Dankwoord (dedication) ...............................................................................................................

Samenvatting (summary) ..............................................................................................................

1. Introduction ............................................................................................................................

1.2. Crater discovery

2. Geological setting.

2. 2. Description of studied sections.

2.2.1 Ramonal North (distance from crater 340 km)

2.2.2 Ramonal South (distance from crater 340 km)

2.2.3 Agua Dulce (distance from crater 345 km)

2.2.4 Alvaro Obregon (distance from crater 350 km)

2.2.5 Albion Island (distance from crater 370 km)

2.2.6 Armenia (distance from crater 470 km)

2.2.7 Santa Teresa (distance from crater 580 km)

2.2.8 Central Belize, Maya Mountains (distance from crater 370 km)

Chapter 1: The discovery of the Cretaceous - Paleogene extraterrestrial impact crater site.

1) Mexican site for K-T impact crater? .................................................................

2) Surficial geology of the Chicxulub impact crater, Yucatan, Mexico..............

3) Surface expression of the Chicxulub crater......................................................

Chapter 2: Discovery and investigation of the Chicxulub impact ejecta.

1) Ejecta blanket deposits of the Chicxulub crater from Albion Island, Belize.

Chapter 3: Distal ejecta of the Chicxulub impact crater.

1) Chicxulub impact ejecta from Albion Island, Belize.
Chapter 4: Geochemical signatures of the impact ejecta in Belize and Mexico.

1) Trace element concentrations in the Mexico-Belize ejecta layer: A link between the Chicxulub impact and the global Cretaceous-Paleogene boundary.

2) Cathodoluminescence petrography and isotope geochemistry of KT impact ejecta deposit 360 km from the Chicxulub crater, at Albion Island, Belize.

Chapter 5: Chicxulub and the global consequences for the fauna and flora.

1) Unravelling the Cretaceous-Paleogene (KT) catastrophe: Evidence from flora fauna.

Chapter 6: Impact modeling of Fluidized Ejecta Blankets (FEB).

1) Impact winter and the Cretaceous/Tertiary extinctions: Results of a Chicxulub asteroid impact model.

2) Chicxulub impact ejecta deposits in southern Quintana Roo, México, and central Belize.

3. Perspectives.

3.1 Main comparisons between the Spheroid Bed and the Diamictite Bed.

3.2 The formation of Fluidized Ejecta Deposits.

3.3 Emplacement mechanism for the Albion Island Formation.

4. FEBs on other planetary surfaces.

4.1 The Chicxulub Fluidized Ejecta Blanket as an analogue to Mars FEBs.

4.2 Mechanisms of emplacement of Chicxulub’s Fluidized ejecta deposits: Atmospheric drag sorting of ejecta.

4.3 The role of water in FEB formation.

5. Acknowledgement.

6. References.