Settlement Structures in Prekmurje from the Air

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Abstract

Systematic archaeological aerial reconnaissance of the Prekmurje region is underway since 1997. Ninety archaeological sites have been reconnoitered up till now. The sites are classified according to the shapes of the structures that are manifested on the geographic surface as cropmarks. Tumulus necropoli, settlements, Roman villae and communications routes, all attributed to various archaeological periods, have been discovered. The majority of archaeological records were documented in the region between the Mura river and Ledava; the largest concentration lies along the Dobel stream that flows near Murska Sobota.

INTRODUCTION

The aerial archaeology training week held between June 15 and June 22, 1996, near Siófok, Lake Balaton, was rudimental and provided competent schooling for the comprehension and development of aerial archaeology in Slovenia (Beweley, Braasch, Palmer 1996, 745-750). Aerial archaeology is acknowledged as equal to other archaeological and research methods throughout western Europe. It represents the basis for researching the settlement of and the protection of historical, natural, as well as archaeological regional monuments. Its origins reach back to the time of the first balloons. The first airplanes, above all, had a strong effect on the development of aerial archaeology. Photographs of regions that were captured during military operations throughout the First and Second World Wars composed a valuable database of archaeological information and it enabled archaeologists to analyze, by interpreting the snapshots of Europe as well as the Near East, the archaeological monuments that disappeared or were only recently discovered.

The most merit should by all means be awarded to O. G. S. Crawford, also known as “the father of aerial archaeology” by the English. Published in 1920, his book, “Wessex from the Air”, was a revolutionary accomplishment in the field of English archaeology as, for the first time, archaeologists could view an archaeological site in its entirety (Bewely 1997, 10-21).

Aerial photo archives did not augment in countries of the former communist and socialist social system (eastern European countries) where the airspace was closed. Aerial photos that were filed as strictly confidential were also difficult to access. Thus aerial archaeology failed to assert itself.

Aerial archaeology, today, is supported by highly developed research groups in the United Kingdom from within the framework of the RCHME. The Aerial Archaeological Research Group (AARG) is a very active and independent group of aerial archaeologists that unite members from various countries and publish the AARGnews (The Newsletter of the Aerial Archaeology Research Group). Likewise, numerous centers and groups that deal with aerial...
archaeology are established in France, Belgium and Germany. Following the aerial archaeology training held near Siófok, an aerial archaeology group, led by Martin Gojda (Gojda 1997), was established within the complex of the Institute for Archaeology in the Czech Republic, as well as a very active group of aerial archaeologists from Slovakia (Kuzma 1995, 251-258) and Hungary, where it is mainly the French who fly (Gougey, Szabó 1995).

Slovene archaeologists also learned impressive amounts on the subject of aerial archaeology during the above mentioned training; furthermore, it also marks the beginning of the development of this discipline in the Slovene region.

WHAT IS AERIAL ARCHAEOLOGY?

Select universal methodological guidelines for aerial archaeology in Slovenia have already been presented (Grosman 1996, 47-50), even aerial archaeological survey, the standard operating procedure and the publication of aerial photographs from the Prekmurje region, as well as the sensation that the aerial archaeologist experiences in the air, have been described (Kerman 1996, 20; Kerman 1998, 46).

The concept of aerial archaeology ordinarily incorporates aerial survey, photography, photo-interpretation and the mapping of archaeological features.

Aerial archaeology must ultimately be defined as a discipline that includes examinations of the landscape from the air and gathers data conducive for further archaeological and historical studies as well as for the protection of historical monuments throughout the landscape. Aerial archaeological survey is a very efficient and relatively quick and nondestructive manner of documenting archaeological structures (ruins) from the air: they appear as positive or negative reflections (cropmarks) in crops and pastures and they are perceived on the basis of differences in the color of soil (soilmarks) in tilled ground.

Light and shade factors are consequential for the discovery of archaeological sites that are barely visible on the ground. Aerial archaeologists seek to determine their contours amid extremely low lighting conditions. Consequently, the best time for such photos is in the early morning and in the late afternoon. These same time intervals are valid also during winter months. Another significant factor in aerial photographs is the amount of total plant cover across the landscape, which varies depending upon the type of vegetation. The best results are attained in grassland and in fields sown with cereals. Structures are much less visible in fields sown with beet sugar or corn, as these two cultures are sown at larger spatial intervals than cereals, for which dense growth is characteristic.

Inclined photos are shot from the air through an open window of a two-seater or four-seater airplane by the archaeologist using the customary films (black and white and diapositive films) and a handheld camera. The airplane can be rented at the local recreational airport. Inclined photos are the best for registering individual sites or regions of historical significance. The advantage lies in the fact that the photographer can choose the most appropriate moment of the day and the type of lighting necessary, a significant factor for a good photograph, for the poorly visible contours of archaeological structures to materialize on the surface through crops in the shapes of circular, semicircular, square or straight ditches that can be indicative of cemeteries, enclosures, settlements, encampments or communications.

THE EXPERIENCE IN THE PREKMURJE REGION - SHAPES OF SETTLEMENT STRUCTURES FROM THE AIR

The Prekmurje region is geographically divided into the level country between the Mura river and Ledava, to the first tertiary Goričko terraces, as well as the hilly world where the ridges are usually settled and marked with forests, and rivers flow through the valleys (Ilešič 1935, 5-12). Numerous factors diminish visibility and the recognition of archaeological structures on the earth’s surface (fig. 1): the agricultural surfaces that are divided into smaller segments, the diversity of cultures sown in the fields, the insufficient amount of grassland, various irrigation and improvements of the land, as well as the drainage of old river courses. The level country between the Mura and Ledava is assuredly the most favorable for aerial survey. Archaeological structures in the Goričko region are difficult to investigate from the air because the terrain is so hilly and quite forested, and settlement is only possible along the larger riverbeds, such as in the region between the Mala Krka and the Velika Krka rivers.

Systematic archaeological aerial survey of the Prekmurje region is underway since 1977. Ninety archaeological sites have been discovered up to this time, with a total of 60 hours of flight. Nevertheless, not enough flight hours have accumulated to
enable systematic survey of the landscape during all four seasons; flights during the winter, when results would be quite favorable, are lacking in particular. Fortunately, an airport is situated near Murska Sobota and flights can be arranged at any time and in any weather, thus enabling the desired region of the landscape to be flown over at each change of weather and position of the sun. None of the more important archaeological institutions in Slovenia (the Department of archaeology on Filozofska fakulteta, the Institute of archaeology ZRC SAZU, the Institutes for the Conservation of the Natural and Cultural Heritage) embody an aerial archaeology department or group to commission and also direct a register of sites documented from the air, and to systematically survey all the regions as well as to secure the necessary financial means for aerial survey. Aerial archaeology ought to be the prospective objective of Slovene archaeology. The Provincial Museum in Murska Sobota (Pokrajinski muzej Murska Sobota) currently manages the aerial register of archaeological sites in the Prekmurje region; no facts are known for the other regions in Slovenia.

The Prekmurje region is one of the few in Slovenia that has executed an archaeological topographic survey for the entire region; it now serves as an excellent foundation for further archaeological investigation of the landscape (Šavel 1991). Known sites were disregarded during the aerial archaeological survey so as to avoid being misled. The landscape was considered as a whole, ready to be discovered anew. The entire landscape of the Prekmurje region is systematically surveyed during all four seasons of the year. The best archaeological data and results were attained primarily in the segment between the Mura river and Ledava. The largest concentration of archaeological sites appeared along the Dobel stream that flows near Murska Sobota.

The archaeological sites discovered from the air shall be classified typologically according to the shape of the structure that can be seen as a cropmark on the earth’s surface (circles, semicircles, squares and rectangles, straight ditches and smaller circles). Chronological determinations are only tentative as they are difficult to evaluate, considering that field surveys and excavations have yet to be carried out on any of the sites. An interpretation of the sites was only possible on the basis of published photographs of similar archaeological structures that had also been excavated. The archaeological structures were traced by hand from the original photographs to simplify the interpretation process.

The most frequent archaeological cropmarks are smaller circles measuring between 20 and 25 m in diameter. The width of the ditch in lush vegetation is up to 2 m (fig. 2). The larger circles measure 35 to 40 m in diameter; the width of the ditch in lush vegetation measures up to 1 m (fig. 4; 6; 7). Semicircular ditches (ringed) measure 20 m in diameter. The width of the ditch in lush vegetation measures up to 2 m (fig. 2; 9-12).

Cropmarks shaped as squares or rectangles are very frequent. There are three types: the smaller square type measures between 12 and 15 m with a ditch that measures up to 2 m wide in lush vegetation (fig. 9; 10), the square type that measures up to 30 m with a ditch of up to 3 m wide in lush vegetation (fig. 8; 13), and the large square type with an opening (an entrance) measuring between 60 and 70 m and with a ditch that is up to 8 m wide in lush vegetation (fig. 19; 20). Another type of cropmark is composed of two equal and lateral squares, with diameters measuring 40 m and ditches that measure between 3 and 4 m wide in lush vegetation, and a smaller square measuring up to 25 m in diameter and with a ditch of up to 4 m wide in lush vegetation (fig. 18). There are also rectangular cropmarks, as positive vegetational marks, measuring 90 m x 30 m and with a ditch of up to 4 m in width in lush vegetation (fig. 17), as well as rectangles as negative vegetation marks (fig. 14).

Long and narrow ditches of up to 1 m in width (fig. 16) were also recognized, as well as ditches measuring up to 2 m wide with rounded off corners (fig. 15).

The current stance of research within the region, if taken into consideration, can help to chronologically determine archaeological sites surveyed from the air.

Prehistory

The oldest occupancy of the region along the Mura reaches back to the Late Stone Age and the Copper Age. Settlements attributed to the Lasinja culture were discovered at Bukovnica, Filovci, Dobrovnik, Kobilje, Mlajtinci, Gomilice, Puconci, Korovci, Lendava and Brezovica. The distribution of sites indicates that settlement was concentrated in the lowland region of Prekmurje, primarily along the lower part of the Ledava stream and its tributaries. Of the above mentioned settlements, only Bukovnica was systematically investigated. The settlement expanded spatially over time. Rectangular, wooden houses plastered with loam were
discovered. Hearths and large pits were found in the open (Šavel 1991, 13; Šavel 1994, 39-50).

The settlement pattern changes in the Bronze Age, settlements arise in new surroundings. The following settlements are known dating to the Middle Bronze Age: Oloris near Dolnji Lakoš, Gaborkert near Lendava, Gospoška near Hotiza and Prapornica near Gačani. Several years of systematic archaeological excavation of the settlement at Oloris near Dolnji Lakoš produced desirable results concerning the architectural remains. Numerous structures (houses) were discovered, measuring 10 x 6 m, that were constructed using vertical, wooden posts interwoven with branches and plastered with loam. The settlement was naturally confined by a 2 m wide ditch (Šavel 1991, 15-16; Šavel 1994, 56-57).

Settlements dating to the Iron Age are very scarce. Some Late La Tène graphite pottery was unearthed at the Bronze Age settlement of Oloris near Dolnji Lakoš. The slightly elevated region of Duje njive near Trnje (measuring 300 x 300 m, it is enclosed by a marshy trench, access is possible only from the eastern side) and the elevated plateau in the center of Černelavci, where graphite pottery was discovered during probe excavations, are potential Iron Age settlements (Šavel 1991, 16-17).

It is evident from the present stance of investigations on Prehistoric settlements that the majority were situated along riverbeds or in marshy areas which were enclosed by natural ditches, and they represented some sort of islands within the flooded areas. Rectangular structures (houses) built with wooden posts dug into the ground prevail. No ritual or ceremonial structures, or even cemeteries, have yet been found.

Archaeological sites seen from the air infer a different Prehistoric settlement pattern. The group of circular ditches along the Murska Sobota-Bakovci main road (fig. 2) can be identified as Prehistoric tumuli. The group is composed of four circular ditches of which two circles are connected by a crossing from one circle to the other, with a visible hole dug out in the center as well as a side entrance. The ditch on the left is incomplete and is of a semicircular, ring shape. The fourth circular ditch is on the right and also has a distinctive entrance and a visible hole dug out in the center. Rectangular pits are recognizable to the side of the circular ditches.

A circular ditch with a smaller circle in the middle was discovered southwest of Petičovci and could also be assessed as a cemetery surrounded by a ditch (fig. 3).

An archaeological site bearing a characteristic circular ditch, situated north of the village Kupšinci, can also be classified as a ceremonial location. Smaller circles, the remains of postholes, are distributed symmetrically and circular within (fig. 5).

Prehistoric settlements that are enclosed by a larger ditch, measuring between 35 and 40 m, are very frequent. One was discovered in the fields southwest of Murska Sobota, situated along a former riverbed. A smaller circular ditch a slightly beyond corresponds to this larger one. The remains of trenches dating to the First or Second World War zigzags between the larger and the smaller circles (fig. 4). A similar settlement that is also enclosed by a larger ditch and is additionally protected with a trench above and below, was discovered south of Murska Sobota (fig. 6). The settlement at Mostje (fig. 7) is different in that it was encompassed by a rampart with two entrances, one from the east and one from the south. Numerous circular holes that were dug out in the middle of the settlement are recognizable.

Square ditches together with smaller, semicircular ring-shaped ditches compose a specific Prehistoric settlement type. These settlements are known along the Dobel stream in Krog (fig. 8), west of Bratonci (fig. 9) and at Beltinci (fig. 10).

The Roman Period

Tumuli cemeteries demarcate the Roman period in the Prekmurje region; 77 have been documented up to this time. Tumuli are situated individually as well as in groups. The smaller tumuli measure up to 6 m in diameter, while the larger ones up to 25 m. Ten settlements have been documented dating to the Roman period. The settlement at Dolga vas was archaeologically investigated only partially. Smaller excavations were also carried out at Ižišče near Ivanci. The laying out of the Roman road traversing the Prekmurje region from Kot to Dolga vas and beyond towards Zalalovoj, Sopron and Szombathely, was thus revealed (Šavel 1991, 17-21; Pahič 1972, 11-20).

Groups of circular ditches, some of which are ring-shaped, unjoined semicircular forms, prevail among the archaeological sites discovered from the air and dating to the Roman period. Two such larger groups of circular ditches were discovered south of Murska Sobota (fig. 11; 12) as well as north of Krog (fig. 13). The group of circular ditches near Murska Sobota could possibly correspond to two larger Roman tumuli cemetery complexes. Likewise can be surmised of the group of circular ditches north of Krog, where two square ditches...
pertaining to a building structure were revealed; they could possibly be indicative of the settlement’s multiphase character.

The Roman villa discovered south of Murska Sobota (fig. 14) along an old dried up riverbed can certainly provide insightful information regarding the manner of urbanizing Roman lifestyle in the countryside. The villa is composed of an oblong building facing another building with numerous intermediate spaces and a smaller additional space on the right side.

Although the Prekmurje region was of a transitional character during the Roman period, it nevertheless had to be subjugated, as did all other provinces constituting the Roman empire, and it had to defend the empire. Ditches with rounded off corners, observed from the air in Lemerje (fig. 15) and at Rakičan (fig. 16), are most likely the remains of Roman military fortifications.

A large number of architectural remains were discovered from the air and are difficult to precisely evaluate whether they chronologically pertain to the Roman period or to the Middle Ages. A ditch pertaining to a large two-part oblong, rectangular building (fig. 17) was recognized in the field south of Kupšinci. Two larger square ditches and a smaller square ditch pertaining to a building structure, residence or fortification, observed northwest of Bratonci (fig. 18), can also be attributed to the Roman period. Discovered south of Murska Sobota, a wide, rectangular ditch pertaining to a building with an entrance could perhaps be the remains of a Roman or a medieval fortification (fig. 19). A ditch pertaining to a square building, north of Pušča (fig. 20), can be interpreted likewise.

An elaborate road system once extended over the Prekmurje region (Horvat-Šavel 1985, 163-175; Zelko 1962, 23-24, 27). The remains of former roads were observed from the air southeast of Črenšovci (fig. 21), at Beltinci (fig. 22) and at Ižakovci (fig. 23).

A review of the aerial archaeological photographs from the Prekmurje region thus enables new prospects concerning the archaeological depiction of the landscape. Despite that aerial archaeological photographs might not be adequately convincing and that interpretations may be difficult to substantiate, I believe that this method maintains exceptional potential for the comprehension of landscape archaeology.

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A CATALOGUE OF AERIAL PHOTOGRAPHS AND A CORRESPONDING INTERPRETATION

Prekmurje (fig. 1)

The lowland region of Prekmurje; with agricultural surfaces that are divided into smaller segments and various crops in the fields, aerial survey is rendered more difficult.

Photo: B. Kerman, 24. 3. 1998.

Murska Sobota (fig. 2)

A group of circular ditches representing Prehistoric tumuli; two of which are connected with a crossing from one circle to the other, which has a hole dug out in the center and a side entrance. The ditch on the left is incomplete and is of a semicircular, ring shape. The fourth circular ditch is on the right and also has a distinctive entrance and a visible hole dug out in the center. Rectangular pits are visible to the side of the circular ditches. The circles, or rather tumuli, are located on an elevated area (an island), and old riverbeds are visible in the surrounding area. Construction work and the expansion of the Murska Sobota-Bakovci main road is already endangering the site.

Cropmark - inclined photo.

Petišovci (fig. 3)

A larger, circular ditch, within the middle of which a smaller circular hole can be recognized. The site is situated along a riverbed and most likely represents the remains of a Prehistoric cemetery with a central grave that is enclosed by a circular ditch.
Cropmark - inclined photo.

Murska Sobota (fig. 4)

A large circular ditch of a Prehistoric settlement on the right, a smaller circular ditch on the left. The remains of trenches dating to the First or Second World War zigzag between the larger and the smaller circles.
Cropmark - inclined photo.

Kupšinci (fig. 5)

A large, circular ditch, within which the contour of a circle composed of symmetrically distributed smaller circles (holes) is visible. Two smaller circular ditches are still visible to the left, as well as a circular ditch to the right. The site could perhaps be a burial or ceremonial complex.
Cropmark - inclined photo.
Photo: B. Kerman, 6. 2. 1996.

Murska Sobota (fig. 6)

A large circular ditch of a Prehistoric settlement that is additionally confined with a trench above and below. Straight horizontal trenches are situated above the circular ditch of the settlement.
Cropmark - positive photo during an extremely low sunlight factor.
Photo: B. Kerman, 3. 7. 1997.
Mostje (fig. 7)

A circular ditch or rampart of a Prehistoric settlement with two entrances, one from the east and one from the south. Numerous small, circular holes were dug forming an ellipse within the settlement.

Cropmark - inclined photo.
Photo: B. Kerman, 10. 6. 1998.

Krog (fig. 8)

Two square enclosures (ditches) are on the lower part and three circular ditches that could possibly be Prehistoric tumuli, or enclosures, are above.

Cropmark - inclined photo.
Photo: B. Kerman, 3. 7. 1997.

Bratonce (fig. 9)

Above are the remains of a ditch pertaining to a rectangular building; the semicircular ring-shaped ditch of a tumuli, or enclosure, with numerous holes dug before the entrance, is in the middle. Another semicircular ditch of a tumulus, or enclosure, is adjacent.

Cropmark - inclined photo.
Photo: B. Kerman, 3. 7. 1997.

Beltinci (fig. 10)

The ditch of a rectangular building with an entrance, which most likely pertains to a semicircular ring-shaped ditch, as well as an oblong and wide ditch on the right.

Cropmark - inclined photo.
Photo: B. Kerman, 3. 7. 1997.
Murska Sobota (fig. 11)
A group of circular and semicircular ring-shaped ditches - the remains of a tumuli necropolis.
Cropmark - inclined photo.

Murska Sobota (fig. 12)
Two groups of circular and semicircular ring-shaped ditches - the remains of a tumuli necropolis.
Cropmark - inclined photo.
Photo: B. Kerman, 5. 6. 1998.

Krog (fig. 13)
A group of circular and oval ditches, most likely a tumuli necropolis, that is concluded above and below by two rectangular buildings with entrances.
Cropmark - inclined photo.

Murska Sobota (fig. 14)
A negative impression of the walls pertaining to a Roman villa composed of an oblong building facing another building with numerous intermediate spaces and a smaller additional space on the right side. The Roman villa is situated along a dried up riverbed.
Cropmark - inclined photo.
Photo: B. Kerman, 7. 7. 1998.
Lemerje (fig. 15)
A wide ditch with rounded off corners; probably the remains of a Roman military encampment.
Cropmark - inclined photo.
Photo: B. Kerman, 9. 5. 1998.

Rakičan (fig. 16)
A narrow ditch with rounded off corners and an entrance in the center; probably the remains of a Roman military encampment.
Cropmark - inclined photo.

Kupšinci (fig. 17)
A wide, oblong ditch pertaining to a two-part square building.
Cropmark - inclined photo.
Photo: B. Kerman, 5. 6. 1998.

Bratonci (fig. 18)
Three rectangular ditches pertaining to building structures. The two larger square structures have visible entrances into the spaces, and a pit is dug in the center of the smaller structure. Numerous holes, or rather pits, are dug before the building structure.
Cropmark - inclined photo.
Photo: B. Kerman, 5. 6. 1998.
Murska Sobota (fig. 19)
A rectangular ditch pertaining to a building structure with an entrance - a Roman or medieval fortification.
Cropmark - inclined photo.

Pušča (fig. 20)
A wide ditch pertaining to a square fortification with an entrance.
Cropmark - inclined photo.
Photo: B. Kerman, 5. 6. 1998.

Črenšovci (fig. 21)
A crossing of a former road.
Cropmark - inclined photo.
Photo: B. Kerman, 22. 2. 1997.

Beltinci (fig. 22)
A former road that is interrupted by architectural remains.
Cropmark - inclined photo.
Photo: B. Kerman, 3. 7. 1997.
Začetni arheološki trening, ki je trajal od 15. do 22. junija 1996 pri Siófoku ob Blatnem jezeru, je bil osnova ter prava šola za razumevanje in razvoj zračne arheologije na Slovenskem (Bewley, Braasch, Palmer 1996, 745-750). Zračna arheologija je v državah zahodne Evrope sprejeta in je enakovredna z ostalimi arheološkimi in raziskovalnimi metodami in predstavlja osnovno za raziskovanje poselitve in zaščito ne le arheoloških, ampak tudi zgodovinskih in naravnih spomenikov krajin. Njeni začetki segajo v čas pojava prvih balonov. Predvsem pa so na razvoj zračne arheologije močno vplivala prva in druga svetovna vojna, zaradi fotografiranja območij, ki so jih zajele vojaške operacije, zapustili dragoceno bazo arheoloških podatkov in omogočili arheologom, da so z interpretacijo teh posnetkov, ki niso bili samo iz Evrope, ampak tudi iz različnih držav, lahko analizirali arheološke spomenike, ki so izginili ali pa so bili odkriti šele zdaj.


Trening, ki sem ga na začetku omenil, je dal ogromno znanja iz zračne arheologije tudi slovenskim arheologom, kar je hkrati pomenilo začetek razvoja te discipline tudi v slovenskem prostoru.
**KAJ JE ZRAČNA ARHEOLOGIJA?**

Nekatere univerzalne metodološke smernice zračne arheologije v Sloveniji so bile že podane (Grosman 1996, 47-50), tudi zračna arheološka rekognosciranja, postopek dela in objava znanstvenih fotografij iz Prekmurja ter občutki, ki jih zračni arheolog doživlja v zraku, so bili že opisani (Kerman 1996, 20; Kerman 1998, 46).

Pojem zračne arheologije največkrat zajema zračno rekognosnico, fotografiranje, fotointerpretacijo in kartiranje arheoloških struktur.

Zračna arheologija torej moramo končno definirati kot disciplino, ki se ukriva s pregledovanjem krajin iz zraka in s pribodivaniem podatkov, ki so koristni za nadaljnje arheološke in zgodovinske študije ter zaščito spomenikov zgodovinske krajinje. Zračno arheološko rekognosnico je zelo učinkovit metodologični korak iz zraka na Goričkem, kjer je teren zelo težavni. Arheološke strukture iz zraka na Goričkem, kjer je teren zelo težavni, ni bilo izkopavano.ercial

Vegetacijski znaki, ki so se ukriva s pregledovanjem krajin iz zraka in s pribodivaniem podatkov, ki so koristni za nadaljnje arheološke in zgodovinske študije ter zaščito spomenikov zgodovinske krajinje. Zračno arheološko rekognosnico je zelo učinkovit metodologični korak iz zraka na Goričkem, kjer je teren zelo težavni.


Iz dosedanjih raziskovanj prazgodovinskih naselb je razvidno, da jih je bila večina ob strugah potokov alia na zamovitih predelih, katere obdajajo naravne jarek, te pa predstavljajo znorte znake v zahodnji predelini (Šavel 1991, 163-175; Zelko 1962, 23, 24, 27).

Arheološka najdišča iz zraka nam dajejo drugačno sliko prazgodovinske poselitev. Skupino arheoloških najdišč v air seeing, a drugačno sliko prazgodovinske poselitev.
Murska Sobota (sl. 2)

Vegetacijski znak - poševni posnetek.

Petišovci (sl. 3)

Večji krožni jarek, znotraj katerega je v sredini dobro viden manjši okrogli vkop. Najdišče leži ob strugi potoka in je najverjetneje ostanek prazgodovinskega grobišča, s centralnim grobom v sredini, ki ga obdaja krožni jarek.
Vegetacijski znak - poševni posnetek.

Murska Sobota (sl. 4)

Na desnem strani večji okrogli jarek prazgodovinske naselbine, na levi manjši okrogli jarek. Med njima poteka poljski jarek, s cik-cak linijo, ki je ostanek strelskih jarkov iz 1. ali 2. svetovne vojne.
Vegetacijski znak - poševni posnetek.

Kupšinci (sl. 5)

Večji okrogli jarek, znotraj katerega je viden en obris kroga, ki ga sestavljajo simetrično v razdaljah razporejeni manjši kroge (vkopi). Na levi strani sta še vidna dva manjša okroglja jarka, prav tako je na desnem strani okrogel jarek. Najdišče bi lahko opredelili kot grobiščni ali ritualni kompleks.
Vegetacijski znak - poševni posnetek.

Murska Sobota (sl. 6)

Večji okrogli jarek prazgodovinske naselbine, ki ga z zgornje in spodnje strani obdajata jarka. Nad okroglim jarkom naselbine so horizontalni jarki.
Vegetacijski znak - pozitivni posnetek pri ekstremno nizki sončni svetlobi.

Mostje (sl. 7)

Okroglj jarek ali nasip prazgodovinske naselbine v dvema vhodoma iz vzhodne in južne strani. Znotraj okroglega prostora je več manjših okroglih vkopov, ki tvorijo znotraj kroga elipsa.
Vegetacijski znak - poševni posnetek.

Krog (sl. 8)

Na spodnji strani dva pravokotna ograjena prostora (jarka), zgoraj trije okrogli jarki, ki bi lahko bili prazgodovinske gomile, ali pa ograde.
Vegetacijski znak - poševni posnetek.

Bratonci (sl. 9)

Zgoraj ostanki jarkov pravokotne stavbe, v sredini polkrožni prstansti jarek gomile ali ograde z več vkopi pred vhodom.
Zraven polkrožen jarek gomile ali ograde.
Vegetacijski znak - poševni posnetek.

Beltinci (sl. 10)

Jarek pravokotne stavbe z vhodom, ki ji najverjetneje pripada polkrožni prstanasti jarek ter podološčata široka jarka na desnem strani.
Vegetacijski znak - poševni posnetek.

Murska Sobota (sl. 11)

Skupina okroglih in polkrožnih prstanastih jarkov - ostanek gomilnega grobišča.
Vegetacijski znak - poševni posnetek.

Murska Sobota (sl. 12)

Dve skupini okroglih in polkrožnih prstanastih jarkov, kot ostanek gomilnega grobišča.
Vegetacijski znak - poševni posnetek.

Krog (sl. 13)

Skupina okroglih in ovalnih jarkov, najverjetneje gomilno grobišče, ki ga na zgornjem in spodnjem delu zaključujeta dve pravokotni stavbi z vhodom.
Vegetacijski znak - poševni posnetek.

Murska Sobota (sl. 14)

Negativni odtis zidovja rimske vile, sestavljene iz podolgovate stavbe, nasproti njej je stavba z več vmesnimi prostori in majhnim prostorom na desnem. Rimska vila leži ob izsušeni strugi potoka.
Vegetacijski znak - poševni posnetek.

Lemerje (sl. 15)

Širok jarek z zaobljenim vogalom, najverjetneje ostanek rimskega tabora.
Vegetacijski znak - poševni posnetek.
Foto: B. Kerman, 9. 5. 1998.

Rakičan (sl. 16)

Ozek jarek z zaobljenim vogalom in vhodom v sredini, najverjetneje ostanke rimskega tabora.
Settlement Structures in Prekmurje from the Air

Vegetacijski znak - poševni posnetek.

**Kupšinci (sl. 17)**

Širok jarek podolgovate dvodelne kvadratne stavbe.
Vegetacijski znak - poševni posnetek.

**Bratonci (sl. 18)**

Vegetacijski znak - poševni posnetek.

**Murska Sobota (sl. 19)**

Pravokotni jarek stavbe z vhodom - rimska ali srednjeveška utrdba.
Vegetacijski znak - poševni posnetek.

Pušča (sl. 20)

Širok jarek kvadratne utrdbe z vhodom.
Vegetacijski znak - poševni posnetek.

**Crenšovci (sl. 21)**

Križišče nekdanjih cest.
Vegetacijski znak - poševni posnetek.

**Beltinci (sl. 22)**

Nekdana cesta, ki jo prekinejo arhitekturne ostaline.
Vegetacijski znak - poševni posnetek.

**Ižakovci (sl. 23)**

Nekdana cesta.
Vegetacijski znak - poševni posnetek.

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