

Supplemental Table 1. Summary of Flight Tests.

Test	Filming Method¹	Video (fps)	Thrower	Atlatl²	Dart³	Point⁴	Rotation⁵
Cahokia 2013	OS	600	JW	SDC	reed	UB stone	cw
Cahokia 2013	OS	600	JW	SDC	reed	UB stone	cw-ccw
Cahokia 2013	OS	600	JW	SDC	reed	UB stone	cw
Cahokia 2013	OS	600	JW	SDC	reed	B stone	ccw
Cahokia 2013	OS	600	JW	SDC	reed	B stone	cw-ccw
Cahokia 2013	OS	600	JW	SDC	reed	B stone	cw-ccw
Cahokia 2013	OS	600	JW	SDC	reed	none	cw-ccw
Cahokia 2013	OS	600	JW	SDC	reed	none	cw-ccw
Cahokia 2013	OS	600	JW	SDC	reed	none	cw
Osage 2014	20 m	300	JW	Clovis	cane #5	UB stone	ccw
Osage 2014	20 m	300	JW	Clovis	UF cane 1	B stone	ccw
Osage 2014	20 m	300	JW	Clovis	cane #5	B stone	ccw
Osage 2014	20 m	300	JW	Clovis	UF cane 1	UB stone	cw
Osage 2014	20 m	300	JG	GBI	cane #5	B stone	ccw
Osage 2014	20 m	300	JG	GBI	cane #5	B stone	ccw
Osage 2014	20 m	300	JG	GBI	cane #5	UB stone	ccw
Osage 2014	20 m	300	JG	GBI	cane #5	UB stone	ccw
Osage 2014	20 m	300	JG	GBI	UF cane 1	UB stone	cw-ccw

¹ OS = over-the-shoulder

² BRC = Broken Roof Cave, GBI = Great Basin Inspired, SDC = Sand Dune Cave

³ UF = unfletched

⁴ B = beveled, UB = unbeveled

⁵ cw = clockwise, ccw = counter clockwise

Osage 2014	20 m	300	JG	GBI	UF cane 1	UB stone	none
Osage 2014	20 m	300	JG	GBI	UF cane 1	B stone	ccw
Osage 2014	20 m	300	JG	BRC	willow #1	B stone	cw
Osage 2014	20 m	300	JG	BRC	willow #1	UB stone	cw
Osage 2014	20 m	300	JG	BRC	willow #1	UB stone	cw
Osage 2014	20 m	300	JG	BRC	willow #1	UB wood	cw
Osage 2014	20 m	300	JG	BRC	willow #1	B wood	cw
Osage 2014	20 m	300	JG	BRC	willow #1	B wood	cw
Osage 2014	20 m	300	JG	BRC	willow #1	B wood	ccw
Osage 2014	20 m	300	JG	GBI	cane #5	B wood	ccw
Osage 2014	20 m	300	JG	GBI	cane #5	B wood	ccw
Osage 2014	20 m	300	JG	GBI	UF cane 1	B wood	ccw
Osage 2014	20 m	300	DP	GBI	UF cane 1	B wood	cw
Osage 2014	20 m	300	DP	GBI	UF cane 1	B wood	cw
Cahokia 2014	20 m	600	JG	GBI	cane #4	B wood	none
Cahokia 2014	20 m	600	JG	GBI	cane #4	B wood	none
Cahokia 2014	20 m	600	JG	GBI	cane #4	B wood	none
Cahokia 2014	20 m	600	JG	GBI	cane #4	B wood	ccw
Cahokia 2014	20 m	600	JG	GBI	cane #4	B wood	none
Cahokia 2014	20 m	600	JG	GBI	cane #4	B wood	none
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw

Cahokia 2014	20 m	600	DP	GBI	cane #4	UB wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	UB wood	cw
Cahokia 2014	20 m	600	JG	GBI	cane #4	UB wood	cw
Cahokia 2014	20 m	600	JG	GBI	cane #4	UB wood	none
Cahokia 2014	20 m	600	JG	GBI	cane #4	UB wood	none
Cahokia 2014	20 m	600	JG	GBI	cane #4	UB wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	UB wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	UB wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B wood	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B stone	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	B stone	cw
Cahokia 2014	20 m	600	DP	GBI	cane #4	UB stone	none
Cahokia 2014	20 m	600	DP	GBI	cane #4	UB stone	cw
Cahokia 2014	20 m	600	JW	Clovis	dowel	none	ccw
Cahokia 2014	20 m	600	JW	Clovis	dowel	none	ccw
Cahokia 2014	20 m	600	JW	Clovis	dowel	UB wood	ccw
Cahokia 2014	20 m	600	JW	Clovis	dowel	B wood	ccw
Cahokia 2014	20 m	600	JW	Clovis	dowel	B wood	ccw
Cahokia 2014	OS	300	JG	GBI	cane #4	none	cw
Cahokia 2014	OS	300	JG	GBI	cane #4	none	cw
Cahokia 2014	OS	300	JG	GBI	cane #4	none	cw
Cahokia 2014	OS	300	JG	GBI	cane #4	UB stone	cw
Cahokia 2014	OS	300	JG	GBI	cane #4	UB stone	cw
Cahokia 2014	OS	300	JG	GBI	cane #4	B stone	cw

Cahokia 2014	OS	300	JG	GBI	cane #4	B stone	cw
Cahokia 2014	OS	300	JG	Clovis	dowel	none	cw-ccw
Cahokia 2014	OS	300	JG	Clovis	dowel	none	cw-ccw
Cahokia 2014	OS	300	JG	Clovis	dowel	none	cw-ccw
Cahokia 2014	OS	300	JW	Clovis	dowel	none	ccw
Cahokia 2014	OS	300	JW	Clovis	dowel	none	ccw
Cahokia 2014	OS	300	JW	Clovis	dowel	UB wood	ccw
Cahokia 2014	OS	300	JW	Clovis	dowel	UB wood	ccw
Cahokia 2014	OS	300	JW	Clovis	dowel	B wood	ccw
Cahokia 2014	OS	300	JW	Clovis	dowel	B wood	ccw
Cahokia 2014	OS	300	JW	GBI	cane #4	none	cw
Cahokia 2014	OS	300	JW	GBI	cane #4	none	cw
Cahokia 2014	OS	300	JW	GBI	cane #4	none	cw
Survey 2014	OS	300	DP	GBI	UF cane 2	UB wood	cw
Survey 2014	OS	300	DP	GBI	UF cane 2	UB wood	cw-ccw- none
Survey 2014	OS	300	DP	GBI	UF cane 2	UB wood	cw-ccw-cw
Survey 2014	OS	300	DP	GBI	UF cane 2	B wood	cw
Survey 2014	OS	300	DP	GBI	UF cane 2	B wood	cw-ccw- none
Survey 2014	20 m	600	DP	GBI	UF cane 2	B wood	ccw
Survey 2014	20 m	600	DP	GBI	UF cane 2	B wood	none
Survey 2014	20 m	600	DP	GBI	UF cane 2	B wood	ccw
Survey 2014	20 m	600	DP	GBI	UF cane 2	UB wood	ccw
Survey 2014	20 m	600	DP	GBI	UF cane 2	UB wood	ccw

Survey 2014	20 m	600	DP	GBI	UF cane 2	none	ccw
Survey 2014	20 m	600	DP	GBI	UF cane 2	none	ccw
Fair 2014	OS	300	DP	GBI	UF cane 2	none	cw
Fair 2014	OS	300	DP	GBI	UF cane 2	B wood	none-ccw
Fair 2014	OS	300	DP	GBI	UF cane 2	B wood	cw
Fair 2014	OS	300	DP	GBI	UF cane 2	B wood	ccw-none
Fair 2014	OS	300	DP	GBI	UF cane 2	UB wood	cw
Fair 2014	OS	300	DP	GBI	UF cane 2	UB wood	cw-ccw
Fair 2014	OS	300	DP	GBI	UF cane 2	UB wood	cw