EOP determination from observations of Russian VLBI-network QUASAR

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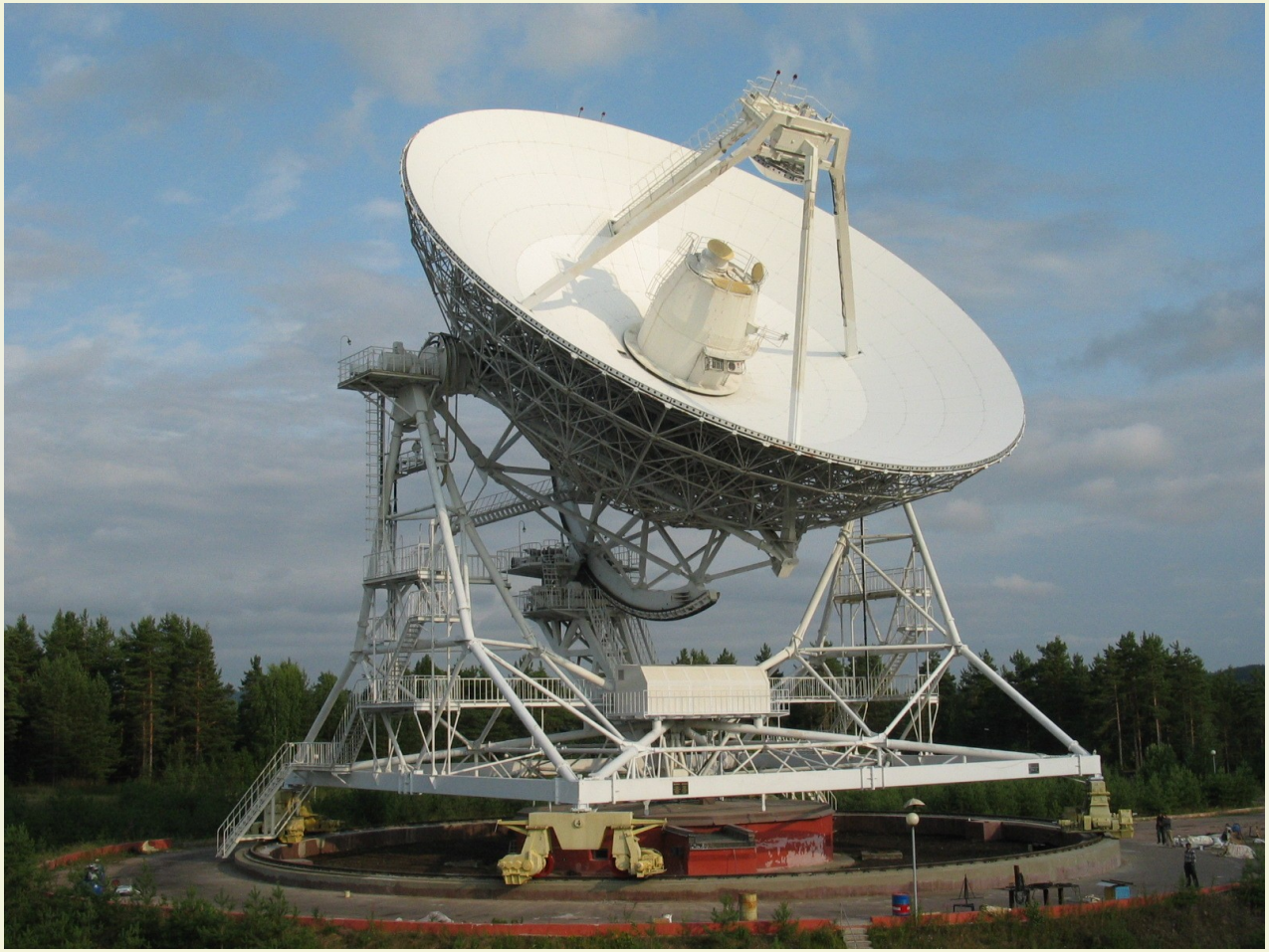
Max-Planck-Institut für Radioastronomie Bonn / Germany

QUASAR NETWORK
2015×4282×4405 км

STATIONS EQUIPMENT

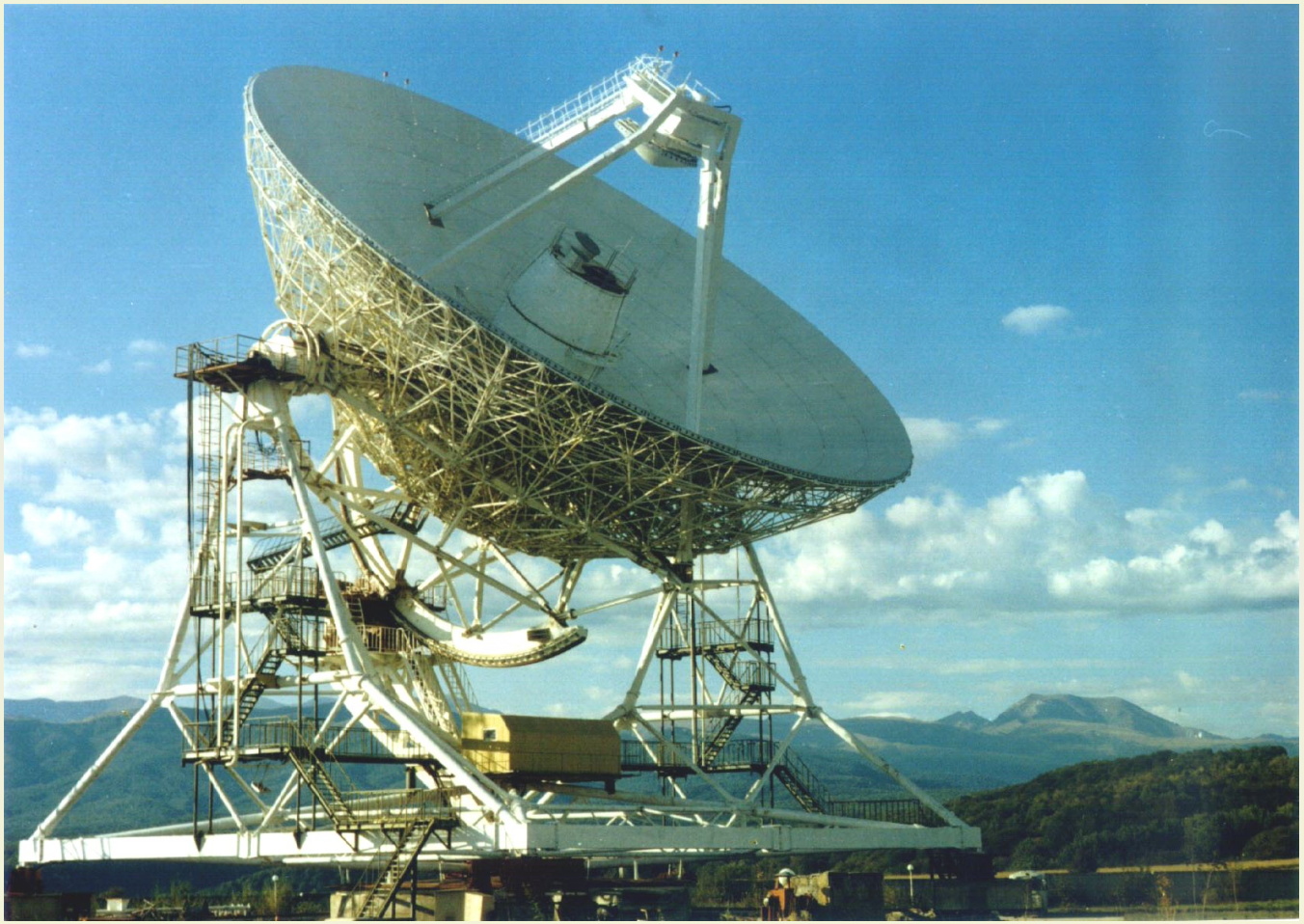
- 32 m radio telescope, equipped with low noise receivers,
- frequency and time keeping system with H-masers, local geodetic network,
- control computers, local computer
- network and technical service systems, P4100
- **SV:** recording terminals Mark 5A, Mark5B and S2, DAS MarkIV ,
- **ZC**: recording terminals Mark 5A, Mark5B and S2, DAS VLBA4,
- **BD**: recording terminals Mark 5B and S2, DAS P1000
- see poster (E. Nosov, D. Ivanov), WVR – poster G. Ilin

Svetloe: 1999, 2003



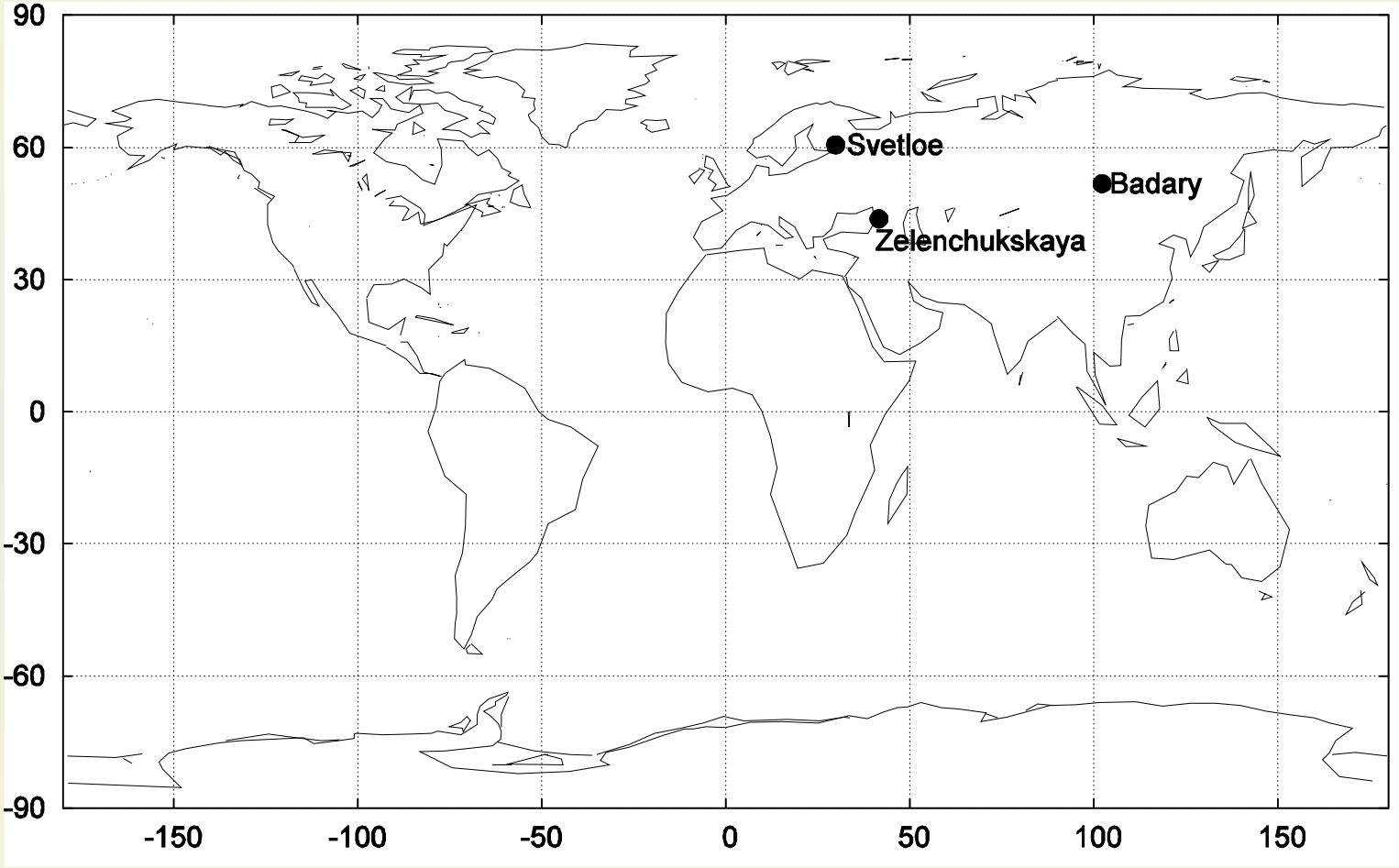
Svetloe registration systems

Zelenchukskaya: 2001,2005



Badary: 2005, 2007

QUASAR VLBI network



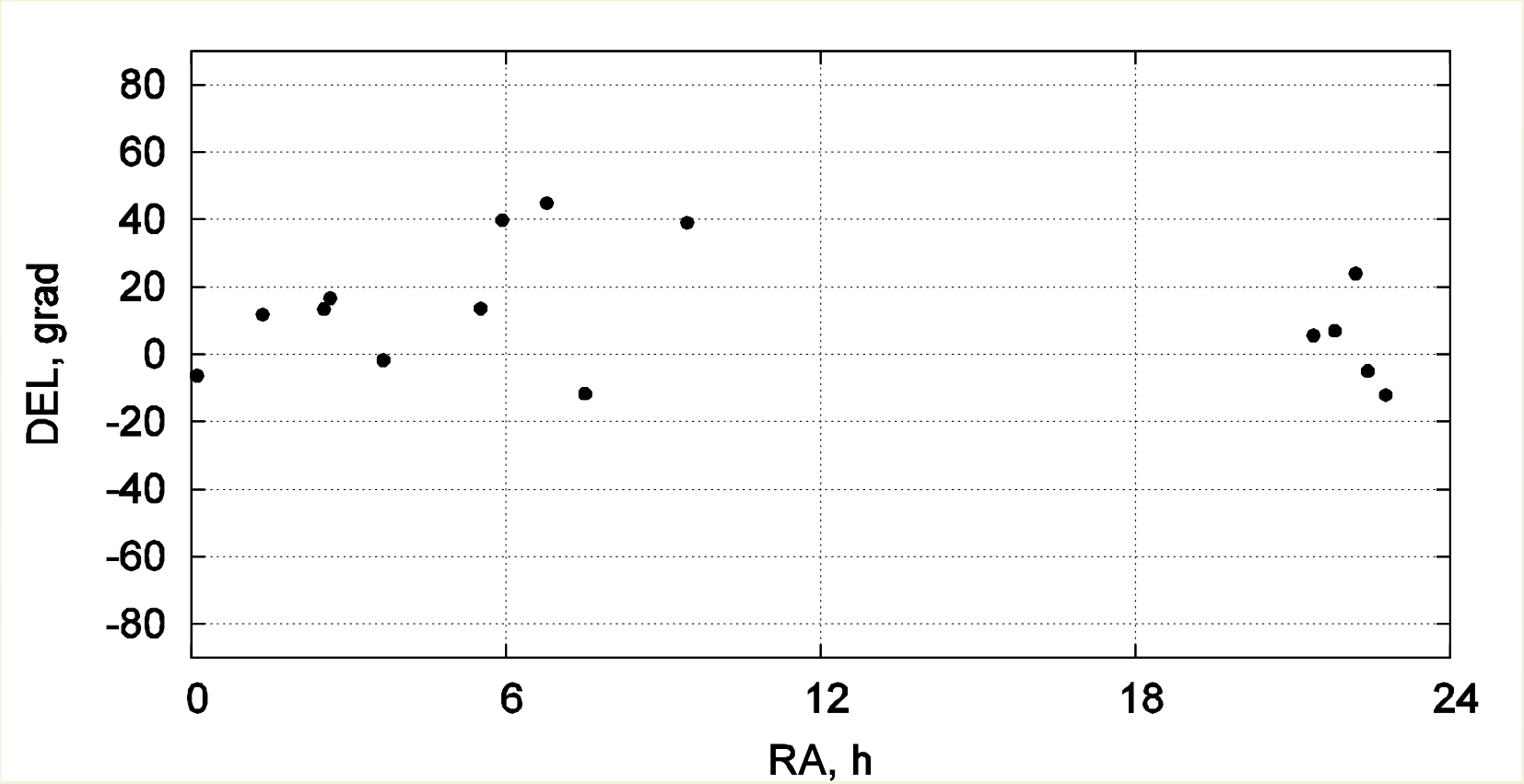
QUASAR NETWORK
2015×4282×4405 km

Svetloe	SVETLOE	φ= 60°32' λ= 29°47' h= 86 м
Zelenchukskaya	ZELENCHK	φ= 43°47' λ= 41°34' h= 1175 м
Badary	BADARY	φ= 51°46' λ= 102° h= 813 м)

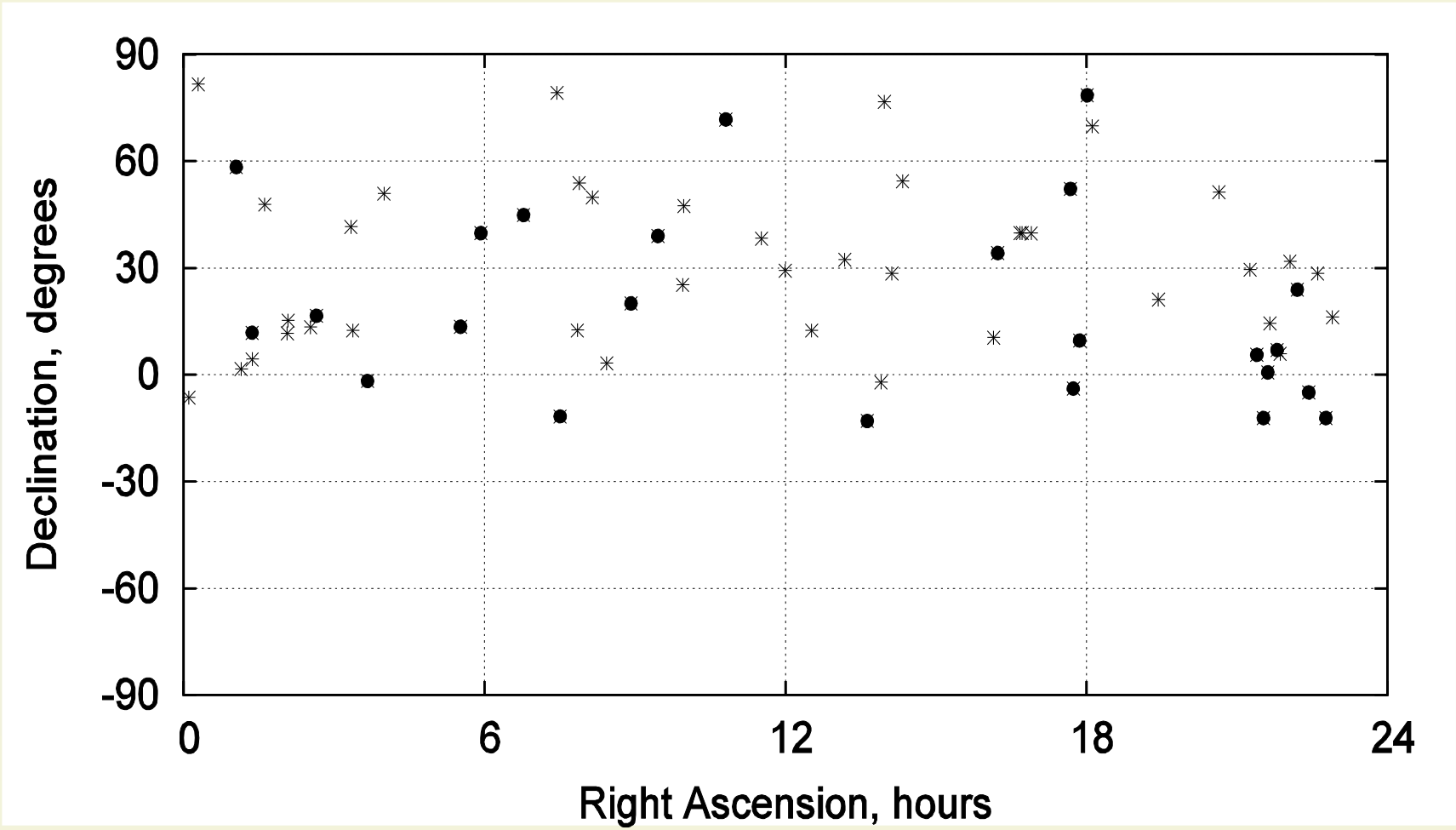
DOMESTIC PROGRAMS

- RuU : dUT1 Bd-Zc(Sv)
- RuE : EOP (24 h) Sv-Bd-Zc

RU-U radio sources



new radio sources set (63 sources, < 0.5 J)



DOMESTIC SESSIONS

	RuU			RuE		
	Sv	Zc	Bd	Sv	Zc	Bd
2006		6	6	9	9	9
2007	10	12	17	9	9	9
2008	18	15	18	14	14	14
2009	13	26	30	23	23	23
2010	3	50	50	20	20	20
2011	5	7(50)	12(50)	7(50)	7(50)	7(50)

- RU-sessions
- 2006 – Jan 2009: S2

RuU sessions: 8-hours, Zc(Sv)-Bd
RuE sessions: 24-hours, Sv-Zc-Bd

- Feb. 2009 - : Mark 5b

experimental Mark 5b sessions:
RuU – Auguest 2008 (1-2 hour) , Zc(Sv)-Bd
RuE sessions: 24-hours, Sv-Zc-Bd
RuE 22 Nov. 2008 test Mark 5b session, correlation : IPA, Bonn

- April 2009: first e-vlbi 1-hour RuU session
- September 2009 – regular e-vlbi RuU sessions (see poster of A. Salnikov)

IAA corellator

- 2006-2008 3-station IAA correlator

MicroPARSEC consists of 12

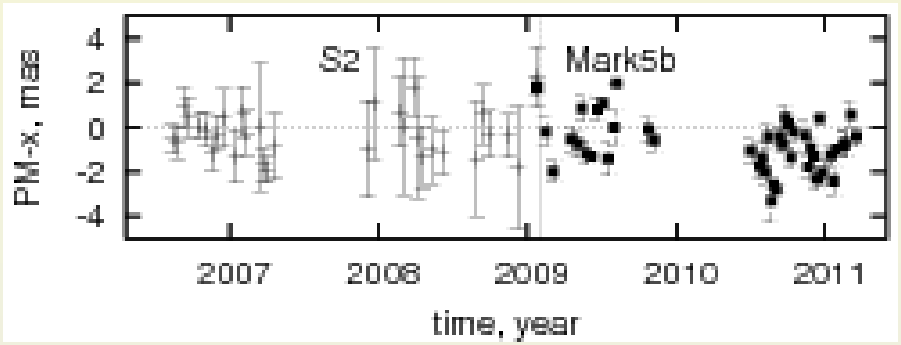
MicroPARSEC boards and 2 S2-PT

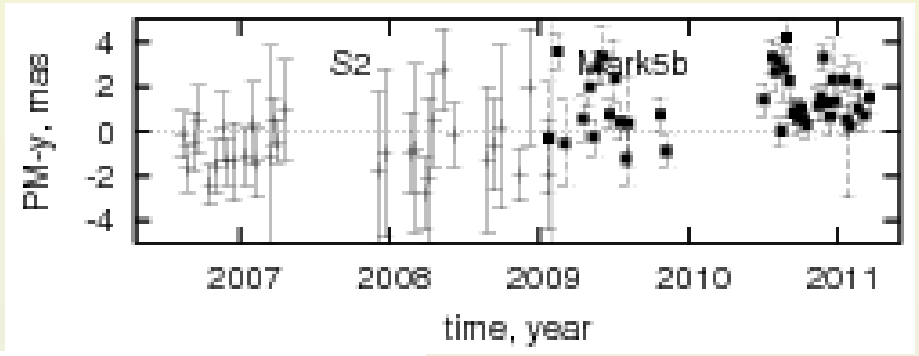
devices – worked since the middle of 2006

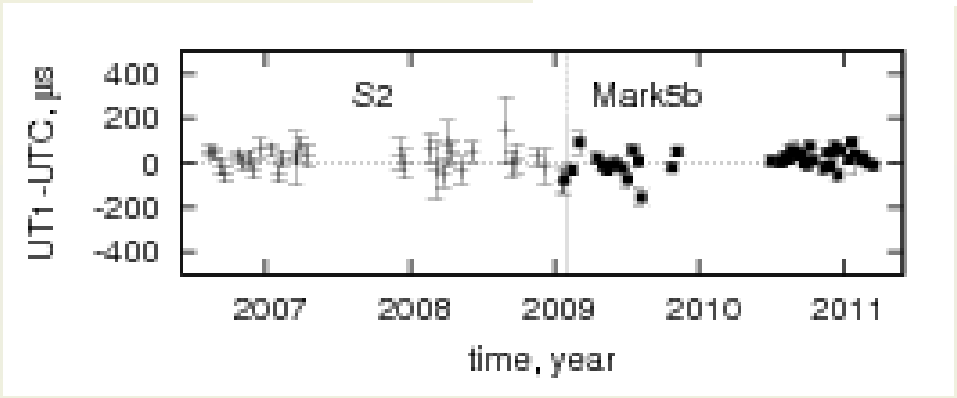
- 2009 6-station correlator IAA «ARC»

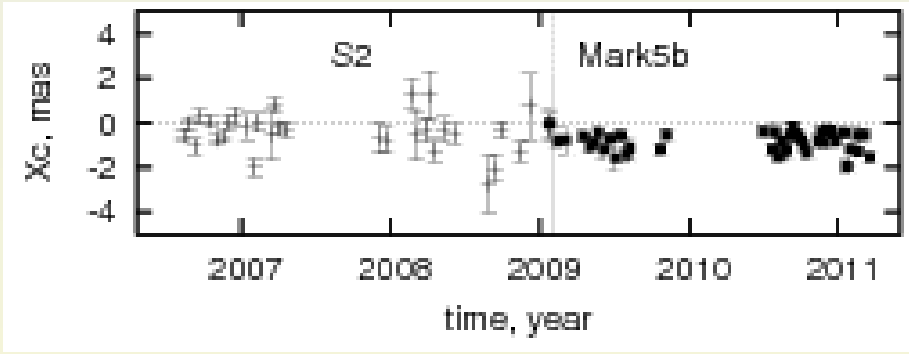
IAA correlator ARC

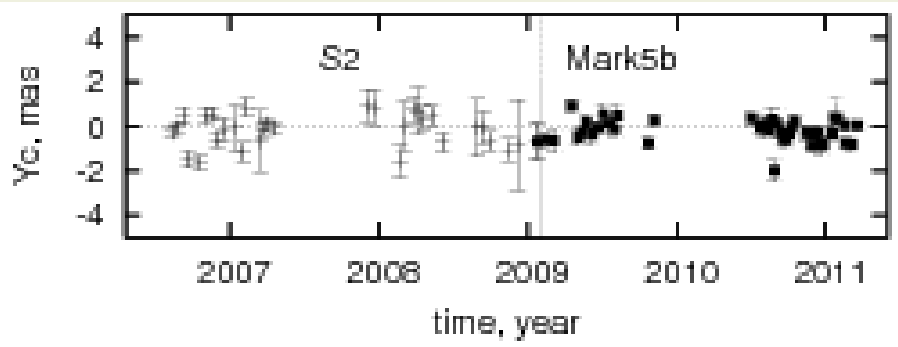
RuE-IERS 08 C04



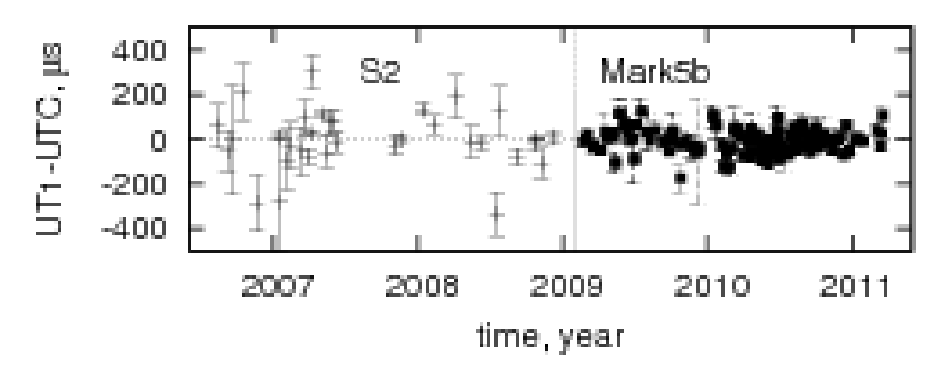




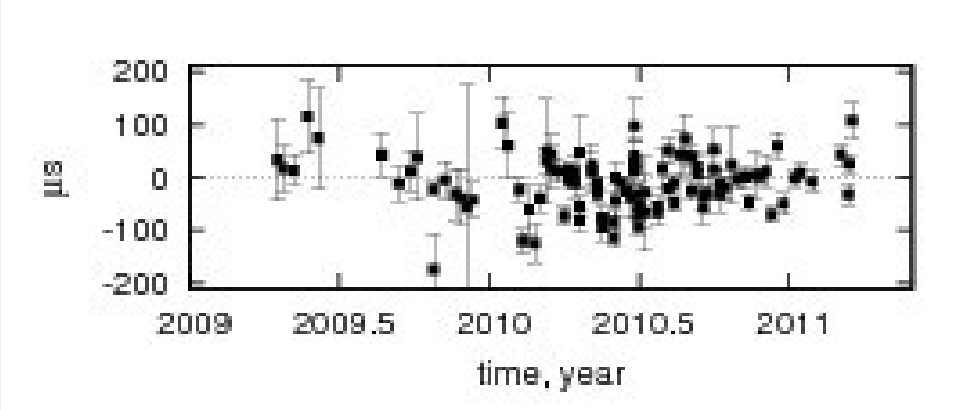




RuU-IERS 08 C04



e-vlbi



RMS (EOP(IAA) – IERS 08 C04), all RuU, RuE sessions

	N sess.	rms
UT1-UTC(Int)	128	91 μs
Xp	74	0.96 mas
Yp	74	1.17 mas
UT1-UTC	74	41 μs
Xc	74	0.65 mas
Yc	74	0.59 mas

RMS (EOP(IAA) – IERS 08 C04) Mark5B RuU, RuE sessions

	N sess.	rms
UT1-UTC(Int)	87	73 μs
e-vlbi	65	61 μs
Xp	42	0.93 mas
Yp	42	1.16 mas
UT1-UTC	42	35 μs
Xc	42	0.37 mas
Yc	42	0.49 mas

FUTURE PLANS

vlbi 2010 - 2015

nearest: weekly RuU, RuE, replace our participation in IVS-R1 to RuE (the same time)?

THANK YOU!