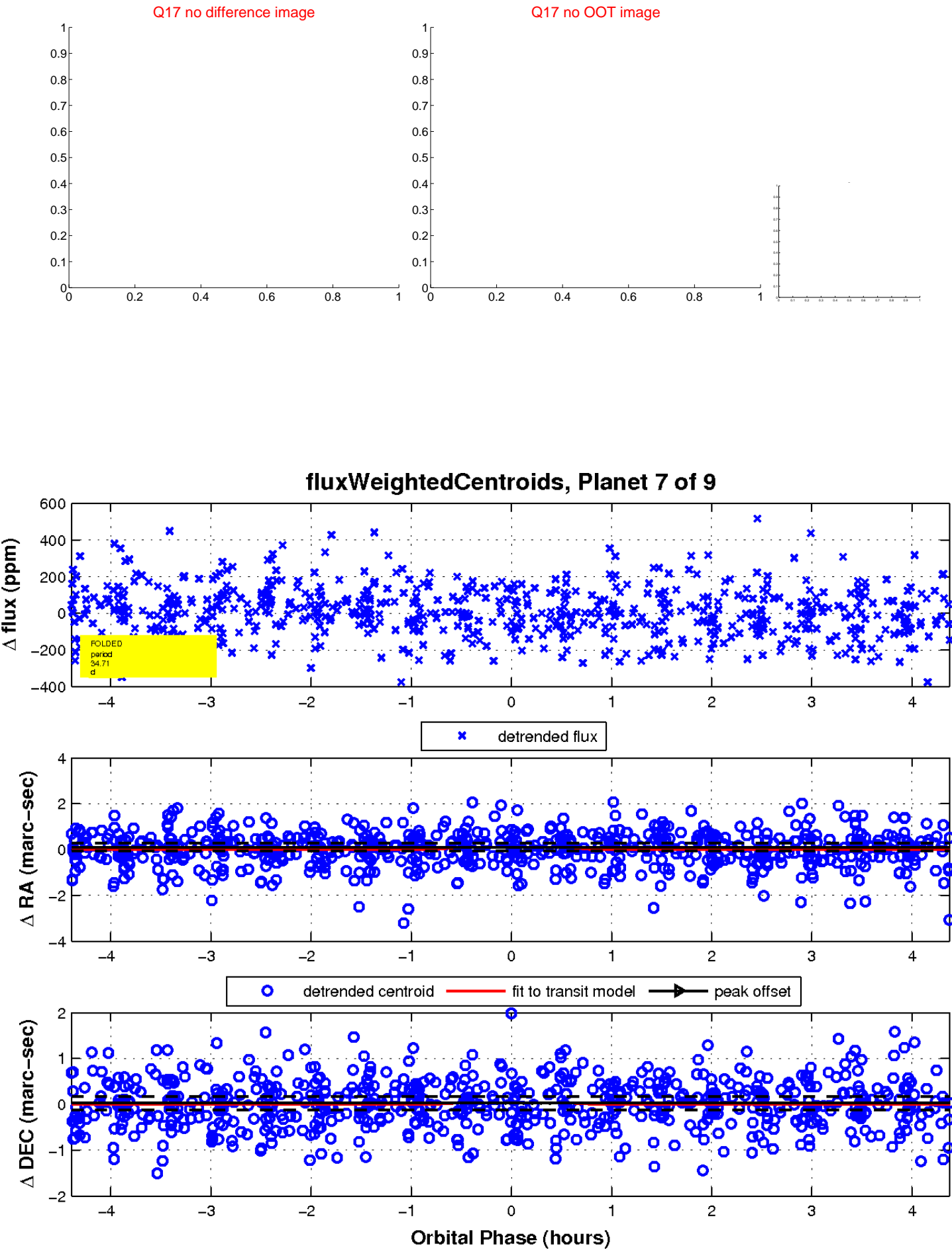
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

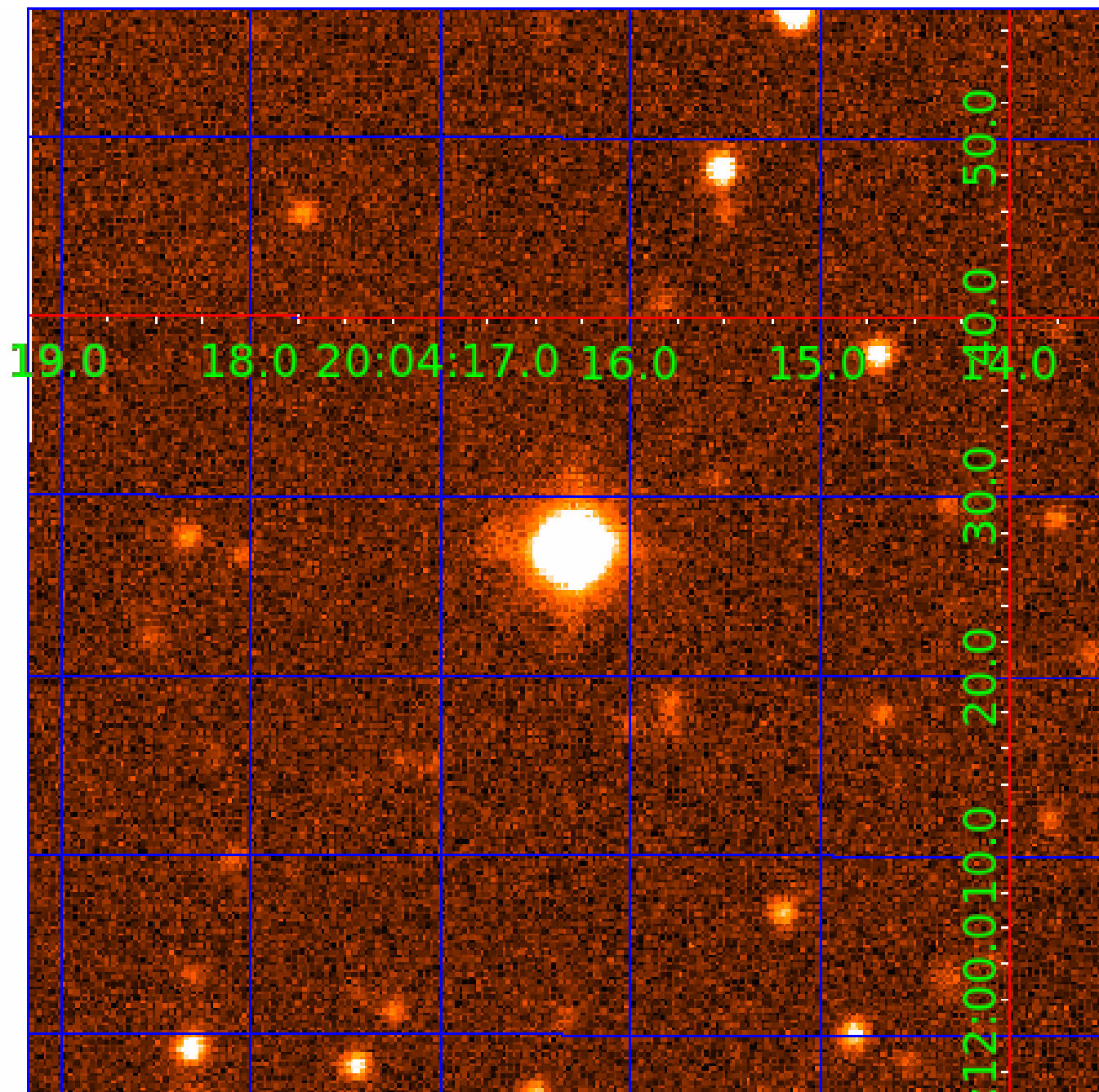


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

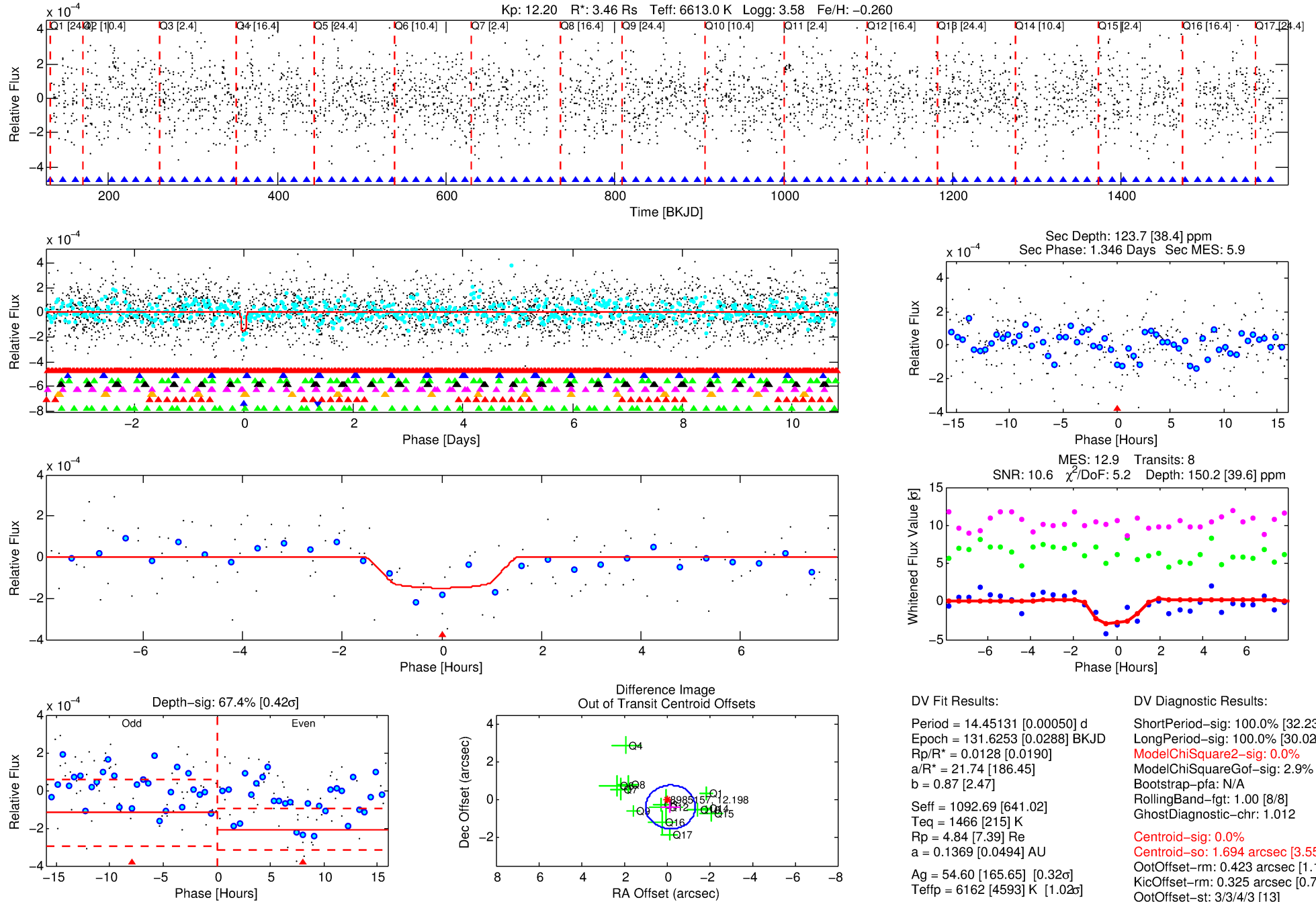
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-08

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 8 of 9 Period: 14.451 d



DV Fit Results:

Period = 14.45131 [0.00050] d
Epoch = 131.6253 [0.0288] BKJD
Rp/R* = 0.0128 [0.0190]
a/R* = 21.74 [186.45]
b = 0.87 [2.47]
Seff = 1092.69 [641.02]
Teq = 1466 [215] K
Rp = 4.84 [7.39] Re
a = 0.1369 [0.0494] AU
Ag = 54.60 [165.65] [0.32σ]
Teffp = 6162 [4593] K [1.02σ]

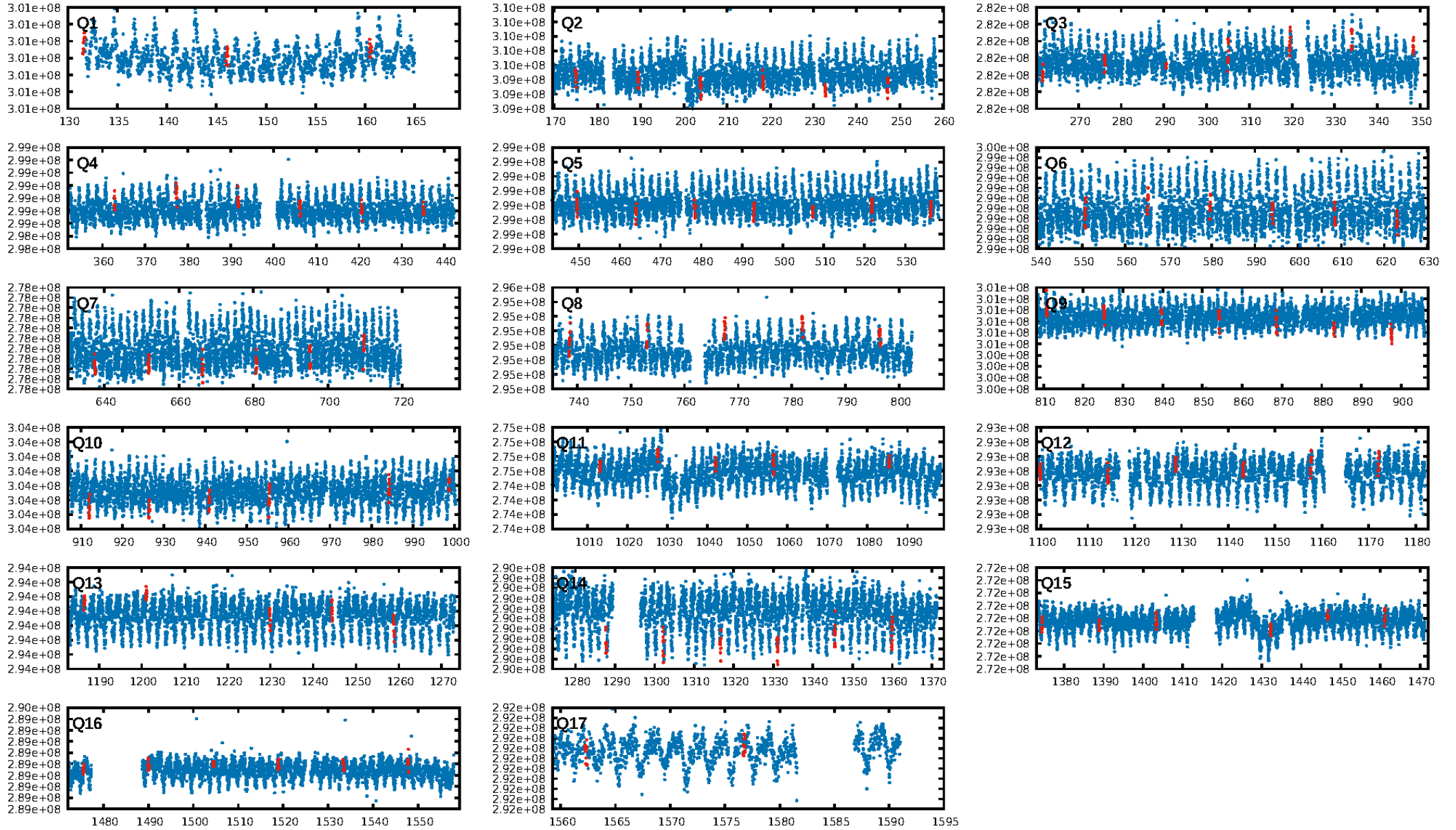
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.23σ]
LongPeriod-sig: 100.0% [30.02σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 2.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.012
Centroid-sig: 0.0%
Centroid-so: 1.694 arcsec [3.55σ]
OotOffset-rm: 0.423 arcsec [1.10σ]
KicOffset-rm: 0.325 arcsec [0.75σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.38 [5/13]
DiffImageOverlap-fno: 0.47 [8/17]

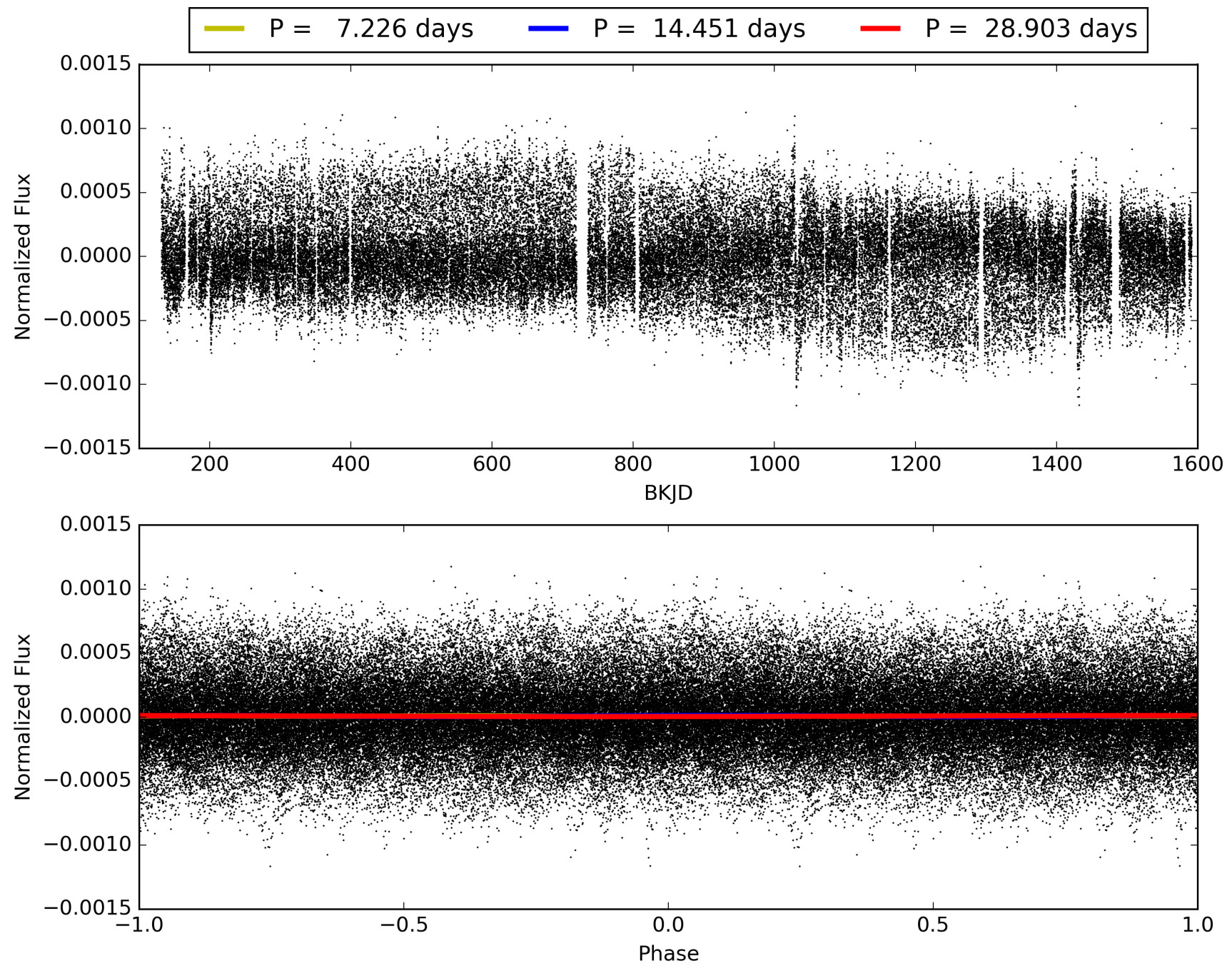
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:24 Z

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

TCE 008985157-08, PDC Light Curves

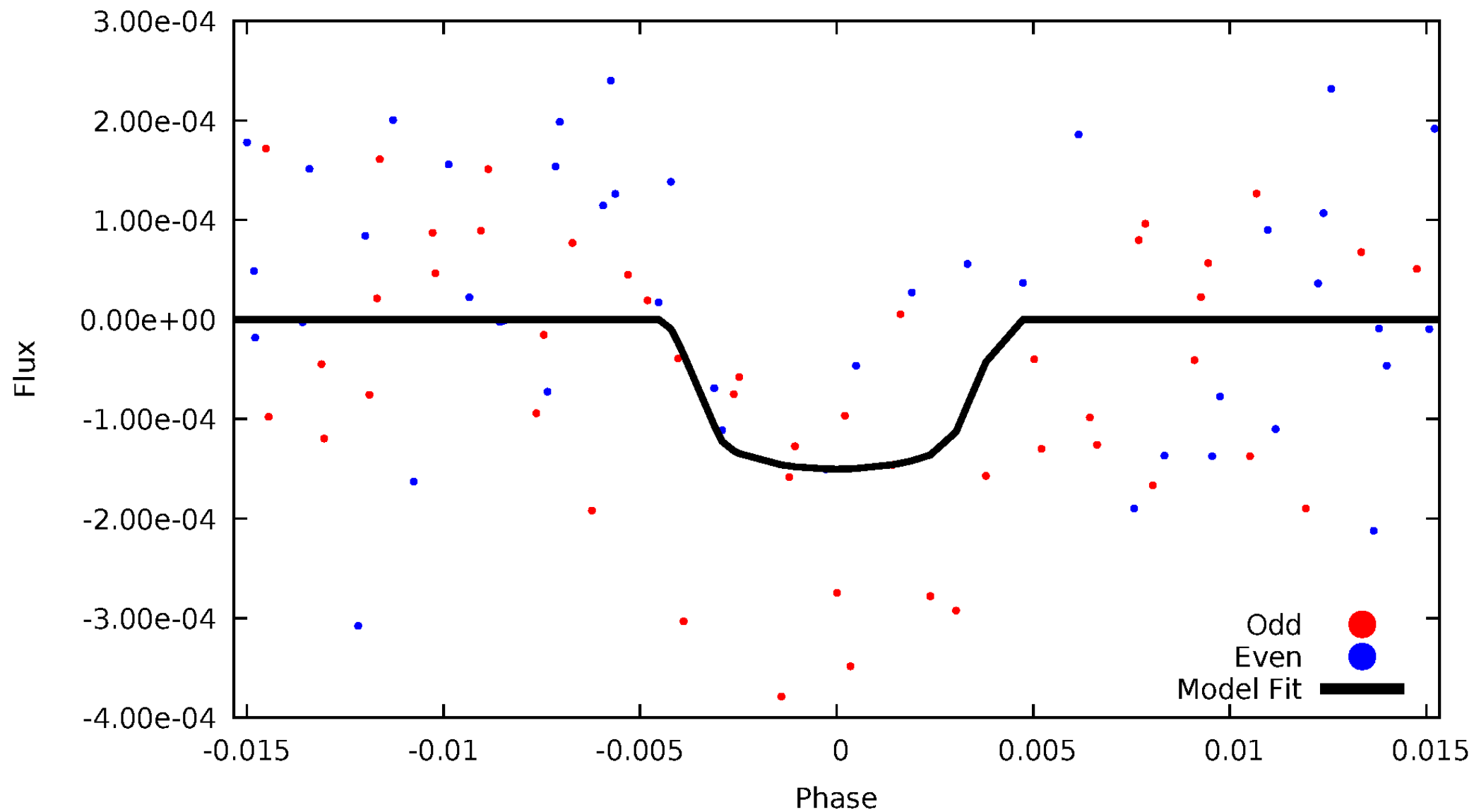


TCE 008985157-08



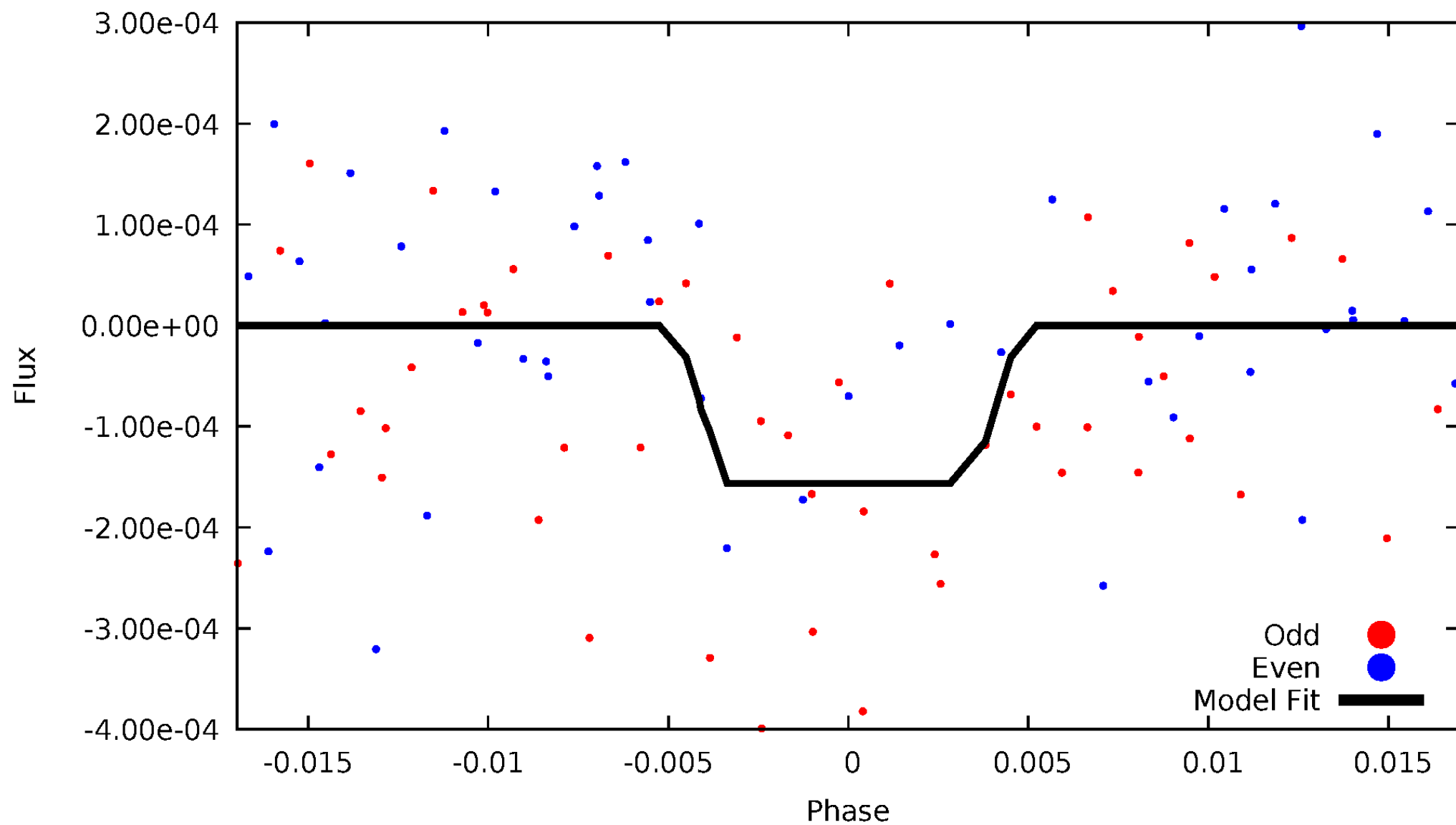
DV Odd/Even

TCE 008985157-08



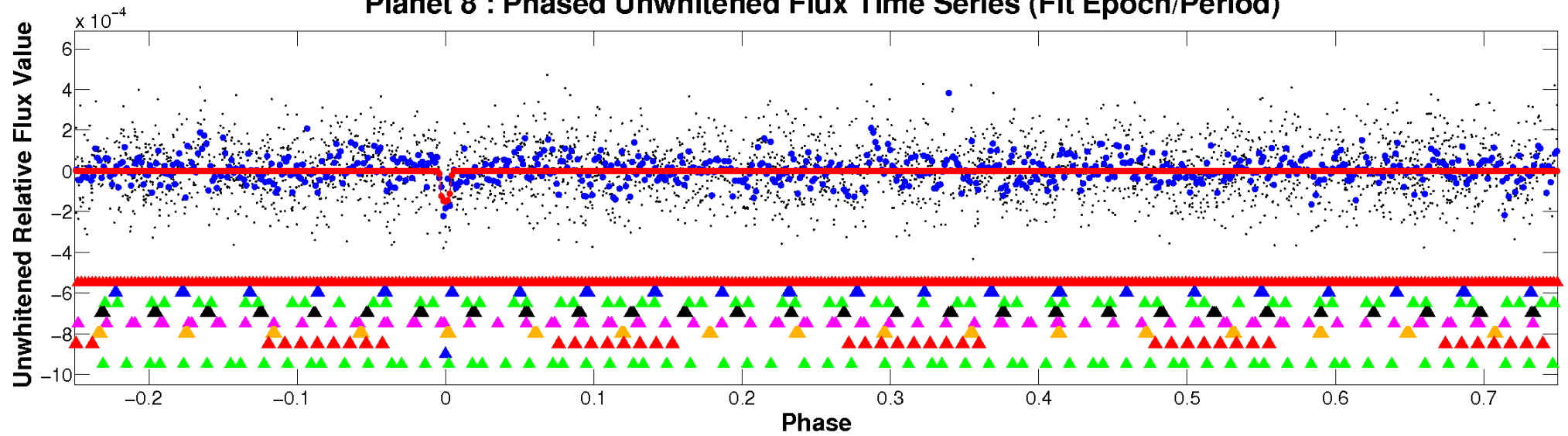
ALT Odd/Even

TCE 008985157-08

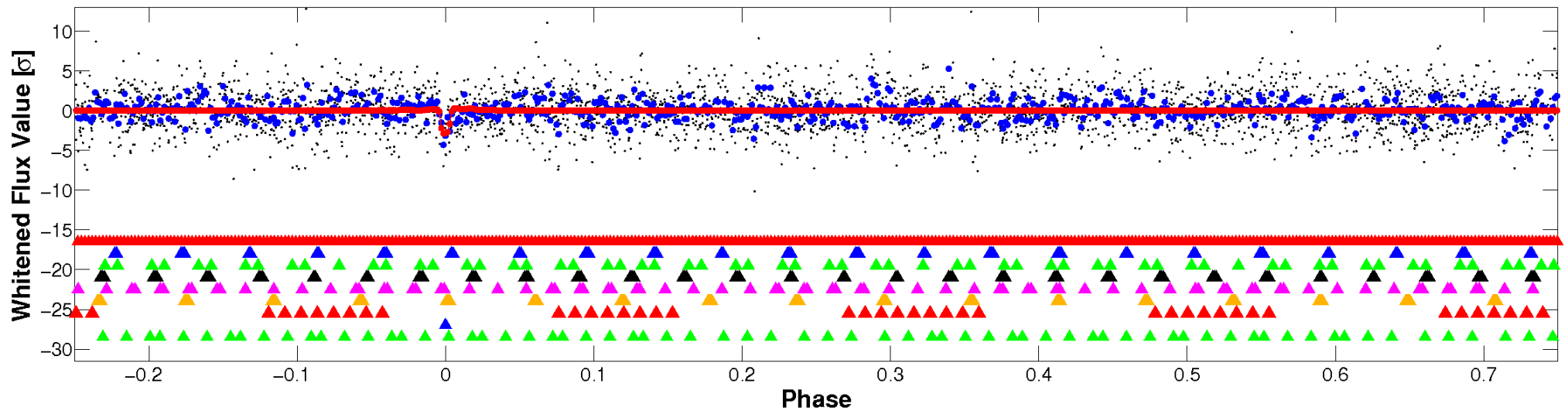


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

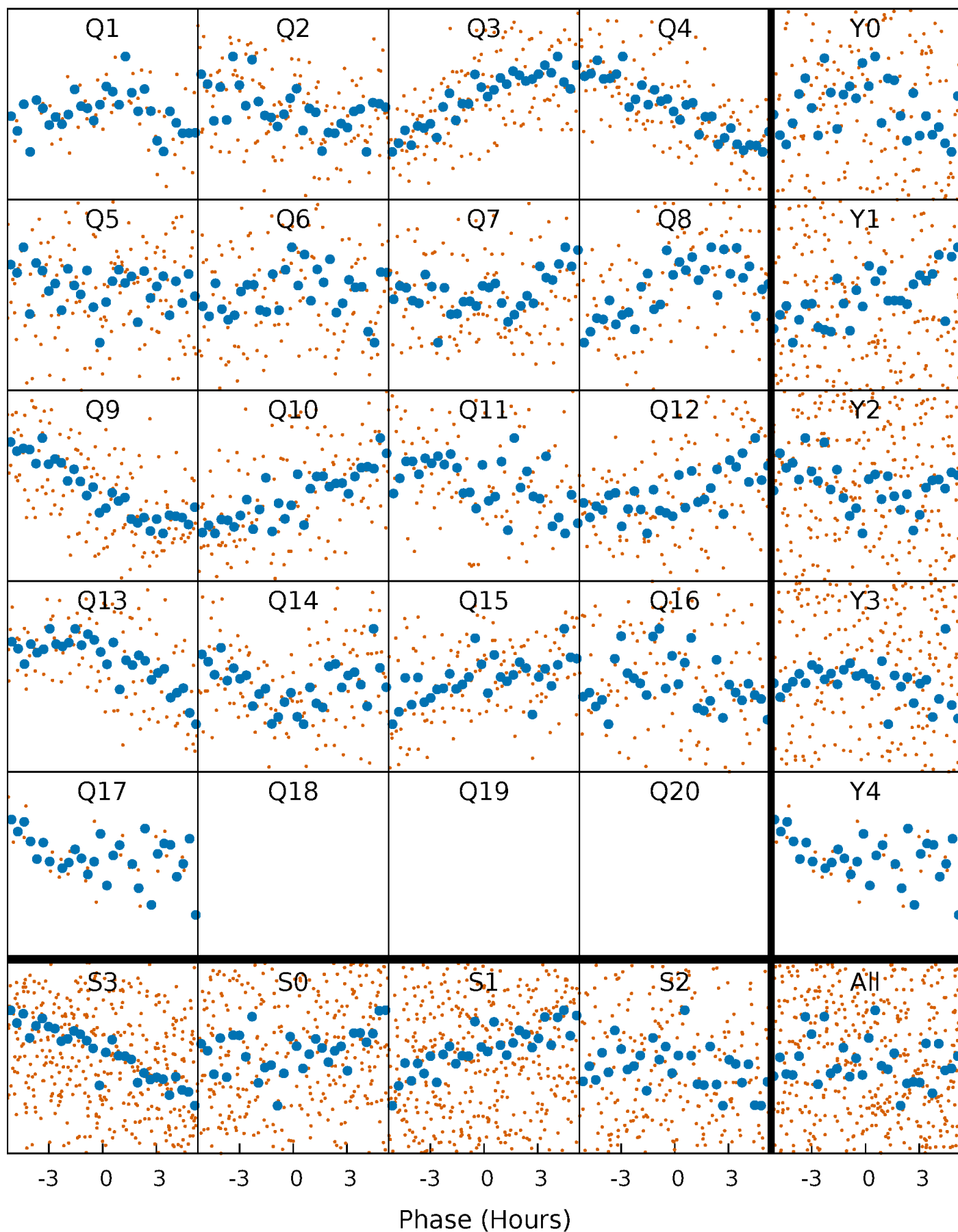


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



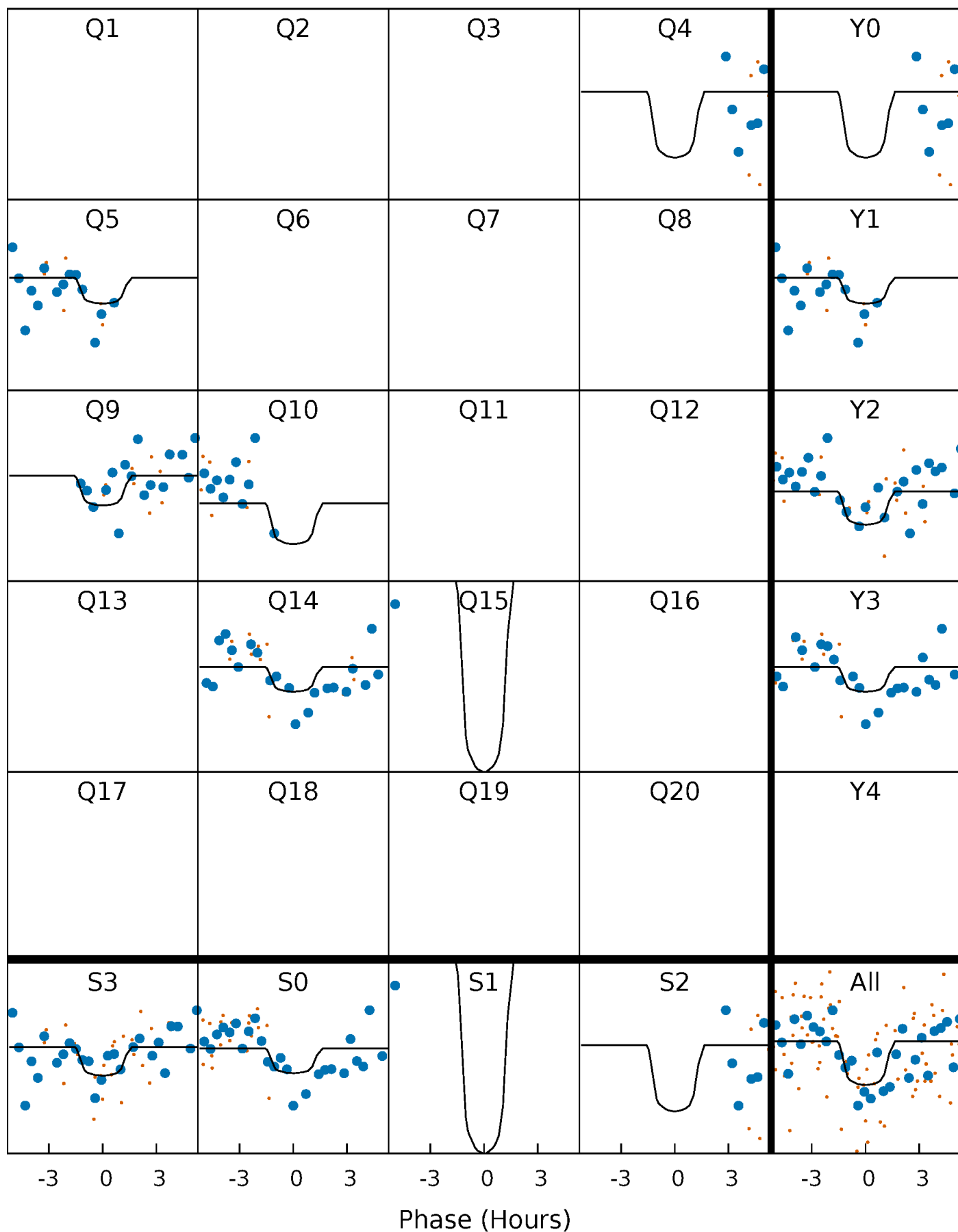
PDC Quarter-Phased Transit Curves

TCE 008985157-08 P= 14.451311 Days $T_0=131.625287$ (BKJD)



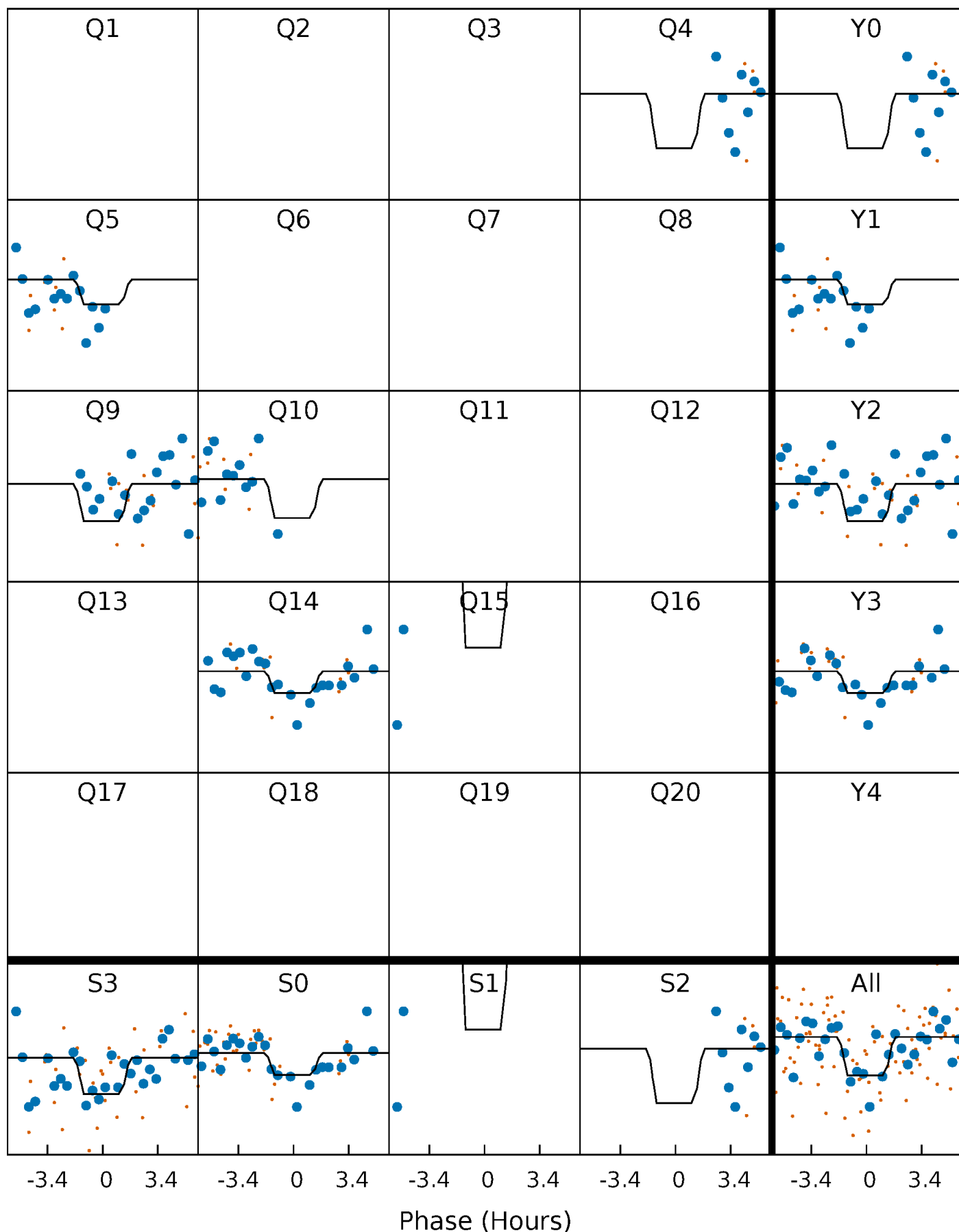
DV Quarter-Phased Transit Curves

TCE 008985157-08 P= 14.451311 Days $T_0=131.625287$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

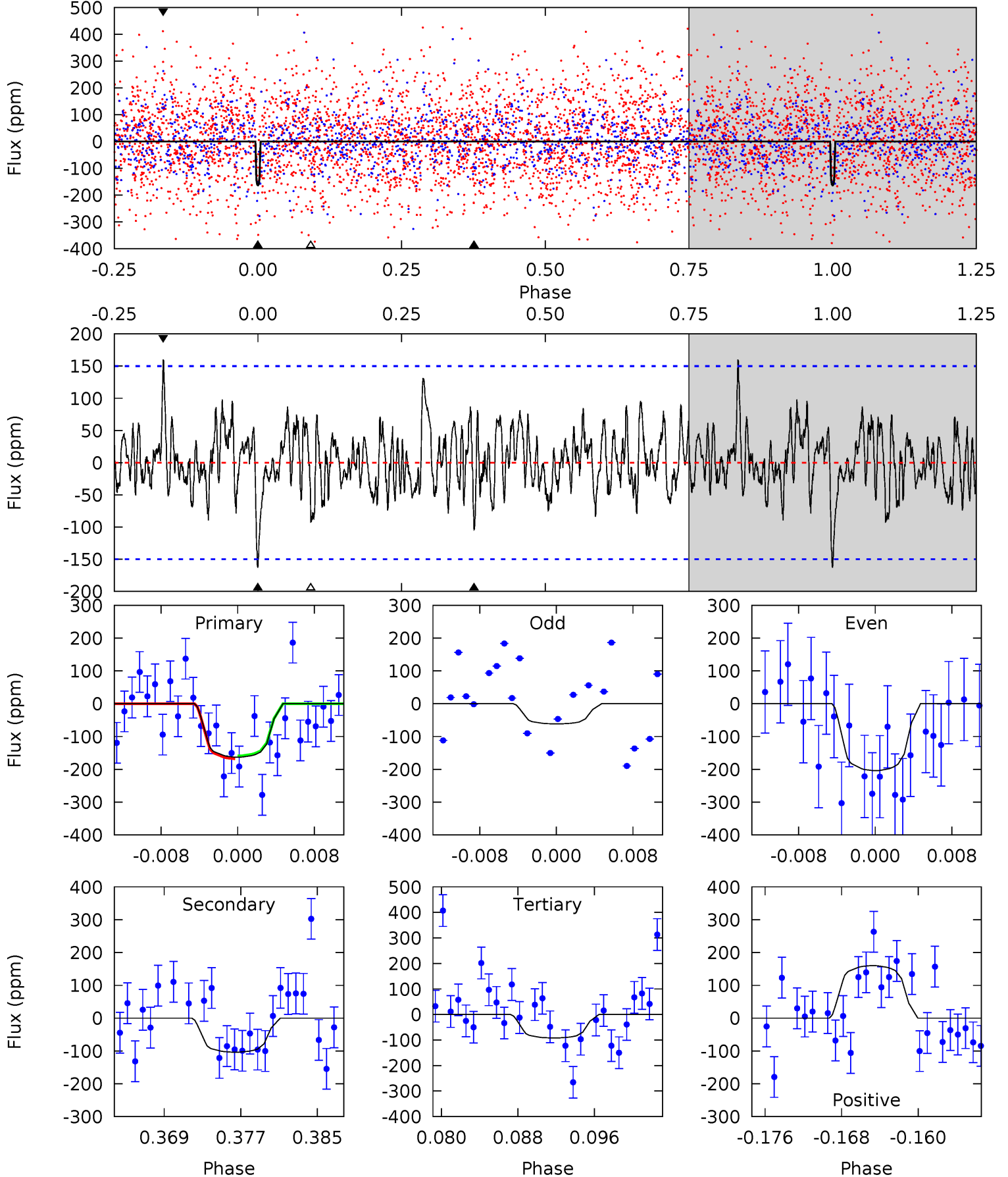
TCE 008985157-08 P= 14.451059 Days $T_0=131.645534$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-08, $P = 14.451311$ Days, $E = 131.625287$ Days

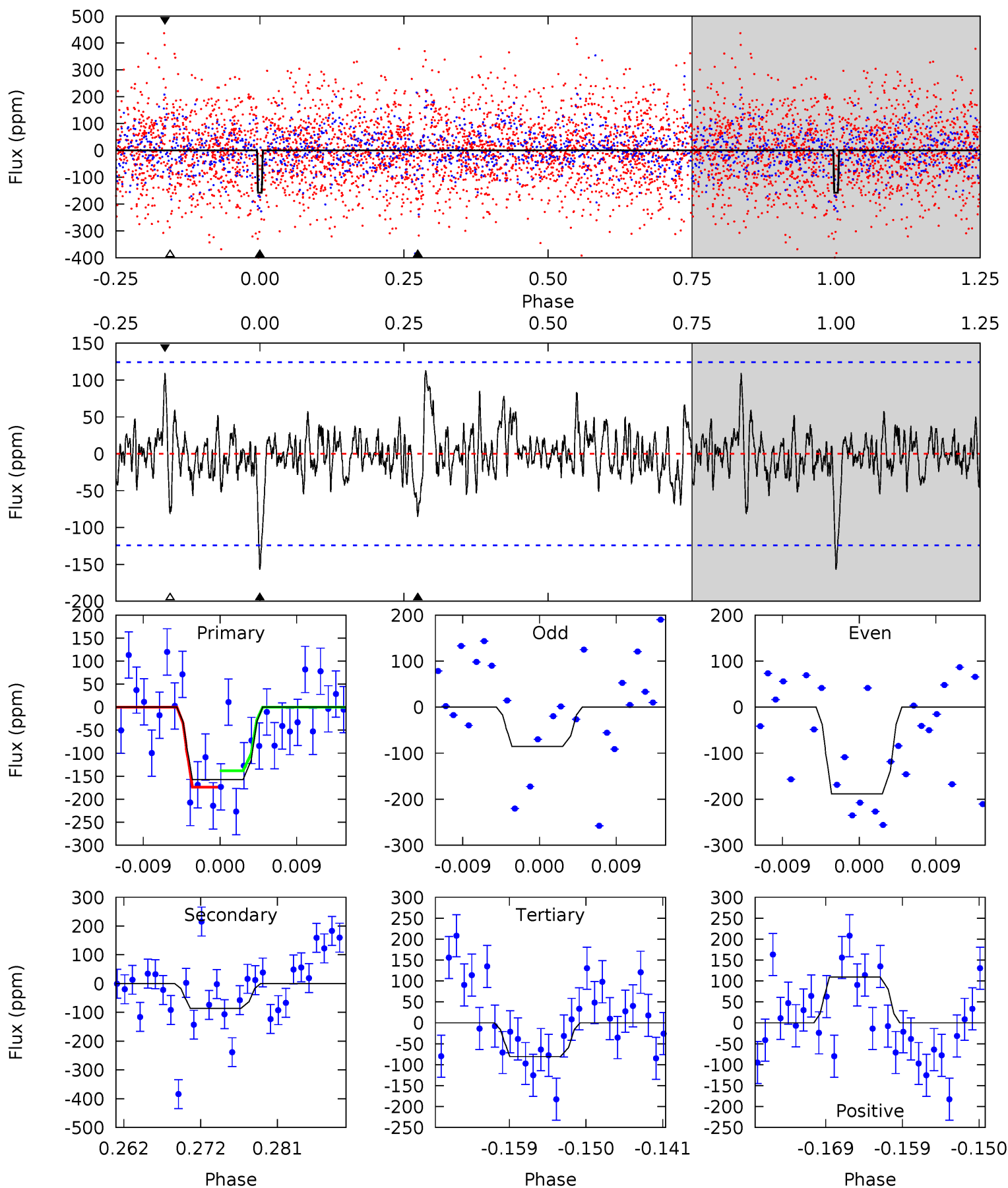
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.51	3.51	3.11	5.41	5.07	2.65	1.34	2.40	0.10	0.40	-1.90	2.22	1.03	0.50	0.14



Alt Model-Shift Uniqueness Test

008985157-08, P = 14.451059 Days, E = 131.645534 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.38	3.48	3.26	4.44	5.04	2.60	1.09	3.11	1.94	0.21	-0.96	1.94	0.93	0.42	0.73



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-104 ± 30	$6.52^{+6.03}_{-4.20}$	2008^{+129}_{-182}	4937^{+3686}_{-1111}	24^{+182}_{-18}
Alt.	-86 ± 25	$7.15^{+6.35}_{-4.71}$	2024^{+115}_{-190}	4645^{+3330}_{-1020}	18^{+130}_{-13}

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

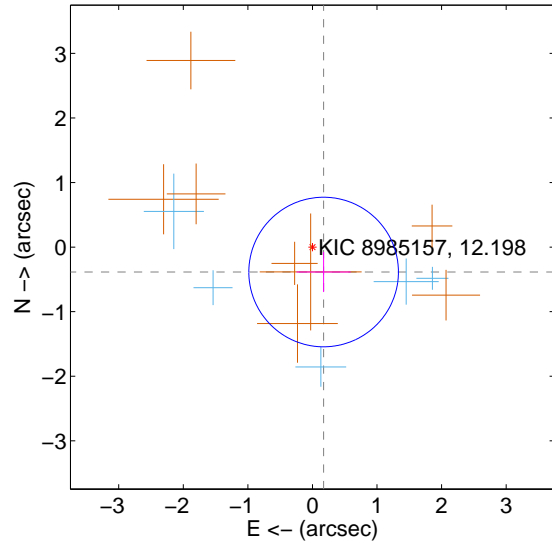
Supplemental centroid analysis for 008985157-08. Kepler magnitude: 12.20. Transit SNR 10.63

There are 5 quarters with good PRF difference image offsets

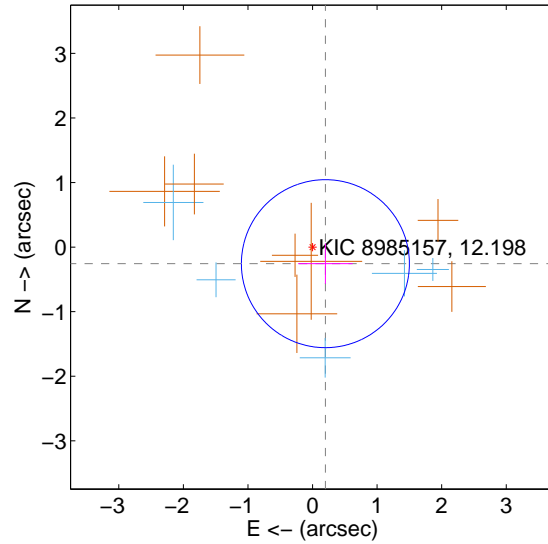
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.423 ± 0.386	1.10	-0.173 ± 0.418	-0.386 ± 0.310
PRF-fit source offset from KIC position	0.325 ± 0.434	0.75	-0.199 ± 0.422	-0.257 ± 0.312
photometric centroid source offset	1.69 ± 0.48	3.55	0.66 ± 0.58	1.56 ± 0.45

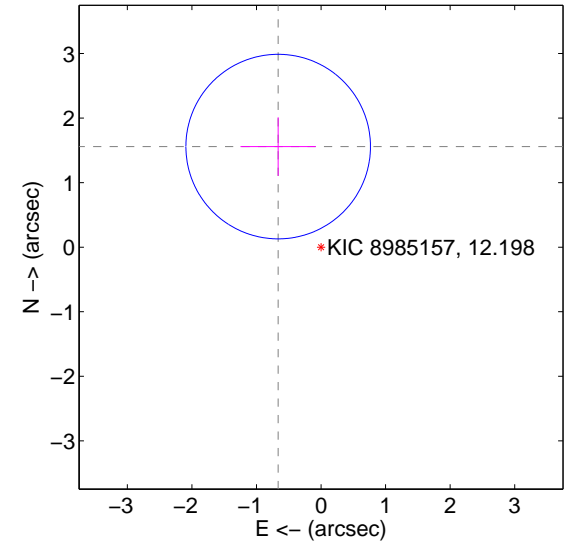
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

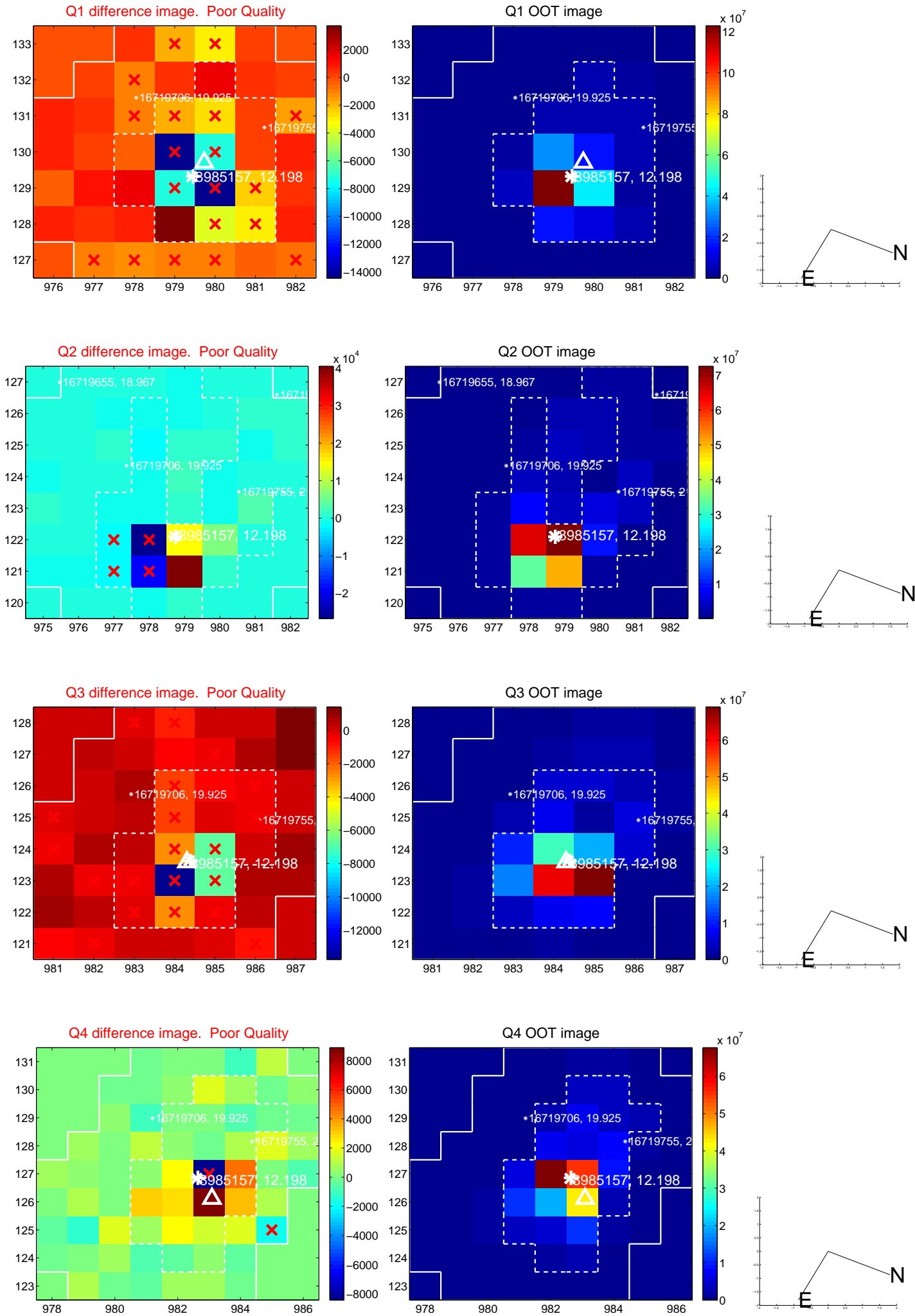


offset from photometric centroids

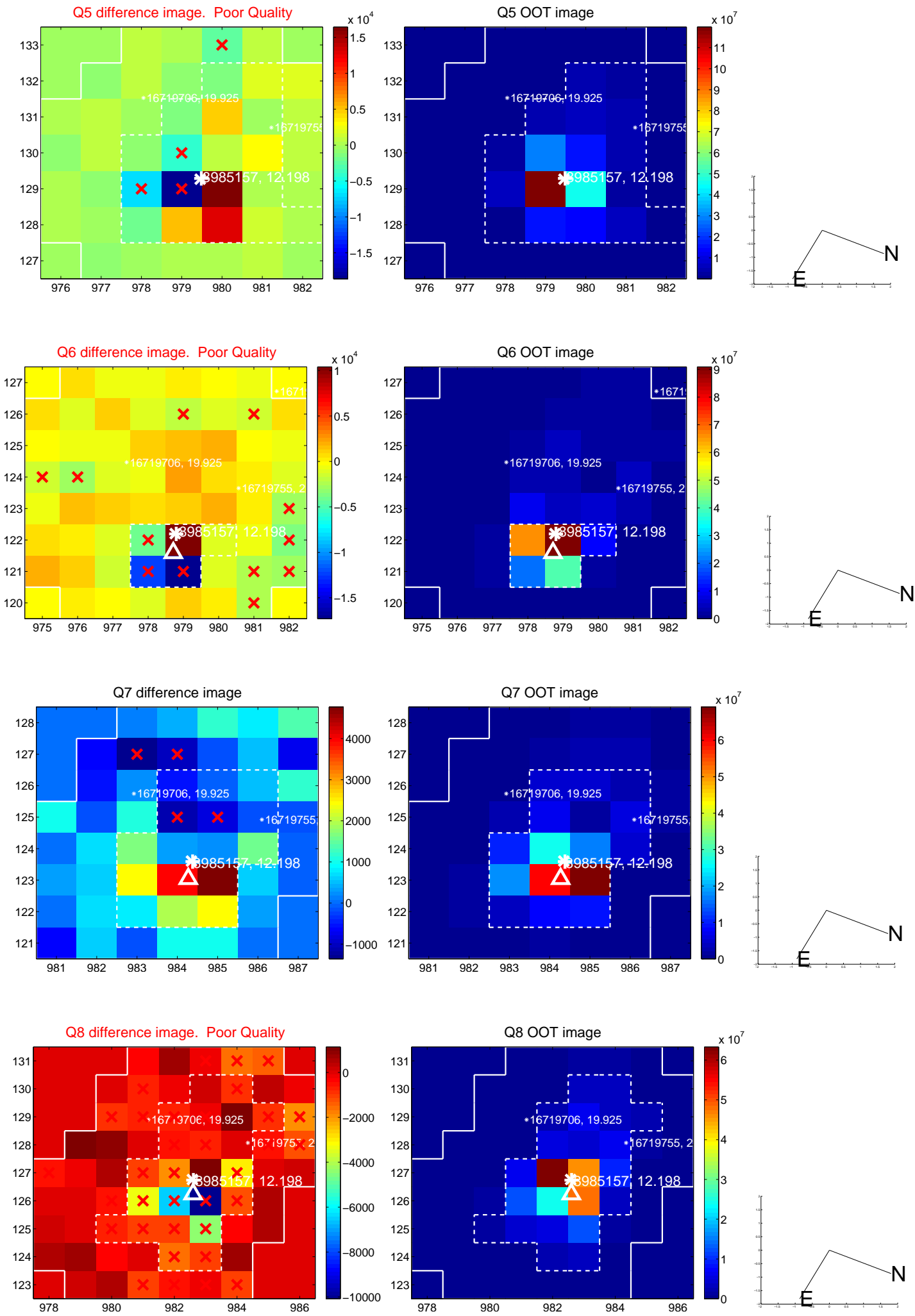


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

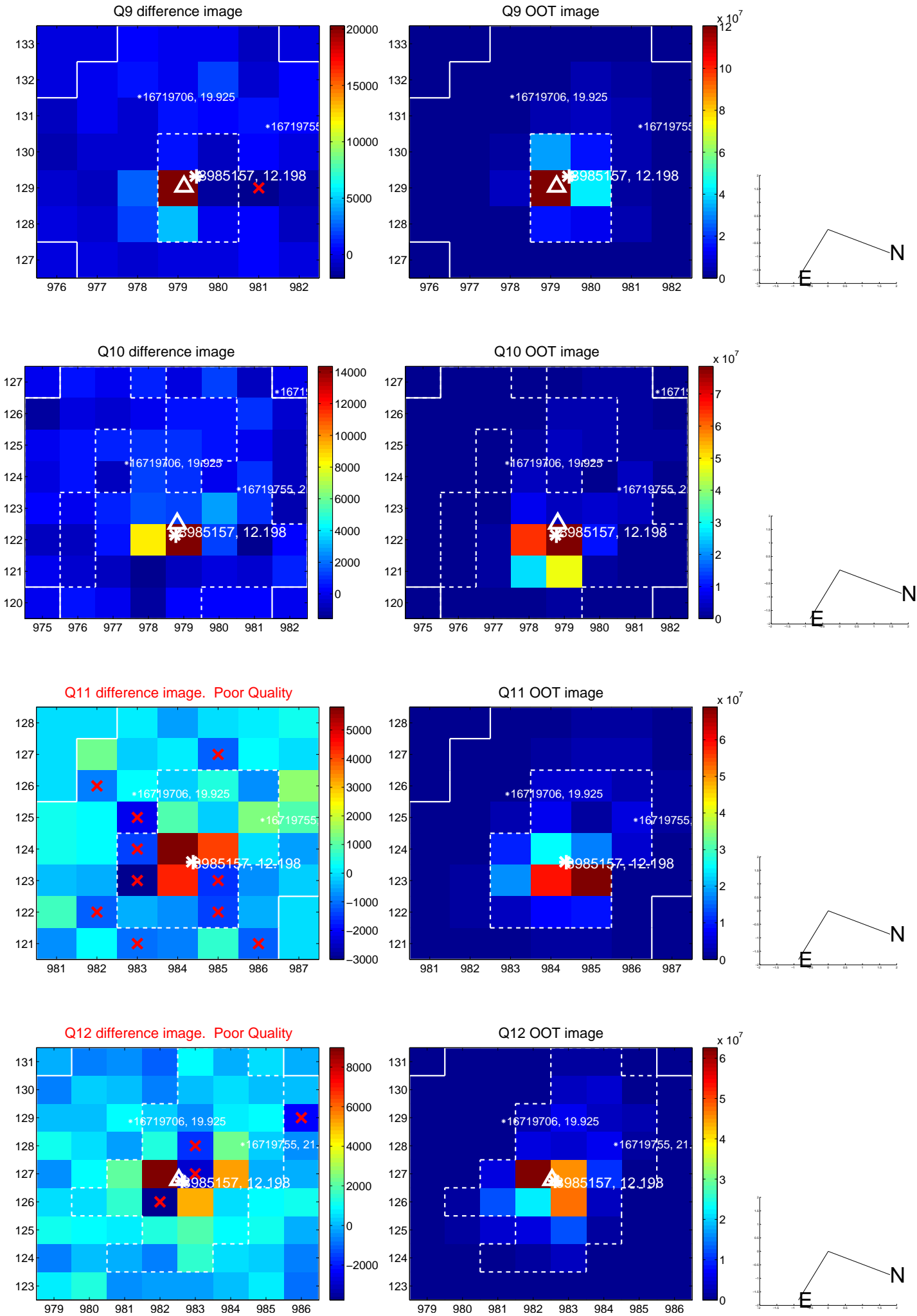
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



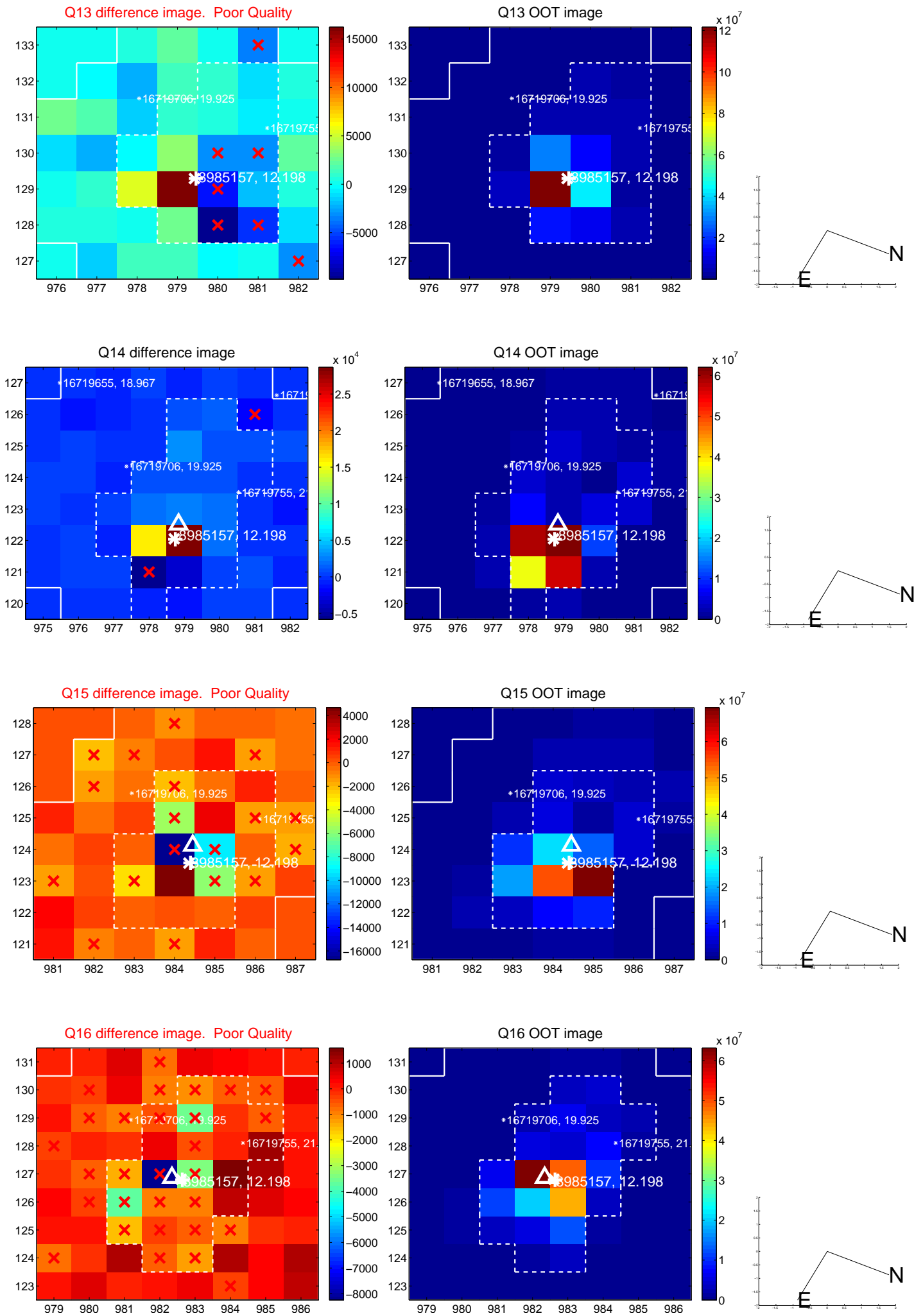
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



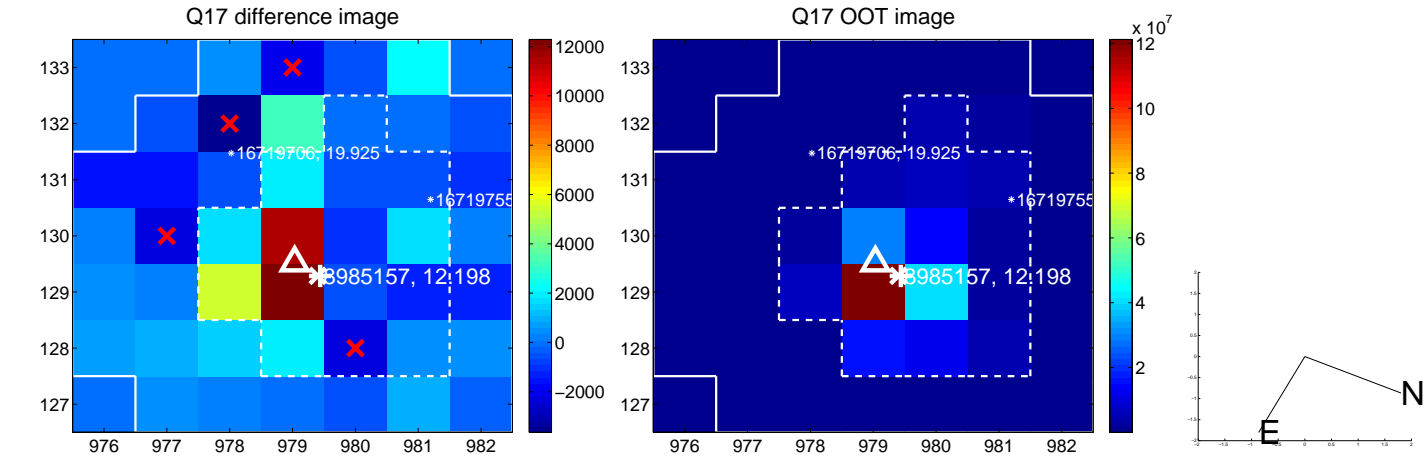
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



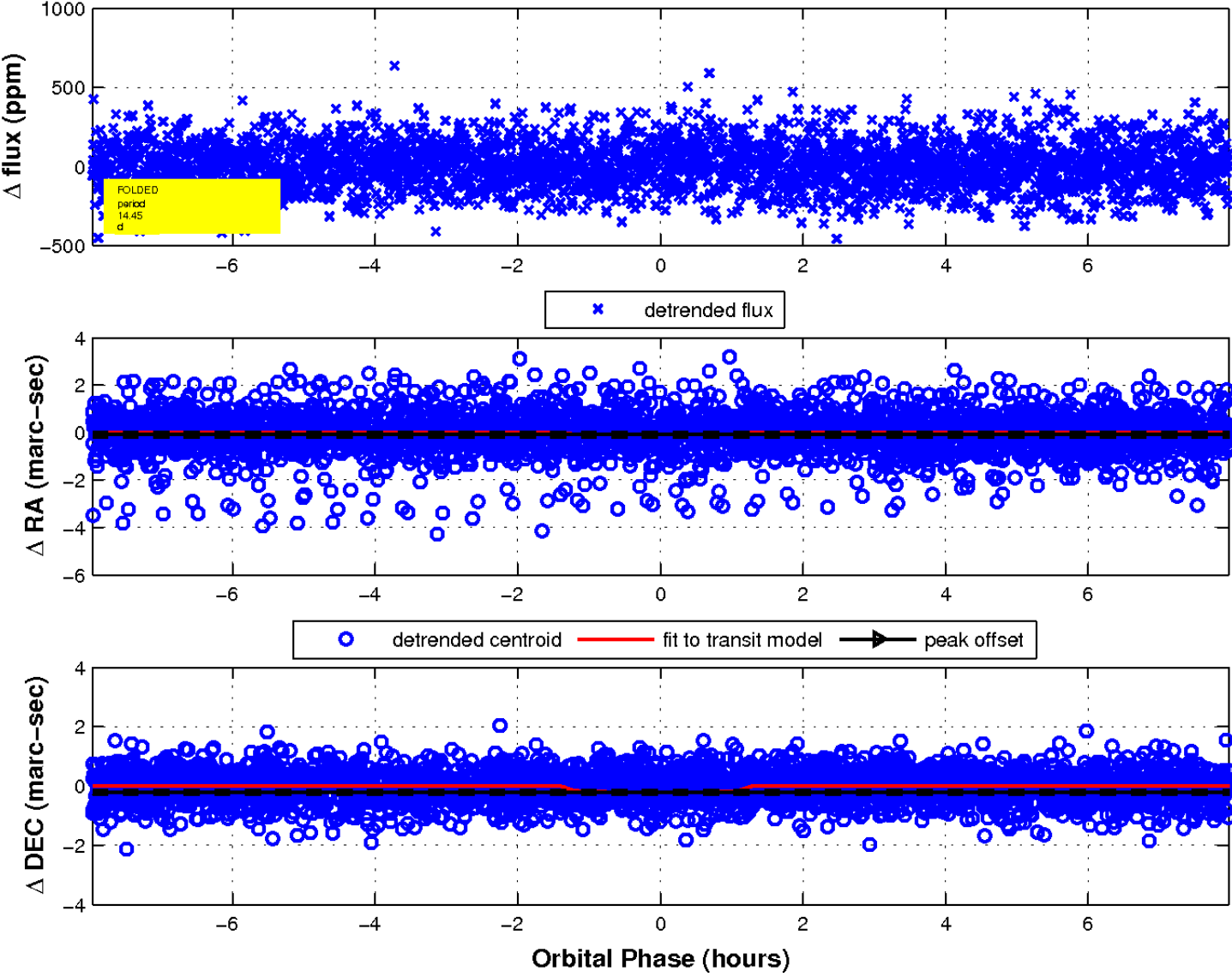
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

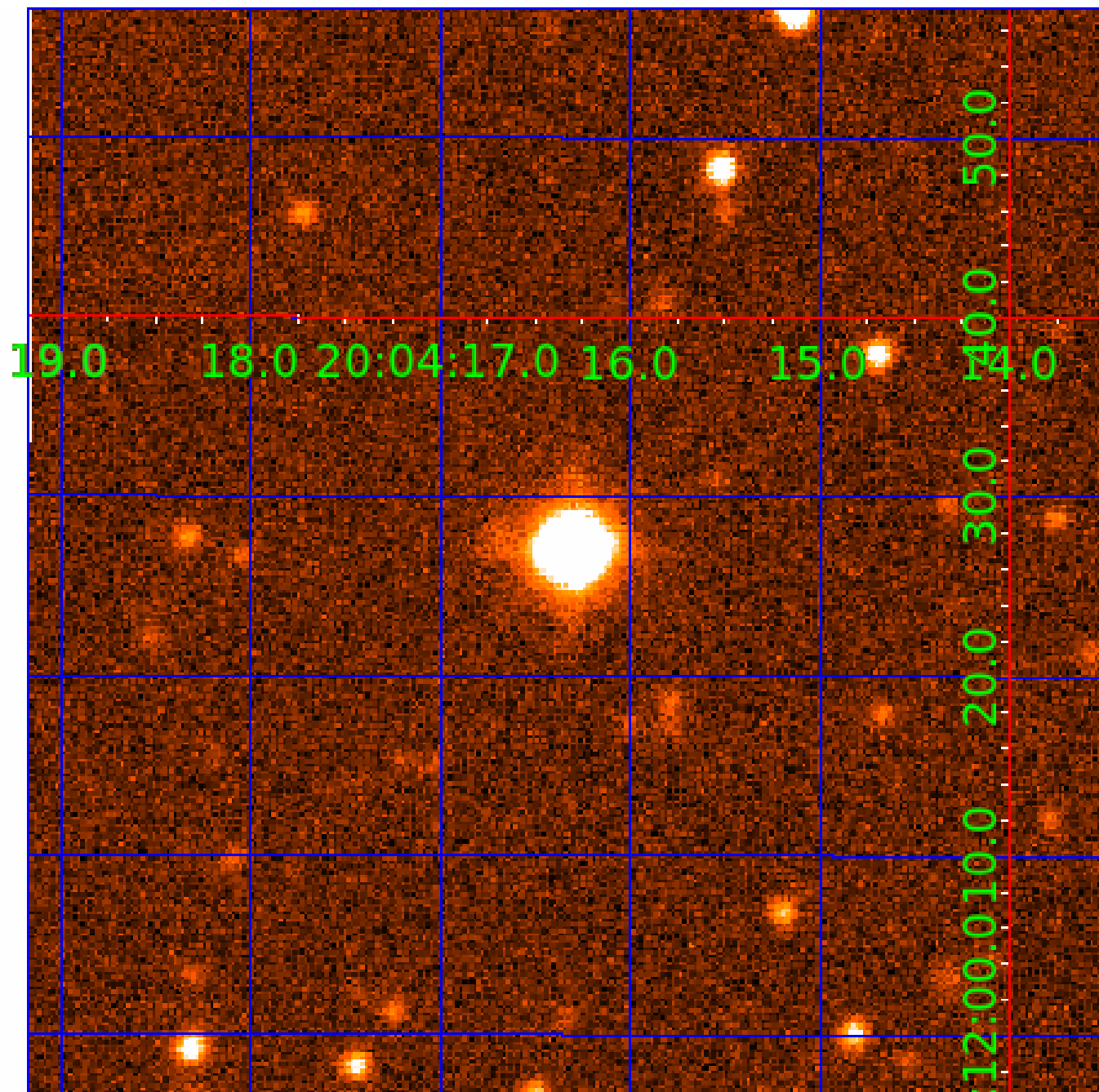


fluxWeightedCentroids, Planet 8 of 9



UKIRT Image

Declination



KIC 008985157

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})
008985157-01	OBS	No	2.054528	132.219855	3.8	15.331	8.6	2.2	3.46	6613	0.67	14726.15
008985157-02	OBS	No	26.932718	136.929506	328.6	3.976	19.9	18.7	3.46	6613	8.23	476.43
008985157-03	OBS	No	23.213372	147.991970	283.6	1.934	16.1	15.7	3.46	6613	7.08	580.84
008985157-04	OBS	No	19.097009	139.613701	163.0	3.310	15.3	13.0	3.46	6613	4.97	753.50
008985157-05	OBS	No	18.540736	131.612505	250.3	1.903	14.9	13.1	3.46	6613	6.40	783.79
008985157-06	OBS	No	10.200629	133.373077	183.6	1.719	14.6	12.7	3.46	6613	5.42	1738.61
008985157-07	OBS	No	34.714824	164.458005	262.8	1.464	14.5	12.4	3.46	6613	6.02	339.64
008985157-08	OBS	No	14.451311	131.625287	150.2	2.658	12.9	10.6	3.46	6613	4.83	1092.69
008985157-09	OBS	No	21.284573	147.907528	191.4	2.755	12.1	11.6	3.46	6613	5.41	652.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008985157-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008985157-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008985157-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
008985157-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008985157-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008985157-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

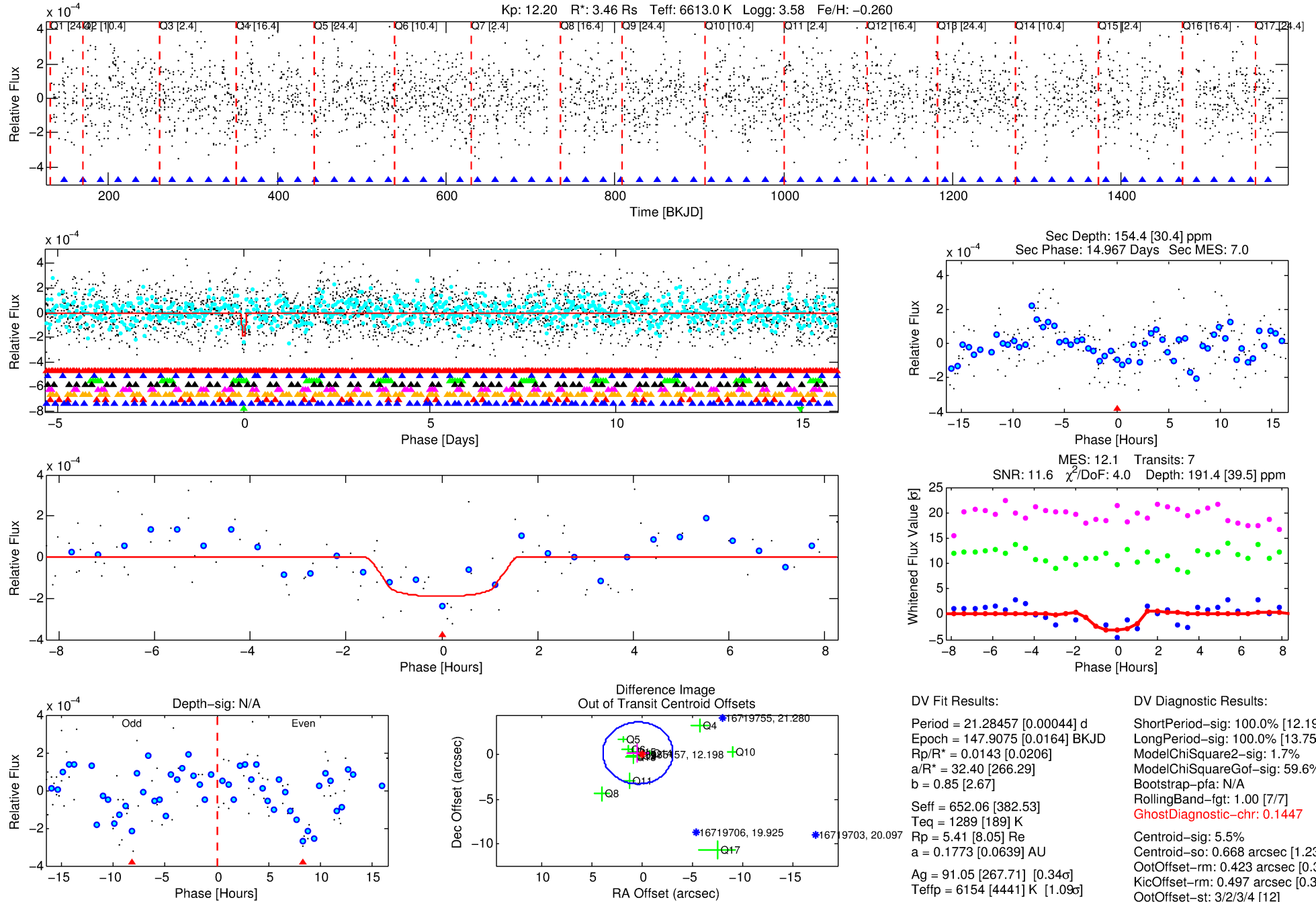
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008985157-09

No Significant Match Found

DV One-Page Summary

KIC: 8985157 Candidate: 9 of 9 Period: 21.285 d



DV Fit Results:

Period = 21.28457 [0.00044] d
Epoch = 147.9075 [0.0164] BKJD
Rp/R* = 0.0143 [0.0206]
a/R* = 32.40 [266.29]
b = 0.85 [2.67]
Seff = 652.06 [382.53]
Teq = 1289 [189] K
Rp = 5.41 [8.05] Re
a = 0.1773 [0.0639] AU
Ag = 91.05 [267.71] [0.34σ]
Teffp = 6154 [4441] K [1.09σ]

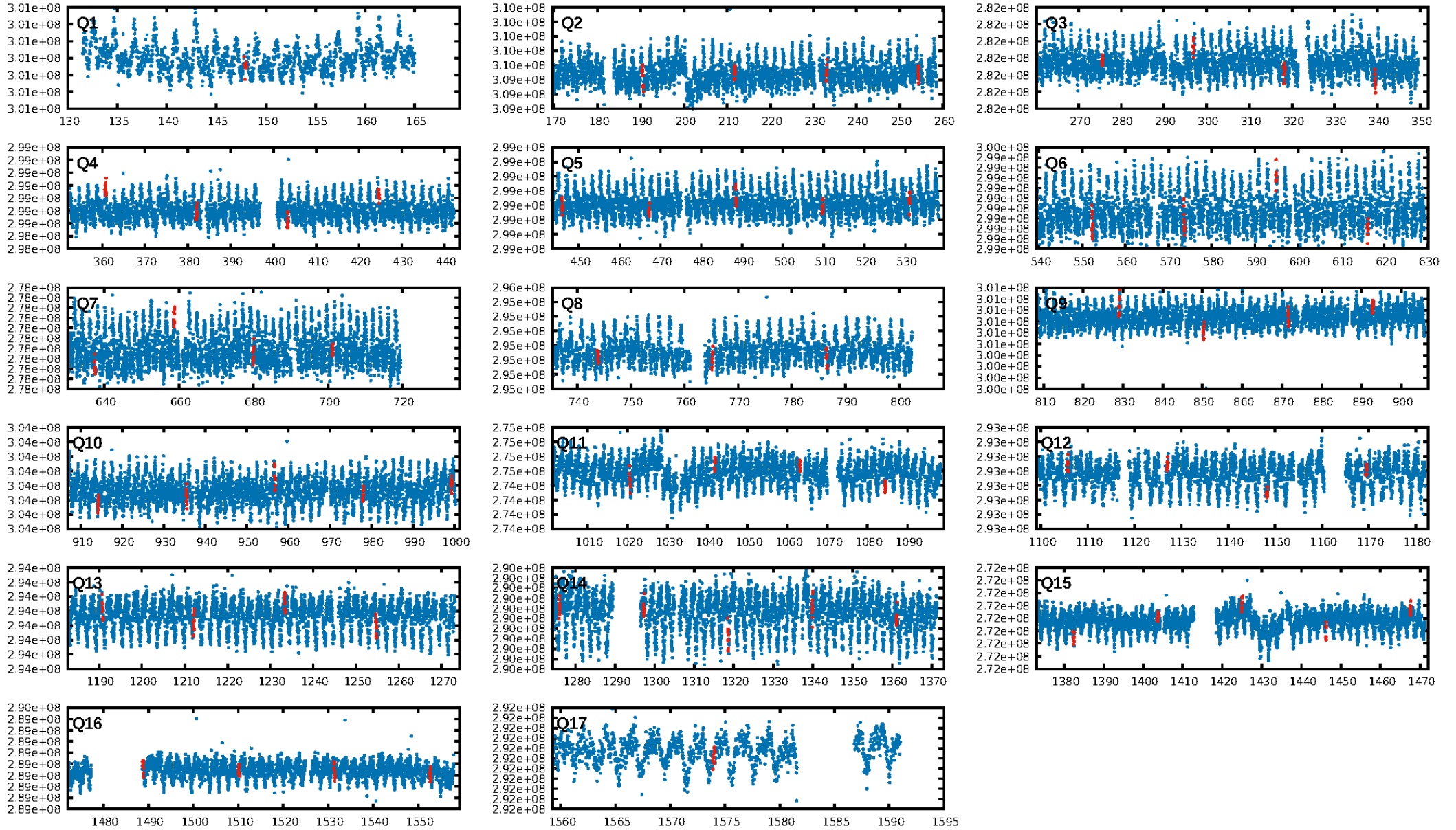
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.19σ]
LongPeriod-sig: 100.0% [13.75σ]
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 59.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.1447
Centroid-sig: 5.5%
Centroid-so: 0.668 arcsec [1.23σ]
OotOffset-rm: 0.423 arcsec [0.36σ]
KicOffset-rm: 0.497 arcsec [0.39σ]
OotOffset-st: 3/2/3/4 [12]
KicOffset-st: 3/2/3/4 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.65 [11/17]

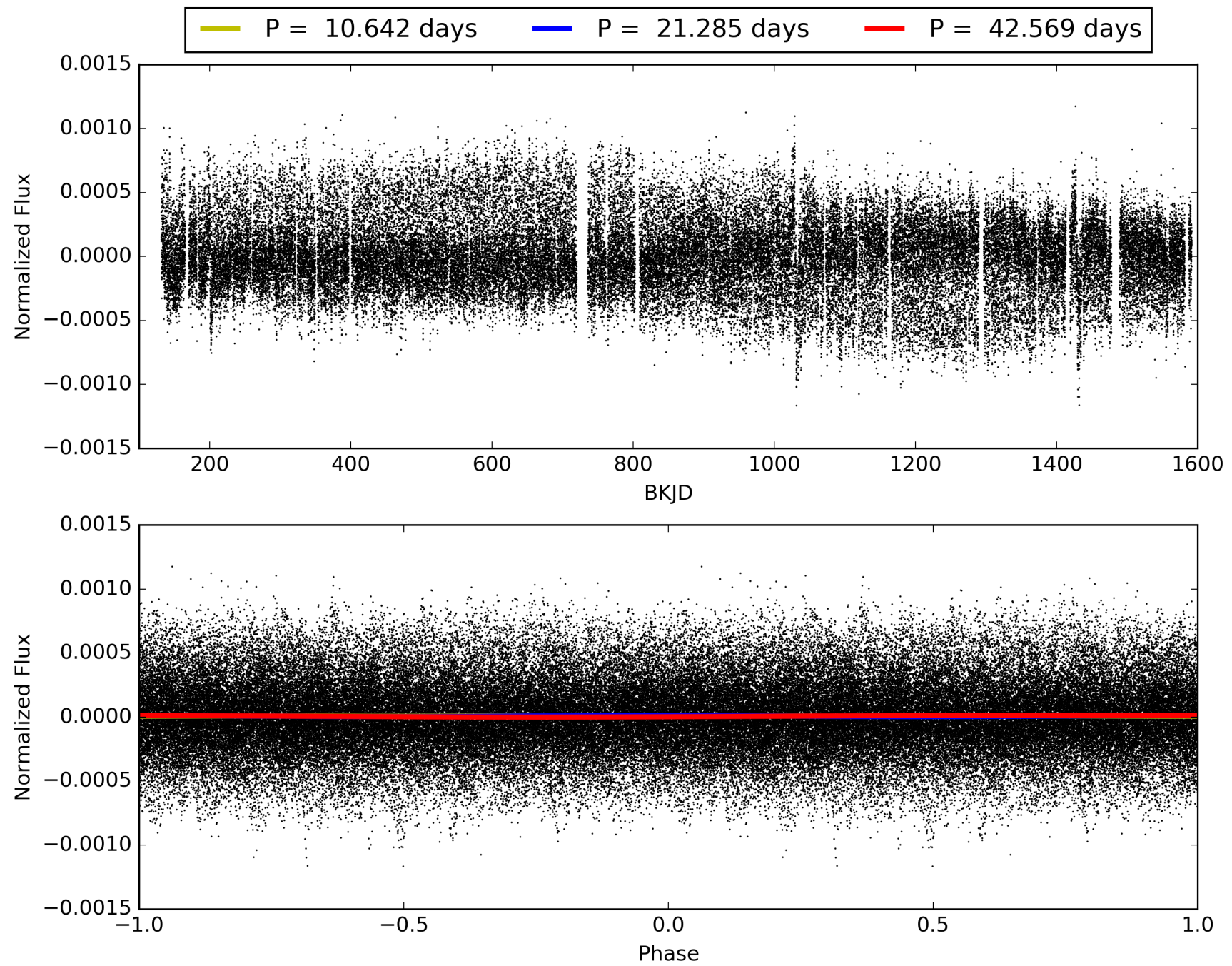
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:27 Z

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

TCE 008985157-09, PDC Light Curves

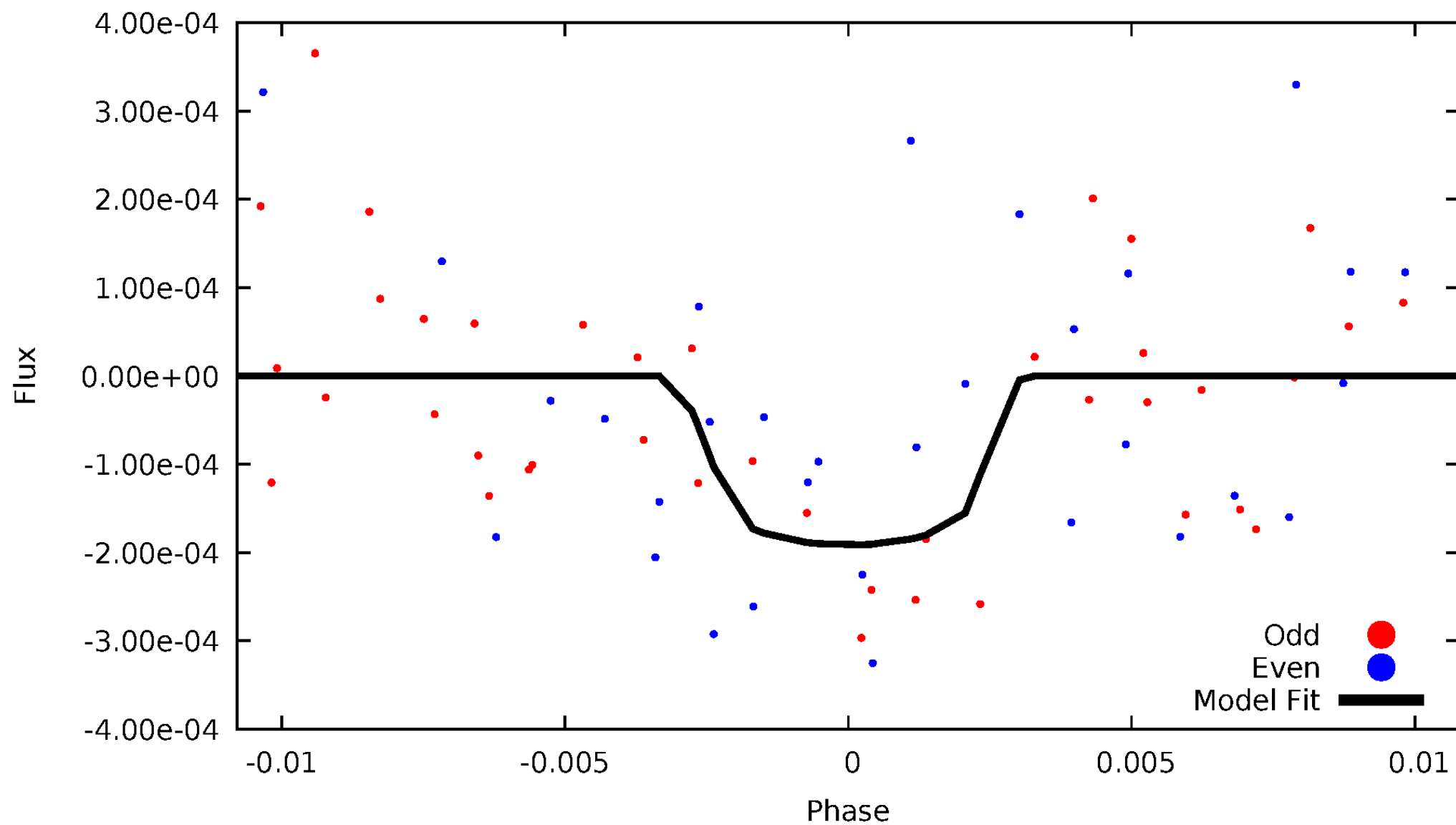


TCE 008985157-09



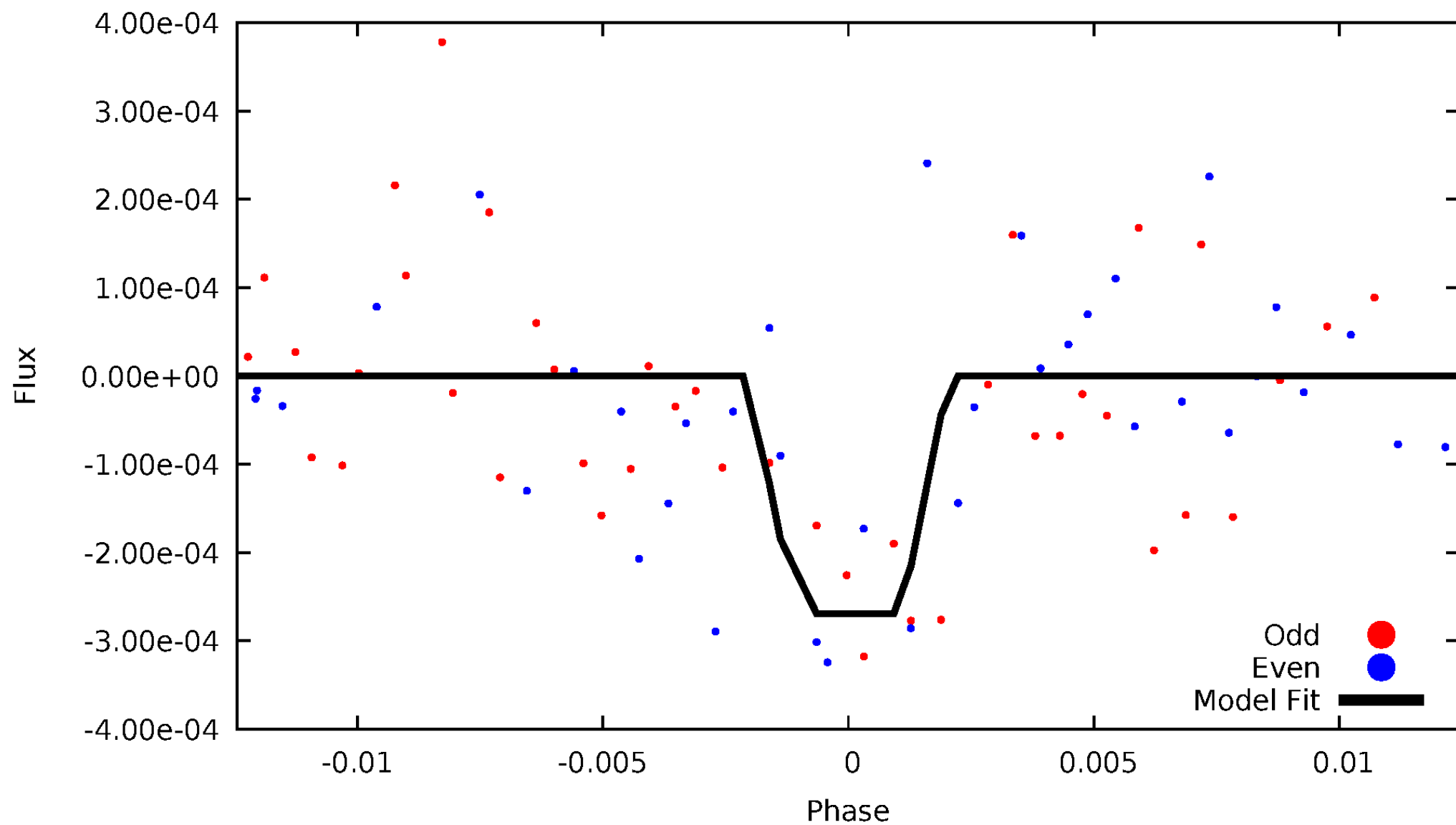
DV Odd/Even

TCE 008985157-09



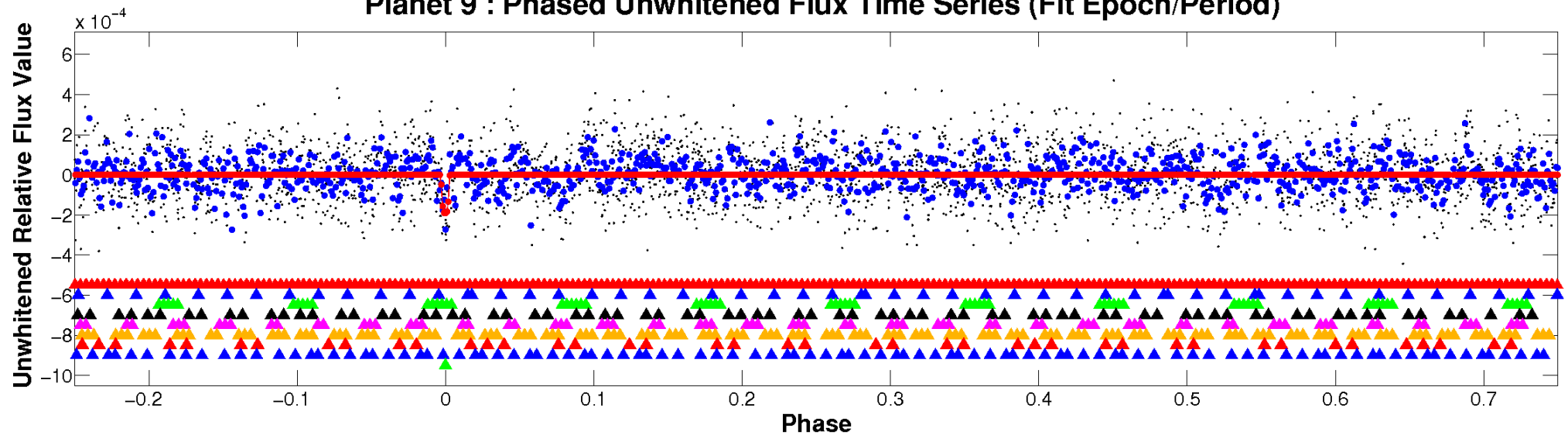
ALT Odd/Even

TCE 008985157-09

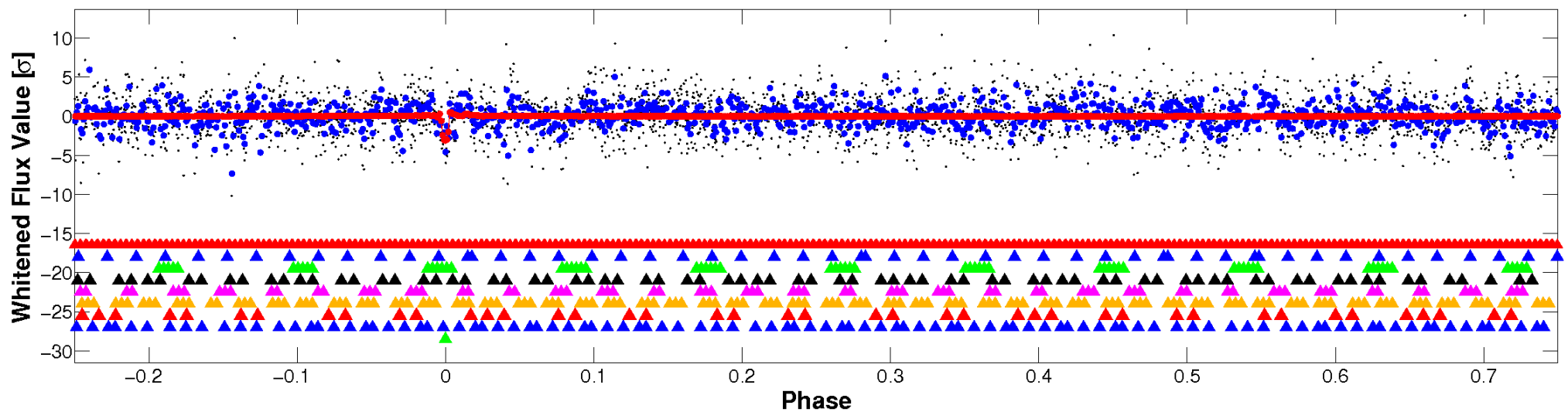


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

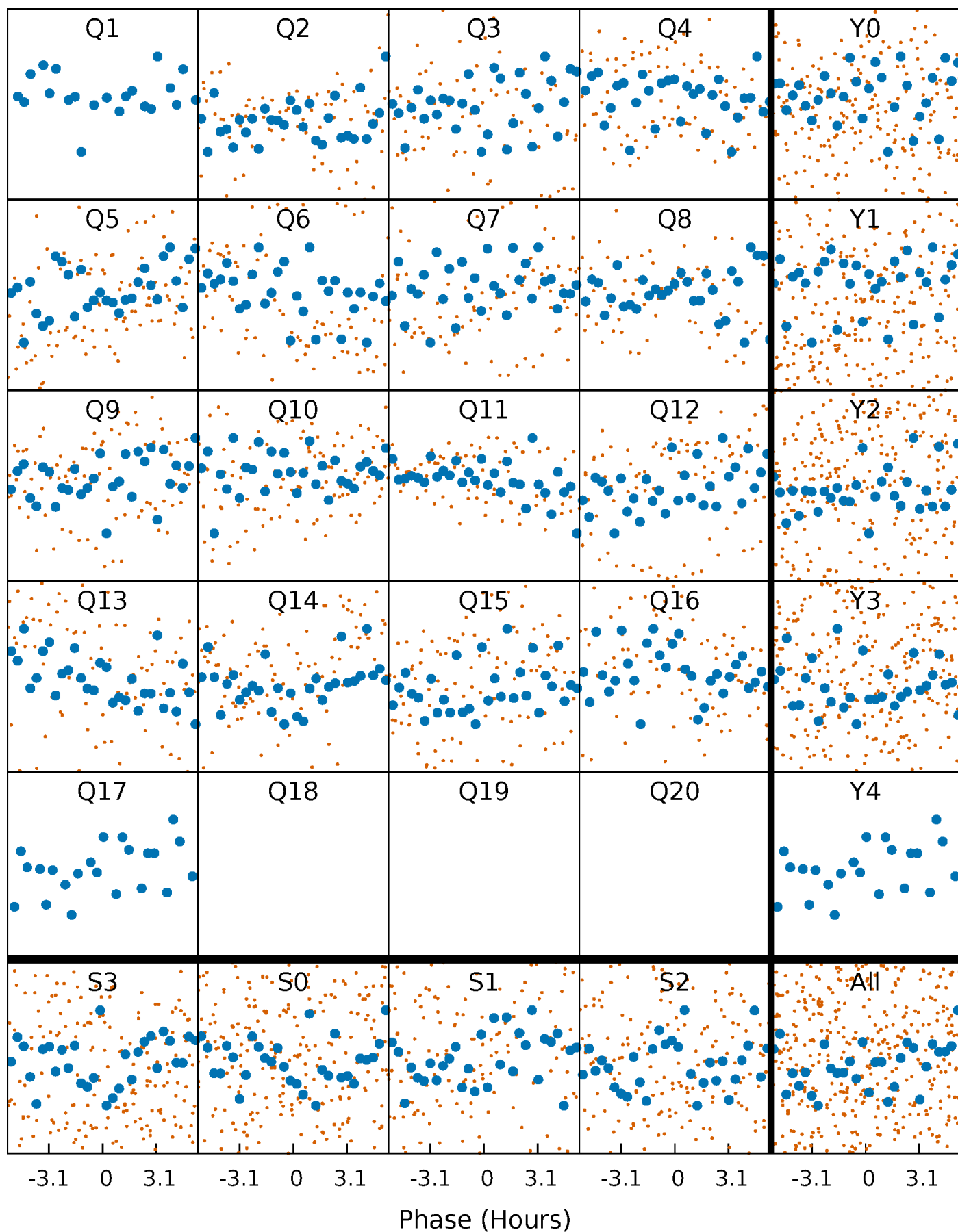


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



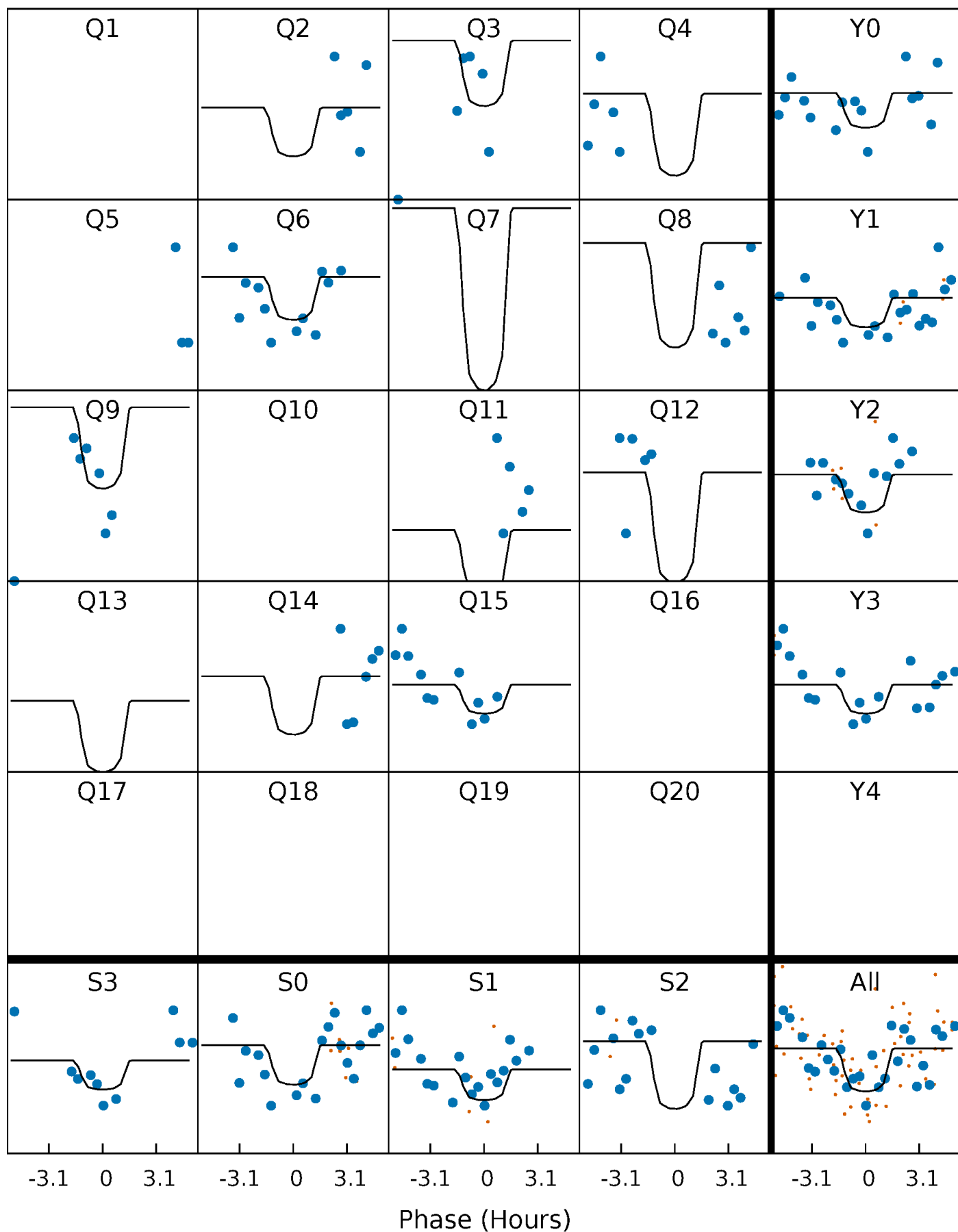
PDC Quarter-Phased Transit Curves

TCE 008985157-09 P= 21.284573 Days $T_0=147.907527$ (BKJD)



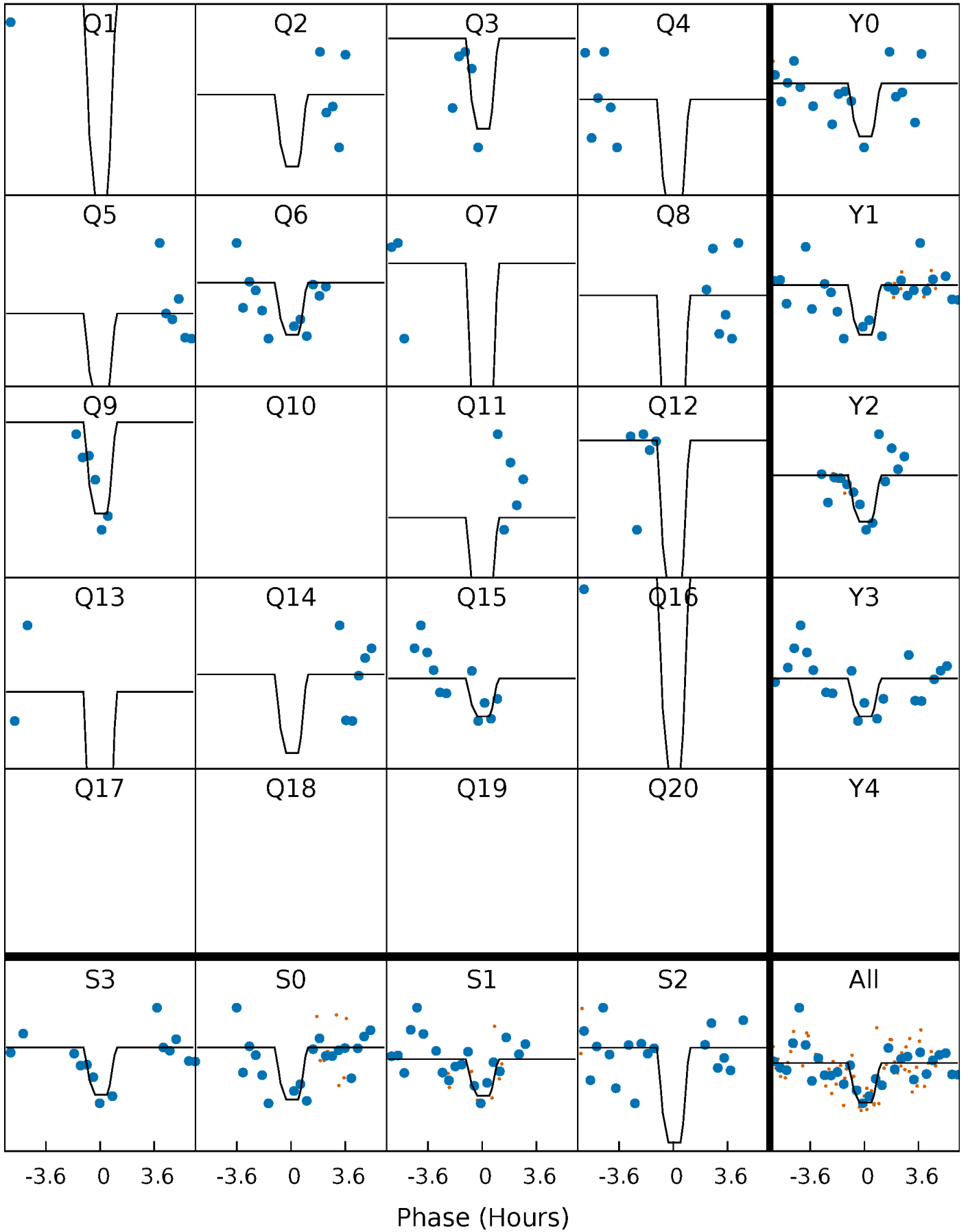
DV Quarter-Phased Transit Curves

TCE 008985157-09 P= 21.284573 Days $T_0=147.907527$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

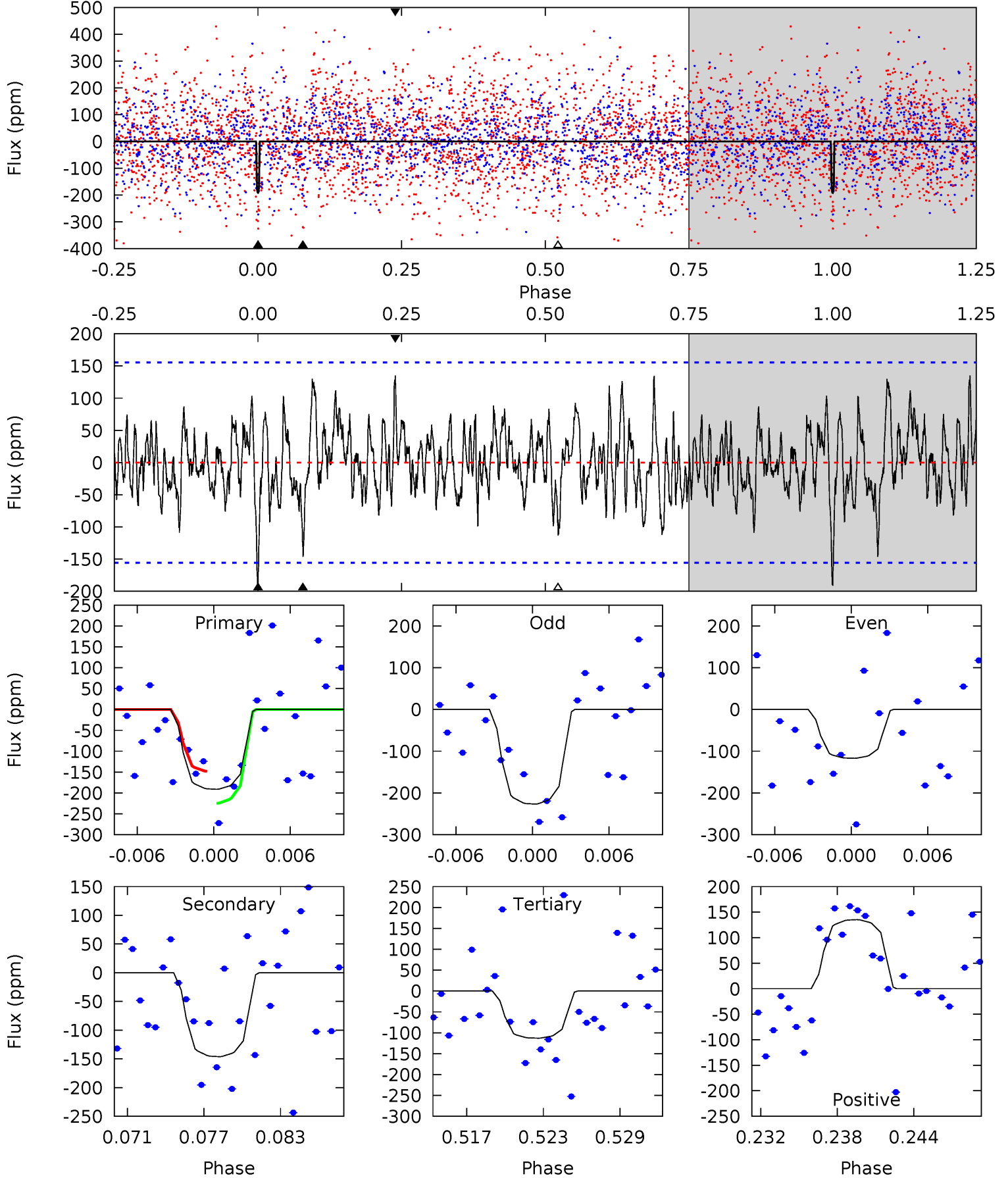
TCE 008985157-09 P= 21.283770 Days $T_0=147.932198$ (BKJD)



DV Model-Shift Uniqueness Test

008985157-09, P = 21.284573 Days, E = 126.622954 Days

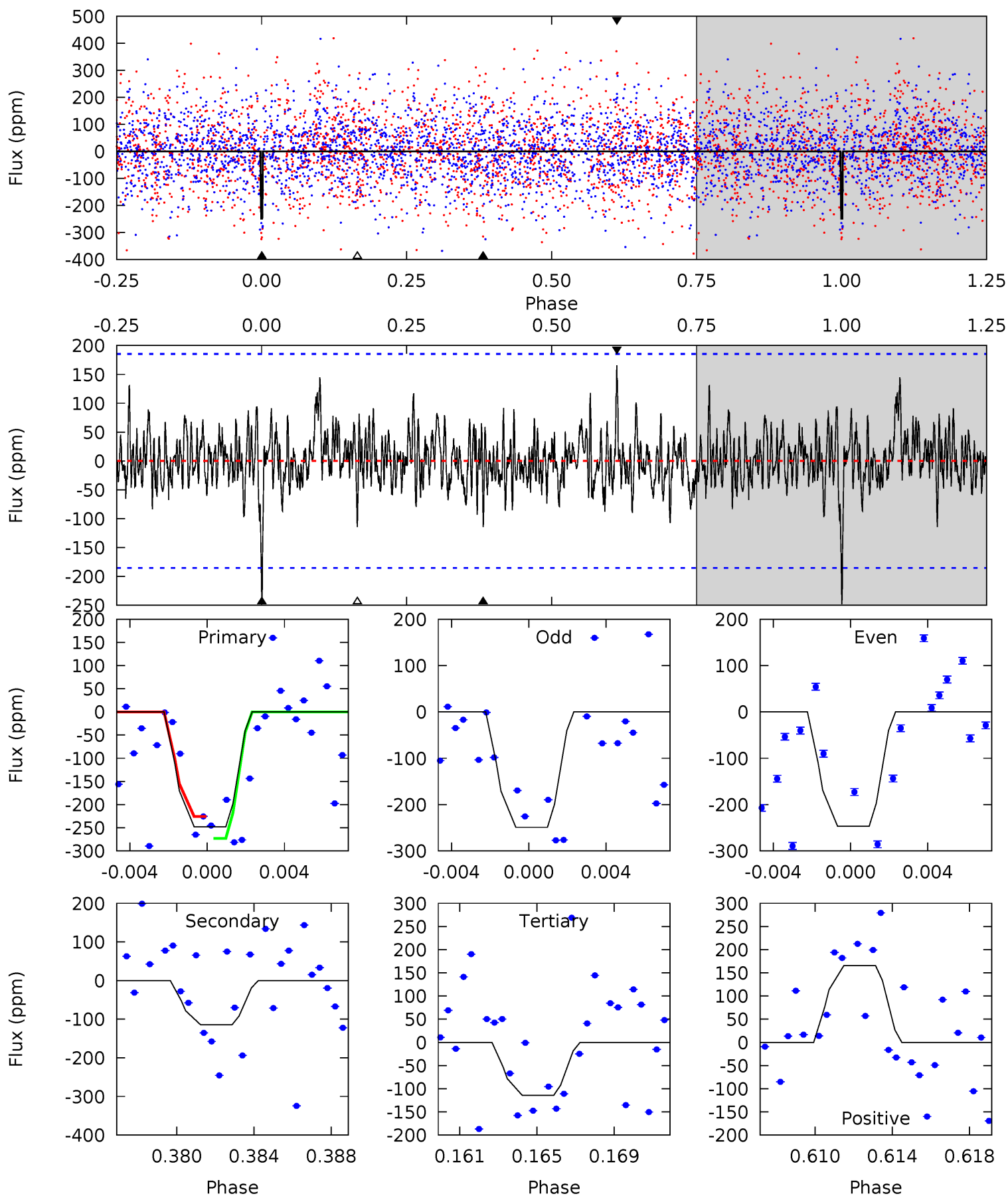
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.30	4.82	3.72	4.46	5.13	2.75	1.48	2.58	1.84	1.09	0.36	1.77	0.76	0.41	1.26



Alt Model-Shift Uniqueness Test

008985157-09, P = 21.283770 Days, E = 126.648428 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.96	3.21	3.21	4.65	5.21	2.89	1.10	3.76	2.31	0.00	-1.45	0.03	0.99	0.40	0.66



Stellar Parameters For KIC 008985157

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+180}_{-200}	$3.575^{+0.336}_{-0.105}$	$-0.260^{+0.350}_{-0.250}$	$3.458^{+0.436}_{-1.307}$	$1.639^{+0.229}_{-0.343}$	$0.056^{+0.137}_{-0.015}$
	+3%/-3%	+9%/-3%	+135%/-96%	+13%/-38%	+14%/-21%	+245%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008985157-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-146 ± 30	$7.23^{+7.06}_{-4.44}$	1777^{+108}_{-175}	5091^{+3462}_{-1114}	48^{+289}_{-35}
Alt.	-114 ± 36	$7.82^{+6.63}_{-4.95}$	1774^{+100}_{-166}	4675^{+2918}_{-982}	33^{+204}_{-24}

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

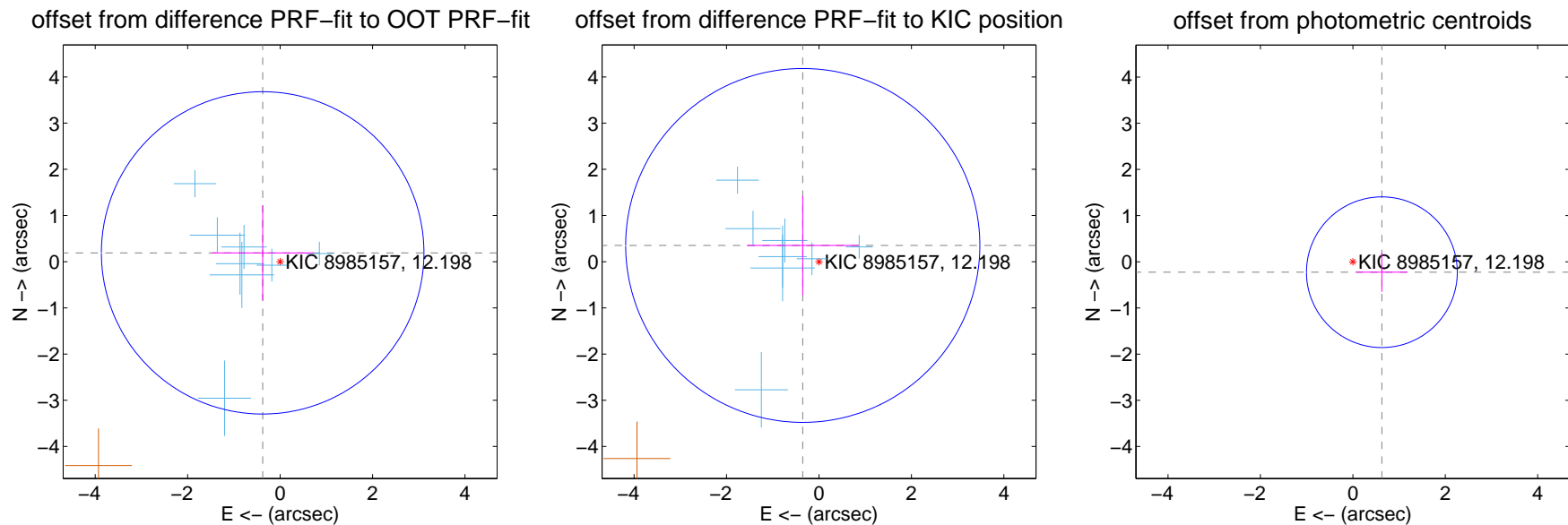
DV Centroid Data

Supplemental centroid analysis for 008985157-09. Kepler magnitude: 12.20. Transit SNR 11.55

There are 8 quarters with good PRF difference image offsets

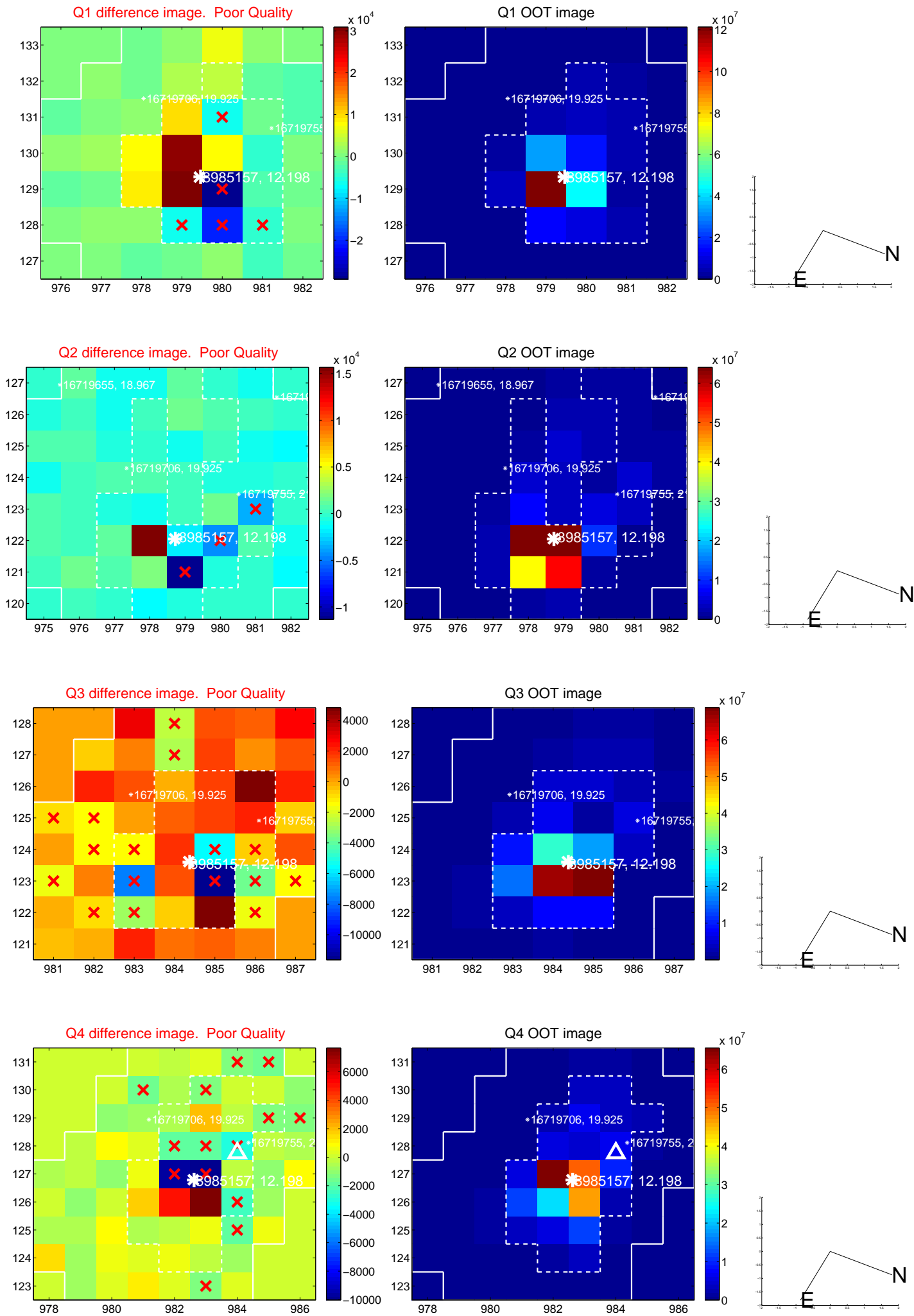
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.423 ± 1.163	0.36	0.377 ± 1.104	0.191 ± 1.027
PRF-fit source offset from KIC position	0.497 ± 1.277	0.39	0.351 ± 1.210	0.352 ± 1.074
photometric centroid source offset	0.67 ± 0.54	1.23	-0.63 ± 0.56	-0.23 ± 0.42

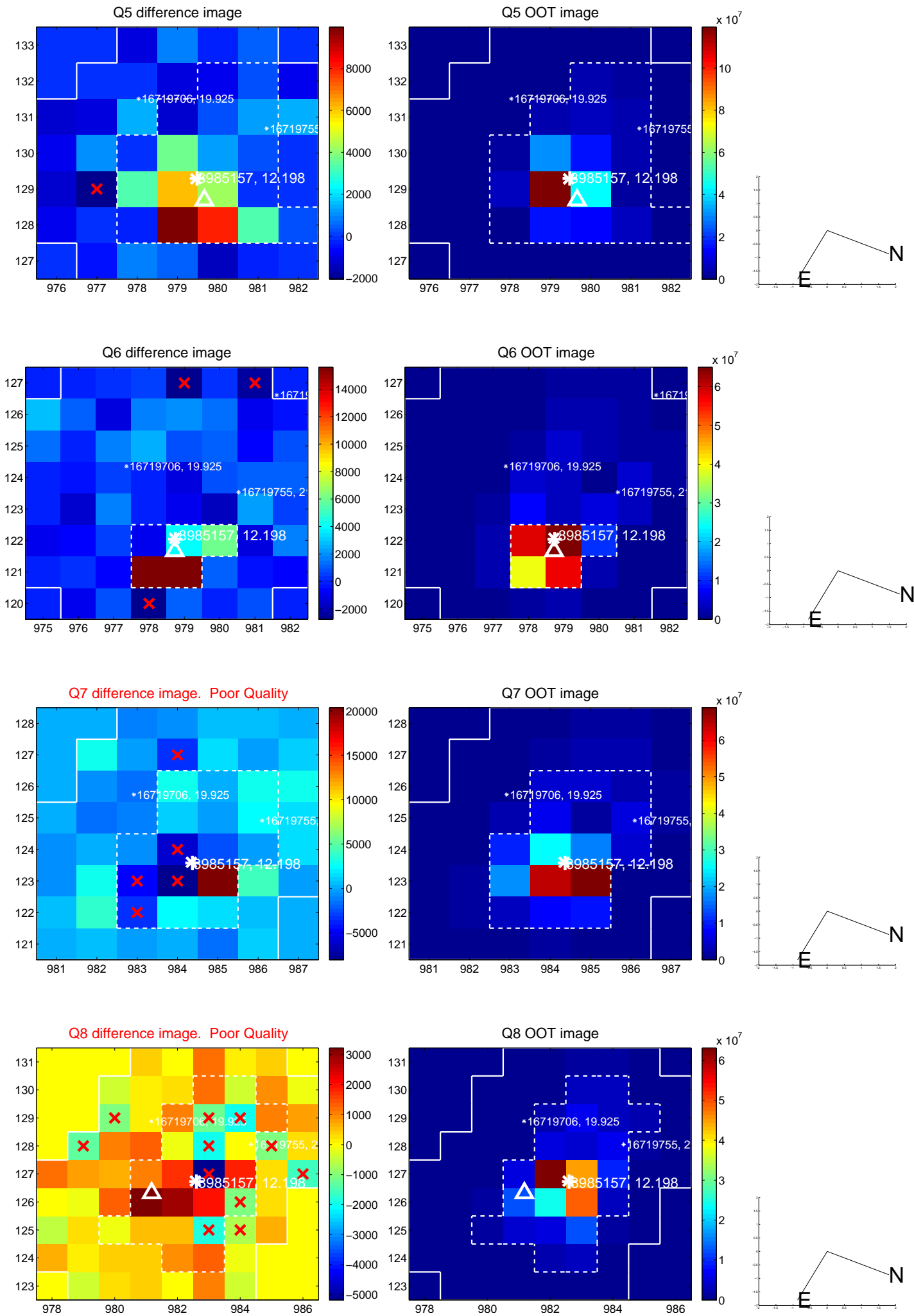


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

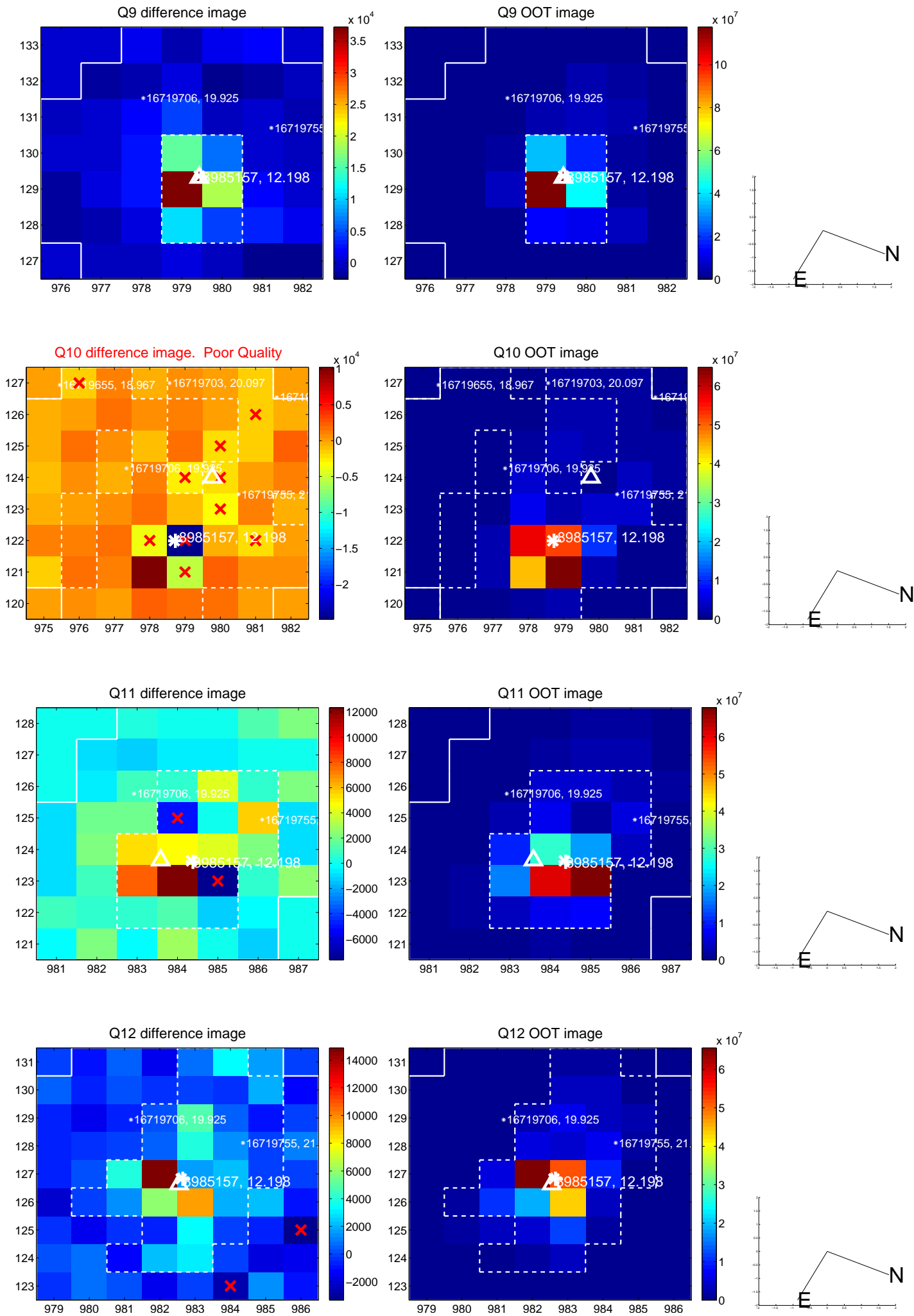
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



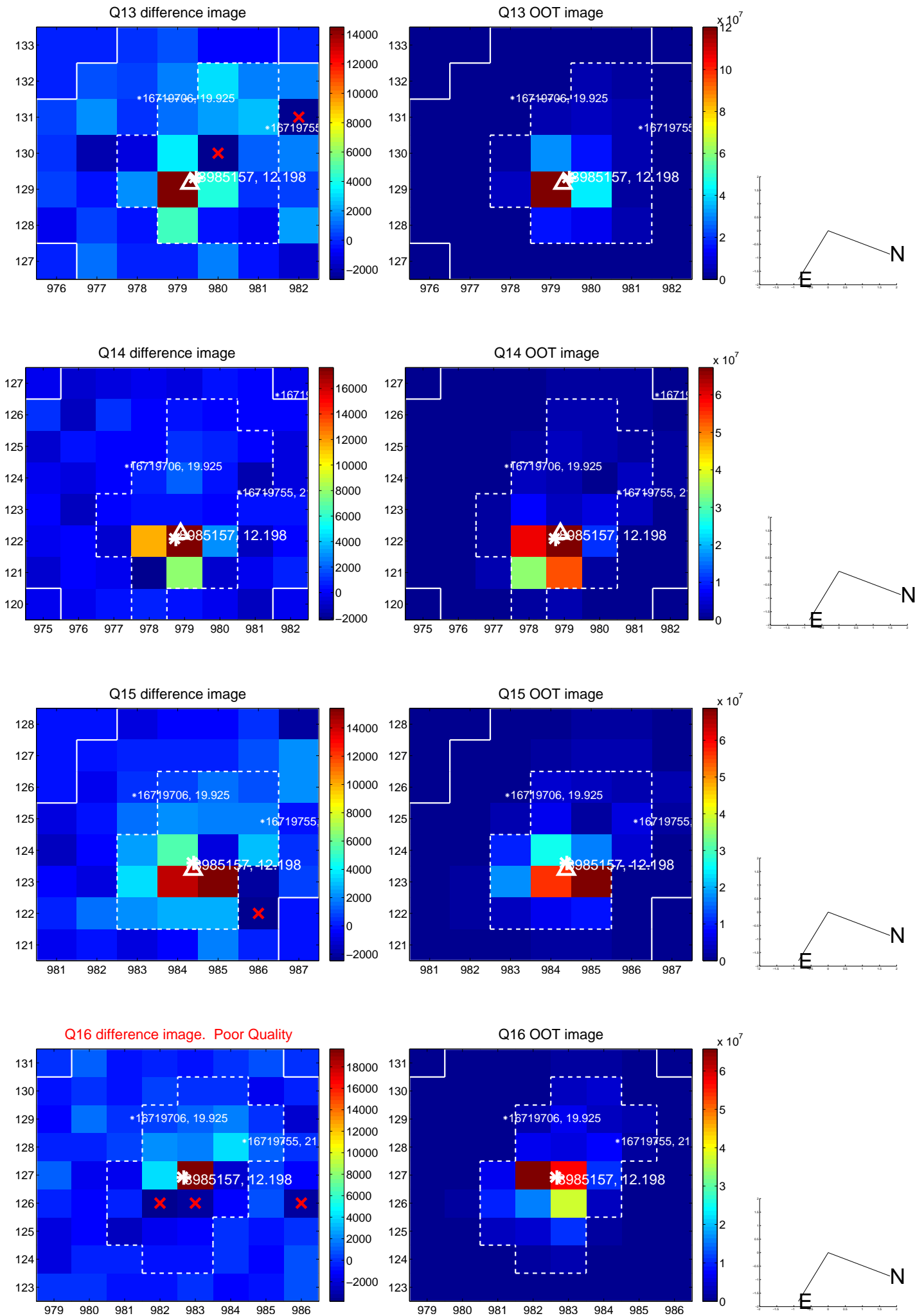
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



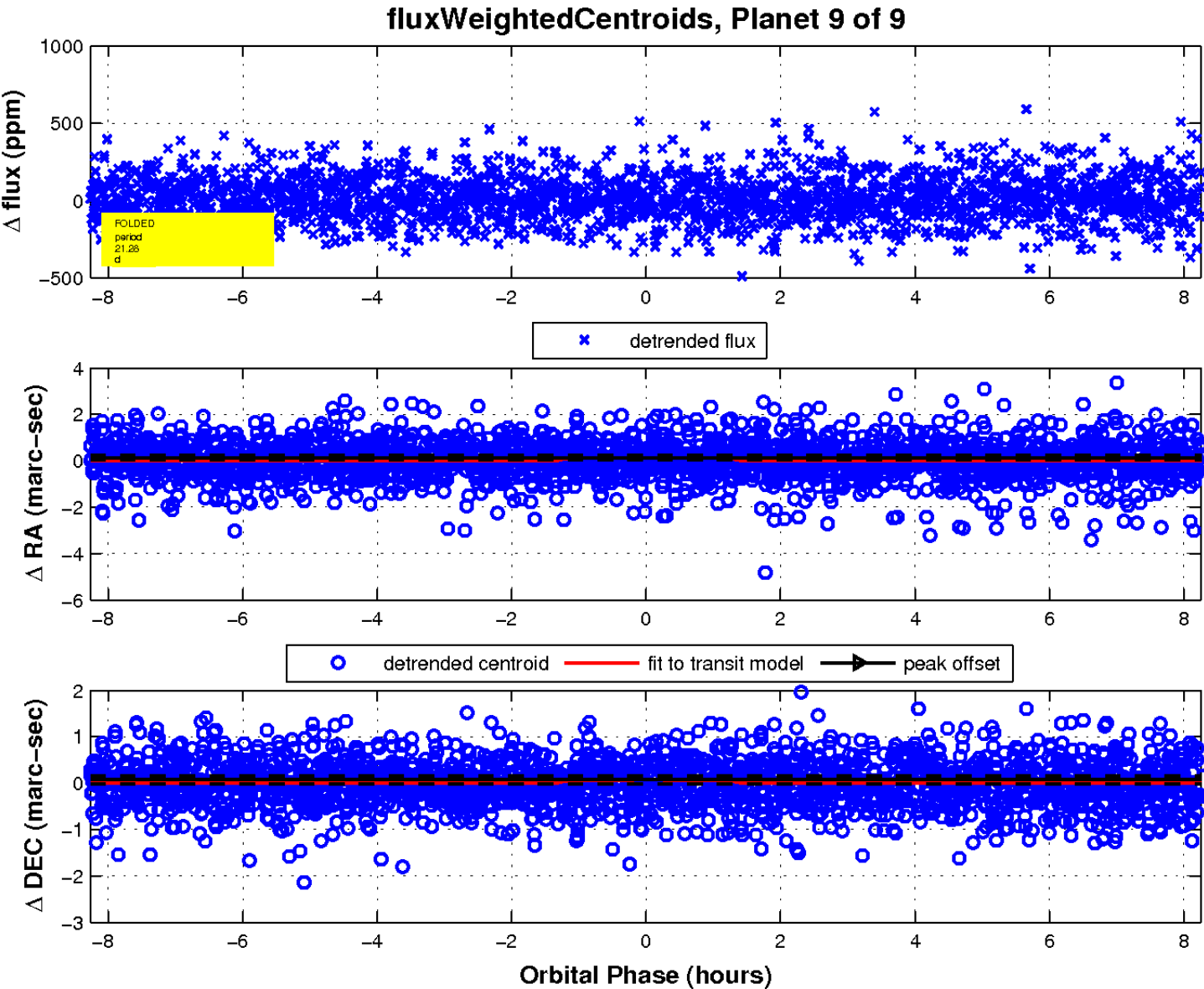
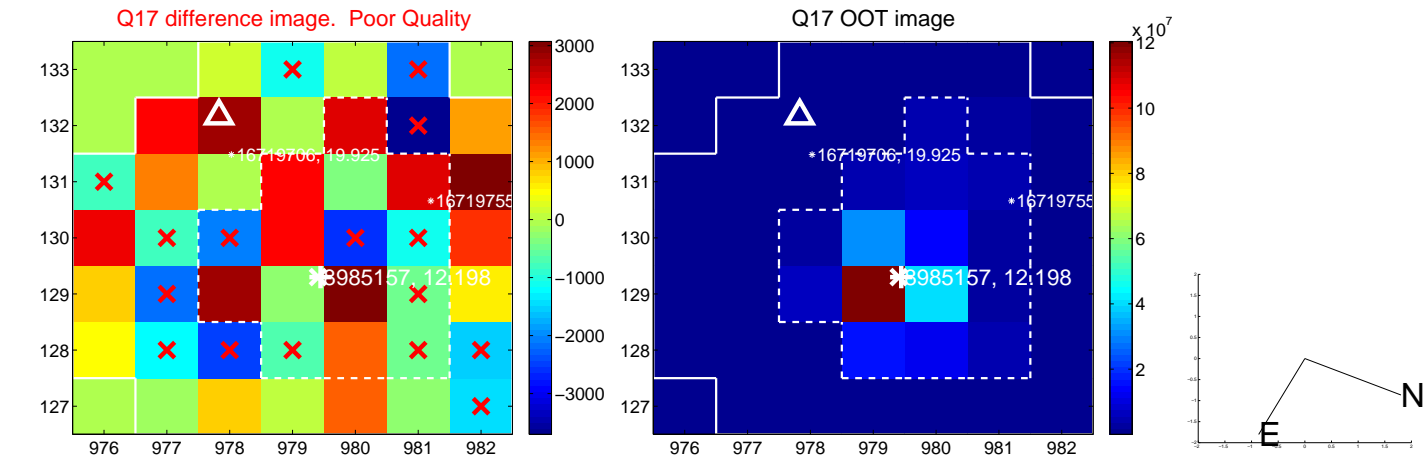
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

