Celtic Landsurveying in the Noerdlinger Ries

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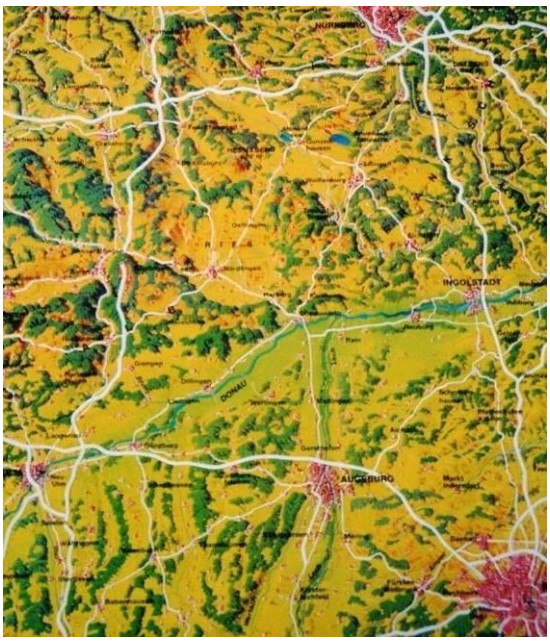
- The Celts in this region
- Ancient Landsurveying (with the Pentagon-Dodecahedrons in the Noerdlinger Ries)
- A Geometrical Grid resulting from Ancient Landsurveying
- Churches, situated nowadays on these Straight Alignements, were key to the Reconstruction of this forgotten Celtic System of Landsurveying in the Ries Crater..



The Noerdlinger Ries is situated in Germany, north of the river Danube, north of Augsburg. About 15 million years ago this hilly countryside on the transition of the Swabian into the Frankonian Mountains was hit by a meteorite some 1000m in diameter, ploughing with ultra-high-temperature schockwaves trough earth's atmosphere and hitting surface with a velocity of approx. 70.000 km/h. At the moment of impact a huge firestorm scratched the upper stratum for miles around carrying away the rubble, at the same time extinguishing all animal life and plant. The meteorite's momentum was so tremendous, that it did not only knock through the 600m thick upper layer but also dug into another 1000 meters of basic kristalline earth formations.
The energy released in these seconds must have been around 180.000 megaton TNT with a temperature of 20.000 degree C. and a pressure of 5 mio kg/cm^2. In these totally destroyed crystalline layers not only the meteorite itself vaporised completely but also some 2,5 km^3 of the surrounding earth's crust. A spherical schock wave was building up at this very moment with exploding velocity, expanding in all directions in these crushed basic cristallyne layers. This shockwave threw up a crystalline inner wall of about 12 km and an outer wall of 25 km in diameter. At the moment of impact the layers at the surface evaporised immidiately to a depth of about 1300m and were liquified to about 1500m below the former surface. Within minutes, exploding mountainous material with a total volume of about 130 km^3 is flying trough the air and another 1000 km^3 is flowing and sliding here into and there just away from the crater. Torrential rain was released, creating at the rim of the crater huge avalanches of mud and sludge, flowing back in an awful hole of rubble and rocks, filling it partly and forming a craterlake of 400 km^2 and about 500 m deep.
During 15 millions of years till today we see a very slow process of silting up to the rim of the crater.Thus this structure long ago has been flattened out and is nearly level since man arrived and is in our days an ideal environment for human settling and intensiv agriculture.

The Celts and the Noerdlinger Ries.

In the 6.th century b.C. it is Hekataios of Milet, who mentioned the Celts as living in a region north of Marseilles. A century later Herodot states them more precisely as living near the sources of the river Danube in the vincinity of the village of Pyrene. In accordance with the latest result of many excavations in this region, it can strongly be recommended, that the celtic village city of Heuneburg is meant, situated east of Sigmaringen, some 50 kms SW of the city of Ulm. The Noerdlinger Ries is situated another 50 kms NE of Ulm and 50 kms W of Manching. This nearly flat area of about 1000 kms^2 in the vincinity of the fertile soils of the Danube-valley was already very early incorporated for agricultural purposes. Extensive findings of the pull-out of tree-stumps by draught animals verify a systematic action in order to clear the forest and to reclaim this fertile area for agriculture as early as the Hallstatt-Period. This landscape was then systematically opened more and more, changing its long-lasting apearance.

More information about the Celtic population can be found in Ceasar's « De Bello Gallico ». Ceasar writes about the Celtic Priests (Druids), that their education/formation lasted up to 20 years. They studied many years in Greece, learnt the language, which they wrote and spoke for life between each other, so they could only be understood by the initiated.

In Greece, they studied also philosophy, mathematics and astronomy. « Daily, there were long discusions about the stars, planets and their movements » (Ceasar). It is also said, that they understood the movements of the stars and the planets (Pompeus Mela in "De Chorographia") Timagenes (in Ammianus Marcellinus XV, 9) refers to their study of the free sciences and the secrets of nature and how they acknowledged Pythagoras as an Expert and Authority. Hippolytus in Philosophumena I, XXV mentioned, how the Celcic Duids studied enthusiastic Pythagoras' Philosophy. This opinion is also found in Clemens of Alexandria : Stromata I, XV, 71 when he writes, that he "studied the Symbolic of Pythagoras from the Galater".

So, it can be said, that the Druids were the direct intellectual and spiritual heirs of Pythagoras. Ceasar (De Bello Gallico VI, 13) also mentionned: "The Druids were so highly esteemed and honored by the Celts, that these priests in nearly all cultural, social and private disputes and conflicts had the last say in solving the differences and problems, emerging from various interpretations in cases of inheritance and/or boundary disputes. They also could set the sentences and fines".

So it is clear, that these Celtic Priests undoubtedly must have known an old, forgotten and now "secret" system of landsurveying, the fixation of borderpoints and how to split and divide the arable lands. This system can only be found in the correct use of the pentagon-dodecahedrons as will be explained below.

Ancient Landsurveying (with the Pentagon-Dodecahedron in the Noerdlinger Ries)

The Pentagon-Dodecahedron is a geometrical body consisting of twelve five-cornered regular metal plates. Ten of these pentagons have in the centre drill-holes of varaible diameter. The last two are equal and max. in diameter.

At each of the 20 cornerpoints there is a smal knob on a short stick.

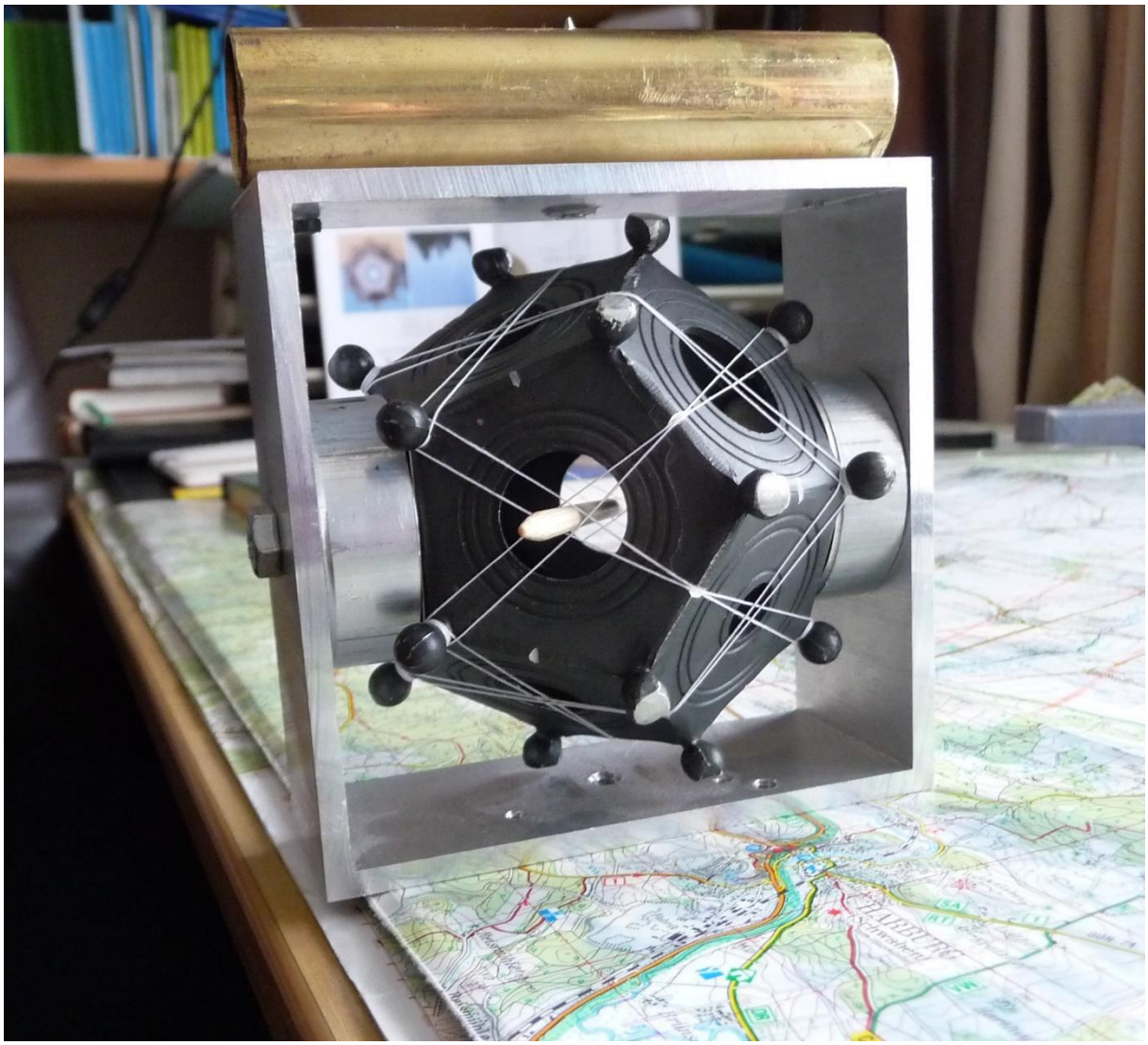


Fig. 2: Visible are the two tenons fixed inside a square hollow section with a tube of brass fixed on top.

In the two largest and equal wide openings at the left and right side of the dodecahedron there can be put in a tenon of a little bit smaller diameter, whose centres are screwed together inside a square hollow section. Now the dodecahedron can be turned around this «axis» and directing the line of sight horizontally, five times two round openings (one in front and one behind) rotate now in this line of sight. When tightening a thin wire between the knobs all around the dodecahedron there are ten times little parallellogramms formated in the centre of the openings; each of which gives the thru direction of the line of sight. Repeating each foresight reading five times (setting five staffs and then eliminating the four morst excentric positions) one can quite satisfactoraly stake out very exactly a long straight line.

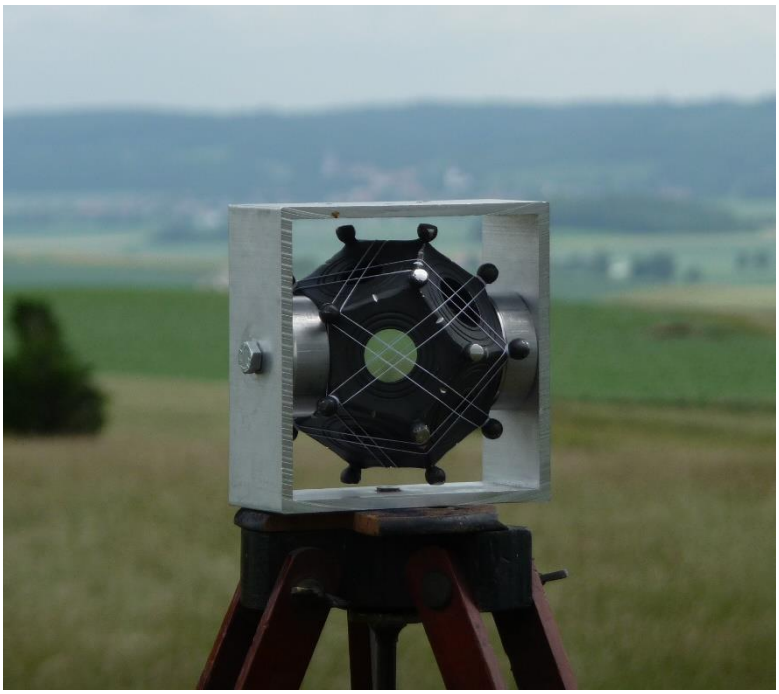


Fig. 3: Testing the Dodecahedron on the fields of the Ries-Crater
A fix orientation N-S E-W is missing as yet.

Ein Diopter als Stativ für das Pentagon Dodekaeder nach der Beschreibung des Heron (Heronis Opera III)

Positioning is the only difficulty and in these early days of surveying (some 2500 years ago) without "our" Polar Star in the North with only a night sky with very faint stars there – i.e. in Cameleopardalis- is available. (Hence Caesar's mentionned discussions of the Celts at night).
First of all an Heron-like Dioptra-Tripod is necessary with an upper table to screw together with the square hollow secton.
Then a star- and direction-finding tube of brass has to be fixed on top of the square hollow secton with two alternativs:

1: The axle of the starfindertube is **perpendicular** to the rotation axle of the dodekaeder or
2: The axle of the starfindertube is **parallel** to the rotation axle of the dodecahdron

In both cases the centreline of the starfindertube has to be placed exactly in the same vertikal plane as the dentated disk under the upper table and accurate directed to the polar star.

1: Soon after sunrise the position of the upper table is horizontalised. The line of sight of the starfindertube looks always true north. Observing from right behind the dodecahedron, five times two openings in the plates of the dodecahedron appear for the eyes of the land-surveyor in the **direction NNW of 26.565°**. The direction of this foresight reading is fix, unchangeable and typical for the art of surveying with a dodecahedron.

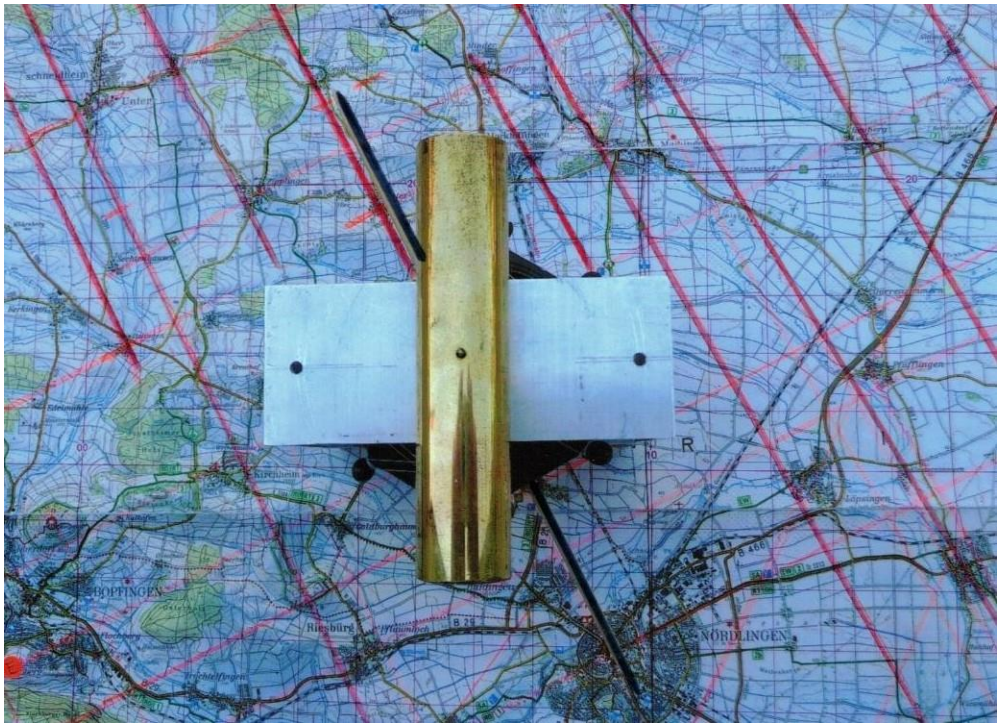
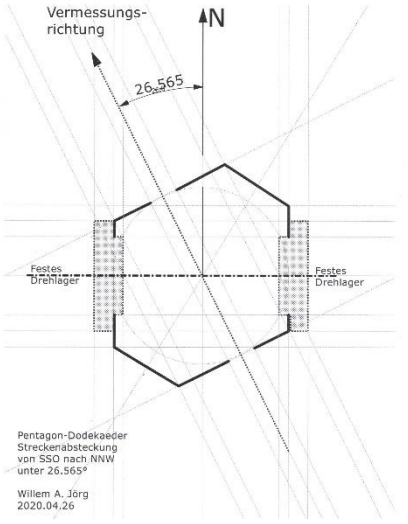


*Fig 5: Positioning the axle of the starfindertube **perpendicular** to the axis of rotation of the Dodecahedron, will result in alignements of **26.565°** NNW.*



As far as visibility is guaranteed surveying of this line can proceed. Otherwise a new station will be set out and after precise backside reading the principle line will guarantee correct further geodetic surveying along this base-line.

One or more stations behind «front runner nr.1», surveyor **2** has also levelled his surveying instrument. His star- and direction-finding tube is also lined up true north, but observing from left behind his dodecahedron he is setting out his line in **a fix ENE-ly direction of 63.435°**, this way forming with nr.1 a perfect rectangular co-ordinated system.

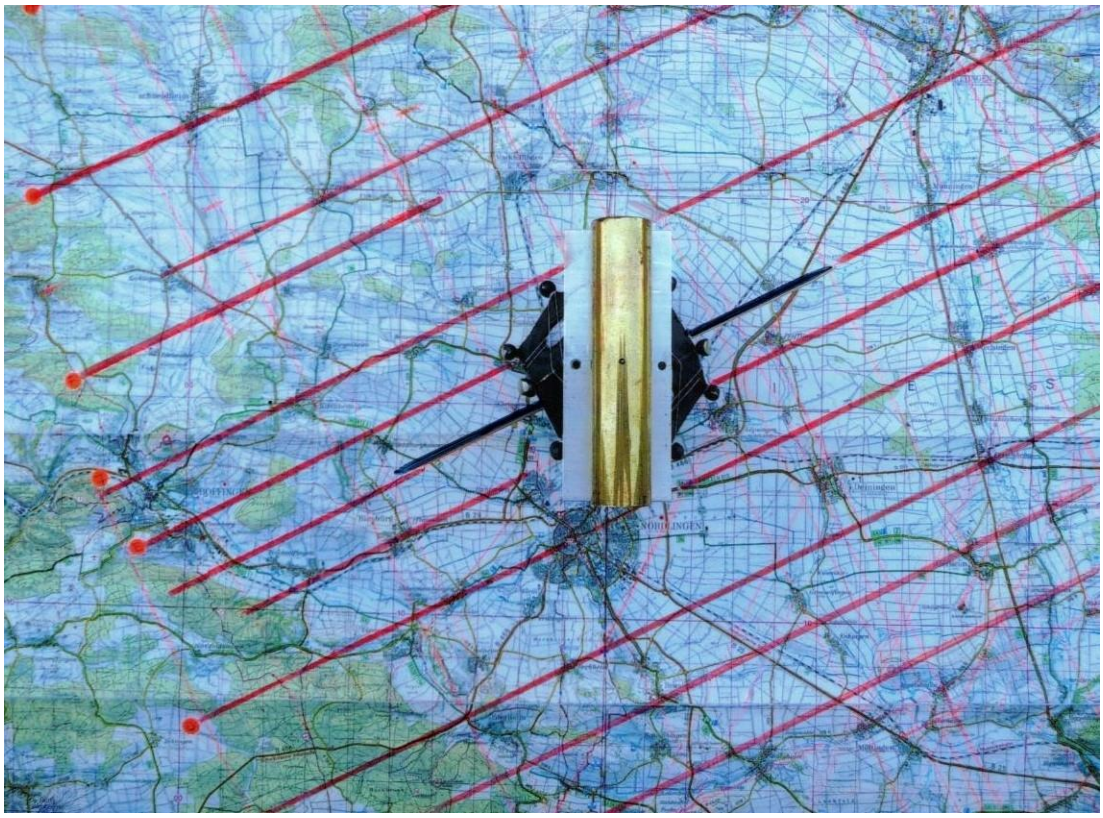


*Fig 6: Positioning the axle of the starfindertube **parallel** to the axis of rotation of the Dodecahedron will result in alignements of **63.435°** ENE*

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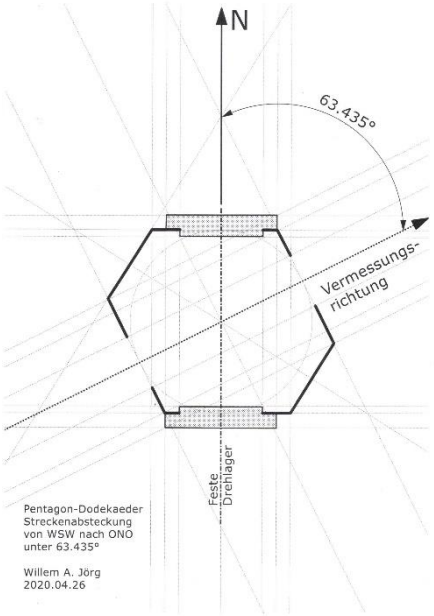

And so on and so forth, till the Noerdlinger Ries as a whole has been parcelled in the way it is **totally reconstructeble today.**

The geometrical Grid resulting from Ancient Landsurveying

A complete system of 40 lines based on the use of dodecahedrons could be redefined in the Noerdlinger Ries. A total of 135 churches, chapels, field-crosses and wayside shrines can be found today in this crater-like landscape situated on the before-mentioned and now resurfaced lines.

-The great number of Churches, situated nowadays on those Straight Allignements were key to the Reconstruction of the system.

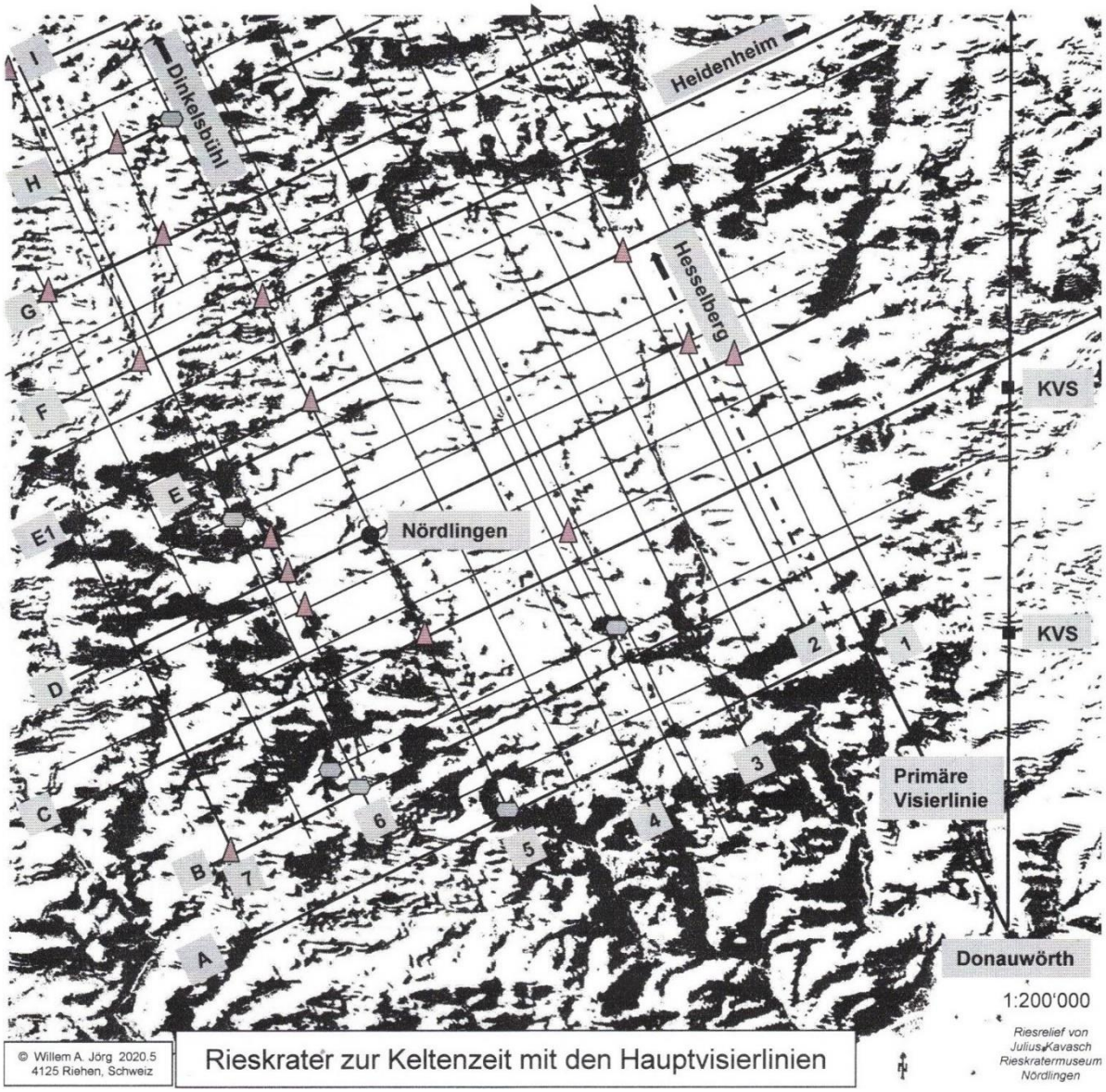

Fig. 9 : A total of 15 churches are situated exactly on the crosspoints of two lines.

The following list shows the details of all churches etc. on the nowadays reconstructable straight alignements.

1. Preliminary lines from the river Danube into the Noerdlinger Ries
2. Nr. 1 - 7: Lines surveying from SE to SW in direction NNW under 26.565°
3. Nr. A - I: Lines surveying from SW to NW in direction ENE under 63.435°

1: -Direction N.: Kapelle Schellenberg, Kaisheim, Keltische Viereckschanze Höfle, Otting, Keltische Viereckschanze Herrenschlag, Kuppe Hirschbuck (W. der Ulrichskapelle), Steinbühl, Gemeindeberg Rohrach, Kirche St. Wunibald in Meinheim.
-Direktion NNW: Kapelle Schellenberg, Kapelle Mündling (H. Familie) bis Höhenberg W.

2.1: Höhenberg Ost □ Gosheim □ Hainsfarth □ STEINBUCK (N. von Dornstadt)
1a: Lehmberg(-senke) □ Metzlesberg □ Laub □ Ött.Forst: Ägidi Kreuz □ Hesselberg Ostgipfel
1b: MÄHHORN □ Lehmberg □ Öttingen (St. Anna) □ HESSELBERG Sendergipfel □ Burk
1c: Kapelle am Himmelberg □ Leitenberg □ Schwörsheim
2: Himmelberg □ Bildstock an St 2221 □ND Bildstöcke an B466 □ Niederhofen □ Heidweiherschlag □ Ött.Forst: Sandweiher □ Gerolfingen
2a: Ött.Forst/Gehren □ Geissberg □ Aufkirchen □ Ammelbruch □ Grossohrenbronn
2b: (ob Ronheim): Gabelberg □ Bühl □ Rudelstetten □ Unter-Wechingen □ Nittingen □ EHINGEN □ Ött.Forst/Gehren □ Wittelshofen □ Dentlein (43 km)
3 Bockberg □ Heroldingen □ Alerheim □ Belzheim □ Hochstadt □ Dorfkemmathen
3a Hochaltingen □ Grünes Kreuz (auf Metzlersberg) □ Weiltingen □ Obermichelbach
3b Eisbronn □ Möggingen (Menhir) □ Pfäfflingen
3c Ringwall Burg/Möggingen □ Hühnerberg □ Wegkreuz □ Klosterzimmern □ Herblingen.
3d Schaffhausen □ Haugeles Buck □Hühnerberg □Hahnenberg □ Utzwingen
4 Kreuzberg □ Möttingen □ Grosselfingen □ NW. Löpsingen □ Maihingen □ Bühlingen □ Fremdingen □ Petershut □ Roter Berg □ Sinbronn (35 km)
4a Mönchsdeggingen □ Heutal Süd □ Im Zwing □ Birkhausen □ Minderoffingen.
4b Raustetten □ Willburgstetten.
5 Kayberg □ Blossen □ Ochsenberg □ Reimlingen (2x) □ NÖRDLINGEN □ Munzingen □ Unterwilfingen □ Geislingen □ Ziegelhau □ Schanz □ Mönchsrot □ DINKELBÜHL
5a Attenbühl □ Herkheim □ Benzenzimmern
5b Nordhausen □ Tannhausen
5c Bollstadt □ Burgstall Hagburg □ Ederheim □ Holheim □ Nähermemmingen □ Pflaumloch □ Goldburghausen □ Eulenstein □ Dirgenheim
6 S. Bollstadt □Osterhau □ Ofnethöhlen □ Goldberg □ Kirchheim □ Stillau
6a Weiherberg □ Hohlenstein □ Feldpunkt 519 □ Kuppe Jagstheimerholz □ Itzlingen □ Burgstall □ Stödtlen
6b Forheim □ PP «Schanze» □ Schnittbühl □ Heide □ Zöbingen.
7 Kösingen □ Riegelsberg □ Buch □ Hohenberg □ Sandberg (Hexenstein)

3.A MÄHHORN □ Schellenberg □ Mönchdeggingen (St. Georg) □ Eierbühl □ Dunstelkingen.
A1 Hofen □ Aufhausen □ Rehberg □ Ochsenberg □ Himmelberg □ Gosheim □ Rohrberg.
B Kösingen □ Lummelhau □ Ganzenberg West □ Balgheim □ westl. Steinberg.

B1 Weiherberg □ Hochhaus □ Niederhaus □ Hahnenberg □ «Alte Eiche» östl. Wemding.
B2 Hohlenstein □ Bopfingerwald □ Hürnheim □ Schmähingen □ Engkingen □ Wemding
C Kapelle Maria Buch, Neresheim □ Mangoldshau □ Schweindorf □ Reimlingen (St.Georg) □ Maria Brünnlein □ Platte (Menhir ob Wemding) □ Wolferstadt.
C1 Ohmenheim □ östlich Herkheim □ südlich Deiningen □ Amerbach.
C2 Holheim □ Deiningen (Friedhof) □ Speckbrodi □ Amerbacherkreut.
C3 Weilermerkingen □ Ohrengipfel □ Utzmemmingen.
D Dehlingen □ Feldkuppe «472» □ Nähermemmingen □ Nö (Alte Wache) □ Laub □ Polsingen.
D1 Ecksbühl (im Walde) □ Trochtelfingen □ Pflaumloch □ NW Löpsingen □ Schwörsheim □ westl. Ursheim.
D2 Menhir west von Dorfen □ Flochbergerhalde □ Feldpunkt 492 □ Goldberg □ Ehringen □ Munningen (ehem. Friedhof) □ Megesheim (Kapelle) □ ND. Hohler Stein.
E Flochberg □ Wallerstein Fels.
E1 Sandberg (Hexenstein) □ Kirchheim □ Munzingen □ Heuberg □ Ziegelhütte □ Roter B
E2 Tonenberg □ Fohbühl □ Heide □ Maihingen
F Bückleshau □ Izlingen □ Hölle □ Unterwilfingen □ Kapelle □ Utzwingen □ Affenberg □ St.Wunibald in HEIDENHEIM.
F1 Sechtenhausen □ Zipplingen □ Belzheim.
F2 Baldern □ Geisslingen (ND Keltenschanze) □ Hochaltingen □ Erlbach.
G Zöbingen □ Unter-Schneidheim □ Nordhausen □ Schopflohe (südl.ND) □ Hausen □ Öttinger Forst Pkt.457 nahe Römerstrasse □ Steinbuck (=Ende Achse 1) □ SPIELBERG
H Stockholz □ Riepach □ Tannhausen □ Keltenschanze Schanzholz.
H1 Stillau □ Forst Greiselbach □ Frankenhofen □ Röckingen.
I Hochpunkt westl.Birkenzell □ Stödtlen □ Mönchsrot □ Wilburgstetten □ Wittelshofen □ Hesselberg (am westl. Abhang).
I1 Dambach □ Grosslellenfeld.

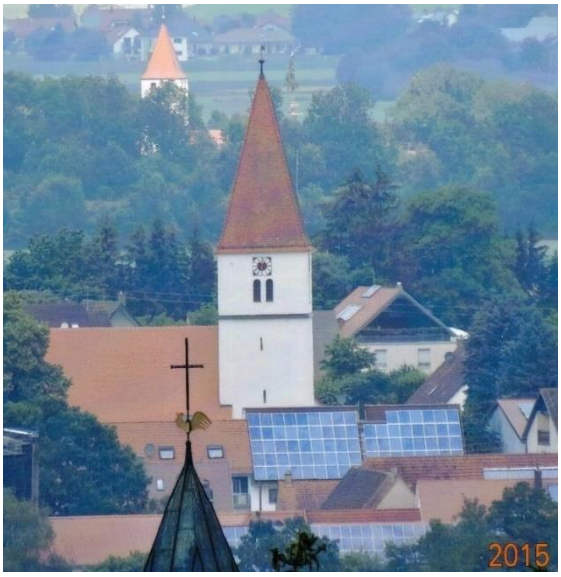

Fig 10: Line 5c with the churches of Holheim, Nähermemmingen and Pflaumloch behind each other in the nowadays naerly flat Ries Crater. All three churches are situated on axle-crossings with the lines C2, D and D1.

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