

STAŠO FORENBAHER

Institut za antropologiju
Gajeva 32
HR – 10000 Zagreb
staso.forenbaher@zg.t-com.hr

ALEXANDER JONES

Institute for the Study of the Ancient World
New York University
15 East 84th St, New York, NY 10028
alexander.jones@nyu.edu

ZODIJAK IZ NAKOVANE¹

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Pelješac)''639''

Izvorni znanstveni rad

Za vrijeme arheoloških iskopavanja provedenih godine 2000. u Spili kod Nakovane na Pelješcu pronađeni su sitni ulomci bjelokosti ukrašeni finim graviranjem. Nakon sastavljanja pokazalo se da potječu od nekoliko pločica s prikazima simbola zodijskih. Radi se najvjerojatnije o iznimno rijetkom arheološkom nalazu dijela astrologove ploče. Nalaz je prikupljen prilikom pažljivog iskopavanja guste koncentracije ulomaka finog helenističkog posuđa ostavljenog na dar u špiljskom svetištu. To je zasada najstariji poznati primjerak astrologove ploče, napravljen oko 100. godine prije Krista, ubrzo nakon što je izumljena grčka horoskopska astrologija. Njegova prisutnost na prostoru koji je bio pod kontrolom domorodačke ilirske zajednice svjedoči o prometnoj i kulturnoj povezanosti Sredozemlja u prvom stoljeću prije Krista.

Ključne riječi: zodijski, astrologija, astrologova ploča, bjelokost, helenizam, Jadran, Nakovana

¹ Ovaj rad je djelomice izmijenjen i nadopunjen prijevod našeg rada objavljenog na engleskom jeziku 2011. godine u časopisu *Journal for the History of Astronomy* (Forenbaher, Jones 2011).

THE NAKOVANA ZODIAC¹

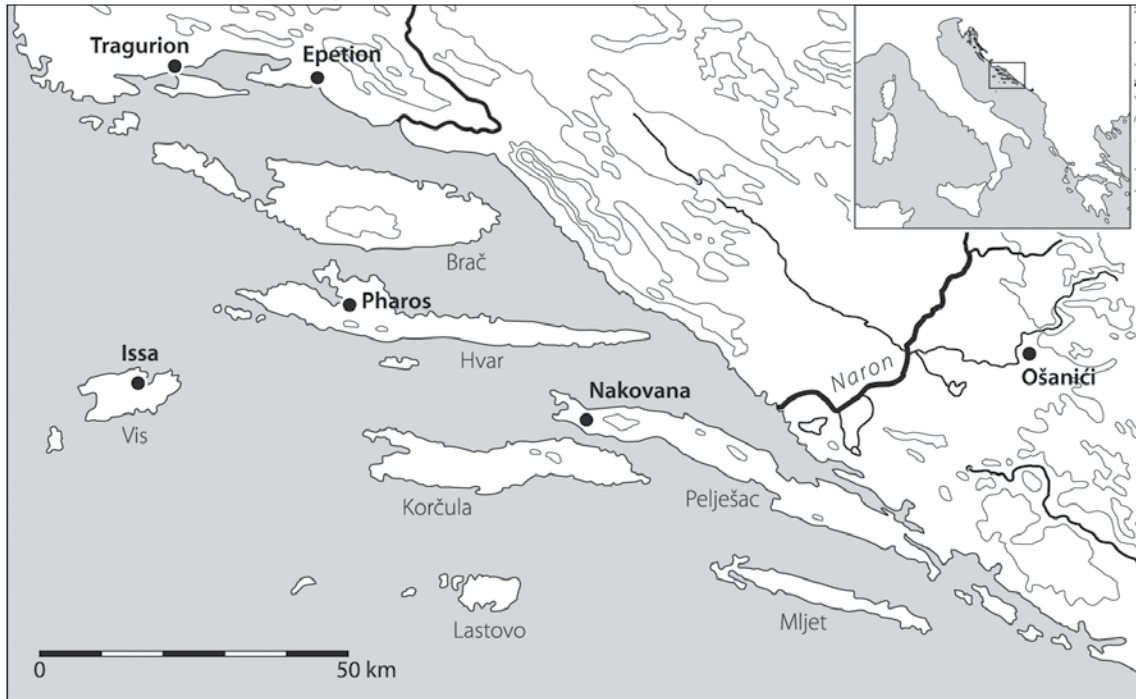
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Original scientific paper

In 2000, during archaeological excavations in Nakovana Cave on the peninsula of Pelješac, small fragments of ivory with engraved decoration were found. Once assembled, it was established that they belonged to several plaques bearing zodiac symbols. They are most probably parts of an astrologer's board – a very rare archaeological find. The fragments were collected during careful recovery of a dense cluster of shards of fine Hellenistic vessels left in the cave as offerings. This is the oldest known astrologer's board to date, made around 100 BC, soon after the emergence of Greek horoscopic astrology. Its presence within territory which was controlled by the indigenous Illyrian community testifies to the communication and cultural links within the Mediterranean basin in the 1st c. BC.

Key words: zodiac, astrology, astrologer's board, ivory, Hellenistic period, Adriatic, Nakovana

¹ This paper is a partially revised and supplemented version of our article published in the *Journal for the History of Astronomy* (Forenbaher, Jones 2011).



Sl. / Fig. 1: Karta srednje i južne Dalmacije s naznačenim položajem Nakovane i drugih nalazišta koja se spominju u tekstu / Map of central and southern Dalmatia with the location of Nakovana and other sites mentioned in the text (crtež / drawing by S. Forenbaher)

Uvod

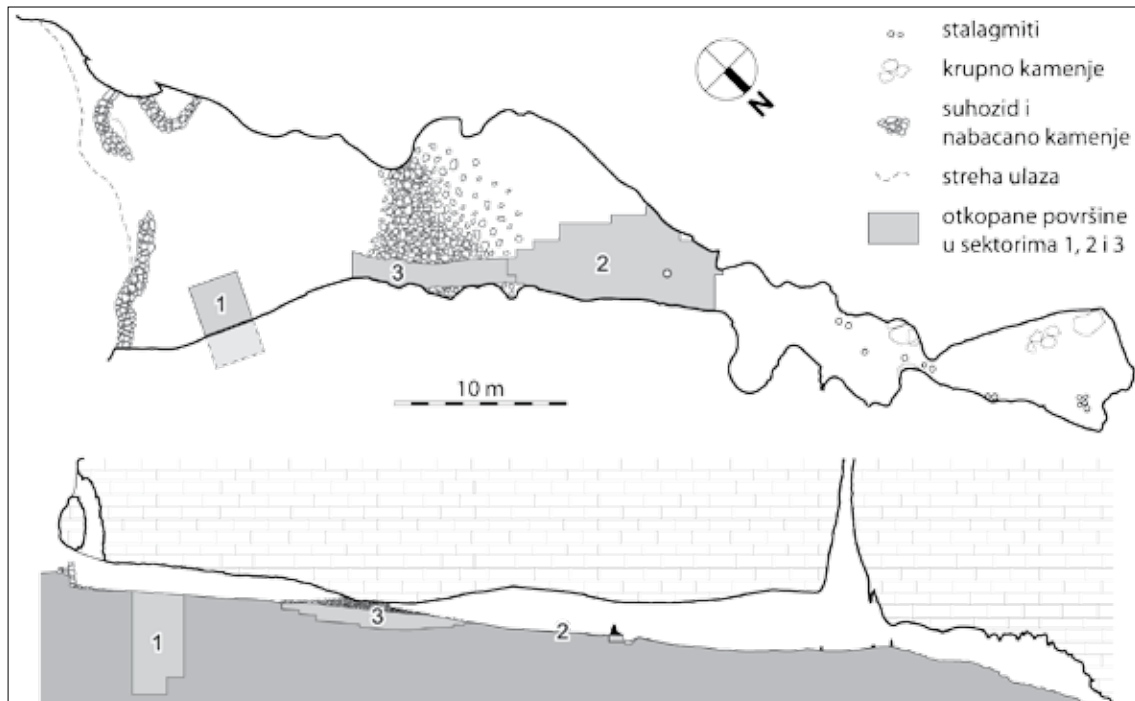
Ulaz u nakovansku Spilu nalazi se pod samim vrhom 400 m visokog krševitog grebena Kopinja, nedaleko strateški važnog zapadnog kraja poluotoka Pelješca (sl. 1). S Kopinja se otvaraju pogledi na Hvar, Vis, Korčulu i Mljet te prema tridesetak kilometara udaljenom ušću Neretve. Plovni putevi koji prolaze ispod špilje Hvarskim i Pelješkim kanalom u antičko su vrijeme bili među najvažnijim na Jadranu.

Mještani obližnjeg sela Nakovane špilju zovu jednostavno »Spila« što ukazuje na njezinu naročitu važnost u usporedbi s drugim špiljama u okolici. Iza 15 m širokog i 2 m visokog ulaza nalazi se u petnaestak metara dubok pripećak, čiji se svod postupno spušta prema tlu prekrivenom krupnim kamenjem. Špilja naizgled završava na mjestu gdje svod dodiruje tlo, no nabacano kamenje zapravo zatvara širok

Introduction

The entrance to the Nakovana Cave is located just below the crest of the 400m-high ridge of Kopinja, on the strategically very important western end of the peninsula of Pelješac (Fig. 1). From Kopinja, one can see the islands of Hvar, Vis, Korčula and Mljet, as well as the mouth of the River Neretva, at a distance of some 30 km. Navigation routes passing through the Hvar and Pelješac channels beneath the cave were among the most important Adriatic sea lanes in Antiquity.

The population of the nearby village of Nakovana calls the cave simply "Spila" (the cave), which suggests that, in comparison with other caves in the surrounding area, this one has particular importance. Beyond an entrance 15 m wide and 2 m high, there is a rock shelter some 15 m deep. Its ceiling gradually slopes down to a floor strewn with large stones. The cave appears to end at the spot where its ceiling meets the floor, but the stones actually



Sl. / Fig. 2: Tlocrt i presjek nakovanske Spile s naznačenim istraženim površinama / Groundplan and cross-section of the Nakovana Cave with excavated areas indicated (crtež / drawing by S. Forenbaher)

i nizak prolaz dug desetak metara, koji se blago spušta prema mračnoj unutrašnjosti brda. Nakon toga špiljski se hodnik proširuje, tvoreći dvije razmjerno prostrane, izdužene i visoke dvorane. Ukupna dužina špilje iznosi oko 60 m (sl. 2).

close off a wide, low passageway, about 10 m long, which slopes towards the dark interior of the hill. Beyond that, the passageway opens up, turning into two relatively spacious chambers, elongated and high. The total length of the cave is about 60 m (Fig. 2).

Okolnosti otkrića

Kada je 1999. godine u okviru »Projekta Nakovana«² započelo istraživanje Nakovanske visoravni, nakovanska Spila već je bila dobro poznata stručnoj javnosti kao eponimno nalazište bakrenodobne

Circumstances of the discovery

When the exploration of the Nakovana Plateau began in 1999, within the scope of the Nakovana Project,² the Nakovana Cave was already well known among experts as the type-site of the Copper Age Nakovana Cul-

² »Projekt Nakovana« vodili su Timothy Kaiser (Royal Ontario Museum, Kanada) i Stašo Forenbaher (Institut za antropologiju, Zagreb). Sredstva za terenski rad osigurala je Zaklada Royal Ontario Museuma putem velikodušne donacije Audry i Davida Mirvisha iz Toronta (Kanada). Laboratorijska istraživanja provedena su u sklopu znanstvenoistraživačkog projekta #196-1962766-2740 Ministarstva znanosti, obrazovanja i športa Republike Hrvatske.

² The Nakovana Project was led by Timothy Kaiser (Royal Ontario Museum, Canada) and Stašo Forenbaher (Institute for Anthropological Research, Zagreb). Field work was funded by the Royal Ontario Museum trust, through a generous donation by Audry and David Mirvish of Toronto (Canada). Laboratory work was performed within the scope of research project No. 196-1962766-2740 of the Ministry of Science, Education and Sport of the Republic of Croatia.



Sl. / Fig. 3: Unutrašnja dvorana nakovanske Spile / Interior chamber of the Nakovana Cave (snimio / photo by S. Forenbaher 1999.)

»nakovanske kulture«³. Istraživanje je najprije bilo usredotočeno na iskop duboke sonde u sektoru 1 nedaleko od ulaza, jer su na tom prostoru 4 m debele kulturne naslage sadržavale jasno uslojenu arheološku građu od ranog neolitika do brončanog doba⁴. Tada još nismo znali da se iza prividnog kraja dubokog pripećka nastavlja dugačak špiljski hodnik. Mračnu unutrašnjost špilje otkrili smo tek potkraj prve sezone iskopavanja, nakon što smo uklonili dio nabacanog kamenja i provukli se kroz tijesan prolaz⁵.

Prilikom prvog posjeta skrivenoj unutrašnjosti Spile ustanovili smo da velik dio tla kanala prekriva krhka i netaknuta sigasta korica. Posvuda su ležali mnogobrojni ulomci keramike, većinom finih helenističkih posuda iz posljednjih stoljeća prije Krista. Površina ulomaka bila je

³ Petrić 1976; Forenbaher 2000.

⁴ Forenbaher, Kaiser 2002; Forenbaher, Kaiser 2010.

⁵ Forenbaher, Kaiser 2003, 15-23.

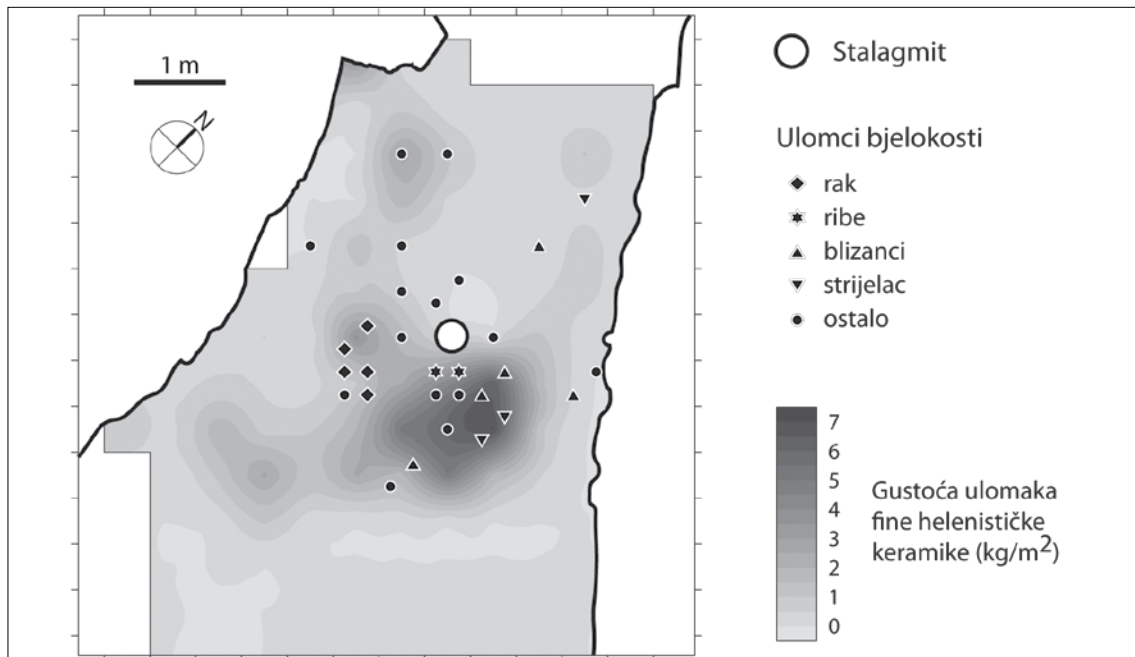
ture.³ The initial focus of the exploration was a deep test pit in sector 1, near the entrance, because in that area cultural deposits about 4 m thick contained clear layers of archaeological material from the periods between the Early Neolithic and the Copper Age.⁴ At that time we were unaware of the long cave corridor beyond the rock-shelter's apparent end. The dark interior of the cave was discovered only at the end of the first excavation season, after some of the strewn stones were removed and we crawled through the narrow passage.⁵

During our first visit to the hidden interior of the cave, we established that much of the channel's floor was covered by fragile and undisturbed stalagmitic crust. Numerous pottery shards were lying around, mostly fragments of fine Hellenistic vessels dating from the last centuries BC. The surface of the shards was exceptionally well preserved,

³ Petrić 1976; Forenbaher 2000.

⁴ Forenbaher, Kaiser 2002; Forenbaher, Kaiser 2010.

⁵ Forenbaher, Kaiser 2003, 15-23.



Sl. / Fig. 4: Prostorni raspored ulomaka bjelokosti i fine helenističke lončarije oko stalagmita / Spatial distribution of ivory fragments and shards of fine Hellenistic pottery around the stalagmite (crtež / drawing by S. Forenbaher)

iznimno dobro sačuvana, a sudeći po njihovom prostornom rasporedu, nalazili su se ondje gdje su posude bile ostavljene. Po svemu sudeći, ulaz u skriveni kanal bio je davno zatrpan kamenjem, čime je zatvoren pristup u stražnji dio špilje.

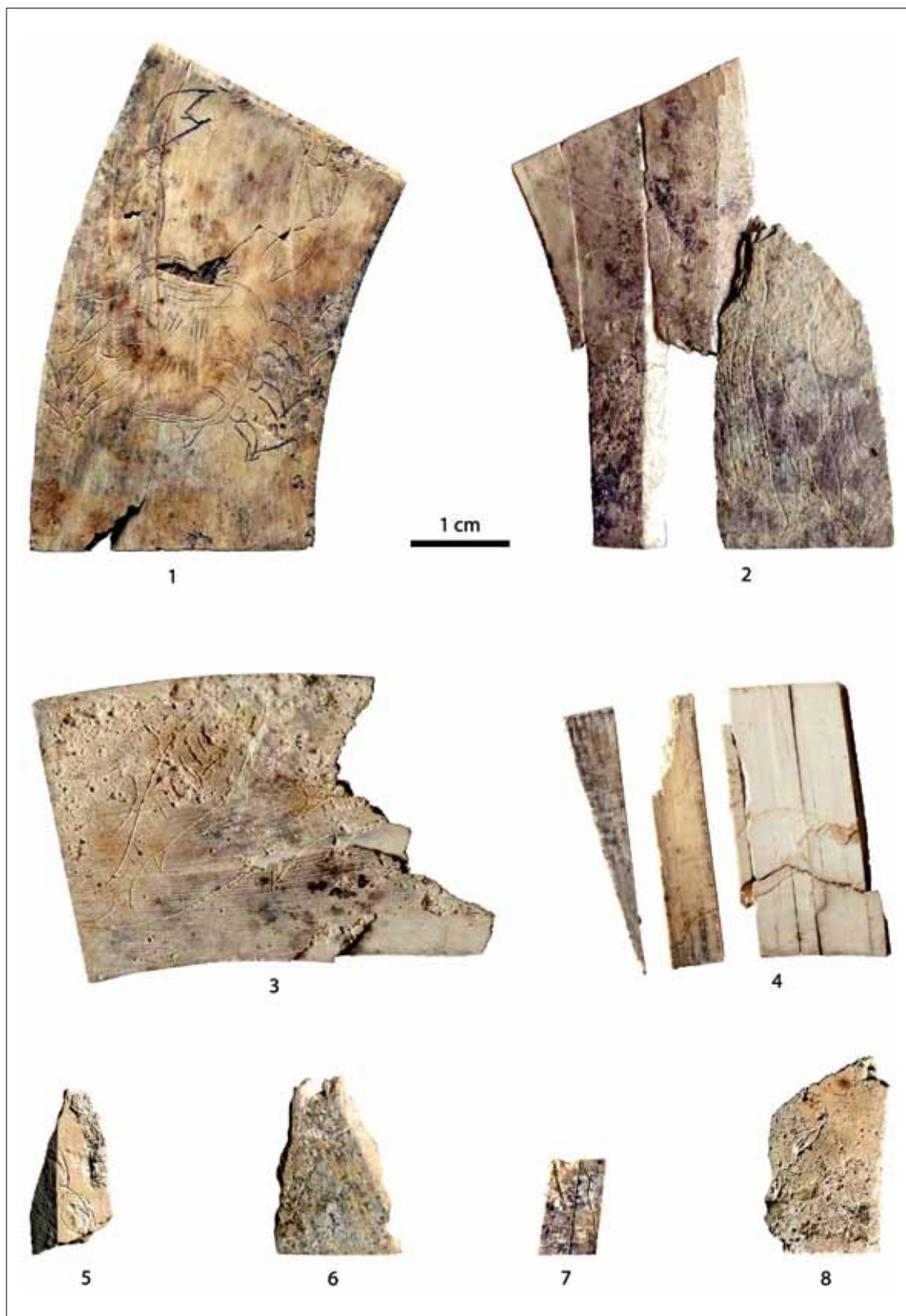
Tijekom iduće dvije istraživačke sezone u potpunosti smo istražili helenistički sloj u sektoru 2 na površini od 47 m² (sl. 2), uklonivši oko tri tone kulturnih naslaga. Taj površinski sloj preslojavao je pretpovijesne naslage. Tek ponegdje bio je deblji od nekoliko centimetara te je isklinjavao prema rubovima istraženog dijela dvorane. Većina nalaza iz spomenutog sloja prikupljena je s prostora promjera oko 2 m, neposredno ispred krupnog, osamljenog stalagmita koji dominira unutrašnjošću špilje (sl. 3).

Izvanredno visoka gustoća neobično dobro sačuvanih nalaza, uklopljenih u sloj žitke špiljske ilovače, iziskivala je primjenu neuobičajeno pažljivih postupaka

and, judging by their spatial distribution, they were in the locations where the vessels had been left. By all appearances, the entrance of the hidden channel was buried by stones a long time ago, preventing access to the back of the cave.

Over the course of the following two excavation seasons, the Hellenistic layer in sector 2 was explored in its entirety, over a surface of 47 m² (Fig. 2). Around three tons of cultural deposits were removed. This surface layer – overlying earlier prehistoric layers – was rarely more than a few centimetres thick, and it petered out towards the edges of the excavated area. Most of the finds from this layer were recovered from an area of 2 m in diameter, located immediately in front of a single large stalagmite which dominates the cave's interior (Fig. 3).

The exceptionally high density of unusually well-preserved finds, embedded in a layer of viscous cave clay, called for particularly careful methods of recovery. For this reason,



Sl. / Fig. 5: Četiri sastavljene pločice i drugi ulomci bjelokosti ukrašeni graviranjem / Four assembled plaques and other ivory fragments with engraved decoration (snimili / photos by D. Doračić and S. Forenbaher)

ka prikupljanja. Zbog toga je površina iskopa podijeljena na kvadrate veličine 0,5x0,5 m, a sav iskopani sediment prenesen je do terenskog laboratorija gdje je mokro prosijan na sitima otvora 3 mm, uz pomoć visokotlačnih prskalica⁶.

Svi ulomci gravirane bjelokosti prikupljeni su prilikom mokrog prosijavanja. Mnogi od njih, uključujući najveće i najbolje očuvane ulomke, potječu iz prostora neposredno ispred istaknutog stalagmita, odakle potječe i većina ulomaka finog helenističkog posuđa (sl. 4). Manji ulomci bjelokosti bili su razasuti oko stalagmita na sve strane, unutar udaljenosti od dva metra.

Opis i rekonstrukcija nalaza

Prikupljeno je ukupno trideset ulomaka obrađene bjelokosti koji potječu od najmanje sedam pločica gotovo identične veličine i oblika. Četiri pločice mogle su se potpuno ili većim dijelom sastaviti, dok preostali manji ulomci, sudeći prema svojim dimenzijama i oblicima, potječu od još barem tri pločice (sl. 5 i 6).

Svaka pojedina pločica oblikovana je kao odsječak luka od približno 28°, najveće dužine od oko 55 mm, širine 30 mm i debljine 2-3 mm. Pločice su vjerojatno nekim ljepljivim sredstvom bile pričvršćene na ravnu (drvenu?) podlogu. Usporedo urezane linije koje prekrivaju njihovo naličje (sl. 7) možda su bile napravljene radi boljeg prijanjanja ljepila.

Na licu četiriju pločica nalaze se prepoznatljivi motivi izvedeni finim graviranjem: rak, dvije ribe, dva ljudska lika te tijelo i stražnje noge neke velike životinje u trku.

Na pločici #1 (sl. 6: 1) realistično je prikazan rak. Skoro posve cijela pločica sastavljena je od pet ulomaka koji su pronađeni nedaleko jedan od drugog, na

the surface was divided into squares of 0.5 x 0.5 m, and all of the excavated sediment was transported to a field laboratory, where it was wet-sieved on tables with 3mm meshes, using high-pressure water guns.⁶

All the fragments of engraved ivory were recovered during wet sieving. Many of them, including the biggest and best-preserved fragments, originate from the area immediately in front of the prominent stalagmite – from the same zone in which most shards of the fine Hellenistic vessels were found (Fig. 4). Smaller ivory fragments were scattered all around the stalagmite, within a distance of two metres.

Description and reconstruction of the finds

In total, thirty fragments of worked ivory were recovered, originating from at least seven plaques of nearly identical size and shape. Four of the plaques could be reassembled completely or to a large degree, while the remaining smaller fragments come from at least three additional plaques, judging by their sizes and shapes (Figs 5 and 6).

Each plaque was shaped as a segment of an arc of approximately 28°. The longest among them was about 55 mm long, 30 mm wide and 2-3 mm thick. The plaques were probably attached by some kind of adhesive to a flat (wooden?) support. The incised parallel lines on their backs (Fig. 7) may have been made to ensure better adhesion.

On the obverse side of the four plaques, recognizable motifs were executed by fine engraving: a crab, two fishes, two human figures, and the body and hind legs of a large running animal.

Plaque 1 (Fig. 6: 1) bears a realistic depiction of a crab. The plaque is almost complete, composed of five fragments discovered close to one another, about 1 m to the south-west of

⁶ Forenbaher, Kaiser 2003, 26-30.

⁶ Forenbaher, Kaiser 2003, 26-30.

udaljenosti od oko 1 m jugozapadno od stalagmita. Prikaz tumačimo kao zodijački simbol Raka.

Na pločici #2 (sl. 6: 2) realistično su prikazana dva ljudska lika koji stoje jedan do drugog, pri čemu lijevi malo nadvisuje desnog. Pločica je sastavljena od pet ulomaka koji su bili razasuti južno, istočno i sjeverno od stalagmita, unutar udaljenosti od 1,5 m. Gornji desni ugao i sredina donjeg dijela pločice nedostaju. Čini se da su oba lika muškarci. Njihova naga tijela prikazana su anatomske precizno, u duhu umjetničke tradicije klasične antike. Lijevom liku nedostaje najveći dio desne noge, gornji dio lijeve noge te lijeva ruka i rame. Desna ruka mu je ispružena, a glava okrenuta prema drugom liku. Desnom liku nedostaje gornji dio trupa, obje ruke i glava. Donji dio nekog odjevnog predmeta spušta se iza njegovih nogu do gležnjeva. Prikaz tumačimo kao zodijački simbol Blizanaca.

Na pločici #3 (sl. 6: 3) realistično su prikazane dvije ribe. Pločica je sastavljena od dva ulomka, oba pronađena pred samim stalagmitom. Gornji desni dio i desni kraj pločice nedostaju. Od jedne ribe sačuvan je samo stražnji dio tijela i rep, dok je druga riba sačuvana u cijelosti. Dvije zakrivljene linije povezuju njihove repove, sastajući se na lijevom rubu pločice. Prikaz tumačimo kao zodijački simbol Riba.

Na pločici #4 (sl. 6: 4) realistično je prikazana neka životinja u trku ili skoku. Sačuvano je oko pola pločice, sastavljene od tri ulomka koji su bili razasuti istočno i sjeverno od stalagmita, unutar udaljenosti od 2 m. Sačuvani dio motiva prikazuje srednji dio trupa, sapi, dijelove obiju zadnjih nogu s jasno naznačenim zglobovima te rep sastavljen od nekoliko dugih pramenova dlake. Ispružene noge i vijoreći rep ukazuju na životinju nalik konju prikazanu u pokretu. Prikaz tuma-

the stalagmite. The depiction has been interpreted as the zodiac symbol for Cancer.

Plaque 2 (Fig. 6: 2) displays two realistically rendered human figures standing next to one another, the left one slightly higher than the right one. The plaque was reassembled from five fragments found scattered to the south, east and north of the stalagmite, within a distance of 1.5 m. The upper right corner and the central section of the lower part of the plaque are missing. It would appear that both depicted figures are male. Their naked bodies are rendered with anatomic precision, in the artistic tradition of classical antiquity. The figure on the left is missing most of his right leg, the upper part of his left leg, left arm and shoulder. His right arm is stretched out, and his head is turned towards the other figure. The right-hand figure is missing the upper part of his torso, both arms and head. Behind his legs, there is the lower part of a garment which reaches down to his ankles. The depiction has been interpreted as the zodiac symbol for Gemini.

Plaque 3 (Fig. 6: 3) bears a realistic depiction of two fishes. It has been reassembled from two fragments, both discovered right in front of the stalagmite. The upper right section and the right edge of the plaque are missing. Of one fish, only the rear end and tail has been preserved, while the other fish is complete. Two curved lines link their tails, converging on the left edge of the plaque. The depiction has been interpreted as the zodiac symbol for Pisces.

Plaque 4 (Fig. 6: 4) displays a realistic portrayal of an animal running or leaping. Approximately one half of the plaque has been preserved, consisting of three fragments found scattered to the east and north of the stalagmite, within a distance of 2 m. The preserved part of the depiction reveals the middle part of the body, buttocks, parts of both rear legs with clearly marked ankles, and a tail consisting of several long tresses of hair. The extended legs and flying tail suggest that a horse-like animal is depicted in motion. The



Sl. / Fig. 6: Crteži četiriju sastavljenih pločica i drugih ulomaka bjelokosti ukrašenih graviranjem / Drawings of the four assembled plaques and other ivory fragments with engraved decoration (crtež / drawing by S. Forenbaher)

čimo kao zodijski simbol (najvjerojatnije) Strijelca.

Dijelovi graviranih prikaza sačuvali su se na još četiri ulomka. Na jednom je, čini se, prikazana ljudska noga (sl. 6: 7), na drugom možda noga neke životinje (sl. 6: 6), dok su druga dva ulomka premalena i stoga neprepoznatljiva unatoč pažljivoj izvedbi (sl. 6: 5 i 8). Lica preostalih ulomaka nisu ukrašena.

Ako pretpostavimo da je između pločica postojao uzak slobodan prostor klinasta oblika (otprilike 2°), dvanaest pločica tvorilo bi puni krug vanjskog promjera oko 21,5 cm (sl. 8). Uvjereni smo da su te pločice, svaka sa svojim zodijskim simbolom, predstavljale grčki zodijak koji je najvjerojatnije bio dio astrologove ploče.

Astrologove ploče

Astrologova ploča bila je središnji predmet astrologovog pribora. Služila je za zorno prikazivanje i tumačenje horoskopa, ali i za impresioniranje klijenata. U Romanu o Aleksandru, grčkom popularnom proznom djelu sačuvanom u prijepisu iz 3. stoljeća po Kristu⁷, nalazimo prilično podroban opis takvog luksuznog predmeta napravljenog od bjelokosti, ebanovine i zlata:⁸

»...[Nektanebo] je izvadio kneževsku, skupocjenu ploču koja se ne može riječima opisati i stavio je na stolicu. Bila je napravljena od bjelokosti, ebanovine, srebra i zlata, s tri gravirane zone. Prvi krug sačinjavalo je 36 dekana, drugi 12 znakova zodijaka, a u sredini su bili Sunce i Mjesec. Zatim je otvorio kutijicu od bjelokosti i istresao iz nje sedam zvijezda i horoskop od osam umjetnički obrađenih kamenčića. U malenom osvjetljenom krugu sastavio je minijaturno nebo.«

⁷ Škiljan 1996, 513.

⁸ Citirano prema Evans 2004, 4.

depiction has been interpreted as the zodiac symbol of (most likely) Sagittarius.

Segments of engraved depictions have been preserved on an additional four fragments. It would appear that one of them portrays a human leg (Fig. 6: 7), another one possibly the leg of an animal (Fig. 6: 6), while the remaining two fragments are too small to allow identification, although they have been carefully executed (Figs 6: 5 and 8). The obverses of the remaining fragments are plain.

If we assume the existence of narrow wedges of empty space between the plaques (of approximately 2°), twelve plaques would have made a full circle with an outer diameter of around 21.5 cm (Fig. 8). We are convinced that the plaques – each of them bearing a zodiac symbol – represented the Greek zodiac, and that it most probably made up part of an astrologer's board.

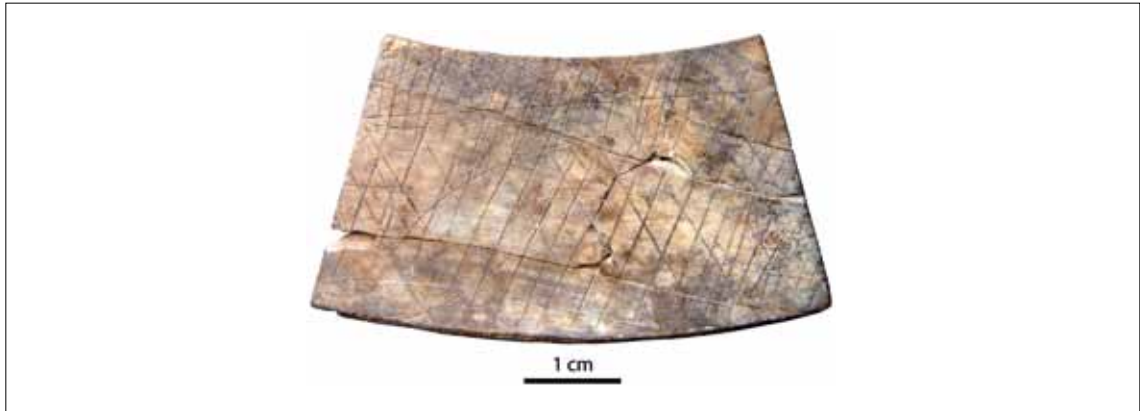
Astrologer's boards

An astrologer's board was the central item of his toolkit. It was used for visualization and interpretation of horoscopes, and for impressing clients. The *Alexander Romance*, a popular Greek narrative preserved in a copy made in the 3rd c. AD,⁷ provides a rather detailed description of such a luxury item, made of ivory, ebony and gold:⁸

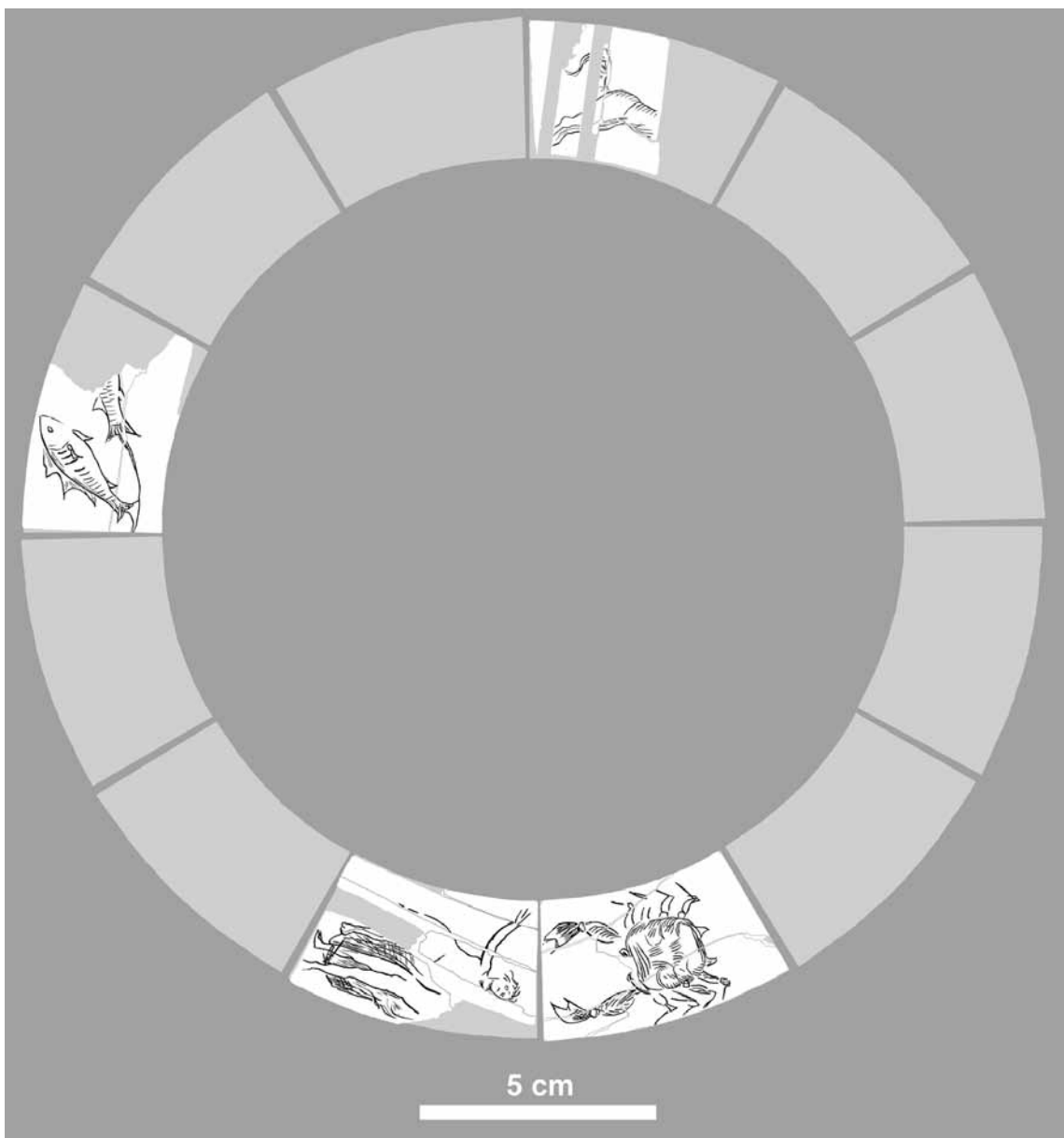
“...[Nektanebo] brought out a princely and costly board, which mere words could not describe, and put it on a chair. It was made from ivory, ebony, gold and silver and was engraved with three zones, having on the first circle the 36 decans, on the second the 12 signs of the zodiac, and on the inner one the Sun and Moon. Then he opened a small ivory box, poured out the seven stars and the horoscope made of eight artfully worked stones, and put together the miniature heaven, illuminating it in a small circle.”

⁷ Škiljan 1996, 513.

⁸ Quoted according to Evans 2004, 4.



Sl. / Fig 7: Naličje pločice #1 / Back of plaque 1 (snimio / photo by D. Doračić)



Sl. / Fig 8: Rekonstrukcija zodijaka iz nakovanske Spile / Reconstruction of the zodiac from the Nakovana Cave (crtež / drawing by S. Forenbaher)

Opis astrologove ploče iz prethodnog odlomka odlično se podudara s rijetkim primjercima sačuvanim iz antičkog razdoblja. Kratak popis ovih razmjerno malih prenosivih predmeta sadrži ploče iz svetišta Apolona Grannusa u Grandu u sjeveroistočnoj Francuskoj napravljene od bjelokosti⁹, zatim Tabulu Bianchini pronadenu u 18. stoljeću u Rimu¹⁰ i danas izgublenu Daressyjevu ploču iz trgovine antikvitetima u Kairu¹¹, obje napravljene od mramora te možda zodijak iz Tanisa u delti Nila napravljen od stakla ukrašenog zlatnim listićima¹². Njihove dimenzije bile su između 20 i 30 cm, osim Tabule Bianchini, veličine oko 58 cm¹³.

Na svim pločama prikazani su astrološki simboli, raspoređeni u nekoliko koncentričnih pojaseva. U sredini su Sunce i Mjesec, uvijek okruženi sa dvanaest znakova zodijaka. Ostali pojasevi mogu sadržavati dekane, dodekaoros, još jedan zodijak i druge simbole¹⁴. Astrolog bi na mjesta određena proračunima postavio na ploču oznake za planete i zatim tumačio njihove odnose. Kao takve oznake koristile su se posebne gеме, izrađene upravo za tu svrhu¹⁵.

Svi navedeni primjerci astrologovih ploča potječu iz vremena Rimskog Carstva. Ploče iz Granda napravljene su u Egiptu, vjerojatno u prvom ili drugom stoljeću po Kristu¹⁶. Oko godine 170. bačene su u bunar nedaleko svetišta Apolona Grannusa u današnjoj istočnoj Francuskoj¹⁷.

⁹ Abry 1993; Gundel 1972, 647, br. 147, 2; Gundel 1992, 232-233, br. 82.

¹⁰ Gundel 1972, 632-633, br. 60; Gundel 1992, 226, br. 63.

¹¹ Gundel 1972, 632, br. 59; Gundel 1992, 226-227, br. 59.

¹² Gundel 1972, 658, br. 159; Gundel 1992, 240, br. 104.

¹³ Fröhner 1869, 15.

¹⁴ Evans 2004, 5-10.

¹⁵ Evans 2004, 14-24.

¹⁶ Goyon 1993; Evans 2004, 22.

¹⁷ Bertaux 1993, 44.

The above description of the astrologer's board corresponds very well to rare examples preserved from Antiquity. A short list of these relatively small, portable objects includes ivory tablets from the sanctuary of Appolo Grannus in Grand, north-east France,⁹ Tabula Bianchini discovered in Rome in the 18th century¹⁰ and the now lost Daressy tablet from an antiquities shop in Cairo¹¹ (both made of marble), and possibly the zodiac from Tanis in the Nile delta, made of glass decorated with gold leaves¹². The dimensions of those boards were between 20 and 30 cm, with the exception of Tabula Bianchini, which measures about 58 cm¹³.

All the boards display astrological symbols, distributed in several concentric zones. In the middle, there is the Sun and the Moon, always encircled with the twelve signs of the zodiac. Other zones can contain decans, the dodecaoros, another zodiac, and other symbols.¹⁴ The astrologer would place markers for planets on the board, in places determined by calculations, and then he would interpret their relationships. The markers were magical gems, made specifically for this purpose.¹⁵

All the examples of astrologer's boards mentioned above originate from the period of the Roman Empire. The Grand tablets were produced in Egypt, probably in the 1st or 2nd c. AD.¹⁶ Around year 170 AD, they were thrown into a well near the sanctuary of Appollo Grannus in what is today eastern France.¹⁷ The dating of the other boards is based on their iconography. The Daressy tablet and the

⁹ Abry 1993; Gundel 1972, 647, No. 147, 2; Gundel 1992, 232-233, No. 82.

¹⁰ Gundel 1972, 632-633, No. 60; Gundel 1992, 226, No. 63.

¹¹ Gundel 1972, 632, No. 59; Gundel 1992, 226-227, No. 59.

¹² Gundel 1972, 658, No. 159; Gundel 1992, 240, No. 104.

¹³ Fröhner 1869, 15.

¹⁴ Evans 2004, 5-10.

¹⁵ Evans 2004, 14-24.

¹⁶ Goyon 1993; Evans 2004, 22.

¹⁷ Bertaux 1993, 44.

Datiranje ostalih primjeraka temelji se na njihovoj ikonografiji. Daressyjeva ploča i zodijak iz Tanisa pripisuju se razdoblju ranog Rimskog Carstva, a Tabula Bianchini 2. ili 3. stoljeću po Kr.¹⁸.

Zodijak iz Nakovane po svojim dimenzijama odgovara poznatim primjercima antičkih astroloških ploča. Napravljen je od bjelokosti, poput ploča iz Granda i ploče opisane u Romanu o Aleksandru, no za razliku od Granda, sastavljen je iz većeg broja malih pločica. Od Granda se razlikuje i stilom, jer prikazi na nakovanskom primjerku slijede klasične grčko-rimske stilske standarde, dok ploče iz Granda pripadaju egipatskoj umjetničkoj tradiciji. Ipak, najneobičnije od svega je njegovo iznenađujuće rano datiranje.

Datiranje i porijeklo zodijaka iz Nakovane

Arheološki kontekst nalaza pruža čvrst općeniti okvir za datiranje. Svi ulomci bjelokosti prikupljeni su iz tankog helenističkog sloja koji je prekrivao površinu unutrašnje špiljske dvorane. Pronađeni su među tisućama ulomaka fine helenističke keramike¹⁹. Najraniji od tih nalaza su crni glazirani skifosi iz četvrtog stoljeća prije Krista i posude stila *Alto Adriatico* oslikano vegetabilnim i figuralnim motivima iz kasnog 4. ili ranog 3. stoljeća pr. Kr.²⁰ Većinu keramike čine lokalne kopije posuda kampanijskog i kasnog gnatijskog stila, proizvedene u grčkim kolonijama u Dalmaciji tijekom 3. ili 2. stoljeća pr. Kr.²¹ Najkasnije nalaze predstavlja nekoliko rimskih posuda koje se može datirati u 1. stoljeće pr. Kr.

¹⁸ Evans 2004, 8-10.

¹⁹ Forenbaher 2010; Forenbaher, Kaiser 2003, 73-91; Forenbaher, Kaiser 2006, 574-578.

²⁰ Kirigin 2000.

²¹ Forti 1965; Kirigin 1996, 132-133; Kirigin, Hayes, Leach 2002.

Tanis zodiac have been attributed to the Early Roman Imperial period, while Tabula Bianchini has been dated to the 2nd or 3rd c. AD¹⁸.

On the basis of its size, the Nakovana zodiac is comparable to other known examples of astrologer's boards from Antiquity. It is made of ivory, just like the tablets from Grand and the one described in the *Alexander Romance*, but, unlike the Grand tablets, it is composed of a number of small plaques. The style of its decoration is also different from that of Grand: the depictions on the Nakovana zodiac follow classical Graeco-Roman stylistic standards, whereas the Grand tablets belong to the Egyptian artistic tradition. Nonetheless, its most extraordinary feature is its surprisingly early dating.

Dating and origin of the Nakovana zodiac

The archaeological context of the Nakovana zodiac provides a solid general base for its dating. All the ivory fragments were recovered from a thin Hellenistic layer which covered the surface of the cave's interior chamber. They were discovered among thousands of shards of fine Hellenistic pottery.¹⁹ The earliest among the pottery finds are glazed black skyphoi from the 4th c. BC and *Alto-Adriatico*-style ware painted with vegetative and figural motifs, from the late 4th or early 3rd c. BC.²⁰ The pottery consists mostly of local copies of Campanian and late Gnathian vessels, produced in Greek colonies in Dalmatia during the 3rd or 2nd c. BC.²¹ The latest of the finds are several Roman vessels that can be dated to the 1st c. BC.

Although very suggestive, the data presented is insufficient to warrant dating of the zodiac to the Hellenistic era. Surface contexts are

¹⁸ Evans 2004, 8-10.

¹⁹ Forenbaher 2010; Forenbaher, Kaiser 2003, 73-91; Forenbaher, Kaiser 2006, 574-578.

²⁰ Kirigin 2000.

²¹ Forti 1965; Kirigin 1996, 132-133; Kirigin, Hayes, Leach 2002.

Iako su izneseni podaci vrlo sugestivni, oni sami po sebi nisu dovoljni da bismo zodijak sa sigurnošću mogli pripisati helenističkom razdoblju. Konteksti pri površini tla nepouzdana su jer lako mogu sadržavati umetnute nalaze iz znatno mlađih razdoblja, no u našem slučaju ne radi se o uobičajenoj situaciji. Unatoč pažljivom pregledu svih unutrašnjih hodnika i dvorana te opsežnom iskopavanju prostora oko stalagmita, u stražnjem dijelu špilje nije pronađen niti jedan predmet koji bi bio mlađi od 1. stoljeća pr. Kr., niti su primijećene bilo kakve naznake kasnijih ljudskih posjeta. Po svemu sudeći, pristup unutrašnjosti nakovanske Spile bio je namjerno zatvoren ubrzo nakon što je špiljsko svetište napušteno.

Napuštanje svetišta mogli bismo povezati s povijesnim događajima koji su u prvom stoljeću prije Krista zahvatili širok prostor istočnog Jadrana. Rimska država tada je odlučila konačno pokoriti Ilire, što je postignuto Oktavijanovim vojnim pohodima koji su trajali od godine 35. do 27. pr. Kr.²² Već u prvoj godini ratovanja rimska vojska izvršila je pokolj nad domorodačkim stanovništvom Korčule i Mljeta²³. Teško je vjerovati da bi strateški važan zapadni kraj Pelješca tom prilikom ostao pošteđen. Sudeći po rezultatima sustavnog terenskog pregleda²⁴, taj prostor bio je pust tijekom čitavog razdoblja rimske vladavine, što ukazuje na to da je bio opustošen za vrijeme rimskog osvajanja.

Sve navedeno ukazuje na godinu 35. pr. Kr. kao *terminus ante quem* za odlaganje graviranih pločica od bjelokosti u špiljsko svetište. Izravno radiokarbonsko datiranje podupire takav rani datum. Metodom akceleratorске masene spektrometrije određena starost kumulativnog uzorka sastavljenog od sedam sićušnih, neukra-

unreliable, as they can contain material deposited in much later periods. However, we are not dealing with an ordinary situation. Despite the careful inspection of all interior corridors and chambers, and extensive excavation of the area surrounding the stalagmite, not a single item was found in the back of the cave from the period after the 1st c. BC, nor were there any indications of later human visits. By all appearances, the entrance to the interior of the Nakovana Cave was sealed on purpose soon after the cave sanctuary was abandoned.

The abandonment of the cave sanctuary may be linked to historical events occurring in the wider region of the eastern Adriatic in the 1st century BC. At the time, the Roman state decided finally to subdue the Illyrians. The goal was achieved by Octavian's military campaigns between 35 and 27 BC.²² In just the first year of warfare, the Roman army massacred the indigenous populations of the islands of Korčula and Mljet²³. It is very unlikely that the strategically important western tip of the peninsula of Pelješac would have been spared. Judging by the results of a systematic field survey,²⁴ this area was uninhabited during the entire Roman period, suggesting that it was ravaged during the Roman conquest.

All of the above suggests that the year 35 BC is *terminus ante quem* for the deposition of the engraved ivory plaques in the cave sanctuary. Direct radiocarbon dating supports such an early date. The age obtained by the accelerator mass spectrometry of a cumulative sample consisting of seven tiny undecorated ivory fragments (laboratory code UBA-14650) is 2217±21 B.P. The calibrated range of two standard deviations is the period between 375 and 204 BC, with an asymmetrical probability distribution leaning towards the 3rd c. BC. This provides a date for the death of the animal whose tusk was used to produce

²² Wilkes 1992, 196-197.

²³ Wilkes 1969, 50.

²⁴ Forenbaher, Kirigin, Vujnović 2001.

²² Wilkes 1992, 196-197.

²³ Wilkes 1969, 50.

²⁴ Forenbaher, Kirigin, Vujnović 2001.

šenih ulomaka bjelokosti (laboratorijski broj analize UBA-14650) iznosi 2217 ± 21 konvencionalnih radiokarbonskih godina prije sadašnjosti. Kalibrirani raspon od dvije standardne devijacije je 375.-204. pr. Kr., s asimetričnom distribucijom vjerojatnosti koja naginje prema 3. stoljeću pr. Kr. Time je datirana smrt životinje čija je kljova upotrijebljena za izradu graviranih pločica.

Grčka horoskopska astrologija temeljila se na vrhunskim dostignućima matematike i astronomije svojeg vremena. Smatra se da je izumljena u kasnoptolomejskom Egiptu, u 2. ili ranom 1. stoljeću pr. Kr.²⁵ Prema tome, zodijski iz Nakovane, po svojoj prilici, nije mogao biti proizveden prije 2. stoljeća pr. Kr. (vjerojatno ne puno prije godine 100. pr. Kr.), što bi značilo da je bjelokost bila stara stotinjak godina kada je upotrijebljena za njegovu izradu. To nadalje znači da je sam predmet bio u upotrebi razmjerno kratko, vjerojatno tijekom prve polovice 1. stoljeća pr. Kr.

Zodijski iz Nakovane nije lokalni proizvod. Bjelokost u Dalmaciji predstavlja egzotičnu sirovinu koja je morala biti uvezena iz Afrike²⁶. Sudeći po ikonografiji, stilu i kvaliteti izrade, radi se o radio-ničkom proizvodu napravljenom u nekom od kasnohelenističkih kozmopolitkih centara. Majstor koji ga je napravio bio je dobro upoznat s najnovijim dostignućima astrologije koja je tek nedavno bila izumljena. Sve to zajedno ukazuje na Egipat kao najvjerojatnije mjesto porijekla nakovanskog nalaza.

²⁵ Pingree 1997, 21, 26; Evans 2004, 1, 2, 34.

²⁶ Nedavno provedene laboratorijske analize pokazale su da je zodijski iz Nakovane napravljen od kljove afričkog slona. Za ovu informaciju zahvaljujemo Timothyju Kaiseru, a rad u kojem ćemo podrobno objaviti rezultate spomenutih analiza trenutno je u pripremi.

the engraved plaques.

Greek horoscopic astrology was based on the exceptional achievements of their mathematicians and astronomers. It is believed to have been invented in late Ptolemaic Egypt, in the 2nd or early 1st c. BC.²⁵ Therefore, the Nakovana zodiac could not have been made before the 2nd c. BC (probably not much before the year 100 BC), which means that the ivory used to produce it was approximately one hundred years old. This would imply that the item itself was in use for a relatively short time, probably only during the first half of the 1st c. BC.

The Nakovana zodiac was not a local product. In Dalmatia, ivory was an exotic raw material which must have been imported from Africa.²⁶ Judging by the iconography, style and quality of work, the plaques were made in a workshop in one of the late-Hellenistic cosmopolitan centres. Their producer was well acquainted with the latest developments in astrology, which had only been invented a short time before. All of this suggests that the Nakovana zodiac most probably originates from Egypt.

²⁵ Pingree 1997, 21, 26; Evans 2004, 1, 2, 34.

²⁶ Recent laboratory analysis has shown that the Nakovana zodiac was made from the tusks of an African elephant. We are grateful to Timothy Kaiser for this piece of information, and the paper in which we will publish detailed results of the analysis is currently being prepared.

Regionalni kontekst: Dalmacija u posljednjim stoljećima prije Krista

Početakom 1. stoljeća pr. Kr. prostor Dalmacije bio je na pragu punog uključivanja u sredozemnu antičku civilizaciju²⁷. Taj proces započeo je u 6. stoljeću pr. Kr. i ubrzao se oko godine 400. pr. Kr. nakon uspješnog osnivanja trajnih grčkih kolonija na Hvaru i Visu²⁸. Grčki polisi kontrolirali su, međutim, tek mali prostor pojedinih dalmatinskih otoka i još manji prostor na kopnu. Dok je sve više grčkih i rimskih brodova plovilo vodama istočnog Jadrana, najveći dio kopna još uvijek je kontroliralo domorodačko ilirsko stanovništvo.

Odnosi između domorodaca, grčkih kolonista i ekspanzivne rimske države mijenjali su se, ovisno o dnevnoj politici, u rasponu od svrsishodnih saveza do otvorenih ratnih sukoba. Posljedica takvih odnosa bili su različiti vidovi mirnog ili nasilnog međudjelovanja. Zahvaljujući trgovini i razmjeni luksuznih darova, ali i gusarstvu i pljački, znatne količine egzotičnih predmeta dospijevale su u ruke lokalnih ilirskih moćnika. Na mnogim mjestima duž istočnog Jadrana, posebice na srednjodalmatinskim otocima, na susjednoj obali te uz donji tok rijeke Neretve, kasnohelenistička keramika čest je nalaz na gradinama i u špiljskim svetištima²⁹. Mnogi grobovi, smješteni pod gomilama prema domorodačkoj tradiciji, sadrže helenističke importe: finu keramiku, brončano posuđe i oružje. Iz snažnog domorodačkog uporišta u Ošanićima potječu spektakularni importirani helenistički predmeti, kao i novac koji je vjerojatno bio lokalno kovan³⁰.

²⁷ Wilkes 1969.

²⁸ Kirigin 1996; Kirigin 2006.

²⁹ Forenbaher, Kaiser 2006, 580-581.

³⁰ Marić 1995.

Regional context: Dalmatia in the last centuries BC

In the early 1st century BC, Dalmatia was at the verge of being fully integrated in Mediterranean classical civilization.²⁷ The process began in the 6th century BC and accelerated around 400 BC, after the successful founding of permanent Greek colonies on the islands of Hvar and Vis.²⁸ However, the Greek poleis only controlled small areas on a few Dalmatian islands, and even smaller areas of the mainland. While an ever-increasing number of Greek and Roman ships sailed through the waters of the eastern Adriatic, most of the mainland was still under the control of the indigenous Illyrian population.

The relations between the indigenous population, the Greek colonists and the expansive Roman state changed, depending on daily politics, ranging from expedient alliances to full-blown armed conflicts. Such relations resulted in various forms of peaceful or violent interaction. Thanks to the trade and exchange of luxury items, and also through piracy and raiding, substantial quantities of exotic goods ended up in the hands of local Illyrian potentates. In many locations on the eastern Adriatic coast, and especially on central Dalmatian islands, the nearby shore, and along the lower course of the River Neretva, Late Hellenistic pottery is often found on hillforts and in cave sanctuaries.²⁹ Numerous graves, buried under mounds in line with the indigenous tradition (cairns), also contain imported Hellenistic items: fine pottery and bronze vessels, as well as weapons. Spectacular imported Hellenistic items, as well as coins that were probably minted locally, were discovered in the indigenous stronghold of Ošanići.³⁰

²⁷ Wilkes 1969.

²⁸ Kirigin 1996; Kirigin 2006.

²⁹ Forenbaher, Kaiser 2006, 580-581.

³⁰ Marić 1995.

Očito je da su neki od pripadnika ilirskih elita rado prihvaćali pojedine elemente helenističke materijalne kulture i djelom oponašali ponašanje svojih bogatijih, moćnijih, tehnološki naprednijih i umjetnički profinjenijih uzora. Potkraj prvog tisućljeća prije Krista stanovništvo grčkih gradova, ilirskih uporišta i područja pod rimskom vlašću sve više se međusobno miješalo, a kulturne razlike između domorodaca i kolonista postajale su sve neizrazitije.

Zahvaljujući naročito povoljnom zemljopisnom položaju, lokalni Iliri sa zapadnog kraja Pelješca mogli su izvlačiti znatnu korist iz pomorskog prometa koji je tekao Pelješkim i Neretvanskim kanalom, neposredno ispod njihovog uporišta na Gradu. Sa svoje gradine smještene pri sredini nakovanske visoravni, zaštićene strmim stijenama i skrivene pogledu s mora, mogli su se brzo i lako spustiti do obje obale uskog poluotoka. Tijekom posljednjih nekoliko stoljeća prije Krista, na Gradu se intenzivno živjelo³¹. Nakovanska Spila udaljena je od spomenute gradine samo jedan kilometar. Čini se da su mnogi od egzotičnih predmeta koje su gospodari Grada priskrbili razmjennom ili otimačinom završili u špiljskom svetištu kao zavjetni darovi³².

Lokalni kontekst: astrologova ploča u špiljskom svetištu

Kako objasniti prisutnost astrologove ploče u špiljskom svetištu skrivenom pri vrhu brda, na rubu civiliziranog svijeta, unutar područja kojeg su kontrolirale lokalne domorodačke zajednice? Ploča je mogla biti ostavljena u Spili zajedno s drugim egzotičnim predmetima kao dar nadnaravnoj sili koju se ondje štova-

³¹ Rajić Šikanjić, Forenbaher 2010; Forenbaher, Vlák 2009.

³² Forenbaher, Kaiser 2003.

It is obvious that some members of the Illyrian elites eagerly accepted various elements of Hellenistic material culture and, to a certain extent, emulated the behaviour of their richer, more powerful, technologically more advanced and artistically more refined role models. At the end of the first millennium BC, contacts among the populations of Greek towns, Illyrian strongholds and territories under Roman control intensified, and cultural differences between the indigenous population and colonists became blurred.

Because of their exceptionally favourable geographical position, local Illyrians who lived at the western tip of the Pelješac peninsula could reap great benefits from the shipping going through the Pelješac and Neretva canals, immediately below their stronghold of Grad. From their hillfort, located close to the centre of the Nakovana Plateau, protected by steep cliffs and hidden from view from the sea, they could quickly and easily reach both coasts of the narrow peninsula. In the last centuries BC, Grad was a place of intensive life.³¹ The distance between the Nakovana Cave and the hillfort is just one kilometre. It appears that many exotic items, obtained by the masters of Grad through either exchange or raids, ended up in the cave sanctuary as offerings.³²

Local context: astrologer's board in a cave sanctuary

How can we explain the presence of an astrologer's board in a cave sanctuary, hidden near the top of a hill, at the edge of the civilized world, within a territory controlled by indigenous local communities? The board could have been left in the cave together with other imported objects as an offering to the supernatural power worshipped in the cave.

³¹ Rajić Šikanjić, Forenbaher 2010; Forenbaher, Vlák 2009.

³² Forenbaher, Kaiser 2003.

lo. Sredinom prvog stoljeća prije Krista astrologija je u Rimu postajala sve poznatijom, a astrološki pribor tada se vjerojatno uvezio u Italiju. Možda je neki lokalni gusar oteo »kneževsku i skupocjenu« ploču s nekog broda u prolazu, ne znajući ništa o astrologiji i horoskopima, no prepoznajući luksuzni predmet dostojan bogova.

S druge strane, vjerojatno podcjenjujemo Ilire kada ih zamišljamo kao necivilizirane prostake, iako su ih pristrani klasični povjesničari često opisivali upravo takvim. U prvom stoljeću prije Krista, uzajamno djelovanje između kolonista i pripadnika autohtonih zajednica bilo je u Dalmaciji svakodnevno i raznoliko, a udaljene obale Sredozemlja bile su povezane kao nikad ranije. Inovacije koje su dolazile iz velikih helenističkih središta nisu mogle ostati zaključane iza vrata grčkih kolonija.

Posve je moguće da su astrolozi posjećivali grčke kolonije u Dalmaciji ili čak obitavali u njima. Nije nezamislivo da su svoje usluge nudili i sve više heleniziranim pripadnicima ilirskih elita koji su silno željeli iskusiti pomodne novotarije. Je li možda neki astrolog obavljao svoju djelatnost u samom špiljskom svetištu? Činjenica je da su astrolozi često radili u hramovima ili uz njih³³ te da su najbolje sačuvani primjerci astrologovih tabli (i jedini s pouzdanim podacima o kontekstu nalaza, izuzev zodijaka iz Nakovane) pronađeni unutar kompleksa hramova³⁴.

Evans uvjerljivo smješta prakticiranje astrologije u hramove boga Serapisa, no odmah pridodaje da su i drugi bogovi bili blagonakloni prema astrolozima. U nakovanskoj Spili održavale su se stvarne ili simboličke gozbe i prinošeni su zavjetni darovi nekoj nadnaravnoj sili čiji nam

Astrology was becoming familiar in Rome about the middle of the 1st c. BC, and the tools connected with it were probably imported to Italy. Perhaps a local pirate plundered the "princely and costly" board from a passing ship. Though he knew nothing about astrology and horoscopes, he recognized a luxury item worthy of the gods.

On the other hand, we may be giving the Illyrians too little credit when we envisage them as uncivilized brutes, although the biased historians of classical antiquity often described them as such. In the Dalmatia of the 1st century BC, the interaction of the colonists and members of indigenous communities was a daily and diverse occurrence, and the distant shores of the Mediterranean were linked as never before. The innovations coming from great Hellenistic centres would not have remained locked behind the gates of Greek colonies.

It is possible that astrologers visited Greek colonies in Dalmatia, or even lived there. It is not beyond imagination that they offered their services to the ever more Hellenized Illyrian elites, who eagerly tried out the latest fads. Could it be that an astrologer practised his activity in the cave sanctuary? We know that astrologers often worked in or near temples,³³ and the best-preserved examples of astrologer's boards (the only ones with reliable data concerning the contexts of their discovery, apart from the Nakovana zodiac) were found within temple complexes.³⁴

Evans provides convincing evidence for placing astrology within the temples of Serapis, but he also adds that other gods were benevolent towards astrologers, too. The Nakovana Cave was the venue of real or symbolic feasts, where offerings were made to a supernatural power whose identity remains obscure for the time being. It may have been an unknown local Illyrian deity, or one of the syncretic

³³ Evans 2004, 36.

³⁴ Abry 1993.

³³ Evans 2004, 36.

³⁴ Abry 1993.

identitet zasada izmiče. Možda se radilo o nekom neznanom lokalnom ilirskom božanstvu, ili o jednom od sinkretičkih grčko-ilirskih bogova. O mogućem identitetu božanskog zaštitnika nakovanskog svetišta raspravljalo se na temelju arheoloških tragova ispijanja alkoholnih pića pred falusoidnim stalagmitom smještenim u žarištu obreda³⁵, no klasični panteon obiluje kandidatima koji bi zadovoljili tako općenite uvjete. S druge strane, većina naših spoznaja o vjerovanjima Ilira³⁶ temelji se na arheološkim spomenicima iz vremena Rimskog Carstva, dok nam pojedini izvorne ilirske religije ostaju nepoznate i nedostupne.

Savjetovanje s astrologom moralo je na klijenta ostaviti dubok dojam. Evansov izmišljeni opis astrologa koji obavlja svoj posao u mračnoj komori hrama, u malenom krugu svjetlosti treptave uljanice³⁷, čvrsto je utemeljen na poznatim činjenicama. Za takvu predstavu teško je zamisliti bolju pozornicu od unutrašnjosti nakovanske Spile.

Oko dvije trećine zodijskih iz Nakovane nedostaje. Budući da drugi poznati primjerci astrologovih ploča sadrže nekoliko koncentričnih pojaseva od kojih tek jedan prikazuje zodijski, izgleda da se u našem slučaju sačuvao samo mali dio čitavog predmeta. Možda je ploča već bila oštećena kada je dospjela u špilju. Druga mogućnost je da je bila ostavljena čitava, ali je netko za naknadnih posjeta i obrednih aktivnosti uklonio (»ukrao«) većinu njenih dijelova. U oba slučaja bila bi astrologu neupotrebljiva.

Čak i da nitko nije dirao ploču ostavljenu na tlu špiljske dvorane, kolebanje vlažnosti i izloženost agresivnim tvarima,

Graeco-Illyrian gods. The possible identity of the divine protector of the Nakovana sanctuary has been discussed on the basis of archaeological evidence of the consumption of alcoholic beverages in front of the phallic stalagmite that served as a ritual focus,³⁵ but the classical pantheon abounds in candidates who meet such general requirements. On the other hand, most of our knowledge of Illyrian beliefs³⁶ is based on archaeological monuments from the time of the Roman Empire, while specifics of the original Illyrian religion remain unknown and beyond reach.

Consulting an astrologer must have been a powerful experience for the client. Evans' fictional description of an astrologer practising his activity in the dark chamber of a temple, in a small circle of light cast by a flickering oil lamp³⁷ is firmly based on known facts. We can hardly imagine a better stage for such a performance than the interior of the Nakovana Cave.

Approximately two thirds of the Nakovana zodiac is missing. Given that other known examples of astrologer's boards feature several concentric zones of which only one contains signs of the zodiac, it appears that only a small part of this object has survived. Perhaps the board was already damaged by the time it was brought to the cave. Or perhaps it was left there intact, but during later visits and ritual activities someone removed ("stole") most of its parts. In either case, it would have been useless to an astrologer.

Even if nobody touched the board left on the cave floor, changes in humidity and its exposure to aggressive substances, such as bat guano, would have caused material degradation. Chemical weathering is visible on many fragments of the plaques, causing cracks between parallel surfaces resulting from the

³⁵ Forenbaher, Kaiser 2003, 119-127; Forenbaher, Kaiser 2006, 578-579.

³⁶ Rendić-Miočević 1955; Stipčević 1981; Stipčević 1989; Gabričević 1987.

³⁷ Evans 2003, 37.

³⁵ Forenbaher, Kaiser 2003, 119-127; Forenbaher, Kaiser 2006, 578-579.

³⁶ Rendić-Miočević 1955; Stipčević 1981; Stipčević 1989; Gabričević 1987.

³⁷ Evans 2003, 37.

poput izmeta šišmiša, doveli bi do propadanja materijala. Tragovi kemijskog trošenja vidljivi su na mnogim ulomcima pločica koje pucaju duž usporednih ploha cijepanja uvjetovanih strukturom bjelokosti. Ako se taj sastavljeni predmet počeo osipati još dok je svetište bilo u upotrebi, njegovi dijelovi mogli su biti razdrobljeni u sitne komadiće nehotičnim gaženjem, pa čak i izneseni iz špilje na blatnjavim poplatima cipela. Nakon što je unutrašnjost špilje postala ljudima nepriступačna, drugi redoviti posjetioци poput puhova, šišmiša i zmija nastavili su svoje destruktivno djelovanje.

Napokon, poput ploča iz Granda, zodijak iz Nakovane mogao je biti namjerno razbijen i neki njegovi dijelovi izbačeni iz špilje.

ivory's structure. If the composite board began falling apart while the sanctuary was still in use, its elements could have been broken into tiny pieces by unintentional trampling, or even taken out of the cave on muddy shoe soles. Once the interior section of the cave became inaccessible to people, other regular visitors such as dormice, bats and snakes continued with their destructive actions.

Finally, like the Grand tablets, the Nakovana zodiac may have been broken deliberately and some of its parts thrown out of the cave.

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