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Front cover: Preclassic stucco mask of Maya deity from Uaxactun in Gutemala (Photo SAHI).
View of the highest part of the site of Tell Fekheriye in Syria (Photo SAHI).
Bronze Age pottery found at the site in Budmerice, Slovakia (Photo SAHI).
Surface find from Budmerice, Slovakia - a heart-shaped pendant (Photo SAHI).

Back cover: Preclassic stucco mask of deity from Uaxactun in Gutemala (Photo SAHI).
Map showing the activities of SAHI on three continents.

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9. NEW MAYA OBSERVATORY IDENTIFIED IN UAXACTÚN, GUATEMALA¹

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ABSTRACT

In 2008, the opportunity has arisen for the Slovak Archaeological and Historical Institute (SAHI) to start excavations in the well-known Classic Maya site of Uaxactun. Preclassic Group H was chosen as a 'core' of the project. During the first season, excavations were focused mainly on the Upper platform with structures H I, H III, H V and the mask. Subsequently, excavations were extended to the Lower platform, focusing especially on structures H XV and H XVI. Results of these excavations brought up several important insights: The Upper platform most likely represents stars of the Orion constellation, and it might also represent well-known myth of Creation. Most likely a private space, this area was not accessible to the entire population, but only to the elite and priests. The whole platform is orientated towards the East, and it probably served as a residential unit for a king, his family and nobility. Based on the observation that Orion was, during particular times of the year, positioned directly above the structure H I, we can reason that the whole triadic group represents the act of Creation, or 'the Place of the Three Stones'. The radial pyramid H XV most likely served as an observation point, from which the Maya astronomers would be able to watch rising of Orion. The setting of Orion probably signaled a start of the rainy season and other events related to agricultural rituals and the sowing of maize. The unexpected astronomical function of this architectural complex Group H North reflects the Maya emphasis on a cosmogonic view of the world, linked with the worshiping of a king and public agricultural rituals.

DISCOVERY OF GROUP H NORTH

Uaxactun was discovered in the early 20th century, and since then this important Mayan city has been systematically investigated many times. After the well-known beginnings by the Carnegie Institute, the last major research here was carried out by Juan Antonio Valdés in the 1980s (Valdés 1986). During this research a Late Preclassic (3rd century BC to 3rd century AD) centre was discovered, with a central plaza and complex of beautiful structures decorated with preserved masks.

The entire complex was given the designation 'Group H South'. Next to it are located other mounds hiding the neighboring plaza, known as 'Group H North'. Until 2009, when we started excavations in various parts of Uaxactun, this plaza was virtually unknown, and the buildings expected to be concealed there were incorrectly drawn. SAHI (Slovak Archaeological and Historical Institute) excavations, which began to concentrate primarily on the Group H North, gradually uncovered the well-preserved large plaza of exceptional architectural value consisting of the Upper and Lower platform. Admittedly, based on the Valdés's success at the Group H South, we started to excavate the Group H North in 2009 with certain expectations. The reality however, far surpassed them (Fig. 1).

In the history of research of Maya astronomy, Uaxactun has always played a dominant role. In the first decades of the 20th century Franz Boas's expedition discovered a solar astronomical observatory called Group E, which quickly became famous and is considered to be the benchmark of the abilities of early Maya astronomy. Like Group H North, it dates to the end of the Preclassic period and it enables the watching of solstices and, with some doubts formulated by archaeoastronomer Anthony Aveni (Aveni 2005, 392), also equinoxes. It is therefore a solar observatory, the functionality of which has been proven many times, and for certain types of observations shows sufficient accuracy. Its smaller copy could be the observatory at Group D, which was identified during short excavations in the 90s². Its accuracy, however, due to the very short distances between the structures its function was mostly symbolic. There were other findings, such as cross carved in the floor at Group A, which, based on its orientation, served probably for astronomical observations. Overall, the developed tradition of the observation of the cosmos in Uaxactun from the earliest of times cannot be doubted. Although Juan Antonio Valdés did not discover any clear astronomical functions of buildings at Group H South, his findings were interpreted by Linda Schele (Schele 1998) and other mayanists as representations of the creation story. In the mask discovered by Valdés, David Freidel iden-

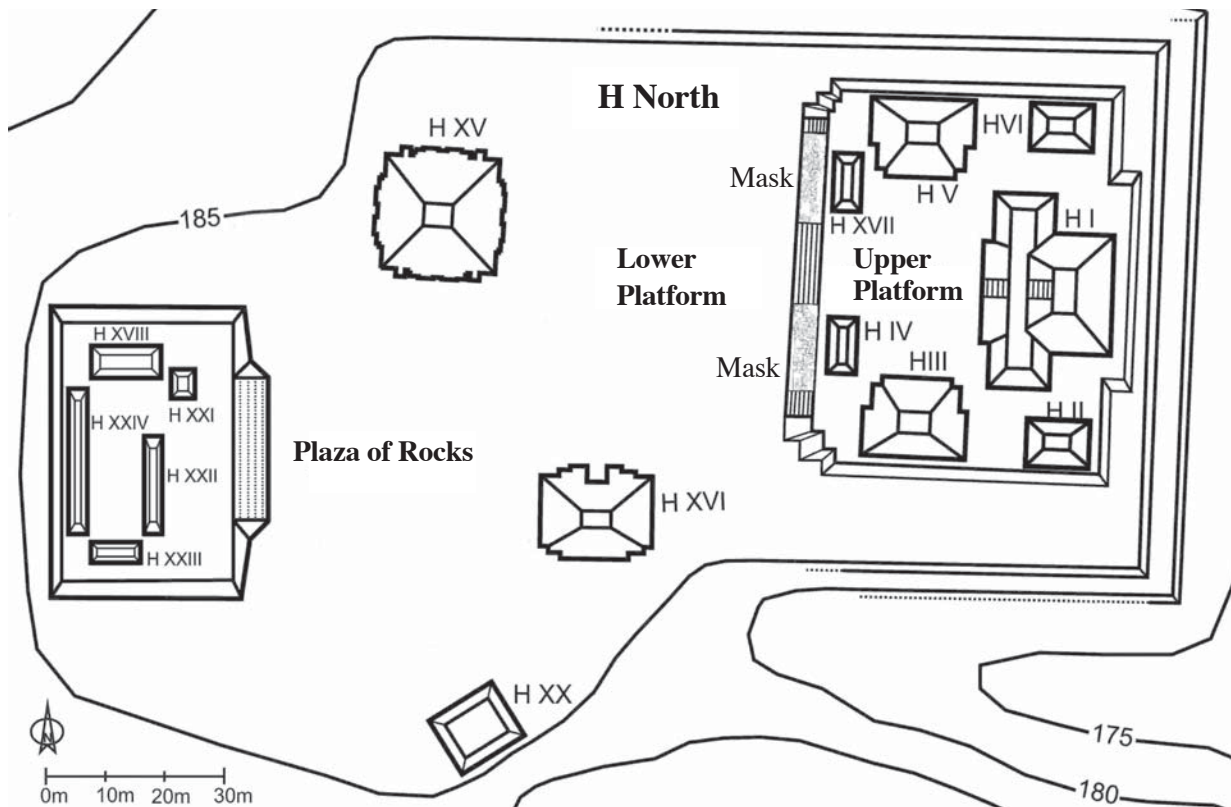


Fig. 1 Group H North has been the main focus of SAHI's last few field seasons. Drawing by M. Riečan and T. Drápela.

tifies *Yax Hal Witz*, 'First True Mountain' with signs of the centre of the world. Symbolically, it designates the first rise and division of the world to the earth, the sky, the sea and the kingdom of Uaxactun (Freidel 1993, 140). The triadic group, of which this motif is a part, is represented here by three mini-acropolises, which according to Freidel symbolize the three stones of creation (Ibidem). From the very start this interpretation provided a great motivation in our attempt to understand the Preclassic Maya ideas about the relationship between the man and the cosmos.

From a practical point of view, it was important that excavations showed that the whole Upper platform of H North had only one construction phase. C¹⁴ and ceramics date this phase to 100-50 BC, and show that settlement continued to around 150 AD. This partly simplified our research (as opposed to many reconstructions found at the Group H South), because it eliminated complex work of the survey of substructures by tunnels. In this chronologically relatively coherent environment we were able to make very effective progress over the last four years.

THE FAÇADE OF THE UPPER PLATFORM

In our first year we discovered large stucco masks on the façade of the Upper platform. They are in a re-

markable state of preservation, and on both sides of the central staircase they extend to a width of 20 metres and height of 4.5 metres each. The masks are orientated to the west, in the direction of the Lower platform, and based on analogies from e.g. the site of Cerros (Freidel/Schele 1988, 550), they probably represent the Sun in the underworld. On the Lower platform, opposite the masks we found remnants of a black-coloured floor, which may indicate black as the colour of the West, or *Ek' Nab* – 'Black Sea' if we take the analogy that suggests itself with the western courtyard of the acropolis in Copán (Schele 1998, 490). The masks themselves are displayed in three levels above each other, which corresponds with the iconography from Group H South. The uppermost level is almost completely destroyed, but we discovered the lower part of its wall. It probably represented the celestial sphere, while the middle level represented earthly sphere and the lower part the underworld. The lower part could be linked to the water world, but iconographic elements that would confirm it, as is the case of Group H South, are not so clear. The celestial sphere appears to have been represented by a snake (in Maya language it can be a word-play with the homophony of kan=snake and kaan=sky), the sides depicting preserved parts of the body of the snake, clearly dropping down from the top

level. Structured in this way, the facade of the Upper platform supports our assumption that this platform was orientated to the east and connected to the top – snake level of the mask was representing the heavenly sphere. The Lower platform orientated to the west and connected to the lower level of the mask represented the underworld (black colouring on the floor underscores it). After the spheres have been thus defined, we will take a look at the structures which were excavated on the upper and lower platforms (Fig. 2).

STRUCTURES OF THE UPPER PLATFORM

The upper platform carries three main structures of impressive architectural quality. A central pyramid HI (Hanuš 2009) is 17m tall (Fig. 3) (all structures here are measured from the level of the Lower platform), it takes the form of an inverted ‘T’ (perhaps the embodiment of the sacred sign *Ik*’ representing wind or breath of life), and is similar to the pyramid 34, from the El Tigre complex in El Mirador. Its facade is almost 50m long and it is dominating the whole of the

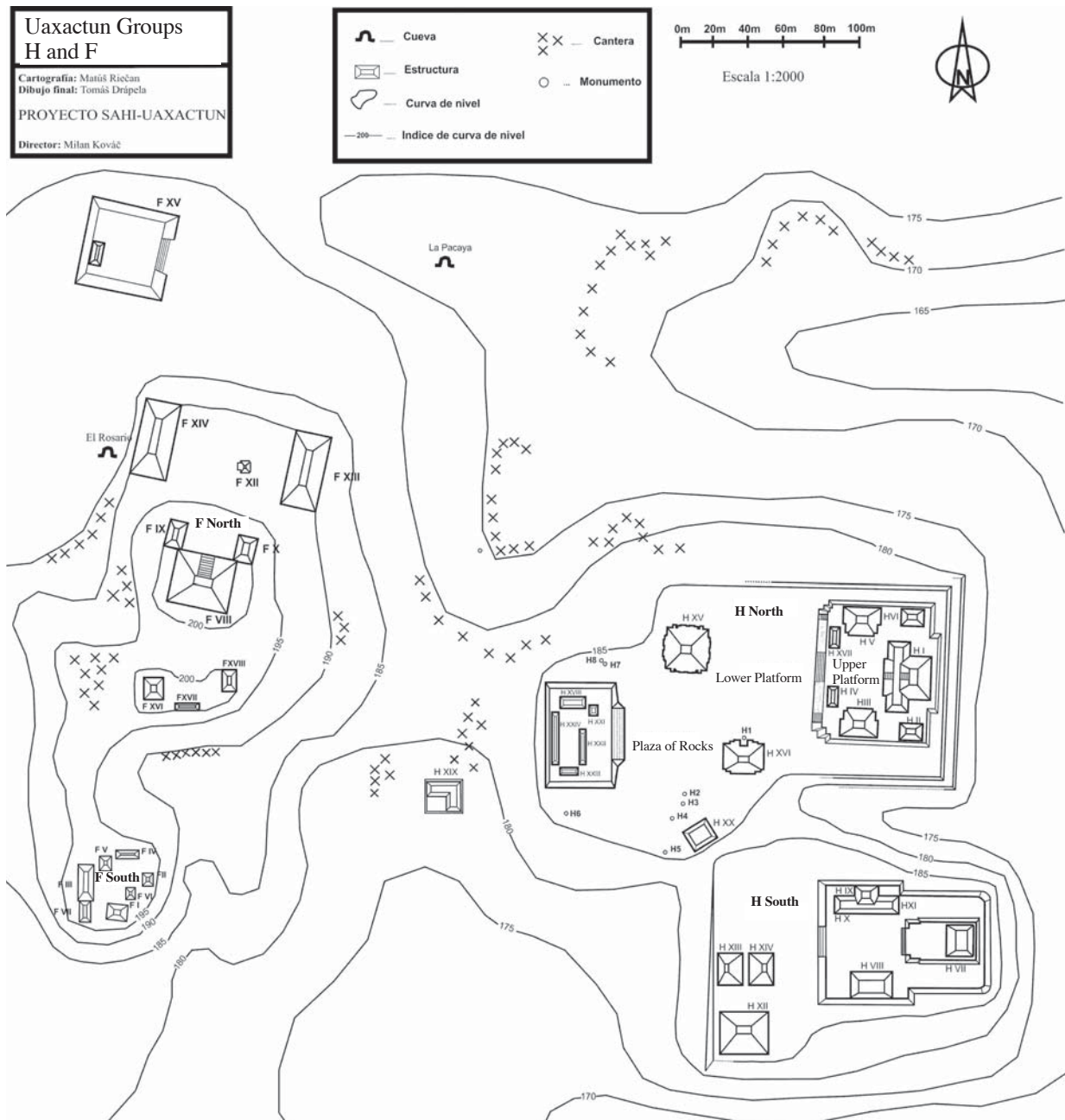


Fig. 2 Overall plan of groups H and F. Drawing by M. Riečan and T. Drápela.



Fig. 3 Central pyramid H1 of triadic complex H North. Photo: Project SAHI – Uaxactun.

group. At its sides, slightly in the foreground, stand the two pyramids designated ‘H III’ and ‘HV’, around 13 m tall, maintaining the complete symmetry with each other and with the central pyramid. HI, H III and H V create an almost perfect triangle (Nagy/Špoták/Kováč 2009, 381), more precisely the exemplar of a triadic group of very precise design. Also at the sides of the central pyramid, but behind the two structures, are located, again symmetrically spaced, two much smaller structures designated as ‘H II’ and ‘H VI’. These, together with the lateral pyramids H III and H V, form a rectangle, the centre of which is the central pyramid H I. These marginal structures do not have an equal role to that of the triadic group; after all, they are only a fraction of their height and size. Therefore, they were most likely they were intended not to interfere with the key moment of the sight of the monumental triad. Yet in a way they subtly complemented it, as together with these structures the object creates *quincunx*, another important element of the Maya symbolic universe.

STRUCTURES OF THE LOWER PLATFORM

The Lower platform offers, from an architectural point of view, a slightly poorer picture. There are only two pyramids standing on it. Both, however, contain an above-standard number of sherds from the later Early

Classic period (Alvarado/Forné et al. 2010), suggesting their importance associated with their revitalization several hundred years after the official abandonment of the complex. A similar frequency of fragments from the later period has not been recorded from the objects on the Upper platform. The first, and also the most investigated pyramid, designated H XV, is standing on the imperfect west-east axis with the central pyramid HI on the Upper platform. The deflection from the optimal direction is about 6° south, which is barely noticeable, though surprising given the practically perfect symmetry of the other structures (Kováč 2009, 431). Possibly they were, as it seems based on the architecture and ceramics, all constructed simultaneously as one large architectural complex. Pyramid H XV takes the form of a radial pyramid; having staircases on all four sides, originally flanked with additional lateral stairways and possibly with monumental masks. It is not unlike the famous pyramid EVII Sub from Group E, but mostly it resembles a reduced version of the massive structure 5C-54 from Tikal’s Mundo Perdido (phase Chuen).

South-east of the pyramid H XV stands the second structure, designated H XVI, the ground plan of which is more similar to that of the buildings from the Upper platform. Importantly, in terms of the ritual aspect,



Fig. 4 Uncovering and transport of the stela discovered at the pyramid H XVI. Photo: Milan Kováč

this structure played as significant a role as pyramid H XV. One stela was uncovered on the pyramid; (Fig. 4) unfortunately it was too eroded to provide us with any epigraphic or iconographic evidence. The stela was located above the altar, formed by a sizeable niche in the forefront of the structure, which was bordered by large rocks, probably remnants of old stelae that had been incorporated into the pyramid during the revitalization of the abandoned structure in Early Classic period. In the middle of the altar we found two plates placed lip to lip, (Fig. 5) which possibly originally contained an organic offering. The plates, as well as the whole altar, were accompanied by Early Classic ceramics (Goetting 2010). The most remarkable discovery, however, were dozens (almost 50) of discs made of limestone and ceramics, which were found on the altar and in its immediate vicinity. We can only speculate about their



Fig. 5 Finding of ceramic offering in the central axis of the pyramid H XVI. Photo: Milan Kováč.

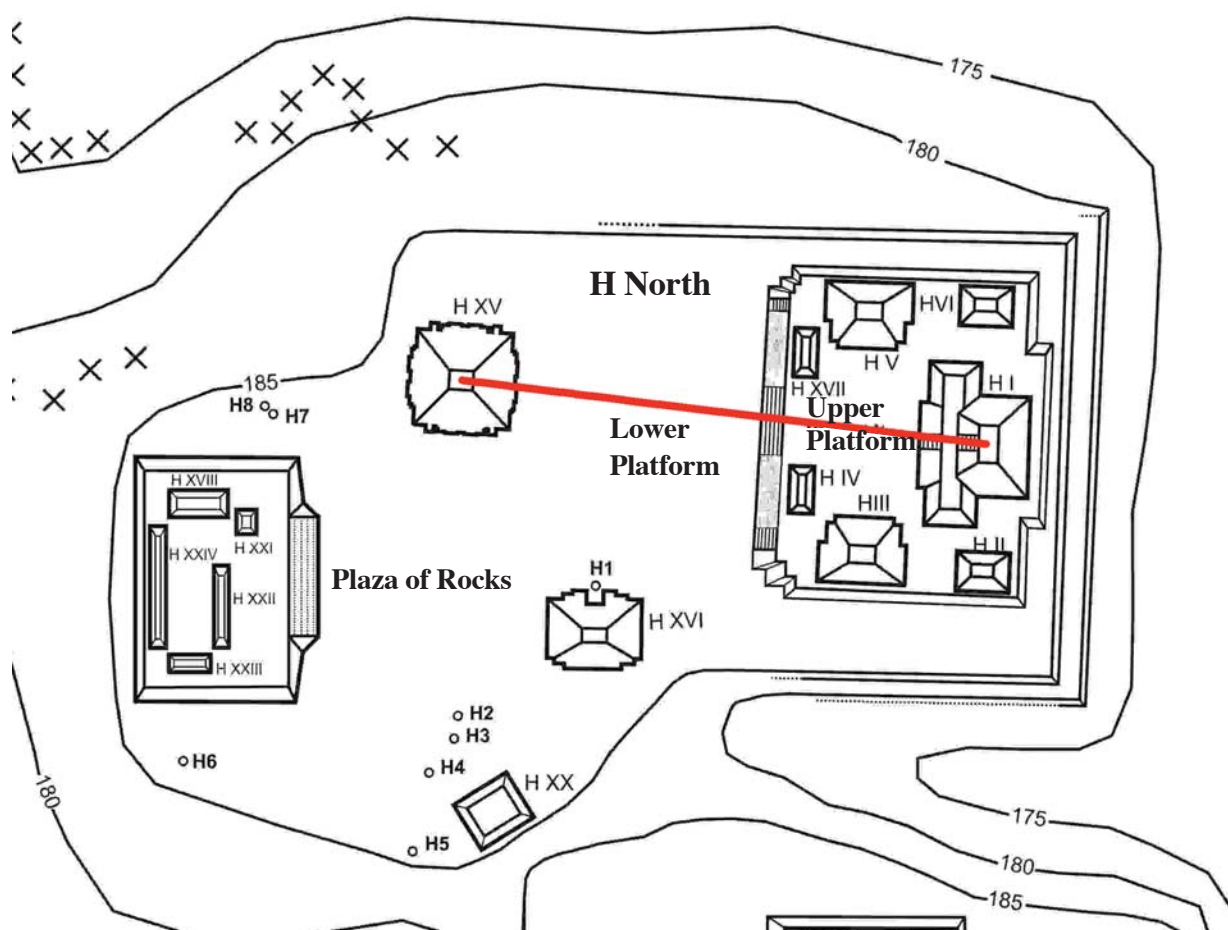


Fig. 6 Main axis between central pyramid H I and H XV. Drawing by M. Riečan and T. Drápela.

function, but such discs in a similar ritual context, and from the same time period, were also found at several other sites in Guatemala.

ASTRONOMICAL ORIENTATION OF STRUCTURES

While looking closer at the structures from the Upper and Lower platform, we must once again return to their orientation. First we will focus on the radial pyramid H XV; its analogy with the nearby Group E, as well as its position in relation to the triadic complex on the Upper platform, encouraged investigation of its possible function as an astronomical observatory. As already mentioned, only 6° deflection of its axis to the south prevented its unequivocal determination as the solar observatory, which would, in the case of this mild correction, certainly work. In this regard, we have outlined some preliminary observations (Kováč et al. 2010, 431). During very basic observations of equinoxes on 21st of March, the sun rose approximately above it. Such minimal accuracy, however, would not have been sufficient for calendar and ritual-astronomical

purposes. Also, given the architectural knowledge and precision shown by builders in other parts of the same complex, as well as their astronomical knowledge shown during the same end of the Late Preclassic period in Group E, the deflection is practically incomprehensible. It would have been sufficient to build the pyramid H XV a few metres to the south and everything would work at the same way as in the case of E VII Sub or better (thanks to bigger distance between H I and the observatory H XV). But only if we assume that they constructed it with a solar cycle in mind. What if, however, we are too focused on the single assumed or expected explanation, based on patterns from only 200m distant, and the chronologically and architecturally similar pyramid E7 Sub. Eventually we started to work with the hypothesis that the ancient Maya had in fact something else in mind here, and that the deviation is not an error but the intention. In Aveni's global, statistical outline of orientations of various structures across Mesoamerica (Aveni 2005, 320), the orientation of our axis seems to be relatively frequent. More re-

cent investigations of orientations of Maya structures by Ivan Šprajc and Pedro Sánchez, however with different conclusions, are working with similarly (but not the same way) deflected axes (Šprajc/Sánchez 2012).

The main direction of the whole complex, the direction from the top of the pyramid H XV to the top of the pyramid HI, (Fig. 6) has the following parameters: height difference of the pyramids - 8m, distance -130.5m. This direction has an elevation of $3^{\circ} 30' 28.78'' \pm 19.6''$ (error in height determination is 0.2 metres) and azimuth $96^{\circ} 27' \pm 6'$, (error from plan measurement). This is the azimuth of the rising point of the star ζ Orion (Alnitak). The azimuth of the rising point of this star in the Late Preclassic period was $96^{\circ} 7' 13''$ and its apparent magnitude was 4.39, therefore it was clearly visible to the naked eye. The difference between measured and calculated azimuth, given the accuracy of the plan, is 20° . Such accuracy corresponds to measurements made with the naked eye. The result of the measurement seems to be clear: the main direction of the complex points towards the three bright stars in the belt of the constellation Orion.³

The change in the apparent magnitude of the star ζ Orion (which shines with magnitude 1.74) with the changing height above the horizon can be seen in Tab. 1.

The orientation of the axis between HI and H XV towards Orion only underscores the supposition that the entire Upper platform might represent this constellation. (Fig. 7). This is in fact generally assumed about the triadic groups. The three stars of Orion – Rigel, Saiph and Alnitak were already identified with the three primordial stones of creation, representing the Maya fireplaces by Tedlock in 1985 (Tedlock 1985, 261). The Upper platform is also remarkable in that from another point of view it resembles the Maya cosmogram, in Mesoamerica known as *quincunx*, which corresponds maybe with a more complex perception of the Orion. It would also be possible to see the combination of the Upper and Lower platform in the

| Height above horizon | Apparent Magnitude | Visibility to the naked eye |
|----------------------|--------------------|-----------------------------|
| 0°08'17'' | 8,14 | No |
| 1°10'01'' | 6,39 | No |
| 2°15'23'' | 5,24 | very weak |
| 3°22'58'' | 4,47 | Yes |
| 4°31'46'' | 3,94 | Yes |
| 5°41'17'' | 3,52 | Yes |
| 6°51'12'' | 3,29 | yes |

Tab. 1 Apparent magnitude of the star ζ Orion (Alnitak) above the horizon.

sky, even if not in complete proportional concordance, considering that the pyramids H XV and H XVI from the Lower platform might, in correspondence to Orion on the Upper platform, represent the stars Procyon and Sirius. The dominance of the orientation towards Orion is further supported by the fact that, twice extending the main axis between HI and H XV, nearly 400m in a direct line, a large pyramid F VIII originating from the Late Preclassic period is located on the top of architectural structure „El Tiburon“; it is the largest structure in Uaxactun and it shares with H I the same angle as H XV. Due to the elevation, Orion would have been easily observable on the axis F VIII – H I, under the same conditions (Fig. 8).

PLACE OF ORION IN THE MAYA CONCEPT OF CREATION

The question ‘Why Orion?’, fortunately has quite a well-founded explanation, based on Maya mythology and sacred cosmology. Stela C from Quirigua bears

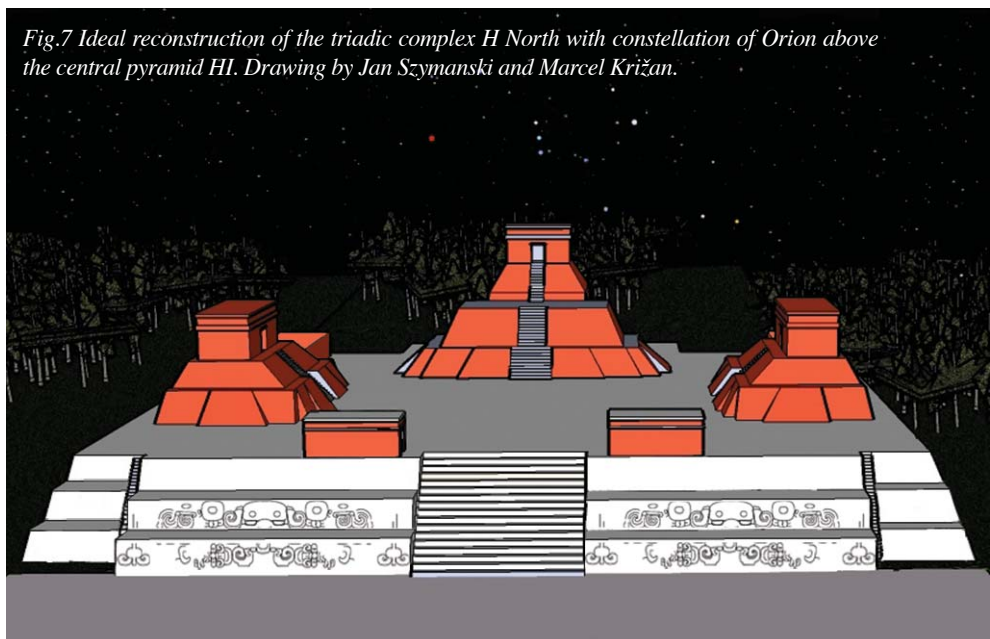


Fig.7 Ideal reconstruction of the triadic complex H North with constellation of Orion above the central pyramid HI. Drawing by Jan Szymanski and Marcel Křížan.

an inscription referring to the Maya creation story, dating it to the 13th of August 3114 BC. Even more importantly for us it states that at that time 'the three stones were set' (Freidel/Schele/Parker 1993, 65-66). The reference to the three stones of creation is found also in Palenque (Milbrath 1999, 267). Research has proven Tedlock's argument that the triangle which they form in the sky was considered to be the prototype of the Maya hearth (Freidel/Schele/Parker 1993, 66-67), which from the earliest times of Maya cul-

ture until today, consists of three hearthstones in a triangular arrangement. The place of creation was located in the sky, and was identical to the hearth. As mentioned, it is now certain that it corresponds to a triangle in the constellation of Orion, formed by the stars: Rigel, Saiph and Alnitak. Thanks to the inscription from Quirigua we also know their Maya names: „Jaguar throne stone“, „Snake throne stone“, and „Water/Waterlily throne stone“. It is probably related to the first fire, as the primary energy of the universe,

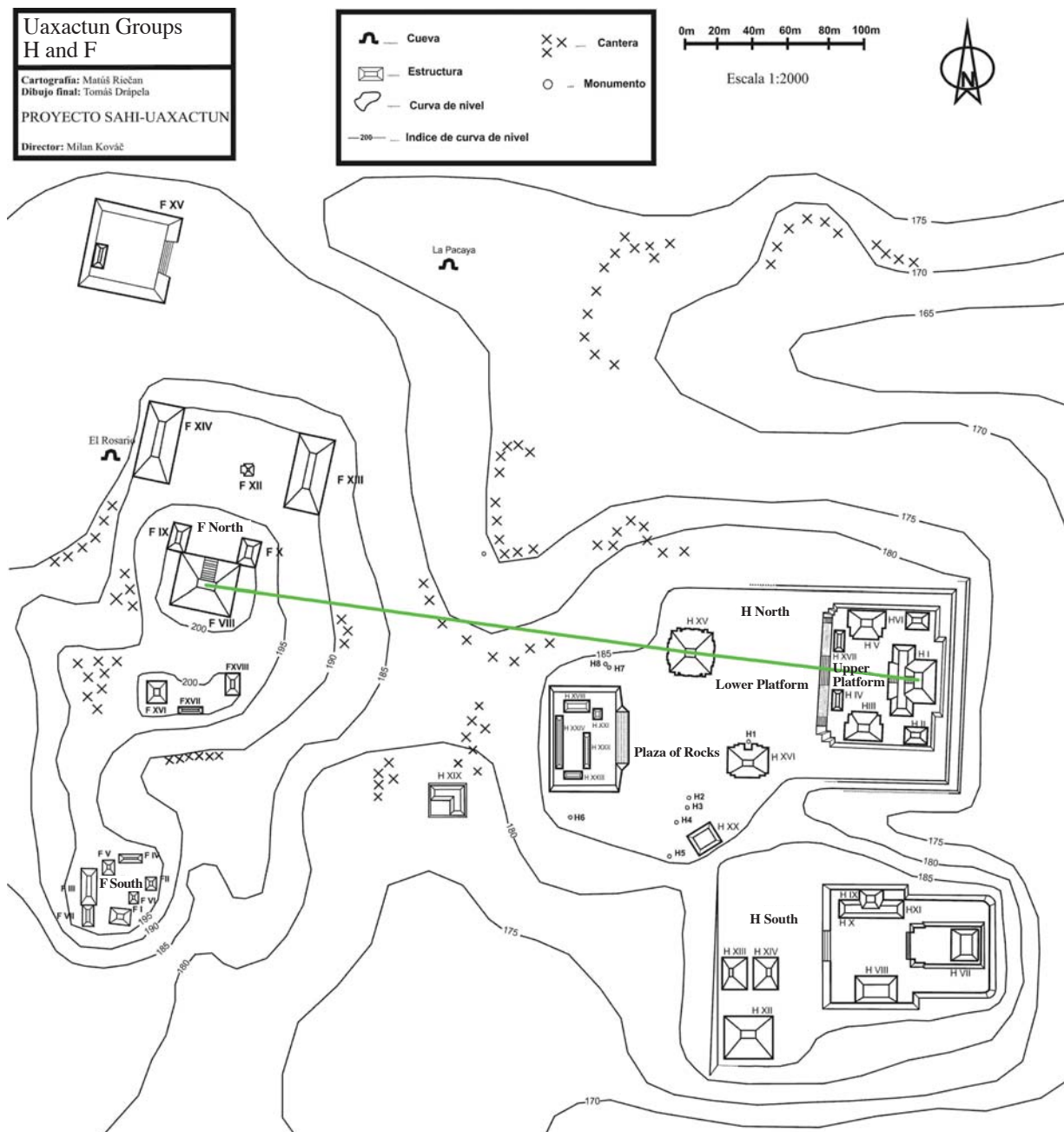


Fig. 8 The most important buildings of groups H and F: FVIII, HXV and HI are all placed on a single axis. Drawing by M. Riečan and T. Drápela.

corresponding, for example, to the Aztec's ideas associated with the god of fire *Xiuhtecuhtli*, representing the initial energy of the universe, who by its dosage formed time (calendar) and therefore existence (León-Portilla 2005). *Quetzalcóatl* also burnt to death in the fire at the end of his reign, and from the first fire, after the self-sacrifice of the gods *Nanahuatzin* and *Tecucistécatl*, the sun and the moon were ultimately born, as we are informed by the old Nahua myth traced to Teotihuacán.

In the middle of the triangle nebula M 42 is located, visible to the naked eye, which probably represented the first fire itself, or its smoke, while the stars represented stones of the hearth. It is this nebula which may be related to the Aztec's constellation of *Mamalhuaztli*, for now tentatively placed in Orion, and which was of fundamental importance to the ancient Mexicans, probably representing the heart of their universe and the place of creation. In the Maya highlands, inhabited by Quiché Maya, Orion was visible in a true zenith position (Milbrath 1999, 266). Quiché associated it with the deity *UK'ux Kah* (Heart of the Sky), which supports its connection with the idea of centrality represented by the hearth. The cosmic hearth of creation is mentioned in Quiché's *Popol Vuh* (Tedlock 1985, 261), but also in Yucatec's *Chilam Balam* of Chumayel (Roys 1967, 107).

The apex of the hearth's triangle is formed by the star Alnitak, which is at the same time the bottom-most of the three stars of Orion's belt. Orion's belt represents the brightest group of three stars in the sky, and those three stars are also close to the celestial equator (Milbrath 1999, 266). Thus the belt connected to the hearth emerges first from behind the horizon, and in a more vertical position than in more northerly latitudes. The Maya probably imagined it as *astillejos*, a stick for igniting fire (Thompson 1972, 68). It rose from behind the horizon first, followed immediately after by the hearth and the fire in its centre. This is how the first fire of creation was probably ignited, the one constantly imitated by the New Fire ceremony in Mexico and also known in Classic Maya environment (Romero 2012, 34); and which for the strongly cosmologically orientated Preclassic Maya culture represented the sacred creation of the world.

The stars of Orion (although not in the constellation representing Orion in Western tradition) were by the Maya called *Ak Ek'*, which means 'Turtle stars' or 'Constellation of the Turtle'. It is not clear which of the stars of Orion represented this turtle, as depictions are ambiguous. For example, in the Madrid Codex the

turtle carries three stones arranged in a triangle, corresponding to the three stars of Orion representing the hearth of creation. Alternately, a mural from Bonampak depicts Orion as a turtle, the shell of which is bearing the image of the three stars of Orion's belt in a straight line. There probably existed an awareness of Orion as a turtle, but no uniform interpretation as to which of the particular stars of Orion represent it. It is possible that this ambivalence is also reflected in the early Maya architecture, where the three stones of Orion are represented by the triadic group; Orion's belt, however, might be related to the so-called Group E. Furthermore, it is possible that the constellation of the turtle could be also represented by Gemini (Milbrath 1999, 267). It is the neighboring bright constellation, of similar astronomical-mythological qualities, therefore they might have been confused in some regions or times. Nevertheless, the turtle was a crucial symbol, especially for Orion. After all, in the presumed representation of the 'Maya zodiac' in the Paris Codex, Orion is apparently depicted as a turtle. Moreover, in the Dresden Codex, where on page 49 the turtle is depicted as a victim of the god of Venus; it most likely does not represent anything other than setting of Orion in opposition to the rise of the Morning Star in November 1225 (Milbrath 1999, 267).

We could also ask why Orion was represented by the turtle, as frankly, the similarity of this constellation with the animal is in no way obvious. Among present-day Lacandon Maya we have identified myth, which says that at the bottom of the lake live two giant turtles that are 'great-grandfather' and 'great-grandmother' of an ancient water deity called Chak Xok or Ah Xok (Kováč 2000, 73). They come from the beginning of time, they are very tired and therefore need constant care. The turtle therefore probably represents an ancestral being, which was associated with the creation of the world, the beginning of everything.

The story of creation played a very important role in the early history of the Maya, and not only in the birth of the Preclassic Maya architecture, when the so called triadic groups developed. We are today practically certain that their shape, distribution and meaning represent the first three stones of creation from Orion. Re-enactment of the creation, was probably also the theme of the key rituals that might have had a role in restoring the sacred universe during the king's enthronement, or during other important moments that imitated the creation. The rising of Orion above the triadic group therefore had to have remarkable

significance, obviously symbolizing the re-creation of the world, and had cause to be validated by the highest political and social institutions.

‘ENTER THE SUN’

Although our measurements dismissed a link between the central axis of the pyramids HI and H XV and observation of equinoxes and solstices, that does not completely rule out other possibilities of Sun observations within the whole architectural complex at Group H North. Until now we have not taken into account the neighboring pyramid H XVI, where the stela and the altar full of peculiar offerings were discovered. Between the pyramid H XVI and HI is an elevation of $4^{\circ}11'35.05''$ and azimuth $65^{\circ}13'45.76''$ ($24^{\circ}46'14.24''$ in the north east direction), the plan accuracy considered: $65^{\circ}14' \pm 6'$. These data indicate a focus on the summer solstice, the estimated azimuth of which, for 23 June of the year 150 AD and for a given altitudinal angle, is $66^{\circ}25'46''$. The

difference between the measured direction and the direction of the summer solstice is only $-1^{\circ}12' + / - 6'$. Taking in to the consideration the space on the top of the pyramid HI, we can conclude that this course could indeed be used to observe the summer solstice (Fig. 9).

With respect to some inaccuracies in solstice dates (solstice can be observed in the same form over several days), the observatory on the radial pyramid H XV also allowed the eventual corrections of Haab calendar. The Sun, around the year 150 AD, rose above the central pyramid HI exactly on the 9th of March and 7th of October. This direction, therefore, might have been used to observe the sunrise during these days, which could have served for relatively accurate calculation of the length of the solar year, or to commemorate unspecified holidays associated with these dates.

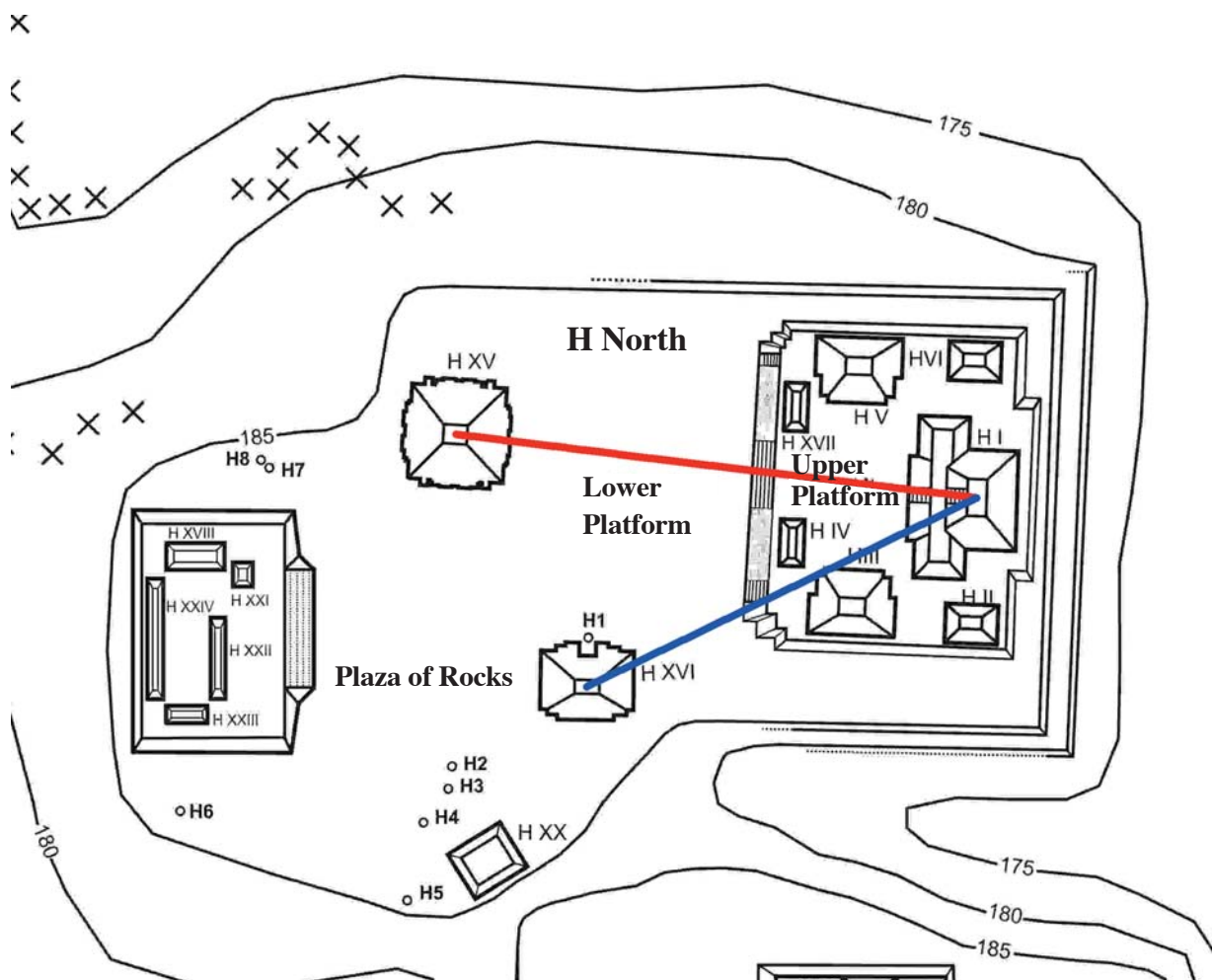


Fig. 9 Possible link of the pyramid H XVI to the summer solstice observable above HI. Drawing by M. Riečan and T. Drápela.

PRESUMED RITUAL FUNCTION OF THE COMPLEX

In order to outline the possible ritual function of the complex H North, first we have to return to the Maya perception of Orion as a turtle. According to the notions of present-day Maya, recorded by Redfield and Rojas, tortoises plead for the rain with their tears and when the ground is wet, they are not visible at all, but when the ground is thirsty, you can see them everywhere (Redfield/Villa Rojas 1962, 207). This idea can be linked well with the Turtle constellation *Ak Ek'*, alias Orion. During the dry season Orion is clearly visible, but as soon as the rainy season begins in early May, Orion disappears from the sky in conjunction with the Sun. Orion thus 'pleads for the rain' and as soon as the rains begin, it disappears. It does not need further stressing that the start of the rainy season was extremely important for the Maya society; it is when the future harvests or famine were decided, because planted maize grains had to receive moisture. This critical time was logically the object of main agricultural rituals.

During the late Preclassic period, Orion disappeared from the sky on May 2nd with an accuracy of +/- 3 days and remained invisible until the 20th of June when its heliacal rising occurred. We believe that the disappearance of Orion, exactly at the beginning of the rainy season, could not go ritually unnoticed, especially when we established that the central axis of the whole complex H North was focused on Orion. Observations of the constellation's disappearance above the radial pyramid H XV observed from H I – the assumed residence of the king, probably commenced the main agricultural ritual taking place at the same pyramid linked with the public space. The ritual in turn, could have been a general sign to start sowing maize.

The heliacal rising of Orion on 20th of June above central pyramid H I observed from H XV marked the victorious return from the underworld. Young maize stalks appeared in the fields and life conquered death. The rising of Orion during this period was most likely a confirmation of the liberation of maize from the underworld – *Xibalba*, and the sign of future harvests and prosperity. Maize was symbolically 'born', or as more accurately illustrates the text in the Chilam Balam of Chumayel, „green corn stalk (personified as Ah Mun) was born in heaven“ (Rois 1967, 112).

Hypothetical Maya procession immediately after the first rise of Orion, still taking place in dark, could celebrate sunrise representing the summer solstice observable above the same pyramid H I. Around the times of the heliacal rising of Orion on 20th of June,

and summer solstice on 23rd of June, we can easily see their overlapping, because both astronomical phenomena can be observed: the heliacal rising of Orion from 17th to 23rd of June and the summer solstice from 20th to 26th of June. Three days, during which the observation of the overlapping phenomena was possible, were most likely presented as part of a single story.

Furthermore, several images from the Classic Maya period depict the Maize god identified with Hun Hunahpu from the Popol Vuh (Kelley 1980, 26), as he emerges out of the cracked turtle shell. The scene is generally interpreted as a triumphant return of this deity from the underworld, the victory over the forces of darkness and at the same time sprouting of maize. The interpretation of this depiction as that of heliacal rising of Orion would be fitting, if only because of the turtle from which the deity emerges. Even more so, because it is not *Hun Hunahpu*, but a different god (Taube 1992, 48) – his son *Hunahpu*, also known as *Hun Ajaw*, who after departure from the underworld is converted into the sun. The concept of associating a victorious return from the underworld with the image of heliacal rising of Orion/Turtle, from which emerges the god/sprouting maize in conjunction with the solstice, is strong enough not to be considered a coincidence. Linking of multiple levels of meaning in the big myths is a rule rather than an exception, and their cosmological model could not be ignored. It is easy to imagine that a perfect interplay of the miracle of creation, a celestial symbol of which disappears at the time of sowing, only to reappear, along with green corn and solstice, must have been impressive. The connection of astral events with vegetal ones might have posed mystery of extraordinary power, and documented use of ritual structures H XV and H XVI long after the abandonment of Group North H only demonstrates their extraordinary religious and social importance.

CONCLUSIONS

If we are to briefly summarize the possible astronomical and ritual function of the newly discovered complex H North at Uaxactún, we have to recognise the fundamental division between the Upper and Lower platform. The Upper platform, where structures appear to represent the stars of Orion and symbolize the story of creation, is elevated by almost 5 metres above the Lower platform, and its enclosed space may not have been available to ordinary visitors. Its eastern location and sky-related features place it symbolically into the celestial sphere; it probably served

as the residence of the ruler and his family. Given the regular appearance of the constellation Orion over the main structure, and also its direct representation by the structures, there is no doubt that the complex not only reflected, but also ritually perpetuated, the creation of the world. Here dynastic rituals might also have taken place reflecting the restoration of the universe, guaranteed by the figure of the king and his descendants.

The Lower platform could not exist by itself and was orientated and linked to the Upper platform. It is not markedly delimited and is freely accessible on two sides, which evokes an open space designed for public rituals. It was built to the west of the Upper platform, overlooked by huge masks of the underworld Sun and probably represented the land of the underworld. The radial pyramid H XV located here only confirms the Cohodas' assumption about the connection between the radial pyramids and the underworld (Cohodas 1980, 218). Above the radial pyramid as well as above the more distant pyramid F VIII, was from H I possible to observe the disappearance of the constellation of Orion into the underworld, i.e. its heliacal setting precisely at the beginning of the rainy season. This would certainly have been related to the most important agrarian rituals linked with the sowing of maize. Swapping places, above the pyramid H I was observed from radial pyramid H XV the heliacal rising of Orion, related to rituals associated with the next phase of the agricultural cycle. This coincided with the summer solstice, which has been observed from the neighboring pyramid H XVI above the top of the same royal residence H I.

The unexpectedly rich astronomical use of the complex H North demonstrates the well-known Maya emphasis on the cosmogony and cosmology associated with the flourish of the royal cult and public agricultural rituals. It seems that their biggest boom falls right at the spectacular dawn of the Maya history – the Late Preclassic period. The central focus of the complex H North on Orion is a surprise in a way. So far the dominant orientation of structures to the heliacal setting of Orion is confirmed from Quiché Utatlán (Freidel/Schele/Parker 1993, 103) which, although geographically and chronologically too distant, might reflect the same Maya ritual-mythological complex. Perhaps it is only a matter of time before similarly orientated architectural complexes from the early Maya history will be confirmed in other areas of the Southern Lowlands.

NOTES

1 *This work was supported by the Slovak Research and Development Agency under the contract No. APVV-0864-12.*

2 Renaldo Acevedo, Zoila Calderón; Bernard Hermes, „Rescate arqueológico en el Grupo D, Uaxactun, Peten“, In: *V Simposio de Investigaciones Arqueológicas en Guatemala, Guatemala : Museo Nacional de Arqueología y Etnología 1992, 120-130.*

3 *The hypothesis we published first time in: Kováč, Milan; Karlovský Vladimír (2011): “Astronomická a rituálna funkcia mayského architektonického komplexu H Sever v Uaxactúne“.*

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